



# RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS

## PART I. NORTH CENTRAL STATES

\*\*\*\*

1962

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## INTRODUCTION

The U. S. Regional Soybean Laboratory was organized in 1936 under the Bankhead-Jones Act, as a cooperative project by the U. S. Department of Agriculture and the twelve Agricultural Experiment Stations of the North Central Region. In 1942, the work of the Laboratory was expanded to include cooperation with twelve Agricultural Experiment Stations in the Southern Region also. At present, six other states and two provinces in Canada are also cooperating informally in the Laboratory research program, which is directed toward the breeding of improved varieties and strains of soybeans for industrial use and the obtaining of fundamental information necessary to the efficient development of strains to meet specific needs.

The purpose of the Uniform Soybean Tests is to evaluate critically the best of the experimental soybean lines being developed through the cooperative breeding research program. Ten of these tests, corresponding to ten maturity groups, have been established, with Test 00 including the very early strains for the northern fringe of the present area of soybean production. Uniform Tests 0 through IV, respectively, include strains adapted to locations farther south in the North Central States and areas of similar latitude. In general, each group is arranged to include strains differing in maturity by 10 days or less.

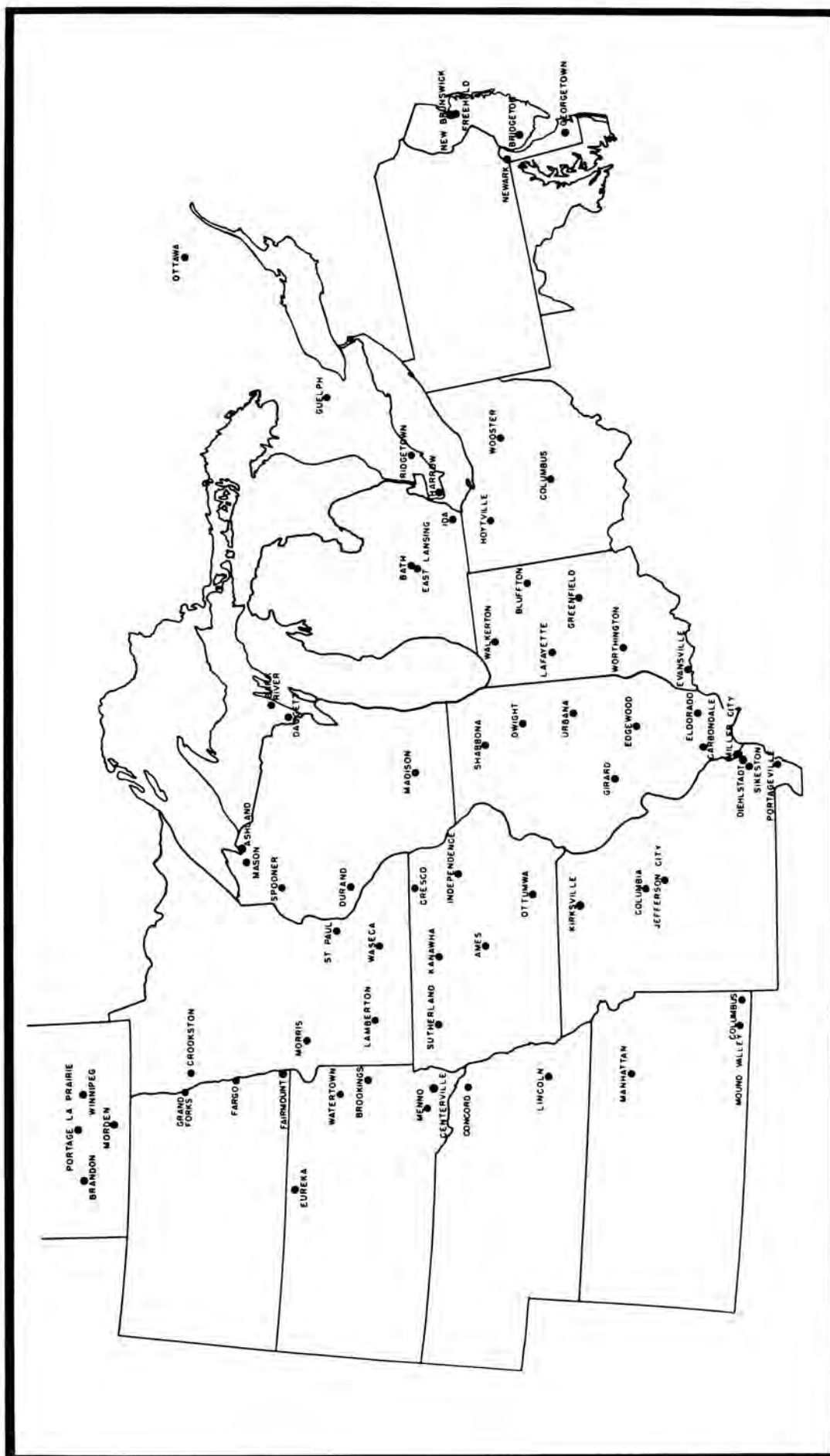
The summary of performance of strains in the first six Uniform Tests is included in Part I of this report. Information on the last four tests, which include strains adapted to the southern part of the United States, is contained in Part II, which is issued separately.

Most of the Uniform Tests in the North Central Region are grown in rod-row size plots, using four replications. The varieties and extra strains differing in maturity from the test strains are separated from the rest of the test by border rows to minimize competition. As the result of recent studies showing that fewer locations are necessary to measure chemical composition with the same precision as yield, the number of locations from which chemical data were obtained was reduced to about half of the test locations.

Uniform Preliminary Tests are grown at a limited number of locations throughout the region to screen the best experimental strains for maturity and general agronomic performance before they are entered in the Uniform Tests. At most locations these nurseries are grown in rod-row plots with two replications. Interest in the Preliminary Tests has been increasing as the importance of early evaluation of strains over a wider range in environmental conditions has been demonstrated. This year there were Preliminary Tests for all of the maturity groups.

Daily rainfall and maximum and minimum temperature graphs, together with a brief statement of growing conditions during the 1962 growing season, are included for most of the nursery locations as an aid to interpretation of the agronomic and chemical data. The 1962 yields for Uniform Test 00 were similar to those for 1961, protein contents of the seed were about 2 percent lower and oil contents nearly 0.4 percent higher. For the later groups, yields were generally lower in 1962 and oil contents also lower. When compared to 1961, the 1962 soybean crop has been characterized by processors as having a low oil content.

Four new soybean varieties, Harosov 63, Hawkeye 63, Lindarin 63, and Clark 63, were released to seed producers in the Spring of 1963. All of the new strains, which were developed by the backcross method, carry Phytophthora rot resistance contributed by the Blackhawk variety. The Clark 63 strain also carries resistance to bacterial pustule contributed by the CNS variety. These four soybean varieties are the first to be developed by backcrossing specifically to incorporate disease resistance, with Clark 63 carrying multiple resistance to two serious diseases.



MAP OF THE NORTH CENTRAL STATES SHOWING LOCATION OF THE COOPERATIVE UNIFORM SOYBEAN TESTS

[illegible]

UNIFORM TEST LOCATIONS - 1962 (Continued)

| Location               | Cooperator                             | Uniform Tests |   |   |    |     |    | Preliminary Tests |   |   |    |     |    |
|------------------------|--|---------------|---|---|----|-----|----|-------------------|---|---|----|-----|----|
|                        |  | OO            | O | I | II | III | IV | OO                | O | I | II | III | IV |
| Centerville, S. D.     | S. D. Agr. Exp. Sta.                   |               |   |   |    | x   |    |                   |   |   |    | x   |    |
| Lincoln, Nebr.         | J. H. Williams, Nebr. A.E.S.           |               |   |   |    | x   | x  |                   |   |   |    | x   |    |
| Manhattan, Kans.       | E. L. Mader, Kans. A.E.S.              |               |   |   |    |     | x  |                   |   |   |    | x   | x  |
| Mound Valley,<br>Kans. | R. N. Ford, Branch Exp. Sta.           |               |   |   |    |     | x  |                   |   |   |    |     |    |
| Columbus, Kans.        | V. H. Peterson, Columbus Exp.<br>Field |               |   |   |    |     | x  |                   |   |   |    |     |    |
| Othello, Wash.         | Irrig. Exp. Sta.                       |               |   |   |    | x   | x  |                   |   |   |    | x   | x  |
| Prosser, Wash.         | C. E. Nelson, Irrig. Exp. Sta.         |               |   |   |    | x   | x  |                   |   |   |    | x   | x  |
| Ontario, Ore.          | L. A. Fitch, Malheur Br. E.S.          |               |   |   |    | x   | x  | x                 |   |   |    | x   | x  |
| Medford, Ore.          | John A. Yungen, S. Ore. Br. E.S.       |               |   |   |    | x   | x  |                   |   |   |    |     |    |

## METHODS

All Uniform and Preliminary Tests are planted in replicated single row-plots with four replications for the Uniform Tests and two replications for the Preliminary Tests. Usually 18 to 20 feet of row is planted and only 16 or 16½ feet harvested. Seeds are planted on the basis of 200 viable seeds per row.

Yield is measured after the seeds have been dried to a uniform moisture content and is reported in bushels per acre.

Maturity is taken as the date when approximately 95% of the pods are ripe and most of the leaves have dropped. Green stems are not to be considered in determining maturity but should be noted separately. Maturity is expressed as days earlier (-) or later (+) than the average of a standard reference variety. Reference varieties used for the Uniform Tests are as follows: Group 00, Acme; Group 0, Grant; Group I, Chippewa; Group II, Hawkeye; Group III, Shelby; and Group IV, Clark.

To make it possible to compare maturities of strains in different tests, the following tie varieties are included in the Uniform Tests: Flambeau (Group 00) in Uniform Test 0; Grant (Group 0) in Uniform Test I; Blackhawk (Group I) and Ford (Group III) in Uniform Test II; and Clark (Group IV) in Uniform Test III. These are separated from the rest of the test by border rows in order to minimize competition effects, and only maturity data are reported.

Lodging notes are taken at maturity and recorded on a scale of 1 to 5 according to the following degrees of lodging:

- 1 Almost all plants erect
- 2 All plants leaning slightly or a few plants down
- 3 All plants leaning moderately, or 25% to 50% of the plants down
- 4 All plants leaning considerably, or 50% to 80% of the plants down
- 5 Almost all plants down

Height is reported as the average length in inches of plants from the ground to the tip of the stem at time of maturity.

Seed Quality is rated from 1 to 5 according to the following scale:

- |               |          |               |
|---------------|----------|---------------|
| 1 - Very good | 3 - Fair | 5 - Very poor |
| 2 - Good      | 4 - Poor |               |

The factors considered in estimating seed quality are: seed development, wrinkling, damage, and objectionable color for the variety.

Seed Weight is recorded as weight (in grams) per 100 seeds.

Chemical Composition of the seed is determined on samples submitted to the Laboratory headquarters in Urbana. Percentages of oil and protein are determined on a composite sample of all replications for each strain and are expressed on a moisture-free basis.

Calculating Summary Means. In cases where the lodging and seed quality notes are all the same at a location, indicating no expression of strain differences, these locations are not included in the mean for these traits. Where the C. V. of yield



is greater than 20% at a location or where yields are unusually low, this location is not included in the strain means.

Disease Reactions are listed according to the Soybean Disease Classification Standards, March 1955, unless otherwise specified. The disease reaction is listed 1-5. The state where the test was made is identified in the column heading, and a small letter "a" or "n" under the state signifies artificial or natural infection. When the reaction is given by letter instead of numbers, R signifies resistant, S stands for susceptible, and I for intermediate. Seg indicates that a strain is segregating for disease reaction.

Strain Designation. In order to simplify strain designations and indicate state of origin for entries in the Uniform Tests, the following code letters to precede strain numbers have been agreed upon in meetings of experiment station agronomists collaborating with the U. S. Regional Soybean Laboratory

| <u>Code Letter</u> | <u>State</u>     | <u>Code Letter</u> | <u>State</u>   |
|--------------------|------------------|--------------------|----------------|
| UD                 | Delaware         | Au                 | Alabama        |
| L                  | Illinois         | R                  | Arkansas       |
| C                  | Indiana          | Ca                 | California     |
| A                  | Iowa             | F                  | Florida        |
| K                  | Kansas           | Ge                 | Georgia        |
| Me                 | Maine            | La                 | Louisiana      |
| E                  | Michigan         | Md                 | Maryland       |
| M                  | Minnesota        | D                  | Mississippi    |
| S                  | Missouri         | N                  | North Carolina |
| U                  | Nebraska         | Ok                 | Oklahoma       |
| ND                 | North Dakota     | SC                 | South Carolina |
| H                  | Ohio             | UT                 | Tennessee      |
| SD                 | South Dakota     | IS                 | Texas          |
| W                  | Wisconsin        | V                  | Virginia       |
| UM                 | Manitoba, Canada |                    |                |
| O                  | Ontario, Canada  |                    |                |

SL Two or More States

It is suggested that states cooperating in these Uniform Tests use these letters to designate their strains.

UNIFORM TEST 00 - 1962

| Strain    | Originating Agency                | Origin                   | Generation<br>Composited |
|-----------|-----------------------------------|--------------------------|--------------------------|
| Acme      | Central Exp. Farm, Ottawa, Ont.   | Sel. from Pagoda         |                          |
| Flambeau  | Wis. Agr. Exp. Sta.               | Introduction from Russia |                          |
| 0-57-2921 | Central Exp. Farm, Ottawa, Ont.   | Blackhawk x Capital      | F7                       |
| UM4       | Univ. of Manitoba, Winnipeg, Man. | Acme x Comet             | F5                       |
| UM5       | Univ. of Manitoba, Winnipeg, Man. | Acme x Comet             | F5                       |
| UM7       | Univ. of Manitoba, Winnipeg, Man. | Blackhawk x PI 194633    | F5                       |

Identification of Parent Strain

PI 194633 733-4, sel. from 193-7-27 x Blackeye by Sven A. Holmberg, Norrkoping, Sweden.

Data are reported from ten locations for the two checks and four experimental strains in this test. Two of the strains, UM4 and UM5, have been in this test for three years, and a summary of these data is given in Tables 6 and 7. They have averaged higher than Acme and nearly as high as Flambeau in yield. They were considerably earlier than Flambeau and not as tall but showed much better lodging resistance.

UM7 was in this test in 1961. In both years its yield has been below the other two UM strains and it was more susceptible to lodging. 0-57-2921 was an entry in the 1960 and 1961 Uniform Test 0. It performed very well for its maturity, and this year it is the highest yielding strain in Uniform Test 00. It outyielded Flambeau by over two bushels on the average, was slightly earlier, almost as tall, and much better in lodging resistance. In addition, it appears to equal Flambeau in resistance to bacterial blight and is resistant to Phytophthora.

Table 1. Summary of data for Uniform Test 00, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 8     | 8    | 7                          | 5            | 8      | 6               | 7              | Protein          | Oil  |
|              |       |      |                            |              |        |                 |                | 5                | 5    |
| Acme         | 25.8  | 5    | 0                          | 1.4          | 27     | 2.8             | 17.1           | 39.6             | 19.2 |
| Flambeau     | 28.4  | 4    | +9.4                       | 3.4          | 34     | 3.1             | 15.2           | 39.7             | 19.2 |
| 0-57-2921    | 30.8  | 1    | +7.9                       | 1.9          | 33     | 2.8             | 13.3           | 38.7             | 19.7 |
| UM4          | 29.0  | 2    | +0.3                       | 1.8          | 28     | 2.8             | 17.5           | 38.9             | 19.4 |
| UM5          | 28.5  | 3    | +2.7                       | 2.0          | 30     | 2.9             | 17.6           | 38.6             | 19.4 |
| UM7          | 25.8  | 5    | +1.6                       | 2.7          | 30     | 3.0             | 16.6           | 40.9             | 19.5 |

<sup>1</sup>Days earlier (-) or later (+) than Acme which matured September 13, 110 days after planting.

Table 2. Disease data for Uniform Test 00, 1962.

| Strain    | Bacterial<br>Blight |                |     | Bacterial<br>Pustule |     | Brown<br>Stem Rot | Phytophthora<br>Rot |
|-----------|---------------------|----------------|-----|----------------------|-----|-------------------|---------------------|
|           | Man.                | Ill.           | Ia. | Ill.                 | Ia. | Ill.              | Ind.                |
|           | n <sup>1</sup>      | a <sup>1</sup> | a   | a                    | a   | n                 | a                   |
| Acme      | 3.7                 | 4              | 3   | 3                    | 4   | 4                 |                     |
| Flambeau  | 1.5                 | 2              | 3   | 3                    | 4   | 4                 |                     |
| 0-57-2921 | 1.5                 | 2              | 3   | 4                    | 4   | 4                 | R                   |
| UM4       | 3.3                 | 3              | 3   | 3                    | 3   | 4                 | S                   |
| UM5       | 3.3                 | 4              | 3   | 4                    | 4   | 4                 | S                   |
| UM7       | 2.3                 | 3              | 3   | 2                    | 4   | 4                 | R                   |

<sup>1</sup>n = natural infection; a = artificial inoculation.



Table 3. Yield, yield rank, and maturity, days earlier (-) or later (+) than Acme, for Uniform Test 00, 1962.

| Strain            | Mean<br>of 8<br>Tests | Ot-<br>tawa<br>Ont. <sup>1</sup> | Guelph<br>Ont. | East                  | Ash-<br>land<br>Wis. | Crooks-<br>ton<br>Minn. | Portage               | Bran-<br>don<br>Man. | Mor-<br>den<br>Man. | On-<br>tario<br>Ore. <sup>1</sup> | Med-                      |
|-------------------|-----------------------|----------------------------------|----------------|-----------------------|----------------------|-------------------------|-----------------------|----------------------|---------------------|-----------------------------------|---------------------------|
|                   |                       |                                  |                | Lan-<br>sing<br>Mich. |                      |                         | la<br>Prairie<br>Man. |                      |                     |                                   | ford<br>Ore. <sup>1</sup> |
| Acme              | 25.8                  | 31.5                             | 16.3           | 26.2                  | 30.7                 | 12.6                    | 31.3                  | 41.3                 | 16.5                | 50.1                              | 26.1                      |
| Flambeau          | 28.4                  | 38.6                             | 28.1           | 30.7                  | 30.0                 | 19.6                    | 29.2                  | 32.2                 | 19.0                | 47.8                              | 27.8                      |
| 0-57-2921         | 30.8                  | 43.6                             | 23.2           | 29.6                  | 30.8                 | 21.1                    | 39.9                  | 39.2                 | 18.9                | 55.8                              | 35.4                      |
| UM4               | 29.0                  | 36.4                             | 20.8           | 28.7                  | 34.8                 | 14.2                    | 34.7                  | 45.2                 | 17.3                | 51.1                              | 29.9                      |
| UM5               | 28.5                  | 37.0                             | 21.2           | 28.2                  | 33.0                 | 16.3                    | 32.3                  | 42.8                 | 17.4                | 54.8                              | 32.1                      |
| UM7               | 25.8                  | 31.4                             | 19.3           | 27.2                  | 31.4                 | 11.1                    | 30.6                  | 40.1                 | 15.5                | 43.9                              | 26.9                      |
| Coef. of Var. (%) |                       | 8.9                              | 8.8            | 8.4                   | 7.7                  | 5.5                     | 7.1                   | 6.0                  | 6.9                 | 4.8                               | 9.7                       |
| L.S.D. (5%)       |                       | 4.9                              | 3.2            | NS                    | 3.5                  | 2.6                     | 3.5                   | 7.9                  | 1.8                 | 3.7                               | 4.3                       |
| Row Spacing (In.) |                       | 30                               | 27             | 24                    | 24                   | 24                      | 30                    | 36                   | 36                  | 20                                | 24                        |

| Yield Rank |   |   |   |   |   |   |   |   |   |   |
|------------|---|---|---|---|---|---|---|---|---|---|
|            |   |   |   |   |   |   |   |   | * | * |
| Acme       | 5 | 5 | 6 | 6 | 5 | 5 | 4 | 3 | 5 | 4 |
| Flambeau   | 4 | 2 | 1 | 1 | 6 | 2 | 6 | 6 | 1 | 5 |
| 0-57-2921  | 1 | 1 | 2 | 2 | 4 | 1 | 1 | 5 | 2 | 1 |
| UM4        | 2 | 4 | 4 | 3 | 1 | 4 | 2 | 1 | 4 | 3 |
| UM5        | 3 | 3 | 3 | 4 | 2 | 3 | 3 | 2 | 3 | 2 |
| UM7        | 5 | 6 | 5 | 5 | 3 | 6 | 5 | 4 | 6 | 6 |

|                | Mean<br>of 7<br>Tests |      | Maturity |      |      |      |     |      |     |      |      |
|----------------|-----------------------|------|----------|------|------|------|-----|------|-----|------|------|
|                |                       |      |          |      |      |      |     |      | *   | *    |      |
| Acme           | 0                     | 0    | 0        | 0    | 0    | 0    | 0   | 0    | 0   | 0    |      |
| Flambeau       | +9.4                  | +12  | +11      | +2   | +13  | +8   | +10 | +10  | +12 | +4   |      |
| 0-57-2921      | +7.9                  | + 9  | +10      | 0    | + 7  | +6   | +10 | +13  | + 6 | 0    |      |
| UM4            | +0.3                  | + 2  | + 1      | 0    | - 3  | +1   | 0   | + 1  | + 1 | -1   |      |
| UM5            | +2.7                  | + 2  | + 4      | 0    | + 3  | +2   | + 7 | + 1  | + 4 | -2   |      |
| UM7            | +1.6                  | + 3  | 0        | +1   | - 4  | +3   | + 7 | + 1  | + 2 | +1   |      |
| Date planted   | 5-26                  | 5-17 | 5-25     | 5-28 | 5-28 | 5-29 | 6-6 | 5-24 | 6-2 | 5-9  | 5-3  |
| Acme matured   | 9-13                  | 9-15 | 9-7      | 9-13 | 9-27 | 9-8  | --  | 9-18 | 9-7 | 8-26 | 9-12 |
| Days to mature | 110                   | 121  | 105      | 108  | 122  | 102  | --  | 117  | 97  | 109  | 132  |

\*Not included in the mean.

<sup>1</sup>Irrigated.

Table 4. Lodging, plant height, and seed quality for Uniform Test 00, 1962.

| Strain    | Mean<br>of 5<br>Tests | Ot-<br>tawa<br>Ont. <sup>1</sup> | Guelph<br>Ont. | East                  | Ash-<br>land<br>Wis. | Crooks-<br>ton<br>Minn. | Portage               | Bran-<br>don<br>Man. | Mor-<br>den<br>Man. | On-<br>tario<br>Ore. <sup>1</sup> | Med-<br>ford      |
|-----------|-----------------------|----------------------------------|----------------|-----------------------|----------------------|-------------------------|-----------------------|----------------------|---------------------|-----------------------------------|-------------------|
|           |                       |                                  |                | Lan-<br>sing<br>Mich. |                      |                         | la<br>Prairie<br>Man. |                      |                     |                                   | Ore. <sup>1</sup> |
|           |                       |                                  | *              |                       |                      |                         |                       | *                    |                     | *                                 | *                 |
| Acme      | 1.4                   | 1.0                              | 1.0            | 1.0                   | 2.0                  |                         | 2.0                   | 1.0                  | 1.0                 | 1.0                               | 3.0               |
| Flambeau  | 3.4                   | 3.0                              | 1.0            | 3.0                   | 3.0                  |                         | 5.0                   | 1.0                  | 3.0                 | 5.0                               | 4.0               |
| 0-57-2921 | 1.9                   | 1.0                              | 1.0            | 1.0                   | 1.0                  |                         | 5.0                   | 1.0                  | 1.3                 | 1.0                               | 3.0               |
| UM4       | 1.8                   | 1.0                              | 1.0            | 1.0                   | 2.0                  |                         | 4.0                   | 1.0                  | 1.0                 | 1.0                               | 3.0               |
| UM5       | 2.0                   | 2.0                              | 1.0            | 1.0                   | 2.0                  |                         | 4.0                   | 1.0                  | 1.0                 | 2.5                               | 3.0               |
| UM7       | 2.7                   | 3.0                              | 1.0            | 1.0                   | 3.0                  |                         | 5.0                   | 1.0                  | 1.3                 | 1.5                               | 4.0               |

|           | Mean<br>of 8<br>Tests | Plant Height |    |    |    |    |    |    |    |    |    |
|-----------|-----------------------|--------------|----|----|----|----|----|----|----|----|----|
|           |                       |              |    |    |    |    |    |    |    |    |    |
|           |                       |              |    |    |    |    |    |    |    | *  | *  |
| Acme      | 27                    | 32           | 26 | 28 | 29 | 19 | 38 | 20 | 26 | 28 | 41 |
| Flambeau  | 34                    | 36           | 31 | 30 | 30 | 26 | 55 | 28 | 33 | 50 | 57 |
| 0-57-2921 | 33                    | 34           | 31 | 32 | 32 | 24 | 50 | 29 | 33 | 31 | 45 |
| UM4       | 28                    | 30           | 26 | 30 | 30 | 20 | 43 | 21 | 27 | 29 | 42 |
| UM5       | 30                    | 32           | 27 | 31 | 29 | 20 | 53 | 21 | 27 | 30 | 42 |
| UM7       | 30                    | 30           | 24 | 30 | 29 | 21 | 49 | 22 | 31 | 29 | 45 |

|           | Mean<br>of 6<br>Tests | Seed Quality |     |     |     |     |     |     |     |     |     |
|-----------|-----------------------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|           |                       |              |     |     |     |     |     |     |     |     |     |
|           |                       |              |     |     | *   |     |     |     | *   | *   | *   |
| Acme      | 2.8                   | 4.0          | 2.8 | 3.0 | 2.0 | 3.0 | 2.0 | 2.0 | 1.0 | 1.5 | 3.0 |
| Flambeau  | 3.1                   | 3.0          | 3.0 | 2.0 | 2.0 | 3.3 | 4.0 | 3.0 | 1.0 | 2.5 | 4.0 |
| 0-57-2921 | 2.8                   | 2.0          | 3.3 | 2.0 | 2.0 | 3.5 | 4.0 | 2.0 | 1.0 | 2.0 | 3.0 |
| UM4       | 2.8                   | 3.0          | 2.5 | 3.0 | 2.0 | 3.3 | 3.0 | 2.0 | 1.0 | 1.5 | 2.0 |
| UM5       | 2.9                   | 4.0          | 2.5 | 3.0 | 2.0 | 3.0 | 2.0 | 3.0 | 1.0 | 1.5 | 2.0 |
| UM7       | 3.0                   | 2.0          | 2.8 | 3.0 | 2.0 | 3.0 | 3.0 | 4.0 | 1.0 | 2.5 | 3.0 |

\*Not included in the mean.  
<sup>1</sup>Irrigated.

Table 5. Percentages of protein and oil for Uniform Test 00, 1962.

| Strain    | Mean<br>of 5<br>Tests | Ottawa<br>Ont. | East<br>Lansing<br>Mich. | Ash-<br>land<br>Wis. | Crooks-<br>ton<br>Minn. | Mor-<br>den<br>Man. | On-<br>tario<br>Ore. <sup>1</sup> |
|-----------|-----------------------|----------------|--------------------------|----------------------|-------------------------|---------------------|-----------------------------------|
|           |                       |                |                          |                      |                         |                     | *                                 |
| Acme      | 39.6                  | 42.5           | 44.2                     | 39.5                 | 37.6                    | 34.1                | 39.5                              |
| Flambeau  | 39.7                  | 43.7           | 44.3                     | 40.5                 | 35.9                    | 34.2                | 42.1                              |
| O-57-2921 | 38.7                  | 41.5           | 43.6                     | 38.7                 | 36.7                    | 33.1                | 41.2                              |
| UM4       | 38.9                  | 41.6           | 42.5                     | 40.0                 | 36.7                    | 33.6                | 40.5                              |
| UM5       | 38.6                  | 42.3           | 42.8                     | 38.6                 | 36.6                    | 32.7                | 40.8                              |
| UM7       | 40.9                  | 42.9           | 45.5                     | 42.2                 | 37.7                    | 36.1                | 42.8                              |

|           | Mean<br>of 5<br>Tests | Percentage of Oil |      |      |      |      |      |
|-----------|-----------------------|-------------------|------|------|------|------|------|
|           |                       |                   |      |      |      |      | *    |
| Acme      | 19.2                  | 17.4              | 18.8 | 17.1 | 21.5 | 21.3 | 19.7 |
| Flambeau  | 19.2                  | 17.5              | 18.8 | 17.8 | 21.4 | 20.3 | 17.0 |
| O-57-2921 | 19.7                  | 18.8              | 19.3 | 17.8 | 21.5 | 20.9 | 19.0 |
| UM4       | 19.4                  | 18.1              | 19.1 | 17.6 | 21.0 | 21.2 | 18.7 |
| UM5       | 19.4                  | 17.9              | 19.0 | 17.7 | 21.1 | 21.1 | 19.3 |
| UM7       | 19.5                  | 18.0              | 18.8 | 17.8 | 21.3 | 21.4 | 18.1 |

\*Not included in the mean.

<sup>1</sup>Irrigated.



Table 6. Three-year summary of data for Uniform Test 00, 1960-1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 34    | 34   | 31                         | 26           | 34     | 30              | 28             | Protein          | Oil  |
| Acme         | 26.2  | 4    | 0                          | 1.9          | 28     | 2.5             | 16.9           | 40.5             | 19.3 |
| Flambeau     | 29.8  | 1    | +9.7                       | 3.2          | 32     | 2.8             | 15.9           | 41.2             | 19.1 |
| UM4          | 28.9  | 2    | +0.7                       | 1.7          | 29     | 2.5             | 17.0           | 39.8             | 19.5 |
| UM5          | 28.6  | 3    | +3.3                       | 2.0          | 30     | 2.6             | 16.8           | 39.9             | 19.5 |

<sup>1</sup>Days earlier (-) or later (+) than Acme which matured September 10, 107 days after planting.

Table 7. Three-year summary of yield and yield rank for Uniform Test 00, 1960-1962.

| Strain          | Mean<br>of 34<br>Tests | Orono<br>Maine | Ot-<br>tawa<br>Ont. | Guelph<br>Ont. | East<br>Lan-<br>sing<br>Mich. | Ash-<br>land<br>Wis. | Mason<br>Wis. | Spoon-<br>er<br>Wis. |
|-----------------|------------------------|----------------|---------------------|----------------|-------------------------------|----------------------|---------------|----------------------|
| Years<br>Tested |                        | 1960-<br>1961  | 1960-<br>1962       | 1960-<br>1962  | 1960-<br>1962                 | 1960-<br>1962        | 1960-<br>1961 | 1960-<br>1961        |
| Acme            | 26.2                   | 21.2           | 31.0                | 27.7           | 24.9                          | 28.3                 | 27.2          | 15.9                 |
| Flambeau        | 29.8                   | 26.8           | 38.7                | 34.4           | 29.2                          | 31.3                 | 27.2          | 21.2                 |
| UM4             | 28.9                   | 26.5           | 35.2                | 28.9           | 25.6                          | 32.3                 | 27.7          | 16.3                 |
| UM5             | 28.6                   | 23.9           | 35.6                | 29.8           | 26.0                          | 33.0                 | 26.3          | 17.9                 |

|          | Yield Rank |   |   |   |   |   |   |   |
|----------|------------|---|---|---|---|---|---|---|
| Acme     | 4          | 4 | 4 | 4 | 4 | 4 | 2 | 4 |
| Flambeau | 1          | 1 | 1 | 1 | 1 | 3 | 2 | 1 |
| UM4      | 2          | 2 | 3 | 3 | 3 | 2 | 1 | 3 |
| UM5      | 3          | 3 | 2 | 2 | 2 | 1 | 4 | 2 |

Table 7. (Continued)

| Strain          | Crooks-<br>ton<br>Minn. | St.<br>Paul<br>Minn. | Portage<br>la<br>Prairie<br>Man. | Winni-<br>peg<br>Man. | Bran-<br>don<br>Man. | Mor-<br>den<br>Man. | On-<br>tario<br>Ore. | Med-<br>ford<br>Ore. |
|-----------------|-------------------------|----------------------|----------------------------------|-----------------------|----------------------|---------------------|----------------------|----------------------|
| Years<br>Tested | 1960-<br>1962           | 1960-<br>1961        | 1960-<br>1962                    | 1960-<br>1961         | 1960-<br>1962        | 1960-<br>1962       | 1960-<br>1962        | 1961-<br>1962        |
| Acme            | 20.3                    | 25.5                 | 38.6                             | 20.2                  | 21.2                 | 14.2                | 50.0                 | 29.6                 |
| Flambeau        | 28.6                    | 28.5                 | 40.1                             | 21.4                  | 20.6                 | 17.6                | 51.5                 | 33.0                 |
| UM4             | 23.1                    | 29.9                 | 43.8                             | 19.9                  | 24.2                 | 14.6                | 52.8                 | 28.3                 |
| UM5             | 22.6                    | 31.1                 | 41.7                             | 18.8                  | 23.3                 | 15.7                | 55.6                 | 31.6                 |

| Yield Rank |   |   |   |   |   |   |   |   |
|------------|---|---|---|---|---|---|---|---|
| Acme       | 4 | 4 | 4 | 2 | 3 | 4 | 4 | 3 |
| Flambeau   | 1 | 3 | 3 | 1 | 4 | 1 | 3 | 1 |
| UM4        | 2 | 2 | 1 | 3 | 1 | 3 | 2 | 4 |
| UM5        | 3 | 1 | 2 | 4 | 2 | 2 | 1 | 2 |

UNIFORM PRELIMINARY TEST 00 - 1962

| Strain   | Originating Agency                | Origin                   | Generation<br>Composited |
|----------|-----------------------------------|--------------------------|--------------------------|
| Acme     | Central Exp. Farm, Ottawa, Ont.   | Sel. from Pagoda         |                          |
| Flambeau | Wis. Agr. Exp. Sta.               | Introduction from Russia |                          |
| M384     | Minn. A.E.S. & U.S.R.S.L.         | Renville x Capital       | F5                       |
| M387     | Minn. A.E.S. & U.S.R.S.L.         | Renville x Capital       | F5                       |
| M388     | Minn. A.E.S. & U.S.R.S.L.         | Renville x Capital       | F5                       |
| UM9      | Univ. of Manitoba, Winnipeg, Man. | M10 x PI 194633          | F5                       |
| UM10     | Univ. of Manitoba, Winnipeg, Man. | M10 x PI 194633          | F6                       |
| UM11     | Univ. of Manitoba, Winnipeg, Man. | Blackhawk x PI 194633    | F6                       |
| UM12     | Univ. of Manitoba, Winnipeg, Man. | 0-52-903 x Flambeau      | F5                       |
| UM13     | Univ. of Manitoba, Winnipeg, Man. | 0-52-903 x Flambeau      | F5                       |

Identification of Parent Strains

|           |   |
|-----------|---|
| M10       | Sel. from Lincoln (2) x Richland.   |
| 0-52-903  | 753-1, sel. by Sven A. Holmberg; same as PI 194654.                           |
| PI 194633 | 733-4, sel. from 193-7-27 x Blackeye by Sven A. Holmberg, Norrkoping, Sweden. |

Data were reported from six locations for the two varieties and eight experimental strains in this test. Only two strains outyielded the Flambeau check, UM13 and M384. UM13, despite its early maturity, had the highest mean yield in the test, was nearly as tall as Flambeau, and possessed some improvement in lodging resistance. M384 yielded and matured about the same as Flambeau but was much more erect and somewhat shorter and had a higher oil content. The other two M strains were similar to M384 although averaging a little lower in yield. UM9 and UM11 outyielded Acme and were only two days later. They had appreciably higher oil percentages than the checks but both had high lodging scores.

Table 8. Summary of data for Uniform Preliminary Test 00, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 5     | 5    | 3                          | 5            | 5      | 5               | 4              | Protein          | Oil  |
|              |       |      |                            |              |        |                 |                | 4                | 4    |
| Acme         | 26.9  | 8    | 0                          | 1.8          | 29     | 2.4             | 19.5           | 40.4             | 18.7 |
| Flambeau     | 30.0  | 3    | +11.3                      | 3.1          | 34     | 2.8             | 16.9           | 41.0             | 18.4 |
| M384         | 30.4  | 2    | +10.7                      | 1.8          | 30     | 2.4             | 15.1           | 39.5             | 19.6 |
| M387         | 28.8  | 6    | +13.0                      | 1.8          | 32     | 3.4             | 14.0           | 38.9             | 19.7 |
| M388         | 29.3  | 5    | +11.0                      | 1.8          | 31     | 2.4             | 15.7           | 38.6             | 20.3 |
| UM9          | 28.6  | 7    | + 2.0                      | 3.4          | 30     | 2.8             | 20.0           | 38.8             | 20.0 |
| UM10         | 25.1  | 9    | + 2.3                      | 3.0          | 28     | 3.0             | 20.0           | 40.4             | 19.8 |
| UM11         | 29.5  | 4    | + 2.0                      | 3.0          | 30     | 2.6             | 16.3           | 39.8             | 20.2 |
| UM12         | 24.7  | 10   | - 0.3                      | 2.4          | 29     | 2.6             | 20.6           | 41.0             | 19.9 |
| UM13         | 31.5  | 1    | + 4.0                      | 2.3          | 32     | 3.0             | 18.8           | 41.1             | 19.0 |

<sup>1</sup>Days earlier (-) or later (+) than Acme which matured September 26, 115 days after planting.

Table 9. Disease data for Uniform Preliminary Test 00, 1962.

| Strain   | Bacterial<br>Blight |                | Bacterial<br>Pustule | Brown<br>Stem Rot |
|----------|---------------------|----------------|----------------------|-------------------|
|          | Man.                | Ill.           |                      |                   |
|          | n <sup>1</sup>      | a <sup>1</sup> |                      |                   |
|          |                     |                | a                    | n                 |
| Acme     | 3.5                 | 4              | 3                    | 4                 |
| Flambeau | 1.5                 | 2              | 3                    | 4                 |
| M384     | 1.5                 | 2              | 4                    | 4                 |
| M387     | 1.5                 | 4              | 2                    | 4                 |
| M388     | 1.0                 | 3              | 3                    | 4                 |
| UM9      | 2.0                 | 4              | 4                    | 4                 |
| UM10     | 3.0                 | 3              | 3                    | 4                 |
| UM11     | 2.5                 | 4              | 4                    | 4                 |
| UM12     | 2.5                 | 4              | 4                    | 4                 |
| UM13     | 2.5                 | 4              | 4                    | 4                 |

<sup>1</sup>n = natural infection; a = artificial inoculation.



Table 10. Yield and yield rank for Uniform Preliminary Test 00, 1962.

| Strain            | Mean<br>of 5<br>Tests | Ot-<br>tawa<br>Ont. <sup>1</sup> | East<br>Lan-<br>sing<br>Mich. | Ash-<br>land<br>Wis. | Portage<br>la<br>Prairie<br>Man. | Mor-<br>den<br>Man. | On-<br>tario<br>Ore. <sup>1</sup> |
|-------------------|-----------------------|----------------------------------|-------------------------------|----------------------|----------------------------------|---------------------|-----------------------------------|
|                   |                       |                                  |                               |                      |                                  |                     | *                                 |
| Acme              | 26.9                  | 29.7                             | 26.1                          | 32.1                 | 32.6                             | 14.0                | 48.1                              |
| Flambeau          | 30.0                  | 39.2                             | 29.8                          | 28.2                 | 39.3                             | 13.3                | 52.4                              |
| M384              | 30.4                  | 42.8                             | 26.5                          | 28.3                 | 44.8                             | 9.6                 | 57.9                              |
| M387              | 28.8                  | 41.1                             | 26.0                          | 30.7                 | 34.7                             | 11.5                | 57.3                              |
| M388              | 29.3                  | 40.4                             | 26.8                          | 29.3                 | 39.2                             | 10.8                | 49.2                              |
| UM9               | 28.6                  | 34.2                             | 26.9                          | 28.0                 | 38.8                             | 15.0                | 48.2                              |
| UM10              | 25.1                  | 24.5                             | 25.2                          | 27.6                 | 37.1                             | 10.9                | 49.0                              |
| UM11              | 29.5                  | 38.1                             | 26.3                          | 30.8                 | 40.1                             | 12.3                | 52.9                              |
| UM12              | 24.7                  | 31.1                             | 27.0                          | 26.5                 | 28.5                             | 10.4                | 45.4                              |
| UM13              | 31.5                  | 37.3                             | 27.4                          | 38.5                 | 41.5                             | 12.6                | 53.8                              |
| Coef. of Var. (%) |                       | 10.9                             | 12.4                          | 10.8                 | 5.1                              | 10.9                | 6.2                               |
| L.S.D. (5%)       |                       | 8.5                              | NS                            | NS                   | 2.5                              | NS                  | 7.2                               |
| Row Spacing (In.) |                       | 30                               | 24                            | 24                   | 30                               | 36                  | 20                                |

|          | Yield Rank |    |    |    |    |    | *  |
|----------|------------|----|----|----|----|----|----|
| Acme     | 8          | 9  | 8  | 2  | 9  | 2  | 9  |
| Flambeau | 3          | 4  | 1  | 7  | 4  | 3  | 5  |
| M384     | 2          | 1  | 6  | 6  | 1  | 10 | 1  |
| M387     | 6          | 2  | 9  | 4  | 8  | 6  | 2  |
| M388     | 5          | 3  | 5  | 5  | 5  | 8  | 6  |
| UM9      | 7          | 7  | 4  | 8  | 6  | 1  | 8  |
| UM10     | 9          | 10 | 10 | 9  | 7  | 7  | 7  |
| UM11     | 4          | 5  | 7  | 3  | 3  | 5  | 4  |
| UM12     | 10         | 8  | 3  | 10 | 10 | 9  | 10 |
| UM13     | 1          | 6  | 2  | 1  | 2  | 4  | 3  |

\*Not included in the mean.

<sup>1</sup>Irrigated.

Table 11. Maturity, days earlier (-) or later (+) than Acme, for Uniform Preliminary Test 00, 1962.

| Strain         | Mean<br>of 3<br>Tests | Ot-<br>tawa<br>Ont. <sup>1</sup> | East<br>Lan-<br>sing<br>Mich. | Ash-<br>land<br>Wis. | Portage<br>la<br>Prairie<br>Man. | Mor-<br>den<br>Man. | On-<br>tario<br>Ore. <sup>1</sup> |
|----------------|-----------------------|----------------------------------|-------------------------------|----------------------|----------------------------------|---------------------|-----------------------------------|
|                |                       |                                  | *                             |                      | *                                |                     | *                                 |
| Acme           | 0                     | 0                                |                               | 0                    |                                  | 0                   | 0                                 |
| Flambeau       | +11.3                 | +10                              |                               | +16                  |                                  | + 8                 | +10                               |
| M384           | +10.7                 | +10                              |                               | +10                  |                                  | +12                 | + 9                               |
| M387           | +13.0                 | +13                              |                               | +12                  |                                  | +14                 | + 7                               |
| M388           | +11.0                 | + 9                              |                               | +14                  |                                  | +10                 | + 9                               |
| UM9            | + 2.0                 | + 2                              |                               | + 4                  |                                  | 0                   | + 7                               |
| UM10           | + 2.3                 | + 2                              |                               | + 5                  |                                  | 0                   | + 1                               |
| UM11           | + 2.0                 | 0                                |                               | + 6                  |                                  | 0                   | + 2                               |
| UM12           | - 0.3                 | + 2                              |                               | - 2                  |                                  | - 1                 | + 2                               |
| UM13           | + 4.0                 | + 7                              |                               | 0                    |                                  | + 5                 | + 7                               |
| Date planted   | 5-26                  | 5-17                             | 5-28                          | 5-28                 | 6-6                              | 6-2                 | 5-9                               |
| Acme matured   | 9-18                  | 9-16                             | --                            | 9-28                 | --                               | 9-9                 | 8-26                              |
| Days to mature | 115                   | 122                              | --                            | 123                  | --                               | 99                  | 109                               |

\*Not included in the mean.

<sup>1</sup>Irrigated.

UNIFORM TEST 0 - 1962

| Strain    | Originating Agency              | Origin              | Generation<br>Composited |
|-----------|---------------------------------|---------------------|--------------------------|
| Grant     | Wis. A.E.S. & U.S.R.S.L.        | Lincoln x Seneca    | F <sub>6</sub>           |
| Merit     | Central Exp. Farm, Ottawa, Ont. | Blackhawk x Capital | F <sub>8</sub>           |
| Norchief  | Wis. A.E.S. & U.S.R.S.L.        | Hawkeye x Flambeau  | F <sub>4</sub>           |
| 0-4323    | Research Station, Harrow, Ont.  | Capital x Hardome   | F <sub>7</sub>           |
| 0-56-2678 | Central Exp. Farm, Ottawa, Ont. | Blackhawk x Capital | F <sub>7</sub>           |
| 0-57-2826 | Central Exp. Farm, Ottawa, Ont. | Adams x A3K-884     | F <sub>12</sub>          |
| 0-57-2905 | Central Exp. Farm, Ottawa, Ont. | Blackhawk x Capital | F <sub>8</sub>           |
| 0-57-2909 | Central Exp. Farm, Ottawa, Ont. | Blackhawk x Capital | F <sub>8</sub>           |

Identification of Parent Strain

A3K-884      Sel. from Mukden x Richland, progenitor of Blackhawk.

Data were reported from 15 locations in 1962 for the three check varieties and five experimental strains in this test. One strain, 0-4323, has been in the test for two years while the remaining four were entered from last year's Preliminary Test 0. All of the experimental strains performed well in 1962, outyielding the check varieties of similar maturity, and they were appreciably taller, which is an important attribute for Group 0 varieties.

Table 12. Summary of data for Uniform Test 0, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
|              |       |      |                            |              |        |                 |                | Protein          | Oil  |
| No. of Tests | 9     | 9    | 7                          | 6            | 9      | 7               | 8              | 6                | 6    |
| Grant        | 28.5  | 3    | 0                          | 2.9          | 31     | 2.1             | 15.5           | 40.5             | 19.8 |
| Merit        | 26.3  | 7    | -3.6                       | 2.4          | 31     | 1.9             | 14.1           | 40.4             | 20.3 |
| Norchief     | 24.7  | 8    | -3.0                       | 2.4          | 29     | 2.4             | 15.8           | 41.4             | 19.9 |
| 0-4323       | 29.0  | 2    | -5.1                       | 2.2          | 33     | 2.8             | 15.4           | 42.4             | 19.8 |
| 0-56-2678    | 28.5  | 3    | -1.6                       | 2.4          | 36     | 2.4             | 15.0           | 41.8             | 19.3 |
| 0-57-2826    | 30.3  | 1    | +0.1                       | 2.8          | 37     | 2.3             | 15.6           | 41.0             | 19.9 |
| 0-57-2905    | 27.4  | 6    | -3.1                       | 2.2          | 36     | 2.4             | 14.9           | 42.1             | 19.2 |
| 0-57-2909    | 28.1  | 5    | -2.1                       | 2.5          | 36     | 2.4             | 15.1           | 40.4             | 19.4 |

<sup>1</sup>Days earlier (-) or later (+) than Grant which matured September 28, 123 days after planting. Flambeau (Group 00) matured -7.0.

Table 13. Disease data for Uniform Test 0, 1962.

| Strain    | Bacterial<br>Blight |     | Bacterial<br>Pustule |     | Brown<br>Stem Rot | Phytophthora<br>Rot |
|-----------|---------------------|-----|----------------------|-----|-------------------|---------------------|
|           | Ill.                | Ia. | Ill.                 | Ia. | Ill.              | Ind.                |
|           | a <sup>1</sup>      | a   | a                    | a   | n <sup>1</sup>    | a                   |
| Grant     | 3                   | 4   | 3                    | 3   | 3                 |                     |
| Merit     | 2                   | 3   | 4                    | 3   | 3                 |                     |
| Norchief  | 2                   | 3   | 3                    | 3   | 3                 |                     |
| 0-4323    | 3                   | 3   | 3                    | 3   | 3                 |                     |
| 0-56-2678 | 2                   | 3   | 3                    | 3   | 3                 | S                   |
| 0-57-2826 | 2                   | 3   | 3                    | 3   | 3                 | S                   |
| 0-57-2905 | 2                   | 3   | 4                    | 4   | 4                 | S                   |
| 0-57-2909 | 2                   | 3   | 3                    | 3   | 4                 | S                   |

<sup>1</sup>a = artificial inoculation; n = natural infection.

Table 14. Yield, yield rank, and maturity, days earlier (-) or later (+) than Grant, for Uniform Test 0, 1962.

| Strain            | Mean<br>of 9<br>Tests | Ot-<br>tawa<br>Ont. <sup>1</sup> | Guelph<br>Ont. | Ridge-<br>town<br>Ont. | Co-<br>lum-<br>bus<br>Ohio | East<br>Lan-<br>sing<br>Mich. | Spoon-<br>er<br>Wis. <sup>1</sup> | Durand<br>Wis.<br>* |
|-------------------|-----------------------|----------------------------------|----------------|------------------------|----------------------------|-------------------------------|-----------------------------------|---------------------|
| Grant             | 28.5                  | 32.4                             | 19.2           | 46.5                   | 26.3                       | 34.2                          | 38.5                              | 13.4                |
| Merit             | 26.3                  | 30.7                             | 17.8           | 40.5                   | 21.0                       | 29.7                          | 34.5                              | 12.2                |
| Norchief          | 24.7                  | 32.1                             | 18.8           | 35.6                   | 17.4                       | 25.0                          | 34.2                              | 13.4                |
| 0-4323            | 29.0                  | 41.4                             | 22.0           | 45.1                   | 29.4                       | 33.7                          | 34.9                              | 10.6                |
| 0-56-2678         | 28.5                  | 35.5                             | 19.1           | 50.4                   | 29.7                       | 29.8                          | 37.1                              | 13.0                |
| 0-57-2826         | 30.3                  | 35.6                             | 21.6           | 50.8                   | 33.3                       | 34.3                          | 37.5                              | 14.4                |
| 0-57-2905         | 27.4                  | 33.3                             | 21.6           | 41.7                   | 28.2                       | 32.2                          | 33.7                              | 13.7                |
| 0-57-2909         | 28.1                  | 41.2                             | 19.5           | 43.9                   | 28.9                       | 29.8                          | 35.9                              | 11.3                |
| Coef. of Var. (%) |                       | 15.7                             | 7.5            | 7.4                    | 10.1                       | 6.2                           | 8.0                               | 8.4                 |
| L.S.D. (5%)       |                       | NS                               | 3.4            | 6.9                    | 4.0                        | 2.8                           | NS                                | 1.6                 |
| Row Spacing (In.) |                       | 30                               | 27             | 24                     | 28                         | 24                            | 36                                | 36                  |

|           | Yield Rank |   |   |   |   |   |   |   |
|-----------|------------|---|---|---|---|---|---|---|
| Grant     | 3          | 6 | 5 | 3 | 6 | 2 | 1 | 3 |
| Merit     | 7          | 8 | 8 | 7 | 7 | 7 | 6 | 6 |
| Norchief  | 8          | 7 | 7 | 8 | 8 | 8 | 7 | 3 |
| 0-4323    | 2          | 1 | 1 | 4 | 3 | 3 | 5 | 8 |
| 0-56-2678 | 3          | 4 | 6 | 2 | 2 | 5 | 3 | 5 |
| 0-57-2826 | 1          | 3 | 2 | 1 | 1 | 1 | 2 | 1 |
| 0-57-2905 | 6          | 5 | 2 | 6 | 5 | 4 | 8 | 2 |
| 0-57-2909 | 5          | 2 | 4 | 5 | 4 | 5 | 4 | 7 |

|                | Mean<br>of 7<br>Tests | Maturity |      |      |      |      |      |      |
|----------------|-----------------------|----------|------|------|------|------|------|------|
| Grant          | 0                     | 0        | 0    | 0    | 0    | 0    | 0    | 0    |
| Merit          | -3.6                  | -4       | -5   | -5   | -1   | -2   | -2   | -2   |
| Norchief       | -3.0                  | -6       | -5   | -7   | 0    | -2   | -1   | -1   |
| 0-4323         | -5.1                  | -6       | -4   | -3   | -1   | -2   | -7   | -7   |
| 0-56-2678      | -1.6                  | -6       | -1   | -2   | 0    | +2   | -3   | -3   |
| 0-57-2826      | +0.1                  | -4       | -1   | -1   | +1   | +2   | +2   | +2   |
| 0-57-2905      | -3.1                  | -6       | -3   | -5   | 0    | 0    | -5   | -5   |
| 0-57-2909      | -2.1                  | -7       | -1   | -1   | -1   | 0    | -2   | -2   |
| Flambeau       | -7.0                  | -13      | -5   | --   | 0    | -7   | --   | --   |
| Date planted   | 5-28                  | 5-17     | 5-25 | 5-23 | 5-10 | 5-28 | 5-29 | 5-26 |
| Grant matured  | 9-28                  | --       | 10-4 | 9-22 | 8-25 | 9-25 | 9-26 | 9-12 |
| Days to mature | 123                   | --       | 132  | 122  | 107  | 120  | 120  | 109  |

\*Not included in the mean.

<sup>1</sup>Irrigated.

