RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS

PART I. NORTH CENTRAL STATES

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1960
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TABLE OF CONTENTS

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INTRODUCTION

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

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

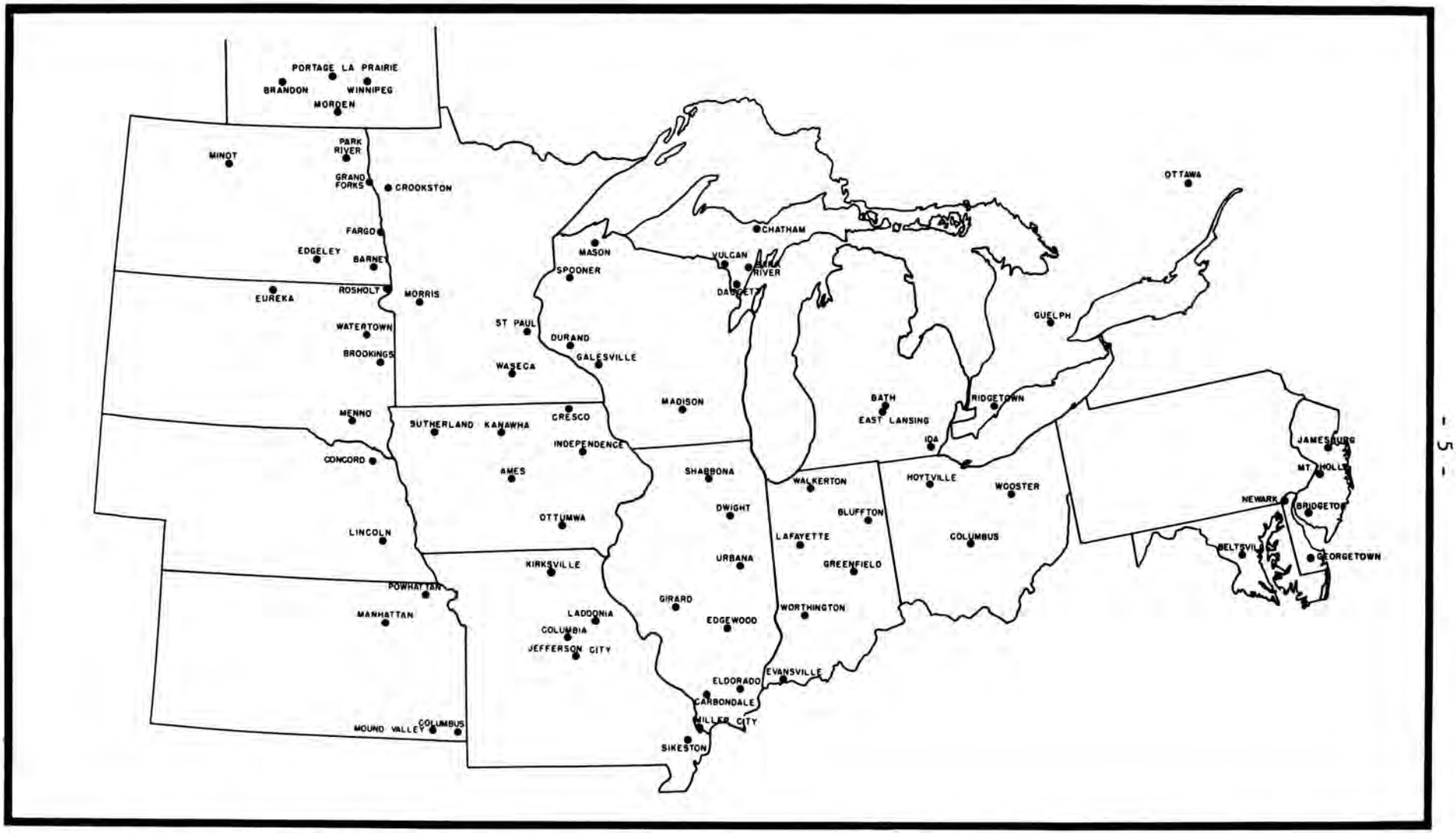
The summary of performance of strains in the first six Uniform Tests is included in Part I of this report. Information on the last four tests, which include strains adapted to the southern part of the United States, is contained in Part II, which is issued separately.

Most of the Uniform Tests in the North Central Region are grown in rod-row size plots, using four replications. At a few locations this year Uniform Test III or IV were grown in tests of one-row and of three-row plots (harvesting the center row only) in order to compare the two methods of testing. Agronomic data reported are means of both tests (all eight replications) while chemical data were from the one-row tests or a composite samples of both tests.

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

Daily rainfall and maximum and minimum temperature graphs, together with a brief statement of growing conditions during the 1960 season, are included for most of the nursery locations as an aid to interpretation of the agronomic and chemical data. Where available, information on the soil analysis and the amount of fertilizers applied to each nursery plot has been included in the weather section. Mean yields and chemical composition for the strains in Tests 00 through II were similar for the 1959 and 1960 seasons, though Tests III and IV yielded 3 and 6 bushels more, respectively, in 1960, reflecting more favorable growing conditions this season.

As an aid to selecting improved varieties, disease ratings for experimental strains and other promising germplasm are included for several of the important soybean diseases. The disease index is also presented, giving the 1960 incidence and severity of several diseases in the principal soybean producing states. These ratings, over a period of years, may aid in determining the relative importance of a disease and the emphasis to be placed on this phase of varietal improvement.



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

UNIFORM TEST LOCATIONS, 1960

Location	Cooperator	Uniform Tests						Prelim. Tests					
		00	0	I	II	III	IV	00	0	I	II	III	IV
Orono, Maine	C. R. Blackmon, Maine A.E.S.	x						x					
Ottawa, Ont.	F. Dimmock, Central Exp. Farm	x	x					x	x				
Guelph, Ont.	G. E. Jones, Ont. Agr. Col.	x	x										
Ridgetown, Ont.	W. W. Snow, W. Ont. Agr. Col.		x	x	x				x	x	x		
Jamesburg, N. J.	J. C. Anderson, N. J. A.E.S.				x	x							
Bridgeton, N. J.	John Finlaw, Coop.						x						
Newark, Del.	F. B. Springer & R. H. Cole, Del. A.E.S.				x	x	x						
Georgetown, Del.	F. B. Springer & R. H. Cole, Del. A.E.S.					x	x					x	x
Hoytville, Ohio	P. E. Smith, Northwestern E.S.			x	x	x				x	x	x	
Wooster, Ohio	P. E. Smith, Ohio A.E.S.			x	x					x	x		
Columbus, Ohio	P. E. Smith, Ohio State Univ.			x	x	x				x	x	x	
Norway, Mich.	Richard Bedard, Coop.	x											
Bark River, Mich.	Elmer Bolm, Coop.	x											
Daggett, Mich.	Oren Berto, Coop.	x											
East Lansing, Mich.	H. M. Brown, Mich. State Univ.	x	x	x					x	x			
Ida, Mich.	Erhard Stotz, Coop.		x	x	x								
Walkerton, Ind.	Frank Pulver, Coop.			x	x					x	x		
Bluffton, Ind.	Gerald & Homer Bayless, Coop.				x	x							
Lafayette, Ind.	O. W. Luetkemeier, Purdue A.E.S.			x	x	x					x	x	
Greenfield, Ind.	Raymond Roney, Coop.				x	x							
Worthington, Ind.	Frederic Sloan, Coop.				x	x	x					x	x
Evansville, Ind.	Bernard Wagner, Coop.					x	x						x
Ashland, Wis.	Robert C. Newman, Coop.	x											
Mason, Wis.	Anderson Bros., Coop.	x											
Spooner, Wis.	C. O. Rydberg, Spooner Br. E.S.	x	x					x	x				
Durand, Wis.	Antoine Sam, Wis. A.E.S.		x	x						x			
Madison, Wis.	J. H. Torrie, Wis. A.E.S.	x		x	x					x	x		
Shabbona, Ill.	R. R. Bell, N. Ill. Exp. Field			x	x					x			
Dwight, Ill.	Vincent Trainor, Coop.			x	x						x		
Urbana, Ill.	C. H. Farnham, Ill. A.E.S.			x	x	x					x	x	
Girard, Ill.	T. H. Lloyd & Sons, Coop.				x	x						x	
Edgewood, Ill.	John Wilson, Coop.				x	x	x						
Eldorado, Ill.	Cyril Wagner, Coop.					x	x						x
Carbondale, Ill.	D. R. Browning, Southern Ill. U.					x	x						x
Miller City, Ill.	M. B. Patton, Coop.						x						
Crookston, Minn.	O. C. Soine, Coop.	x	x										
Morris, Minn.	Roy L. Thompson, Coop.		x										
St. Paul, Minn.	J. W. Lambert, Minn. A.E.S.	x	x	x				x	x	x			
Waseca, Minn.	John Thompson, Coop.			x	x								
Cresco, Iowa	Howard Co. Exp. Farm			x									
Sutherland, Iowa	Galva-Primghar Exp. Farm				x								
Kanawha, Iowa	Northern Iowa Exp. Assoc.			x	x					x	x		
Independence, Iowa	Carrington-Clyde Exp. Assoc.				x								
Ames, Iowa	Iowa Agr. Exp. Sta.				x	x					x	x	
Ottumwa, Iowa	A. E. Newquist, Coop.					x						x	
Kirksville, Mo.	Earl Shockey, Coop.				x	x					x		
Columbia, Mo.	Mo. Agr. Exp. Sta.					x	x					x	x

UNIFORM TEST LOCATIONS, 1960 (Continued)

Location	Cooperator	Uniform Tests						Prelim. Tests					
		00	0	I	II	III	IV	00	0	I	II	III	IV
Jefferson City, Mo.	Lincoln University						x						
Diehlstadt, Mo.	Mo. Agr. Exp. Sta.						x						x
Sikeston, Mo.	Mo. Agr. Exp. Sta.						x						
Portage la Prairie, Man.	W. O. Chubb, Spec. Crops Substa.	x											
Winnipeg, Man.	B. R. Stefansson, U. of Manitoba	x						x					
Brandon, Man.	H. Gross, Experimental Farm	x											
Morden, Man.	John Giesbrecht, Exp. Farm	x						x					
Park River, N. D.	R. E. Bothun, N. D. A.E.S.	x						x					
Fargo, N. D.	R. E. Bothun, N. D. A.E.S.		x						x				
Eureka, S. D.	C. J. Franzke, S. D. North Central Substa.		x										
Brookings, S. D.	C. J. Franzke, S. D. A.E.S.			x									
Menno, S. D.	C. J. Franzke, S. D. A.E.S.				x						x		
Concord, Nebr.	N. E. Nebr. A.E.S.				x						x		
Lincoln, Nebr.	J. H. Williams, Nebr. A.E.S.				x	x						x	
Manhattan, Kans.	E. L. Mader, Kans. A.E.S.					x	x					x	x
Mound Valley, Kans.	R. N. Ford, Branch Exp. Sta.						x						
Columbus, Kans.	V. H. Peterson, Columbus Exp. Field						x						x
Prosser, Wash.	C. E. Nelson, Irrig. Exp. Sta.	x											
Ontario, Ore.	Luther Fitch, Malheur Br. E.S.	x	x	x					x				

METHODS

All Uniform and Preliminary Tests are planted in replicated single rod-row plots, using either a lattice or a randomized block design with four replications for the Uniform Tests and two or four replications for the Preliminary Tests. Row widths used at the different test locations vary from 21 to 42 inches, depending upon the width in common use or the equipment available for handling the crop. Usually 18 to 20 feet of row is planted and only 16 or 16½ feet harvested. Seeds have been planted on the basis of 200 viable seeds per row. The following data were taken for each plot.

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

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

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

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

1 Almost all plants erect
2 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 Almost all plants down

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

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

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

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

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

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

Calculating Summary Means. In cases where the lodging and seed quality notes are all the same at a location, indicating no expression of strain differences, these locations are not included in the mean for these traits. Where the C. V. of yield is greater than 20% at a location or where yields are unusually low, this location is not included in the strain means.

Disease Reactions are listed according to the Soybean Disease Classification Standards, March 1955, unless otherwise specified. The disease reaction is listed 1-5, followed by a capital letter to identify the state where the test was made (L = Illinois, C = Indiana, etc.); small letter "a" or "n" after the code letter signifies artificial or natural infection. When the reaction is given by letter instead of numbers, R signifies resistant, S stands for susceptible, and I for intermediate. Seg. indicates that a strain is segregating for disease reaction.

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

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

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

UNIFORM TEST 00, 1960

Strain	Originating Agency	Origin	Generation Composited
Acme	Central Exp. Farm, Ottawa	Sel. from Pagoda	
Crest	Central Exp. Farm, Ottawa	ND8-291 x Mandarin	F_8
Flambeau	Wis. Agr. Exp. Sta.	Introduction from Russia	
M350	Minn. A.E.S. & U.S.R.S.L.	P.I. 180501 x P.I. 194633	F_5
M351	Minn. A.E.S. & U.S.R.S.L.	P.I. 180501 x P.I. 194633	F_5
M354	Minn. A.E.S. & U.S.R.S.L.	Blackhawk x P.I. 194633	F_5
0-52-903	Central Exp. Farm, Ottawa	Sel. No. 753-1	
UM4	Univ. of Manitoba, Winnipeg, Man.	Acme x Comet	F_5
UM5	Univ. of Manitoba, Winnipeg, Man.	Acme x Comet	F_5
UM55-2	Univ. of Manitoba, Winnipeg, Man.	Pagoda 2 x 201-14-18	F_5

Identification of Parent Strains

ND8-291	Sel. from Manitoba Brown x Mandarin.
P.I. 180501	Sel. made in Germany from Strain 238 (of Manchurian origin) x P.I. 54616 (yellow soybean from Kungchuling, Chekiang Province, China through B. W. Skvortzow, Harbin, Manchuria).
P.I. 194633	733-4, sel. by Sven A. Holmberg, Norrkoping, Sweden.
201-14-18	Sel. by Sven A. Holmberg; same as P.I. 196491.
753-1	Sel. by Sven A. Holmberg; same as P.I. 194654.

This test was grown at 20 locations in 1960. The yield level varied greatly from location to location. Yields were excellent at Ashland, Wisconsin, Ontario, Oregon and Portage la Prairie, Manitoba. Flambeau yielded over 48 bushels at Portage la Prairie, a record yield for Uniform Tests this far north.

The test consisted of three check varieties and seven experimental strains. Considering the over-all means, except for Crest, which yielded relatively low, there was a nearly perfect correlation of yield and maturity.

One experimental strain, UM55-2, has been in the test for three years along with the three check varieties. It was intermediate between Crest and Acme in maturity, but averaged slightly higher in yield than either variety.

The remaining six strains were entered from the 1959 Preliminary Test 00. The two selections from Acme x Comet yielded well for their maturity and showed excellent lodging resistance.

Two strains, M350 and M351, were similar to Acme in average performance but had gray-colored seed coats. M354 was also similar to Acme, although a little poorer in lodging resistance. 0-52-903 was considerably earlier than the other strains in the test and correspondingly lower in yield.

Table 1. Summary of data for Uniform Test 00, 1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	15	13	11	15	15	13	15	15
Flambeau	30.9	+9.8	3.4	30	2.0	16.7	41.9	19.3
UM5	28.8	+4.8	2.1	28	2.3	17.4	39.9	19.8
UM55-2	27.6	+3.0	2.5	31	2.3	18.4	39.8	19.9
UM4	27.5	+1.4	1.7	27	2.1	17.5	39.6	20.1
Crest	26.9	+4.4	2.0	28	2.3	19.9	41.3	19.9
Acme	25.8	0	2.1	26	2.1	17.2	40.3	19.9
M350	25.8	-0.5	1.8	26	2.4	15.7	41.4	19.9
M354	25.6	-0.7	2.5	27	2.1	16.8	41.8	19.7
M351	25.2	-1.2	1.8	25	2.5	16.1	41.7	19.5
0-52-903	21.6	-4.7	2.2	26	2.4	20.4	41.1	20.1
Mean	26.6	+1.6	2.2	27	2.3	17.6	40.9	19.8

[1]Days earlier (-) or later (+) than Acme which matured September 7, 107 days after planting.

Table 2. Disease data for Uniform Test 00, 1960.

Strain	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Frogeye*		Phytophthora Rot
					R1	R2	
Flambeau	R	S	S	S	S	S	S
UM5	S	S	S	S	S	S	
UM55-2	S	S	S	S	R	R	Seg.
UM4	S	S	S	S	S	S	
Crest	S	S	S	S	R	S	R
Acme	S	S	S	S	S	S	Seg.
M350	S	S	S	S	R	R	
M354	S	S	S	S	R	R	
M351	S	S	S	S	R	R	
0-52-903	S	S	S	S	R	S	

*Frogeye ratings are all from Indiana, artificial inoculation.
R1 (Race 1) - All strains tested up to 1960 were tested for R1.
R2 (Race 2) - New race.

Table 3. Yield and yield rank for Uniform Test 00, 1960.

Strain	Mean of 15 Tests[1]	Orono Maine	Ottawa Ont.[2]	Guelph Ont.	Norway Mich.	Bark River Mich.	Daggett Mich.	East Lansing Mich.	Ashland Wis.	Mason Wis.	Spooner Wis.
Flambeau	30.9	29.6	34.3	27.1	--	--	--	31.3	42.7	32.8	26.3
UM5	28.8	24.8	32.2	25.1	21.1	24.1	18.4	29.0	42.0	35.2	24.2
UM55-2	27.6	25.7	30.0	23.9	20.6	26.6	18.0	29.7	37.8	33.2	22.6
UM4	27.5	25.5	31.0	20.2	22.8	26.6	21.6	26.1	39.6	34.8	22.6
Crest	26.9	25.8	28.1	24.1	18.7	24.2	--	27.6	37.5	33.2	24.9
Acme	25.8	23.3	26.9	23.6	19.7	23.0	16.8	27.7	35.3	34.0	24.9
M350	25.8	24.7	28.9	22.9	16.2	20.9	15.7	23.2	40.2	34.5	21.7
M354	25.6	24.1	30.6	21.5	19.5	21.1	16.5	20.5	37.3	31.9	20.4
M351	25.2	24.5	27.2	24.6	17.5	20.6	13.7	23.0	40.6	32.2	19.4
0-52-903	21.6	20.0	26.4	17.0	16.7	22.8	18.4	19.1	33.2	27.7	19.8
Mean	26.6	24.8	29.6	23.0	19.2	23.3	17.4	25.7	38.6	33.0	22.7
C. V. (%)		12.8	10.4	9.2	15.9	10.9	16.8	9.6	7.5	7.8	10.4
Bu. N.F.S. (5%)		4.6	4.4	3.1	N.S.	3.7	4.3	3.5	4.2	3.7	3.4
Row Sp. (In.)		24	30	27	36	36	38	24	24	24	36

	Yield Rank									
Flambeau	1	1	1	--	--	--	1	1	7	1
UM5	5	2	2	2	4	2	3	2	1	4
UM55-2	3	5	5	3	1	4	2	6	5	5
UM4	4	3	9	1	1	1	6	5	2	5
Crest	2	7	4	6	3	--	5	7	5	2
Acme	9	9	6	4	5	5	4	9	4	2
M350	6	6	7	9	8	7	7	4	3	7
M354	8	4	8	5	7	6	9	8	9	8
M351	7	8	3	7	9	8	8	3	8	10
0-52-903	10	10	10	8	6	2	10	10	10	9

[1]Norway, Bark River and Daggett, Michigan, Madison, Wisconsin and Prosser, Washington not included in the mean.
[2]Irrigated.
[3]Three replications.

Table 3. (Continued)

Strain	Madison Wis.	Crookston Minn.[3]	St. Paul Minn.	Portage la Prairie Man.	Winnipeg Man.	Brandon Man.	Morden Man.	Park River N.D.	Prosser Wash.[2]	Ontario Ore.[2]
Flambeau	12.6	30.7	23.9	48.4	29.2	20.8	21.6	20.1	21.2	44.2
UM5	10.6	24.1	24.4	47.9	23.2	17.6	19.8	15.2	17.7	47.4
UM55-2	9.0	19.2	28.1	41.4	24.7	19.7	18.3	19.0	26.7	40.4
UM4	10.8	22.5	25.6	47.7	25.6	17.4	19.3	10.7	10.3	43.8
Crest	10.8	20.2	19.3	44.3	25.1	19.0	16.6	16.2	24.7	41.6
Acme	10.0	19.5	22.5	40.2	23.6	13.5	18.3	13.4	11.0	40.3
M350	7.0	22.4	22.5	41.3	20.6	13.8	17.1	15.2	13.3	37.8
M354	9.3	22.3	26.1	43.1	25.3	14.9	18.0	11.8	9.8	36.7
M351	7.7	20.6	21.9	41.2	20.3	13.6	16.2	16.5	11.6	35.7
0-52-903	6.3	11.2	20.0	36.9	21.0	11.4	12.5	13.1	16.4	34.1
Mean	9.4	21.3	23.4	43.2	23.9	16.2	17.8	15.1	16.3	40.2
C. V. (%)	16.3	19.4	9.8	6.6	7.9	--	12.6	--	--	8.2
Bu. N.F.S. (5%)	2.5	7.0	3.3	4.2	2.7	--	3.3	--	--	3.9
Row Sp. (In.)	36	24	40	30	24	36	36	24	22	36
	Yield Rank									
Flambeau	1	1	5	1	1	1	1	1	3	2
UM5	4	2	4	2	7	4	2	5	4	1
UM55-2	7	9	1	6	5	2	4	2	1	5
UM4	2	3	3	3	2	5	3	10	9	3
Crest	2	7	10	4	4	3	8	4	2	4
Acme	5	8	6	9	6	9	4	7	8	6
M350	9	4	6	7	9	7	7	5	6	7
M354	6	5	2	5	3	6	6	9	10	8
M351	8	6	8	8	10	8	9	3	7	9
0-52-903	10	10	9	10	8	10	10	8	5	10

Table 4. Maturity, days earlier (-) or later (+) than Acme, for Uniform Test 00, 1960.

Strain	Mean of 13 Tests[1]	Orono Maine	Ottawa Ont.	Guelph Ont.	Norway Mich.	Bark River Mich.	Daggett Mich.	Ashland Wis.	Mason Wis.	Spooner Wis.
Flambeau	+9.8	+20	+9	+9	+7	+8	+9	+8	+6	+11
UM5	+4.8	+25	+8	+2	+4	+4	+4	+5	+2	+ 6
UM55-2	+3.0	+ 6	+7	+1	+2	+3	+4	+8	+4	- 4
UM4	+1.4	+ 6	+1	0	0	+3	+2	0	+2	+ 2
Crest	+4.4	+ 6	+8	+2	+4	+4	+5	+8	+4	+ 2
Acme	0	0	0	0	0	0	0	0	0	0
M350	-0.5	+ 4	+1	0	+2	-1	+2	-3	-4	+ 4
M354	-0.7	+ 4	+1	0	-2	-2	-1	-5	-3	- 1
M351	-1.2	+ 4	+2	0	-2	-2	-3	-5	-3	+ 1
0-52-903	-4.7	- 3	-6	-1	+2	-2	-2	-5	-3	- 4
Date planted	5-23	6-3	5-19	5-30	6-9	6-10	6-10	5-31	6-2	5-27
Acme matured	9-7	9-8	9-7	9-2	10-3	10-2	10-3	9-19	9-14	9-6
Days to mature	107	97	111	95	116	114	115	111	104	102

[1]Norway, Bark River and Daggett, Michigan, Madison, Wisconsin and Prosser, Washington not included in the mean.

Table 4. (Continued)

Strain	Madison Wis.	Crookston Minn.	St. Paul Minn.	Portage la Prairie Man.	Winnipeg Man.	Brandon Man.	Morden Man.	Prosser Wash.	Ontario Ore.
Flambeau	+1	+8	+6	+16	+9	+7	+2	+6	+17
UM5	+2	0	+3	+ 3	+4	-1	+1	0	+ 4
UM55-2	0	-1	-1	+ 2	+5	+1	+3	+2	+ 8
UM4	+3	+1	+3	+ 2	+3	0	-2	0	0
Crest	0	+2	+5	+ 3	+8	+3	+2	+2	+ 4
Acme	0	0	0	0	0	0	0	0	0
M350	0	-1	0	0	-1	-3	0	+7	- 4
M354	-3	-2	-1	+ 1	-1	-3	-2	+3	+ 3
M351	-2	-2	-2	- 5	0	-1	0	+2	- 4
0-52-903	0	-7	-5	-10	-1	-6	-4	+2	- 6
Date planted	7-7	5-20	5-23	5-25	5-24	5-20	5-3	5-10	5-12
Acme matured	10-10	9-4	9-1	9-12	9-7	9-5	9-16	9-6	8-24
Days to mature	95	107	101	110	106	108	136	119	104

Table 5. Lodging and plant height for Uniform Test 00, 1960.

Strain	Mean of 11 Tests[1]	Orono Maine	Ottawa Ont.	Guelph Ont.	Norway Mich.	Bark River Mich.	Daggett Mich.	East Lansing Mich.	Ashland Wis.	Mason Wis.	Spooner Wis.
Flambeau	3.4	2.0	4.5	2.3	2.0	4.0	3.0		4.8	4.0	3.7
UM5	2.1	2.0	1.0	1.5	1.0	1.0	1.0		2.0	2.0	2.5
UM55-2	2.5	1.0	1.0	1.8	1.0	3.0	2.0		4.0	3.0	3.5
UM4	1.7	1.0	1.0	1.3	1.0	1.0	1.0		2.3	2.0	2.0
Crest	2.0	1.0	1.0	1.5	1.0	2.0	2.0		3.0	2.8	2.5
Acme	2.1	1.0	2.0	1.3	1.0	2.0	1.0		3.0	2.8	2.2
M350	1.8	1.0	2.0	1.3	1.0	2.0	1.0		2.8	2.0	1.7
M354	2.5	1.0	3.5	1.8	1.0	3.0	2.0		4.0	2.3	3.5
M351	1.8	1.0	2.0	1.3	1.0	1.0	1.0		3.5	1.0	2.5
0-52-903	2.2	1.0	2.0	1.0	1.0	2.0	1.0		3.8	3.0	3.0
Mean	2.2	1.2	2.0	1.5	1.1	2.1	1.5		3.3	2.5	2.7
	Mean of 15 Tests[2]	Plant Height									
Flambeau	30	27	38	27	34	40	36	22	32	31	29
UM5	28	28	37	27	32	33	32	22	30	32	28
UM55-2	31	30	43	27	36	37	36	27	30	31	29
UM4	27	22	34	26	27	32	28	21	30	31	26
Crest	28	26	37	29	32	38	33	23	27	31	28
Acme	26	20	33	24	28	30	29	23	29	31	26
M350	26	25	34	25	24	31	25	20	25	29	27
M354	27	26	36	26	27	32	28	19	26	27	28
M351	25	25	32	24	25	29	27	19	26	26	28
0-52-903	26	24	37	23	29	34	30	22	27	30	27
Mean	27	25	36	26	29	34	30	22	28	30	28

[1]Norway, Bark River and Daggett, Michigan, Madison, Wisconsin, Brandon, Manitoba, Park River, North Dakota and Prosser, Washington not included in the mean.

[2]Norway, Bark River and Daggett, Michigan, Madison, Wisconsin and Prosser, Washington not included in the mean.

Table 5. (Continued)

Strain	Madison Wis.	Crookston Minn.	St. Paul Minn.	Portage la Prairie Man.	Winnipeg Man.	Brandon Man.	Morden Man.	Park River N.D.	Prosser Wash.	Ontario Ore.
Flambeau	2.2		3.5	4.0	2.5	1.0	1.5	1.0	3.0	5.0
UM5	1.4		3.0	3.0	1.0	1.0	1.2	1.0	2.0	4.0
UM55-2	2.4		3.8	2.0	1.5	1.0	1.7	1.0	2.0	4.0
UM4	1.2		2.0	1.0	1.0	1.0	1.2	1.0	1.0	4.0
Crest	1.8		3.0	1.0	1.8	1.0	1.5	1.0	2.0	2.5
Acme	1.6		2.8	2.0	1.0	1.0	1.0	1.0	1.0	3.5
M350	1.4		3.0	2.0	1.0	1.0	1.0	1.0	1.0	2.5
M354	1.5		3.0	2.0	1.5	1.0	1.7	1.0	1.0	3.5
M351	1.6		2.5	1.0	1.0	1.0	1.2	1.0	1.0	2.5
0-52-903	2.2		3.0	1.0	1.8	1.0	1.5	1.0	2.0	3.5
Mean	1.7		3.0	1.9	1.4	1.0	1.4	1.0	1.6	3.5

	Plant Height									
Flambeau	20	26	34	32	25	29	27	22	40	55
UM5	20	20	34	33	23	24	23	19	14	42
UM55-2	25	22	35	34	26	31	28	23	34	45
UM4	20	22	35	31	24	26	22	18	18	38
Crest	22	21	32	34	24	28	23	21	30	40
Acme	19	20	32	31	23	23	21	20	23	38
M350	19	25	31	30	20	23	22	17	24	30
M354	20	24	34	34	24	25	22	20	21	30
M351	18	21	31	29	21	24	22	18	20	30
0-52-903	20	19	31	30	22	27	22	20	22	33
Mean	20	22	33	32	23	26	23	20	25	38

Table 6. Percentages of protein and oil for Uniform Test 00, 1960.

Strain	Mean of 15 Tests[1]	Orono Maine	Ottawa Ont.	Guelph Ont.	East Lansing Mich.	Ashland Wis.	Mason Wis.	Spooner Wis.
Flambeau	41.9	42.3	41.1	44.5	41.8	42.6	43.3	45.8
UM5	39.9	40.2	40.8	40.4	40.4	42.1	40.9	44.3
UM55-2	39.8	39.5	40.8	42.7	40.0	41.6	39.8	44.2
UM4	39.6	40.4	40.5	39.6	40.9	41.7	40.0	42.2
Crest	41.3	41.6	41.9	43.2	42.2	43.6	41.5	43.6
Acme	40.3	40.8	41.1	40.3	41.0	42.7	40.7	44.0
M350	41.4	40.4	43.0	42.4	42.3	43.6	41.0	45.6
M354	41.8	42.6	41.3	41.1	43.8	42.9	42.3	44.6
M351	41.7	42.3	42.9	43.7	42.8	42.8	42.2	45.4
0-52-903	41.1	40.4	42.2	40.8	41.2	43.3	42.5	44.7
Mean	40.9	41.1	41.6	41.9	41.6	42.7	41.4	44.4
	Mean of 15 Tests[1]	Percentage of Oil						
Flambeau	19.3	19.9	19.2	18.1	20.1	18.3	18.1	18.2
UM5	19.8	19.0	18.9	19.4	19.6	17.5	18.4	19.4
UM55-2	19.9	19.7	19.2	18.2	20.1	18.3	19.7	18.9
UM4	20.1	19.7	19.4	20.0	19.6	18.3	18.7	19.7
Crest	19.9	20.1	19.0	19.1	20.2	18.0	18.8	19.8
Acme	19.9	19.5	19.0	19.8	20.4	18.0	18.7	19.3
M350	19.9	20.3	19.0	19.2	19.3	18.4	18.8	18.8
M354	19.7	19.7	19.6	20.1	18.9	18.7	18.5	19.3
M351	19.5	19.9	18.7	19.0	19.0	18.7	17.9	18.4
0-52-903	20.1	20.4	18.6	20.3	18.8	18.7	19.0	18.8
Mean	19.8	19.8	19.1	19.3	19.6	18.3	18.7	19.1

[1]Madison, Wisconsin not included in the mean.

Table 6. (Continued)

Strain	Madison Wis.	Crookston Minn.	St. Paul Minn.	Portage la Prairie Man.	Winnipeg Man.	Brandon Man.	Morden Man.	Park River N.D.	Ontario Ore.
Flambeau	41.5	37.1	43.0	44.4	37.0	37.0	41.0	43.4	43.6
UM5	39.4	35.6	42.7	41.1	34.5	34.3	39.1	40.3	42.4
UM55-2	40.5	35.1	41.4	41.4	33.8	34.9	39.3	40.3	42.1
UM4	39.0	35.4	42.0	41.5	35.3	33.5	38.4	39.4	42.5
Crest	39.9	37.4	43.2	42.5	36.1	37.1	40.0	42.8	43.1
Acme	40.1	36.1	42.9	41.8	34.8	35.3	39.3	41.7	41.7
M350	42.6	36.6	44.1	42.6	36.7	37.0	40.5	42.4	43.2
M354	42.5	37.5	43.2	43.7	39.6	34.2	42.7	43.5	44.1
M351	42.6	37.1	44.0	43.0	37.1	36.2	41.0	42.0	42.7
0-52-903	41.5	37.3	42.7	43.9	38.2	35.4	40.4	42.0	41.5
Mean	41.0	36.5	42.9	42.6	36.3	35.5	40.2	41.8	42.7
	Percentage of Oil								
Flambeau	18.6	21.9	19.2	18.0	21.5	21.1	19.4	17.7	18.3
UM5	19.1	22.0	19.5	18.9	21.9	22.3	20.2	19.9	19.9
UM55-2	20.0	21.4	20.4	19.5	22.5	22.5	19.8	19.1	19.4
UM4	19.7	22.4	19.6	19.3	21.2	22.7	20.5	20.3	20.6
Crest	20.7	22.0	19.6	18.8	22.3	22.0	20.4	19.0	19.9
Acme	19.6	21.5	19.5	19.1	22.2	21.7	20.3	19.8	20.2
M350	18.4	21.6	19.1	19.4	22.5	22.0	20.6	19.6	20.0
M354	18.8	20.8	19.8	18.6	21.0	22.3	19.7	19.2	19.4
M351	19.2	21.3	19.0	19.1	21.9	21.2	19.9	19.3	19.9
0-52-903	19.6	21.4	20.7	19.6	21.6	22.6	20.5	19.4	20.5
Mean	19.4	21.6	19.6	19.0	21.9	22.0	20.1	19.3	19.8

Table 7. Three-year summary of data for Uniform Test 00, 1958-1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	40	28	27	38	35	37	39	39
Flambeau	28.7	+9.4	3.3	29	2.3	16.5	41.6	18.6
UM55-2	25.0	+2.7	2.4	30	2.2	18.1	39.8	19.5
Crest	24.8	+4.9	2.1	28	2.4	19.9	41.3	19.4
Acme	24.0	0	1.9	26	2.2	17.4	40.4	19.3
Mean	25.6	+4.3	2.4	28	2.3	18.0	40.8	19.2

[1]Days earlier (-) or later (+) than Acme which matured September 10, 110 days after planting.

Table 8. Three-year summary of yield and yield rank for Uniform Test 00, 1958-1960.

Strain	Mean of 40 Tests	Ottawa Ont.	Norway Mich.	Bark River Mich.	Daggett Mich.	Mason Wis.	Spooner Wis.	Crookston Minn.
Years Tested		1958-1960	1958-1960	1958-1960	1958-1960	1959-1960	1958-1960	1958-1960
Flambeau	28.7	35.3	--	--	--	32.8	28.3	35.6
UM55-2	25.0	29.1	18.3	19.7	15.3	30.6	22.3	27.3
Crest	24.8	28.6	17.6	19.0	--	30.9	23.7	29.7
Acme	24.0	28.0	16.8	17.7	15.3	29.9	22.6	28.0
Mean	25.6	30.3	17.6	18.8	15.3	31.1	24.2	30.2
		Yield Rank						
Flambeau		1	--	--	--	1	1	1
UM55-2		2	1	1	1	3	4	4
Crest		3	2	2	--	2	2	2
Acme		4	3	3	1	4	3	3

Table 8. (Continued)

Strain	St. Paul Minn.	Portage la Prairie Man.	Winnipeg Man.	Brandon Man.	Morden Man.	Park River N.D.	Ontario Ore.
Years Tested	1958-1960	1958-1960	1958-1960	1958-1960	1958, 1960	1958-1960	1958-1960
Flambeau	29.0	34.2	32.1	21.1	19.9	23.4	38.2
UM55-2	26.2	29.1	27.6	19.0	18.1	18.7	35.5
Crest	23.4	30.6	26.6	19.5	15.0	18.8	43.0
Acme	25.2	30.8	26.1	17.2	17.3	17.4	38.4
Mean	26.0	31.2	28.1	19.2	17.6	19.6	38.8
	Yield Rank						
Flambeau	1	1	1	1	1	1	3
UM55-2	2	4	2	3	2	3	4
Crest	4	3	3	2	4	2	1
Acme	3	2	4	4	3	4	2

UNIFORM PRELIMINARY TEST 00, 1960

Strain	Originating Agency	Origin	Generation Composited
Acme	Central Exp. Farm, Ottawa	Sel. from Pagoda	
Crest	Central Exp. Farm, Ottawa	ND8-291 x Mandarin	F_8
Flambeau	Wis. Agr. Exp. Sta.	Introduction from Russia	
Me13	Maine Agr. Exp. Sta.	P.I. 194628	
Me27A	Maine Agr. Exp. Sta.	P.I. 194633	
Me57B	Maine Agr. Exp. Sta.	P.I. 194644	
Me60C	Maine Agr. Exp. Sta.	P.I. 194645	
UM6	Univ. of Manitoba, Winnipeg, Man.	Blackhawk x P.I. 194633	F_5
UM7	Univ. of Manitoba, Winnipeg, Man.	Blackhawk x P.I. 194633	F_5
UM8	Univ. of Manitoba, Winnipeg, Man.	M10 x P.I. 194633	F_5

Identification of Parent Strains

M10	Sel. from Lincoln (2) x Richland.
ND8-291	Sel. from Manitoba Brown x Mandarin.
P.I. 194628	698-1-2, sel. from Pagoda 2 x 294-1-1 by Sven A. Holmberg, Norrkoping, Sweden.
P.I. 194633	733-4, sel. from 193-7-27 x Blackeye by Sven A. Holmberg.
P.I. 194644	748-7, sel. from Pagoda 2 x 201-8-29 by Sven A. Holmberg.
P.I. 194645	749-1, sel. from 201-9-29 x Pagoda 2 by Sven A. Holmberg.

This test was grown at 7 locations with the location mean yield levels ranging from 11 to 27 bushels per acre. There were three check varieties and seven experimental strains.

Flambeau was the latest strain in the test and had the highest average yield, 5 bushels above the second highest yielding strain.

The four Me strains are from Swedish hybrid lines. They ranged from the same maturity as Acme to 4 days later. Me57B and Me60C approached the yields of Acme and Crest but were not superior to them in other traits.

The three UM strains are from crosses involving the line designated as Me27A in this test. All three outyielded Acme and Crest, and they also had greater height and protein content.

Table 9. Summary of data for Uniform Preliminary Test 00, 1960.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	5	5	5	5	5	5	4	5	5
Acme	23.1	5	0	1.7	27	2.4	15.9	40.7	19.5
Crest	22.8	6	+ 6.2	1.8	29	2.8	19.3	41.2	19.8
Flambeau	29.2	1	+11.2	3.1	32	2.0	17.0	42.0	19.3
Me13	21.4	9	+ 2.0	1.7	27	2.6	17.5	41.5	19.7
Me27A	17.5	10	0	1.6	25	3.2	16.8	42.2	19.5
Me57B	22.3	8	+ 2.8	2.1	28	2.8	20.2	41.0	20.1
Me60C	22.8	6	+ 3.8	1.7	27	2.4	16.1	41.0	18.7
UM6	24.3	2	+ 8.8	1.8	31	2.9	17.5	42.7	19.8
UM7	24.0	3	+ 6.2	2.0	32	2.7	16.0	43.0	20.0
UM8	23.4	4	+ 0.8	1.7	25	2.1	12.9	42.0	20.8
Mean	23.1		+ 4.2	1.9	28	2.6	16.9	41.7	19.7

[1]Days earlier (-) or later (+) than Acme which matured September 5, 103 days after planting.

Table 10. Disease data for Uniform Preliminary Test 00, 1960.

Strain	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Frogeye	
					R1	R2
Acme	4La,5Aa	2.5La,3Aa	S	3Ln	S	S
Crest	4La,4Aa	3La,4Aa		3Ln	R	S
Flambeau	3La,4Aa	2La,4Aa		3Ln	S	S
Me13	5Aa	4Aa			S	S
Me27A	5Aa	4Aa			R	R
Me57B	5Aa	3Aa			Seg.	R
Me60C	4Aa	4Aa			R	R
UM6	4La,4Aa	2.5La,4Aa		3Ln	R	R
UM7	4La,4Aa	1La,4Aa		3Ln	R	R
UM8	5La,4Aa	1La,4Aa		3Ln	R	S

Lincoln, included as a check variety, rated 4La,5Aa for bacterial blight, 3.5La,4Aa for bacterial pustule, 4Ln for brown stem rot, and R for frogeye (race 1), S for frogeye (race 2).

Table 11. Yield and yield rank for Uniform Preliminary Test 00, 1960.

Strain	Mean of 5 Tests[1]	Orono Maine	Ottawa Ont.[2]	Spooner Wis.	St. Paul Minn.	Winnipeg Man.	Morden Man.	Park River N.D.
Acme	23.1	25.1	23.1	21.3	20.8	25.0	16.3	13.4
Crest	22.8	28.6	23.7	21.3	18.8	21.8	11.7	16.2
Flambeau	29.2	33.5	34.3	25.8	22.9	29.6	22.0	20.1
Me13	21.4	23.2	24.9	16.4	23.1	19.5	17.5	9.0
Me27A	17.5	19.8	17.9	15.0	15.5	19.5	12.3	12.3
Me57B	22.3	28.7	25.6	17.5	19.7	20.0	7.0	4.2
Me60C	22.8	28.5	26.7	17.4	19.9	21.6	7.7	2.3
UM6	24.3	29.6	25.2	19.8	20.8	26.3	19.3	13.9
UM7	24.0	28.4	24.5	17.4	21.7	28.2	18.2	8.0
UM8	23.4	28.5	22.9	20.9	21.2	23.5	17.8	10.8
Mean	23.1	27.4	24.9	19.3	20.4	23.5	15.0	11.0
Coef. of Var. (%)		8.5	18.0	9.5	12.9	8.2	19.9	--
Bu. Nec. for Sig. (5%)		5.3	--	4.2	N.S.	4.4	6.7	--
Row Spacing (In.)		24	30	36	40	24	36	24
	Yield Rank							
Acme	5	8	8	2	5	4	6	4
Crest	6	4	7	2	9	6	8	2
Flambeau	1	1	1	1	2	1	1	1
Me13	9	9	5	9	1	9	5	7
Me27A	10	10	10	10	10	9	7	5
Me57B	8	3	3	6	8	8	10	9
Me60C	6	5	2	7	7	7	9	10
UM6	2	2	4	5	5	3	2	3
UM7	3	7	6	7	3	2	3	8
UM8	4	5	9	4	4	5	4	6

[1]Morden, Manitoba and Park River, North Dakota not included in the mean.
[2]Irrigated.

Table 12. Maturity, days earlier (-) or later (+) than Acme, for Uniform Preliminary Test 00, 1960.

Strain	Mean of 5 Tests[1]	Orono Maine	Ottawa Ont.	Spooner Wis.	St. Paul Minn.	Winnipeg Man.	Morden Man.
Acme	0	C	0	0	0	0	0
Crest	+ 6.2	+ 6	+ 9	+ 2	+7	+7	+8
Flambeau	+11.2	+20	+11	+11	+6	+8	+3
Me13	+ 2.0	- 2	0	+ 8	+3	+1	-5
Me27A	0	- 6	- 3	+ 5	+4	0	-6
Me57B	+ 2.8	+ 6	+ 1	+ 6	-2	+3	+4
Me60C	+ 3.8	0	+ 2	+11	+3	+3	-3
UM6	+ 8.8	+ 9	+11	+12	+6	+6	+2
UM7	+ 6.2	+ 6	+10	+ 9	+3	+3	-1
UM8	+ 0.8	0	- 2	+ 6	-1	+1	-1
Date planted	5-25	6-3	5-19	5-27	5-23	5-24	5-31
Acme matured	9-5	9-8	9-5	9-4	8-31	9-7	9-22
Days to mature	103	97	109	100	100	106	114

[1]Morden, Manitoba not included in the mean.

Table 13. Percentages of protein and oil for Uniform Preliminary Test 00, 1960.

Strain	Mean of 5 Tests[1]	Orono Maine	Ottawa Ont.	Spooner Wis.	St. Paul Minn.	Winnipeg Man.	Park River N.D.
Acme	40.7	40.6	42.6	42.9	42.1	35.3	41.7
Crest	41.2	42.3	42.1	44.2	43.4	34.2	42.8
Flambeau	42.0	43.7	41.8	46.4	42.8	35.5	43.4
Me13	41.5	42.3	42.5	43.6	43.5	35.5	42.0
Me27A	42.2	40.5	42.8	44.6	43.8	39.1	41.6
Me57B	41.0	39.5	42.0	45.8	42.7	35.2	42.4
Me60C	41.0	40.8	41.3	45.5	41.4	36.0	38.7
UM6	42.7	43.9	41.6	45.4	43.2	39.6	41.8
UM7	43.0	43.0	42.0	46.2	44.1	39.7	42.0
UM8	42.0	42.3	42.4	44.1	43.9	37.1	42.7
Mean	41.7	41.9	42.1	44.9	43.1	36.7	41.9
	Mean of 5 Tests[1]	Percentage of Oil					
Acme	19.5	19.7	17.2	19.5	18.9	22.0	19.8
Crest	19.8	19.1	18.9	19.4	18.8	22.8	19.0
Flambeau	19.3	17.8	19.7	18.6	19.0	21.6	17.7
Me13	19.7	18.9	18.7	19.5	19.3	22.2	19.1
Me27A	19.5	19.8	18.5	19.1	19.5	20.6	19.3
Me57B	20.1	19.8	19.3	19.4	19.9	22.3	18.7
Me60C	18.7	17.1	17.1	20.0	18.8	20.3	20.8
UM6	19.8	18.7	19.6	19.8	19.8	21.1	19.8
UM7	20.0	19.4	19.9	19.2	19.8	21.8	19.4
UM8	20.8	21.0	20.3	19.6	20.2	23.1	20.1
Mean	19.7	19.1	18.9	19.4	19.4	21.8	19.4

[1]Park River, North Dakota not included in the mean.

