

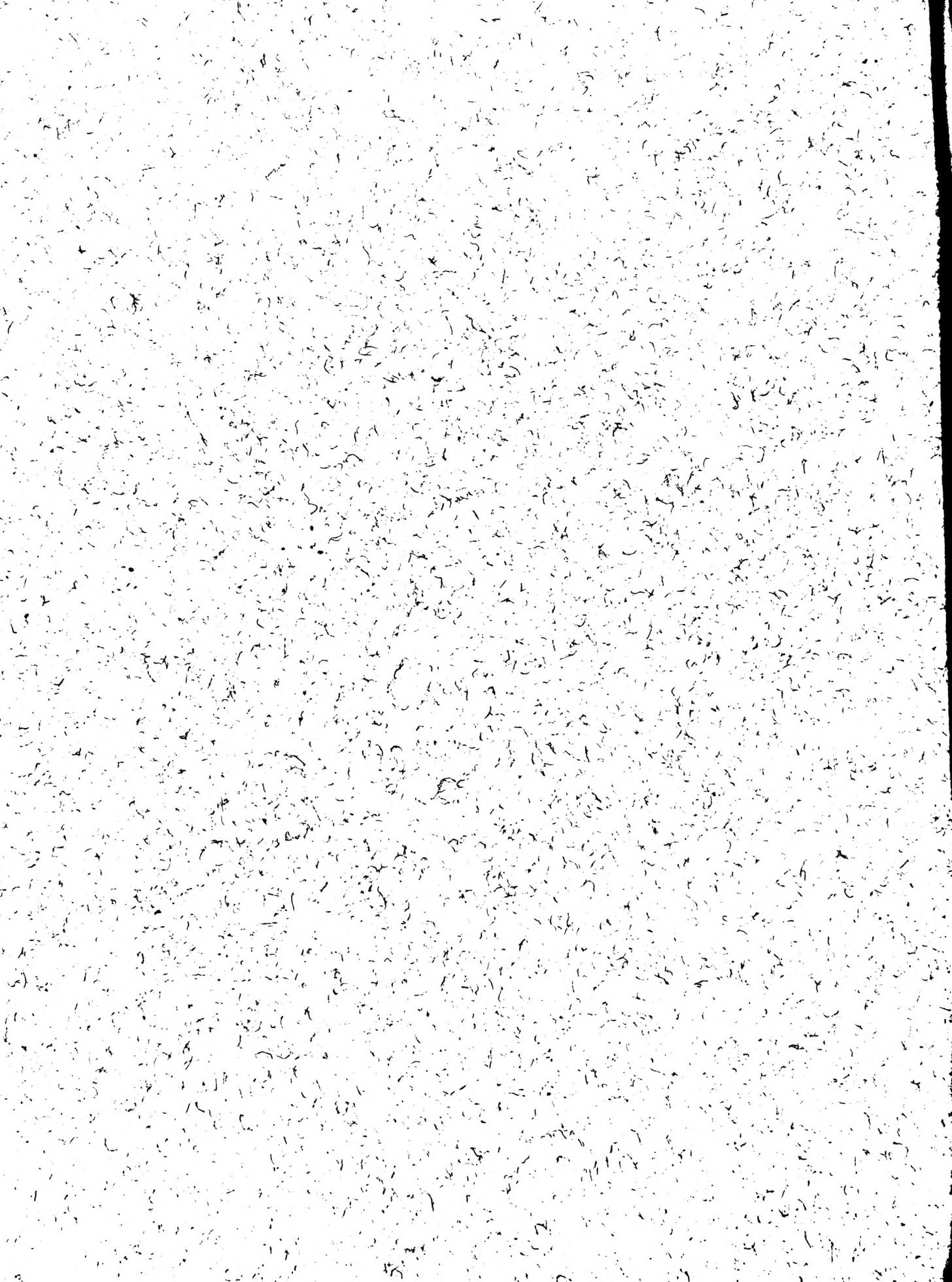
U. S. REGIONAL SOYBEAN LABORATORY
URBANA, ILLINOIS

RESULTS OF
THE COOPERATIVE UNIFORM
SOYBEAN TESTS, 1948
PART I. NORTH CENTRAL STATES

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF PLANT INDUSTRY
SOILS, AND AGRICULTURAL ENGINEERING,
DIVISION OF FORAGE CROPS AND DISEASES
COOPERATING WITH
STATE AGRICULTURAL EXPERIMENT STATIONS

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RSLM 150



RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS

PART I. NORTH CENTRAL STATES^{1/}

1948

Compiled by

Staff of the U. S. Regional Soybean Laboratory

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1/ This annual report of activity at the Soybean Laboratory, as well as of that at the state stations with which the Laboratory cooperates, is a progress report and as such may contain statements which may or may not be verified by subsequent experiments. The fact that any statement has been made herein does not necessarily constitute publication. For this reason citation to particular statements in the Report should not be published unless permission has been granted previously by the Laboratory or the state station concerned.

INTRODUCTION

The U. S. Regional Soybean Laboratory was started in 1936 as a cooperative project by the U. S. Department of Agriculture and the twelve Agricultural Experiment Stations of the North Central States. In 1942 the work was expanded to include twelve of the Southern States.

The work of the Laboratory has been directed toward the breeding of improved varieties and strains of soybeans for industrial use, and uniform nurseries have been grown extensively in the North Central States for the purpose of evaluating the new strains produced through the breeding program. Several superior strains have resulted from this breeding and selection work, among them being Lincoln, Hawkeye, Monroe, Adams, and Wabash. Another strain, adapted to the northern part of the North Central Region, is being considered for release this year.

Nine uniform test groups have been established, the first five of which include strains of proper maturity for the North Central States. The other four groups contain strains adapted to the southern part of the United States, and a summary of performance of these will be found in Part II of this report, which is published separately.

Uniform Test, Group O, contains the strains that will bloom and mature under the longer days encountered during summer in the Dakotas, Minnesota, and northern Wisconsin. Group I contains strains generally adapted to South Dakota, the southern parts of Minnesota, Wisconsin, and Michigan, and the northern part of Ohio. Groups II, III, and IV, respectively, include strains adapted to locations farther south in the North Central States and to other areas of similar latitude. In general, each group is arranged to include strains differing in maturity by not over 10 to 15 days. Maturity of the strains is expressed as so many days earlier or later than some well-known check or reference variety in the group.

Temperature and rainfall graphs with brief statements of weather conditions at many of the 1948 nursery locations are presented to aid in interpreting the performance of strains under climatic conditions occurring in each locality. The spring of 1948 was characterized by a general drought at planting time, resulting in uneven emergence at many nursery locations. Summer weather conditions were generally favorable following the spring drought, and nursery, as well as commercial yields, were high. However, much hand labor was necessary to keep weeds under control in many of the nurseries. An unusually severe occurrence of brown stem rot (cephalosporium gregatum) was noted in the central part of the soybean belt, probably due to the cold weather in early August. Fields showing severe early symptoms suffered a reduction in yield and seed size.

COOPERATING AGENCIES AND PERSONNEL
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North Dakota Agricultural Experiment Station

Agronomy Department: T. E. Stoa

Ohio Agricultural Experiment Station

Agronomy Department: J. L. Haynes, L. E. Thatcher

Purdue Agricultural Experiment Station

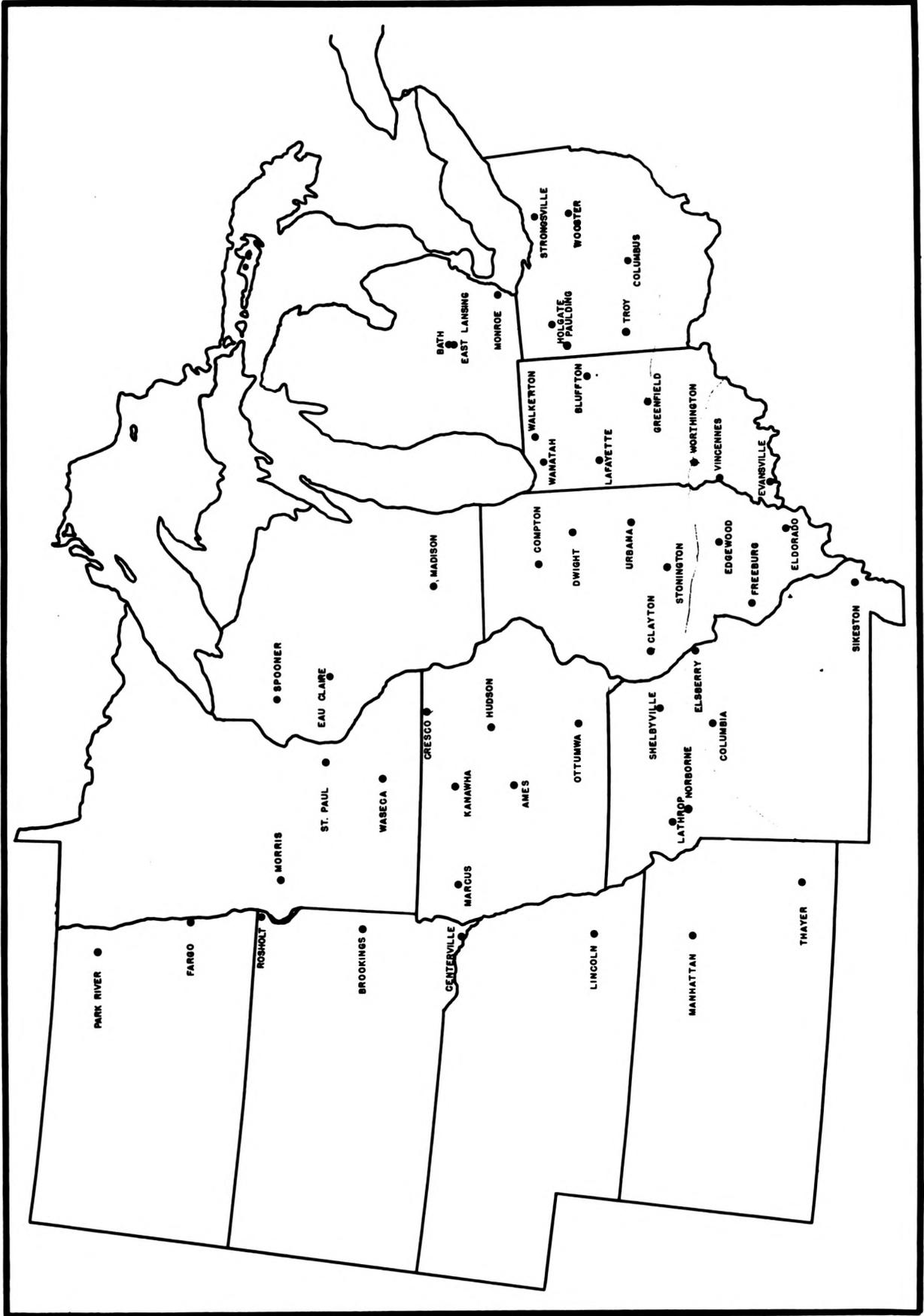
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South Dakota Agricultural Experiment Station

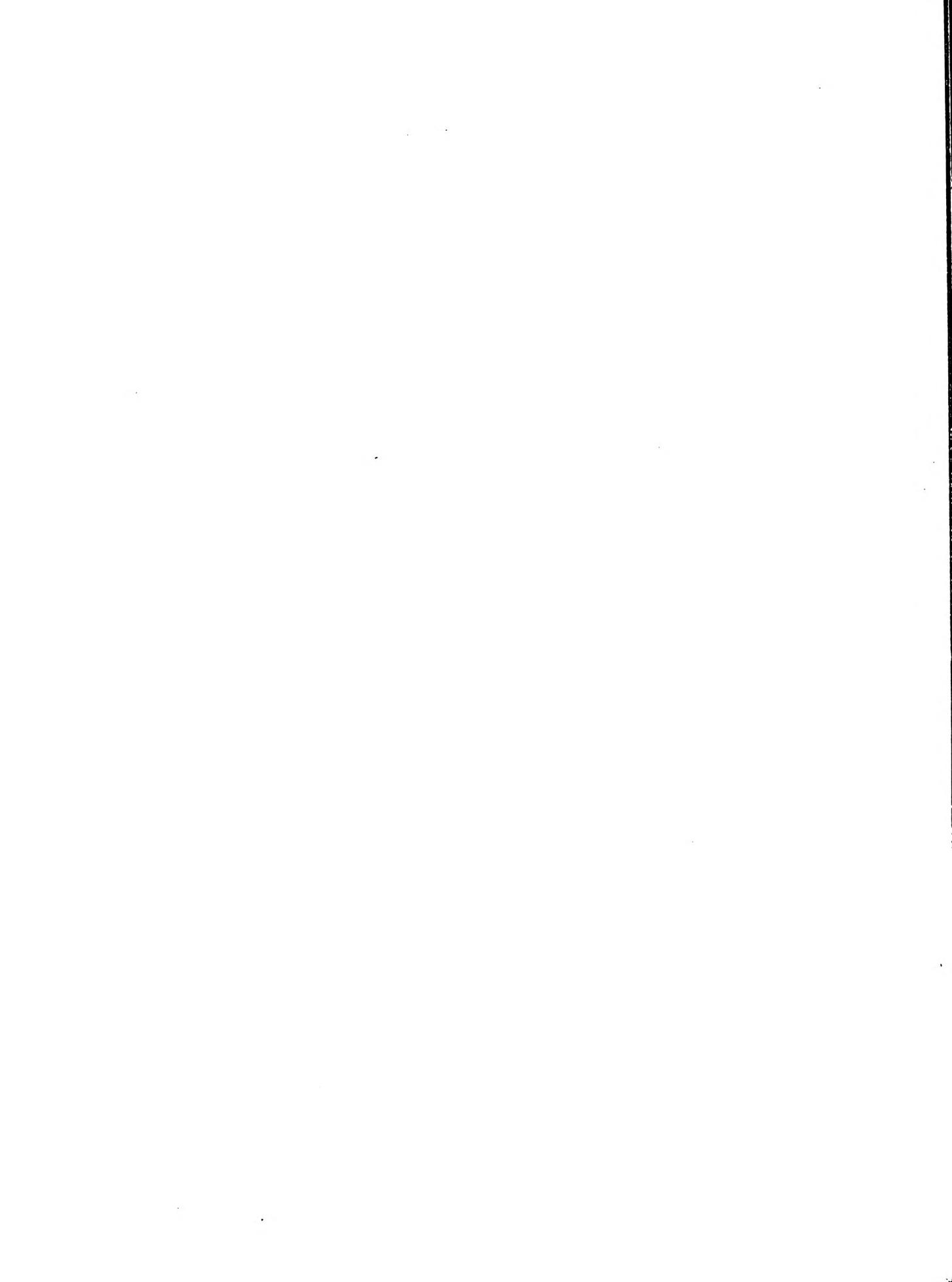
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MAP OF THE NORTH CENTRAL STATES SHOWING LOCATION OF THE COOPERATIVE UNIFORM SOYBEAN TESTS, 1948



METHODS

All Uniform Tests have been planted in replicated rod-row plots, using either a lattice or a randomized block design with four replications. Row widths used at the different test locations have varied from 18 to 42 inches, depending upon the width in common use or the equipment available for handling the crop. Seeding rates have also varied with locations, the most prevalent rates being 150 to 200 viable seeds per row. Rates within this range have given satisfactory stands throughout the region under normal soil and weather conditions at planting time.

Yields were taken on individual replications after the seed had been dried to a uniform moisture content basis.

Chemical composition was determined for each strain at each location in Group O, Group I, the Preliminary Groups, and for some locations in Groups II, III, and IV. Chemical composition was determined for the remaining locations in Groups II, III, and IV on composite samples prepared by combining equal weights of seed from each location. The location composites were prepared by combining equal weights of seed of each of the strains in a Group Test at an individual location. Percentage composition of the seed is expressed on a dry basis (moisture free). Seed weight for each strain was determined on the variety composite or by individual locations, and was recorded as weight (in grams) per 100 seeds.

Lodging notes were recorded on a scale of 1 to 5 according to the following criteria:

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

Height was determined as the average length of plants in a plot from the ground to the top extremity at time of maturity.

Maturity was taken as the date when the leaves had dropped, the pods were ripe, and the stems were fairly dry. Maturity in all summaries is expressed as days earlier (-) or later (+) than a standard or reference variety. Reference varieties used for the different Uniform Tests are as follows: Group O, Mandarin (Ottawa); Group I, Mandarin (Ottawa); Group II, Richland; Group III, Lincoln; and Group IV, Gibson.

Seed Quality was 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 were: Development of seed; wrinkling; damage; and color for the variety.

Calculating Means. In most cases where the lodging and seed quality notes were 1, indicating no difference between strains at a location, these locations were not included in the mean.

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>
L	Illinois	Au	Alabama
C	Indiana	R	Arkansas
A	Iowa	Fl	Florida
K	Kansas	Ga	Georgia
E	Michigan	La	Louisiana
M	Minnesota	D	Mississippi
S	Missouri	N	North Carolina
U	Nebraska	Ok	Oklahoma
F	North Dakota	SC	South Carolina
H	Ohio	UT	Tennessee
B	South Dakota	TS	Texas
W	Wisconsin	V	Virginia

UNIFORM TEST, GROUP O

The origin of the strains in the Uniform Test, Group O, is as follows:

Strain	Source or Originating Agency	Origin
Capital	Central Exp. Farm, Ottawa	Sel. from Strain 171 x A.K. (Harrow)
Flambeau	Wis. Agr. Exp. Sta.	Sel. from Manchu
Goldsoy	Ontario Agr. College	Sel. from O.A.C. 211
Kabott	Central Exp. Farm, Ottawa	Sel. from Intr. from Ninguta, Manchuria
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Montreal Manchu	T. B. MacCauley, Montreal	Sel. from Manchu
O-255	Central Exp. Farm, Ottawa	Sel. from Strain 171 x A.K. (Harrow)
W4-610	Wis. A.E.S. & U.S.R.S.L.	Sel. from Richland x Kabott
W4-631	Wis. A.E.S. & U.S.R.S.L.	Sel. from Richland x Kabott
W5S-4142	Wis. A.E.S. & U.S.R.S.L.	Sel. from Kabott x Goldsoy
W5S-4143	Wis. A.E.S. & U.S.R.S.L.	Sel. from Mukden x Pagoda
W6S-339	Wis. A.E.S. & U.S.R.S.L.	Sel. from Cayuga x Kabott

Data from eight locations are presented in tables 1-4. Yields were highest at Ottawa, Ontario, and lowest at Rosholt, South Dakota. Some difficulty was experienced by dry weather at emergence but yields in general were good and the tests should be reliable. Killing frosts did not occur until after maturity. This test is designed for strains earlier than Mandarin (Ottawa) and the six new entries were of the correct maturity range. Testing these new strains in the Preliminary Group O at four locations in 1947 helped to establish their correct maturity. Maturity is one of the most important characteristics in the area in which Group O is grown and yields must be considered in relation to maturity. Compared to the check strains of comparable maturity, none of the new entries is very exciting. O-255 is equal to Mandarin in yield and maturity and is somewhat superior in oil content and height. It does lodge somewhat more, however. This is perhaps the best of the new entries. The other new entries are earlier and closer to Flambeau in maturity. None of these is equal to comparable check strains in yield but W4-610 and W4-631 are higher in oil content. The new selections are inferior to Mandarin (Ottawa) in lodging resistance, but are superior to the other check varieties in this respect.

Six varieties have been in this test for three years (tables 5 and 6). Of these, Capital and Montreal Manchu have yielded slightly more than Mandarin and have averaged slightly earlier in maturity. Capital has yielded best at Ottawa, Ithaca, and Rosholt, and Montreal Manchu has yielded best at Spooner, Eau Claire, Fargo, Park River, and Corvallis. These varieties are somewhat taller and lodge more than Mandarin. Capital has about one percent more oil than the other five strains in this test and this is a definite advantage. Goldsoy, Flambeau, and Kabott have yielded about as might be expected for their maturity. In relation to the three later strains, Goldsoy has been at the top in yield at Morris and Fargo.

Table 1. Summary of agronomic and chemical data for the strains in the Uniform Test, Group O, 1948.

Strain	Mean Yield Bu/Δ.	Maturity ¹	Lodging	Height Inches	Seed Quality	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	8	5	5	7	5	8	8	8	8
Montreal Manchu	26.4	- 0.4	2.6	32	1.0	16.6	41.9	19.2	133.0
Capital	27.8	- 1.2	2.8	33	1.8	13.4	40.1	20.7	132.1
Mandarin (Ottawa)	27.0	0	1.1	29	1.6	18.5	42.7	19.1	129.7
O-255	26.9	+ 0.6	1.5	32	2.2	13.7	40.1	19.7	132.4
Goldsoy	24.8	- 6.8	2.2	25	2.2	19.5	41.9	19.2	132.9
Flambeau	24.7	- 9.2	2.6	29	1.7	15.9	41.1	19.7	130.3
W4-610	24.4	- 5.4	1.8	28	2.1	19.1	40.9	20.3	129.8
W5S-4142	24.1	- 9.8	2.5	27	1.7	20.3	40.3	19.9	130.9
W6S-339	23.8	-11.0	1.4	27	1.6	16.9	40.8	18.6	131.0
W4-631	23.4	- 7.4	1.4	28	1.7	18.0	41.0	20.3	130.1
Kabott	23.2	-11.6	1.7	25	1.8	20.9	41.7	19.4	130.4
W5S-4143	23.0	- 9.0	1.2	31	2.1	16.0	42.5	19.3	124.7
Mean	25.1		1.9	29	1.8	17.4	41.3	19.6	130.6

¹ Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 124 days to mature.

Table 2. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group O, 1948.

Strain	Mean	Ottawa	Ithaca	Spoooner	Eau	Morris	Fargo	Rosholt	Cor-
	of 8 Tests	Ontario	N. Y.	Wis.	Claire Wis.	Minn.	N. D.	S. D.	vallis Ore.
Montreal Manchu	28.4	40.8	22.8	31.3	29.4	26.2	28.6	16.4	31.3
Capital	27.8	44.0	24.0	32.2	25.6	24.0	26.1	17.8	28.4
Mandarin(Ottawa)	27.0	35.6	23.8	33.1	28.9	24.2	28.3	15.3	26.6
O-255	26.9	38.6	16.6	30.3	25.1	28.6	29.2	16.9	30.2
Goldsoy	24.8	32.4	21.7	23.7	24.8	28.4	28.8	18.8	19.7
Flambeau	24.7	33.2	18.1	26.4	25.0	26.4	26.6	16.3	25.4
W4-610	24.4	33.1	19.4	26.9	25.9	27.0	24.4	14.7	23.8
W5S-4142	24.1	36.1	17.1	23.5	25.1	25.8	25.3	18.1	21.7
W6S-339	23.8	36.5	18.5	24.4	23.7	25.5	24.7	17.2	19.6
W4-631	23.4	36.0	18.9	24.7	23.7	26.2	23.7	14.0	20.2
Kabott	23.2	35.7	16.0	22.8	24.2	24.0	26.8	14.9	20.9
W5S-4143	23.0	38.9	17.0	21.3	24.8	23.9	21.7	13.3	22.9
Mean	25.1	36.7	19.5	26.7	25.5	25.9	26.2	16.1	24.2
Coef. of Var. (%)	--	--	--	--	--	--	--	12.0	--
Bu. Nec. for Sig. (5%)		4.5	--	--	--	2.8	--	3.3	--

Yield Rank

Montreal Manchu	2	3	3	1	5	3	6	1
Capital	1	1	2	4	10	7	3	3
Mandarin(Ottawa)	9	2	1	2	9	4	8	4
O-255	4	11	4	5	1	1	5	2
Goldsoy	12	4	9	8	2	2	1	11
Flambeau	10	8	6	7	4	6	7	5
W4-610	11	5	5	3	3	10	10	6
W5S-4142	6	9	10	5	7	8	2	8
W6S-339	5	7	8	11	8	9	4	12
W4-631	7	6	7	11	5	11	11	10
Kabott	8	12	11	10	10	5	9	9
W5S-4143	3	10	12	8	12	12	12	7

Table 3. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and lodging for the strains in the Uniform Test, Group O, 1948.

Strain	Mean of 5 Tests ¹	Ottawa Ontario	Spooner Wis.	Eau Claire Wis.	Morris Minn.	Fargo N. D.	Rosholt S. D.	Corvallis Oregon
Montreal Manchu	- 0.4	- 2	- 1	+1	0	+3	0	0
Capital	- 1.2	- 5	0	+1	+1	+9	0	- 3
Mandarin (Ottawa)	0	0	0	0	0	0	0	0
O-255	+ 0.6	- 4	- 3	-2	+2	+3	+3	+10
Goldsey	- 6.8	- 9	-10	-2	-3	+1	+4	-10
Flambeau	- 9.2	-12	-10	-5	-5	-3	-3	-14
W4-610	- 5.4	- 6	- 6	-1	-2	-5	+3	-12
W5S-4142	- 9.8	-12	- 9	-5	-5	-6	+4	-18
W6S-339	-11.0	-16	-15	-5	-5	-8	0	-14
W4-631	- 7.4	- 8	- 7	-3	-3	-7	+3	-16
Kabott	-11.6	-14	-13	-6	-5	-9	+3	-20
W5S-4143	- 9.0	-13	-10	-4	-4	-7	0	-14
Date planted		5/20	5/31	5/22	5/28	6/8	5/28	5/17
Mand. (Ott.) matured		10/1	9/29	9/14	9/13	9/21	9/26	10/5
Days to mature	124	134	121	115	108	105	121	141

	Mean of 5 Tests	Lodging					
Montréal Manchu	2.6	3.0	2.3	2.8	3.8	1.0	
Capital	2.8	3.5	2.0	3.1	4.1	1.2	
Mandarin (Ottawa)	1.1	1.0	1.0	1.5	1.0	1.0	
O-255	1.5	1.0	1.3	2.4	1.0	1.8	
Goldsey	2.2	1.8	2.0	1.9	4.3	1.0	
Flambeau	2.6	3.0	1.8	2.7	3.6	1.8	
W4-610	1.8	1.8	1.5	2.0	2.9	1.0	
W5S-4142	2.5	3.3	2.3	2.1	4.0	1.0	
W6S-339	1.4	1.0	1.0	1.4	2.8	1.0	
W4-631	1.4	1.0	1.3	1.6	1.9	1.0	
Kabott	1.7	1.5	1.8	1.6	2.6	1.0	
W5S-4143	1.2	1.0	1.0	1.1	1.9	1.2	
Mean	1.9	1.9	1.6	2.0	2.8	1.2	

¹ Fargo and Rosholt not included in the mean.

Table 4. Summary of height data and percentage oil for the strains in the Uniform Test, Group O, 1948.