Table 14. (Continued)

| Strain            | Crooks-<br>ton<br>Minn. | Morris<br>Minn. | Eu-<br>reka<br>S.D. | Water-<br>town<br>S.D. | Othel-<br>lo<br>Wash. <sup>1</sup> | Pros-<br>ser<br>Wash. <sup>1</sup> | On-<br>tario<br>Ore. <sup>1</sup> | Med-<br>ford<br>Ore. <sup>1</sup> |
|-------------------|-------------------------|-----------------|---------------------|------------------------|------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|
| Grant             | 15.8                    | 30.0            | 13.9                | 12.2                   | 51.3                               | 36.9                               | 59.4                              | 26.7                              |
| Merit             | 17.4                    | 27.0            | 18.1                | 13.2                   | 44.2                               | 46.1                               | 68.2                              | 30.6                              |
| Norchief          | 13.0                    | 28.6            | 17.6                | 13.9                   | 42.6                               | 25.5                               | 50.6                              | 29.5                              |
| 0-4323            | 15.4                    | 26.0            | 12.7                | 8.5                    | 45.3                               | 40.7                               | 52.3                              | 38.5                              |
| 0-56-2678         | 11.8                    | 27.0            | 16.0                | 13.5                   | 47.4                               | 24.3                               | 54.5                              | 29.6                              |
| 0-57-2826         | 14.0                    | 29.8            | 15.8                | 12.3                   | 50.5                               | 36.9                               | 55.6                              | 34.2                              |
| 0-57-2905         | 13.6                    | 26.8            | 15.8                | 12.0                   | 46.7                               | 31.5                               | 53.0                              | 31.8                              |
| 0-57-2909         | 11.9                    | 27.2            | 14.4                | 10.8                   | 43.8                               | 38.5                               | 49.8                              | 39.3                              |
| Coef. of Var. (%) | 7.4                     | 5.1             | --                  | --                     | 13.1                               | 23.1                               | 8.1                               | 10.7                              |
| L.S.D. (5%)       | 3.1                     | 4.2             | --                  | --                     | 8.6                                | 12.5                               | 6.7                               | 5.1                               |
| Row Spacing (In.) | 24                      | 40              | 42                  | 42                     | 22                                 | 22                                 | 20                                | 24                                |

|           | Yield Rank |   |   |   |   |   |   |   |
|-----------|------------|---|---|---|---|---|---|---|
| Grant     | 2          | 1 | 7 | 5 | 1 | 4 | 2 | 8 |
| Merit     | 1          | 5 | 1 | 3 | 6 | 1 | 1 | 5 |
| Norchief  | 6          | 3 | 2 | 1 | 8 | 7 | 7 | 7 |
| 0-4323    | 3          | 8 | 8 | 8 | 5 | 2 | 6 | 2 |
| 0-56-2678 | 8          | 5 | 3 | 2 | 3 | 8 | 4 | 6 |
| 0-57-2826 | 4          | 2 | 4 | 4 | 2 | 4 | 3 | 3 |
| 0-57-2905 | 5          | 7 | 4 | 6 | 4 | 6 | 5 | 4 |
| 0-57-2909 | 7          | 4 | 6 | 7 | 7 | 3 | 8 | 1 |

|                | Maturity |      |      |      |       |       |      |      |
|----------------|----------|------|------|------|-------|-------|------|------|
| Grant          | 0        | 0    | 0    | 0    | 0     | 0     | 0    | 0    |
| Merit          | - 4      | - 6  | -3   | -3   | -4    | - 3   | - 4  | - 2  |
| Norchief       | - 2      | - 2  | -4   | -3   | -2    | - 4   | - 5  | - 1  |
| 0-4323         | -10      | -10  | -3   | -4   | -5    | - 5   | -16  | - 3  |
| 0-56-2678      | - 1      | - 3  | -2   | -3   | +3    | + 8   | - 3  | + 1  |
| 0-57-2826      | + 3      | 0    | 0    | -2   | +7    | +12   | + 2  | - 2  |
| 0-57-2905      | - 4      | - 6  | -3   | -3   | +2    | + 8   | - 8  | 0    |
| 0-57-2909      | - 1      | - 2  | -3   | -4   | -3    | - 2   | - 3  | 0    |
| Flambeau       | -10      | -10  | -4   | -4   | -1    | + 1   | -14  | -10  |
| Date planted   | 5-29     | 6-7  | 5-21 | 6-2  | 5-17  | 5-14  | 5-8  | 5-3  |
| Grant matured  | 9-26     | 9-28 | 10-5 | 9-29 | 10-10 | 10-10 | 9-21 | 9-26 |
| Days to mature | 120      | 113  | 137  | 119  | 146   | 149   | 136  | 146  |

Table 15. Lodging, plant height, and seed quality for Uniform Test 0, 1962.

| Strain    | Mean<br>of 6<br>Tests | Ot-<br>tawa<br>Ont. <sup>1</sup> | Guelph<br>Ont. | Ridge-<br>town<br>Ont. | Co-<br>lum-<br>bus<br>Ohio | East<br>Lan-<br>sing<br>Mich. | Spoon-<br>er<br>Wis. <sup>1</sup> | Durand<br>Wis. |
|-----------|-----------------------|----------------------------------|----------------|------------------------|----------------------------|-------------------------------|-----------------------------------|----------------|
|           |                       |                                  |                |                        | *                          |                               |                                   | *              |
| Grant     | 2.9                   | 3.0                              | 2.3            | 2.0                    | 1.0                        | 3.0                           | 3.0                               | 1.0            |
| Merit     | 2.4                   | 4.0                              | 1.0            | 2.0                    | 1.0                        | 2.0                           | 2.5                               | 1.0            |
| Norchief  | 2.4                   | 3.0                              | 1.0            | 2.0                    | 1.0                        | 2.0                           | 3.4                               | 1.0            |
| 0-4323    | 2.2                   | 2.0                              | 1.0            | 1.0                    | 1.0                        | 2.0                           | 3.6                               | 1.0            |
| 0-56-2678 | 2.4                   | 3.0                              | 1.0            | 1.0                    | 1.0                        | 3.0                           | 3.5                               | 1.0            |
| 0-57-2826 | 2.8                   | 4.0                              | 1.3            | 2.0                    | 1.0                        | 3.0                           | 3.7                               | 1.0            |
| 0-57-2905 | 2.2                   | 2.0                              | 1.0            | 2.0                    | 1.0                        | 2.0                           | 3.6                               | 1.0            |
| 0-57-2909 | 2.5                   | 3.0                              | 1.3            | 2.0                    | 1.0                        | 2.0                           | 3.9                               | 1.0            |

|           | Mean<br>of 9<br>Tests | Plant Height |    |    |    |    |    |    |
|-----------|-----------------------|--------------|----|----|----|----|----|----|
|           |                       |              |    |    |    |    |    | *  |
| Grant     | 31                    | 36           | 31 | 35 | 28 | 32 | 32 | 24 |
| Merit     | 31                    | 38           | 34 | 35 | 28 | 32 | 31 | 25 |
| Norchief  | 29                    | 34           | 31 | 31 | 24 | 30 | 29 | 23 |
| 0-4323    | 33                    | 40           | 35 | 38 | 28 | 37 | 36 | 27 |
| 0-56-2678 | 36                    | 40           | 38 | 40 | 33 | 39 | 40 | 30 |
| 0-57-2826 | 37                    | 40           | 36 | 37 | 49 | 38 | 37 | 27 |
| 0-57-2905 | 36                    | 42           | 36 | 39 | 32 | 39 | 38 | 28 |
| 0-57-2909 | 36                    | 42           | 36 | 38 | 31 | 36 | 39 | 29 |

|           | Mean<br>of 7<br>Tests | Seed Quality |     |     |     |     |     |     |
|-----------|-----------------------|--------------|-----|-----|-----|-----|-----|-----|
|           |                       |              |     |     |     | *   |     | *   |
| Grant     | 2.1                   | 2.0          | 2.8 | 2.0 | 2.0 | 2.0 | 1.0 | 3.0 |
| Merit     | 1.9                   | 2.0          | 2.5 | 1.0 | 2.0 | 2.0 | 1.5 | 4.0 |
| Norchief  | 2.4                   | 3.0          | 3.0 | 2.0 | 2.5 | 2.0 | 1.0 | 2.0 |
| 0-4323    | 2.8                   | 3.0          | 3.0 | 3.0 | 2.5 | 2.0 | 1.5 | 4.0 |
| 0-56-2678 | 2.4                   | 2.0          | 3.0 | 2.0 | 2.0 | 2.0 | 1.7 | 4.0 |
| 0-57-2826 | 2.3                   | 2.0          | 2.3 | 2.0 | 2.5 | 2.0 | 1.6 | 3.0 |
| 0-57-2905 | 2.4                   | 2.0          | 2.8 | 2.0 | 2.2 | 2.0 | 1.5 | 3.0 |
| 0-57-2909 | 2.4                   | 3.0          | 2.8 | 2.0 | 2.5 | 2.0 | 1.0 | 5.0 |

\*Not included in the mean.

<sup>1</sup>Irrigated.



Table 15. (Continued)

| Strain    | Crooks-<br>ton<br>Minn. | Morris<br>Minn. | Eu-<br>reka<br>S.D. | Water-<br>town<br>S.D. | Othel-<br>lo<br>Wash. <sup>1</sup> | Pros-<br>ser<br>Wash. <sup>1</sup> | On-<br>tario<br>Ore. <sup>1</sup> | Med-<br>ford<br>Ore. <sup>1</sup> |
|-----------|-------------------------|-----------------|---------------------|------------------------|------------------------------------|------------------------------------|-----------------------------------|-----------------------------------|
|           |                         |                 | *                   | *                      | *                                  | *                                  | *                                 | *                                 |
| Grant     |                         | 4.0             | 1.0                 | 2.0                    | 4.0                                | 5.0                                | 5.0                               | 4.0                               |
| Merit     |                         | 2.8             | 1.0                 | 2.0                    | 3.0                                | 3.0                                | 3.0                               | 4.0                               |
| Norchief  |                         | 3.0             | 1.0                 | 2.0                    | 3.0                                | 5.0                                | 4.0                               | 4.0                               |
| 0-4323    |                         | 3.3             | 1.0                 | 2.0                    | 2.0                                | 5.0                                | 3.0                               | 3.0                               |
| 0-56-2678 |                         | 2.8             | 1.0                 | 2.0                    | 4.0                                | 5.0                                | 3.5                               | 4.0                               |
| 0-57-2826 |                         | 3.0             | 1.0                 | 2.0                    | 4.0                                | 4.0                                | 3.8                               | 4.0                               |
| 0-57-2905 |                         | 2.5             | 1.0                 | 2.0                    | 4.0                                | 4.0                                | 3.5                               | 4.0                               |
| 0-57-2909 |                         | 3.0             | 1.0                 | 3.0                    | 4.0                                | 5.0                                | 4.0                               | 4.0                               |

| Plant Height |    |    |    |    |    |    |    |    |
|--------------|----|----|----|----|----|----|----|----|
|              |    |    |    | *  | *  | *  | *  | *  |
| Grant        | 27 | 31 | 25 | 23 | 43 | 63 | 45 | 59 |
| Merit        | 25 | 32 | 26 | 24 | 43 | 69 | 45 | 58 |
| Norchief     | 25 | 32 | 25 | 23 | 39 | 61 | 38 | 51 |
| 0-4323       | 28 | 33 | 23 | 22 | 52 | 70 | 48 | 54 |
| 0-56-2678    | 31 | 35 | 30 | 27 | 60 | 66 | 48 | 66 |
| 0-57-2826    | 30 | 35 | 30 | 26 | 50 | 62 | 50 | 65 |
| 0-57-2905    | 31 | 37 | 30 | 25 | 59 | 70 | 48 | 59 |
| 0-57-2909    | 30 | 38 | 30 | 26 | 51 | 62 | 50 | 53 |

| Seed Quality |     |     |     |     |  |  |     |     |
|--------------|-----|-----|-----|-----|--|--|-----|-----|
|              |     |     | *   | *   |  |  | *   | *   |
| Grant        | 2.3 | 2.5 | 1.0 | 2.0 |  |  | 2.0 | 3.0 |
| Merit        | 2.3 | 2.3 | 1.0 | 1.0 |  |  | 1.5 | 3.0 |
| Norchief     | 2.5 | 2.5 | 1.0 | 2.0 |  |  | 2.0 | 3.0 |
| 0-4323       | 3.3 | 3.0 | 1.0 | 2.0 |  |  | 2.5 | 2.0 |
| 0-56-2678    | 2.8 | 3.0 | 1.0 | 2.0 |  |  | 2.5 | 3.0 |
| 0-57-2826    | 3.0 | 3.0 | 1.0 | 2.0 |  |  | 2.5 | 3.0 |
| 0-57-2905    | 3.0 | 3.0 | 1.0 | 2.0 |  |  | 2.5 | 3.0 |
| 0-57-2909    | 3.3 | 2.5 | 1.0 | 1.0 |  |  | 2.5 | 3.0 |



Table 16. Percentages of protein and oil for Uniform Test 0, 1962.

| Strain    | Mean<br>of 6<br>Tests | Ridge-<br>town<br>Ont. | Co-<br>lum-<br>bus<br>Ohio | East<br>Lan-<br>sing<br>Mich. | Spoon-<br>er<br>Wis. <sup>1</sup> | Morris<br>Minn. | Eu-<br>reka<br>S.D. | Othel-<br>lo<br>Wash. <sup>1</sup><br>* | On-<br>tario<br>Ore. <sup>1</sup><br>* |
|-----------|-----------------------|------------------------|----------------------------|-------------------------------|-----------------------------------|-----------------|---------------------|---|--|
| Grant     | 40.5                  | 42.8                   | 42.3                       | 42.4                          | 38.8                              | 39.2            | 37.3                | 42.5                                    | 43.5                                   |
| Merit     | 40.4                  | 41.1                   | 41.1                       | 42.6                          | 39.8                              | 39.5            | 38.0                | 42.6                                    | 40.9                                   |
| Norchief  | 41.4                  | 43.1                   | 42.3                       | 43.8                          | 40.2                              | 40.6            | 38.2                | 45.9                                    | 44.1                                   |
| 0-4323    | 42.4                  | 43.9                   | 42.8                       | 44.3                          | 42.2                              | 42.5            | 38.8                | 44.6                                    | 44.2                                   |
| 0-56-2678 | 41.8                  | 44.1                   | 43.5                       | 44.3                          | 41.0                              | 40.9            | 37.1                | 44.9                                    | 44.0                                   |
| 0-57-2826 | 41.0                  | 42.7                   | 42.8                       | 42.4                          | 40.1                              | 39.4            | 38.4                | 44.0                                    | 42.7                                   |
| 0-57-2905 | 42.1                  | 43.7                   | 44.6                       | 44.2                          | 41.8                              | 41.4            | 36.9                | 44.1                                    | 44.3                                   |
| 0-57-2909 | 40.4                  | 41.6                   | 42.4                       | 42.0                          | 39.6                              | 40.1            | 36.9                | 43.4                                    | 42.8                                   |

|           | Mean<br>of 6<br>Tests | Percentage of Oil |      |      |      |      |      |      |      |
|-----------|-----------------------|-------------------|------|------|------|------|------|------|------|
|           |                       |                   |      |      |      |      |      | *    | *    |
| Grant     | 19.8                  | 20.0              | 20.2 | 19.5 | 18.5 | 20.0 | 20.6 | 16.0 | 17.6 |
| Merit     | 20.3                  | 20.7              | 21.0 | 20.0 | 18.0 | 20.7 | 21.5 | 16.4 | 20.0 |
| Norchief  | 19.9                  | 19.6              | 20.7 | 20.1 | 18.2 | 20.1 | 20.5 | 16.5 | 17.5 |
| 0-4323    | 19.8                  | 19.5              | 20.7 | 19.6 | 17.3 | 20.5 | 21.1 | 16.2 | 18.8 |
| 0-56-2678 | 19.3                  | 19.1              | 20.3 | 19.2 | 17.3 | 19.2 | 20.6 | 16.4 | 19.0 |
| 0-57-2826 | 19.9                  | 20.1              | 21.1 | 20.6 | 17.4 | 20.7 | 19.6 | 16.1 | 18.1 |
| 0-57-2905 | 19.2                  | 18.9              | 19.7 | 18.8 | 17.3 | 19.7 | 20.7 | 16.0 | 17.9 |
| 0-57-2909 | 19.4                  | 20.1              | 21.5 | 20.1 | 17.0 | 18.6 | 21.0 | 16.2 | 18.7 |

\*Not included in the mean.

<sup>1</sup>Irrigated.

UNIFORM PRELIMINARY TEST 0 - 1962

| Strain    | Originating Agency              | Origin             | Generation<br>Composited |
|-----------|---------------------------------|--------------------|--------------------------|
| Grant     | Wis. A.E.S. & U.S.R.S.L.        | Lincoln x Seneca   | F <sub>6</sub>           |
| Norchief  | Wis. A.E.S. & U.S.R.S.L.        | Hawkeye x Flambeau | F <sub>4</sub>           |
| M316G     | Minn. A.E.S. & U.S.R.S.L.       | Hawkeye x Capital  | F <sub>12</sub>          |
| M389      | Minn. A.E.S. & U.S.R.S.L.       | Capital x M10      | F <sub>5</sub>           |
| M391      | Minn. A.E.S. & U.S.R.S.L.       | Capital x Renville | F <sub>5</sub>           |
| 0-57-2824 | Central Exp. Farm, Ottawa, Ont. | Adams x A3K-884    | F <sub>11</sub>          |

Identification of Parent Strains

|         |   |
|---------|---|
| A3K-884 | Sel. from Mukden x Richland, progenitor of Blackhawk. |
| M10     | Sel. from Lincoln (2) x Richland.                     |

Data were reported from nine locations in 1962 for the two check varieties and four experimental strains in this test. Three of the four strains were new entries in regional testing. M316 was in Preliminary Test 0 in 1957 and Uniform Test 0 in 1958 and 1959 but was segregating for pubescence color. M316G is a composite of gray pubescent lines from M316.

Grant had the highest average yield in the test but the early strain, M389, out-yielded the early check, Norchief, and had good height and excellent lodging resistance. M391 includes two hilum colors, yellow and brown.

Table 17. Summary of data for Uniform Preliminary Test 0, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
|              |       |      |                            |              |        |                 |                | Protein          | Oil  |
| No. of Tests | 5     | 5    | 4                          | 2            | 5      | 4               | 4              | 4                | 4    |
| Grant        | 35.7  | 1    | 0                          | 2.5          | 32     | 2.0             | 17.1           | 40.3             | 19.7 |
| Norchief     | 28.2  | 6    | -4.0                       | 3.4          | 30     | 2.0             | 17.3           | 41.4             | 19.3 |
| M316G        | 34.3  | 3    | -2.8                       | 3.0          | 33     | 1.8             | 16.0           | 40.1             | 20.6 |
| M389         | 31.6  | 5    | -3.5                       | 1.5          | 32     | 2.0             | 16.6           | 40.8             | 20.2 |
| M391         | 33.4  | 4    | -1.5                       | 3.4          | 35     | 2.4             | 18.0           | 40.4             | 20.8 |
| 0-57-2824    | 34.9  | 2    | +1.0                       | 3.5          | 35     | 1.3             | 18.0           | 40.8             | 20.0 |

<sup>1</sup>Days earlier (-) or later (+) than Grant which matured September 27, 125 days after planting. Flambeau (Group 00) matured -4.3.

Table 18. Disease data for Uniform Preliminary Test 0, 1962.

| Strain    | Bacterial<br>Blight           | Bacterial<br>Pustule | Brown<br>Stem Rot             | Phytophthora<br>Rot |
|-----------|-------------------------------|----------------------|-------------------------------|---------------------|
|           | <u>Ill.</u><br>a <sup>1</sup> | <u>Ill.</u><br>a     | <u>Ill.</u><br>n <sup>1</sup> | <u>Ind.</u><br>a    |
| Grant     | 3                             | 3                    | 3                             |                     |
| Norchief  | 2                             | 3                    | 3                             |                     |
| M316G     | 4                             | 4                    | 3                             |                     |
| M389      | 2                             | 4                    | 3                             | S                   |
| M391      | 3                             | 3                    | 3                             |                     |
| 0-57-2824 | 2                             | 3                    | 3                             | S                   |

<sup>1</sup>a = artificial inoculation; n = natural infection.

Table 19. Yield, yield rank, and maturity, days earlier (-) or later (+) than Grant, for Uniform Preliminary Test 0, 1962.

| Strain            | Mean<br>of 5<br>Tests | Ot-<br>tawa<br>Ont. | Ridge-<br>town<br>Ont. | East                  |      | Spoon-<br>er<br>Wis. <sup>1</sup> | Eu-<br>reka<br>S.D. | Water-<br>town<br>S.D. | Othel-<br>lo<br>Wash. <sup>1</sup> | Pros-<br>ser<br>Wash. <sup>1</sup> | On-<br>tario<br>Ore. <sup>1</sup> |
|-------------------|-----------------------|---------------------|------------------------|-----------------------|------|-----------------------------------|---------------------|------------------------|------------------------------------|------------------------------------|-----------------------------------|
|                   |                       |                     |                        | Lan-<br>sing<br>Mich. |      |                                   |                     |                        |                                    |                                    |                                   |
|                   |                       |                     |                        |                       |      |                                   |                     | *                      | *                                  | *                                  | *                                 |
| Grant             | 35.7                  | 42.4                | 49.8                   | 34.3                  | 36.2 | 16.0                              | 11.1                | 50.7                   | 35.7                               | 63.6                               |                                   |
| Norchief          | 28.2                  | 29.2                | 36.4                   | 24.8                  | 34.1 | 16.3                              | 13.0                | 41.2                   | 20.9                               | 49.6                               |                                   |
| M316G             | 34.3                  | 40.7                | 44.5                   | 32.6                  | 37.3 | 16.6                              | 12.2                | 40.4                   | 34.9                               | 56.4                               |                                   |
| M389              | 31.6                  | 32.6                | 39.7                   | 29.7                  | 37.1 | 18.8                              | 14.3                | 37.1                   | 17.3                               | 60.5                               |                                   |
| M391              | 33.4                  | 39.7                | 42.8                   | 29.6                  | 39.5 | 15.3                              | 14.3                | 48.5                   | 60.1                               | 58.3                               |                                   |
| 0-57-2824         | 34.9                  | 43.1                | 49.2                   | 29.8                  | 37.3 | 14.9                              | 12.9                | 63.1                   | 38.2                               | 59.0                               |                                   |
| Coef. of Var. (%) |                       | 14.7                | 7.8                    | 8.7                   | 10.0 | --                                | --                  | 16.7                   | 28.3                               | 6.2                                |                                   |
| L.S.D. (5%)       |                       | NS                  | NS                     | NS                    | NS   | --                                | --                  | NS                     | NS                                 | NS                                 |                                   |
| Row Spacing (In.) |                       | 30                  | 24                     | 24                    | 36   | 42                                | 42                  | 22                     | 22                                 | 20                                 |                                   |

| Strain    | Yield Rank |   |   |   |   |   |   |   |   |    |
|-----------|------------|---|---|---|---|---|---|---|---|----|
|           | 1          | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Grant     | 1          | 2 | 1 | 1 | 5 | 4 | 6 | 2 | 3 | 1  |
| Norchief  | 6          | 6 | 6 | 6 | 6 | 3 | 3 | 4 | 5 | 6  |
| M316G     | 3          | 3 | 3 | 2 | 2 | 2 | 5 | 5 | 4 | 5  |
| M389      | 5          | 5 | 5 | 4 | 4 | 1 | 1 | 6 | 6 | 2  |
| M391      | 4          | 4 | 4 | 5 | 1 | 5 | 1 | 3 | 1 | 4  |
| 0-57-2824 | 2          | 1 | 2 | 3 | 2 | 6 | 4 | 1 | 2 | 3  |

| Strain         | Mean<br>of 4<br>Tests | Maturity |      |      |      |      |      |       |       |      |
|----------------|-----------------------|----------|------|------|------|------|------|-------|-------|------|
|                |                       | *        | *    | *    | *    | *    | *    | *     | *     | *    |
| Grant          | 0                     |          | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0    |
| Norchief       | -4.0                  |          | -5   | -4   | -3   | -4   | -4   | -3    | -7    | -6   |
| M316G          | -2.8                  |          | -3   | -4   | 0    | -4   | -2   | +3    | +1    | -4   |
| M389           | -3.5                  |          | -4   | -4   | -2   | -4   | -3   | +3    | +2    | -4   |
| M391           | -1.5                  |          | -1   | -1   | -1   | -3   | -3   | +5    | +6    | -4   |
| 0-57-2824      | +1.0                  |          | +1   | -1   | +4   | 0    | -2   | +4    | +4    | -1   |
| Flambeau       | -4.3                  |          | -7   | +1   | -7   | -4   | -4   | -1    | +1    | -14  |
| Date planted   | 5-25                  | 5-17     | 5-23 | 5-28 | 5-29 | 5-21 | 6-2  | 5-17  | 5-14  | 5-8  |
| Grant matured  | 9-27                  | --       | 9-24 | 9-24 | 9-26 | 10-5 | 9-29 | 10-10 | 10-10 | 9-21 |
| Days to mature | 125                   | --       | 124  | 119  | 120  | 131  | 119  | 146   | 149   | 136  |

\*Not included in the mean.

<sup>1</sup>Irrigated.

UNIFORM TEST I - 1962

| Strain    | Originating Agency                   | Origin                   | Generation Compositd |
|-----------|--------------------------------------|--------------------------|----------------------|
| A-100     | Freedolph Anderson, St. Peter, Minn. | Unknown                  |                      |
| Blackhawk | Iowa A.E.S. & U.S.R.S.L.             | Mukden x Richland        | F7                   |
| Chippewa  | Ill. A.E.S. & U.S.R.S.L.             | Lincoln (2) x Richland   | F5                   |
| L1        | Ill. A.E.S. & U.S.R.S.L.             | Chippewa (8) x Blackhawk | F1                   |
| Ottawa    | Edward Brodbeck, Ottawa Lake, Mich.  | Sel. from Chippewa       |                      |
| A8-1334   | Iowa A.E.S. & U.S.R.S.L.             | Hawkeye x Capital        | F6                   |
| C1255     | Purdue A.E.S. & U.S.R.S.L.           | Harosoy x Clark          | F6                   |
| M380      | Minn. A.E.S. & U.S.R.S.L.            | M10 x PI 180501          | F5                   |
| W7-2334   | Wis. A.E.S. & U.S.R.S.L.             | Seneca x Chippewa        | F5                   |

Identification of Parent Strains

|           |   |
|-----------|---|
| M10       | Sel. from Lincoln (2) x Richland.   |
| PI 180501 | Sel. made in Germany from Strain 238 (of Manchurian origin) x PI 54616 (yellow soybean from Kungchuling, Chekiang Province, China, introduced to U. S. through B. W. Skvortzow, Harbin, Manchuria). |

Data were reported from 21 locations in 1962 for the four varieties and five experimental strains in this test.

One strain, M380, has been in the test for two years. It is slightly earlier than Blackhawk but has outyielded Blackhawk and Chippewa both years, although the margin over Chippewa this year decreased to one bushel.

Two farmers' selections, A-100 and Ottawa, were entered in regional tests for the first time. A-100 was also entered in Uniform Test II. Both varieties performed well in this test. A-100 outyielded the check varieties but Ottawa does not appear to have any advantage over Chippewa in agronomic performance.

L1 was derived by backcrossing to Chippewa and selecting for Phytophthora resistance. L1 did fully as well in yield as Chippewa and equalled it in other traits on the average. This strain was increased in Illinois, Indiana, Iowa, Ohio, and South Dakota for possible future release.

The remaining three strains were entered from the 1961 Preliminary Test I. A8-1334 and C1255 topped the test in mean yield and were about two days earlier than Blackhawk and five days later than Chippewa.

Table 20. Summary of data for Uniform Test I, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 16    | 16   | 13                         | 14           | 16     | 12              | 15             | Protein          | Oil  |
| A-100        | 34.6  | 3    | +7.3                       | 1.9          | 34     | 1.6             | 17.7           | 40.7             | 21.2 |
| Blackhawk    | 30.5  | 9    | +8.2                       | 2.2          | 35     | 1.7             | 16.1           | 41.5             | 20.0 |
| Chippewa     | 32.1  | 7    | 0                          | 2.0          | 34     | 1.7             | 14.7           | 41.8             | 20.1 |
| L1           | 32.5  | 6    | +0.1                       | 1.7          | 36     | 1.6             | 15.3           | 41.7             | 20.0 |
| Ottawa       | 31.6  | 8    | +2.8                       | 2.2          | 36     | 1.7             | 17.5           | 42.0             | 19.6 |
| A8-1334      | 35.1  | 2    | +5.6                       | 2.0          | 36     | 1.8             | 16.0           | 42.6             | 20.0 |
| C1255        | 35.7  | 1    | +5.3                       | 2.3          | 36     | 2.1             | 17.8           | 42.0             | 20.5 |
| M380         | 33.1  | 5    | +6.5                       | 1.9          | 34     | 1.6             | 17.2           | 42.1             | 20.0 |
| W7-2334      | 33.4  | 4    | +6.6                       | 1.8          | 36     | 1.5             | 15.7           | 40.1             | 20.2 |

<sup>1</sup>Days earlier (-) or later (+) than Chippewa which matured September 18, 117 days after planting. Grant (Group 0) matured -2.2.

Table 21. Disease data for Uniform Test I, 1962.

| Strain    | Bacte-<br>rial<br>Blight |     | Bacte-<br>rial<br>Pustule |     | Brown<br>Stem<br>Rot | Phytoph-<br>thora<br>Rot | Pod &<br>Stem<br>Blight | Downy<br>Mildew |      | Frogeye<br>Ind. |                 | Purple<br>Stain |      |
|-----------|--------------------------|-----|---------------------------|-----|----------------------|--------------------------|-------------------------|-----------------|------|-----------------|-----------------|-----------------|------|
|           | Ill.                     | Ia. | Ill.                      | Ia. | Ill.                 | Ind.                     | Del.                    | Ind.            | Del. | R1              | R2 <sup>2</sup> | Ind.            | Del. |
|           | al                       | a   | a                         | a   | n <sup>1</sup>       | a                        | n                       | n               | n    | a               | a               | n               | n    |
| A-100     | 3                        | 3   | 4                         | 2   | 4                    | S                        | 3.2                     | 4.0             | 3.9  | --              | S               | 3.8             |      |
| Blackhawk | 2                        | 3   | 3                         | 3   | 4                    | R                        | 3.0                     | 5.0             | 4.0  | S               | S               | 2.8             |      |
| Chippewa  | 2                        | 3   | 4                         | 3   | 4                    | S                        | 2.5                     | 3.0             | 4.2  | S               | S               | 3.0             |      |
| L1        | 3                        | 3   | 4                         | 3   | 4                    | R                        | 3.5                     | 2.8             | 4.4  | S               | S               | 2.0             |      |
| Ottawa    | 2                        | 4   | 3                         | 3   | 4                    | R                        | 2.0                     | 2.3             | 3.5  | --              | S               | 2.5             |      |
| A8-1334   | 1                        | 4   | 4                         | 3   | 4                    | S                        | 2.2                     | 4.0             | 3.0  | --              | S               | 3.0             |      |
| C1255     | 2                        | 4   | 3                         | 3   | 4                    | S                        | 3.0                     | 2.3             | 3.4  | R               | S               | 2.3             |      |
| M380      | 3                        | 4   | 4                         | 2   | 4                    | S                        | 4.5                     | 2.5             | 3.5  | Seg.            | S               | 2.5             |      |
| W7-2334   | 3                        | 3   | 4                         | 3   | 4                    | S                        | 3.8                     | 1.5             | 4.0  | S               | S               | 3.5             |      |

<sup>1</sup>la = artificial inoculation; n = natural infection.

<sup>2</sup>R1 = Race 1; R2 = Race 2.



Table 22. Yield and yield rank for Uniform Test I, 1962.

| Strain            | Mean<br>of 16<br>Tests | Ridge-<br>town<br>Ont. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | Co-<br>lum-<br>bus<br>Ohio | East<br>Lan-<br>sing<br>Mich. | Ida<br>Mich. | Walk-<br>er-<br>ton<br>Ind. | Lafa-<br>yette<br>Ind. | Durand<br>Wis. | Madi-<br>son<br>Wis. |
|-------------------|------------------------|------------------------|------------------------|----------------------|----------------------------|-------------------------------|--------------|-----------------------------|------------------------|----------------|----------------------|
|                   |                        |                        |                        |                      |                            |                               |              |                             |                        | *              |                      |
| A-100             | 34.6                   | 45.8                   | 31.6                   | 19.7                 | 36.9                       | 30.4                          | 33.7         | 40.7                        | 44.6                   | 14.9           | 38.9                 |
| Blackhawk         | 30.5                   | 36.2                   | 26.6                   | 18.1                 | 31.8                       | 28.3                          | 28.5         | 35.9                        | 39.7                   | 13.5           | 31.3                 |
| Chippewa          | 32.1                   | 41.5                   | 29.0                   | 19.9                 | 33.1                       | 28.7                          | 29.5         | 34.8                        | 38.9                   | 11.1           | 35.0                 |
| L1                | 32.5                   | 44.3                   | 29.6                   | 20.9                 | 33.7                       | 27.7                          | 28.8         | 36.1                        | 39.2                   | 11.8           | 35.8                 |
| Ottawa            | 31.6                   | 44.7                   | 28.4                   | 19.7                 | 33.8                       | 27.9                          | 27.6         | 36.1                        | 36.4                   | 12.3           | 31.9                 |
| A8-1334           | 35.1                   | 42.3                   | 27.0                   | 19.4                 | 32.3                       | 29.8                          | 33.5         | 38.7                        | 40.5                   | 16.4           | 36.7                 |
| C1255             | 35.7                   | 49.9                   | 29.1                   | 19.8                 | 34.1                       | 30.9                          | 34.3         | 44.3                        | 43.6                   | 16.2           | 39.1                 |
| M380              | 33.1                   | 40.9                   | 27.4                   | 20.4                 | 30.6                       | 30.4                          | 28.7         | 38.0                        | 42.0                   | 12.3           | 36.8                 |
| W7-2334           | 33.4                   | 43.0                   | 27.0                   | 20.0                 | 30.8                       | 28.2                          | 31.6         | 38.6                        | 40.2                   | 15.0           | 39.0                 |
| Coef. of Var. (%) |                        | 8.1                    | 8.5                    | 10.5                 | 10.0                       | 6.4                           | 9.5          | 7.3                         | 7.8                    | 7.0            | 5.9                  |
| L.S.D. (5%)       |                        | 7.2                    | NS                     | NS                   | NS                         | NS                            | 4.3          | 4.1                         | 4.6                    | 1.4            | 3.0                  |
| Row Spacing(In.)  |                        | 24                     | 36                     | 28                   | 28                         | 24                            | 34           | 40                          | 38                     | 36             | 36                   |

|           | Yield Rank |   |   |   |   |   |   |   |   |   |   |
|-----------|------------|---|---|---|---|---|---|---|---|---|---|
|           |            |   |   |   |   |   |   |   |   | * |   |
| A-100     | 3          | 2 | 1 | 6 | 1 | 2 | 2 | 2 | 1 | 4 | 3 |
| Blackhawk | 9          | 9 | 9 | 9 | 7 | 6 | 8 | 8 | 6 | 5 | 9 |
| Chippewa  | 7          | 7 | 4 | 4 | 5 | 5 | 5 | 9 | 8 | 9 | 7 |
| L1        | 6          | 4 | 2 | 1 | 4 | 9 | 6 | 6 | 7 | 8 | 6 |
| Ottawa    | 8          | 3 | 5 | 6 | 3 | 8 | 9 | 6 | 9 | 6 | 8 |
| A8-1334   | 2          | 6 | 7 | 8 | 6 | 4 | 3 | 3 | 4 | 1 | 5 |
| C1255     | 1          | 1 | 3 | 5 | 2 | 1 | 1 | 1 | 2 | 2 | 1 |
| M380      | 5          | 8 | 6 | 2 | 9 | 2 | 7 | 5 | 3 | 6 | 4 |
| W7-2334   | 4          | 5 | 7 | 3 | 8 | 7 | 4 | 4 | 5 | 3 | 2 |

\*Not included in the mean.

1Irrigated.

Table 22. (Continued)

| Strain        | Shab-<br>bona<br>Ill. | Dwight<br>Ill. | Ur-<br>bana<br>Ill. | Wa-<br>seca<br>Minn. | Kana-<br>wha<br>Iowa | Eu-<br>reka<br>S.D. | Water-<br>town<br>S.D. | Brook-<br>ings<br>S.D. | Othello<br>Wash. <sup>1</sup> | Pros-<br>ser<br>Wash. <sup>1</sup> | On-<br>tario<br>Ore. <sup>1</sup> |
|---------------|-----------------------|----------------|---------------------|----------------------|----------------------|---------------------|------------------------|------------------------|-------------------------------|------------------------------------|-----------------------------------|
|               |                       |                |                     |                      |                      |                     | *                      |                        | *                             | *                                  | *                                 |
| A-100         | 32.0                  | 34.1           | 49.9                | 29.9                 | 35.2                 | 19.5                | 11.9                   | 30.3                   | 28.9                          | 17.2                               | 48.0                              |
| Blackhawk     | 27.0                  | 30.6           | 43.2                | 24.9                 | 38.8                 | 19.6                | 13.9                   | 27.4                   | 28.2                          | 16.8                               | 39.1                              |
| Chippewa      | 30.1                  | 30.2           | 45.0                | 30.2                 | 36.5                 | 18.5                | 13.7                   | 33.3                   | 32.8                          | 31.7                               | 51.8                              |
| L1            | 31.4                  | 30.2           | 40.8                | 32.3                 | 36.0                 | 19.5                | 13.3                   | 33.0                   | 39.9                          | 36.8                               | 51.8                              |
| Ottawa        | 32.6                  | 29.8           | 42.8                | 28.3                 | 35.5                 | 20.6                | 13.0                   | 29.1                   | 37.7                          | 25.5                               | 45.6                              |
| A8-1334       | 37.7                  | 31.5           | 56.1                | 31.7                 | 42.7                 | 28.3                | 15.6                   | 32.9                   | 27.1                          | 16.9                               | 49.0                              |
| C1255         | 37.9                  | 34.0           | 51.8                | 29.8                 | 39.8                 | 21.0                | 15.7                   | 32.2                   | 33.7                          | 33.9                               | 56.8                              |
| M380          | 31.4                  | 32.7           | 47.5                | 27.5                 | 43.2                 | 20.8                | 12.7                   | 31.0                   | 32.0                          | 35.1                               | 49.1                              |
| W7-2334       | 39.0                  | 33.2           | 43.7                | 28.6                 | 42.9                 | 17.7                | 12.3                   | 30.6                   | 36.7                          | 34.1                               | 57.9                              |
| C.V. (%)      | 8.7                   | 8.0            | 9.4                 | 3.8                  | 4.2                  | --                  | --                     | --                     | 13.2                          | 31.1                               | 11.0                              |
| L.S.D. (5%)   | 4.2                   | NS             | 6.4                 | 3.2                  | 2.3                  | --                  | --                     | --                     | 8.6                           | 12.5                               | 8.0                               |
| Row Sp. (In.) | 40                    | 40             | 40                  | 40                   | 40                   | 42                  | 42                     | 42                     | 22                            | 22                                 | 20                                |

Yield Rank

|           |   |   |   |   |   |   | * |   | * | * | * |
|-----------|---|---|---|---|---|---|---|---|---|---|---|
| A-100     | 5 | 1 | 3 | 4 | 9 | 6 | 9 | 7 | 7 | 9 | 7 |
| Blackhawk | 9 | 6 | 7 | 9 | 5 | 5 | 3 | 9 | 8 | 8 | 9 |
| Chippewa  | 8 | 7 | 5 | 3 | 6 | 8 | 4 | 1 | 5 | 5 | 3 |
| L1        | 6 | 7 | 9 | 1 | 7 | 6 | 5 | 2 | 1 | 1 | 3 |
| Ottawa    | 4 | 9 | 8 | 7 | 8 | 4 | 6 | 8 | 2 | 6 | 8 |
| A8-1334   | 3 | 5 | 1 | 2 | 3 | 1 | 2 | 3 | 9 | 7 | 6 |
| C1255     | 2 | 2 | 2 | 5 | 4 | 2 | 1 | 4 | 4 | 4 | 2 |
| M380      | 6 | 4 | 4 | 8 | 1 | 3 | 7 | 5 | 6 | 2 | 5 |
| W7-2334   | 1 | 3 | 6 | 6 | 2 | 9 | 8 | 6 | 3 | 3 | 1 |



Table 23. Maturity, days earlier (-) or later (+) than Chippewa, and lodging for Uniform Test I, 1962.

| Strain           | Mean<br>of 13<br>Tests | Ridge-<br>town<br>Ont. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | Co-<br>lum-<br>bus<br>Ohio | East<br>Lan-<br>sing<br>Mich. | Ida<br>Mich. | Walk-<br>er-<br>ton<br>Ind. | Lafa-<br>yette<br>Ind. | Durand<br>Wis. | Madi-<br>son<br>Wis. |
|------------------|------------------------|------------------------|------------------------|----------------------|----------------------------|-------------------------------|--------------|-----------------------------|------------------------|----------------|----------------------|
|                  |                        |                        | *                      | *                    |                            |                               |              |                             | *                      | *              |                      |
| A-100            | +7.3                   | +4                     | + 5                    | +8                   | +14                        | +4                            | +3           | +12                         | +8                     | +10            | + 4                  |
| Blackhawk        | +8.2                   | +6                     | +13                    | +9                   | +16                        | +6                            | +3           | +10                         | +7                     | +11            | +10                  |
| Chippewa         | 0                      | 0                      | 0                      | 0                    | 0                          | 0                             | 0            | 0                           | 0                      | 0              | 0                    |
| L1               | +0.1                   | 0                      | + 2                    | -1                   | 0                          | 0                             | 0            | + 1                         | 0                      | 0              | 0                    |
| Ottawa           | +2.8                   | +2                     | + 4                    | +4                   | + 9                        | +4                            | +2           | + 2                         | +4                     | + 3            | + 3                  |
| A8-1334          | +5.6                   | +3                     | + 8                    | +5                   | +14                        | +2                            | +3           | + 5                         | +2                     | +10            | + 4                  |
| C1255            | +5.3                   | +2                     | + 6                    | +7                   | +13                        | +4                            | +4           | + 5                         | +2                     | +14            | + 5                  |
| M380             | +6.5                   | +2                     | + 7                    | +6                   | +13                        | +2                            | +3           | +10                         | +4                     | + 2            | + 7                  |
| W7-2334          | +6.6                   | +2                     | +12                    | +9                   | +13                        | +4                            | +5           | +11                         | +3                     | + 7            | + 8                  |
| Grant            | -2.2                   | -4                     | --                     | --                   | + 1                        | 0                             | 0            | - 2                         | --                     | - 9            | - 3                  |
| Date planted     | 5-24                   | 5-23                   | 5-18                   | 5-21                 | 5-10                       | 5-28                          | 5-26         | 6-1                         | 5-18                   | 5-26           | 5-16                 |
| Chippewa matured | 9-18                   | 9-29                   | 9-1                    | 9-3                  | 8-24                       | 10-8                          | 9-20         | 9-12                        | 8-28                   | 9-21           | 9-12                 |
| Days to mature   | 117                    | 129                    | 106                    | 105                  | 106                        | 133                           | 117          | 103                         | 102                    | 118            | 119                  |
|                  | Mean<br>of 14<br>Tests |                        |                        |                      |                            | Lodging                       |              |                             |                        |                |                      |
|                  |                        |                        |                        | *                    |                            |                               |              |                             |                        | *              |                      |
| A-100            | 1.9                    | 2.0                    | 1.2                    | 1.0                  | 1.2                        | 2.0                           | 3.0          | 1.5                         | 1.0                    | 1.0            | 2.6                  |
| Blackhawk        | 2.2                    | 3.0                    | 1.5                    | 1.0                  | 1.0                        | 2.0                           | 3.0          | 1.3                         | 1.0                    | 1.0            | 3.8                  |
| Chippewa         | 2.0                    | 2.0                    | 2.0                    | 1.0                  | 1.0                        | 1.0                           | 3.0          | 2.0                         | 1.3                    | 1.0            | 2.3                  |
| L1               | 1.7                    | 2.0                    | 1.2                    | 1.0                  | 1.0                        | 1.0                           | 2.0          | 1.5                         | 1.0                    | 1.0            | 2.4                  |
| Ottawa           | 2.2                    | 2.0                    | 2.2                    | 1.0                  | 1.5                        | 2.0                           | 3.0          | 1.8                         | 1.3                    | 1.0            | 3.5                  |
| A8-1334          | 2.0                    | 3.0                    | 2.0                    | 1.0                  | 1.0                        | 1.0                           | 3.0          | 1.3                         | 1.3                    | 1.0            | 2.6                  |
| C1255            | 2.3                    | 3.0                    | 2.2                    | 1.0                  | 1.2                        | 2.0                           | 4.0          | 1.5                         | 1.8                    | 1.0            | 3.0                  |
| M380             | 1.9                    | 2.0                    | 1.5                    | 1.0                  | 1.2                        | 2.0                           | 3.0          | 1.8                         | 1.5                    | 1.0            | 2.4                  |
| W7-2334          | 1.8                    | 2.0                    | 1.5                    | 1.0                  | 1.5                        | 2.0                           | 3.0          | 1.3                         | 1.0                    | 1.0            | 2.4                  |

\*Not included in the mean.

1Irrigated.

Table 23. (Continued)

| Strain        | Shab-<br>bona<br>Ill. | Dwight<br>Ill. | Ur-<br>bana<br>Ill. | Wa-<br>seca<br>Minn. | Kana-<br>wha<br>Iowa | Eu-<br>reka<br>S.D. | Water-<br>town<br>S.D. | Brook-<br>ings<br>S.D. | Othello<br>Wash. <sup>1</sup> | Pros-<br>ser<br>Wash. <sup>1</sup> | On-<br>tario<br>Ore. <sup>1</sup> |
|---------------|-----------------------|----------------|---------------------|----------------------|----------------------|---------------------|------------------------|------------------------|-------------------------------|------------------------------------|-----------------------------------|
|               |                       |                |                     |                      |                      |                     | *                      |                        | *                             | *                                  | *                                 |
| A-100         | +5                    | +5             | +4                  | +12                  | + 9                  | +11                 | +1                     | +8                     | +5                            | +7                                 | +14                               |
| Blackhawk     | +5                    | +5             | +4                  | +14                  | +10                  | +10                 | +2                     | +7                     | +2                            | +5                                 | +16                               |
| Chippewa      | 0                     | 0              | 0                   | 0                    | 0                    | 0                   | 0                      | 0                      | 0                             | 0                                  | 0                                 |
| L1            | 0                     | -1             | 0                   | + 2                  | 0                    | 0                   | 0                      | -1                     | -4                            | -3                                 | + 1                               |
| Ottawa        | +1                    | +1             | -1                  | + 3                  | + 2                  | + 3                 | 0                      | +6                     | -3                            | +4                                 | + 6                               |
| A8-1334       | +5                    | +5             | +3                  | +10                  | +10                  | + 5                 | +1                     | +4                     | +1                            | -6                                 | +14                               |
| C1255         | +7                    | +2             | +4                  | + 8                  | + 6                  | + 4                 | +2                     | +5                     | +3                            | +4                                 | + 9                               |
| M380          | +4                    | +5             | +5                  | +13                  | +10                  | + 3                 | +2                     | +8                     | -2                            | +2                                 | +12                               |
| W7-2334       | +6                    | +5             | +5                  | + 7                  | + 8                  | + 5                 | +2                     | +7                     | -3                            | +7                                 | +10                               |
| Grant         | -3                    | -6             | -3                  | - 3                  | - 3                  | 0                   | -1                     | -2                     | -3                            | -3                                 | - 4                               |
| Date planted  | 5-23                  | 6-2            | 5-15                | 6-2                  | 5-22                 | 5-21                | 6-2                    | 5-31                   | 5-17                          | 5-14                               | 5-8                               |
| Chippewa mat. | 9-12                  | 9-13           | 8-29                | 9-30                 | 9-14                 | 10-7                | 10-3                   | 10-1                   | 10-17                         | 10-15                              | 9-25                              |
| Days to mat.  | 112                   | 103            | 106                 | 120                  | 115                  | 139                 | 123                    | 123                    | 153                           | 154                                | 140                               |

|           | Lodging |     |     |     |     |     |     |     |     |     |     |
|-----------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|           |         |     |     |     |     | *   | *   |     | *   | *   | *   |
| A-100     | 2.3     | 1.6 | 2.1 | 2.0 | 2.6 | 1.0 | 2.0 | 1.0 | 5.0 | 5.0 | 3.8 |
| Blackhawk | 2.4     | 2.0 | 2.1 | 3.0 | 2.7 | 1.0 | 2.0 | 1.5 | 5.0 | 5.0 | 5.0 |
| Chippewa  | 2.7     | 1.5 | 1.9 | 2.0 | 3.2 | 1.0 | 2.0 | 1.5 | 5.0 | 5.0 | 3.5 |
| L1        | 2.2     | 1.4 | 1.6 | 2.3 | 3.2 | 1.0 | 2.0 | 1.0 | 5.0 | 5.0 | 3.5 |
| Ottawa    | 2.6     | 1.8 | 2.3 | 2.3 | 3.5 | 1.0 | 1.0 | 1.0 | 5.0 | 5.0 | 3.7 |
| A8-1334   | 2.6     | 1.6 | 2.5 | 2.0 | 2.6 | 1.0 | 2.0 | 1.0 | 5.0 | 5.0 | 4.8 |
| C1255     | 2.7     | 1.6 | 2.4 | 2.8 | 3.0 | 1.0 | 2.0 | 1.0 | 5.0 | 5.0 | 3.8 |
| M380      | 2.2     | 1.5 | 1.7 | 2.5 | 2.4 | 1.0 | 2.0 | 1.0 | 5.0 | 5.0 | 2.8 |
| W7-2334   | 1.9     | 1.3 | 1.4 | 2.3 | 2.3 | 1.0 | 1.0 | 1.0 | 5.0 | 5.0 | 2.8 |

Table 24. Plant height and seed quality for Uniform Test I, 1962.

| Strain    | Mean<br>of 16<br>Tests | Ridge-<br>town<br>Ont. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | Co-<br>lum-<br>bus<br>Ohio | East<br>Lan-<br>sing<br>Mich. | Ida<br>Mich. | Walk-<br>er-<br>ton<br>Ind. | Lafa-<br>yette<br>Ind. | Durand<br>Wis. | Madi-<br>son<br>Wis. |
|-----------|------------------------|------------------------|------------------------|----------------------|----------------------------|-------------------------------|--------------|-----------------------------|------------------------|----------------|----------------------|
| A-100     | 34                     | 37                     | 34                     | 20                   | 31                         | 30                            | 32           | 33                          | 38                     | 24*            | 36                   |
| Blackhawk | 35                     | 36                     | 35                     | 20                   | 33                         | 32                            | 35           | 34                          | 38                     | 26             | 38                   |
| Chippewa  | 34                     | 36                     | 35                     | 21                   | 32                         | 31                            | 33           | 33                          | 37                     | 23             | 38                   |
| L1        | 36                     | 41                     | 36                     | 22                   | 33                         | 31                            | 34           | 33                          | 39                     | 23             | 38                   |
| Ottawa    | 36                     | 41                     | 35                     | 22                   | 33                         | 32                            | 34           | 33                          | 38                     | 27             | 43                   |
| A8-1334   | 36                     | 40                     | 37                     | 19                   | 33                         | 31                            | 36           | 35                          | 40                     | 24             | 39                   |
| C1255     | 36                     | 40                     | 35                     | 20                   | 35                         | 31                            | 35           | 35                          | 38                     | 26             | 37                   |
| M380      | 34                     | 36                     | 34                     | 19                   | 32                         | 32                            | 33           | 31                          | 36                     | 24             | 34                   |
| W7-2334   | 36                     | 39                     | 35                     | 20                   | 37                         | 31                            | 36           | 35                          | 38                     | 25             | 40                   |

| Strain    | Mean<br>of 12<br>Tests | Seed Quality |     |     |     |     |     |     |     |     |     |
|-----------|------------------------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|           |                        | *            |     |     |     |     | *   | *   |     | *   |     |
| A-100     | 1.6                    | 2.0          | 1.0 | 1.0 | 1.2 | 2.0 | 2.0 | 2.0 | 1.5 | 3.0 | 2.0 |
| Blackhawk | 1.7                    | 2.0          | 1.0 | 1.2 | 1.2 | 1.0 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| Chippewa  | 1.7                    | 2.0          | 1.0 | 1.0 | 1.5 | 2.0 | 2.0 | 2.0 | 1.5 | 3.0 | 2.0 |
| L1        | 1.6                    | 2.0          | 1.0 | 1.0 | 1.2 | 2.0 | 2.0 | 2.0 | 1.5 | 3.0 | 1.0 |
| Ottawa    | 1.7                    | 2.0          | 1.0 | 1.0 | 1.2 | 2.0 | 2.0 | 2.0 | 2.0 | 3.0 | 2.0 |
| A8-1334   | 1.8                    | 3.0          | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| C1255     | 2.1                    | 3.0          | 1.0 | 2.0 | 2.2 | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 3.0 |
| M380      | 1.6                    | 2.0          | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 1.5 | 2.0 | 2.0 |
| W7-2334   | 1.5                    | 3.0          | 1.0 | 1.0 | 1.2 | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 1.0 |

\*Not included in the mean.

1Irrigated.

Table 24. (Continued)

| Strain    | Shab-<br>bona<br>Ill. | Dwight<br>Ill. | Ur-<br>bana<br>Ill. | Wa-<br>seca<br>Minn. | Kana-<br>wha<br>Iowa | Eu-<br>reka<br>S.D. | Water-<br>town<br>S.D. | Brook-<br>ings<br>S.D. | Othello<br>Wash. <sup>1</sup> | Pros-<br>ser<br>Wash. <sup>1</sup> | On-<br>tario<br>Ore. <sup>1</sup> |
|-----------|-----------------------|----------------|---------------------|----------------------|----------------------|---------------------|------------------------|------------------------|-------------------------------|------------------------------------|-----------------------------------|
|           |                       |                |                     |                      |                      |                     | *                      |                        | *                             | *                                  | *                                 |
| A-100     | 39                    | 37             | 35                  | 37                   | 39                   | 29                  | 27                     | 40                     | 56                            | 64                                 | 50                                |
| Blackhawk | 38                    | 38             | 34                  | 37                   | 40                   | 33                  | 28                     | 42                     | 61                            | 64                                 | 55                                |
| Chippewa  | 37                    | 37             | 35                  | 33                   | 39                   | 29                  | 25                     | 38                     | 55                            | 55                                 | 40                                |
| L1        | 42                    | 38             | 36                  | 36                   | 40                   | 30                  | 28                     | 39                     | 54                            | 69                                 | 40                                |
| Ottawa    | 42                    | 42             | 36                  | 38                   | 40                   | 30                  | 28                     | 43                     | 58                            | 67                                 | 50                                |
| A8-1334   | 41                    | 36             | 39                  | 37                   | 43                   | 31                  | 30                     | 42                     | 59                            | 64                                 | 50                                |
| C1255     | 42                    | 39             | 38                  | 37                   | 42                   | 31                  | 27                     | 41                     | 55                            | 66                                 | 45                                |
| M380      | 38                    | 37             | 34                  | 36                   | 38                   | 27                  | 26                     | 39                     | 47                            | 54                                 | 40                                |
| W7-2334   | 41                    | 38             | 37                  | 36                   | 45                   | 30                  | 28                     | 42                     | 50                            | 65                                 | 48                                |

| Seed Quality |     |     |     |     |     |     |     |     |  |  |     |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|--|--|-----|
|              |     |     |     |     | *   |     | *   |     |  |  | *   |
| A-100        | 1.6 | 2.0 | 1.9 | 2.0 | 1.0 | 1.0 | 2.0 | 1.0 |  |  | 1.5 |
| Blackhawk    | 1.8 | 2.0 | 2.0 | 2.5 | 1.0 | 1.0 | 2.0 | 2.0 |  |  | 2.5 |
| Chippewa     | 1.5 | 2.0 | 1.5 | 2.0 | 1.0 | 2.0 | 1.0 | 1.0 |  |  | 1.5 |
| L1           | 1.3 | 1.8 | 1.8 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |  |  | 1.5 |
| Ottawa       | 1.5 | 2.5 | 1.6 | 2.5 | 1.0 | 1.0 | 2.0 | 1.0 |  |  | 2.0 |
| A8-1334      | 1.8 | 2.5 | 1.4 | 2.5 | 1.0 | 1.0 | 1.0 | 2.0 |  |  | 3.0 |
| C1255        | 1.8 | 2.0 | 1.5 | 3.0 | 1.0 | 2.0 | 2.0 | 2.0 |  |  | 3.0 |
| M380         | 1.5 | 2.1 | 1.6 | 3.0 | 1.0 | 1.0 | 2.0 | 1.0 |  |  | 2.0 |
| W7-2334      | 1.3 | 1.5 | 1.4 | 3.0 | 1.0 | 2.0 | 2.0 | 1.0 |  |  | 1.5 |

Table 25. Percentages of protein and oil for Uniform Test I, 1962.

| Strain    | Mean<br>of 9<br>Tests | Ridge-<br>town<br>Ont. | Co-<br>lum-<br>bus<br>Ohio | East<br>Lan-<br>sing<br>Mich. | Walk-<br>er-<br>ton<br>Ind. | Madi-<br>son<br>Wis. | Shab-<br>bona<br>Ill. | Wa-<br>seca<br>Minn. | Kana-<br>wha<br>Iowa | Brook-<br>ings<br>S.D. | Othel-<br>lo<br>Wash. <sup>1</sup> | On-<br>tario<br>Ore. <sup>1</sup> |
|-----------|-----------------------|------------------------|----------------------------|-------------------------------|-----------------------------|----------------------|-----------------------|----------------------|----------------------|------------------------|------------------------------------|-----------------------------------|
|           |                       |                        |                            |                               |                             |                      |                       |                      |                      |                        | *                                  | *                                 |
| A-100     | 40.7                  | 40.4                   | 42.1                       | 43.5                          | 41.0                        | 40.9                 | 40.2                  | 40.3                 | 39.9                 | 37.6                   | 43.7                               | 40.1                              |
| Blackhawk | 41.5                  | 42.4                   | 41.9                       | 43.6                          | 42.5                        | 42.4                 | 41.1                  | 40.4                 | 41.0                 | 38.1                   | 43.9                               | 42.5                              |
| Chippewa  | 41.8                  | 42.0                   | 42.8                       | 43.8                          | 42.0                        | 40.7                 | 42.8                  | 40.6                 | 42.2                 | 39.6                   | 42.9                               | 42.8                              |
| L1        | 41.7                  | 41.6                   | 41.6                       | 44.5                          | 42.3                        | 41.6                 | 42.5                  | 40.5                 | 41.7                 | 39.2                   | 45.0                               | 43.6                              |
| Ottawa    | 42.0                  | 42.1                   | 43.2                       | 45.4                          | 42.2                        | 42.2                 | 41.4                  | 40.8                 | 41.1                 | 39.2                   | 45.9                               | 44.0                              |
| A8-1334   | 42.6                  | 43.6                   | 43.0                       | 45.0                          | 42.0                        | 43.0                 | 42.2                  | 42.7                 | 42.1                 | 39.7                   | 46.4                               | 44.5                              |
| C1255     | 42.0                  | 41.4                   | 42.4                       | 44.1                          | 43.0                        | 42.0                 | 42.3                  | 41.4                 | 42.0                 | 39.2                   | 43.7                               | 43.5                              |
| M380      | 42.1                  | 41.8                   | 42.5                       | 43.6                          | 43.0                        | 42.1                 | 42.1                  | 41.9                 | 42.4                 | 39.4                   | 46.1                               | 44.1                              |
| W7-2334   | 40.1                  | 40.0                   | 40.0                       | 42.8                          | 40.7                        | 41.0                 | 39.9                  | 38.9                 | 40.1                 | 37.4                   | 43.7                               | 41.2                              |
|           | Mean<br>of 9<br>Tests | Percentage of Oil      |                            |                               |                             |                      |                       |                      |                      |                        |                                    |                                   |
|           |                       |                        |                            |                               |                             |                      |                       |                      |                      |                        | *                                  | *                                 |
| A-100     | 21.2                  | 20.6                   | 22.0                       | 20.6                          | 21.4                        | 21.4                 | 22.0                  | 21.2                 | 20.3                 | 21.2                   | 16.8                               | 19.1                              |
| Blackhawk | 20.0                  | 19.8                   | 21.5                       | 19.5                          | 20.0                        | 19.3                 | 20.9                  | 19.2                 | 20.1                 | 19.7                   | 15.8                               | 18.6                              |
| Chippewa  | 20.1                  | 20.2                   | 19.7                       | 20.1                          | 20.9                        | 20.2                 | 20.8                  | 19.2                 | 20.3                 | 19.8                   | 16.2                               | 18.8                              |
| L1        | 20.0                  | 20.1                   | 20.5                       | 18.8                          | 20.8                        | 20.4                 | 20.7                  | 18.6                 | 20.0                 | 19.8                   | 16.5                               | 17.4                              |
| Ottawa    | 19.6                  | 19.4                   | 19.9                       | 18.3                          | 19.9                        | 19.0                 | 21.1                  | 18.8                 | 19.8                 | 19.8                   | 15.6                               | 17.9                              |
| A8-1334   | 20.0                  | 18.9                   | 21.0                       | 19.4                          | 20.8                        | 20.3                 | 21.3                  | 18.5                 | 19.9                 | 20.0                   | 15.7                               | 18.2                              |
| C1255     | 20.5                  | 21.0                   | 21.7                       | 20.0                          | 21.0                        | 20.1                 | 21.4                  | 19.2                 | 20.4                 | 20.1                   | 16.9                               | 18.1                              |
| M380      | 20.0                  | 20.1                   | 21.4                       | 19.3                          | 20.8                        | 19.3                 | 21.4                  | 18.7                 | 19.2                 | 19.9                   | 16.9                               | 18.8                              |
| W7-2334   | 20.2                  | 20.4                   | 21.4                       | 19.5                          | 20.7                        | 20.1                 | 21.4                  | 18.9                 | 19.7                 | 19.7                   | 15.8                               | 18.4                              |

\*Not included in the mean.