UNIFORM TEST 0, 1960

Strain	Originating Agency	Origin	Generation Composited
Grant	Wis. A.E.S. & U.S.R.S.L.	Lincoln x Seneca	F_6
Merit	Central Exp. Farm, Ottawa	Blackhawk x Capital	F_8
Norchief	Wis. A.E.S. & U.S.R.S.L.	Hawkeye x Flambeau	F_4
M355	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 194633	F_5
0-57-2921	Central Exp. Farm, Ottawa	Blackhawk x Capital	F_7

Identification of Parent Strains

M10	Sel. from Lincoln (2) x Richland
P.I. 194633	733-4, sel. by Sven A. Holmberg, Norrkoping, Sweden.

This test was grown at 13 locations in 1961. Yield levels were quite variable, ranging from under 10 bushels at Eureka, South Dakota to nearly 50 bushels at Ontario, Oregon, but the over-all mean was about the same as in the past several years. The entries consisted of two experimental strains, three check varieties, and the Group 00 tie variety, Flambeau.

Merit has been in the test for three years, and summary tables are presented comparing it with Grant and Norchief. There was a strong correlation of yield with maturity for these three varieties, and Merit was intermediate in both respects. Merit was superior to the other two in lodging resistance and oil content.

The two experimental strains were both in the 1959 Preliminary Test 00, where they were high in yield but rather late in maturity. They appear to be early Group 0 maturity since they were later than Flambeau this year. They were both earlier than the three Group 0 checks and consequently lower in yield. 0-27-2921 yielded well for its very early maturity and had excellent lodging resistance.

Table 14. Summary of data for Uniform Test 0, 1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	11	9	7	11	8	9	11	11
Grant	34.8	0	2.8	31	2.1	17.0	41.1	20.2
Merit	32.3	- 4.7	2.1	32	2.0	15.1	40.3	21.2
Norchief	29.8	- 5.9	2.3	29	2.5	17.3	41.1	20.0
0-57-2921	27.7	-10.1	1.6	30	2.1	13.9	41.2	20.4
M355	26.2	- 7.8	2.4	30	2.4	16.9	43.9	19.7
Mean	30.2	- 5.7	2.2	30	2.2	16.0	41.5	20.3

[1]Days earlier (-) or later (+) than Grant which matured September 24, 123 days after planting. Flambeau (Group 00) matured -10.7.

Table 15. Disease data for Uniform Test 0, 1960.

Strain	Purple Stain	Pod and Stem Blight	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Frogeye		Phytophthora Rot
							R1	R2	
Grant	3UDn	2UDn	S	S	S	S	S	S	S
Merit			S	S	S	S	Seg.	S	R
Norchief	2UDn	4UDn	S	S	S	3Ln	S	S	S
0-57-2921			3.5La,4Aa	1La,4Aa		3Ln	S	S	
M355			5La,4Aa	1La,4Aa		3Ln	R	S	

Lincoln, included as a susceptible check variety, rated 4La,4Aa for bacterial blight, 3.5La,4Aa for bacterial pustule, S for brown spot, brown stem rot and Phytophthora rot, R for frogeye (race 1) and S for frogeye (race 2).

Table 16. Yield and yield rank for Uniform Test 0, 1960.

Strain	Mean of 11 Tests[1]	Ottawa Ont.[2]	Guelph Ont.	Ridge-town Ont.	East Lan-sing Mich.	Ida Mich.	Spoon-er Wis.
Grant	34.8	42.7	20.9	38.3	38.7	38.3	32.1
Merit	32.3	41.2	18.4	35.6	33.3	32.9	23.9
Norchief	29.8	35.1	20.8	33.4	27.0	30.8	28.0
0-57-2921	27.7	30.8	22.0	30.9	28.2	26.6	22.0
M355	26.2	29.3	22.4	31.4	32.0	28.7	19.6
Mean	30.2	35.8	20.9	33.9	31.8	31.5	25.1
Coef. of Var. (%)		6.8	9.7	2.5	8.1	7.1	12.0
Bu. Nec. for Sig. (5%)		3.4	3.1	1.9	3.6	3.2	4.5
Row Spacing (In.)		30	27	24	24	34	36
		Yield Rank					
Grant		1	3	1	1	1	1
Merit		2	5	2	2	2	3
Norchief		3	4	3	5	3	2
0-57-2921		4	2	5	4	5	4
M355		5	1	4	3	4	5

[1]Durand, Wisconsin and Eureka, South Dakota not included in the mean.
[2]Irrigated.

Table 16. (Continued)

Strain	Durand Wis.	Crookston Minn.	Morris Minn.	St. Paul Minn.	Fargo N.D.	Eureka S.D.	Ontario Ore.[2]
Grant	19.7	27.3	25.5	31.4	36.4	9.0	51.0
Merit	18.2	30.1	24.4	29.2	32.7	11.2	53.5
Norchief	14.0	25.6	22.1	26.3	33.2	10.2	45.3
0-57-2921	12.3	25.7	19.1	21.4	30.1	9.3	48.0
M355	7.5	18.6	19.9	21.1	25.9	4.0	38.8
Mean	14.3	25.5	22.2	25.9	31.7	8.7	47.3
Coef. of Var. (%)	11.0	10.0	9.1	11.5	--	--	10.7
Bu. Nec. for Sig. (5%)	2.5	3.9	3.0	4.6	--	--	7.5
Row Spacing (In.)	36	24	40	40	40	42	36
	Yield Rank						
Grant	1	2	1	1	1	4	2
Merit	2	1	2	2	3	1	1
Norchief	3	4	3	3	2	2	4
0-57-2921	4	3	5	4	4	3	3
M355	5	5	4	5	5	5	5

Table 17. Maturity, days earlier (-) or later (+) than Grant, lodging, and plant height for Uniform Test 0, 1960.

Strain	Mean of 9 Tests[1]	Ottawa Ont.	Guelph Ont.	Ridge-town Ont.	East Lan-sing Mich.	Ida Mich.	Spoon-er Wis.
Grant	0	0	0	0	0		0
Merit	- 4.7	- 7	-3	-10	0		-3
Norchief	- 5.9	- 7	-5	- 4	-1		-6
0-57-2921	-10.1	-14	-9	-10	-2		-6
M355	- 7.8	- 7	-7	- 4	-1		-9
Flambeau	-10.7	-16	-9	- 5	0		-9
Date planted	5-24	5-19	5-30	5-27	6-9	5-27	5-27
Grant matured	9-24	10-2	9-24	9-9	9-30	--	9-26
Days to mature	123	136	117	105	113	--	122
	Mean of 7 Tests[2]			Lodging			
Grant	2.8	3.0	2.3	1.0	1.0	1.0	2.5
Merit	2.1	2.0	1.3	1.0	1.0	1.0	2.7
Norchief	2.3	2.0	1.8	1.0	1.0	1.0	2.2
0-57-2921	1.6	1.0	1.3	1.0	1.0	1.0	1.5
M355	2.4	2.0	1.3	1.0	1.0	1.0	3.0
Mean	2.2	2.0	1.6	1.0	1.0	1.0	2.4
	Mean of 11 Tests[3]			Plant Height			
Grant	31	31	32	27	30	29	27
Merit	32	33	33	27	30	29	30
Norchief	29	28	31	26	25	26	25
0-57-2921	30	31	31	25	25	27	28
M355	30	30	30	26	28	28	25
Mean	30	31	31	26	28	28	27

[1]Morris, Minnesota and Eureka, South Dakota not included in the mean.
[2]Ridgetown, Ontario, East Lansing and Ida, Michigan, Morris, Minnesota and Eureka, South Dakota not included in the mean.
[3]Durand, Wisconsin and Eureka, South Dakota not included in the mean.

Table 17. (Continued)

Strain	Durand Wis.	Crookston Minn.	Morris Minn.	St. Paul Minn.	Fargo N.D.	Eureka S.D.	Ontario Ore.
Grant		0	0	0	0	0	0
Merit		-2	- 3	-12	- 3	-3	- 2
Norchief		-4	- 7	-12	- 8	-5	- 6
0-57-2921		-5	-13	-19	-10	-6	-16
M355		-5	-10	-18	- 9	-5	-10
Flambeau		-9	--	-22	-12	-3	-14
Date planted	5-23	5-20	5-24	5-23	5-17	5-28	5-12
Grant matured	--	9-21	9-23	9-29	9-22	10-1	9-24
Days to mature	--	124	122	129	128	126	135
				Lodging			
Grant		2.2	1.0	3.0	1.8	1.0	5.0
Merit		1.5	1.0	3.0	2.0	1.0	2.5
Norchief		1.5	1.0	3.3	1.8	1.0	3.5
0-57-2921		1.0	1.0	3.0	1.4	1.0	2.2
M355		1.0	1.0	3.0	1.8	1.0	5.0
Mean		1.4	1.0	3.1	1.8	1.0	3.6
				Plant Height			
Grant	23	25	26	34	34	20	42
Merit	24	27	28	40	37	21	43
Norchief	21	25	24	34	34	19	38
0-57-2921	23	25	26	38	37	18	40
M355	23	26	24	35	33	21	42
Mean	23	26	26	36	35	20	41

Table 18. Percentages of protein and oil for Uniform Test 0, 1960.

Strain	Mean of 11 Tests[1]	Ottawa Ont.	Guelph Ont.	Ridge-town Ont.	East Lan-sing Mich.	Ida Mich.	Spoon-er Wis.
Grant	41.1	40.5	46.2	40.4	41.1	42.1	45.4
Merit	40.3	38.6	44.7	39.2	42.0	41.1	42.3
Norchief	41.1	40.8	46.9	40.1	41.2	40.9	43.3
0-57-2921	41.2	40.8	44.9	40.3	42.4	41.6	46.0
M355	43.9	44.2	45.3	43.5	45.4	45.6	45.3
Mean	41.5	41.0	45.6	40.7	42.4	42.3	44.5
	Mean of 11 Tests[1]	Percentage of Oil					
Grant	20.2	19.9	17.9	21.0	19.8	20.3	18.7
Merit	21.2	22.0	18.0	22.2	20.3	21.6	19.2
Norchief	20.0	20.2	17.2	21.3	20.1	21.0	17.0
0-57-2921	20.4	20.2	17.4	20.4	20.1	20.5	19.3
M355	19.7	19.4	18.4	20.1	19.1	19.4	20.0
Mean	20.3	20.3	17.8	21.0	19.9	20.6	18.8

[1]Durand, Wisconsin and Eureka, South Dakota not included in the mean.

Table 18. (Continued)

Strain	Durand Wis.	Crookston Minn.	Morris Minn.	St. Paul Minn.	Fargo N.D.	Eureka S.D.	Ontario Ore.
Grant	[illegible]	[illegible]	39.5	[illegible]	36.9	39.3	43.7
Merit	[illegible]	35.5	39.9	[illegible]	36.7	38.9	42.0
Norchief	[illegible]	35.9	[illegible]	[illegible]	36.[illegible]	[illegible]	43.3
C-57-2921	[illegible]	35.6	[illegible]	[illegible]	36.8	38.0	42.0
M355	[illegible]	[illegible]	[illegible]	43.3	[illegible]	41.6	44.8
Mean	[illegible]	36.3	[illegible]	[illegible]	37.6	39.6	43.2
	Percentage of Oil						
Grant	[illegible]	22.6	21.9	[illegible]	[illegible]	20.4	17.6
Merit	[illegible]	23.6	[illegible]	[illegible]	[illegible]	21.6	19.7
Norchief	[illegible]	22.9	[illegible]	[illegible]	[illegible]	20.0	18.3
C-57-2921	19.9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M355	18.9	[illegible]	[illegible]	[illegible]	[illegible]	19.6	18.7
Mean	[illegible]	22.7	[illegible]	[illegible]	[illegible]	[illegible]	18.9

Table 19. Three-year summary of data for Uniform Test 0, 1958-1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	39	24	29	38	36	35	37	37
Grant	33.7	0	2.7	30	2.2	16.7	40.9	19.8
Merit	30.9	-3.3	1.9	31	2.1	14.7	40.4	20.7
Norchief	28.9	-5.0	2.2	28	2.7	17.2	41.4	19.7
Mean	31.2	-2.8	2.3	30	2.3	16.2	40.9	20.1

[1]Days earlier (-) or later (+) than Grant which matured September 21, 122 days after planting. Flambeau (Group 00) matured -9.2.

Table 20. Three-year summary of yield and yield rank for Uniform Test 0, 1958-1960.

Strain	Mean of 39 Tests	Ottawa Ont.	Guelph Ont.	Ridgetown Ont.	Bath Mich.	East Lansing Mich.	Ida Mich.	Spooner Wis.
Years Tested		1958-1960	1958-1960	1958-1960	1958-1959	1958-1960	1958-1960	1958-1960
Grant	33.7	44.0	36.0	38.4	24.3	43.0	40.9	34.4
Merit	30.9	41.8	31.3	32.3	22.5	34.0	36.9	28.3
Norchief	28.9	37.0	31.8	32.7	27.9	30.0	30.9	28.3
Mean	31.2	40.9	33.0	34.5	24.9	35.7	36.2	30.3
		Yield Rank						
Grant		1	1	1	2	1	1	1
Merit		2	3	3	3	2	2	2
Norchief		3	2	2	1	3	3	2

[1]LaMoure, North Dakota, 1958.
[2]Dwight, North Dakota, 1958.

Table 20. (Continued)

Strain	Durand Wis.	Crookston Minn.	Morris Minn.	St. Paul Minn.	Fargo N.D.	Edgeley N.D.[1]	Fairmount N.D.[2]	Rosholt S.D.	Ontario Ore.
Years Tested	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1959	1958-1959	1958-1959	1958-1960
Grant	20.0	31.7	21.9	33.7	29.9	17.4	15.9	9.9	49.4
Merit	18.0	33.5	20.7	30.9	28.3	16.1	15.3	9.4	50.6
Norchief	15.7	32.9	19.2	27.7	27.7	17.2	13.6	7.6	42.8
Mean	17.9	32.7	20.6	30.8	28.6	16.9	14.9	9.0	47.6
	Yield Rank								
Grant	1	3	1	1	1	1	1	1	2
Merit	2	1	2	2	2	3	2	2	1
Norchief	3	2	3	3	3	2	3	3	3

UNIFORM PRELIMINARY TEST 0, 1960

Strain	Originating Agency	Origin	Generation Composited
Grant	Wis. A.E.S. & U.S.R.S.L.	Lincoln x Seneca	F_6
Norchief	Wis. A.E.S. & U.S.R.S.L.	Hawkeye x Flambeau	F_4
M365	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
M366	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
M367	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
M368	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
M369	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
M370	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
0-4323	Central Exp. Farm, Ottawa	Capital x Hardome	F_7

Identification of Parent Strains

M10	Sel. from Lincoln (2) x Richland.
P.I. 180501	Sel. made in Germany from Strain 238 (of Manchurian origin) x P.I. 54616 (yellow soybean from Kungchuling, Chekiang Province, China through B. W. Skvortzow, Harbin, Manchuria).

This test was grown at 7 locations and consisted of two check varieties and seven experimental strains. Yields were good for this maturity group, ranging from the mid 20's to over 40 bushels per acre.

The check variety, Grant, was the highest yielding strain at all but one location and its over-all average was 5 bushels higher than the next highest strain. Being the latest strain in the test in part explains its high yield, but some of the experimental strains were only slightly earlier.

The six M strains are selections from the same cross and ranged in maturity from 1 to 10 days earlier than Grant, and as much as 3 days earlier than the early check Norchief. Lodging and height were similar to that of the check varieties. The earliest strain of this group, M370, was also the highest in yield, being 2 days earlier than Norchief and a bushel higher in average yield.

The remaining strain, 0-4323, yielded well considering its maturity and was unusually tall and lodging resistant.

Table 21. Summary of data for Uniform Preliminary Test 0, 1960.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	7	7	6	6	6	6	5	6	6
Grant	37.9	1	0	2.9	31	2.3	18.0	41.1	20.0
Norchief	31.5	5	-7.2	2.4	29	2.5	17.6	41.7	20.2
M365	31.0	6	-4.5	2.8	32	2.3	16.6	41.7	20.8
M366	29.7	7	-2.0	2.6	30	2.1	16.4	43.2	20.6
M367	28.7	8	-1.2	2.6	30	2.0	16.5	44.5	19.7
M368	31.9	3	-2.3	2.4	30	2.4	18.3	41.4	20.5
M369	27.0	9	-7.0	2.6	30	2.5	16.3	41.9	21.4
M370	32.7	2	-9.9	2.6	29	2.1	17.1	41.2	20.2
0-4323	31.9	3	-8.0	2.3	35	3.0	17.7	42.7	20.2
Mean	31.4		-4.7	2.6	31	2.4	17.2	42.1	20.4

[1]Days earlier (-) or later (+) than Grant which matured September 24, 126 days after planting. Flambeau (Group 00) matured -12.7.

Table 22. Disease data for Uniform Preliminary Test 0, 1960.

Strain	Purple Stain	Pod and Stem Blight	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Frogeye	
							R1	R2
Grant	3UDn	2UDn	4La,3Aa	3La,4Aa	S	3Ln	S	S
Norchief	2UDn	4UDn	4La,3Aa	3La,3Aa	S	3Ln	S	S
M365	3UDn	3UDn	3La,4Aa	2La,3Aa		4Ln	S	S
M366	3UDn	3UDn	3La,4Aa	3La,4Aa		4Ln	S	S
M367	3UDn	3UDn	3La,4Aa	2.5La,4Aa		3Ln	Seg.	S
M368	3UDn	3UDn	2La,3Aa	3La,4Aa		3Ln	R	S
M369	3UDn	3UDn	4La,4Aa	2.5La,4Aa		3Ln	R	S
M370	3UDn	2UDn	4La,4Aa	3La,4Aa		3Ln	Seg.	S
0-4323	4UDn	4UDn	3La	3.5La		3Ln	R	S

Table 23. Yield and yield rank for Uniform Preliminary Test 0, 1960.

Strain	Mean of 7 Tests	Ottawa Ont.[1]	Ridgetown Ont.	East Lansing Mich.[2]	Spooner Wis.	St. Paul Minn.	Fargo N.D.	Ontario Ore.[1]
Grant	37.9	46.4	38.4	33.8	36.1	30.6	36.2	44.1
Norchief	31.5	33.7	31.8	22.3	30.5	26.9	32.7	42.7
M365	31.0	36.1	33.8	30.6	29.7	23.2	27.1	36.5
M366	29.7	33.6	35.6	30.2	24.4	21.1	29.7	33.1
M367	28.7	31.2	35.7	30.2	24.8	15.4	30.1	33.8
M368	31.9	36.7	38.1	29.9	24.3	28.3	31.0	35.3
M369	27.0	28.4	32.6	21.6	19.6	19.7	30.1	36.7
M370	32.7	33.7	36.0	31.7	25.0	25.0	33.0	44.8
0-4323	31.9	36.7	34.2	26.1	22.1	23.2	32.5	48.3
Mean	31.4	35.2	35.1	28.5	26.3	23.7	31.4	39.5
Coef. of Var. (%)		6.6	6.4	9.8	7.7	12.3	--	6.2
Bu. Nec. for Sig. (5%)		3.8	5.0	4.0	4.6	6.1	--	5.5
Row Spacing (In.)		30	24	24	36	40	40	36

	Yield Rank							
Grant	1	1	1	1	1	1	1	3
Norchief	5	5	9	8	2	3	3	4
M365	6	4	7	3	3	5	9	6
M366	7	7	5	4	6	7	8	9
M367	8	8	4	4	5	9	6	8
M368	3	2	2	6	7	2	5	7
M369	9	9	8	9	9	8	6	5
M370	2	5	3	2	4	4	2	2
0-4323	3	2	6	7	8	5	4	1

[1]Irrigated.
[2]Four replications.

Table 24. Maturity, days earlier (-) or later (+) than Grant, for Uniform Preliminary Test 0, 1960.

Strain	Mean of 6 Tests[1]	Ottawa Ont.	Ridgetown Ont.	East Lansing Mich.	Spooner Wis.	St. Paul Minn.	Fargo N.D.	Ontario Ore.
Grant	0	0	0	0	0	0	0	0
Norchief	- 7.2	- 6	-1	-1	- 9	-12	- 9	- 6
M365	- 4.5	- 2	-5	-1	- 6	- 8	- 6	0
M366	- 2.0	- 2	+2	0	- 4	- 6	- 2	0
M367	- 1.2	- 2	+2	0	- 5	- 1	- 1	0
M368	- 2.3	- 2	0	-1	- 5	- 6	- 1	0
M369	- 7.0	- 5	0	0	-10	-11	- 6	-10
M370	- 9.9	- 5	-2	-1	-12	-19	- 9	-12
0-4323	- 8.0	- 5	-3	-1	- 9	-12	- 7	-12
Flambeau	-12.7	-15	-1	--	-13	-22	-11	-14
Date planted	5-21	5-19	5-27	6-9	5-27	5-23	5-17	5-12
Grant matured	9-24	10-2	9-9	9-29	9-28	9-29	9-21	9-24
Days to mature	126	136	105	112	124	129	127	135

[1]East Lansing, Michigan not included in the mean.

Table 25. Percentage of protein and oil for Uniform Preliminary Test 0, 1960.

Strain	Mean of 6 Tests	Ridge-town Ont.	East Lan-sing Mich.	Spoon-er Wis.	St. Paul Minn.	Fargo N.D.	On-tario Ore.
Grant	41.1	39.6	41.7	45.2	41.5	35.8	43.0
Norchief	41.7	39.8	42.6	44.0	43.3	36.8	43.8
M365	41.7	39.7	42.6	45.1	42.3	35.9	44.5
M366	43.2	42.0	43.0	46.1	43.8	38.7	45.3
M367	44.5	42.8	43.2	47.6	45.9	40.8	46.7
M368	41.4	39.5	43.4	44.2	40.4	37.5	43.2
M369	41.9	39.7	42.8	44.7	42.1	38.1	44.2
M370	41.2	39.8	42.2	44.0	40.7	36.9	43.8
0-4323	42.7	40.9	43.1	46.2	43.2	38.0	44.6
Mean	42.1	40.4	42.7	45.2	42.6	37.6	44.3
	Mean of 6 Tests	Percentage of Oil					
Grant	20.0	21.2	19.9	18.2	21.2	21.7	17.5
Norchief	20.2	21.4	19.8	19.3	20.3	21.9	18.5
M365	20.8	22.1	20.8	19.6	21.0	21.8	19.2
M366	20.6	22.0	19.8	19.3	21.0	22.0	19.5
M367	19.7	21.1	19.2	18.5	20.0	20.5	19.1
M368	20.5	21.6	19.7	19.3	21.8	21.8	19.0
M369	21.4	22.6	20.7	20.2	22.0	22.1	20.5
M370	20.2	21.2	19.6	19.1	20.7	21.1	19.5
0-4323	20.2	21.8	19.6	18.6	21.0	21.2	18.8
Mean	20.4	21.7	19.9	19.1	21.0	21.6	19.1

UNIFORM TEST I, 1960

Strain	Originating Agency	Origin	Generation Composited
Blackhawk	Iowa A.E.S. & U.S.R.S.L.	Mukden x Richland	F_7
Chippewa	Ill. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_5
M319	Minn. A.E.S. & U.S.R.S.L.	Lincoln x Hawkeye	F_5

This test was grown at 19 locations in 1960. All locations averaged over 20 bushels per acre and provided satisfactory strain evaluations.

The test consisted of one experimental strain, M319, plus two check varieties, Chippewa and Blackhawk. M319 has been in this test for three years. It has had a higher mean yield than the check varieties in each of the three years and has performed relatively well in all other traits.

Table 26. Summary of data for Uniform Test I, 1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	19	11	12	17	10	17	19	19
M319	35.1	+4.6	1.8	30	1.3	17.5	41.6	21.5
Blackhawk	34.4	+7.3	2.1	33	1.8	17.1	42.0	20.7
Chippewa	33.4	0	1.9	30	1.5	16.1	42.1	20.9
Mean	34.3	+4.0	1.9	31	1.5	16.9	41.9	21.0

[1]Days earlier (-) or later (+) than Chippewa which matured September 19, 117 days after planting. Grant (Group 0) matured -3.9.

Table 27. Disease data for Uniform Test I, 1960.

Strain	Purple Stain	Pod and Stem Blight	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Downy Mildew	Frog-eye		Phytophthora Rot	Bud Blight Virus*
								R1	R2		
M319	2UDn	2UDn	S	S	S	S	3.3Cn,3UDn	R	S	S	1.7Wn
Blackhawk	2UDn	2UDn	S	S	S	S	5Cn,3UDn	S	S	R	3.7Wn
Chippewa	2UDn	2UDn	S	S	S	S	3Cn,2UDn	S	S	S	1.2Wn

*Bud Blight notes taken on a scale of 0 (none) to 5 (100% of plants infected).

Table 28. Yield and yield rank for Uniform Test I, 1960.

Strain	Mean of 19 Tests	Ridge-town Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	East Lan-sing Mich.	Ida Mich.	Walk-erton Ind.	La-fay-ette Ind.	Du-rand Wis.
M319	35.1	34.9	24.8	46.1	44.2	32.0	34.0	39.6	52.7	21.2
Blackhawk	34.4	35.9	26.6	44.6	49.9	44.4	33.2	38.5	47.2	22.1
Chippewa	33.4	35.3	23.6	42.8	47.4	33.8	33.7	38.2	42.5	17.4
Mean	34.3	35.4	25.0	44.5	47.2	36.7	33.6	38.8	47.5	20.2
Coef. of Var. (%)		3.3	--	7.6	16.9	9.7	4.8	11.3	8.0	12.4
Bu. Nec. for Sig. (5%)		N.S.	--	N.S.	N.S.	5.2	N.S.	N.S.	4.9	3.8
Row Spacing (In.)		24	36	28	28	24	34	40	28	36
		Yield Rank								
M319		3	2	1	3	3	1	1	1	2
Blackhawk		1	1	2	1	1	3	2	2	1
Chippewa		2	3	3	2	2	2	3	3	3

Table 28. (Continued)

Strain	Madison Wis.	Shabbona Ill.	Dwight Ill.	Urbana Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.	Ontario Ore.
M319	39.2	44.7	31.7	38.4	34.0	28.7	21.7	24.5	32.8	41.6
Blackhawk	42.5	39.4	35.6	35.4	28.4	24.8	25.1	18.6	30.6	31.5
Chippewa	39.8	43.2	31.5	36.9	32.6	26.2	22.4	20.1	25.8	41.7
Mean	40.5	42.4	32.9	36.9	31.7	26.6	23.1	21.1	29.7	38.3
Coef. of Var. (%)	8.4	1.2	8.5	5.1	13.4	4.7	4.0	6.3	--	14.5
Bu. Nec. for Sig. (5%)	N.S.	0.9	N.S.	N.S.	N.S.	2.1	1.6	2.3	--	9.4
Row Spacing (In.)	36	40	38	40	40	40	42	40	42	36
	Yield Rank									
M319	3	1	2	1	1	1	3	1	1	2
Blackhawk	1	3	1	3	3	3	1	3	2	3
Chippewa	2	2	3	2	2	2	2	2	3	1

Table 29. Maturity, days earlier (-) or later (+) than Chippewa, lodging and plant height for Uniform Test I, 1960.

Strain	Mean of 11 Tests[1]	Ridge-town Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	East Lan-sing Mich.	Ida Mich.	Walk-erton Ind.	La-fay-ette Ind.	Du-rand Wis.
M319	+4.6	+ 4	+4	+ 4	+6		0	+4	+ 8	
Blackhawk	+7.3	+ 4	+5	+15	+7		+1	+6	+10	
Chippewa	0	0	0	0	0		0	0	0	
Grant	-3.9	-12	--	--	--		--	-3	- 2	
Date planted	5-25	5-27	5-26	5-20	5-26	6-9	5-27	6-3	5-25	5-23
Chippewa matured	9-19	9-21	9-20	9-8	9-6	--	9-29	9-21	9-12	--
Days to mature	117	117	117	111	103	--	125	110	110	--
	Mean of 12 Tests[3]	Lodging								
M319	1.8	1.0	2.0	1.0	1.2	1.0	1.0	1.3	1.3	
Blackhawk	2.1	1.0	2.0	1.0	1.2	1.0	1.0	1.5	1.5	
Chippewa	1.9	1.0	2.0	1.0	1.0	2.0	1.0	1.3	1.8	
Mean	1.9	1.0	2.0	1.0	1.1	1.3	1.0	1.4	1.5	
	Mean of 17 Tests[4]	Plant Height								
M319	30	31	20	33	34	33	32	31	33	24
Blackhawk	33	31	22	33	35	36	33	44	38	28
Chippewa	30	28	19	33	34	35	32	33	34	23
Mean	31	30	20	33	34	35	32	36	35	25

[1]Hoytville, Wooster and Columbus, Ohio, Ida, Michigan, Waseca, Minnesota and Brookings, South Dakota not included in the mean.
[2]Irrigated.
[3]Ridgetown, Ontario, Hoytville and Wooster, Ohio, Ida, Michigan and Waseca, Minnesota not included in the mean.
[4]Wooster, Ohio not included in the mean.

Table 29. (Continued)

Strain	Madison Wis.	Shabbona Ill.	Dwight Ill.	Urbana Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.	Ontario Ore.[2]
M319	+2	+ 7	+6	+3	+3	+4	+6	+4	+4	+ 4
Blackhawk	+8	+10	+7	+5	+7	+7	+6	+3	+6	+14
Chippewa	0	0	0	0	0	0	0	0	0	0
Grant	-6	- 4	-4	-2	-3	--	-1	-3	--	- 3
Date planted	5-27	5-26	6-8	5-20	5-23	6-7	6-1	5-10	5-28	5-12
Chippewa matured	9-22	9-18	9-18	8-30	10-2	10-2	9-28	9-7	10-6	10-3
Days to mature	118	115	102	102	132	117	119	120	131	144
					Lodging					
M319	2.5	1.2	1.0	1.2	3.0	1.1	1.2	1.1		5.0
Blackhawk	3.5	1.2	1.1	1.6	4.2	1.1	2.0	1.0		5.0
Chippewa	2.4	1.4	1.1	1.3	3.0	1.1	1.9	1.0		4.0
Mean	2.8	1.3	1.1	1.4	3.4	1.1	1.7	1.0		4.7
					Plant Height					
M319	33	31	27	32	37	28	22	26	30	
Blackhawk	36	35	33	38	39	28	25	27	36	
Chippewa	35	31	27	33	36	25	25	25	31	
Mean	35	32	29	34	37	27	24	26	32	

Table 30. Percentages of protein and oil for Uniform Test I, 1960.

Strain	Mean of 19 Tests	Ridge-town Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	East Lan-sing Mich.	Ida Mich.	Walk-erton Ind.	La-fay-ette Ind.	Du-rand Wis.
M319	41.6	41.2	38.9	41.2	42.6	41.7	43.0	42.1	41.9	40.6
Blackhawk	42.0	40.5	39.2	41.6	43.7	41.0	42.6	42.3	42.7	41.6
Chippewa	42.1	41.4	40.3	42.4	42.7	41.5	43.0	42.8	41.6	41.8
Mean	41.9	41.0	39.5	41.7	43.0	41.4	42.9	42.4	42.1	41.3
	Mean of 19 Tests	Percentage of Oil								
M319	21.5	21.5	23.2	21.9	22.2	19.8	20.8	21.3	22.0	21.3
Blackhawk	20.7	21.9	22.7	21.5	21.5	20.3	19.7	20.6	21.0	20.4
Chippewa	20.9	21.0	21.9	21.1	21.1	19.2	20.7	21.2	21.1	20.2
Mean	21.0	21.5	22.6	21.5	21.6	19.8	20.4	21.0	21.4	20.6

Table 30. (Continued)

Strain	Madison Wis.	Shabbona Ill.	Dwight Ill.	Urbana Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.	Ontario Ore.
M319	42.2	41.9	43.0	38.8	41.1	40.2	43.3	41.0	41.8	44.0
Blackhawk	44.1	40.5	42.7	40.2	42.2	41.5	43.2	42.0	42.0	44.3
Chippewa	43.5	42.0	43.5	40.3	41.9	41.5	44.1	41.1	41.2	42.9
Mean	43.3	41.5	43.1	39.8	41.7	41.1	43.5	41.4	41.7	43.7
	Percentage of Oil									
M319	20.5	22.1	21.2	23.4	21.7	22.1	21.4	22.7	21.1	18.0
Blackhawk	19.4	22.0	20.6	22.0	20.5	20.8	19.5	22.0	20.5	17.4
Chippewa	19.7	22.0	21.0	22.2	20.6	21.7	21.0	22.3	21.0	17.4
Mean	19.9	22.0	20.9	22.5	20.9	21.5	20.6	22.3	20.9	17.6

Table 31. Three-year summary of data for Uniform Test I, 1958-1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	53	40	40	51	41	51	53	53
M319	33.8	+3.5	1.7	31	1.6	17.4	41.2	21.4
Blackhawk	32.9	+6.7	2.1	34	1.9	16.9	41.7	20.6
Chippewa	32.3	0	1.8	31	1.9	16.2	41.6	20.8
Mean	33.0	+3.4	1.9	32	1.8	16.8	41.5	20.9

[1]Days earlier (-) or later (+) than Chippewa which matured September 16, 116 days after planting.

Table 32. Three-year summary of yield and yield rank for Uniform Test I, 1958-1960.

Strain	Mean of 53 Tests	Ridgetown Ont.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Ida Mich.	Walkerton Ind.	Lafayette Ind.	Durand Wis.
Years Tested		1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958, 1960	1958-1960
M319	33.8	35.8	30.7	39.4	38.2	39.8	37.9	29.9	39.0	22.5
Blackhawk	32.9	35.4	32.5	38.6	39.0	41.5	36.4	29.6	35.8	22.4
Chippewa	32.3	35.8	27.7	37.6	36.3	39.5	38.1	27.7	35.5	18.7
Mean	33.0	35.7	30.3	38.5	37.8	40.3	37.5	29.1	36.8	21.2
		Yield Rank								
M319		1	2	1	2	2	2	1	1	1
Blackhawk		3	1	2	1	1	3	2	2	2
Chippewa		1	3	3	3	3	1	3	3	3

Table 32. (Continued)

Strain	Madi-son Wis.	Shab-bona Ill.	Dwight Ill.	Ur-bana Ill.	St. Paul Minn.	Wa-seca Minn.	Cresco Iowa	Kana-wha Iowa	Brook-ings S.D.	On-tario Ore.
Years Tested	1958-1960	1958-1960	1959-1960	1959-1960	1958-1960	1958-1960	1958, 1960	1958-1960	1958-1960	1959-1960
M319	30.6	44.6	31.4	31.2	35.4	33.3	22.3	28.6	26.9	42.0
Blackhawk	35.2	40.8	35.5	29.2	29.7	31.3	24.0	25.0	23.7	33.3
Chippewa	31.1	41.9	34.3	29.8	35.3	31.5	22.3	24.8	20.6	40.7
Mean	32.3	42.4	33.7	30.1	33.5	32.0	22.9	26.1	23.7	38.7
	Yield Rank									
M319	3	1	3	1	1	1	2	1	1	1
Blackhawk	1	3	1	3	3	3	1	2	2	3
Chippewa	2	2	2	2	2	2	2	3	3	2

UNIFORM PRELIMINARY TEST I, 1960

Strain	Originating Agency	Origin	Generation Composited
Blackhawk	Iowa A.E.S. & U.S.R.S.L.	Mukden x Richland	F_7
Chippewa	Ill. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_5
M372	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
M373	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
M375	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
M376	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
M379	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5
M380	Minn. A.E.S. & U.S.R.S.L.	M10 x P.I. 180501	F_5

Identification of Parent Strains

M10	Sel. from Lincoln (2) x Richland.
P.I. 180501	Sel. made in Germany from Strain 238 (of Manchurian origin) x P.I. 54616 (yellow soybean from Kungchuling, Chekiang Province, China through B. W. Skvortzow, Harbin, Manchuria).

This test was grown at 11 locations and consisted of six experimental strains and two check varieties, Blackhawk and Chippewa. Yield level was good (over 30 bushels) except at three locations where it averaged under 20 bushels.

The six strains are all selections from the same cross and ranged in maturity from that of Chippewa to a day earlier than Blackhawk. Lodging resistance was equal to or better than that of the checks, height was less, and three of the six had oil contents a percent higher than the checks. Only one, M380, equaled the checks in average yield, and this was the latest one of the six. Its relatively high yield was very consistent over all locations.

Table 33. Summary of data for Uniform Preliminary Test I, 1960.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	9	9	5	5	9	5	7	7	7
Blackhawk	36.3	2	+6.2	1.7	33	1.6	17.2	42.0	21.1
Chippewa	35.4	3	0	1.5	30	1.3	16.1	42.0	21.0
M372	34.6	4	-0.2	1.3	27	1.3	17.4	40.7	22.1
M373	32.3	8	+0.4	1.3	28	2.2	18.5	41.8	21.7
M375	34.1	5	+2.2	1.3	29	1.9	18.9	40.6	22.3
M376	32.9	7	-1.8	1.2	27	1.6	17.3	41.6	21.4
M379	33.3	6	+2.2	1.2	28	1.4	17.1	41.5	22.2
M380	36.6	1	+5.2	1.5	29	1.8	19.0	42.8	21.0
Mean	34.4		+2.2	1.4	29	1.6	17.7	41.6	21.6

[1]Days earlier (-) or later (+) than Chippewa which matured September 17, 116 days after planting. Grant (Group 0) matured -2.0.

Table 34. Disease data for Uniform Preliminary Test I, 1960.

Strain	Purple Stain	Pod and Stem Blight	Bacterial Blight	Bacterial Pustule	Brown Stem Rot	Downy Mildew	Frogeye		Phytophthora Rot	Bud Blight Virus
							R1	R2		
Blackhawk	2UDn	2UDn	3La,4Aa	3La,4Aa	3Ln	5Cn,3UDn	S	S	R	3.3Wn
Chippewa	2UDn	3UDn	3La,3Aa	3La,4Aa	3Ln	3Cn,2UDn	S	S	S	1.0Wn
M372	1UDn	2UDn	3La,4Aa	3La,4Aa	3Ln	1Cn,1UDn	R	S		1.0Wn
M373			2La,3Aa	3La,4Aa	3Ln	1Cn	Seg.	S		1.5Wn
M375	2UDn	3UDn	2.5La,3Aa	1La,4Aa	3Ln	1Cn,2UDn	R	S		2Wn
M376	3UDn	3UDn	3.5La,3Aa	3La,4Aa	3Ln	1Cn,1UDn	Seg.	S		1Wn
M379	2UDn	2UDn	3.5La,4Aa	2La,5Aa	3Ln	1.5Cn	S	S		1Wn
M380	2UDn	3UDn	3La,4Aa	2La,5Aa	3Ln	2Cn,1UDn	Seg.	S		1.5Wn

Table 35. Yield and yield rank for Uniform Preliminary Test I, 1960.

Strain	Mean of 9 Tests[1]	Ridge-town Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	East Lan-sing Mich.[2]	Walk-er-ton Ind.	Du-rand Wis.	Madi-son Wis.	Shab-bona Ill.[2]	St. Paul Minn.	Kana-wha Iowa
Blackhawk	36.3	35.6	24.9	44.7	49.5	32.6	37.2	22.8	43.3	40.8	33.3	20.0
Chippewa	35.4	36.8	18.9	44.9	47.1	29.8	39.3	15.5	40.8	42.8	32.6	21.2
M372	34.6	36.7	22.5	46.0	40.5	29.7	36.6	17.5	43.0	42.2	29.8	18.8
M373	32.3	36.9	16.5	38.4	31.0	32.1	37.7	16.0	38.8	40.2	29.8	19.2
M375	34.1	37.8	15.3	46.3	35.3	31.2	37.0	18.9	40.7	40.4	30.7	19.0
M376	32.9	34.0	16.5	43.7	39.3	29.7	38.8	19.6	34.1	38.7	31.0	18.4
M379	33.3	35.2	12.5	44.1	39.7	31.0	32.1	18.0	37.6	42.5	27.7	19.8
M380	36.6	38.2	23.1	45.2	43.6	32.7	40.7	19.6	44.7	43.0	31.7	22.0
Mean	34.4	36.4	18.8	44.2	40.8	31.1	37.4	18.5	40.4	41.3	30.8	19.8
C.V.(%)		3.5	--	13.8	13.9	8.4	7.7	8.8	8.2	4.3	32.0	5.6
B.N.F.S.(5%)		2.9	--	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.	2.6	N.S.	2.6
Row Sp.(In.)		24	36	28	28	24	40	36	36	40	40	40
	Yield Rank											
Blackhawk	2	6	1	5	1	2	5	1	2	5	1	3
Chippewa	3	4	4	4	2	6	2	8	4	2	2	2
M372	4	5	3	2	4	7	7	6	3	4	6	7
M373	8	3	5	8	8	3	4	7	6	7	6	5
M375	5	2	7	1	7	4	6	4	5	6	5	6
M376	7	8	5	7	6	7	3	2	8	8	4	8
M379	6	7	8	6	5	5	8	5	7	3	8	4
M380	1	1	2	3	3	1	1	2	1	1	3	1

[1]Hoytville, Ohio and St. Paul, Minnesota not included in the mean.
[2]Four replications.

Table 36. Maturity, days earlier (-) or later (+) than Chippewa for Uniform Preliminary Test I, 1960.

Strain	Mean of 5 Tests[1]	Ridgetown Ont.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Walkerton Ind.	Madison Wis.	Shabbona Ill.	St. Paul Minn.	Kanawha Iowa
Blackhawk	+6.2	+6	+2	+13	+ 9	+3	+9	+11	+6	+2
Chippewa	0	0	0	0	0	0	0	0	0	0
M372	-0.2	+1	-3	+ 1	+ 4	+1	-3	0	-3	0
M373	+0.4	-3	-8	+ 2	+ 8	+6	-2	0	-3	+1
M375	+2.2	+2	-3	+ 1	+ 6	+4	+3	+ 2	+4	0
M376	-1.8	-2	-5	0	- 1	-2	-1	- 2	0	-2
M379	+2.2	+3	+3	+ 2	+10	+2	0	+ 4	+1	+2
M380	+5.2	+4	+4	+14	+ 7	+3	+4	+ 9	+8	+6
Grant	-2.0	+2	--	--	--	-4	-3	- 3	-3	-2
Date planted	5-24	5-27	5-26	5-20	5-26	6-3	5-26	5-26	5-23	5-10
Chippewa matured	9-17	9-21	9-23	9-6	9-10	9-22	9-19	9-17	10-2	9-6
Days to mature	116	117	120	109	107	111	116	114	132	119

[1]Hoytville, Wooster and Columbus, Ohio and St. Paul, Minnesota not included in the mean.

Table 37. Percentages of protein and oil for Uniform Preliminary Test I, 1960.

Strain	Mean of 7 Tests[1]	Ridge-town Ont.	Co-lum-bus Ohio	East Lan-sing Mich.	Walk-er-ton Ind.	Madi-son Wis.	Shab-bona Ill.	St. Paul Minn.	Kana-wha Iowa
Blackhawk	42.0	39.5	41.7	42.6	43.6	44.6	40.8	42.5	41.0
Chippewa	42.0	40.2	41.3	41.7	43.9	44.0	41.6	42.2	41.5
M372	40.7	39.5	39.5	42.2	41.5	41.4	40.5	40.3	40.1
M373	41.8	39.5	41.5	41.7	44.2	43.4	40.8	40.1	41.2
M375	40.6	38.5	40.7	41.0	41.1	42.8	40.1	39.0	40.1
M376	41.6	40.1	40.6	42.1	42.8	43.3	40.6	41.0	41.4
M379	41.5	39.9	41.1	42.3	41.5	42.1	41.6	41.1	42.0
M380	42.8	40.7	43.1	42.2	43.9	43.2	43.1	40.0	43.4
Mean	41.6	39.7	41.2	42.0	42.8	43.1	41.1	40.8	41.3
	Mean of 7 Tests[1]	Percentage of Oil							
Blackhawk	21.1	21.8	21.8	20.3	20.7	18.7	22.4	20.1	22.1
Chippewa	21.0	21.4	21.5	19.4	20.8	19.5	22.0	20.7	22.3
M372	22.1	22.5	23.1	19.8	22.1	20.6	23.3	21.8	23.5
M373	21.7	22.2	22.2	20.8	21.0	20.5	22.3	22.5	23.1
M375	22.3	23.6	22.6	20.8	22.2	21.2	22.4	22.5	23.3
M376	21.4	21.4	21.8	19.8	21.6	20.4	22.5	21.5	22.0
M379	22.2	22.6	22.4	20.9	22.5	20.7	23.0	22.3	23.0
M380	21.0	22.0	21.1	20.0	21.3	19.9	21.4	20.9	21.5
Mean	21.6	22.2	22.1	20.2	21.5	20.2	22.4	21.5	22.6

[1]St. Paul, Minnesota not included in the mean.

UNIFORM TEST II, 1960

Strain	Originating Agency	Origin	Generation Composited
Adams	Iowa A.E.S. & U.S.R.S.L.	Illini x Dunfield	F_7
Harosoy	Harrow E.S., Harrow, Ont.	Mandarin (2) x A.K.	F_5
Hawkeye	Iowa A.E.S. & U.S.R.S.L.	Mukden x Richland	F_4
Lindarin	Purdue A.E.S. & U.S.R.S.L.	Mandarin (Ottawa) x Lincoln	F_7
C1160	Purdue A.E.S. & U.S.R.S.L.	Perry x Mandarin (Ottawa)	F_7
L58-1531R	Ill. A.E.S. & U.S.R.S.L.	T235 (2) x [Harosoy (4) x F_2 (Blackhawk x Harosoy)]	F_1
L59g-1H	Ill. A.E.S. & U.S.R.S.L.	Harosoy (7) x F_2 (Blackhawk x Harosoy)	F_1
L59g-2R	Ill. A.E.S. & U.S.R.S.L.	Hawkeye (6) x F_2 (Blackhawk x Hawkeye)	F_1
L59g-3R	Ill. A.E.S. & U.S.R.S.L.	Adams (6) x F_2 (Blackhawk x Adams)	F_1
S6-5004	Mo. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_{11}
U4-75	Nebr. A.E.S. & U.S.R.S.L.	Lincoln x Blackhawk	F_6

Identification of Parent Strain

T235	Harosoy mutation to magenta-colored flowers.

This test was grown at 27 locations in 1960. Yields were good to excellent at most locations; only four widely scattered locations had yields under 30 bushels per acre. This year's over-all average yield was appreciably higher than the five-year mean.