Strain	Mean	Ottawa	Ithaca	Spooner	Eau				Cor-
	of 7				Ontario	N. Y.	Wis.	Claire	
	Tests				Wis.	Minn.	N. D.	S. D.	Ore.
Montreal Manchu	32	42		32	31	33	24	31	33
Capital	33	41		31	33	34	24	34	36
Mandarin(Ottawa)	29	37		28	28	29	24	26	30
O-255	32	39		32	27	34	24	34	36
Goldsoy	25	35		24	23	26	22	23	21
Flambeau	29	42		28	28	30	22	28	26
W4-610	28	39		28	27	30	24	27	22
W5S-4142	27	36		29	25	28	24	22	22
W6S-339	27	38		27	26	30	24	24	21
W4-631	28	39		30	29	30	23	24	23
Kabott	25	35		25	25	27	21	22	21
W5S-4143	31	45		32	30	31	24	30	27
Mean	29	39		29	28	30	23	27	27

	Mean	Percentage Oil								
	of 8									
	Tests									
Montreal Manchu	19.2	20.6	19.0	18.9	19.6	18.4	20.2	17.8	19.2	
Capital	20.7	22.1	20.5	20.2	22.2	19.9	21.0	19.6	19.9	
Mandarin(Ottawa)	19.1	19.9	19.9	18.9	19.9	18.6	20.1	17.0	18.3	
O-255	19.7	20.8	20.0	19.7	20.2	19.2	20.7	18.0	18.7	
Goldsoy	19.2	19.2	19.8	18.5	19.2	18.9	20.8	18.4	18.6	
Flambeau	19.7	20.7	19.3	19.4	20.1	19.0	20.8	19.1	19.3	
W4-610	20.3	20.9	20.9	19.9	20.6	19.9	20.9	19.0	20.0	
W5S-4142	19.9	20.1	20.3	18.9	19.7	19.1	21.5	20.3	19.1	
W6S-339	18.6	19.6	19.2	18.2	18.6	18.3	18.1	18.7	18.1	
W4-631	20.3	20.8	20.3	19.6	20.8	19.3	20.7	20.3	20.6	
Kabott	19.4	19.6	19.5	18.8	19.9	18.9	20.1	19.6	18.9	
W5S-4143	19.3	20.4	19.5	18.4	19.8	18.5	19.3	19.1	19.3	
Mean	19.6	20.4	19.9	19.1	20.1	19.0	20.4	18.9	19.2	

Table 5. Three-year summary of agronomic and chemical data for the strains in the Uniform Test, Group O, 1946-48.

Strain	Mean				Seed		Percent-	Percent-	Iodine
	Yield Bu/A.	Matu- rity ¹	Lodg- ing	Height Inches	Qual- ity	Seed Weight	age of Protein	age of Oil	Number of Oil
No. of Tests	25	16	13	22	16	25	26	26	26
Capital	25.9	- 2.0	2.5	30	2.1	12.7	40.1	20.6	133.6
Montreal Manchu	25.8	- 2.3	2.1	31	1.5	16.1	41.5	19.4	134.3
— Mandarin (Ottawa)	24.8	0	1.2	27	2.3	17.7	42.2	19.6	131.2
Goldsoy	23.3	- 6.9	2.3	24	2.2	18.4	42.2	19.3	134.2
— Flambeau	22.6	-10.9	2.3	27	2.0	15.4	40.0	19.6	131.6
Kabott	21.5	-12.1	1.8	24	1.8	19.4	42.4	19.4	132.1
Mean	24.0		2.0	27	2.0	16.6	41.4	19.7	132.8

¹ Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 125 days to mature.

Table 6. Three-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group O, 1946-48.

Strain	Mean of 25 Tests	Co-	Eau	St.	Park	Ros-	Cor-				
		tawa Ont.	Ithaca N. Y.	Spooner Wis.	Claire Wis.	Morris Minn.	Fargo N.D.	River N.D.	holt S.D.	vallis Ore.	
Years Tested	1946- 1948	1946- 1948	1946- 1948	1947- 1948	1946- 1947	1946- 1948	1946- 1948	1946- 1947	1947- 1948	1946- 1948	
Capital	25.9	37.2	28.3	22.3	24.2	17.4	23.1	23.2	24.1	17.7	24.4
Montreal Manchu	25.8	35.8	26.5	23.1	26.1	17.8	23.2	25.5	24.7	15.1	25.8
— Mandarin (Ott.)	24.8	31.8	27.1	23.0	25.0	18.6	22.7	23.8	21.9	14.4	23.6
Goldsoy	23.3	30.5	25.0	18.2	22.2	14.8	24.0	25.5	23.5	15.7	17.8
— Flambeau	22.6	30.0	21.4	19.9	22.5	14.2	23.9	22.7	22.9	13.8	19.7
Kabott	21.5	30.0	22.3	19.8	19.5	15.7	20.1	21.6	23.5	11.6	18.3
Mean	24.0	32.6	25.1	21.1	23.3	16.4	22.8	23.7	23.4	14.7	21.6

Yield Rank

Capital	1	1	3	3	3	4	4	2	1	2
Montreal Manchu	2	3	1	1	2	3	1	1	3	1
Mandarin (Ott.)	3	2	2	2	1	5	3	6	4	3
Goldsoy	4	4	6	5	5	1	1	3	2	6
Flambeau	5	6	4	4	6	2	5	5	5	4
Kabott	5	5	5	6	4	6	6	3	6	5

PRELIMINARY TEST, GROUP O

The origin of the strains in the Preliminary Test, Group O, is as follows:

Strain	Source or Originating Agency	Origin
Capital	Central Exp. Farm, Ottawa	Sel. from Strain 171 x A.K. (Harrow)
Flambeau	Wis. Agr. Exp. Station	Sel. from Manchu
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Pridesoy	Twin City Seed Co., Minneapolis	Unknown
Pridesoy 57	Twin City Seed Co., Minneapolis	Sel. from Pridesoy
M8	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M9	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M11	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M305-2	Central Exp. Farm, Ottawa	Sel. from variety Moscow
O-10	Central Exp. Farm, Ottawa	Sel. from a natural cross in Manchu
W5-2070	Wis. A.E.S. & U.S.R.S.L.	Sel. from Mukden x Kabott
W5-2260	Wis. A.E.S. & U.S.R.S.L.	Sel. from Ontario x Richland
W6S-326	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Pagoda
W6S-338	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Pagoda
W6S-341	Wis. A.E.S. & U.S.R.S.L.	Sel. from Cayuga x Kabott
W6S-441	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W6S-457	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)

Preliminary Group O was grown at 6 locations in 1948. In general, these were good tests, the one at Ottawa yielding the most (Table 8). One of the new entries, Pridesoy 57, is being distributed in quantity by the Twin City Seed Company of Minneapolis. This strain has proven to be distinctly superior to the ordinary Pridesoy but apparently is inferior to Mandarin (Ottawa) in yield, lodging resistance, height, seed quality, and percentage of oil (Table 7). The majority of the experimental entries have not proven to be better yielders than the check strains of comparable maturity but several have been superior in lodging resistance and percentage of oil. Since maturity is such an important question in Group O territory, the strains in this test must be evaluated with this in mind. The individual maturity data are presented in Table 9.

Of the later entries, the most promising appear to be W5-2260, M8, and M9. Of the strains earlier than Mandarin, O-10 is the best yielding but it is low in oil. W5-2070 is about as early as Flambeau and stands up better but has a somewhat lower oil content. M305-2 did not yield as well in 1948 as it did in 1947. O-10, W5-2070, and M305-2 have been tested for two years in this group.

Table 7. Summary of agronomic and chemical data for the strains in the Preliminary Test, Group O, 1948.

Strain	Mean Yield Bu/A.	Matu- rity ¹	Lodg- ing	Height Inches	Seed Qual- ity	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	6	5	5	5	4	6	6	6	6
Capital	31.7	+ 0.4	3.2	34	1.3	14.6	39.7	21.2	131.5
Mandarin (Ottawa)	31.3	0	1.5	29	1.3	19.6	41.7	20.0	128.6
W5-2260	30.3	+ 0.4	1.9	30	1.8	18.3	38.6	20.5	128.3
M8	29.7	+ 0.8	2.4	32	1.5	16.9	38.9	21.0	131.8
M11	29.4	+ 2.4	2.4	34	1.5	16.1	39.3	21.2	132.9
M9	28.8	0	2.1	31	1.8	17.3	39.9	21.6	132.0
W6S-441	28.7	+ 0.2	2.7	33	1.4	15.4	40.3	20.7	132.6
O-10	28.6	- 3.8	2.5	32	1.8	16.0	42.6	19.3	134.1
W6S-326	27.3	+ 0.4	1.7	32	1.6	16.8	39.5	21.4	131.3
Pridesoy 57	27.3	- 1.8	1.6	27	1.4	16.3	42.8	18.9	131.4
W6S-338	27.1	- 0.6	2.1	31	2.3	16.5	41.9	18.5	133.3
W6S-457	26.8	+ 0.6	2.2	31	1.8	15.0	39.4	20.8	133.5
Flambeau	26.7	- 6.8	3.0	30	1.8	15.6	40.9	19.8	129.8
W5-2070	26.6	- 5.4	1.6	34	2.3	16.2	42.9	19.3	123.0
M305-2	25.9	- 4.4	1.6	28	2.4	20.4	40.8	18.5	129.5
Pridesoy	25.6	- 1.0	1.6	28	1.5	14.7	43.4	18.5	132.2
W6S-341	25.1	-10.2	1.6	27	1.8	16.7	40.3	19.3	130.0
Mean	28.0		2.1	31	1.7	16.6	40.8	20.0	130.9

¹ Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 116 days to mature.

Table 8. Summary of yield in bushels per acre and yield rank for the strains in the Preliminary Test, Group O, 1948.

Strain	Mean of 6 Tests	Ottawa Ontario	Walker- ton Ind.	Spooner Wis.	Eau Claire Wis.	Fargo N.D.	Rosholt S.D.
Capital	31.7	41.3	29.8	33.4	30.7	26.6	28.4
Mandarin (Ottawa)	31.3	35.1	37.7	31.6	30.9	27.2	25.0
W5-2260	30.3	37.3	36.5	33.1	26.9	17.3	20.9
M8	29.7	40.1	32.4	32.8	30.4	21.7	21.0
M11	29.4	38.5	31.3	32.2	25.0	25.2	24.1
M9	28.8	34.6	31.0	34.1	29.7	20.0	23.4
W6S-441	28.7	38.9	29.1	32.2	27.2	23.5	21.3
O-10	28.6	36.5	28.7	33.6	29.3	21.5	21.8
W6S-326	27.3	33.1	27.2	32.2	29.0	20.4	21.9
Pridesoy 57	27.3	31.2	31.7	30.3	27.0	20.7	22.9
W6S-338	27.1	34.4	27.9	30.8	24.9	23.0	21.8
W6S-457	26.8	34.6	29.4	31.3	27.0	20.1	18.1
Flambeau	26.7	34.9	25.4	27.6	26.9	22.7	22.4
W5-2070	26.6	36.0	27.0	27.6	28.7	18.4	21.6
M305-2	25.9	32.3	27.0	24.2	24.0	22.9	24.7
Pridesoy	25.6	27.9	31.7	29.2	25.3	23.0	16.3
W6S-341	25.1	32.7	21.4	24.2	28.1	22.5	21.4
Mean	28.0	35.3	29.7	30.6	27.7	22.2	22.2
Coef. of Var. (%)		--	9.8	--	--	--	18.2
Bu. Nec. for Sig. (5%)		3.4	4.1	--	--	--	--

Yield Rank

Capital	1	8	3	2	3	1
Mandarin (Ottawa)	8	1	9	1	2	2
W5-2260	5	2	4	12	1	15
M8	2	3	5	3	11	14
M11	4	7	6	15	4	4
M9	10	6	1	4	16	5
W6S-441	3	10	6	9	5	13
O-10	6	11	2	5	12	9
W6S-326	13	13	6	6	14	8
Pridesoy 57	16	4	12	10	13	6
W6S-338	12	12	11	16	6	9
W6S-457	11	9	10	10	15	16
Flambeau	9	16	14	12	9	7
W5-2070	7	14	14	7	17	11
M305-2	15	14	16	17	8	3
Pridesoy	17	4	13	14	6	17
W6S-341	14	17	16	8	10	12

Table 9. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and percentage oil for the strains in the Preliminary Test, Group O, 1948.

Strain	Mean of 5 Tests ¹	Ottawa Ontario	Walker- ton Ind.	Spooner Wis.	Eau Claire Wis.	Fargo N.D.	Rosholt S.D.
Capital	+ 0.4	- 3	-1	0	+1	+ 5	0
Mandarin (Ottawa)	0	0	0	0	0	0	0
W5-2260	+ 0.4	- 1	+2	- 3	+2	+ 2	+4
M8	+ 0.8	- 1	+3	+ 1	+2	- 1	+8
M11	+ 2.4	+ 2	+5	+ 1	+3	+ 1	+3
M9	0	- 1	+2	- 1	+2	- 2	+9
W6S-441	+ 0.2	- 2	+2	+ 1	+1	- 1	+5
O-10	- 3.8	- 5	-2	- 6	-1	- 5	+7
W6S-326	+ 0.4	+ 2	+1	- 2	+2	- 1	+3
Pridesoy 57	- 1.8	- 3	0	- 4	0	- 2	+8
W6S-338	- 0.6	- 2	-1	0	0	0	+1
W6S-457	+ 0.6	- 2	+1	+ 1	+3	0	0
Flambeau	- 6.8	-11	-5	-10	-3	- 5	-3
W5-2070	- 5.4	-10	-3	- 9	-1	- 4	+3
M305-2	- 4.4	- 4	-3	- 7	-2	- 6	+3
Pridesoy	- 1.0	- 1	0	- 5	+3	- 2	0
W6S-341	-10.2	-17	-6	-15	-3	-10	+5
Date planted		5/20	6/18	5/31	5/22	6/8	5/28
Mand. (Ott.) matured		9/29	10/1	9/29	9/12	9/23	9/26
Days to mature	116	132	105	121	113	107	121
	Mean of 6 Tests			Oil			
Capital	21.2	21.8	20.3	20.8	21.3	21.4	21.3
Mandarin (Ottawa)	20.0	19.9	20.2	19.5	20.2	19.9	20.0
W5-2260	20.5	21.4	20.4	20.6	20.7	21.4	18.7
M8	21.0	21.1	21.0	20.5	21.3	21.9	20.3
M11	21.2	21.4	20.5	20.5	21.1	22.5	20.9
M9	21.6	21.7	21.4	20.5	22.3	22.4	21.4
W6S-441	20.7	21.3	20.2	20.4	20.7	21.3	20.0
O-10	19.3	19.9	19.0	19.4	19.5	19.5	18.2
W6S-326	21.4	21.7	20.9	20.6	22.6	22.1	20.6
Pridesoy 57	18.9	19.1	19.5	17.8	20.3	19.8	16.8
W6S-338	18.5	18.2	17.9	18.5	18.2	19.4	18.9
W6S-457	20.8	21.7	20.5	21.2	20.8	20.9	19.6
Flambeau	19.8	19.7	18.6	19.7	20.1	20.7	19.9
W5-2070	19.3	20.0	18.5	19.9	19.9	19.0	18.5
M305-2	18.5	18.2	18.4	18.0	19.2	18.7	18.5
Pridesoy	18.5	18.1	18.1	18.8	19.3	19.2	17.7
W6S-341	19.3	19.8	19.4	18.8	19.1	18.8	20.0
Mean	20.0	20.3	19.7	19.7	20.4	20.5	19.5

¹ Rosholt not included in the mean.

UNIFORM TEST, GROUP I

The origin of the strains in the Uniform Test, Group I, is as follows:

Strain	Source or Originating Agency	Origin
Earlyana	Purdue Agr. Exp. Sta.	Sel. from a natural hybrid
Habaro	U.S. Dept. of Agriculture	Sel. from P. I. 20405
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Wis. Manchu 3	Wis. Agr. Exp. Sta.	Sel. from Manchu
A3K-884	Iowa A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
A6K-937	Iowa A.E.S. & U.S.R.S.L.	Sel. from A3K-884
Monroe (H5S)	Ohio A.E.S. & U.S.R.S.L.	Sel. from Mukden x Mandarin
H2804	Ohio A.E.S. & U.S.R.S.L.	Sel. from Richland x Scioto
H6403	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M1	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M4	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5-2175	Wis. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x I6-12
W5-2307	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland
W5-3638	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland

Group I was planted at two new locations, State College, Pennsylvania, and Paulding, Ohio. Dry weather at planting resulted in such irregular stands that the St. Paul test was abandoned. The pure line selection, A6K-937, and the original strain, A3K-884, were entered in this test in 1948. A3K-884 has the highest average yield for the four-year period 1945-1948 (table 14). The selection appears to be equal to or better than its parent (tables 10-13). A6K-937 is superior to Earlyana in yield, resistance to lodging, seed quality, and oil content. The history of this selection from the Mukden x Richland cross was given in detail in the 1947 report. An initial increase of fifteen pounds of seed of A6K-937 was produced in Iowa for further increase in 1949. The other seven new entries varied from 2 to 11 days later than Mandarin. H6403 and W5-2307 may prove to be too late for this group since they averaged later than Earlyana. All of these had satisfactory resistance to lodging and most of them were tall enough. H6403 and W5-3638 seem to be the best of the later strains although W5-3638 lodges more than it should for its height. M1 appears to be the best of the earlier strains. It yielded almost as much as H6403 and was 5 days earlier. M4 and W5-2175 were earlier than the other selections and did not yield as well.

Of the 6 strains which have been in for 4 years, A3K-884 has yielded better than anything else (tables 14-15). It is slightly earlier than Earlyana, more resistant to lodging, and higher in oil content. The strain H5S, from the cross Mukden x Mandarin, has been named Monroe, and seed was increased in 1948 to 1700 bushels in Ohio, 100 bushels in Wisconsin, and 55 bushels in Minnesota. The origin of H5S was described in detail in the 1947 report. Monroe has been tested for 6 years (tables 16 and 17). This variety has yielded slightly less than Earlyana and is about 5 days earlier. Monroe is just as tall as Earlyana but stands up better and has better quality seed. It is being released as a strain to precede wheat in Northern Ohio.

Table 10. Summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1948.

Strain	Mean Yield Bu/A.	Maturity ¹	Lodging	Height Inches	Seed Quality	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	12	9	11	11	11	12	12	12	12
H6403	28.4	+11.1	1.4	35	2.2	16.6	42.0	20.8	131.5
W5-3638	28.1	+ 8.8	1.7	33	2.3	15.5	41.4	21.1	130.9
M1	27.9	+ 5.9	1.5	32	2.0	16.4	41.1	20.9	129.2
A6K-937	27.6	+ 9.1	1.5	33	1.6	15.7	40.5	21.3	126.1
H2804	27.5	+10.7	1.7	35	2.0	17.2	42.2	20.6	132.8
A3K-884	√ 27.3	+ 9.0	1.3	33	1.8	16.2	41.1	21.0	125.8
Habaro	√ 26.8	+ 6.4	1.7	26	2.1	18.3	43.1	19.3	129.2
Earlyana	√ 26.8	+ 9.0	2.6	35	2.3	15.7	42.8	20.1	130.7
W5-2307	26.7	+11.2	1.4	34	2.0	16.7	40.7	21.0	128.9
Monroe (H5S)	26.4	+ 4.0	2.0	36	2.0	14.9	42.5	20.3	128.1
W5-2175	26.4	+ 2.8	1.6	34	2.0	14.6	41.7	19.9	130.8
Wis. Manchu 3	25.8	+ 8.3	2.5	35	2.3	17.5	40.9	20.6	130.5
Mandarin (Ottawa)	25.2	0	1.2	25	1.9	18.4	42.6	20.0	126.7
M4	24.1	+ 1.8	1.4	27	2.4	14.7	40.4	21.3	130.9
Mean	26.8		1.7	32	2.1	16.3	41.6	20.6	129.4

¹ Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 114 days to mature.

Table 11. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1948.

Strain	Mean of 12 Tests	Ithaca N. Y.	State College Pa.	Holgate Ohio	Pauld- ing Ohio	Colum- bus Ohio	Eau Claire Wis.
H6403	28.4	23.8	30.7	29.0	30.3	41.3	18.3
W5-3638	28.1	24.6	31.4	25.5	28.5	29.7	21.0
M1	27.9	23.8	32.4	27.9	26.6	33.7	20.3
A6K-937	27.6	26.4	33.6	24.9	27.8	31.5	21.0
H2804	27.5	27.0	31.6	25.5	27.7	36.2	17.9
A3K-884	27.3	26.0	32.2	27.4	24.0	30.5	23.0
Habaro	26.8	27.4	35.0	22.6	25.5	30.6	23.7
Earlyana	26.8	23.8	32.2	23.1	31.8	24.8	20.1
W5-2307	26.7	21.1	30.4	23.8	28.0	38.1	19.4
Monroe (H5S)	26.4	28.4	31.9	23.9	28.3	25.3	24.9
W5-2175	26.4	22.2	28.1	25.2	23.2	33.5	25.5
Wis. Manchu 3	25.8	21.9	30.4	23.7	24.4	21.7	22.2
Mandarin (Ottawa)	25.2	23.2	28.2	23.8	23.9	21.2	24.9
M4	24.1	18.4	29.3	21.0	18.2	21.6	27.5
Mean	26.8	24.1	31.2	24.8	26.5	30.0	22.1
Coef. of Var. (%)		--	7.1	11.9	14.0	12.3	--
Bu. Nec. for Sig. (5%)		--	3.3	4.2	5.3	5.3	--

Yield Rank

Strain	Ithaca N. Y.	State College Pa.	Holgate Ohio	Pauld- ing Ohio	Colum- bus Ohio	Eau Claire Wis.
H6403	7	9	1	2	1	13
W5-3638	6	8	4	4	9	8
M1	7	3	2	3	4	10
A6K-937	4	2	7	7	6	8
H2804	3	7	4	8	3	14
A3K-884	5	4	3	11	8	6
Habaro	2	1	13	9	7	5
Earlyana	7	4	12	1	11	11
W5-2307	13	10	9	6	2	12
Monroe (H5S)	1	6	8	5	10	3
W5-2175	11	14	6	13	5	2
Wis. Manchu 3	12	10	11	10	12	7
Mandarin (Ottawa)	10	13	9	12	14	3
M4	14	12	14	14	13	1

Table 11. (Continued)

Strain	Madi- son Wis.	Comp- ton Ill.	Waseca Minn.	Cresco Iowa	Kana- wha Iowa	Brook- ings S. D.
H6403	25.6	23.8	28.0	21.8	35.6	32.5
W5-3638	28.8	28.0	29.0	21.0	35.8	33.5
M1	26.0	24.8	30.0	21.4	34.7	31.6
A6K-937	26.5	27.4	27.6	20.8	31.8	32.2
H2804	26.0	25.5	26.9	21.5	32.0	32.3
A3K-884	24.0	26.3	29.7	20.1	33.4	31.0
Habaro	22.7	27.7	26.8	17.6	30.8	31.4
Earlyana	24.8	25.6	27.8	19.8	34.1	33.5
W5-2307	25.6	24.2	28.3	22.4	32.7	26.5
Monroe (H5S)	23.4	25.6	27.6	17.7	31.0	28.2
W5-2175	22.2	27.4	27.2	19.5	31.0	31.2
Wis. Manchu 3	26.6	28.8	22.3	21.0	32.0	34.4
Mandarin (Ottawa)	21.8	28.2	27.6	16.0	29.2	33.8
M4	22.6	26.6	30.8	16.9	29.2	27.4
Mean	24.8	26.4	27.8	19.8	32.4	31.4
Coef. of Var. (%)	--	6.7	5.1	5.8	7.3	8.4
B.N.F.S. (5%)	--	2.5	4.1	1.6	3.4	3.8

Yield Rank

Strain	Madi- son	Comp- ton	Waseca	Cresco	Kana- wha	Brook- ings
H6403	6	14	6	2	2	5
W5-3638	1	3	4	5	1	3
M1	4	12	2	4	3	8
A6K-937	3	5	8	7	9	7
H2804	4	11	12	3	7	6
A3K-884	9	8	3	8	5	11
Habaro	11	4	13	12	12	9
Earlyana	8	9	7	9	4	3
W5-2307	6	13	5	1	6	14
Monroe (H5S)	10	9	8	11	10	12
W5-2175	13	5	11	10	10	10
Wis. Manchu 3	2	1	14	5	8	1
Mandarin (Ottawa)	14	2	8	14	13	2
M4	12	7	1	13	13	13

Table 12. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and lodging for the strains in the Uniform Test, Group I, 1948.

Strain	Mean of 9 Tests ¹	State College Pa.	Holgate Ohio	Pauld- ing Ohio	Colum- bus Ohio	Eau Claire Wis.
H6403	+11.1	+15	+8	0		+12
W5-3638	+8.8	+9	+8	-1		+6
M1	+5.9	+11	+3	-1		+5
A6K-937	+9.1	+12	+9	0		+10
H2804	+10.7	+7	+7	0		+13
A3K-884	+9.0	+12	+7	+1		+11
Habaro	+6.4	+16	+9	-1		+6
Earlyana	+9.0	+5	+10	+1		+12
W5-2307	+11.2	+9	+9	+2		+17
Monroe (H5S)	+4.0	+8	+7	-1		+3
W5-2175	+2.8	+5	+3	0		+5
Wis. Manchu 3	+8.3	+8	+5	-1		+11
Mandarin (Ottawa)	0	0	0	0		0
M4	+1.8	+8	+1	-4		0
Date planted		5/25	5/26	5/28		5/22
Mand. (Ott.) matured		9/17	9/16	9/18		9/14
Days to mature	114	115	113	113		115
	Mean of 11 Tests	Lodging				
H6403	1.4	1.0	1.5	1.5	1.0	1.3
W5-3638	1.7	1.0	1.3	2.3	2.0	1.5
M1	1.5	2.0	1.0	1.5	1.3	1.5
A6K-937	1.5	1.0	1.3	1.8	2.0	1.3
H2804	1.7	1.5	1.0	3.0	1.7	1.8
A3K-884	1.3	1.0	1.0	1.0	1.0	1.0
Habaro	1.7	1.0	1.0	2.0	1.5	1.5
Earlyana	2.6	2.0	1.5	3.3	3.0	2.8
W5-2307	1.4	1.0	1.0	1.3	2.0	1.0
Monroe (H5S)	2.0	1.0	1.3	3.5	2.5	1.5
W5-2175	1.6	1.0	1.3	1.5	2.2	1.5
Wis. Manchu 3	2.5	1.0	2.0	4.0	2.5	3.0
Mandarin (Ottawa)	1.2	1.0	1.0	1.0	1.2	1.0
M4	1.4	1.5	1.0	1.0	1.5	1.5
Mean	1.7	1.2	1.1	2.0	1.8	1.6

¹Paulling not included in the mean.

Table 12. (Continued)

Strain	Madi- son Wis.	Comp- ton Ill.	Waseca Minn.	Cresco Iowa	Kana- wha Iowa	Brook- ings S. D.
H6403	+11	+10	+8	+18	+10	+8
W5-3638	+7	+7	+6	+15	+9	+12
M1	+5	+6	+6	+9	+6	+2
A6K-937	+8	+10	+6	+11	+8	+8
H2804	+10	+13	+6	+16	+14	+10
A3K-884	+8	+10	+6	+10	+9	+8
Habaro	+4	+6	+3	+5	+7	+2
Earlyana	+10	+7	+6	+12	+9	+10
W5-2307	+9	+11	+8	+14	+12	+12
Monroe (H5S)	+1	+4	+1	+6	+5	+1
W5-2175	0	+3	+1	+4	+3	+1
Wis. Manchu 3	+10	+8	+7	+13	+10	+3
Mandarin (Ottawa)	0	0	0	0	0	0
M4	+2	0	+1	+4	-2	+2
Date planted	5/19	5/21	5/27	5/26	5/24	5/24
Mand. (Ott.)matured	9/13	9/7	9/15	9/12	9/10	9/30
Days to mature	117	109	111	109	109	129

	Mean of 11 Tests						Lodging
H6403	1.5	2.0	1.0	1.0	1.0	2.5	
W5-3638	2.0	2.0	1.0	1.0	1.3	3.0	
M1	1.8	2.0	1.1	1.0	1.0	2.8	
A6K-937	1.3	2.1	1.0	1.0	1.0	3.2	
H2804	1.0	2.2	1.0	1.0	1.3	3.0	
A3K-884	1.0	2.0	1.0	1.0	1.0	3.2	
Habaro	2.3	2.3	1.2	1.0	1.3	3.2	
Earlyana	3.3	3.0	1.9	1.0	2.3	4.0	
W5-2307	1.3	2.0	1.1	1.0	1.3	2.0	
Monroe (H5S)	2.0	2.5	1.2	1.0	1.5	3.8	
W5-2175	1.3	2.1	1.4	1.0	1.5	2.8	
Wis. Manchu 3	3.3	3.0	1.6	1.3	2.5	3.8	
Mandarin (Ottawa)	1.0	2.0	1.1	1.0	1.0	2.0	
M4	1.0	2.0	1.2	1.0	1.0	2.5	
Mean	1.7	2.2	1.2	1.0	1.4	3.0	

Table 13. Summary of height data and percentage oil for the strains in the Uniform Test, Group I, 1948.