<sup>1</sup>Irrigated.

UNIFORM PRELIMINARY TEST I - 1962

| Strain    | Originating Agency        | Origin                 | Generation<br>Composited |
|-----------|---------------------------|------------------------|--------------------------|
| Blackhawk | Iowa A.E.S. & U.S.R.S.L.  | Mukden x Richland      | F <sub>7</sub>           |
| Chippewa  | Ill. A.E.S. & U.S.R.S.L.  | Lincoln (2) x Richland | F <sub>5</sub>           |
| A9-619    | Iowa A.E.S. & U.S.R.S.L.  | Clark x Chippewa       | F <sub>4</sub>           |
| AX157-9   | Iowa A.E.S. & U.S.R.S.L.  | Chippewa (3) x A6-8221 | F <sub>3</sub>           |
| M402      | Minn. A.E.S. & U.S.R.S.L. | Renville x Capital     | F <sub>5</sub>           |
| W7-2155   | Wis. A.E.S. & U.S.R.S.L.  | Blackhawk x Seneca     | F <sub>5</sub>           |
| W7-2330   | Wis. A.E.S. & U.S.R.S.L.  | Seneca x Chippewa      | F <sub>5</sub>           |

Identification of Parent Strain

A6-8221      D49-2491 (2) x Hawkeye. D49-2491 is an F<sub>6</sub> line from S100 x CNS.

Data were reported from 12 locations for the two check varieties and five new experimental strains in this test.

Only two strains, A9-619 and M402, had appreciably higher yields than the checks. M402 and W7-2155 were two days later than Blackhawk and would therefore be considered maturity Group II.



Table 26. Summary of data for Uniform Preliminary Test I, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
|              |       |      |                            |              |        |                 |                | Protein          | Oil  |
| No. of Tests | 9     | 9    | 7                          | 7            | 9      | 7               | 8              | 6                | 6    |
| Blackhawk    | 30.5  | 5    | + 9.0                      | 2.3          | 35     | 1.5             | 15.7           | 41.2             | 20.0 |
| Chippewa     | 30.5  | 5    | 0                          | 1.9          | 34     | 1.6             | 14.1           | 42.0             | 20.0 |
| A9-619       | 34.1  | 1    | + 4.7                      | 1.9          | 35     | 1.4             | 15.7           | 41.7             | 20.5 |
| AX157-9      | 29.0  | 7    | + 0.7                      | 1.8          | 35     | 1.6             | 14.0           | 42.3             | 19.7 |
| M402         | 32.3  | 2    | +10.7                      | 2.0          | 36     | 1.7             | 15.3           | 40.3             | 21.0 |
| W7-2155      | 30.9  | 4    | +11.1                      | 2.0          | 37     | 1.6             | 14.6           | 41.0             | 19.0 |
| W7-2330      | 31.0  | 3    | + 8.3                      | 1.8          | 36     | 1.2             | 14.4           | 40.7             | 19.9 |

<sup>1</sup>Days earlier (-) or later (+) than Chippewa which matured September 22, 123 days after planting. Grant (Group 0) matured -1.7.

Table 27. Disease data for Uniform Preliminary Test I, 1962.

| Strain    | Bacte-<br>rial<br>Blight | Bacte-<br>rial<br>Pustule | Brown<br>Stem<br>Rot | Phytoph-<br>thora<br>Rot | Pod &<br>Stem<br>Blight | Downy<br>Mildew |      | Frogeye<br>Ind. |                 | Purple<br>Stain |      |
|-----------|--------------------------|---------------------------|----------------------|--------------------------|-------------------------|-----------------|------|-----------------|-----------------|-----------------|------|
|           | Ill.                     | Ill.                      | Ill.                 | Ind.                     | Del.                    | Ind.            | Del. | R1              | R2 <sup>2</sup> | Ind.            | Del. |
|           | a <sup>1</sup>           | a                         | n <sup>1</sup>       | a                        | n                       | n               | n    | a               | a               | n               | n    |
| Blackhawk | 2                        | 3                         | 4                    |                          | 3.0                     | 4.0             | 4.0  |                 |                 | 2               | 2.8  |
| Chippewa  | 2                        | 4                         | 4                    |                          | 2.5                     | 3.0             | 4.2  |                 |                 | 2               | 3.0  |
| A9-619    | 2                        | 4                         | 4                    |                          | 3.0                     |                 | 4.2  |                 |                 |                 | 2.0  |
| AX157-9   | 3                        | 4                         | 4                    | S                        | 2.5                     |                 | 4.0  |                 | S               |                 | 1.0  |
| M402      | 3                        | 3                         | 4                    |                          | 3.0                     |                 | 4.2  |                 |                 |                 | 2.0  |
| W7-2155   | 2                        | 3                         | 4                    | R                        | 2.0                     |                 | 2.0  |                 |                 |                 | 2.0  |
| W7-2330   | 4                        | 4                         | 4                    |                          | 3.0                     |                 | 3.7  |                 |                 |                 | 2.0  |

<sup>1</sup>a = artificial inoculation; n = natural infection.

<sup>2</sup>R1 = Race 1; R2 = Race 2.



Table 28. Yield, yield rank, and maturity, days earlier (-) or later (+) than Chippewa, for Uniform Preliminary Test I, 1962.

| Strain       | Mean<br>of 9<br>Tests | Co- East               |                        |                      |                     |                       |                      |                      |                     |                        |                        |                                    |                                   |
|--------------|-----------------------|------------------------|------------------------|----------------------|---------------------|-----------------------|----------------------|----------------------|---------------------|------------------------|------------------------|------------------------------------|-----------------------------------|
|              |                       | Ridge-<br>town<br>Ont. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | lum-<br>bus<br>Ohio | Lan-<br>sing<br>Mich. | Madi-<br>son<br>Wis. | Kana-<br>wha<br>Iowa | Eu-<br>reka<br>S.D. | Water-<br>town<br>S.D. | Brook-<br>ings<br>S.D. | Othel-<br>lo<br>Wash. <sup>1</sup> | On-<br>tario<br>Ore. <sup>1</sup> |
| Blackhawk    | 30.5                  | 40.5                   | 22.9                   | 21.3                 | 29.2                | 31.5                  | 33.8                 | 37.6                 | 26.4                | 11.3                   | 30.9                   | 35.9                               | 35.9                              |
| Chippewa     | 30.5                  | 40.0                   | 23.0                   | 22.9                 | 33.0                | 32.0                  | 32.3                 | 35.8                 | 22.0                | 11.9                   | 33.9                   | 33.9                               | 55.6                              |
| A9-619       | 34.1                  | 46.0                   | 27.2                   | 21.3                 | 36.1                | 34.5                  | 41.2                 | 42.4                 | 24.1                | 12.1                   | 34.5                   | 31.6                               | 52.3                              |
| AX157-9      | 29.0                  | 39.3                   | 21.5                   | 20.5                 | 29.4                | 28.0                  | 30.9                 | 33.0                 | 22.7                | 13.3                   | 35.4                   | 20.6                               | 50.1                              |
| M402         | 32.3                  | 46.9                   | 21.4                   | 23.2                 | 32.7                | 31.5                  | 35.4                 | 44.8                 | 23.6                | 11.0                   | 31.5                   | 48.3                               | 57.4                              |
| W7-2155      | 30.9                  | 44.5                   | 21.3                   | 23.0                 | 29.8                | 30.3                  | 35.9                 | 38.8                 | 19.9                | 9.3                    | 34.3                   | 26.3                               | 50.4                              |
| W7-2330      | 31.0                  | 38.5                   | 24.2                   | 19.1                 | 31.4                | 29.1                  | 34.2                 | 41.4                 | 25.7                | 10.8                   | 35.2                   | 42.4                               | 44.9                              |
| C.V.(%)      |                       | 10.2                   | 18.0                   | 7.9                  | 16.8                | 4.5                   | 5.0                  | 5.1                  | --                  | --                     | --                     | 18.2                               | 3.9                               |
| L.S.D.(5%)   |                       | NS                     | NS                     | NS                   | NS                  | NS                    | 4.3                  | 4.9                  | --                  | --                     | --                     | 15.3                               | 4.7                               |
| Row Sp.(In.) |                       | 24                     | 36                     | 28                   | 28                  | 24                    | 36                   | 40                   | 42                  | 42                     | 42                     | 22                                 | 20                                |

|           | Yield Rank |   |   |   |   |   |   |   |   |   |   |   |   |
|-----------|------------|---|---|---|---|---|---|---|---|---|---|---|---|
|           |            |   |   |   |   |   |   |   |   |   |   |   |   |
| Blackhawk | 5          | 4 | 4 | 4 | 7 | 3 | 5 | 5 | 1 | 4 | 7 | 3 | 7 |
| Chippewa  | 5          | 5 | 3 | 3 | 2 | 2 | 6 | 6 | 6 | 3 | 5 | 4 | 2 |
| A9-619    | 1          | 2 | 1 | 4 | 1 | 1 | 1 | 2 | 3 | 2 | 3 | 5 | 3 |
| AX157-9   | 7          | 6 | 5 | 6 | 6 | 7 | 7 | 7 | 5 | 1 | 1 | 7 | 5 |
| M402      | 2          | 1 | 6 | 1 | 3 | 3 | 3 | 1 | 4 | 5 | 6 | 1 | 1 |
| W7-2155   | 4          | 3 | 7 | 2 | 5 | 5 | 2 | 4 | 7 | 7 | 4 | 6 | 4 |
| W7-2330   | 3          | 7 | 2 | 7 | 4 | 6 | 4 | 3 | 2 | 6 | 2 | 2 | 6 |

|           | Mean<br>of 7<br>Tests | Maturity |     |    |     |    |     |     |     |    |    |    |     |
|-----------|-----------------------|----------|-----|----|-----|----|-----|-----|-----|----|----|----|-----|
|           |                       |          |     |    |     |    |     |     |     |    |    |    |     |
| Blackhawk | + 9.0                 | +6       | +14 | +7 | +14 | +6 | +10 | +12 | + 7 | +5 | +8 | +3 | +16 |
| Chippewa  | 0                     | 0        | 0   | 0  | 0   | 0  | 0   | 0   | 0   | 0  | 0  | 0  | 0   |
| A9-619    | + 4.7                 | +2       | + 9 | -1 | + 5 | +2 | + 4 | +10 | + 4 | +2 | +6 | +1 | + 9 |
| AX157-9   | + 0.7                 | -2       | + 4 | 0  | + 1 | +2 | + 2 | + 1 | + 1 | 0  | 0  | +2 | - 1 |
| M402      | +10.7                 | +7       | + 9 | +9 | +23 | +6 | + 8 | +12 | +11 | +5 | +8 | +1 | +10 |
| W7-2155   | +11.1                 | +6       | +15 | +8 | +20 | +6 | +10 | +14 | +13 | +6 | +9 | +4 | +12 |
| W7-2330   | + 8.3                 | +6       | +12 | +8 | +18 | +4 | + 7 | +12 | + 5 | +1 | +6 | -2 | +14 |
| Grant     | - 1.7                 | -4       | --  | -- | 0   | 0  | - 3 | - 3 | 0   | -1 | -2 | -3 | - 4 |

|               |      |      |      |      |      |      |      |      |      |      |      |       |      |
|---------------|------|------|------|------|------|------|------|------|------|------|------|-------|------|
| Date planted  | 5-22 | 5-23 | 5-18 | 5-21 | 5-10 | 5-28 | 5-16 | 5-22 | 5-21 | 6-2  | 5-31 | 5-17  | 5-8  |
| Chippewa mat. | 9-22 | 9-29 | 8-31 | 9-3  | 8-25 | 10-8 | 9-12 | 9-14 | 10-7 | 10-3 | 10-1 | 10-17 | 9-25 |
| Days to mat.  | 123  | 129  | 105  | 105  | 107  | 133  | 119  | 115  | 139  | 123  | 123  | 153   | 140  |

\*Not included in the mean.

<sup>1</sup>Irrigated.



UNIFORM TEST II - 1962

| Strain               | Originating Agency                   | Origin                                 | Generation Compositd |
|----------------------|--------------------------------------|--|----------------------|
| A-100                | Freedolph Anderson, St. Peter, Minn. | Unknown                                |                      |
| Adams                | Iowa A.E.S. & U.S.R.S.L.             | Illini x Dunfield                      | F7                   |
| L59g-3R              | Ill. A.E.S. & U.S.R.S.L.             | Adams (6) x F2 (Blackhawk x Adams)     | F1                   |
| Harosoy              | Research Station, Harrow, Ont.       | Mandarin (2) x A.K.                    | F5                   |
| L2                   | Ill. A.E.S. & U.S.R.S.L.             | Harosoy 63 x L3                        | F1                   |
| L3                   | Ill. A.E.S. & U.S.R.S.L.             | Harosoy (5) x (S54-1207 x Harosoy)     | F1                   |
| Harosoy 63 (L59g-1R) | Ill. A.E.S. & U.S.R.S.L.             | Harosoy (2) x F2 (Blackhawk x Harosoy) | F1                   |
| Hawkeye              | Iowa A.E.S. & U.S.R.S.L.             | Mukden x Richland                      | F4                   |
| Hawkeye 63 (L59g-2R) | Ill. A.E.S. & U.S.R.S.L.             | Hawkeye (6) x F2 (Blackhawk x Hawkeye) | F1                   |
| Lindarin             | Purdue A.E.S. & U.S.R.S.L.           | Mandarin (Ontawa) x Lincoln            | F7                   |
| Lindarin 63 (C1294R) | Purdue A.E.S. & U.S.R.S.L.           | Lindarin (4) x (Mukden x Lindarin)     | F2                   |
| A5-5629              | Iowa A.E.S. & U.S.R.S.L.             | Roanoke x Hawkeye                      | F5                   |
| A8-932               | Iowa A.E.S. & U.S.R.S.L.             | Harosoy x Capital                      | F6                   |
| AX50F40-2            | Iowa A.E.S. & U.S.R.S.L.             | Hawkeye x Clark                        | F5                   |
| AX50F58-2            | Iowa A.E.S. & U.S.R.S.L.             | Hawkeye x Clark                        | F5                   |
| AX56P64-1            | Iowa A.E.S. & U.S.R.S.L.             | Adams x Harosoy                        | F5                   |
| C1264                | Purdue A.E.S. & U.S.R.S.L.           | Harosoy x C1079                        | F6                   |
| C1265                | Purdue A.E.S. & U.S.R.S.L.           | Harosoy x C1079                        | F6                   |
| O-671                | Research Station, Harrow, Ont.       | Mandarin x (A.K. (Harrow) x Korean)    | F9                   |

Identification of Parent Strains

|          |   |
|----------|---|
| C1079    | F7 line from Lincoln x Ogden; from same F4 line as Kent.  |
| S54-1207 | Sel. from Hawkeye x (L49-4091 x L46-2132-1). L49-4091 is a pustule-resistant F4 line from L44-1219 x (Lincoln x CNS). L44-1219 is an F3 line from Lincoln (2) x Richland. L46-2132-1 is an F8 line from Lincoln (2) x Richland and a sib of Clark and Shelby. |

Data were reported from 29 locations in 1962 for the eight named varieties and eleven experimental strains in this test

Three strains, including two newly-released varieties, produced by backcrossing have been in the test for three years and the three-year means are presented in Tables 41 and 42. L59g-3R, produced by backcrossing to Adams, will not be released because of the shift of commercial acreage from Adams to other varieties. Harosoy 63 and Hawkeye 63, produced by backcrossing to the indicated variety, have recently been

released. All three have similar means to their recurrent parent although yield is slightly lower in all three backcross strains. The 80 tests making up the three-year mean do not include tests where *Phytophthora* was known to have affected the means.

The newly-released Lindarin 63, along with four experimental strains, are included in the two-year means in Tables 39 and 40. Lindarin 63, like the other backcross strains, yielded slightly less than its recurrent parent but is otherwise similar. The four A strains have performed well in the two years with three out of the four having a higher mean yield than Harosoy. Two of them (the lower yielding two, unfortunately) have excellent lodging resistance, even excelling Hawkeye in this trait.

A-100, a farmer's selection, was entered in regional tests for the first time in 1962. It was quite early for Group II and yielded about as well as would be expected for its maturity. It was also entered in Uniform Test I.

Two strains of backcross origin, L2 and L3, are new entries in 1962. L3 is a pustule-resistant strain produced by backcrossing to Harosoy while L2 is both pustule- and *Phytophthora*-resistant from a cross of Harosoy 63 with L3. Both L2 and L3 performed as the other backcross strains in the absence of disease, averaging slightly lower in yield and similar in other traits. At Greenfield, Indiana, where *Phytophthora* occurred, L2 and the other PR-resistant strains outyielded the respective recurrent parent by from 7 to 18 bushels. L2 was increased in 1962 in Illinois, Indiana, Missouri, Ohio, Ontario, and South Dakota for possible future release.

The remaining four strains, A8-932, C1264, C1265, and O-671, were entered from last year's Preliminary Test I or II. A8-932, although early, had the highest mean yield in the test. The other three yielded about as expected, considering their respective maturities.

A description and outline of the history of the development of Harosoy 63, Hawkeye 63, and Lindarin 63 follows:

#### HAROSOY 63

Harosoy 63 was named and released in January 1963. Participants in the release are Illinois, Indiana, Michigan, Missouri, Ohio, South Dakota, and Wisconsin and Ontario. Harosoy 63, formerly L59g-1R, is similar to Harosoy in all respects except for the addition from Blackhawk of a dominant gene for *Phytophthora* rot resistance. Harosoy 63 was developed at Urbana by the backcross method with most of the work done in the greenhouse. The details of its development are given below:

|         |         |                                |   |
|---------|---------|--------------------------------|---|
| 1952    |         |                                | Cross of Blackhawk x Harosoy made at Ames, Iowa.                    |
| 1953    |         | F <sub>1</sub>                 | Plants grown at Ames; seeds sent to Urbana in April 1956.           |
| 1956    | Mar-Aug | F <sub>2</sub>                 | Seedlings PR-inoculated; survivors (4 plants) crossed onto Harosoy. |
| 1956-57 | Oct-Mar | F <sub>1</sub> BC <sub>1</sub> | Seedlings PR-inoculated; survivors (10) crossed onto Harosoy.       |
| 1957    | Apr-Jul | F <sub>1</sub> BC <sub>2</sub> | Seedlings PR-inoculated; survivors (6) crossed onto Harosoy.        |

|         |         |                                |   |
|---------|---------|--------------------------------|---|
| 1957    | Jul-Oct | F <sub>1</sub> BC <sub>3</sub> | Seedlings PR-inoculated; survivors (5) crossed onto Harosoy.  |
| 1957-58 | Oct-Feb | F <sub>1</sub> BC <sub>4</sub> | Seedlings PR-inoculated; survivors (1) crossed onto Harosoy.<br><br>(In 1958 a bulk of 15 uniformly resistant F <sub>3</sub> lines from this BC <sub>4</sub> was composited as L58g-1R and increased in 1959. A bulk of segregating lines L58g-1H was entered in Uniform Test II in 1959. It averaged lower in yield, earlier, and shorter than Harosoy, and L58g-1R was therefore discarded.)                                  |
| 1958    | Feb-May | F <sub>1</sub> BC <sub>5</sub> | Seedlings PR-inoculated; survivors (2) crossed onto Harosoy.  |
| 1958    | Jun-Sep | F <sub>1</sub> BC <sub>6</sub> | Seedlings PR-inoculated; survivors (6) crossed onto Harosoy.  |
| 1958-59 | Oct-Feb | F <sub>1</sub> BC <sub>7</sub> | 16 seedlings PR-inoculated; 8 survived (L59g-1)   |
| 1959    | Feb-Jun | F <sub>2</sub>                 | 129 seedlings from L59g-1 PR-inoculated; 90 survived PR; only 37 survived an accidental exposure to pentachlorophenol fumes to which Harosoy was unusually sensitive (L59g-161).  |
| 1959    | Jun-Sep | F <sub>3</sub>                 | 37 F <sub>3</sub> lines from L59g-161 grown in rod rows (2 discarded for possible offtype plants, 1 short and 1 segregating late) (L59-726 to -762).  |
| 1960    | Jan-Feb | F <sub>4</sub>                 | Progeny test of 35 F <sub>3</sub> lines; 6 lines uniformly resistant PR reaction checked at Lafayette by Athow and Probst.  |
| 1960    |         | F <sub>4</sub>                 | 6 resistant F <sub>3</sub> lines grown in increase plots at Urbana and Lafayette. lines were similar to Harosoy in appearance. Tests at Lafayette suggested that 3 of the lines were segregating for frogeve susceptibility and recheck on this was possible since a pathogenic culture of the organism is not available.<br>L59g-1H, a composite of 8 F <sub>3</sub> lines segregating PR-reaction, tested in Uniform Test II. |
| 1961    |         | F <sub>5</sub>                 | L59g-1R, a composite of the remaining 3 resistant F <sub>3</sub> lines, tested in Uniform Test II and increased in 6 states and Ontario.  |
| 1962    |         | F <sub>6</sub>                 | L59g-1R tested in Uniform Test II and increased in 6 states and Ontario.  |



Deviation of the 3 lines composited is as follows:

| <u>F3 line</u> | <u>F1 plant</u> | <u>F1BC6 plant</u> |
|----------------|-----------------|--------------------|
| L59-731        | L59g-1-1        | L58-1530-1         |
| L59-732        | L59g-1-2        | "                  |
| L59-738        | L59g-1-3        | "                  |

Summary of the increase of Harosoy 63:

|              | <u>1960</u>       | <u>Distribution*</u> | <u>1961</u>    | <u>1962</u>       |
|--------------|-------------------|----------------------|----------------|-------------------|
|              | <u>Production</u> |                      |                |                   |
| Illinois     | 227 pounds        | 316 pounds           | 254 bu.        | 7,732 bu.         |
| Indiana      | 543               | 190**                | 249            | 10,856            |
| Iowa         |                   | 28                   | 49             |                   |
| Michigan     |                   |                      |                | 400               |
| Missouri     |                   | 37                   | 73             | 2,000             |
| Ohio         |                   | 129                  | 88             | 2,200             |
| Ontario      |                   | 43                   | 39             | 2,100             |
| South Dakota |                   |                      |                | 65                |
| Wisconsin    |                   | 3                    | 4              | 250               |
| Total        | <u>770 pounds</u> | <u>746 pounds</u>    | <u>756 bu.</u> | <u>25,603 bu.</u> |

\*Distribution was made in proportion to acreage of Harosoy.

\*\*Includes 13 pounds for Michigan.

### HAWKEYE 63

Hawkeye 63 was named and released in January 1963. Releasing states are Illinois, Indiana, and South Dakota. Hawkeye 63, formerly L59g-2R, is similar to Hawkeye in all respects except for the addition from Blackhawk of a dominant gene for Phytophthora rot resistance. Hawkeye 63 was developed at Urbana by the backcross method with most of the work done in the greenhouse. The details of its development are given below:

|         |                |                                |   |
|---------|----------------|--------------------------------|---|
| 1951    |                |                                | Cross of Blackhawk x Hawkeye made at Ames, Iowa.                    |
| 1952    | F <sub>1</sub> |                                | Plants grown at Ames; seeds sent to Urbana in April 1956.           |
| 1956    | May-Aug        | F <sub>2</sub>                 | Seedlings PR-inoculated; survivors (4 plants) crossed onto Hawkeye. |
| 1956-57 | Oct-Mar        | F <sub>1</sub> BC <sub>1</sub> | Seedlings PR-inoculated; survivors (4) crossed onto Hawkeye.        |
| 1957    | Apr-Aug        | F <sub>1</sub> BC <sub>2</sub> | Seedlings PR-inoculated; survivors (2) crossed onto Hawkeye.        |
| 1957-58 | Oct-Feb        | F <sub>1</sub> BC <sub>3</sub> | Seedlings PR-inoculated; survivors (7) crossed onto Hawkeye.        |

|         |         |                                |   |
|---------|---------|--------------------------------|---|
| 1958    | Feb-May | F <sub>1</sub> BC <sub>4</sub> | Seedlings PR-inoculated; survivors (8) crossed onto Hawkeye.  |
| 1958    | Jun-Oct | F <sub>1</sub> BC <sub>5</sub> | Seedlings PR-inoculated; survivors (5) crossed onto Hawkeye.  |
| 1958-59 | Oct-Feb | F <sub>1</sub> BC <sub>6</sub> | 16 seedlings PR-inoculated; 6 survived (L59g-2).  |
| 1959    | Feb-Jun | F <sub>2</sub>                 | 66 seedlings from L59g-2 PR-inoculated; 36 survived (L59g-169).   |
| 1959    | Jun-Sep | F <sub>3</sub>                 | 36 F <sub>3</sub> lines from L59g-169 grown in rod rows (2 discarded as possibly offtype, short plants).  |
| 1960    | Jan-Feb | F <sub>4</sub>                 | Progeny test of 36 F <sub>3</sub> lines; 12 lines uniformly resistant.  |
| 1960    |         | F <sub>4</sub>                 | Bulk of 12 resistant lines tested in Uniform Test II as L59g-2R.<br><br>12 lines increased in rod 3-row plots at Urbana, one line discarded as slightly late (+2 days). |
| 1961    |         | F <sub>5</sub>                 | Bulk of 11 resistant lines tested in Uniform Test II as L59g-2R and grown in increase blocks in 5 states.   |
| 1962    |         | F <sub>6</sub>                 | L59g-2R tested in Uniform Test II and increased in 5 states.  |

Derivation of the 11 lines composited is as follows:

| <u>F<sub>3</sub> line</u> | <u>F<sub>1</sub> plant</u> | <u>F<sub>1</sub>BC<sub>5</sub> plant</u> | <u>F<sub>1</sub>BC<sub>4</sub> plant</u> |
|---------------------------|----------------------------|--|--|
| L59-767                   | L59g-2-1                   | L58-1532-1                               | L58g-120-4                               |
| L59-768                   | "                          | "  | "  |
| L59-773                   | L59g-2-2                   | "  | "  |
| L59-774                   | "                          | "  | "  |
| L59-777                   | "                          | "  | "  |
| L59-787                   | L59g-2-5                   | L58-1532-2                               | "  |
| L59-788                   | "                          | "  | "  |
| L59-792                   | L59g-2-9                   | L58-1532-3                               | "  |
| L59-794                   | "                          | "  | "  |
| L59-795                   | "                          | "  | "  |
| L59-796                   | "                          | "  | "  |



Summary of the increase of Hawkeye 63:

|              | <u>1960</u><br><u>Production</u> | <u>Distribution*</u> | <u>1961</u>    | <u>1962</u>      |
|--------------|----------------------------------|----------------------|----------------|------------------|
| Illinois     | 108 pounds                       | 36** pounds          | 42 bu.         | 1,981 bu.        |
| Indiana      |                                  | 16                   | 40             | 1,500            |
| Iowa         |                                  | 37                   | 73             | --               |
| Missouri     |                                  | 1                    | 1              | 75               |
| Ohio         |                                  | 10                   | 7              | 150              |
| South Dakota |                                  |                      |                | 29               |
| Total        | <u>108 pounds</u>                | <u>100 pounds</u>    | <u>163 bu.</u> | <u>3,735 bu.</u> |

\*Distribution was in proportion to the Hawkeye acreage in each state.

\*\*Includes 2 pounds for Nebraska and 1 for Michigan.

LINDARIN 63

Lindarin 63 was released in January 1963 by the states of Indiana, Ohio, and Wisconsin. Foundation seed was made available to Michigan and South Dakota from Indiana for multiplication in 1963 and release in 1964.

Lindarin 63 is quite similar to Lindarin except that it is resistant to Phytophthora root rot. Also, Lindarin 63 appears to be slightly taller with possibly somewhat less dense foliage near the top of the plant than Lindarin. Average yields, in the absence of visible Phytophthora effects, indicate that Lindarin 63 might be slightly lower in yield than Lindarin.

History and development:

|      |        |                                |  |
|------|--------|--------------------------------|--|
| 1957 | Winter |                                | Mukden x Lindarin cross made by A. H. Probst at Lafayette, Indiana, and assigned cross number CX324.   |
| 1957 | Summer | F <sub>1</sub>                 | Grew 2 F <sub>1</sub> plants and made BC <sub>1</sub> of Lindarin x CX324.   |
| 1958 | Winter | F <sub>1</sub> BC <sub>1</sub> | Grew 6 Phytophthora-resistant plants; made BC <sub>2</sub> .   |
| 1958 | Summer | F <sub>1</sub> BC <sub>2</sub> | Grew 4 Phytophthora-resistant plants; made BC <sub>3</sub> .   |
| 1959 | Winter | F <sub>1</sub> BC <sub>3</sub> | Grew 7 Phytophthora-resistant plants; made BC <sub>4</sub> .   |
| 1959 | Summer | F <sub>1</sub> BC <sub>4</sub> | Grew 2 F <sub>1</sub> Phytophthora-resistant plants of CX324 BC <sub>4</sub> .<br>Phytophthora inoculation was ineffective at planting and the resistant plants were not determined until after harvest.<br>F <sub>1</sub> plant number 10 had imperfect black hilum and since it did not represent the Lindarin type, it will not be discussed further. |
| 1959 | Fall   | F <sub>2</sub>                 | Planted 449 seeds from F <sub>1</sub> plant number 13. Emergence was poor. Harvested all seed from 71 resistant plants.  |

|      |        |                |  |
|------|--------|----------------|--|
| 1960 | Spring | F <sub>3</sub> | Planted 15 seeds from each of the 11 F <sub>2</sub> plants and retained the 28 F <sub>2</sub> plants which were homozygous resistant to Phytophthora.  |
| 1960 | Summer | F <sub>3</sub> | Planted all remnant seed from all of the above 28 resistant plants in plant rows end to end across the end of a field bordered from other soybeans by 4 rows of Lindarin. Spaced 4" apart. Each line harvested separately and seed examined.   |
| 1961 | Winter | F <sub>4</sub> | Checked each of above lines for homozygous resistance to Phytophthora. Checked each line for susceptibility to frogeye leaf spot, race 1, since Mukden was a susceptible parent. Eighteen lines were resistant to frogeye leaf spot and Phytophthora and were composited under the designation C1294R as breeders' seed. This totaled 63 pounds of breeders' seed was divided proportionally based on Lindarin acreage, among Illinois, Indiana, Michigan, Ohio, South Dakota, and Wisconsin. A proportional amount of seed was taken from all Phytophthora-resistant lines including those susceptible to frogeye leaf spot and composited under the number C1294 for regional testing. |
| 1961 | Summer | F <sub>4</sub> | C1294 tested in 27 regional tests. Breeders' seed of C1294R multiplied in Ohio, Illinois, and Indiana. Indiana multiplied to meet the needs of Michigan, South Dakota, and Wisconsin also.   |
| 1962 | Summer | F <sub>5</sub> | C1294R tested in 27 regional tests. Foundation seed of C1294R multiplied in Ohio - 50 bu. and Indiana - 2,200 bu. Indiana multiplied for Michigan, 10 bushels, South Dakota, 10 bushels, and Wisconsin, 24 bushels. Illinois decided not to release and did not multiply in 1962.  |

Table 29. Summary of data for Uniform Test II, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 27    | 27   | 24                         | 26           | 27     | 23              | 22             | Protein          | Oil  |
|              |       |      |                            |              |        |                 |                | 14               | 14   |
| A-100        | 35.3  | 13   | -6.5                       | 1.9          | 34     | 1.9             | 18.0           | 40.8             | 21.5 |
| Adams        | 34.9  | 15   | +1.5                       | 2.8          | 41     | 2.0             | 14.5           | 40.5             | 20.8 |
| L59g-3R      | 34.4  | 18   | +2.3                       | 2.9          | 42     | 2.0             | 14.8           | 41.2             | 20.1 |
| Harosoy      | 37.2  | 7    | -3.2                       | 2.6          | 40     | 2.2             | 17.3           | 41.8             | 20.4 |
| L2           | 36.4  | 10   | -3.8                       | 2.7          | 41     | 2.4             | 17.4           | 41.6             | 20.3 |
| L3           | 35.7  | 12   | -3.2                       | 2.5          | 40     | 2.6             | 17.8           | 42.1             | 20.1 |
| Harosoy 63   | 36.9  | 9    | -4.2                       | 2.8          | 41     | 2.2             | 17.1           | 41.8             | 20.3 |
| Hawkeye      | 34.5  | 17   | 0                          | 2.4          | 39     | 1.9             | 17.2           | 41.8             | 20.6 |
| Hawkeye 63   | 33.0  | 19   | +0.5                       | 2.4          | 40     | 2.0             | 17.0           | 41.8             | 20.3 |
| Lindarin     | 36.1  | 11   | -4.4                       | 2.1          | 36     | 1.9             | 15.5           | 41.7             | 20.6 |
| Lindarin 63  | 35.3  | 13   | -6.0                       | 2.2          | 38     | 2.2             | 15.7           | 41.5             | 20.9 |
| A5-5629      | 38.3  | 4    | -1.2                       | 2.6          | 41     | 1.9             | 17.5           | 40.7             | 21.1 |
| A8-932       | 39.2  | 1    | -4.4                       | 2.7          | 39     | 2.0             | 15.3           | 40.8             | 20.9 |
| AX50F40-2    | 37.9  | 5    | -0.4                       | 2.2          | 36     | 2.2             | 18.2           | 41.3             | 20.8 |
| AX50F58-2    | 37.1  | 8    | +0.3                       | 2.1          | 34     | 2.1             | 19.0           | 41.8             | 21.0 |
| AX56P64-1    | 38.9  | 2    | -1.0                       | 2.4          | 40     | 2.4             | 16.7           | 40.3             | 21.2 |
| C1264        | 38.6  | 3    | +1.1                       | 2.1          | 40     | 2.5             | 16.8           | 40.7             | 21.1 |
| C1265        | 37.8  | 6    | -4.1                       | 2.2          | 40     | 2.2             | 16.8           | 41.6             | 21.0 |
| O-671        | 34.9  | 15   | -5.8                       | 2.8          | 39     | 2.4             | 16.4           | 41.5             | 20.1 |

<sup>1</sup>Days earlier (-) or later (+) than Hawkeye which matured September 23, 124 days after planting. Blackhawk (Group I) matured -6.8. Ford (Group III) matured +5.9.

Table 30. Disease data for Uniform Test II, 1962.

| Strain      | Bacte-<br>rial<br>Blight |     | Bacte-<br>rial<br>Pustule |     | Brown<br>Stem<br>Rot | Phytoph-<br>thora<br>Rot | Pod &<br>Stem<br>Blight | Downy<br>Mildew |      | Frogaye<br>Ind. |                 | Purple<br>Stain |      |
|-------------|--------------------------|-----|---------------------------|-----|----------------------|--------------------------|-------------------------|-----------------|------|-----------------|-----------------|-----------------|------|
|             | Ill.                     | Ia. | Ill.                      | Ia. | Ill.                 | Ind.                     | Del.                    | Ind.            | Del. | R1              | R2 <sup>2</sup> | Ind.            | Del. |
|             | a <sup>1</sup>           | a   | a                         | a   | n <sup>1</sup>       | a                        | n                       | n               | n    | a               | a               | n               | n    |
| A-100       | 4                        | 3   | 4                         | 2   | 4                    | S                        | 3.2                     | 3.5             | 3.9  | -               | S               |                 | 3.8  |
| Adams       | 2                        | 3   | 4                         | 3   | 4                    | S                        | 2.0                     | 3.0             | 3.2  | R               | S               | 3               | 2.5  |
| L59g-3R     | 2                        | 3   | 4                         | 3   | 4                    | R                        | 2.0                     | 3.5             | 3.0  | R               | S               | 3               | 2.0  |
| Harosoy     | 3                        | 3   | 4                         | 3   | 4                    | S                        | 2.8                     | 2.8             | 3.6  | R               | S               | 3               | 2.0  |
| L2          | 3                        | 3   | 3                         | 2   | 4                    | R                        | 2.2                     | 2.8             | 3.8  | R               | S               |                 | 2.8  |
| L3          | 2                        | 3   | 2                         | 2   | 4                    | S                        | 2.5                     | 3.0             | 3.1  | R               | S               |                 | 3.0  |
| Harosoy 63  | 3                        | 3   | 3                         | 3   | 4                    | R                        | 2.7                     | 2.5             | 3.5  | R               | S               | 3               | 2.0  |
| Hawkeye     | 2                        | 3   | 2                         | 3   | 4                    | S                        | 2.5                     | 4.3             | 3.8  | S               | S               | 3               | 2.0  |
| Hawkeye 63  | 2                        | 4   | 3                         | 3   | 4                    | R                        | 2.5                     | 4.3             | 4.0  | S               | S               | 3               | 2.5  |
| Lindarin    | 4                        | 3   | 4                         | 3   | 4                    | S                        | 3.0                     | 3.0             | 3.5  | R               | S               | 3               | 3.5  |
| Lindarin 63 | 4                        | 4   | 4                         | 3   | 4                    | R                        | 2.2                     | 3.0             | 4.3  | R               | S               | 3               | 3.5  |
| A5-5629     | 2                        | 3   | 4                         | 3   | 4                    | S                        | 2.0                     | 2.5             | 2.3  | R               | R               | 2               | 2.0  |
| A3-932      | 2                        | 3   | 4                         | 3   | 4                    | S                        | 2.0                     | 2.8             | 3.3  | R               | S               |                 | 1.3  |
| AX50F40-2   | 2                        | 2   | 4                         | 3   | 4                    | S                        | 3.5                     | 3.5             | 3.6  | R               | S               | 3               | 2.6  |
| AX50F53-2   | 1                        | 3   | 4                         | 3   | 4                    | S                        | 4.3                     | 3.8             | 3.7  | R               | S               | 3               | 2.2  |
| AX56P64-1   | 2                        | 3   | 4                         | 2   | 4                    | S                        | 2.2                     | 2.3             | 3.4  | R               | S               | 4               | 3.5  |
| C1264       | 4                        | 3   | 4                         | 2   | 4                    | S                        | 2.2                     | 2.5             | 3.6  | R               | R               | 3               | 2.5  |
| C1265       | 3                        | 4   | 3                         | 3   | 4                    | S                        | 2.7                     | 3.0             | 1.3  | R               | R               | 3               | 3.0  |
| C-671       | 4                        | 3   | 4                         | 4   | 4                    | R                        | 2.0                     | 2.8             | 1.0  | -               | S               |                 | 2.3  |

<sup>1</sup>a = artificial inoculation; n = natural infection.

<sup>2</sup>R1 = Race 1; R2 = Race 2.

Table 31. Yield for Uniform Test II, 1962.

| Strain of 27 | Mean | Tests | Rank | Ridge-town | Har-row | Free-hold | George-town | Hoyt-ville | Wooster | Co-lumbus | East-Lansing | Ida-Mich.         | Walk-er-ton       | La-bluff-ton | Green-field | Worthing-ton |
|--------------|------|-------|------|------------|---------|-----------|-------------|------------|---------|-----------|--------------|-------------------|-------------------|--------------|-------------|--------------|
|              |      |       |      | Ont.       | N.J.    | Del.      | Ohio        | Ohio       | Ohio    | Mich.     | Mich.        | Ind. <sup>1</sup> | Ind. <sup>1</sup> | Ind.         | Ind.        | Ind.         |
|              |      |       |      | *          |         |           |             |            |         |           |              |                   |                   |              |             | *            |
| A-100        | 35.3 | 13    |      | 47.6       | 34.6    | 37.9      | 27.7        | 25.1       | 20.3    | 31.0      | 33.5         | 32.2              | 36.0              | 38.6         | 43.8        | 28.4 35.8    |
| Adams        | 34.9 | 15    |      | 41.3       | 32.8    | 41.2      | 28.9        | 20.9       | 21.7    | 31.9      | 29.2         | 29.4              | 30.9              | 39.9         | 42.2        | 29.2 43.2    |
| L59g-3R      | 34.4 | 18    |      | 40.4       | 31.7    | 41.1      | 29.6        | 19.2       | 23.6    | 29.5      | 28.1         | 28.2              | 34.1              | 41.0         | 41.8        | 39.9 41.1    |
| Harosoy      | 37.2 | 7     |      | 38.9       | 30.4    | 41.0      | 32.5        | 23.3       | 23.3    | 29.9      | 30.9         | 32.0              | 42.1              | 39.7         | 48.8        | 31.2 46.2    |
| L2           | 36.4 | 10    |      | 36.5       | 31.0    | 37.3      | 32.6        | 22.5       | 25.4    | 27.0      | 30.1         | 31.7              | 41.8              | 39.0         | 43.5        | 38.3 44.9    |
| L3           | 35.7 | 12    |      | 31.0       | 30.8    | 37.4      | 30.0        | 23.3       | 24.7    | 31.2      | 29.3         | 30.9              | 44.2              | 41.7         | 42.2        | 23.0 45.3    |
| Har. 63      | 36.9 | 9     |      | 41.3       | 34.6    | 40.0      | 32.3        | 24.0       | 25.5    | 31.2      | 28.6         | 32.3              | 38.6              | 39.4         | 46.7        | 39.4 47.2    |
| Hawkeye      | 34.5 | 17    |      | 34.1       | 35.2    | 37.1      | 25.7        | 22.0       | 23.6    | 26.7      | 29.3         | 29.6              | 37.3              | 38.2         | 43.0        | 21.3 44.6    |
| Hawk. 63     | 33.0 | 19    |      | 38.1       | 32.4    | 40.3      | 25.6        | 20.2       | 23.6    | 26.0      | 28.5         | 28.8              | 34.3              | 42.7         | 39.3        | 39.7 43.0    |
| Lindarin     | 36.1 | 11    |      | 40.6       | 33.2    | 38.9      | 31.7        | 21.4       | 24.1    | 28.3      | 30.3         | 31.9              | 36.1              | 34.8         | 43.9        | 25.7 46.4    |
| Lind. 63     | 35.3 | 13    |      | 42.0       | 32.3    | 36.1      | 26.4        | 23.9       | 23.9    | 28.4      | 31.6         | 31.7              | 37.8              | 36.1         | 40.4        | 40.1 42.9    |
| A5-5629      | 38.3 | 4     |      | 47.4       | 36.4    | 42.2      | 32.1        | 22.9       | 24.1    | 35.3      | 32.9         | 38.7              | 42.4              | 39.4         | 46.3        | 32.7 44.1    |
| A8-932       | 39.2 | 1     |      | 49.2       | 31.8    | 43.5      | 29.8        | 23.5       | 21.4    | 31.3      | 32.5         | 35.4              | 40.5              | 41.2         | 44.8        | 26.8 41.8    |
| AX50F40      | 37.9 | 5     |      | 36.1       | 37.9    | 41.3      | 27.4        | 21.1       | 24.6    | 28.1      | 29.6         | 31.8              | 39.3              | 41.7         | 48.3        | 31.7 50.7    |
| AX50F58      | 37.1 | 8     |      | 39.8       | 32.4    | 35.8      | 28.7        | 21.8       | 24.4    | 29.8      | 33.1         | 32.8              | 37.0              | 44.1         | 45.1        | 32.1 46.0    |
| AX56P64      | 38.9 | 2     |      | 47.1       | 33.9    | 43.6      | 34.4        | 23.3       | 23.3    | 31.2      | 29.4         | 34.0              | 44.5              | 41.8         | 47.5        | 30.8 48.7    |
| C1264        | 38.6 | 3     |      | 45.1       | 34.8    | 45.5      | 35.5        | 21.3       | 26.1    | 31.0      | 29.6         | 34.0              | 40.2              | 42.9         | 49.1        | 38.2 47.1    |
| C1265        | 37.8 | 6     |      | 52.8       | 33.9    | 38.7      | 33.4        | 22.6       | 22.7    | 30.1      | 30.5         | 36.9              | 44.3              | 38.4         | 47.0        | 34.8 45.5    |
| 0-671        | 34.9 | 15    |      | 51.5       | 27.4    | 32.9      | 31.9        | 19.3       | 22.8    | 29.8      | 33.5         | 29.1              | 40.7              | 35.8         | 41.2        | 42.7 41.6    |
| CV(%)        |      |       |      | 10.0       | 7.4     | 20.7      | 7.9         | 13.1       | 14.5    | 11.6      | 7.4          | 7.2               | 9.6               | 6.0          | 6.2         | 12.3 7.5     |
| LSD(5%)      |      |       |      | 8.4        | 3.5     | 4.0       | 3.4         | NS         | NS      | 5.0       | 3.2          | 3.3               | 6.2               | 3.9          | 3.9         | 5.9 4.7      |
| R.Sp.(In.)   |      |       |      | 24         | 36      | 32        | 36          | 36         | 28      | 28        | 24           | 34                | 40                | 38           | 38          | 38 38        |

\*Not included in the mean.

<sup>1</sup>Three replications.

<sup>2</sup>Irrigated.



Table 31. (Continued)

| Strain      | Madi-<br>son<br>Wis. | Shab-<br>bona<br>Ill. | Dwight<br>Ill. | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Edge-<br>wood<br>Ill. | Lan-<br>ber-<br>ton<br>Minn. | Wa-<br>seca<br>Minn. | Suth-<br>er-<br>land<br>Iowa | Kana-<br>wha<br>Iowa | Inde-<br>pen-<br>dence<br>Iowa | Ames<br>Iowa | Co-<br>lum-<br>bia<br>Mo. | Ken-<br>ter-<br>ville<br>S.D. | Lin-<br>coln<br>Nebr. |
|-------------|----------------------|-----------------------|----------------|---------------------|---------------------|-----------------------|------------------------------|----------------------|------------------------------|----------------------|--------------------------------|--------------|---------------------------|-------------------------------|-----------------------|
| A-100       | 37.8                 | 30.6                  | 32.9           | 51.5                | 41.6                | 34.7                  | 36.9                         | 28.0                 | 41.2                         | 38.8                 | 32.2                           | 34.2         | 22.6                      | 35.4                          | 49.3                  |
| Adams       | 37.1                 | 31.0                  | 35.4           | 53.0                | 48.7                | 35.2                  | 28.8                         | 26.3                 | 43.5                         | 32.6                 | 29.6                           | 36.5         | 31.4                      | 38.1                          | 43.4                  |
| L59g-3R     | 29.0                 | 34.4                  | 31.6           | 52.4                | 45.8                | 37.8                  | 33.3                         | 23.9                 | 39.4                         | 30.6                 | 31.5                           | 35.2         | 28.5                      | 41.3                          | 45.9                  |
| Harosoy     | 35.7                 | 35.9                  | 35.7           | 53.8                | 49.9                | 34.7                  | 34.6                         | 30.3                 | 45.7                         | 37.5                 | 35.5                           | 35.6         | 28.6                      | 48.3                          | 43.3                  |
| L2          | 36.6                 | 36.7                  | 33.7           | 52.9                | 47.5                | 39.0                  | 33.0                         | 29.3                 | 41.0                         | 36.4                 | 34.5                           | 34.4         | 26.4                      | 46.8                          | 47.9                  |
| L3          | 35.0                 | 35.6                  | 32.8           | 54.1                | 46.5                | 36.1                  | 34.3                         | 26.1                 | 40.5                         | 38.7                 | 32.6                           | 34.8         | 28.8                      | 42.8                          | 41.4                  |
| Har. 63     | 32.4                 | 38.5                  | 31.9           | 53.1                | 43.8                | 38.9                  | 36.0                         | 28.8                 | 41.5                         | 35.5                 | 32.9                           | 34.0         | 28.2                      | 50.2                          | 48.3                  |
| Hawkeye     | 37.6                 | 29.5                  | 34.1           | 48.5                | 43.1                | 34.6                  | 32.8                         | 24.7                 | 42.0                         | 33.7                 | 32.2                           | 33.3         | 28.7                      | 48.2                          | 38.9                  |
| Hawk. 63    | 34.2                 | 26.1                  | 31.0           | 40.9                | 43.4                | 34.8                  | 32.2                         | 23.6                 | 38.6                         | 29.5                 | 29.6                           | 33.5         | 27.4                      | 44.5                          | 40.1                  |
| Lindarin    | 35.9                 | 36.6                  | 32.8           | 52.6                | 45.3                | 33.6                  | 33.2                         | 28.4                 | 41.3                         | 40.1                 | 33.1                           | 31.0         | 27.1                      | 49.0                          | 51.6                  |
| Lind. 63    | 34.5                 | 32.3                  | 34.1           | 48.7                | 45.0                | 34.6                  | 34.8                         | 28.7                 | 40.5                         | 38.5                 | 32.5                           | 30.3         | 26.0                      | 50.7                          | 44.9                  |
| A5-5629     | 36.1                 | 38.8                  | 33.9           | 50.3                | 50.7                | 35.7                  | 32.6                         | 30.1                 | 45.3                         | 36.8                 | 34.5                           | 36.8         | 32.1                      | 53.1                          | 44.9                  |
| A8-932      | 42.5                 | 36.6                  | 39.1           | 53.3                | 52.2                | 37.4                  | 41.2                         | 35.9                 | 47.8                         | 41.2                 | 40.0                           | 35.6         | 27.9                      | 59.8                          | 43.4                  |
| AX50F40     | 42.4                 | 38.5                  | 37.3           | 52.9                | 47.8                | 42.4                  | 32.8                         | 28.1                 | 46.0                         | 41.0                 | 35.0                           | 35.2         | 28.6                      | 48.2                          | 50.1                  |
| AX50F58     | 40.3                 | 35.7                  | 38.0           | 53.2                | 46.8                | 37.5                  | 31.9                         | 28.7                 | 41.8                         | 37.7                 | 33.4                           | 37.4         | 30.9                      | 45.6                          | 46.9                  |
| AX56P64     | 38.8                 | 42.5                  | 36.8           | 59.0                | 48.9                | 35.4                  | 34.6                         | 27.3                 | 46.6                         | 44.8                 | 35.5                           | 37.2         | 32.7                      | 47.6                          | 44.8                  |
| C1264       | 40.8                 | 38.1                  | 34.3           | 55.7                | 52.3                | 37.5                  | 34.1                         | 28.1                 | 45.0                         | 42.0                 | 36.1                           | 34.4         | 30.5                      | 44.8                          | 50.7                  |
| C1265       | 38.2                 | 36.2                  | 33.4           | 50.3                | 48.1                | 36.0                  | 32.6                         | 30.1                 | 45.3                         | 41.1                 | 34.2                           | 33.5         | 29.2                      | 47.4                          | 46.3                  |
| 0-671       | 33.9                 | 35.3                  | 30.1           | 50.2                | 43.3                | 34.2                  | 34.4                         | 28.5                 | 40.7                         | 35.9                 | 31.8                           | 31.9         | 25.5                      | 42.2                          | 41.1                  |
| CV(%)       | 8.7                  | 7.5                   | 7.6            | 5.3                 | 6.6                 | 10.9                  | 2.9                          | 3.9                  | 4.8                          | 7.5                  | 6.8                            | 6.0          | 8.7                       | --                            | 11.1                  |
| LSD(5%)     | 4.5                  | 3.7                   | 3.7            | 3.9                 | 4.4                 | NS                    | 2.8                          | 3.1                  | 2.9                          | 3.9                  | 3.2                            | 2.9          | 3.5                       | --                            | 7.1                   |
| R.Sp. (In.) | 36                   | 40                    | 40             | 40                  | 38                  | 37                    | 40                           | 40                   | 40                           | 40                   | 40                             | 40           | 38                        | 42                            | 40                    |

Table 32. Yield rank for Uniform Test II, 1962.

| Strain      | Mean<br>of 27<br>Tests | Ridge-<br>town<br>Ont. | Har-<br>row<br>Ont. | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>lum-<br>ter<br>Ohio | Co-<br>bus<br>Ohio | East<br>sing<br>Mich. | Ida<br>Mich. | Walk-<br>er-<br>ton<br>Ind. | Bluff-<br>ton<br>Ind. | La-<br>fa-<br>yette<br>Ind. | Green-<br>field<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. |
|-------------|------------------------|------------------------|---------------------|-----------------------|-------------------------|------------------------|------------------------------|--------------------|-----------------------|--------------|-----------------------------|-----------------------|-----------------------------|-------------------------|-------------------------------|
|             |                        |                        |                     | *                     |                         |                        |                              |                    |                       |              |                             |                       |                             | *                       |                               |
| A-100       | 13                     | 4                      | 5                   | 13                    | 15                      | 1                      | 19                           | 7                  | 1                     | 8            | 16                          | 14                    | 11                          | 15                      | 19                            |
| Adams       | 15                     | 9                      | 10                  | 6                     | 13                      | 16                     | 17                           | 2                  | 16                    | 16           | 19                          | 9                     | 14                          | 14                      | 13                            |
| L59g-3R     | 18                     | 12                     | 15                  | 7                     | 12                      | 19                     | 10                           | 13                 | 19                    | 19           | 18                          | 8                     | 16                          | 3                       | 18                            |
| Harosoy     | 7                      | 14                     | 18                  | 8                     | 5                       | 5                      | 13                           | 10                 | 7                     | 9            | 5                           | 10                    | 2                           | 12                      | 6                             |
| L2          | 10                     | 16                     | 16                  | 15                    | 4                       | 10                     | 3                            | 17                 | 10                    | 12           | 6                           | 13                    | 12                          | 6                       | 10                            |
| L3          | 12                     | 19                     | 17                  | 14                    | 10                      | 5                      | 4                            | 4                  | 14                    | 14           | 3                           | 5                     | 14                          | 18                      | 9                             |
| Harosoy 63  | 9                      | 9                      | 5                   | 10                    | 6                       | 2                      | 2                            | 4                  | 17                    | 7            | 11                          | 11                    | 6                           | 5                       | 3                             |
| Hawkeye     | 17                     | 18                     | 3                   | 16                    | 18                      | 11                     | 10                           | 18                 | 14                    | 15           | 13                          | 16                    | 13                          | 19                      | 11                            |
| Hawkeye 63  | 19                     | 15                     | 11                  | 9                     | 19                      | 17                     | 10                           | 19                 | 18                    | 18           | 17                          | 3                     | 19                          | 4                       | 14                            |
| Lindarin    | 11                     | 11                     | 9                   | 11                    | 9                       | 13                     | 7                            | 15                 | 9                     | 10           | 15                          | 19                    | 10                          | 17                      | 5                             |
| Lindarin 63 | 13                     | 8                      | 13                  | 17                    | 17                      | 3                      | 9                            | 14                 | 6                     | 12           | 12                          | 17                    | 18                          | 2                       | 15                            |
| A5-5629     | 4                      | 5                      | 2                   | 4                     | 7                       | 8                      | 7                            | 1                  | 4                     | 1            | 4                           | 11                    | 7                           | 9                       | 12                            |
| A8-932      | 1                      | 3                      | 14                  | 3                     | 11                      | 4                      | 18                           | 3                  | 5                     | 3            | 8                           | 7                     | 9                           | 16                      | 16                            |
| AX50F40-2   | 5                      | 17                     | 1                   | 5                     | 16                      | 15                     | 5                            | 16                 | 11                    | 11           | 10                          | 5                     | 3                           | 11                      | 1                             |
| AX50F58-2   | 8                      | 13                     | 11                  | 18                    | 14                      | 12                     | 6                            | 11                 | 3                     | 6            | 14                          | 1                     | 8                           | 10                      | 7                             |
| AX56P64-1   | 2                      | 6                      | 7                   | 2                     | 2                       | 5                      | 13                           | 4                  | 13                    | 4            | 1                           | 4                     | 4                           | 13                      | 2                             |
| C1264       | 3                      | 7                      | 4                   | 1                     | 1                       | 14                     | 1                            | 7                  | 11                    | 4            | 9                           | 2                     | 1                           | 7                       | 4                             |
| C1265       | 6                      | 1                      | 7                   | 12                    | 3                       | 9                      | 16                           | 9                  | 8                     | 2            | 2                           | 15                    | 5                           | 8                       | 8                             |
| O-671       | 15                     | 2                      | 19                  | 19                    | 8                       | 18                     | 15                           | 11                 | 1                     | 17           | 7                           | 18                    | 17                          | 1                       | 17                            |

\*Not included in the mean.