The five-year summary tables include Lindarin, Harosoy, Hawkeye, and Adams. Lindarin has continued to outyield Hawkeye at most locations but was in turn outyielded by Harosoy.

One strain, C1160, has been in the test for three years. It was superior to Harosoy in lodging resistance and outyielded all check varieties. However, it was 2 days later than Harosoy and was distinctly poorer in seed quality than any of the four check varieties.

One strain, S6-5004, has been in the test for two years. In 1959 it was the highest strain in mean yield and this year it was near the top in yield. It has been satisfactory in other traits but was among the poorer ones in lodging resistance.

Four strains in this test for the first time in 1960 were developed by backcrossing. L59g-1H is BC_7 Harosoy, L59g-2R is BC_6 Hawkeye, L59g-3R is BC_6 Adams, and L58-1531R is BC_6 Harosoy except that the last two backcrosses were made to a mutant strain of Harosoy with magenta-colored flowers so that L58-1531R is uniformly of this flower color. All of these strains are composites of Phytophthora-resistant F_2 lines except L59g-1H which is a composite of F_2 lines segregating for Phytophthora reaction. In general these strains performed very similarly to their respective recurrent

parents. Phytophthora rot may have affected yields at some locations, such as Dwight and Girard, Illinois, and Greenfield, Indiana, and this would explain the slightly higher mean yields of the Harosoy and Hawkeye backcrosses. Since Adams itself has some resistance to Phytophthora, its mean yield is very close to that of its derived strain. L58-1531R appeared to differ in yield and composition from Harosoy perhaps due to pleiotropic effects of the gene causing its distinctive flower color.

One additional strain, U4-75, was new to this test in 1960. Its over-all performance was very similar to that of Harosoy.

Two new varieties, Henry and Madison, of Group II maturity, were named and released by Ohio in 1960. A description and outline of the development of these two strains follow:

HENRY

Henry has gray pubescence, purple flowers, and yellow seed with a gray hilum. It matures about one day later than Harosoy and has resistance to Phytophthora rot.

The history of its development follows:

1949 - Ohio cross HX6, Richland x (Illini x Dunfield) made at Columbus, Ohio by Dr. Lewis C. Saboe.
1950 - F_1 grown at Columbus, Ohio.
1951 - F_2 grown at Columbus, Ohio.
1952 - F_3 rows planted at Columbus, Ohio and individual plant selections made.
1953 - Selections made among F_4 rows and seed bulked within selected rows.
1954 - Seed from bulked F_4 rows placed in preliminary yield trials.
1955 - Best yielding selections placed in Phytophthora rot nursery and only resistant individual plants harvested.
1956 - Seed of individual plants retested in Phytophthora rot nursery and remaining seed planted in seed increase plots.
1957-59 - Selection H21793-7 (Henry) included in Uniform Test II and a three-year summary of performance of the strain will be found on page 59 of the 1959 Report (RSLM 202).

MADISON

Madison has gray pubescence, white flowers, and yellow seed with a brown hilum. It matures about one day later than Hawkeye and is resistant to Phytophthora rot.

The history of its development follows:

1948 - Ohio cross HX2, Monroe x Lincoln, made at Columbus, Ohio by Dr. Lewis C. Saboe.
1949 - F_1 grown at Columbus, Ohio.
1950 - F_2 grown at Columbus, Ohio.
1951 - F_3 rows planted at Columbus, Ohio and individual plant selections made.
1952 - Selections made among F_4 rows and seed bulked within selected rows.
1953 - Seed from bulked F_4 rows placed in preliminary yield trials.
1954 - Same as 1953.
1955 - Best yielding selections placed in Phytophthora rot nursery and only resistant individual plants harvested.

1956 - Seed of individual plants retested in Phytophthora rot nursery and remaining seed planted in seed increase plots.

1957-59 - Selection H20771-9 (Madison) included in Uniform Test II and a three-year summary of performance of the strain will be found on page 59 of the 1959 Report (RSLM 202).

Table 38. Summary of data for Uniform Test II, 1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	26	24	23	25	19	22	26	26
C1160	39.6	-0.7	1.6	35	2.2	18.9	42.0	21.3
L59g-1H	39.3	-3.3	2.0	38	2.2	18.7	41.9	21.3
L59g-3R	39.1	+2.8	2.2	40	1.8	16.1	41.3	21.4
Adams	38.9	+2.7	2.1	39	1.8	15.8	40.9	21.9
S6-5004	38.8	+0.7	2.1	36	1.8	15.9	41.2	21.4
U4-75	38.7	-1.3	2.0	38	2.1	18.3	41.6	21.2
Harosoy	38.5	-2.4	2.1	38	2.0	18.5	41.7	21.3
L58-1531R	37.6	-3.1	1.9	38	2.2	18.7	42.5	20.9
L59g-2R	36.9	+0.5	1.8	39	1.7	18.4	42.2	21.4
Hawkeye	36.4	0	1.8	37	1.7	18.5	42.0	21.5
Lindarin	36.0	-2.8	1.6	33	1.8	17.0	41.9	21.7
Mean	38.2	-0.6	1.9	37	1.9	17.7	41.7	21.4

[1]Days earlier (-) or later (+) than Hawkeye which matured September 27, 122 days after planting. Blackhawk (Group I) matured -4.6. Ford (Group III) matured +3.7.

Table 39. Disease data for Uniform Test II, 1960.

Strain	Purple Stain	Pod and Stem Blight	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Downy Mildew	Frog-eye R1	Frog-eye R2	Phytophthora Rot
C1160	2UDn	2UDn	S	S	S	S	3.3Cn,3.3Ln,4UDn	S	S	S
L59g-1H	3UDn	1UDn	S	S	S	S	1.7Cn,1.8Ln,2UDn	R	S	Seg.
L59g-3R	2UDn	1UDn	3La	3La,4Aa		3Ln	3.4Cn,3.3Ln,2UDn	R	S	R
Adams	3UDn	2UDn	S	S	S	S	3.4Cn,2.8Ln,4UDn	R	S	S
S6-5004	2UDn	2UDn	S	S	S	S	3.2Cn,3.5Ln,3UDn	R	S	S
U4-75	2UDn	2UDn	S	S	S	3Ln	1.9Cn,2Ln,2UDn	R	S	--
Harosoy	2UDn	1UDn	S	S	S	S	1.5Cn,1.8Ln,2UDn	R	S	S
L58-1531R	2UDn	2UDn	3La	3La,5Aa		3.5Ln	1.8Cn,2Ln,2UDn	R	S	R
L59g-2R	2UDn	2UDn	3.5La	3La,4Aa		3.5Ln	4.4Cn,2.8Ln,2UDn	S	S	R
Hawkeye	2UDn	1UDn	4La	3La,4Aa	S	S	4.3Cn,2.8Ln,2UDn	S	S	S
Lindarin	3UDn	2UDn	S	S	S	S	1.6Cn,2Ln,2UDn	R	S	S

Table 40. Yield and yield rank for Uniform Test II, 1960.

Strain	Mean of 26 Tests[1]	Ridge-town Ont.	James-burg N.J.	New-ark Del.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	Ida Mich.	Walk-er-ton Ind.	Bluff-ton Ind.	La-fay-ette Ind.	Green-field Ind.	Worth-ing-ton Ind.	Madi-son Wis.
C1160	39.6	39.9	29.0	36.9	28.3	54.8	50.5	40.6	41.8	47.4	49.6	42.6	47.2	40.0
L59g-1H	39.3	40.3	34.0	41.5	24.4	47.1	43.6	36.4	40.4	48.1	46.6	44.7	47.7	37.8
L59g-3R	39.1	37.9	31.4	41.0	30.6	49.2	58.1	33.6	42.8	43.4	41.9	42.6	48.8	35.3
Adams	38.9	37.9	34.4	44.9	28.4	46.5	55.0	35.8	41.8	43.1	48.3	41.0	47.4	35.1
S6-5004	38.8	36.4	28.5	33.8	18.0	43.0	45.6	35.0	40.7	47.7	46.8	41.3	46.3	37.2
U4-75	38.7	37.0	32.2	37.8	27.1	51.6	46.0	33.9	38.5	46.2	44.9	42.9	48.2	36.2
Harosoy	38.5	39.3	34.3	35.2	26.2	42.6	49.8	34.5	42.1	46.8	45.9	42.3	48.9	36.3
L58-1531R	37.6	39.3	32.9	40.7	23.8	48.2	40.0	33.7	39.4	44.2	45.2	44.7	47.4	35.5
L59g-2R	36.9	40.0	27.2	36.2	24.9	46.8	46.5	35.9	35.8	42.0	48.1	39.5	44.7	33.9
Hawkeye	36.4	37.9	27.9	37.0	24.2	45.2	46.7	35.1	38.0	40.4	48.9	32.8	44.0	35.1
Lindarin	36.0	35.4	27.3	35.6	22.7	44.0	48.2	36.5	34.4	43.3	44.6	41.2	46.5	36.5
Mean	38.2	38.3	30.8	38.2	25.3	47.2	48.2	35.5	39.6	44.8	46.4	41.4	47.0	36.3
CV (%)		7.0	11.8	11.4	--	8.0	12.9	7.9	9.6	4.4	6.5	8.5	7.4	6.8
BNFS (5%)		5.4	5.3	6.2	--	5.5	9.0	N.S.	5.1	2.8	4.3	5.0	N.S.	3.5
R.Sp.(In.)		24	24	36	36	28	28	34	40	38	38	38	38	36
							Yield Rank							
C1160		3	7	7	3	1	3	1	3	3	1	4	7	1
L59g-1H		1	3	2	7	5	10	3	6	1	6	1	4	2
L59g-3R		6	6	3	1	3	1	11	1	7	11	4	2	8
Adams		6	1	1	2	7	2	5	3	9	3	9	5	9
S6-5004		10	8	11	11	10	9	7	5	2	5	7	9	3
U4-75		9	5	5	4	2	8	9	8	5	9	3	3	6
Harosoy		5	2	10	5	11	4	8	2	4	7	6	1	5
L58-1531R		4	4	4	9	4	11	10	7	6	8	1	5	7
L59g-2R		2	11	8	6	6	7	4	10	10	4	10	10	11
Hawkeye		6	9	6	8	8	6	6	9	11	2	11	11	9
Lindarin		11	10	9	10	9	5	2	11	8	10	8	8	4

[1]Ida, Michigan not included in the mean.

Table 40. (Continued)

Strain	Shab-bona Ill.	Dwight Ill.	Ur-bana Ill.	Gir-ard Ill.	Edge-wood Ill.	Wa-seca Minn.	Suth-er-land Iowa	Kana-wha Iowa	Inde-pen-dence Iowa	Ames Iowa	Kirks-ville Mo.	Men-no S.D.	Con-cord Nebr.	Lin-coln Nebr.
C1160	44.1	38.4	37.2	43.7	49.5	24.2	40.1	24.2	38.4	39.5	23.7	26.1	39.7	51.9
L59g-1H	45.5	41.1	40.8	47.0	46.7	23.0	38.3	24.4	37.8	39.8	29.0	29.6	36.9	44.9
L59g-3R	44.4	33.7	38.0	44.3	44.1	22.4	38.6	26.4	35.4	41.6	29.3	32.4	38.2	44.0
Adams	43.2	35.4	38.6	39.5	44.6	22.4	40.4	27.6	37.2	39.8	26.1	32.2	38.3	42.3
S6-5004	45.3	38.5	36.5	43.6	44.6	21.4	41.2	30.6	38.3	45.5	24.5	40.0	41.3	53.1
U4-75	44.2	32.8	39.6	42.7	50.0	24.2	39.6	23.8	35.8	41.0	21.9	32.7	38.5	50.9
Harosoy	42.1	36.5	40.5	41.8	47.0	25.2	37.2	24.9	36.2	38.4	25.2	29.0	37.8	48.7
L58-1531R	41.2	35.3	37.6	44.8	44.7	19.4	36.2	22.8	35.1	40.1	30.8	24.3	37.1	47.7
L59g-2R	39.7	33.1	36.7	40.6	40.6	22.0	37.2	25.8	33.2	37.9	25.8	33.0	37.4	49.9
Hawkeye	39.1	29.4	34.8	38.5	41.3	20.3	38.8	26.6	34.8	40.0	24.9	34.5	36.8	49.7
Lindarin	41.0	29.9	40.1	38.5	47.0	20.1	37.7	24.2	36.6	36.7	22.6	28.6	33.8	39.1
Mean	42.7	34.9	38.2	42.3	45.5	22.2	38.7	25.6	36.3	40.0	25.8	31.1	37.8	47.5
CV (%)	3.9	9.6	4.8	8.2	6.9	9.1	7.2	5.6	5.2	5.6	14.2	--	6.1	6.7
BNFS (5%)	2.4	4.8	2.7	5.0	4.5	2.9	4.0	2.1	2.7	3.2	4.9	--	3.3	4.6
R.Sp.(In.)	40	38	40	38	38	40	40	40	40	40	40	42	40	40
	Yield Rank													
C1160	5	3	8	4	2	2	3	8	1	8	9	10	2	2
L59g-1H	1	1	1	1	5	4	7	7	3	6	3	7	9	8
L59g-3R	3	7	6	3	9	5	6	4	8	2	2	5	5	9
Adams	6	5	5	9	7	5	2	2	4	6	4	6	4	10
S6-5004	2	2	10	5	7	8	1	1	2	1	8	1	1	1
U4-75	4	9	4	6	1	2	4	10	7	3	11	4	3	3
Harosoy	7	4	2	7	3	1	9	6	6	9	6	8	6	6
L58-1531R	8	6	7	2	6	11	11	11	9	4	1	11	8	7
L59g-2R	10	8	9	8	11	7	9	5	11	10	5	3	7	4
Hawkeye	11	11	11	10	10	9	5	3	10	5	7	2	10	5
Lindarin	9	10	3	10	3	10	8	8	5	11	10	9	11	11

Table 41. Maturity, days earlier (-) or later (+) than Hawkeye, for Uniform Test II, 1960.

Strain	Mean of 24 Tests[1]	Ridge-town Ont.	James-burg N.J.	New-ark Del.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	Ida Mich.	Walk-er-ton Ind.	Bluff-ton Ind.	La-fay-ette Ind.	Green-field Ind.	Worth-ing-ton Ind.
C1160	-0.7	0	-1	-1	-2	-1	+ 1	+1	-2	0	+2	0	+3
L59g-1H	-3.3	-5	-1	0	-2	-3	0	-1	-6	-3	-4	0	0
L59g-3R	+2.8	+3	+3	+3	0	-1	+ 3	+3	+4	+8	+6	+ 6	+5
Adams	+2.7	+3	0	+5	0	-2	+ 4	+3	+3	+7	+6	+ 4	+5
S6-5004	+0.7	0	+2	-3	-1	-1	+ 3	-1	-2	-1	-1	+ 2	+1
U4-75	-1.3	-4	+1	0	-2	-2	+ 2	0	-3	0	+1	0	+2
Harosoy	-2.4	-4	-2	-1	-2	-4	+ 1	-1	-4	-3	-4	+ 1	0
L58-1531R	-3.1	-5	-2	-1	-4	-3	+ 1	-1	-5	-3	-4	0	0
L59g-2R	+0.5	+1	+1	+1	0	+1	0	-1	0	+2	0	+ 1	0
Hawkeye	0	0	0	0	0	0	0	0	0	0	0	0	0
Lindarin	-2.8	-5	-1	-2	-1	-4	- 1	-2	-7	-4	-5	0	+2
Blackhawk	-4.6	-1	-4	+1	-8	-7	-12	--	-5	-3	-2	- 5	-3
Ford	+3.7	+2	-1	0	+2	--	+ 2	--	+2	+7	+4	+10	+3
Date pltd.		5-28	5-27	6-3	6-10	5-26	5-20	5-26	5-27	6-3	6-1	5-24	6-4	6-1
Hawkeye mat.		9-27	9-29	9-27	10-1	10-3	9-30	9-25	10-1	10-2	9-28	9-24	9-23	9-18
Days to mat.		122	125	116	113	130	133	122	127	121	119	123	111	109

[1]Wooster, Ohio and Ida, Michigan not included in the mean.

Table 41. (Continued)

Strain	Madi-son Wis.	Shab-bona Ill.	Dwight Ill.	Ur-bana Ill.	Gir-ard Ill.	Edge-wood Ill.	Wa-seca Minn.	Suth-er-land Iowa	Kana-wha Iowa	Inde-pen-dence Iowa	Ames Iowa	Men-no S.D.	Con-cord Nebr.	Lin-coln Nebr.
C1160	-3	-2	0	-2	-2	0	0	0	- 5	0	+1	-2	-2	0
L59g-1H	-2	-3	-3	-4	-6	-2	-1	-7	- 9	-4	-7	-5	-5	-1
L59g-3R	0	+1	+2	-2	+1	+2	+1	+1	+ 3	+2	+6	+6	-1	+3
Adams	+1	+1	+1	-2	+1	+2	+1	+1	+ 3	+2	+6	+6	+3	+2
S6-5004	-3	0	0	0	+1	+2	+2	+3	+ 5	0	+6	+1	-5	+4
U4-75	-1	-2	-1	-3	-3	0	0	-3	- 7	-2	-2	-2	-1	-1
Harosoy	-2	-2	-2	-3	-4	-1	-1	-5	- 8	-2	-4	-4	0	-2
L58-1531R	-2	-3	-3	-4	-4	-1	-1	-6	- 9	-2	-5	-4	-4	-3
L59g-2R	+1	0	-1	-1	0	-1	+1	+1	- 1	0	0	+3	+4	0
Hawkeye	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lindarin	-5	-3	-3	-2	-5	0	0	-6	- 6	-4	-3	-3	-2	-2
Blackhawk	-4	-5	-5	-7	-6	-1	-1	-8	-10	-5	-6	-4	-5	-1
Ford	+5	+3	+2	+2	+4	+3	+3	+5	+ 7	+4	+7	+4	+4	+5
Date pltd.	5-27	5-26	6-8	5-20	5-24	6-7	6-7	5-13	5-10	5-30	5-11	5-24	6-7	5-27
Hawkeye mat.	10-3	10-3	9-30	9-11	9-16	9-15	10-10	9-29	9-23	10-4	9-23	10-2	9-28	9-29
Days to mat.	129	130	114	114	115	100	125	139	136	127	135	131	113	125

Table 42. Lodging and plant height for Uniform Test II, 1960.

Strain	Mean of 23 Tests[1]	Ridge-town Ont.	James-burg N.J.	New-ark Del.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	Ida Mich.	Walk-er-ton Ind.	Bluff-ton Ind.	La-fay-ette Ind.	Green-field Ind.	Worth-ing-ton Ind.	Madi-son Wis.
C1160	1.6	4.0	2.5	2.5	2.2	1.2	1.0	3.0	1.0	1.5	1.5	1.0	1.3	2.4
L59g-1H	2.0	4.0	3.2	3.3	2.0	1.5	1.0	3.0	1.0	1.3	2.3	1.3	1.8	3.1
L59g-3R	2.2	5.0	3.2	2.5	2.0	1.5	1.0	3.0	2.5	1.5	2.0	2.3	2.8	3.0
Adams	2.1	4.0	3.0	2.5	2.0	2.2	1.0	3.0	1.8	1.5	2.0	1.8	2.3	3.1
S6-5004	2.1	5.0	3.0	2.8	2.2	1.2	1.0	3.0	2.3	1.5	2.5	1.8	2.8	2.6
U4-75	2.0	3.0	3.2	3.3	2.0	1.7	1.0	3.0	1.5	1.8	2.0	1.3	2.0	3.4
Harosoy	2.1	4.0	3.0	3.0	2.0	1.2	1.0	3.0	1.3	1.5	3.0	1.5	2.0	3.8
L58-1531R	1.9	3.0	3.5	2.8	1.7	1.7	1.0	2.0	1.5	1.3	2.0	1.0	1.8	3.6
L59g-2R	1.8	4.0	3.5	2.8	2.0	1.0	1.0	3.0	1.0	1.3	1.5	1.3	1.0	3.1
Hawkeye	1.8	4.0	3.0	2.0	2.0	1.7	1.0	3.0	1.3	1.5	1.5	1.3	1.0	3.1
Lindarin	1.6	3.0	3.2	2.0	1.5	1.0	1.0	3.0	1.0	1.0	1.3	1.0	2.0	2.0
Mean	1.9	3.9	3.1	2.7	2.0	1.4	1.0	2.9	1.5	1.4	2.0	1.4	1.9	3.0
	Mean of 25 Tests[2]							Plant Height						
C1160	35	41		39	24	40	27	40	37	40	40	35	37	36
L59g-1H	38	40		40	22	38	25	39	36	44	43	39	42	36
L59g-3R	40	44		45	27	38	29	45	41	45	48	40	43	40
Adams	39	41		44	27	38	27	43	42	44	45	39	42	39
S6-5004	36	39		38	24	40	27	41	35	40	45	35	39	37
U4-75	38	41		43	24	42	28	41	40	44	43	39	42	36
Harosoy	38	40		42	24	39	24	42	39	44	44	39	43	34
L58-1531R	38	40		44	23	40	26	42	37	44	44	39	43	37
L59g-2R	39	39		40	28	41	24	43	38	43	45	38	42	37
Hawkeye	37	39		42	25	39	27	40	38	42	45	34	41	35
Lindarin	33	35		41	23	38	25	39	34	37	38	34	37	35
Mean	37	40		42	25	39	26	41	38	42	44	37	41	37

[1]Columbus, Ohio, Ida, Michigan and Kirksville, Missouri not included in the mean.
[2]Ida, Michigan not included in the mean.

Table 42. (Continued)

Strain	Shab-bona Ill.	Dwight Ill.	Ur-bana Ill.	Gir-ard Ill.	Edge-wood Ill.	Wa-seca Minn.	Suth-er-land Iowa	Kana-wha Iowa	Inde-pen-dence Iowa	Ames Iowa	Kirks-ville Mo.	Men-no S.D.	Con-cord Nebr.	Lin-coln Nebr.
C1160	1.2	1.1	1.8	1.1	1.1	1.0	1.4	1.1	1.6	1.6	1.0		1.3	3.1
L59g-1H	1.4	1.0	2.1	1.3	1.6	1.2	1.4	1.0	1.8	1.6	1.0		2.1	3.9
L59g-3R	1.6	1.2	1.9	1.8	1.9	1.5	1.5	1.2	2.0	1.9	1.0		2.5	3.9
Adams	1.5	1.1	1.6	1.9	2.0	1.4	1.5	1.1	1.8	1.8	1.0		2.5	2.8
S6-5004	1.4	1.2	1.9	1.6	1.3	1.9	1.4	1.2	1.9	2.0	1.0		2.5	3.2
U4-75	1.4	1.0	2.0	1.1	1.0	1.5	1.5	1.0	1.9	1.7	1.0		2.0	4.0
Harosoy	1.4	1.0	2.0	1.4	1.4	1.5	1.4	1.0	2.0	1.7	1.0		2.4	4.0
L58-1531R	1.5	1.1	2.1	1.4	1.3	1.4	1.4	1.0	1.7	1.6	1.0		1.8	4.2
L59g-2R	1.4	1.0	1.9	1.1	1.1	1.6	1.4	1.0	1.8	1.6	1.0		1.6	2.9
Hawkeye	1.3	1.0	2.0	1.2	1.1	1.5	1.4	1.0	1.8	1.5	1.0		1.6	2.5
Lindarin	1.1	1.0	1.3	1.0	1.0	1.1	1.4	1.0	1.6	1.6	1.0		1.6	3.1
Mean	1.4	1.1	1.9	1.4	1.3	1.4	1.4	1.1	1.8	1.7	1.0		2.0	3.4
	Plant Height													
C1160	36	33	38	35	32	35	38	30	38	35	27	35	36	40
L59g-1H	38	35	42	40	37	38	38	32	44	40	31	41	41	50
L59g-3R	42	37	41	40	37	40	43	33	45	42	33	40	43	48
Adams	40	35	39	39	35	38	42	33	43	41	32	40	41	47
S6-5004	37	34	38	35	33	37	40	32	40	39	29	37	39	42
U4-75	38	34	41	38	37	36	41	33	43	40	29	41	40	47
Harosoy	38	36	42	39	38	36	40	32	43	39	29	40	40	48
L58-1531R	36	36	41	38	36	38	38	31	44	40	32	40	40	48
L59g-2R	41	34	40	37	35	39	42	34	44	41	30	43	41	48
Hawkeye	39	32	39	36	33	37	41	32	44	40	30	42	39	46
Lindarin	34	29	36	33	31	32	37	28	39	34	25	30	33	38
Mean	38	34	40	37	35	37	40	32	42	39	30	39	39	46

Table 43. Percentages of protein and oil for Uniform Test II, 1960.

Strain	Mean of 26 Tests[1]	Ridge-town Ont.	James-burg N.J.	New-ark Del.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	Ida Mich.	Walk-er-ton Ind.	Bluff-ton Ind.	La-fay-ette Ind.	Green-field Ind.	Worth-ing-ton Ind.	Madi-son Wis.
C1160	42.0	43.4	43.9	42.0	39.7	42.7	43.1	42.7	42.0	41.9	42.7	42.6	39.5	44.1
L59g-1H	41.9	41.8	43.4	40.6	39.5	42.5	44.0	43.0	41.9	41.3	43.7	42.7	39.6	44.9
L59g-3R	41.3	40.5	44.2	40.1	39.5	41.5	40.7	43.1	41.9	40.6	41.4	42.6	40.0	40.9
Adams	40.9	40.4	43.3	40.1	38.6	41.5	40.6	42.3	41.6	40.0	42.5	42.0	38.9	41.2
S6-5004	41.2	42.5	43.1	37.9	38.7	41.6	42.6	42.9	41.4	41.6	41.2	42.6	39.7	42.9
U4-75	41.6	41.5	44.0	40.6	39.3	42.2	43.7	42.5	41.2	41.4	41.2	42.7	39.2	44.3
Harosoy	41.7	41.4	44.0	39.4	39.4	42.9	44.1	41.6	41.7	41.5	43.3	42.3	38.8	44.3
L58-1531R	42.5	42.2	43.8	42.0	40.5	43.6	43.4	42.2	42.3	41.2	43.9	42.8	40.6	44.4
L59g-2R	42.2	42.4	44.3	41.6	39.4	42.5	41.9	43.9	42.7	41.5	43.1	43.0	39.9	42.3
Hawkeye	42.0	42.5	44.0	39.9	39.4	42.5	42.0	43.5	42.1	40.7	42.7	42.8	39.5	43.3
Lindarin	41.9	43.6	45.1	41.4	39.3	41.5	42.4	43.3	42.1	41.4	42.5	42.9	40.1	44.6
Mean	41.7	42.0	43.9	40.5	39.4	42.3	42.6	42.8	41.9	41.2	42.6	42.6	39.6	43.4

	Mean of 26 Tests[1]	Percentage of Oil												
C1160	21.3	19.7	20.1	21.1	21.3	20.4	21.7	20.0	21.3	21.5	21.7	21.5	22.9	19.3
L59g-1H	21.3	19.9	20.4	21.3	21.9	20.6	20.7	19.8	20.9	20.9	21.0	21.7	22.8	18.4
L59g-3R	21.4	20.3	20.2	21.5	21.6	21.2	22.0	19.5	20.6	21.3	21.2	21.2	22.7	20.3
Adams	21.9	20.5	20.8	21.8	22.3	21.9	22.6	19.7	21.0	21.6	22.0	21.7	23.4	20.3
S6-5004	21.4	19.8	20.0	22.9	21.9	20.7	21.7	20.3	21.3	21.5	21.8	21.6	21.6	19.8
U4-75	21.2	21.1	19.9	21.9	21.7	20.2	20.2	20.0	20.7	20.9	21.0	21.4	22.9	17.7
Harosoy	21.3	21.0	19.7	22.7	21.6	20.6	20.7	19.5	20.9	21.5	21.2	21.5	23.2	18.6
L58-1531R	20.9	19.8	19.7	21.1	21.2	21.1	20.3	19.8	20.3	21.0	20.8	20.9	22.7	18.2
L59g-2R	21.4	20.9	20.1	21.3	22.1	20.4	21.3	19.9	20.9	21.5	21.3	21.5	23.0	19.9
Hawkeye	21.5	21.0	19.9	22.5	22.3	20.5	21.6	20.1	21.2	21.3	21.7	21.2	23.4	19.8
Lindarin	21.7	20.2	19.4	21.5	21.9	21.0	21.6	20.0	20.9	22.1	21.7	22.4	23.0	19.4
Mean	21.4	20.4	20.0	21.8	21.8	20.8	21.3	19.9	20.9	21.4	21.4	21.5	22.9	19.2

[1]Ida, Michigan not included in the mean.

Table 43. (Continued)

Strain	Shab-bona Ill.	Dwight Ill.	Ur-bana Ill.	Gir-ard Ill.	Edge-wood Ill.	Wa-seca Minn.	Suth-er land Iowa	Kana-wha Iowa	Inde-pen-dence Iowa	Ames Iowa	Kirks-ville Mo.	Men-no S.D.	Con-cord Nebr.	Lin-coln Nebr.
C1160	44.5	43.4	40.3	44.6	41.4	41.3	40.6	40.6	47.0	43.4	38.7	39.2	40.9	38.7
L59g-1H	42.1	42.6	40.6	43.6	40.3	42.4	40.8	41.4	46.0	42.4	39.4	41.1	40.7	39.7
L59g-3R	45.8	40.8	40.1	43.4	41.4	40.5	40.2	40.5	43.2	42.4	39.6	41.0	40.4	39.6
Adams	43.6	40.0	39.3	42.5	41.4	39.4	39.7	39.5	43.5	42.6	39.2	41.3	39.8	39.8
S6-5004	43.6	41.9	40.1	43.7	41.0	39.0	39.5	41.4	45.6	42.7	38.7	39.5	38.6	39.1
U4-75	44.6	42.6	40.6	43.1	40.2	41.3	40.8	41.2	45.2	43.4	38.1	41.0	40.0	39.1
Harosoy	44.0	42.2	40.6	43.1	40.3	41.6	41.2	41.7	44.2	43.0	38.1	40.7	41.2	38.7
L58-1531R	42.9	43.0	41.5	44.0	41.1	42.0	41.3	42.7	46.2	43.9	40.7	41.9	42.2	40.4
L59g-2R	42.6	42.0	40.7	45.3	41.1	40.6	42.0	42.5	45.5	44.1	40.5	42.5	41.7	40.4
Hawkeye	42.5	42.7	40.6	44.3	41.3	41.0	42.0	42.3	45.7	44.4	40.3	42.1	42.0	40.1
Lindarin	43.2	42.9	41.1	43.8	41.6	41.5	41.2	40.1	45.7	42.7	37.4	40.5	40.9	38.7
Mean	43.6	42.2	40.5	43.8	41.0	41.0	40.8	41.3	45.3	43.2	39.2	41.0	40.8	39.5

	Percentage of Oil													
C1160	18.1	20.9	21.7	22.2	22.5	20.8	22.6	23.2	19.0	21.9	22.2	22.7	21.1	22.5
L59g-1H	22.1	21.1	21.8	22.7	23.1	20.6	21.7	22.7	19.4	21.6	21.5	21.4	20.6	21.9
L59g-3R	19.3	21.9	22.7	22.0	22.7	21.2	22.1	23.2	19.7	21.7	22.4	21.1	20.5	22.6
Adams	19.5	21.9	23.1	22.3	22.8	21.6	22.5	24.4	20.7	22.1	22.5	21.6	20.9	22.3
S6-5004	21.7	21.2	21.7	21.7	22.2	20.6	22.0	22.3	19.6	21.3	22.3	21.8	21.3	22.2
U4-75	21.5	21.2	21.9	22.2	22.9	20.8	21.8	22.3	19.0	21.2	22.9	20.8	20.5	22.0
Harosoy	20.4	21.1	22.0	22.4	23.2	21.2	21.6	22.5	19.3	21.2	21.9	21.3	20.1	21.4
L58-1531R	21.1	20.4	21.8	22.2	22.5	19.7	21.8	22.0	18.8	20.8	21.1	21.8	20.2	21.4
L59g-2R	19.9	20.9	22.8	22.0	22.2	21.2	21.8	23.1	19.8	21.9	21.7	21.6	20.7	21.9
Hawkeye	22.3	21.8	22.7	21.6	21.8	21.1	21.8	22.6	19.8	21.1	21.8	21.3	20.2	22.6
Lindarin	21.4	21.0	22.0	23.1	22.7	21.3	22.1	23.4	19.4	22.8	23.0	22.5	20.8	22.7
Mean	20.7	21.2	22.2	22.2	22.6	20.9	22.0	22.9	19.5	21.6	22.1	21.6	20.6	22.1

Table 44. Three-year summary of data for Uniform Test II, 1958-1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	75	71	66	73	66	71	75	75
C1160	38.9	-0.7	1.9	36	2.2	18.6	41.6	21.4
Harosoy	38.3	-2.6	2.2	39	1.9	18.2	41.4	21.2
Adams	37.8	+2.6	2.3	40	1.6	15.4	40.5	21.7
Lindarin	36.4	-2.9	1.8	35	1.7	16.5	41.5	21.6
Hawkeye	36.2	0	1.9	38	1.8	18.2	41.6	21.4
Mean	37.5	-0.7	2.0	38	1.8	17.4	41.3	21.5

[1]Days earlier (-) or later (+) than Hawkeye which matured September 23, 121 days after planting. Blackhawk (Group I) matured -4.3. Ford (Group III) matured +4.5.

Table 45. Three-year summary of yield and yield rank for Uniform Test II, 1958-1960.

Strain	Mean of 75 Tests	Ridgetown Ont.	Jamesburg N.J.	Newark Del.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Ida Mich.	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Madison Wis.
Years Tested		1958-1960	1959-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960
C1160	38.9	39.9	37.0	41.1	30.3	45.9	46.2	42.3	36.4	42.1	43.4	37.9	40.9	35.5
Harosoy	38.3	37.9	37.7	37.0	29.2	38.8	45.1	41.7	35.4	43.8	43.3	38.6	43.0	30.5
Adams	37.8	34.1	38.5	41.3	28.5	37.7	47.9	39.7	34.7	38.1	43.5	38.6	39.1	31.5
Lindarin	36.4	33.0	35.6	38.8	25.4	38.3	43.7	39.6	32.1	39.0	40.8	37.3	41.4	31.6
Hawkeye	36.2	37.1	35.4	35.6	26.3	38.6	42.3	37.9	33.3	39.6	43.4	32.4	39.1	30.8
Mean	37.5	36.4	36.8	38.8	27.9	39.9	45.0	40.2	34.4	40.5	42.9	37.0	40.7	32.0
		Yield Rank												
C1160		1	3	2	1	1	2	1	1	2	2	3	3	1
Harosoy		2	2	4	2	2	3	2	2	1	4	1	1	5
Adams		4	1	1	3	5	1	3	3	5	1	1	4	3
Lindarin		5	4	3	5	4	4	4	5	4	5	4	2	2
Hawkeye		3	5	5	4	3	5	5	4	3	2	5	4	4

Table 45. (Continued)

Strain	Shabbona Ill.	Dwight Ill.	Urbana Ill.	Girard Ill.	Edgewood Ill.	Waseca Minn.	Sutherland Iowa	Kanawha Iowa	Independence Iowa	Ames Iowa	Kirksville Mo.	Menno S.D.	Concord Nebr.	Lincoln Nebr.
Years Tested	1958-1960	1958-1960	1958-1960	1958-1960	1959-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958-1960	1958, 1960	1958, 1960	1958-1960	1958-1960
C1160	45.3	40.2	34.8	45.2	40.3	34.2	38.1	33.4	37.1	40.1	28.2	17.5	37.1	46.7
Harosoy	43.1	39.8	37.8	42.0	41.3	35.1	37.3	33.3	38.1	40.3	29.7	19.5	37.0	45.6
Adams	44.4	41.5	38.5	41.3	36.7	34.8	37.0	33.4	35.4	42.4	28.0	20.7	35.3	42.5
Lindarin	41.4	35.3	37.4	40.0	39.9	33.1	36.6	31.4	35.3	39.8	26.8	18.0	35.8	42.0
Hawkeye	40.9	35.5	34.0	40.2	35.8	33.7	39.1	32.1	34.5	40.5	27.7	22.9	34.6	44.4
Mean	43.0	38.5	36.5	41.7	38.8	34.2	37.6	32.7	36.1	40.6	28.1	19.7	36.0	44.2
	Yield Rank													
C1160	1	2	4	1	2	3	2	1	2	4	2	5	1	1
Harosoy	3	3	2	2	1	1	3	3	1	3	1	3	2	2
Adams	2	1	1	3	4	2	4	1	3	1	3	2	4	4
Lindarin	4	5	3	5	3	5	5	5	4	5	5	4	3	5
Hawkeye	5	4	5	4	5	4	1	4	5	2	4	1	5	3

Table 46. Five-year summary of data for Uniform Test II, 1956-1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	121	109	109	116	103	118	122	122
Harosoy	37.9	-3.0	2.3	39	1.9	17.9	41.5	21.0
Adams	37.1	+2.4	2.3	40	1.6	15.2	40.3	21.5
Lindarin	36.5	-3.4	1.8	35	1.7	16.4	41.6	21.3
Hawkeye	35.8	0	2.0	38	1.8	18.1	41.4	21.2
Mean	36.8	-1.0	2.1	38	1.8	16.9	41.2	21.3

[1]Days earlier (-) or later (+) than Hawkeye which matured September 23, 120 days after planting. Blackhawk (Group I) matured -5.2. Ford (Group III) matured +4.5.

Table 47. Five-year summary of yield and yield rank for Uniform Test II, 1956-1960.

Strain	Mean of 121 Tests	Ridgetown Ont.	Newark Del.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Ida Mich.	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Madison Wis.	Shabbona Ill.
Years Tested		1956-1960	1956-1960	1956-1960	1956-1960	1956-1960	1956-1960	1956-1960	1956-1960	1956-1960	1956-1960	1956-1960	1956-1960
Harosoy	37.9	38.2	38.6	29.8	40.5	41.6	40.4	39.5	44.9	42.9	35.5	32.5	43.5
Adams	37.1	33.1	41.1	29.0	37.9	43.9	38.6	38.9	40.5	42.5	33.9	33.0	42.7
Lindarin	36.5	34.0	40.6	26.3	37.2	41.2	38.5	37.8	41.6	40.6	33.7	33.7	42.2
Hawkeye	35.8	34.5	37.6	26.5	39.0	39.4	37.7	37.4	39.8	43.0	31.0	33.1	40.3
Mean	36.8	35.0	39.5	27.9	38.7	41.5	38.8	38.4	41.7	42.3	33.5	33.1	42.2
		Yield Rank											
Harosoy		1	3	1	1	2	1	1	1	2	1	4	1
Adams		4	1	2	3	1	2	2	3	3	2	3	2
Lindarin		3	2	4	4	3	3	3	2	4	3	1	3
Hawkeye		2	4	3	2	4	4	4	4	1	4	2	4

Table 47. (Continued)

Strain	Dwight Ill.	Urbana Ill.	Girard Ill.	Waseca Minn.	Sutherland Iowa	Kanawha Iowa	Independence Iowa	Ames Iowa	Kirksville Mo.	Menno S.D.	Concord Nebr.	Lincoln Nebr.
Years Tested	1956-1960	1956-1960	1957-1960	1956-1960	1957-1960	1956-1960	1956-1960	1956-1960	1957-58 1960	1956-58 1960	1957-1960	1956-1960
Harosoy	41.9	40.6	40.8	35.0	40.7	32.6	35.5	34.3	32.0	19.3	36.2	40.1
Adams	43.7	41.3	39.5	33.0	37.7	33.1	31.8	36.1	30.0	19.6	34.6	39.5
Lindarin	37.8	41.9	39.1	32.2	38.1	31.1	33.2	34.4	30.3	18.6	35.5	38.7
Hawkeye	38.0	38.5	39.1	32.3	39.9	32.9	32.9	34.5	29.8	18.3	33.4	40.8
Mean	40.4	40.6	39.6	33.1	39.1	32.4	33.4	34.8	30.5	19.0	34.9	39.8
	Yield Rank											
Harosoy	2	3	1	1	1	3	1	3	1	2	1	2
Adams	1	2	2	2	4	1	4	4	3	1	3	3
Lindarin	4	1	3	4	3	4	2	2	2	3	2	4
Hawkeye	3	4	3	3	2	2	3	1	4	4	4	1

UNIFORM PRELIMINARY TEST II, 1960

Strain	Originating Agency	Origin	Generation Composited
Harosoy	Harrow E.S., Harrow, Ont.	Mandarin (2) x A.K.	F_5
Hawkeye	Iowa A.E.S. & U.S.R.S.L.	Mukden x Richland	F_4
A5-5629	Iowa A.E.S. & U.S.R.S.L.	Roanoke x Hawkeye	F_5
AX50B-19	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Clark	F_5
AX50F27-2	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Clark	F_5
AX50F40-2	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Clark	F_5
AX50F58-2	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Clark	F_5
AX50P35-1	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Clark	F_5
AX55-60-3	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Harosoy	F_5
AX55F24-2	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Harosoy	F_5
AX55P8-2	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Harosoy	F_5
AX55P27-1	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Harosoy	F_5
AX56F31-1	Iowa A.E.S. & U.S.R.S.L.	Adams x Harosoy	F_5
AX56P64-1	Iowa A.E.S. & U.S.R.S.L.	Adams x Harosoy	F_5
AX57B-14	Iowa A.E.S. & U.S.R.S.L.	Lincoln x Harosoy	F_5
AX57P29-1	Iowa A.E.S. & U.S.R.S.L.	Lincoln x Harosoy	F_5
AX58B-8	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Clark	F_5
AX58B-13	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Clark	F_5
AX58B-15	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Clark	F_5
AX58B-18	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Clark	F_5
AX58P23-2	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Clark	F_5
AX58P39-3	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Clark	F_5
AX58P68-2	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Clark	F_5
C1243	Purdue A.E.S. & U.S.R.S.L.	P.I. 68521 x Wabash	F_6
L57-2918	Ill. A.E.S. & U.S.R.S.L.	Hawkeye x L48-7289	F_5

Identification of Parent Strains

L48-7289	Sel. from Seneca x Richland
P.I. 68521	Introduced from Duitsinshan, Manchuria, in 1926.

This test was grown at 14 locations and consisted of 23 experimental strains in addition to Harosoy and Hawkeye as check varieties. Most of these strains are crosses between adapted Group II to IV varieties, exceptions being A5-5629 with one parent a Group VI strain and C1243 with P.I. 68521, a bacterial blight resistant introduction, as one parent. Strain C1243 appears to have some resistance to bacterial blight from this parent.

Almost all of the experimental strains had higher mean yields than the check varieties, ranging up to 3 bushels higher for AX57B-14. Lodging resistance of most strains was good, with the exception of C1243 and three of the A strains which were

similar to Harosoy in this respect. The seed quality of many of the strains was inferior to that of the check varieties, and this seems to be the chief drawback of a few of the best yielding strains. Oil content ranged from over a percent higher than Hawkeye in the case of L57-2918 to a percent lower in the case of AX58P23-2. However, the latter strain had a protein content almost 2 percent higher than the checks.

A few of the strains were segregating for certain traits; AX57B-14 had both purple- and white-flowered plants and AX58B-8 and AX58P39-3 were heterogeneous for pubescence color (tawny and gray).

Table 48. Summary of data for Uniform Preliminary Test II, 1960.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	14	14	11	12	14	14	11	9	9
Harosoy	36.3	20	-1.5	2.2	37	1.6	18.9	42.2	20.6
Hawkeye	36.3	20	0	1.8	36	1.3	19.0	42.3	20.9
A5-5629	39.1	2	+0.3	1.8	36	1.3	19.0	41.1	21.6
AX50B-19	36.4	19	+1.5	1.6	36	1.7	20.2	42.5	21.0
AX50F27-2	36.7	15	+1.2	1.3	30	1.8	18.7	42.4	21.7
AX50F40-2	38.4	4	+1.4	1.6	32	1.7	20.3	41.7	21.3
AX50F58-2	36.8	13	+1.7	1.6	32	1.7	20.0	42.1	21.7
AX50P35-1	36.8	13	+0.2	1.7	35	1.6	18.0	41.5	21.4
AX55-60-3	36.7	15	+2.5	1.6	37	1.7	20.0	43.1	21.3
AX55F24-2	37.2	11	+3.4	1.7	36	1.6	18.8	43.3	20.8
AX55P8-2	38.0	6	+1.2	1.8	35	1.7	19.4	42.5	20.7
AX55P27-1	37.5	8	+1.8	1.7	34	1.8	20.4	42.7	20.8
AX56F31-1	37.4	9	+0.9	2.1	39	1.7	14.9	40.7	21.0
AX56P64-1	39.0	3	-0.6	1.6	36	2.0	18.5	40.5	21.8
AX57B-14	39.3	1	+1.6	2.1	38	2.0	16.2	41.7	20.2
AX57P29-1	34.0	25	-1.0	1.4	35	2.2	18.8	41.0	21.1
AX58B-8	36.7	15	-0.4	1.8	32	2.0	19.8	42.3	21.3
AX58B-13	36.1	23	-0.1	1.7	34	1.9	20.2	42.7	21.0
AX58B-15	37.0	12	+0.7	2.1	35	1.7	18.6	41.5	21.5
AX58B-18	36.3	20	-0.9	1.7	37	1.7	17.9	42.6	20.9
AX58P23-2	38.0	6	+2.7	1.7	38	1.8	20.4	44.0	19.8
AX58P39-3	38.3	5	-0.3	1.8	37	1.6	17.8	42.6	21.0
AX58P68-2	37.3	10	+1.1	1.6	35	1.9	20.0	41.6	21.3
C1243	36.5	18	+1.5	2.3	36	1.5	17.7	41.3	21.3
L57-2918	35.9	24	+2.9	1.8	41	1.9	17.0	41.4	22.1
Mean	37.1		+0.9	1.8	36	1.7	18.8	42.0	21.1

[1]Days earlier (-) or later (+) than Hawkeye which matured September 26, 125 days after planting. Blackhawk (Group I) matured -5.7. Ford (Group III) matured +2.8.

Table 49. Disease data for Uniform Preliminary Test II, 1960.