Strain	Mean of 11 Tests	Ithaca No. Ys	State College Pa.	Holgate Ohio	Pould- ing Ohio	Colum- bus Ohio	Eau Claire Wis.
H6403	35		28	27	36	33	39
W5-3638	33		27	23	35	31	36
M1	32		26	24	36	28	35
A6K-937	33		30	24	36	29	37
H2804	35		29	24	38	32	37
A3K-884	33		28	25	34	28	38
Habaro	26		22	21	29	22	32
Earlyana	35		31	26	36	31	38
W5-2307	34		27	24	35	31	39
Monroe (H5S)	36		32	26	44	30	38
W5-2175	34		29	26	36	32	38
Wis. Manchu 3	35		31	25	35	30	39
Mandarin (Ottawa)	25		23	20	30	22	28
M4	27		24	22	28	25	30
Mean	32		28	24	35	29	36

	Mean of 12 Tests	Percentage Oil					
H6403	20.8	20.3	20.2	21.3	20.6	20.9	20.1
W5-3638	21.1	21.0	21.1	20.7	20.6	20.6	19.9
M1	20.9	20.1	20.5	20.6	20.5	20.8	20.9
A6K-937	21.3	21.1	20.9	21.5	21.7	21.0	20.1
H2804	20.6	20.0	20.7	20.8	21.0	21.0	19.8
A3K-884	21.0	21.0	20.5	21.2	21.1	21.0	19.6
Habaro	19.3	19.6	18.6	18.9	18.9	19.1	19.1
Earlyana	20.1	19.8	19.5	19.9	20.2	20.1	19.1
W5-2307	21.0	20.3	21.3	21.1	21.1	21.4	19.5
Monroe (H5S)	20.3	19.7	19.5	19.9	20.2	20.4	20.3
W5-2175	19.9	20.6	20.5	19.0	19.0	20.0	19.4
Wis. Manchu 3	20.6	19.5	20.1	21.0	20.5	20.5	20.2
Mandarin (Ottawa)	20.0	20.4	20.7	19.4	19.2	19.8	19.8
M4	21.3	21.0	21.1	20.7	20.2	21.4	22.1
Mean	20.6	20.3	20.4	20.4	20.3	20.6	20.0

Table 13. (Continued)

Strain	Madison Wis.	Compton Ill.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
H6403	36	41	33	28	39	42
W5-3638	37	39	34	27	37	38
M1	34	38	32	25	37	37
A6K-937	36	40	30	28	38	39
H2804	37	42	34	27	39	41
A3K-884	35	40	30	27	39	40
Habaro	29	31	24	19	28	34
Earlyana	37	40	36	29	43	43
W5-2307	36	41	33	28	40	39
Monroe (H5S)	36	47	32	29	41	46
W5-2175	33	39	32	28	37	40
Wis. Manchu 3	37	42	32	30	39	41
Mandarin (Ottawa)	26	30	23	20	26	31
M4	28	32	25	20	27	33
Mean	34	39	31	26	36	39

Percentage Oil

Strain	Madison Wis.	Compton Ill.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
H6403	21.0	21.3	20.7	20.7	21.5	20.7
W5-3638	21.9	21.9	21.2	21.0	22.2	20.7
M1	21.3	21.4	21.1	21.4	21.8	20.1
A6K-937	21.5	21.7	21.4	21.8	23.0	20.4
H2804	20.8	20.7	20.5	20.6	21.3	20.2
A3K-884	20.9	21.5	21.0	21.5	22.2	20.0
Habaro	19.1	19.8	20.4	19.3	20.2	18.8
Earlyana	20.1	20.7	20.0	20.9	20.9	19.4
W5-2307	21.7	21.5	21.2	21.5	21.7	19.9
Monroe (H5S)	20.7	20.6	20.7	21.1	21.2	19.2
W5-2175	19.4	20.7	20.1	20.4	20.5	19.1
Wis. Manchu 3	21.2	21.5	21.1	20.8	21.4	19.8
Mandarin (Ottawa)	18.9	20.7	20.6	20.0	20.7	19.3
M4	21.4	21.8	21.7	21.3	22.0	20.6
Mean	20.7	21.1	20.8	20.9	21.5	19.9

Table 14. Four-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1945-48.

X

Strain	Mean of 43 Tests	Ithaca N. Y.	Strongs- ville Ohio	Wooster Ohio	Colum- bus Ohio	East Lansing Mich.	Eau Claire Wis.
Years Tested		1946- 1948	1945	1945- 1947	1945- 1948	1945- 1946	1945 1947-48
A3K-884	28.3	24.6	20.4	28.9	38.9	32.0	24.7
Monroe (H5S)	27.1	26.4	22.4	28.7	35.9	30.5	24.8
Earlyana	26.8	24.3	18.7	27.6	34.3	27.8	21.0
Wis. Manchu 3	26.7	21.5	22.5	27.7	34.3	26.0	23.6
Habaro	26.6	26.0	20.0	28.3	37.7	27.3	22.4
Mandarin (Ottawa)	26.5	23.9	21.6	27.4	34.3	28.0	23.8
Mean	27.0	24.5	20.9	28.1	35.9	28.6	23.4

	Yield Rank						
A3K-884		3	4	1	1	1	2
Monroe (H5S)		1	2	2	3	2	1
Earlyana		4	6	5	4	4	6
Wis. Manchu 3		6	1	4	4	6	4
Habaro		2	5	3	2	5	5
Mandarin (Ottawa)		5	3	6	4	3	3

Table 15. Four-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1945-48.

Strain	Mean Yield Bu/A.	Matu- rity ¹	Lodg- ing	Height Inches	Seed Qual- ity	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	43	29	39	38	32	43	43	43	43
A3K-884	28.3	+ 9.0	1.7	34	1.7	15.9	41.7	20.4	128.1
Monroe (H5S)	27.1	+ 5.6	2.1	36	1.7	14.5	42.9	19.9	130.4
Earlyana	26.8	+ 9.7	2.8	36	2.1	15.1	43.0	20.0	132.7
Wis. Manchu 3	26.7	+10.3	2.9	35	2.2	17.0	41.4	20.2	133.1
Habaro	26.6	+ 8.3	2.2	28	1.9	17.7	43.3	19.2	131.5
Mandarin (Ottawa)	26.5	0	1.3	26	1.7	17.9	42.7	19.9	128.7
Mean	27.0		2.2	33	1.9	16.4	42.5	19.9	130.8

¹ Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 112 days to mature.

Table 14. (Continued)

Strain	Madison Wis.	Compton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
Years Tested	1945- 1948	1946- 1948	1945 1947	1945- 1948	1945- 1948	1945- 1948	1945- 1948
A3K-884	28.7	30.1	26.1	29.1	19.1	32.7	24.5
Monroe (H5S)	27.4	28.6	23.8	28.1	18.4	31.0	21.4
Earlyana	28.0	29.9	21.8	28.4	18.9	32.4	23.2
Wis. Manchu 3	28.7	31.1	24.8	26.4	18.9	31.6	22.3
Habaro	27.5	29.6	19.4	26.5	17.5	31.0	22.2
Mandarin (Ottawa)	24.7	28.9	28.9	27.1	18.8	29.9	24.5
Mean	27.5	29.7	24.1	27.6	18.6	31.4	23.0

Yield Rank

A3K-884	1	2	2	1	1	1	1
Monroe (H5S)	5	6	4	3	5	4	6
Earlyana	3	3	5	2	2	2	3
Wis. Manchu 3	1	1	3	6	2	3	4
Habaro	4	4	6	5	6	4	5
Mandarin (Ottawa)	6	5	1	4	4	6	1

Table 16. Six-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1943-48.

Strain	Mean of 61 Tests	Ithaca No. Y.	Strongs- ville Ohio	Wooster Ohio	Colum- bus Ohio	East Lansing Mich.	Eau Claire Wis.
Years Tested		1946- 1948	1943- 1945	1943 1945-47	1945- 1948	1944- 1946	1943-45 1947-48
Wis. Manchu 3	27.3	21.5	25.3	29.0	34.3	25.9	21.6
Earlyana	27.3	24.3	24.8	29.2	34.3	26.8	20.2
Habaro	27.1	26.0	25.4	29.6	37.7	25.6	21.0
Monroe (H5S)	27.0	26.4	26.2	29.4	35.9	27.7	21.9
Mandarin (Ottawa)	26.5	23.9	25.8	29.2	34.3	25.9	21.3
Mean	27.0	24.4	25.5	29.3	35.3	26.4	21.2

Yield Rank

Wis. Manchu 3	5	4	5	3	3	2
Earlyana	3	5	3	3	2	5
Habaro	2	3	1	1	5	4
Monroe (H5S)	1	1	2	2	1	1
Mandarin (Ottawa)	4	2	3	3	3	3

Table 17. Six-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1943-48.

Strain	Mean Yield Bu/A.	Matu- rity ¹	Lodg- ing	Height Inches	Seed Qual- ity	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	61	45	56	56	45	61	61	61	61
Wis. Manchu 3	27.3	+10.7	2.8	35	2.0	17.0	41.4	20.2	133.7
Earlyana	27.3	+10.8	2.8	36	2.0	15.1	42.8	19.9	133.5
Habaro	27.1	+ 8.4	2.0	29	1.8	18.2	43.4	19.1	132.0
Monroe (H5S)	27.0	+ 6.0	2.1	36	1.6	14.7	42.8	19.8	131.0
Mandarin (Ottawa)	26.5	0	1.4	26	1.7	18.1	42.9	19.8	128.7
Mean	27.0		2.2	32	1.8	16.6	42.7	19.8	131.8

¹ Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 112 days to mature.

Table 16. (Continued)

Strain	Madison Wis.	Compton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kana- wha Iowa	Brook- ings S. D.
Years Tested	1943- 1948	1946- 1948	1943-45 1947	1943- 1948	1944- 1948	1944- 1948	1943- 1948
Wis. Manchu 3	29.2	31.1	27.6	28.4	19.6	33.1	23.5
Earlyana	28.1	29.9	26.2	29.8	19.6	34.0	24.5
Habaro	27.6	29.6	24.9	29.4	18.2	32.5	23.6
Monroe (H5S)	27.2	28.6	27.4	29.4	18.9	32.0	21.2
Mandarin (Ottawa)	25.2	28.9	28.0	29.2	19.2	30.6	24.6
Mean	27.5	29.6	26.8	29.2	19.1	32.4	23.5

Yield Rank

Wis. Manchu 3	1	1	2	5	1	2	4
Earlyana	2	2	4	1	1	1	2
Habaro	3	3	5	2	5	3	3
Monroe (H5S)	4	5	3	2	4	4	5
Mandarin (Ottawa)	5	4	1	4	3	5	1

PRELIMINARY TEST, GROUP I

Strain	Source or Originating Agency	Origin
Harly	Central Exp.Farm, Ottawa	Sel. from Mandarin x A.K. (Harrow)
Mandarin (Ottawa)	Central Exp.Farm, Ottawa	Sel. from Mandarin
Mandarin Rogue	Iowa Agr. Exp. Sta.	Regue in Mandarin
A6K-937	Iowa A.E.S. & U.S.R.S.L.	Sel. from A3K884 (Mukden x Rich.)
A6K-549	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A6K-0649	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A6K-1428	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A6K-1521	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A6K-1810	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
Cornell 1069-4-1-1-4-2	N. Y. Agr. Exp. Sta.	Sel. from a natural cross in Seneca
Cornell 1136-5-3-1	N. Y. Agr. Exp. Sta.	Sel. from a natural cross in Seneca
Cornell 1175	N. Y. Agr. Exp. Sta.	Sel. from a natural cross in Seneca
Cornell 1196	N. Y. Agr. Exp. Sta.	Sel. from a natural cross in Seneca
L6-8091	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L6-8144	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland
L6-8148	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland
L6-8174	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L6-8179	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L6-8275	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M6	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M7	Minn. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x Richland
M10	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W4-3190	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W4-4018	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5-3346	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5-3372	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5-3633	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)

The Preliminary Group I test was grown at five locations in 1948. Growing conditions were generally good and the plots were grown on fields of good fertility. The test at Compton suffered severe hail injury August 14 and yields and seed quality were severely affected. There may have been some differential effects but a study of the yield ranks in table 20 indicates that this field was no more out of line than any other. In spite of the hail, Compton yields were only a few bushels below Ithaca, Madison, and Waseca. Kanawha had the highest yields of all.

The 25 new entries in this test came from five states and Canada. This group is designed to include strains later than Mandarin and earlier than Earlyana. Earlyana has averaged about 11 days later than Mandarin. None of the new strains were too early for the test and only two were later than Earlyana. In general there were more late entries than early. One of the early entries is the new variety Harly, a selection from Mandarin x A.K. (Harrow) developed by the Harrow (Ontario) Station. This was four days later than Mandarin and was the tallest strain in the test. The results of this and other tests this year indicate that breeders have succeeded very well in combining height and earliness. In spite of its height, Harly stands up very well. Although this strain looked very good at several locations, it did not prove to be as high a yielder as Mandarin at 4 of the five locations. Mandarin Rogue, a tall selection from Mandarin, had about the same maturity, height, and oil content as Harly but did not yield nor stand as well. Of the four strains entered from New York, Cornell 1196 had the best oil content but it is quite late and did not yield as well as it should have for its maturity. Cornell 1136-5-3-1 is probably the best of the Cornell strains as it is fairly early and stands up satisfactorily. The eighteen strains tracing back to the cross Lincoln x Richland showed good resistance to lodging and good oil content. They ranged from 3 to 11 days later than Mandarin. M6, M10, and A6K-1428 were outstanding in oil content. Strain A6K-549 had the highest yield and was the most consistent yielder. It is interesting to note that there was very little variation in yield among the upper half of the strains and no appreciable correlation between yield and maturity.

Table 18. Summary of agronomic and chemical data for the strains in the Preliminary Test, Group I, 1948.

Strain	Mean	Matu-	Lodg-	Seed	Seed	Percent-	Percent-	Iodine	
	Yield Bu/A	rity ¹	ing Height	Qual- ity	Seed Weight	age of Protein	age of Oil	Number of Oil	
No. of Tests	5	4	4	4	4	5	5	5	
A6K-549	30.4	+9.0	1.6	38	2.0	16.5	41.0	21.5	130.7
L6-8179	29.7	+8.0	1.5	34	1.6	16.2	41.1	21.4	128.2
Cornell 1069-4-1-1-4-2	29.7	+9.8	2.1	34	1.3	18.4	40.5	21.1	129.0
W4-4018	29.6	+8.3	1.5	36	1.6	15.8	40.5	21.5	130.1
W5-3633	29.5	+7.3	1.8	34	2.0	17.1	40.5	21.7	131.8
M10	29.4	+8.8	1.5	33	1.5	16.6	38.9	22.5	130.4
L6-8174	29.3	+8.0	1.5	33	1.8	15.6	39.9	21.3	129.6
Cornell 1136-5-3-1	29.3	+6.8	1.5	31	1.8	18.7	40.7	21.0	127.4
W4-3190	29.1	+4.8	1.5	35	1.9	16.4	40.9	21.3	129.7
W5-3372	29.1	+9.3	1.4	36	2.1	15.1	39.1	21.8	131.0
W5-3346	29.1	+9.5	1.5	32	1.9	16.3	39.7	21.1	128.7
A6K-0649	29.0	+6.3	1.5	37	2.7	16.7	41.0	21.1	129.6
A6K-1810	28.9	+8.8	1.6	37	1.5	16.6	40.7	21.2	131.1
A6K-937	28.8	+7.5	1.4	36	1.3	16.1	40.2	21.8	126.4
L6-8091	28.3	+6.8	1.3	33	2.1	17.6	41.1	21.5	132.2
A6K-1428	28.1	+7.3	1.6	36	2.6	16.3	39.9	22.3	131.4
M6	28.0	+6.5	1.4	33	1.9	15.9	39.5	22.2	129.6
L6-8275	27.8	+2.8	1.3	33	2.1	15.0	40.8	21.3	131.6
L6-8144	27.8	+10.8	1.4	39	1.9	16.2	39.7	21.5	132.0
Cornell 1196	27.7	+12.5	2.6	34	1.3	16.1	39.8	21.8	132.1
L6-8148	27.6	+9.5	1.2	38	1.6	16.6	39.5	21.6	130.9
A6K-1521	27.4	+6.5	1.6	37	2.4	16.4	40.6	21.5	131.4
M7	27.0	+6.0	1.4	34	2.1	18.6	41.5	20.4	128.0
Cornell 1175	26.4	+13.8	2.1	40	1.8	14.0	41.2	19.9	135.5
Mandarin (Ottawa)	26.2	0	1.1	26	1.6	19.4	42.6	20.1	125.8
Harly	25.6	+3.8	1.6	41	1.5	14.7	42.8	20.0	127.7
Mandarin Rogue	24.0	+3.8	2.1	39	2.5	14.8	43.1	20.2	129.5
Mean	28.3		1.6	35	1.9	16.4	40.6	21.3	130.1

¹Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 111 days to mature.

Table 19. Summary of yield in bushels per acre for the strains in the Preliminary Test, Group I, 1948.

Strain	Mean of 5 Tests	Ithaca N. Y.	Madison Wis.	Compton Ill.	Waseca Minn.	Kanawha Iowa
A6K-549	30.4	30.5	28.7	25.0	29.7	37.9
L6-8179	29.7	28.7	27.9	26.0	28.7	37.3
Cornell 1069-4-1-1-4-2	29.7	28.1	26.6	23.9	30.9	38.8
W4-4018	29.6	27.5	28.4	24.9	29.0	38.4
W5-3633	29.5	28.9	29.2	25.9	26.5	36.8
M10	29.4	24.9	27.0	24.6	32.4	38.2
L6-8174	29.3	27.6	26.5	27.0	29.6	35.7
Cornell 1136-5-3-1	29.3	28.2	28.0	24.7	29.1	36.3
W4-3190	29.1	27.7	27.8	26.7	28.6	34.9
W5-3372	29.1	23.9	28.3	24.8	27.6	41.0
W5-3346	29.1	24.1	25.4	24.0	33.5	38.3
A6K-0649	29.0	26.1	27.1	25.9	31.6	34.4
A6K-1810	28.9	26.2	28.4	23.7	30.4	35.7
A6K-937	28.8	28.0	30.1	24.0	28.0	34.1
L6-8091	28.3	24.6	26.4	25.2	29.2	35.9
A6K-1428	28.1	27.7	26.8	24.6	26.2	35.2
M6	28.0	24.2	27.2	22.0	28.1	38.3
L6-8275	27.8	23.6	28.5	25.4	28.2	33.4
L6-8144	27.8	26.5	26.7	22.8	28.0	34.8
Cornell 1196	27.7	27.1	24.3	24.3	25.0	37.7
L6-8148	27.6	25.9	25.6	20.2	31.4	34.9
A6K-1521	27.4	26.5	27.0	23.9	25.8	33.9
M7	27.0	27.2	23.5	23.2	28.8	32.1
Cornell 1175	26.4	26.8	25.1	20.6	23.1	36.2
Mandarin (Ottawa)	26.2	25.5	23.9	24.5	26.8	30.5
Harly	25.6	23.8	26.2	21.2	26.3	30.4
Mandarin Rogue	24.0	22.8	21.4	21.6	25.6	28.8
Mean	28.3	26.4	26.7	24.1	28.4	35.7
Coef. of Var. (%)		--	--	7.0	6.0	9.4
Bu. Nec. for Sig. (5%)		2.9	--	2.4	4.8	4.7

Table 20. Summary of yield rank for the strains in the Preliminary Test, Group I, 1948.

Strain	Ithaca N. Y.	Madison Wis.	Compton Ill.	Waseca Minn.	Kanawha Iowa
A6K-549	1	3	8	7	7
L6-8179	3	9	3	13	9
Cornell 1069-4-1-1-4-2	5	17	18	5	2
W4-4018	10	5	9	11	3
W5-3633	2	2	4	21	10
M10	20	13	12	2	6
L6-8174	9	18	1	8	14
Cornell 1136-5-3-1	4	8	11	10	11
W4-3190	7	10	2	14	17
W5-3372	24	7	10	19	1
W5-3346	23	22	16	1	4
A6K-0649	17	12	4	3	20
A6K-1810	16	5	20	6	14
A6K-937	6	1	16	17	21
L6-8091	21	19	7	9	13
A6K-1428	7	15	12	23	16
M8	22	11	23	16	4
L6-8275	26	4	6	15	23
L6-8144	14	16	22	17	19
Cornell 1196	12	24	15	26	8
L6-8148	18	21	27	4	17
A6K-1521	14	13	18	24	22
M7	11	26	21	12	24
Cornell 1175	13	23	26	27	12
Mandarin (Ottawa)	19	25	14	20	25
Harly	25	20	25	22	26
Mandarin Rogue	27	27	24	25	27

Table 21. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), for the strains in the Preliminary Test, Group I, 1948.

Strain	Mean of 4 Tests	Madison Wisc.	Compton Ill.	Waseca Minn.	Kanawha Iowa
A6K-549	+ 9.0	+ 9	+11	+6	+10
L6-8179	+ 8.0	+ 6	+10	+6	+10
Cornell 1069-4-1-1-4-2	+ 9.8	+ 9	+12	+6	+12
W4-4008	+ 8.3	+ 5	+ 9	+8	+11
W5-3333	+ 7.3	+ 5	+ 8	+6	+10
M10	+ 8.8	+ 6	+10	+8	+11
L6-8174	+ 8.0	+ 6	+10	+6	+10
Cornell 1136-5-3-1	+ 6.8	+ 4	+11	+4	+ 8
W4-3190	+ 4.8	+ 3	+ 5	+4	+ 7
W5-3372	+ 9.3	+ 7	+11	+8	+11
W5-3346	+ 9.5	+ 8	+10	+8	+12
A6K-0649	+ 6.3	+ 6	+ 7	+6	+ 6
A6K-1810	+ 8.8	+ 8	+10	+6	+11
A6K-937	+ 7.5	+ 5	+10	+6	+ 9
L6-8091	+ 6.8	+ 5	+ 8	+4	+10
A6K-1428	+ 7.3	+ 6	+ 9	+6	+ 8
M6	+ 6.5	+ 6	+ 8	+4	+ 8
L6-8275	+ 2.8	+ 1	+ 4	+1	+ 5
L6-8144	+10.8	+11	+11	+8	+13
Cornell 1196	+12.5	+11	+16	+8	+15
L6-8148	+ 9.5	+ 9	+10	+8	+11
A6K-1521	+ 6.5	+ 6	+ 8	+6	+ 6
M7	+ 6.0	+ 4	+ 7	+4	+ 9
Cornell 1175	+13.8	+13	+19	+8	+15
Mandarin (Ottawa)	0	0	0	0	0
Harly	+ 3.8	+ 1	+ 6	+1	+ 7
Mandarin Rogue	+ 3.8	+ 3	+ 6	0	+ 6
Date planted		5/19	5/21	5/27	5/24
Mand. (Ott.) matured		9/13	9/6	9/15	9/9
Days to mature	111	117	108	111	108

Table 22. Summary of percentage oil for the strains in the Preliminary Test, Group I, 1948.

Strain	Mean of 5 Tests	Ithaca N. Y.	Madison Wis.	Compton Ill.	Waseca Minn.	Kanawha Iowa
A6K-549	21.5	20.6	22.0	21.5	21.0	22.3
L6-8179	21.4	19.6	22.1	21.8	20.8	22.5
Cornell 1069-4-1-1-4-2	21.1	19.2	21.7	21.9	21.2	21.5
W4-4018	21.5	20.3	21.7	21.9	21.0	22.6
W5-3533	21.7	20.7	22.1	22.1	21.3	22.5
M10	22.5	21.0	22.4	22.7	22.4	23.8
L6-8174	21.3	19.9	21.4	21.8	21.1	22.5
Cornell 1136-5-3-1	21.0	19.1	21.7	21.1	21.3	21.9
W4-3190	21.3	19.8	21.6	21.5	21.4	22.3
W5-3372	21.8	20.1	22.4	22.1	21.9	22.4
W5-3346	21.1	20.0	20.8	21.4	21.1	22.4
A6K-0649	21.1	20.4	21.0	21.3	21.0	21.6
A6K-1810	21.2	19.2	22.2	21.7	20.9	22.2
A6K-937	21.8	20.5	22.0	21.9	21.8	22.6
L6-8091	21.5	19.8	22.1	21.8	21.3	22.3
A6K-1428	22.3	21.2	22.6	22.6	21.8	23.3
M6	22.2	20.7	22.9	22.3	22.1	22.9
L6-8275	21.3	20.1	21.7	21.3	21.3	22.0
L6-8144	21.5	20.4	21.5	21.7	21.3	22.7
Cornell 1196	21.8	20.8	21.8	22.4	21.5	22.6
L6-8148	21.6	20.3	21.2	22.1	21.7	22.8
A6K-1521	21.5	20.4	21.5	22.2	21.0	22.6
M7	20.4	19.7	20.1	20.7	20.7	21.0
Cornell 1175	19.9	19.0	19.9	20.4	19.2	20.8
Mandarin (Ottawa)	20.1	19.3	19.3	20.4	20.7	20.6
Harly	20.0	18.1	21.2	19.8	19.6	21.1
Mandarin Rogue	20.2	18.8	20.3	20.7	20.2	20.8
Mean	21.3	20.0	21.5	21.6	21.1	22.2

UNIFORM TEST, GROUP II

The origin of the strains in the Uniform Test, Group II, is as follows:

Strain	Source or Originating Agency	Origin
Bavender Special	Mr. Bavender, Whitten, Iowa	Farmer's Selection
Earlyana	Purdue Agr. Exp. Sta.	Sel. from a natural hybrid
Hawkeye	Iowa A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
Korean	Dominion Exp. Sta., Ontario	Introduction from Orient
Lincoln	Ill. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x Manchu
Richland	Purdue Agr. Exp. Sta.	P. I. 70502-2
A5-2683 (Adams)	Iowa A.E.S. & U.S.R.S.L.	Sel. from Illini x Dunfield
A6K-937	Iowa A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
C789	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Rich. x Earlyana)
C790	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Rich. x Earlyana)
C791	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Rich. x Earlyana)
H6150	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
I4-8066	Ill. A.E.S. & U.S.R.S.L.	Sel. from Seneca x L7-1355
I4-8090	Ill. A.E.S. & U.S.R.S.L.	Sel. from Seneca x Hudson Manchu
I6-8144	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland
I6-8182	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
I6-8474	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
I6-8622	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)

Group II was grown at two new locations, State College, Pennsylvania, and Troy, Ohio, in 1948. Eight of the eleven new strains traced to Lincoln x Richland parentage. These new strains ranged from Earlyana to Lincoln in maturity (tables 23-26). H6150, in addition to being highest in average yield, was also second in oil content. Adams averaged slightly higher in yield than Lincoln, just as it did in 1947. In 1948 Adams yielded more than Lincoln at 9 of the 18 locations. Strain A6K-937, which has had a good record in Group I, was added to Group II to gain additional information on its range of adaptation.

Study of the maturity and yield data indicated a correlation of .786 when yield was calculated based on the regression of yield on maturity (table 23). Bavender Special, L6-8182, H6150, Adams, Hawkeye, and L4-8066 were the highest yielding varieties for their maturity.