Table 32. (Continued)

| Strain      | Madi-son<br>Wis. | Shab-bona<br>Ill. | Dwight<br>Ill. | Ur-bana<br>Ill. | Gi-rard<br>Ill. | Edge-wood<br>Ill. | Lam-ber-ton<br>Minn. | Wa-seca<br>Minn. | Suth-er-land<br>Iowa | Kana-wha<br>Iowa | Inde-pence<br>Iowa | Ames<br>Iowa | Co-lumbia<br>Mo. | Cent-er-ville<br>S.D. | Lincoln<br>Nebr. |
|-------------|------------------|-------------------|----------------|-----------------|-----------------|-------------------|----------------------|------------------|----------------------|------------------|--------------------|--------------|------------------|-----------------------|------------------|
| A-100       | 7                | 17                | 13             | 13              | 19              | 14                | 2                    | 13               | 13                   | 7                | 14                 | 12           | 19               | 19                    | 4                |
| Adams       | 9                | 16                | 6              | 8               | 6               | 12                | 19                   | 15               | 8                    | 17               | 18                 | 4            | 3                | 18                    | 13               |
| L59g-3R     | 19               | 14                | 17             | 12              | 12              | 4                 | 10                   | 18               | 13                   | 18               | 17                 | 7            | 11               | 17                    | 9                |
| Harosoy     | 13               | 10                | 5              | 4               | 4               | 14                | 5                    | 2                | 4                    | 11               | 3                  | 5            | 9                | 6                     | 15               |
| L2          | 10               | 6                 | 11             | 9               | 9               | 2                 | 12                   | 5                | 14                   | 13               | 6                  | 10           | 16               | 11                    | 6                |
| L3          | 4                | 12                | 14             | 3               | 11              | 8                 | 8                    | 16               | 16                   | 8                | 12                 | 9            | 7                | 15                    | 16               |
| Harosoy 63  | 18               | 3                 | 16             | 7               | 15              | 3                 | 3                    | 6                | 11                   | 15               | 11                 | 13           | 12               | 4                     | 5                |
| Hawkeye     | 8                | 13                | 8              | 18              | 18              | 16                | 13                   | 17               | 9                    | 16               | 14                 | 16           | 8                | 7                     | 19               |
| Hawkeye 63  | 16               | 19                | 18             | 19              | 16              | 13                | 17                   | 19               | 19                   | 19               | 18                 | 14           | 14               | 14                    | 18               |
| Lindarin    | 12               | 7                 | 14             | 11              | 13              | 19                | 11                   | 10               | 12                   | 6                | 10                 | 18           | 15               | 5                     | 1                |
| Lindarin 63 | 15               | 15                | 8              | 17              | 14              | 16                | 4                    | 7                | 16                   | 9                | 13                 | 19           | 17               | 3                     | 10               |
| A5-5629     | 11               | 2                 | 10             | 14              | 3               | 10                | 15                   | 3                | 5                    | 12               | 6                  | 3            | 2                | 2                     | 10               |
| A8-932      | 1                | 7                 | 1              | 5               | 2               | 7                 | 1                    | 1                | 1                    | 3                | 1                  | 5            | 13               | 1                     | 13               |
| AX50F40-2   | 2                | 3                 | 3              | 9               | 8               | 1                 | 13                   | 11               | 3                    | 5                | 5                  | 7            | 9                | 7                     | 3                |
| AX50F58-2   | 4                | 11                | 2              | 6               | 10              | 5                 | 18                   | 7                | 10                   | 10               | 9                  | 1            | 4                | 12                    | 7                |
| AX56P64-1   | 5                | 1                 | 4              | 1               | 5               | 11                | 5                    | 14               | 2                    | 1                | 3                  | 2            | 1                | 9                     | 12               |
| C1264       | 3                | 5                 | 7              | 2               | 1               | 5                 | 9                    | 11               | 7                    | 2                | 2                  | 10           | 5                | 13                    | 2                |
| C1265       | 6                | 9                 | 12             | 14              | 7               | 9                 | 15                   | 3                | 5                    | 4                | 8                  | 14           | 6                | 10                    | 8                |
| O-671       | 17               | 13                | 19             | 16              | 17              | 18                | 7                    | 9                | 15                   | 14               | 16                 | 17           | 13               | 16                    | 17               |

Table 33. Maturity, days earlier (-) or later (+) than Hawkeye, for Uniform Test II, 1962.

| Strain      | Mean<br>of 24<br>Tests | Ridge-<br>town<br>Ont. | Har-<br>row<br>Ont. | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>lum-<br>bus<br>Ohio | Co-<br>East<br>Lan-<br>sing<br>Mich. | Ida<br>Mich. | Walk-<br>er-<br>ton<br>Ind. | Bluff-<br>ton<br>Ind. | La-<br>fa-<br>yette<br>Ind. | Green-<br>field<br>Ind. | Thing-<br>ton<br>Ind. |      |
|-------------|------------------------|------------------------|---------------------|-----------------------|-------------------------|------------------------|------------------------------|--------------------------------------|--------------|-----------------------------|-----------------------|-----------------------------|-------------------------|-----------------------|------|
|             |                        |                        |                     | *                     |                         |                        |                              |                                      |              |                             |                       |                             | *                       |                       |      |
| A-100       | -6.5                   | -4                     | -8                  | -4                    | -4                      | -11                    | -6                           | -1                                   | -1           | -9                          | -11                   | -13                         | -4                      | -3                    | -2   |
| Adams       | +1.5                   | +2                     | +2                  | +7                    | 0                       | +3                     | -2                           | +2                                   | +6           | -2                          | 0                     | -4                          | 0                       | +1                    | +2   |
| L59g-3R     | +2.3                   | +2                     | +2                  | +11                   | 0                       | +2                     | -2                           | +4                                   | +6           | 0                           | +2                    | -1                          | +3                      | +2                    | +2   |
| Harosoy     | -3.2                   | 0                      | +1                  | +2                    | 0                       | -2                     | -3                           | -1                                   | 0            | -2                          | -6                    | -11                         | -3                      | -3                    | 0    |
| L2          | -3.8                   | -1                     | +1                  | 0                     | -1                      | -4                     | -4                           | -1                                   | 0            | -4                          | -7                    | -12                         | -4                      | -2                    | 0    |
| L3          | -3.2                   | -1                     | +1                  | +1                    | 0                       | -4                     | -3                           | -2                                   | 0            | -4                          | -6                    | -10                         | -1                      | -3                    | +1   |
| Harosoy 63  | -4.2                   | 0                      | 0                   | 0                     | -1                      | -4                     | -5                           | -2                                   | 0            | -5                          | -6                    | -10                         | -6                      | -4                    | 0    |
| Hawkeye     | 0                      | 0                      | 0                   | 0                     | 0                       | 0                      | 0                            | 0                                    | 0            | 0                           | 0                     | 0                           | 0                       | 0                     | 0    |
| Hawkeye 63  | +0.5                   | 0                      | -1                  | 0                     | +1                      | +1                     | +1                           | 0                                    | +1           | 0                           | 0                     | 0                           | 0                       | 0                     | 0    |
| Lindarin    | -4.4                   | -3                     | -6                  | -1                    | -4                      | -7                     | -2                           | -3                                   | 0            | -9                          | -12                   | -12                         | -7                      | -8                    | -1   |
| Lindarin 63 | -6.0                   | -2                     | -6                  | -2                    | -5                      | -9                     | -5                           | -2                                   | -1           | -9                          | -11                   | -14                         | -7                      | -7                    | -1   |
| A5-5629     | -1.2                   | -1                     | -2                  | 0                     | +2                      | -2                     | -3                           | 0                                    | 0            | -2                          | -5                    | -6                          | 0                       | -2                    | +1   |
| A8-932      | -4.4                   | -2                     | -2                  | -1                    | -4                      | -7                     | -7                           | -2                                   | 0            | -6                          | -8                    | -12                         | -4                      | -2                    | +1   |
| AX50F40-2   | -0.4                   | 0                      | -2                  | +1                    | 0                       | -1                     | +1                           | +1                                   | +2           | -2                          | +1                    | -7                          | +1                      | 0                     | +1   |
| AX50F58-2   | +0.3                   | 0                      | +2                  | 0                     | +1                      | 0                      | 0                            | +1                                   | +2           | 0                           | +1                    | +3                          | 0                       | 0                     | +1   |
| AX56P64-1   | -1.0                   | 0                      | -1                  | 0                     | +1                      | -3                     | -3                           | -1                                   | +1           | -1                          | 0                     | -5                          | 0                       | -1                    | +2   |
| C1264       | +1.1                   | +2                     | +4                  | +7                    | +1                      | -1                     | 0                            | +2                                   | +2           | +1                          | +2                    | -1                          | 0                       | +1                    | +4   |
| C1265       | -4.1                   | 0                      | +2                  | -2                    | -1                      | -5                     | -1                           | -1                                   | -1           | -5                          | -4                    | -10                         | -7                      | -5                    | -1   |
| 0-671       | -5.8                   | -2                     | -2                  | -2                    | 0                       | -4                     | -6                           | -3                                   | +1           | -7                          | -9                    | -14                         | -6                      | -5                    | -2   |
| Blackhawk   | -6.8                   | -3                     | -8                  | 0                     | -5                      | -5                     | -7                           | -4                                   | 0            | -11                         | -9                    | -13                         | -6                      | --                    | -7   |
| Ford        | +5.9                   | +2                     | +8                  | +6                    | +3                      | +5                     | +9                           | +15                                  | +8           | +2                          | +2                    | +5                          | +5                      | +10                   | +8   |
| Date pltd.  | 5-22                   | 5-23                   | 6-1                 | 5-30                  | 5-29                    | 5-18                   | 5-21                         | 5-10                                 | 5-28         | 5-26                        | 6-1                   | 5-21                        | 5-18                    | 5-17                  | 5-24 |
| Hawk. mat.  | 9-23                   | 10-8                   | 10-1                | 9-27                  | 9-11                    | 9-19                   | 9-19                         | 9-13                                 | 10-11        | 10-4                        | 10-1                  | 9-25                        | 9-10                    | 9-13                  | 9-10 |
| Da. to mat. | 124                    | 138                    | 122                 | 120                   | 105                     | 124                    | 121                          | 126                                  | 136          | 131                         | 122                   | 127                         | 115                     | 119                   | 109  |

\*Not included in the mean.

<sup>1</sup>Irrigated.

Table 33. (Continued)

| Strain      | Madi-<br>son<br>Wis. | Dwight<br>Ill. | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Edge-<br>wood<br>Ill. | Lam-<br>ber-<br>ton<br>Minn. | Wa-<br>seca<br>Minn. | Suth-<br>er-<br>land<br>Iowa | Kana-<br>pen-<br>wha<br>Iowa | Inde-<br>dence<br>Iowa | Ames<br>Iowa | Co-<br>lum-<br>bia<br>Mo. | Gen-<br>ter-<br>ville<br>S.D. | Lin-<br>coln<br>Nebr. <sup>1</sup> |
|-------------|----------------------|----------------|---------------------|---------------------|-----------------------|------------------------------|----------------------|------------------------------|------------------------------|------------------------|--------------|---------------------------|-------------------------------|------------------------------------|
|             |                      |                |                     |                     |                       |                              |                      |                              |                              |                        |              |                           |                               | *                                  |
| A-100       | -13                  | -5             | -8                  | -5                  | -5                    |                              | -4                   | -10                          | -9                           | -5                     | -10          | -7                        | -2                            | -7                                 |
| Adams       | +1                   | 0              | 0                   | +4                  | +1                    |                              | +6                   | 0                            | +2                           | +2                     | +3           | +4                        | +3                            | 0                                  |
| L59g-3R     | +3                   | +1             | 0                   | +5                  | 0                     |                              | +6                   | +2                           | +2                           | +4                     | +5           | +4                        | +4                            | 0                                  |
| Harosoy     | -3                   | -5             | -5                  | -3                  | -3                    |                              | -2                   | -8                           | -6                           | -3                     | -9           | -2                        | -1                            | -7                                 |
| L2          | -4                   | -6             | -5                  | -3                  | -1                    |                              | -4                   | -9                           | -7                           | -3                     | -10          | -2                        | 0                             | -7                                 |
| L3          | -3                   | -5             | -5                  | -2                  | -2                    |                              | +1                   | -8                           | -7                           | -3                     | -10          | -2                        | -1                            | -6                                 |
| Harosoy 63  | -5                   | -7             | -5                  | -3                  | -2                    |                              | -4                   | -10                          | -8                           | -4                     | -10          | -2                        | -2                            | -6                                 |
| Hawkeye     | 0                    | 0              | 0                   | 0                   | 0                     |                              | 0                    | 0                            | 0                            | 0                      | 0            | 0                         | 0                             | 0                                  |
| Hawkeye 63  | +1                   | 0              | 0                   | +1                  | 0                     |                              | +2                   | +1                           | 0                            | +1                     | +2           | 0                         | +1                            | 0                                  |
| Lindarin    | -9                   | -5             | -4                  | -4                  | -3                    |                              | -5                   | -9                           | -7                           | -4                     | -8           | -8                        | -2                            | -7                                 |
| Lindarin 63 | -11                  | -6             | -4                  | -3                  | -4                    |                              | -3                   | -10                          | -6                           | -4                     | -10          | -8                        | -2                            | -7                                 |
| A5-5629     | 0                    | 0              | +1                  | 0                   | +3                    |                              | 0                    | -5                           | -2                           | -2                     | -6           | -2                        | +2                            | 0                                  |
| A8-932      | -7                   | -4             | -2                  | -2                  | -1                    |                              | -2                   | -10                          | -7                           | -5                     | -15          | +2                        | +1                            | -2                                 |
| AX50F40-2   | 0                    | -2             | -1                  | +1                  | +1                    |                              | 0                    | -4                           | -2                           | -1                     | -2           | +4                        | +2                            | 0                                  |
| AX50F58-2   | 0                    | -1             | -2                  | +1                  | +1                    |                              | 0                    | -3                           | -3                           | 0                      | 0            | +4                        | 0                             | -2                                 |
| AX56P64-1   | -3                   | -2             | -2                  | +1                  | +1                    |                              | +2                   | -5                           | -5                           | -1                     | -5           | +4                        | 0                             | -2                                 |
| C1264       | 0                    | 0              | 0                   | +2                  | +6                    |                              | 0                    | -2                           | 0                            | +2                     | -4           | +5                        | +1                            | -2                                 |
| C1265       | -9                   | -5             | -4                  | -3                  | 0                     |                              | -4                   | -10                          | -6                           | -5                     | -12          | -6                        | -1                            | -5                                 |
| O-671       | -7                   | -7             | -8                  | -5                  | -5                    |                              | -2                   | -11                          | -8                           | -7                     | -13          | -11                       | -1                            | -7                                 |
| Blackhawk   | -11                  | -8             | -9                  | -6                  | -5                    |                              | +1                   | -8                           | -8                           | -6                     | -13          | -12                       | 0                             | --                                 |
| Ford        | +9                   | +3             | +8                  | +11                 | +7                    |                              | +8                   | +4                           | +3                           | +7                     | +5           | +5                        | +4                            | +3                                 |
| Date pltd.  | 5-16                 | 6-2            | 5-15                | 5-17                | 6-6                   | 5-31                         | 6-2                  | 5-8                          | 5-22                         | 5-21                   | 5-1          | 5-28                      | 5-24                          | 5-22                               |
| Hawk. mat.  | 10-3                 | 9-26           | 9-11                | 8-31                | 9-11                  | --                           | 10-17                | 9-27                         | 10-4                         | 9-28                   | 9-16         | 9-12                      | 10-1                          | 9-26                               |
| Da. to mat. | 140                  | 116            | 119                 | 106                 | 97                    | --                           | 137                  | 142                          | 135                          | 130                    | 138          | 107                       | 130                           | 127                                |

Table 34. Lodging for Uniform Test II, 1962.

| Strain      | Mean<br>of 26<br>Tests | Ridge-<br>town<br>Ont. | Har-<br>row<br>Ont. | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>lum-<br>ter<br>Ohio | Co-<br>bus<br>Ohio | East<br>sing<br>Mich. | Walk-<br>ton<br>Ind. | Bluff-<br>ton<br>Ind. | La-<br>fayette<br>Ind. | Green-<br>field<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. |     |
|-------------|------------------------|------------------------|---------------------|-----------------------|-------------------------|------------------------|------------------------------|--------------------|-----------------------|----------------------|-----------------------|------------------------|-------------------------|-------------------------------|-----|
|             |                        |                        |                     | *                     |                         |                        | *                            |                    |                       |                      |                       |                        | *                       |                               |     |
| A-100       | 1.9                    | 1.0                    | 2.2                 | 2.0                   | 1.5                     | 2.0                    | 1.0                          | 1.5                | 2.0                   | 3.0                  | 1.5                   | 2.3                    | 1.0                     | 1.0                           | 2.8 |
| Adams       | 2.8                    | 3.0                    | 2.1                 | 3.0                   | 2.2                     | 3.5                    | 1.0                          | 1.7                | 3.0                   | 5.0                  | 2.8                   | 3.0                    | 2.3                     | 1.8                           | 3.8 |
| L59g-3R     | 2.9                    | 4.0                    | 2.0                 | 3.0                   | 2.1                     | 3.7                    | 1.0                          | 2.2                | 3.0                   | 5.0                  | 2.3                   | 3.0                    | 2.5                     | 2.0                           | 3.8 |
| Harosoy     | 2.6                    | 3.0                    | 1.6                 | 3.0                   | 1.8                     | 3.0                    | 1.0                          | 1.2                | 3.0                   | 5.0                  | 2.3                   | 3.3                    | 2.0                     | 1.3                           | 2.8 |
| L2          | 2.7                    | 2.0                    | 2.0                 | 4.0                   | 1.6                     | 3.7                    | 1.0                          | 1.7                | 3.0                   | 4.0                  | 1.8                   | 3.6                    | 2.0                     | 2.5                           | 3.8 |
| L3          | 2.5                    | 3.0                    | 1.8                 | 3.0                   | 1.5                     | 2.2                    | 1.0                          | 1.2                | 3.0                   | 4.0                  | 1.8                   | 3.6                    | 2.0                     | 1.0                           | 3.0 |
| Harosoy 63  | 2.8                    | 3.0                    | 1.9                 | 3.0                   | 1.5                     | 3.2                    | 1.0                          | 1.7                | 3.0                   | 4.0                  | 2.0                   | 4.3                    | 2.0                     | 2.0                           | 3.3 |
| Hawkeye     | 2.4                    | 4.0                    | 1.9                 | 3.0                   | 1.4                     | 2.5                    | 1.0                          | 1.5                | 3.0                   | 4.0                  | 1.5                   | 2.6                    | 2.0                     | 2.0                           | 3.0 |
| Hawkeye 63  | 2.4                    | 4.0                    | 1.5                 | 3.0                   | 1.5                     | 2.7                    | 1.0                          | 1.5                | 3.0                   | 4.0                  | 1.5                   | 2.6                    | 2.0                     | 1.8                           | 3.0 |
| Lindarin    | 2.1                    | 3.0                    | 1.5                 | 3.0                   | 1.8                     | 2.0                    | 1.0                          | 1.0                | 2.0                   | 3.0                  | 1.5                   | 2.6                    | 2.0                     | 1.0                           | 2.0 |
| Lindarin 63 | 2.2                    | 2.0                    | 1.5                 | 4.0                   | 1.8                     | 2.2                    | 1.0                          | 1.2                | 2.0                   | 3.0                  | 1.5                   | 3.3                    | 2.0                     | 2.0                           | 2.8 |
| A5-5629     | 2.6                    | 3.0                    | 2.8                 | 3.0                   | 1.4                     | 3.0                    | 1.0                          | 1.7                | 3.0                   | 4.0                  | 2.0                   | 3.0                    | 1.3                     | 1.5                           | 4.0 |
| A8-932      | 2.7                    | 3.0                    | 2.2                 | 3.0                   | 1.8                     | 2.2                    | 1.0                          | 1.2                | 3.0                   | 4.0                  | 1.8                   | 3.3                    | 2.3                     | 1.0                           | 3.3 |
| AX50F40-2   | 2.2                    | 3.0                    | 1.4                 | 2.0                   | 1.1                     | 2.2                    | 1.0                          | 1.2                | 3.0                   | 4.0                  | 2.3                   | 3.0                    | 1.5                     | 1.3                           | 2.5 |
| AX50F58-2   | 2.1                    | 3.0                    | 1.4                 | 2.0                   | 1.1                     | 2.5                    | 1.0                          | 1.0                | 3.0                   | 4.0                  | 2.0                   | 3.0                    | 1.0                     | 1.0                           | 1.8 |
| AX56P64-1   | 2.4                    | 3.0                    | 1.6                 | 4.0                   | 1.8                     | 1.7                    | 1.0                          | 1.0                | 3.0                   | 4.0                  | 2.0                   | 4.0                    | 2.0                     | 1.3                           | 3.0 |
| C1264       | 2.1                    | 2.0                    | 1.8                 | 3.0                   | 1.4                     | 1.7                    | 1.0                          | 1.0                | 3.0                   | 3.0                  | 2.0                   | 2.6                    | 1.0                     | 1.0                           | 2.0 |
| C1265       | 2.2                    | 3.0                    | 1.6                 | 3.0                   | 1.2                     | 2.2                    | 1.0                          | 1.2                | 3.0                   | 3.0                  | 1.3                   | 3.3                    | 1.3                     | 1.0                           | 2.5 |
| O-671       | 2.8                    | 3.0                    | 3.2                 | 4.0                   | 1.6                     | 3.0                    | 1.0                          | 1.0                | 3.0                   | 4.0                  | 1.3                   | 3.0                    | 1.0                     | 2.0                           | 4.5 |

\*Not included in the mean.

lIrrigated.

Table 34. (Continued)

| Strain      | Madi-<br>son<br>Wis. | Shab-<br>bona<br>Ill. | Dwight<br>Ill. | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Edge-<br>wood<br>Ill. | Lam-<br>ber-<br>ton<br>Minn. | Wa-<br>seca<br>Minn. | Suth-<br>er-<br>land<br>Iowa | Kana-<br>wha<br>Iowa | Inde-<br>pen-<br>dence<br>Iowa | Ames<br>Iowa | Co-<br>lum-<br>bia<br>Mo. | Cen-<br>ter-<br>ville<br>S.D. | Lin-<br>coln<br>Nebr. <sup>1</sup> |
|-------------|----------------------|-----------------------|----------------|---------------------|---------------------|-----------------------|------------------------------|----------------------|------------------------------|----------------------|--------------------------------|--------------|---------------------------|-------------------------------|------------------------------------|
| A-100       | 1.9                  | 2.3                   | 1.8            | 2.5                 | 1.5                 | 3.1                   | 2.0                          | 2.3                  | 1.3                          | 2.9                  | 1.7                            | 1.0          | 1.1                       | 2.0                           | 2.4                                |
| Adams       | 3.3                  | 3.3                   | 2.3            | 3.1                 | 3.0                 | 3.1                   | 2.0                          | 3.0                  | 1.6                          | 2.2                  | 2.1                            | 1.8          | 3.3                       | 3.0                           | 3.1                                |
| L59g-3R     | 3.4                  | 3.3                   | 2.4            | 3.3                 | 3.3                 | 2.9                   | 2.8                          | 3.3                  | 1.9                          | 2.4                  | 2.2                            | 1.9          | 3.3                       | 3.0                           | 3.2                                |
| Harosoy     | 3.4                  | 3.5                   | 2.2            | 3.6                 | 2.7                 | 3.1                   | 1.8                          | 3.0                  | 1.8                          | 3.0                  | 2.4                            | 1.2          | 1.5                       | 2.0                           | 3.5                                |
| L2          | 3.5                  | 3.7                   | 2.2            | 4.1                 | 2.8                 | 3.4                   | 1.8                          | 3.3                  | 2.1                          | 3.7                  | 2.5                            | 1.3          | 1.5                       | 3.0                           | 3.2                                |
| L3          | 3.4                  | 3.4                   | 2.1            | 3.6                 | 2.4                 | 2.7                   | 1.8                          | 3.3                  | 1.7                          | 2.6                  | 2.4                            | 1.2          | 2.0                       | 3.0                           | 3.2                                |
| Harosoy 63  | 3.4                  | 3.6                   | 1.9            | 3.7                 | 2.5                 | 4.1                   | 1.8                          | 3.0                  | 1.8                          | 3.9                  | 2.4                            | 1.2          | 2.2                       | 3.0                           | 3.2                                |
| Hawkeye     | 3.0                  | 3.1                   | 2.0            | 2.9                 | 2.3                 | 2.1                   | 2.5                          | 2.3                  | 1.6                          | 2.8                  | 1.8                            | 1.4          | 1.1                       | 3.0                           | 3.1                                |
| Hawkeye 63  | 3.0                  | 3.2                   | 2.0            | 3.2                 | 2.5                 | 2.5                   | 2.5                          | 2.3                  | 1.7                          | 2.7                  | 1.8                            | 1.4          | 1.1                       | 3.0                           | 3.0                                |
| Lindarin    | 2.4                  | 2.6                   | 1.5            | 2.6                 | 2.5                 | 3.1                   | 1.8                          | 2.3                  | 1.4                          | 2.1                  | 1.9                            | 1.2          | 1.2                       | 3.0                           | 2.1                                |
| Lindarin 63 | 2.4                  | 2.9                   | 1.7            | 3.2                 | 2.4                 | 3.2                   | 2.0                          | 2.5                  | 1.6                          | 3.0                  | 2.1                            | 1.2          | 1.5                       | 3.0                           | 2.1                                |
| A5-5629     | 3.4                  | 3.6                   | 2.2            | 3.9                 | 2.2                 | 2.5                   | 2.0                          | 3.0                  | 2.4                          | 3.6                  | 2.1                            | 1.2          | 1.3                       | 3.0                           | 3.2                                |
| A8-932      | 3.1                  | 3.7                   | 2.3            | 4.3                 | 2.5                 | 3.3                   | 2.5                          | 2.8                  | 2.2                          | 3.4                  | 2.6                            | 1.1          | 1.5                       | 3.0                           | 3.4                                |
| AX50F40-2   | 2.8                  | 2.4                   | 2.0            | 2.6                 | 2.4                 | 1.9                   | 2.3                          | 2.8                  | 1.4                          | 1.9                  | 1.7                            | 1.2          | 1.1                       | 3.0                           | 2.6                                |
| AX50F58-2   | 2.9                  | 2.8                   | 1.6            | 2.3                 | 1.7                 | 1.9                   | 2.0                          | 3.0                  | 1.4                          | 1.8                  | 1.6                            | 1.2          | 1.3                       | 2.0                           | 2.0                                |
| AX56P64-1   | 3.0                  | 2.4                   | 2.5            | 2.6                 | 3.4                 | 3.5                   | 2.3                          | 3.0                  | 1.6                          | 2.0                  | 2.0                            | 1.2          | 2.0                       | 2.0                           | 2.8                                |
| C1264       | 2.8                  | 3.0                   | 1.9            | 3.0                 | 2.3                 | 2.1                   | 2.3                          | 2.3                  | 1.4                          | 1.9                  | 1.6                            | 1.1          | 1.6                       | 3.0                           | 2.1                                |
| C1265       | 2.6                  | 3.3                   | 1.6            | 3.1                 | 2.0                 | 2.6                   | 1.5                          | 2.0                  | 1.4                          | 2.3                  | 2.0                            | 1.1          | 1.3                       | 3.0                           | 2.6                                |
| O-671       | 3.5                  | 3.9                   | 2.1            | 3.8                 | 2.3                 | 4.5                   | 1.8                          | 4.0                  | 2.5                          | 4.0                  | 2.8                            | 1.1          | 1.7                       | 4.0                           | 3.0                                |

Table 35. Plant height for Uniform Test II, 1962.

| Strain      | Mean<br>of 27<br>Tests | Ridge-<br>town<br>Ont. | Har-<br>row<br>Ont. | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | Co-<br>lum-<br>bus<br>Ohio | East<br>Lan-<br>sing<br>Mich. | Ida<br>Mich. | Walk-<br>er-<br>ton<br>Ind. | Bluff-<br>ton<br>Ind. | La-<br>fayette<br>Ind. | Green-<br>field<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. |
|-------------|------------------------|------------------------|---------------------|-----------------------|-------------------------|------------------------|----------------------|----------------------------|-------------------------------|--------------|-----------------------------|-----------------------|------------------------|-------------------------|-------------------------------|
|             |                        |                        |                     | *                     |                         |                        |                      |                            |                               |              |                             |                       |                        | *                       |                               |
| A-100       | 34                     | 36                     | 31                  | 28                    | 26                      | 33                     | 22                   | 31                         | 36                            | 34           | 34                          | 32                    | 37                     | 33                      | 37                            |
| Adams       | 41                     | 46                     | 39                  | 33                    | 32                      | 40                     | 26                   | 36                         | 40                            | 40           | 37                          | 42                    | 43                     | 41                      | 41                            |
| L59g-3R     | 42                     | 47                     | 42                  | 32                    | 33                      | 43                     | 26                   | 38                         | 40                            | 41           | 39                          | 43                    | 45                     | 44                      | 46                            |
| Harosoy     | 40                     | 40                     | 37                  | 33                    | 32                      | 40                     | 25                   | 36                         | 36                            | 40           | 40                          | 45                    | 43                     | 40                      | 45                            |
| L2          | 41                     | 40                     | 36                  | 32                    | 34                      | 43                     | 26                   | 36                         | 36                            | 40           | 41                          | 44                    | 44                     | 43                      | 47                            |
| L3          | 40                     | 40                     | 36                  | 31                    | 31                      | 39                     | 23                   | 38                         | 38                            | 38           | 40                          | 45                    | 42                     | 39                      | 47                            |
| Harosoy 63  | 41                     | 40                     | 36                  | 31                    | 33                      | 40                     | 25                   | 36                         | 37                            | 40           | 40                          | 44                    | 43                     | 46                      | 47                            |
| Hawkeye     | 39                     | 43                     | 40                  | 32                    | 30                      | 37                     | 25                   | 35                         | 36                            | 39           | 41                          | 39                    | 42                     | 38                      | 44                            |
| Hawkeye 63  | 40                     | 46                     | 39                  | 32                    | 30                      | 40                     | 25                   | 33                         | 36                            | 38           | 40                          | 40                    | 43                     | 45                      | 45                            |
| Lindarin    | 36                     | 40                     | 34                  | 29                    | 28                      | 35                     | 25                   | 32                         | 34                            | 34           | 32                          | 35                    | 37                     | 35                      | 40                            |
| Lindarin 63 | 38                     | 42                     | 35                  | 31                    | 29                      | 36                     | 24                   | 34                         | 36                            | 36           | 35                          | 41                    | 38                     | 42                      | 43                            |
| A5-5629     | 41                     | 49                     | 39                  | 32                    | 30                      | 40                     | 25                   | 35                         | 36                            | 40           | 38                          | 44                    | 40                     | 43                      | 48                            |
| A8-932      | 39                     | 44                     | 35                  | 30                    | 29                      | 38                     | 23                   | 34                         | 37                            | 40           | 37                          | 38                    | 39                     | 37                      | 43                            |
| AX50F40-2   | 36                     | 38                     | 34                  | 30                    | 28                      | 35                     | 25                   | 32                         | 34                            | 34           | 34                          | 35                    | 38                     | 35                      | 41                            |
| AX50F58-2   | 34                     | 37                     | 32                  | 27                    | 26                      | 34                     | 22                   | 28                         | 38                            | 34           | 34                          | 36                    | 38                     | 35                      | 39                            |
| AX56P64-1   | 40                     | 41                     | 36                  | 32                    | 32                      | 38                     | 25                   | 32                         | 35                            | 39           | 40                          | 42                    | 42                     | 42                      | 47                            |
| C1264       | 40                     | 41                     | 39                  | 35                    | 33                      | 38                     | 25                   | 37                         | 39                            | 42           | 41                          | 42                    | 41                     | 41                      | 44                            |
| C1265       | 40                     | 44                     | 38                  | 34                    | 32                      | 41                     | 26                   | 36                         | 37                            | 36           | 32                          | 40                    | 44                     | 44                      | 43                            |
| 0-671       | 39                     | 43                     | 37                  | 31                    | 31                      | 39                     | 24                   | 32                         | 37                            | 40           | 38                          | 40                    | 39                     | 39                      | 42                            |

\*Not included in the mean.

1Irrigated.



Table 35. (Continued)

| Strain      | Madi-<br>son<br>Wis. | Shab-<br>bona<br>Ill. | Dwight<br>Ill. | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Edge-<br>wood<br>Ill. | Lam-<br>ber-<br>ton<br>Minn. | Wa-<br>seca<br>Minn. | Suth-<br>er-<br>land<br>Iowa | Kana-<br>wha<br>Iowa | Inde-<br>pen-<br>dence<br>Iowa | Ames<br>Iowa | Co-<br>lum-<br>bia<br>Mo. | Cen-<br>ter-<br>ville<br>S.D. | Lin-<br>coln<br>Nebr. <sup>1</sup> |
|-------------|----------------------|-----------------------|----------------|---------------------|---------------------|-----------------------|------------------------------|----------------------|------------------------------|----------------------|--------------------------------|--------------|---------------------------|-------------------------------|------------------------------------|
| A-100       | 35                   | 37                    | 36             | 36                  | 38                  | 31                    | 33                           | 38                   | 37                           | 41                   | 36                             | 35           | 27                        | 36                            | 38                                 |
| Adams       | 42                   | 45                    | 43             | 48                  | 47                  | 36                    | 35                           | 41                   | 46                           | 48                   | 41                             | 44           | 32                        | 36                            | 48                                 |
| L59g-3R     | 42                   | 45                    | 44             | 54                  | 51                  | 39                    | 38                           | 42                   | 48                           | 47                   | 44                             | 44           | 32                        | 34                            | 52                                 |
| Harosoy     | 41                   | 44                    | 41             | 45                  | 47                  | 37                    | 37                           | 44                   | 45                           | 48                   | 42                             | 42           | 32                        | 38                            | 48                                 |
| L2          | 42                   | 47                    | 41             | 44                  | 48                  | 39                    | 37                           | 46                   | 42                           | 48                   | 41                             | 41           | 32                        | 39                            | 49                                 |
| L3          | 41                   | 44                    | 42             | 44                  | 47                  | 36                    | 37                           | 46                   | 42                           | 48                   | 41                             | 42           | 34                        | 42                            | 49                                 |
| Harosoy 63  | 41                   | 46                    | 42             | 46                  | 48                  | 42                    | 39                           | 45                   | 43                           | 47                   | 41                             | 42           | 33                        | 43                            | 50                                 |
| Hawkeye     | 42                   | 42                    | 40             | 41                  | 46                  | 35                    | 38                           | 41                   | 45                           | 46                   | 41                             | 42           | 32                        | 39                            | 45                                 |
| Hawkeye 63  | 41                   | 45                    | 40             | 45                  | 46                  | 38                    | 38                           | 45                   | 46                           | 46                   | 42                             | 42           | 31                        | 38                            | 46                                 |
| Lindarin    | 36                   | 39                    | 36             | 41                  | 39                  | 33                    | 32                           | 38                   | 39                           | 44                   | 38                             | 38           | 29                        | 41                            | 42                                 |
| Lindarin 63 | 38                   | 41                    | 39             | 45                  | 41                  | 36                    | 35                           | 40                   | 42                           | 44                   | 38                             | 38           | 30                        | 40                            | 44                                 |
| A5-5629     | 43                   | 50                    | 47             | 51                  | 46                  | 37                    | 36                           | 44                   | 43                           | 44                   | 42                             | 39           | 36                        | 38                            | 50                                 |
| A8-932      | 43                   | 45                    | 41             | 45                  | 45                  | 36                    | 36                           | 45                   | 42                           | 46                   | 40                             | 39           | 32                        | 42                            | 45                                 |
| AX50F40-2   | 37                   | 40                    | 36             | 39                  | 39                  | 31                    | 33                           | 40                   | 40                           | 43                   | 36                             | 37           | 28                        | 38                            | 42                                 |
| AX50F58-2   | 35                   | 36                    | 35             | 36                  | 37                  | 31                    | 31                           | 37                   | 38                           | 41                   | 36                             | 36           | 26                        | 36                            | 41                                 |
| AX56P64-1   | 42                   | 42                    | 42             | 44                  | 47                  | 37                    | 37                           | 41                   | 46                           | 50                   | 43                             | 43           | 32                        | 39                            | 49                                 |
| C1264       | 41                   | 43                    | 41             | 45                  | 46                  | 36                    | 36                           | 42                   | 45                           | 49                   | 43                             | 42           | 31                        | 41                            | 44                                 |
| C1265       | 43                   | 42                    | 43             | 44                  | 48                  | 38                    | 37                           | 43                   | 44                           | 48                   | 43                             | 42           | 34                        | 39                            | 47                                 |
| O-671       | 41                   | 49                    | 41             | 43                  | 41                  | 37                    | 37                           | 42                   | 41                           | 44                   | 38                             | 37           | 34                        | 41                            | 42                                 |

Table 36. Seed quality for Uniform Test II, 1962.

| Strain      | Mean<br>of 23<br>Tests | Ridge-<br>town<br>Ont. | Har-<br>row<br>Ont. | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | Co-<br>lum-<br>bus<br>Ohio | East<br>Lan-<br>sing<br>Mich. | Ida<br>Mich. | Walk-<br>er-<br>ton<br>Ind. | Bluff-<br>ton<br>Ind. | La-<br>fa-<br>yette<br>Ind. | Green-<br>field<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. |
|-------------|------------------------|------------------------|---------------------|-----------------------|-------------------------|------------------------|----------------------|----------------------------|-------------------------------|--------------|-----------------------------|-----------------------|-----------------------------|-------------------------|-------------------------------|
|             |                        |                        |                     | *                     |                         |                        |                      |                            |                               |              |                             |                       |                             | *                       |                               |
| A-100       | 1.9                    | 2.0                    | 2.5                 | 2.0                   | 2.2                     | 1.0                    | 1.0                  | 1.0                        | 1.0                           | 2.0          | 2.0                         | 1.0                   | 1.0                         | 3.0                     | 4.0                           |
| Adams       | 2.0                    | 2.0                    | 1.5                 | 1.0                   | 2.0                     | 1.0                    | 1.0                  | 1.0                        | 2.0                           | 2.0          | 2.0                         | 1.0                   | 2.0                         | 2.5                     | 4.0                           |
| L59g-3R     | 2.0                    | 2.0                    | 1.5                 | 2.0                   | 2.2                     | 1.0                    | 1.0                  | 1.0                        | 2.0                           | 2.0          | 2.0                         | 1.0                   | 2.0                         | 1.5                     | 4.0                           |
| Harosoy     | 2.2                    | 3.0                    | 4.5                 | 3.0                   | 3.2                     | 1.0                    | 1.2                  | 1.5                        | 2.0                           | 2.0          | 1.5                         | 1.5                   | 1.5                         | 2.5                     | 4.0                           |
| L2          | 2.4                    | 3.0                    | 4.5                 | 2.0                   | 2.5                     | 1.0                    | 1.2                  | 2.2                        | 1.0                           | 2.0          | 2.0                         | 1.5                   | 2.0                         | 3.0                     | 4.0                           |
| L3          | 2.6                    | 3.0                    | 4.6                 | 3.0                   | 3.0                     | 1.0                    | 1.0                  | 2.0                        | 1.0                           | 2.0          | 3.0                         | 2.0                   | 4.0                         | 3.5                     | 4.0                           |
| Harosoy 63  | 2.2                    | 2.0                    | 4.4                 | 2.0                   | 2.2                     | 1.0                    | 1.2                  | 1.7                        | 1.0                           | 2.0          | 2.0                         | 1.5                   | 2.0                         | 3.0                     | 3.5                           |
| Hawkeye     | 1.9                    | 2.0                    | 1.5                 | 1.0                   | 2.8                     | 1.0                    | 1.0                  | 1.0                        | 1.0                           | 2.0          | 1.5                         | 1.0                   | 1.5                         | 3.5                     | 3.5                           |
| Hawkeye 63  | 2.0                    | 2.0                    | 1.5                 | 2.0                   | 2.8                     | 1.0                    | 1.0                  | 1.2                        | 1.0                           | 3.0          | 2.0                         | 1.0                   | 1.5                         | 2.5                     | 3.5                           |
| Lindarin    | 1.9                    | 2.0                    | 3.0                 | 2.0                   | 2.8                     | 1.0                    | 1.0                  | 1.2                        | 1.0                           | 2.0          | 2.0                         | 1.5                   | 1.5                         | 2.5                     | 4.0                           |
| Lindarin 63 | 2.2                    | 2.0                    | 3.0                 | 2.0                   | 3.0                     | 1.0                    | 1.2                  | 1.2                        | 1.0                           | 2.0          | 1.5                         | 1.5                   | 2.0                         | 2.5                     | 4.0                           |
| A5-5629     | 1.9                    | 1.0                    | 1.5                 | 1.0                   | 3.0                     | 1.0                    | 1.0                  | 1.0                        | 1.0                           | 2.0          | 2.0                         | 1.0                   | 1.5                         | 2.0                     | 3.0                           |
| A8-932      | 2.0                    | 2.0                    | 4.0                 | 2.0                   | 2.5                     | 1.7                    | 1.0                  | 1.0                        | 1.0                           | 2.0          | 2.5                         | 1.5                   | 1.5                         | 3.0                     | 3.5                           |
| AX50F40-2   | 2.2                    | 2.0                    | 2.8                 | 2.0                   | 3.0                     | 1.0                    | 1.0                  | 1.2                        | 2.0                           | 3.0          | 3.0                         | 1.5                   | 3.0                         | 2.5                     | 3.5                           |
| AX50F58-2   | 2.1                    | 2.0                    | 3.0                 | 2.0                   | 2.8                     | 1.0                    | 1.0                  | 1.0                        | 1.0                           | 2.0          | 2.0                         | 1.0                   | 2.0                         | 3.0                     | 3.5                           |
| AX56P64-1   | 2.4                    | 2.0                    | 4.2                 | 3.0                   | 3.5                     | 1.5                    | 1.0                  | 1.2                        | 2.0                           | 2.0          | 3.0                         | 2.0                   | 3.0                         | 2.5                     | 4.0                           |
| C1264       | 2.5                    | 3.0                    | 4.4                 | 2.0                   | 2.5                     | 1.2                    | 1.0                  | 1.5                        | 2.0                           | 2.0          | 3.0                         | 2.0                   | 2.5                         | 2.0                     | 4.0                           |
| C1265       | 2.2                    | 2.0                    | 4.2                 | 2.0                   | 2.5                     | 1.0                    | 1.0                  | 1.7                        | 2.0                           | 2.0          | 1.5                         | 1.5                   | 2.0                         | 2.5                     | 4.0                           |
| O-671       | 2.4                    | 2.0                    | 4.3                 | 1.0                   | 3.2                     | 1.5                    | 1.0                  | 1.0                        | 2.0                           | 2.0          | 2.0                         | 2.0                   | 3.0                         | 4.0                     | 3.0                           |

\*Not included in the mean.

<sup>1</sup>Irrigated.

Table 36. (Continued)

| Strain      | Madi-<br>son<br>Wis. | Shab-<br>bona<br>Ill. | Dwight<br>Ill. | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Edge-<br>wood<br>Ill. | Lam-<br>ber-<br>ton<br>Minn. | Wa-<br>seca<br>Minn. | Suth-<br>er-<br>land<br>Iowa | Kana-<br>wha<br>Iowa | Inde-<br>pen-<br>dence<br>Iowa | Ames<br>Iowa | Co-<br>lum-<br>bia<br>Mo. | Cen-<br>ter-<br>ville<br>S.D. | Lin-<br>coln<br>Nebr. <sup>1</sup> |
|-------------|----------------------|-----------------------|----------------|---------------------|---------------------|-----------------------|------------------------------|----------------------|------------------------------|----------------------|--------------------------------|--------------|---------------------------|-------------------------------|------------------------------------|
|             |                      |                       |                |                     |                     |                       |                              |                      | *                            | *                    | *                              | *            |                           |                               |                                    |
| A-100       | 2.0                  | 1.5                   | 2.5            | 2.1                 | 2.5                 | 3.3                   | 2.5                          | 2.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 2.0                       | 1.0                           | 2.4                                |
| Adams       | 2.0                  | 1.1                   | 2.1            | 1.9                 | 2.5                 | 2.5                   | 2.8                          | 2.5                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 2.5                       | 2.0                           | 1.9                                |
| L59g-3R     | 2.0                  | 1.0                   | 2.5            | 1.9                 | 2.9                 | 2.9                   | 2.5                          | 2.3                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 2.5                       | 1.0                           | 2.0                                |
| Harosoy     | 3.0                  | 1.9                   | 2.4            | 1.6                 | 2.5                 | 2.8                   | 2.8                          | 3.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 1.5                       | 1.0                           | 1.8                                |
| L2          | 2.0                  | 1.9                   | 2.9            | 2.0                 | 3.4                 | 3.4                   | 3.0                          | 2.8                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 2.0                       | 2.0                           | 2.2                                |
| L3          | 2.0                  | 1.9                   | 2.8            | 2.4                 | 2.5                 | 3.8                   | 2.8                          | 3.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 2.0                       | 3.0                           | 2.1                                |
| Harosoy 63  | 2.0                  | 1.8                   | 2.8            | 2.0                 | 2.9                 | 3.1                   | 3.0                          | 3.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 1.5                       | 2.0                           | 1.8                                |
| Hawkeye     | 2.0                  | 1.5                   | 2.6            | 1.8                 | 2.8                 | 2.9                   | 3.0                          | 2.5                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 2.0                       | 1.0                           | 2.0                                |
| Hawkeye 63  | 1.0                  | 1.4                   | 2.5            | 1.8                 | 3.3                 | 2.5                   | 3.0                          | 3.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 1.5                       | 2.0                           | 1.6                                |
| Lindarin    | 1.0                  | 1.6                   | 2.6            | 1.6                 | 2.5                 | 2.9                   | 2.0                          | 3.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 1.5                       | 1.0                           | 1.2                                |
| Lindarin 63 | 2.0                  | 1.5                   | 2.6            | 2.0                 | 2.9                 | 3.5                   | 2.5                          | 3.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 2.0                       | 2.0                           | 2.1                                |
| A5-5629     | 2.0                  | 1.3                   | 2.5            | 2.0                 | 2.0                 | 2.8                   | 3.0                          | 3.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 2.0                       | 1.0                           | 2.1                                |
| A8-932      | 2.0                  | 1.1                   | 2.5            | 2.3                 | 2.3                 | 2.8                   | 2.5                          | 2.8                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 1.5                       | 1.0                           | 1.9                                |
| AX50F40-2   | 2.0                  | 1.1                   | 2.1            | 2.1                 | 2.8                 | 3.3                   | 3.0                          | 2.8                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 2.0                       | 1.0                           | 2.5                                |
| AX 50F58-2  | 2.0                  | 1.9                   | 2.3            | 1.8                 | 2.8                 | 3.1                   | 3.0                          | 2.8                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 3.0                       | 1.0                           | 1.8                                |
| AX56P64-1   | 2.0                  | 1.5                   | 2.4            | 2.0                 | 3.0                 | 3.8                   | 2.5                          | 2.3                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 3.0                       | 2.0                           | 2.1                                |
| C1264       | 3.0                  | 1.1                   | 2.6            | 2.0                 | 3.0                 | 4.1                   | 3.0                          | 3.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 3.0                       | 2.0                           | 2.0                                |
| C1265       | 2.0                  | 1.6                   | 2.8            | 2.0                 | 3.3                 | 3.8                   | 2.5                          | 3.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 1.5                       | 1.0                           | 2.0                                |
| O-671       | 3.0                  | 1.9                   | 2.9            | 2.6                 | 3.0                 | 3.0                   | 2.8                          | 3.0                  | 1.0                          | 1.0                  | 1.0                            | 1.0          | 2.0                       | 1.0                           | 1.9                                |

Table 37. Percentage of protein for Uniform Test II, 1962.

| Strain      | Mean<br>of 14<br>Tests | Harrow<br>Ont. | Free-<br>hold<br>N.J.<br>* | George-<br>town<br>Del. | Colum-<br>bus<br>Ohio | East<br>Lansing<br>Mich. | Walk-<br>erton<br>Ind. | Lafa-<br>yette<br>Ind. |
|-------------|------------------------|----------------|----------------------------|-------------------------|-----------------------|--------------------------|------------------------|------------------------|
| A-100       | 40.8                   | 41.9           | 40.7                       | 42.0                    | 42.3                  | 41.8                     | 41.3                   | 40.4                   |
| Adams       | 40.5                   | 40.8           | 40.7                       | 42.7                    | 41.2                  | 41.0                     | 41.9                   | 40.3                   |
| L59g-3R     | 41.2                   | 41.3           | 41.3                       | 43.6                    | 41.7                  | 42.4                     | 43.7                   | 40.5                   |
| Harosoy     | 41.8                   | 43.9           | 42.5                       | 43.3                    | 42.9                  | 43.7                     | 43.3                   | 42.1                   |
| L2          | 41.6                   | 44.1           | 41.9                       | 42.8                    | 43.0                  | 43.4                     | 43.1                   | 42.0                   |
| L3          | 42.1                   | 45.2           | 42.7                       | 43.2                    | 42.8                  | 43.3                     | 43.3                   | 42.7                   |
| Harosoy 63  | 41.8                   | 44.6           | 42.1                       | 43.4                    | 42.8                  | 43.0                     | 43.3                   | 42.2                   |
| Hawkeye     | 41.8                   | 41.8           | 41.8                       | 44.3                    | 43.0                  | 42.8                     | 43.5                   | 41.2                   |
| Hawkeye 63  | 41.8                   | 42.4           | 41.6                       | 43.7                    | 42.5                  | 43.9                     | 43.1                   | 42.0                   |
| Lindarin    | 41.7                   | 42.0           | 42.6                       | 42.5                    | 43.7                  | 44.5                     | 43.0                   | 41.6                   |
| Lindarin 63 | 41.5                   | 42.9           | 42.2                       | 42.9                    | 42.5                  | 44.0                     | 42.5                   | 41.9                   |
| A5-5629     | 40.7                   | 40.9           | 39.9                       | 42.1                    | 40.6                  | 42.0                     | 42.9                   | 40.9                   |
| A8-932      | 40.8                   | 43.3           | 40.1                       | 41.1                    | 42.0                  | 42.0                     | 42.2                   | 41.2                   |
| AX50F40-2   | 41.3                   | 41.7           | 41.0                       | 43.5                    | 42.9                  | 42.8                     | 40.9                   | 40.9                   |
| AX50F58-2   | 41.8                   | 43.1           | 41.1                       | 43.5                    | 43.4                  | 42.6                     | 42.4                   | 40.8                   |
| AX56P64-1   | 40.3                   | 41.5           | 40.9                       | 41.3                    | 41.9                  | 41.2                     | 41.7                   | 40.0                   |
| C1264       | 40.7                   | 43.1           | 40.8                       | 44.4                    | 42.2                  | 41.5                     | 41.8                   | 40.7                   |
| C1265       | 41.6                   | 43.6           | 40.9                       | 42.9                    | 42.5                  | 43.8                     | 42.7                   | 42.3                   |
| O-671       | 41.5                   | 44.7           | 40.1                       | 43.3                    | 44.1                  | 42.4                     | 42.9                   | 41.1                   |

\*Not included in the mean.

1Irrigated.