Strain	Purple Stain	Pod and Stem Blight	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Downy Mildew	Frogeye R1	Frogeye R2	Phytophthora Rot
Harosoy	2UDn	1UDn	3.5La	3La,4Aa	S	S	1.5Cn,2UDn	R		S
Hawkeye	2UDn	1UDn	3La	3La,4Aa	S	S	4.5Cn,3UDn	S		S
A5-5629	2UDn	1UDn	3.5La	3La,4Aa		4Ln	2Cn,4UDn	R	R	--
AX50B-19	2UDn	2UDn	3La	3La,4Aa		3Ln	4Cn,3UDn	R	S	S
AX50F27-2	3UDn	2UDn	3.5La	2.5La,4Aa		3.5Ln	5Cn,4UDn	Seg.	S	S
AX50F40-2	2UDn	2UDn	3.5La	2La,4Aa		4Ln	4Cn,3UDn	R	S	S
AX50F58-2	2UDn	2UDn	3La	3.5La,4Aa		3Ln	4Cn,3UDn	R	S	S
AX50P35-1	3UDn	3UDn	3La	3La,4Aa		3Ln	3.5Cn,3UDn	R	S	S
AX55-60-3	3UDn	1UDn	3La	2.5La,4Aa		3.5Ln	2.5Cn,2UDn	S	S	S
AX55F24-2	2UDn	1UDn	3.5La	2.5La,4Aa		3Ln	4.5Cn,3UDn	Seg.	S	S
AX55P8-2	3UDn	2UDn	4La	3La,4Aa		3Ln	1Cn,2UDn	Seg.	S	S
AX55P27-1	2UDn	2UDn	3La	3La,4Aa		3.5Ln	2.5Cn,2UDn	S	S	S
AX56F31-1	2UDn	1UDn	3.5La	3La,4Aa		4Ln	2.5Cn,4UDn	R	S	S
AX56P64-1	4UDn	2UDn	4La	2La,4Aa		3.5Ln	2Cn,3UDn	R	S	S
AX57B-14	2UDn	2UDn	4La	2La,4Aa		3.5Ln	2.5Cn,4UDn	R	S	S
AX57P29-1	2UDn	2UDn	4La	2.5La,5Aa		3.5Ln	4Cn,4UDn	R	S	S
AX58B-8	2UDn	2UDn	4La	1La,4Aa		3Ln	3.5Cn,4UDn	R	S	S
AX58B-13	3UDn	2UDn	4La	1La,5Aa		3Ln	3Cn,3UDn	R	S	S
AX58B-15	2UDn	2UDn	4La	2La,4Aa		3Ln	3Cn,3UDn	R	S	S
AX58B-18	3UDn	2UDn	3.5La	2.5La,4Aa		3Ln	1Cn,2UDn	R	S	S
AX58P23-2	2UDn	2UDn	3La	3La,5Aa		3Ln	4Cn,4UDn	R	S	S
AX58P39-3	2UDn	2UDn	3La	3La,4Aa		3Ln	2.5Cn,3UDn	R	S	S
AX58P68-2	3UDn	2UDn	3La	3La,4Aa		3Ln	4Cn,4UDn	R	S	S
C1243	2UDn	1UDn	2La	3La,4Aa		3Ln	1.5Cn,3UDn	Seg.	S	Seg.
L57-2918	2UDn	2UDn	3La	3.5La,4Aa		3Ln	4.5Cn,3UDn	S	S	S

Table 50. Yield for Uniform Preliminary Test II, 1960.

Strain	Mean of 14 Tests	Ridge-town Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Colum-bus Ohio	Walk-erton Ind.	Lafay-ette Ind.
Harosoy	36.3	37.8	29.0	45.7	53.7	45.5	39.4
Hawkeye	36.3	34.4	25.0	51.8	47.1	44.0	46.1
A5-5629	39.1	40.4	25.4	53.9	56.7	43.9	43.8
AX50B-19	36.4	32.5	25.8	49.2	43.2	38.9	43.2
AX50F27-2	36.7	34.3	21.6	53.7	39.9	37.8	44.8
AX50F40-2	38.4	37.4	26.7	53.4	51.6	46.5	49.6
AX50F58-2	36.8	37.7	22.5	43.5	40.4	44.0	43.4
AX50P35-1	36.8	34.9	26.9	42.7	46.2	40.5	44.6
AX55-60-3	36.7	31.6	22.7	53.0	43.5	45.9	43.7
AX55F24-2	37.2	32.9	26.1	51.2	46.4	45.3	48.4
AX55P8-2	38.0	34.0	24.4	59.2	46.0	43.0	45.9
AX55P27-1	37.5	34.3	23.5	45.2	49.1	44.2	45.6
AX56F31-1	37.4	36.0	27.6	44.6	53.6	40.0	44.0
AX56P64-1	39.0	36.3	18.3	52.3	50.8	49.7	52.4
AX57B-14	39.3	34.9	26.6	47.2	63.1	43.3	44.8
AX57P29-1	34.0	36.7	17.0	47.5	43.5	45.3	40.3
AX58B-8	36.7	42.4	20.3	39.5	47.1	45.2	41.1
AX58B-13	36.1	37.2	17.4	46.5	41.9	46.0	47.5
AX58B-15	37.0	37.9	20.7	45.5	49.1	43.4	46.8
AX58B-18	36.3	40.2	20.6	43.5	51.0	41.1	45.4
AX58P23-2	38.0	35.4	26.4	49.1	48.2	48.1	44.2
AX58P39-3	38.3	35.1	22.4	54.6	52.4	45.4	48.1
AX58P68-2	37.3	35.4	21.0	52.0	44.6	45.3	46.4
C1243	36.5	36.9	22.2	38.1	44.5	41.6	47.7
L57-2918	35.9	34.5	23.1	49.1	45.0	43.1	48.6
Mean	37.1	36.0	23.3	48.5	47.9	43.9	45.4
Coef. of Var. (%)		4.4	--	12.3	10.5	6.1	6.8
Bu. Nec. for Sig. (5%)		3.3	--	N.S.	6.6	5.6	N.S.
Row Spacing (In.)		24	36	28	28	40	38

[1]Four replications.

Table 50. (Continued)

Strain	Madi-son Wis.	Dwight Ill.	Ur-bana Ill.[1]	Kana-wha Iowa	Ames Iowa	Kirks-ville Mo.	Menno S.D.	Con-cord Nebr.
Harosoy	33.7	32.0	37.2	25.2	35.4	28.4	31.0	33.8
Hawkeye	31.4	30.1	37.6	27.4	37.6	28.7	34.5	32.1
A5-5629	39.4	35.0	44.7	26.6	39.0	29.9	37.9	31.3
AX50B-19	32.0	40.5	36.1	29.6	36.9	29.7	35.5	36.9
AX50F27-2	37.8	34.4	39.9	31.2	39.6	25.8	36.9	35.4
AX50F40-2	37.4	33.1	42.2	29.4	37.2	25.0	31.4	36.3
AX50F58-2	41.4	31.2	43.2	29.6	42.0	28.2	30.8	37.9
AX50P35-1	38.1	31.9	40.5	31.2	40.6	27.8	32.9	36.1
AX55-60-3	37.3	32.9	37.6	27.4	42.4	32.9	28.7	34.0
AX55F24-2	37.1	30.2	42.0	26.8	39.4	29.4	32.6	32.6
AX55P8-2	38.1	35.2	38.4	30.6	38.8	30.9	29.4	37.7
AX55P27-1	39.8	37.2	40.5	28.4	40.9	28.4	29.0	38.9
AX56F31-1	34.8	40.2	39.2	28.2	44.7	24.0	29.6	37.2
AX56P64-1	38.7	33.9	42.6	27.4	42.2	30.0	30.4	40.3
AX57B-14	44.5	30.1	38.8	32.6	43.8	32.4	31.6	36.8
AX57P29-1	34.1	26.6	37.7	23.2	32.0	31.1	27.9	32.5
AX58B-8	40.3	36.3	40.9	29.2	36.7	28.5	32.0	34.6
AX58B-13	36.9	35.5	41.0	26.8	37.9	27.4	31.4	31.9
AX58B-15	34.1	34.6	40.5	30.4	39.0	28.9	32.5	34.4
AX58B-18	38.9	31.5	38.6	27.3	38.2	29.2	27.4	34.9
AX58P23-2	40.8	37.5	41.5	31.2	40.6	30.3	28.8	36.3
AX58P39-3	38.3	30.7	38.4	27.4	37.8	34.4	31.5	39.1
AX58P68-2	39.4	33.7	41.2	28.7	36.5	33.5	29.9	34.0
C1243	41.7	33.7	39.1	31.1	36.8	31.5	29.5	36.5
L57-2918	39.7	30.9	38.8	25.3	34.0	26.8	26.1	36.9
Mean	37.8	33.6	39.9	28.2	38.8	29.3	31.2	35.5
Coef. of Var. (%)	8.4	11.6	6.8	7.3	8.3	8.4	--	7.6
Bu. Nec. for Sig. (5%)	6.5	N.S.	3.8	4.3	6.6	4.6	--	5.7
Row Spacing (In.)	36	38	40	40	40	40	42	40

Table 51. Yield rank for Uniform Preliminary Test II, 1960.

Strain	Mean of 14 Tests	Ridge-town Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Colum-bus Ohio	Walk-erton Ind.	Lafay-ette Ind.
Harosoy	20	5	1	17	3	6	25
Hawkeye	20	19	10	9	12	13	10
A5-5629	2	2	9	3	2	15	19
AX50B-19	19	24	8	11	22	24	22
AX50F27-2	15	20	18	4	25	25	14
AX50F40-2	4	7	4	5	6	3	2
AX50F58-2	13	6	15	21	24	13	21
AX50P35-1	13	16	3	23	15	22	16
AX55-60-3	15	25	14	6	20	5	20
AX55F24-2	11	23	7	10	14	8	4
AX55P8-2	6	22	11	1	16	19	11
AX55P27-1	8	20	12	19	9	12	12
AX56F31-1	9	12	2	20	4	23	18
AX56P64-1	3	11	23	7	8	1	1
AX57B-14	1	16	5	15	1	17	14
AX57P29-1	25	10	25	14	20	8	24
AX58B-8	15	1	22	24	12	11	23
AX58B-13	23	8	24	16	23	4	7
AX58B-15	12	4	20	18	9	16	8
AX58B-18	20	3	21	21	7	21	13
AX58P23-2	6	13	6	12	11	2	17
AX58P39-3	5	15	16	2	5	7	5
AX58P68-2	10	13	19	8	18	8	9
C1243	18	9	17	25	19	20	6
L57-2918	24	18	13	12	17	18	3

Table 51. (Continued)

Strain	Madison Wis.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Ames Iowa	Kirksville Mo.	Menno S.D.	Concord Nebr.
Harosoy	23	16	24	24	23	17	13	20
Hawkeye	25	23	22	15	17	15	4	23
A5-5629	8	8	1	22	11	10	1	25
AX50B-19	24	1	25	8	19	11	3	7
AX50F27-2	15	10	13	2	9	23	2	14
AX50F40-2	16	14	4	10	18	24	11	11
AX50F58-2	3	19	2	8	5	19	14	4
AX50P35-1	13	17	10	2	7	20	5	13
AX55-60-3	17	15	22	15	3	3	22	18
AX55F24-2	18	22	5	20	10	12	6	21
AX55P8-2	13	7	19	6	13	7	19	5
AX55P27-1	6	4	10	13	6	17	20	3
AX56F31-1	20	2	14	14	1	25	17	6
AX56P64-1	11	11	3	15	4	9	15	1
AX57B-14	1	23	16	1	2	4	9	9
AX57P29-1	21	25	21	25	25	6	23	22
AX58B-8	5	5	9	11	21	16	8	16
AX58B-13	19	6	8	20	15	21	11	24
AX58B-15	21	9	10	7	11	14	7	17
AX58B-18	10	18	18	19	14	13	24	15
AX58P23-2	4	3	6	2	7	8	21	11
AX58P39-3	12	21	19	15	16	1	10	2
AX58P68-2	8	12	7	12	22	2	16	18
C1243	2	12	15	5	20	5	18	10
L57-2918	7	20	16	23	24	22	25	7

Table 52. Maturity, days earlier (-) or later (+) than Hawkeye, for Uniform Preliminary Test II, 1960.

Strain	Mean of 11 Tests[1]	Ridgetown Ont.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Walkerton Ind.	Lafayette Ind.
Harosoy	-1.5	0	-1	-4	+ 6	-1	0
Hawkeye	0	0	0	0	0	0	0
A5-5629	+0.3	+1	-1	-4	+ 4	+1	+1
AX50B-19	+1.5	+3	-1	-2	+ 6	+1	+2
AX50F27-2	+1.2	+3	+1	-1	+ 7	-1	-1
AX50F40-2	+1.4	+1	+1	-2	+ 6	0	+1
AX50F58-2	+1.7	+3	+1	-4	+ 4	+1	-1
AX50P35-1	+0.2	+1	-3	-5	+ 6	0	0
AX55-60-3	+2.5	+5	+3	-1	+ 6	+2	+5
AX55F24-2	+3.4	+4	+4	-1	+ 3	+1	+3
AX55P8-2	+1.2	+3	+1	0	+ 5	+1	+3
AX55P27-1	+1.8	+5	+2	-2	+ 4	+1	+4
AX56F31-1	+0.9	+1	-1	-6	+ 5	+1	+3
AX56P64-1	-0.6	0	0	-5	+ 6	0	+4
AX57B-14	+1.6	+1	0	-3	+ 6	+2	+5
AX57P29-1	-1.0	+3	+1	-3	+ 6	-2	+5
AX58B-8	-0.4	0	0	-6	+ 4	0	+5
AX58B-13	-0.1	+1	0	-4	+ 5	0	+2
AX58B-15	+0.7	-1	+2	-2	+ 6	+1	+2
AX58B-18	-0.9	-3	+1	-4	+ 8	0	0
AX58P23-2	+2.7	+6	+3	-1	+ 6	+1	+2
AX58P39-3	-0.3	+2	0	-2	+ 7	0	0
AX58P68-2	+1.1	+4	+3	+1	+ 3	0	+5
C1243	+1.5	+2	+2	+2	+ 6	+1	+5
L57-2918	+2.9	+5	+3	+3	+ 1	+2	+6
Blackhawk	-5.7	-1	-8	-7	-12	-5	-1
Ford	+2.8	+2	+2	--	+ 2	0	+5
Date planted	5-24	5-27	5-26	5-20	5-26	6-3	5-24
Hawkeye matured	9-26	9-27	10-2	10-1	9-22	10-2	9-23
Days to mature	125	123	129	134	119	121	122

[1]Wooster, Ohio and Concord, Nebraska not included in the mean.

Table 52. (Continued)

Strain	Madi-son Wis.	Dwight Ill.	Ur-bana Ill.	Kana-wha Iowa	Ames Iowa	Menno S.D.	Con-cord Nebr.
Harosoy	-2	-1	-2	-8	-4	-4	-3
Hawkeye	0	0	0	0	0	0	0
A5-5629	-3	+1	0	-4	0	+3	--
AX50B-19	-2	+3	0	+1	+1	+2	--
AX50F27-2	-2	+2	0	+2	0	+2	--
AX50F40-2	-3	+1	0	+2	+3	+3	--
AX50F58-2	+2	+1	-1	+4	+2	+3	--
AX50P35-1	-3	+1	-1	-2	+2	+1	+3
AX55-60-3	-1	+2	-1	-2	+6	+2	--
AX55F24-2	+3	+3	+2	+4	+6	+4	--
AX55P8-2	-1	+1	0	0	+1	-1	+2
AX55P27-1	-3	+2	0	0	+4	+1	--
AX56F31-1	-2	+1	-1	0	+5	-2	--
AX56P64-1	-2	+1	-2	-6	-3	-5	+1
AX57B-14	-2	+2	+1	+2	+4	-3	--
AX57P29-1	-2	-3	-4	-8	-4	-3	-2
AX58B-8	-2	0	-3	-2	-2	-4	+1
AX58B-13	-3	+2	-1	-2	-1	-4	+2
AX58B-15	-1	+1	0	0	0	-2	+1
AX58B-18	-3	-1	-3	-4	-2	-3	-3
AX58P23-2	0	+2	+1	+2	+6	+1	--
AX58P39-3	0	-1	-1	-5	-2	-3	-4
AX58P68-2	-1	+1	-1	0	0	-2	-3
C1243	-1	0	0	+2	+2	-3	--
L57-2918	+3	+3	+1	+2	+6	0	--
Blackhawk	-4	-5	-7	-9	-5	-6	-5
Ford	+5	+2	+2	+6	+8	-3	+4
Date planted	5-27	6-8	5-20	5-10	5-11	5-24	6-7
Hawkeye matured	10-3	9-29	9-11	9-24	9-22	10-2	9-27
Days to mature	129	113	114	137	134	131	112

Table 53. Percentage of protein for Uniform Preliminary Test II, 1960.

Strain	Mean of 9 Tests	Ridge-town Ont.	Colum-bus Ohio	Walk-erton Ind.	Madi-son Wis.	Dwight Ill.	Ames Iowa	Kirks-ville Mo.	Menno S.D.	Con-cord Nebr.
Harosoy	42.2	42.0	43.1	42.2	44.7	41.8	43.2	39.4	42.2	41.5
Hawkeye	42.3	42.1	42.0	42.8	43.6	42.4	42.7	41.5	42.6	40.8
A5-5629	41.1	40.2	40.0	41.9	42.9	41.6	41.6	40.5	41.5	39.4
AX50B-19	42.5	42.6	42.6	42.4	44.1	43.0	43.0	42.5	42.1	40.0
AX50F27-2	42.4	42.5	41.6	43.8	44.2	42.5	42.8	41.3	41.6	41.0
AX50F40-2	41.7	41.3	42.5	43.1	43.5	41.3	41.7	40.2	41.1	40.5
AX50F58-2	42.1	40.9	42.5	43.1	44.0	42.7	43.3	39.9	42.0	40.3
AX50P35-1	41.5	41.5	41.6	42.1	42.6	41.6	42.4	41.3	40.9	39.8
AX55-60-3	43.1	43.1	43.2	43.8	44.1	42.9	44.4	41.9	42.7	41.5
AX55F24-2	43.3	42.4	42.2	42.2	43.4	44.2	45.3	43.4	43.4	42.9
AX55P8-2	42.5	42.0	41.0	42.8	43.5	42.8	44.7	42.3	41.9	41.5
AX55P27-1	42.7	42.4	42.5	43.9	44.3	43.0	44.1	41.5	41.6	41.4
AX56F31-1	40.7	40.6	40.8	41.6	42.4	41.0	42.9	38.1	39.0	40.3
AX56P64-1	40.5	40.3	41.0	41.0	42.4	40.4	41.1	40.1	39.5	39.0
AX57B-14	41.7	42.7	41.7	41.9	43.3	41.5	42.8	40.9	40.8	39.9
AX57P29-1	41.0	42.2	41.4	42.3	42.4	41.8	42.0	40.0	37.5	39.7
AX58B-8	42.3	42.0	43.0	43.4	44.0	42.7	42.4	41.8	40.6	41.0
AX58B-13	42.7	41.9	44.6	44.5	44.8	42.7	43.6	39.9	41.1	41.1
AX58B-15	41.5	41.5	42.6	42.5	43.4	41.3	42.6	40.2	39.6	39.8
AX58B-18	42.6	41.6	43.9	43.9	44.3	43.7	42.8	41.5	40.8	41.2
AX58P23-2	44.0	43.5	44.2	44.5	45.9	44.4	46.4	42.6	42.0	42.7
AX58P39-3	42.6	42.1	44.0	43.9	43.6	43.0	43.3	40.7	41.2	41.3
AX58P68-2	41.6	40.5	42.6	43.0	43.1	42.9	41.7	40.2	40.2	40.6
C1243	41.3	40.7	42.4	43.7	41.5	41.4	43.2	40.1	39.9	38.7
L57-2918	41.4	41.0	41.6	43.1	41.3	41.7	43.3	39.1	41.0	40.4
Mean	42.0	41.7	42.3	42.9	43.5	42.3	43.1	40.8	41.1	40.7

Table 54. Percentage of oil for Uniform Preliminary Test II, 1960.

Strain	Mean of 9 Tests	Ridge-town Ont.	Colum-bus Ohio	Walk-erton Ind.	Madi-son Wis.	Dwight Ill.	Ames Iowa	Kirks-ville Mo.	Menno S.D.	Con-cord Nebr.
Harosoy	20.6	20.7	19.9	20.6	18.2	21.5	20.2	22.6	21.3	20.1
Hawkeye	20.9	20.7	20.3	20.9	19.3	21.8	21.8	21.3	20.8	20.9
A5-5629	21.6	22.1	21.3	21.0	20.5	22.0	22.5	22.6	21.7	21.1
AX50B-19	21.0	20.2	21.0	21.4	19.3	21.8	21.9	21.5	20.9	20.8
AX50F27-2	21.7	21.3	21.7	21.3	20.1	22.3	22.8	21.9	22.9	21.3
AX50F40-2	21.3	20.9	20.5	21.4	18.7	22.3	21.9	22.0	22.1	21.6
AX50F58-2	21.7	21.1	21.0	21.7	20.0	22.8	22.7	22.2	22.1	21.7
AX50P35-1	21.4	20.3	20.9	21.7	20.2	22.3	22.5	21.6	22.1	21.2
AX55-60-3	21.3	21.1	21.0	21.8	19.8	21.9	21.2	21.6	21.8	21.3
AX55F24-2	20.8	20.6	20.6	20.8	19.8	21.5	21.0	21.1	21.1	20.9
AX55P8-2	20.7	20.5	20.6	20.8	19.5	21.6	21.2	20.5	21.1	20.2
AX55P27-1	20.8	20.4	20.7	20.8	18.9	22.0	21.2	21.5	21.6	20.0
AX56F31-1	21.0	20.7	21.1	20.7	20.0	21.1	20.7	22.5	22.2	19.7
AX56P64-1	21.8	21.1	21.4	22.0	20.3	22.5	23.0	22.0	22.8	20.8
AX57B-14	20.2	19.7	19.6	20.5	18.2	20.7	20.8	20.6	21.6	19.8
AX57P29-1	21.1	20.0	19.0	21.9	19.6	21.7	22.2	22.4	22.7	20.5
AX58B-8	21.3	21.0	21.0	21.5	19.5	21.7	22.3	21.8	22.3	20.3
AX58B-13	21.0	20.5	20.3	20.7	19.3	21.5	21.8	22.1	22.0	20.7
AX58B-15	21.5	21.0	20.9	21.1	19.1	22.6	21.9	22.8	22.6	21.1
AX58B-18	20.9	20.9	20.7	20.9	17.8	20.9	22.0	21.6	22.4	20.7
AX58P23-2	19.8	19.2	19.6	19.9	18.1	19.7	20.4	20.1	21.3	19.6
AX58P39-3	21.0	20.5	20.5	21.6	19.6	21.7	21.9	20.5	22.2	20.7
AX58P68-2	21.3	21.2	21.0	21.3	19.5	22.0	22.2	21.6	22.1	21.2
C1243	21.3	21.1	20.9	20.4	20.0	21.9	22.0	21.3	22.5	21.5
L57-2918	22.1	21.7	21.7	22.0	20.6	22.2	22.5	22.7	23.1	22.0
Mean	21.1	20.7	20.7	21.1	19.4	21.8	21.8	21.7	22.0	20.8

UNIFORM TEST III, 1960

Strain	Originating Agency	Origin	Generation Composited
Ford	Iowa A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_9
Ross	Ohio A.E.S. & U.S.R.S.L.	Monroe x Lincoln	F_5
Shelby	Ill. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_8
A5-5515	Iowa A.E.S. & U.S.R.S.L.	Ogden x Hawkeye	F_5
A5-5740	Iowa A.E.S. & U.S.R.S.L.	Roanoke x Hawkeye	F_5
A6-7823	Iowa A.E.S. & U.S.R.S.L.	Adams x Clark	F_5
C1223	Purdue A.E.S. & U.S.R.S.L.	C1070 x Adams	F_6
C1225	Purdue A.E.S. & U.S.R.S.L.	C1070 x Adams	F_6
L57-2322	Ill. A.E.S. & U.S.R.S.L.	L49-4091 x Clark	F_5
S2-5179	Mo. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_9

Identification of Parent Strains

C1070	F_7 line from Lincoln x Ogden; from same F_4 line as Kent.
L49-4091	Pustule resistant F_4 line from L44-1219 x (Lincoln x CNS). L44-1219 is an F_3 line from Lincoln (2) x Richland.

This test was grown at 21 locations in 1960. Yields were good to excellent at most locations with location means being over 29 bushels at all but one location.

One strain, S2-5179, has been in the test for three years. A 1958-59 summary is presented in last year's report. This strain is similar to Shelby in maturity and most other traits and is from the same cross. In 1958 its over-all mean yield was 1 bushel higher than Shelby and in 1959 it was .7 bushel higher, but in 1960 its mean yield was 1.1 bushel lower than Shelby's. It has lodged less than Shelby under most environments.

A second strain, A6-7823, has been in the test for two years and has outyielded Shelby by a small amount in both years. It was similar to Shelby in lodging, height, and seed quality and composition but averaged about 5 days later.

The variety Ross, released by Ohio in 1960, has been tested for two years. Its chief merit is its resistance to Phytophthora and it yields very well under environments where this disease is prevalent, such as Eldorado, Illinois, in 1960 where it outyielded Shelby by 10 bushels. Under most conditions, however, it is outyielded by Shelby.

ROSS

Ross has brown pubescence, white flowers, and yellow seeds with a black hilum. It is resistant to Phytophthora rot and matures about the same time as Lincoln.

The history of its development follows:

1948 - Ohio cross HX2, Monroe x Lincoln, made at Columbus, Ohio by Dr. Lewis C. Saboe.
1949 - F_1 grown at Columbus, Ohio.
1950 - F_2 grown at Columbus, Ohio.
1951 - F_3 rows planted at Columbus, Ohio and individual plant selections made.
1952 - Selection made among F_4 rows and seed bulked within selected rows.
1953 - Seed from bulked F_4 rows placed in preliminary yield trials.
1954 - Same as 1953.
1955 - Best yielding selections placed in Phytophthora rot nursery and only resistant individual plants harvested.
1956 - Seed of individual plants retested in Phytophthora rot nursery and remaining seed planted in seed increase plots.
1957 - Selection H24157-4 continued in state yield trials.
1958 - Same as 1957.
1959-60 - H24157-4 (Ross) included in Uniform Test III.

* * * * *

Five strains were entered in this test in 1960 for the first time. A5-5515 and A5-5740 were in Preliminary Test II in 1959. They are of interest since their parentage includes the southern varieties, Ogden and Roanoke, respectively. Despite good yields at a few locations, their average yields were lowest in the test. A5-5515 was characterized by very short height at several locations.

C1223 and C1225 are selections from CX192-28-3, which was the top-yielding strain in Uniform Preliminary Test III in 1956 and again in 1957. The selections were at the top of the test in yield in 1960 and differed from each other only slightly. C1223 was both slightly earlier and slightly higher in yield than C1225 in 1960. Their yield advantage over Shelby was very slight in 1960. They were several days later than Shelby but were consistently better in lodging resistance.

L57-2322 is a pustule resistant strain which was in the Preliminary Test IV in 1959. It was not outstanding in yield in 1960 and was distinctly poor in seed quality. It appeared to be unusually susceptible to downy mildew at several locations.

Table 55. Summary of data for Uniform Test III, 1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	21	18	19	20	17	15	20	20
C1223	40.5	+3.8	1.4	37	1.7	16.7	40.0	22.0
A6-7823	39.9	+5.4	2.0	39	1.9	16.9	41.3	21.8
C1225	39.9	+4.9	1.5	36	1.7	16.8	40.7	21.6
Shelby	39.7	0	1.9	39	1.9	15.9	41.0	21.7
S2-5179	38.6	+0.3	1.8	36	1.9	15.3	41.0	21.4
Ross	38.2	+3.8	2.4	40	1.9	14.5	42.5	20.3
L57-2322	37.7	+5.4	1.8	38	2.4	16.8	41.4	22.1
Ford	37.6	+0.2	1.9	37	2.2	16.5	41.7	21.4
A5-5740	37.3	-0.5	1.9	40	1.8	16.5	40.6	22.5
A5-5515	35.1	+0.9	1.6	34	1.9	17.9	39.3	22.8
Mean	38.5	+2.4	1.8	38	1.9	16.4	41.0	21.8

[1]Days earlier (-) or later (+) than Shelby which matured September 24, 114 days after planting. Clark (Group IV) matured +7.2.

Table 56. Disease data for Uniform Test III, 1960.

Strain	Purple Stain	Pod and Stem Blight	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Downy Mildew	Frogeye R1	Frogeye R2	Phytophthora Rot
C1223	2UDn	1UDn	4La	3La,4Aa		3Ln	4.8Cn,3.8Ln,4UDn	R	Seg.	S
A6-7823	2UDn	2UDn	4La	3La,4Aa		3Ln	4.8Cn,3.3Ln,4UDn	R	S	--
C1225	2UDn	1UDn	3.5La	3La,4Aa		3Ln	4.5Cn,3.5Ln,4UDn	R	S	S
Shelby	3UDn	2UDn	S	S	S	S	4Cn,3Ln,3UDn	R	S	S
S2-5179	2UDn	2UDn	3.5La	2.5La,4Aa		3Ln	4Cn,3.8Ln,3UDn	R	S	--
Ross	2UDn	1UDn	4La	1La,4Aa		3Ln	4Cn,3Ln,4UDn	R	S	S
L57-2322	3UDn	3UDn	3.5La	1La,3Aa		3Ln	5Cn,4Ln,4UDn	R	S	--
Ford	2UDn	1UDn	S	S,4Aa	S	S	3.8Cn,3.3Ln,3UDn	R	S	S
A5-5740			S	S	S	S	4.3Cn,2.5Ln	Seg.	S	--
A5-5515	2UDn	1UDn	S	S	S	S	3Cn,2.5Ln,2UDn	Seg.	S	--

Table 57. Yield and yield rank for Uniform Test III, 1960.

Strain	Mean of 21 Tests	James-burg N.J.	New-ark Del.	George-town Del.	Hoyt-ville Ohio	Co-lum-bus Ohio	Bluff-ton Ind.	La-fay-ette Ind.[1]	Green-field Ind.	Worth-ing-ton Ind.	Evans-ville Ind.
C1223	40.5	32.3	41.4	34.3	30.4	55.1	49.6	49.5	46.0	55.1	47.9
A6-7823	39.9	28.0	41.0	35.9	30.7	47.6	48.6	46.7	47.9	52.6	45.6
C1225	39.9	36.3	47.7	32.4	28.9	46.5	43.2	48.3	44.0	56.5	49.1
Shelby	39.7	37.1	38.8	35.9	30.8	56.6	46.5	44.1	46.5	53.4	44.1
S2-5179	38.6	32.2	35.4	32.1	30.7	48.8	47.4	43.3	46.7	53.1	43.9
Ross	38.2	21.4	42.1	32.1	31.7	56.1	42.9	43.0	43.5	45.9	45.6
L57-2322	37.7	34.0	38.8	33.8	27.5	40.5	47.6	46.2	42.4	53.5	44.7
Ford	37.6	23.8	34.9	28.8	27.9	58.1	46.7	46.2	43.3	47.5	42.0
A5-5740	37.3	27.6	36.4	30.2	28.6	45.1	44.7	49.5	43.5	49.3	38.3
A5-5515	35.1	24.1	37.1	27.0	32.8	47.9	41.8	45.8	38.0	50.4	36.1
Mean	38.5	29.7	39.4	32.3	30.0	50.2	45.9	46.3	44.2	51.7	43.7
C.V. (%)		18.3	12.9	10.0	--	14.6	6.3	8.7	9.4	8.2	8.5
B.N.F.S. (5%)		7.9	7.2	4.7	--	10.6	4.2	3.0	N.S.	6.2	5.4
Row Sp. (In.)		24	36	36	36	28	38	--	38	38	40
		Yield Rank									
C1223		4	3	3	6	4	1	1	4	2	2
A6-7823		6	4	1	4	7	2	4	1	6	3
C1225		2	1	5	7	8	8	3	5	1	1
Shelby		1	5	1	3	2	6	8	3	4	6
S2-5179		5	9	6	4	5	4	9	2	5	7
Ross		10	2	6	2	3	9	10	6	10	3
L57-2322		3	5	4	10	10	3	5	9	3	5
Ford		9	10	9	9	1	5	5	8	9	8
A5-5740		7	8	8	8	9	7	1	6	8	9
A5-5515		8	7	10	1	6	10	7	10	7	10

[1]Four replications at 28" spacing and 12 replications at 38" spacing.
[2]Eight replications.
[3]Irrigated.
[4]Bottom land. Not included in the mean.

Table 57. (Continued)

Strain	Urbana Ill.[2]	Girard Ill.	Edgewood Ill.	Eldorado Ill.	Carbondale Ill.	Ames Iowa	Ottumwa Iowa	Kirksville Mo.	Columbia Mo.[2]	Lincoln Nebr.[3]	Manhattan Kans.	Manhattan Kans.[4]
C1223	35.2	45.2	43.2	31.7	32.6	43.3	31.4	20.6	37.3	51.2	37.1	42.6
A6-7823	33.9	45.0	50.7	31.3	36.2	42.2	32.4	21.6	36.1	49.4	34.7	39.9
C1225	34.5	39.1	42.8	38.3	32.3	44.9	31.9	21.2	36.0	50.2	33.4	44.3
Shelby	33.6	42.3	46.7	34.4	36.2	38.6	27.6	24.2	36.7	46.2	34.0	38.3
S2-5179	34.7	38.4	43.7	37.0	31.9	43.5	27.0	23.1	35.8	46.5	35.8	41.9
Ross	28.7	42.8	46.1	44.8	33.1	38.1	28.8	26.2	33.9	44.1	31.9	36.1
L57-2322	35.8	42.4	45.5	26.8	32.5	39.1	27.9	20.2	38.0	40.2	33.9	43.5
Ford	34.9	41.3	45.9	30.7	33.7	37.2	25.9	25.5	34.4	46.9	34.3	37.5
A5-5740	35.9	42.3	46.7	37.3	29.2	41.6	28.8	19.4	35.7	41.1	31.4	39.6
A5-5515	36.0	38.5	40.2	30.3	24.9	37.3	29.5	10.4	31.3	46.5	30.2	31.7
Mean	34.3	41.7	45.2	34.3	32.3	40.6	29.1	21.2	35.5	46.2	33.7	39.5
C.V. (%)	6.7	8.0	8.3	13.8	--	8.3	6.7	15.1	12.0	11.6	6.6	7.6
B.N.F.S. (5%)	3.4	N.S.	5.5	6.9	--	4.9	2.8	4.6	N.S.	N.S.	3.3	4.4
Row Sp. (In.)	40	38	38	40	40	40	40	40	38	40	40	36
	Yield Rank											
C1223	4	1	8	6	5	3	3	7	2	1	1	3
A6-7823	8	2	1	7	1	4	1	5	4	3	3	5
C1225	7	8	9	2	7	1	2	6	5	2	8	1
Shelby	9	5	2	5	1	7	8	3	3	7	5	7
S2-5179	6	10	7	4	8	2	9	4	6	5	2	4
Ross	10	3	4	1	4	8	5	1	9	8	8	9
L57-2322	3	4	6	10	6	6	7	8	1	10	6	2
Ford	5	7	5	8	3	10	10	2	8	4	4	8
A5-5740	2	5	2	3	9	5	5	9	7	9	9	6
A5-5515	1	9	10	9	10	9	4	10	10	5	10	10

Table 58. Maturity, days earlier (-) or later (+) than Shelby, for Uniform Test III, 1960.

Strain	Mean of 18 Tests[1]	James-burg N.J.	New-ark Del.	George-town Del.	Hoyt-ville Ohio	Co-lum-bus Ohio	Bluff-ton Ind.	La-fay-ette Ind.	Green-field Ind.	Worth-ing-ton Ind.	Evans-ville Ind.
C1223	+3.8	+1	+2	+ 2	+4	+4	+7	+3	+ 9	+3	+ 6
A6-7823	+5.4	+7	+6	+10	+5	+6	+7	+7	+10	+6	+ 6
C1225	+4.9	+4	+4	+ 1	+5	+5	+6	+5	+ 9	+5	+ 9
Shelby	0	0	0	0	0	0	0	0	0	0	0
S2-5179	+0.3	0	0	- 1	0	+5	+4	-1	+ 1	+1	0
Ross	+3.8	+3	+6	+ 4	+5	0	+5	+3	+10	+5	+ 3
L57-2322	+5.4	+8	+5	+ 6	+5	+4	+6	+6	+ 8	+6	+ 6
Ford	+0.2	+3	-1	- 1	0	-2	+4	0	+ 6	0	- 1
A5-5740	-0.5	0	0	+ 1	0	-2	+5	0	+ 1	+1	- 2
A5-5515	+0.9	+3	+1	- 1	0	-1	+6	+2	+ 1	0	+ 1
Clark	+7.2	+2	+6	+10	--	--	+6	+5	+ 8	+8	+10
Date planted	6-2	6-3	6-10	6-7	5-26	5-26	6-1	5-24	6-4	6-1	6-3
Shelby matured	9-24	10-5	10-4	9-21	10-5	9-29	10-1	9-28	9-27	9-21	9-19
Days to mature	114	124	116	106	132	126	122	127	115	112	108

[1]Hoytville and Columbus, Ohio and Carbondale, Illinois not included in the mean.
[2]Bottom land. Not included in the mean.

Table 58. (Continued)

Strain	Urbana Ill.	Girard Ill.	Edgewood Ill.	Eldorado Ill.	Carbondale Ill.	Ames Iowa	Ottumwa Iowa	Kirksville Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.	Manhattan Kans.[2]
C1223	+2	+2	+1	+4	+3	+6	+3	+4	+ 1	+5	+7	+3
A6-7823	+3	+2	+3	+4	+5	+4	+3	0	+ 5	+8	+7	+7
C1225	+5	+4	+2	+6	+4	+7	+6	+4	+ 2	+6	+4	+4
Shelby	0	0	0	0	0	0	0	0	0	0	0	0
S2-5179	0	0	+1	-1	+1	0	-1	0	0	0	+3	+2
Ross	+3	+3	+2	+5	--	+4	+2	0	+ 3	+4	+4	-2
L57-2322	+4	+4	+2	+3	-9	+7	+5	+3	+ 4	+5	+9	+8
Ford	-1	0	-1	-3	0	-3	-2	+2	0	0	+1	-4
A5-5740	-1	-3	-1	-4	+1	-4	-2	+1	- 1	0	0	-6
A5-5515	-1	+1	0	0	+3	-1	+1	+4	- 1	+1	0	-6
Clark	+8	+7	+7	+7	+4	+8	+6	+8	+10	+8	+6	+8
Date planted	5-20	6-1	6-7	6-1	5-31	5-11	6-7	6-4	5-25	6-1	6-16	6-18
Shelby matured	9-15	9-20	9-19	9-11	9-13	9-30	10-4	9-14	9-6	10-2	10-1	9-29
Days to mature	118	111	104	102	105	142	119	102	104	123	107	103

Table 59. Lodging and plant height for Uniform Test III, 1960.

Strain	Mean of 19 Tests[1]	James-burg N.J.	New-ark Del.	George-town Del.	Hoyt-ville Ohio	Colum-bus Ohio	Bluff-ton Ind.	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.	Evans-ville Ind.
C1223	1.4	1.7	1.8	1.3	2.0	1.0	1.0	1.4	1.0	1.0	1.0
A6-7823	2.0	3.0	2.8	2.0	2.0	1.0	2.0	2.1	1.8	2.3	1.5
C1225	1.5	2.2	1.5	1.5	2.0	1.0	1.0	1.5	2.0	1.8	1.0
Shelby	1.9	3.2	3.3	2.0	2.2	1.0	1.5	2.2	2.0	2.3	1.0
S2-5179	1.8	2.5	3.3	2.0	2.0	1.0	2.0	2.3	1.3	2.8	1.0
Ross	2.4	3.2	3.3	2.3	2.2	1.0	2.0	3.1	2.5	3.0	2.3
L57-2322	1.8	2.2	2.3	2.0	2.2	1.0	1.5	1.6	1.3	2.5	1.0
Ford	1.9	2.7	3.0	1.3	2.2	1.0	2.0	2.3	2.0	3.0	1.0
A5-5740	1.9	3.0	2.5	1.5	2.0	1.0	1.3	2.2	1.0	2.0	1.0
A5-5515	1.6	3.2	2.5	1.0	2.0	1.0	1.5	1.7	1.8	2.5	1.0
Mean	1.8	2.7	2.7	1.7	2.1	1.0	1.6	2.0	1.7	2.3	1.2
	Mean of 20 Tests	Plant Height									
C1223	37		40	33	25	39	44	43	39	45	35
A6-7823	39		41	36	24	38	46	48	42	45	37
C1225	36		39	31	24	36	43	43	37	44	36
Shelby	39		43	36	27	38	45	46	41	45	38
S2-5179	36		39	33	24	34	44	43	38	42	36
Ross	40		44	36	27	38	47	48	41	44	40
L57-2322	38		43	36	24	39	45	47	40	45	36
Ford	37		42	34	26	37	44	43	39	42	36
A5-5740	40		47	34	27	38	47	47	43	47	37
A5-5515	34		40	30	26	34	40	39	34	40	28
Mean	38		42	34	25	37	45	45	39	44	36

[1]Columbus, Ohio and Kirksville, Missouri not included in the mean.
[2]Bottom land. Not included in the means.

Table 59. (Continued)

Strain	Urbana Ill.	Girard Ill.	Edgewood Ill.	Eldorado Ill.	Carbondale Ill.	Ames Iowa	Ottumwa Iowa	Kirksville Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.	Manhattan Kans.[2]
C1223	1.3	1.4	1.5	1.6	1.0	1.7	1.1	1.0	1.0	2.0	1.8	1.7
A6-7823	1.8	1.6	1.8	2.0	2.0	2.0	1.1	1.0	1.0	2.9	2.2	2.4
C1225	1.3	1.5	1.2	1.9	1.0	1.8	1.0	1.0	1.0	2.4	1.6	1.8
Shelby	1.7	1.6	1.6	1.9	1.0	1.8	1.0	1.0	1.0	2.9	1.8	2.5
S2-5179	1.3	1.3	1.2	1.6	1.0	2.0	1.0	1.0	1.2	2.1	1.4	1.7
Ross	2.6	1.8	2.1	2.6	3.0	2.1	1.2	1.0	1.0	3.8	2.4	3.5
L57-2322	1.5	1.5	1.8	1.9	1.0	2.0	1.1	1.0	1.0	2.8	1.4	1.8
Ford	1.6	1.6	1.2	1.8	2.0	1.7	1.0	1.0	1.0	2.9	1.4	1.6
A5-5740	2.5	1.8	1.7	2.1	1.0	1.7	1.0	1.0	1.0	2.8	3.4	2.8
A5-5515	1.3	1.2	1.4	1.4	1.0	1.5	1.0	1.0	1.0	2.8	1.1	3.4
Mean	1.7	1.5	1.5	1.9	1.4	1.8	1.2	1.0	1.0	2.7	1.9	2.3
	Plant Height											
C1223	40	34	36	29	30	39	28	33	42	44	37	39
A6-7823	42	41	37	33	33	39	33	31	42	48	38	39
C1225	40	35	35	32	29	37	28	33	39	42	37	38
Shelby	41	40	37	33	34	39	30	36	43	46	37	38
S2-5179	40	37	35	32	30	39	28	35	40	39	37	37
Ross	42	41	38	37	35	40	31	31	44	48	38	39
L57-2322	42	40	36	31	32	41	29	31	42	46	38	38
Ford	41	39	34	33	33	38	28	35	41	41	36	34
A5-5740	44	42	39	38	34	41	32	31	48	50	40	41
A5-5515	37	34	29	28	28	35	27	36	36	42	35	31
Mean	41	38	36	33	32	39	29	33	42	45	37	37

Table 60. Percentages of protein and oil for Uniform Test III, 1960.