Seven varieties have been in Group II for two years (tables 27 and 28). Of these, Bavender Special has had the highest yield and Adams the highest oil content. Adams has averaged .4% higher in oil content and .5 bushels higher in yield than Lincoln. It is interesting to note that Adams has actually averaged taller than Lincoln in Group II, whereas in Group III Adams has been shorter than Lincoln. This is probably part of the general picture of the better performance of Adams in Group II territory than in Group III territory. In relation to Lincoln, Adams has been later in Group II than in Group III. The Korean variety has yielded about as it should for its maturity.

Hawkeye has been tested in this group for six years and has averaged 3.8 bushels more than Richland (tables 29 and 30). Although it is a week earlier than Lincoln, it has averaged only a bushel less in yield and has been just as high in oil content. It would seem that Hawkeye should replace Richland anywhere it is grown and probably will replace some Lincoln at the northern limits of Lincoln distribution.

Table 23. Summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1948.

Strain	Mean		Adj. Yield Rank	Maturity	Lodging	Height Inches	Seed		Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
	Yield Bu/A	Bu/A					Quality	Weight			
No. of Tests	18		14	18	18	18	18	18	18	18	18
H6150	34.3	32.6	3	+4.9	2.0	38	1.8	17.3	40.1	21.8	130.0
Bav. Spec.	34.2	33.0	1	+3.5	3.1	37	2.0	16.3	41.5	20.2	134.6
Adams	34.1	33.6	3	+4.2	2.0	40	1.2	14.9	40.8	21.9	129.5
Lincoln	33.9	31.7	7	+6.2	2.1	39	1.6	14.6	41.1	21.2	132.2
C790	33.3	30.8	10	+6.9	1.7	41	1.4	15.2	40.8	21.0	132.5
L6-8622	33.1	30.9	9	+6.3	2.0	39	1.4	14.2	41.2	21.3	131.2
C791	32.8	30.6	13	+6.1	2.1	42	1.8	15.1	40.9	21.2	133.6
Hawkeye	32.7	32.6	3	+0.2	1.5	37	1.3	17.8	41.1	21.3	125.1
L6-8182	32.5	33.0	1	-1.4	1.3	35	1.8	14.2	40.7	20.9	132.4
L4-8066	31.9	32.0	6	-0.4	2.0	42	1.8	15.7	41.2	20.8	127.2
C789	31.7	29.7	16	+5.6	1.6	40	1.6	14.2	41.5	20.7	130.6
L6-8474	31.5	30.7	12	+2.3	1.6	39	1.7	16.0	41.1	21.7	131.8
A6K-937	29.4	31.1	8	-4.9	1.5	34	1.9	15.4	41.8	21.0	123.5
L6-8144	29.3	29.9	14	-1.7	1.6	38	2.0	16.1	40.3	21.4	129.4
Richland	29.2	29.2	17	0	1.6	34	1.7	16.9	40.7	21.0	125.5
Earlyana	29.0	30.8	10	-5.0	2.7	37	2.2	15.0	43.0	20.3	128.9
Korean	28.8	29.8	15	-2.8	1.7	30	2.2	22.9	43.2	20.4	126.4
L4-8090	28.1	28.3	18	-0.7	1.8	43	1.3	14.1	41.7	20.6	128.8
Mean	31.7				1.9	38		15.9	41.3	21.0	129.6

1Days earlier (-) or later (+) than Richland. Richland required 123 days to mature.

Table 24. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1948.

Strain	Mean of 18 Tests	State College Pa.	Holgate Ohio	Troy Ohio	Columbus Ohio	Walker-ton Ind.	Bluff-ton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.
H6150	34.3	31.9	30.9	36.2	35.5	34.5	35.7	54.2	40.2	42.4
Bavender Spec.	34.2	39.0	28.3	35.6	25.4	32.3	37.0	63.2	36.9	38.7
Adams (A5-2683)	34.1	32.2	30.7	34.8	35.3	30.8	37.9	52.0	38.8	37.1
Lincoln	33.9	33.6	31.8	32.5	34.7	31.4	34.5	54.0	38.9	36.6
C790	33.3	33.3	30.5	35.8	35.3	28.0	33.8	54.0	39.0	37.6
L6-8622	33.1	37.0	25.6	33.3	36.2	31.6	33.8	51.9	37.3	39.9
C791	32.8	32.4	26.4	32.9	29.0	35.0	32.3	51.6	38.9	38.6
Hawkeye	32.7	34.7	25.6	37.1	32.9	33.9	36.6	49.2	34.9	39.1
L6-8182	32.5	33.8	30.3	33.2	34.0	30.9	34.6	44.7	33.5	36.6
L4-8066	31.9	33.5	25.5	33.0	29.6	32.6	31.8	48.3	38.8	33.9
C789	31.7	29.3	25.9	30.6	29.5	34.0	34.3	52.0	36.9	40.3
L6-8474	31.5	32.9	30.7	31.5	32.0	27.7	33.0	45.2	32.5	39.2
A6K-937	29.4	33.6	24.1	32.2	26.4	26.2	32.7	35.9	29.6	34.3
L6-8144	29.3	30.4	26.0	31.4	31.3	27.7	30.8	42.3	29.2	33.1
Richland	29.2	28.4	27.6	33.1	28.8	28.5	32.0	42.8	29.4	34.0
Earlyana	29.0	32.2	24.0	31.8	23.3	28.4	30.8	38.6	32.0	33.6
Korean	28.8	33.1	22.1	32.9	14.7	33.4	29.5	43.5	30.3	36.1
L4-8090	28.1	28.0	24.5	29.0	29.0	26.4	30.8	39.4	29.2	31.1
Mean	31.7	32.7	27.2	33.2	30.2	30.8	33.4	47.9	34.8	36.8
Coef. of Var. (%)		8.7	12.4	8.5	13.7	11.8	7.5	7.2	7.5	7.2
Bu.Nec. for Sig.(5%)		4.0	4.8	4.0	5.9	5.2	3.6	4.5	3.7	3.7

Yield Rank

H6150	14	2	2	2	2	4	2	1	1
Bavender Spec.	1	7	4	16	7	2	1	8	6
Adams (A5-2683)	12	3	5	3	11	1	5	5	9
Lincoln	5	1	12	5	9	6	3	3	10
C790	8	5	3	3	14	8	3	2	8
L6-8622	2	12	6	1	8	8	7	7	3
C791	11	9	10	12	1	12	8	3	7
Hawkeye	3	12	1	7	4	3	9	10	5
L6-8182	4	6	7	6	10	5	12	11	10
L4-8066	7	14	9	10	6	14	10	5	15
C789	16	11	17	11	3	7	5	8	2
L6-8474	10	3	15	8	15	10	11	12	4
A6K-937	5	16	13	15	18	11	18	15	13
L6-8144	15	10	16	9	15	15	15	17	17
Richland	17	8	8	14	12	13	14	16	14
Earlyana	12	17	14	17	13	15	17	13	16
Korean	9	18	10	18	5	18	13	14	12
L4-8090	18	15	18	12	17	15	16	17	18

Table 24. (Continued)

Strain	Madi- son Wis.	Comp- ton Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Center- ville S. D.	Lincoln Nebr.
H6150	28.7	22.1	30.4	39.1	39.9	23.4	46.1	15.5	30.3
Bavender Spec.	26.0	24.2	34.1	39.4	39.3	28.5	41.6	14.8	31.5
Adams (A5-2683)	25.6	25.6	37.1	37.9	39.3	28.8	43.6	16.5	34.9
Lincoln	28.3	23.9	35.7	36.6	38.8	23.8	46.7	14.0	35.2
C790	27.4	26.0	30.8	34.5	36.7	22.2	47.6	17.5	30.1
L6-8622	27.4	22.8	31.8	39.9	37.7	23.0	42.1	13.6	30.6
C791	28.0	24.8	26.0	37.0	39.1	23.8	43.6	14.9	36.3
Hawkeye	28.2	24.0	28.6	35.5	38.6	24.6	41.1	13.6	31.0
L6-8182	31.2	22.3	31.2	36.4	35.7	25.1	44.0	16.8	31.5
I4-8066	28.3	22.1	29.2	37.2	38.1	28.3	46.2	16.8	21.7
C789	25.2	22.7	30.1	32.8	36.8	23.3	42.0	15.4	28.7
L6-8474	27.6	22.3	31.3	31.9	34.8	24.1	43.4	17.5	30.0
A6K-937	25.2	25.8	29.6	34.1	36.2	23.9	36.9	14.5	27.1
L6-8144	26.0	20.2	28.7	32.1	33.0	24.0	40.1	15.1	25.7
Richland	23.3	22.7	28.3	32.5	32.5	22.0	35.7	13.7	29.5
Earlyana	25.7	22.2	30.7	34.8	32.3	23.1	38.4	13.2	27.4
Korean	24.8	25.9	25.3	32.5	39.0	26.2	36.4	11.9	20.6
I4-8090	24.7	24.0	27.1	32.3	32.9	21.0	35.7	14.4	26.9
Mean	26.8	23.5	30.3	35.4	36.7	24.1	41.7	15.0	29.4
Coef. of Var. (%)	--	8.6	10.4	8.0	6.8	7.1	8.9	15.7	9.9
B.N.f.S. (5%)	--	2.9	4.4	4.0	3.5	2.4	5.3	3.3	4.1

Strain	Yield Rank								
	Madi- son Wis.	Comp- ton Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Center- ville S. D.	Lincoln Nebr.
H6150	2	16	9	3	1	12	4	6	8
Bavender Spec.	10	6	3	2	2	1	11	10	4
Adams (A5-2683)	13	4	1	4	2	9	6	5	3
Lincoln	3	9	2	7	6	9	2	13	2
C790	8	1	7	11	11	16	1	1	9
L6-8622	8	10	4	1	9	15	9	15	7
C791	6	5	17	6	4	9	6	9	1
Hawkeye	5	7	14	9	7	5	12	15	6
L6-8182	1	13	6	8	13	4	5	3	4
I4-8066	3	17	12	5	8	2	3	3	17
C789	14	11	10	13	10	13	10	7	12
L6-8474	7	13	5	18	14	6	8	1	10
A6K-937	14	3	11	12	12	8	15	11	14
L6-8144	10	18	13	17	15	7	13	8	16
Richland	18	11	15	14	17	17	17	14	11
Earlyana	12	15	8	10	18	14	14	17	13
Korean	16	2	18	15	5	3	16	18	18
I4-8090	17	7	16	16	16	18	17	12	15

Table 25. Summary of maturity data, days earlier (-) or later (+) than Richland, for the strains in the Uniform Test, Group II, 1948.

Strain	Mean of 14 Tests ¹	State College Pa.	Holgate Ohio	Troy Ohio	Walker- ton Ind.	Bluff- ton Ind.	Lafay- ette Ind.	Green- field Ind.	Worth- ington Ind.
H6150	+4.9	+1	+2	+3	+8	+3	+6	+7	0
Bavender Special	+3.5	+1	+1	+2	+3	+3	+6	+1	-1
Adams (A5-2683)	+4.2	0	+2	+4	+2	+6	+10	+5	-1
Lincoln	+6.2	0	+10	+5	+6	+5	+8	+5	0
C790	+6.9	+1	+7	+5	+8	+6	+11	+4	+4
L6-8622	+6.3	+1	+10	+4	+5	+7	+11	+3	+4
C791	+6.1	+1	+9	+5	+8	+3	+4	+6	+2
Hawkeye	+0.2	0	+2	+1	0	+1	-1	-3	-2
L6-8182	-1.4	0	-1	-2	+6	-1	-3	+2	-2
L4-8066	-0.4	+1	+3	+3	+2	-1	0	-1	-3
C789	+5.6	+1	+9	+4	+7	+5	+8	+5	+2
L6-8474	+2.3	0	+3	+1	+4	+1	+5	+2	-1
A6K-937	-4.9	-3	-2	-1	-5	-10	-4	-7	-7
L6-8144	-1.7	+1	+1	+1	-4	-2	-3	-4	-4
Richland	0	0	0	0	0	0	0	0	0
Earlyana	-5.0	-8	-3	-2	-6	-9	-4	-7	-4
Korean	-2.8	0	0	-1	-4	-2	-6	-2	-5
L4-8090	-0.7	+1	-1	+1	0	-1	-3	-3	-5
Date planted		5/25	5/25	5/25	6/3	5/22	5/20	5/21	6/9
Richland matured		10/1	9/27	9/24	10/3	9/28	9/15	9/29	9/22
Days to mature	123	129	125	122	122	129	118	131	105

¹State College, Centerville, and Lincoln not included in the mean.

Table 25. (Continued)

Strain	Madison	Compton	Urbana	Kanawha	Marcus	Hudson	Center-		Lincoln
	Wis.	Ill.	Ill.	Iowa	Iowa	Iowa	Ames	ville	Nebr.
H6150	+6	+5	+9	+4	+2	+5	+8	+10	-1
Bavender Special	+5	+4	+8	+3	+1	+4	+9	+8	-6
Adams (A5-2683)	+4	+3	+4	+3	+3	+4	+10	+10	0
Lincoln	+8	+5	+9	+6	+4	+6	+10	+9	+1
C790	+5	+7	+12	+9	+3	+6	+10	+11	0
I6-8622	+4	+5	+11	+6	+3	+6	+9	+2	-2
C791	+4	+7	+11	+7	+3	+6	+10	-4	-2
Hawkeye	+1	+2	+3	0	0	0	+1	+2	-2
I6-8182	-1	0	-1	-2	-7	0	-3	+4	-2
I4-8066	+1	-1	+3	0	+1	0	-1	-1	+1
C789	+5	+4	+9	+4	+3	+4	+9	+5	-2
I6-8474	+4	+2	+3	+2	+2	+3	+1	+2	-2
A6K-937	-2	-6	-3	-5	-8	-4	-5	-7	-1
I6-8144	0	-2	-1	0	-4	0	-2	+7	-1
Richland	0	0	0	0	0	0	0	0	0
Earlyana	-3	-8	-4	-6	-7	-3	-4	-7	-3
Korean	-1	-3	-3	-3	-4	-2	-3	+3	-2
I4-8090	+1	-3	0	0	+1	0	+3	+9	-2
Date planted	5/19	5/21	5/27	5/24	5/18	5/26	5/13	5/27	5/25
Richland matured	9/23	9/23	9/14	9/25	9/26	9/20	9/20	10/1	10/11
Days to mature	127	125	110	124	131	117	130	127	139

Table 26. Summary of lodging and height data for the strains in the Uniform Test, Group II, 1948.

Strain	Mean of 18 Tests	State College Pa.	Holgate Ohio	Troy Ohio	Columbus Ohio	Walker--ton Ind.	Bluff-ton Ind.	Lafayette Ind.	Greenfield Ind.	Worth-ington Ind.
H6150	2.0	2.0	1.2	2.0	2.0	1.4	1.6	1.5	2.0	2.5
Bavender Spec.	3.1	1.5	1.7	2.5	3.0	1.9	2.3	3.0	3.1	3.4
Adams (A5-2683)	2.0	1.0	1.0	2.0	2.0	1.1	1.5	1.5	1.9	3.0
Lincoln	2.1	1.0	1.0	2.5	2.0	1.1	1.5	1.9	1.9	3.3
C790	1.7	1.0	1.0	1.7	1.7	1.2	1.0	1.3	1.4	2.0
L6-8622	2.0	2.0	1.0	1.5	2.0	1.3	1.4	2.3	1.6	1.3
C791	2.1	1.5	1.0	2.2	2.5	1.1	1.5	1.5	1.5	2.1
Hawkeye	1.5	1.0	1.0	1.7	1.2	1.0	1.0	1.0	1.5	1.8
L6-8182	1.3	1.0	1.2	1.0	1.0	1.0	1.0	1.0	1.3	2.0
L4-8066	2.0	1.5	1.0	2.5	2.2	1.0	1.4	1.5	1.6	3.0
C789	1.6	1.0	1.0	1.5	2.5	1.1	1.1	1.0	1.3	1.6
L6-8474	1.6	1.0	1.0	1.7	1.7	1.0	1.0	1.3	1.3	1.6
A6K-937	1.5	1.0	1.0	1.5	2.2	1.0	1.0	1.0	1.5	2.5
L6-8144	1.6	1.5	1.2	1.5	2.0	1.0	1.3	1.1	1.4	1.9
Richland	1.6	1.0	1.0	1.5	1.5	1.0	1.1	1.3	1.4	2.1
Earlyana	2.7	2.0	1.7	2.7	3.0	1.9	2.3	2.4	2.0	4.0
Korean	1.7	1.0	1.2	2.0	1.0	1.3	1.3	1.0	1.1	3.1
L4-8090	1.8	1.5	1.0	1.5	1.7	1.1	1.1	1.4	1.4	2.8
Mean	1.9	1.3	1.2	1.8	1.9	1.2	1.4	1.5	1.6	2.4

Height

H6150	38	34	29	37	38	38	38	40	35	37
Bavender Spec.	37	32	28	34	32	38	35	41	37	35
Adams (A5-2683)	40	38	27	39	36	37	40	41	38	40
Lincoln	39	37	28	38	37	37	39	43	37	39
C790	41	36	29	40	38	38	42	44	40	41
L6-8622	39	39	29	39	37	38	40	39	38	39
C791	42	40	31	43	38	41	43	44	40	42
Hawkeye	37	35	25	36	30	35	36	38	34	38
L6-8182	35	32	25	32	33	34	35	37	31	35
L4-8066	42	41	33	44	35	40	41	42	40	41
C789	40	36	28	40	35	36	40	42	37	41
L6-8474	39	37	30	33	37	37	39	41	34	38
A6K-937	34	30	26	33	26	28	32	33	34	33
L6-8144	38	34	28	38	35	35	36	38	33	36
Richland	34	32	26	31	28	32	32	35	31	32
Earlyana	37	31	28	35	33	38	37	38	37	38
Korean	30	29	22	29	20	28	29	31	26	31
L4-8090	43	41	32	42	36	41	42	44	38	43
Mean	38	35	28	37	34	36	38	40	36	37

Table 26. (Continued)

Strain	Madison Wis.	Compton Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Center- ville S. D.	Lincoln Nebr.
H6150	2.0	2.0	2.1	1.8	2.4	1.8	3.0	1.2	3.2
Bavender Spec.	4.3	2.8	3.4	2.8	4.1	3.3	5.0	3.0	3.8
Adams (A5-2683)	2.3	2.4	2.4	1.8	2.4	1.8	3.1	2.2	2.8
Lincoln	2.5	1.9	2.3	2.1	2.8	2.5	3.0	1.8	3.5
C790	1.8	2.5	2.0	2.0	1.8	2.0	3.0	1.2	2.5
L6-8622	2.0	2.5	1.9	1.8	1.9	2.5	3.3	1.5	3.5
C791	2.3	2.0	2.8	2.3	2.5	3.0	3.5	2.3	3.0
Hawkeye	1.5	2.1	2.4	1.3	1.5	1.3	2.6	1.0	1.8
L6-8182	1.3	1.9	1.6	1.0	1.5	1.0	2.0	1.0	1.8
IA-8066	1.8	2.1	2.4	1.5	2.4	2.0	3.0	2.0	2.8
C789	2.0	2.0	2.1	1.5	2.0	1.3	2.9	1.2	2.5
L6-8474	2.0	2.0	1.9	1.4	2.0	1.0	2.6	1.5	2.0
A6K-937	1.5	2.0	1.8	1.0	2.0	1.0	2.6	1.0	1.8
L6-8144	1.8	2.0	1.8	1.1	1.5	1.0	2.6	1.2	2.5
Richland	1.8	2.3	1.8	1.1	2.0	1.3	2.9	1.2	1.8
Earlyana	4.0	2.4	2.8	2.1	3.1	2.8	3.6	2.2	3.2
Korean	2.3	2.0	1.8	1.6	2.4	1.8	3.1	1.5	1.8
IA-8090	2.0	2.3	2.4	1.4	2.5	1.8	3.0	1.5	2.2
Mean	2.2	2.2	2.2	1.6	2.3	1.8	3.0	1.6	2.6

Height

H6150	41	41	44	47	43	38	41	37	30
Bavender Spec.	39	41	43	47	43	36	45	35	29
Adams (A5-2683)	42	44	45	50	46	39	50	39	30
Lincoln	39	43	45	49	45	39	47	35	32
C790	42	44	47	47	45	39	48	41	30
L6-8622	39	43	44	48	45	37	45	35	31
C791	42	45	47	52	49	41	50	40	34
Hawkeye	40	40	41	48	43	36	43	37	27
L6-8182	39	39	41	44	42	34	42	34	28
IA-8066	42	47	48	53	48	42	50	39	29
C789	40	44	45	48	45	38	47	38	31
L6-8474	41	44	46	48	46	39	45	36	32
A6K-937	37	41	36	43	42	34	41	34	26
L6-8144	41	44	40	47	44	38	46	39	26
Richland	36	40	34	43	40	34	39	32	27
Earlyana	37	43	41	48	43	36	45	36	27
Korean	33	35	30	39	40	32	36	31	24
IA-8090	44	48	52	57	50	41	53	38	35
Mean	40	43	43	48	44	37	45	36	29

Table 27. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1947-48.

Strain	Mean of 37 Tests	Holgate Ohio	Columbus Ohio	Walker-ton Ind.	Bluff-ton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Madison Wis.
Bavender Spec.	32.8	24.3	38.1	29.8	38.9	53.5	41.1	38.6	29.1
Adams (A5-2683)	32.3	22.8	44.0	32.8	37.4	46.3	41.2	36.8	28.0
Lincoln	31.8	22.9	43.1	33.1	36.3	48.0	40.5	37.2	29.0
Hawkeye	31.3	23.3	39.8	33.8	36.3	45.5	38.5	38.0	28.7
Korean	28.8	20.6	27.8	31.5	33.9	41.2	36.6	33.7	28.0
Earlyana	27.7	23.1	29.5	26.2	32.0	35.1	34.6	31.3	26.3
Richland	27.6	21.5	34.1	26.5	32.5	38.6	34.6	33.2	25.0
Mean	30.3	22.6	36.6	30.5	35.3	44.0	38.2	35.5	27.7

Yield Rank

Strain	Holgate Ohio	Columbus Ohio	Walker-ton Ind.	Bluff-ton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Madison Wis.
Bavender Spec.	1	4	5	1	1	2	1	1
Adams (A5-2683)	5	1	3	2	3	1	3	4
Lincoln	4	2	2	3	2	3	4	2
Hawkeye	2	3	1	3	4	4	2	3
Korean	7	7	4	5	5	5	5	4
Earlyana	3	6	7	7	7	6	7	6
Richland	6	5	6	6	6	6	6	7

Table 28. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1947-48.

Strain	Mean Yield	Matu- rity ¹	Lodg- ing	Height Inches	Seed Qual- ity	Seed Weight	Percent- age of Protein	Percent age of Oil	Iodine Number of Oil
	Bu/A.						37	37	37
Bavender Spec.	32.8	+4.7	3.0	35	2.1	15.9	41.9	20.2	134.6
Adams (A5-2683)	32.3	+5.7	2.0	38	1.2	14.3	40.8	22.0	129.0
Lincoln	31.8	+7.0	2.1	37	1.6	13.8	41.0	21.6	132.8
Hawkeye	31.3	+0.7	1.5	35	1.3	17.1	41.3	21.7	125.4
Korean	28.8	-2.4	1.7	29	2.0	21.8	42.7	20.8	126.7
Earlyana	27.7	-5.3	2.5	36	2.4	14.8	42.9	20.8	129.1
Richland	27.6	0	1.6	32	1.5	16.3	40.9	21.2	124.9
Mean	30.3		2.1	35	1.7	16.3	41.6	21.2	128.9

¹ Days earlier (-) or later (+) than Richland. Richland required 124 days to mature.

Table 27. (Continued)

Strain	Compton Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Center- ville S. D.	Lincoln Nebr.
Bavender Spec.	28.9	34.6	33.6	33.1	34.5	38.6	18.1	24.5
Adams (A5-2683)	31.8	36.8	32.7	32.2	31.2	39.8	17.6	25.5
Lincoln	29.4	35.5	30.4	32.1	28.0	40.1	15.9	26.4
Hawkeye	31.2	31.2	30.4	31.2	28.8	37.0	16.6	23.6
Korean	31.4	29.3	29.0	30.9	33.3	32.9	14.5	17.7
Earlyana	30.1	30.9	29.7	26.8	29.9	32.5	15.6	19.9
Richland	26.9	30.6	27.4	27.3	24.0	32.4	16.5	23.6
Mean	30.0	32.7	30.5	30.5	30.0	36.2	16.4	23.0

	Yield Rank							
Bavender Spec.	6	3	1	1	1	3	1	3
Adams (A5-2683)	1	1	2	2	3	2	2	2
Lincoln	5	2	3	3	6	1	5	1
Hawkeye	3	4	3	4	5	4	3	4
Korean	2	7	6	5	2	5	7	7
Earlyana	4	5	5	7	4	6	6	6
Richland	7	6	7	6	7	7	4	4

Table 29. Six-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1943-48.

Strain	Mean of 111 Tests	New									
		Brunswick N. J.	Holgate Ohio	Columbus Ohio	East Lansing Mich.	Monroe Mich.	Walker-ton Ind.	Bluff-ton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.
Years Tested		1944-1946	1943-1948	1943-1945-48	1943-1947	1943-1945-46	1943-1948	1943-1945-48	1943-1948	1944-1948	1946-1948
Lincoln	32.7	24.4	22.8	40.9	21.2	31.0	33.0	37.6	43.5	38.7	37.9
Hawkeye	31.8	25.5	22.4	40.7	21.7	29.3	33.0	36.8	40.9	34.7	37.0
Earlyana	28.2	21.9	21.7	32.9	22.9	23.0	28.2	32.9	33.0	31.1	31.4
Richland	28.0	21.9	20.5	37.3	17.4	25.1	27.8	33.3	35.8	31.7	31.4
Mean	30.2	23.4	21.9	38.0	20.8	27.1	30.5	35.2	38.3	34.1	34.4

Strain	Yield Rank									
	Brunswick N. J.	Holgate Ohio	Columbus Ohio	East Lansing Mich.	Monroe Mich.	Walker-ton Ind.	Bluff-ton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.
Lincoln	2	1	1	3	1	1	1	1	1	1
Hawkeye	1	2	2	2	2	1	2	2	2	2
Earlyana	3	3	4	1	4	3	4	4	4	3
Richland	3	4	3	4	3	4	3	3	3	3

Table 30. Six-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1943-48.

Strain	Mean Yield Bu/A.	Matu- rity ¹	Lodg- ing	Height Inches	Seed Qual- ity	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	111	86	107	108	89	106	109	109	109
Lincoln	32.7	+7.0	2.2	38	1.4	14.3	40.4	21.0	135.6
Hawkeye	31.8	+0.1	1.6	35	1.4	17.1	41.4	21.0	128.3
Earlyana	28.2	-5.4	2.7	36	2.0	15.2	42.8	20.5	131.6
Richland	28.0	0	1.6	32	1.5	16.5	40.5	20.5	128.5
Mean	30.2		2.0	35	1.6	15.8	41.3	20.8	131.0

¹ Days earlier (-) or later (+) than Richland. Richland required 124 days to mature.