Table 37. (Continued)

| Strain      | Madi-<br>son<br>Wis. | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Waseca<br>Minn. | Kana-<br>wha<br>Iowa | Ames<br>Iowa | Center-<br>ville<br>S.D. | Lin-<br>coln<br>Nebr. <sup>1</sup> |
|-------------|----------------------|---------------------|---------------------|-----------------|----------------------|--------------|--------------------------|------------------------------------|
| A-100       | 40.4                 | 40.8                | 40.7                | 40.4            | 40.0                 | 41.4         | 39.1                     | 39.3                               |
| Adams       | 39.5                 | 40.2                | 41.4                | 39.8            | 40.2                 | 40.0         | 38.5                     | 39.5                               |
| L59g-3R     | 40.5                 | 40.5                | 41.9                | 40.7            | 40.8                 | 41.1         | 38.6                     | 39.1                               |
| Harosoy     | 41.7                 | 41.1                | 41.5                | 40.4            | 40.6                 | 41.0         | 39.3                     | 39.4                               |
| L2          | 41.2                 | 40.7                | 41.7                | 40.7            | 41.0                 | 41.7         | 37.7                     | 39.0                               |
| L3          | 42.5                 | 41.1                | 41.6                | 41.1            | 41.1                 | 42.3         | 40.0                     | 39.5                               |
| Harosoy 63  | 42.6                 | 41.0                | 41.1                | 40.5            | 40.8                 | 41.7         | 38.8                     | 39.1                               |
| Hawkeye     | 41.2                 | 41.7                | 43.0                | 41.1            | 41.0                 | 41.6         | 39.2                     | 39.7                               |
| Hawkeye 63  | 41.4                 | 41.9                | 42.0                | 41.3            | 41.3                 | 41.5         | 39.3                     | 39.5                               |
| Lindarin    | 42.5                 | 41.0                | 41.7                | 40.9            | 41.0                 | 41.7         | 39.1                     | 39.2                               |
| Lindarin 63 | 41.7                 | 40.0                | 40.8                | 40.8            | 40.5                 | 41.9         | 39.0                     | 39.1                               |
| A5-5629     | 40.5                 | 39.2                | 41.0                | 40.6            | 41.1                 | 41.1         | 38.7                     | 38.8                               |
| A3-932      | 41.4                 | 38.9                | 40.4                | 40.7            | 40.4                 | 41.1         | 38.4                     | 38.5                               |
| AX50F40-2   | 41.7                 | 41.1                | 41.5                | 40.7            | 41.0                 | 40.5         | 38.9                     | 39.5                               |
| AX50F58-2   | 41.9                 | 41.0                | 42.0                | 41.6            | 42.1                 | 41.5         | 39.6                     | 39.6                               |
| AX56P64-1   | 40.9                 | 39.0                | 40.8                | 39.9            | 40.0                 | 40.4         | 37.4                     | 38.0                               |
| C1264       | 40.3                 | 40.0                | 40.7                | 39.0            | 40.0                 | 40.4         | 37.3                     | 38.0                               |
| C1265       | 42.1                 | 41.1                | 41.2                | 40.7            | 41.0                 | 41.1         | 38.9                     | 38.9                               |
| O-671       | 40.3                 | 40.3                | 41.1                | 40.6            | 40.7                 | 41.6         | 38.3                     | 38.9                               |

Table 38. Percentage of oil for Uniform Test II, 1962.

| Strain      | Mean<br>of 14<br>Tests | Harrow<br>Ont. | Free-<br>hold<br>N.J.<br>* | George-<br>town<br>Del. | Colum-<br>bus<br>Ohio | East<br>Lansing<br>Mich. | Walk-<br>erton<br>Ind. | Lafa-<br>yette<br>Ind. |
|-------------|------------------------|----------------|----------------------------|-------------------------|-----------------------|--------------------------|------------------------|------------------------|
| A-100       | 21.5                   | 22.0           | 21.2                       | 22.5                    | 20.9                  | 21.0                     | 21.5                   | 21.7                   |
| Adams       | 20.8                   | 21.0           | 21.0                       | 21.0                    | 20.6                  | 19.5                     | 21.5                   | 22.2                   |
| L59g-3R     | 20.1                   | 19.6           | 20.2                       | 20.1                    | 21.3                  | 19.0                     | 20.4                   | 21.5                   |
| Harosoy     | 20.4                   | 18.7           | 19.6                       | 20.7                    | 21.0                  | 18.6                     | 20.1                   | 21.0                   |
| L2          | 20.3                   | 19.2           | 20.3                       | 21.3                    | 20.1                  | 19.0                     | 20.0                   | 20.7                   |
| L3          | 20.1                   | 18.8           | 19.7                       | 21.2                    | 20.3                  | 19.2                     | 20.1                   | 20.2                   |
| Harosoy 63  | 20.3                   | 19.3           | 19.8                       | 21.5                    | 19.8                  | 18.2                     | 19.4                   | 20.9                   |
| Hawkeye     | 20.6                   | 20.5           | 20.9                       | 21.4                    | 20.1                  | 19.7                     | 20.4                   | 21.6                   |
| Hawkeye 63  | 20.3                   | 20.4           | 20.4                       | 20.6                    | 20.9                  | 19.2                     | 20.1                   | 20.9                   |
| Lindarin    | 20.6                   | 19.7           | 20.0                       | 21.7                    | 20.3                  | 19.0                     | 20.7                   | 22.5                   |
| Lindarin 63 | 20.9                   | 20.9           | 20.7                       | 21.9                    | 20.2                  | 18.9                     | 21.1                   | 22.2                   |
| A5-5629     | 21.1                   | 21.0           | 21.0                       | 21.7                    | 22.1                  | 20.4                     | 20.5                   | 21.9                   |
| A8-932      | 20.9                   | 19.4           | 20.6                       | 21.9                    | 20.5                  | 19.7                     | 20.6                   | 22.6                   |
| AX50F40-2   | 20.8                   | 20.6           | 21.0                       | 20.3                    | 20.5                  | 19.3                     | 21.9                   | 21.4                   |
| AX50F58-2   | 21.0                   | 20.5           | 20.9                       | 21.7                    | 21.9                  | 19.5                     | 21.6                   | 21.8                   |
| AX56P64-1   | 21.2                   | 21.0           | 20.9                       | 21.4                    | 21.2                  | 20.3                     | 21.2                   | 21.9                   |
| C1264       | 21.1                   | 20.1           | 20.6                       | 21.6                    | 20.8                  | 19.3                     | 21.5                   | 22.6                   |
| C1265       | 21.0                   | 19.7           | 21.3                       | 22.3                    | 20.6                  | 18.8                     | 20.9                   | 22.4                   |
| O-671       | 20.1                   | 18.4           | 20.5                       | 19.9                    | 20.9                  | 18.5                     | 20.0                   | 20.4                   |

\*Not included in the mean.

<sup>1</sup>Irrigated.



Table 38. (Continued)

| Strain      | Madi-<br>son<br>Wis. | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Waseca<br>Minn. | Kana-<br>wha<br>Iowa | Ames<br>Iowa | Center-<br>ville<br>S.D. | Lin-<br>coln<br>Nebr. <sup>1</sup> |
|-------------|----------------------|---------------------|---------------------|-----------------|----------------------|--------------|--------------------------|------------------------------------|
| A-100       | 21.3                 | 22.4                | 22.7                | 19.9            | 21.1                 | 21.1         | 20.9                     | 21.7                               |
| Adams       | 21.4                 | 21.4                | 22.7                | 17.2            | 19.0                 | 21.4         | 20.4                     | 21.9                               |
| L59g-3R     | 20.1                 | 20.8                | 21.7                | 16.2            | 19.6                 | 20.4         | 20.3                     | 20.5                               |
| Harosoy     | 19.9                 | 22.3                | 22.2                | 19.0            | 19.7                 | 20.7         | 20.3                     | 21.2                               |
| L2          | 19.8                 | 21.7                | 22.2                | 18.2            | 19.5                 | 21.4         | 20.3                     | 20.6                               |
| L3          | 19.6                 | 21.9                | 21.0                | 17.8            | 19.2                 | 20.6         | 20.1                     | 20.8                               |
| Harosoy 63  | 19.8                 | 22.0                | 22.4                | 18.4            | 19.9                 | 20.6         | 20.6                     | 21.5                               |
| Hawkeye     | 20.9                 | 21.4                | 22.3                | 18.0            | 19.2                 | 20.6         | 20.5                     | 21.6                               |
| Hawkeye 63  | 21.1                 | 20.5                | 21.6                | 18.4            | 19.0                 | 20.2         | 20.4                     | 21.4                               |
| Lindarin    | 19.6                 | 22.1                | 22.0                | 18.2            | 20.3                 | 20.4         | 20.5                     | 21.3                               |
| Lindarin 63 | 19.6                 | 22.3                | 22.9                | 19.0            | 19.9                 | 20.7         | 21.0                     | 21.7                               |
| A5-5629     | 21.2                 | 21.3                | 22.6                | 18.8            | 19.9                 | 21.2         | 20.8                     | 21.7                               |
| A8-932      | 20.3                 | 21.9                | 22.5                | 18.8            | 20.0                 | 22.1         | 21.0                     | 21.1                               |
| AX50F40-2   | 21.3                 | 21.6                | 22.3                | 18.7            | 20.0                 | 21.6         | 20.5                     | 21.8                               |
| AX50F58-2   | 20.8                 | 22.4                | 22.6                | 17.9            | 19.9                 | 21.0         | 20.4                     | 21.5                               |
| AX56P64-1   | 20.2                 | 22.9                | 22.6                | 19.0            | 20.3                 | 21.3         | 21.5                     | 21.9                               |
| C1264       | 20.8                 | 22.7                | 22.3                | 19.3            | 20.1                 | 21.8         | 20.8                     | 21.6                               |
| C1265       | 20.5                 | 22.3                | 22.7                | 19.0            | 21.2                 | 20.8         | 20.9                     | 22.4                               |
| O-671       | 20.1                 | 21.5                | 21.5                | 18.1            | 20.6                 | 20.1         | 19.8                     | 21.8                               |



Table 39. Two-year summary of data for Uniform Test II, 1961-1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 54    | 54   | 41                         | 51           | 54     | 46              | 46             | Protein          | Oil  |
| Adams        | 36.5  | 8    | +1.5                       | 2.6          | 42     | 1.9             | 14.8           | 40.5             | 21.2 |
| L59g-3R      | 35.4  | 10   | +2.1                       | 2.8          | 43     | 1.9             | 15.0           | 40.9             | 20.6 |
| Harosoy      | 38.0  | 4    | -3.2                       | 2.6          | 41     | 2.1             | 17.9           | 41.6             | 20.6 |
| Harosoy 63   | 37.5  | 6    | -4.0                       | 2.7          | 42     | 2.1             | 17.8           | 41.7             | 20.6 |
| Hawkeye      | 35.2  | 11   | 0                          | 2.3          | 40     | 1.9             | 17.6           | 41.8             | 20.7 |
| Hawkeye 63   | 34.1  | 12   | +0.4                       | 2.4          | 41     | 2.0             | 17.5           | 41.9             | 20.6 |
| Lindarin     | 37.3  | 7    | -4.0                       | 2.1          | 37     | 1.9             | 16.0           | 41.8             | 20.8 |
| Lindarin 63  | 35.9  | 9    | -4.8                       | 2.3          | 39     | 2.1             | 16.2           | 41.5             | 21.1 |
| A5-5629      | 39.2  | 2    | -1.1                       | 2.5          | 41     | 1.8             | 18.0           | 40.7             | 21.3 |
| AX50F40-2    | 38.8  | 3    | -0.4                       | 2.1          | 37     | 2.2             | 18.8           | 41.3             | 21.0 |
| AX50F58-2    | 37.6  | 5    | +0.4                       | 2.0          | 35     | 2.1             | 19.4           | 41.8             | 21.3 |
| AX56P64-1    | 40.3  | 1    | -1.3                       | 2.4          | 41     | 2.2             | 17.5           | 40.3             | 21.6 |

<sup>1</sup>Days earlier (-) or later (+) than Hawkeye which matured September 24, 124 days after planting. Blackhawk (Group I) matured -6.0. Ford (Group III) matured -5.1.

Table 40. Two-year summary of yield and yield rank for Uniform Test II, 1961-1962.

| Strain      | Mean<br>of 54<br>Tests | Ridge-<br>town<br>Ont. | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>lum-<br>Ohio | Co-<br>bus<br>Ohio | East<br>sing<br>Mich. | Ida<br>Mich. | Walk-<br>er-<br>ton<br>Ind. | Bluff-<br>ton<br>Ind. | Lafa-<br>yette<br>Ind. | Green-<br>field<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. |
|-------------|------------------------|------------------------|-------------------------|------------------------|-----------------------|--------------------|-----------------------|--------------|-----------------------------|-----------------------|------------------------|-------------------------|-------------------------------|
| Adams       | 36.5                   | 45.2                   | 29.5                    | 31.4                   | 28.4                  | 42.4               | 30.7                  | 31.7         | 34.8                        | 44.6                  | 38.0                   | 32.7                    | 45.3                          |
| L59g-3R     | 35.4                   | 44.2                   | 27.0                    | 27.7                   | 29.5                  | 38.9               | 29.9                  | 30.6         | 37.9                        | 44.3                  | 37.8                   | 39.7                    | 42.5                          |
| Harosoy     | 38.0                   | 47.7                   | 28.7                    | 33.1                   | 31.9                  | 38.6               | 35.7                  | 34.6         | 42.2                        | 43.2                  | 41.6                   | 33.2                    | 44.9                          |
| Harosoy 63  | 37.5                   | 45.2                   | 27.4                    | 33.2                   | 33.8                  | 40.6               | 34.5                  | 34.5         | 39.7                        | 43.2                  | 41.4                   | 39.2                    | 46.2                          |
| Hawkeye     | 35.2                   | 37.9                   | 26.0                    | 29.8                   | 32.8                  | 35.5               | 31.8                  | 31.0         | 36.2                        | 41.6                  | 40.1                   | 27.3                    | 43.8                          |
| Hawkeye 63  | 34.1                   | 38.3                   | 22.5                    | 28.8                   | 31.6                  | 35.7               | 31.6                  | 31.7         | 37.6                        | 40.8                  | 38.3                   | 37.1                    | 43.4                          |
| Lindarin    | 37.3                   | 44.7                   | 28.2                    | 30.9                   | 33.5                  | 38.9               | 34.0                  | 35.1         | 37.7                        | 43.3                  | 39.4                   | 33.6                    | 48.2                          |
| Lindarin 63 | 35.9                   | 42.7                   | 24.7                    | 30.3                   | 32.2                  | 37.8               | 34.2                  | 35.5         | 38.1                        | 42.4                  | 36.8                   | 41.5                    | 43.9                          |
| A5-5629     | 39.2                   | 52.2                   | 30.0                    | 30.2                   | 32.8                  | 41.7               | 38.3                  | 40.7         | 40.3                        | 43.9                  | 42.8                   | 36.2                    | 45.0                          |
| AX50F40-2   | 38.8                   | 39.2                   | 27.5                    | 32.9                   | 29.9                  | 38.2               | 32.9                  | 33.6         | 41.5                        | 45.2                  | 45.7                   | 33.8                    | 47.7                          |
| AX50F58-2   | 37.6                   | 40.7                   | 25.2                    | 30.0                   | 32.0                  | 42.0               | 33.7                  | 30.7         | 37.5                        | 44.3                  | 41.4                   | 33.4                    | 43.5                          |
| AX56P64-1   | 40.3                   | 54.3                   | 28.7                    | 33.2                   | 32.2                  | 40.2               | 35.7                  | 35.7         | 45.8                        | 49.6                  | 43.7                   | 33.6                    | 49.3                          |

|             | Yield Rank |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------|------------|----|----|----|----|----|----|----|----|----|----|----|----|
| Adams       | 8          | 4  | 2  | 5  | 12 | 1  | 11 | 8  | 12 | 3  | 10 | 11 | 5  |
| L59g-3R     | 10         | 7  | 8  | 12 | 11 | 6  | 12 | 12 | 7  | 4  | 11 | 2  | 12 |
| Harosoy     | 4          | 3  | 3  | 3  | 8  | 8  | 2  | 5  | 2  | 8  | 4  | 10 | 7  |
| Harosoy 63  | 6          | 4  | 7  | 1  | 1  | 4  | 4  | 6  | 5  | 8  | 5  | 3  | 4  |
| Hawkeye     | 11         | 12 | 9  | 10 | 3  | 12 | 9  | 10 | 11 | 11 | 7  | 12 | 9  |
| Hawkeye 63  | 12         | 11 | 12 | 11 | 9  | 11 | 10 | 8  | 9  | 12 | 9  | 4  | 11 |
| Lindarin    | 7          | 6  | 5  | 6  | 2  | 6  | 6  | 4  | 8  | 7  | 8  | 7  | 2  |
| Lindarin 63 | 9          | 8  | 11 | 7  | 5  | 10 | 5  | 3  | 6  | 10 | 12 | 1  | 8  |
| A5-5629     | 2          | 2  | 1  | 8  | 3  | 3  | 1  | 1  | 4  | 6  | 3  | 5  | 6  |
| AX50F40-2   | 3          | 10 | 6  | 4  | 10 | 9  | 8  | 7  | 3  | 2  | 1  | 6  | 3  |
| AX50F58-2   | 5          | 9  | 10 | 9  | 7  | 2  | 7  | 11 | 10 | 4  | 5  | 9  | 10 |
| AX56P64-1   | 1          | 1  | 3  | 1  | 5  | 5  | 2  | 2  | 1  | 1  | 2  | 7  | 1  |

Table 40. (Continued)

| Strain      | Madi-<br>son<br>Wis. | Shab-<br>bona<br>Ill. | Ur-<br>Dwight<br>Ill. | Ci-<br>bana<br>Ill. | Edge-<br>rard<br>Ill. | Wa-<br>wood<br>Ill. | Wa-<br>seca<br>Minn. | Suth-<br>er-<br>land<br>Iowa | Kana-<br>wha<br>Iowa | Inde-<br>pen-<br>dence<br>Iowa | Ames<br>Iowa | Cen-<br>ter-<br>ville<br>S.D. | Lin-<br>coln<br>Nebr. |
|-------------|----------------------|-----------------------|-----------------------|---------------------|-----------------------|---------------------|----------------------|------------------------------|----------------------|--------------------------------|--------------|-------------------------------|-----------------------|
| Adams       | 33.2                 | 37.1                  | 34.0                  | 49.7                | 46.4                  | 38.6                | 29.2                 | 41.6                         | 33.6                 | 33.7                           | 35.8         | 35.8                          | 41.9                  |
| L59g-3R     | 28.3                 | 38.6                  | 32.0                  | 48.4                | 44.0                  | 37.0                | 25.8                 | 38.6                         | 31.4                 | 33.1                           | 34.6         | 35.9                          | 42.9                  |
| Harosoy     | 32.5                 | 40.2                  | 35.6                  | 49.3                | 45.1                  | 39.0                | 32.9                 | 43.8                         | 35.5                 | 35.3                           | 36.3         | 39.3                          | 44.5                  |
| Harosoy 63  | 30.9                 | 41.2                  | 32.8                  | 49.9                | 44.6                  | 39.5                | 30.6                 | 40.6                         | 32.7                 | 33.4                           | 35.1         | 37.9                          | 46.4                  |
| Hawkeye     | 33.1                 | 33.3                  | 33.6                  | 45.5                | 41.7                  | 36.8                | 25.1                 | 40.8                         | 33.1                 | 34.9                           | 35.0         | 39.7                          | 38.8                  |
| Hawkeye 63  | 30.2                 | 32.8                  | 31.8                  | 41.4                | 41.0                  | 36.3                | 24.6                 | 37.8                         | 30.2                 | 32.8                           | 34.4         | 38.4                          | 40.0                  |
| Lindarin    | 31.6                 | 38.0                  | 32.4                  | 47.9                | 43.0                  | 38.1                | 31.4                 | 41.1                         | 34.9                 | 32.2                           | 33.7         | 42.9                          | 49.9                  |
| Lindarin 63 | 30.1                 | 35.0                  | 32.8                  | 46.4                | 43.3                  | 36.2                | 32.4                 | 40.3                         | 32.4                 | 31.7                           | 33.0         | 40.7                          | 42.9                  |
| A5-5629     | 33.5                 | 41.0                  | 35.4                  | 49.9                | 48.7                  | 36.4                | 32.6                 | 45.2                         | 36.0                 | 37.4                           | 35.3         | 43.2                          | 44.7                  |
| AX50F40-2   | 36.1                 | 41.1                  | 36.5                  | 48.7                | 46.8                  | 46.0                | 31.1                 | 45.5                         | 37.9                 | 36.0                           | 36.8         | 42.0                          | 50.0                  |
| AX50F58-2   | 35.5                 | 40.6                  | 35.9                  | 50.1                | 47.7                  | 41.4                | 30.7                 | 41.8                         | 36.2                 | 33.2                           | 37.5         | 39.4                          | 46.8                  |
| AX56P64-1   | 34.3                 | 45.5                  | 36.5                  | 51.6                | 48.2                  | 40.4                | 32.0                 | 45.9                         | 39.5                 | 36.6                           | 38.6         | 40.9                          | 49.5                  |

| Yield Rank  |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Adams       | 5  | 9  | 6  | 5  | 5  | 6  | 9  | 6  | 7  | 6  | 5  | 12 | 10 |
| L59g-3R     | 12 | 7  | 11 | 8  | 8  | 8  | 10 | 11 | 11 | 9  | 9  | 11 | 8  |
| Harosoy     | 7  | 6  | 4  | 6  | 6  | 5  | 1  | 4  | 5  | 4  | 4  | 8  | 7  |
| Harosoy 63  | 9  | 2  | 8  | 3  | 7  | 4  | 8  | 9  | 9  | 7  | 7  | 10 | 5  |
| Hawkeye     | 6  | 12 | 7  | 11 | 11 | 9  | 11 | 8  | 8  | 5  | 8  | 6  | 12 |
| Hawkeye 63  | 10 | 11 | 12 | 12 | 12 | 11 | 12 | 12 | 12 | 10 | 10 | 9  | 11 |
| Lindarin    | 8  | 8  | 10 | 9  | 10 | 7  | 5  | 7  | 6  | 11 | 11 | 2  | 2  |
| Lindarin 63 | 11 | 10 | 8  | 10 | 9  | 12 | 3  | 10 | 10 | 12 | 12 | 5  | 8  |
| A5-5629     | 4  | 4  | 5  | 3  | 1  | 10 | 2  | 3  | 4  | 1  | 6  | 1  | 6  |
| AX50F40-2   | 1  | 3  | 1  | 7  | 4  | 1  | 6  | 2  | 2  | 3  | 3  | 3  | 1  |
| AX50F58-2   | 2  | 5  | 3  | 2  | 3  | 2  | 7  | 5  | 3  | 8  | 2  | 7  | 4  |
| AX56P64-1   | 3  | 1  | 1  | 1  | 2  | 3  | 4  | 1  | 1  | 2  | 1  | 4  | 3  |

Table 41. Three-year summary of data for Uniform Test II, 1960-1962.

| Strain                  | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|-------------------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests            | 80    | 80   | 65                         | 74           | 79     | 65              | 68             | Protein          | Oil  |
|                         |       |      |                            |              |        |                 |                | 67               | 67   |
| Adams                   | 37.3  | 3    | +1.9                       | 2.5          | 41     | 1.9             | 15.2           | 40.6             | 21.4 |
| L59g-3R                 | 36.6  | 5    | +2.4                       | 2.6          | 42     | 1.9             | 15.4           | 41.1             | 20.8 |
| Harosoy                 | 38.2  | 1    | -3.0                       | 2.5          | 40     | 2.1             | 18.1           | 41.7             | 20.8 |
| Harosoy 63 <sup>2</sup> | 38.1  | 2    | -3.8                       | 2.5          | 40     | 2.1             | 18.1           | 41.7             | 20.8 |
| Hawkeye                 | 35.6  | 6    | 0                          | 2.1          | 39     | 1.8             | 17.9           | 41.9             | 21.0 |
| Hawkeye 63              | 35.1  | 7    | +0.4                       | 2.2          | 40     | 1.9             | 17.8           | 42.0             | 20.9 |
| Lindarin                | 36.9  | 4    | -3.7                       | 2.0          | 35     | 1.8             | 16.4           | 41.8             | 21.1 |

<sup>1</sup>Days earlier (-) or later (+) than Hawkeye which matured September 25, 123 days after planting. Blackhawk (Group I) matured -5.5. Ford (Group III) matured +4.6.

<sup>2</sup>L59g-1H in 1960.

Table 42. Three-year summary of yield and yield rank for Uniform Test II, 1960-1962.

| Strain                  | Mean<br>of 80<br>Tests | Ridge-<br>Free-<br>town<br>Ont. | Hoyt-<br>hold<br>N.J. <sup>1</sup> | Woos-<br>ville<br>Ohio | lum-<br>ter<br>Ohio | Co-<br>bus<br>Ohio | Walk-<br>er-<br>Ida<br>Mich. | Bluff-<br>ton<br>Ind. | Lafa-<br>ton<br>Ind. | Green-<br>yette<br>Ind. | thing-<br>field<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. | Madi-<br>son<br>Wis. |
|-------------------------|------------------------|---------------------------------|------------------------------------|------------------------|---------------------|--------------------|------------------------------|-----------------------|----------------------|-------------------------|-------------------------|-------------------------------|----------------------|
| Years<br>Tested         |                        | 1960-<br>1962                   | 1960,<br>1962                      | 1960-<br>1962          | 1960-<br>1962       | 1960-<br>1962      | 1960-<br>1962                | 1960-<br>1962         | 1960-<br>1962        | 1960-<br>1962           | 1960-<br>1962           | 1960-<br>1962                 | 1960-<br>1962        |
| Adams                   | 37.3                   | 42.8                            | 37.8                               | 30.4                   | 34.4                | 46.6               | 33.1                         | 37.2                  | 44.1                 | 41.4                    | 35.5                    | 46.0                          | 33.8                 |
| L59g-3R                 | 36.6                   | 42.1                            | 36.3                               | 28.7                   | 36.1                | 45.3               | 31.6                         | 39.6                  | 44.0                 | 39.2                    | 40.7                    | 44.6                          | 30.6                 |
| Harosoy                 | 38.2                   | 44.9                            | 37.7                               | 30.8                   | 35.4                | 42.3               | 34.6                         | 42.2                  | 44.4                 | 43.1                    | 36.3                    | 46.3                          | 33.8                 |
| Harosoy 63 <sup>2</sup> | 38.1                   | 43.6                            | 37.0                               | 30.3                   | 38.2                | 41.6               | 35.1                         | 39.9                  | 44.8                 | 43.2                    | 41.0                    | 46.8                          | 33.2                 |
| Hawkeye                 | 35.6                   | 37.9                            | 32.5                               | 27.9                   | 36.9                | 39.2               | 32.4                         | 36.8                  | 41.2                 | 43.0                    | 29.2                    | 43.9                          | 33.8                 |
| Hawkeye 63              | 35.1                   | 38.9                            | 33.8                               | 27.5                   | 36.7                | 39.3               | 33.1                         | 37.0                  | 41.2                 | 41.6                    | 37.9                    | 43.9                          | 31.5                 |
| Lindarin                | 36.9                   | 41.6                            | 33.1                               | 28.1                   | 37.0                | 42.0               | 35.6                         | 36.6                  | 43.3                 | 41.2                    | 36.1                    | 47.7                          | 33.2                 |

Yield Rank

|                         |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adams                   | 3 | 3 | 1 | 2 | 7 | 1 | 4 | 4 | 3 | 5 | 6 | 4 | 1 |
| L59g-3R                 | 5 | 4 | 4 | 4 | 5 | 2 | 7 | 3 | 4 | 7 | 2 | 5 | 7 |
| Harosoy                 | 1 | 1 | 2 | 1 | 6 | 3 | 3 | 1 | 2 | 2 | 4 | 3 | 1 |
| Harosoy 63 <sup>2</sup> | 2 | 2 | 3 | 3 | 1 | 5 | 2 | 2 | 1 | 1 | 1 | 2 | 4 |
| Hawkeye                 | 6 | 7 | 7 | 6 | 3 | 7 | 6 | 6 | 6 | 3 | 7 | 6 | 1 |
| Hawkeye 63              | 7 | 6 | 5 | 7 | 4 | 6 | 4 | 5 | 6 | 4 | 3 | 6 | 6 |
| Lindarin                | 4 | 5 | 6 | 5 | 2 | 4 | 1 | 7 | 5 | 6 | 5 | 1 | 4 |

<sup>1</sup>Jamesburg, New Jersey, 1960.

<sup>2</sup>L59g-1H in 1960.



Table 42. (Continued)

| Strain                  | Shab- |        | Ur-  | Gi-  | Edge- | Wa-   | Suth- |       | Inde- | Kirks- |       | Con-  | Lin-  |
|-------------------------|-------|--------|------|------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
|                         | bona  | Dwight |      |      |       |       | er-   | Kana- |       | Ames   | ville |       | coln  |
|                         | Ill.  | Ill.   | Ill. | Ill. | Ill.  | Minn. | Iowa  | Iowa  | Iowa  | Iowa   | Mo.   | Nebr. | Nebr. |
| Years                   | 1960  | 1960   | 1960 | 1960 | 1960  | 1960  | 1960  | 1960  | 1960  | 1960   | 1960  | 1960  | 1960  |
| Tested                  | 1962  | 1962   | 1962 | 1962 | 1962  | 1962  | 1962  | 1962  | 1962  | 1962   | 1961  | 1961  | 1962  |
| Adams                   | 39.1  | 34.5   | 46.0 | 44.1 | 40.6  | 27.0  | 41.2  | 31.6  | 34.9  | 37.1   | 26.5  | 34.3  | 42.0  |
| L59g-3R                 | 40.5  | 32.5   | 44.9 | 44.1 | 39.3  | 24.7  | 38.6  | 29.7  | 33.9  | 36.9   | 28.5  | 32.5  | 43.2  |
| Harosoy                 | 40.8  | 35.9   | 46.4 | 44.0 | 41.7  | 30.4  | 41.6  | 32.0  | 35.6  | 37.0   | 27.2  | 34.6  | 45.9  |
| Harosoy 63 <sup>2</sup> | 42.6  | 35.6   | 46.8 | 45.4 | 41.9  | 28.1  | 39.8  | 30.0  | 34.8  | 36.7   | 27.0  | 33.5  | 45.9  |
| Hawkeye                 | 35.2  | 32.2   | 42.0 | 40.6 | 38.3  | 23.5  | 40.1  | 30.9  | 34.9  | 36.6   | 25.3  | 33.2  | 42.4  |
| Hawkeye 63              | 35.1  | 32.2   | 39.8 | 40.9 | 37.7  | 23.7  | 37.6  | 28.7  | 32.9  | 35.6   | 25.7  | 32.4  | 43.3  |
| Lindarin                | 39.0  | 31.6   | 45.3 | 41.5 | 41.1  | 27.6  | 40.0  | 31.4  | 33.6  | 34.7   | 24.0  | 33.5  | 46.3  |
| Yield Rank              |       |        |      |      |       |       |       |       |       |        |       |       |       |
| Adams                   | 4     | 3      | 3    | 2    | 4     | 4     | 2     | 2     | 2     | 1      | 4     | 2     | 7     |
| L59g-3R                 | 3     | 4      | 5    | 2    | 5     | 5     | 6     | 6     | 5     | 3      | 1     | 6     | 5     |
| Harosoy                 | 2     | 1      | 2    | 4    | 2     | 1     | 1     | 1     | 1     | 2      | 2     | 1     | 2     |
| Harosoy 63 <sup>2</sup> | 1     | 2      | 1    | 1    | 1     | 2     | 5     | 5     | 4     | 4      | 3     | 3     | 2     |
| Hawkeye                 | 6     | 5      | 6    | 7    | 6     | 7     | 3     | 4     | 2     | 5      | 5     | 5     | 6     |
| Hawkeye 63              | 7     | 5      | 7    | 6    | 7     | 6     | 7     | 7     | 7     | 6      | 6     | 7     | 4     |
| Lindarin                | 5     | 7      | 4    | 5    | 3     | 3     | 4     | 3     | 6     | 7      | 7     | 3     | 1     |

UNIFORM PRELIMINARY TEST II - 1962

| Strain    | Originating Agency             | Origin                    | Generation<br>Composited |
|-----------|--------------------------------|---------------------------|--------------------------|
| Harosoy   | Research Station, Harrow, Ont. | Mandarin (2) x A.K.       | F <sub>5</sub>           |
| Hawkeye   | Iowa A.E.S. & U.S.R.S.L.       | Mukden x Richland         | F <sub>4</sub>           |
| A5-5515-2 | Iowa A.E.S. & U.S.R.S.L.       | Ogden x Hawkeye           | F <sub>9</sub>           |
| A5-5629-4 | Iowa A.E.S. & U.S.R.S.L.       | Roanoke x Hawkeye         | F <sub>9</sub>           |
| C1273     | Purdue A.E.S. & U.S.R.S.L.     | Mandarin (Ottawa) x Clark | F <sub>6</sub>           |
| U6-N171   | Nebr. A.E.S. & U.S.R.S.L.      | Radiated Hawkeye          | N <sub>3</sub>           |
| U7-6804   | Nebr. A.E.S. & U.S.R.S.L.      | Hawkeye x H6150           | F <sub>7</sub>           |
| W7-2420   | Wis. A.E.S. & U.S.R.S.L.       | Seneca x W9-1982-32       | F <sub>5</sub>           |

Identification of Parent Strains

H6150      Sel. from Lincoln (2) x Richland.  
W9-1982-32   Sel. from Hawkeye x Manchu.

Data were reported from 13 locations in 1962 for the two checks and six experimental strains in this test.

Only two strains, C1273 and A5-5629-4, outyielded Harosoy. U7-6804 yielded well for its early maturity.

The selection from radiated Hawkeye was slightly later but otherwise did not differ greatly from Hawkeye in average performance.

Table 43. Summary of data for Uniform Preliminary Test II, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 13    | 13   | 13                         | 11           | 13     | 10              | 10             | Protein          | Oil  |
| Harosoy      | 36.0  | 3    | -2.0                       | 2.5          | 38     | 2.1             | 17.0           | 41.9             | 19.8 |
| Hawkeye      | 32.9  | 7    | 0                          | 2.2          | 38     | 1.3             | 17.4           | 41.5             | 20.2 |
| A5-5515-2    | 35.2  | 4    | +2.2                       | 2.2          | 37     | 1.9             | 16.5           | 39.4             | 21.2 |
| A5-5629-4    | 36.5  | 2    | +0.8                       | 2.7          | 41     | 1.4             | 17.2           | 40.0             | 21.1 |
| C1273        | 37.4  | 1    | +0.8                       | 2.8          | 34     | 2.0             | 19.5           | 42.0             | 19.8 |
| U6-N171      | 33.4  | 6    | +1.5                       | 2.2          | 38     | 1.6             | 17.5           | 41.3             | 20.4 |
| U7-6804      | 34.7  | 5    | -3.2                       | 2.0          | 35     | 2.3             | 17.1           | 40.3             | 21.3 |
| W7-2420      | 32.7  | 8    | -1.4                       | 2.2          | 39     | 1.7             | 17.0           | 41.5             | 20.1 |

<sup>1</sup>Days earlier (-) or later (+) than Hawkeye which matured September 24, 126 days after planting. Blackhawk (Group I) matured -0.6. Ford (Group III) matured +6.3.

Table 44. Disease data for Uniform Preliminary Test II, 1962.

| Strain    | Bacte-<br>rial         | Bacte-<br>rial | Brown<br>Stem          | Phytoph-<br>thora | Pod &<br>Stem | Downy<br>Mildew |           | Frogeye<br>Ind. |                      | Purple<br>Stain |           |
|-----------|------------------------|----------------|------------------------|-------------------|---------------|-----------------|-----------|-----------------|----------------------|-----------------|-----------|
|           | Blight                 | Pustule        | Rot                    | Rot               | Blight        | Ind.            | Del.      | R1              | R2 <sup>2</sup>      | Ind.            | Del.      |
|           | Ill.<br>a <sup>1</sup> | Ill.<br>a      | Ill.<br>n <sup>1</sup> | Ind.<br>a         | Del.<br>n     | Ind.<br>n       | Del.<br>n | R1<br>a         | R2 <sup>2</sup><br>a | Ind.<br>n       | Del.<br>n |
| Harosoy   | 3                      | 4              | 4                      | S                 | 2.8           | 2.5             | 3.6       | R               | S                    | 3               | 2.0       |
| Hawkeye   | 2                      | 2              | 4                      | S                 | 2.5           | 4.5             | 3.8       | S               | S                    | 3               | 2.0       |
| A5-5515-2 | 4                      | 4              | 4                      | S                 | 2.0           | 3.5             | 3.3       | -               | S                    |                 | 1.5       |
| A5-5629-4 | 3                      | 3              | 4                      | S                 | 2.0           | 1.0             | 3.0       | R               | R                    |                 | 2.0       |
| C1273     | 4                      | 2              | 4                      | S                 | 2.0           | 1.5             | 3.5       | S               | S                    | 2               | 1.5       |
| U6-N171   | 3                      | 4              | 4                      | S                 | 2.5           | 4.0             | 4.0       | -               | S                    |                 | 2.0       |
| U7-6804   | 3                      | 3              | 4                      | S                 | 1.5           | 3.0             | 4.3       | -               | S                    |                 | 1.5       |
| W7-2420   | 3                      | 4              | 4                      | Seg.              | 3.0           | 4.5             | 4.5       | -               | S                    |                 | 1.5       |

<sup>1</sup>a = artificial inoculation; n = natural infection.

<sup>2</sup>R1 = Race 1; R2 = Race 2.

Table 45. Yield, yield rank, and maturity, days earlier (-) or later (+) than Hawkeye, for Uniform Preliminary Test II, 1962.

| Strain            | Mean<br>of 13<br>Tests | Ridge-<br>town<br>Ont. | Harrow<br>Ont. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | Colum-<br>bus<br>Ohio | East<br>Lansing<br>Mich. |
|-------------------|------------------------|------------------------|----------------|------------------------|----------------------|-----------------------|--------------------------|
| Harosoy           | 36.0                   | 44.2                   | 27.8           | 22.5                   | 20.3                 | 30.9                  | 30.9                     |
| Hawkeye           | 32.9                   | 33.1                   | 34.0           | 21.2                   | 19.9                 | 27.6                  | 28.5                     |
| A5-5515-2         | 35.2                   | 40.6                   | 33.0           | 21.9                   | 24.2                 | 30.2                  | 31.7                     |
| A5-5629-4         | 36.5                   | 47.7                   | 38.6           | 21.4                   | 23.3                 | 31.9                  | 30.1                     |
| C1273             | 37.4                   | 53.0                   | 34.5           | 19.8                   | 20.1                 | 28.8                  | 31.3                     |
| U6-N171           | 33.4                   | 32.3                   | 35.2           | 21.6                   | 18.3                 | 28.6                  | 28.8                     |
| U7-6804           | 34.7                   | 41.5                   | 33.4           | 20.7                   | 19.1                 | 30.6                  | 32.6                     |
| W7-2420           | 32.7                   | 35.7                   | 32.6           | 18.9                   | 24.2                 | 28.7                  | 26.1                     |
| Coef. of Var. (%) |                        | 7.8                    | 6.5            | 18.3                   | 16.4                 | 6.6                   | 7.4                      |
| L.S.D. (5%)       |                        | 7.4                    | 5.2            | NS                     | NS                   | NS                    | NS                       |
| Row Spacing (In.) |                        | 24                     | 36             | 36                     | 28                   | 28                    | 24                       |

| Yield Rank |   |   |   |   |   |   |   |
|------------|---|---|---|---|---|---|---|
| Harosoy    | 3 | 3 | 8 | 1 | 4 | 2 | 4 |
| Hawkeye    | 7 | 7 | 4 | 5 | 6 | 8 | 7 |
| A5-5515-2  | 4 | 5 | 6 | 2 | 1 | 4 | 2 |
| A5-5629-4  | 2 | 2 | 1 | 4 | 3 | 1 | 5 |
| C1273      | 1 | 1 | 3 | 7 | 5 | 5 | 3 |
| U6-N171    | 6 | 8 | 2 | 3 | 8 | 7 | 6 |
| U7-6804    | 5 | 4 | 5 | 6 | 7 | 3 | 1 |
| W7-2420    | 8 | 6 | 7 | 8 | 1 | 6 | 8 |

|                 | Mean<br>of 13<br>Tests | Maturity |      |      |      |      |       |
|-----------------|------------------------|----------|------|------|------|------|-------|
| Harosoy         | -2.0                   | -4       | +2   | -3   | -1   | 0    | 0     |
| Hawkeye         | 0                      | 0        | 0    | 0    | 0    | 0    | 0     |
| A5-5515-2       | +2.2                   | +2       | +2   | 0    | +2   | + 4  | +1    |
| A5-5629-4       | +0.8                   | 0        | -1   | 0    | -1   | + 2  | +1    |
| C1273           | +0.8                   | +2       | +4   | 0    | +2   | 0    | 0     |
| U6-N171         | +1.5                   | +3       | +2   | +1   | +2   | + 1  | +1    |
| U7-6804         | -3.2                   | -3       | 0    | +1   | -2   | 0    | -1    |
| W7-2420         | -1.4                   | -2       | +1   | +2   | -2   | - 1  | -1    |
| Blackhawk       | -6.6                   | -3       | -8   | -5   | -7   | - 4  | 0     |
| Ford            | +6.6                   | +2       | +8   | +5   | +9   | +15  | +8    |
| Date planted    | 5-21                   | 5-23     | 6-1  | 5-18 | 5-21 | 5-10 | 5-28  |
| Hawkeye matured | 9-24                   | 10-8     | 10-2 | 9-16 | 9-15 | 9-13 | 10-16 |
| Days to mature  | 126                    | 138      | 123  | 121  | 117  | 126  | 141   |

Table 45 (Continued)

| Strain             | Lafayette<br>Ind. | Madison<br>Wis. | Wabash<br>Ill. | Lansing<br>Iowa | Annes<br>Iowa | Columbia<br>Mo. | Centerville<br>S.D. |
|--------------------|-------------------|-----------------|----------------|-----------------|---------------|-----------------|---------------------|
| Harcosoy           | 45.9              | 37.2            | 53.7           | 40.4            | 34.4          | 33.1            | 46.5                |
| Hawkeye            | 42.9              | 37.9            | 40.5           | 31.6            | 32.0          | 30.2            | 47.9                |
| A5-5515-2          | 45.7              | 37.6            | 50.4           | 36.5            | 33.2          | 31.2            | 41.7                |
| A5-5629-4          | 44.3              | 35.0            | 52.7           | 34.2            | 30.3          | 37.3            | 37.6                |
| C1273              | 44.7              | 37.4            | 49.7           | 43.2            | 39.3          | 35.5            | 48.7                |
| U6-N171            | 40.8              | 34.9            | 41.5           | 34.6            | 34.4          | 33.8            | 45.5                |
| U7-6804            | 40.4              | 35.5            | 54.1           | 39.1            | 32.2          | 22.4            | 45.4                |
| W7-2420            | 38.9              | 38.1            | 42.2           | 31.3            | 34.3          | 25.5            | 41.2                |
| Coeff. of Var. (%) | 6.8               | 5.5             | 6.0            | 10.8            | 7.1           | 11.8            | -                   |
| L.S.D. (5%)        | NS                | NS              | 6.8            | 5.3             | 5.6           | NS              | -                   |
| Row Spacing (In.)  | 38                | 36              | 44             | 41              | 40            | 38              | 36                  |

|           | Field Rank |   |   |   |   |   |   |
|-----------|------------|---|---|---|---|---|---|
| Harcosoy  | 1          | 5 | 1 | 1 | 2 | 4 | - |
| Hawkeye   | 5          | 2 | 8 | 7 | 7 | 6 | - |
| A5-5515-2 | 2          | 3 | 4 | 4 | 4 | 5 | 8 |
| A5-5629-4 | 4          | 7 | 3 | - | 3 | 1 | - |
| C1273     | 3          | 4 | 5 | 1 | 1 | 2 | 7 |
| U6-N171   | 6          | 8 | 6 | 5 | 2 | 3 | - |
| U7-6804   | 7          | 6 | 1 | 3 | 6 | 8 | - |
| W7-2420   | 8          | 1 | 7 | 6 | 5 | 7 | 1 |

|                 | Relative |      |      |      |      |      |      |
|-----------------|----------|------|------|------|------|------|------|
| Harcosoy        | -4       | -3   | -3   | -6   | -4   | -3   | -3   |
| Hawkeye         | 0        | 0    | 0    | 0    | 0    | 0    | -    |
| A5-5515-2       | +3       | +1   | +2   | -2   | +4   | +3   | -    |
| A5-5629-4       | +1       | +1   | -2   | 0    | 0    | +3   | -    |
| C1273           | 0        | +1   | -1   | -3   | 0    | +3   | -    |
| U6-N171         | +2       | 0    | +1   | 0    | +4   | +3   | -    |
| U7-6804         | -4       | -10  | -6   | -8   | -4   | -6   | -    |
| W7-2420         | 0        | -3   | -2   | -4   | -2   | 0    | -    |
| Blackhawk       | -6       | -11  | -9   | -6   | -13  | -12  | -    |
| Ford            | +5       | +9   | +6   | +3   | +5   | +3   | -    |
| Date planted    | 5-18     | 5-16 | 5-15 | 5-22 | 5-18 | 5-26 | -    |
| Hawkeye matured | 9-10     | 10-3 | 9-10 | 10-4 | 9-12 | 9-11 | 10-1 |
| Days to mature  | 115      | 140  | 113  | 132  | 127  | 106  | -    |

UNIFORM TEST III - 1962

| Strain   | Originating Agency                  | Origin  | Generation Compositied |
|----------|-------------------------------------|---|------------------------|
| Ford     | Iowa A.E.S. & U.S.R.S.L.            | Lincoln (2) x Richland  | F <sub>9</sub>         |
| Shelby   | Ill. A.E.S. & U.S.R.S.L.            | Lincoln (2) x Richland  | F <sub>8</sub>         |
| L5       | Ill. A.E.S. & U.S.R.S.L.            | Shelby (6) x F <sub>5</sub> (L49-4091 x Shelby)                             | F <sub>1</sub>         |
| SL2      | Ill. and Purdue A.E.S. & U.S.R.S.L. | L5 x F <sub>2</sub> [Shelby (4) x (Mukden x Shelby)]                        | F <sub>1</sub>         |
| C1128    | Purdue A.E.S. & U.S.R.S.L.          | Wabash x Hawkeye  | F <sub>6</sub>         |
| L4       | Ill. A.E.S. & U.S.R.S.L.            | F <sub>2</sub> [C1128 (6) x S54-1207] x F <sub>2</sub> [C1128 (6) x H21162] | F <sub>1</sub>         |
| C1212    | Purdue A.E.S. & U.S.R.S.L.          | LX1061-9-9 x Blackhawk  | F <sub>6</sub>         |
| L57-2222 | Ill. A.E.S. & U.S.R.S.L.            | L49-4091 x Clark  | F <sub>5</sub>         |
| L57-3033 | Ill. A.E.S. & U.S.R.S.L.            | Adams x L46-1503  | F <sub>5</sub>         |
| L57-9775 | Ill. A.E.S. & U.S.R.S.L.            | Hawkeye x Lee   | F <sub>6</sub>         |

Identification of Parent Strains

|            |   |
|------------|---|
| H21162     | Phytophthora-resistant sel. from Monroe x Lincoln.  |
| LX1061-9-9 | F <sub>7</sub> line from Lincoln x Ogden; from same F <sub>4</sub> line as Kent.  |
| L46-1503   | F <sub>5</sub> line from Lincoln (2) x Richland.  |
| L49-4091   | Pustule-resistant F <sub>4</sub> line from L44-1219 x (Lincoln x CNS). L44-1219 is an F <sub>3</sub> line from Lincoln (2) x Richland.  |
| S54-1207   | Pustule-resistant sel. from Hawkeye x (L49-4091 x L46-2132-1). L46-2132-1 is an F <sub>8</sub> line from Lincoln (2) x Richland and is an F <sub>5</sub> sib of Clark and Shelby. |

Data were reported from 20 locations in 1962 for the two checks and eight experimental strains in this test.

Two strains, L5 and SL2, were produced by backcrossing to Shelby and entered in yield tests for the first time in 1962. The first is pustule-resistant BC<sub>6</sub> and the second combines pustule-resistant BC<sub>6</sub> with Phytophthora-resistant BC<sub>4</sub>. Both performed similarly to Shelby in 1962 although SL2 averaged a little low in yield. At Greenfield, Indiana, where common root rot occurred, SL2 outyielded Shelby and L5 by 10 bushels.

L4 was produced by backcrossing to C1128 and combines pustule-resistant BC<sub>5</sub> with Phytophthora-resistant BC<sub>5</sub>. It was tested this year for the first time. C1128 was in Uniform Test II from 1954 to 1958 and was at one time being considered for release. It was entered in this test as a check for L4. The average performance of L4 was similar to C1128 although slightly lower in yield and at some locations it did not appear as uniform in plant type as did C1128.

C1212 and L57-2222 have been in this test two years and were in Preliminary Test III in 1960. Both have performed similarly to Shelby in most traits. C1212 is Phytophthora rot resistant. L57-2222 has yielded unusually well. It has averaged about four bushels higher than Shelby in each of the last four years. This yield



advantage was quite consistent; this year it was first or second in yield at 17 out of the 20 locations.

Two strains, L57-3033 and L57-9775, were entered from the 1961 Preliminary Test III. They yielded the same as Shelby this year and were similar in most other traits except that L57-3033 has an advantage in lodging resistance and higher oil content and L57-9775 is slightly earlier, higher in protein content, and pustule resistant.

Table 46. Summary of data for Uniform Test III, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 17    | 17   | 15                         | 16           | 17     | 12              | 13             | Protein          | Oil  |
| Ford         | 38.0  | 2    | -1.2                       | 2.5          | 41     | 2.6             | 16.8           | 41.3             | 20.9 |
| Shelby       | 37.5  | 4    | 0                          | 2.4          | 42     | 2.3             | 16.0           | 40.8             | 21.3 |
| L5           | 37.3  | 5    | +0.2                       | 2.5          | 42     | 2.5             | 15.5           | 40.5             | 21.5 |
| SL2          | 35.9  | 9    | +0.5                       | 2.7          | 43     | 2.7             | 15.4           | 40.4             | 21.1 |
| C1128        | 36.0  | 8    | -2.3                       | 2.3          | 42     | 2.4             | 16.4           | 40.2             | 22.3 |
| L4           | 35.0  | 10   | -2.6                       | 2.5          | 42     | 2.5             | 15.4           | 39.6             | 22.2 |
| C1212        | 37.1  | 7    | +1.5                       | 2.6          | 42     | 2.7             | 17.0           | 41.7             | 21.7 |
| L57-2222     | 42.1  | 1    | +1.7                       | 2.6          | 41     | 2.7             | 17.5           | 41.6             | 21.1 |
| L57-3033     | 37.2  | 6    | +0.4                       | 1.8          | 39     | 2.4             | 16.9           | 40.1             | 22.4 |
| L57-9775     | 37.7  | 3    | -1.6                       | 2.3          | 39     | 2.5             | 19.8           | 42.7             | 20.8 |

<sup>1</sup>Days earlier (-) or later (+) than Shelby which matured September 20, 121 days after planting. Clark (Group IV) matured +11.0.

Table 47. Disease data for Uniform Test III, 1962.

| Strain   | Bacte-<br>rial<br>Blight |     | Bacte-<br>rial<br>Pustule |     | Brown<br>Stem<br>Rot | Phytoph-<br>thora<br>Rot | Pod &<br>Stem<br>Blight | Downy<br>Mildew |      | Frogeye<br>Ind. |                 | Purple<br>Stain |      |
|----------|--------------------------|-----|---------------------------|-----|----------------------|--------------------------|-------------------------|-----------------|------|-----------------|-----------------|-----------------|------|
|          | Ill.                     | Ia. | Ill.                      | Ia. | Ill.                 | Ind.                     | Del.                    | Ind.            | Del. | R1              | R2 <sup>2</sup> | Ind.            | Del. |
|          | a <sup>1</sup>           | a   | a                         | a   | n <sup>1</sup>       | a                        | n                       | n               | n    | a               | a               | n               | n    |
| Ford     | 2                        | 3   | 3                         | 3   | 4                    | S                        | 2.8                     | 2.8             | 3.5  | R               | S               | 3               | 2.0  |
| Shelby   | 2                        | 3   | 4                         | 3   | 4                    | S                        | 3.5                     | 3.0             | 3.8  | R               | S               | 3               | 2.0  |
| L5       | 3                        | 3   | 2                         | 1   | 4                    | S                        | 3.5                     | 3.0             | 4.1  | R               | S               |                 | 2.0  |
| SL2      | 3                        | 3   | 1                         | 1   | 4                    | R                        | 3.5                     | 3.3             | 4.3  | R               | S               |                 | 2.0  |
| C1128    | 2                        | 3   | 4                         | 3   | 4                    | S                        | 1.2                     | 2.5             | 3.8  | R               | S               |                 | 1.2  |
| L4       | 1                        | 3   | 1                         | 3   | 4                    | R                        | 1.5                     | 2.8             | 3.8  | R               | S               |                 | 1.8  |
| C1212    | 3                        | 3   | 3                         | 3   | 4                    | R                        | 2.8                     | 2.5             | 3.8  | S               | S               | 3               | 2.5  |
| L57-2222 | 2                        | 3   | 1                         | 1   | 4                    | S                        | 3.2                     | 3.3             | 3.8  | R               | R               | 2               | 1.8  |
| L57-3033 | 2                        | 3   | 4                         | 4   | 4                    | S                        | 1.5                     | 2.8             | 3.5  | -               | S               |                 | 1.8  |
| L57-9775 | 4                        | 3   | 2                         | 1   | 4                    | S                        | 2.0                     | 2.5             | 3.5  | -               | S               | 3               | 1.8  |

<sup>1</sup>a = artificial inoculation; n = natural infection.

<sup>2</sup>R1 = Race 1; R2 = Race 2.

Table 48. Yield and yield rank for Uniform Test III, 1962.

| Strain        | Mean<br>of 17<br>Tests | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | Co-<br>lum-<br>bus<br>Ohio | Bluff-<br>ton<br>Ind. <sup>1</sup> | Lafa-<br>yette<br>Ind. | Green-<br>field<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. |
|---------------|------------------------|-----------------------|-------------------------|------------------------|----------------------|----------------------------|------------------------------------|------------------------|-------------------------|-------------------------------|
|               |                        | *                     |                         |                        |                      |                            |                                    |                        | *                       |                               |
| Ford          | 38.0                   | 39.6                  | 31.2                    | 20.9                   | 20.8                 | 33.9                       | 43.6                               | 40.9                   | 29.4                    | 42.0                          |
| Shelby        | 37.5                   | 41.7                  | 29.2                    | 20.3                   | 21.8                 | 33.6                       | 38.9                               | 40.6                   | 32.1                    | 44.4                          |
| L5            | 37.3                   | 42.6                  | 29.8                    | 17.5                   | 20.1                 | 31.6                       | 39.7                               | 41.6                   | 31.5                    | 44.8                          |
| SL2           | 35.9                   | 37.0                  | 26.2                    | 18.5                   | 20.3                 | 33.7                       | 38.1                               | 37.0                   | 42.7                    | 40.5                          |
| Cl128         | 36.0                   | 39.6                  | 29.6                    | 19.7                   | 23.6                 | 29.3                       | 42.1                               | 41.2                   | 35.9                    | 42.8                          |
| L4            | 35.0                   | 39.6                  | 29.5                    | 18.4                   | 20.4                 | 29.9                       | 40.9                               | 37.5                   | 36.7                    | 37.2                          |
| Cl212         | 37.1                   | 39.7                  | 34.2                    | 22.4                   | 23.5                 | 31.0                       | 43.3                               | 41.9                   | 46.1                    | 40.9                          |
| L57-2222      | 42.1                   | 45.5                  | 32.0                    | 26.0                   | 27.3                 | 35.8                       | 46.7                               | 45.7                   | 44.2                    | 53.1                          |
| L57-3033      | 37.2                   | 46.4                  | 33.3                    | 20.9                   | 24.9                 | 28.1                       | 41.1                               | 42.6                   | 30.6                    | 53.3                          |
| L57-9775      | 37.7                   | 40.6                  | 35.5                    | 21.4                   | 26.0                 | 30.1                       | 44.3                               | 43.3                   | 37.5                    | 39.3                          |
| C.V. (%)      |                        | 25.0                  | 7.8                     | 16.6                   | 9.8                  | 10.9                       | 9.5                                | 6.2                    | 8.6                     | 10.5                          |
| L.S.D. (5%)   |                        | 4.5                   | 3.5                     | NS                     | 3.3                  | NS                         | NS                                 | 3.8                    | 4.6                     | 6.8                           |
| Row Sp. (In.) |                        | 32                    | 36                      | 36                     | 28                   | 28                         | 38                                 | 38                     | 38                      | 38                            |

| Yield Rank |    |    |    |    |    |    |    |    |    |    |
|------------|----|----|----|----|----|----|----|----|----|----|
|            |    | *  |    |    |    |    |    |    | *  |    |
| Ford       | 2  | 7  | 5  | 4  | 7  | 2  | 3  | 7  | 10 | 6  |
| Shelby     | 4  | 4  | 9  | 6  | 6  | 4  | 9  | 8  | 7  | 4  |
| L5         | 5  | 3  | 6  | 10 | 10 | 5  | 8  | 5  | 8  | 3  |
| SL2        | 9  | 10 | 10 | 8  | 9  | 3  | 10 | 10 | 3  | 8  |
| Cl128      | 8  | 7  | 7  | 7  | 4  | 9  | 5  | 6  | 6  | 5  |
| L4         | 10 | 7  | 8  | 9  | 8  | 8  | 7  | 9  | 5  | 10 |
| Cl212      | 7  | 6  | 2  | 2  | 5  | 6  | 4  | 4  | 1  | 7  |
| L57-2222   | 1  | 2  | 4  | 1  | 1  | 1  | 1  | 1  | 2  | 2  |
| L57-3033   | 6  | 1  | 3  | 4  | 3  | 10 | 6  | 3  | 9  | 1  |
| L57-9775   | 3  | 5  | 1  | 3  | 2  | 7  | 2  | 2  | 4  | 9  |

\*Not included in the mean.