Strain	Mean of 20 Tests	James-burg N.J.	New-ark Del.	George-town Del.	Hoyt-ville Ohio	Colum-bus Ohio	Bluff-ton Ind.	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.
C1223	40.0	42.3	40.0	40.8	37.8	39.3	40.0	40.4	41.1	38.7
A6-7823	41.3	43.5	41.7	41.6	38.7	41.5	41.0	42.7	42.7	40.4
C1225	40.7	42.7	41.0	43.0	38.4	40.2	40.8	41.5	41.9	39.3
Shelby	41.0	43.9	39.7	41.4	39.1	41.5	41.3	42.4	42.5	39.6
S2-5179	41.0	43.7	40.7	43.0	39.1	41.5	41.3	41.7	42.0	39.9
Ross	42.5	45.4	42.8	42.7	40.7	41.3	42.5	43.4	44.4	42.2
L57-2322	41.4	45.7	41.9	42.0	38.9	41.7	41.4	41.7	42.2	40.0
Ford	41.7	46.3	41.9	42.6	39.0	41.6	41.7	42.8	42.9	39.8
A5-5740	40.6	42.5	40.3	41.0	38.3	41.5	41.2	41.9	41.4	39.2
A5-5515	39.3	42.4	39.2	40.9	37.8	39.9	39.3	40.3	40.1	37.8
Mean	41.0	43.8	40.9	41.9	38.8	41.0	41.1	41.9	42.1	39.7
	Mean of 20 Tests	Percentage of Oil								
C1223	22.0	20.6	22.0	22.4	21.9	21.0	21.0	20.8	21.4	23.1
A6-7823	21.8	20.1	21.0	22.5	21.9	21.3	20.5	20.6	20.9	22.6
C1225	21.6	19.6	21.5	20.8	21.8	20.9	20.3	20.7	20.7	22.6
Shelby	21.7	19.5	21.9	22.2	21.3	21.0	20.6	20.8	20.4	22.7
S2-5179	21.4	20.2	21.3	20.5	21.1	20.6	20.4	20.4	20.6	21.8
Ross	20.3	18.9	20.0	20.8	20.6	19.8	19.1	19.7	19.0	20.8
L57-2322	22.1	19.6	21.8	22.6	22.0	21.7	20.5	21.3	21.2	22.7
Ford	21.4	19.0	20.8	21.0	20.9	20.6	20.2	19.9	20.5	22.4
A5-5740	22.5	20.6	22.3	22.7	22.2	22.0	21.1	21.6	21.9	23.7
A5-5515	22.8	20.7	22.4	22.6	22.3	22.0	21.4	22.1	22.2	24.0
Mean	21.8	19.9	21.5	21.8	21.6	21.1	20.5	20.8	20.9	22.6

Table 60. (Continued)

Strain	Evans-ville Ind.	Ur-bana Ill.	Gir-ard Ill.	Edge-wood Ill.	Eldor-ado Ill.	Ames Iowa	Ottum-wa Iowa	Kirks-ville Mo.	Colum-bia Mo.	Lin-coln Nebr.	Man-hattan Kans.
C1223	39.5	40.0	42.1	40.4	41.4	41.2	38.3	40.3	39.6	37.8	38.8
A6-7823	41.5	41.0	42.6	42.0	41.8	41.9	39.1	40.8	40.5	39.7	41.2
C1225	40.0	40.9	43.2	41.5	39.6	40.9	38.8	42.6	40.1	37.9	40.2
Shelby	40.9	41.2	42.8	41.7	40.8	41.8	38.5	41.7	39.5	38.1	40.6
S2-5179	41.4	40.9	42.1	42.1	41.5	41.4	38.4	40.8	40.0	38.2	41.2
Ross	41.2	42.9	44.3	43.7	43.2	43.7	40.1	43.1	41.5	39.5	41.8
L57-2322	40.4	40.8	43.4	41.8	41.5	43.5	37.9	41.4	40.7	39.3	41.6
Ford	42.2	41.4	43.5	42.3	41.5	43.9	38.7	40.7	40.0	38.7	41.8
A5-5740	40.9	41.0	42.7	40.8	40.6	41.7	39.0	39.7	38.6	38.5	40.4
A5-5515	38.8	39.7	40.7	38.7	39.7	40.7	37.0	39.2	38.1	37.0	39.5
Mean	40.7	41.0	42.7	41.5	41.2	42.1	38.6	41.0	39.9	38.5	40.7
	Percentage of Oil										
C1223	22.2	22.0	22.2	22.4	22.8	21.0	23.3	21.3	23.4	22.1	23.2
A6-7823	22.3	22.1	22.5	23.0	21.8	21.5	23.5	21.6	22.7	21.8	22.2
C1225	22.6	21.2	22.2	22.2	23.1	22.2	22.5	19.4	23.6	22.2	22.6
Shelby	22.6	21.0	22.3	22.4	22.1	22.4	23.1	20.1	23.2	21.8	22.4
S2-5179	22.4	21.0	21.9	22.6	22.4	21.1	22.6	20.6	22.9	22.0	22.2
Ross	21.1	20.0	20.1	20.7	20.7	20.7	21.4	19.2	21.5	20.8	21.4
L57-2322	22.9	23.4	22.8	22.7	22.6	21.3	23.3	21.1	23.8	22.1	22.5
Ford	22.1	21.3	21.8	22.4	22.1	22.0	22.8	21.2	23.1	22.0	22.1
A5-5740	23.1	22.1	22.0	22.8	23.0	23.2	23.4	22.4	24.3	22.9	23.4
A5-5515	23.4	22.5	23.1	23.5	23.6	23.2	23.5	22.1	23.8	23.0	24.2
Mean	22.5	21.7	22.1	22.5	22.4	21.9	22.9	20.9	23.2	22.1	22.6

Table 61. Two-year summary of data for Uniform Test III, 1959-1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	41	36	37	40	31	35	40	40
A6-7823	38.5	+4.8	2.1	40	2.1	16.8	41.4	22.0
Shelby	37.9	0	2.1	41	1.9	15.9	41.1	22.0
S2-5179	37.7	0	1.8	38	2.0	15.4	41.0	21.7
Ross	36.4	+2.6	2.4	41	2.0	14.2	42.5	20.5
Ford	36.3	-0.5	2.0	39	2.4	16.4	41.7	21.7
Mean	37.4	+1.4	2.1	40	2.1	15.7	41.5	21.6

[1]Days earlier (-) or later (+) than Shelby which matured September 22, 118 days after planting. Clark (Group IV) matured +6.4.

Table 62. Two-year summary of yield and yield rank for Uniform Test III, 1959-1960.

Strain	Mean of 41 Tests	Jamesburg N.J.	Newark Del.	Georgetown Del.	Hoytville Ohio	Columbus Ohio	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Evansville Ind.
A6-7823	38.5	34.8	39.5	36.6	32.3	33.0	43.9	44.6	41.1	48.7	46.1
Shelby	37.9	43.0	38.3	35.6	32.3	36.6	42.6	43.7	40.6	47.3	43.5
S2-5179	37.7	39.8	33.9	32.3	33.1	33.2	42.6	43.1	42.4	48.4	45.2
Ross	36.4	32.6	38.2	30.9	33.6	37.1	41.5	42.0	39.5	43.3	46.9
Ford	36.3	32.2	35.1	30.9	31.0	38.2	42.9	45.3	38.6	42.7	43.6
Mean	37.4	36.5	37.0	33.3	32.5	35.6	42.7	43.7	40.4	46.1	45.1
	Yield Rank										
A6-7823		3	1	1	3	5	1	2	2	1	2
Shelby		1	2	2	3	3	3	3	3	3	5
S2-5179		2	5	3	2	4	3	4	1	2	3
Ross		4	3	4	1	2	5	5	4	4	1
Ford		5	4	4	5	1	2	1	5	5	4

[1]Irrigated.
[2]Bottom land.

Table 62. (Continued)

Strain	Urbana Ill.	Girard Ill.	Edgewood Ill.	Eldorado Ill.	Carbondale Ill.	Ames Iowa	Ottumwa Iowa	Columbia Mo.	Lincoln Nebr.[1]	Manhattan Kans.	Manhattan Kans.[2]
A6-7823	36.0	47.1	40.3	30.7	30.1	44.5	40.7	31.4	49.3	30.1	33.0
Shelby	36.9	45.5	38.7	31.9	29.7	41.1	36.7	31.8	44.2	27.5	33.1
S2-5179	36.0	43.1	39.4	35.9	27.5	44.5	36.8	31.4	46.9	31.0	34.6
Ross	32.5	44.2	36.5	37.7	27.6	37.5	35.9	28.6	43.4	27.6	31.6
Ford	35.3	44.4	37.7	27.3	27.8	39.0	33.7	30.4	46.3	27.9	31.0
Mean	35.3	44.9	38.5	32.7	28.5	41.3	36.8	30.7	46.0	28.8	32.7
	Yield Rank										
A6-7823	2	1	1	4	1	1	1	2	1	2	3
Shelby	1	2	3	3	2	3	3	1	4	5	2
S2-5179	2	5	2	2	5	1	2	2	2	1	1
Ross	5	4	5	1	4	5	4	5	5	4	4
Ford	4	3	4	5	3	4	5	4	3	3	5

UNIFORM PRELIMINARY TEST III, 1960

Strain	Originating Agency	Origin	Generation Composited
Ford	Iowa A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_9
Shelby	Ill. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_8
AX50-11-2	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Clark	F_5
AX50F15-1	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Clark	F_5
AX55-22-1	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Harosoy	F_5
AX58-58-1	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Clark	F_5
C1212	Purdue A.E.S. & U.S.R.S.L.	LX1061-9-9 x Blackhawk	F_6
C1236	Purdue A.E.S. & U.S.R.S.L.	L46-1503 x (Mukden x Capital)	F_8
C1238	Purdue A.E.S. & U.S.R.S.L.	LX1061-9-9 x Blackhawk	F_7
L57-2206	Ill. A.E.S. & U.S.R.S.L.	L49-4091 x Clark	F_5
L57-2222	Ill. A.E.S. & U.S.R.S.L.	L49-4091 x Clark	F_5
L57-2276	Ill. A.E.S. & U.S.R.S.L.	L49-4091 x Clark	F_5
L57-2324	Ill. A.E.S. & U.S.R.S.L.	L49-4091 x Clark	F_5
L57-2396	Ill. A.E.S. & U.S.R.S.L.	L49-4091 x Clark	F_5
L57-2974	Ill. A.E.S. & U.S.R.S.L.	L48-7289 x Adams	F_5
L57-9777	Ill. A.E.S. & U.S.R.S.L.	Hawkeye x Lee	F_6

Identification of Parent Strains

LX1061-9-9	F_7 line from Lincoln x Ogden; from same F_4 line as Kent.
L46-1503	F_5 line from Lincoln (2) x Richland.
L48-7289	Sel. from Seneca x Richland.
L49-4091	Pustule resistant F_4 line from L44-1219 x (Lincoln x CNS). L44-1219 is an F_3 line from Lincoln (2) x Richland.

This test was grown at 12 locations in 8 states and consisted of 14 experimental strains plus Ford and Shelby as check varieties. Most locations had satisfactory yields with all but two having a mean yield of over 30 bushels.

The four AX strains are selections from crosses among adapted varieties. Only one, AX58-58-1, exceeded the checks appreciably in yield.

Two of the three C strains, C1212 and C1238, are resistant to Phytophthora rot and also appreciably outyielded the check varieties. They were satisfactory in most other traits and were higher than the checks in both oil and protein content.

The first five L strains are pustule resistant selections from the cross L49-4091 x Clark. They all surpassed the check varieties in mean yield, ranging from 1 to almost 5 bushels higher. L57-2222, the highest in mean yield, was also the earliest in maturity and equaled the checks in other traits.

L57-2974 was consistently low in yield despite excellent yield performance in Illinois tests in previous years. L57-9777 is a pustule-resistant selection from

Hawkeye x Lee. It was similar in performance to Shelby in most respects but was appreciably higher in protein content with only slightly lower oil.

Table 63. Summary of data for Uniform Preliminary Test III, 1960.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	11	11	10	11	11	10	7	8	8
Ford	38.0	15	-0.9	1.6	38	1.9	16.8	41.5	21.7
Shelby	39.1	11	0	1.7	40	1.7	16.2	41.4	21.7
AX50-11-2	38.6	14	-0.8	1.8	38	2.0	19.8	42.7	21.7
AX50F15-1	39.4	10	-1.7	1.3	39	2.2	19.6	41.3	22.6
AX55-22-1	39.9	9	+1.1	1.8	36	2.8	19.5	40.1	23.0
AX58-58-1	40.8	7	+1.3	1.6	41	2.3	17.8	41.9	21.1
C1212	42.9	4	+2.7	1.8	42	2.0	17.9	42.6	22.2
C1236	38.7	13	+2.5	1.8	44	2.1	15.4	41.6	22.7
C1238	41.6	5	+4.8	1.6	43	2.0	17.4	42.1	22.8
L57-2206	40.0	8	+2.9	1.9	41	1.9	16.0	42.0	21.1
L57-2222	43.8	1	+1.0	1.7	39	1.7	17.7	41.8	21.9
L57-2276	43.1	3	+6.0	1.9	40	1.6	17.0	41.3	22.5
L57-2324	43.6	2	+6.9	1.5	38	1.7	16.7	41.0	22.4
L57-2396	41.6	5	+2.5	1.7	39	2.1	16.5	41.6	21.7
L57-2974	35.6	16	-1.5	1.9	46	2.0	14.6	41.3	22.5
L57-9777	39.1	11	+1.5	1.7	38	2.0	18.9	43.2	21.2
Mean	40.4		+1.8	1.7	40	2.0	17.4	41.7	22.0

[1]Days earlier (-) or later (+) than Shelby which matured September 25, 119 days after planting. Clark (Group IV) matured +5.8.

Table 64. Disease data for Uniform Preliminary Test III, 1960.

Strain	Purple Stain	Pod and Stem Blight	Bacterial Blight	Bacterial Pustule	Brown Stem Rot	Downy Mildew	Frogeye R1	Frogeye R2	Phytophthora Rot
Ford	2UDn	2UDn	3La	3La,4Aa	4Ln	4Cn,3UDn	R	S	S
Shelby	2UDn	2UDn	3La	3La,4Aa	4Ln	3Cn,3UDn	R	S	S
AX50-11-2	2UDn	1UDn	3La	2La,4Aa	3.5Ln	3.5Cn,4UDn	Seg.	S	S
AX50F15-1	3UDn	2UDn	3.5La	3La,4Aa	3.5Ln	4.5Cn,3UDn	S	S	S
AX55-22-1	3UDn	2UDn	3.5La	3.5La,4Aa	3.5Ln	3Cn,2UDn	Seg.	S	S
AX58-58-1	2UDn	1UDn	3La	2La,4Aa	4Ln	3Cn,3UDn	R	S	S
C1212	2UDn	1UDn	3.5La	1La,4Aa	3.5Ln	3Cn,3UDn	S	S	R
C1236	3UDn	2UDn	3La	2La,4Aa	3.5Ln	3Cn,3UDn	R	S	S
C1238	2UDn	1UDn	3La	3.5La,4Aa	3.5Ln	4.5Cn,3UDn	S	S	R
L57-2206	2UDn	2UDn	4La	2La,4Aa	3.5Ln	4Cn,4UDn	R	S	S
L57-2222	2UDn	2UDn	3.5La	1La,3Aa	3.5Ln	4Cn,4UDn	R	R	S
L57-2276	3UDn	3UDn	4La	1La,4Aa	3.5Ln	3.5Cn,3UDn	R	Seg.	S
L57-2324	3UDn	2UDn	4La	1La,3Aa	3.5Ln	4.5Cn,4UDn	R	S	S
L57-2396	2UDn	3UDn	4La	2La,4Aa	4Ln	3.5Cn,4UDn	R	R	S
L57-2974	2UDn	2UDn	3La	2.5La,4Aa	4Ln	3.5Cn,4UDn	S	S	S
L57-9777	2UDn	2UDn	5La	2La,4Aa	4Ln	3Cn,2UDn	R	S	S

Table 65. Yield and yield rank for Uniform Preliminary Test III, 1960.

Strain	Mean of 11 Tests[1]	George-town Del.	Hoyt-ville Ohio	Co-lum-bus Ohio	La-fay-ette Ind.	Worth-ing-ton Ind.	Ur-bana Ill.[2]	Gir-ard Ill.	Ames Iowa	Ot-tum-wa Iowa	Co-lum-bia Mo.	Lin-coln Nebr.	Man-hat-tan Kans.
Ford	38.0	29.5	28.7	54.9	42.8	44.8	36.2	40.7	33.2	27.4	41.5	40.2	32.8
Shelby	39.1	30.8	34.0	55.4	45.8	50.1	35.3	40.1	38.7	23.8	37.0	39.7	33.3
AX50-11-2	38.6	26.1	28.2	46.9	42.9	46.0	37.4	38.4	38.6	28.9	38.1	46.6	34.8
AX50F15-1	39.4	26.7	34.2	53.9	46.5	46.1	35.5	36.3	36.8	25.2	41.2	50.6	34.5
AX55-22-1	39.9	36.7	21.4	46.8	41.7	46.6	36.6	42.5	37.0	27.9	43.0	48.2	31.8
AX58-58-1	40.8	26.9	26.0	55.3	43.4	48.2	39.2	41.4	39.0	28.7	38.1	52.9	35.2
C1212	42.9	36.3	28.5	57.2	47.6	50.7	36.3	47.9	40.8	33.0	38.4	52.4	30.9
C1236	38.7	33.2	27.1	45.5	47.7	55.0	33.2	39.2	32.4	27.2	36.0	41.0	34.4
C1238	41.6	34.3	33.5	52.6	47.8	47.3	35.1	50.0	40.1	33.8	37.7	45.9	32.9
L57-2206	40.0	30.8	33.1	49.7	42.3	49.8	32.8	40.4	37.8	29.2	36.6	56.0	34.4
L57-2222	43.8	34.1	33.5	52.8	52.4	50.5	40.5	45.3	42.2	30.1	41.2	50.3	42.1
L57-2276	43.1	34.9	30.4	42.8	50.7	57.0	36.0	45.8	44.4	30.4	40.0	57.5	35.1
L57-2324	43.6	35.3	35.1	54.0	50.8	50.7	36.4	43.1	40.0	29.6	43.6	56.5	39.9
L57-2396	41.6	35.1	29.4	46.9	43.4	55.4	35.3	39.1	41.6	28.7	38.9	56.2	36.5
L57-2974	35.6	30.9	26.7	41.4	41.3	43.5	33.4	32.0	33.0	24.5	35.3	42.7	33.7
L57-9777	39.1	32.7	27.1	47.2	47.0	50.3	35.7	40.3	35.0	26.7	38.9	45.2	31.2
Mean	40.4	31.8	29.8	50.2	45.9	49.5	35.9	41.4	38.2	28.4	39.1	48.9	34.6
C.V.(%)		6.8	--	9.8	5.8	9.6	6.2	9.7	8.7	7.6	6.1	11.4	6.2
B.N.F.S.(5%)		4.6	--	N.S.	5.7	N.S.	3.2	8.5	7.1	5.6	N.S.	11.9	4.6
Row Sp.(In.)		36	36	28	38	38	40	38	40	40	38	40	40
							Yield Rank						
Ford	15	13	9	4	13	15	7	8	14	11	3	15	13
Shelby	11	11	3	2	9	8	11	11	8	16	13	16	11
AX50-11-2	14	16	11	11	12	14	3	14	9	7	10	10	6
AX50F15-1	10	15	2	6	8	13	10	15	12	14	4	7	7
AX55-22-1	9	1	16	13	15	12	4	6	11	10	2	9	14
AX58-58-1	7	14	15	3	10	10	2	7	7	8	10	5	4
C1212	4	2	10	1	6	4	6	2	4	2	9	6	16
C1236	13	8	12	14	5	3	15	12	16	12	15	13	8
C1238	5	6	4	8	4	11	13	1	5	1	12	11	12
L57-2206	8	11	6	9	14	9	16	9	10	6	14	4	8
L57-2222	1	7	4	7	1	6	1	4	2	4	4	8	1
L57-2276	3	5	7	15	3	1	8	3	1	3	6	1	5
L57-2324	2	3	1	5	2	4	5	5	6	5	1	2	2
L57-2396	5	4	8	11	10	2	11	13	3	8	7	3	3
L57-2974	16	10	14	16	16	16	14	16	15	15	16	13	10
L57-9777	11	9	12	10	7	7	9	10	13	13	7	12	15

[1]Hoytville, Ohio not included in the mean.
[2]Four replications.

Table 66. Maturity, days earlier (-) or later (+) than Shelby, for Uniform Preliminary Test III, 1960.

Strain	Mean of 10 Tests[1]	George-town Del.	Hoyt-ville Ohio	Co-lum-bus Ohio	La-fay-ette Ind.	Worth-ing-ton Ind.	Ur-bana Ill.	Gir-ard Ill.	Ames Iowa	Ot-tum-wa Iowa	Co-lum-bia Mo.	Lin-coln Nebr.	Man-hat-tan Kans.
Ford	-0.9	-2	+1	-2	+1	-1	-2	-1	-2	-3	0	0	+3
Shelby	0	0	0	0	0	0	0	0	0	0	0	0	0
AX50-11-2	-0.8	-4	0	-4	+2	0	-3	0	-2	-1	- 1	+1	0
AX50F15-1	-1.7	-4	-1	-5	0	0	-4	-2	-5	-2	- 2	-1	+3
AX55-22-1	+1.1	-4	+2	-5	+6	+6	-3	+1	-2	-1	0	0	+8
AX58-58-1	+1.3	-4	+2	-4	+6	+6	-1	+2	-2	-1	+ 2	0	+5
C1212	+2.7	-5	+3	-6	+6	+2	0	+5	+4	+3	+ 3	+3	+6
C1236	+2.5	-3	+2	-6	+5	+1	+3	+3	+2	+1	+ 6	+3	+4
C1238	+4.8	-3	+5	-4	+5	+4	+2	+7	+8	+6	+ 5	+7	+7
L57-2206	+2.9	-2	+2	-1	+5	+3	+3	+4	+2	+1	+ 2	+5	+6
L57-2222	+1.0	-3	0	-1	+2	+3	-1	+1	-2	-1	+ 1	+5	+5
L57-2276	+6.0	+2	+5	-2	+5	+6	+5	+9	+8	+7	+ 7	+6	+5
L57-2324	+6.9	+3	+6	+1	+6	+6	+5	+9	+7	+7	+ 9	+8	+9
L57-2396	+2.5	+3	+1	0	+3	+2	+1	+2	+2	+1	+ 4	+3	+4
L57-2974	-1.5	0	-5	-2	+1	0	-6	-3	-4	-4	+ 2	-1	0
L57-9777	+1.5	+7	-1	-5	+2	+1	-1	+2	-1	-2	+ 2	0	+5
Clark	+5.8	-3	--	--	+6	+7	+6	+4	+8	+6	+11	+8	+5
Date planted	5-29	6-7	5-26	5-26	5-24	6-1	5-20	5-24	5-11	6-7	5-25	5-27	6-16
Shelby mat.	9-25	9-26	10-5	10-5	9-27	9-23	9-17	9-21	9-30	10-3	9-7	10-3	10-1
Days to mat.	119	111	132	132	126	114	120	120	142	118	105	129	107

[1]Hoytville and Columbus, Ohio not included in the mean.

Table 67. Percentages of protein and oil for Uniform Preliminary Test III, 1960.

Strain	Mean of 8 Tests	George-town Del.	Colum-bus Ohio	Lafay-ette Ind.	Gir-ard Ill.	Ames Iowa	Colum-bia Mo.	Lin-coln Nebr.	Man-hattan Kans.
Ford	41.5	41.9	41.1	43.8	43.7	42.7	40.0	38.3	40.2
Shelby	41.4	41.9	42.4	42.9	43.4	41.5	40.4	38.3	40.4
AX50-11-2	42.7	43.4	43.9	44.7	43.6	43.5	42.0	39.4	41.2
AX50F15-1	41.3	41.8	41.4	43.1	42.7	42.1	40.5	39.0	40.1
AX55-22-1	40.1	40.1	40.4	41.2	41.5	41.8	38.8	37.8	39.0
AX58-58-1	41.9	43.2	42.8	43.8	41.0	43.7	40.0	39.4	41.2
C1212	42.6	42.8	42.5	43.6	45.0	43.8	41.8	40.4	40.9
C1236	41.6	42.6	42.0	42.9	43.2	43.4	40.3	38.6	39.7
C1238	42.1	42.8	42.6	43.7	43.3	43.5	41.3	39.1	40.2
L57-2206	42.0	43.1	42.0	43.4	43.0	43.4	40.7	39.3	41.3
L57-2222	41.8	41.8	42.4	44.5	42.7	41.6	40.2	40.3	40.6
L57-2276	41.3	42.2	41.7	42.8	43.1	42.6	39.0	38.8	40.2
L57-2324	41.0	41.7	40.0	42.5	41.3	43.3	41.4	37.6	40.0
L57-2396	41.6	42.7	42.1	43.4	42.6	42.2	40.8	39.3	40.0
L57-2974	41.3	42.7	41.3	43.1	44.3	41.5	40.0	38.3	39.4
L57-9777	43.2	43.8	42.8	45.4	44.8	45.1	41.4	40.6	41.8
Mean	41.7	42.4	42.0	43.4	43.1	42.9	40.5	39.0	40.4
	Mean of 8 Tests	Percentage of Oil							
Ford	21.7	21.1	20.1	21.1	22.1	21.5	22.8	21.5	23.1
Shelby	21.7	21.7	20.6	21.1	21.7	21.6	22.3	22.1	22.3
AX50-11-2	21.7	20.7	20.6	21.4	22.0	21.5	22.3	22.1	23.3
AX50F15-1	22.6	22.6	21.1	22.3	23.1	21.4	23.8	22.5	23.6
AX55-22-1	23.0	23.0	21.8	22.2	22.2	22.6	24.2	23.3	24.5
AX58-58-1	21.1	21.0	20.0	20.3	21.1	20.5	22.7	21.1	22.3
C1212	22.2	22.7	21.2	21.6	21.8	21.7	22.5	22.4	23.7
C1236	22.7	22.7	20.9	21.9	22.7	22.6	24.1	23.2	23.8
C1238	22.8	23.1	21.1	22.7	22.7	22.7	23.4	22.3	24.3
L57-2206	21.1	21.2	19.8	20.2	21.6	21.4	21.6	20.6	22.3
L57-2222	21.9	21.4	20.7	21.3	22.5	22.7	22.6	21.2	23.0
L57-2276	22.5	23.0	21.4	21.5	23.1	22.4	22.9	22.2	23.7
L57-2324	22.4	22.6	21.5	21.5	22.7	21.8	23.1	22.0	24.2
L57-2396	21.7	21.6	20.7	20.7	21.6	21.6	22.3	21.5	23.3
L57-2974	22.5	21.8	21.3	21.9	21.5	23.0	23.6	22.6	24.3
L57-9777	21.2	21.4	20.7	20.6	20.8	20.4	22.1	21.1	22.4
Mean	22.0	22.0	20.8	21.4	22.1	21.8	22.9	22.0	23.4

UNIFORM TEST IV, 1960

Strain	Originating Agency	Origin	Generation Composited
Bethel (UD321-5)	Del. A.E.S. & U.S.R.S.L.	F.C. 33243 x Perry	F_5
Clark	Ill. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_8
Kent (C1068)	Purdue A.E.S. & U.S.R.S.L.	Lincoln x Ogden	F_7
L57-0034	Ill. A.E.S. & U.S.R.S.L.	L46-2132 x Adams	F_6
S6-5162	Mo. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_{11}
S7-4264	Mo. A.E.S. & U.S.R.S.L.	S4-1714 x Clark	F_3
S7-4319	Mo. A.E.S. & U.S.R.S.L.	S4-1714 x Clark	F_3
S7-5343	Mo. A.E.S. & U.S.R.S.L.	Clark (3) x S4-1714	F_3

Identification of Parent Strains

L46-2132	F_5 line from Lincoln (2) x Richland, progenitor of Clark.
S4-1714	Sel. from L49-4091 x Clark.

This test was grown at 16 locations in 1960 and consisted of five strains plus three named varieties. Yields were generally good, averaging 30 bushels or higher except at two locations in Missouri, at one of which the low yields were due to root knot.

Bethel and two experimental strains have been in this test for two years along with the varieties Kent and Clark. Bethel was similar to Kent in maturity but was inferior to Kent in yield except at locations such as Diehlstadt, Missouri, 1960, where root knot nematode reduced the yields of Kent and other susceptible varieties. S7-5343 is a pustule-resistant BC_3 Clark and performed similarly to Clark in most of the tests. S6-5162, a selection from Lincoln (2) x Richland, was similar to Clark in most respects but was more susceptible to lodging as an average of the two years. In 1959 it appeared to have a yield advantage over Clark but the reverse was true in 1960.

The remaining three strains were entered in this test from the 1959 Preliminary Test IV. L57-0034 performed very well, approaching Kent in yield and being a few days earlier. The seedlots of Kent and L57-0034 used in this test in 1960 were mixed, but it is believed that this was not great enough to appreciably affect their performance. S7-4264 and S7-4319 are pustule-resistant selections from a cross which had Clark as both the paternal parent and one of the maternal grandparents. Their average performance was very similar to that of Clark.

A description and outline of the history of the development of Kent follows:

KENT

Kent was named and released in January 1961 by the states of Delaware, Maryland, Indiana, Illinois and Kansas. Kent has medium- to large-sized yellow seeds with a black hilum. The plants produce a dense spreading dark green foliage and are of medium height with purple flowers and brown pubescence. Kent is relatively resistant to downy mildew and is resistant to frogeye leafspot, including a recently

identified race to which currently recommended Midwest varieties are susceptible.

The origin and development of Kent is as follows:

1944 - Cross of Lincoln x Ogden made at Urbana, Illinois.
1945 - F_1. Grown at Urbana; assigned cross number LX1061.
1946 - F_2. Grown at Urbana.
1947 - F_3. Seed from bulked F_2 plants of cross LX1061 was received from Dr. L. F. Williams in May 1947. This was planted at Lafayette and individual plants were selected.
1948 - F_4. Plant rows were grown at Evansville and the best rows were saved. These included LX1061-9 which was designated C985.
1949 - F_5. C985 entered in Indiana Hybrid Line Test IV-1 and tested at Evansville. Highly significantly higher in yield than any other entry. Very high oil content.
1950 - F_6. C985 entered in Uniform Preliminary Test IV at 6 locations in Maryland, Indiana, Illinois, Missouri and Kansas. Highest in yield and oil content in the test. Eighty-five plant selections were made from C985 and given pedigree numbers LX1061-9-1 to 85 inclusive.
1951 - F_7. C985 entered in Uniform Test IV at 16 locations. Highest in yield, and near top in oil content in the test. F_6 plant selections advanced to F_7 plant rows. Seventeen rows were saved and included LX1061-9-7, -21, -25, -28, -32, -33 (C1068), -34, -37, -38, -40, -41, -50, -52, -60, -65, -79, and -84 which were assigned Purdue numbers C1063 to C1079, respectively.
1952 - F_8. C985 entered in Uniform Test IV at 17 locations. Highest in yield, and near top in oil content in the test. C985 selections, C1063 to C1079, entered in Indiana Preliminary Test, Group IV-1. All entries well above Clark, Perry, and Wabash in yield.
1953 - F_9. C985 entered in Uniform Test IV at 15 locations. Highest in yield and near top in oil content in the test. C985 and 13 selections from it were entered in Uniform Preliminary Test IV in 4 tests in Indiana, Illinois and Missouri. Unusual drought and high temperatures occurred at these locations and except at Worthington, Indiana, these were not considered very good tests.

Twenty-seven single F8 plants grown from remnant 1951 seeds were selected from C1068 for use in producing breeders seed and were placed in cold storage.

1954 - F_{10}. C985 and 8 "C" number selections including C1068 were entered in Uniform Test IV grown at 12 locations. Some unusual drought conditions prevailed at some of the Midwestern locations.
1955 - F_{11}. 1954 tests repeated at 13 locations. Test conditions again rather erratic at some Midwestern locations. Interest in release of one of these strains was expressed by Maryland, Delaware, and Indiana. Illinois, Missouri and Kansas lacked good tests to support a choice for a strain.
1956 - F_{12}. Tests as set up in 1954 repeated at 13 locations. C1068 had highest 3-year yield average.
1957 - F_{13}. C1068 and C1069 grown at 9 Uniform Test IV locations. Average yield of the two strains were similar and highest in the test.
1958 - F_{14}. C1068 and C1069 grown at 15 Uniform Test IV locations. C1068 averaged highest yield in the tests.

Seeds of the 27 F_8 plant selections of C1068 made in 1953 were grown in thinly-seeded plant rows. Seed from 21 F_9 rows was saved and composited to give 71 pounds of F_9 breeders seed divided as follows: Maryland, 9; Delaware, 18; Virginia, 9; Illinois, 18; and Indiana, 17 pounds. Kansas elected to multiply C1069 and was given 18 pounds of breeders seed by Indiana.

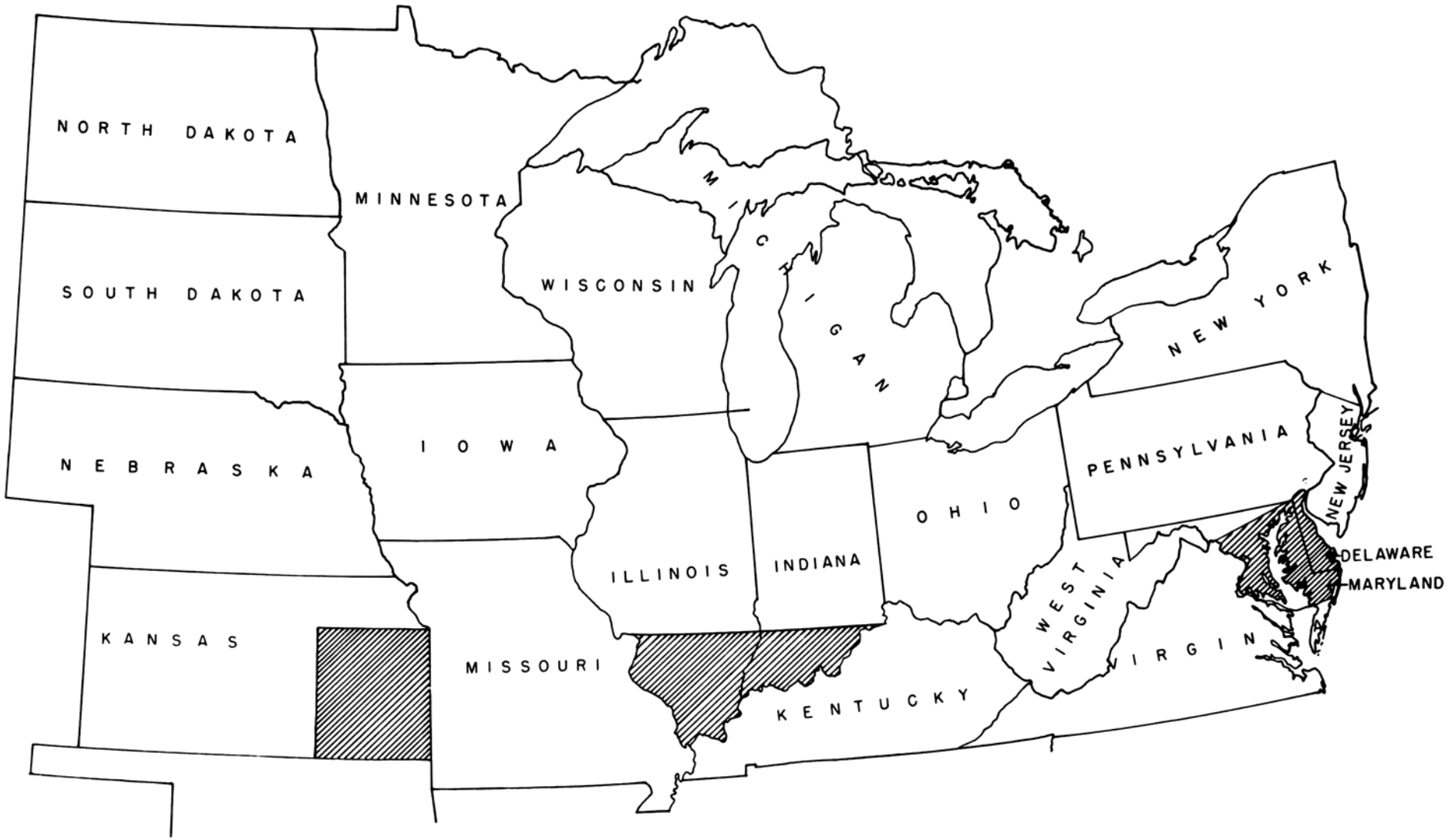
1959 - F_{15}. C1068 grown at 13 Uniform Test IV locations. Averaged highest in yield.

Breeders seed (F_{10}) produced as follows: Delaware, 30; Maryland, 18; Virginia, 6; Illinois, 0 (crop failure); and Indiana, 53.5 bushels. Virginia decided not to release. Kansas decided to multiply C1068 and drop C1069. Indiana sold 15 bushels each to Kansas and Illinois and also placed 1 bushel in cold storage for future breeders seed. Illinois also purchased Virginia's seed and 5 bushels from Delaware for a total of 26 bushels.

1960 - F_{16}. C1068 continued in Uniform Test IV. Named Kent from a slate of 5 names established by and voted on by the releasing states.

Production of foundation seed (F_{11}) for release to certified seed growers in 1961 was as follows:

	Del.	Md.	Ind.	Ill.	Kans.	Total
Bu. planted	25	18	22	26	15	106
A. grown	29	23	39	40	34	165
Bu. seed	850	950	1616	1068	700	5184



AREA OF ADAPTATION OF KENT

Table 68. Summary of data for Uniform Test IV, 1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	12	11	11	12	11	8	11	11
Kent	43.1	+8.5	1.8	39	2.3	16.5	40.4	22.2
L57-0034	42.7	+5.3	1.8	37	2.3	16.0	39.9	22.6
S7-4264	41.0	-0.5	2.0	38	2.2	14.3	40.2	22.3
Clark	40.9	0	2.1	38	2.2	15.6	40.8	21.9
S7-4319	40.4	+0.2	1.9	38	2.0	15.2	40.9	22.0
S7-5343	39.7	+0.3	2.1	38	2.3	14.9	40.9	22.0
S6-5162	39.1	-0.1	2.2	39	2.3	15.0	40.7	21.9
Bethel	36.6	+8.5	2.2	45	2.0	14.0	41.9	20.6
Mean	40.4	+2.8	2.0	39	2.2	15.2	40.7	21.9

[1]Days earlier (-) or later (+) than Clark which matured September 24, 114 days after planting.

Table 69. Disease data for Uniform Test IV, 1960.

Strain	Purple Stain	Pod and Stem Blight	Bacterial Blight	Bacterial Pustule	Wild-fire	Brown Spot	Brown Stem Rot	Downy Mildew	Frog-eye		Phytophthora Rot
									R1	R2	
Kent	3.5UDn	2UDn	3La	S	4Sn	S	S	2.8Cn,2Ln,2UDn	R	R	S
L57-0034	1.5UDn	2UDn	3La	S	3Sn	S	S	3.3Cn,2.3Ln,2UDn	R	S	--
S7-4264	1.5UDn	3.5UDn	3.5La	1La,2Aa	1Sn	S	S	4.5Cn,3Ln,3.5UDn	R	S	--
Clark	3UDn	4UDn	3La	3.5La,4Aa	4Sn	S	S	4.3Cn,3.3Ln,3UDn	R	S	S
S7-4319	1.5UDn	3UDn	3.5La	1La,2Aa	1Sn	S	S	4.8Cn,3Ln,3.5UDn	R	S	--
S7-5343	1.5UDn	3UDn	4La	1La,4Aa	2Sn	S	S	4.5Cn,3.5Ln,3.5UDn	R	S	--
S6-5162	3UDn	2.5UDn	S	S	4Sn	S	S	3.8Cn,3Ln,2.5UDn	R		S
Bethel	2UDn	1UDn	4La	2La,4Aa	3Sn	S	S	3Cn,3Ln,2UDn	R	S	S

Table 70. Yield and yield rank for Uniform Test IV, 1960.

Strain	Mean of 12 Tests[1]	Bridgeton N.J.	Newark Del.	Georgetown Del.	Worthington Ind.[2]	Evansville Ind.[2]	Edgewood Ill.	Eldorado Ill.[2]	Carbondale Ill.
Kent	43.1	41.0	49.9	34.2	51.3	47.9	45.7	42.0	38.4
L57-0034	42.7	39.1	45.9	37.1	48.0	46.7	48.4	41.5	37.8
S7-4264	41.0	32.6	50.2	35.5	47.1	44.1	43.3	36.5	37.0
Clark	40.9	35.7	39.4	36.2	49.8	41.9	45.0	40.7	38.8
S7-4319	40.4	33.3	47.3	33.7	46.5	43.5	41.9	40.4	34.1
S7-5343	39.7	30.0	44.4	32.4	45.1	44.5	45.5	37.5	33.0
S6-5162	39.1	34.6	37.0	30.3	45.4	41.1	44.5	36.7	35.9
Bethel	36.6	25.6	45.8	30.0	43.8	44.8	38.9	36.1	33.1
Mean	40.4	34.0	45.0	33.7	47.1	44.3	44.2	38.9	36.0
Coef. of Var. (%)		12.6	12.4	24.2	7.2	11.1	5.9	6.7	--
Bu. Nec. for Sig. (5%)		6.2	8.2	N.S.	3.5	5.2	3.8	6.3	--
Row Spacing (In.)		42	36	36	38	40	38	40	40
		Yield Rank							
Kent		1	2	4	1	1	2	1	2
L57-0034		2	4	1	3	2	1	2	3
S7-4264		6	1	3	4	5	6	7	4
Clark		3	7	2	2	7	4	3	1
S7-4319		5	3	5	5	6	7	4	6
S7-5343		7	6	6	7	4	3	5	8
S6-5162		4	8	7	6	8	5	6	5
Bethel		8	5	8	8	3	8	8	7

[1]Georgetown, Delaware and Jefferson City, Diehlstadt and Sikeston, Missouri not included in the mean.
[2]Eight replications.
[3]Bottom land. Not included in the mean.

Table 70. (Continued)

Strain	Miller City Ill.[2]	Columbia Mo.[2]	Jefferson City Mo.	Diehlstadt Mo.	Sikeston Mo.[2]	Manhattan Kans.	Manhattan Kans.[3]	Mound Valley Kans.	Columbus Kans.
Kent	52.3	35.4	21.2	21.2	42.5	38.4	47.0	44.0	30.3
L57-0034	53.6	36.9	25.8	9.9	38.1	36.7	45.1	49.8	27.5
S7-4264	51.0	35.5	17.6	25.1	43.2	36.1	39.3	45.9	32.1
Clark	47.8	37.3	18.2	24.0	40.0	36.5	42.5	49.1	28.7
S7-4319	45.9	38.4	16.6	31.1	41.1	35.9	42.0	45.7	31.7
S7-5343	48.9	35.8	16.9	29.1	40.2	33.3	41.3	47.0	31.1
S6-5162	46.0	35.0	21.3	22.6	40.4	37.0	45.8	45.6	30.0
Bethel	42.3	28.4	24.1	39.8	37.9	35.9	39.4	39.7	24.9
Mean	48.5	35.3	20.2	25.4	40.4	36.2	42.8	45.9	29.5
Coef. of Var. (%)	6.9	7.7	25.6	26.7	10.9	4.7	7.9	7.0	--
Bu. Nec. for Sig. (5%)	4.7	4.1	N.S.	11.7	N.S.	2.5	5.0	4.7	--
Row Spacing (In.)	38	38	40	38	38	40	36	42	40
	Yield Rank								
Kent	2	6	4	7	2	1	1	7	4
L57-0034	1	3	1	8	7	3	3	1	7
S7-4264	3	5	6	4	1	5	8	4	1
Clark	5	2	5	5	6	4	4	2	6
S7-4319	7	1	8	2	3	6	5	5	2
S7-5343	4	4	7	3	5	8	6	3	3
S6-5162	6	7	3	6	4	2	2	6	5
Bethel	8	8	2	1	8	6	7	8	8

Table 71. Maturity, days earlier (-) or later (+) than Clark, for Uniform Test IV, 1960.

Strain	Mean of 11 Tests[1]	Bridge-ton N.J.	New-ark Del.	George-town Del.	Worth-ing-ton Ind.	Evans-ville Ind.	Edge-wood Ill.	El-dor-ado Ill.	Car-bon-dale Ill.
Kent	+8.5	+11	+2	+4	+10	+10	+3	+9	+11
L57-0034	+5.3	+ 9	+2	+4	+ 9	+ 7	+3	+7	+ 5
S7-4264	-0.5	+ 1	-2	0	+ 1	- 1	-2	0	- 2
Clark	0	0	0	0	0	0	0	0	0
S7-4319	+0.2	+ 4	-2	+2	+ 1	0	0	0	- 2
S7-5343	+0.3	+ 1	-1	0	+ 2	- 1	-1	0	+ 1
S6-5162	-0.1	+ 3	-2	+1	0	0	-1	+1	- 3
Bethel	+8.5	+11	+5	+7	+11	+ 7	+4	+8	+12
Date planted	6-2	6-7	6-10	6-7	6-1	6-3	6-7	6-1	5-31
Clark matured	9-24	9-25	10-11	10-1	9-30	9-29	9-26	9-18	9-17
Days to mature	114	110	123	116	121	118	111	109	109

[1]Georgetown, Delaware and Jefferson City, Diehlstadt and Sikeston, Missouri not included in the mean.
[2]Bottom land. Not included in the mean.

Table 71. (Continued)

Strain	Miller City Ill.	Columbia Mo.	Jefferson City Mo.	Diehlstadt Mo.	Sikeston Mo.	Manhattan Kans.	Manhattan Kans.[2]	Columbus Kans.
Kent	+ 9	+10	+11	--	+ 7	+12	+ 7	+7
L57-0034	+ 6	+ 1	+ 4	-2	+ 4	+ 5	+ 3	+4
S7-4264	0	0	+ 1	0	0	- 1	+ 1	0
Clark	0	0	0	0	0	0	0	0
S7-4319	+ 1	0	+ 1	-1	0	0	0	0
S7-5343	0	+ 1	+ 1	0	0	+ 1	0	0
S6-5162	- 1	+ 2	+ 1	+1	0	0	0	0
Bethel	+12	+ 7	+11	--	+10	+13	+11	+3
Date planted	5-14	5-25	6-8	5-15	5-14	6-17	6-18	6-1
Clark matured	9-11	9-16	9-23	9-16	9-7	10-5	10-6	9-17
Days to mature	120	114	107	124	116	110	110	108

Table 72. Lodging and plant height for Uniform Test IV, 1960.

Strain	Mean of 11 Tests[1]	Bridgeton N.J.	Newark Del.	Georgetown Del.	Worthington Ind.	Evansville Ind.	Edgewood Ill.	Eldorado Ill.	Carbondale Ill.
Kent	1.8	2.5	2.0	1.3	2.1	1.0	1.5	2.1	2.0
L57-0034	1.8	2.5	2.0	1.3	2.5	1.2	1.3	1.8	2.0
S7-4264	2.0	3.5	2.8	1.3	2.4	1.5	1.6	1.8	1.0
Clark	2.1	3.5	3.5	1.5	2.0	1.3	1.5	2.0	2.0
S7-4319	1.9	3.2	2.5	1.7	2.4	1.3	1.3	1.7	2.0
S7-5343	2.1	3.5	3.5	1.5	2.5	1.5	1.5	1.9	1.0
S6-5162	2.2	4.0	4.0	2.0	2.7	1.6	1.5	1.8	2.0
Bethel	2.2	3.7	2.8	2.0	1.4	1.5	1.9	2.2	2.0
Mean	2.0	3.3	2.9	1.6	2.3	1.4	1.5	1.9	1.8
	Mean of 12 Tests[3]	Plant Height							
Kent	39	42	41	36	47	41	39	35	34
L57-0034	37	40	40	36	45	38	38	34	32
S7-4264	38	37	41	36	46	38	36	35	32
Clark	38	38	43	34	45	38	36	36	34
S7-4319	38	38	43	34	45	38	36	36	33
S7-5343	38	37	43	33	45	37	36	36	32
S6-5162	39	39	41	36	46	39	37	35	34
Bethel	45	43	45	41	53	47	47	41	40
Mean	39	39	42	36	47	40	38	36	34

[1]Georgetown, Delaware, Jefferson City, Diehlstadt and Sikeston, Missouri and Columbus, Kansas not included in the mean.
[2]Bottom land. Not included in the means.
[3]Georgetown, Delaware and Jefferson City, Diehlstadt and Sikeston, Missouri not included in the mean.