Table 29. (Continued)

Strain	Madi-Comp-		Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Center-Wake-		Lincoln Nebr.
	son Wis.	ton Ill.							ville S. D.	field Nebr.	
Years Tested	1943- 1948	1943- 1948	1943- 1947	1943- 1948	1943- 1948	1944- 1948	1943- 1948	1943- 1948	1946- 1948	1943-45 1947	1946- 1948
Lincoln	33.3	29.9	26.5	34.5	34.4	37.8	37.9	39.4	17.1	26.4	26.5
Hawkeye	32.5	29.0	24.8	32.9	35.1	35.6	37.3	39.1	16.8	26.9	24.5
Earlyana	28.9	27.5	21.5	28.6	33.1	30.0	33.1	33.7	16.3	24.7	21.5
Richland	27.5	25.6	22.4	31.9	30.7	31.7	29.2	33.5	17.0	24.9	24.2
Mean	30.6	28.0	23.8	32.0	33.3	33.8	34.4	36.4	16.8	25.7	24.2

Yield Rank

Lincoln	1	1	1	1	2	1	1	1	1	2	1
Hawkeye	2	2	2	2	1	2	2	2	3	1	2
Earlyana	3	3	4	4	3	4	3	3	4	4	4
Richland	4	4	3	3	4	3	4	4	2	3	3

UNIFORM TEST, GROUP III

The origin of the strains in the Uniform Test, Group III, is as follows:

Strain	Source or Originating Agency	Origin
Adams (A5-2683)	Iowa A.E.S. & U.S.R.S.L.	Sel. from A3-176 (Illini x Dunfield)
Carlin	Farmer's Selection	Rogue in Dunfield
Chief	Ill. Agr. Exp. Sta.	Sel. from Illini x Manchu
Dunfield	Purdue Agr. Exp. Sta.	P.I. 36846
Illini	Ill. Agr. Exp. Sta.	Sel. from A.K.
Lincoln	Ill. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x Manchu
A3-176	Iowa A.E.S. & U.S.R.S.L.	Sel. from Illini x Dunfield
L6-1152	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)

Group III was grown at two new locations in 1948, Lancaster, Pennsylvania, and Norborne, Missouri. Yields were high at most locations, the whole test averaging 7 bushels higher than in 1947 (table 32).

Only two new strains were entered in 1948. Carlin is a farmer's selection from the Dunfield variety but does not resemble Dunfield. It has brown pubescence, purple flowers and is much later. It also has a very unusual grayish coloration in the seed coat, and is much more subject to mottling of the seed coat than are other common varieties. This variety is named after Carlinville, Illinois, near which it originated. It proved to be rather low in yield (tables 31 and 32) except at Lancaster, Pennsylvania; Freeburg and Eldorado, Illinois; Ottumwa, Iowa; Columbia, Missouri; and Manhattan, Kansas. It is probably best suited to the lighter soils where its pronounced tendency to lodge (table 34) is not such a serious disadvantage. Its late maturity (table 33) also will not be such a drawback on these soils. The oil content of Carlin is satisfactory but it is definitely lower than such varieties as Lincoln, Adams, and Dunfield.

L6-1152 is a selection from the backcross Lincoln x (Lincoln x Richland). This strain seems to have a good combination of ability to yield, resistance to lodging, and high oil content. The seed is rather large and in 1948 was not of as good quality as some varieties. It averaged as good as Lincoln, however, and the five-year data (table 37) show the same average seed quality for Lincoln, Chief, Adams, and Illini.

A5-2683, from the cross Dunfield x Illini, has been increased for release in Iowa under the name Adams. In 1948 Adams again proved to be slightly better than its parent, A3-176, in yield and oil content. In the two-year tables (tables 35 and 36) Adams has averaged .8 bushels higher in yield and .2% higher in oil content. It exceeded the yield of A3-176 at 14 of the 18 locations. In the two-year data (table 35) Adams has averaged two days earlier than Lincoln and .5% higher in oil content. It has about the same height and resistance to lodging as Lincoln. Adams has exceeded Lincoln in yield at 7 of the 18 locations but has averaged .8 bushels less in yield for the two-year period.

In the five-year tables (tables 37 and 38), data for A3-176 for 1944-1946 were used with data for A5-2683 for 1947-1948. Using these data, Adams has exceeded Lincoln in yield at 6 of the 20 locations (table 38). Adams has averaged 1.2 bushels less than Lincoln and 2.5 days earlier.

It is interesting to note that although Lincoln is a week earlier than Chief, it has yielded as well or better than Chief at many locations.

Table 31. Summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1948.

Strain	Mean Yield Bu/A.	Maturity	Lodging	Height Inches	Seed Quality	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	21	20	19	21	18	21	21	21	21
L6-1152	36.7	+ 2.9	1.8	37	1.8	17.4	38.6	23.3	128.6
Chief	35.2	+ 7.7	2.8	48	1.5	12.9	40.2	21.4	129.9
Lincoln	34.2	0	2.4	39	1.8	13.5	40.3	22.1	132.0
Adams (A5-2683)	33.3	- 2.8	2.2	38	1.4	14.3	40.2	22.6	128.2
A3-176	32.9	- 3.3	2.2	37	1.5	14.9	40.7	22.5	127.7
Illini	32.0	+ 0.7	3.0	42	1.5	13.8	41.1	21.0	129.7
Carlin	31.6	+10.4	3.1	37	1.7	14.6	41.3	21.5	129.3
Dunfield	30.7	- 1.1	3.1	38	1.8	15.3	39.4	22.4	125.0
Mean	33.3		2.6	40	1.6	14.6	40.2	22.1	128.8

¹ Days earlier (-) or later (+) than Lincoln. Lincoln required 120 days to mature.

Table 32. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1948.

Strain	Mean of 21 Tests	George town Del.	Belts ville Md.	Lan- caster Pa.	Blacks- burg Va.	Colum- bus Ohio	Lafay- ette Ind.	Green- field Ind.	Worth- ington Ind.	Clay- Urbana Ill.	ton Ill.
L6-1152	36.7	13.6	42.1	27.7	34.4	38.2	52.7	35.5	42.9	39.6	35.0
Chief	35.2	16.0	44.1	34.5	33.6	40.6	44.9	37.0	41.4	34.1	28.4
Lincoln	34.2	12.6	38.6	24.5	37.7	35.9	44.6	40.0	39.4	40.6	27.4
Adams	33.3	15.8	39.8	24.6	32.6	35.2	47.3	38.0	37.0	38.0	22.8
A3-176	32.9	15.8	37.1	26.3	35.6	34.8	44.5	37.6	37.1	34.8	22.8
Illini	32.0	15.8	36.4	25.7	36.4	39.5	41.6	37.0	34.2	33.6	26.0
Carlin	31.6	11.6	34.2	31.2	29.4	27.4	34.8	35.9	33.1	33.0	20.5
Dunfield	30.7	17.6	35.9	26.4	29.7	32.3	41.1	36.5	36.5	35.2	23.3
Mean	33.3	14.9	38.5	27.6	33.7	35.5	43.9	37.2	37.7	36.1	25.8
Coef. of Var. (%)	15.0	--	--	--	--	10.8	9.9	8.7	7.3	10.4	--
Bu. Nec. for Sig (5%)	3.1	--	--	--	--	5.7	6.4	Not Sig.	4.0	Not Sig.	--

Yield Rank

L6-1152	6	2	3	4	3	1	8	1	2	1
Chief	2	1	1	5	1	3	4	2	6	2
Lincoln	7	4	8	1	4	4	1	3	1	3
Adams	3	3	7	6	5	2	2	5	3	6
A3-176	3	5	5	3	6	5	3	4	5	6
Illini	3	6	6	2	2	6	4	7	7	4
Carlin	8	8	2	8	8	8	7	8	8	8
Dunfield	1	7	4	7	7	7	6	6	4	5

Table 32. (Continued)

Strain	Ston- ington Ill.	Edge- wood Ill.	Free- burg Ill.	Eldor- ado Ill.	Ames Iowa	Ottum- wa Iowa	Shelby- ville Mo.	Colum- bia Mo.	Nor- borne Mo.	Lin- coln Neb.	Man- hattan Kans.
16-1152	45.9	42.1	36.6	35.1	43.8	45.7	23.4	23.6	51.4	31.1	31.3
Chief	39.8	41.1	31.5	34.1	45.1	42.7	26.4	21.0	52.6	23.7	27.6
Lincoln	40.5	37.9	27.6	36.0	43.9	39.9	24.5	20.1	44.3	30.8	31.1
Adams	38.0	39.9	26.7	30.9	43.4	39.0	25.1	20.1	39.0	35.1	32.0
A3-176	38.4	37.2	25.6	32.7	41.9	38.5	24.1	17.5	45.1	32.2	30.9
Illini	31.0	35.6	23.0	30.2	45.8	39.5	23.9	18.1	44.0	25.8	28.1
Carlin	36.2	38.6	32.2	35.5	42.0	40.4	23.5	22.4	41.6	29.6	31.2
Dunfield	37.0	34.1	21.9	27.7	35.5	36.0	22.5	19.9	36.7	33.7	26.0
Mean	38.3	38.3	28.1	32.8	42.7	40.2	24.2	20.3	41.3	30.1	29.8
C. Y. (%)	13.8	10.8	12.5	10.9	8.8	7.5	13.2	13.0	9.3	5.3	--
Bu/Sig. (5%)	7.8	N.S.	5.2	5.3	5.5	4.5	4.7	3.8	6.1	2.4	--

Yield Rank

16-1152	1	1	1	3	4	1	7	1	2	4	2
Chief	3	2	3	4	2	2	1	3	1	8	7
Lincoln	2	5	4	1	3	4	3	4	4	5	4
Adams	5	3	5	6	5	7	2	4	7	1	1
A3-176	4	6	6	5	7	6	4	8	3	3	5
Illini	8	7	7	7	1	5	5	7	5	7	6
Carlin	7	4	2	2	6	3	6	2	6	6	3
Dunfield	6	8	8	8	8	8	8	6	8	2	8

Table 33. Summary of maturity, days earlier (-) or later (+) than Lincoln for the strains in the Uniform Test, Group III, 1948.

Strain	Mean of 20 Tests	George- town Del.	Belts- ville Md.	Lan- caster Pa.	Blacks- burg Va.	Lafay- ette Ind.	Green- field Ind.	Worth- ington Ind.	Urbana Ill.	Clay- ton Ill.
I6-1152	+ 2.9	+2	+2	-4	0	+ 2	-3	+ 4	+ 2	+ 2
Chief	+ 7.7	+3	+5	+3	+7	+10	+7	+12	+ 6	+ 7
Lincoln	0	0	0	0	0	0	0	0	0	0
Adams	- 2.8	-7	-4	0	+1	- 1	0	- 2	- 6	- 4
A3-176	- 3.3	-7	-6	0	0	0	-1	- 3	- 7	- 4
Illini	+ 0.7	-7	-3	+8	+2	0	+1	+ 1	0	- 1
Carlin	+10.4	+7	+5	+8	+5	+15	+9	+14	+12	+13
Dunfield	- 1.1	-7	-7	+3	+5	- 4	0	+ 1	- 3	0
Date planted		6/9	5/28	5/20	5/15	5/20	5/21	6/9	5/27	5/20
Lincoln matured		9/15	10/1	10/2	9/22	9/22	10/5	9/22	9/24	9/17
Days to mat.	120	98	126	135	130	125	137	105	120	120

Table 33. (Continued)

Strain	Ston- ington Ill.	Edge- wood Ill.	Free- burg Ill.	Eldor- ado Ill.	Ames Iowa	Ottum- wa Iowa	Shelby- ville Mo.	Colum- bia Mo.	Nor- borne Mo.	Lin- coln Nebr.	Man- hattan Kans.
16-1152	+ 8	+ 6	+ 8	+ 6	+2	+ 1	+7	+ 3	+ 5	+1	+ 4
Chief	+ 9	+13	+10	+12	+6	+ 7	+4	+ 7	+ 9	+5	+11
Lincoln	0	0	0	0	0	0	0	0	0	0	0
Adams	- 5	- 2	- 5	- 6	0	0	-5	- 4	- 3	0	- 2
A3-176	- 4	- 5	- 5	- 7	0	- 1	-4	- 4	- 3	0	- 4
Illini	- 1	0	+ 1	+ 1	+2	+ 2	-1	0	0	+2	+ 6
Carlin	+14	+14	+14	+11	+7	+11	+8	+13	+10	+1	+17
Dunfield	+ 1	+ 3	0	- 3	-1	- 1	-1	- 1	0	-2	- 2
Date planted	5/27	6/1	5/27	5/29	5/13	5/27	5/22	5/24	5/21	5/25	6/2
Lincoln mat.	9/21	9/16	9/13	9/15	9/30	9/26	9/19	9/11	9/15	10/14	9/18
Days to mat.	117	107	109	109	140	122	120	110	117	142	108

Table 34. Summary of lodging and height data for the strains in Uniform Test, Group III, 1948.

Strain	Mean of 19 ¹ Tests	George-town Del.	Belts-ville Md.	Lan-caster Pa.	Blacks-burg Va.	Colum-bus Ohio	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.	Urbana Ill.	Clay-ton Ill.
L6-1152	1.8	1.0	2.0	1.0	1.0	2.5	1.4	1.8	1.6	1.7	1.4
Chief	2.8	1.0	3.0	2.0	2.5	3.5	2.0	2.4	3.3	2.8	2.6
Lincoln	2.4	1.0	2.5	1.0	2.0	2.7	2.4	2.1	3.0	2.1	2.1
Adams	2.2	1.0	2.5	1.0	1.0	2.2	2.0	2.0	3.1	2.1	2.0
A3-176	2.2	1.0	2.5	1.0	1.0	2.2	2.1	2.0	2.9	2.1	2.0
Illini	3.0	1.0	3.0	2.0	1.5	3.0	2.3	2.0	3.4	2.9	3.1
Carlin	3.1	1.0	3.5	2.0	3.0	4.0	3.6	2.6	3.0	3.3	2.9
Dunfield	3.1	1.0	3.5	1.0	3.0	3.2	2.8	2.6	3.5	2.4	3.3
Mean	2.6	1.0	2.8	1.4	1.9	2.9	2.3	2.2	3.0	2.4	2.4

	Mean of 21 Tests	Height									
L6-1152	37	22	40	27	31	38	40	34	38	44	40
Chief	48	31	53	44	43	44	51	44	52	59	43
Lincoln	39	26	42	25	34	39	42	37	41	47	40
Adams	38	22	38	26	31	36	40	34	39	46	39
A3-176	37	21	38	27	30	35	40	34	41	46	39
Illini	42	26	43	37	35	36	46	40	44	52	42
Carlin	37	23	39	34	34	36	40	35	35	44	36
Dunfield	38	24	38	40	34	34	41	36	39	45	37
Mean	40	24	41	31	34	37	43	37	41	48	40

¹ Georgetown and Columbia not included in the mean.

Table 34. (Continued)

Strain	Stoning- ton Ill.	Edge- wood Ill.	Free- burg Ill.	Eldor- ado Ill.	Ames Iowa	Ottum- wa Iowa	Shelby- ville Mo.	Colum- bia Mo.	Nor- borne Mo.	Lin- coln Neb.	Man- hattan Kans.
L6-1152	1.5	2.0	2.0	2.0	3.1	1.8	1.0	1.0	1.8	2.5	1.8
Chief	2.5	3.0	2.4	3.0	3.8	3.3	2.5	1.0	3.0	3.5	3.0
Lincoln	2.0	2.6	2.4	2.4	3.3	2.8	1.5	1.0	3.5	2.8	2.2
Adams	2.0	2.8	2.9	2.4	3.0	2.6	1.5	1.0	3.3	2.5	1.8
A3-176	2.0	2.5	2.9	2.4	3.3	2.4	1.5	1.0	3.8	2.2	1.8
Illini	2.5	4.0	4.0	3.3	3.6	3.4	3.0	1.0	3.3	3.5	3.4
Carlin	2.9	3.3	2.9	3.0	5.0	3.1	2.0	1.0	3.0	4.0	2.5
Dunfield	2.1	3.0	3.8	2.6	4.8	3.1	2.5	1.0	4.3	3.8	3.5
Mean	2.2	2.9	2.9	2.6	3.7	2.8	1.9	1.0	3.3	3.1	2.5

	Mean of 21 Tests										
	Height										
L6-1152	35	38	41	39	47	43	37	26	41	31	35
Chief	50	50	54	52	60	53	52	32	65	44	42
Lincoln	41	42	44	41	48	46	39	28	43	35	36
Adams	37	40	42	40	52	48	39	26	43	35	37
A3-176	36	39	41	39	54	44	39	25	44	34	36
Illini	40	45	45	48	54	49	41	29	61	35	39
Carlin	37	38	40	38	45	42	40	29	45	35	33
Dunfield	39	35	44	40	51	43	40	27	49	33	35
Mean	39	41	44	42	51	46	41	28	49	35	37

Table 35. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1947-48.

Strain	Mean of 40 Tests	Georgetown Del.	Beltsville Md.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Urbana Ill.	Clayton Ill.
Chief	31.5	21.5	33.5	43.9	46.3	38.2	43.8	34.4	21.3
Lincoln	30.8	19.1	28.7	41.5	45.6	40.6	38.3	37.8	21.1
Adams	30.2	18.2	30.1	42.3	46.8	38.2	38.5	35.3	19.6
A3-176	29.4	17.5	28.5	38.0	45.8	38.3	36.0	33.8	17.8
Illini	28.4	17.2	28.4	39.3	41.7	35.8	34.2	31.7	19.6
Dunfield	27.4	17.5	26.8	37.8	41.6	38.2	37.1	32.0	18.8
Mean	29.6	18.5	29.3	40.5	44.6	38.2	38.0	34.2	19.7

Yield Rank

Strain	Georgetown Del.	Beltsville Md.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Urbana Ill.	Clayton Ill.
Chief	1	1	1	2	3	1	3	1
Lincoln	2	3	3	4	1	3	1	2
Adams	3	2	2	1	3	2	2	3
A3-176	4	4	5	3	2	5	4	6
Illini	6	5	4	5	6	6	6	3
Dunfield	4	6	6	6	3	4	5	5

Table 36. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1947-48.

Strain	Mean Yield Bu/A.	Matu- rity ¹	Lodg- ing	Height Inches	Seed Qual- ity	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	40	35	35	38	35	39	39	39	39
Chief	31.5	+7.3	2.7	45	1.6	12.6	40.5	21.4	130.1
Lincoln	30.8	0	2.2	36	1.8	13.6	40.4	22.4	132.6
Adams	30.2	-1.9	2.1	35	1.5	13.9	40.6	22.9	129.9
A3-176	29.4	-2.3	2.1	34	1.5	14.7	41.1	22.7	129.1
Illini	28.4	+0.6	2.9	39	1.6	13.2	41.4	21.1	130.5
Dunfield	27.4	-0.5	2.8	36	2.0	15.2	40.1	22.4	124.5
Mean	29.6		2.5	38	1.7	13.9	40.7	22.2	129.5

¹ Days earlier (-) or later (+) than Lincoln. Lincoln required 120 days to mature.

Table 35. (Continued)

Strain	Ston- ington Ill.	Edge- wood Ill.	Free- burg Ill.	Eldor- ado Ill.	Ames Iowa	Ottum- wa Iowa	Shelby- ville Mo.	Colum- bia Mo.	Lin- coln Nebr.	Man- hattan Kans.
Chief	33.3	34.4	27.8	31.8	36.6	32.9	20.4	21.6	20.0	22.0
Lincoln	33.3	33.2	27.8	31.0	36.7	31.0	19.8	20.8	24.1	24.2
Adams	32.2	34.9	24.6	29.2	37.7	30.8	20.5	20.5	23.9	24.1
A3-176	32.4	32.8	24.0	28.4	36.2	31.9	19.6	18.3	24.4	24.0
Illini	28.9	29.0	23.5	28.5	36.4	31.2	18.3	19.4	21.7	22.7
Dunfield	28.5	29.7	21.2	25.5	31.5	28.6	17.6	19.6	24.8	21.3
Mean	31.4	32.3	24.8	29.1	35.9	31.1	19.4	20.0	23.2	23.1

Yield Rank

Chief	1	2	1	1	3	1	2	1	6	5
Lincoln	1	3	1	2	2	4	3	2	3	1
Adams	4	1	3	3	1	5	1	3	4	2
A3-176	3	4	4	5	5	2	4	6	2	3
Illini	5	6	5	4	4	3	5	5	5	4
Dunfield	6	5	6	6	6	6	6	4	1	6

Table 37. Five-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1944-48.

Strain	Mean of 94 Tests	George-town Del.	Belts-ville Md.	Blacks-burg Va.	Colum-bus Ohio	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.	Dwight Ill.	Urbana Ill.
Years Tested		1945-1948	1945-1948	1946-1948	1945-1948	1944-45 1947-48	1944-1948	1945-1948	1944-1947	1944-1948
Lincoln	30.0	21.4	31.1	30.3	37.6	42.8	37.0	37.6	24.3	34.9
Chief	29.3	23.2	33.7	29.0	37.6	42.3	32.5	42.2	19.3	31.8
Adams ¹	28.8	20.3	30.7	24.6	37.2	43.4	33.5	34.8	23.9	34.0
Illini	26.9	18.8	28.7	26.9	35.0	41.2	32.2	31.7	23.6	29.8
Dunfield	26.1	19.7	25.2	22.8	31.5	38.3	29.8	33.5	19.5	30.0
Mean	28.2	20.7	29.9	26.7	35.8	41.6	33.0	36.0	22.1	32.1

Yield Rank

Lincoln	2	2	1	1	2	1	2	1	1
Chief	1	1	2	1	3	3	1	5	3
Adams	3	3	4	3	1	2	3	2	2
Illini	5	4	3	4	4	4	5	3	5
Dunfield	4	5	5	5	5	5	4	4	4

¹ Average of A3-176 (1944-46) and A5-2683 (1947-48).

Table 38. Five-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1944-48.

Strain	Mean Yield Bu/A.	Matu- rity ¹	Lodg- ing	Height Inches	Seed Qual- ity	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	94	77	84	85	80	92	92	92	92
Lincoln	30.0	0	2.2	36	1.6	13.9	40.4	21.7	134.2
Chief	29.3	+7.6	2.8	45	1.6	12.6	40.3	20.8	132.5
Adams ²	28.8	-2.5	2.1	34	1.6	14.3	40.5	22.0	130.9
Illini	26.9	+1.1	3.0	39	1.6	13.7	40.9	20.5	132.5
Dunfield	26.1	-0.6	2.9	36	2.0	15.1	39.7	21.7	127.5
Mean	28.2		2.6	38	1.7	13.9	40.4	21.3	131.5

¹ Days earlier (-) or later (+) than Lincoln. Lincoln required 122 days to mature.

² Average of A3-176 (1944-46) and A5-2683 (1947-48).

Table 37. (Continued)

Strain	Clay- ton Ill.	Ston- ington Ill.	Edge- wood Ill.	Free- burg Ill.	Ames Iowa	Ottum- wa Iowa	Shelby- ville Mo.	Colum- bia Mo.	Lath- rop Mo.	Lin- coln Nebr.	Man- hattan Kans.
Years Tested	1944- 1948	1944- 1948	1944- 1948	1944- 1948	1944- 1948	1944- 1948	1945- 1948	1944- 1948	1945- 1946	1944- 1948	1944- 1948
Lincoln	25.8	32.0	28.0	27.8	38.8	31.5	19.8	20.4	23.4	24.6	24.5
Chief	24.9	29.5	26.6	26.5	36.6	30.1	19.9	23.8	21.9	20.7	22.8
Adams ¹	24.2	31.3	24.9	24.3	39.9	31.6	19.7	21.5	17.7	25.0	24.9
Illini	21.7	28.4	23.0	21.6	36.6	29.9	18.2	18.3	20.2	22.2	21.9
Dunfield	23.5	26.7	25.0	22.8	33.6	28.6	18.3	20.5	18.1	23.6	22.2
Mean	24.0	29.6	25.5	24.6	37.1	30.3	19.2	20.9	20.3	23.2	23.3

	Yield Rank										
Lincoln	1	1	1	1	2	2	2	4	1	2	2
Chief	2	3	2	2	3	3	1	1	2	5	3
Adams	3	2	4	3	1	1	3	2	5	1	1
Illini	5	4	5	5	3	4	5	5	3	4	5
Dunfield	4	5	3	4	5	5	4	3	4	3	4

PRELIMINARY TEST, GROUP III

The origin of the strains in the Preliminary Test, Group III, is as follows:

Strain	Source or Origination Agency	Origin
Chief	Ill. Agr. Exp. Station	Sel. from Illini x Manchu
Lincoln	Ill. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x Manchu
Adams(A5-2683)	Iowa A.E.S. & U.S.R.S.L.	Sel. from A3-176(Illini x Dunfield)
A6-440	Iowa A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Lincoln x Richland)
A6-549	Iowa A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Lincoln x Richland)
C785	Ind. A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Richland x Earlyana)
C786	Ind. A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Richland x Earlyana)
C787	Ind. A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Richland x Earlyana)
C788	Ind. A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Richland x Earlyana)
L6-1503	Ill. A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Lincoln x Richland)
L6-1656	Ill. A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Lincoln x Richland)
L6-1744	Ill. A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Lincoln x Richland)
L6-1776	Ill. A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Lincoln x Richland)
L6-2132	Ill. A.E.S. & U.S.R.S.L.	Sel. from Linc. x (Lincoln x Richland)
L6-5605	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland

Preliminary Group III was planted at five locations, Ottumwa, Columbia, Urbana, Stonington, and Lafayette. Chief, Lincoln, and Adams were used as check strains. The experimental entries were from the crosses Lincoln x Richland, Lincoln x (Lincoln x Richland) and Lincoln x (Richland x Earlyana). This group is designed to extend from Lincoln to Chief, but most of these selections were closer to Chief than to Lincoln in maturity (Table 39). A6-440 and A6-549 were only slightly later than Lincoln. The yields of these experimental entries were very good, all but one of them yielding more than the check strains. The Columbia test was planted on a hardpan soil of only medium productivity and since all varieties were erect, Columbia was omitted from the lodging means. The other four locations were all on highly productive soils.

The most unusual strain in this test proved to be L6-1503 which averaged 24.1 percent oil, 1 percent higher than any other strain in the test. In table 39 it can be seen that it was above the average in lodging resistance also, but did not yield as well as L6-2132. This latter strain was consistently high in yield both on the lower level of productivity at Columbia and on the high levels elsewhere (table 40). When maturity is considered, A6-440 and A6-549 have yielded better than any other strain except L6-2132. A6-440 is outstanding in general performance in addition to its earliness and should be entered together with L6-2132 and L6-1503 in the 1949 Uniform Group III.

Table 39. Summary of agronomic and chemical data for the strains in the Preliminary Test, Group III, 1948.

Strain	Mean Yield Bu/A.	Matu- rity ¹	Lodg- ing	Height Inches	Seed Qual- ity	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	5	5	4	5	4	5	5	5	5
L6-2132	42.2	+6.2	2.1	41	1.0	15.7	39.0	22.8	132.4
L6-1744	40.0	+9.0	1.9	43	1.3	15.1	38.4	22.3	132.8
L6-1656	39.5	+8.8	2.2	45	1.6	13.9	37.6	23.1	135.5
L6-1503	38.4	+7.8	1.9	39	1.3	16.5	38.2	24.1	133.8
A6-440	38.0	+1.4	1.8	43	1.3	15.1	38.6	22.9	130.5
A6-549	37.6	+2.0	2.2	41	2.0	13.5	38.7	21.9	132.4
L6-5605	36.5	+8.8	2.7	45	1.1	15.7	38.7	22.6	131.6
C785	36.0	+7.2	2.4	41	1.6	17.9	39.1	22.6	130.6
L6-1776	35.7	+9.2	2.6	44	1.8	16.4	38.5	22.7	132.5
C787	35.6	+9.6	2.5	46	1.4	14.3	39.3	21.8	135.1
C786	34.9	+7.2	2.7	42	1.3	17.4	40.4	21.9	130.2
Lincoln	34.5	0	2.3	41	1.6	14.0	38.5	22.7	133.1
C788	34.1	+5.4	1.9	41	2.0	15.3	39.8	22.7	129.3
Chief	34.0	+8.6	2.7	51	1.3	13.0	38.4	21.7	130.9
Adams (A5-2683)	33.8	-3.8	2.2	40	1.8	14.6	38.5	23.1	129.8
Mean	36.7		2.3	43	1.5	15.2	38.8	22.6	132.0

¹ Days earlier (-) or later (+) than Lincoln. Lincoln required 120 days to mature.