<sup>1</sup>Three replications.

<sup>2</sup>Irrigated.

Table 48. (Continued)

| Strain        | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Edge-<br>wood<br>Ill. | El-<br>do-<br>rado<br>Ill. | Car-<br>bon-<br>dale<br>Ill. | Ames<br>Iowa | Ot-<br>tum-<br>wa<br>Iowa | Co-<br>lum-<br>bia<br>Mo. | Lin-<br>coln<br>Nebr. <sup>2</sup> | Man-<br>hat-<br>tan<br>Kans. | Man-<br>hat-<br>tan<br>Kans. <sup>2</sup> |
|---------------|---------------------|---------------------|-----------------------|----------------------------|------------------------------|--------------|---------------------------|---------------------------|------------------------------------|------------------------------|---|
|               |                     |                     |                       |                            |                              |              |                           |                           |                                    |                              | *   |
| Ford          | 50.5                | 46.4                | 40.2                  | 43.8                       | 32.1                         | 41.0         | 48.5                      | 32.2                      | 50.7                               | 26.5                         | 39.1                                      |
| Shelby        | 49.9                | 50.0                | 35.5                  | 45.9                       | 33.0                         | 37.7         | 43.3                      | 34.7                      | 49.5                               | 29.1                         | 40.9                                      |
| L5            | 51.1                | 50.6                | 37.2                  | 45.6                       | 31.0                         | 39.4         | 45.3                      | 33.7                      | 47.4                               | 27.2                         | 44.6                                      |
| SL2           | 46.0                | 49.6                | 37.6                  | 41.3                       | 31.7                         | 38.9         | 40.3                      | 33.2                      | 46.6                               | 30.2                         | 45.4                                      |
| Cl128         | 47.6                | 47.4                | 35.9                  | 42.1                       | 27.5                         | 37.8         | 42.5                      | 31.8                      | 41.0                               | 29.5                         | 41.4                                      |
| L4            | 46.5                | 46.6                | 40.3                  | 42.3                       | 27.9                         | 36.1         | 38.3                      | 31.5                      | 43.9                               | 28.6                         | 39.6                                      |
| Cl212         | 52.3                | 47.8                | 37.0                  | 41.1                       | 26.3                         | 36.4         | 41.1                      | 37.7                      | 42.1                               | 31.5                         | 42.7                                      |
| L57-2222      | 55.5                | 54.2                | 43.3                  | 56.6                       | 32.3                         | 40.1         | 45.0                      | 35.7                      | 48.5                               | 37.8                         | 48.0                                      |
| L57-3033      | 53.5                | 40.5                | 36.8                  | 42.9                       | 29.4                         | 36.3         | 44.0                      | 32.6                      | 46.7                               | 26.2                         | 35.6                                      |
| L57-9775      | 51.9                | 49.2                | 43.6                  | 47.3                       | 28.6                         | 37.1         | 42.9                      | 33.0                      | 36.0                               | 31.7                         | 43.5                                      |
| C.V. (%)      | 6.5                 | 6.0                 | 9.6                   | 8.0                        | --                           | 5.7          | 9.3                       | 6.7                       | 12.1                               | 13.3                         | 8.0                                       |
| L.S.D. (5%)   | 4.7                 | 4.2                 | NS                    | 5.2                        | --                           | 3.0          | 5.4                       | 3.2                       | 7.9                                | 6.0                          | 4.9                                       |
| Row Sp. (In.) | 40                  | 38                  | 37                    | 36                         | 40                           | 40           | 40                        | 38                        | 40                                 | 40                           | 36  |

|          | Yield Rank |    |    |    |    |    |    |    |    |    | *  |
|----------|------------|----|----|----|----|----|----|----|----|----|----|
| Ford     | 6          | 9  | 4  | 5  | 3  | 1  | 1  | 8  | 1  | 9  | 9  |
| Shelby   | 7          | 3  | 10 | 3  | 1  | 6  | 5  | 3  | 2  | 6  | 7  |
| L5       | 5          | 2  | 6  | 4  | 5  | 3  | 2  | 4  | 4  | 8  | 3  |
| SL2      | 10         | 4  | 5  | 9  | 4  | 4  | 9  | 5  | 6  | 4  | 2  |
| Cl128    | 8          | 7  | 9  | 8  | 9  | 5  | 7  | 9  | 9  | 5  | 6  |
| L4       | 9          | 8  | 3  | 7  | 8  | 10 | 10 | 10 | 7  | 7  | 8  |
| Cl212    | 3          | 6  | 7  | 10 | 10 | 8  | 8  | 1  | 8  | 3  | 5  |
| L57-2222 | 1          | 1  | 2  | 1  | 2  | 2  | 3  | 2  | 3  | 1  | 1  |
| L57-3033 | 2          | 10 | 8  | 6  | 6  | 9  | 4  | 7  | 5  | 10 | 10 |
| L57-9775 | 4          | 5  | 1  | 2  | 7  | 7  | 6  | 6  | 10 | 2  | 4  |

Table 49. Maturity, days earlier (-) or later (+) than Shelby, and lodging for Uniform Test III, 1962.

| Strain         | Mean<br>of 15<br>Tests | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | Co-<br>lum-<br>bus<br>Ohio | Bluff-<br>ton<br>Ind. | Lafa-<br>yette<br>Ind. | Green-<br>field<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. |
|----------------|------------------------|-----------------------|-------------------------|------------------------|----------------------|----------------------------|-----------------------|------------------------|-------------------------|-------------------------------|
|                |                        | *                     |                         | *                      | *                    |                            |                       |                        | *                       |                               |
| Ford           | - 1.2                  | -6                    | 0                       | -1                     | -1                   | 0                          | 0                     | -1                     | + 3                     | 0                             |
| Shelby         | 0                      | 0                     | 0                       | 0                      | 0                    | 0                          | 0                     | 0                      | 0                       | 0                             |
| L5             | + 0.2                  | -1                    | 0                       | -1                     | 0                    | 0                          | -1                    | 0                      | + 4                     | 0                             |
| SL2            | + 0.5                  | +2                    | +1                      | 0                      | +1                   | + 1                        | 0                     | +1                     | + 3                     | 0                             |
| Cl128          | - 2.3                  | 0                     | 0                       | -3                     | -1                   | - 1                        | +2                    | -2                     | 0                       | - 4                           |
| L4             | - 2.6                  | 0                     | -1                      | -3                     | -1                   | - 1                        | +1                    | -2                     | + 3                     | - 3                           |
| Cl212          | + 1.5                  | +3                    | +1                      | -2                     | -2                   | 0                          | +1                    | +2                     | + 8                     | 0                             |
| L57-2222       | + 1.7                  | -6                    | +1                      | -1                     | -1                   | - 1                        | 0                     | +3                     | + 9                     | +12                           |
| L57-3033       | + 0.4                  | +2                    | 0                       | -4                     | -1                   | + 4                        | +1                    | -1                     | + 7                     | +11                           |
| L57-9775       | - 1.6                  | 0                     | -1                      | -3                     | -2                   | 0                          | 0                     | -2                     | + 7                     | 0                             |
| Clark          | +11.0                  | +3                    | +8                      | --                     | --                   | +21                        | +5                    | +8                     | +12                     | +12                           |
| Date planted   | 5-22                   | 5-30                  | 5-29                    | 5-18                   | 5-21                 | 5-10                       | 5-21                  | 5-18                   | 5-17                    | 5-24                          |
| Shelby matured | 9-20                   | 10-8                  | 9-13                    | 9-25                   | 9-29                 | 9-28                       | 9-30                  | 9-16                   | 9-20                    | 9-18                          |
| Days to mature | 121                    | 131                   | 107                     | 130                    | 131                  | 141                        | 132                   | 121                    | 126                     | 117                           |
|                | Mean<br>of 16<br>Tests | Lodging               |                         |                        |                      |                            |                       |                        |                         |                               |
|                |                        | *                     |                         |                        | *                    |                            |                       |                        | *                       |                               |
| Ford           | 2.5                    | 3.0                   | 1.8                     | 2.5                    | 1.0                  | 1.0                        | 4.0                   | 2.8                    | 2.0                     | 3.3                           |
| Shelby         | 2.4                    | 3.0                   | 2.1                     | 2.2                    | 1.0                  | 1.2                        | 3.7                   | 3.0                    | 2.5                     | 2.8                           |
| L5             | 2.5                    | 3.0                   | 2.5                     | 2.5                    | 1.0                  | 1.2                        | 3.7                   | 3.0                    | 2.5                     | 2.8                           |
| SL2            | 2.7                    | 2.0                   | 2.3                     | 2.5                    | 1.0                  | 1.7                        | 3.7                   | 3.0                    | 2.0                     | 3.0                           |
| Cl128          | 2.3                    | 2.0                   | 1.3                     | 2.7                    | 1.0                  | 1.5                        | 3.0                   | 2.5                    | 2.0                     | 3.0                           |
| L4             | 2.5                    | 3.0                   | 1.8                     | 2.7                    | 1.0                  | 1.2                        | 3.0                   | 3.0                    | 2.0                     | 3.5                           |
| Cl212          | 2.6                    | 2.0                   | 1.5                     | 3.2                    | 1.0                  | 1.5                        | 3.3                   | 2.3                    | 2.0                     | 4.0                           |
| L57-2222       | 2.6                    | 3.0                   | 1.9                     | 2.7                    | 1.0                  | 1.5                        | 4.0                   | 3.0                    | 2.0                     | 3.0                           |
| L57-3033       | 1.8                    | 2.0                   | 1.3                     | 1.7                    | 1.0                  | 1.2                        | 2.0                   | 2.0                    | 1.0                     | 1.5                           |
| L57-9775       | 2.3                    | 2.0                   | 1.4                     | 2.7                    | 1.0                  | 1.5                        | 3.0                   | 2.0                    | 1.5                     | 3.3                           |

\*Not included in the mean.

<sup>1</sup>Irrigated.

Table 49. (Continued)

| Strain         | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Edge-<br>wood<br>Ill. | El-<br>do-<br>rado<br>Ill. | Car-<br>bon-<br>dale<br>Ill. | Ames<br>Iowa | Ot-<br>tum-<br>wa<br>Iowa | Co-<br>lum-<br>bia<br>Mo. | Lin-<br>coln<br>Nebr. <sup>1</sup> | Man-<br>hat-<br>tan<br>Kans. | Man-<br>hat-<br>tan<br>Kans. <sup>1</sup> |
|----------------|---------------------|---------------------|-----------------------|----------------------------|------------------------------|--------------|---------------------------|---------------------------|------------------------------------|------------------------------|---|
|                |                     |                     |                       |                            |                              |              |                           |                           |                                    |                              | *   |
| Ford           | -1                  | - 3                 | -3                    | - 1                        | - 2                          | -2           | -2                        | - 3                       | - 1                                | + 1                          | - 3                                       |
| Shelby         | 0                   | 0                   | 0                     | 0                          | 0                            | 0            | 0                         | 0                         | 0                                  | 0                            | 0   |
| L5             | +1                  | 0                   | 0                     | + 1                        | + 1                          | +1           | 0                         | - 2                       | 0                                  | + 2                          | + 2                                       |
| SL2            | +1                  | 0                   | +1                    | + 1                        | 0                            | +1           | 0                         | - 2                       | 0                                  | + 2                          | + 4                                       |
| C1128          | -2                  | - 3                 | -3                    | - 4                        | - 6                          | -5           | -4                        | - 3                       | - 2                                | + 2                          | + 3                                       |
| L4             | -1                  | - 4                 | -4                    | - 4                        | - 9                          | -4           | -4                        | - 3                       | - 2                                | + 2                          | + 3                                       |
| C1212          | 0                   | - 3                 | +1                    | 0                          | +10                          | +4           | 0                         | + 1                       | + 2                                | + 3                          | + 4                                       |
| L57-2222       | +2                  | 0                   | +2                    | + 1                        | + 3                          | +2           | -2                        | - 3                       | + 2                                | + 3                          | + 5                                       |
| L57-3033       | 0                   | - 3                 | -2                    | - 1                        | - 4                          | 0            | -2                        | + 1                       | 0                                  | + 2                          | + 5                                       |
| L57-9775       | -1                  | - 7                 | -2                    | - 1                        | - 7                          | -2           | -4                        | + 1                       | 0                                  | + 2                          | + 5                                       |
| Clark          | +8                  | +10                 | +6                    | +17                        | +11                          | +9           | +5                        | +14                       | +10                                | +21                          | +15                                       |
| Date planted   | 5-15                | 5-17                | 6-6                   | 5-21                       | 5-15                         | 5-1          | 6-1                       | 5-28                      | 5-22                               | 6-12                         | 6-7                                       |
| Shelby matured | 9-20                | 9-14                | 9-21                  | 9-7                        | 9-3                          | 9-24         | 9-28                      | 9-20                      | 9-30                               | 9-24                         | 9-29                                      |
| Days to mature | 128                 | 120                 | 107                   | 109                        | 111                          | 146          | 119                       | 115                       | 131                                | 104                          | 114                                       |

|          | Lodging |     |     |     |     |     |     |     |     |     | *   |
|----------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ford     | 2.9     | 3.8 | 2.6 | 3.5 | 2.0 | 1.6 | 2.1 | 1.8 | 2.9 | 1.2 | 3.1 |
| Shelby   | 3.1     | 3.3 | 2.9 | 3.3 | 1.5 | 1.6 | 2.1 | 2.0 | 2.7 | 1.5 | 3.0 |
| L5       | 2.9     | 3.2 | 2.4 | 3.2 | 1.5 | 1.6 | 2.3 | 2.1 | 3.2 | 1.9 | 3.2 |
| SL2      | 3.4     | 3.1 | 2.9 | 3.4 | 3.0 | 1.6 | 2.2 | 2.2 | 3.5 | 2.2 | 3.3 |
| C1128    | 2.6     | 2.3 | 2.2 | 3.3 | 1.0 | 1.5 | 2.6 | 1.9 | 3.2 | 1.6 | 2.2 |
| L4       | 3.0     | 2.5 | 2.8 | 3.3 | 1.0 | 1.6 | 3.0 | 2.0 | 3.4 | 1.9 | 2.8 |
| C1212    | 2.8     | 2.9 | 3.5 | 3.6 | 1.5 | 1.6 | 2.7 | 2.0 | 3.7 | 2.0 | 2.4 |
| L57-2222 | 3.0     | 3.5 | 2.8 | 3.4 | 2.0 | 1.6 | 2.6 | 2.2 | 3.1 | 2.0 | 3.5 |
| L57-3033 | 2.2     | 3.5 | 2.0 | 2.9 | 1.0 | 1.3 | 1.5 | 1.7 | 2.0 | 1.1 | 2.0 |
| L57-9775 | 2.9     | 2.7 | 2.6 | 2.9 | 1.0 | 1.6 | 2.6 | 1.7 | 3.9 | 1.3 | 2.4 |

Table 50. Plant height and seed quality for Uniform Test III, 1962.

| Strain   | Mean<br>of 17<br>Tests | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | Co-<br>lum-<br>bus<br>Ohio | Bluff-<br>ton<br>Ind. | Lafa-<br>yette<br>Ind. | Green-<br>field<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. |
|----------|------------------------|-----------------------|-------------------------|------------------------|----------------------|----------------------------|-----------------------|------------------------|-------------------------|-------------------------------|
|          |                        | *                     |                         |                        |                      |                            |                       |                        | *                       |                               |
| Ford     | 41                     | 34                    | 34                      | 37                     | 28                   | 38                         | 45                    | 46                     | 38                      | 45                            |
| Shelby   | 42                     | 34                    | 37                      | 38                     | 27                   | 38                         | 44                    | 47                     | 43                      | 45                            |
| L5       | 42                     | 35                    | 36                      | 37                     | 27                   | 39                         | 40                    | 47                     | 44                      | 44                            |
| SL2      | 43                     | 35                    | 38                      | 38                     | 27                   | 40                         | 44                    | 47                     | 49                      | 47                            |
| C1128    | 42                     | 35                    | 37                      | 38                     | 27                   | 40                         | 43                    | 44                     | 43                      | 47                            |
| L4       | 42                     | 35                    | 36                      | 39                     | 26                   | 39                         | 45                    | 47                     | 44                      | 45                            |
| C1212    | 42                     | 36                    | 36                      | 38                     | 27                   | 38                         | 44                    | 49                     | 47                      | 45                            |
| L57-2222 | 41                     | 34                    | 36                      | 36                     | 25                   | 37                         | 41                    | 48                     | 47                      | 46                            |
| L57-3033 | 39                     | 35                    | 34                      | 38                     | 26                   | 38                         | 40                    | 45                     | 41                      | 45                            |
| L57-9775 | 39                     | 35                    | 34                      | 38                     | 27                   | 37                         | 39                    | 41                     | 39                      | 39                            |

|          | Mean<br>of 12<br>Tests | Seed Quality |     |     |     |     |     |     |     |     |
|----------|------------------------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|
|          |                        | *            |     | *   | *   |     |     |     | *   |     |
| Ford     | 2.6                    | 2.0          | 3.5 | 1.0 | 1.0 | 2.0 | 1.0 | 2.0 | 2.0 | 4.0 |
| Shelby   | 2.3                    | 2.0          | 2.5 | 1.0 | 1.0 | 2.0 | 1.0 | 2.0 | 1.5 | 3.0 |
| L5       | 2.5                    | 1.0          | 2.5 | 1.0 | 1.0 | 2.0 | 1.0 | 2.5 | 2.0 | 4.0 |
| SL2      | 2.7                    | 1.0          | 3.0 | 1.0 | 1.0 | 2.5 | 1.0 | 2.0 | 1.5 | 4.0 |
| C1128    | 2.4                    | 1.0          | 2.5 | 1.0 | 1.0 | 2.0 | 1.0 | 2.0 | 1.5 | 3.5 |
| L4       | 2.5                    | 2.0          | 2.2 | 1.0 | 1.0 | 2.0 | 1.0 | 2.0 | 2.0 | 4.0 |
| C1212    | 2.7                    | 1.0          | 2.5 | 1.0 | 1.0 | 2.2 | 1.5 | 2.0 | 1.5 | 3.5 |
| L57-2222 | 2.7                    | 2.0          | 3.2 | 1.0 | 1.0 | 2.5 | 1.0 | 1.5 | 2.0 | 3.5 |
| L57-3033 | 2.4                    | 2.0          | 1.8 | 1.0 | 1.0 | 2.0 | 1.0 | 2.0 | 1.5 | 4.0 |
| L57-9775 | 2.5                    | 1.0          | 1.8 | 1.0 | 1.0 | 1.5 | 1.0 | 2.0 | 2.0 | 3.0 |

\*Not included in the mean.

<sup>1</sup>Irrigated.



Table 50. (Continued)

| Strain   | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Edge-<br>wood<br>Ill. | El-<br>do-<br>rado<br>Ill. | Car-<br>bon-<br>dale<br>Ill. | Ames<br>Iowa | Ot-<br>tum-<br>wa<br>Iowa | Co-<br>lum-<br>bia<br>Mo. | Lin-<br>coln<br>Nebr. <sup>1</sup> | Man-<br>hat-<br>tan<br>Kans. | Man-<br>hat-<br>tan<br>Kans. <sup>1</sup> |
|----------|---------------------|---------------------|-----------------------|----------------------------|------------------------------|--------------|---------------------------|---------------------------|------------------------------------|------------------------------|---|
| Ford     | 47                  | 47                  | 38                    | 44                         | 36                           | 46           | 45                        | 32                        | 47                                 | 38                           | 44*                                       |
| Shelby   | 50                  | 48                  | 40                    | 47                         | 37                           | 46           | 48                        | 33                        | 50                                 | 38                           | 44  |
| L5       | 50                  | 49                  | 41                    | 47                         | 36                           | 46           | 46                        | 34                        | 50                                 | 39                           | 45  |
| SL2      | 52                  | 52                  | 43                    | 49                         | 39                           | 47           | 49                        | 33                        | 52                                 | 41                           | 45  |
| C1128    | 47                  | 51                  | 39                    | 45                         | 39                           | 44           | 45                        | 32                        | 48                                 | 40                           | 46  |
| L4       | 49                  | 51                  | 40                    | 44                         | 38                           | 44           | 45                        | 33                        | 51                                 | 43                           | 45  |
| C1212    | 47                  | 50                  | 40                    | 43                         | 36                           | 47           | 44                        | 33                        | 48                                 | 41                           | 46  |
| L57-2222 | 48                  | 48                  | 40                    | 47                         | 36                           | 45           | 46                        | 31                        | 49                                 | 38                           | 46  |
| L57-3033 | 47                  | 43                  | 37                    | 42                         | 33                           | 45           | 44                        | 30                        | 48                                 | 36                           | 46  |
| L57-9775 | 44                  | 46                  | 39                    | 44                         | 35                           | 40           | 44                        | 30                        | 45                                 | 39                           | 48  |

| Seed Quality |     |     |     |     |     |     |     |     |     |     |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|              |     |     |     |     |     | *   | *   |     |     | *   |
| Ford         | 2.6 | 2.6 | 3.0 | 3.0 | 3.5 | 1.0 | 1.0 | 2.1 | 1.6 | 1.3 |
| Shelby       | 2.0 | 2.5 | 3.4 | 2.6 | 3.0 | 1.0 | 1.0 | 2.0 | 1.3 | 1.0 |
| L5           | 2.4 | 3.4 | 3.4 | 3.1 | 2.5 | 1.0 | 1.0 | 1.5 | 1.3 | 1.5 |
| SL2          | 2.3 | 3.5 | 3.8 | 3.5 | 3.0 | 1.0 | 1.0 | 2.1 | 1.7 | 1.0 |
| C1128        | 2.8 | 2.3 | 2.5 | 2.3 | 4.0 | 1.0 | 1.0 | 2.5 | 1.3 | 1.5 |
| L4           | 3.3 | 2.3 | 2.6 | 2.3 | 3.5 | 1.0 | 1.0 | 3.0 | 1.3 | 1.3 |
| C1212        | 2.6 | 2.8 | 3.4 | 3.3 | 4.0 | 1.0 | 1.0 | 3.0 | 1.5 | 1.5 |
| L57-2222     | 2.5 | 3.4 | 3.1 | 3.6 | 3.0 | 1.0 | 1.0 | 3.5 | 1.2 | 1.0 |
| L57-3033     | 1.9 | 2.6 | 2.9 | 2.5 | 3.5 | 1.0 | 1.0 | 2.8 | 1.2 | 1.0 |
| L57-9775     | 3.3 | 3.4 | 3.3 | 2.8 | 3.5 | 1.0 | 1.0 | 2.6 | 1.2 | 1.0 |

Table 51. Percentages of protein and oil for Uniform Test III, 1962.

| Strain   | Mean<br>of 9<br>Tests | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Co-<br>lum-<br>bus<br>Ohio | Lafa-<br>yette<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Ames<br>Iowa | Lin-<br>coln<br>Nebr. <sup>1</sup> | Man-<br>hat-<br>tan<br>Kans. |
|----------|-----------------------|-----------------------|-------------------------|----------------------------|------------------------|-------------------------------|---------------------|---------------------|--------------|------------------------------------|------------------------------|
|          |                       | *                     |                         |                            |                        |                               |                     |                     |              |                                    |                              |
| Ford     | 41.3                  | 42.9                  | 44.7                    | 42.5                       | 40.6                   | 41.9                          | 40.7                | 42.3                | 40.3         | 39.8                               | 39.2                         |
| Shelby   | 40.8                  | 41.6                  | 44.5                    | 41.6                       | 39.5                   | 41.0                          | 40.5                | 41.9                | 39.8         | 39.4                               | 38.9                         |
| L5       | 40.5                  | 41.2                  | 43.8                    | 41.2                       | 38.9                   | 41.1                          | 40.9                | 41.5                | 39.4         | 38.9                               | 38.6                         |
| SL2      | 40.4                  | 41.3                  | 44.3                    | 41.3                       | 39.0                   | 41.1                          | 40.8                | 41.2                | 38.7         | 38.5                               | 38.9                         |
| C1128    | 40.2                  | 41.0                  | 43.0                    | 41.9                       | 40.4                   | 39.5                          | 40.4                | 40.8                | 38.8         | 38.7                               | 38.5                         |
| L4       | 39.6                  | 40.2                  | 42.4                    | 40.9                       | 39.1                   | 39.6                          | 39.7                | 41.1                | 38.2         | 37.2                               | 37.9                         |
| C1212    | 41.7                  | 42.6                  | 44.4                    | 43.3                       | 41.2                   | 41.5                          | 40.9                | 43.0                | 41.4         | 40.1                               | 39.5                         |
| L57-2222 | 41.6                  | 42.7                  | 44.2                    | 42.2                       | 40.3                   | 42.5                          | 42.4                | 42.6                | 40.7         | 40.1                               | 39.7                         |
| L57-3033 | 40.1                  | 41.2                  | 42.6                    | 41.5                       | 40.5                   | 38.9                          | 39.4                | 41.5                | 39.6         | 39.4                               | 37.5                         |
| L57-9775 | 42.7                  | 43.8                  | 44.4                    | 44.2                       | 42.4                   | 42.3                          | 43.1                | 44.3                | 42.3         | 41.0                               | 40.5                         |
|          | Mean<br>of 9<br>Tests |                       |                         |                            |                        |                               |                     |                     |              |                                    |                              |
|          |                       | *                     |                         |                            |                        |                               |                     |                     |              |                                    |                              |
| Ford     | 20.9                  | 19.8                  | 19.7                    | 19.7                       | 20.8                   | 21.3                          | 21.1                | 21.1                | 20.8         | 21.3                               | 22.1                         |
| Shelby   | 21.3                  | 20.1                  | 19.8                    | 20.6                       | 21.8                   | 21.4                          | 21.2                | 21.5                | 21.9         | 21.4                               | 22.4                         |
| L5       | 21.5                  | 19.9                  | 19.8                    | 20.7                       | 21.7                   | 21.0                          | 22.7                | 22.2                | 21.6         | 21.5                               | 22.5                         |
| SL2      | 21.1                  | 19.4                  | 19.5                    | 20.5                       | 22.2                   | 21.2                          | 20.8                | 21.3                | 21.2         | 20.8                               | 22.3                         |
| C1128    | 22.3                  | 20.9                  | 21.2                    | 21.6                       | 22.7                   | 22.1                          | 22.7                | 22.8                | 22.6         | 21.4                               | 23.2                         |
| L4       | 22.2                  | 20.9                  | 21.3                    | 21.3                       | 22.8                   | 21.6                          | 22.1                | 22.9                | 22.8         | 22.2                               | 23.2                         |
| C1212    | 21.7                  | 20.6                  | 21.2                    | 20.3                       | 22.5                   | 21.7                          | 21.8                | 22.3                | 21.0         | 21.6                               | 22.6                         |
| L57-2222 | 21.1                  | 20.2                  | 19.5                    | 18.5                       | 22.0                   | 21.1                          | 22.2                | 21.7                | 20.9         | 21.1                               | 22.7                         |
| L57-3033 | 22.4                  | 20.9                  | 21.6                    | 22.3                       | 22.3                   | 22.5                          | 22.5                | 22.3                | 22.4         | 22.0                               | 23.8                         |
| L57-9775 | 20.8                  | 19.4                  | 20.3                    | 19.8                       | 20.9                   | 20.6                          | 21.2                | 20.4                | 22.0         | 20.3                               | 21.4                         |

\*Not included in the mean.

<sup>1</sup>Irrigated.



UNIFORM PRELIMINARY TEST III - 1962

| Strain   | Originating Agency         | Origin                    | Generation Compositd |
|----------|----------------------------|---------------------------|----------------------|
| Ford     | Iowa A.E.S. & U.S.R.S.L.   | Lincoln (2) x Richland    | F <sub>9</sub>       |
| Shelby   | Ill. A.E.S. & U.S.R.S.L.   | Lincoln (2) x Richland    | F <sub>8</sub>       |
| A9-1144  | Iowa A.E.S. & U.S.R.S.L.   | Clark x Chippewa          | F <sub>4</sub>       |
| C1276    | Purdue A.E.S. & U.S.R.S.L. | Mandarin (Ottawa) x Clark | F <sub>6</sub>       |
| C1291    | Purdue A.E.S. & U.S.R.S.L. | Mandarin (Ottawa) x C1069 | F <sub>6</sub>       |
| CX314-50 | Purdue A.E.S. & U.S.R.S.L. | Ford x Shelby             | F <sub>3</sub>       |
| CX314-56 | Purdue A.E.S. & U.S.R.S.L. | Ford x Shelby             | F <sub>3</sub>       |
| CX314-81 | Purdue A.E.S. & U.S.R.S.L. | Ford x Shelby             | F <sub>3</sub>       |
| CX314-90 | Purdue A.E.S. & U.S.R.S.L. | Ford x Shelby             | F <sub>3</sub>       |
| CX314-92 | Purdue A.E.S. & U.S.R.S.L. | Ford x Shelby             | F <sub>3</sub>       |
| S9-2501  | Mo. A.E.S. & U.S.R.S.L.    | Radiated Clark            | R <sub>5</sub>       |
| S9-2504  | Mo. A.E.S. & U.S.R.S.L.    | Radiated Clark            | R <sub>5</sub>       |
| UD470    | Del. A.E.S. & U.S.R.S.L.   | Adams x F.C. 33243        | F <sub>6</sub>       |
| UD475    | Del. A.E.S. & U.S.R.S.L.   | Adams x F.C. 33243        | F <sub>6</sub>       |
| UD485    | Del. A.E.S. & U.S.R.S.L.   | Adams x F.C. 33243        | F <sub>6</sub>       |

Identification of Parent Strains

|            |   |
|------------|---|
| C1069      | F <sub>7</sub> line from Lincoln x Ogden; from same F <sub>4</sub> line as Kent.              |
| F.C. 33243 | Rogue in Lincoln, selected by H. J. Anderson, Calamus, Iowa; resistant to root knot nematode. |

Data are presented from 13 locations for the two check varieties and 13 new experimental strains in this test.

The two strains, S9-2501 and S9-2504, are of interest since they (along with three other strains in Preliminary Tests II and IV) represent the first entries in regional tests selected from radiated material. Both strains are distinctly earlier than Clark. S9-2504 averaged highest in yield in the test.

The five selections from Ford x Shelby were similar to the parents in performance although two of them outyielded the higher-yielding parent.

The three root knot-resistant UD strains were consistently low in yield. UD485 matured too early for this group.

C1276 and C1291 outyielded Shelby but were appreciably later in maturity.

Table 52. Summary of data for Uniform Preliminary Test III, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 12    | 12   | 11                         | 10           | 12     | 9               | 7              | Protein          | Oil  |
| Ford         | 37.2  | 12   | -0.5                       | 2.4          | 41     | 2.3             | 17.1           | 40.7             | 21.1 |
| Shelby       | 38.7  | 7    | 0                          | 2.3          | 42     | 2.2             | 16.3           | 40.2             | 21.3 |
| A9-1144      | 38.4  | 9    | +0.5                       | 2.4          | 38     | 2.2             | 16.1           | 40.7             | 20.8 |
| C1276        | 40.2  | 2    | +4.4                       | 2.0          | 37     | 2.0             | 20.1           | 42.1             | 20.9 |
| C1291        | 39.8  | 3    | +5.5                       | 2.4          | 43     | 2.3             | 18.7           | 39.9             | 21.2 |
| CX314-50     | 38.6  | 8    | -0.1                       | 2.0          | 43     | 2.1             | 16.5           | 40.4             | 20.9 |
| CX314-56     | 38.9  | 5    | -1.4                       | 2.3          | 42     | 2.2             | 17.0           | 40.4             | 20.9 |
| CX314-81     | 39.3  | 4    | +0.5                       | 2.3          | 43     | 2.0             | 16.7           | 40.4             | 21.1 |
| CX314-90     | 38.1  | 10   | +0.5                       | 2.2          | 43     | 2.3             | 17.6           | 40.7             | 21.2 |
| CX314-92     | 38.8  | 6    | +0.7                       | 2.2          | 43     | 2.3             | 16.7           | 39.6             | 21.3 |
| S9-2501      | 37.3  | 11   | -0.5                       | 2.3          | 43     | 2.3             | 16.3           | 40.6             | 21.0 |
| S9-2504      | 40.6  | 1    | +3.1                       | 2.2          | 41     | 2.1             | 16.9           | 40.7             | 20.8 |
| UD470        | 35.0  | 13   | +4.7                       | 2.6          | 42     | 2.1             | 16.0           | 41.3             | 20.6 |
| UD475        | 34.7  | 14   | +2.4                       | 2.2          | 39     | 2.6             | 16.3           | 38.6             | 22.2 |
| UD485        | 26.8  | 15   | -6.9                       | 2.7          | 37     | 2.6             | 16.3           | 42.0             | 20.8 |

<sup>1</sup>Days earlier (-) or later (+) than Shelby which matured September 23, 123 days after planting. Clark (Group IV) matured +9.5.

Table 53. Disease data for Uniform Preliminary Test III, 1962.

| Strain   | Bacte-<br>rial<br>Blight | Bacte-<br>rial<br>Pustule | Brown<br>Stem<br>Rot | Phytoph-<br>thora<br>Rot | Pod &<br>Stem<br>Blight | Downy<br>Mildew |             | Frogeye<br>Ind. |           | Purple<br>Stain |             |
|----------|--------------------------|---------------------------|----------------------|--------------------------|-------------------------|-----------------|-------------|-----------------|-----------|-----------------|-------------|
|          | <u>Ill.</u>              | <u>Ill.</u>               | <u>Ill.</u>          | <u>Ind.</u>              | <u>Del.</u>             | <u>Ind.</u>     | <u>Del.</u> | <u>R1</u>       | <u>R2</u> | <u>Ind.</u>     | <u>Del.</u> |
|          | a <sup>1</sup>           | a                         | n <sup>1</sup>       | a                        | n                       | n               | n           | a               | a         | n               | n           |
| Ford     | 2                        | 3                         | 4                    | S                        | 2.8                     | 2.0             | 3.5         | R               | S         | 3               | 2.0         |
| Shelby   | 2                        | 4                         | 4                    | S                        | 3.5                     | 3.0             | 3.8         | R               | S         | 3               | 2.0         |
| A9-1144  | 1                        | 4                         | 4                    | S                        | 3.5                     | 2.5             | 4.0         | -               | S         |                 | 2.0         |
| C1276    | 3                        | 4                         | 4                    | S                        |                         | 3.0             | 3.0         | R               | S         | 3               | 1.5         |
| C1291    | 4                        | 3                         | 4                    | S                        | 1.5                     | 3.0             | 3.0         | R               | R         | 2               | 1.5         |
| CX314-50 | 2                        | 4                         | 4                    | S                        | 3.0                     | 2.5             | 4.0         | R               | S         |                 | 2.0         |
| CX314-56 | 2                        | 4                         | 4                    | S                        | 3.0                     | 3.0             | 3.8         | R               | S         |                 | 2.0         |
| CX314-81 | 3                        | 4                         | 4                    | S                        | 3.5                     | 3.0             | 3.3         | R               | S         |                 | 2.5         |
| CX314-90 | 3                        | 4                         | 4                    | S                        | 3.0                     | 2.5             | 4.0         | R               | S         |                 | 2.0         |
| CX314-92 | 3                        | 5                         | 4                    | S                        | 3.0                     | 2.5             | 4.0         | R               | S         |                 | 2.0         |
| S9-2501  | 3                        | 4                         | 4                    | S                        | 4.0                     | 2.0             | 4.0         | -               | S         |                 | 1.0         |
| S9-2504  | 3                        | 3                         | 4                    | S                        | 3.0                     | 3.0             | 4.0         | -               | S         |                 | 2.0         |
| UD470    | 3                        | 3                         | 4                    | S                        | 1.0                     | 2.5             | 4.2         | -               | S         |                 | 1.0         |
| UD475    | 4                        | 3                         | 4                    | S                        | 1.0                     | 1.5             | 3.8         | -               | S         |                 | 2.0         |
| UD485    | 4                        | 3                         | 4                    | S                        | 3.0                     | 2.5             | 3.0         | -               | S         |                 | 1.5         |

<sup>1</sup>a = artificial inoculation; n = natural infection.

<sup>2</sup>R1 = Race 1; R2 = Race 2.



Table 54. Yield and yield rank for Uniform Preliminary Test III, 1962.

| Strain        | Mean<br>of 12<br>Tests | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>lum-<br>Ohio | Co-<br>bus<br>Ohio | Lafa-<br>yette<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Ames<br>Iowa | Ot-<br>tum-<br>wa<br>Iowa | Co-<br>lum-<br>bia<br>Mo. | Lin-<br>coln<br>Nebr. <sup>1</sup> | Man-<br>hat-<br>tan<br>Kans. |
|---------------|------------------------|-------------------------|------------------------|-----------------------|--------------------|------------------------|-------------------------------|---------------------|---------------------|--------------|---------------------------|---------------------------|------------------------------------|------------------------------|
|               |                        |                         | *                      |                       |                    |                        |                               |                     |                     |              |                           |                           |                                    |                              |
| Ford          | 37.2                   | 29.0                    | 25.7                   | 21.6                  | 31.6               | 43.5                   | 44.4                          | 49.4                | 46.6                | 35.2         | 46.2                      | 29.9                      | 40.9                               | 28.3                         |
| Shelby        | 38.7                   | 27.5                    | 17.9                   | 18.6                  | 33.7               | 43.2                   | 55.3                          | 48.3                | 54.0                | 32.0         | 42.5                      | 34.3                      | 45.1                               | 29.6                         |
| A9-1144       | 38.4                   | 27.0                    | 18.5                   | 17.4                  | 29.8               | 45.8                   | 48.1                          | 51.1                | 50.2                | 37.3         | 44.4                      | 32.5                      | 47.6                               | 30.1                         |
| C1276         | 40.2                   | 25.6                    | 24.0                   | 24.6                  | 41.3               | 50.5                   | 41.6                          | 63.4                | 37.4                | 33.8         | 41.6                      | 37.3                      | 52.8                               | 32.7                         |
| C1291         | 39.8                   | 28.8                    | 17.5                   | 20.5                  | 31.6               | 50.3                   | 48.2                          | 53.4                | 52.2                | 36.1         | 43.3                      | 31.3                      | 47.7                               | 34.2                         |
| CX314-50      | 38.6                   | 28.4                    | 19.4                   | 18.9                  | 33.5               | 49.5                   | 52.1                          | 50.4                | 50.2                | 34.6         | 42.2                      | 30.2                      | 46.4                               | 26.5                         |
| CX314-56      | 38.9                   | 28.0                    | 24.0                   | 19.3                  | 32.4               | 48.3                   | 45.3                          | 55.8                | 50.2                | 37.2         | 43.0                      | 31.5                      | 45.0                               | 30.7                         |
| CX314-81      | 39.3                   | 30.7                    | 21.6                   | 19.8                  | 32.5               | 46.6                   | 50.4                          | 51.8                | 50.6                | 35.3         | 46.6                      | 33.9                      | 44.2                               | 29.7                         |
| CX314-90      | 38.1                   | 30.4                    | 28.9                   | 18.7                  | 37.3               | 48.3                   | 44.0                          | 48.3                | 47.0                | 32.6         | 41.8                      | 30.4                      | 46.4                               | 31.5                         |
| CX314-92      | 38.8                   | 31.6                    | 18.2                   | 19.3                  | 33.3               | 45.9                   | 44.7                          | 54.1                | 53.8                | 32.6         | 41.4                      | 31.5                      | 45.7                               | 31.3                         |
| S9-2501       | 37.3                   | 25.4                    | 17.6                   | 18.3                  | 29.9               | 39.8                   | 54.3                          | 48.3                | 49.9                | 37.1         | 38.7                      | 32.5                      | 47.2                               | 26.5                         |
| S9-2504       | 40.6                   | 26.2                    | 16.5                   | 20.6                  | 36.7               | 50.4                   | 51.6                          | 53.9                | 48.4                | 37.5         | 41.0                      | 35.2                      | 51.2                               | 34.5                         |
| UD470         | 35.0                   | 21.5                    | 21.4                   | 16.6                  | 36.5               | 46.2                   | 36.6                          | 51.9                | 39.0                | 31.0         | 34.0                      | 28.2                      | 42.8                               | 35.6                         |
| UD475         | 34.7                   | 28.0                    | 16.7                   | 16.0                  | 28.3               | 45.8                   | 34.3                          | 42.2                | 41.2                | 32.5         | 39.0                      | 28.3                      | 54.4                               | 26.3                         |
| UD485         | 26.8                   | 23.6                    | 20.2                   | 16.0                  | 23.3               | 33.1                   | 27.3                          | 37.2                | 37.7                | 27.8         | 29.0                      | 22.1                      | 30.4                               | 14.6                         |
| C.V. (%)      |                        | 7.0                     | 20.5                   | 7.8                   | 11.6               | 6.7                    | 9.6                           | 8.8                 | 7.4                 | 4.2          | 7.3                       | 8.1                       | 8.7                                | 10.5                         |
| L.S.D. (5%)   |                        | 4.1                     | NS                     | 3.2                   | 8.1                | 6.5                    | 9.2                           | 9.5                 | 7.6                 | 3.1          | 6.4                       | 5.5                       | 8.6                                | 6.3                          |
| Row Sp. (In.) |                        | 36                      | 36                     | 28                    | 28                 | 38                     | 38                            | 40                  | 38                  | 40           | 40                        | 38                        | 40                                 | 40                           |

| Yield Rank |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Ford       | 12 | 4  | 2  | 2  | 10 | 12 | 10 | 10 | 11 | 7  | 2  | 12 | 14 | 11 |
| Shelby     | 7  | 9  | 11 | 10 | 5  | 13 | 1  | 11 | 1  | 13 | 6  | 3  | 10 | 10 |
| A9-1144    | 9  | 10 | 9  | 12 | 13 | 10 | 7  | 8  | 5  | 2  | 3  | 5  | 5  | 8  |
| C1276      | 2  | 12 | 3  | 1  | 1  | 1  | 12 | 1  | 15 | 9  | 9  | 1  | 2  | 4  |
| C1291      | 3  | 5  | 13 | 4  | 10 | 3  | 6  | 5  | 3  | 5  | 4  | 9  | 4  | 3  |
| CX314-50   | 8  | 6  | 8  | 8  | 6  | 4  | 3  | 9  | 5  | 8  | 7  | 11 | 7  | 12 |
| CX314-56   | 5  | 7  | 3  | 6  | 9  | 5  | 8  | 2  | 5  | 3  | 5  | 7  | 11 | 7  |
| CX314-81   | 4  | 2  | 5  | 5  | 8  | 7  | 5  | 7  | 4  | 6  | 1  | 4  | 12 | 9  |
| CX314-90   | 10 | 3  | 1  | 9  | 2  | 5  | 11 | 11 | 10 | 10 | 8  | 10 | 7  | 5  |
| CX314-92   | 6  | 1  | 10 | 6  | 7  | 9  | 9  | 3  | 2  | 10 | 10 | 7  | 9  | 6  |
| S9-2501    | 11 | 13 | 12 | 11 | 12 | 14 | 2  | 11 | 8  | 4  | 13 | 5  | 6  | 12 |
| S9-2504    | 1  | 11 | 15 | 3  | 3  | 2  | 4  | 4  | 9  | 1  | 11 | 2  | 3  | 7  |
| UD470      | 13 | 15 | 6  | 13 | 4  | 8  | 13 | 6  | 13 | 14 | 14 | 14 | 13 | 1  |
| UD475      | 14 | 7  | 14 | 14 | 14 | 10 | 14 | 14 | 12 | 12 | 12 | 13 | 1  | 14 |
| UD485      | 15 | 14 | 7  | 14 | 15 | 15 | 15 | 15 | 14 | 15 | 15 | 15 | 15 | 15 |

\*Not included in the mean.

<sup>1</sup>Irrigated.

Table 55. Maturity, days earlier (-) or later (+) than Shelby, for Uniform Preliminary Test III, 1962.

| Strain         | Mean<br>of 11<br>Tests | George-<br>town<br>Del. | Hoyt-<br>ville<br>Ohio | Woos-<br>ter<br>Ohio | Co-<br>lum-<br>bus<br>Ohio | Lafa-<br>yette<br>Ind. | Wor-<br>thing-<br>ton<br>Ind. |
|----------------|------------------------|-------------------------|------------------------|----------------------|----------------------------|------------------------|-------------------------------|
|                |                        |                         | *                      | *                    |                            |                        |                               |
| Ford           | -0.5                   | 0                       | -1                     | -1                   | + 1                        | + 1                    | + 1                           |
| Shelby         | 0                      | 0                       | 0                      | 0                    | 0                          | 0                      | 0                             |
| A9-1144        | +0.5                   | +1                      | -1                     | -1                   | - 3                        | 0                      | 0                             |
| C1276          | +4.4                   | +5                      | +7                     | +2                   | - 1                        | + 6                    | +11                           |
| C1291          | +5.5                   | +6                      | +4                     | +2                   | + 3                        | + 6                    | +13                           |
| CX314-50       | -0.1                   | 0                       | -1                     | 0                    | - 1                        | + 2                    | 0                             |
| CX314-56       | -1.4                   | 0                       | +1                     | -1                   | - 4                        | 0                      | 0                             |
| CX314-81       | +0.5                   | 0                       | +1                     | -1                   | - 2                        | + 3                    | + 1                           |
| CX314-90       | +0.5                   | 0                       | +3                     | 0                    | - 1                        | + 3                    | 0                             |
| CX314-92       | +0.7                   | 0                       | +1                     | +2                   | + 2                        | + 3                    | + 2                           |
| S9-2501        | -0.5                   | 0                       | -1                     | -2                   | - 5                        | + 2                    | 0                             |
| S9-2504        | +3.1                   | +1                      | +3                     | +1                   | + 1                        | + 4                    | + 4                           |
| UD470          | +4.7                   | +1                      | +1                     | -1                   | - 2                        | + 5                    | +14                           |
| UD475          | +2.4                   | +1                      | -2                     | -1                   | - 1                        | 0                      | +13                           |
| UD485          | -6.9                   | -5                      | -5                     | -3                   | -11                        | -10                    | + 2                           |
| Clark          | +9.5                   | +7                      | --                     | --                   | + 9                        | + 5                    | +12                           |
| Date planted   | 5-23                   | 5-29                    | 5-18                   | 5-21                 | 5-10                       | 5-18                   | 5-24                          |
| Shelby matured | 9-23                   | 9-14                    | 9-24                   | 9-28                 | 10-10                      | 9-19                   | 9-18                          |
| Days to mature | 123                    | 108                     | 129                    | 130                  | 153                        | 124                    | 117                           |

\*Not included in the mean.

<sup>1</sup>Irrigated.

Table 55. (Continued)

| Strain         | Ur-<br>bana<br>Ill. | Gi-<br>rard<br>Ill. | Ames<br>Iowa | Ottum-<br>wa<br>Iowa | Co-<br>lum-<br>bia<br>Mo. | Lin-<br>coln<br>Nebr. <sup>1</sup> | Man-<br>hat-<br>tan<br>Kans. |
|----------------|---------------------|---------------------|--------------|----------------------|---------------------------|------------------------------------|------------------------------|
| Ford           | + 1                 | 0                   | -2           | -3                   | - 2                       | 0                                  | - 2                          |
| Shelby         | 0                   | 0                   | 0            | 0                    | 0                         | 0                                  | 0                            |
| A9-1144        | 0                   | - 1                 | +2           | 0                    | + 5                       | + 3                                | - 1                          |
| C1276          | + 2                 | + 5                 | +4           | +2                   | +10                       | + 4                                | 0                            |
| C1291          | + 6                 | + 3                 | +4           | +3                   | + 9                       | + 6                                | + 2                          |
| CX314-50       | - 1                 | - 1                 | 0            | 0                    | 0                         | - 1                                | + 1                          |
| CX314-56       | - 3                 | - 1                 | -2           | -1                   | - 1                       | - 1                                | - 2                          |
| CX314-81       | - 1                 | 0                   | +2           | -2                   | + 1                       | + 3                                | + 1                          |
| CX314-90       | + 1                 | 0                   | +2           | 0                    | 0                         | + 1                                | 0                            |
| CX314-92       | 0                   | + 1                 | +2           | 0                    | 0                         | - 1                                | - 1                          |
| S9-2501        | - 1                 | 0                   | +2           | -1                   | 0                         | - 2                                | - 1                          |
| S9-2504        | + 2                 | + 2                 | +5           | +4                   | + 7                       | + 3                                | + 1                          |
| UD470          | + 7                 | + 4                 | +2           | +2                   | + 9                       | + 7                                | + 3                          |
| UD475          | + 7                 | - 1                 | +1           | -2                   | + 1                       | + 5                                | + 2                          |
| UD485          | -14                 | -15                 | -5           | -7                   | - 3                       | - 2                                | - 6                          |
| Clark          | + 5                 | + 9                 | +5           | +5                   | +16                       | +12                                | +10                          |
| Date planted   | 5-15                | 5-17                | 5-18         | 6-1                  | 5-28                      | 5-22                               | 6-12                         |
| Shelby matured | 9-23                | 9-15                | 9-28         | 9-23                 | 9-18                      | 9-23                               | 9-26                         |
| Days to mature | 131                 | 121                 | 133          | 119                  | 113                       | 129                                | 106                          |

UNIFORM TEST IV - 1962

| Strain         | Originating Agency               | Origin  | Generation Composited |
|----------------|----------------------------------|---|-----------------------|
| Bethel         | Del. A.E.S. & U.S.R.S.L.         | FC 33243 x Perry  | F <sub>5</sub>        |
| Clark          | Ill. A.E.S. & U.S.R.S.L.         | Lincoln (2) x Richland  | F <sub>8</sub>        |
| L6             | Ill. A.E.S. & U.S.R.S.L.         | L8 x L7   | F <sub>1</sub>        |
| L7             | Ill. A.E.S. & U.S.R.S.L.         | Clark (3) x F <sub>2</sub> [Clark (4) x F <sub>2</sub> (Blackhawk x Clark)]                             | F <sub>1</sub>        |
| L8             | Ill. A.E.S. & U.S.R.S.L.         | Clark (5) x F <sub>5</sub> (L49-4091 x Clark)   | F <sub>1</sub>        |
| Clark 63 (SL1) | Ill. and Mo. A.E.S. & U.S.R.S.L. | F <sub>2</sub> [Clark (4) x S54-1714] x F <sub>1</sub> [Clark (5) x F <sub>2</sub> (Blackhawk x Clark)] | F <sub>1</sub>        |
| SL1-H          | Ill. and Mo. A.E.S. & U.S.R.S.L. | Same as above   | F <sub>1</sub>        |
| Kent           | Purdue A.E.S. & U.S.R.S.L.       | Lincoln x Ogden   | F <sub>7</sub>        |
| C1220          | Purdue A.E.S. & U.S.R.S.L.       | LX1061-9-15 x Richland  | F <sub>6</sub>        |
| C1266          | Purdue A.E.S. & U.S.R.S.L.       | Harosoy x C1079   | F <sub>6</sub>        |
| C1268          | Purdue A.E.S. & U.S.R.S.L.       | Harosoy x C1079   | F <sub>6</sub>        |
| K646           | Kansas A.E.S. & U.S.R.S.L.       | Unknown*  |                       |
| K701           | Kansas A.E.S. & U.S.R.S.L.       | Unknown*  |                       |
| L57-0034       | Ill. A.E.S. & U.S.R.S.L.         | L46-2132 x Adams  | F <sub>6</sub>        |
| L57-2324       | Ill. A.E.S. & U.S.R.S.L.         | L49-4091 x Clark  | F <sub>5</sub>        |
| L57-3104       | Ill. A.E.S. & U.S.R.S.L.         | C985 x Perry  | F <sub>5</sub>        |
| Md59-285       | Md. A.E.S. & U.S.R.S.L.          | Lincoln x C985  | F <sub>6</sub>        |

Identification of Parent Strains

|             |  |
|-------------|--|
| C985        | F <sub>4</sub> line from Lincoln x Ogden, progenitor of Kent.  |
| C1079       | F <sub>7</sub> line from C985.   |
| FC 33243    | Rogue in Lincoln, selected by H. J. Anderson, Calamus, Iowa; resistant to root knot.   |
| LX1061-9-15 | F <sub>7</sub> line from C985.   |
| L46-2132    | F <sub>5</sub> line from Lincoln (2) x Richland, progenitor of Clark and Shelby.   |
| L49-4091    | Pustule-resistant F <sub>4</sub> line from L44-1219 x (Lincoln x CNS). L44-1219 is an F <sub>3</sub> line from Lincoln (2) x Richland. |
| S54-1714    | Pustule-resistant sel. from L49-4091 x Clark.  |

\*Records destroyed by fire in 1957.

Data were reported from 14 locations in 1962 for the four varieties and 13 experimental strains.

Four of the strains, plus the newly released Clark 63, were derived by backcrossing to Clark and all were new entries except SL1-H. The four of these which have Phytophthora resistance averaged slightly lower in yield than Clark, while L8, which

has only pustule resistance, averaged a little higher. In other traits they were close to Clark except that L8 tended to be late.

L57-0034 has been in this test since 1960. In the past it has outyielded Clark, but this year the margin was very slight. C1220 and L57-2324 have each been in the test two years. C1220 yielded relatively poorly this year. In 1961 it equalled Clark's yield but this year averaged two bushels lower. L57-2324 outyielded Clark by about one bushel both years and, in addition, is pustule resistant.

The remaining six varieties were advanced from last year's Preliminary Test IV. C1266 topped the test in yield, had excellent lodging resistance, and apparently is somewhat resistant to downy mildew. C1268 and Md59-285 equalled Clark in yield and were better in both lodging and seed quality.