Table 72. (Continued)

Strain	Miller City Ill.	Columbia Mo.	Jefferson City Mo.	Diehlstadt Mo.	Sikeston Mo.	Manhattan Kans.	Manhattan Kans.[2]	Mound Valley Kans.	Columbus Kans.
Kent	1.9	1.0	1.0	1.0	1.4	1.5	2.7	2.0	1.0
L57-0034	2.2	1.0	1.0	1.0	1.5	1.3	2.9	2.0	1.0
S7-4264	2.7	1.0	1.0	1.0	1.3	1.5	2.1	2.0	1.0
Clark	2.5	1.0	1.0	1.0	1.5	1.7	2.1	2.0	1.0
S7-4319	2.3	1.0	1.0	1.0	1.4	1.7	2.3	2.0	1.0
S7-5343	2.3	1.0	1.0	1.0	1.4	1.5	2.0	3.0	1.0
S6-5162	1.9	1.0	1.0	1.0	1.7	1.4	1.8	2.0	1.0
Bethel	2.7	1.2	1.0	1.0	3.5	2.4	4.0	2.0	1.0
Mean	2.3	1.0	1.0	1.0	1.7	1.6	2.5	2.1	1.0
	Plant Height								
Kent	42	41	34	31	44	37	42	36	32
L57-0034	40	40	31	32	43	37	40	36	29
S7-4264	43	42	33	34	44	38	40	38	31
Clark	42	41	31	33	43	38	39	39	29
S7-4319	41	42	31	36	44	37	40	37	31
S7-5343	41	43	32	33	44	38	39	38	30
S6-5162	40	42	33	33	44	38	42	41	31
Bethel	51	51	42	44	52	42	49	46	34
Mean	43	43	33	35	45	38	41	39	31

Table 73. Percentages of protein and oil for Uniform Test IV, 1960.

Strain	Mean of 11 Tests[1]	Bridgeton N.J.	Newark Del.	Georgetown Del.	Worthington Ind.	Evansville Ind.	Edgewood Ill.
Kent	40.4	40.2	39.5	41.8	40.1	40.6	41.3
L57-0034	39.9	38.9	40.7	40.8	38.7	40.4	40.5
S7-4264	40.2	41.6	39.9	41.7	39.7	39.5	41.7
Clark	40.8	40.9	41.3	41.7	40.2	39.7	42.1
S7-4319	40.9	41.6	41.1	44.2	40.1	40.8	41.6
S7-5343	40.9	41.6	41.7	41.9	40.6	40.4	41.6
S6-5162	40.7	40.9	40.1	41.0	40.2	40.0	41.4
Bethel	41.9	42.5	42.6	40.0	40.6	40.7	41.9
Mean	40.7	41.0	40.9	41.6	40.0	40.3	41.5
	Mean of 11 Tests[1]	Percentage of Oil					
Kent	22.2	22.3	20.2	22.5	22.9	22.0	22.3
L57-0034	22.6	22.5	20.3	22.5	22.1	22.8	23.2
S7-4264	22.3	21.5	21.0	21.7	22.1	22.6	21.5
Clark	21.9	21.1	21.0	22.5	22.1	22.7	21.8
S7-4319	22.0	21.5	20.9	21.2	22.1	22.2	21.0
S7-5343	22.0	21.3	21.0	22.3	21.8	22.7	21.9
S6-5162	21.9	21.8	21.2	22.6	21.7	22.9	20.7
Bethel	20.6	20.3	18.9	21.5	21.4	21.9	20.0
Mean	21.9	21.5	20.6	22.1	22.0	22.5	21.6

[1]Georgetown, Delaware not included in the mean.

Table 73. (Continued)

Strain	Eldorado Ill.	Miller City Ill.	Columbia Mo.	Manhattan Kans.	Mound Valley Kans.	Columbus Kans.
Kent	40.5	41.7	40.5	38.0	41.1	41.2
L57-0034	40.0	41.6	39.9	38.0	39.8	40.2
S7-4264	40.1	41.9	39.1	38.9	40.1	39.6
Clark	41.1	42.0	39.8	39.3	40.9	41.6
S7-4319	41.1	42.6	40.7	39.5	40.6	40.4
S7-5343	40.8	42.3	39.9	39.1	40.9	40.6
S6-5162	40.6	42.6	40.3	39.1	41.3	41.4
Bethel	41.1	43.7	43.3	38.4	43.4	42.6
Mean	40.7	42.3	40.4	38.8	41.0	41.0
	Percentage of Oil					
Kent	21.4	22.7	21.6	23.6	22.4	22.3
L57-0034	21.9	23.0	22.0	24.4	23.9	22.6
S7-4264	21.2	22.6	22.6	23.7	22.9	23.1
Clark	20.9	22.1	22.0	23.2	22.6	21.9
S7-4319	20.7	22.1	21.7	23.4	22.8	23.1
S7-5343	20.9	22.4	21.3	23.4	22.7	22.8
S6-5162	21.1	22.2	21.9	23.4	22.4	22.0
Bethel	20.0	20.7	19.8	22.5	20.6	20.6
Mean	21.0	22.2	21.6	23.5	22.5	22.3

Table 74. Two-year summary of data for Uniform Test IV, 1959-1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	25	22	23	24	24	21	24	24
Kent	40.6	+8.8	1.7	40	2.3	16.6	40.3	22.2
Clark	37.1	0	1.9	39	2.3	15.7	40.6	22.1
S6-5162	36.9	0	2.2	40	2.5	14.9	40.6	22.1
S7-5343	36.2	+0.4	1.9	39	2.4	14.5	40.5	22.1
Bethel	35.4	+9.4	2.1	45	2.3	14.6	41.6	20.8
Mean	37.2	+3.7	2.0	41	2.4	15.3	40.7	21.9

[1]Days earlier (-) or later (+) than Clark which matured September 24, 119 days after planting.

Table 75. Two-year summary of yield and yield rank for Uniform Test IV, 1959-1960.

Strain	Mean of 25 Tests	Newark Del.	Georgetown Del.	Worthington Ind.	Evansville Ind.	Edgewood Ill.	Eldorado Ill.	Carbondale Ill.
Kent	40.6	46.3	39.8	49.2	52.8	40.2	43.4	35.0
Clark	37.1	37.6	36.3	41.9	42.9	38.6	36.2	30.3
S6-5162	36.9	36.8	34.5	44.1	40.7	38.2	37.8	30.5
S7-5343	36.2	41.1	33.7	39.3	44.4	38.3	33.2	27.2
Bethel	35.4	40.2	34.1	45.0	48.4	36.6	37.5	30.7
Mean	37.2	40.4	35.7	43.9	45.8	38.4	37.6	30.7
		Yield Rank						
Kent		1	1	1	1	1	1	1
Clark		4	2	4	4	2	4	4
S6-5162		5	3	3	5	4	2	3
S7-5343		2	5	5	3	3	5	5
Bethel		3	4	2	2	5	3	2

[1]Bottom land.

Table 75. (Continued)

Strain	Miller City Ill.	Columbia Mo.	Jefferson City Mo.	Manhattan Kans.	Manhattan Kans.[1]	Mound Valley Kans.	Columbus Kans.
Kent	46.2	35.0	28.0	33.8	36.7	35.8	34.7
Clark	43.3	34.7	26.8	32.0	33.1	39.6	34.9
S6-5162	40.2	34.8	28.5	32.0	36.6	36.9	35.7
S7-5343	42.6	33.1	25.1	30.3	36.8	36.7	34.2
Bethel	37.2	29.3	26.7	30.6	33.9	33.8	31.0
Mean	41.9	33.4	27.0	31.7	35.4	36.6	34.1
	Yield Rank						
Kent	1	1	2	1	2	4	3
Clark	2	3	3	2	5	1	2
S6-5162	4	2	1	2	3	2	1
S7-5343	3	4	5	5	1	3	4
Bethel	5	5	4	4	4	5	5

Table 76. Seven-year summary of data for Uniform Test IV, 1954-1960.

Strain	Yield	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
							Protein	Oil
No. of Tests	87	75	72	82	82	84	87	87
Kent	38.4	+8.8	1.7	40	2.1	16.8	40.8	21.9
Clark	35.9	0	2.0	40	2.2	15.6	40.9	21.7
Mean	37.2	+4.4	1.9	40	2.2	16.2	40.9	21.8

[1]Days earlier (-) or later (+) than Clark which matured September 24, 121 days after planting.

Table 77. Seven-year summary of yield and yield rank for Uniform Test IV, 1954-1960.

Strain	Mean of 87 Tests	Newark Del.	Georgetown Del.	Worthington Ind.	Evansville Ind.	Edgewood Ill.	Eldorado Ill.
Years Tested		1955-1960	1954,'56 1958-60	1954-1960	1954-1960	1955-56 1958-60	1954-1960
Kent	38.4	48.1	40.2	46.8	53.0	40.7	42.9
Clark	35.9	40.7	35.6	42.1	47.9	39.8	40.5
Mean	37.2	44.4	37.9	44.5	50.5	40.3	41.7
		Yield Rank					
Kent		1	1	1	1	1	1
Clark		2	2	2	2	2	2

Table 77. (Continued)

Strain	Carbon-dale Ill.	Miller City Ill.	Colum-bia Mo.	Jeffer-son City Mo.	Man-hattan Kans.	Mound Valley Kans.	Colum-bus Kans.
Years Tested	1954-1960	1958-1960	1954-1960	1955-56 1958-60	1954-56 1958-60	1957-1960	1954-1960
Kent	32.4	47.1	30.3	28.9	26.1	30.1	22.2
Clark	29.1	43.9	30.3	28.8	25.6	31.8	22.7
Mean	30.8	45.5	30.3	28.9	25.9	31.0	22.5
	Yield Rank						
Kent	1	1	1	1	1	2	2
Clark	2	2	1	2	2	1	1

UNIFORM PRELIMINARY TEST IV, 1960

Strain	Originating Agency	Origin	Generation Composited
Clark	Ill. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_8
Kent (C1068)	Purdue A.E.S. & U.S.R.S.L.	Lincoln x Ogden	F_7
C1220	Purdue A.E.S. & U.S.R.S.L.	LX1061-9-15 x Richland	F_6
C1239	Purdue A.E.S. & U.S.R.S.L.	Wabash x C1066	F_7
C1245	Purdue A.E.S. & U.S.R.S.L.	Korean x C1067	F_6
CX286-304-4	Purdue A.E.S. & U.S.R.S.L.	Clark x C1069	F_3
L57-9809	Ill. A.E.S. & U.S.R.S.L.	Hawkeye x Lee	F_6
L57-9819	Ill. A.E.S. & U.S.R.S.L.	Hawkeye x Lee	F_6
L58g-122R	Ill. A.E.S. & U.S.R.S.L.	Clark (4) x F_2 (Blackhawk x Clark)	F_1
Md58-252	Md. A.E.S. & U.S.R.S.L.	Perry x Wabash	F_3
UD36	Del. A.E.S. & U.S.R.S.L.	F.C. 33243 x Wabash	F_6
UD217	Del. A.E.S. & U.S.R.S.L.	Hawkeye x F.C. 33243	F_6
UD315	Del. A.E.S. & U.S.R.S.L.	F.C. 33243 x Perry	F_6
UD333	Del. A.E.S. & U.S.R.S.L.	F.C. 33243 x Perry	F_6
UD338	Del. A.E.S. & U.S.R.S.L.	F.C. 33243 x Perry	F_6
UD716	Del. A.E.S. & U.S.R.S.L.	L48-7289 x F.C. 33243	F_6
UD769	Del. A.E.S. & U.S.R.S.L.	L48-7289 x F.C. 33243	F_6

Identification of Parent Strains

C1066	F_7 line from Lincoln x Ogden; from same F_4 line as Kent.
C1067	Same as above.
C1069	Same as above.
LX1061-9-15	Same as above.
L48-7289	Sel. from Seneca x Richland.

This test was grown at 9 locations and consisted of 15 experimental strains plus two check varieties, Clark and Kent.

The four C strains all had sibs of Kent as one parent. Of these, CX286-304-4 was outstanding in performance, equaling Kent in mean yield and being about 5 days earlier.

L57-9809 and L57-9819 are pustule-resistant selections from Hawkeye x Lee. The earlier one, L57-9819, equaled Clark in performance in most respects and was superior in seed quality. L57-9809 equaled Kent in yield and was a day or two earlier, but appears to be rather susceptible to lodging. L58g-122R is Phytophthora-resistant BC_4 Clark. Phytophthora rot was a factor affecting yields at Eldorado and perhaps other locations. Probably for this reason L58g-122R had a higher mean yield than any other strain. In other traits it was similar to Clark.

Md58-252 is of interest chiefly for its rather high protein content. The seven UD strains have been selected for resistance to root knot nematode. Most of them performed relatively well at Diehlstadt, where the nematode was present, but were relatively low elsewhere in mean yield performance. UD315 was the highest in yield and the most lodging resistant of the group, comparing satisfactorily with the check varieties in most respects.

Table 78. Summary of data for Uniform Preliminary Test IV, 1960.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	8	8	6	7	8	7	5	5	5
Clark	36.9	7	0	1.6	37	2.4	15.0	41.2	21.9
Kent	39.2	4	+7.3	1.5	39	2.2	15.6	41.3	22.0
C1220	37.8	5	+3.0	1.8	43	2.4	15.1	40.5	22.4
C1239	34.1	10	-0.7	1.3	44	2.0	13.8	39.3	23.6
C1245	35.7	9	+3.0	1.3	37	2.3	18.5	40.8	22.3
CX286-304-4	39.6	2	+2.7	1.6	39	1.9	15.4	41.3	22.0
L57-9809	39.5	3	+5.7	2.3	42	1.9	13.4	40.6	22.4
L57-9819	37.6	6	+1.3	1.6	39	1.8	13.0	42.4	21.4
L58g-122R	39.9	1	-0.3	1.7	39	2.3	15.7	41.8	21.7
Md58-252	31.7	15	+5.3	1.6	39	2.4	14.9	44.0	20.5
UD36	31.3	16	+5.2	2.6	39	2.2	15.0	42.0	21.7
UD217	32.6	12	+6.8	2.3	39	2.2	14.4	42.3	21.3
UD315	36.0	8	+5.3	1.7	42	1.6	14.5	40.8	21.5
UD333	32.1	13	+1.7	2.6	31	1.6	13.1	39.1	22.2
UD338	30.0	17	-0.8	2.2	32	2.4	13.4	39.3	22.1
UD716	32.1	13	+1.7	2.4	37	2.9	13.7	38.7	22.8
UD769	32.7	11	+4.2	2.9	45	2.3	12.9	39.9	22.1
Mean	35.2		+3.0	1.9	39	2.2	14.6	40.9	22.0

[1]Days earlier (-) or later (+) than Clark which matured September 25, 114 days after planting.

Table 79. Disease data for Uniform Preliminary Test IV, 1960.

Strain	Purple Stain	Pod and Stem Blight	Bacterial Blight	Bacterial Pustule	Wildfire	Brown Spot	Brown Stem Rot	Downy Mildew	Frogeye R1	Frogeye R2	Phytophthora Rot
Clark	3UDn	4UDn	3La	3.5La,4Aa	4Sn	S	S	4UDn	R	S	S
Kent	3.5UDn	2UDn	3La	2.5La,4Aa	4Sn	S	S	3Cn,1.5UDn	R	R	S
C1220	4UDn	2.5UDn	3.5La	1La,4Aa	3Sn		4Ln	3UDn	R	R	
C1239	3UDn	1.5UDn	3La	3La,4Aa	3Sn		4Ln	3UDn	R	S	
C1245	3.5UDn	2.5UDn	2.5La	1La,4Aa	4Sn		4Ln	2UDn	R	R	
CX286-304-4	3UDn	3UDn	3La	3La,4Aa	3Sn		4Ln	3.8Cn,2.5UDn	R	S	
L57-9809	3UDn	2UDn	4La	1La,4Aa	1Sn		4Ln	1.5UDn	S	S	
L57-9819	1.5UDn	1.5UDn	3.5La	1La,3Aa	1Sn		4Ln	3.5UDn	Seg.	S	
L58g-122R	2.5UDn	2.5UDn	2La	3La,4Aa	4Sn		4Ln	3UDn	R	S	
Md58-252	3.5UDn	2.5UDn	3La	2.5La,4Aa	3Sn		4Ln	4UDn	R	S	
UD36	1.5UDn	2UDn	3La	S	4Sn	S	S	1UDn	R	S	
UD217	3.5UDn	1.5UDn	4La	1La,5Aa	3Sn		4Ln	4UDn	R	S	
UD315	2UDn	1UDn	3.5La	2La,4Aa	3Sn		4Ln	2UDn	Seg.	S	
UD333	1.5UDn	1UDn	3.5La	3La,4Aa	5Sn		4Ln	2UDn	Seg.	S	
UD338	1.2UDn	1UDn	3.5La	3La,4Aa	5Sn		4Ln	3UDn	R	S	
UD716	3.5UDn	3UDn	3La	3La,5Aa	5Sn		4Ln	3UDn	R	S	
UD769	3UDn	3UDn	2.5La	2.5La,4Aa	5Sn		4Ln	4UDn	Seg.	S	

Table 80. Yield for Uniform Preliminary Test IV, 1960.

Strain	Mean of 8 Tests[1]	George-town Del.	Worth-ington Ind.	Evans-ville Ind.	Eldor-ado Ill.	Carbon-dale Ill.	Colum-bia Mo.	Diehl-stadt Mo.	Man-hattan Kans.	Colum-bus Kans.
Clark	36.9	31.7	52.6	44.3	34.0	30.1	43.0	33.5	31.5	27.7
Kent	39.2	37.0	49.3	54.6	44.8	31.3	36.9	27.5	31.6	28.4
C1220	37.8	40.3	51.1	43.6	39.5	34.1	33.8	14.8	30.0	30.0
C1239	34.1	28.7	57.5	44.5	29.8	27.6	32.6	31.6	29.0	22.8
C1245	35.7	40.2	47.6	46.3	26.3	30.5	36.9	34.8	30.0	27.6
CX286-304-4	39.6	36.8	53.5	48.1	47.4	30.7	37.0	22.5	33.8	29.3
L57-9809	39.5	37.8	58.3	51.2	41.6	31.7	36.0	25.3	31.0	28.3
L57-9819	37.6	30.3	51.2	51.9	42.7	28.3	35.8	34.7	32.5	27.9
L58g-122R	39.9	32.5	58.5	51.2	47.5	33.1	36.8	30.8	30.0	29.9
Md58-252	31.7	37.6	42.6	38.5	31.2	24.0	27.5	28.1	28.0	23.8
UD36	31.3	29.9	37.5	45.6	35.6	28.7	24.0	36.9	27.5	21.9
UD217	32.6	36.3	40.6	47.6	33.3	27.9	22.7	38.7	30.0	22.4
UD315	36.0	38.1	53.7	49.8	28.7	30.0	30.8	16.9	33.6	23.3
UD333	32.1	27.0	41.3	41.4	35.6	31.1	26.6	38.1	29.0	24.8
UD338	30.0	26.1	34.2	33.5	36.2	30.3	29.0	37.9	26.5	24.2
UD716	32.1	35.7	49.1	37.2	21.7	30.5	27.9	30.9	29.7	25.3
UD769	32.7	31.1	41.4	42.4	35.5	28.8	31.2	37.4	25.6	25.6
Mean	35.2	33.9	48.2	45.4	36.0	29.9	32.3	30.6	30.0	26.1
C.V. (%)		9.7	9.7	9.1	11.0	--	11.5	20.1	6.5	--
B.N.F.S. (5%)		7.0	9.9	8.7	8.4	--	7.8	13.1	4.2	--
Row Sp. (In.)		36	38	40	40	40	38	38	40	40

[1]Diehlstadt, Missouri not included in the mean.

Table 81. Yield rank for Uniform Preliminary Test IV, 1960.

Strain	Mean of 8 Tests	George-town Del.	Worth-ington Ind.	Evans-ville Ind.	Eldor-ado Ill.	Carbon-dale Ill.	Colum-bia Mo.	Diehl-stadt Mo.	Man-hattan Kans.	Colum-bus Kans.
Clark	7	11	6	11	11	10	1	8	5	7
Kent	4	6	9	1	3	4	3	13	4	4
C1220	5	1	8	12	6	1	8	17	7	1
C1239	10	15	3	10	14	16	9	9	12	15
C1245	9	2	11	8	16	7	3	6	7	8
CX286-304-4	2	7	5	6	2	6	2	15	1	3
L57-9809	3	4	2	3	5	3	6	14	6	5
L57-9819	6	13	7	2	4	14	7	7	3	6
L58g-122R	1	10	1	3	1	2	5	11	7	2
Md58-252	15	5	12	15	13	17	14	12	14	13
UD36	16	14	16	9	8	13	16	5	15	17
UD217	12	8	15	7	12	15	17	1	7	16
UD315	8	3	4	5	15	11	11	16	2	14
UD333	13	16	14	14	8	5	15	2	12	11
UD338	17	17	17	17	7	9	12	3	16	12
UD716	13	9	10	16	17	7	13	10	11	10
UD769	11	12	13	13	10	12	10	4	17	9

Table 82. Maturity, days earlier (-) or later (+) than Clark, for Uniform Preliminary Test IV, 1960.

Strain	Mean of 6 Tests[1]	George-town Del.	Worth-ington Ind.	Evans-ville Ind.	Eldor-ado Ill.	Carbon-dale Ill.	Colum-bia Mo.	Diehl-stadt Mo.	Man-hattan Kans.	Colum-bus Kans.
Clark	0	0	0	0	0	0	0	0	0	0
Kent	+7.3	-6	+7	+10	+7	+10	+5	--	+10	+5
C1220	+3.0	-3	+5	+ 5	+1	+ 6	+2	+3	+ 4	+1
C1239	-0.7	-4	-3	0	-1	+ 6	-1	-1	+ 2	-1
C1245	+3.0	-5	+5	+ 5	+2	+ 5	+2	--	+ 3	+1
CX286-304-4	+2.7	-1	+1	+ 5	+3	+ 2	+3	+6	+ 1	+3
L57-9809	+5.7	+1	+5	+ 9	+6	+ 3	+3	--	+ 5	+6
L57-9819	+1.3	0	-5	+ 3	+1	+ 2	+2	--	+ 2	+5
L58g-122R	-0.3	0	-1	0	0	+ 3	0	+1	- 1	0
Md58-252	+5.3	-5	-1	+ 8	+6	+ 3	+3	--	+10	+6
UD36	+5.2	-2	+8	+ 7	+5	+10	+3	+5	+ 7	+1
UD217	+6.8	-6	+7	+ 6	+6	+ 8	+5	--	+12	+5
UD315	+5.3	-2	+5	+ 6	+5	+ 6	+3	--	+ 8	+5
UD333	+1.7	-3	+2	+ 4	+4	+11	-3	+6	+ 1	+2
UD338	-0.8	-3	0	- 1	0	+ 7	-4	+4	+ 1	-1
UD716	+1.7	+4	+4	+ 1	+2	+ 6	-2	+1	+ 5	0
UD769	+4.2	+1	+5	+ 6	+2	+ 8	+3	+6	+ 6	+3
Date planted	6-3	7-7	6-1	6-3	6-1	5-31	5-25	5-15	6-17	6-1
Clark matured	9-25	10-10	10-3	9-28	9-20	9-18	9-17	9-13	10-6	9-18
Days to mature	114	95	124	117	111	110	115	121	111	109

[1]Georgetown, Delaware, Carbondale, Illinois and Diehlstadt, Missouri not included in the mean.

Table 83. Percentage of protein for Uniform Preliminary Test IV, 1960.

Strain	Mean of 5 Tests	George-town Del.	Evans-ville Ind.	Eldor-ado Ill.	Colum-bia Mo.	Colum-bus Kans.
Clark	41.2	41.7	41.1	40.6	41.1	41.6
Kent	41.3	40.8	41.0	40.7	41.1	43.0
C1220	40.5	40.5	39.0	40.9	41.0	41.0
C1239	39.3	41.1	38.1	38.0	40.0	39.1
C1245	40.8	40.3	41.1	40.6	40.4	41.8
CX286-304-4	41.3	41.0	40.5	41.1	41.0	42.9
L57-9809	40.6	40.8	40.2	41.0	41.0	40.2
L57-9819	42.4	41.9	42.1	42.6	42.4	42.9
L58g-122R	41.8	40.9	41.3	43.1	41.6	42.3
Md58-252	44.0	43.8	43.6	44.8	43.6	44.2
UD36	42.0	40.9	41.9	41.6	42.8	43.0
UD217	42.3	41.0	41.1	42.4	43.4	43.7
UD315	40.8	40.2	40.7	39.4	41.6	41.9
UD333	39.1	39.0	38.7	38.0	40.6	39.4
UD338	39.3	39.7	38.4	39.2	40.7	38.4
UD716	38.7	40.0	38.0	39.7	39.0	37.0
UD769	39.9	41.1	39.6	39.6	39.8	39.2
Mean	40.9	40.9	40.4	40.8	41.2	41.3

Table 84. Percentage of oil for Uniform Preliminary Test IV, 1960.

Strain	Mean of 5 Tests	George-town Del.	Evans-ville Ind.	Eldor-ado Ill.	Colum-bia Mo.	Colum-bus Kans.
Clark	21.9	21.1	22.6	21.3	21.7	22.6
Kent	22.0	21.5	22.6	22.5	22.3	21.3
C1220	22.4	21.7	23.3	21.9	22.3	22.6
C1239	23.6	21.6	24.5	23.8	23.3	24.7
C1245	22.3	21.1	23.2	22.7	22.0	22.3
CX286-304-4	22.0	21.5	23.3	22.1	21.5	21.5
L57-9809	22.4	21.2	23.9	21.8	22.0	23.2
L57-9819	21.4	20.3	22.1	21.7	21.7	21.0
L58g-122R	21.7	20.6	22.7	20.9	21.7	22.4
Md58-252	20.5	19.7	21.2	20.2	20.9	20.6
UD36	21.7	21.2	22.7	21.8	21.4	21.4
UD217	21.3	21.9	22.6	21.2	20.3	20.5
UD315	21.5	21.4	21.9	21.9	21.0	21.2
UD333	22.2	21.7	23.2	22.0	20.9	23.0
UD338	22.1	21.4	22.6	21.8	21.8	23.0
UD716	22.8	22.0	22.9	23.1	22.5	23.6
UD769	22.1	20.7	22.6	22.6	21.7	22.9
Mean	22.0	21.2	22.8	22.0	21.7	22.2

SOYBEAN DISEASE INVESTIGATIONS IN 1960

Compiled from Data Supplied by:

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At the pathologists' conference at Urbana in March 1960, a standardized method was devised for taking disease survey notes. The method involves an estimate of the severity and prevalence of the individual diseases present in each field visited. A disease index can then be calculated for each disease by multiplying the percent of fields showing the disease x the average severity x the average prevalence.

The following tables list the disease survey data for each state in which a survey was made in 1960.

SUMMARY OF DISEASE SURVEY DATA - 1960

Disease	Percent of Fields Infected	Average Severity	Average Prevalence	Disease Index
	ILLINOIS			
Brown Spot	65	2.0	3.3	4.3
Downy Mildew	51	2.2	3.5	3.9
Bacterial Pustule	29	2.3	2.9	1.9
Brown Stem Rot	21	2.1	3.8	1.7
Bacterial Blight	34	2.1	2.0	1.4
Phytophthora Rot	15	2.2	1.6	0.5
Wildfire	3	Trace		
Bud Blight	1	Trace		
Yellow Mosaic	4	Trace		
	IOWA			
Downy Mildew	85	2.9	3.6	8.9
Bacterial Pustule	68	2.9	3.1	6.1
Fusarium Root Rot	37	2.4	3.2	2.8
Brown Spot	29	2.4	2.8	1.9
Bacterial Blight	29	2.4	2.2	1.5
Stem Canker	35	2.1	1.0	0.7
Cercospora Leaf Blight	10	2.1	1.3	0.2
Brown Stem Rot	5	2.3	2.0	0.2
Rhizoctonia Root Rot	5	2.0	1.0	0.1
Yellow Mosaic	11	Trace		
Bud Blight	6	Trace		
Wildfire	3	Trace		

SUMMARY OF DISEASE SURVEY DATA - 1960 (Continued)

Disease	Percent of Fields Infected	Average Severity	Average Prevalence	Disease Index
	MINNESOTA			
Root Rot (Rhizoctonia and Fusarium)	100	3.1	3.6	11.1
Bacterial Blight	80	3.3	2.9	7.7
Brown Spot	41	2.8	3.1	3.6
Brown Stem Rot	23	2.5	1.4	0.8
	OHIO			
Bacterial Blight	78	2.5	3.5	6.8
Brown Spot	41	2.5	3.9	3.9
Downy Mildew	49	3.2	3.9	6.1
Stem Canker	20	2.3	2.8	1.3
Phytophthora Rot	39	2.1	1.2	1.0

GLOSSARY FOR SOYBEAN DISEASE REACTION

The following list of abbreviations for soybean diseases has been agreed upon by the pathologists. It is recommended that these be used whenever abbreviations are necessary to conserve space.

Abbreviation	Name of Disease	Causal Organism
BB	Bacterial Blight	*Pseudomonas glycinea*
BP	Bacterial Pustule	*Xanthomonas phaseoli* var. *sojensis*
BS	Brown Spot	*Septoria glycines*
BSR	Brown Stem Rot	*Cephalosporium gregatum*
CN	Cyst Nematode	*Heterodera glycines*
DM	Downy Mildew	*Peronospora manshurica*
FE	Frogeye	*Cercospora sojina*
PR	Phytophthora Rot	*Phytophthora sojae*
PS	Purple Stain	*Cercospora kikuchii*
PSB	Pod and Stem Blight	*Diaporthe phaseolorum* var. *sojae*
RK (followed by the initial of the specific nematode)	Root Knot Nematode	*Meloidogyne sps.*
RR	Rhizoctonia Root Rot	*Rhizoctonia solani*
SB	Sclerotial Blight	*Sclerotium rolfsii*
SC	Stem Canker	*Diaporthe phaseolorum* var. *caulivora*
SMV	Soybean Mosaic	*Soja virus 1*
BBV	Bud Blight	Tobacco Ringspot Virus
TS	Target Spot	*Corynespora cassiicola*
WF	Wildfire	*Pseudomonas tabaci*
YMV	Yellow Mosaic	*Phaseolus virus 2*

Disease reactions are listed according to the Soybean Disease Classification Standards, March 1955, unless otherwise specified.

The disease reaction is listed 1-5, followed by a capital letter to identify the state where the test was made (L = Illinois, C = Indiana, etc.); small letter "a" or "n" after the code letter signifies artificial or natural infection.

When the reaction is given by letter instead of numbers, R signifies resistant, S stands for susceptible, and I for intermediate. Seg. indicates that a strain is segregating for disease reaction.

The Indiana (C) reactions to stem canker indicate the percentage of diseased plants, referenced to the number of infected Hawkeye as 100%. The Iowa readings follow the 1-5 designations.

Regional Disease Reaction Test, 1960.

Strain	Bacterial Blight	Bacterial Pustule	Brown Spot	Strain	Bacterial Blight	Bacterial Pustule	Brown Spot
Earlyana*			5Ln	L57-2883		3.5La	
Flambeau**	3Ln,3La			S4-1714		2La	
Lee**		1La		S7-3575		2La	
Lincoln*	4Ln,3.5La	3.5La		P.I. 68521	2.5Ln,2La		
Scott		3La		68554	2.5Ln,2La		
Hawkeye	4Ln,3.5La			68708	2Ln,2La		
CX262-79-3			3Ln	90763	3.5Ln,3.5La	3.5La	
L56-1513	3.5Ln,3La			96333		2La	
L57-1885	2Ln,2La			153213	3Ln,2.5La	2.5La	
L57-2228		1La		166147	2.5Ln,2La		
L57-2386		2La		215693		1La	

*Susceptible check variety.
**Resistant check variety.

PRELIMINARY RESULTS OF TOBACCO RINGSPOT REACTION TEST ON GERMPLASM STRAINS

The soybean strains from the Germplasm Collection of the U. S. Regional Soybean Laboratory were tested for reaction to mechanical inoculation with the tobacco ringspot virus. Groups 00 and 0 were tested at Fargo, North Dakota, and Group I at Cresco, Iowa by John Dunleavy. Group II was tested at Lafayette, Indiana by Kirk Athow. Group III was tested at Urbana, Illinois by Don Chamberlain, and Group IV at Columbia, Missouri by Oscar Calvert. The inoculation of Group III strains was unsuccessful and will be repeated in 1961. Groups V, VI, and VII were tested at Raleigh, North Carolina by John Ross.

The following strains were selected as the most promising. Possible resistance was indicated by 50% or better pod or seed production on inoculated plants.

Group 00

P.I. 153301
180524

Group 0

P.I. 153317
154194
189857
189859
189866
189894
227326
227565
232999
238924

Group I

P.I. 72341
79610
79617
85674
98243

Group II

P.I. 68736
70478
88997
89154-1
92698
196158

Group IV

F.C. 03548
Chief
P.I. 88444
84751
92713

Group V

F.C. 03659-Ped.
32176
P.I. 62204-1
157487
159321
S-100

Group VI

D523-114

Group VII

Hayseed

Disease Reaction Data for the Old Variety Germplasm Collection, 1958-1960.

Variety	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Frogeye R1	Frogeye R2	Phytophthora Rot	Cyst Nematode
Agate	5La	4Ln	S	S		R	S	S
A.K. (F.C. 30761-1)	4La	4La	R	S	S	S	S	
A.K. (Harrow)	4La	4La	R	S	R	S	R	S
A.K. (Kansas)	4La	4La	S	S	S	S	R	S
Aksarben	4La	4Ln	S	S	S	S	S	
Aoda	4La	2Ln	R	S	R	R	S	S
Bansei	4La	4Ln	R	S	R	R	S	S
Bavender Special	4La	4Ln	R	S	Seg.	S	S	S
Black Eyebrow	4La	4Ln	S	S	S	S	S	S
Boone	4La	4Ln	S	S	S	S	R	S
Burwell	4La	4Ln		S		R		S
Carlin	4La	4Ln	S	S	Seg.	S	S	S
Cayuga	4La	4Ln	S	S	S	S	R & S	S
Chestnut	4La	4Ln	S	S	S	S	S	S
Chief	4La	4La	S	S	I	S	S	S
Chusei	5La	4La	S	S	R	R	R & S	S
Cloud	4La	4La	S	S	S	S	S	S
Lincoln (check variety)	4La	4La		S				S
Columbia	3La	3Ln	R	S	S	R	S	S
Comet	4La	4La	S	S	S	S	S	S
Cypress #1	4La	4La	S	S	S	S	S	S
Dunfield	4La	4Ln	R	S	S	S	S	S
Earlyana	4La	4La	S	S	S	S	S	S
Early White Eyebrow	5La	4Ln	R	S	S	S	S	S
Easycook	4La	4La	S	S			S	S
Ebony	4La	4Ln	S	S	R	R	S	S
Elton	4La	5Ln	R	S	S	S	S	S
Emperor	4La	4La	S	S	R	R	S	S
Etum	4La	5La	S	S	R	R	S	S
Fabulin	4La	3La	S	S	R	S	S	S
Fuji	4La	4Ln	S	S	R	S	R	S
Funk Delicious	4La	5Ln	S	S	R	R	S	S
Funman	4La	4Ln	S	S	S	S	S	S
Giant Green	5La	4La	S	S	R	R	S	S
Gibson	4La	5La	R	S	S	S	S	S
Goku	4La	4Ln	S	S	R	R	R	S
Goldsoy	4La	4Ln	S	S	R	S	S	S
Lincoln (check variety)	4La	4Ln		S				
Granger	3La	4Ln	S	S	R	S	S	S
Green and Black	4La	4Ln	S	S	R	R	R	S
Habaro	4La	5Ln	S	S	S		R	S

Disease Reaction Data for the Old Variety Germplasm Collection (Continued)

Variety	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Frogeye R1	Frogeye R2	Phytophthora Rot	Cyst Nematode
Hahto	4La	5La	S	S	R		R	
Hakote	4La	4La	S	S	R		R & S	S
Harbinsoy	4La	4Ln	S	S	S		S	S
Hardome	4La	4La	R	S	S		S	S
Harly	4La	5Ln	S	S	R		R	S
Harman	4La	5Ln	S	S	S		S	S
Hidatsa	4La		S	S			R	S
Higan (P.I. 80475)	4La	4Ln	S	S	R		R	S
Hokkaido	4La	4La	S	S	R		S	S
Hongkong	4La	4Ln	S	S	S		S	S
Hoosier	4La	5Ln	S	S	R		S	S
Hurrelbrink	4La	4La	S	S	R		R	S
Illington	4La	4La	S	S	R		R	S
Illini	5La	4Ln	S	S	R		R	S
Ilsoy	4La	4Ln	S	S	S		S	R
Imperial	5La	4Ln	S	S	R		S	S
Lincoln (check variety)	4La	4Ln	S	S			S	S
Jackson (P.I. 82581)	4La	4La	S	S	R		S	S
Jefferson	4La	4Ln	S	S	Seg.	S	S	S
Jogun	5La	4Ln	S	S	R	R	S	S
Kabott	4La	4Ln	S	S	S	S	S	S
Kagon	4La	4Ln	S	S	S	S	S	S
Kanro	4La	5Ln	S	S	R	R	S	S
Kanum	5La	5Ln	S	S	R	R	S	S
Kingston	4La	4Ln	S	S	R	R	S	S
Kingwa	4La	4Ln	S	S	S	S	R	S
Korean	3La	3La	S	S	S	R		S
Kura	4La	4La	S	S	R	R	R & S	S
Linman 533	3La	4La	S	S	S	S	S	R
Little Wonder	4La	2La	S	S	S	S	S	R
Macoupin	4La	2La	S	S	S	S	S	S
Manchu (L55-143)	4La	4La	S	S	S	S	S	S
Manchu (L54-161)	4La	4La	S	S			S	S
Manchu (42 Lafayette)	4La	4La	S	S	S	S	S	S
Manchu (Madison)	3La	4La	S	S	S	S	S	S
Manchu (Early Minn.)	4La	4La	S	S			S	S
Lincoln (check variety)	4La	4La	S	S				S
Manchu (Hudson)	4La	2La	S	S	S	S	S	S
Manchu (Montreal)	3La	3La	S	S	S	S	S	S
Manchu 3 (Wisconsin)	4La	4La	S	S	S	S	S	S

Disease Reaction Data for the Old Variety Germplasm Collection (Continued)

Variety	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Frogeye R1	Frogeye R2	Phytophthora Rot	Cyst Nematode
Manchu 606 (Wisconsin)	3La	4La	S	S	S	S	S	
Manchu 2204	4La	4La	S	S	S	S	S	S
Manchukota	4La	4La	S	S	S	S	S	S
Manchuria	3La	4La	S	S	S	S	S	S
Manchuria 13-177	3La	3La	S	S	S	S	R & S	S
Manchuria 20173	4La	3La	S	S	S	S	R & S	S
Mandarin	4La	3La	S	S	S	S	S	S
Mandarin 507	4La	3La	S	S	S	S	R & S	S
Mandell	4La	3La	S	S	I	S	S	S
Manitoba Brown	4La		S	S		R		S
Medium Green (T44)	4La	2La	S	S	S	S	S	S
Medium Green (34 Lafayette)	4La	4La	S	S			R	S
Mendota	4La	4La	S	S	R	R	R & S	S
Midwest	4La	4La	S	S	R	R	S	S
Mingo	4La	3La	S	S	S	S	S	S
Minsoy	5La		S	S		R	S	S
Lincoln (check variety)	4La	4La	S	S			S	S
Monroe	4La	3La	S	S	S	S	R	S
Morse	4La		S	S	S	R	S	S
Mukden	3La	2La	S	S	S	S	R	S
Norredo	4La		S		S	R	S	S
Norredo B (F.C. 31930)	4La		S				R	S
Norsoy	4La		S		S	S	S	S
O. A. C. No. 211	4La	3La	S	S	S	S	S	S
O. A. C. No. 211 (T51)	3La	3La	S	S			R	S
Ogemaw H	4La		S	S		R	S	S
Ontario	4La	3La	S	S	S	S	S	S
Osaya	4La	3La	S	S	R	R		S
Pagoda	5La		S	S		R	R & S	S
Pando	5La		S	S		R	R	S
Patoka	4La	4La	S	S	S	R	S	S
Peking	4La	4La	S	S	Seg.	Seg.	S	R
Pennsoy	4La		S	S	R	S	S	S
Perry	4La		S	S	I	R	S	S
Pocahontas	5La	4La	S	S	S	S	S	S
Poland Yellow	4La		S	S	S	S		S
Lincoln (check variety)	4La	4La						S
Polysoy	4La	5La	S	S	S	R		S
Portugal	5La		S	S		R		S
Pridesoy	3La	4La	S	S	S			S

Disease Reaction Data for the Old Variety Germplasm Collection (Continued)

Variety	Bacterial Blight	Bacterial Pustule	Brown Spot	Brown Stem Rot	Frogeye R1	Frogeye R2	Phytophthora Rot	Cyst Nematode
Pridesoy 57	4La	4La	S	S	S			S
Renville	4La	4La	S	S	S	S		S
Richland	4La	4La	S	S	S	S		S
Roe	4La	3La	S	S	S	S		S
Sac	4La	2La	S	S	R	R		S
Sangra	4La	4La	S	S	S	S		S
Sato-3	4La	2La	S	S		R		S
Scioto	3La	3La	S	S	S	S		S
Seneca	4La	2La	S	S	S	S		S
Shingto	4La	4La	S	S		S		S
Shiro	5La	2La	S	S	R	R		S
Sioux	5La		S	S		R		S
Sooty	4La	3La	S	S	S	R		S
Sousei	4La	2La	S	S	Seg.	R		S
Soysota	4La	3La	S	S	S	S		S
Tastee	4La	4La	S	S	R	R		S
Lincoln (check variety)	4La	4La	S	S				S
Toku	5La	4La	S	S	R	R		S
Tortoise Egg	5La	2La	S	S	R	R		S
Viking	4La	5La	S	S	S	S	S	S
Virginia	4La	2La	S	S	R	R	R	S
Waseda	4La	2La	S	S		R		S
Wea	4La	3La	S	S	S	S	S	S
Willomi	4La	2La	S	S	I	R	R & S	S
Wilson	4La	4La	S	S	R	S	S	S
Wilson-5 (L43-132)	3La	4La	S	S	S		S	S
Wilson-5 (T68)	4La	2La	S	S	S		S	S
Wing Jet	4La	4La	S	S	R	R	S	S
Wisconsin Black	4La	4La	S	S	S	S	S	S
Wolverine	4La	4La	S	S	R	R	S	S

Reference List of Soybean Varieties Resistant to One or More Diseases.

Variety	Maturity Group	Bacterial Blight	Bacterial Pustule	Brown Spot	Frogeye R1	Frogeye R2	Stem Canker	Brown Stem Rot	Phytophthora Rot	Sphaceloma Scab Disease	Target Spot	Purple Seed Stain	Soybean Cyst Nematode[1]
Capital	0	3	5	4	R	S	5	4	5Hn	R			4
Flambeau	0	2	3	2-3	S		5	4	5Hn				4
Blackhawk	I	5	5	3-4	S		44Cn	5	RHn	R			4
Monroe	I	5	5	4	S	S	10Cn	4	RHn				3
Adams	II	5	5	3	R		3	5	SHn				3
Harly	II	4	5		R			4	RHn,RCa				
Harosoy	II	5	5	5	R		R	5	SHn				4
Hawkeye	II	5	5	4	S		100Cn	5	SHn	R			4
Jogun	II	5	4		R	R	2	4	SCa	R			4
Kanro	II	4	5		R	R		4	SCa	R			4
Mukden	II	3	5	3	S	S	5	4	RHn				4
H3665	II	2	4	4Cn	S		5	5	3Hn,SCa				4
L8-7289	II	2	4	3	S		37Cn	5	3Hn,SCa				4
Illini	III	5	4	4	R		40Cn	5	RHn				4
Ilsoy	III	4	4		S			4	SCa				1.3
Lincoln	III	5	5	4	R	S	20Cn	5	SHn				3
L9-4091	III	3	2	4	R	R	17Cn	5	3Hn				4
L9-4197	III	3	2	5	S	S	5	4	1Hn,R-SCa				3
Clark	IV	5	5	3	R		67Cn	5	SHn				4
Patoka	IV	5	4	3	S	R	0	5	SCa	R			4
Wabash	IV	5	5	3	R	S	47Cn	5	SHn	R			4
L9-4196	IV	3	1	5Cn	S	S	0	4	3Hn,SCa				3
Peking	IV	4	4		Seg.	Seg.		4	SCa				1
A.K. (Kansas)	V	4	4	3	S	S	1	4	RHn,RCa				4
Dorman	V	4	3.5	3	R	R	4	4	2Hn,RCa		3		4
Arksoy	VI	5	4	3	R		3	4	RHn				3
Lee	VI	4	1	3	R	R	3	4			R	R	5Sn
Ogden	VI	4	3	4	R	R	3	5	3Hn	R	2		5Sn
CNS	VII	5	1	3	R	R		4	RHn			R	4
Jackson	VII	4	3		R		1	4	2Hn		R		5
Roanoke	VII	4	3	3	R	R	2	4	3Hn		2.5		

[1]Most of the Germplasm Collection has been tested for reaction to the cyst nematode. Ilsoy and Peking are resistant varieties. See Reference List of P.I.'s for five resistant P.I.'s. Reactions of most of the Germplasm Collection are on file at Urbana, Illinois. Unless otherwise noted, cyst nematode reactions originated from North Carolina.

Reference List of Plant Introductions Resistant to One or More Diseases.