Table 40. Summary of yield in bushels per acre and yield rank for the strains in the Preliminary Test, Group III, 1948.

Strain	Mean of 5 Tests	Lafayette Ind.	Urbana Ill.	Ston- ington Ill.	Ottumwa Iowa	Columbia Mo.
L3-2132	42.2	55.7	42.5	40.7	47.6	24.4
L6-1744	40.0	53.2	40.3	38.2	44.6	23.8
L6-1656	39.5	50.7	41.3	41.5	39.9	24.0
L6-1503	38.4	46.7	42.8	35.2	45.2	22.3
A6-440	38.0	45.7	39.9	43.1	40.1	21.3
A6-549	37.6	52.0	39.7	35.3	38.8	22.2
L6-5605	36.5	45.4	36.3	36.8	42.3	21.6
C785	36.0	44.6	38.6	30.4	43.7	22.7
L6-1776	35.7	42.2	38.1	35.8	38.6	24.0
C787	35.6	43.5	35.6	36.5	40.2	22.2
C786	34.9	40.6	37.1	33.4	39.9	23.4
Lincoln	34.5	43.8	38.9	33.5	34.3	21.9
C788	34.1	43.8	34.6	32.7	37.4	21.8
Chief	34.0	45.6	35.5	33.0	36.3	19.5
Adams (A5-2683)	33.8	43.1	39.1	30.8	37.9	18.1
Mean	36.7	46.4	38.7	36.0	40.4	22.2
Coef. of Var. (%)		12.3	--	13.4	10.6	8.7
Bu. Nec. for Sig. (5%)		8.2	--	6.9	6.1	2.8
Yield Rank						
L6-2132		1	2	3	1	1
L6-1744		2	4	4	3	4
L6-1656		4	3	2	9	2
L6-1503		5	1	9	2	7
A6-440		6	5	1	7	13
A6-549		3	6	8	10	8
L6-5605		8	12	5	5	12
C785		9	9	15	4	6
L6-1776		14	10	7	11	2
C787		12	13	6	6	8
C786		15	11	11	8	5
Lincoln		10	8	10	15	10
C788		10	15	13	13	11
Chief		7	14	12	14	14
Adams (A5-2683)		13	7	14	12	15

Table 41. Summary of maturity data, days earlier (-) or later (+) than Lincoln, and percentage oil for the strains in the Preliminary Test, Group III, 1948.

Strain	Mean of 5 Tests	Lafayette Ind.	Urbana Ill.	Stonington Ill.	Ottumwa Iowa	Columbia Mo.
L6-2132	+6.2	+ 6	+ 7	+ 7	+4	+ 7
L6-1744	+9.0	+10	+10	+ 9	+6	+10
L6-1656	+8.8	+ 7	+12	+11	+9	+ 5
L6-1503	+7.8	+10	+ 8	+10	+3	+ 8
A6-440	+1.4	+ 6	+ 3	+ 2	-2	- 2
A6-549	+2.0	+ 5	+ 1	+ 2	0	+ 2
L6-5605	+8.8	+ 7	+11	+ 9	+8	+ 9
C785	+7.2	+11	+ 5	+ 8	+6	+ 6
L6-1776	+9.2	+10	+10	+11	+6	+ 9
C787	+9.6	+ 8	+10	+11	+8	+11
C786	+7.2	+ 8	+ 8	+10	+4	+ 6
Lincoln	0	0	0	0	0	0
C788	+5.4	+ 4	+ 5	+ 9	+3	+ 6
Chief	+8.6	+12	+ 9	+10	+9	+ 3
Adams (A5-2683)	-3.8	+ 5	- 6	- 5	0	- 3
Date planted		5/20	5/27	5/27	5/27	5/24
Lincoln matured		9/27	9/24	9/21	9/25	9/15
Days to mature	120	130	120	117	121	114
Oil						
L6-2132	22.6	22.0	21.7	24.3	22.7	23.3
L6-1744	22.3	21.4	21.4	24.1	22.5	22.2
L6-1656	23.1	22.3	21.9	24.3	23.4	23.4
L6-1503	24.1 ^{+1.0}	23.5 ^{+1.0}	22.9 ^{+1.4}	24.9 ^{+1.5}	24.1 ^{+1.7}	24.9 ^{+1.4}
A6-440	22.9	22.1	21.9	24.4	22.7	23.6
A6-549	21.9	21.2	21.0	23.5	21.6	22.0
L6-5605	22.6	22.4	21.5	23.8	22.5	22.9
C785	22.6	21.8	21.9	24.0	22.4	23.0
L6-1776	22.7	22.2	21.6	24.4	22.4	22.8
C787	21.8	21.8	20.8	22.9	21.6	22.0
C786	21.9	21.5	20.9	22.9	21.5	22.5
Lincoln	22.7	22.0	22.0	24.1	22.4	22.9
C788	22.7	22.5	21.9	24.0	22.6	22.5
Chief	21.7	21.0	20.6	22.9	21.7	22.1
Adams (A5-2683)	23.1	22.1	22.0	24.3	22.4	24.5
Mean	22.6	22.0	21.6	23.9	22.4	23.0

UNIFORM TEST, GROUP IV

The origin of the strains in the Uniform Test, Group IV, is as follows:

Strain	Source or Originating Agency	Origin
Chief	Ill. Agr. Exp. Station	Sel. from Illini x Manchu
Gibson	Purdue Agr. Exp. Station	Sel. from Midwest x Dunfield
Patoka	Purdue Agr. Exp. Station	Sel. from P. I. 70218-2
Wabash (C463)	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C490	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from Patoka x X531-468-3-3-2
C499	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from C143 x X531-468-3-3-2-3
C500	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from C143 x X531-468-3-3-2-3
C501	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from C143 x X531-468-3-3-2-3
C502	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from C143 x X531-468-3-3-2-3
C508	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from Patoka x L7-1355
C612	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from C508
L3-2010	Ill. Agr. Exp. Sta. & U.S.R.S.L.	Sel. from C167 x L7-1355
L3-3427	Ill. Agr. Exp. Sta. & U.S.R.S.L.	Sel. from Scioto x Mukden

Data are reported from 17 locations for Group IV in 1948 (table 42). Yields were higher than 1947 at most locations, but at Georgetown, Delaware, the test was planted on Norfolk Loamy Sand in 1948 and yielded only about half as much as the more productive Sassafraz Sandy Loam used in 1947. The test at Vincennes, Indiana, also yielded less than the 1947 plot.

Data are reported for two new locations (tables 43-45), Lancaster, Pennsylvania, and Norborne, Missouri. Lancaster represents the corn and tobacco region of southeastern Pennsylvania. This is a rather productive soil and has good possibilities for soybean production. The test at Norborne, Missouri, was planted on a productive soil characteristic of the second bottom soils of central Missouri.

There were only four new strains entered in Group IV in 1948, L3-2010, C490, C501, and C612. L3-2010 had been tested in Group III and had proven to be high in oil and high in yield, but since it was as late as Chief, it was entered in Group IV in 1948. It had the highest oil content in Group IV in 1948, but was not outstanding in yield in these tests and lodged as badly as Chief. Strain C612 is a selection from C508 which has had such a good record in Group IV. C612 is just as good or even slightly better than C508. C490 and C501 proved to be low in oil and in average yield. These were the latest strains in Group IV (table 44) and for their maturity did not yield as well as they should. Of the strains carried over from 1947, Wabash (C463) showed up much better in 1948 than it had in any previous year and C502 did not do quite as well in 1948 as in 1947. C508, C499, and L3-3427 behaved about as they had formerly.

The summary of the 1947-48 data are presented in tables 46 and 48. C508 and C502 are highest in yield and oil content for the two-year period. Since these strains are also at the top in lodging resistance, they represent definitely superior germ plasm. C499 has yielded well at some locations but is rather low in oil content. L3-3427 is satisfactory in yield and has a good oil content but lodges more than is desirable. C500 is rather low in yield and has a mediocre oil content. Probably only C508 and C502 should be continued.

Only four strains have been in Group IV for the six-year period 1943-1948 (tables 47 and 49). Of these, C463, which has been named Wabash, has averaged highest in yield. The history of this strain was recorded in the 1947 report. Wabash is superior to Chief in yield, lodging resistance, seed quality, and oil content. It has averaged about a day later and is somewhat shorter. Since this strain is being released, it was thought desirable to present as much of the yield data as possible in table 47, Wabash has yielded more than Chief at 15 of the 20 locations. This strain should prove valuable in Southern Indiana, Southern Illinois, and Central Illinois, and probably in some other areas.

This strain was increased in 1948 to 4500 bushels in Indiana, 4000 bushels in Illinois, and 800 bushels in Missouri. Ample supplies of seed should be available in 1950.

Table 42. Summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1948.

Strain	Mean Yield Bu/A.	Maturity ¹	Lodging	Height Inches	Seed Quality	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	17	16	15	17	12	16	16	16	16
C612	35.6	+1.3	2.0	40	1.6	16.5	40.9	22.3	128.9
C508	34.4	0	2.0	40	1.8	16.5	41.1	22.4	128.7
Wabash (C463)	34.2	-2.4	1.8	43	1.6	14.6	40.1	22.2	128.6
C499	34.0	+2.6	2.0	41	1.3	17.4	42.3	21.0	129.8
L3-3427	34.0	+1.3	2.8	46	1.9	14.4	39.5	22.5	133.0
C502	33.7	-0.8	1.8	39	1.6	15.0	40.2	22.4	130.5
L3-2010	32.9	-3.6	2.5	46	1.8	13.2	38.2	22.8	132.3
C501	32.8	+4.1	2.4	43	1.5	14.8	41.2	21.3	130.2
Chief	32.4	-4.7	2.5	49	1.9	13.4	41.4	21.1	130.2
C490	31.5	+4.9	2.2	39	1.5	17.2	42.4	21.2	130.1
C500	30.8	-0.1	1.8	40	1.5	17.4	43.3	21.3	127.2
Patoka	30.7	-2.4	2.1	37	2.3	17.1	43.4	21.0	132.1
Gibson	28.9	0	2.6	40	1.5	14.5	40.5	20.7	131.2
Mean	32.8		2.2	42	1.7	15.5	41.1	21.7	130.2

¹ Days earlier (-) or later (+) than Gibson. Gibson required 131 days to mature.

Table 43. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1948.

Strain	Mean of 17 Tests	George-town Del.	Belts-ville Md.	Lan-caster Pa.	Blacks-burg Va.	Worth-ington Ind.	Vin-cennes Ind.	Evans-ville Ind.	Urbana Ill.
C612	35.6	18.9	38.8	35.0	31.8	51.9	24.3	46.5	39.8
C508	34.4	18.9	44.7	35.7	30.7	44.7	23.8	50.9	38.8
Wabash (C463)	34.2	18.2	39.3	35.3	37.0	53.6	17.9	44.6	38.1
C499	34.0	14.6	40.2	30.3	29.4	52.9	21.3	48.6	34.7
L3-3427	34.0	18.4	37.4	32.9	26.4	41.0	23.3	50.7	36.1
C502	33.7	14.6	43.8	31.5	21.7	50.9	23.6	49.3	31.0
L3-2010	32.9	20.4	40.2	31.7	26.3	46.4	25.0	48.3	40.3
C501	32.8	19.9	37.3	35.1	24.2	38.8	18.7	43.4	29.2
Chief	32.4	17.4	38.6	34.5	31.2	38.3	25.3	50.1	32.2
C490	31.5	19.1	37.1	34.2	21.5	44.6	18.1	42.0	31.5
C500	30.8	15.0	37.7	28.3	29.5	39.7	18.5	40.1	32.6
Patoka	30.7	17.1	35.7	33.3	25.1	39.3	23.6	35.6	33.3
Gibson	28.9	14.4	32.7	23.7	20.2	33.7	16.7	36.8	38.0
Mean	32.8	17.5	38.7	32.4	27.3	44.3	21.6	45.2	35.0
Coef. of Var. (%)		13.8	--	--	--	12.6	13.8	9.8	15.4
Bu. Nec. for Sig. (5%)		3.3	--	--	--	8.0	4.3	6.4	Not Sig.

Yield Rank

Strain	George-town Del.	Belts-ville Md.	Lan-caster Pa.	Blacks-burg Va.	Worth-ington Ind.	Vin-cennes Ind.	Evans-ville Ind.	Urbana Ill.
C612	4	6	4	2	3	3	7	2
C508	4	1	1	4	6	4	1	3
Wabash (C463)	6	5	2	1	1	12	8	4
C499	10	3	11	6	2	8	5	7
L3-3427	5	9	8	7	8	7	2	6
C502	10	2	10	12	4	5	4	12
L3-2010	1	3	9	8	5	2	6	1
C501	2	10	3	10	11	9	9	13
Chief	7	7	5	3	12	1	3	10
C490	3	11	6	11	7	11	10	11
C500	9	8	12	5	9	10	11	9
Patoka	8	12	7	9	10	5	13	8
Gibson	11	13	13	13	13	13	12	5

Table 43. (Continued)

Strain	Clay- ton Ill.	Ston- ington Ill.	Edge- wood Ill.	Free- burg Ill.	Eldor- ado Ill.	Shelby- ville Mo.	Colum- bia Mo.	Nor- borne Mo.	Man- hattan Kans.
C612	31.4	42.6	44.5	36.2	35.7	26.8	23.2	44.7	32.4
C508	28.6	40.9	39.9	32.5	39.1	25.1	24.9	38.8	27.5
Wabash (C463)	27.9	43.7	40.7	33.0	35.7	21.0	28.8	42.5	23.3
C499	35.0	39.0	41.7	35.7	38.0	22.5	24.4	41.5	27.9
L3-3427	30.4	46.3	44.8	33.9	36.6	22.9	25.5	41.3	29.3
C502	31.3	40.4	45.2	29.9	38.9	24.7	26.7	45.3	23.5
L3-2010	23.5	38.0	31.2	35.6	35.2	23.1	22.9	42.7	28.9
C501	33.5	39.0	40.7	37.0	36.6	25.9	28.5	41.9	27.1
Chief	24.6	35.7	38.6	30.8	32.8	22.2	25.5	46.6	26.1
C490	25.9	36.0	39.2	31.1	35.3	21.1	28.1	44.8	26.7
C500	32.0	36.4	37.3	30.9	36.5	23.4	23.6	39.0	22.5
Patoka	26.8	36.5	35.4	31.4	35.6	20.7	25.5	40.8	26.7
Gibson	25.8	35.4	37.9	32.1	33.3	18.5	24.6	39.9	27.0
Mean	29.0	39.2	39.8	33.1	36.1	22.9	25.5	42.3	26.8
Coef. of Var. (%)	--	--	10.6	10.2	7.1	12.6	10.7	10.8	--
Bu/Sig. (5%)	--	--	6.1	not sig.	3.7	4.1	3.9	6.5	--

Yield Rank

	Clay- ton	Ston- ington	Edge- wood	Free- burg	Eldor- ado	Shelby- ville	Colum- bia	Nor- borne	Man- hattan
C612	4	3	3	2	7	1	12	4	1
C508	7	4	7	7	1	3	8	13	5
Wabash (C463)	8	2	5	6	7	11	1	6	12
C499	1	6	4	3	3	8	10	8	4
L3-3427	6	1	2	5	4	7	5	9	2
C502	5	5	1	13	2	4	4	2	11
L3-2010	13	8	13	4	11	6	13	5	3
C501	2	6	5	1	4	2	2	7	6
Chief	12	12	9	12	13	9	5	1	10
C490	10	11	8	10	10	10	3	3	8
C500	3	10	11	11	6	5	11	12	13
Patoka	9	9	12	9	9	12	5	10	9
Gibson	11	13	10	8	12	13	9	11	7

Table 44. Summary of maturity data, days earlier (-) or later (+) than Gibson, for the strains in the Uniform Test, Group IV, 1948.

Strain	Mean of 16 ₁ Tests ¹	George- town Del.	Belts- ville Md.	Lan- caster Pa.	Blacks- burg Va.	Worth- ington Ind.	Vin- cennes Ind.	Evans- ville Ind.	Urbana Ill.
C612	+1.3	+3	+8	+ 5	+6	+2	+1	+1	-1
C508	0	+3	+5	+ 5	+4	+1	+1	+1	-4
Wabash (C463)	-2.4	+2	-1	+ 5	+2	-7	-1	-5	-3
C499	+2.6	+4	+6	+ 5	+2	-3	+1	+1	+5
L3-3427	+1.3	+3	+5	+ 5	-1	0	0	+6	+1
C502	-0.8	+4	+2	+ 5	+2	-2	0	-3	-8
L3-2010	-3.6	-1	-3	+ 5	+1	-3	-3	-3	-5
C501	+4.1	+9	+3	+ 5	+2	+1	+5	+1	+5
Chief	-4.7	-5	-2	0	+1	-7	-2	-5	-7
C490	+4.9	+8	+7	+12	+3	+2	+4	+4	+8
C500	-0.1	+2	+7	+ 5	+2	-3	0	-4	-5
Patoka	-2.4	+1	+2	+ 5	+2	-4	-2	-3	-9
Gibson	0	0	0	0	0	0	0	0	0
Date planted		6/9	5/28	5/20	5/15	5/11	6/15	5/10	5/27
Gibson matured		9/24	10/8	10/5	10/3	10/11	10/19	9/28	10/10
Days to mature	131	107	133	138	141	153	126	141	136

¹ Lancaster not included in the mean.

Table 44. (Continued)

Strain	Clay- ton Ill.	Ston- ington Ill.	Edge- wood Ill.	Free- burg Ill.	Eldor- ado Ill.	Shelby- ville Mo.	Colum- bia Mo.	Nor- borne Mo.	Man- hattan Kans.
C612	-2	-3	-2	+1	0	+2	+ 1	+1	0
C508	-2	-3	-2	0	0	+1	0	+1	-5
Wabash (C463)	-1	-4	-4	-1	-3	-2	- 2	-1	-7
C499	+4	-1	+5	+3	+1	+7	+ 6	+2	-1
L3-3427	-1	-2	0	+3	-1	-1	0	+7	+1
C502	-1	-6	-3	+2	-1	+5	+ 4	-1	-7
L3-2010	-5	-6	-3	-1	-5	-4	- 6	-2	-8
C501	+5	+1	+8	+7	+2	+5	+ 9	+3	-1
Chief	-8	-6	-3	-1	-4	-5	- 8	-5	-8
C490	+6	+1	+5	+6	+2	+5	+10	+7	0
C500	-1	-5	+1	+4	0	+7	+ 1	-1	-7
Patoka	-6	-5	-3	-1	-4	+1	- 2	0	-6
Gibson	0	0	0	0	0	0	0	0	0
Date planted	5/20	5/27	6/1	5/27	5/29	5/22	5/24	5/21	6/2
Gibson matured	10/3	10/7	10/2	9/28	10/1	9/28	9/26	9/29	10/8
Days to mature	136	133	123	124	125	129	125	131	128

Table 45. Summary of lodging and height data for the strains in the Uniform Test, Group IV, 1948.

Strain	Mean of 15 Tests ¹	George-town Del.	Belts-ville Md.	Lan-caster Pa.	Blacks-burg Va.	Worth-ington Ind.	Vin-cennes Ind.	Evans-ville Ind.	Urbana Ill.
C612	2.0	1.0	3.0	2.0	3.0	2.0	1.0	2.3	2.3
C508	2.0	1.0	3.0	2.0	2.0	2.1	1.0	2.4	2.4
Wabash (C463)	1.8	1.0	3.0	1.0	1.0	2.5	1.0	2.0	2.0
C499	2.0	1.0	3.5	1.0	2.5	1.9	1.1	2.3	2.0
L3-3427	2.8	1.0	4.0	2.0	3.0	3.6	1.5	3.3	3.0
C502	1.8	1.0	2.0	1.0	3.0	2.1	1.3	1.6	1.9
L3-2010	2.5	1.0	3.5	2.0	2.0	3.6	1.8	2.9	2.6
C501	2.4	1.0	3.0	2.0	2.5	3.8	1.4	2.5	2.4
Chief	2.5	1.0	3.5	2.0	2.0	3.5	1.6	3.3	2.5
C490	2.2	1.0	3.5	2.0	1.0	3.1	1.0	3.1	2.5
C500	1.8	1.0	3.0	1.0	2.0	2.4	1.0	1.8	2.0
Patoka	2.1	1.0	3.0	1.0	1.0	3.1	1.0	3.3	2.3
Gibson	2.6	1.0	3.5	1.0	2.0	3.8	1.6	3.5	3.0
Mean	2.2	1.0	3.2	1.5	2.1	2.9	1.3	2.6	2.4

	Mean of 17 Tests	Height							
C612	40	28	40	33	36	48	34	46	51
C508	40	28	42	36	39	47	35	45	49
Wabash (C463)	43	31	45	37	38	52	38	51	52
C499	41	28	43	35	37	51	38	50	51
L3-3427	46	31	49	40	38	56	40	56	55
C502	39	27	40	36	34	47	35	48	49
L3-2010	46	33	48	36	40	53	44	54	55
C501	43	32	45	39	38	51	39	52	48
Chief	49	32	54	44	43	61	44	59	59
C490	39	29	41	38	34	49	34	49	46
C500	40	29	43	30	35	50	38	48	51
Patoka	37	25	40	29	35	43	31	43	48
Gibson	40	27	45	32	35	48	36	47	49
Mean	42	29	44	36	37	50	37	50	51

¹ Georgetown and Columbia not included in the mean.

Table 45. (Continued)

Strain	Clay- ton Ill.	Ston- ington Ill.	Edge- wood Ill.	Free- burg Ill.	Eldor- ado Ill.	Shelby- ville Mo.	Colum- bia Mo.	Nor- borne Mo.	Man- hattan Kans.
C612	2.1	2.0	2.0	1.8	2.0	1.0	1.0	2.5	1.4
C508	1.9	2.1	2.1	1.9	2.0	1.5	1.0	2.5	1.5
Wabash (C463)	2.1	2.0	2.0	2.0	2.0	1.0	1.0	2.0	1.6
C499	2.0	2.0	2.1	1.9	1.8	1.8	1.0	2.3	1.7
L3-3427	2.3	2.9	2.8	2.8	2.5	2.0	1.0	3.3	2.6
C502	2.0	2.0	2.0	2.1	1.9	1.0	1.0	1.8	1.5
L3-2010	2.1	2.1	2.9	2.4	1.9	3.0	1.0	3.0	2.1
C501	2.1	2.4	2.8	2.5	2.0	1.5	1.0	3.5	2.0
Chief	1.9	2.1	3.0	2.5	2.0	3.0	1.0	3.0	2.1
C490	2.0	2.0	2.4	2.5	1.5	1.5	1.0	2.5	1.8
C500	1.8	1.9	2.0	2.1	1.5	1.0	1.0	2.5	1.4
Patoka	2.0	2.3	2.8	1.9	1.9	1.0	1.0	3.0	2.0
Gibson	2.5	2.7	2.9	2.8	2.2	1.8	1.0	4.0	2.1
Mean	2.1	2.2	2.4	2.2	1.9	1.6	1.0	2.8	1.8

Strain	Height								
	Clay- ton Ill.	Ston- ington Ill.	Edge- wood Ill.	Free- burg Ill.	Eldor- ado Ill.	Shelby- ville Mo.	Colum- bia Mo.	Nor- borne Mo.	Man- hattan Kans.
C612	40	45	42	40	41	41	26	49	37
C508	40	43	44	39	41	42	26	46	36
Wabash (C463)	43	46	44	43	45	44	31	49	38
C499	42	42	43	44	45	38	29	46	36
L3-3427	44	48	51	46	47	45	33	56	40
C502	40	41	38	39	40	34	31	47	36
L3-2010	50	46	51	45	51	45	34	48	44
C501	43	47	46	43	45	42	34	46	38
Chief	47	49	53	48	50	52	34	65	44
C490	36	40	41	38	41	39	31	43	37
C500	42	41	40	42	45	36	30	43	36
Patoka	38	41	39	36	40	35	26	44	31
Gibson	39	47	43	41	42	41	31	50	35
Mean	42	44	44	42	44	41	30	49	38

Table 46. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1947-48.

Strain	Mean of 32 Tests	Georgetown Del.	Beltsville Md.	Blacksburg Va.	Worthington Ind.	Vincennes Ind.	Evansville Ind.	Urbana Ill.
C508	31.7	24.9	34.3	29.5	43.9	26.7	47.7	38.0
C502	30.4	21.6	29.6	25.7	46.3	28.1	44.1	31.7
C499	30.3	24.2	29.5	27.1	47.2	24.5	44.1	33.2
L3-3427	30.2	25.9	25.3	23.9	37.0	26.6	45.8	35.1
Wabash (C463)	30.0	23.5	30.9	31.8	45.9	21.3	40.4	35.7
Chief	28.5	20.6	31.3	28.0	40.0	24.3	41.2	31.7
Patoka	28.1	21.9	26.8	25.8	39.3	26.5	35.1	31.9
C500	27.9	20.9	28.0	28.2	38.1	26.6	36.8	31.9
Gibson	27.1	21.4	22.9	18.9	35.9	22.1	36.5	35.1
Mean	29.3	22.8	28.7	26.5	41.5	25.2	41.3	33.8

Yield Rank

C508	2	1	2	4	2	1	1
C502	6	4	7	2	1	3	8
C499	3	5	5	1	6	3	5
L3-3427	1	8	8	8	3	2	3
Wabash (C463)	4	3	1	3	9	6	2
Chief	9	2	4	5	7	5	8
Patoka	5	7	6	6	5	9	6
C500	8	6	3	7	3	7	6
Gibson	7	9	9	9	8	8	3

Table 46. (Continued).

Strain	Clay- ton Ill.	Ston- ington Ill.	Edge- wood Ill.	Free- burg Ill.	Eldor- ado Ill.	Shelby- ville Mo.	Colum- bia Mo.	Man- hattan Kans.
C508	23.6	35.7	35.2	29.7	36.3	20.5	24.6	22.3
C502	25.2	34.4	38.8	28.3	32.9	19.7	25.0	19.1
C499	25.8	34.0	36.2	32.9	32.7	18.2	23.1	20.3
L3-3427	24.7	38.5	38.2	30.9	31.8	19.1	24.6	22.5
Wabash (C463)	20.9	35.1	34.9	30.3	30.9	18.0	24.8	19.9
Chief	19.6	30.6	32.5	27.3	29.4	19.0	23.2	20.8
Patoka	22.8	31.3	29.9	29.2	31.7	17.8	24.2	20.5
C500	23.8	30.5	32.5	27.4	30.7	18.9	22.9	18.6
Gibson	20.2	33.1	34.5	29.4	30.8	16.3	24.0	22.2
Mean	23.0	33.7	34.7	29.5	31.9	18.6	24.0	20.7

	Yield Rank							
C508	5	2	4	4	1	1	3	2
C502	2	4	1	7	2	2	1	8
C499	1	5	3	1	3	6	8	6
L3-3427	3	1	2	2	4	3	3	1
Wabash (C463)	7	3	5	3	6	7	2	7
Chief	9	8	7	9	9	4	7	4
Patoka	6	7	9	6	5	8	5	5
C500	4	9	7	8	8	5	9	9
Gibson	8	6	6	5	7	9	6	3

Table 47. (Continued)

Strain	Ston- ington Ill.	Edge- wood Ill.	Free- burg Ill.	El- dorado Ill.	Els- berry Mo.	Shelby- ville Mo.	Colum- bia Mo.	Nor- borne Mo.	La- throp Mo.	Man hattan Kans.	Thayer Kansas
Years Tested	1945- 1948	1944- 1948	1945- 1948	1947- 1948	1946	1945- 1948	1944 1945-8	1948	1945- 1946	1945- 1948	1945- 1947
Wabash	31.3	29.5	24.9	30.9	35.1	19.4	24.4	42.5	23.5	20.5	14.3
Chief	29.5	27.2	24.8	29.4	30.4	20.3	22.9	46.6	19.5	19.6	15.6
Patoka	30.6	24.5	26.3	31.7	35.6	18.5	23.3	40.8	17.0	19.4	14.4
Gibson	27.2	26.6	23.6	30.8	27.4	18.3	22.3	39.9	19.1	21.0	17.5
Mean	29.7	27.0	24.9	30.7	32.1	19.1	23.2	42.5	19.8	20.1	15.5
	Yield Rank										
Wabash	1	1	2	2	2	2	1	2	1	2	4
Chief	3	2	3	4	3	1	3	1	2	3	2
Patoka	2	4	1	1	1	3	2	3	4	4	3
Gibson	4	3	4	3	4	4	4	4	3	1	1

Table 48. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1947-48.

Strain	Mean Yield Bu/A	Matu- rity ¹	Lodg- ing	Height Inches	Seed Qual- ity	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	32	29	27	30	24	30	30	30	30
C508	31.7	-0.8	1.8	37	1.6	16.7	41.3	22.3	128.1
C502	30.4	-1.0	1.7	37	1.6	15.2	40.3	22.4	129.4
C499	30.3	+1.2	1.9	40	1.3	17.4	42.6	20.9	128.1
L3-3427	30.2	+1.3	2.7	43	1.9	14.3	40.2	22.1	132.4
Wabash (C463)	30.0	-3.3	1.8	40	1.6	14.5	40.8	22.1	126.4
Chief	28.5	-4.8	2.4	45	2.1	12.8	41.5	21.2	130.1
Patoka	28.1	-2.6	2.0	35	2.0	17.0	43.6	20.7	131.4
C500	27.9	-1.2	1.8	39	1.7	17.6	43.6	21.1	125.3
Gibson	27.1	0	2.6	38	1.6	14.3	40.8	20.7	131.3
Mean	29.3		2.1	39	1.7	15.5	41.6	21.5	129.2

¹Days earlier (-) or later (+) than Gibson. Gibson required 130 days to mature.

Table 49. Six-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1943-48.

Strain	Mean Yield Bu/A	Matu- rity ¹	Lodg- ing	Height Inches	Seed Qual- ity	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	73	58	60	64	59	63	70	70	70
Wabash (C463)	28.8	-2.2	2.1	39	1.7	14.3	40.4	21.4	128.8
Chief	27.7	-3.5	2.7	44	2.1	13.0	41.0	20.6	131.8
Patoka	27.0	-2.2	2.2	33	2.0	17.6	43.6	20.3	132.0
Gibson	25.4	0	2.7	38	1.7	13.9	40.5	20.1	133.4
Mean	27.2		2.4	39	1.9	14.7	41.4	20.6	131.5

¹Days earlier (-) or later (+) than Gibson. Gibson required 129 days to mature.

PRELIMINARY TEST, GROUP IV

The origin of the strains in the Preliminary Test, Group IV, is as follows:

Strain	Source or Originating Agency	Origin
Chief	Ill. Agr. Exp. Sta.	Sel. from Illini x Manchu
Gibson	Purdue Agr. Exp. Sta.	Sel. from Midwest x Dunfield
Wabash (C463)	Purdue A.E.S. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C508	Purdue A.E.S. & U.S.R.S.L.	Sel. from Patoka x L7-1355
S100	Mo. Agr. Exp. Sta.	Rogue in Illini
CX6742-11	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Patoka
CX6742-16	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Patoka
CX6742-20	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Patoka
CX6742-22	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Patoka
CX6742-34	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Patoka
CX6842-17	Purdue A.E.S. & U.S.R.S.L.	Sel. from Gibson x Lincoln
CX7342-27	Purdue A.E.S. & U.S.R.S.L.	Sel. from C143 x Lincoln
CX7342-39	Purdue A.E.S. & U.S.R.S.L.	Sel. from C143 x Lincoln
CX7342-42	Purdue A.E.S. & U.S.R.S.L.	Sel. from C143 x Lincoln
CX7342-53	Purdue A.E.S. & U.S.R.S.L.	Sel. from C143 x Lincoln
D56-8	Delta Br.E.S. & U.S.R.S.L.	Sel. from Boone x Magnolia
D523-30	Delta Br.E.S. & U.S.R.S.L.	Sel. from Dunfield x Arksoy
D523-55	Delta Br.E.S. & U.S.R.S.L.	Sel. from Dunfield x Arksoy
L4-6238	Ill. A.E.S. & U.S.R.S.L.	Sel. from L7-1355 x (Macoupin x L7-1355)
L4-6259	Ill. A.E.S. & U.S.R.S.L.	Sel. from L7-1355 x (Macoupin x L7-1355)
L4-6290	Ill. A.E.S. & U.S.R.S.L.	Sel. from L7-1355 x (Macoupin x L7-1355)
L6-5002	Ill. A.E.S. & U.S.R.S.L.	Sel. from C143 x Lincoln
L6-5658	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland
L6-5679	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland
L6-5680	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland
L6-5683	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland
S4-241	Mo. A.E.S. & U.S.R.S.L.	Sel. from Chief x (Macoupin x Chief)
S4-307	Mo. A.E.S. & U.S.R.S.L.	Sel. from Chief x (Macoupin x Chief)
S4-374	Mo. A.E.S. & U.S.R.S.L.	Sel. from Chief x (Chief x Boone)
S5-41	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Patoka
S5-234	Mo. A.E.S. & U.S.R.S.L.	Sel. from C149 x L7-1355

Preliminary Group IV was an interesting test as it had entries from Indiana, Illinois, Missouri, and Mississippi. One of the strains, D536-4, had such poor stands that it was omitted from the summaries. This material was tested under widely different conditions in Indiana, Illinois, Mississippi, Missouri, and Oklahoma. Yields in general were good, top yields ranging from 54 bushels at Evansville, Indiana, to 33 bushels at Stillwater, Oklahoma (table 51). Sixteen of the twenty-six experimental entries are from crosses involving Lincoln. The mean agronomic and chemical data are presented in table 50, and the individual data in tables 51 to 54. Of the selections from the Lincoln x Richland cross, which have all yielded well, L6-5679 was the most consistent. This strain averaged 6 bushels more than Wabash and was equal in lodging resistance. It is about five days later in maturity and somewhat lower in oil content than Wabash. This strain was high in yield at all locations and appears to have wide adaptation. Strain L6-5680 is a sister selection of L6-5679 and appears to be very similar to it except for yield.

Strains CX6742-20 and CX6742-34 from the cross Lincoln x Patoka were the best of the entries from Indiana. These have good lodging resistance, but are lower in oil content than Wabash. The Illinois entries from the L7-1355 x (Macoupin x L7-1355) cross were later than S100 and so should have been in Group V. In general these strains did not yield well, but L6-6259 was among the higher yielding strains at Evansville and Stoneville and L6-6290 was high at Stoneville. All of these strains lodge more than is desirable and the oil content is not as high as Wabash.

Of the three entries from Mississippi, D523-55 appears to be the best, but all of these lodge more than the check strains and are rather low in oil content.

S4-241 from the Chief x (Macoupin x Chief) cross is the most promising of the selections from Missouri. This strain is an improvement over the original Chief in yield, lodging resistance, and seed quality, but is somewhat lower in oil content.

Table 50. Summary of agronomic and chemical data for the strains in the Preliminary Test, Group IV, 1948.

Strain	Mean Yield Bu/A.	Maturity ¹	Lodging	Height Inches	Seed Quality	Seed Weight	Percent- age of Protein	Percent- age of Oil	Iodine Number of Oil
No. of Tests	6	5	5	6	4	6	6	6	6
L6-5679	39.4	+ 1.6	1.8	46	2.0	13.4	39.1	21.9	129.6
L6-5680	37.5	+ 0.8	1.9	44	2.1	13.7	39.2	21.8	129.6
CX6742-20	37.1	+ 0.4	2.1	43	3.0	16.1	41.1	21.9	133.3
CX6742-34	35.7	- 0.6	1.8	45	2.9	14.9	41.2	21.4	132.6
L6-5658	35.2	- 1.2	1.9	44	2.0	13.5	40.4	21.4	132.1
L6-5683	34.8	+ 1.2	2.0	45	2.8	12.4	39.7	21.0	131.1
C508	34.6	- 0.8	1.9	39	2.5	15.6	40.2	22.8	129.1
IA-6259	33.8	+13.6	2.8	51	2.8	15.3	39.9	21.4	127.1
Wabash (C463)	33.7	- 3.6	1.8	44	2.0	13.5	39.1	22.7	126.8
CX7342-27	33.5	+ 1.2	2.4	42	2.3	14.1	41.0	21.7	130.6
CX7342-39	33.4	- 3.0	1.8	44	2.6	14.3	39.5	22.5	133.1
D523-55	33.2	+ 6.2	2.8	50	1.8	13.9	42.9	20.2	129.1
CX7342-53	32.9	- 2.4	2.0	43	2.4	15.0	41.0	22.5	129.5
L6-5002	32.9	- 3.0	2.2	43	3.2	13.2	39.4	22.0	132.0
CX6742-11	32.8	- 1.0	2.2	45	2.5	15.8	41.6	21.3	131.9
IA-6290	32.6	+14.6	3.1	57	2.2	13.1	39.4	20.9	129.9
CX6742-16	32.5	- 1.2	2.1	42	2.8	16.4	41.8	20.9	132.2
S4-241	32.2	+ 0.6	1.9	49	2.1	12.5	39.9	21.3	129.3
S100	32.0	+11.4	2.0	49	1.7	13.4	41.9	19.4	130.5
CX7342-42	31.8	- 3.4	1.8	42	2.7	13.8	41.4	22.0	132.8
Gibson	31.5	0	2.4	41	1.8	13.6	39.2	21.5	132.3
D523-30	31.2	+ 4.4	2.5	49	1.8	14.1	43.0	20.4	128.2
CX6842-17	31.1	- 1.0	2.3	43	2.3	12.5	39.8	21.5	133.2
IA-6238	31.0	+13.2	3.2	53	2.7	14.0	39.6	20.8	127.8
Chief	30.9	- 5.6	2.4	49	2.5	12.8	39.8	21.7	130.2
CX6742-22	30.5	- 4.2	2.2	39	3.0	14.6	39.8	22.0	132.1
S4-307	29.5	- 3.6	2.4	48	2.5	12.4	39.9	21.6	129.1
S5-234	28.6	- 2.4	2.4	47	2.0	14.8	40.9	21.8	128.0
S4-374	28.3	- 3.4	2.6	49	2.3	12.4	39.7	21.5	129.1
D56-8	27.8	+ 9.6	3.1	44	2.1	17.0	42.7	21.4	125.1
S5-41	26.9	- 6.2	2.3	37	3.0	14.9	40.9	21.3	129.5
Mean	32.5		2.3	45	2.4	14.1	40.5	21.5	130.2

¹ Days earlier (-) or later (+) than Gibson. Gibson required 128 days to mature.

Table 51. Summary of yield in bushels per acre for the strains in the Preliminary Test, Group IV, 1948.

Strain	Mean of 6 Tests	Evans- ville Ind.	Free- burg Ill.	Eldor- ado Ill.	Stone- ville Miss.	Colum- bia Mo.	Still- water Okla.
L6-5679	39.4	54.2	37.9	38.8	38.1	34.4	32.9
L6-5680	37.5	50.3	34.4	40.7	35.6	33.4	30.3
CX6742-20	37.1	48.4	35.9	40.3	37.4	30.6	29.7
CX6742-34	35.7	51.8	31.9	38.9	29.9	31.8	29.9
L6-5658	35.2	45.0	33.0	40.4	32.5	30.0	30.1
L6-5683	34.8	46.1	31.9	37.5	32.0	34.1	26.9
C508	34.6	46.2	33.5	38.0	33.8	25.9	30.1
LA-6259	33.8	50.4	30.4	34.0	35.7	29.0	23.5
Wabash (C463)	33.7	48.3	35.5	33.7	33.2	26.0	25.3
CX7342-27	33.5	41.6	32.0	37.2	29.8	32.5	28.0
CX7342-39	33.4	50.9	30.5	36.6	26.0	28.7	27.9
D523-55	33.2	49.1	35.9	32.4	33.5	26.5	21.5
CX7342-53	32.9	43.7	32.0	33.7	28.7	31.7	27.6
L6-5002	32.9	46.6	34.8	29.3	26.0	33.9	26.6
CX6742-11	32.8	46.3	31.0	32.3	32.1	25.1	30.1
LA-6290	32.6	42.6	29.2	29.2	38.3	29.9	26.2
CX6742-16	32.5	44.9	30.9	31.4	31.3	30.2	26.1
S4-241	32.2	46.3	29.1	34.2	29.9	26.5	27.1
S100	32.0	45.9	28.4	34.3	30.9	23.7	28.8
CX7342-42	31.8	41.6	32.8	34.1	26.4	30.1	25.9
Gibson	31.5	40.1	26.9	36.4	29.6	28.6	27.3
D523-30	31.2	39.5	28.8	33.1	32.3	27.6	26.1
CX6842-17	31.1	39.8	29.9	33.7	28.9	26.7	27.8
LA-6238	31.0	40.6	25.8	32.2	36.6	28.4	22.2
Chief	30.9	41.9	29.7	33.0	26.3	25.8	26.8
CX6742-22	30.5	39.3	26.8	33.1	26.0	29.1	28.9
S4-307	29.5	43.3	29.2	29.1	23.0	24.9	27.7
S5-234	28.6	33.3	26.8	31.7	29.0	22.5	28.3
S4-374	28.3	35.4	30.8	28.3	24.9	24.1	26.2
D56-8	27.8	34.6	22.1	29.9	30.8	25.3	24.2
S5-41	26.9	40.0	28.1	30.3	19.4	26.0	17.9
Mean	32.5	44.1	30.8	34.1	30.6	28.5	27.1
Coef. of Var. (%)		13.1	11.8	--	11.0	11.3	--
Bu. Nec. for Sig. (5%)		8.1	5.0	--	4.6	4.5	--

Table 52. Summary of yield rank for the strains in the Preliminary Test, Group IV, 1948.

Strain	Evans- ville Ind.	Free- burg Ill.	EIdor- ado Ill.	Stone- ville Miss.	Colum- bia Mo.	Still- water Okla.
L6-5679	1	1	5	2	1	1
L6-5680	5	6	1	6	4	2
CX6742-20	7	2	3	3	8	7
CX6742-34	2	12	4	17	6	6
L6-5658	15	8	2	10	11	3
L6-5683	13	12	7	13	2	19
C508	12	7	6	7	24	3
IA-6259	4	18	14	5	14	28
Wabash (C463)	8	4	15	9	22	26
CX7342-27	21	10	8	19	5	12
CX7342-39	3	17	9	26	15	13
D523-55	6	2	22	8	20	30
CX7342-53	17	10	15	23	7	16
L6-5002	9	5	29	26	3	20
CX6742-11	10	14	23	12	27	3
IA-6290	19	21	30	1	12	21
CX6742-16	16	15	26	14	9	23
S4-241	10	23	12	17	20	18
S100	14	25	11	15	30	9
CX7342-42	21	9	13	24	10	25
Gibson	24	27	10	20	16	17
D523-30	27	24	18	11	18	23
CX6842-17	26	19	15	22	19	14
IA-6238	23	30	24	4	17	29
Chief	20	20	20	25	25	9
CX6742-22	28	28	18	26	13	8
S4-307	18	21	31	30	28	15
S5-234	31	28	25	21	31	11
S4-374	29	16	20	29	29	21
I56-8	30	31	28	16	26	27
S5-41	25	26	27	31	22	31

Table 53. Summary of maturity data, days earlier (-) or later (+) than Gibson for the strains in the Preliminary Test, Group IV, 1948.

Strain	Mean of 5 Tests	Evans- ville Ind.	Free- burg Ill.	Eldor- ado Ill.	Stono- ville Miss.	Colum- bia Mo.
L6-5679	+ 1.6	0	+1	+ 1	+ 3	+ 3
L6-5680	+ 0.8	+ 1	+1	- 1	0	+ 3
CX6742-20	+ 0.4	- 1	+1	- 2	0	+ 4
CX6742-34	- 0.6	- 3	+1	- 2	0	+ 1
L6-5658	- 1.2	- 3	0	- 2	- 2	+ 1
L6-5683	+ 1.2	0	+3	- 1	+ 1	+ 3
C508	- 0.8	- 1	-1	- 2	0	0
IA-6259	+13.6	+17	+7	+ 9	+16	+19
Wabash (C463)	- 3.6	- 7	-1	- 2	- 7	- 1
CX7342-27	+ 1.2	- 4	+2	+ 2	+ 1	+ 5
CX7342-39	- 3.0	- 7	-1	- 4	0	- 3
D523-55	+ 6.2	+10	+4	- 1	+13	+ 5
CX7342-53	- 2.4	- 5	+1	- 6	- 1	- 1
L6-5002	- 3.0	- 6	0	- 4	- 4	- 1
CX6742-11	- 1.0	- 4	0	- 1	+ 1	- 1
IA-6290	+14.6	+19	+9	+10	+16	+19
CX6742-16	- 1.2	+ 4	+1	- 2	0	- 1
S4-241	+ 0.6	0	+1	- 1	0	+ 3
S100	+11.4	+12	+7	+ 8	+16	+14
CX7342-42	- 3.4	- 8	0	- 4	- 2	- 3
Gibson	0	0	0	0	0	0
D523-30	+ 4.4	+10	+5	- 2	+ 4	+ 5
CX6842-17	- 1.0	- 3	0	- 1	0	+ 1
IA-6238	+13.2	+13	+9	+10	+16	+18
Chief	- 5.6	- 7	-2	- 2	- 8	- 9
CX6742-22	- 4.2	- 5	-1	- 6	- 5	- 4
S4-307	- 3.6	- 4	-1	- 2	- 5	- 6
S5-234	- 2.4	- 4	0	- 5	- 1	- 2
S4-374	- 3.4	- 4	0	- 2	- 5	- 6
D56-8	+ 9.6	+13	+6	+ 6	+ 8	+15
S5-41	- 6.2	- 8	-1	-10	- 5	- 7
Date planted		5/10	5/27	5/29	5/4	5/24
Gibson matured		9/29	9/28	10/2	9/1	9/27
Days to mature	128	142	124	126	120	126

Table 54. Summary of percentage oil for the strains in the Preliminary Test, Group IV, 1948.

Strain	Mean of 6 Tests	Evans- ville Ind.	Free- burg Ill.	Eldor- ado Ill.	Stone- ville Miss.	Colum- bia Mo.	Still- water Okla.
L6-5679	21.9	21.9	22.0	20.5	22.1	22.6	21.8
L6-5680	21.8	22.2	21.5	20.5	22.1	22.8	21.8
CX6742-20	21.9	22.3	21.1	21.1	22.3	22.6	22.0
CX6742-34	21.4	22.1	21.0	20.5	21.5	22.1	20.9
L6-5658	21.4	21.2	20.9	20.0	22.3	21.9	22.0
L6-5683	21.0	21.6	20.6	20.2	21.2	21.6	20.9
C508	22.8	22.7	22.2	21.9	23.6	23.9	22.5
IA-6259	21.4	21.9	20.9	20.4	22.1	21.9	20.9
Wabash (C463)	22.7	22.4	22.9	22.0	23.3	23.2	22.4
CX7342-27	21.7	22.1	21.3	20.5	22.5	22.2	21.8
CX7342-39	22.5	22.8	22.0	21.6	23.4	23.0	22.3
D528-55	20.2	20.3	20.2	19.0	20.4	21.8	19.5
CX7342-53	22.5	22.8	22.3	21.5	23.2	23.2	22.2
L6-5002	22.0	22.3	21.6	21.2	22.6	22.9	21.6
CX6742-11	21.3	21.7	20.7	19.7	21.8	21.9	22.0
IA-6290	20.9	21.0	20.5	20.0	21.5	21.7	20.7
CX6742-16	20.9	21.5	20.2	19.7	21.8	21.3	20.9
S4-241	21.3	21.5	20.7	20.5	21.7	22.2	21.0
S100	19.4	20.0	18.9	18.9	19.1	19.9	19.4
CX7342-42	22.0	22.2	21.9	21.2	22.1	22.7	21.7
Gibson	21.5	21.4	21.0	20.7	22.4	22.3	21.3
D523-30	20.4	20.3	20.0	19.1	20.9	21.6	20.2
CX6842-17	21.5	21.5	21.0	20.6	21.6	22.0	22.1
IA-6238	20.8	21.2	20.3	19.6	21.5	21.8	20.5
Chief	21.7	21.0	21.3	20.8	22.3	22.7	21.8
CX6742-22	22.0	22.0	20.9	21.2	22.8	22.0	22.9
S4-307	21.6	21.2	21.3	20.5	22.3	22.4	21.7
S5-234	21.8	21.8	22.0	21.4	22.2	22.3	21.1
S4-374	21.5	21.0	21.2	20.6	22.1	22.4	21.7
D56-8	21.4	21.8	20.7	20.1	22.4	21.9	21.3
S5-41	21.3	21.6	20.7	20.7	22.0	22.1	20.9
Mean	21.5	21.7	21.1	20.5	22.0	22.2	21.4

Table 55. Chemical composition of soybean seed grown at each of the Uniform Test locations for 1948, the two-year means for 1947-48, and the three-year means for 1946-48 (composite sample or mean of all strains grown in each respective Group Test).

Location	1948			Two-Year Mean			Three-Year Mean		
	Percent-Protein	Percent-Oil	Iodine Number of Oil	Percent-Protein	Percent-Oil	Iodine Number of Oil	Percent-Protein	Percent-Oil	Iodine Number of Oil
Group O (Mean of 12 strains in 1948, 11 in 1947, and 17 in 1946)									
Ottawa, Ontario	39.1	20.4	132.3	40.9	20.4	131.1	41.6	19.6	133.8
Ithaca, N.Y.	40.6	19.9	131.8	42.2	20.0	132.2	42.8	19.1	134.1
Spoooner, Wis.	43.0	19.1	130.3	44.0	19.5	129.9	44.7	18.8	131.3
Eau Claire, Wis.	41.6	20.1	125.4	43.6	20.1	126.7	--	--	--
Morris, Minn.	43.1	19.0	128.8	42.6	19.7	128.3	41.7	19.7	131.7
Fargo, N.D.	39.2	20.4	132.4	38.5	21.0	131.5	39.1	20.7	132.7
Resholt, S.D.	43.3	18.9	128.4	42.0	20.5	128.3	--	--	--
Corvallis, Ore.	40.1	19.2	135.3	40.9	19.3	134.8	40.6	19.5	135.1
Group I (Mean of 14 strains in 1948, 13 in 1947, and 16 in 1946)									
Ithaca, N.Y.	40.4	20.3	133.8	41.7	20.5	133.9	41.9	19.7	134.9
State Col. Pa.	41.0	20.4	129.2	--	--	--	--	--	--
Holgate, Ohio	41.7	20.4	128.6	--	--	--	--	--	--
Paulding, Ohio	42.1	20.3	128.5	--	--	--	--	--	--
Columbus, Ohio	41.7	20.6	129.8	42.3	21.1	129.5	42.3	20.8	130.7
Eau Claire, Wis.	41.7	20.0	129.2	43.2	20.0	129.5	--	--	--
Madison, Wis.	41.8	20.7	126.6	41.2	21.1	126.4	41.5	20.8	127.8
Compton, Ill.	40.5	21.1	129.7	41.8	21.1	127.2	41.9	21.0	128.4
Waseca, Minn.	42.0	20.8	130.6	42.9	20.5	130.5	41.5	20.9	131.3
Cresco, Iowa	43.2	20.9	129.1	44.6	20.1	127.6	45.1	19.4	129.6
Kanawha, Iowa	41.1	21.5	128.4	41.6	21.6	127.2	41.5	21.2	128.7
Brookings, S.D.	42.4	19.9	129.8	41.6	20.5	129.8	41.7	20.0	132.1
Group II (Composite of 18 strains in 1948, 14 in 1947, and 30 in 1946)									
State Col. Pa.	39.8	20.9	131.5	--	--	--	--	--	--
Holgate, Ohio	41.0	20.6	128.6	41.5	20.0	130.9	39.8	20.2	132.2
Troy, Ohio	40.9	20.7	131.1	--	--	--	--	--	--
Columbus, Ohio	41.4	20.4	130.1	42.4	21.2	130.2	42.1	20.7	131.1
Walkerton, Ind.	40.9	21.2	131.4	43.0	20.7	129.2	42.6	20.5	130.8
Bluffton, Ind.	41.2	21.0	130.3	41.3	21.3	129.9	41.3	21.1	130.4
Lafayette, Ind.	41.4	21.4	129.4	42.5	21.4	128.3	42.4	21.2	129.9
Greenfield, Ind.	42.7	20.7	129.3	42.9	20.8	129.4	42.8	20.5	130.5
Worthington, Ind.	42.7	20.6	128.7	43.7	20.8	127.9	--	--	--
Madison, Wis.	40.7	21.4	128.7	40.3	21.6	129.0	39.9	21.5	130.8
Compton, Ill.	41.8	20.9	130.9	42.3	21.1	130.1	42.2	20.8	131.0
Urbana, Ill.	40.5	21.1	129.4	40.6	21.6	128.1	40.2	21.6	129.8
Kanawha, Iowa	41.2	21.0	128.7	41.0	21.5	128.2	40.5	21.3	129.9
Marcus, Iowa	40.5	21.1	130.3	38.9	22.3	129.0	39.0	22.0	130.4
Hudson, Iowa	40.3	22.0	128.8	41.3	21.7	128.5	41.5	21.3	129.8
Ames, Iowa	40.7	21.5	129.7	41.2	21.8	129.3	41.2	21.4	130.2
Centerville, S.D.	42.5	20.0	129.3	41.9	20.7	129.3	--	--	--
Lincoln, Nebr.	39.9	21.8	124.9	39.8	22.1	123.7	39.8	22.0	126.0

Table 55. (Continued)

Location	1948			Two-Year Mean			Three-Year Mean		
	Percent-Protein	Percent-Oil	Iodine Number of Oil	Percent-Protein	Percent-Oil	Iodine Number of Oil	Percent-Protein	Percent-Oil	Iodine Number of Oil
Group III (Composite of 8 strains in 1948, 11 in 1947, and 10 in 1946)									
Georgetown, Del.	43.2	21.4	127.4	42.5	22.7	129.5	41.9	22.3	130.3
Beltsville, Md.	41.0	21.5	130.9	42.0	21.5	131.1	41.5	21.3	131.4
Lancaster, Pa.	33.6	24.2	132.1	--	--	--	--	--	--
Blacksburg, Va.	40.3	21.4	130.8	--	--	--	--	--	--
Columbus, Ohio	40.1	21.0	131.6	41.5	21.1	132.1	41.2	20.5	132.2
Lafayette, Ind.	40.4	21.7	128.6	41.3	21.8	129.5	--	--	--
Greenfield, Ind.	42.0	20.7	130.9	42.2	21.1	131.1	41.7	20.5	131.0
Worthington, Ind.	42.1	20.9	129.2	42.6	21.2	129.5	42.2	20.6	130.1
Urbana, Ill.	40.1	21.6	129.4	39.9	22.2	130.0	39.4	21.9	130.5
Clayton, Ill.	42.1	21.6	128.3	42.1	21.2	131.0	42.4	20.7	131.9
Stonington, Ill.	38.0	23.1	128.6	39.7	22.2	130.8	40.4	21.4	131.3
Edgewood, Ill.	40.4	21.8	127.7	41.6	22.1	129.6	41.7	21.7	131.0
Freeburg, Ill.	42.0	21.5	126.4	40.8	22.6	127.4	40.7	22.0	129.0
Eldorado, Ill.	41.4	22.1	127.2	40.8	23.1	127.4	--	--	--
Ames, Iowa	39.7	21.6	129.4	39.9	22.2	130.1	39.8	21.5	130.8
Ottumwa, Iowa	39.8	22.3	129.9	40.7	21.7	131.6	40.6	21.0	132.2
Shelbyville, Mo.	41.0	21.8	127.7	42.0	21.5	126.0	41.9	21.2	127.4
Columbia, Mo.	39.5	23.0	128.5	39.9	23.4	126.6	40.6	22.3	127.8
Norborne, Mo.	38.7	22.7	129.4	--	--	--	--	--	--
Lincoln, Nebr.	38.9	22.7	125.1	38.2	23.1	126.4	38.3	22.6	127.7
Manhattan, Kans.	39.1	22.7	124.0	40.8	21.9	124.5	41.1	21.5	126.4
Group IV (Composite of 13 strains in 1948, 11 in 1947, and 16 in 1946)									
Georgetown, Del.	44.3	20.8	127.6	43.3	22.0	128.1	43.0	21.5	129.4
Beltsville, Md.	41.4	21.2	132.1	42.0	20.7	132.2	41.7	20.6	132.9
Lancaster, Pa.	35.3	23.2	132.1	--	--	--	--	--	--
Worthington, Ind.	41.5	21.3	129.5	42.3	21.0	129.2	42.0	20.4	130.2
Vincennes, Ind.	45.3	19.3	130.0	43.7	20.3	128.6	43.0	20.2	129.8
Evansville, Ind.	41.0	22.2	131.6	41.4	21.9	130.2	41.3	21.3	130.7
Urbana, Ill.	41.2	21.2	131.1	40.9	21.2	129.6	40.3	21.1	130.4
Clayton, Ill.	41.9	21.6	130.0	42.2	20.9	130.8	42.4	20.4	132.0
Stonington, Ill.	38.5	22.9	129.4	40.0	21.6	130.0	40.7	21.2	131.3
Edgewood, Ill.	41.2	21.4	128.3	42.3	21.2	128.5	42.1	20.9	130.2
Freeburg, Ill.	41.9	21.8	130.0	41.6	22.2	128.7	41.4	21.5	130.5
Eldorado, Ill.	43.0	21.3	129.5	42.1	22.3	128.5	--	--	--
Shelbyville, Mo.	41.9	21.5	128.4	43.3	20.7	126.6	42.2	20.9	127.8
Columbia, Mo.	40.1	22.5	130.4	40.4	22.6	126.1	41.0	21.7	127.9
Norborne, Mo.	39.0	22.3	129.0	--	--	--	--	--	--
Manhattan, Kans.	40.2	22.5	127.8	42.3	21.1	125.4	42.3	20.8	127.7

SOYBEAN DISEASE INVESTIGATIONS IN 1948 ^{1/}

The brown stem rot disease of soybeans was widespread and severe this season, probably due to the unusually cool period in August. Damage was heaviest in the central parts of Illinois and Indiana, but the disease was reported as far south as Evansville, Indiana. As usual, the full impact was not felt until late August when the brown, frosted-appearing leaf symptoms gave the first outward indication that brown stem rot was present. The early optimistic forecasts on estimated yields were revised drastically downward as leaf symptoms began to appear, only to be again revised upward by actual yields at harvest time. There can be no doubt that brown stem rot was a factor in reducing yields in 1948, possibly by 15 per cent in some areas; we are fortunate, however, that it is not a disease that does its damage early in the season. The effect of temperature on disease development was again emphasized this year by a study of August temperature records. During the first two weeks of August, just as in 1945 and 1946, average daily temperatures were low and brown stem rot developed rapidly to produce leaf symptoms. It will be remembered that in 1947 August temperatures were unseasonably high throughout the month, resulting in no leaf symptoms and a mild development of the disease.

An interesting development in the brown stem rot picture in 1948 in many fields was the distribution of leaf symptoms in scattered brown patches instead of the uniform browning of other seasons. This was apparently a reflection of the very uneven emergence caused by dry conditions during and after the time of planting, resulting in uneven maturity late in the summer. It was noted that the most severe leaf symptoms affected only the more mature plants, although all plants in the field showed internal brown discoloration of the stem.

Occasionally there has been some question as to the efficacy of rotation as a control measure for brown stem rot. During the height of the epidemic in 1948 a survey was made in Champaign and McClean Counties on farms where accurate crop histories were available. As in 1946, the results showed that brown stem rot was much less severe on the fields that were growing their first crop of soybeans or the first crop in 3 to 5 years, while the most severely damaged fields had been cropped with either soybeans for two or more successive years or a continuous corn-soybean rotation. Just what effect rotation has on the organism is a question that remains unanswered, but it appears to be of definite value in reducing the amount of damage sustained through brown stem rot. There is no basis for the idea that rotation kills the organism in the soil, but it seems to be instrumental in avoiding a dangerous build-up of disease potential already present in the soil.

Bud blight (Tobacco ring-spot virus) caused little damage in 1948. As usual, the southern part of Illinois had more of it than did the central and northern parts of the State, where the disease appeared in slightly more than trace amounts. Heavy infection was reported in the soybean nursery at Lincoln, Nebraska, and at Brookings, South Dakota, on a seed increase field. A heavy and damaging epidemic was also observed on a few rows adjacent to a fence row on one side of the nursery at Madison, Wisconsin.

Brown spot (Septoria glycines) was prevalent throughout Illinois, but appeared later than usual. It caused some defoliation in the central and southern part of the State, usually on land that had been cropped frequently with soybeans. Our main concern with this disease lies in its increasing prevalence and intensity from year to year.

The bacterial leaf spots, bacterial blight (Pseudomonas glycinea), bacterial pustule (Xanthomonas phaseoli var. sojensis), and wildfire (Pseudomonas tabaci) were all present in 1948. Bacterial blight was again the most prevalent leaf spot. Bacterial pustule was common in central and southern Illinois after mid-July, and wildfire, after a lapse of two years, again appeared in small amounts early in August. Experimental attempts to find the connection, if any, between the incidence of wildfire and previous infection with pustule were nullified by abundant natural infection with pustule and the unexpected appearance of wildfire in the experimental plots. The constant association of the two diseases on the same leaves, however, gave additional observational evidence that bacterial pustule may in some way facilitate infection with wildfire.

The search for disease resistance continued this year. At Weldon, Illinois, where the soil is infested with the brown stem rot organism, a total of 1450 introductions and varieties were tested. Nothing with complete immunity was found but there were some introductions that showed only trace amounts of internal stem browning. Further tests will show whether this is actually a form of tolerance or comparative resistance to the disease. The test for bud blight resistance was carried on at Oblong, Illinois, with the surviving introductions from 1947. Twenty-one introductions and varieties remained free of bud blight in the past two years. These will be carried through further tests next year.

Charcoal rot was prevalent in the southern part of the region, being reported in the nurseries in Evansville, Indiana, through southern Illinois, and in southeastern Missouri. Ordinarily this disease is severe only in extremely dry seasons, but at Sikeston, Missouri, there was some evidence that it was causing loss under fair growing conditions.

WEATHER CONDITIONS AND GENERAL GROWTH RESPONSES AT MOST OF THE
NURSERY LOCATIONS DURING THE 1948 SEASON

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

Temperature and rainfall at most of the nursery locations for the 1948 season are presented in graphs at the end of this section of the report. The daily mean temperatures and rainfall are taken from "Climatological Data" published by the Weather Bureau. The arc is the normal mean monthly temperature for the location.

Ithaca, New York The soil is a Dunkirk, silty clay loam, tile-drained, and in a good state of fertility. The rainfall during the growing season was sufficient, but not excessive, while the temperature and moisture conditions during August were favorable. The vegetative growth was not unusual, as a matter of fact, hardly average. The conditions during pollination were satisfactory and the pod set was average. The stand was good throughout. The maturity of the adapted varieties was entirely satisfactory.

State College, Pennsylvania Weather conditions at State College were more favorable for soybean growth than at Lancaster. There was a better balance between moisture and fair weather. The moisture content of the soil was at a good level when the drought came the latter part of August. Fine weather prevailed during September. After a killing frost on October 4, the weather turned warm and bright and remained favorable for ripening and harvesting of fall crops.

Lancaster, Pennsylvania The weather during May and June was characterized by an excess of rainfall. Temperatures were approximately normal but the excessive spring and early summer rainfall made early cultivation an impossibility. Weeds, therefore, were a problem in growing soybeans. August, as well as part of September, was hot and dry. The fine weather during the latter part of September and October was ideal for ripening and harvesting.

Beltsville, Maryland Weather conditions were unusually favorable for soybeans. Monthly mean temperatures were above normal except in October, when sub-normal temperatures prevailed during the first three weeks. Killing frost (22°) occurred October 18. Greatest departures from normal occurred during the last week in August, when record temperatures of 92°, 96°, and 97° were reached.

Rainfall was above normal except in April and July. May, with 7.99 inches, was the wettest since 1889. June rainfall was 6.66 inches, of which 3.70 inches fell June 18 and 19. July rainfall was 1.93 inches below normal, but well distributed. Heavy storms August 1, 3, and 11 caused considerable lodging in the uniform test plots. Total rainfall for August was 8.98 inches, 4.97 inches above normal. Rain fell on only 6 days in September, though the total for the month, 3.08 inches, was nearly normal.

Holgate, Ohio The soybean tests at Northwestern Experiment Farm at Holgate were not very good. Most of the experimental farm has been abandoned and most of the research terminated. Approximately 10 acres were retained for use. The area allotted for soybean tests was very poor. The seedbed was in only fair condition. The plots were planted on May 26. The stands were somewhat erratic. The data obtained are only fair, but good enough to warrant some consideration. Harvesting and threshing conditions were favorable.

Troy, Ohio The soybean plots at Miami County Experiment Farm, Troy, were planted on May 25 in a well-prepared but very dry seedbed. A few showers occurred shortly after planting but did not provide sufficient moisture for immediate germination. Complete emergence of seedlings did not occur until three weeks after planting. Temperature and rainfall conditions from June 15 until harvest were ideal. These favorable conditions produced one of the very best soybean tests in the state in 1948. No apparent damage was evident from either disease or insects. Plots were weed-free during the growing season.

Paulding, Ohio The uniform soybean tests at Paulding County Experiment Farm were planted on May 28 in a seedbed in excellent condition. They emerged rather slowly but were completely emerged by June 9. The growing conditions throughout the season were just fair. This was caused chiefly by rather poor distribution of rainfall. The tests were about average. Harvesting conditions were very good.

Columbus, Ohio The month of May was very favorable for soybean planting. All experimental soybean plots were planted between May 20 and May 25. The seedbed was in excellent condition at planting time, but the relatively dry period that followed planting caused the seed to germinate poorly and unevenly. The stands were very erratic. The stands were improved by replanting, using the hand cornplanters. The growing season from July 1 until harvest was favorable. Weather conditions at harvest were ideal. Insect damage and disease were unimportant.

Walkerton, Indiana The nursery on mineral soil planted June 3 was fertilized with 130 pounds of 3-12-12 fertilizer plus 50 pounds of 66% manganese sulfate per acre in the row at planting. There was no evidence of manganese deficiency in the plants. Soil conditions were ideal at planting and early growth was rapid. Excessive June rainfall, 4.86 inches above normal, prevented timely cultivation and weeds became very abundant, necessitating considerable hand weeding. Growth was greatly impeded by an extended summer drought and high temperatures. Yields were below average and variability in growth and yield between replications was obvious. As a whole, the nursery was considered fair. Uniform Test, Group II, was a good test.

The nursery on muck soil was planted June 18 with varieties of Group O maturity. This was an excellent nursery although it was planted late and all varieties matured prior to the October 4 frost.

May and June rainfall was 6.92 and 4.86 inches, respectively, above normal. July, August, and September were 1.19, 2.82, and 0.92 inches, respectively, below normal, with no precipitation of consequence from July 23 to September 6, a period of 45 days. Temperatures were about normal throughout the growth period except for a period of 8 days the latter part of August when temperatures ranged from 93 to 101°F.

There was considerable bacterial leaf blight and some pod and stem blight, but other diseases were insignificant.

Bluffton, Indiana The nursery was planted on May 22. Emergence was slow and growth variable early in the season, but stands were fair to good on most varieties. Korean had the poorest stands but good enough for comparable yield trials. Precipitation was 1.92 and 1.28 inches below average in July and August, respectively. Temperatures were very high the latter part of August and yields were somewhat below that ordinarily obtained at this location. Harvest conditions were ideal.

Pod and stem blight was especially noticeable but no differential infection was noted. Bacterial leaf blight and downy mildew infection was light. Other diseases were not observed.

The stems of Adams and Richland remained green for some time after the leaves had dropped and the pods had ripened.

Lafayette, Indiana This nursery was planted May 19 and 20 under ideal conditions, but no precipitation occurred from May 16 to June 6 and consequently emergence was over a long period and growth was variable. Growth was especially good and the highest yields ever recorded at this location were obtained in 1948. Conditions at harvest were ideal on most tests. Precipitation was about normal in all months except August in which it was 1.55 inches below normal. Temperatures were about normal most of the season, except the latter part of August when they ranged from 90 to 98 on eight consecutive days. Disease infection was very light in this plot.

Greenfield, Indiana The nursery was planted on May 21. Emergence was slow and growth variable in the early part of the season due to drought. Growth was fair and yields were good, but not high. Early stages of manganese deficiency were observed and the plots were sprayed July 24. The deficiency was corrected in a few days. Harvest conditions were ideal. Precipitation was 1.16 inches above normal in June, normal in July, and 2.40 and 0.94 inches below normal in August and September, respectively. Temperatures ranged from 91 to 98°F on eight consecutive days the latter part of August but were about normal the remainder of the season.

Pod and stem blight, bacterial blight, and brown spot were the most prevalent diseases but these did not appear to be serious.

Worthington, Indiana This nursery was planted and harvested under ideal conditions. Emergence, stands, and growth were excellent. Yields were unusually high. Uniform Group Tests II and III were planted June 9 and the rest of the nursery, including Group IV, was planted May 11. Precipitation was 4.91 inches above normal in July and is considered a contributing factor to the excessive lodging. Precipitation was 2.44 and 2.40 inches below normal in August and September. Temperatures were about normal throughout the growing season with a hot period occurring for a week in late August.

Brown stem rot, brown spot, bacterial blight, bacterial pustule, and downy mildew were very prevalent diseases. Brown stem rot, as well as heavy rains in July, was without a doubt an important contributing factor to the excessive lodging.

Vincennes, Indiana This was a poor nursery. It was replanted on June 15. Stands were only fair and there were numerous weeds due to the back of cultivation. Yields were low and varied considerably between replications. Harvest conditions were about average. Temperatures ranged from 92 to 99°F. on eight consecutive days in late August. Otherwise, temperatures were about normal during the growing season.

Evansville, Indiana The nursery was planted early on May 10. The soil became crusted and emergence was somewhat delayed, with poor stands resulting in some varieties. Poorest stands occurred in D536-4, S5-41, and S5-234 of the Uniform Preliminary Test, Group IV. Growth was especially good and yields were the highest ever recorded in the 14 years of testing at this location. Lodging was more marked than usual and provided an excellent differential study for this character. Harvest

conditions were ideal. Rainfall was 2.19 and 1.73 inches below normal in June and August but 1.68 and 1.02 inches above normal in July and September, respectively. Temperatures were about normal throughout the growing season.

Bacterial blight, bacterial pustule, brown spot, downy mildew, frog-eye leaf spot, charcoal root rot and brown stem rot were all prevalent. This was the first time that brown stem rot was observed south of Vincennes.

Spoooner, Wisconsin The season was very dry from planting time to harvest. Rainfall was below normal every month, but temperatures were normal or above, particularly in August and September when temperatures were 2.9 and 4.0 degrees above normal. The most extreme drought occurred from the time of planting to June 16th. The nursery had to be irrigated shortly after planting in order to obtain satisfactory emergence. The nursery was irrigated five times after emergence, the first being June 9th and the last, late in August. The over-head type of irrigation used at this station severely tests the lodging resistance of each variety, which accounts for the low lodging resistance reported for some of the varieties here.

The favorable temperatures and irrigation promoted excellent plant growth, height, foliage, and pod development. Full maturity of the later strains such as Mandarin (Ottawa) was made possible by the high temperatures in September and the unusually late frost.

Eau Claire, Wisconsin Very dry conditions prevailed at Eau Claire. The rainfall for the period May to September was 11.73 inches as compared to a normal of 19.49 inches. The rainfall was very well distributed. The average yield was about 33% higher than normal, due in part to the plots being located on a very fertile area and the reasonably good rainfall distribution.

Madison, Wisconsin It was very dry at Madison during the entire growing season. For the period May to September, inclusive, the rainfall was 12.75 inches as compared to a normal of 18.42 inches. The soil was dry at planting, and, as a result, the stand was uneven in certain parts of the field. The average yield was approximately 75% of normal.

Compton, Illinois The plot at Compton was planted May 21 on the same field as the 1945 plot. This had been in brome alfalfa pasture, fall plowed. Planting conditions were excellent and the drought following seeding did not seriously affect stands. Growth was excellent but a heavy hail in August, when pods were filling, seriously damaged leaves, stems, and pods, reducing yield at least 30% and producing much seed damage. The earlier varieties did not seem to be damaged quite as much as the later ones, Group I averaging 26.4 bushels and Group II only 23.5 bushels. Dudding due to hail injury was severe and affected the accuracy of maturity records.

Dwight, Illinois Dwight was planted May 25 in a very dry seedbed. Drought for a month after planting resulted in such irregular emergence that the field was abandoned.

Urbana, Illinois The uniform tests were planted May 27 in a good seedbed on a field that had averaged 129 bushels of corn in 1947. There was some irregularity in emergence due to dry weather at planting but rainfall was adequate the remainder of the season and good growth and yields were obtained. Group II averaged 30 bushels, Group III, 36 bushels, and Group IV, 35 bushels per acre.

Clayton, Illinois The tests were planted May 20 in a good seedbed on fall plowed crimson clover sod, but due to drought from the middle of May to the middle of June, emergence was somewhat irregular, resulting in poor stands in some rows. Rainfall was ample from the middle of July to the end of July, but August was generally dry. Yields were mostly good, Groups III and IV averaging 26 and 29 bushels per acre respectively.

Stonington, Illinois The tests at Stonington were planted May 27 in an excellent seedbed. Soil tests indicated high fertility. Although dry weather at planting time reduced stands in some rows, growth and yield was generally good, rainfall being adequate after the middle of June. Groups III and IV averaged 38 and 39 bushels per acre respectively. Oil content was the highest in the history of the farm.

Edgewood, Illinois The tests at Edgewood were planted June 1 in a good seedbed. Rainfall was generally adequate during the growing season and good growth resulted. Although this hardpan soil is naturally low in fertility, this field had been built up to a high production by careful treatment, and yields were excellent, Groups III and IV averaging 38 and 40 bushels per acre respectively.

Freeburg, Illinois Freeburg was planted May 27 in a good seedbed after clover sod. Stands were excellent and growth was good. Fertility was good, but the field was slightly low in potash though not enough so to show any symptoms of starvation. Rainfall was extremely heavy in June and July and very light in August. Grasshopper populations were high but due to numerous poisonings and sprayings with chlordane, only slight damage occurred. Yields were good, Group IV averaging 33 bushels per acre. The earlier varieties in Group III, A3-176, Adams, Illini, and Lincoln were severely damaged by charcoal rot, which got started during an unusually hot, dry spell in August. Cooler weather and rains later prevented damage to the later varieties.

Eldorado, Illinois The rainfall at Eldorado was well distributed and growth was good. Temperatures during July and August were generally below normal. Perhaps because of this, Lincoln yielded about as well as the later strains. Yields were good, Groups III and IV averaging 33 and 36 bushels, respectively.

Morris, St. Paul, and Waseca, Minnesota Temperatures in most of Minnesota were above normal and rainfall was considerably below normal during May and early June. Soybeans which were seeded fairly deep in well-prepared seedbeds got off to a good start. The trials at University Farm were seeded rather shallow and did not germinate until mid-June, almost a month after planting. The resulting stands were very irregular. Hence no yields were taken at University Farm.

Growing conditions were ideal from mid-June until harvest. Rainfall was adequate, temperatures were warm, and frost did not occur until October 15. Yield trials at locations other than University Farm seemed satisfactory.

Cresco, Iowa This nursery represents the northeast section of Iowa with wet, cold, poorly drained, tight soils of Carrington Plastic Till phase, low in fertility. Strains grown on these soils mature on the average about 6 to 9 days later than on well drained soils. This nursery (planted May 26) was the only one in Iowa which was not transplanted. Growing conditions were good through June. However, drought in July and August seriously hampered growth and yields were low. Frost occurred October 10, a week later than normal.

Kanawha, Iowa This nursery is located in the north central part of Iowa on level, very fertile Webster Silty Clay Loam. Drought at planting time (May 24) caused uneven germination. The poor stands were corrected by transplanting. Sufficient moisture was present throughout the remainder of the growing season. The yields and lodging from this nursery were not as great as normally expected, although the strains grew to a good height (40-50 inches). Frost occurred October 10, a week later than normal.

Marcus, Iowa This location represents the northwest section of Iowa with soils of the Galva Silt Loam series (formerly the Marshall series), medium high in fertility, and slightly undulating in topography. Drought at planting time (May 18) caused uneven germination and poor stands. These poor stands were corrected by transplanting from alleyways into the respective rows, transforming an unsatisfactory nursery into a very satisfactory one. The remainder of the growing season was conducive to good growth. Severe rain and wind in early September caused excessive lodging not generally observed on these soils. Frost occurred October 10, a week later than normal.

Hudson, Iowa This nursery represents northeast central Iowa with soils of the Carrington Silt Loam type, medium high in fertility. Drought at planting time caused poor emergence which was corrected by transplanting. Moisture was slightly deficient through most of the growing season. Although drought was not serious at any one time, height, yield, and lodging were somewhat lower than normally expected. Frost occurred a week later than normal. Strain comparisons appear fair to good.

Ames, Iowa Located in central Iowa, Ames has soils of two types (1) fertile Webster Silty Clay Loam and (2) lighter, medium fertile Clarion Silt Loam. Here, as in most of the other nurseries, drought at planting time caused poor emergence. Stands were corrected by transplanting, and in some experiments watering was accomplished by the use of a large tank and garden hoses. Either one or both procedures was used in the entire nursery. Growing conditions were excellent throughout the remainder of the season. This produced tall plants with a great deal of lodging. Yields were high and harvesting was completed under ideal weather. Frost occurred October 17th, a week later than normal.

Ottumwa, Iowa This nursery is in southeast Iowa on level Haig Silt Loam, medium high in fertility. The tests were planted May 27, which is considered early from past experiences. Emergence was only fair and transplanting resulted in a good stand. Weather conditions, on the average, were conducive to good growth and yields. Frost occurred a week later than normal.

Shelbyville, Missouri Conditions were similar to those at Columbia. The soil was deficient in moisture at planting time but moisture was ample from the latter part of June through the remainder of the season. Relatively poor stands were obtained but weeds were well controlled. Yields were above average.

Columbia, Missouri There was a deficiency of soil moisture during May and the first half of June. Relatively poor stands were obtained in many tests. Excessive precipitation began about the middle of June and continued through July. During this period, cultivation was impossible and grass became a serious problem, but soybean yields were reduced very little by the grass because of the abundant supply of moisture during the latter part of the season.

Norborne, Missouri The stands and growing conditions at Norborne were good. There was an abundant supply of moisture during the entire growing season. All strains

were extremely tall and lodged badly. Yields were very high. The soil is similar to that found on the second bottom along the Missouri River.

Fargo, North Dakota Soil moisture throughout April and early May was very good. However, the late May rainfall was below normal and the temperatures distinctly above normal. As a result the soil was too dry for normal germination and emergence. A favorable rain, however, did occur in early June. This was followed by cool temperatures throughout the month, highly favorable for small grains but not so favorable for soybeans.

Except for about a week of high temperatures in early July, the July temperatures also were below normal. Soybeans, therefore, came into blossom and pod later than usual. However, with August and September relatively dry and frost holding off longer than usual, the crop matured satisfactorily. Light frost occurred October 1 with the first severe frost on October 16.

Rosholt, South Dakota A long season with optimum growing conditions throughout enabled all entries to perform comparably and to reach maturity well before harvest time. The Preliminary Group O test was planted on land that had been in potatoes and yielded better than the Group O test which was planted on land which had been in soybeans in 1947. With good growing conditions, the somewhat heavier stands in Preliminary Group O may have contributed to the higher yields in this test.

In Preliminary Group O, Capital and Mandarin (Ottawa) were outstanding. In the Uniform Group O, Goldsoy and W5S-4142 slightly out-yielded Capital, but the latter variety was taller, earlier in maturity by about four days, and non-shattering. The yield differences between these entries were not significant.

Brookings, South Dakota Except for a warm dry period at the beginning of the season, the weather conditions were unusually favorable for soybean culture. Soybean yields in 1948 were higher than for any previous year on record. The mean yield was well above 30 bushels per acre. Each entry had the advantage of a full frost-free season.

The better looking entries of the Group I test included Ottawa Mandarin and Wis. Manchu 3.

Centerville, South Dakota The Group II nursery was seeded in dry soil in May and because of continued dry weather in June, the soybeans did not recover from the initial set-back. The season was a long one and the temperature somewhat higher than normal. The plot had also been in soybeans in 1947. The named varieties as a group, excluding Bavender Special, ranked lower than the selections on the basis of yield alone.

Lincoln, Nebraska Showers immediately before and after the planting dates, May 25 and 26, insured prompt germination. Temperatures during June, July, and the first half of August were near or slightly below normal. Rainfall was sufficient to produce excellent growth. A hot, dry, windy period from August 15 to September 2 may have slightly reduced yields. Fair weather in the fall permitted all varieties to mature fully before frost, which occurred later than usual.

The average yield of all varieties in the uniform tests was almost 30 bushels per acre, an unusually high average for this location.

Bud blight infection was heavy. Much of it occurred late in the season and prevented normal drying and maturing of the stems. The yields of the later-maturing varieties in Group III, such as Chief, were decreased considerably by bud blight while those of earlier varieties were affected less.

Manhattan, Kansas Weather and soil conditions were favorable for soybean planting around June 1. After the crop was well started, eleven inches of rain fell in the last half of June and nearly six inches in July. This abundant moisture resulted in a heavy vegetative growth of some varieties. These suffered from drouth by the end of August when only 0.58 inches of rain came during the month. Over three inches of rain the first week in September was helpful but this was followed by a dry spell until October 6. Killing frost came October 12 followed by a low of 23° on October 18. This caught most of the varieties in Group V. Conditions were generally more favorable for Group III than for IV or V.

Corvallis, Oregon The last spring frost in 1948 was two weeks later than usual and the first fall frost did not occur until October 27, 8 days later than the average. This resulted in a frost-free period of 183 days. The rainfall in the 1948 growing season was 7.45 inches, .85 inches less than normal.

The nursery was planted May 17, 1948. The month of May was moist and warm, and seedling establishment was rapid. June was warm and dry and good early growth resulted. July and August were too cool for best growth of soybeans. Early September was unusually warm, which speeded growth. These conditions resulted in good growth responses and good yields of seed for this area. Late September and October were too moist and cool for good maturity and ease of harvesting.