A description and outline of the history of the development of Clark 63 follows:

### CLARK 63

Clark 63 was named and released in January 1963. Releasing states are Illinois, Indiana, Iowa, Kansas, Missouri, and Ohio. Clark 63, formerly strain SL1, is similar to Clark in all respects except for the addition from Blackhawk of a dominant gene for Phytophthora rot resistance and the addition from L49-4091 of a recessive gene (originally from CNS) for bacterial pustule resistance. Clark 63 was developed cooperatively with the backcrossing for pustule resistance done at Columbia, Missouri, and the backcrossing for Phytophthora resistance done at Urbana, Illinois. The details of its development are given below:

#### Columbia, Missouri

|      |                                       |  |
|------|---------------------------------------|--|
| 1954 | BC <sub>1</sub>                       | Cross of S4-1714 x Clark made.<br>S4-1714 is a BP resistant F <sub>6</sub> line from L49-4091 x L46-2132-1 and was in Uniform Test IV in 1956. Its BP resistance traces through L49-4091 to CNS. L49-4091 is an F <sub>4</sub> line from the cross of an F <sub>3</sub> line of Lincoln (2) x Richland by the F <sub>1</sub> of Lincoln x CNS. L46-2132-1 is an F <sub>5</sub> plant from L46-2132 which is the F <sub>5</sub> line from which Clark and Shelby were selected. |
| 1955 | F <sub>1</sub> BC <sub>1</sub>        | Two plants grown   |
| 1956 | F <sub>2</sub>                        | Plants grown and harvested individually.   |
| 1957 | F <sub>3</sub>                        | About 200 F <sub>3</sub> lines grown, 2 lines crossed with L46-2132-A14 which is a selection made at Ames, Iowa, from L46-2132. L46-2132-A14 was tested in Uniform Test III in 1956 and Uniform Test IV in 1956-57 and performed similarly to Clark.   |
| 1957 | Fall F <sub>1</sub> BC <sub>2</sub>   | Grown in greenhouse and crossed with L46-2132-A14.   |
| 1958 | Spring F <sub>1</sub> BC <sub>3</sub> | 21 plants grown  |



|         |        |                                |  |
|---------|--------|--------------------------------|--|
| 1958    | Summer | F <sub>2</sub>                 | BP-tested in greenhouse; about 40 plants transplanted to field; crossed with Clark.  |
| 1958    | Fall   | F <sub>1</sub> BC <sub>4</sub> | Plants grown and 20 F <sub>2</sub> seeds sent to Urbana.   |
| [1959   | Spring |                                | Crossed with BC <sub>5</sub> PR-resistant plants at Urbana.]   |
| 1959    | Summer | F <sub>1</sub> (BP + PR)       | 9 plants grown from seeds sent from Urbana.  |
| 1959-60 | Winter | F <sub>2</sub>                 | Plants grown and tested for PR and BP; resistant plants progeny tested for PR.   |
| 1960    | Summer | F <sub>3</sub>                 | 8 F <sub>3</sub> lines space planted in field (8-12 inches apart) and harvested.   |
| 1960-61 | Winter | F <sub>4</sub>                 | BP test showed that 2 lines were not resistant; these were discarded, leaving 6 uniformly resistant F <sub>3</sub> lines from 2 F <sub>1</sub> plants. |

Urbana, Illinois

|         |         |  |  |
|---------|---------|--|--|
| 1951    |         |  | Cross of Blackhawk x Clark made at Ames, Iowa.   |
| 1952    |         | F <sub>1</sub>   | Plants grown at Ames; seeds sent to Urbana in April 1956.  |
| 1956    | Apr-Aug | F <sub>2</sub>   | Seedlings PR inoculated; survivors (4 plants) crossed onto Clark.  |
| 1956-57 | Oct-Mar | F <sub>1</sub> BC <sub>1</sub>   | Seedlings PR inoculated; survivors (5) crossed onto Clark.   |
| 1957    | Apr-Sep | F <sub>1</sub> BC <sub>2</sub>   | Seedlings PR inoculated; survivors (4) crossed onto Clark.   |
| 1957-58 | Oct-Feb | F <sub>1</sub> BC <sub>3</sub>   | Seedlings PR inoculated; survivors (8) crossed onto Clark.   |
| 1958    | Feb-Jun | F <sub>1</sub> BC <sub>4</sub>   | Seedlings PR inoculated; survivors (9 plants, designated L58g-122) crossed onto Clark.<br>(A bulk of 2 resistant F <sub>3</sub> lines from this BC <sub>4</sub> was tested as L58g-122R in Preliminary Test IV in 1960 and in Uniform Test IV in 1961.)  |
| 1959    | Mar-Jun | F <sub>1</sub> BC <sub>5</sub> (PR)<br>F <sub>2</sub> BC <sub>4</sub> (BP) | Three seedlings PR inoculated; 1 survived and was designated L59g-182.<br>Twenty seedlings grown from seeds sent from Columbia and BP inoculated; 15 infected plants rogued leaving 5 resistant plants, designated L59g-188.<br>Cross of L59g-182 x -188 made, 11 seeds sent to Columbia, 14 kept at Urbana. |
| 1959    | Jun-Oct | F <sub>1</sub> (BP + PR)   | 14 seedlings PR inoculated in field (159-2823).<br>9 survived.   |



|         |         |                |   |
|---------|---------|----------------|---|
| 1959-60 | Feb-Jun | F <sub>2</sub> | Seedlings from L59-2823 BP inoculated, infected plants rogued (L60g-303).   |
| 1960    | Jun-Oct | F <sub>3</sub> | 30 F <sub>3</sub> lines from L60g-303 grown in 8-foot rows and BP inoculated: 21 uniformly resistant lines found (L60-241 to -270). |
| 1960-61 | Dec-Jan | F <sub>4</sub> | 21 BP resistant lines inoculated with PR, 8 lines found to be uniformly PR resistant (10.2 pounds of seeds).                        |

Columbia and Urbana

|      |         |                |   |
|------|---------|----------------|---|
| 1961 | May-Sep | F <sub>4</sub> | <p>8 F<sub>3</sub> lines produced at Urbana and 6 produced at Columbia were yield-tested in rod-row plots with four replications at Urbana and Columbia; differences in yield were not statistically significant.</p> <p>The 8 Urbana lines and 2 of the Columbia ones were rechecked for pustule reaction and one Urbana line was found to be segregating and was discarded.</p> <p>The lines were increased and harvested individually at Urbana and Columbia.</p> <p>A composite of PR-segregating, BP-resistant lines from Urbana was tested in Uniform Test IV as SL1-H. Another composite of segregating lines was tested in Uniform Group IVS as SL-1.</p> |
| 1962 |         |                | <p>Seeds from 7 Urbana lines and 6 Columbia lines composited and increased in 6 states as SL1.</p> <p>SL1 tested in Uniform Test IV and IVS.</p>  |

Increase and distribution of Clerk 63:

|          | 1962<br><u>Production</u> | <u>Distribution</u> | 1963       |
|----------|---------------------------|---------------------|------------|
| Illinois | 26 bus.                   | 31 bus.             | 1,834 bus. |
| Missouri | 64                        | 28                  | 2,000      |
| Indiana  |                           | 13                  | 1,500      |
| Iowa     |                           | 2                   | 120        |
| Kansas   |                           | 13                  | 400        |
| Ohio     |                           | 2                   | 100        |
| Total    | 90 bus.                   | 89 bus.             | 5,954 bus. |

Table 56. Summary of data for Uniform Test IV, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 10    | 10   | 10                         | 10           | 10     | 10              | 6              | Protein          | Oil  |
|              |       |      |                            |              |        |                 |                | 7                | 7    |
| Bethel       | 35.1  | 16   | +13.1                      | 2.1          | 42     | 2.3             | 16.5           | 41.1             | 20.6 |
| Clark        | 37.4  | 8    | 0                          | 2.2          | 40     | 2.5             | 16.9           | 41.8             | 20.9 |
| L6           | 36.3  | 12   | + 1.1                      | 2.4          | 40     | 2.8             | 16.1           | 41.8             | 20.5 |
| L7           | 35.4  | 15   | + 0.1                      | 2.4          | 40     | 2.7             | 16.4           | 42.0             | 21.0 |
| L8           | 37.7  | 6    | + 1.8                      | 2.1          | 39     | 2.6             | 16.3           | 41.8             | 20.9 |
| Clark 63     | 36.8  | 10   | + 0.6                      | 2.2          | 41     | 2.6             | 15.9           | 41.9             | 20.7 |
| SL1-H        | 36.5  | 11   | + 0.4                      | 2.2          | 40     | 2.6             | 15.9           | 41.9             | 20.8 |
| Kent         | 38.7  | 2    | + 8.6                      | 2.1          | 39     | 2.6             | 18.2           | 41.8             | 20.9 |
| C1220        | 35.1  | 16   | + 7.3                      | 2.4          | 44     | 2.7             | 16.9           | 41.0             | 20.7 |
| C1266        | 40.7  | 1    | + 2.5                      | 1.9          | 43     | 2.7             | 17.3           | 43.4             | 20.3 |
| C1268        | 37.6  | 7    | + 5.6                      | 1.8          | 40     | 2.2             | 16.6           | 42.1             | 20.5 |
| K646         | 37.1  | 9    | + 7.2                      | 2.4          | 43     | 2.6             | 16.4           | 41.9             | 20.5 |
| K701         | 36.3  | 12   | + 3.0                      | 1.9          | 38     | 2.7             | 16.6           | 40.9             | 21.8 |
| L57-0034     | 37.8  | 4    | + 5.5                      | 2.1          | 37     | 2.3             | 15.7           | 40.9             | 21.4 |
| L57-2324     | 38.3  | 3    | + 0.8                      | 2.1          | 38     | 3.0             | 16.6           | 41.9             | 21.3 |
| L57-3104     | 35.6  | 14   | + 0.1                      | 1.9          | 39     | 2.8             | 17.3           | 41.7             | 22.1 |
| Md59-285     | 37.8  | 4    | + 4.8                      | 1.7          | 37     | 2.2             | 16.3           | 42.0             | 21.1 |

<sup>1</sup>Days earlier (-) or later (+) than Clark which matured September 28, 124 days after planting.

Table 57. Disease data for Uniform Test IV, 1962.

| Strain   | Bacte-<br>rial<br>Blight |     | Bacte-<br>rial<br>Pustule |     | Brown<br>Stem<br>Rot | Phytoph-<br>thora<br>Rot | Pod &<br>Stem<br>Blight | Downy<br>Mildew |      | Frogeye<br>Ind. |                 | Purple<br>Stain |      |
|----------|--------------------------|-----|---------------------------|-----|----------------------|--------------------------|-------------------------|-----------------|------|-----------------|-----------------|-----------------|------|
|          | Ill.                     | Ia. | Ill.                      | Ia. | Ill.                 | Ind.                     | Del.                    | Ind.            | Del. | R1              | R2 <sup>2</sup> | Ind.            | Del. |
|          | a <sup>1</sup>           | a   | a                         | a   | n <sup>1</sup>       | a                        | n                       | n               | n    | a               | a               | n               | n    |
| Bathel   | 4                        | 3   | 4                         | 4   | 4                    | S                        | 2.0                     | 3.0             | 4.3  | R               | S               | 2               | 2.0  |
| Clark    | 2                        | 3   | 4                         | 3   | 4                    | S                        | 3.5                     | 3.0             | 3.8  | R               | S               | 3               | 2.0  |
| L6       | 2                        | 3   | 2                         | 1   | 4                    | R                        | 3.0                     | 3.0             | 3.8  | R               | S               |                 | 2.0  |
| L7       | 2                        | 3   | 4                         | 2   | 4                    | R                        | 3.0                     | 3.0             | 3.6  | R               | S               |                 | 1.5  |
| L8       | 1                        | 3   | 2                         |     | 4                    | S                        | 2.8                     | 3.0             | 3.8  | R               | S               |                 | 1.5  |
| Clark 63 | 3                        | 3   | 2                         | 1   | 4                    | R                        | 3.2                     | 3.3             | 4.3  | R               | S               |                 | 1.5  |
| SL1-H    | 2                        | 3   | 2                         | 1   | 4                    | Seg.                     | 3.2                     | 3.0             | 4.4  | R               | S               | 3               | 1.2  |
| Kent     | 3                        | 3   | 2                         | 3   | 4                    | S                        | 2.0                     | 2.5             | 1.1  | R               | R               | 3               | 3.0  |
| C1220    | 3                        | 4   | 3                         | 3   | 4                    | S                        | 2.3                     | 2.5             | 1.9  | R               | R               | 2               | 2.8  |
| C1266    | 2                        | 3   | 3                         | 3   | 4                    | S                        | 1.8                     | 2.3             | 1.0  | R               | Seg.            | 3               | 3.0  |
| C1268    | 4                        | 3   | 3                         | 3   | 4                    | S                        | 2.0                     | 2.3             | 1.0  | R               | R               | 2               | 2.2  |
| K646     | 2                        | 3   | 3                         | 3   | 4                    | S                        | 2.0                     | 3.5             | 3.9  | --              | Seg.            |                 | 2.2  |
| K701     | 1                        | 3   | 4                         | 3   | 4                    | S                        | 2.0                     | 3.0             | 4.3  | --              | S               |                 | 2.2  |
| L57-0034 | 2                        | 3   | 4                         | 3   | 4                    | S                        | 2.0                     | 2.8             | 3.5  | R               | S               | 2               | 2.5  |
| L57-2324 | 4                        | 3   | 2                         | 3   | 4                    | S                        | 2.8                     | 2.3             | 4.3  | R               | S               | 3               | 2.5  |
| L57-3104 | 4                        | 4   | 3                         | 3   | 4                    | S                        | 2.5                     | 3.0             | 4.1  | R               | R               |                 | 2.0  |
| Md59-285 | 4                        | 3   | 4                         | 4   | 4                    | S                        | 2.2                     | 3.3             | 4.3  | Seg.            | S               |                 | 2.0  |

<sup>1</sup>a = artificial inoculation; n = natural infection.

<sup>2</sup>R1 = Race 1; R2 = Race 2.

Table 58. Yield for Uniform Test IV, 1962.

| Strain            | Mean<br>of 10<br>Tests | Rank | Free-<br>hold<br>N.J.<br>* | George-<br>town<br>Del. <sup>1</sup> | Co-<br>lum-<br>bus<br>Ohio | Wor-<br>thing-<br>ton<br>Ind. | Edge-<br>wood<br>Ill. | Eldo-<br>rado<br>Ill. |
|-------------------|------------------------|------|----------------------------|--------------------------------------|----------------------------|-------------------------------|-----------------------|-----------------------|
| Bethel            | 35.1                   | 16   | 36.7                       | 23.8                                 | 30.6                       | 44.4                          | 26.8                  | 46.2                  |
| Clark             | 37.4                   | 8    | 35.6                       | 24.4                                 | 30.7                       | 45.7                          | 37.8                  | 51.9                  |
| L6                | 36.3                   | 12   | 36.3                       | 22.1                                 | 32.8                       | 40.3                          | 37.3                  | 48.0                  |
| L7                | 35.4                   | 15   | 35.9                       | 21.5                                 | 29.6                       | 37.5                          | 35.7                  | 51.6                  |
| L8                | 37.7                   | 6    | 39.3                       | 22.8                                 | 32.7                       | 44.1                          | 37.1                  | 51.5                  |
| Clark 63          | 36.8                   | 10   | 37.8                       | 20.9                                 | 29.1                       | 44.3                          | 38.2                  | 49.6                  |
| SL1-H             | 36.5                   | 11   | 35.0                       | 22.7                                 | 29.6                       | 46.3                          | 38.3                  | 48.6                  |
| Kent              | 38.7                   | 2    | 41.4                       | 26.5                                 | 29.6                       | 49.2                          | 33.4                  | 53.5                  |
| C1220             | 35.1                   | 16   | 35.6                       | 24.6                                 | 25.3                       | 44.0                          | 33.2                  | 54.6                  |
| C1266             | 40.7                   | 1    | 39.9                       | 31.9                                 | 32.0                       | 48.9                          | 40.3                  | 56.0                  |
| C1268             | 37.6                   | 7    | 36.6                       | 27.5                                 | 30.3                       | 47.8                          | 36.0                  | 54.0                  |
| K646              | 37.1                   | 9    | 37.0                       | 21.5                                 | 33.8                       | 41.3                          | 36.8                  | 55.6                  |
| K701              | 36.3                   | 12   | 39.1                       | 22.7                                 | 30.6                       | 45.9                          | 40.3                  | 49.1                  |
| L57-0034          | 37.8                   | 4    | 42.1                       | 27.1                                 | 35.8                       | 44.9                          | 38.3                  | 51.7                  |
| L57-2324          | 38.3                   | 3    | 37.5                       | 23.6                                 | 31.8                       | 45.2                          | 41.9                  | 48.0                  |
| L57-3104          | 35.6                   | 14   | 40.3                       | 23.6                                 | 34.6                       | 47.5                          | 38.7                  | 49.6                  |
| Md59-285          | 37.8                   | 4    | 44.2                       | 22.7                                 | 36.4                       | 47.3                          | 36.7                  | 54.6                  |
| Coef. of Var. (%) |                        |      | 23.4                       | 9.1                                  | 17.6                       | 9.5                           | 10.8                  | 8.0                   |
| L.S.D. (5%)       |                        |      | 4.2                        | 5.2                                  | NS                         | 6.1                           | 5.6                   | 5.8                   |
| Row Spacing (In.) |                        |      | 32                         | 36                                   | 28                         | 38                            | 37                    | 36                    |

\*Not included in the mean.

<sup>1</sup>Three replications.

<sup>2</sup>Irrigated.

Table 58. (Continued)

| Strain            | Carbon-<br>dale<br>Ill. | Miller<br>City<br>Ill. | Co-<br>lum-<br>bia<br>Mo. | Por-<br>tage-<br>ville<br>Mo. <sup>1</sup> | Man-<br>hat-<br>tan<br>Kans. | Man-<br>hat-<br>tan<br>Kans. <sup>2</sup> | Mound<br>Valley<br>Kans. | Co-<br>lum-<br>bus<br>Kans. |
|-------------------|-------------------------|------------------------|---------------------------|--|------------------------------|---|--------------------------|-----------------------------|
|                   |                         |                        |                           |  |                              | *   | *                        | *                           |
| Bethel            | 33.9                    | 34.6                   | 36.9                      | 39.7                                       | 33.8                         | 46.8                                      | 12.2                     | 5.8                         |
| Clark             | 34.4                    | 36.6                   | 39.5                      | 35.6                                       | 37.3                         | 40.5                                      | 10.4                     | 13.7                        |
| L6                | 36.6                    | 34.7                   | 39.4                      | 32.5                                       | 39.5                         | 43.9                                      | 11.0                     | 10.8                        |
| L7                | 33.2                    | 34.6                   | 37.4                      | 36.3                                       | 36.8                         | 43.1                                      | 12.7                     | 12.9                        |
| L8                | 34.4                    | 39.6                   | 40.5                      | 33.2                                       | 41.2                         | 47.5                                      | 12.5                     | 12.0                        |
| Clark 63          | 34.6                    | 38.0                   | 37.3                      | 37.5                                       | 38.8                         | 44.2                                      | 11.5                     | 12.9                        |
| SL1-H             | 32.4                    | 37.0                   | 39.7                      | 31.9                                       | 38.7                         | 42.5                                      | 11.0                     | 14.5                        |
| Kent              | 37.9                    | 36.1                   | 39.6                      | 39.1                                       | 42.4                         | 48.8                                      | 17.5                     | 11.1                        |
| C1220             | 33.3                    | 35.9                   | 33.8                      | 31.4                                       | 35.3                         | 40.4                                      | 13.9                     | 12.1                        |
| C1266             | 34.3                    | 37.7                   | 43.5                      | 43.3                                       | 39.2                         | 45.5                                      | 18.2                     | 15.9                        |
| C1268             | 32.9                    | 32.9                   | 40.8                      | 37.3                                       | 36.9                         | 49.2                                      | 20.4                     | 16.0                        |
| K646              | 37.5                    | 33.6                   | 41.9                      | 28.6                                       | 40.0                         | 44.4                                      | 16.4                     | 13.3                        |
| K701              | 33.9                    | 36.4                   | 34.4                      | 33.3                                       | 36.0                         | 42.8                                      | 13.8                     | 20.1                        |
| L57-0034          | 30.1                    | 33.8                   | 42.5                      | 32.7                                       | 41.1                         | 45.5                                      | 15.4                     | 14.7                        |
| L57-2324          | 33.9                    | 37.9                   | 39.1                      | 41.2                                       | 40.3                         | 50.6                                      | 9.6                      | 16.3                        |
| L57-3104          | 28.4                    | 36.0                   | 33.7                      | 29.1                                       | 35.0                         | 38.5                                      | 12.6                     | 15.9                        |
| Md59-285          | 35.2                    | 32.2                   | 39.3                      | 36.4                                       | 37.2                         | 45.8                                      | 15.2                     | 7.2                         |
| Coef. of Var. (%) | --                      | 8.2                    | 7.4                       | 16.9                                       | 8.0                          | 11.1                                      | 14.0                     | --                          |
| L.S.D. (5%)       | --                      | 4.2                    | 4.0                       | NS   | 4.4                          | NS  | 2.8                      | --                          |
| Row Spacing (In.) | 40                      | 38                     | 38                        | 38   | 40                           | 36  | 36                       | 40                          |

Table 59. Yield rank for Uniform Test IV, 1962.

| Strain   | Mean<br>of 10<br>Tests | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Co-<br>lum-<br>bus<br>Ohio | Wor-<br>thing-<br>ton<br>Ind. | Edge-<br>wood<br>Ill. | Eldo-<br>rado<br>Ill. |
|----------|------------------------|-----------------------|-------------------------|----------------------------|-------------------------------|-----------------------|-----------------------|
|          |                        | *                     |                         |                            |                               |                       |                       |
| Bethel   | 16                     | 11                    | 7                       | 10                         | 11                            | 17                    | 17                    |
| Clark    | 8                      | 15                    | 6                       | 9                          | 8                             | 8                     | 7                     |
| L6       | 12                     | 13                    | 14                      | 5                          | 16                            | 9                     | 15                    |
| L7       | 15                     | 14                    | 15                      | 13                         | 17                            | 14                    | 9                     |
| L8       | 6                      | 6                     | 10                      | 6                          | 13                            | 10                    | 10                    |
| Clark 63 | 10                     | 8                     | 17                      | 16                         | 12                            | 7                     | 11                    |
| SL1-H    | 11                     | 17                    | 11                      | 13                         | 6                             | 5                     | 14                    |
| Kent     | 2                      | 3                     | 4                       | 13                         | 1                             | 15                    | 6                     |
| C1220    | 16                     | 15                    | 5                       | 17                         | 14                            | 16                    | 3                     |
| C1266    | 1                      | 5                     | 1                       | 7                          | 2                             | 2                     | 1                     |
| C1268    | 7                      | 12                    | 2                       | 12                         | 3                             | 13                    | 5                     |
| K646     | 9                      | 10                    | 15                      | 4                          | 15                            | 11                    | 2                     |
| K701     | 12                     | 7                     | 11                      | 10                         | 7                             | 2                     | 13                    |
| L57-0034 | 4                      | 2                     | 3                       | 2                          | 10                            | 5                     | 8                     |
| L57-2324 | 3                      | 9                     | 8                       | 8                          | 9                             | 1                     | 15                    |
| L57-3104 | 14                     | 4                     | 8                       | 3                          | 4                             | 4                     | 11                    |
| Md59-285 | 4                      | 1                     | 11                      | 1                          | 5                             | 12                    | 3                     |

\*Not included in the mean.

<sup>1</sup>Irrigated



Table 59. (Continued)

| Strain   | Carbon-<br>dale<br>Ill. | Miller<br>City<br>Ill. | Co-<br>lum-<br>bia<br>Mo. | Por-<br>tage-<br>ville<br>Mo. | Man-<br>hat-<br>tan<br>Kans. | Man-<br>hat-<br>tan<br>Kans. <sup>1</sup> | Mound<br>Valley<br>Kans. | Co-<br>lum-<br>bus<br>Kans. |
|----------|-------------------------|------------------------|---------------------------|-------------------------------|------------------------------|---|--------------------------|-----------------------------|
|          |                         |                        |                           |                               |                              | *   | *                        | *                           |
| Bethel   | 9                       | 12                     | 14                        | 3                             | 17                           | 5   | 12                       | 17                          |
| Clark    | 6                       | 6                      | 8                         | 9                             | 10                           | 15  | 16                       | 8                           |
| L6       | 3                       | 11                     | 9                         | 13                            | 6                            | 11  | 14                       | 15                          |
| L7       | 13                      | 12                     | 12                        | 8                             | 13                           | 12  | 9                        | 10                          |
| L8       | 6                       | 1                      | 5                         | 11                            | 2                            | 4   | 11                       | 13                          |
| Clark 63 | 5                       | 2                      | 13                        | 5                             | 8                            | 10  | 13                       | 10                          |
| SL1-H    | 15                      | 5                      | 6                         | 14                            | 9                            | 14  | 14                       | 7                           |
| Kent     | 1                       | 8                      | 7                         | 4                             | 1                            | 3   | 3                        | 14                          |
| C1220    | 12                      | 10                     | 16                        | 15                            | 15                           | 16  | 7                        | 12                          |
| C1266    | 8                       | 4                      | 1                         | 1                             | 7                            | 7   | 2                        | 4                           |
| C1268    | 14                      | 16                     | 4                         | 6                             | 12                           | 2   | 1                        | 3                           |
| K646     | 2                       | 15                     | 3                         | 17                            | 5                            | 9   | 4                        | 9                           |
| K701     | 9                       | 7                      | 15                        | 10                            | 14                           | 13  | 8                        | 1                           |
| L57-0034 | 16                      | 14                     | 2                         | 12                            | 3                            | 7   | 5                        | 6                           |
| L57-2324 | 9                       | 3                      | 11                        | 2                             | 4                            | 1   | 17                       | 2                           |
| L57-3104 | 17                      | 9                      | 17                        | 16                            | 16                           | 17  | 10                       | 4                           |
| Md59-285 | 4                       | 17                     | 10                        | 7                             | 11                           | 6   | 6                        | 16                          |

Table 60. Maturity, days earlier (-) or later (+) than Clark, for Uniform Test IV, 1962.

| Strain         | Mean<br>of 10<br>Tests | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Co-<br>lum-<br>bus<br>Ohio | Wor-<br>thing-<br>ton<br>Ind. | Edge-<br>wood<br>Ill. | Eldo-<br>rado<br>Ill. |
|----------------|------------------------|-----------------------|-------------------------|----------------------------|-------------------------------|-----------------------|-----------------------|
|                |                        | *                     |                         |                            |                               |                       |                       |
| Bethel         | +13.1                  | +11                   | +11                     | +5                         | +18                           | +15                   | +16                   |
| Clark          | 0                      | 0                     | 0                       | 0                          | 0                             | 0                     | 0                     |
| L6             | + 1.1                  | + 1                   | 0                       | +1                         | + 1                           | + 1                   | + 1                   |
| L7             | + 0.1                  | 0                     | 0                       | 0                          | + 1                           | + 2                   | 0                     |
| L8             | + 1.8                  | 0                     | + 4                     | +1                         | + 2                           | + 2                   | 0                     |
| Clark 63       | + 0.6                  | - 1                   | - 1                     | 0                          | + 1                           | 0                     | + 1                   |
| SL1-H          | + 0.4                  | + 1                   | - 1                     | +1                         | 0                             | + 1                   | - 1                   |
| Kent           | + 8.6                  | + 5                   | + 9                     | +2                         | +12                           | + 9                   | +10                   |
| C1220          | + 7.3                  | + 9                   | + 9                     | +2                         | +12                           | +10                   | + 8                   |
| C1266          | + 2.5                  | 0                     | + 7                     | 0                          | + 7                           | + 6                   | + 1                   |
| C1268          | + 5.6                  | + 2                   | + 9                     | +1                         | +10                           | +10                   | + 5                   |
| K646           | + 7.2                  | + 7                   | + 9                     | 0                          | + 9                           | + 9                   | + 8                   |
| K701           | + 3.0                  | - 2                   | 0                       | +1                         | + 9                           | + 5                   | + 1                   |
| L57-0034       | + 5.5                  | 0                     | + 9                     | 0                          | +12                           | + 4                   | + 4                   |
| L57-2324       | + 0.8                  | - 2                   | 0                       | 0                          | + 2                           | + 1                   | 0                     |
| L57-3104       | + 0.1                  | - 2                   | 0                       | -1                         | + 2                           | 0                     | 0                     |
| Md59-285       | + 4.8                  | + 2                   | + 4                     | +2                         | + 6                           | + 8                   | + 5                   |
| Date planted   | 5-27                   | 5-30                  | 5-29                    | 5-10                       | 5-24                          | 6-6                   | 5-21                  |
| Clark matured  | 9-28                   | 10-15                 | 9-22                    | 10-19                      | 9-30                          | 9-27                  | 9-24                  |
| Days to mature | 124                    | 138                   | 116                     | 162                        | 129                           | 113                   | 126                   |

\*Not included in the mean.

1Irrigated.

Table 60. (Continued)

| Strain         | Carbon-<br>dale<br>Ill. | Miller<br>City<br>Ill. | Co-<br>lum-<br>bia<br>Mo. | Por-<br>tage-<br>ville<br>Mo. | Man-<br>hat-<br>tan<br>Kans. | Man-<br>hat-<br>tan<br>Kans. <sup>1</sup> | Mound<br>Valley<br>Kans. | Co-<br>lum-<br>bus<br>Kans. |
|----------------|-------------------------|------------------------|---------------------------|-------------------------------|------------------------------|---|--------------------------|-----------------------------|
|                |                         |                        |                           |                               |                              | *   | *                        | *                           |
| Bethel         | +21                     | +12                    | +10                       | +17                           | +6                           | +9  | +2                       | +9                          |
| Clark          | 0                       | 0                      | 0                         | 0                             | 0                            | 0   | 0                        | 0                           |
| L6             | 0                       | + 2                    | + 1                       | + 3                           | +1                           | +1  | 0                        | 0                           |
| L7             | - 1                     | + 1                    | + 1                       | - 2                           | -1                           | 0   | 0                        | 0                           |
| L8             | + 1                     | + 1                    | + 2                       | + 3                           | +2                           | 0   | 0                        | 0                           |
| Clark 63       | 0                       | 0                      | + 2                       | + 1                           | +2                           | +1  | 0                        | 0                           |
| SL1-H          | 0                       | + 1                    | + 2                       | - 1                           | +2                           | 0   | 0                        | 0                           |
| Kent           | +10                     | + 9                    | +10                       | + 8                           | +7                           | +8  | +2                       | +5                          |
| C1220          | + 7                     | + 5                    | + 7                       | + 5                           | +8                           | +9  | +2                       | +2                          |
| C1266          | + 2                     | + 1                    | + 3                       | + 2                           | -4                           | +3  | -3                       | +3                          |
| C1268          | + 8                     | + 5                    | + 6                       | + 5                           | -3                           | +4  | 0                        | +8                          |
| K646           | + 7                     | + 9                    | + 7                       | + 9                           | +5                           | +6  | +2                       | +7                          |
| K701           | + 3                     | + 1                    | + 2                       | + 1                           | +7                           | +7  | +2                       | -2                          |
| L57-0034       | + 6                     | + 6                    | + 3                       | + 5                           | +6                           | +6  | +2                       | +2                          |
| L57-2324       | - 1                     | 0                      | + 1                       | 0                             | +5                           | +5  | +2                       | 0                           |
| L57-3104       | + 2                     | - 1                    | 0                         | - 4                           | +3                           | +4  | +2                       | 0                           |
| Id59-285       | + 5                     | + 5                    | + 7                       | + 5                           | +1                           | +3  | +2                       | +2                          |
| Date planted   | 5-15                    | 6-18                   | 5-28                      | 5-17                          | 6-12                         | 6-7                                       | 6-15                     | 5-25                        |
| Clark matured  | 9-15                    | 9-30                   | 10-4                      | 9-9                           | 10-15                        | 10-14                                     | 10-15                    | 9-4                         |
| Days to mature | 123                     | 104                    | 129                       | 115                           | 125                          | 129                                       | 122                      | 102                         |

Table 61. Lodging for Uniform Test IV, 1962.

| Strain   | Mean<br>of 10<br>Tests | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Co-<br>lum-<br>bus<br>Ohio | Wor-<br>thing-<br>ton<br>Ind. | Edge-<br>wood<br>Ill. | Eldo-<br>rado<br>Ill. |
|----------|------------------------|-----------------------|-------------------------|----------------------------|-------------------------------|-----------------------|-----------------------|
|          |                        | *                     |                         |                            |                               |                       |                       |
| Bethel   | 2.1                    | 2.0                   | 2.0                     | 1.2                        | 2.0                           | 2.2                   | 2.6                   |
| Clark    | 2.2                    | 2.0                   | 3.0                     | 1.0                        | 2.3                           | 2.8                   | 3.3                   |
| L6       | 2.4                    | 3.0                   | 2.7                     | 1.0                        | 2.5                           | 2.9                   | 3.5                   |
| L7       | 2.4                    | 3.0                   | 2.7                     | 1.0                        | 2.8                           | 2.9                   | 3.7                   |
| L8       | 2.1                    | 3.0                   | 2.7                     | 1.0                        | 2.3                           | 2.3                   | 3.2                   |
| Clark 63 | 2.2                    | 2.0                   | 2.3                     | 1.2                        | 2.3                           | 2.3                   | 3.4                   |
| SL1-H    | 2.2                    | 3.0                   | 2.7                     | 1.0                        | 2.5                           | 2.6                   | 3.2                   |
| Kent     | 2.1                    | 2.0                   | 2.3                     | 1.2                        | 2.0                           | 2.4                   | 3.5                   |
| C1220    | 2.4                    | 3.0                   | 2.3                     | 1.2                        | 2.3                           | 2.7                   | 3.8                   |
| C1266    | 1.9                    | 3.0                   | 2.0                     | 1.0                        | 2.3                           | 2.7                   | 3.9                   |
| C1268    | 1.8                    | 3.0                   | 1.0                     | 1.2                        | 2.0                           | 2.5                   | 3.3                   |
| K646     | 2.4                    | 3.0                   | 2.7                     | 1.2                        | 2.5                           | 2.2                   | 3.7                   |
| K701     | 1.9                    | 2.0                   | 2.7                     | 1.2                        | 2.0                           | 1.8                   | 3.1                   |
| L57-0034 | 2.1                    | 2.0                   | 1.7                     | 1.0                        | 2.0                           | 2.2                   | 4.0                   |
| L57-2324 | 2.1                    | 2.0                   | 3.0                     | 1.0                        | 2.3                           | 2.0                   | 3.4                   |
| L57-3104 | 1.9                    | 2.0                   | 2.7                     | 1.0                        | 2.0                           | 1.7                   | 3.5                   |
| Md59-285 | 1.7                    | 2.0                   | 2.0                     | 1.0                        | 1.5                           | 1.7                   | 2.5                   |

\*Not included in the mean.

<sup>1</sup>Irrigated.

Table 61. (Continued)

| Strain   | Carbon-<br>dale<br>Ill. | Miller<br>City<br>Ill. | Co-<br>lum-<br>bia<br>Mo. | Por-<br>tage-<br>ville<br>Mo. | Man-<br>hat-<br>tan<br>Kans. | Man-<br>hat-<br>tan<br>Kans. <sup>1</sup> | Mound<br>Valley<br>Kans. | Co-<br>lum-<br>bus<br>Kans. |
|----------|-------------------------|------------------------|---------------------------|-------------------------------|------------------------------|---|--------------------------|-----------------------------|
|          |                         |                        |                           |                               |                              | *   | *                        | *                           |
| Bethel   | 3.0                     | 2.2                    | 2.1                       | 1.5                           | 1.7                          | 2.2                                       | 1.0                      | 1.0                         |
| Clark    | 2.0                     | 2.7                    | 1.6                       | 1.3                           | 2.0                          | 3.2                                       | 1.0                      | 1.0                         |
| L6       | 3.0                     | 2.8                    | 1.9                       | 1.5                           | 2.1                          | 3.6                                       | 1.0                      | 1.0                         |
| L7       | 2.5                     | 2.8                    | 1.7                       | 1.5                           | 2.0                          | 3.2                                       | 1.0                      | 1.0                         |
| L8       | 2.0                     | 3.1                    | 1.4                       | 1.1                           | 2.0                          | 2.8                                       | 1.0                      | 1.0                         |
| Clark 63 | 2.0                     | 3.4                    | 1.7                       | 1.6                           | 2.0                          | 3.1                                       | 1.0                      | 1.0                         |
| SL1-H    | 2.0                     | 2.8                    | 1.9                       | 1.6                           | 1.8                          | 3.0                                       | 1.0                      | 1.0                         |
| Kent     | 3.0                     | 1.7                    | 1.4                       | 1.3                           | 1.7                          | 2.0                                       | 1.0                      | 1.0                         |
| C1220    | 2.5                     | 3.2                    | 2.1                       | 1.4                           | 2.7                          | 3.2                                       | 1.0                      | 1.0                         |
| C1266    | 1.0                     | 2.1                    | 1.2                       | 1.1                           | 1.7                          | 3.2                                       | 1.0                      | 1.0                         |
| C1268    | 2.0                     | 2.0                    | 1.2                       | 1.1                           | 1.4                          | 1.9                                       | 1.0                      | 1.0                         |
| K646     | 2.5                     | 3.1                    | 1.6                       | 1.9                           | 2.2                          | 2.3                                       | 1.0                      | 1.0                         |
| K701     | 2.0                     | 2.0                    | 1.0                       | 1.0                           | 1.8                          | 2.3                                       | 1.0                      | 1.0                         |
| L57-0034 | 2.0                     | 2.7                    | 1.7                       | 2.2                           | 1.8                          | 3.5                                       | 1.0                      | 1.0                         |
| L57-2324 | 2.0                     | 2.9                    | 1.4                       | 1.2                           | 1.7                          | 2.7                                       | 1.0                      | 1.0                         |
| L57-3104 | 1.5                     | 2.3                    | 1.2                       | 1.2                           | 1.6                          | 2.3                                       | 1.0                      | 1.0                         |
| Md59-285 | 2.0                     | 2.4                    | 1.2                       | 1.1                           | 1.8                          | 2.2                                       | 1.0                      | 1.0                         |

Table 62. Plant height for Uniform Test IV, 1962.

| Strain   | Mean<br>of 10<br>Tests | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Co-<br>lum-<br>bus<br>Ohio | Wor-<br>thing-<br>ton<br>Ind. | Edge-<br>wood<br>Ill. | Eldo-<br>rado<br>Ill. |
|----------|------------------------|-----------------------|-------------------------|----------------------------|-------------------------------|-----------------------|-----------------------|
|          |                        | *                     |                         |                            |                               |                       |                       |
| Bethel   | 42                     | 38                    | 41                      | 39                         | 47                            | 42                    | 49                    |
| Clark    | 40                     | 35                    | 38                      | 37                         | 45                            | 41                    | 49                    |
| L6       | 40                     | 37                    | 39                      | 36                         | 47                            | 41                    | 49                    |
| L7       | 40                     | 37                    | 39                      | 36                         | 46                            | 40                    | 49                    |
| L8       | 39                     | 36                    | 38                      | 37                         | 45                            | 39                    | 48                    |
| Clark 63 | 41                     | 36                    | 40                      | 37                         | 48                            | 39                    | 49                    |
| SL1-H    | 40                     | 35                    | 39                      | 38                         | 45                            | 41                    | 49                    |
| Kent     | 39                     | 38                    | 40                      | 36                         | 45                            | 39                    | 47                    |
| C1220    | 44                     | 38                    | 47                      | 41                         | 45                            | 42                    | 55                    |
| C1266    | 43                     | 37                    | 41                      | 38                         | 51                            | 44                    | 54                    |
| C1268    | 40                     | 36                    | 39                      | 37                         | 47                            | 41                    | 49                    |
| K646     | 43                     | 38                    | 43                      | 40                         | 50                            | 43                    | 53                    |
| K701     | 38                     | 35                    | 37                      | 37                         | 45                            | 39                    | 46                    |
| L57-0034 | 37                     | 36                    | 36                      | 36                         | 44                            | 37                    | 46                    |
| L57-2324 | 38                     | 36                    | 36                      | 36                         | 47                            | 38                    | 47                    |
| L57-3104 | 39                     | 37                    | 35                      | 39                         | 46                            | 39                    | 48                    |
| Md59-285 | 37                     | 37                    | 36                      | 38                         | 43                            | 39                    | 46                    |

\*Not included in the mean.

lIrrigated.



Table 62. (Continued)

| Strain   | Carbon-<br>dale<br>Ill. | Miller<br>City<br>Ill. | Co-<br>lum-<br>bia<br>Mo. | Per-<br>tage-<br>ville<br>Mo. | Man-<br>hat-<br>tan<br>Kans. | Man-<br>hat-<br>tan<br>Kans. <sup>1</sup> | Mound<br>Valley<br>Kans. | Co-<br>lum-<br>bus<br>Kans. |
|----------|-------------------------|------------------------|---------------------------|-------------------------------|------------------------------|---|--------------------------|-----------------------------|
|          |                         |                        |                           |                               |                              | *   | *                        | *                           |
| Bethel   | 40                      | 40                     | 35                        | 46                            | 41                           | 47  | 23                       | 40                          |
| Clark    | 36                      | 38                     | 32                        | 41                            | 41                           | 45  | 19                       | 37                          |
| L6       | 37                      | 38                     | 32                        | 40                            | 42                           | 48  | 20                       | 39                          |
| L7       | 37                      | 38                     | 33                        | 44                            | 41                           | 47  | 19                       | 38                          |
| L8       | 34                      | 38                     | 32                        | 38                            | 40                           | 45  | 18                       | 36                          |
| Clark 63 | 37                      | 40                     | 32                        | 41                            | 42                           | 46  | 20                       | 38                          |
| SL1-E    | 36                      | 38                     | 33                        | 40                            | 40                           | 48  | 19                       | 38                          |
| Kent     | 34                      | 39                     | 32                        | 40                            | 40                           | 45  | 21                       | 38                          |
| C1220    | 42                      | 43                     | 35                        | 46                            | 41                           | 47  | 23                       | 42                          |
| C1266    | 39                      | 42                     | 35                        | 43                            | 40                           | 51  | 19                       | 45                          |
| C1268    | 36                      | 37                     | 33                        | 41                            | 40                           | 47  | 20                       | 42                          |
| K646     | 41                      | 42                     | 37                        | 41                            | 43                           | 46  | 22                       | 42                          |
| K701     | 35                      | 37                     | 31                        | 36                            | 38                           | 43  | 19                       | 37                          |
| L57-0034 | 33                      | 35                     | 31                        | 37                            | 38                           | 44  | 19                       | 34                          |
| L57-2324 | 36                      | 37                     | 30                        | 38                            | 37                           | 42  | 19                       | 35                          |
| L57-3104 | 35                      | 37                     | 32                        | 37                            | 38                           | 44  | 19                       | 37                          |
| Md59-285 | 34                      | 36                     | 31                        | 37                            | 34                           | 43  | 19                       | 35                          |

Table 63. Seed quality for Uniform Test IV, 1962.

| Strain   | Mean<br>of 10<br>Tests | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Co-<br>lum-<br>bus<br>Ohio | Wor-<br>thing-<br>ton<br>Ind. | Edge-<br>wood<br>Ill. | Eldo-<br>rado<br>Ill. |
|----------|------------------------|-----------------------|-------------------------|----------------------------|-------------------------------|-----------------------|-----------------------|
|          |                        | *                     |                         |                            |                               |                       |                       |
| Bethel   | 2.3                    | 2.0                   | 1.7                     | 1.2                        | 3.0                           | 2.8                   | 2.4                   |
| Clark    | 2.5                    | 1.0                   | 2.7                     | 1.5                        | 3.0                           | 2.6                   | 4.0                   |
| L6       | 2.8                    | 2.0                   | 2.7                     | 1.7                        | 3.0                           | 2.8                   | 4.3                   |
| L7       | 2.7                    | 2.0                   | 2.7                     | 2.0                        | 3.0                           | 3.3                   | 3.8                   |
| L8       | 2.6                    | 2.0                   | 2.0                     | 2.0                        | 3.5                           | 2.9                   | 4.0                   |
| Clark 63 | 2.6                    | 2.0                   | 2.3                     | 2.0                        | 3.0                           | 2.8                   | 3.4                   |
| SL1-H    | 2.6                    | 2.0                   | 2.7                     | 1.5                        | 3.5                           | 2.8                   | 3.0                   |
| Kent     | 2.6                    | 1.0                   | 2.0                     | 2.5                        | 3.0                           | 3.0                   | 3.3                   |
| C1220    | 2.7                    | 1.0                   | 3.0                     | 3.2                        | 2.5                           | 3.1                   | 3.3                   |
| C1266    | 2.7                    | 1.0                   | 2.0                     | 3.5                        | 3.5                           | 3.0                   | 3.3                   |
| C1268    | 2.2                    | 1.0                   | 2.0                     | 2.7                        | 2.5                           | 2.5                   | 2.6                   |
| K646     | 2.6                    | 2.0                   | 2.7                     | 1.7                        | 3.5                           | 3.1                   | 3.3                   |
| K701     | 2.7                    | 1.0                   | 2.0                     | 3.2                        | 3.0                           | 3.1                   | 3.5                   |
| L57-0034 | 2.3                    | 1.0                   | 1.3                     | 1.7                        | 3.5                           | 2.8                   | 3.0                   |
| L57-2324 | 3.0                    | 1.0                   | 3.3                     | 2.2                        | 4.0                           | 3.3                   | 4.5                   |
| L57-3104 | 2.8                    | 2.0                   | 3.0                     | 2.2                        | 3.0                           | 2.9                   | 3.5                   |
| Md59-285 | 2.2                    | 1.0                   | 2.3                     | 1.2                        | 2.5                           | 2.8                   | 2.5                   |

\*Not included in the mean.

<sup>1</sup>Irrigated.

Table 63. (Continued)

| Strain   | Carbon-<br>dale<br>Ill. | Miller<br>City<br>Ill. | Co-<br>lum-<br>bia<br>Mo. | Por-<br>tage-<br>ville<br>Mo. | Man-<br>hat-<br>tan<br>Kans. | Man-<br>hat-<br>tan<br>Kans. <sup>1</sup> | Mound<br>Valley<br>Kans. | Co-<br>lum-<br>bus<br>Kans. |
|----------|-------------------------|------------------------|---------------------------|-------------------------------|------------------------------|---|--------------------------|-----------------------------|
|          |                         |                        |                           |                               |                              | *   | *                        | *                           |
| Bethel   | 3.0                     | 2.4                    | 2.0                       | 3.0                           | 1.3                          | 1.2                                       | 4.0                      | 4.0                         |
| Clark    | 3.0                     | 3.3                    | 1.5                       | 2.7                           | 1.0                          | 1.3                                       | 4.0                      | 3.0                         |
| L6       | 4.0                     | 3.5                    | 1.5                       | 2.8                           | 1.3                          | 1.3                                       | 4.0                      | 3.0                         |
| L7       | 4.0                     | 3.0                    | 1.5                       | 2.7                           | 1.0                          | 1.2                                       | 4.0                      | 3.0                         |
| L8       | 3.0                     | 2.8                    | 1.5                       | 2.9                           | 1.0                          | 1.2                                       | 4.0                      | 3.0                         |
| Clark 63 | 4.0                     | 3.1                    | 1.5                       | 2.7                           | 1.0                          | 1.2                                       | 5.0                      | 3.0                         |
| SL1-H    | 3.0                     | 3.4                    | 1.5                       | 2.9                           | 1.3                          | 1.1                                       | 4.0                      | 3.0                         |
| Kent     | 3.0                     | 2.5                    | 2.5                       | 2.5                           | 1.3                          | 1.2                                       | 3.0                      | 3.0                         |
| C1220    | 3.0                     | 3.0                    | 1.5                       | 3.0                           | 1.0                          | 1.4                                       | 3.0                      | 3.0                         |
| C1266    | 3.0                     | 3.1                    | 1.5                       | 2.6                           | 1.0                          | 1.3                                       | 4.0                      | 2.0                         |
| C1263    | 2.5                     | 2.0                    | 1.5                       | 2.4                           | 1.0                          | 1.2                                       | 3.0                      | 2.0                         |
| K646     | 3.0                     | 3.1                    | 1.5                       | 2.9                           | 1.0                          | 1.0                                       | 4.0                      | 3.0                         |
| K701     | 3.5                     | 2.5                    | 1.5                       | 3.0                           | 1.3                          | 1.4                                       | 5.0                      | 2.0                         |
| L57-0034 | 3.0                     | 2.5                    | 1.5                       | 2.6                           | 1.0                          | 1.1                                       | 4.0                      | 2.0                         |
| L57-2324 | 4.0                     | 3.5                    | 1.5                       | 2.8                           | 1.3                          | 1.6                                       | 5.0                      | 3.0                         |
| L57-3104 | 4.5                     | 2.0                    | 1.5                       | 3.0                           | 1.3                          | 1.5                                       | 4.0                      | 4.0                         |
| Md59-285 | 3.5                     | 2.5                    | 1.5                       | 2.2                           | 1.0                          | 1.1                                       | 4.0                      | 4.0                         |

Table 64. Percentage of protein for Uniform Test IV, 1962.

| Strain   | Mean<br>of 7<br>Tests | Free-<br>hold<br>N.J. | George-<br>town<br>Del. | Co-<br>lum-<br>bus<br>Ohio | Wor-<br>thing-<br>ton<br>Ind. | Eldo-<br>rado<br>Ill. | Miller<br>City<br>Ill. | Co-<br>lum-<br>bia<br>Mo. | Man-<br>hat-<br>tan<br>Kans. |
|----------|-----------------------|-----------------------|-------------------------|----------------------------|-------------------------------|-----------------------|------------------------|---------------------------|------------------------------|
|          |                       | *                     |                         |                            |                               |                       |                        |                           |                              |
| Bethel   | 41.1                  | 42.6                  | 42.2                    | 43.6                       | 40.1                          | 42.4                  | 39.1                   | 41.1                      | 39.0                         |
| Clark    | 41.8                  | 42.5                  | 43.8                    | 43.7                       | 41.5                          | 41.6                  | 41.5                   | 41.6                      | 39.2                         |
| L6       | 41.8                  | 41.4                  | 42.9                    | 43.1                       | 41.5                          | 41.7                  | 41.2                   | 42.2                      | 39.8                         |
| L7       | 42.0                  | 42.0                  | 43.7                    | 44.1                       | 41.6                          | 41.7                  | 41.6                   | 42.1                      | 38.9                         |
| L8       | 41.8                  | 41.9                  | 43.2                    | 43.6                       | 41.9                          | 41.8                  | 40.1                   | 42.3                      | 39.6                         |
| Clark 63 | 41.9                  | 41.5                  | 43.5                    | 43.7                       | 41.4                          | 41.5                  | 40.6                   | 43.0                      | 39.7                         |
| SL1-II   | 41.9                  | 42.2                  | 43.5                    | 43.4                       | 41.3                          | 42.0                  | 40.9                   | 42.3                      | 40.0                         |
| Kent     | 41.8                  | 41.7                  | 43.5                    | 43.2                       | 41.4                          | 41.4                  | 40.0                   | 43.0                      | 39.9                         |
| C1220    | 41.0                  | 42.0                  | 42.0                    | 43.4                       | 39.4                          | 41.0                  | 39.1                   | 43.0                      | 39.4                         |
| C1266    | 43.4                  | 44.1                  | 44.5                    | 45.2                       | 43.6                          | 42.8                  | 43.1                   | 43.7                      | 40.6                         |
| C1268    | 42.1                  | 43.4                  | 43.2                    | 43.4                       | 41.1                          | 42.5                  | 41.9                   | 43.4                      | 38.9                         |
| K646     | 41.9                  | 42.7                  | 44.4                    | 43.3                       | 41.9                          | 41.9                  | 42.0                   | 41.9                      | 38.0                         |
| K701     | 40.9                  | 41.0                  | 42.4                    | 41.8                       | 40.3                          | 41.2                  | 40.1                   | 41.2                      | 39.4                         |
| L57-0034 | 40.9                  | 40.8                  | 41.7                    | 41.3                       | 40.1                          | 41.0                  | 40.1                   | 42.3                      | 39.6                         |
| L57-2324 | 41.9                  | 42.5                  | 44.0                    | 42.3                       | 41.2                          | 42.8                  | 41.6                   | 42.7                      | 39.0                         |
| L57-3104 | 41.7                  | 42.4                  | 42.4                    | 42.1                       | 40.7                          | 41.1                  | 42.2                   | 43.4                      | 39.7                         |
| Md59-285 | 42.0                  | 42.5                  | 44.4                    | 42.9                       | 40.9                          | 42.1                  | 41.8                   | 42.3                      | 39.7                         |

\*Not included in the mean.

Table 65. Percentage of oil for Uniform Test IV, 1962.

| Strain   | Mean<br>of 7<br>Tests | Free-<br>hold<br>N.J.<br>* | George-<br>town<br>Del. | Co-<br>lum-<br>bus<br>Ohio | Wor-<br>thing-<br>ton<br>Ind. | Eldo-<br>rado<br>Ill. | Miller<br>City<br>Ill. | Co-<br>lum-<br>bia<br>Mo. | Man-<br>hat-<br>tan<br>Kans. |
|----------|-----------------------|----------------------------|-------------------------|----------------------------|-------------------------------|-----------------------|------------------------|---------------------------|------------------------------|
| Bethel   | 20.6                  | 19.0                       | 20.4                    | 19.9                       | 20.6                          | 20.8                  | 20.8                   | 20.8                      | 21.2                         |
| Clark    | 20.9                  | 19.3                       | 19.7                    | 20.1                       | 20.4                          | 21.6                  | 21.6                   | 21.3                      | 21.8                         |
| L6       | 20.5                  | 19.3                       | 19.5                    | 19.1                       | 20.3                          | 21.3                  | 21.3                   | 20.3                      | 21.5                         |
| L7       | 21.0                  | 19.4                       | 19.5                    | 19.4                       | 21.5                          | 21.9                  | 22.2                   | 21.1                      | 21.3                         |
| L8       | 20.9                  | 18.8                       | 19.5                    | 20.4                       | 20.5                          | 21.8                  | 22.0                   | 20.4                      | 21.7                         |
| Clark 63 | 20.7                  | 18.6                       | 19.0                    | 19.7                       | 20.7                          | 21.7                  | 22.4                   | 19.5                      | 21.6                         |
| SL1-H    | 20.8                  | 18.9                       | 19.5                    | 20.4                       | 20.7                          | 21.8                  | 21.8                   | 19.9                      | 21.4                         |
| Kent     | 20.9                  | 19.5                       | 20.5                    | 20.1                       | 20.8                          | 21.5                  | 22.0                   | 20.2                      | 21.4                         |
| C1220    | 20.7                  | 19.5                       | 20.5                    | 19.1                       | 21.4                          | 21.7                  | 20.9                   | 20.8                      | 20.8                         |
| C1266    | 20.3                  | 18.5                       | 19.7                    | 20.4                       | 19.9                          | 21.2                  | 20.5                   | 19.5                      | 20.8                         |
| C1268    | 20.5                  | 18.6                       | 19.7                    | 19.6                       | 20.3                          | 21.6                  | 21.6                   | 19.6                      | 21.2                         |
| K646     | 20.5                  | 18.4                       | 18.6                    | 20.3                       | 20.8                          | 21.1                  | 21.0                   | 19.9                      | 21.7                         |
| K701     | 21.8                  | 20.5                       | 21.1                    | 21.6                       | 22.1                          | 22.3                  | 22.0                   | 21.4                      | 22.4                         |
| L57-0034 | 21.4                  | 20.1                       | 20.5                    | 21.3                       | 21.4                          | 22.1                  | 21.9                   | 21.5                      | 21.3                         |
| L57-2324 | 21.3                  | 19.4                       | 19.8                    | 21.3                       | 21.2                          | 22.1                  | 22.7                   | 20.7                      | 21.6                         |
| L57-3104 | 22.1                  | 20.4                       | 21.5                    | 22.3                       | 22.4                          | 22.5                  | 21.9                   | 21.4                      | 23.0                         |
| Md59-285 | 21.1                  | 19.6                       | 19.8                    | 20.3                       | 21.3                          | 21.6                  | 21.2                   | 21.2                      | 22.6                         |

\*Not included in the mean.