Identity	Maturity Group	Bacterial Blight	Bacterial Pustule	Stem Canker	Brown Spot	Frogeye R1	Frogeye R2	Brown Stem Rot	Phytophthora Rot	Root-knot Nematode	Soybean Cyst Nematode[1]
P.I. 153239	0	3	4	5	2	R		5	R-S		3
153252	0	4	5	5	3	R		3	R-S		3
153252-1	0	5	4		3	R		3	R-S		3
153262-1	0	5	4	5	3	R		3	R-S		3
153300	0	5	4	5	2			5	S		3
161988	0	5	5	5	3	R		3	S		4
177100	0	5	4	5	2	R		4	S		3
179822	0	4	4	5	1	S		3	S		3
180524	0	5	4	4	3	R		2	S		4
180525	0	5	4	4	2	R		3	S		4
189859	0	4	5	1	2	S	5		S		4
189923	0	5	4	3	3	R	S	5	S		4
68521	I	3	4	4	5	I	S	4	S		2
68554-1	I	4	5	4	3	S	S	5	5Hn		4
92625	I	5	5	5	3	S		4	S		4
153213	I	1-2	2	3	4	S		4	S		3
180498	I	4	4	5	2	S		4	4Hn		3
65338	II	5	4	5	2	S	S	5	S		3
68708	II	3	4	5	2	S	S	4	S		2
79609	II	4	3	5	1	S	R	5	S		4
79726	II	4	5	5	1-2	R	S	5	S		4
84673	II	3	4	1	1-2	R	R	5	S		2
86031	II	5	4	3	1-2	S	R	5	S		4
86069	II	3	3	3	1-2	R	R	4	S		3
87628	II	5	4	3	2	S	R	5	S		4
90567	II	4	3	5	3	S	S	5	2Hn		2
91114	II	5	4	5	1-2	R	S	4	S		4
91341	II	3	4	5	2	R	R	3	S		4
92733	II	4	4	4	2	R		5	2Hn		3
200595	II	5	4	4	2	S		4	S		4
F.C. 33243 (Anderson)	III	4	4	5	3	Seg.	S	4	S	R	4
P.I. 54583	III	4	4	3	1-2	S	S	5	R		4
84578	III	4	4	4	1-2	S	S	5	R-S		4
84946-2[2]	III	4	4	4	3	S	R	R	S		3
90180[3]	III	5	5	3	2	R	R	5	R-S		3

Reference List of Plant Introductions...(Continued)

Identity	Maturity Group	Bacterial Blight	Bacterial Pustule	Stem Canker	Brown Spot	Frogeye R1	Frogeye R2	Brown Stem Rot	Phytophthora Rot	Root-knot Nematode	Soybean Cyst Nematode[1]
P.I. 96188	III	4	4	3	1-2	R		5	S		4
90763	III	4	2		5	R	R	5	S		1
96322	III	4	3	3	2	S		5	S		4
157416	III	5	3	4	1	S		4	S		3
84751	IV	4	3	4	4	S	R	4	S		1
91153-1	IV	4	4	2	2	S	S	4	S		2
91346	IV	4	4	3	2	R	S	5	R		4
96333	IV	5	4	2	1	S		3	4Hn		4
157418	IV	5	4	2	2	S		4	S		4
157448	IV	5	4	1	1	S		3	R		4
171431	IV	5	3	1	2	S		5	S		4
209332	IV	3	4				R	4			2
82200-1	V	3			1-2	S		3	S		2Sn
166147	VI	2	4	2				4			5
215693	VI	4	1	1	4		R	4	1		5

[1]Unless otherwise noted, cyst nematode reactions originated from North Carolina.
[2]Selection 84946-2-L1 from this P.I. showed 31% disease-free plants at Cresco and Ames, Iowa, and 38% disease-free plants at Urbana, Illinois. Lincoln control rows were 100% infected at all three locations.
[3]This P.I. has been misnumbered sometime in the past. In the listing of the Plant Inventory of the Division of Plant Exploration and Introduction, some other species has this number. This soybean introduction has consequently been maintained at Urbana as P.I. 90180 in order to identify it. Its original P.I. number is unknown.

Soybean Introductions Resistant to Meloidogyne incognita var. acrita (tested in Delaware).

Strain	Maturity Group	Field Reaction[1] Bethel	Phillips	Greenhouse Reaction[2]
F.C. 33243	III	0	0	Light
P.I. 200446	VI	1	0	Light
200507	VII	0	0	Very Light
205909	VIII	0	0	Light

[1]Based on number of plants showing galls.
[2]Based on number of egg masses.

WEATHER CONDITIONS AND GENERAL GROWTH RESPONSES AT MOST OF THE NURSERY LOCATIONS DURING THE 1960 SEASON

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

Temperature and rainfall at most of the nursery locations for the 1960 season are presented in graphs at the end of this section of the report. The daily maximum and minimum temperatures and rainfall are taken from "Climatological Data" published by the Weather Bureau.

Orono, Maine. The weather was unusually mild throughout the season. The growing season lasted until late September. Two severe hail storms while the soybeans were very small broke off many leaves and set the crop back considerably.

Fertilizer Treatment: 400 lbs./A. 5-10-10. Fertility Level: pH, 5.8.

Ottawa, Ontario, Canada. The season at Ottawa started out cool and wet and the temperature during most of the season tended to be lower than average. During July, August and September, rainfall was considerably below average, so much so that on August 1 we applied an inch of water by means of sprinkler irrigation. This seemed to be sufficient to maintain what appeared to be normal growth.

Fertilizer Treatment: 300 lbs./A. 4-24-12. Fertility Level: 75 bu. corn/A.

Guelph, Ontario, Canada. The 1960 season at Guelph was cool and wet through the month of May, June and July. August and September were dry and warm. Soybean growth was very good although seed size and yield suffered due to moisture stress in late August and early September. Maturity was normal.

Fertilizer Treatment: 300 lbs./A. 5-20-20. Fertility Level: 75 bu. corn/A.

Ridgetown, Ontario, Canada. Below average rainfall was characteristic of every month except June. The extra two inches of precipitation during June helped to obtain excellent early growth. September and October were dry enough to allow almost ideal harvesting conditions. Temperatures throughout the season were below normal.

Fertilizer Treatment: 500 lbs./A. 9-9-9. Fertility Level: pH, 6.8; P, 400; K, 200.

Jamesburg and Bridgeton, New Jersey. Weather for the growing season was generally good. Rainfall was adequate and well distributed. Temperatures were slightly below normal at Jamesburg and normal at Bridgeton during July and August. Cool temperatures and high relative humidity prevailed at Jamesburg during September. Bridgeton was about normal.

Jamesburg--Fertilizer Treatment: 500 lbs./A 5-10-10. Fertility Level: pH, 4.9; P, 14; K, 40; Mg, 75.
Bridgeton--Fertilizer Treatment: 200 lbs./A. K_2O and 200 lbs./A. 4-12-16. Fertility Level: pH, 6.5; OM, 1.0; P, 19; K, 130; Ca, 1000; Mg, 224.

Newark and Georgetown, Delaware. Rainfall at both Delaware locations was slightly above the average and evenly distributed throughout the growing season. Below average precipitation was obtained in June and October, average in August, and

above average in July and September. Temperatures during the period were slightly below normal.

Newark--Fertilizer Treatment: 250 lbs./A. 0-20-20. Fertility Level: pH, 6.0; P_2O_5, 80; K_2O, 80.
Georgetown--Fertilizer Treatment: 250 lbs./A. 0-20-20. Fertility Level: pH, 6.0; P_2O_5, 140; K_2O, 67.

Hoytville, Ohio. Temperatures and rainfall were near normal throughout the entire growing season. On July 18, 1960, a severe hailstorm resulted in nearly complete defoliation of all varieties and strains and considerable stem breakage and bruising. Early varieties and strains were in the late bloom and early pod formation stage while the mid-season and late varieties and strains were just starting to bloom.

Fertilizer Treatment: None. Fertility Level (1959): pH, 6.2; P, 140; K, 300. 85 bu. corn/A.

Wooster, Ohio. Temperatures for May, June and July were below normal with near normal rainfall. August temperatures were near normal with slightly above normal rainfall while September temperatures were normal with considerably below normal rainfall. Diseases noted were brown spot, mildew (severity type 4), bacterial blight in trace amounts, Rhizoctonia-Pythium seedling blight in trace amounts, and a virus leaf disease which was quite prevalent throughout the nursery. For a short period Japanese beetles caused considerable damage which appeared to be quite uniform throughout the nursery.

Fertilizer Treatment: 500 lbs./A. 10-10-10. Fertility Level: pH, 5.1; P_1, 114; P_2, 176; K, 300+.

Columbus, Ohio. Subsoil moisture was low at the beginning of the planting season; however, rainfall during May, June, July, August and September was near normal and the distribution was such that continued good growth and development occurred throughout the growing season. Temperatures were near normal for the entire growing season. Stem canker was prevalent throughout the nursery.

Fertilizer Treatment: 300 lbs./A. 0-20-20. Fertility Level (1959): pH, 6.6; P, 111; K, 270. 75 bu. corn/A.

Chatham, Michigan. This test was a failure. The planting date was exceptionally late and most varieties were not mature enough to harvest before the killing frost on September 16.

Fertilizer Treatment: 200 lbs./A. 0-0-60 and 400 lbs./A. 12-12-12. Fertility Level: pH, 6.6; P, 66; K, 72.

Norway and Bark River, Michigan. The spring was exceptionally late. The rainfall during the growing season was above normal except for September, and the temperatures were much below normal in June and July and slightly above normal in August and September. Beans made good growth in spite of these apparent adverse conditions. No disease was noted. Ripening and harvest conditions were excellent; the first killing frost was on October 6.

Norway--Fertilizer Treatment: 200 lbs./A. 5-20-20. Fertility Level: pH, 7.1; P, 36; K, 96.

Bark River--Fertilizer Treatment: 200 lbs./A. 5-20-20. Fertility Level: pH, 7.0; P, 26; K, 136.

Daggett, Michigan. This area was better drained than the other two Upper Michigan plots, and in spite of a late spring was planted only about ten days later than normal. Rainfall in the area was much above normal during the season, especially in August. Temperatures were below normal during the early part of the season and slightly above normal later. There was more Agropyron repens than in the other plots. Ripening and harvest conditions were excellent; the first killing frost was on October 6.

Fertilizer Treatment: 200 lbs./A. 5-20-20. Fertility Level: pH, 6.8; P, 113; K, 148.

Bath, Michigan. The beans got off to a good start and recovered well after the deer came in from the swamp and chewed off the tops when about six inches high. Planting date was May 26. Growth was stopped by a heavy frost September 14. As a result of the frost coming this early, no varieties of Test 0 were near maturity and only a few varieties of Tests 00 and Preliminary 00 were mature enough to harvest. Only the mature varieties were harvested September 22.

Fertilizer Treatment: 500 lbs./A. 5-10-20 with 2% manganese. Fertility Level: High.

East Lansing, Michigan. Planting was late, June 9, due to wet weather. Germination and stand were good for the most part. Test 00 was mature enough to be harvested September 22. The other varieties continued growing until the frost of October 1. However, the leaves on some continued to hang on and harvesting was attempted until October 21. It was a fairly good year for soybeans.

Fertilizer Treatment: 400 lbs./A. 5-20-20. Fertility Level: pH, 7.2; NO_3, 9; P, 26; K, 100.

Ida, Michigan. This test was planted on corn ground. The soil was a black, heavy clay-loam, quite different from recent tests in that area. Two weeks of rainy weather followed planting after which there was a good growing season. Stand was good. Test 0 was pulled September 21. Harvesting of the other plots by Jari mower was not until October 4.

Fertilizer Treatment: 100 lbs./A. 0-20-20. Fertility Level: pH, 7.2; NO_3, 100; P, 30, K, 107.

Walkerton, Indiana. This plot was planted a little later than average on June 3 following a fairly dry May. Soil moisture was fair at planting and the soil was fairly cloddy. Rain occurred immediately after planting and emergence was fair to good over most of the plot, except in Uniform Test II which was spotty. Rainfall distribution was good and of average amount for the growing season. Temperatures were somewhat below normal in June and July. There were high temperatures occurring at a critical period during the first 8 days of September. Harvest conditions were excellent. Mildew was the most prevalent disease with ratings of 3.5 to 4.5 prevalent on susceptible varieties. Some Phytophthora was observed in the Uniform Test II area. Killing frost occurred after all varieties matured.

Fertilizer Treatment: 200 lbs./A. 3-11-11. Fertility Level: pH, 6.7; P_2O_5, 220; K_2O, 123.

Bluffton, Indiana. This plot was planted about 6 to 8 days later than usual on June 1. Planting conditions were very good. Growth was good and yields slightly above average. Some manganese deficiency was noticeable in Uniform Test III but little in II. Rainfall distribution was good throughout the growing season. There was a week of hot weather in early September which may have caused some reduction in yields. Harvest conditions were excellent. There were no diseases of importance. Killing frost occurred after harvest.

Fertilizer Treatment: 180 lbs./A. 0-20-20. Fertility Level: pH, 6.8; P_2O_5, 363; K_2O, 237.

Lafayette, Indiana. Planting was under ideal conditions on May 24 and 25. Soil moisture was abundant throughout the growing season. Cultivation was delayed some due to untimely rains and weeds were a problem for brief periods. Growth was excellent and yields were above average. Killing frost occurred after harvest. Brown spot, bacterial blight and bacterial pustule were present in damaging amounts. Bud blight was noticed throughout the plot as scattered plants to a greater extent than any previous year.

Fertilizer Treatment: 400 lbs./A. 0-25-25 worked in + 80 lbs./A. 5-20-20. Fertility Level: pH, 6.5; P_2O_5, 146; K_2O, 146.

Greenfield, Indiana. Soil conditions were ideal for planting but planting on June 4 was 8 to 10 days later than normal for this area of the state. Growth conditions were good through August. Harvest was completed before killing frost. There was a trace of manganese deficiency. Phytophthora was fairly serious and very noticeable in several replications of Harosoy and Hawkeye, particularly. Other diseases were not abundant.

Fertilizer Treatment: 125 lbs./A. 5-20-20. Fertility Level: pH, 6.7; P_2O_5, 640; K_2O, 149.

Worthington, Indiana. This plot was planted under ideal soil conditions June 1 which is about 6 to 8 days later than usual for this area of the state. Cultivation was timely and the plot was kept weed-free. Growth was excellent. Soil moisture was ample through August. Only 0.10 inches of rain fell in September. Temperatures averaged 3° above normal for September. Green stems were especially noticeable in Uniform Test II, and noticeable to a lesser extent in Uniform Test III. Harvest of most tests was delayed because of slow and/or ununiform maturity, especially in Test IV. Maturity was prior to killing frost. Mildew was exceptionally heavy and ratings from 3 to 5 on susceptible varieties were very common. Other diseases were of little importance.

Fertilizer Treatment: 160 lbs./A. 5-20-20 + barnyard manure. Fertility Level: pH, 7.8; P_2O_5, 608; K_2O, 230.

Evansville, Indiana. This plot was planted about 2 weeks late on June 3. Emergence was somewhat irregular and stands somewhat spotty. Early growth was poor due to irregular emergence, excessive ground water, and nitrogen- and spotted manganese-deficiency. Green clover leaf worm was fairly abundant in mid-July. The beans were sprayed with manganese and DDT July 30 and the crop condition improved considerably through August. Although growth was not as good as usual, the average yields were fair and near normal for the late planting date. Harvest conditions were good and harvest was prior to frost. Several small areas of an

unidentified (root) rot were observed as in the past several years. Frogeye was observed in several areas of the plot with very little showing on Clark, thus this was probably mostly Race 1. Other common diseases were at a minimum.

Fertilizer Treatment: None except manganese spray. Heavy applications of P and K are made prior to corn. Fertility Level: pH, 7.2; P_2O_5, 450; K_2O, 246.

Ashland, Wisconsin. This nursery was planted May 31 in moist soil. Spring and early summer precipitation were well below normal, July was about normal, whereas an excess occurred in August and September, respectively. Toward the end of August, during the wet period, a heavy wind estimated at 80 to 90 miles per hour almost completely flattened the nursery. The nursery was quite free of disease. All varieties matured prior to killing frost, September 30.

Fertilizer Treatment: 10 tons/A. cow manure. Fertility Level: pH, 6.0; P, 85; K, 320; B, .90.

Mason, Wisconsin. This nursery was planted June 2 in a wet sandy loam. Rainfall was essentially the same as at Ashland. Mason, being farther from Lake Superior than Ashland, is somewhat warmer. Clay underlies sand and some waterlogging occurred. There was less damage from severe wind than at Ashland. Little disease occurred, and all varieties matured before killing frost.

Fertilizer Treatment: None. Fertility Level: pH, 6.1; P, 73; K, 275.

Spooner, Wisconsin. The weather was ideal for planting soybeans the last week of May, with temperatures above normal and heavy rainfall occurring the week before. Distribution of rainfall was very good the last half of June. Temperatures in July were 1.9 degrees below normal and rainfall 1.61 inches below normal. However, most of the rainfall occurred the last half when most needed. The heat and drouth of July continued into August and irrigation was necessary August 5. Two inches of water was applied with an overhead sprinkler system. Abundant rainfall occurred the last two weeks in August. The nursery should have been irrigated 5 to 7 days earlier than it was since there were a number of green plants at maturity in all the earlier varieties that were sparsely podded.

Fertilizer Treatment: None. Fertility Level: pH, 6.9; P, 69; K, 90.

Durand, Wisconsin. Planting was made on May 23. Germination and stand were good. Temperatures were below normal in June and July, but above normal in August, and normal in September. Rainfall was below normal during every month but August. Yields were low, especially for Test 0, due to drouth in late July and early August.

Fertilizer Treatment: 200 lbs./A. 0-20-20. Fertility Level: pH, 6.0; P, 42; K, 160.

Madison, Wisconsin. This nursery was planted May 26 and emergence was good. Temperatures were below normal during every month of the growing season. Rainfall was above normal during May, July and August, below normal in June, and normal in September. As a result of the cool wet season, vegetative growth was heavy, maturity was delayed, and lodging was severe. A severe epidemic of bud blight occurred. All varieties matured prior to fall frost.

Madison, Wisconsin (Continued)

Fertilizer Treatment: 200 lbs./A. 0-20-20. Fertility Level: pH, 7.1; P, 45; K, 130.

Shabbona, Illinois. Planting was made in late May and seedling emergence was good. Rains were adequate though not abundant, and growth was normal throughout the season with good yields resulting. A scattering of plants in the field were killed by corn borers in July. The only disease noted was a moderate amount of bacterial blight in early August. All varieties matured ahead of frost this year.

Fertilizer Treatment: None. Fertility Level: pH, 7.2; P_1, 20; P_2, 139; K, 254.

Dwight, Illinois. Planting was made in early June and emergence was good. Because of the late planting date and lack of abundant moisture, growth was quite short, 20 to 30 inches, and lodging was almost nonexistent. The yield level was good (30 to 40 bushels) considering the small plant size. A small amount of bacterial blight and downy mildew was observed in early August. In early July a few plants, all outside of the Uniform Test area, were observed to be dying, apparently from Photophthora rot. (This test is located on the farm where Phytophthora rot was first identified in Illinois.) Although there was no visible effect, the Phytophthora-resistant strains were a few bushels higher in yield than Harosoy and Hawkeye.

Fertilizer Treatment: None. Fertility Level: pH, 6.6; P_1, 18; P_2, 58; K, 216.

Urbana, Illinois. Planting was made in mid-May. Initial stands were good but some plants were lost to the cultivator at the last cultivation in the Preliminary Tests. Plant growth was excellent though not excessive, but yield and seed quality were reduced by a period of hot, dry weather in late August and early September. A moderately heavy epiphytotic of bacterial blight occurred in July and a general but light epiphytotic of bacterial pustule occurred in August along with widely scattered but locally severe infections of wildfire.

Fertilizer Treatment: None. Fertility Level: pH, 6.5; P_1, 31; P_2, 139; K, 300+.

Girard, Illinois. Planting was made in late May in a rather cloddy and wet seedbed. Due to a heavy rain right after planting, emergence was spotty, and two replications of the Uniform Tests and all of the Preliminary Test III, which were in a low area, were replanted in early June. Subsequent growth was good and yields were very good for both planting dates. Some Phytophthora rot was observed and this probably affected the yields of the susceptible varieties. Brown spot was prevalent throughout the test area in June, as well as locally severe patches of bacterial blight.

Fertilizer Treatment: None. Fertility Level: pH, 6.4; P_1, 24; P_2, 139; K, 208.

Edgewood, Illinois. Planting was made in early June. There was some soil crusting and emergence was a little uneven; however, most stands were satisfactory. Early growth was slowed by waterlogged soil but subsequent growth was excellent and yields were unusually good for this location. A general and rather heavy infection of downy mildew developed in late July and early August along with some bacterial pustule. In late September grasshoppers became concentrated on the late Group IV strains and their feeding on pods may have reduced yields somewhat.

Fertilizer Treatment: 120 lbs./A. 60% potash. Fertility Level: pH, 6.3; P_1, 32; P_2, 85; K, 244.

Eldorado, Illinois. Planting was made on June 1 and emergence was good except for strains highly susceptible to Phytophthora rot where in some cases only about half of the seedlings emerged. The soil was waterlogged during most of June, and growth was very slow and plants became yellowish. Phytophthora rot was very prevalent and plants continued to die from it up to late July. Harosoy, Hawkeye, Lindarin, and, to a lesser extent, Adams were the most severely affected varieties with every plant slowing some symptom of the disease. Harosoy yielded 13 bushels while the Phytophthora-resistant backcross-7 Harosoy averaged 47 bushels (in 1-row plots bordered by stunted varieties). The Uniform Test III and IV strains were not so severely affected but growth was still reduced and yields were below normal for this location.

Fertilizer Treatment: 200 lbs./A. 8-16-8. Fertility Level: pH, 6.2; P_1, 42; P_2, 200+; K, 300.

Carbondale, Illinois. Seeding was made in a well prepared and moist seedbed. Excellent stands were obtained. Plant growth was fair to good even though less than half the average amount of rainfall was obtained during July. The moisture situation improved moderately during August. September was extremely dry which favored normal ripening.

Fertilizer Treatment: 300 lbs./A. 0-20-20. Fertility Level: pH, 6.0; P, 110; K, 180.

Miller City, Illinois. Planting was timely, in mid-May, and good stands were obtained. Cultivator damage reduced the yields of some plots. There was considerable downy mildew evident, beginning in late July. Growth was very heavy, especially with the Group V and VI varieties, and yields were excellent.

Fertilizer Treatment: None. Fertility Level: pH, 7.5; P_1, 64; P_2, 200+; K, 300+.

Crookston, Minnesota. Planting was done in a good seedbed at a relatively early date (May 20) and stands were good. There was excessive moisture in late June and early July. Considerable bacterial blight was evident, as is usual at this station, and there was some hail damage in early July. All varieties reached maturity before the relatively late-occurring first killing frost (September 30). Chlorosis was not as prevalent as in some past years.

Fertilizer Treatment: None. Fertility Level (1959): pH, 7.7; OM, 5.7; P, 43; K, 420.

Morris, Minnesota. Timely planting was made in a good seedbed. Stands and early development were good. Rather severe drouth in late July and August materially reduced yields. The plots were harvested before frost which occurred on September 30.

Fertilizer Treatment: Some phosphorus. Fertility Level (1959): pH, 6.9; OM, 5.9; P, 19; K, 290.

St. Paul, Minnesota. Timely planting was made in a good seedbed. Stands were good and early season development was excellent. Some moisture stress about August 10 to 15 resulted in less than optimum pod and seed set. It would appear that an excellent crop was reduced to a medium crop during this period of drouth. The Waukegan soils at St. Paul are characterized by a very good silt loam top soil but an

excessively-drained gravelly subsoil. A fairly heavy epidemic of bacterial blight was evident in June, particularly on the Test 00 and 0 strains. A rather unusual amount of bud blight appeared in late August and September. As is commonly the case at St. Paul, a considerable amount of mottling occurred on varieties in which there was any tendency for extension of hilum color. This condition is seldom noted at any of the other three locations.

Fertilizer Treatment: Manure. Fertility Level: pH, 6.0; P, 200; K, 550.

Waseca, Minnesota. There were very unfavorable conditions for preparation of a good seedbed. Excessive moisture from September 1959 to May 1960 prevented plowing of the land in regular rotation either at the usual time in the fall or at a reasonable time in the spring. Finally, after June 1, less favorable land was plowed and a cloddy seedbed prepared on June 7. Stands were surprisingly good, but development was subnormal all season. Yields were uncommonly low for this station.

Fertilizer Treatment: Manure. Fertility Level: pH, 5.7; OM, 5.4; P, 14; K, 240.

Cresco, Iowa. This nursery is located in northeast Iowa on Carrington Plastic Till Phase soil which is tight, cold, wet, slowly drained, and low in productivity. The nursery was planted on June 1 on corn land. Stands were excellent and plots were kept weed-free. Precipitation was above normal for each month from May through September, resulting in a total for the growing season of +9.2 inches above normal. Growth was unusually slow and never did attain normal response and height. Some bacterial blight occurred in July. This nursery was considered fair for making strain comparisons.

Fertilizer Treatment: 40 lbs./A. K_2O. Fertility Level: pH, 6.7; N, 60 ppm; P, 3.75 ppm; P_1, 26.5 lbs.; K, 92 ppm.

Sutherland, Iowa. This nursery represents the northwest section of Iowa with Primghar silt loam soil, medium high in productivity and generally slightly undulating in topography. The nursery was planted May 13 on corn land. Stands were excellent and plots were kept weed-free. Precipitation was above normal for May, August and September, and below normal for June and July. Temperatures for each month, May through September, averaged below normal. Killing frost (October 19) did not occur before maturity. Growth response, yields and lodging were considered good. More than normal bacterial blight occurred in June and July. This nursery was considered good for making strain comparisons.

Fertilizer Treatment: None. Fertility Level: pH, 6.4; N, 57 ppm; P, 1.25 ppm; P_1, 15.5 lbs.; K, 146 ppm.

Kanawha, Iowa. This nursery is located in north central Iowa on level, productive Webster silt loam. Planting was completed on May 10 on land previously grown to corn. Stands were generally good to excellent and plots were kept weed-free. There was an unusually low incidence of bacterial blight and other diseases in the nursery. During the growing season temperatures averaged -0.8° F. below normal with most of the cold temperatures occurring from May through July. Precipitation was deficient in every month from June through September. These conditions permitted poor growth and below normal yields and little lodging. A killing frost (October 19) did not occur until after maturity. Harvesting was completed under good conditions. This nursery was considered fair for making strain comparisons.

Kanawha, Iowa (Continued)

Fertilizer Treatment: None. Fertility Level: pH, 6.5; N, 60 ppm; P, 3.5 ppm; P_1, 25.4 lbs.; K, 128 ppm.

Independence, Iowa. This nursery is located in northeast central Iowa on well drained Carrington silt loam, medium in productivity. Planting was completed on May 30. Stands were good and plots were kept weed-free. Temperatures averaged -2.0° F. below normal. Precipitation totaled +5.5 inches above normal for May through September. Growth, yield, and general response was reasonably good although there were indications of late infection of disease (stem canker). Frost occurred later than normal (October 19). This nursery was considered fair to good for making strain comparisons.

Fertilizer Treatment: 40 lbs./A. K_2O. Fertility Level: pH, 6.5; N, 54 ppm; P, 2.0 ppm; P_1, 18.8 lbs.; K, 68 ppm.

Ames, Iowa. This nursery was centrally located on level, productive Clarion silt loam. Planting was completed on May 11 with subsequent stands excellent. Temperatures averaged below normal and precipitation above normal. Growth, yield, and general response were good. A lower than normal incidence of disease occurred. Frost occurred October 19, two weeks after the normal date. Strain comparisons are believed to be very good.

Fertilizer Treatment: None. Fertility Level: pH, 6.2; N, 48 ppm; P, 3.5 ppm; P_1, 25.4 lbs.; K, 94 ppm.

Ottumwa, Iowa. This nursery is in southeastern Iowa on flat, very productive Haig silt loam. The nursery was planted June 7 because of excessive moisture in May. Stands were poor but weeds were controlled reasonably well. Temperatures averaged below normal and precipitation above normal for the growing season, although July, August and September were dry. Growth, yield, and response were poor because of the excessively wet and cold June coupled with a dry July, August and September. Killing frost occurred on November 19, over a month later than normal. Strain comparisons are believed to be poor.

Fertilizer Treatment: None. Fertility Level: pH, 5.8; N, 43.5 ppm; P, 3.75 ppm; P_1, 26.5 lbs.; K, 128 ppm.

Kirksville, Missouri. The 1960 Uniform and Preliminary Tests II and III were planted in the same productive area as in 1958. Plantings were made June 4 and emerged to satisfactory stands. 8.26 inches of rain fell in June and this may have adversely affected the plants since yields were lower than in 1958. Moisture was good during July and August.

There was some premature drying in Test II. A comparison of the strains resistant to Phytophthora with their susceptible counterparts showed no killing in resistant strains, very little in heterozygous strains and more in commercial varieties. It is probable that this killing is due to Phytophthora. Yields reflect these differences. Test II and Preliminary Test II were harvested at maturity but rainy weather interfered with prompt harvesting of Test III. The low yields of A5-5515 are largely due to this delay which permitted shattering of this very susceptible strain.

Kirksville, Missouri (Continued)

Fertilizer Treatment: None. Fertility Level: pH, 6.5; OM, 2.5; P, 250; K, 200; Ca, 4500; Mg, 220.

Columbia, Missouri. Two replications of Uniform Tests III and IV were planted in 3-row plots and two replications were planted in 1-row plots May 15 and these were duplicated June 1. One replication of Uniform Preliminary Tests III and IV was planted May 15 and one replication June 1. High temperatures and well spaced rainfall in June and the first part of July resulted in very heavy growth in the May planted plots. Very little rain fell from July 15 to August 15 and by this date the soil was dry down 15 inches and the May planted plots in particular were in a critical condition. 1.75 inches of water was applied with sprinklers August 15 and 16. This saved the crop but by the time the latest strains in Test IV matured, moisture was again critical and it is probable that the latest of these suffered some in yield. Temperatures for August and September were above normal, with 12 and 20 days, respectively, above 90°.

Average yields for Uniform Test IV were 36.2 and 34.4 and for Uniform Test III 36.6 and 34.4 for the May and June plantings. There was very little interaction between variety and date for Test IV but in Test III there was considerable shifting of yield rank between the two dates. The three related strains Ford, Shelby, and S2-5179 are particularly interesting. Comparing the May and June plantings, Ford dropped from fifth to tenth place with a loss of 8 bushels, S2-5179 dropped from first to ninth place with a drop of 6 bushels, while Shelby only dropped from fourth to fifth place with a loss of 4 bushels. L57-2322 was first at each date of planting, only dropping 1.6 bushel.

A5-5515 is very prone to shatter. When the May planting was harvested, 5 days after A5-5515 was ripe, it had already lost a lot, yielding about 6 bushels less than any other strain and 8 bushels less than the average. Hawkeye, one of its parents, had not begun to shatter although Hawkeye is much earlier.

Fertilizer Treatment: None. Fertility Level: pH, 6.1; OM, 1.8; P, 168; K, 155; Ca, 3425; Mg, 250.

Jefferson City, Missouri. Uniform Test IV was planted on a somewhat cloddy seedbed and stands were below optimum. One replication was discarded. Rainfall was somewhat better than at Columbia but yields were only fair.

Fertilizer Treatment: None. Fertility Level: pH, 7.0; OM, 2.8; P, 290; K, 280; Ca, 7000; Mg, 480.

Portage la Prairie, Manitoba, Canada. Weather conditions this year were exceptionally favorable for soybean production. Temperatures were slightly below normal in June but above normal in July, August and September. Precipitation was well below normal in June and July but soil moisture reserves were ample to carry the crop through to the July rains. The late fall favored the development and ripening of the beans. For the first time since the test was carried at this location (1956) Flambeau matured before being killed by frost. The uninterrupted frost-free period was thirty-five days longer than normal (121 frost-free days).

Fertilizer Treatment: None. Fertility Level: High.

Winnipeg, Manitoba, Canada. At the beginning of the season moisture was adequate. Emergence was uniform and stands were good. Lack of moisture probably limited growth somewhat toward the end of the long dry period between June 21 and August 25. Temperatures were slightly above normal in July and August. The soybeans matured slightly earlier than usual (Acme, 106 days). The crude protein content of the seed was unusually low. Nodulation was approximately the same as usual. All tests previously reported were grown on summer fallow but in 1960 the soybean tests followed a crop of barley.

Fertilizer Treatment: None. Fertility Level (1959): pH, 7.3; P_1, 57; P_2, 196; K, 300+.

Brandon, Manitoba, Canada. This was a very good test in 1960. Stands were good. Development progressed favorably despite low rainfall. Moisture reserves from 1959 were excellent and only for this reason were we able to obtain fairly good yields in 1960. Insects and diseases were the least concern that they have been for a number of years. There was no lodging and no seed shattering. Maturity was attained by all entries and seed quality was good.

Fertilizer Treatment: None. Fertility Level (1959): pH, 7.7; Phosphate, high; Potash, high.

Morden, Manitoba, Canada. The yield trial was planted on May 3 in a seedbed with adequate reserve moisture. The mean monthly temperatures for May, July, August and September were higher than the 42-year average, and the total precipitation for April to September lower. May, June and July were especially low in precipitation. This is believed to have had a detrimental effect on the yield. The high precipitation obtained during August saved the crop and resulted in near normal yields. Disease and insect damage was not observed.

Fertilizer Treatment: None. Fertility Level: 35 bu. wheat/A.

Fargo, North Dakota. During the growing season temperatures were only slightly above average except for the month of June when they were just below average. Frost occurred on September 30, 1960, somewhat later than the first average fall frost. Rainfall was about adequate throughout the growing season except from the last few days of July to about the middle of August when drouth conditions apparently caused some loss in seed yield. The tests at this station were considered good for strain comparisons.

Fertilizer Treatment: 42-42-0 (intended for flax). Fertility Level: pH, 6.8. Wheat, 35 bu./A.

Eureka and Watertown, South Dakota. Climatic conditions at Eureka and Watertown were very dry. Soil moisture was short throughout the growing season. The emergence of the seedlings were delayed and in most cases came up very spotty. This produced a growth that was not uniform. In the fall the maturity ranged from mature to blossoming. The yields and seed quality were not representative of an average test at these locations. Due to the poor quality, the seed of Uniform Tests 0 and I at Watertown and Uniform Test I at Eureka were discarded.

Eureka--Fertilizer Treatment: None. Fertility Level: 17 bu./A. wheat.

Brookings and Menno, South Dakota. Climatic conditions at Brookings and Menno were favorable, producing high bean yields. At no time was soil moisture short. Also the humidity was relatively high without extreme high daily temperature. These conditions produced good pod setting.

Brookings--Fertilizer Treatment: 10 T./A. Manure. Fertility Level: 73 bu./A. oats.
Menno--Fertilizer Treatment: None.

Concord, Nebraska. Soybean tests were planted on June 2 in a good seedbed on Wabash silt loam. No fertilizer was added. Rainfall was about normal for the season but short in July. One irrigation of about three inches was applied on August 1. Temperatures were considered about normal. Killing frost occurred September 30. The tests were considered good for making strain comparisons.

Fertilizer Treatment: None. Fertility Level: 120 bu./A. corn (irrigated).

Lincoln, Nebraska. Uniform Tests planted on May 27 followed corn on Wabash silt loam. Stands were thinner than planned but adequate for yield evaluation. Two irrigations, one on July 9 and one on August 3 were applied. Average temperature ranged from 2 to 5 degrees below the long-time average. Most entries were mature before killing frost on October 20.

Fertilizer Treatment: None. Fertility Level (1959): pH, 5.9; N, medium; P, very high; K, high.

Manhattan, Kansas. Nursery tests were planted late (June 16 to 18) because of the rainy periods from early June until the middle of the month. Rainfall was above normal during the growing season and precipitation was timely distributed during the growing season. Temperatures during the latter part of June were higher than normal, but during July and August lower.

Fertilizer Treatment: None. Fertility Level: pH, 5.8; OM, 2.0; P, 150; K, 550+.
Bottom Land--Fertilizer Treatment: None. Fertility Level: pH, 7.4; OM, 1.1; P, 38; K, 550+.

Mound Valley, Kansas. The conditions for soybean production were very desirable in this area this past season. The soybean plots were sprayed with DDT July 13 to control the Japanese beetle and garden web worm. Possibly this was an aide in obtaining the high yields.

Fertilizer Treatment: 100 lbs./A. P_2O_5. Fertility Level: pH, 5.9; P_1, 44; P_2, 66; K, 200.

Columbus, Kansas. Moisture was adequate during the entire soybean growing season with the exception of a two-week period during the latter part of July and the first few days in August. Rainfall recorded was as follows: June, 4.44; July, 4.34; August, 5.35; September, 1.17. Temperatures, also, were comparatively mild during the entire season.

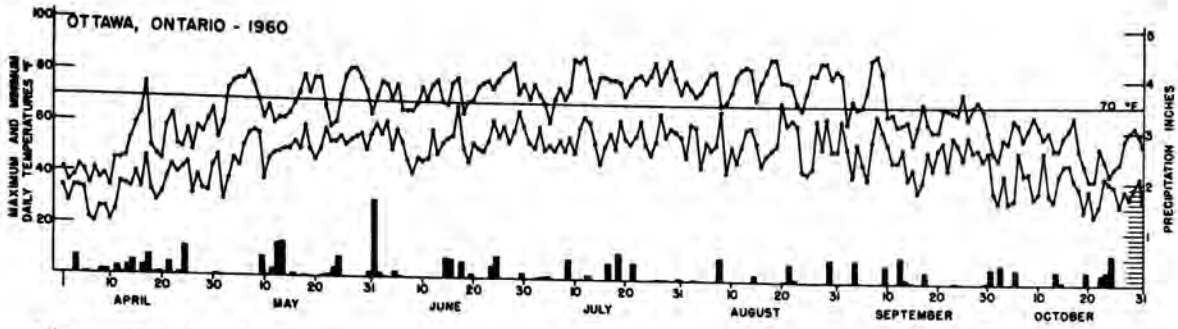
Fertilizer Treatment: 0-80-80. Fertility Level: pH, 7.2; OM, 0.3; P, 6; K, 100.

Prosser, Washington. The Uniform Test was planted May 10 and excellent stands were obtained. The nursery was irrigated to maintain adequate moisture throughout the season. Bean mosaic symptoms were apparent in the area. Lodging was severe on the

taller and later strains. Yields were low on most Test 00 strains but Chippewa of Group I maturity yielded nearly 35 bushels.

Ontario, Oregon. The Uniform Tests barely escaped an unusually late (May 22) frost. Temperatures were low during the germination period, but rose rapidly shortly after emergence. Between July 13 and July 29 the average daily maximum temperature was 100° F. Record high mean temperatures were recorded for both June and July. The soybeans were irrigated to maintain a high level of moisture throughout the growing season. The last irrigation was on August 8 for all but Test I, which received an additional irrigation on August 15. A total of about 20 inches of water was used. Several high winds during or closely following irrigations, coupled with rank early season growth, resulted in heavy lodging. A 10-day cold period with 5 nights below 40° F. beginning about August 20, delayed maturity of most of the varieties by at least one week. The first killing frost on October 13 allowed all varieties except Blackhawk to completely mature.

Fertilizer Treatment: 100 lbs./A. P_2O_5 and 40 lbs./A. N.