UNIFORM PRELIMINARY TEST IV - 1962

| Strain     | Originating Agency         | Origin                 | Generation<br>Composited |
|------------|----------------------------|------------------------|--------------------------|
| Clark      | Ill. A.E.S. & U.S.R.S.L.   | Lincoln (2) x Richland | F <sub>8</sub>           |
| Kent       | Purdue A.E.S. & U.S.R.S.L. | Lincoln x Ogden        | F <sub>7</sub>           |
| Scott      | Mo. A.E.S. & U.S.R.S.L.    | D49-2525 x L46-5679    | F <sub>4</sub>           |
| S2-7158-61 | Mo. A.E.S. & U.S.R.S.L.    | Scott line             | F <sub>8</sub>           |
| C1278      | Purdue A.E.S. & U.S.R.S.L. | Clark x C1069          | F <sub>6</sub>           |
| C1279      | Purdue A.E.S. & U.S.R.S.L. | Clark x C1069          | F <sub>6</sub>           |
| C1282      | Purdue A.E.S. & U.S.R.S.L. | Clark x C1069          | F <sub>6</sub>           |
| C1285      | Purdue A.E.S. & U.S.R.S.L. | Clark x C1069          | F <sub>6</sub>           |
| L60-1385   | Ill. A.E.S. & U.S.R.S.L.   | Hawkeye x Lee          | F <sub>9</sub>           |
| Md59-1552  | Md. A.E.S. & U.S.R.S.L.    | Adams x C985           | F <sub>6</sub>           |
| S9-632     | Mo. A.E.S. & U.S.R.S.L.    | PI 86145 x Clark (3)   | F <sub>5</sub>           |
| S9-1550-1  | Mo. A.E.S. & U.S.R.S.L.    | L49-4091 x Clark (4)   | F <sub>3</sub>           |
| S9-2506    | Mo. A.E.S. & U.S.R.S.L.    | Radiated Clark         | R <sub>5</sub>           |
| S9-2521    | Mo. A.E.S. & U.S.R.S.L.    | Radiated Clark         | R <sub>5</sub>           |

Identification of Parent Strains

|          |  |
|----------|--|
| C985     | F <sub>4</sub> line from Lincoln x Ogden, progenitor of Kent.  |
| C1069    | F <sub>7</sub> line from C985.   |
| D49-2525 | Pustule-resistant F <sub>6</sub> line from S100 x CNS, sib of Lee.   |
| L46-5679 | F <sub>5</sub> line from Lincoln x Richland.   |
| L49-4091 | Pustule-resistant F <sub>4</sub> line from L44-1219 x (Lincoln x CNS). L44-1219 is an F <sub>3</sub> line from Lincoln (2) x Richland. |
| PI 86145 | Monbetsu Nagabadaizu, a narrow-leaved variety introduced from Obihiro, Hokkaido, Japan, in 1930.                                       |

Data were reported from six locations for the three checks and the eleven new strains in this test.

S2-7158-61 is one of the F<sub>8</sub> lines which were composited as Scott. Several such lines were tested individually and this line was selected for its high yield. In this test, it outyielded Scott at all locations except Carbondale.

Md59-1552 was retained from the 1961 Preliminary Test IV. This year it was close to Kent in yield and maturity and again had excellent lodging resistance and seed quality.

Of the remaining strains, only three, C1278, C1282, and L60-1385, outyielded Clark and none outyielded Kent on the average. They were three to five days later than Clark.



Table 66. Summary of data for Uniform Preliminary Test IV, 1962.

| Strain       | Yield | Rank | Matu-<br>rity <sup>1</sup> | Lodg-<br>ing | Height | Seed<br>Quality | Seed<br>Weight | Seed Composition |      |
|--------------|-------|------|----------------------------|--------------|--------|-----------------|----------------|------------------|------|
| No. of Tests | 5     | 6    | 6                          | 6            | 6      | 5               | 3              | Protein          | Oil  |
|              |       |      |                            |              |        |                 |                | 4                | 4    |
| Clark        | 36.5  | 10   | 0                          | 2.3          | 39     | 2.9             | 16.2           | 42.1             | 20.6 |
| Kent         | 40.5  | 1    | + 9.2                      | 1.9          | 39     | 2.7             | 18.8           | 41.8             | 20.8 |
| Scott        | 37.2  | 7    | +10.2                      | 2.3          | 44     | 2.3             | 15.1           | 39.6             | 19.9 |
| S2-7158-61   | 38.8  | 4    | + 9.5                      | 2.3          | 43     | 2.2             | 14.4           | 39.5             | 19.9 |
| C1278        | 39.2  | 3    | + 3.3                      | 2.0          | 40     | 2.7             | 18.4           | 41.3             | 20.9 |
| C1279        | 36.4  | 12   | + 0.2                      | 2.1          | 40     | 2.9             | 16.6           | 41.1             | 20.9 |
| C1282        | 38.6  | 5    | + 4.3                      | 2.3          | 40     | 3.1             | 17.8           | 43.3             | 20.1 |
| C1285        | 36.8  | 8    | + 4.3                      | 2.1          | 40     | 2.4             | 16.7           | 41.8             | 20.4 |
| L60-1385     | 38.6  | 5    | + 5.3                      | 2.0          | 40     | 3.1             | 19.6           | 41.9             | 21.7 |
| Md59-1552    | 39.4  | 2    | +10.2                      | 1.7          | 41     | 2.2             | 15.3           | 42.3             | 20.3 |
| S9-632       | 34.8  | 14   | - 1.3                      | 2.5          | 38     | 2.6             | 14.8           | 41.6             | 20.4 |
| S9-1550-1    | 35.4  | 13   | - 0.3                      | 2.3          | 39     | 2.6             | 15.8           | 41.1             | 20.9 |
| S9-2506      | 36.5  | 10   | - 0.7                      | 2.3          | 39     | 2.9             | 15.7           | 41.4             | 21.1 |
| S9-2521      | 36.6  | 8    | - 1.7                      | 2.1          | 39     | 3.0             | 16.5           | 41.6             | 21.1 |

<sup>1</sup>Days earlier (-) or later (+) than Clark which matured September 27, 123 days after planting.

Table 67. Disease data for Uniform Preliminary Test IV, 1962.

| Strain     | Bacte-<br>rial<br>Blight | Bacte-<br>rial<br>Pastule | Brown<br>Stem<br>Rot | Phytoph-<br>thora<br>Rot | Pod &<br>Stem<br>Blight | Downy<br>Mildew |      | Frogeye<br>Ind. |                 | Purple<br>Stain |      |
|------------|--------------------------|---------------------------|----------------------|--------------------------|-------------------------|-----------------|------|-----------------|-----------------|-----------------|------|
|            | Ill.                     | Ill.                      | Ill.                 | Ind.                     | Del.                    | Ind.            | Del. | R1              | R2 <sup>2</sup> | Ind.            | Del. |
|            | a <sup>1</sup>           | a                         | n <sup>1</sup>       | a                        | n                       | n               | n    | a               | a               | n               | n    |
| Clark      | 2                        | 4                         | 4                    | S                        | 3.5                     | 2.5             | 3.8  | R               | S               | 3               | 2.0  |
| Kent       | 3                        | 2                         | 4                    | S                        | 2.0                     | 3.0             | 1.1  | R               | R               | 3               | 3.0  |
| Scott      | 3                        | 4                         | 4                    | S                        | 2.0                     | 3.0             | 4.5  | Seg.            | R               |                 | 2.5  |
| S2-7158-61 | 3                        | 3                         | 4                    | S                        | 2.0                     | 3.0             | 4.5  | --              | Seg.            |                 | 2.0  |
| C1278      | 2                        | 2                         | 4                    | S                        | 3.0                     | 3.0             | 3.3  | R               | R               |                 | 3.0  |
| C1279      | 2                        | 2                         | 4                    | S                        | 3.0                     | 2.0             | 3.5  | R               | R               |                 | 2.0  |
| C1282      | 2                        | 4                         | 4                    | S                        | 2.5                     | 3.0             | 3.7  | R               | S               |                 | 2.0  |
| C1285      | 3                        | 3                         | 4                    | S                        | 2.5                     | 2.5             | 3.7  | R               | R               |                 | 2.0  |
| L60-1385   | 4                        | 3                         | 4                    | S                        | 1.5                     | 2.5             | 1.0  | --              | S               |                 | 2.0  |
| Md59-1552  | 4                        | 4                         | 4                    | S                        | 2.0                     | 2.5             | 4.0  | R               | Seg.            | 2               | 2.0  |
| S9-632     | 2                        | 4                         | 4                    | S                        |                         | 3.0             |      | --              | S               |                 |      |
| S9-1550-1  | 3                        | 3                         | 4                    | S                        | 3.0                     | 3.0             | 4.0  | --              | S               |                 | 2.5  |
| S9-2506    | 2                        | 3                         | 4                    | S                        | 3.0                     | 3.0             | 3.7  | --              | S               |                 | 2.0  |
| S9-2521    | 3                        | 4                         | 4                    | S                        | 2.5                     | 2.0             | 4.0  | --              | S               |                 | 3.0  |

<sup>1</sup>a = artificial inoculation; n = natural infection.

<sup>2</sup>R1 = Race 1; R2 = Race 2.

Table 68. Yield and yield rank for Uniform Preliminary Test IV, 1962.

| Strain            | Mean<br>of 6<br>Tests | George-<br>town<br>Del. | Wor-<br>thing-<br>ton<br>Ind. | El-<br>do-<br>rado<br>Ill. | Car-<br>bon-<br>dale<br>Ill. | Co-<br>lum-<br>bia<br>Mo. | Man-<br>hat-<br>tan<br>Kans. |
|-------------------|-----------------------|-------------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------------------|
| Clark             | 36.5                  | 20.4                    | 46.9                          | 45.7                       | 25.7                         | 38.8                      | 41.5                         |
| Kent              | 40.5                  | 22.2                    | 53.6                          | 58.6                       | 25.7                         | 37.3                      | 45.3                         |
| Scott             | 37.2                  | 21.1                    | 47.7                          | 55.0                       | 27.2                         | 31.4                      | 40.5                         |
| S2-7158-61        | 38.8                  | 23.4                    | 49.3                          | 62.5                       | 21.9                         | 33.8                      | 41.7                         |
| C1278             | 39.2                  | 22.7                    | 56.9                          | 55.8                       | 17.9                         | 41.5                      | 40.6                         |
| C1279             | 36.4                  | 24.9                    | 48.4                          | 48.6                       | 21.9                         | 39.6                      | 35.2                         |
| C1282             | 38.6                  | 22.6                    | 47.7                          | 58.6                       | 22.2                         | 42.8                      | 37.7                         |
| C1285             | 36.6                  | 22.1                    | 49.1                          | 55.6                       | 21.3                         | 36.5                      | 34.8                         |
| L60-1385          | 38.6                  | 23.7                    | 52.2                          | 54.1                       | 21.8                         | 38.8                      | 41.1                         |
| Md59-1552         | 39.4                  | 19.8                    | 56.4                          | 55.3                       | 25.8                         | 39.1                      | 40.0                         |
| S9-632            | 34.8                  | 22.5                    | 42.0                          | 50.4                       | 21.2                         | 36.1                      | 36.6                         |
| S9-1550-1         | 35.4                  | 20.8                    | 45.5                          | 50.8                       | 23.8                         | 36.2                      | 35.5                         |
| S9-2506           | 36.5                  | 22.3                    | 47.3                          | 46.4                       | 23.9                         | 40.3                      | 38.8                         |
| S9-2521           | 36.6                  | 23.2                    | 47.1                          | 48.1                       | 23.6                         | 38.0                      | 39.6                         |
| Coef. of Var. (%) |                       | 11.9                    | 7.4                           | 7.3                        | --                           | --                        | 11.2                         |
| L.S.D. (5%)       |                       | NS                      | 7.9                           | NS                         | --                           | --                        | NS                           |
| Row Spacing (In.) |                       | 36                      | 38                            | 36                         | 40                           | 38                        | 40                           |

|            | Yield Rank |    |    |    |    |    |    |
|------------|------------|----|----|----|----|----|----|
| Clark      | 10         | 13 | 12 | 14 | 3  | 6  | 3  |
| Kent       | 1          | 9  | 3  | 2  | 3  | 9  | 1  |
| Scott      | 7          | 11 | 8  | 7  | 1  | 14 | 6  |
| S2-7158-61 | 4          | 3  | 5  | 1  | 9  | 13 | 2  |
| C1278      | 3          | 5  | 1  | 4  | 14 | 2  | 5  |
| C1279      | 12         | 1  | 7  | 11 | 9  | 4  | 13 |
| C1282      | 5          | 6  | 8  | 2  | 8  | 1  | 10 |
| C1285      | 8          | 10 | 6  | 5  | 12 | 10 | 14 |
| L60-1385   | 5          | 2  | 4  | 8  | 11 | 6  | 4  |
| Md59-1552  | 2          | 14 | 2  | 6  | 2  | 5  | 7  |
| S9-632     | 14         | 7  | 14 | 10 | 13 | 12 | 11 |
| S9-1550-1  | 13         | 12 | 13 | 9  | 6  | 11 | 12 |
| S9-2506    | 10         | 8  | 10 | 13 | 5  | 3  | 9  |
| S9-2521    | 8          | 4  | 11 | 12 | 7  | 8  | 8  |

Table 69. Maturity, days earlier (-) or later (+) than Clark, for Uniform Preliminary Test IV, 1962.

| Strain         | Mean<br>of 6<br>Tests | George-<br>town<br>Del. | Wor-<br>thing-<br>ton<br>Ind. | El-<br>do-<br>rado<br>Ill. | Car-<br>bon-<br>dale<br>Ill. | Co-<br>lum-<br>bia<br>Mo. | Man-<br>hat-<br>tan<br>Kans. |
|----------------|-----------------------|-------------------------|-------------------------------|----------------------------|------------------------------|---------------------------|------------------------------|
| Clark          | 0                     | 0                       | 0                             | 0                          | 0                            | 0                         | 0                            |
| Kent           | + 9.2                 | +12                     | +12                           | +11                        | + 5                          | +8                        | +7                           |
| Scott          | +10.2                 | +13                     | +17                           | +13                        | + 5                          | +4                        | +9                           |
| S2-7158-61     | + 9.5                 | +13                     | +17                           | +11                        | + 5                          | +4                        | +7                           |
| C1278          | + 3.3                 | + 1                     | + 1                           | + 3                        | +10                          | +2                        | +3                           |
| C1279          | + 0.2                 | - 4                     | - 1                           | - 2                        | + 5                          | +1                        | +2                           |
| C1282          | + 4.8                 | + 2                     | + 7                           | + 4                        | + 7                          | +3                        | +6                           |
| C1285          | + 4.3                 | 0                       | + 7                           | + 6                        | + 7                          | +2                        | +4                           |
| L60-1385       | + 5.3                 | +13                     | + 7                           | + 6                        | + 6                          | +3                        | -3                           |
| Md59-1552      | +10.2                 | +12                     | +18                           | +17                        | +12                          | +5                        | -3                           |
| S9-632         | - 1.3                 | - 4                     | - 1                           | - 3                        | + 3                          | 0                         | -3                           |
| S9-1550-1      | - 0.3                 | - 3                     | 0                             | - 2                        | + 5                          | +1                        | -3                           |
| S9-2506        | - 0.7                 | - 4                     | - 2                           | - 2                        | + 6                          | 0                         | -2                           |
| S9-2521        | - 1.7                 | - 4                     | 0                             | - 2                        | - 1                          | 0                         | -3                           |
| Date planted   | 5-27                  | 5-29                    | 5-24                          | 5-21                       | 5-15                         | 5-28                      | 6-12                         |
| Clark matured  | 9-27                  | 9-19                    | 9-30                          | 9-25                       | 9-10                         | 10-6                      | 10-12                        |
| Days to mature | 123                   | 113                     | 129                           | 127                        | 118                          | 131                       | 122                          |

SOYBEAN DISEASE INVESTIGATIONS IN 1962

Compiled from Data Supplied by:

|                             |                            |                           |
|-----------------------------|----------------------------|---------------------------|
| K. L. Athow, Indiana        | H. W. Crittenden, Delaware | A. L. Matson, Missouri    |
| D. W. Chamberlain, Illinois | J. M. Dunleavy, Iowa       | A. F. Schmitthenner, Ohio |
|                             | E. R. French, Minnesota    |                           |

Disease survey data are listed in the following table for each state in which a survey was made. The disease data are calculated as follows: severity index is determined on a 1 (no disease) to 5 (very severe infection) basis; prevalence index is based on the percent of a field infected on a 1 (1-25%), 2 (26-50%), 3 (51-75%), 4 (76-100%) basis; and the disease index = percent of fields diseased x average severity x average prevalence. Averages are based on infected fields only.

SUMMARY OF DISEASE SURVEY DATA - 1962

| Disease                        | Percent of<br>Fields Infected |                  | Average<br>Severity | Average<br>Prevalence | Disease<br>Index |
|--------------------------------|-------------------------------|------------------|---------------------|-----------------------|------------------|
| ILLINOIS (July 27-31)          |                               |                  |                     |                       |                  |
| Bacterial Blight               | 56                            | +17 <sup>1</sup> | 2.5                 | 3.2                   | 4.5              |
| Bacterial Pustule              | 54                            | +13              | 2.6                 | 3.4                   | 4.8              |
| Brown Spot                     | 27                            | +23              | 2.1                 | 3.8                   | 2.2              |
| Downy Mildew                   | 24                            | +17              | 2.4                 | 3.9                   | 2.3              |
| Brown Stem Rot                 | 17                            | + 4              | 2.4                 | 2.0                   | 0.8              |
| Phytophthora Rot               | 8                             | +25              | 2.2                 | 1.6                   | 2.8              |
| Wildfire                       | 6                             |                  | tr                  | tr                    | --               |
| Bud Blight                     | 6                             |                  | tr                  | tr                    | --               |
| IOWA (July 11-12, Sept. 12-13) |                               |                  |                     |                       |                  |
| Bacterial Blight               | 82                            |                  | 2.6                 | 2.7                   | 5.8              |
| Brown Spot                     | 61                            |                  | 2.8                 | 2.9                   | 5.0              |
| Downy Mildew                   | 61                            |                  | 2.6                 | 2.8                   | 4.4              |
| Brown Stem Rot                 | 42                            |                  | 2.7                 | 2.2                   | 2.5              |
| Stem Canker                    | 37                            |                  | 2.2                 | 1.3                   | 1.1              |
| Bacterial Pustule              | 24                            |                  | 2.7                 | 2.3                   | 1.5              |
| Root Rot                       | 22                            |                  | 2.4                 | 2.4                   | 1.3              |
| Wildfire                       | 6                             |                  | 2.0                 | 1.0                   | 0.1              |
| Yellow Mosaic                  | 4                             |                  | 2.0                 | 1.0                   | 0.1              |
| Phytophthora                   | 3                             |                  | 2.0                 | 1.0                   | 0.1              |

<sup>1</sup>+17, +13, etc. indicates percent of additional fields in which a disease was found in trace amounts only. Since these amounts are not measurable, and can not be included in figuring the disease index, they are listed separately.

SUMMARY OF DISEASE SURVEY DATA - 1962 (Continued)

| Disease | Percent of<br>Fields Infected | Average<br>Severity | Average<br>Prevalence | Disease<br>Index |
|---------|-------------------------------|---------------------|-----------------------|------------------|
|---------|-------------------------------|---------------------|-----------------------|------------------|

INDIANA (July 19-20, northern half of state only)

|                   |    |     |     |     |
|-------------------|----|-----|-----|-----|
| Brown Spot        | 80 | 2.9 | 4   | 9.4 |
| Bacterial Blight  | 80 | 2.3 | 4   | 7.3 |
| Bacterial Pustule | 50 | 2.2 | 4   | 4.5 |
| Phytophthora Rot  | 40 | 3.1 | 1.8 | 2.2 |
| Downy Mildew      | 20 | 2.2 | 4   | 1.8 |
| Yellow Mosaic     | 2  | tr  | tr  | --  |
| Phyllosticta      | 2  | tr  | tr  | --  |

OHIO (July 25-27)

|   |    |     |     |     |
|---|----|-----|-----|-----|
| Bacterial Blight                          | 71 | 2.7 | 2.3 | 4.3 |
| Brown Spot                                | 63 | 2.4 | 2.9 | 4.3 |
| Downy Mildew                              | 31 | 2.0 | 2.9 | 1.8 |
| Seedling Diseases<br>(Rhizoc. or Pythium) | 26 | 2.1 | 1.6 | 0.9 |
| Phytophthora Rot                          | 9  | 4.3 | 3.3 | 1.3 |
| Bud Blight                                | 3  | tr  |     |     |
| Mosaic                                    | 3  | tr  |     |     |

MINNESOTA (June 20-July 27)

|                  | <u>Region</u> | <u>No. of Fields</u> | <u>Disease Index</u> | <u>Date</u> |
|------------------|---------------|----------------------|----------------------|-------------|
| Bacterial Blight | Southern      | 12                   | 0.0                  | June 20     |
|                  | Southwest     | 14                   | 2.7                  | July 12     |
|                  | Central       | 12                   | 7.5                  | July 27     |
| Root Rot         | Southern      | 12                   | 9.9                  | June 20     |
|                  | Southwest     | 14                   | 13.7                 | July 12     |
|                  | Central       | 12                   | 8.6                  | July 27     |
| Brown Spot       | Southern      | 12                   | 1.7                  | June 20     |
|                  | Southwest     | 14                   | 6.1                  | July 12     |
|                  | Central       | 12                   | 7.0                  | July 27     |
| Downy Mildew     | Southern      | 12                   | 0.0                  | June 20     |
|                  | Southwest     | 14                   | 0.4                  | July 12     |
|                  | Central       | 12                   | 1.7                  | July 27     |



WEATHER CONDITIONS AND GENERAL GROWTH RESPONSES AT MOST OF THE  
NURSERY LOCATIONS DURING THE 1962 SEASON

The following general notes compiled from information supplied by the cooperators may be helpful in interpreting performance of the nurseries at individual locations.

Temperature and rainfall at most of the nursery locations for the 1962 season are presented in graphs at the end of this section of the report. The daily maximum and minimum temperatures and rainfall are taken from "Climatological Data" published by the Weather Bureau.

Ottawa, Ontario, Canada. The 1962 season started out hot and dry (May 15 - July 15). In June, the soybeans were irrigated twice, receiving about 1½ inches of water, which maintained normal growth. A period of below normal temperatures and above normal precipitation began in mid-July and extended into November. Even though average temperatures were below normal, the first killing frost did not occur until October 22, four weeks later than normal. The first snowfall (6 inches on October 27) occurred before harvesting was completed in our soybean breeding nursery. Fortunately, the yield trials had been harvested. The Group 0 tests did not ripen normally, and it was not possible to obtain adequate maturity readings.

Soil Type: Grenville sandy loam.  
Fertilizer Application: None.  
Soil Analysis: pH, 6.5.

Ridgetown, Ontario, Canada. Plant growth during the early part of the season was excellent. May temperatures were: Maximum +8.5° F. and Minimum +5.6° F. of normal. However, June, July, August, and September were below normal in temperature and above normal in rainfall. Storms in July caused severe lodging in the later maturity material which, with the below normal temperature, reduced anticipated yield considerably.

Soil Type: Brookston Clay Loam.  
Fertilizer Applications: 600 lbs./A. 9-9-9 + Muriate of Potash.  
Soil Analysis: pH, 6.5; OM, M; N, 80; P, 275 High; K, 125 Medium; Ca, 100 Medium-; Mg, 50 Low + .

Harrow, Ontario, Canada. Planting was later than optimum for this location and for this year's early season. Moisture and temperature were favorable during the growing season. A light frost on September 21 reduced the number of green leaves. Saddle pigmentation of the seed was quite prevalent in many lines resulting in poor seed quality scores.

Soil Type: Harrow fine sandy loam.  
Fertilizer Application: None.

Freehold, New Jersey. Moisture was in short supply until mid-June. July was below normal in moisture, 2.5 inches, and temperature, 3.4 degrees. August was cold and wet. All of this combined to seriously delay maturity. Several of the late entries were in an immature stage when the first killing frost occurred on October 25. Growth was slowed but not seriously impaired. No disease nor insect problems were encountered.

Soil Type: Sassafras sandy loam.

Fertilizer Applications: May 23, before seed bed preparation, 300 lbs. of 5-10-10 and 1800 lbs. of ground limestone.

Soil Analysis: pH, 6.8; OM, 3.6% Medium;  $\text{NO}_3\text{-N}$ , 40 lb./A. Medium; P, 90 lb./A. Very high; K, 95 lb./A. Medium; Ca, 970 lb./A. Medium; Mg, 120 lbs./A. High.

Georgetown, Delaware. Plant growth through mid-August was normal. This was true even though rainfall was below normal in May and July and temperatures were well below normal in July. There was below average rainfall in August and September. Inadequate moisture, coupled with only slightly below average temperatures in August, depressed yields markedly from the average season. Fall temperatures were below normal and rains did not occur before October, too late to help the rapidly maturing crop.

Soil Type: Norfolk loamy sand.

Fertilizer Applications: N = 0; 30 lbs./A.  $\text{P}_2\text{O}_5$ ; 60 lbs./A.  $\text{K}_2\text{O}$ .

Soil Analysis: pH, 6.3; OM, 1.6%; N, --; P, 183 lbs./A; K, 87 lbs./A.; Ca, --; Mg, 169 lbs./A.

Hoytville, Ohio. Rainfall was deficient during May and June but near normal during July, August, September, and October. Temperatures were slightly above normal for May and June and slightly below normal for July, August, September, and October. The yield of Harosoy was 22.4 bushels compared to a five-year average of 31.1 bushels, 1958-1962.

Soil Type: Hoytville clay.

Fertilizer Application: None.

Soil Analysis: pH, 6.4; OM, 3.5%; P, 34 lbs./A.; K, 348 lbs./A.

Wooster, Ohio. Rainfall was deficient throughout the growing season. Temperatures were slightly above normal for May and June and below normal for July, August, September, and October. The yield of Harosoy was 23.1 bushels compared to a five-year average of 37.3 bushels, 1958-1962.

Soil Type: Wooster silt loam.

Fertilizer Application: Rye turned under.

Soil Analysis: pH, 6.9; OM, 1.5%; P, 60 lbs./A.; K, 168 lbs./A.

Columbus, Ohio. Rainfall was deficient throughout the growing season. Plots were sprinkled immediately following planting to insure germination (approximately one-half inch). Temperatures were slightly above normal during May and June but below normal for July, August, September, and October. The yield of Harosoy was 29.8 bushels compared to a five-year average of 40.2 bushels, 1958-1962.

Soil Type: Miami-Brookston silt loam.

Fertilizer Application: None.

Soil Analysis: pH, 6.4; OM, 3%; P, 100 lbs./A.; K, 324 lbs./A.

Bath, Michigan. The soybeans were sprayed twice with 4 lbs./A. of  $\text{MnSO}_4$ . The area was irrigated as needed and a good stand was obtained. Only the erect plots which were fairly well along toward maturity at time of frost were harvested.

Soil Type: Muck.

Fertilizer Application: None.

Soil Analysis: pH, 5.6; OM, 84; N, --; P, 80 lbs./A. Available; K, 186 lbs./A. Available; Ca, 13025 lbs./A. Available; Mg, 1296 lbs./A. Available.

East Lansing, Michigan. This area had been in alfalfa and quack grass was troublesome. Partial control was effected by a pre-emergence spray of di-nitro on June 5. Due to quack grass recovery, the area was rotary hoed June 15. Eventually, by cultivation and hoeing, the quack grass was controlled. This was a fairly good growing season and the late fall helped later maturing varieties complete their growth.

Soil Type: Loam.

Fertilizer Application: 300 lbs./A. of 5-20-20.

Soil Analysis: pH, 7.1; OM, 5.06; N, --; P, 15 lbs./A. Available; K, 86 lbs./A. Available; Ca, 3606 lbs./A. Available; Mg, 605 lbs./A. Available.

Ida, Michigan. No fertilizer was applied just before the soybeans were planted. However, during the previous year, 400 lbs./A. of 12-12-12 was applied before corn was planted and 160 lbs./A. of 4-16-16 along with the corn. The soil was somewhat dry and cloddy at planting time. At first, stands were irregular, but as the season progressed the gaps filled. The frost before complete maturity doubtless had some effect on the true dates of maturity. Fairly pleasant weather after the frost allowed the crop to mature.

Soil Type: Silt loam.

Fertilizer Application: None.

Soil Analysis: pH, 6.5; OM, 8%; N, --; P, 26 lbs./A. Available; K, 211 lbs./A. Available; Ca, 8060 lbs./A. Available; Mg, 755 lbs./A. Available.

Walkerton, Indiana. Planting was timely, June 1, with good soil and fair moisture conditions. Precipitation was deficient in each month of the growing season. Total summer precipitation was only 12.62 inches with a deficiency of 5.56 inches. Temperatures were especially high in August. There were 20 days in the growing season with temperatures of 90° F. or above. A light frost occurred September 20 with slight damage to varieties of Hawkeye maturity or later. Drouth conditions showed up rather markedly in this sandy loam soil, causing more than the usual expected variation from soil type. Uniform Preliminary Test 17 was severely affected by drouth in a sandy spot and was not harvested. Yields were fairly good under these drouth conditions and averaged nearly 38 bushels per acre for all tests.

Soil Type: Maumee loam.

Fertilizer Application: 200 lbs./A. 14-14-14 plowed under

Soil Analysis: pH, 6.2; P<sub>2</sub>O<sub>5</sub>, 140 lbs./A.; K<sub>2</sub>O, 112 lbs./A.

Bluffton, Indiana. Planting was timely on May 21 with good emergence conditions. Precipitation was excellent through July but somewhat below normal in August and September. There were 16 days during the growing season with temperatures of 90° F. or above. The temperature reached 100° F. on one day in August. There was some rotary hoe damage in two rows the length of the plot, thus only three replications of undamaged entries were harvested. Yields were 5 to 7 bushels below average in these tests. There was no apparent Phytophthora damage, but brown stem rot was quite prevalent.



Soil Type: Nappanee silt loam.

Fertilizer Application: None.

Soil Analysis: pH, 6.0; P<sub>2</sub>O<sub>5</sub>, 980 lbs./A.; K<sub>2</sub>O, 720 lbs./A.

Lafayette, Indiana. Planting was timely on May 18 and 19 with good conditions for rapid emergence. Precipitation was below normal in June and September and very excessive, with some water damage, in July. The mid-summer season was cool with only 8 days during the growing season having temperatures of 90° F. or above. The weather was conducive for the development of brown stem rot and damage therefrom. This was very prevalent in the Lafayette area. Growth and yields were about average.

Soil Type: Chalmers silty clay loam.

Fertilizer Application: 125 lbs./A. 7-28-14 in row.

Soil Analysis: pH, 6.1; P<sub>2</sub>O<sub>5</sub>, 105 lbs./A.; K<sub>2</sub>O, 207 lbs./A.

Greenfield, Indiana. Planting was timely on May 17 with good emergence conditions. June was exceptionally dry and July excessively wet with 0.70 and 9.18 inches of precipitation, respectively. There were only 12 days in the growing season with temperatures of 90° F. or above. These were distributed throughout the season. Phytophthora root rot and brown stem rot were both very abundant and damaging. Average yields at Greenfield were 8 to 10 bushels per acre lower than usual for this soil type and fertility.

Soil Type: Brookston-Crosby Complex.

Fertilizer Application: 165 lbs./A. 8-32-0.

Soil Analysis: pH, 6.1; P<sub>2</sub>O<sub>5</sub>, 660 lbs./A.; K<sub>2</sub>O, 234 lbs./A.

Worthington, Indiana. Planting was delayed somewhat until May 24. Emergence was excellent and growth was excellent throughout the season. Precipitation was above or near normal throughout the season except for a fairly dry September. Temperatures averaged below normal for June through September. However, there were 25 days in the growing season when the temperature was 90° F. or above. There were short hot periods in July and August. Green stemmed plants and irregular maturity were quite marked. There was considerable downy mildew and brown stem rot present. Yields were about equal to or slightly better than the previous high for this location. Harvest conditions were only fair to good.

Soil Type: Genessee silty clay loam.

Fertilizer Application: 200 lbs./A. 5-20-20.

Soil Analysis: pH, 7.7; P<sub>2</sub>O<sub>5</sub>, 543 lbs./A.; K<sub>2</sub>O, 209 lbs./A.

Evansville, Indiana. No tests were harvested due to hail damage.

Ashland, Wisconsin. The 1962 growing season at this location was generally characterized by below normal temperatures and above normal rainfall. Only the month of May had above normal temperature and only April and July had a little below normal rainfall. About mid-May we received several heavy rains and the rains continued through the month. This made it difficult to get corn and soybeans planted on time. Most of these crops went into the ground late. June was plagued by above normal rainfall but the most serious drawback was the frequency of the rain and the very cool temperatures. June had 3.2 degrees below normal for a mean temperature; July followed with 5.3 degrees below the normal mean. Although July had a little

below normal rainfall, there were no serious drouth conditions. In general, the whole season had ample moisture. August temperatures were nearly normal, but the mean temperature in September was 1.5 degrees below normal. Because of the cool wet season, the development and ripening of crops such as corn and soybeans were very slow. It is truly amazing that the soybeans did as well as they did.

Soil Type: Ogema Fine Sandy Loam.

Fertilizer Applications: 10 ton of manure plowed under and 400 lbs. of 5-20-20 drilled in with grain drill before seeding.

Spooner, Wisconsin Soil conditions at planting time, May 29, were ideal due to above normal rainfall and temperatures for the month. Temperatures in July were 5.2 degrees below normal and rainfall 53 inches above normal. Dry weather the first half of the month had very little effect, if any, on growth. Temperatures in August were 1.9 degrees below normal and rainfall was .19 inches below normal with the bulk of it occurring after August 22. The trial was irrigated August 10 with one and one-half inches of water. Temperatures were 1.9 degrees below normal in September, but rainfall was 1.04 inches above normal with excellent distribution. Killing frost occurred September 20, when the temperature dropped to 25 degrees.

Durand, Wisconsin. Temperatures averaged above normal in May, normal in June, and below normal during the remainder of the growing season. While total rainfall was above normal, several drouth periods markedly reduced growth and seed yield. The soil is a fine sandy loam where short drouth periods can reduce yields. Yields of early varieties were reduced more than later varieties.

Soil Type: Boone Fine Sandy Loam.

Fertilizer Applications: 100 lbs. 0-20-20

Soil Analysis: pH, 6.0; P, 110; K, 125.

Madison, Wisconsin Temperatures averaged above normal during May and June and below normal during the rest of the season, being 4° F. below normal in July and September. Rainfall was about 4 inches below normal during the growing season. Stand and growth were good. Yields were reduced by lack of rainfall; however, owing to the cool weather, the loss from drouth was minimized. There was little damage from diseases and insects. A light frost occurred September 19 which did not appreciably affect the later varieties.

Soil Type: Miami Silt Loam.

Fertilizer Application: 200 lbs. 0-20-20.

Soil Analysis: pH, 7.1; P, 128; K, 215.

Shabbona, Illinois Planting was in late May in a moist seedbed. Emergence and stands were good. Growth was good but lodging occurred in late summer. Grasshoppers infested the field in late August and stripped up to one-third of the foliage from the plants. Leaves on the Group II plants were killed by frost before maturity. August was very dry. There was a light epiphytotic of bacterial blight in early summer, but no other diseases were noted.

Soil Type: Drummer silty clay loam.

Fertilizer Application: None.

Soil Analysis: pH, 7.0; P<sub>1</sub>, 21 lbs /A ; P<sub>2</sub>, 120+ lbs /A ; K, 254 lbs /A

Dwight, Illinois. Planting was the first week of June in a moist seedbed. Growth was only fair, due to drouth. Potassium deficiency was noted in early July, causing stunting throughout the test. Downy mildew, bacterial blight, stem canker, and brown stem rot were present in the test in light to moderate amounts.

Soil Type: Elliott silt loam.

Fertilizer Application: None.

Soil Analysis: pH, 7.1; P<sub>1</sub>, 38 lbs./A.; P<sub>2</sub>, 120+ lbs./A.; K, 233 lbs./A.

Urbana, Illinois. Planting was in mid-May in a cloddy seedbed with many corn stumps. Heavy rain two days after planting caused crusting which hindered emergence. May was warmer than normal and July was one of the wettest months on record, giving excellent growth and considerable lodging. Residual atrazine from a 1961 application for corn stunted the plants. Bacterial pustule, bacterial blight, and downy mildew were present in moderate amounts. Stem canker was very prevalent.

Soil Type: Catlin and Flanagan silt loam.

Fertilizer Application: None.

Soil Analysis: pH, 6.4; P<sub>1</sub>, 35 lbs./A.; P<sub>2</sub>, 120+ lbs./A.; K, 300+ lbs./A.

Girard, Illinois. Planting was in mid-May in a good seedbed with plenty of moisture. Emergence and stands were good. Stem canker was frequently observed and there was moderate to heavy bacterial pustule, bacterial blight, and downy mildew. Growth was excellent and yields were high.

Soil Type: Harrison silt loam.

Fertilizer Application: None.

Soil Analysis: pH, 6.6; P<sub>1</sub>, 19 lbs./A.; P<sub>2</sub>, 84 lbs./A.; K, 200 lbs./A.

Edgewood, Illinois. Planting was the first week in June in a good seedbed. Emergence and stands were good. Phytophthora rot thinned stands of susceptible varieties in low spots in the field. Many diseases were present, with moderate downy mildew, moderate to very heavy brown spot, slight bacterial pustule, slight to severe bud blight, and some brown stem rot.

Soil Type: Cisne silt loam.

Fertilizer Application: 130 lbs. 60% K.

Soil Analysis: pH, 6.5; P<sub>1</sub>, 32 lbs./A.; P<sub>2</sub>, 93 lbs./A.; K, 300 lbs./A.

Eldorado, Illinois. Planting was in mid-May in an excellent seedbed. Seedling emergence was very good and growth was good. The field was very dry by mid-August and the plants dropped a lot of pods. Yields were excellent and seed quality was better than normal for this location. There was some killing of plants due to residual atrazine from a 1961 pre-emergence application to corn. Plants were lodged on August 6 by rain and wind. There was slight to heavy bacterial pustule over the entire field in July, with moderate bacterial blight and downy mildew following in August.

Soil Type: Silt loam.

Fertilizer Application: 165 lbs./A. 4-10-10.

Soil Analysis: pH, 7.0; P<sub>1</sub>, 29 lbs./A.; P<sub>2</sub>, 120+ lbs./A.; K, 200 lbs./A.



Carbondale, Illinois. Planting was in mid-May and emergence was somewhat irregular with gaps in stands. Rainfall during the early part of the growing season gave good growth. The growth during the latter part of the season was retarded due to a shortage of rain. An increase in rainfall during the maturing period retarded the maturity date and harvesting of the late varieties. Seed quality ranged from fair to very poor.

Soil Type: Stoy silt loam.

Fertilizer Application: 300 lbs./A. 0-20-20.

Soil Analysis: pH, 6.4.

Miller City, Illinois. Planting was after mid-June and poor stands were obtained. Due to late planting, growth was not very good. Unevenness of fertility caused one-third of the field to be shorter than the rest. There was some damage from residual chlorate. The only disease noted was a slight to moderate infestation of downy mildew.

Soil Type: Riley fine sandy loam.

Fertilizer Application: None.

Soil Analysis: pH, 7.4; P<sub>1</sub>, 107 lbs./A.; P<sub>2</sub>, 120+ lbs./A.; K, 300 lbs./A.

Crookston, Minnesota. The Group 00 and 0 tests were planted at the normal time despite generally excessive rainfall and wet soil conditions in May. Stands were good. Development was about normal despite abnormally cool mid- and late-summer temperatures. Much of the Group 00 material was mature by the first week of September. On September 10, a hailstorm caused some shattering on the earliest varieties. Yields in these nurseries are therefore considered to be of small value.

Soil Type: Fargo silty clay loam.

Fertilizer Application: None.

Morris, Minnesota. The Group 0 trial at Morris grew under rather favorable conditions. Moisture was adequate nearly all season. Temperatures were somewhat below average in July, August, and September. Stands were good and fertility of the soil was good. This was considered a satisfactory test even though varietal differences were small.

Soil Type: Barnes silt loam.

Fertilizer Application: None.

St. Paul, Minnesota. The Group 00, 0, and I trials (including the Preliminary trials) were completely hailed out on June 23. Some trials of Minnesota lines were replanted on June 26 but these suffered the effects of a second hailstorm on July 21.

Lamberton, Minnesota. The Group II trial grew under ample moisture conditions most of the season. The stands were good. The soil fertility was good. In common with other locations, temperatures averaged below normal in mid- and late-summer. This was considered a quite satisfactory trial. As in years past, the strains of Group II maturity performed relatively better at Lamberton than at Waseca. That is, strains such as Harosoy and Lindarin often show an advantage over Chippewa in southwestern Minnesota but seldom do so in the south-central and southeastern parts of the state.

Soil Type: Webster clay loam.  
Fertilizer Application: None.

Waseca, Minnesota. The Group I and II trials had good stands and developed normally. Moisture was adequate the entire season. Temperatures averaged lower than normal in July, August, and September. Light frost on September 20 killed the top 3 or 4 inches of the plants but a subsequent month of warm weather permitted the late Group II material to mature rather well. Soil fertility in these plots was high.

Soil Type: LeSueur silty clay loam.  
Fertilizer Application: Barnyard manure on alfalfa sod.

Cresco, Iowa. This nursery is located in northeast Iowa on Carrington Plastic Till Phase soil which is tight, cold, wet, slowly drained, and low in productivity. The nursery was planted on May 24 on corn land. Due to a heavy rain immediately after planting, the nursery was lost because of extremely poor stands which could not be salvaged by transplanting.

Soil Type: Carrington Plastic Till Phase.  
Fertilizer Application: 40 lbs./A.  $K_2O$ .  
Soil Analysis: pH, 6.4; OM, Medium; N, 75 lbs./A.; P, 7.5 lbs./A. Low; K, 176 lbs./A.

Sutherland, Iowa. This nursery represents the northwest section of Iowa with Primghar silt loam soil, medium high in productivity, and generally slightly undulating in topography. The nursery was planted May 8 on corn land. Stands were excellent, and plots were kept weed-free. Temperatures for May through September averaged  $1.0^{\circ}$  F. below normal with June, July, August, and September departing  $-1.6$ ,  $-3.7$ ,  $-1.1$ , and  $-3.1^{\circ}$  F., respectively. A light frost on September 20 did some damage to late maturing strains. Growth response, yields, and lodging were considered above average. Disease was of little consequence throughout the season.

Soil Type: Primghar silt loam.  
Fertilizer Application: None.  
Soil Analysis: pH, 7.3; OM, Medium + ; N, 84 lbs./A.; P, 5.5 lbs./A. Low; K, 228 lbs./A.

Kanawha, Iowa. This nursery is located in north-central Iowa on level, productive Webster silt loam. Planting was completed on May 22 on land previously in corn. Stands were generally good to excellent, and plots were kept weed-free. There was an unusually low incidence of bacterial blight and other diseases in the nursery. During the growing season, temperatures averaged  $1.6^{\circ}$  F. below normal. Although precipitation was slightly deficient in May, June, and September, the over-all average from May through September was 4.3 inches above normal. Several heavy storms in July and August caused excessive lodging. These conditions permitted about average growth, but above normal yields, and lodging which was difficult to assess. A light frost on September 20 damaged some of the late maturing strains.

Soil Type: Webster silt loam.  
Fertilizer Application: None.  
Soil Analysis: pH, 7.1; OM, High; N, 93 lbs./A.; P, 21.0 lbs./A. High; K, 220 lbs./A.

Independence, Iowa. This nursery is located in northeast central Iowa on well drained Carrington silt loam, medium in productivity. Planting was completed on May 21. Stands were good and plots were kept weed-free. Temperatures averaged 1.2° F. below normal. Precipitation was 0.6 inches below normal for May through September. Growth, yield, and general response were just normal. Lodging due to storms was greater than normally encountered. Light frost occurred on September 20, earlier than normal, and injured some late maturing strains.

Soil Type: Carrington silt loam.

Fertilizer Application: 40 lbs. K<sub>2</sub>O.

Soil Analysis: pH, 6.6; OM, Medium, N, 75 lbs./A.; P, 70 lbs./A. Low; K, 140 lbs./A.

Ames, Iowa. This nursery is centrally located on level, productive Webster silt loam. Planting was completed on May 1 with subsequent stands excellent. Temperatures averaged slightly below normal. Precipitation for the season was 3.3 inches below normal with May and July the only months above normal. Growth, yield, and general response were average. A low incidence of diseases occurred. Light frost occurred on September 20 before the normal date of October 5 causing slight damage to late maturing strains.

Soil Type: Webster silt loam.

Fertilizer Application: None.

Soil Analysis: pH, 8.1; OM, High; N, 78 lbs./A.; P, 2.5 lbs./A. Very low; K, 180 lbs./A.

Ottumwa, Iowa. This nursery is in southeastern Iowa on flat, very productive Haig silt loam. The nursery was planted June 1. Stands were good and weeds were controlled. Temperatures averaged 0.5° F. below normal. Precipitation averaged slightly above normal with the greatest departures occurring in May & 8 and July (2.5). Growth and yield response were slightly above average because of the good moisture in July and not a serious deficit in any month. Lodging was excessive. Killing frost occurred on October 24, later than normal (October 10).

Soil Type: Haig silt loam.

Fertilizer Application: None.

Soil Analysis: pH, 6.1; OM, Medium; N, 96 lbs./A.; P, 19 lbs./A. High; K, 269 lbs./A.

Columbia, Missouri. Uniform tests were planted after a long dry spell was broken by a three-fourth inch rain. Soil was in perfect condition and emergence rapid. Stands were very thick. Very little rain fell during June and July and plants grew very slowly. By August 10, there was a deficit of 5 inches for the growing season and, with the heavy stands, plants were showing stress. Two and one half inches of water was applied August 11-12. This probably benefited later groups more than early ones. Yields were good in Group IV with some 40-bushel yields on 30 inch plants. Dudding was widespread and severe on some varieties. Kent plants all showed green stems and leaves with ripe pods, but plants were normal in appearance and yields good. No other disease problem was present and the field was weed-free.

Soil Type: Mexico Silt Loam.

Fertilizer Application: None.

Soil Analysis: pH, 7.5; OM, 1.8 Average; P, 224+ lbs./A. High; K, 150 lbs./A. Average; Ca, 4500 lbs./A. High; Mg, 100 lbs./A. Low.



Portageville, Missouri. A dry period at planting caused poor stand in some tests. Amiben was used as a pre-emergence treatment on all tests planted on or before May 14. Considerable chemical damage was observed in these tests throughout the season. Conditions were very favorable for growth except for a period of drouth during the middle of August. Irrigation by flooding was applied August 21 to 23. A period of heavy rainfall began 2 days after irrigation. Excessive rainfall retarded maturity in Group IV tests and interfered with harvest.

Soil Type: Salix Silt Loam.

Fertilizer Application: 200 lbs. 0-20-20.

Soil Analysis: pH, 5.0; OM, 1.3%; P, 212 lbs./A. High; K, 220 lbs./A. Medium; Ca, 2500 lbs./A. Medium; Mg, 300 lbs./A. High.

Portage la Prairie, Manitoba, Canada. This test was planted rather late, June 6, due to a very wet spring. Germination was excellent and plant development very rank, resulting in serious lodging. Precipitation was considerably above average during the growing season. June temperatures averaged slightly above average, while the remaining part of the growing season was below average.

Soil Type: Riverdale Silty Clay.

Fertilizer Application: None.

Winnipeg, Manitoba, Canada. The season was extremely wet. Precipitation from the beginning of May to the end of August was almost 100 percent above normal. The temperature in June was 3.4° F. above normal and slightly below normal for the rest of the season. The tests were planted on May 29. Early growth was excellent. The performance of strains could not be evaluated due to severe hail damage which occurred on July 24.

Soil Type: Riverdale Silty Clay.

Fertilizer Application: None.

Soil Analysis: pH, 7.3; P<sub>1</sub>, 57 lbs./A.; P<sub>2</sub>, 196 lbs./A.; K, 300+ lbs./A. (1959 analysis).

Brandon, Manitoba, Canada. Growing conditions were very good and there was ample moisture. Temperatures in July and August were below normal. Very little disease was observed and no insect problems developed. The 1962 test was as good as could be expected to be produced in this area.

Morden, Manitoba, Canada. This test was planted rather late, June 2, due to a very wet spring. Germination was excellent and plant development above average. There was 17.7 inches of rain from May 1 to August 31 compared to 10.4 inches on the average. June temperatures averaged 1.8 degrees per day above average while the rest of the summer was below average. July averaged 3.5 degree days below average. There was a high incidence of bacterial blight.

Soil Type: Altona Association Very Fine Sandy Loam.

Fertilizer Application: None.

Soil Analysis: pH, 7.4.

Eureka, South Dakota. The seedbed was fall plowed. In the spring, 150 pounds of 16-20-0 commercial fertilizer per acre was added before the seedbed was double disked and double harrowed. There was ample soil moisture to germinate the seed. The rainfall throughout June and the early part of July was ample to produce a

normal soybean crop, but during the latter part of July, August, and September, moisture became very short, causing stunting of the plants and poor pod set. The entire growing season was cool, below average, delaying maturity at least 10 to 14 days. The first killing frost was October 15.

Soil Type: Sandy Loam.

Fertilizer Application: 150 lbs. 16-20-0.

Watertown, South Dakota. The seedbed was fall-plowed. In the spring, 150 lbs. of 16-20-0 commercial fertilizer per acre was added before the seedbed was double disked and double harrowed. There was ample soil moisture to germinate the seed. Throughout June and the early part of July there was ample moisture received to produce a normal soybean crop but during the latter part of July and through August and September, moisture became very short, causing stunting of the plants and poor pod set. The entire growing season was cool, below average, delaying maturity by at least 10 to 14 days. The first killing frost was September 20.

Soil Type: Kranzberg.

Fertilizer Application: 150 lbs. 16-20-0.

Brookings, South Dakota. The seedbed was fall-plowed. There were 200 pounds per acre of 16-20-0 commercial fertilizer added at the time of plowing. In the spring the seedbed was double disked and double harrowed. At planting time and throughout the growing season there was an abundant supply of moisture. The entire growing season was very cool, somewhat below average, which delayed maturity at least 10 to 14 days. There was a killing frost on September 20 before any of the varieties showed signs of dropping their leaves. This delayed the season and hard frost produced many green seeds.

Soil Type: Barnes.

Fertilizer Application: 200 lbs. 16-20-0.

Centerville, South Dakota. The seedbed was fall-plowed. There were 200 pounds per acre of 16-20-0 commercial fertilizer added at the time of plowing. In the spring the seedbed was double disked and double harrowed. At planting time and throughout the growing season there was ample moisture. The growing season was somewhat cool but not as slow a season as at Brookings. There was no killing frost until September 20.

Soil Type: Poinsett.

Fertilizer Application: 200 lbs. 16-20-0.

Concord, Nebraska. These tests were not good for evaluating strains. Stands and growing conditions were good and test plots looked fine during the season but the analysis of variance showed that coefficients of variability ran as high as 17 and 18 percent. Differential killing from a light frost may have contributed to this variability.

Manhattan, Kansas. Planting was delayed because of excessive rainfall in late May and early June. Growing conditions were very favorable throughout the growing season except for a severe hot week beginning August 19. Irrigated plots lodged severely, especially Group III test. Irrigations were made June 19, July 7, and August 7 to the irrigated test. A total of eight inches was applied in furrows and one inch in June by sprinklers.

Soil Type: Unnamed series.

Fertilizer Application: None.

Soil Analysis: Dryland -- pH, 5.7; OM, 3.75; P, 49; K, 550 lbs./A.; Exch. Ca, 6,800 lbs./A.; Exch. Mg, 1,056 lbs./A.

Irrigated -- pH, 8.0; OM, 1.2; P, 41; K, 516 lbs./A.; Exch. Ca, 8,560 lbs./A.; Exch. Mg, 74 lbs./A.

Mound Valley, Kansas. A severe drouth occurred in this area during the growing season followed by a record breaking amount of rainfall during the month of September. This wet September delayed maturity two to three weeks. The soybean plants were very slow in shedding their leaves even though the pods were mature. A noticeable number of immature pods were dropped early, possibly because of the drouth.

Fertilizer Application: 0-30-30 and 3 tons of lime.

Soil Analysis: pH, 5.8; OM, 1.6; P, 21; K, 142; Ca, Recommended 3 tons of lime.

Columbus, Kansas. Soybean growth was excellent during June and July, however, high temperatures and inadequate moisture in August were the factors responsible for low yields. Disease and insect infestations were not a problem.

Soil Analysis: pH, 5.7; OM, .9; P, 10 lbs./A.; K, 116 lbs./A.

Othello, Washington. No mosaic was apparent in the nurseries at this location. The season was cool and the soybeans were later in maturing than usual. These nurseries were irrigated before seeding and then, beginning June 20, irrigated every 12 days. Soil moisture was never limited.

Soil Type: Shano silt loam.

Fertilizer Application: 10 lbs. Zn.; 80 lbs. P<sub>2</sub>O<sub>5</sub>/A.

Soil Analysis: pH, 7.5; OM, 0.6; P, 18.0 Medium (Sodium bicarbonate extractant); K, 300 Medium (Sodium bicarbonate extractant).

Prosser, Washington. Considerable mosaic showed up in the nurseries about mid-summer. The season was abnormally cool with a resulting delay in maturity. These nurseries were irrigated before seeding and then, beginning June 26, irrigated every 12 days. Soil moisture was never limited.

Soil Type: Sagemoor fine sandy loam.

Fertilizer Application: 10 lbs. Zn; 60 lbs. P<sub>2</sub>O<sub>5</sub>/A.

Soil Analysis: pH, 8.2; OM, 1.5; P, 26 High (Sodium bicarbonate extractant); K, 450 High (Sodium bicarbonate extractant).

Ontario, Oregon. Several weeks of cold wet weather with beating rains followed planting on May 8 and 9. Emergence was extremely slow and stands were reduced. Stand counts ranged from 20 to 50 plants per 10 feet of row. The season was unusually windy, resulting in severe lodging in Groups 0 and I, and was cooler than normal, delaying maturity by at least a week. Mildew was noted for the first time at this location and yields were reduced in the few replications where it was present. Group 00 varieties received five irrigations between June 23 and August 7. Group 0 and I lines had an additional irrigation on August 16. The nursery is considered poor for Group 0 and I strain comparisons, and only fair for comparisons in Group 00.



Soil Type: Owyhee Silt Loam.

Fertilizer Application: 95 lbs./A.  $P_2O_5$ .

Soil Analysis: pH, 7.6;  $P_1$ , 25 lbs./A.;  $P_2$ , 120+ lbs./A.; K, 740 lbs./A.

Medford, Oregon. The soybeans were planted May 3 in a well-prepared seedbed. The fertilizers were banded June 15. Neither weeds, diseases, nor spider mites presented a serious problem. The growing season was cooler than normal with night temperatures being well below the long-time average. Approximately 18 inches of irrigation water was applied by sprinkling and about two inches of rain fell during the growing season. The plants grew exceptionally tall and lodging was generally severe. No shattering was observed. The soybeans were all harvested before any killing frost occurred.

Soil Type: Medford loam.

Fertilizer Applications: 60 lbs. N; 60 lbs.  $P_2O_5$ ; 60 lbs.  $K_2O$ .

Soil Analysis: pH, 6.1; OM, 3.97%; P, 10 lbs./A. Low; K, 0.26 me Medium; Ca, 12.3 me; Mg, 2.3 me.