OTTAWA, ONTARIO - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
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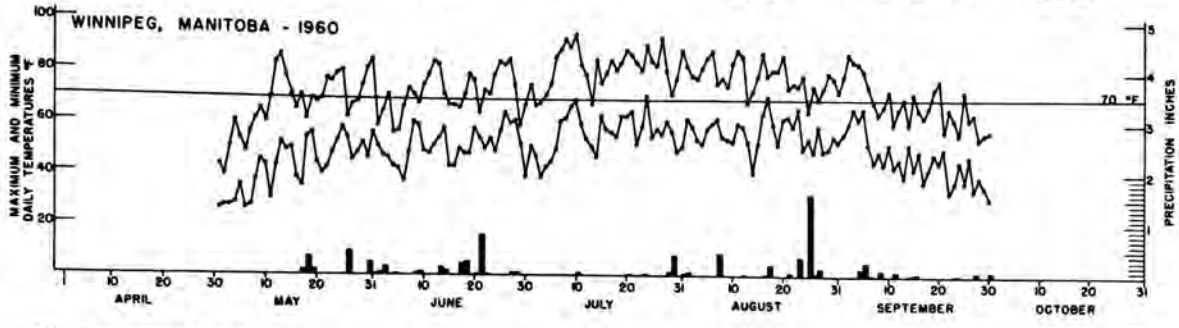
WINNIPEG, MANITOBA - 1960
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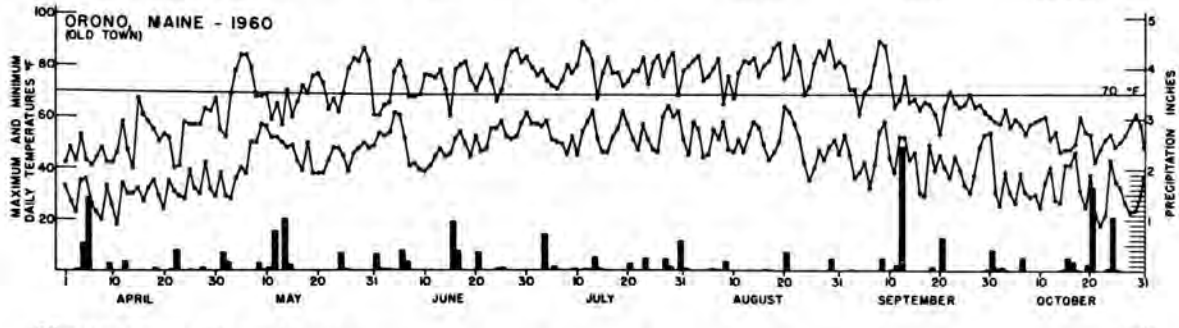
ORONO, MAINE - 1960
(OLD TOWN)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
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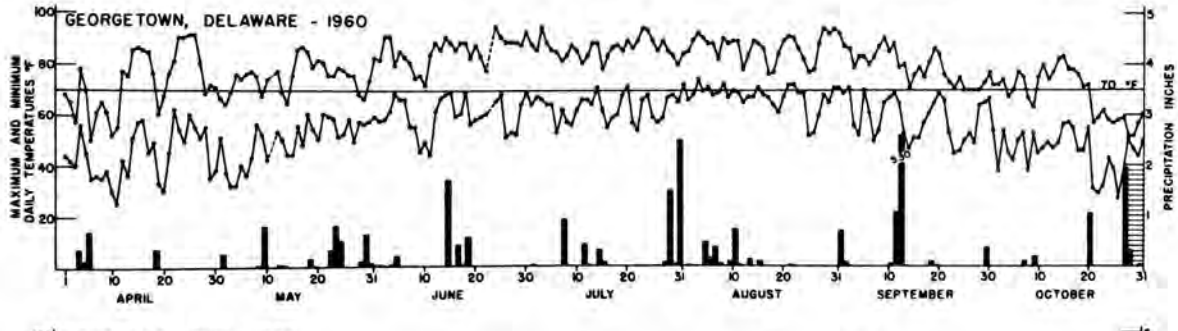
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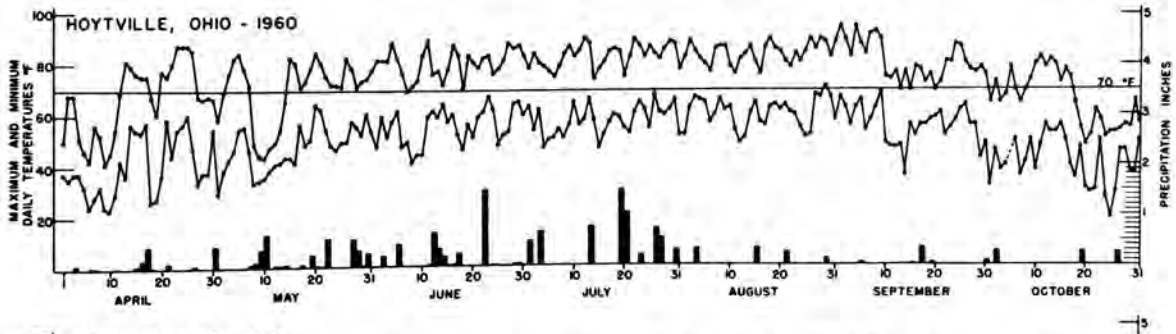
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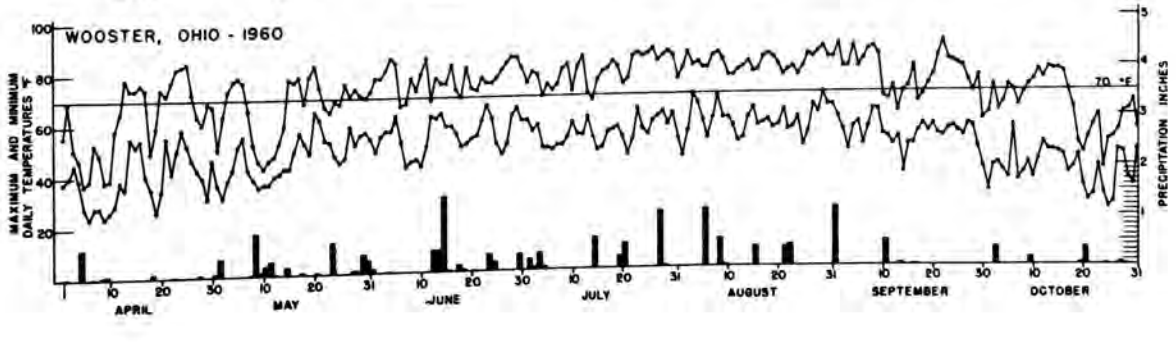
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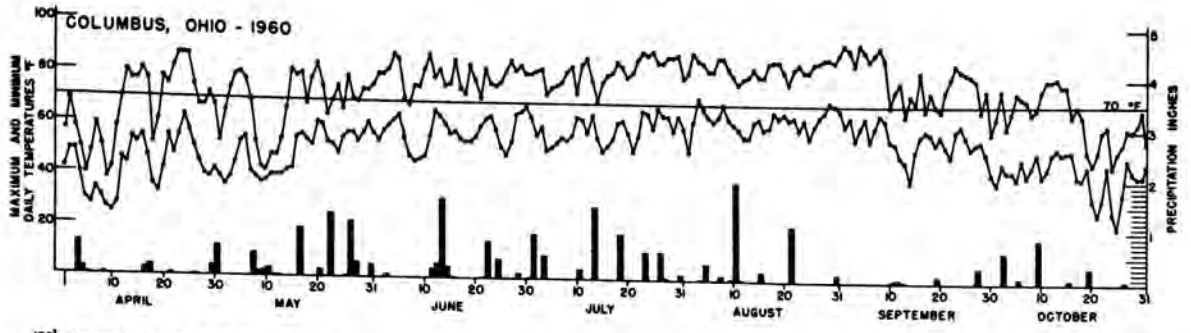
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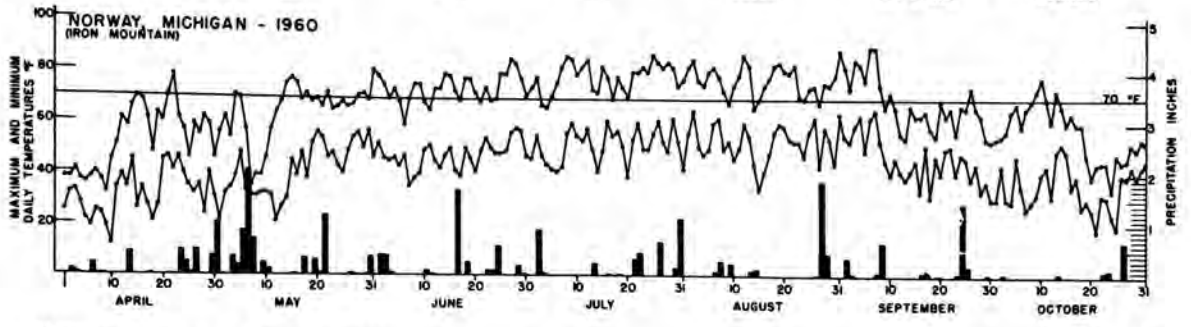
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(IRON MOUNTAIN)
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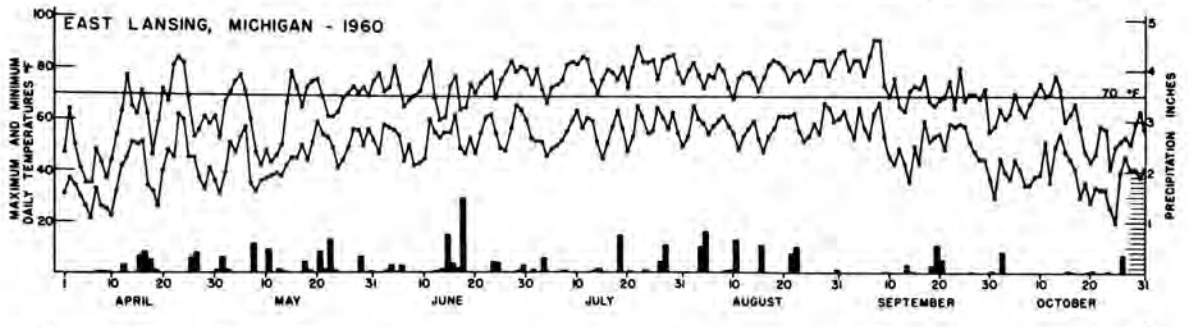
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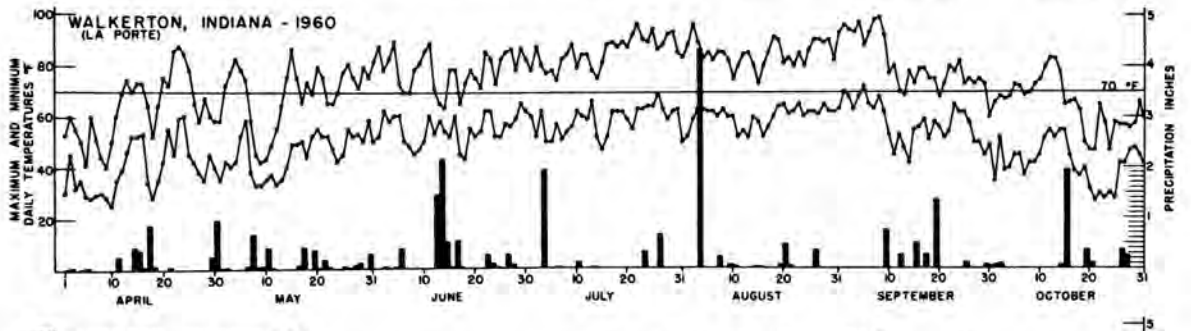
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(LA PORTE)
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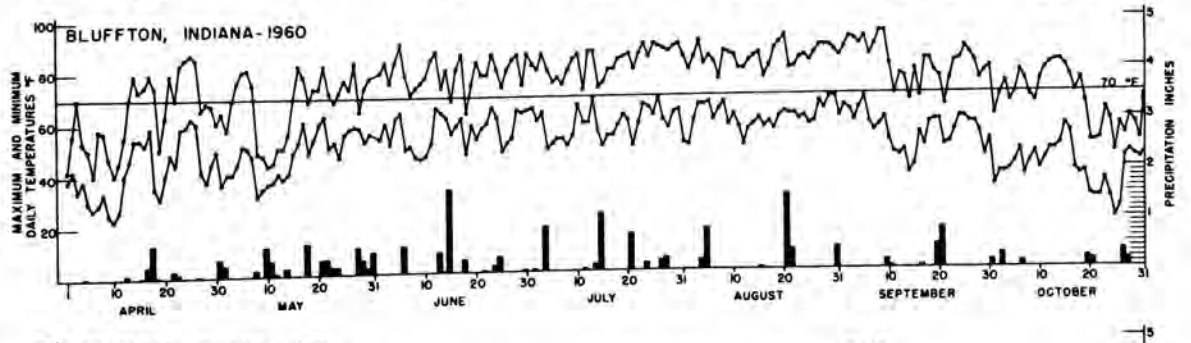
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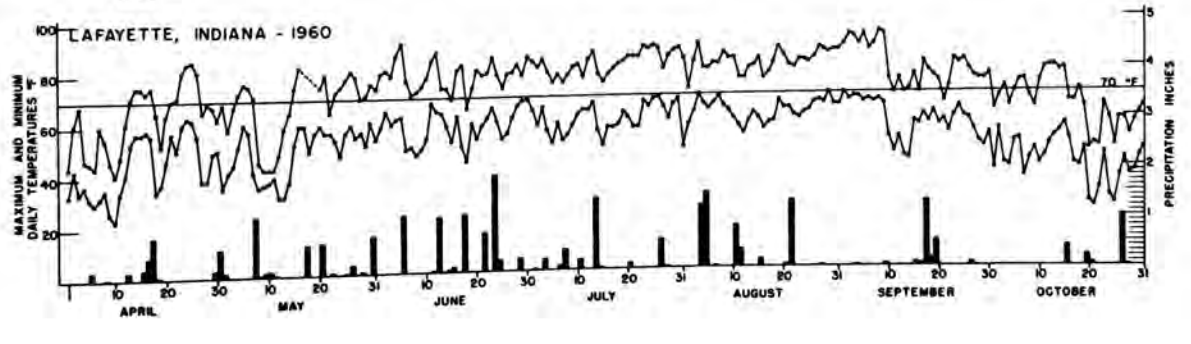
LAFAYETTE, INDIANA - 1960
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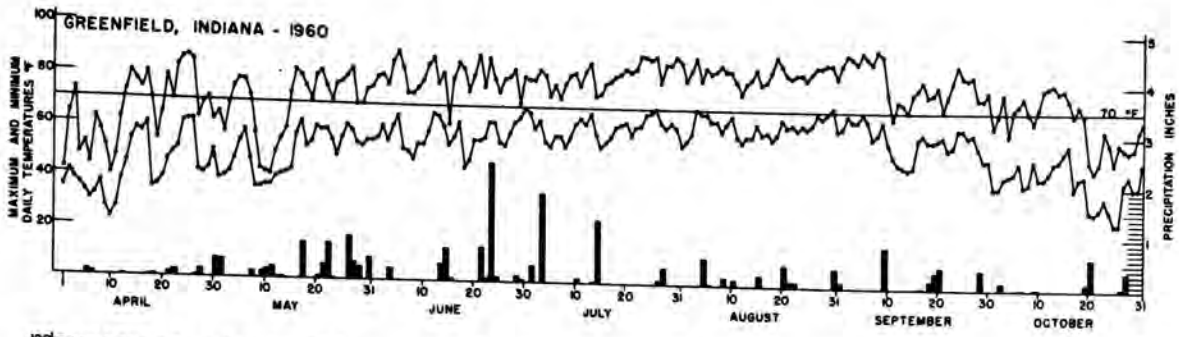
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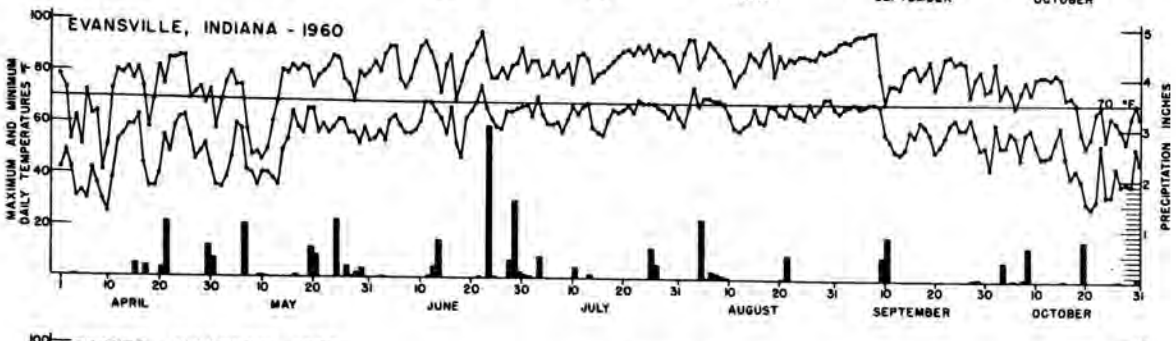
EVANSVILLE, INDIANA - 1960
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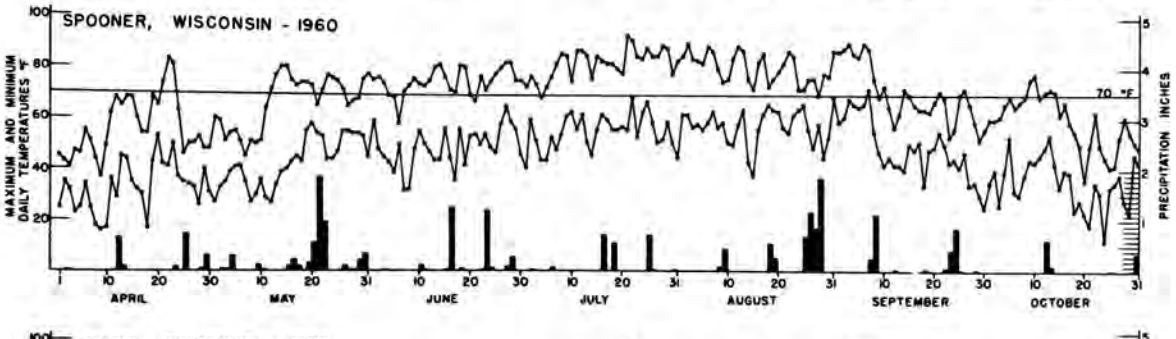
SPOONER, WISCONSIN - 1960
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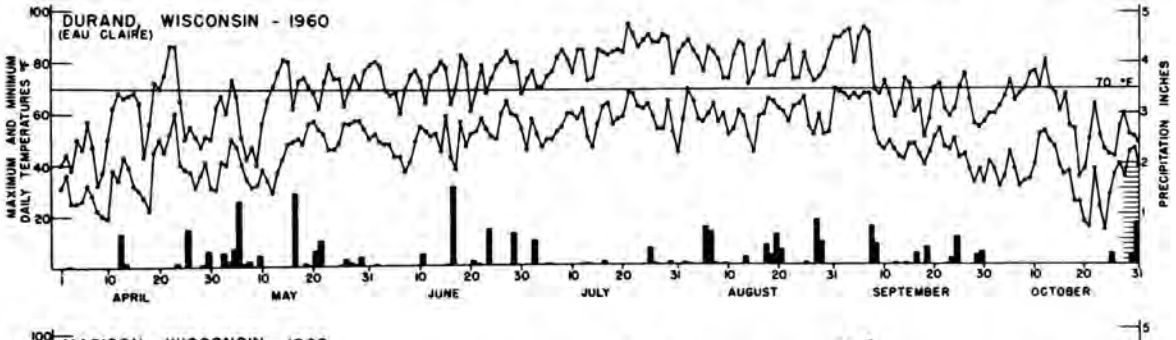
DURAND, WISCONSIN - 1960
(EAU CLAIRE)
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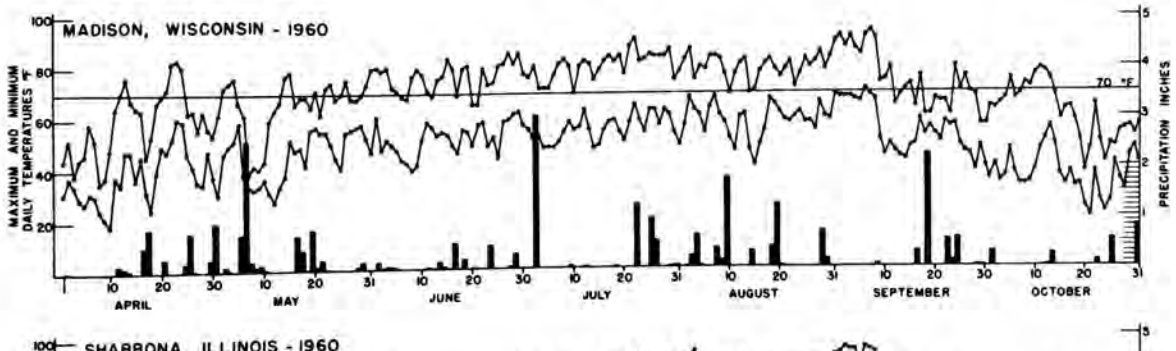
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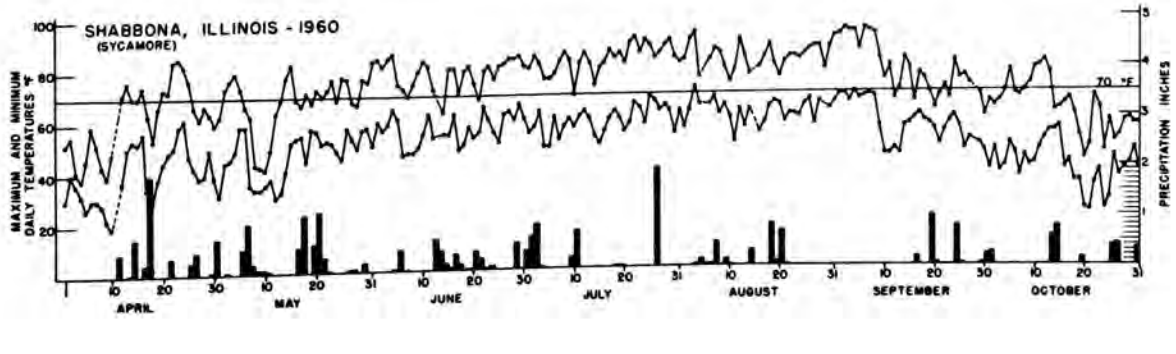
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(SYCAMORE)
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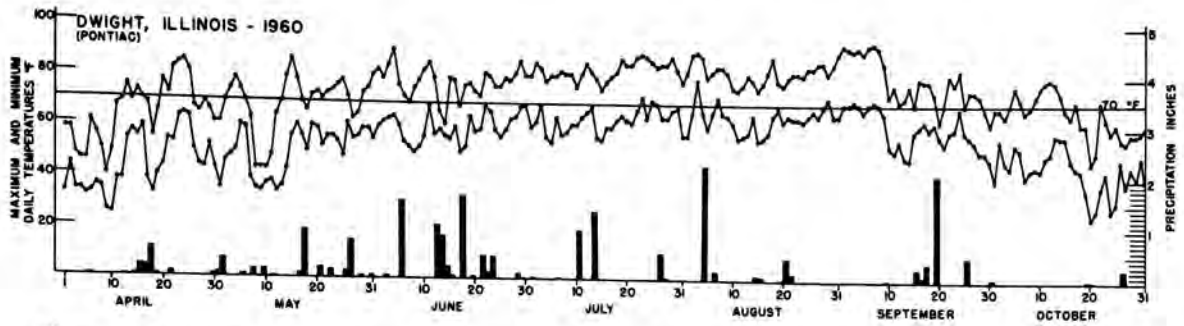
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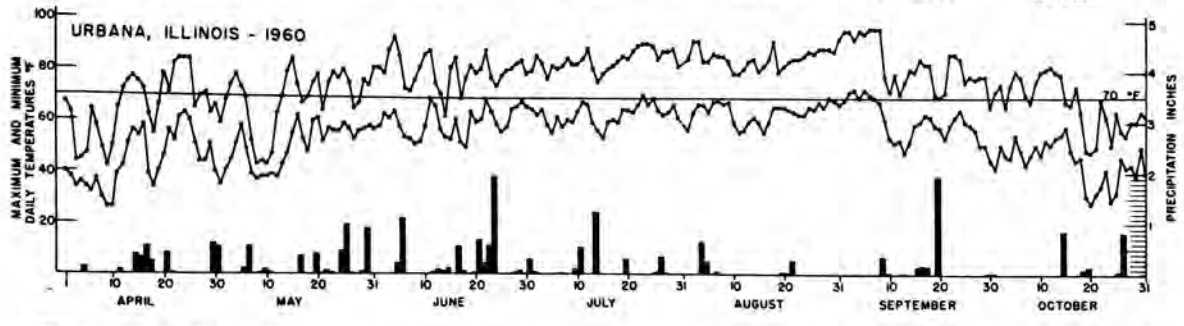
URBANA, ILLINOIS - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
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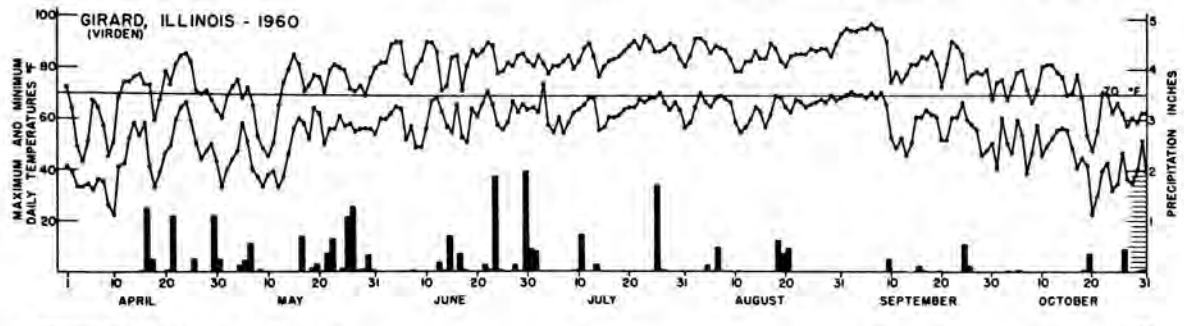
GIRARD, ILLINOIS - 1960
(VIRDEN)
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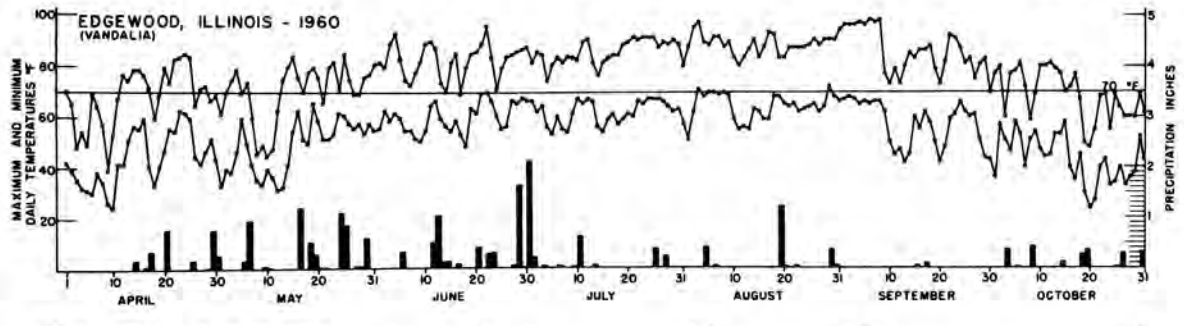
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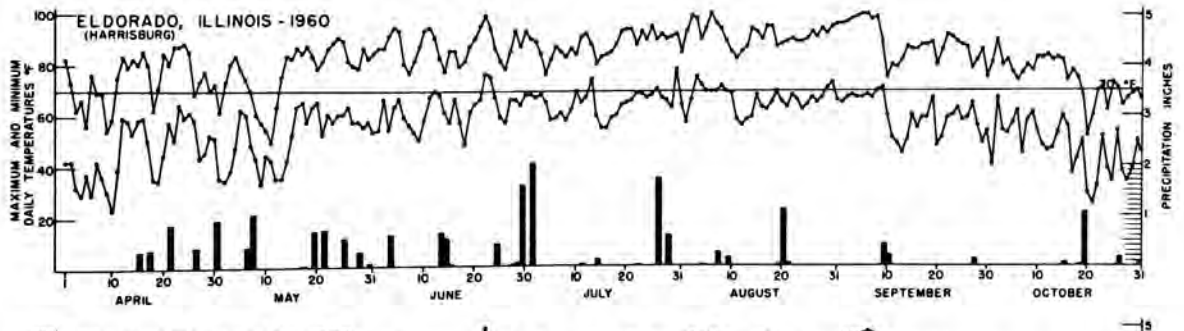
ELDORADO, ILLINOIS - 1960
(HARRISBURG)
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PRECIPITATION INCHES
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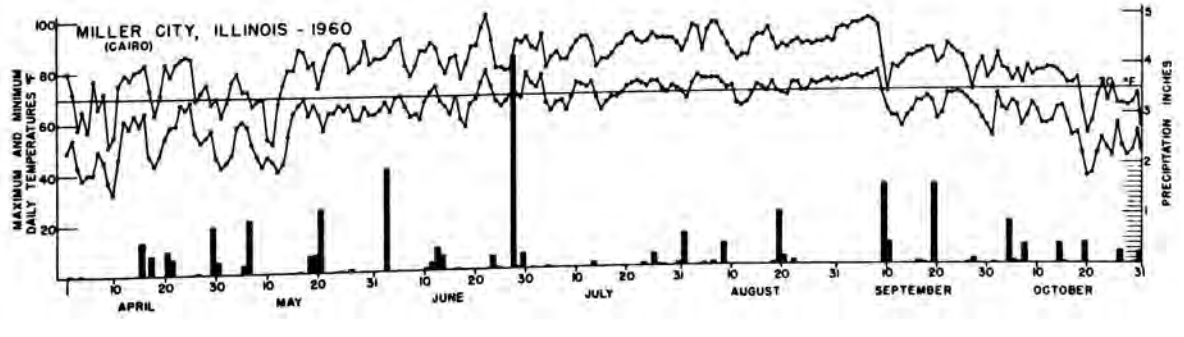
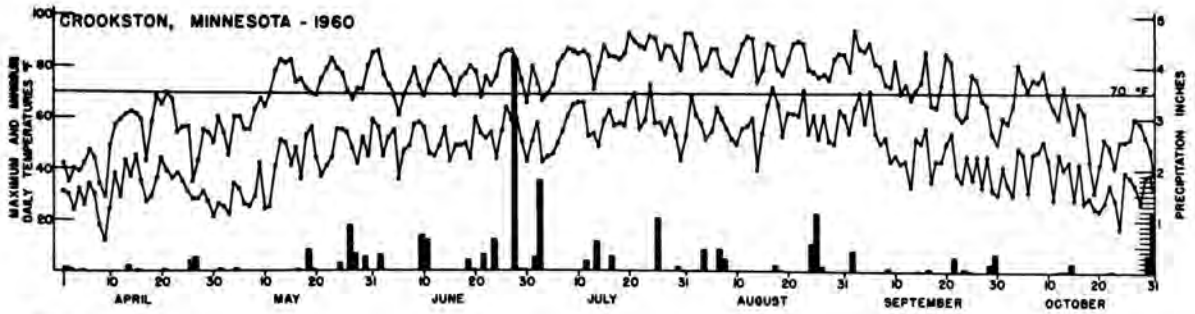
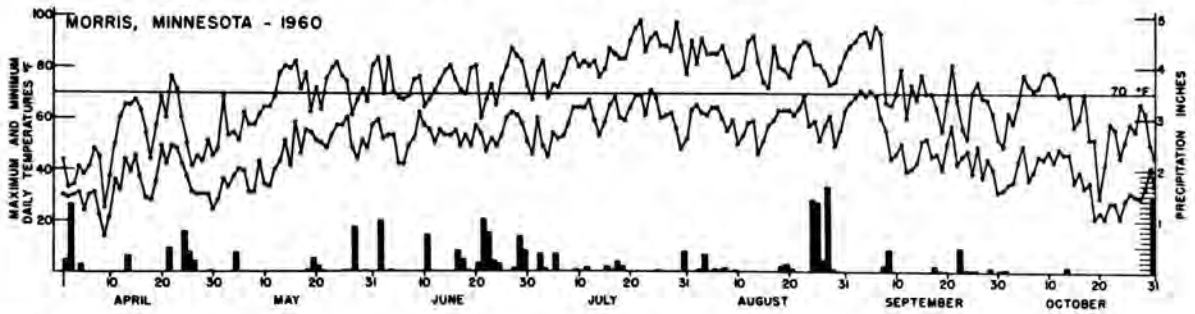
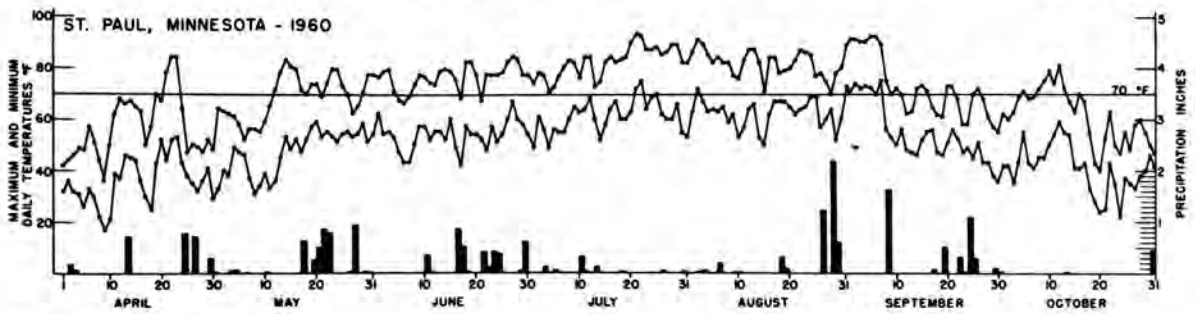
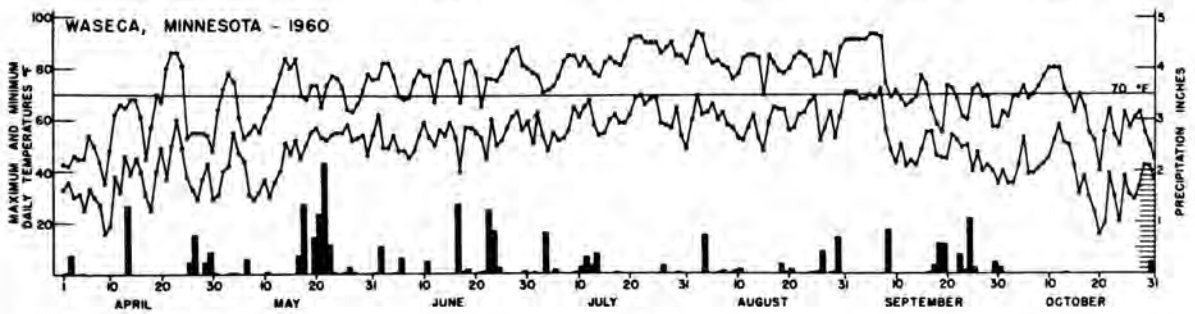
SEPTEMBER
OCTOBER

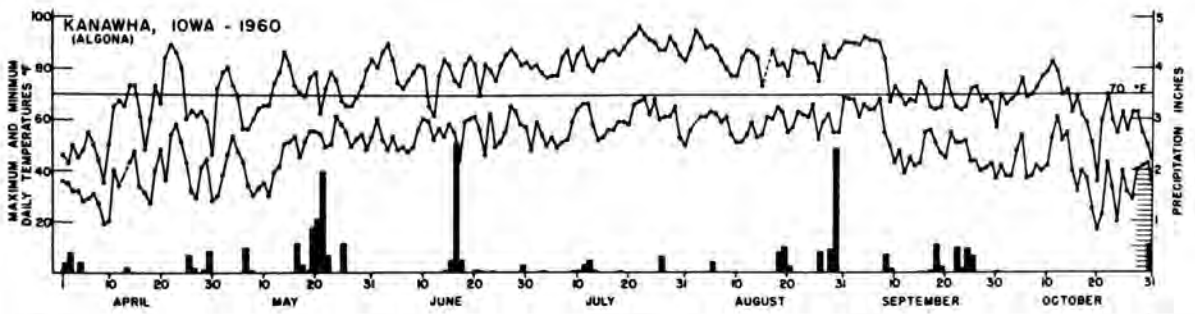

MILLER CITY, ILLINOIS - 1960
(CAIRO)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

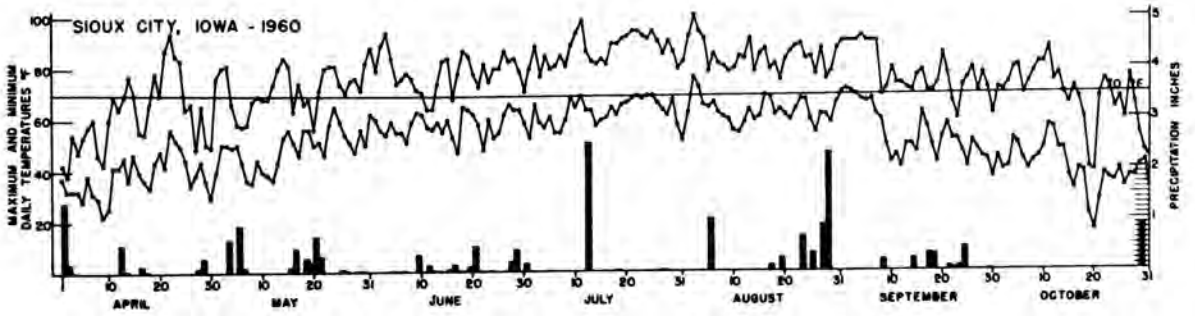

CROOKSTON, MINNESOTA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

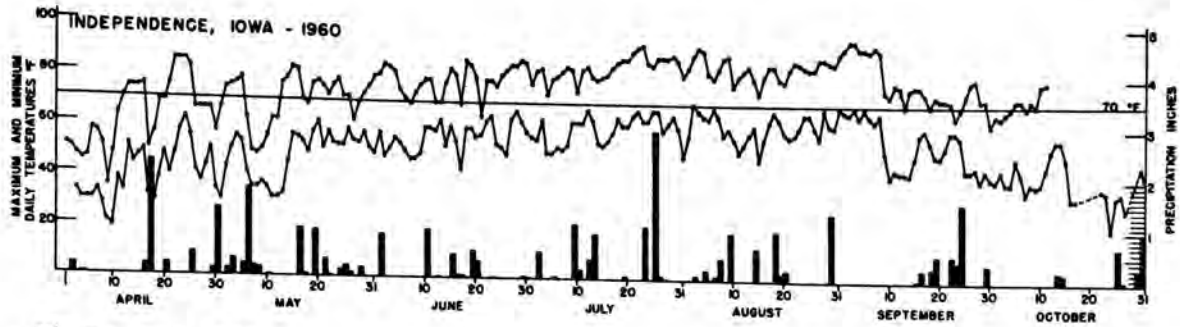

MORRIS, MINNESOTA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

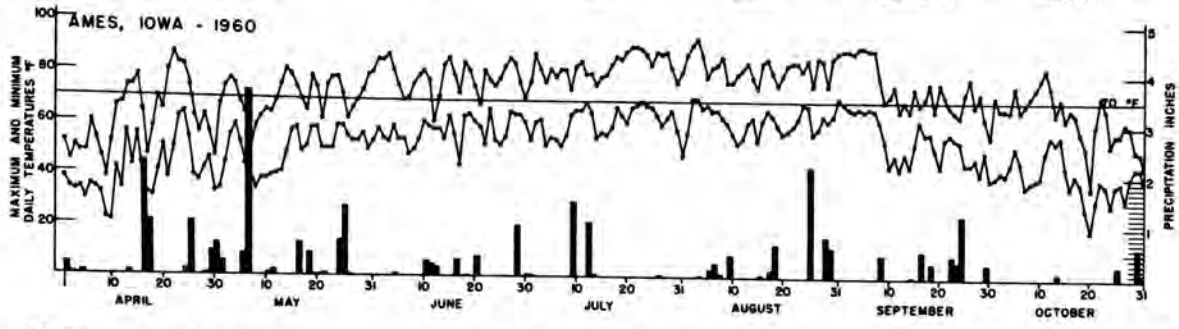

ST. PAUL, MINNESOTA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

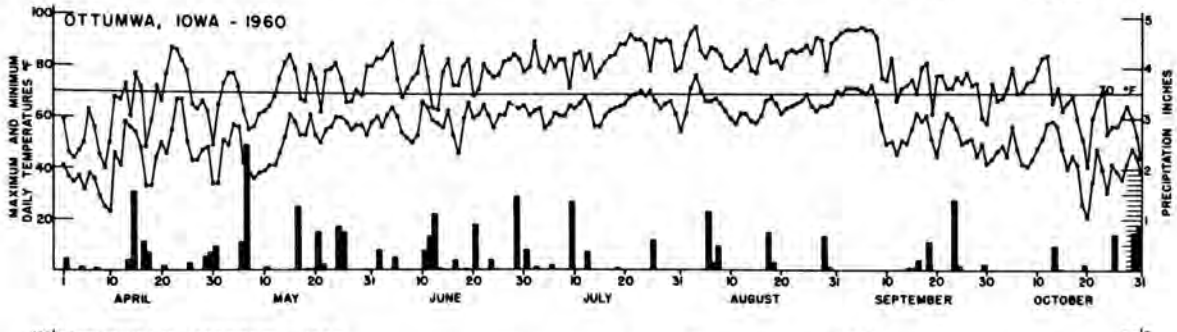

WASECA, MINNESOTA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

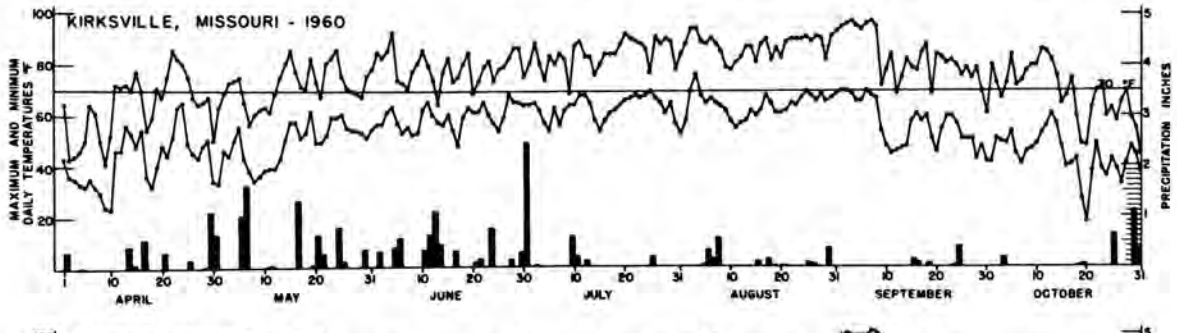

KANAWHA, IOWA - 1960
(ALGONA)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

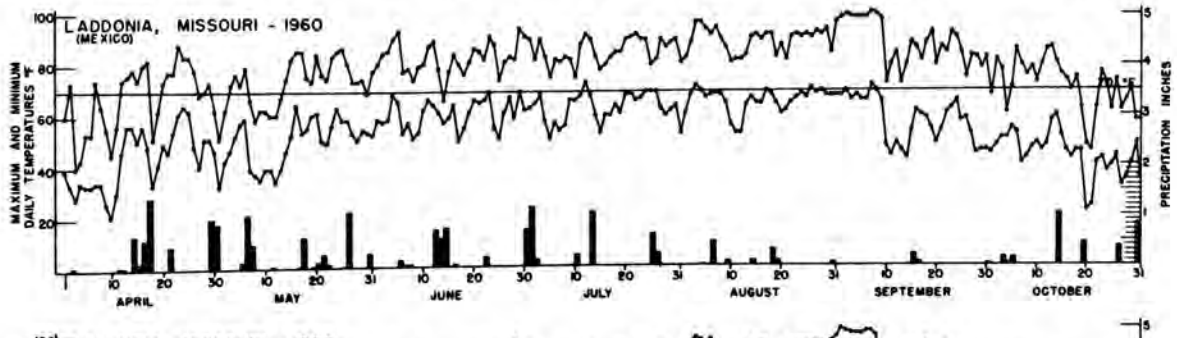

SIOUX CITY, IOWA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

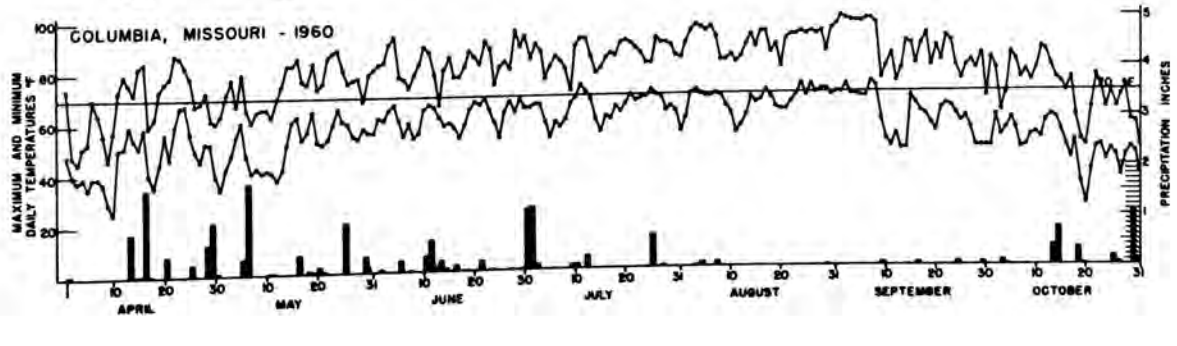

INDEPENDENCE, IOWA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

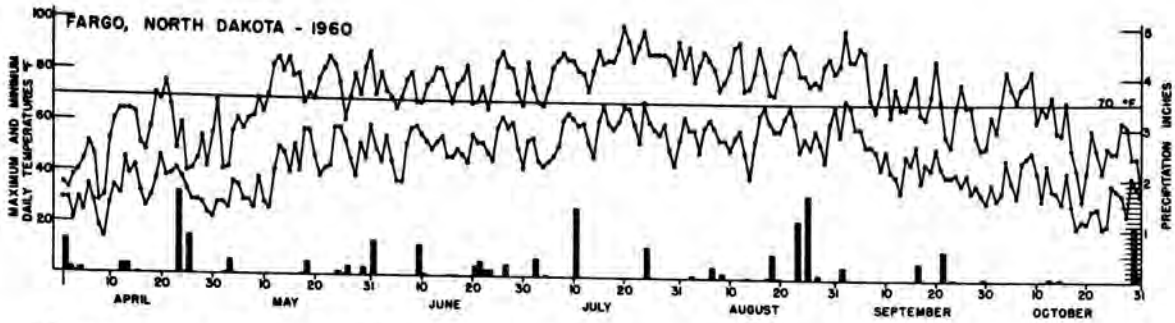

AMES, IOWA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

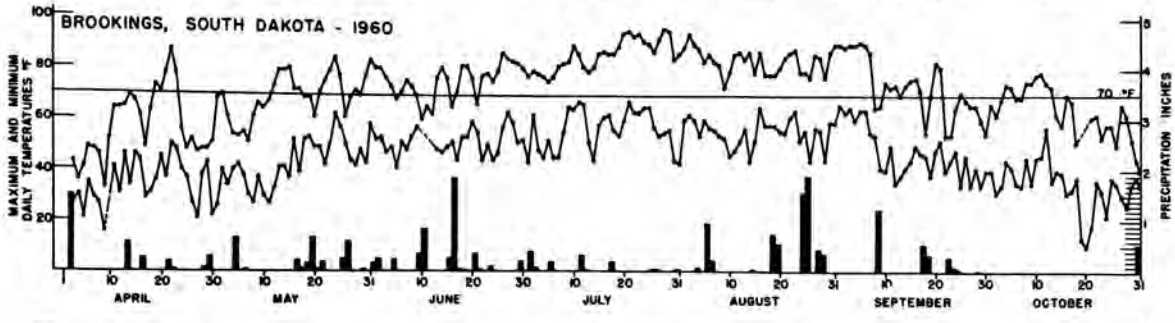

OTTUMWA, IOWA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

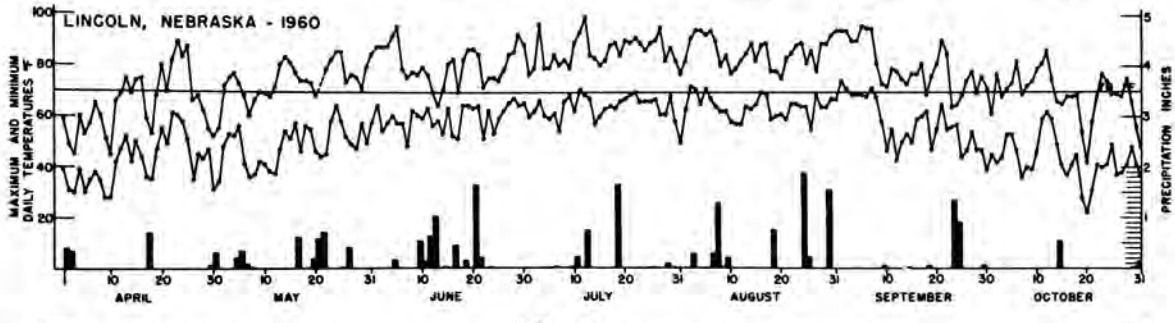

KIRKSVILLE, MISSOURI - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

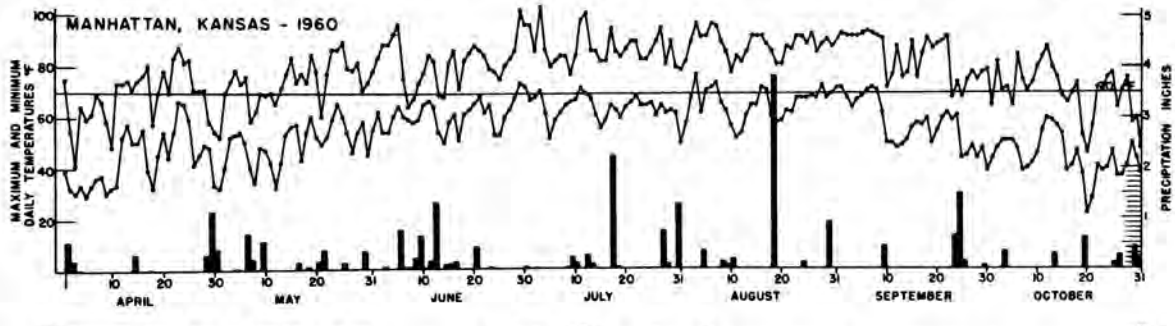

LADDONIA, MISSOURI - 1960
(MEXICO)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

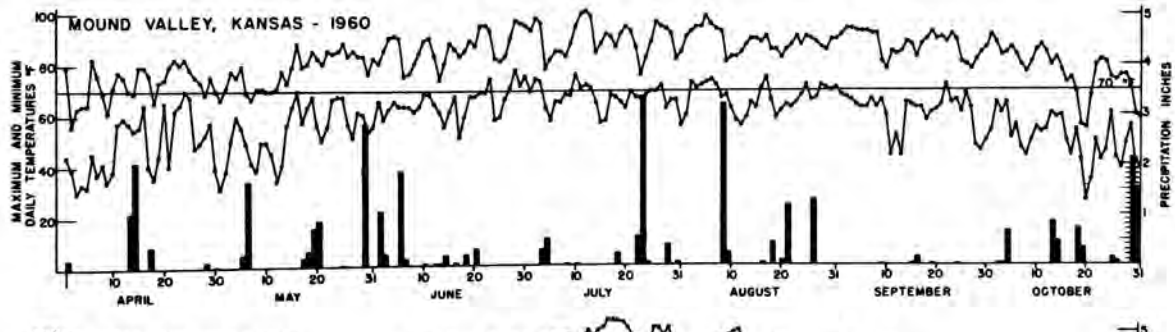

COLUMBIA, MISSOURI - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

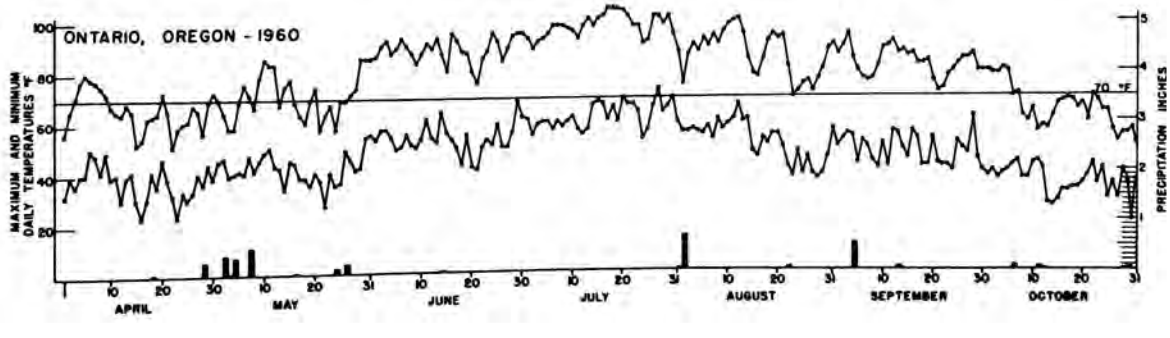

FARGO, NORTH DAKOTA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


BROOKINGS, SOUTH DAKOTA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


LINCOLN, NEBRASKA - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


MANHATTAN, KANSAS - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


MOUND VALLEY, KANSAS - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


ONTARIO, OREGON - 1960
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER