RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS, 1965

PART I. NORTH CENTRAL STATES

March 1966

RSLM 224

Compiled by:

R. L. Bernard, D. W. Chamberlain
and Ruth E. Lawrence

From Data Supplied by:

J. C. Anderson, New Jersey
L. J. Anderson, Ontario
K. L. Athow, Indiana
R. L. Bernard, Illinois
E. H. Beyer, Maryland
R. E. Bothun, North Dakota
N. A. Brown, Missouri
D. R. Browning, Illinois
D. W. Chamberlain, Illinois
R. H. Cole, Delaware
F. I. Collins, Illinois
J. D. Curtis, Ontario
J. M. Dunleavy, Iowa
J. Giesbrecht, Manitoba
H. Gross, Manitoba
S. C. Hildebrand, Michigan
M. L. Jones, Wisconsin
B. W. Kennedy, Minnesota
O. A. Krober, Illinois
J. W. Lambert, Minnesota
F. A. Laviolette, Indiana
J. R. Lawless, Kansas
V. D. Luedders, Missouri
A. O. Lunden, South Dakota
E. L. Mader, Kansas
V. H. Peterson, Kansas
A. H. Probst, Indiana
C. O. Rydberg, Wisconsin
P. E. Smith, Ohio
B. R. Stefansson, Manitoba
J. H. Torrie, Wisconsin
C. R. Weber, Iowa
J. H. Williams, Nebraska

TABLE OF CONTENTS

Personnel. 2
Introduction 4
Map. 5
Uniform Test Locations 6
Methods. 8
Uniform Test 00. 10
Uniform Preliminary Test 00. 19
Uniform Test 0 25
Uniform Test I 42
Uniform Preliminary Test I 57
Uniform Test II. 65
Uniform Preliminary Test II. 81
Uniform Test III 89
Uniform Preliminary Test III 100
Uniform Test IV. 105
Disease Investigations 118
Growing Conditions 121

PERSONNEL

Oilseed and Industrial Crops Research Branch, Beltsville, Maryland

R. W. Howell, Chief of Branch and
Acting Soybean Investigations Leader

U. S. Regional Soybean Laboratory, Urbana, Illinois

R. L. Bernard, Acting Geneticist-in-Charge — Carolyn J. Younger, Admin. Asst.

Breeding and Genetics

R. L. Bernard, Research Geneticist
C. R. Cremeens, Agric. Res. Technician
Ruth E. Lawrence, Statistical Assistant
D. A. Lindahl, Agric. Res. Technician
L. D. Graham, Crops Research Helper

Chemical Analysis

F. I. Collins, Oil Chemist
V. E. Sedgwick, Phys. Sci. Technician
O. A. Krober, Protein Chemist
S. J. Gibbons, Phys. Sci. Technician

Plant Pathology

D. W. Chamberlain, Plant Pathologist

Plant Physiology

R. E. Johnson, Plant Physiologist
R. W. Rinne, Plant Physiologist
W. L. Ogren, Plant Physiologist
R. H. Johnson, Instrument Maker
A. J. Maggio, Agric. Res. Technician

Lafayette, Indiana

A. H. Probst, Research Agronomist
P. E. Stingle, Technician*
K. L. Athow, Plant Pathologist*

Beltsville, Maryland

B. E. Caldwell, Research Agronomist
C. E. Bass, Agric. Res. Technician
J. R. Franklin, Agric. Res. Technician
V. L. Miller, Agric. Res. Technician
D. O. Pyne, Agric. Res. Technician
J. D. Vasvery, Agric. Res. Technician

Ames, Iowa

C. R. Weber, Research Agronomist
R. C. Clark, Agric. Res. Technician
J. M. Dunleavy, Plant Pathologist
J. W. Fisher, Agric. Res. Technician
J. A. Fielding, Technician*
H. Tachibana, Plant Pathologist
M. S. Shih, Technician*

Columbia, Missouri

V. D. Luedders, Research Agronomist
E. R. Smith, Agric. Res. Technician

*Full-time state employee.

COLLABORATORS

Delaware Agricultural Experiment Station
Agronomy and Engineering (Agr) Department: R. H. Cole

Illinois Agricultural Experiment Station
Agronomy Department: H. H. Hadley
J. L. Cartter
Food Technology Department: R. T. Milner

Iowa Agricultural Experiment Station
Agronomy Department: C. R. Weber

Kansas Agricultural Experiment Station
Agronomy Department: E. L. Mader

Maryland Agricultural Experiment Station
Agronomy Department: E. H. Beyer

Michigan Agricultural Experiment Station
Crop Science Department: S. C. Hildebrand

Minnesota Agricultural Experiment Station
Agronomy and Plant Genetics Department: R. L. Cooper
H. W. Johnson
J. W. Lambert
Plant Pathology and Physiology Department: B. W. Kennedy

Missouri Agricultural Experiment Station
Field Crops Department: E. L. Pinnell

Nebraska Agricultural Experiment Station
Agronomy Department: J. H. Williams

North Dakota Agricultural Experiment Station
Agronomy Department: R. E. Bothun

Ohio Agricultural Experiment Station
Agronomy Department: P. E. Smith
Botany and Plant Pathology Department: A. F. Schmitthenner

Purdue Agricultural Experiment Station
Agronomy Department: F. L. Patterson

South Dakota Agricultural Experiment Station
Agronomy Department: A. O. Lunden

Wisconsin Agricultural Experiment Station
Agronomy Department: J. H. Torrie

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, five other states and two provinces in Canada are also cooperating informally in the Laboratory research program directed toward the breeding of better varieties of soybeans.

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. A test is conducted for each of ten maturity groups. Test 00 includes the very early, Group 00 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. The maturity range for each maturity group relative to a selected reference variety is as follows:

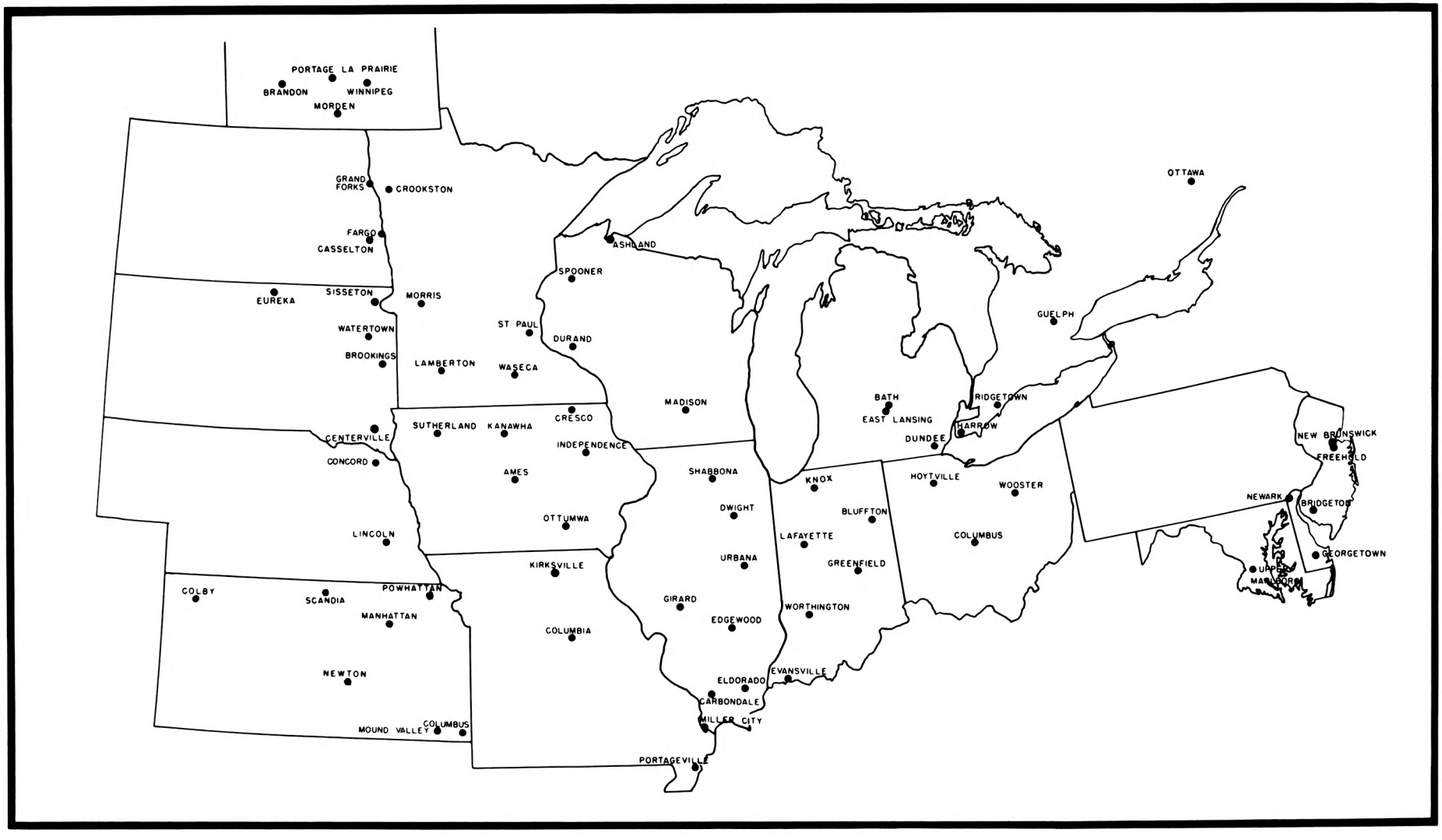
Maturity Group	Reference Variety	Range in days (expected means)
00	Acme	-2 to +6
0	Merit	-4 to +4
I	Chippewa 64	-2 to +6
II	Harosoy 63	-3 to +5
III	Shelby	-4 to +4
IV	Clark 63	-1 to +9

These intervals are based on long-time means over many locations. When using data from fewer environments, the interval between reference varieties may differ from that given above, and the division between maturity groups should be estimated proportionately.

The summary of performance of strains in Uniform Tests 00 through IV is included in Part I of this report. Information on Uniform Tests IV through VIII, which include strains adapted to the southern part of the United States, is contained in Part II, which is issued separately.

Uniform Tests at most locations in the North Central Region are grown in rod-row size plots, using four replications. The test strains are separated from other soybeans by border rows to provide equal competition. Since fewer locations are necessary to measure chemical composition with the same precision as yield, chemical data is obtained from about half of the test locations. Uniform Preliminary Tests are grown at a limited number of locations throughout the region to screen the experimental strains for maturity and general agronomic performance for one year before they are entered in the Uniform Tests. At most locations these tests are grown in rod-row plots with two replications.

Two new soybean varieties, developed through the cooperative breeding program, were released during the past year. Traverse, of Group 0 maturity, was released in Minnesota, Iowa, and North Dakota, and Amsoy, of Group II maturity, was released by the Experiment Stations in Iowa, Illinois, Indiana, Minnesota, Missouri, Nebraska, and South Dakota. A history of the development and test performance of each is included in this report.



MAP OF THE NORTH CENTRAL STATES SHOWING LOCATION OF THE COOPERATIVE UNIFORM SOYBEAN TESTS - 1965

UNIFORM TEST LOCATIONS - 1965

Location	Cooperator	Uniform Tests						Preliminary Tests			
		00	0	I	II	III	IV	00	I	II	III
Ottawa, Ont.	L. S. Donovan, Central Exp. Farm	*	*					*			
Guelph, Ont.	J. W. Tanner, Ont. Agr. Col.	*	*					*			
Ridgetown, Ont.	J. D. Curtis, W. Ont. Agr. School		x	x	x				x	x	
Harrow, Ont.	L. J. Anderson, C.D.A. Res. Sta.		x	x	x	x			x	x	
Adelphia, N. J.	J. C. Anderson, N. J. A.E.S.				*	*					
Monroeville, N.J.	J. C. Anderson, N. J. A.E.S.						*				
Newark, Del.	R. H. Cole, Del. A.E.S.					x	x				
Georgetown, Del.	Univ. Substation					x	x				x
Upper Marlboro, Md.	E. H. Beyer, Tobacco Research Farm						x				
Hoytville, Ohio	Northwestern Substa.			x	x	x			x	x	x
Wooster, Ohio	Ohio A.E.S.			x	x	x			x	x	x
Columbus, Ohio	P. E. Smith, Ohio State Univ.		x	x	x	x	x		x	x	x
East Lansing, Mich.	S. C. Hildebrand, Mich. A.E.S.	x	x	x	*			x	x	*	
Dundee, Mich.	Russell P. Houpt & Sons			x	x						
Knox, Indiana	Frank Pulver			x	x					x	
Bluffton, Ind.	Gerald Bayless				x	x					
Lafayette, Ind.	O. W. Luetkemeier, Purdue A.E.S.			x	x	x				x	x
Greenfield, Ind.	Mrs. R. Roney				x	x					
Worthington, Ind.	Frederic Sloan				x	x	x				x
Evansville, Ind.	Bernard Wagner					x	x				
Ashland, Wis.	M. L. Jones, Ashland Exp. Farm	x						x			
Spooner, Wis.	C. O. Rydberg, Spooner Exp. Farm		x								
Durand, Wis.	Anton Sam		x	x							
Madison, Wis.	J. H. Torrie, Wis. A.E.S.			x	x				x	x	
Shabbona, Ill.	R. R. Bell, N. Ill. Agron. Res. Center			x	x				x		
Dwight, Ill.	Harry Henderson			x	x					x	
Urbana, Ill.	C. H. Farnham, Ill. A.E.S.				x	x	x			x	x
Girard, Ill.	Lloyd Brothers				x	x	x				x
Edgewood, Ill.	John Wilson				x	x	x				
Eldorado, Ill.	Marshall Grisham				x	x	x				
Carbondale, Ill.	D. R. Browning, Southern Ill. U.				x	x	x				
Miller City, Ill.	M. B. Patton						x				
Crookston, Minn.	F. K. Johnson	x	x								
Morris, Minn.	R. L. Thompson		x								
St. Paul, Minn.	J. W. Lambert, Univ. of Minn.	x	x	x				x			
Lamberton, Minn.	W. W. Nelson			x	x						
Waseca, Minn.	J. R. Thompson			x	x				x		
Cresco, Ia.	Howard Co. Exp. Farm			x							
Sutherland, Ia.	Galva-Primghar Exp. Farm				x						
Kanawha, Ia.	Northern Iowa Exp. Farm			x	x				x	x	
Independence, Ia.	Carrington-Clyde Exp. Farm				x						
Ames, Ia.	Iowa Agr. Exp. Sta.				x	x				x	x
Ottumwa, Ia.	A. E. Newquist					x					x
Kirksville, Mo.	Earl Shockey				x	x				x	x
Columbia, Mo.	Eldon Smith, Mo. Agr. Exp. Sta.				x	x	x			x	x

UNIFORM TEST LOCATIONS - 1965 (Continued)

Location	Cooperator	Uniform Tests						Preliminary Tests			
		00	0	I	II	III	IV	00	I	II	III
Portageville, Mo.	Norman Brown, Mo. A.E.S.					*	x				
Portage la Prairie, Man.	Morden Exp. Farm	x						x			
Winnipeg, Man.	B. R. Stefansson, Univ. of Man.	x						x			
Brandon, Man.	H. Gross, Exp. Farm	x									
Morden, Man.	John Giesbrecht, Morden Exp. Farm	x						x			
Casselton, N. D.	R. E. Bothun		x								
Fargo, N. D.	R. E. Bothun, State Univ. Sta.	*	*					x			
Eureka, S. D.	S. D. North Central Substa.			x					x		
Sisseton, S. D.	A. O. Lunden		x								
Watertown, S. D.	S. D. Agr. Exp. Sta.			x					x		
Brookings, S. D.	A. O. Lunden, S. D. A.E.S.			x	x				x	x	
Centerville, S. D.	S. D. Agr. Exp. Sta.				x	x				x	x
Concord, Nebr.	J. H. Williams, Nebr. A.E.S.				*					*	
Lincoln, Nebr.	J. H. Williams, Nebr. A.E.S.				x	x				x	x
Scandia, Kans.	Kans. Agr. Exp. Sta.					x	x				
Powhattan, Kans.	Kans. Agr. Exp. Sta.					x	x				x
Colby, Kans.	John Lawless, Colby Br. Exp. Sta.					x	x				
Manhattan, Kans.	E. L. Mader, Kans. A.E.S.					x	x				x
Newton, Kans.	Kans. Agr. Exp. Sta.					x	x				
Mound Valley, Kans.	Verlin H. Peterson, Branch Exp. Sta.					x	x				
Columbus, Kans.	Verlin H. Peterson, Columbus Exp. Field					*	*				
Hotchkiss, Colo.	John C. Hoff			*							
Fruita, Colo.	John C. Hoff					*					
Number of locations with data		8	11	21	30	28	20	7	13	17	16

*Tests planted but failed to provide data.

METHODS

Most Uniform and Preliminary Tests are planted in replicated single rod-row plots with four replications for the Uniform Tests and two replications for the Preliminary Tests. At some locations where growth is heavy or where rows are closely spaced (e.g., 30"), border rows are used between different varieties or double rod-row plots with 3 replications are used. Usually 18 to 20 feet of row is planted and only 16 to 17 feet harvested. Seeds are packeted at a rate of 200 viable seeds per packet.

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: Test 00, Acme; Test 0, Merit; Test I, Chippewa 64; Test II, Harosoy 63; Test III, Shelby; and Test IV, Clark 63.

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

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

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

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

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

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

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

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

Calculating Summary Means. In cases where the lodging and seed quality notes are all the same at a location, indicating no expression of strain differences, these locations are not included in the mean for these traits. Where the C.V. of yield is greater than 20% at a location or where yields are unusually low or variable, 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. Disease reaction is scored from 1 to

5. The state where the test was made is identified in the column heading, and a small letter "a" or "n" under the state signifies artificial or natural infection. For diseases where reaction is clearcut, strains are not retested each year and the reaction is given by letter instead of number, R signifies resistant, S stands for susceptible, and I for intermediate. Seg. indicates that a strain includes both resistant and susceptible plants.

Shattering scores are based on estimates of the percent of open pods as follows:

1 - No shattering
2 - 1 to 10% shattered
3 - 10 to 25% shattered
4 - 25 to 50% shattered
5 - Over 50% shattered

Testing History. The number of years in Uniform Test given in this table includes the current year's test and excludes years in Preliminary Tests or Uniform Tests of another group. The previous regional test is abbreviated: U.T. 0 for Uniform Test 0, P.T. III for Uniform Preliminary Test III, etc., and only the most recent previous test is listed. The year(s) are listed only if the previous test did not immediately precede its entry in this test or if the strain was in the previous test for more than one year. Testing of similar ancestral strains is stated in footnotes.

Descriptive Traits are abbreviated as follows:

Flower color: P = purple, W = white
Pubescence color: T = tawny, G = gray, Lt = light tawny
Pod color: Br = brown, T = tan
Seed coat luster: D = dull, S = shiny
Seed coat color: Y = yellow, G = gray, Lg = light gray
Hilum color: G = gray, Lg = light gray, T = tan, Y = yellow, Bl = black, Ib = imperfect black, Br = brown, Bf = buff, Lbf = light buff

Strain Designation. To insure distinct designations for unreleased, experimental strains and to indicate the state of origin, 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.

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

UNIFORM TEST 00, 1965

Strain	Originating Agency	Origin	Generation Composited
Acme	Central Exp. Farm, Ottawa, Ont.	Sel. from Pagoda	
Flambeau	Wis. Agr. Exp. Sta.	Introduction from Russia	
Portage	Univ. of Manitoba, Winnipeg, Man.	Acme x Comet	F_5
CM1	Canada Dept. of Agr., Morden, Man.	Crest x L48-7289	F_5
M384	Minn. A.E.S. & U.S.R.S.L.	Renville x Capital	F_5
M424	Minn. A.E.S. & U.S.R.S.L.	Acme x Hardome	F_5
M425	Minn. A.E.S. & U.S.R.S.L.	Acme x Chippewa	F_5
M431	Minn. A.E.S. & U.S.R.S.L.	Grant x Acme	F_5
M433	Minn. A.E.S. & U.S.R.S.L.	Acme x Chippewa	F_5
057-2921	Central Exp. Farm, Ottawa, Ont.	Blackhawk x Capital	F_7
057-2921-M	Central Exp. Farm, Ottawa, Ont.	Minn. Breeder Seed of 057-2921	F_7
057-2921-0	Central Exp. Farm, Ottawa, Ont.	Ottawa Breeder Seed of 057-2921	F_7
060-3396	Central Exp. Farm, Ottawa, Ont.	Sel. from P.I. 180.501	
UM14-I	Univ. of Manitoba, Winnipeg, Man.	052-903 x Flambeau	F_5
UM14-P	Univ. of Manitoba, Winnipeg, Man.	052-903 x Flambeau	F_5
UM15	Univ. of Manitoba, Winnipeg, Man.	052-903 x Flambeau	F_5

Identification of Parent Strains

L48-7289 Sel. from Seneca x Richland, in Uniform Test II in 1950-51.

052-903 Sel. 753-1 by Sven A. Holmberg, Norrkoping, Sweden; same as P.I. 194.654.

P.I. 180.501 Sel. made in Germany from Strain 238 (of Manchurian origin) x P.I. 54.616. P.I. 54.616 was introduced to the U. S. in 1921 from Kung-chuling, Chekiang Province, China, through B. W. Skvortzow, Harbin, Manchuria.

Despite a short and cool growing season this year, the later Test 00 strains, those bordering on Group 0 maturity, had the highest average yield in the test. Two of these strains, which are similar to Flambeau in maturity, are included in the three-year summaries in Tables 8 and 9. Both of these, 057-2921 and M384, are appreciably better in lodging resistance and oil percentage of the seed. 057-2921 has the desirable combination of tallness with lodging resistance. Yield appears to be similar to Flambeau for M384 and perhaps slightly lower for 057-2921, although a four-year mean shows less difference, since 1962 was very favorable for 057-2921. The strains designated 057-2921-M and 057-2921-0 are purified seed lots of 057-2921 selected to eliminate the purple-flowered plants and should be similar to 057-2921 in performance.

UM14 (represented by two substrains this year) and UM15 are several days earlier than Flambeau and did not yield quite as well this year although they had outyielded it last year. The two substrains of UM14 performed similarly, and the 1.1

bushel mean yield difference favoring UM14-I, with imperfect hilum abscission, would not be statistically significant with only six test locations.

Table 1. Regional testing history and descriptive data for the strains in Uniform Test 00, 1965.

Strain	Years in Uniform Test 00	Previous Regional Test	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering*
Acme	8	None	P	G	Br	S	Y	Y	4.5
Flambeau	8	43-56 U.T. 0	P	T	Br	S	Y	Bl	2.5
Portage	6	P.T. 00	P	G	Br	D+S	Y	Y	5.0
CM1	1	P.T. 00	P	G	Br	D	Y	G	3.5
M384	3	P.T. 00	W	G	Br	S	Y	Y	2.0
M424	1	P.T. 00	P	G	Br	S	Y	Y	2.5
M425	1	P.T. 00	P	G	Br	S	Y	Lg	2.5
M431	1	P.T. 00	W	Lt	Br	S	Y	Y	2.0
M433	1	P.T. 00	P	T	Br	S	Y	Y	2.0
057-2921	4	60-61 U.T. 0	P+W	G	Br	D	Y	Y	2.0
057-2921-M	1		W	G	Br	D	Y	Y	2.0
057-2921-0	1		W	G	Br	D	Y	Y	2.0
060-3396	1	P.T. 00	P	T	Br	S	Y	Br	2.0
UM14-I	1	UM14 - 64 U.T. 00	P	T	Br	S	Y	Bl**	2.0
UM14-P	1	UM14 - 64 U.T. 00	P	T	Br	S	Y	Bl	2.5
UM15	2	P.T. 00	P	T	Br	S	Y	Bl	2.0

*Average score 1 month after maturity of 2 replications at Urbana, Illinois, planted May 11.
**Hilum with imperfect abscission.

Table 2. Summary of data for Uniform Test 00, 1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	6	6	3	5	6	6	6	5	5
Acme	24.9	16	0	1.6	26	2.3	16.4	40.8	18.8
Flambeau	29.5	1	+9.3	3.8	31	2.9	15.4	40.9	18.0
Portage	26.0	13	+0.3	1.5	27	2.6	16.8	39.4	19.1
CM1	27.2	7	+5.7	1.6	30	3.3	14.7	37.9	19.5
M384	28.2	2	+9.7	2.5	29	3.6	13.8	38.9	19.8
M424	27.2	7	+3.7	2.5	29	2.5	15.1	39.0	19.9
M425	26.6	10	+3.7	2.3	28	2.2	14.5	39.6	19.0
M431	25.7	15	+4.3	2.6	25	2.5	16.3	39.1	18.5
M433	26.1	12	+2.3	1.9	28	2.8	13.3	40.8	18.3
057-2921	28.0	4	+9.7	1.9	31	2.9	12.7	39.2	19.0
057-2921-M	27.0	9	+9.7	1.9	31	2.8	12.6	39.0	18.8
057-2921-0	28.2	2	+9.0	1.9	31	2.6	12.2	38.6	19.3
060-3396	25.8	14	+7.3	2.7	27	2.9	14.7	39.3	19.7
UM14-I	27.6	6	+3.7	2.1	27	2.8	18.1	40.1	19.5
UM14-P	26.5	11	+4.7	2.4	27	2.7	17.0	40.9	19.5
UM15	27.7	5	+5.7	2.5	28	2.9	16.9	39.5	19.5

[1]Days earlier (-) or later (+) than Acme which matured September 15, 119 days after planting.

Table 3. Disease data for Uniform Test 00, 1965.

Strain	Bacterial Blight			Bacterial Pustule	Brown Stem Rot	Frogeye Race 2	Phytophthora Rot
	Ill.	Ia.	Minn.	Ia.	Ill.	Ind.	Ind.
	a[1]	a	n[1]	a	n	a	a
Acme	4	4	3.5	3	2	S	Seg.
Flambeau	2	3	2.0	3	2	S	S
Portage	2	5	2.5	4	2	S	S
CM1	3	3	2.5	4	2	S	Seg.
M384	2	3	2.5	4	2	S	S
M424	5	4	3.5	4	2	S	S
M425	4	5	2.5	3	2	S	S
M431	3	4	3.0	4	2	S	S
M433	4	4	2.5	4	2	S	S
057-2921	3	3	2.0	3	2	S	R
057-2921-M	3	3	2.5	4	2	S	R
057-2921-0	3	3	3.0	3	2	S	R
060-3396	4	3	3.5	4	2	S	S
UM14-I	3	3	3.0	4	2	S	--
UM14-P	3	4	2.5	4	2	S	--
UM15	3	4	2.5	4	2	S	R

[1]a = artificial inoculation; n = natural infection.

Table 4. Yield and yield rank for Uniform Test 00, 1965.

Strain	Mean of 6 Tests	East Lansing Mich.	Ashland Wis.	Crookston Minn.	St. Paul Minn.	Portage la Prairie Man. *	Winnipeg Man. *	Brandon Man.	Morden Man.
Acme	24.9	18.1	22.7	17.7	32.8	23.3	19.8	41.5	16.7
Flambeau	29.5	18.7	13.6	25.1	45.3	5.9	23.1	52.7	21.4
Portage	26.0	18.7	22.9	15.4	33.3	22.8	17.2	46.1	19.4
CM1	27.2	18.4	21.1	21.7	36.2	19.5	22.0	43.2	22.7
M384	28.2	22.4	10.0	23.7	41.7	8.6	18.7	46.5	24.9
M424	27.2	21.9	18.8	20.7	35.1	18.1	18.2	46.3	20.4
M425	26.6	19.6	21.0	17.6	39.0	21.4	19.6	43.5	18.9
M431	25.7	17.2	24.4	16.2	33.6	18.9	19.5	41.3	21.4
M433	26.1	17.0	20.8	17.9	36.8	23.9	19.8	45.1	18.7
057-2921	28.0	20.3	20.0	18.7	39.0	3.8	13.3	45.5	24.5
057-2921-M	27.0	19.1	17.2	21.1	36.3	4.3	14.8	45.1	23.4
057-2921-0	28.2	19.1	22.5	20.8	40.5	8.8	10.8	47.7	18.4
060-3396	25.8	22.2	19.2	19.3	36.1	11.2	5.1	38.2	19.9
UM14-I	27.6	16.3	26.3	17.2	36.5	20.7	18.4	48.0	21.0
UM14-P	26.5	15.6	26.7	18.2	35.8	22.3	19.6	39.9	22.7
UM15	27.7	18.7	25.4	18.1	38.0	17.3	21.2	43.7	22.3
Coef. of Var. (%)		11.3	8.0	12.9	6.8	10.4	16.8	--	10.2
L.S.D. (5%)		3.0	2.4	3.5	3.6	2.3	4.2	--	3.1
Row Spacing (In.)		28	24	24	36	36	24	36	36
	Yield Rank								
Acme	16	12	6	12	16	2	4	13	16
Flambeau	1	8	15	1	1	14	1	1	7
Portage	13	8	5	16	15	3	12	6	12
CM1	7	11	8	3	10	7	2	12	4
M384	2	1	16	2	2	13	9	4	1
M424	7	3	13	6	13	9	11	5	10
M425	10	5	9	13	4	5	6	11	13
M431	15	13	4	15	14	8	8	14	7
M433	12	14	10	11	7	1	4	8	14
057-2921	4	4	11	8	4	16	14	7	2
057-2921-M	9	6	14	4	9	15	13	8	3
057-2921-0	2	6	7	5	3	12	15	3	15
060-3396	14	2	12	7	11	11	16	16	11
UM14-I	6	15	2	14	8	6	10	2	9
UM14-P	11	16	1	9	12	4	6	15	4
UM15	5	8	3	10	6	10	3	10	6

*Not included in the mean.

Table 5. Maturity, days earlier (-) or later (+) than Acme, and lodging for Uniform Test 00, 1965.

Strain	Mean of 3 Tests	East Lansing Mich.	Ashland Wis.[1] *	Crookston Minn.	St. Paul Minn.[1] *	Portage la Prairie Man.[1] *	Winnipeg Man.[1] *	Brandon Man. *	Morden Man.
Acme	0	0	0	0			0		0
Flambeau	+9.3	+2	--	+12			--		+14
Portage	+0.3	0	+9	+ 1			+1		0
CM1	+5.7	0	--	+ 8			+4		+ 9
M384	+9.7	+4	--	+10			--		+15
M424	+3.7	+2	--	+ 2			+2		+ 7
M425	+3.7	+2	--	+ 4			+2		+ 5
M431	+4.3	-2	--	+ 5			0		+10
M433	+2.3	+1	--	+ 4			0		+ 2
057-2921	+9.7	+2	--	+12			--		+15
057-2921-M	+9.7	+2	--	+12			--		+15
057-2921-0	+9.0	+1	--	+12			--		+14
060-3396	+7.3	+4	--	+10			--		+ 8
UM14-I	+3.7	-2	+8	+ 5			--		+ 8
UM14-P	+4.7	+1	+4	+ 6			--		+ 7
UM15	+5.7	+2	+7	+ 5			+7		+10
Date planted	5-19	5-24	6-2	5-20	5-22	6-4	5-31	5-12	5-13
Acme matured	9-15	9-15	9-16	9-18	9-12	--	9-18	--	9-11
Days to mature	119	114	106	121	113	--	110	--	121
	Mean of 5 Tests	Lodging							
Acme	1.6	1.0	1.0	1.0	3.5	3.0 *	1.0 *		1.5
Flambeau	3.8	2.0	4.8	2.5	4.5	5.0	1.0		5.0
Portage	1.5	1.0	1.0	1.0	2.5	3.0	1.0		2.0
CM1	1.6	1.0	1.3	1.2	2.5	3.0	1.0		2.0
M384	2.5	2.0	2.5	2.0	3.0	3.0	1.0		3.0
M424	2.5	2.0	3.3	1.2	4.0	3.0	1.0		2.0
M425	2.3	1.5	3.0	1.5	2.5	4.0	1.0		3.0
M431	2.6	1.5	2.5	1.8	3.0	4.0	1.0		4.0
M433	1.9	1.0	2.3	1.2	3.0	3.0	1.0		2.0
057-2921	1.9	2.0	1.0	1.2	2.5	3.0	1.0		3.0
057-2921-M	1.9	1.5	1.0	1.5	2.5	3.0	1.0		3.0
057-2921-0	1.9	1.5	1.0	1.5	2.5	4.0	1.0		3.0
060-3396	2.7	2.0	3.8	1.2	4.5	4.0	1.0		2.0
UM14-I	2.1	1.0	2.0	1.2	3.5	4.0	1.0		3.0
UM14-P	2.4	1.5	2.0	1.5	3.5	4.0	1.0		3.5
UM15	2.5	2.0	1.8	1.5	3.5	4.0	1.0		3.5

*Not included in the mean.
[1]Missing dates due to frost before maturity.

Table 6. Plant height and seed quality for Uniform Test 00, 1965.

Strain	Mean of 6 Tests	East Lansing Mich.	Ashland Wis.	Crookston Minn.	St. Paul Minn.	Portage la Prairie Man. *	Winnipeg Man. *	Brandon Man.	Morden Man.
Acme	26	20	27	22	30	33	24	24	33
Flambeau	31	21	32	28	35	33	28	30	38
Portage	27	19	26	22	33	31	25	27	33
CM1	30	22	32	27	35	34	29	28	36
M384	29	20	31	25	29	32	27	31	35
M424	29	22	31	25	33	33	26	26	35
M425	28	20	30	23	31	31	24	27	34
M431	25	18	26	22	28	31	22	24	32
M433	28	20	30	23	31	32	25	27	35
057-2921	31	21	33	26	37	36	30	33	36
057-2921-M	31	21	32	27	38	36	31	32	36
057-2921-0	31	21	32	26	37	35	31	31	37
060-3396	27	20	28	23	30	32	25	26	36
UM14-I	27	18	28	22	31	30	25	27	34
UM14-P	27	19	29	22	29	30	25	26	35
UM15	28	21	30	24	31	31	26	27	36

	Mean of 6 Tests	Seed Quality						
						*		
Acme	2.3	2.0	3.0	2.2	2.8	2.0	2.0	2.0
Flambeau	2.9	2.0	4.0	2.5	3.0	3.7	4.0	2.0
Portage	2.6	2.0	3.0	2.5	2.8	3.0	3.0	2.0
CM1	3.3	3.0	5.0	2.5	3.5	2.7	3.0	3.0
M384	3.6	3.0	4.0	2.5	3.8	4.0	5.0	3.0
M424	2.5	2.0	3.0	2.2	3.5	3.0	2.0	2.0
M425	2.2	1.0	3.0	2.2	3.0	1.7	2.0	2.0
M431	2.5	2.0	3.0	2.2	2.8	2.7	3.0	2.0
M433	2.8	2.0	4.0	2.5	3.2	2.0	3.0	2.0
057-2921	2.9	2.0	3.0	2.5	3.0	4.3	4.0	3.0
057-2921-M	2.8	2.0	3.0	2.5	2.5	5.0	4.0	3.0
057-2921-0	2.6	1.0	3.0	2.2	3.2	5.0	4.0	2.0
060-3396	2.9	3.0	3.0	2.8	2.5	2.7	4.0	2.0
UM14-I	2.8	3.0	4.0	1.8	2.8	1.7	3.0	2.0
UM14-P	2.7	3.0	3.0	1.8	3.2	1.7	3.0	2.0
UM15	2.9	2.0	5.0	2.2	3.2	1.7	3.0	2.0

*Not included in the mean.

Table 7. Percentages of protein and oil for Uniform Test 00, 1965.

Strain	Mean of 5 Tests	East Lansing Mich.	Ashland Wis.	Crookston Minn.	Brandon Man.	Morden Man.
Acme	40.8	41.9	39.3	40.3	39.0	43.4
Flambeau	40.9	42.9	39.2	39.5	40.5	42.4
Portage	39.4	41.1	37.5	39.4	37.4	41.5
CM1	37.9	39.6	36.5	38.0	36.0	39.2
M384	38.9	41.6	38.6	36.8	37.4	40.3
M424	39.0	40.2	38.8	38.8	37.9	39.2
M425	39.6	40.5	38.9	39.1	38.1	41.5
M431	39.1	40.4	37.8	38.0	38.5	40.6
M433	40.8	40.7	40.4	40.1	38.9	44.0
057-2921	39.2	40.0	39.3	38.1	37.4	41.2
057-2921-M	39.0	40.7	37.6	38.1	37.8	40.9
057-2921-0	38.6	40.0	38.8	38.1	35.1	41.1
060-3396	39.3	41.3	38.4	38.9	36.5	41.2
UM14-I	40.1	41.4	39.6	39.0	39.0	41.6
UM14-P	40.9	43.1	39.7	40.6	38.9	42.3
UM15	39.5	42.7	37.7	37.4	37.3	42.6
	Mean of 5 Tests	Percentage of Oil				
Acme	18.8	19.9	18.1	19.4	18.8	17.9
Flambeau	18.0	19.8	16.7	18.6	17.1	17.6
Portage	19.1	19.8	18.4	19.1	19.7	18.6
CM1	19.5	21.2	17.9	19.4	19.5	19.5
M384	19.8	21.6	18.0	20.8	19.3	19.1
M424	19.9	21.4	18.9	20.7	19.6	19.1
M425	19.0	20.3	18.4	19.5	19.0	17.6
M431	18.5	19.8	17.4	19.9	18.5	16.8
M433	18.3	19.6	17.4	19.4	18.5	16.4
057-2921	19.0	20.4	18.1	20.1	18.2	18.2
057-2921-M	18.8	20.2	17.4	19.8	18.5	18.3
057-2921-0	19.3	21.2	17.7	19.9	19.0	18.9
060-3396	19.7	20.7	19.7	19.8	19.5	18.7
UM14-I	19.5	19.4	18.5	20.7	19.6	19.1
UM14-P	19.5	19.7	18.5	20.6	19.3	19.5
UM15	19.5	19.9	19.2	20.1	19.6	18.8

Table 8. Three-year summary of data for Uniform Test 00, 1963-1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	25	25	17	21	24	21	21	17	17
Acme	25.1	5	0	1.5	27	2.4	17.2	39.2	19.0
Flambeau	28.7	2	+6.6	3.2	30	2.8	15.7	39.8	18.5
Portage	25.8	4	+0.2	1.4	27	2.6	16.9	38.2	19.5
M384	28.8	1	+7.0	2.1	28	3.1	14.1	38.2	20.1
057-2921	27.6	3	+7.3	1.8	31	2.7	12.7	38.1	19.8

[1]Days earlier (-) or later (+) than Acme which matured September 11, 112 days after planting.

Table 9. Three-year summary of yield and yield rank for Uniform Test 00, 1963-1965.

Strain	Mean of 25 Tests	Ottawa Ont.	Guelph Ont.	Bath Mich.	East Lansing Mich.	Ashland Wis.	Crookston Minn.	St. Paul Minn.	Portage la Prairie Man.	Winnipeg Man.	Brandon Man.	Morden Man.
Years Tested		1963-1964	1963-1964	1963-1964	1963-1965	1963-1965	1963-1965	1963-1965	1963, 1965	1963-1965	1963-1965	1963-1965
Acme	25.1	31.0	35.4	17.6	23.2	26.9	19.4	23.7	26.5	21.2	31.0	21.0
Flambeau	28.7	34.2	34.9	26.5	25.5	23.1	25.5	28.4	20.1	25.2	39.3	23.5
Portage	25.8	27.3	33.1	20.7	25.7	26.5	19.8	24.2	26.3	21.5	34.2	23.2
M384	28.8	33.8	37.7	20.6	26.7	24.5	24.3	27.8	20.5	22.2	39.0	26.9
057-2921	27.6	30.8	31.8	17.4	26.9	24.3	22.1	25.6	19.7	18.5	39.1	25.8
						Yield Rank						
Acme		5	3	2	4	5	1	5	5	1	4	5	5
Flambeau		2	1	3	1	4	5	1	1	4	1	1	3
Portage		4	5	4	2	3	2	4	4	2	3	4	4
M384		1	2	1	3	2	3	2	2	3	2	3	1
057-2921		3	4	5	5	1	4	3	3	5	5	2	2

UNIFORM PRELIMINARY TEST 00, 1965

Strain	Originating Agency	Origin	Generation Composited
Acme	Central Exp. Farm, Ottawa, Ont.	Sel. from Pagoda	
Flambeau	Wis. Agr. Exp. Sta.	Introduction from Russia	
CM6	Canada Dept. of Agr., Morden, Man.	Acme x L48-7289	F_5
CM7	Canada Dept. of Agr., Morden, Man.	Acme x L48-7289	F_5
CM8	Canada Dept. of Agr., Morden, Man.	Acme x Monroe	F_5
CM9	Canada Dept. of Agr., Morden, Man.	Acme x Monroe	F_5
CM10	Canada Dept. of Agr., Morden, Man.	Acme x Monroe	F_5
CM11	Canada Dept. of Agr., Morden, Man.	Acme x Monroe	F_5
M55-30	Minn. A.E.S. & U.S.R.S.L.	Acme x Chippewa	F_5
M55-33	Minn. A.E.S. & U.S.R.S.L.	Acme x Chippewa	F_5
M55-134	Minn. A.E.S. & U.S.R.S.L.	Pagoda 25 x Chippewa	F_5
UM18	Univ. of Manitoba, Winnipeg, Man.	052-903 x Flambeau	F_7
UM19	Univ. of Manitoba, Winnipeg, Man.	Crest x Flambeau	F_7

Identification of Parent Strains

L48-7289	Sel. from Seneca x Richland, in Uniform Test II in 1950-51.
052-903	Sel. 753-1 by Sven A. Holmberg, Norrkoping, Sweden; same as P.I. 194.654.

Several of the eleven experimental strains in this test yielded distinctly better than the check and all were superior to Flambeau in lodging resistance. Most of them were higher than Flambeau or Acme in oil or protein content, or both. The four later strains, M55-30, M55-134, CM9, and M55-33, ranked 1 to 4 in average yield. Among the early strains, UM19 was most promising, with an average yield equal to Flambeau and maturing almost as early as Acme.

Table 10. Descriptive data for the strains in Uniform Preliminary Test 00, 1965.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering*
Acme	P	G	Br	S	Y	Y	3.5
Flambeau	P	T	Br	S	Y	Bl	2.0
CM6	P	G	Br	D	Y	Y	2.0
CM7	P	G	Br	S	Y	Ib	2.0
CM8	W	G	Br	S	Y	Y	2.5
CM9	P	G	Br	S	Y	G+Bf+Ib+Y	2.5
CM10	W	G	Br	D	Y	Y	2.5
CM11	P	G	Br	D	Y	Y	2.0
M55-30	P	T	Br	S	Y	Br	1.5
M55-33	P	G	Br	S	Y	Lg	2.0
M55-134	P	G	Br	D+S	Y	G+Ib+Y	1.0
UM18	P	T	Br	S	Y	Br[2]	2.0
UM19	P	G[1]	Br	S	Y	G	2.5

*Average score, 1 month after maturity, of two replications at Urbana, Illinois, planted May 11.
[1]Appressed pubescence.
[2]Hilum with imperfect abscission.

Table 11. Summary of data for Uniform Preliminary Test 00, 1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	6	6	2	5	6	4	4	5	5
Acme	22.6	10	0	2.2	29	2.4	17.2	39.5	19.0
Flambeau	25.9	6	+8.0	4.2	33	2.8	16.2	40.3	18.5
CM6	22.4	11	+4.5	1.8	31	3.3	16.3	38.8	20.1
CM7	23.5	9	+2.0	1.8	33	2.3	15.6	39.2	20.1
CM8	23.6	8	+3.5	2.1	33	2.5	15.5	40.5	19.1
CM9	26.5	3	+6.0	2.4	32	2.9	17.3	39.5	19.9
CM10	21.7	12	+3.0	3.2	32	3.1	14.7	40.3	18.8
CM11	20.6	13	+3.5	2.7	32	3.5	17.5	41.5	19.2
M55-30	28.5	1	+6.0	3.0	32	2.1	16.3	39.0	20.2
M55-33	26.3	4	+7.0	2.2	30	2.4	17.2	41.0	18.9
M55-134	27.0	2	+8.5	2.7	31	2.9	16.2	41.0	19.4
UM18	24.4	7	+1.0	2.4	27	2.8	19.6	41.2	19.7
UM19	26.0	5	+1.5	2.7	31	3.0	17.0	41.9	19.4

[1]Days earlier (-) or later (+) than Acme which matured September 19, 118 days after planting.

Table 12. Disease data for Uniform Preliminary Test 00, 1965.

Strain	Bacterial Blight		Brown Stem Rot	Frogeye Race 2	Phytophthora Rot
	Ill.	Minn.	Ill.	Ind.	Ind.
	a[1]	n[1]	n	a	a
Acme	4	3.5	2	S	Seg.
Flambeau	3	2.0	2	S	S
CM6	4	2.5	2	S	S
CM7	4	3.0	2	S	S
CM8	5	3.5	2	S	S
CM9	4	2.5	2	S	S
CM10	5	3.0	2	S	R
CM11	5	4.0	2	Seg.	R
M55-30	4	3.5	2	S	S
M55-33	4	3.0	2	S	S
M55-134	4	3.0	2	S	S
UM18	4	2.5	2	S	Seg.
UM19	4	3.0	2	S	S

[1]a = artificial inoculation; n = natural infection.

Table 13. Yield and yield rank for Uniform Preliminary Test 00, 1965.

Strain	Mean of 6 Tests	East Lansing Mich.	Ashland Wis.	St. Paul Minn.	Winnipeg Man.	Portage la Prairie Man. *	Morden Man.	Fargo N.D.
Acme	22.6	18.0	25.0	34.0	18.5	23.0	23.4	16.8
Flambeau	25.9	20.1	16.9	45.8	20.1	10.2	25.9	26.5
CM6	22.4	18.4	18.2	33.1	15.6	15.0	24.1	25.0
CM7	23.5	17.9	25.3	35.8	17.8	21.4	22.9	21.3
CM8	23.6	19.8	22.6	32.3	19.6	22.6	26.9	20.4
CM9	26.5	19.4	22.5	37.8	23.0	21.2	29.5	26.7
CM10	21.7	19.8	18.2	26.8	19.2	16.0	28.3	18.1
CM11	20.6	17.0	19.5	31.0	16.5	21.4	22.3	17.0
M55-30	28.5	22.3	25.8	44.5	22.3	19.5	27.5	28.4
M55-33	26.3	23.6	21.4	33.1	20.0	19.0	33.8	25.8
M55-134	27.0	24.9	13.3	40.6	20.3	10.6	30.8	32.0
UM18	24.4	17.1	22.7	37.0	16.6	24.9	29.4	23.7
UM19	26.0	21.9	24.5	32.7	20.4	23.8	33.1	23.2
Coef. of Var. (%)		8.2	3.4	8.3	9.7	9.3	12.7	11.9
L.S.D. (5%)		1.6	1.6	6.5	4.1	3.9	N.S.	6.1
Row Spacing (In.)		28	24	36	24	36	36	20

	Yield Rank							
Acme	10	10	3	7	9	3	11	13
Flambeau	6	5	12	1	5	13	9	4
CM6	11	9	10	8	13	11	10	6
CM7	9	11	2	6	10	5	12	9
CM8	8	6	6	11	7	4	8	10
CM9	3	8	7	4	1	7	4	3
CM10	12	6	10	13	8	10	6	11
CM11	13	13	9	12	12	5	13	12
M55-30	1	3	1	2	2	8	7	2
M55-33	4	2	8	8	6	9	1	5
M55-134	2	1	13	3	4	12	3	1
UM18	7	12	5	5	11	1	5	7
UM19	5	4	4	10	3	2	2	8

*Not included in the mean.

Table 14. Maturity, days earlier (-) or later (+) than Acme, for Uniform Preliminary Test 00, 1965.

Strain	Mean of 2 Tests	East Lansing Mich.	Ashland Wis.[1]	St. Paul Minn.[1]	Winnipeg Man.[1]	Portage la Prairie Man.[1]	Morden Man.	Fargo N.D.
			*	*	*	*		*
Acme	0	0	0		0		0	
Flambeau	+8.0	+2	--		--		+14	
CM6	+4.5	+1	--		+6		+ 8	
CM7	+2.0	+1	+2		+5		+ 3	
CM8	+3.5	-2	+9		+3		+ 9	
CM9	+6.0	+1	--		+7		+11	
CM10	+3.0	0	--		+3		+ 6	
CM11	+3.5	+1	--		+3		+ 6	
M55-30	+6.0	+2	--		+1		+10	
M55-33	+7.0	+2	--		+1		+12	
M55-134	+8.5	+4	--		--		+13	
UM18	+1.0	-2	0		+2		+ 4	
UM19	+1.5	-2	+4		+2		+ 5	
Date planted	5-19	5-24	6-2	5-22	5-31	6-4	5-13	5-25
Acme matured	9-14	9-15	9-16	9-12	9-18	--	9-13	--
Days to mature	118	114	106	113	110	--	123	--

*Not included in the mean.
[1]Missing dates due to frost before maturity.

UNIFORM TEST O, 1965

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, Ont.	Blackhawk x Capital	F_8
Norchief	Wis. A.E.S. & U.S.R.S.L.	Hawkeye x Flambeau	F_4
Traverse (M417)	Minn. A.E.S. & U.S.R.S.L.	Lincoln x Mandarin (Ottawa)	F_5
M391	Minn. A.E.S. & U.S.R.S.L.	Capital x Renville	F_5
M391-1	Minn. A.E.S. & U.S.R.S.L.	Sel. from M391	
M393	Minn. A.E.S. & U.S.R.S.L.	Capital x Renville	F_5
M406	Minn. A.E.S. & U.S.R.S.L.	Harosoy x Norchief	F_5
M422	Minn. A.E.S. & U.S.R.S.L.	Renville x Capital	F_5
O-4323	Research Station, Harrow, Ont.	Capital x Hardome	F_7
OAC85	Ontario Agr. College, Guelph, Ont.	(Sel. from Lincoln x Flambeau) x Goldsoy	F_8
W1S-191	Wis. A.E.S. & U.S.R.S.L.	Norchief x Clark	F_7
W1S-294	Wis. A.E.S. & U.S.R.S.L.	Norchief x Harosoy	F_7

The five-year summaries in Tables 24 and 25 provide comparisons for O-4323 with the three check varieties. O-4323 yielded well for such an early variety, averaging above Norchief and equal to Merit, and it was the tallest variety in this test. It had a rather poor seed quality score but was distinctly higher in protein content.

Two-year summaries are presented in Tables 22 and 23 for this test since so many strains, including the newly released Traverse, have been in just two years. None of the strains yielded as well as Grant, on the average, but some of the early ones did as well as Merit, or slightly higher. Among the early strains, M406 had the highest yield.

Three strains were new to the test this year. M391-1 appears to differ significantly from M391, being earlier, more lodging resistant, slightly shorter, and having better seed quality. M393 performed well for its very early maturity but was quite short. OAC85 was also very early but yielded less.

TRAVERSE

Traverse was named, and publicity on it was released in April, 1965. The states of Minnesota, Iowa, and North Dakota shared in the initial release of seed. The variety traces to an F_4 plant selection from a cross of Lincoln x Mandarin (Ottawa). It is fairly similar in maturity, height, and yielding ability to the variety Grant and has somewhat better standing ability and higher oil content.

The following is an outline of its development:

1944 - Cross Lincoln x Mandarin (Ottawa) was made at Madison, Wisconsin.

1945, 46 - F_1 and F_2 were grown at Madison.

1947 F_3 - Bulked seed of F_2 plants were obtained by J. W. Lambert of the Minnesota Agricultural Experiment Station from J. H. Torrie of the Wisconsin station. F_3 bulk populations were grown in St. Paul, and plant selections were made on the basis of maturity adaptation.

1948 F_4 - Progenies of 210 F_3 plants were grown at two locations in Minnesota. 158 plants (1 - 3 plants from 117 rows) were selected.

1949 F_5 - Progenies of 158 F_4 plants were grown at St. Paul and Waseca. Thirteen progenies were selected for good plant vigor, lodging resistance, and seed quality, among them one designated II-44-91.

1950 F_6 - The six earliest of the thirteen lines were grown in replicated single rod-row plots at St. Paul and Morris along with 69 other entries (other lines in F_6 and check varieties). II-44-91 ranked 11th in mean yield.

1951 F_6 - II-44-91 retested in similar manner at the same two locations. Ranked 11th of 29.

1952 F_7 - II-44-91 tested in replicated 3-row plots at St. Paul, Morris, and Rosemount. Ranked 5th of 21.

1953 F_8 - II-44-91 retested in 3-row plots at Rosemount and Morris. Ranked 8th of 27. Seventy-five grams of seed placed in cold storage.

1960 F_9 - Seed renewed in observation row. About one pound of seed produced. Special interest at this time in varieties with yellow hilum.

1961 - Seed of II-44-91 increased to 30-40 pounds for use in testing. Nineteen typical plants selected to initiate purification program.

1962 - Nineteen progenies grown in 6-foot rows. These appeared uniform in plant and seed characters and the seed was bulked to form the basis of a purified increase. Testing resumed in Minnesota.

1963 - About 7 bushels of purified seed produced for testing and further increase. II-44-91 was designated M417 and entered in Uniform Test I. Extensive testing in Minnesota.

1963-64 - Fifty pounds of purified increase of M417 shipped to Santiago, Chile, for "off-season" increase. Fifteen bushels returned to Minnesota in May, 1964.

1964 - Seed of M417 increased by the Agronomy Seedstocks Organization, Minnesota Agricultural Experiment Station, under contract, to about 1,300 bushels. Continued regional testing, this time in Uniform Test 0 where it more properly belongs maturity-wise.

1965 - M417 named Traverse. Seed distributed to seedstocks organizations in Iowa and North Dakota and to Registered and Certified growers in Minnesota. Testing continued in Uniform Test 0.

Table 15. Regional testing history and descriptive data for the strains in Uniform Test 0, 1965.

Strain	Years in Uniform Test 0	Previous Regional Test	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color
Grant	16	P.T. 0	W	Lt	Br	S	Y	Bl
Merit	8	P.T. 0	W	G	Br	D	Y	Bf
Norchief	16	None	P	T	Br	S	Y	Bl
Traverse	2	'63 U.T. I	W	G	Br	S	Y	Y
M391	3	P.T. 0	P	T	Br	S	Y	Y
M391-1	1	None	P	T	Br	S	Y	Y
M393	1	P.T. 0	P	G	Br	S	Y	Y
M406	2	P.T. 0 & I	P	G	Br	D	Y	Y
M422	2	P.T. 00	W	G	Br	S	Y	Y
0-4323	5	P.T. 0	P	T	Br	S	Y	Y
OAC85	1	None	W	T	Br	S	Y	Y
W1S-191	2	P.T. 0	P	T	Br	D	G	Bl
W1S-294	2	P.T. 0	P	G	Br	D	Y	Y

Table 16. Summary of data for Uniform Test 0, 1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	10	10	7	7	10	8	6	6	6
Grant	31.1	1	+3.0	2.9	29	1.8	17.3	39.8	20.0
Merit	28.5	10	0	2.0	30	1.8	15.1	39.3	20.6
Norchief	28.1	13	-2.1	2.3	27	1.8	17.5	40.2	20.2
Traverse	30.6	4	+4.1	2.5	30	2.0	18.6	40.8	20.5
M391	30.7	3	+3.0	2.4	33	2.3	16.6	39.5	21.0
M391-1	30.8	2	+0.9	2.1	31	1.8	16.3	39.8	21.0
M393	29.1	7	-5.1	1.5	23	2.2	16.9	40.2	21.0
M406	30.5	5	+0.7	2.5	30	2.0	20.0	40.0	20.3
M422	28.4	11	-4.0	1.5	27	2.1	15.9	41.0	20.7
0-4323	29.1	7	-4.1	2.3	34	2.3	15.5	41.3	20.5
OAC85	28.3	12	-4.1	2.2	31	2.1	14.8	41.4	19.2
W1S-191	29.5	6	+3.0	2.0	29	1.7	17.3	41.1	20.3
W1S-294	28.8	9	-1.9	2.3	31	1.9	16.4	40.3	20.2

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

Table 17. Disease data for Uniform Test 0, 1965.

Strain	Bacterial Blight			Bacterial Pustule	Brown Stem Rot	Frogeye Race 2	Phytophthora Rot
	Ill.	Ia.	Minn.	Ia.	Ill.	Ind.	Ind.
	a[1]	a	n[1]	a	n	a	a
Grant	4	5	3.0	5	3	S	S
Merit	3	4	2.0	4	3	S	R
Norchief	3	3	2.0	3	3	S	S
Traverse	3	4	3.0	4	3	S	S
M391	3	3	2.0	3	3	S	S
M391-1	4	3	2.0	3	2	S	S
M393	4	4	2.0	4	2	S	S
M406	3	3	2.0	3	3	S	S
M422	3	3	2.0	3	3	S	S
O-4323	3	4	2.5	4	3	S	S
OAC85	3	4	2.5	4	2	S	S
W1S-191	4	3	2.0	3	3	S	S
W1S-294	3	3	2.5	4	3	S	S

[1]a = artificial inoculation; n = natural infection.

Table 18. Yield and yield rank for Uniform Test 0, 1965.

Strain	Mean of 10 Tests	Ridge-town Ont.	Harrow Ont.	Colum-bus Ohio	East Lansing Mich.	Spooner Wis.[1]
Grant	31.1	40.7	32.0	24.8	36.5	31.4
Merit	28.5	37.5	30.4	17.5	29.0	28.4
Norchief	28.1	36.9	27.8	14.9	28.7	32.4
Traverse	30.6	40.2	32.3	27.3	35.1	23.3
M391	30.7	39.7	31.9	22.1	33.9	27.0
M391-1	30.8	39.9	29.8	21.6	31.4	29.5
M393	29.1	38.4	24.8	13.8	27.5	31.9
M406	30.5	43.2	32.7	18.2	29.0	34.4
M422	28.4	39.1	25.6	13.9	26.9	32.8
0-4323	29.1	39.3	26.2	21.1	29.1	32.5
OAC85	28.3	36.3	27.5	17.1	26.3	32.0
W1S-191	29.5	40.1	30.2	21.8	32.8	27.1
W1S-294	28.8	39.3	29.7	20.4	30.2	26.9
Coef. of Var. (%)		4.3	12.6	14.5	6.8	9.0
L.S.D. (5%)		2.5	5.3	4.1	2.9	4.0
Row Spacing (In.)		24	40	28	28	36

	Yield Rank					
Grant	1	2	3	2	1	7
Merit	10	11	5	9	8	9
Norchief	13	12	9	11	10	4
Traverse	4	3	2	1	2	13
M391	3	6	4	3	3	11
M391-1	2	5	7	5	5	8
M393	7	10	13	13	11	6
M406	5	1	1	8	8	1
M422	11	9	12	12	12	2
0-4323	7	7	11	6	7	3
OAC85	12	13	10	10	13	5
W1S-191	6	4	6	4	4	10
W1S-294	9	7	8	7	6	12

*Not included in the mean.
[1]Irrigated.

Table 18. (Continued)

Strain	Durand Wis.	Crookston Minn. *	Morris Minn.	St. Paul Minn.	Casselton N.D.	Sisseton S.D.
Grant	17.0	18.0	34.6	39.7	31.1	22.9
Merit	14.4	18.7	33.2	39.1	32.5	22.7
Norchief	14.6	17.1	31.1	39.5	31.6	23.0
Traverse	15.9	18.8	36.7	39.9	31.1	23.7
M391	16.2	13.1	37.1	41.1	34.6	23.1
M391-1	15.3	17.4	36.4	44.0	37.5	22.7
M393	13.8	20.2	36.0	44.4	34.5	26.2
M406	16.6	15.0	37.0	39.5	31.5	23.3
M422	13.9	21.4	33.2	39.6	36.3	22.4
0-4323	13.9	17.7	32.9	37.3	34.0	24.7
OAC85	14.2	20.7	34.0	37.7	32.3	25.4
W1S-191	15.8	12.2	33.9	42.0	29.4	22.2
W1S-294	15.1	12.4	30.2	40.5	31.6	24.2
Coef. of Var. (%)	6.2	18.3	8.8	8.8	8.2	7.2
L.S.D. (5%)	1.3	4.5	4.3	5.1	3.6	2.4
Row Spacing (In.)	36	24	38	36	40	42

	Yield Rank					
Grant	1	6	6	7	11	9
Merit	9	5	9	11	6	10
Norchief	8	9	12	9	8	8
Traverse	4	4	3	6	11	5
M391	3	11	1	4	3	7
M391-1	6	8	4	2	1	10
M393	13	3	5	1	4	1
M406	2	10	2	9	10	6
M422	11	1	9	8	2	12
0-4323	11	7	11	13	5	3
OAC85	10	2	7	12	7	2
W1S-191	5	13	8	3	13	13
W1S-294	7	12	13	5	8	4

Table 19. Maturity, days earlier (-) or later (+) than Merit, and lodging for Uniform Test 0, 1965.

Strain	Mean of 7 Tests	Ridge-town Ont.	Harrow Ont.	Colum-bus Ohio	East Lansing Mich.	Spooner Wis.[1,2] *
Grant	+3.0	+ 3	+2	+6	+3	
Merit	0	0	0	0	0	
Norchief	-2.1	- 3	-2	-1	-3	
Traverse	+4.1	+ 4	+2	+6	+6	
M391	+3.0	+ 5	+4	+5	+4	
M391-1	+0.9	+ 2	+1	+1	+5	
M393	-5.1	- 9	-4	-2	-3	
M406	+0.7	0	+2	-1	+3	
M422	-4.0	- 8	-4	-1	+1	
O-4323	-4.1	- 9	-4	-2	-2	
OAC85	-4.1	-11	-5	-3	+2	
W1S-191	+3.0	+ 2	+2	+3	+4	
W1S-294	-1.9	- 5	-1	-1	-2	
Date planted	5-23	5-17	5-20	5-12	5-24	5-28
Merit matured	9-16	9-16	9-10	8-28	9-26	--
Days to mature	116	122	113	108	125	--
	Mean of 7 Tests	Lodging				
				*		
Grant	2.9	3.0	1.0	1.0	2.0	2.7
Merit	2.0	2.0	1.0	1.0	1.0	1.5
Norchief	2.3	3.0	1.0	1.0	1.3	2.0
Traverse	2.5	2.0	1.0	1.0	2.2	3.5
M391	2.4	3.0	1.0	1.0	1.9	2.0
M391-1	2.1	2.0	1.2	1.0	1.3	1.5
M393	1.5	1.0	1.0	1.0	1.0	1.0
M406	2.5	2.0	1.2	1.0	1.5	1.7
M422	1.5	1.0	1.0	1.0	1.0	1.0
O-4323	2.3	2.0	1.0	1.0	1.3	2.0
OAC85	2.2	2.0	1.2	1.0	1.1	1.2
W1S-191	2.0	2.0	1.0	1.0	1.8	1.5
W1S-294	2.3	2.0	1.0	1.0	1.0	2.0

*Not included in the mean.
[1]Irrigated.
[2]Missing dates due to frost before maturity.

Table 19. (Continued)

Strain	Durand Wis.	Crookston Minn.[2] *	Morris Minn.	St. Paul Minn.[2] *	Castleton N.D.[2] *	Sisseton S.D.
Grant	+4		+ 3			0
Merit	0		0			0
Norchief	0		- 5			-1
Traverse	+6		+ 4			+1
M391	+2		+ 2			-1
M391-1	0		- 3			0
M393	-7		- 9			-2
M406	+2		- 1			0
M422	-6		-10			0
0-4323	-5		- 8			+1
OAC85	-4		- 8			0
W1S-191	+5		+ 5			0
W1S-294	+1		- 4			-1
Date planted	6-7	5-20	5-19	5-22	5-19	5-31
Merit matured	9-17	--	9-19	--	--	9-27
Days to mature	102	--	123	--	--	119

	Lodging				
	*	*			
Grant	1.0	2.0	3.8	4.0	3.5
Merit	1.0	1.5	2.5	3.5	2.5
Norchief	1.0	1.0	2.5	3.5	2.5
Traverse	1.0	1.8	3.0	3.0	2.5
M391	1.0	1.2	3.8	3.5	1.8
M391-1	1.0	2.2	3.2	3.0	2.5
M393	1.0	1.5	2.5	2.0	2.0
M406	1.0	1.2	2.8	4.0	4.3
M422	1.0	1.5	2.8	2.0	1.8
0-4323	1.0	1.2	4.0	3.0	2.8
OAC85	1.0	1.8	3.5	3.5	2.8
W1S-191	1.0	2.2	3.0	2.5	2.5
W1S-294	1.0	1.0	2.5	4.0	3.3

Table 20. Plant height and seed quality for Uniform Test 0, 1965.

Strain	Mean of 10 Tests	Ridge-town Ont.	Harrow Ont.	Colum-bus Ohio	East Lansing Mich.	Spooner Wis.[1]
Grant	29	34	23	21	25	32
Merit	30	36	23	18	25	36
Norchief	27	30	21	16	24	31
Traverse	30	33	24	24	27	35
M391	33	39	26	21	28	35
M391-1	31	38	25	20	26	35
M393	23	25	17	15	21	27
M406	30	35	24	18	25	34
M422	27	31	20	18	22	32
0-4323	34	42	27	23	28	36
OAC85	31	37	24	18	27	33
W1S-191	29	32	22	20	26	34
W1S-294	31	38	24	19	26	35
	Mean of 8 Tests	Seed Quality				
Grant	1.8	2.0	1.5	1.5	2.0	2.0
Merit	1.8	2.0	1.2	1.2	1.0	2.5
Norchief	1.8	2.0	1.5	2.0	2.0	1.5
Traverse	2.0	2.0	1.2	1.2	2.0	3.0
M391	2.3	3.0	1.8	1.0	2.0	3.0
M391-1	1.8	2.0	1.2	1.0	2.0	2.5
M393	2.2	2.0	1.2	2.0	3.0	2.2
M406	2.0	2.0	1.2	1.5	3.0	2.0
M422	2.1	2.0	2.0	2.0	3.0	2.0
0-4323	2.3	3.0	2.5	1.7	2.0	2.5
OAC85	2.1	2.0	2.0	1.5	2.0	1.7
W1S-191	1.7	2.0	1.0	1.0	2.0	1.7
W1S-294	1.9	2.0	1.8	1.2	2.0	1.5

*Not included in the mean.
[1]Irrigated.

Table 20. (Continued)

Strain	Durand Wis.	Crookston Minn. *	Morris Minn.	St. Paul Minn.	Casselton N.D.	Sisseton S.D.
Grant	23	26	29	34	37	30
Merit	24	30	31	38	37	32
Norchief	21	24	29	37	34	30
Traverse	23	25	33	36	39	30
M391	25	29	35	44	42	30
M391-1	24	29	35	39	40	28
M393	18	25	26	28	31	24
M406	23	24	32	39	38	32
M422	18	27	29	32	35	30
0-4323	26	30	37	41	42	35
OAC85	24	30	33	43	37	32
W1S-191	23	26	31	37	36	33
W1S-294	22	26	29	42	42	30

	Seed Quality			
		*		
Grant	1.0	3.8	2.2	2.5
Merit	2.0	3.8	2.2	2.2
Norchief	1.0	3.5	2.0	2.5
Traverse	1.0	3.8	2.5	3.0
M391	2.0	3.8	2.5	2.8
M391-1	1.0	4.0	2.5	2.2
M393	2.0	3.2	2.2	2.8
M406	2.0	3.5	1.8	2.5
M422	1.0	2.8	2.2	2.8
0-4323	1.0	3.8	2.8	3.2
OAC85	2.0	3.5	2.5	2.8
W1S-191	2.0	4.0	1.8	2.2
W1S-294	1.0	3.8	2.5	3.0

Table 21. Percentages of protein and oil for Uniform Test 0, 1965.

Strain	Mean of 6 Tests	Ridge-town Ont.	Colum-bus Ohio	East Lansing Mich.	Spooner Wis.	Morris Minn.	Cassel-ton N.D.
Grant	39.8	40.6	38.2	41.8	39.8	41.6	36.8
Merit	39.3	39.5	39.0	40.9	37.8	40.3	38.4
Norchief	40.2	41.0	40.2	41.8	39.3	40.2	38.4
Traverse	40.8	39.8	39.8	41.9	41.5	41.5	40.2
M391	39.5	39.1	39.4	41.4	38.1	40.5	38.6
M391-1	39.8	40.8	40.1	40.4	38.1	40.4	39.2
M393	40.2	41.1	40.3	40.2	39.0	41.0	39.4
M406	40.0	41.4	39.1	42.1	39.3	39.4	38.7
M422	41.0	41.2	41.9	41.3	40.1	41.9	39.3
0-4323	41.3	42.0	40.6	41.6	41.4	41.3	40.7
OAC85	41.4	42.9	40.2	43.6	40.4	41.4	39.8
W1S-191	41.1	41.6	40.7	42.5	40.4	42.0	39.3
W1S-294	40.3	41.8	39.2	42.3	39.1	40.2	39.1

	Mean of 6 Tests	Percentage of Oil					
Grant	20.0	20.5	21.5	19.9	18.9	19.8	19.1
Merit	20.6	21.1	23.6	20.4	18.4	20.5	19.6
Norchief	20.2	20.6	22.1	19.8	19.1	20.1	19.4
Traverse	20.5	22.3	22.5	19.7	18.8	20.0	19.4
M391	21.0	21.9	24.1	20.2	19.4	20.7	19.8
M391-1	21.0	21.7	23.0	20.7	20.0	20.5	20.1
M393	21.0	20.2	23.4	21.3	19.8	21.2	20.3
M406	20.3	20.4	23.2	19.6	18.6	20.7	19.4
M422	20.7	21.5	22.4	20.7	19.3	20.6	19.7
0-4323	20.5	20.8	22.8	20.3	18.3	20.8	19.7
OAC85	19.2	19.6	20.8	18.2	18.2	19.5	19.0
W1S-191	20.3	20.9	22.4	19.7	19.1	19.9	19.8
W1S-294	20.2	20.1	22.6	19.5	19.5	20.1	19.1

Table 22. Two-year summary of data for Uniform Test 0, 1964-1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	21	21	16	15	21	19	14	13	13
Grant	30.3	1	+3.5	2.6	29	1.9	17.0	40.1	19.7
Merit	27.4	7	0	1.8	30	1.9	14.8	39.3	20.5
Norchief	26.8	9	-1.7	2.1	27	2.0	17.1	40.3	19.9
Traverse	29.3	3	+5.2	2.2	30	2.2	18.2	40.7	20.2
M391	28.9	4	+2.7	2.2	33	2.3	16.6	39.6	20.7
M406	29.6	2	+1.4	2.3	31	2.2	19.8	40.0	19.9
M422	27.4	7	-2.5	1.4	28	2.3	15.6	40.7	20.3
0-4323	26.8	9	-4.5	2.2	34	2.5	14.9	41.1	20.1
W1S-191	28.7	5	+2.6	1.9	30	2.0	17.0	41.2	20.0
W1S-294	27.8	6	-0.9	1.9	31	2.1	16.0	40.2	19.9

[1]Days earlier (-) or later (+) than Merit which matured September 17, 117 days after planting.

Table 23. Two-year summary of yield and yield rank for Uniform Test 0, 1964-1965.

Strain	Mean of 21 Tests	Ridge-town Ont.	Harrow Ont.	Colum-bus Ohio	East Lansing Mich.	Spooner Wis.	Morris Minn.
Grant	30.3	43.8	33.9	30.6	38.3	30.2	26.4
Merit	27.4	39.1	27.3	23.7	30.8	30.2	26.0
Norchief	26.8	38.8	26.9	21.2	29.3	30.9	24.9
Traverse	29.3	41.1	34.8	31.1	36.9	25.8	26.8
M391	28.9	39.1	30.9	29.0	35.8	26.9	27.7
M406	29.6	44.4	31.9	27.1	33.2	33.1	28.6
M422	27.4	38.1	24.8	24.0	29.7	31.5	26.1
0-4323	26.8	38.1	26.7	27.0	31.2	32.0	23.4
W1S-191	28.7	41.8	32.5	29.3	33.9	27.8	26.3
W1S-294	27.8	38.1	29.5	28.0	31.5	29.6	24.4
	Yield Rank						
Grant	1	2	2	2	1	5	4
Merit	7	5	7	9	8	5	7
Norchief	9	7	8	10	10	4	8
Traverse	3	4	1	1	2	10	3
M391	4	5	5	4	3	9	2
M406	2	1	4	6	5	1	1
M422	7	8	10	8	9	3	6
0-4323	9	8	9	7	7	2	10
W1S-191	5	3	3	3	4	8	5
W1S-294	6	8	6	5	6	7	9

Table 24. Five-year summary of data for Uniform Test 0, 1961-1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	52	52	41	40	52	44	39	35	35
Grant	32.1	1	+3.3	2.7	31	2.0	16.5	40.2	19.8
Merit	29.3	2	0	2.0	32	1.8	14.4	39.4	20.6
Norchief	28.0	4	-1.0	2.2	29	2.2	16.7	40.4	20.0
0-4323	29.2	3	-3.2	2.3	35	2.5	15.1	41.2	20.0

[1]Days earlier (-) or later (+) than Merit which matured September 20, 118 days after planting.

Table 25. Five-year summary of yield and yield rank for Uniform Test 0, 1961-1965.

Strain	Mean of 52 Tests	Ottawa Ont.	Guelph Ont.	Ridgetown Ont.	Columbus Ohio	East Lansing Mich.	Spooner Wis.	Durand Wis.
Years Tested		1961-1964	1961-1964	1961-1965	1961-1965	1961-1965	1961-1965	1962-63, 1965
Grant	32.1	40.0	32.1	47.4	28.8	37.2	30.2	17.9
Merit	29.3	36.2	29.1	42.7	22.8	30.4	28.8	15.9
Norchief	28.0	36.2	28.8	40.2	20.4	27.0	28.3	16.3
0-4323	29.2	39.2	30.4	42.6	25.7	32.3	29.4	14.8
	Yield Rank							
Grant	1	1	1	1	1	1	1	1
Merit	2	3	3	2	3	3	3	3
Norchief	4	3	4	4	4	4	4	2
0-4323	3	2	2	3	2	2	2	4

Table 25. (Continued)

Strain	Crookston Minn.	Morris Minn.	St. Paul Minn.	Fargo N.D.	Eureka S.D.	Watertown S.D.	Ontario Ore.
Years Tested	1961-63, 1965	1961-1965	1961, '63,'65	1961, 1963-64	1961-62, 1964	1961-1964	1961-1964
Grant	26.2	28.2	40.3	30.5	11.2	19.3	59.7
Merit	24.7	27.7	38.8	28.5	13.7	17.4	62.3
Norchief	23.0	27.2	36.2	26.6	12.9	18.1	53.0
0-4323	22.1	24.8	35.7	26.1	10.5	15.3	54.8
	Yield Rank						
Grant	1	1	1	1	3	1	2
Merit	2	2	2	2	1	3	1
Norchief	3	3	3	3	2	2	4
0-4323	4	4	4	4	4	4	3

UNIFORM TEST I, 1965

Strain	Originating Agency	Origin	Generation Composited
A-100	Anderson Bros., St. Peter, Minn.	Unknown	
Chippewa	Ill. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_5
Chippewa 64	Ill. A.E.S. & U.S.R.S.L.	Chippewa (8) x Blackhawk	29 F_3 lines
L10	Ill. A.E.S. & U.S.R.S.L.	[Chippewa (8) x L59g-16] x [Chippewa (10) x Blackhawk]	13 F_3 lines
A1-540	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Harosoy	F_9
A2-5405	Iowa A.E.S. & U.S.R.S.L.	Clark x Chippewa	F_7
A2-5407	Iowa A.E.S. & U.S.R.S.L.	Clark x Chippewa	F_7
A2-5504	Iowa A.E.S. & U.S.R.S.L.	Hawkeye x Chippewa	F_7
AX80-21	Iowa A.E.S. & U.S.R.S.L.	[Mandarin (Ottawa) x Kanro] x [Richland x Jogun]	F_6
M401	Minn. A.E.S. & U.S.R.S.L.	Capital x M10	F_5
W1-4221	Wis. A.E.S. & U.S.R.S.L.	Grant x Chippewa	F_6

Identification of Parent Strains

L59g-16	F_1 of C1128 (2) x S54-1207, carrying pustule resistance from CNS.
M10	Sel. from Lincoln (2) x Richland, in Uniform Test I in 1949-51.

The four-year summaries of Tables 33 and 34 include data on A1-540 in comparison to the three named varieties. A1-540 has outyielded all three and is slightly earlier and taller than A-100 with equally good lodging resistance. It has averaged somewhat higher in protein content. In Table 34, there appears evidence for a regional adaptation, with A-100 yielding relatively better in the eastern half of the region and A1-540 averaging higher in the west.

These tables also show Chippewa 64 performing very similarly to Chippewa at these locations, where phytophthora has not been reported to be a factor. Considering the four-year mean at each location, the greatest deviation favoring Chippewa was less than a bushel, and the overall mean slightly favors Chippewa 64.

L10, tested for the first time this year, is a Chippewa backcross selected for pustule, as well as phytophthora, resistance. Although similar in appearance, it yielded lower and was slightly later than either Chippewa or Chippewa 64.

Several of the strains being tested for the first time this year performed well with higher yields than either check variety.

AX80-21 is of interest because of its large seed size, about 50 percent larger than A-100 and 75 percent larger than Chippewa, but was about 5 to 10 percent lower in yield than the other strains.

Table 26. Regional testing history and descriptive data for the strains in Uniform Test I, 1965.

Strain	Years in Uniform Test I	Previous Regional Test	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color
A-100	4	None	W	G	Br	S	Y	Bf
Chippewa	17	P.T. I	P	T	Br	S	Y	Bl
Chippewa 64	4	None	P	T	Br	S	Y	Bl
L10	1	None	P	T	Br	S	Y	Bl
A1-540	2[1]	P.T. I	P	G	Br	D	Y	Y
A2-5405	1[2]	P.T. I	P	T	Br	S	Y	Bl
A2-5407	1	P.T. I	P	T	Br	S	Y	Bl
A2-5504	1[3]	P.T. I	P	T	Br	S	Y	Bl
AX80-21	1	None	P	G	Tan	D	Y	Y
M401	1	P.T. II	P	T	Br	D	Y	Br
W1-4221	1	P.T. I	P	Lt	Br	S	Y	Bl

[1]A8-1334 in 1962-63.
[2]A9-619 in 1963-64.
[3]A9K-2558 in 1964.

Table 27. Summary of data for Uniform Test I, 1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	21	21	18	14	21	16	15	9	9
A-100	32.5	5	+5.8	1.9	31	1.8	18.8	40.0	21.1
Chippewa	32.0	9	-0.4	1.9	30	1.6	15.3	40.6	20.4
Chippewa 64	32.1	8	0	1.9	31	1.6	16.3	41.0	20.1
L10	30.0	11	+1.3	2.0	32	1.8	16.3	41.0	20.2
A1-540	32.2	7	+4.4	1.7	32	1.6	16.8	41.7	20.0
A2-5405	34.7	1	+5.4	2.0	32	1.6	17.5	40.4	20.7
A2-5407	33.1	4	+0.5	2.0	31	1.8	16.4	41.4	20.4
A2-5504	34.7	1	+2.6	2.1	32	1.8	17.3	41.8	20.0
AX80-21	30.7	10	+5.7	2.5	34	2.4	27.3	42.1	19.6
M401	32.3	6	+2.9	2.6	32	1.9	16.8	39.9	20.4
W1-4221	33.3	3	-0.7	2.3	30	1.6	17.7	41.4	20.2

[1]Days earlier (-) or later (+) than Chippewa 64 which matured September 23, 126 days after planting.

Table 28. Disease data for Uniform Test I, 1965.

Strain	Bacterial Blight			Bacterial Pustule	Brown Stem Rot	Frogeye Race 2	Phytoph-thora Rot	Pod and Stem Blight	Purple Stain
	Ill.	Ia.	Minn.	Ia.	Ill.	Ind.	Ind.	Del.	Del.
	a[1]	a	n[1]	a	n	a	a	n	n
A-100	3	4	3.5	4	3	S	S	1.5	1.0
Chippewa	3	3	3.0	3	3	S	S	1.8	1.0
Chippewa 64	3	3	3.5	3	3	S	R	1.7	1.0
L10	3	3	3.0	3	3	S	R	2.0	1.0
A1-540	3	3	3.0	3	2	S	S	1.5	1.0
A2-5405	3	3	2.5	4	4	S	S	1.8	1.5
A2-5407	3	3	2.5	3	4	S	S	2.8	1.7
A2-5504	3	3	3.5	4	4	S	S	2.8	1.8
AX80-21	4	4	3.0	3	4	R	S	2.0	1.5
M401	3	3	2.5	4	4	S	S	1.5	1.0
W1-4221	4	4	3.0	4	4	S	S	1.7	1.5

[1]a = artificial inoculation; n = natural infection.

Table 29. Yield and yield rank for Uniform Test I, 1965.

Strain	Mean of 21 Tests	Ridge-town Ont.	Har-row Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	East Lan-sing Mich.	Dun-dee Mich.	Knox Ind.	Lafa-yette Ind.	Du-rand Wis.
A-100	32.5	41.3	35.9	49.3	22.6	34.1	43.1	39.0	30.9	47.6	18.7
Chippewa	32.0	38.8	36.8	39.7	21.4	28.7	42.4	37.4	30.0	42.9	18.5
Chippewa 64	32.1	40.9	36.1	45.3	23.9	25.6	42.1	36.2	28.2	44.6	17.6
L10	30.0	38.8	26.6	40.8	18.4	25.9	42.2	35.5	27.4	43.7	17.8
A1-540	32.2	43.5	31.2	39.6	19.9	20.4	42.9	41.5	32.3	49.7	17.5
A2-5405	34.7	45.2	38.3	52.7	27.3	30.3	48.7	41.1	31.3	50.9	18.0
A2-5407	33.1	41.2	35.3	42.7	24.4	28.0	44.4	38.2	30.5	44.0	18.5
A2-5504	34.7	41.4	39.0	42.3	28.0	29.5	45.7	40.6	30.6	53.2	19.4
AX80-21	30.7	29.2	32.8	45.4	24.6	33.1	39.9	37.3	31.3	44.5	16.4
M401	32.3	43.5	37.6	40.7	22.5	25.4	44.3	35.4	30.1	41.4	17.8
W1-4221	33.3	42.9	35.0	38.2	23.9	22.2	46.8	42.4	28.8	42.9	17.9
Coef. of Var. (%)		6.7	9.4	14.0	13.9	11.2	6.2	5.2	10.2	7.1	3.6
L.S.D. (5%)		3.9	4.7	8.6	4.7	4.4	4.0	3.7	N.S.	4.2	0.9
Row Spacing (In.)		24	40	28	32	28	28	28	40	38	36

	Yield Rank										
A-100	5	6	6	2	7	1	6	5	4	4	2
Chippewa	9	9	4	9	9	5	8	7	8	9	3
Chippewa 64	8	8	5	4	5	8	10	9	10	5	9
L10	11	9	11	7	11	7	9	10	11	8	7
A1-540	7	2	10	10	10	11	7	2	1	3	10
A2-5405	1	1	2	1	2	3	1	3	2	2	5
A2-5407	4	7	7	5	4	6	4	6	6	7	3
A2-5504	1	5	1	6	1	4	3	4	5	1	1
AX80-21	10	11	9	3	3	2	11	8	2	6	11
M401	6	2	3	8	8	9	5	11	7	11	7
W1-4221	3	4	8	11	5	10	2	1	9	9	6

Table 29. (Continued)

Strain	Madison Wis.	Shabbona Ill.	Dwight Ill.	St. Paul Minn.	Lamberton Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Eureka S.D.	Watertown S.D.	Brookings S.D.
A-100	30.0	48.9	46.3	29.8	20.6	25.8	26.8	39.2	13.8	12.9	25.3
Chippewa	28.3	44.7	43.2	34.3	22.6	31.4	28.8	40.5	19.0	18.0	24.8
Chippewa 64	30.6	45.7	43.8	33.7	22.4	32.3	27.7	39.1	18.6	16.4	23.9
L10	31.1	47.5	43.3	28.3	22.1	24.8	28.0	37.1	13.2	13.5	23.5
A1-540	29.4	48.1	45.2	30.5	24.2	33.1	30.1	41.4	13.6	13.2	28.5
A2-5405	32.7	52.9	52.9	28.1	24.6	30.6	28.9	41.8	12.2	12.7	26.8
A2-5407	30.9	45.6	46.9	35.4	23.9	32.9	30.2	41.6	18.1	17.1	24.3
A2-5504	30.8	51.8	49.1	35.0	24.8	33.8	31.3	41.7	16.0	17.3	26.8
AX80-21	29.5	46.4	50.4	19.8	21.0	27.2	26.5	40.6	12.4	13.7	22.6
M401	31.7	47.2	51.1	33.5	24.2	31.7	26.7	39.0	15.7	16.1	23.5
W1-4221	30.6	45.3	47.3	36.5	25.0	34.5	28.5	41.4	20.6	20.4	28.5
C. V. (%)	10.2	3.8	6.8	9.5	8.2	8.5	5.6	4.7	12.1	14.5	10.1
L.S.D. (5%)	4.4	2.6	4.7	4.3	2.7	3.7	2.2	2.6	2.8	3.3	3.7
Row Sp. (In.)	36	40	38	36	40	40	42	40	42	40	40
	Yield Rank										
A-100	8	3	7	8	11	10	9	8	7	10	5
Chippewa	11	11	11	4	7	7	5	7	2	2	6
Chippewa 64	6	8	9	5	8	5	8	9	3	5	8
L10	3	5	10	9	9	11	7	11	9	8	9
A1-540	10	4	8	7	4	3	3	4	8	9	1
A2-5405	1	1	1	10	3	8	4	1	11	11	3
A2-5407	4	9	6	2	6	4	2	3	4	4	7
A2-5504	5	2	4	3	2	2	1	2	5	3	3
AX80-21	9	7	3	11	10	9	11	6	10	7	11
M401	2	6	2	6	4	6	10	10	6	6	9
W1-4221	6	10	5	1	1	1	6	4	1	1	1

Table 30. Maturity, days earlier (-) or later (+) than Chippewa 64, and lodging for Uniform Test I, 1965.

Strain	Mean of 18 Tests	Ridge-town Ont.	Har-row Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	East Lan-sing Mich.	Dun-dee Mich.	Knox Ind.	Lafa-yette Ind.	Du-rand Wis. *
A-100	+5.8	+14	+5	+ 8	+6	+8	+12	+12	+1	-3	
Chippewa	-0.4	0	0	0	0	0	0	- 1	-4	-2	
Chippewa 64	0	0	0	0	0	0	0	0	0	0	
L10	+1.3	+ 4	+2	+ 3	+4	+1	- 1	+ 2	-1	0	
A1-540	+4.4	+11	+1	+ 5	+4	+5	+ 3	+10	0	+2	
A2-5405	+5.4	+ 8	+4	+13	+6	+9	+ 7	+ 7	+1	+3	
A2-5407	+0.5	+ 3	0	+ 3	+2	+1	0	0	-3	0	
A2-5504	+2.6	+ 5	0	+ 6	+4	+2	- 1	+ 3	-1	+2	
AX80-21	+5.7	+20	+4	+10	+4	+2	+14	+15	-2	+5	
M401	+2.9	+ 6	+2	+ 8	+4	+3	+ 3	+ 3	0	-1	
W1-4221	-0.7	+ 4	-2	0	+1	+3	- 3	+ 1	-5	-2	
Date planted		5-20	5-17	5-20	5-24	5-18	5-12	5-25	5-21	5-27	5-14	6-7
Chippewa 64 matured		9-23	9-20	9-20	9-12	9-10	9-9	10-2	9-25	10-2	9-7	--
Days to mature		126	126	123	111	115	120	130	127	128	116	--
	Mean of 14 Tests	Lodging									
					*	*					*
A-100	1.9	2.0	1.0	1.5	1.0	1.0	2.6	1.9	1.5	2.0	1.0
Chippewa	1.9	3.0	1.0	2.0	1.0	1.0	1.7	1.7	1.5	2.0	1.0
Chippewa 64	1.9	3.0	1.0	2.0	1.0	1.0	1.8	1.3	1.6	1.5	1.0
L10	2.0	4.0	1.0	2.0	1.0	1.0	2.3	1.6	1.8	1.8	1.0
A1-540	1.7	4.0	1.0	1.3	1.0	1.0	1.3	2.1	1.1	1.8	1.0
A2-5405	2.0	3.0	1.0	1.3	1.0	1.0	2.5	1.6	1.3	2.3	1.0
A2-5407	2.0	3.0	1.0	2.0	1.0	1.0	1.9	1.2	1.5	2.0	1.0
A2-5504	2.1	3.0	1.0	2.0	1.0	1.0	2.1	2.3	1.6	1.8	1.0
AX80-21	2.5	4.0	1.8	1.7	1.0	1.0	3.7	3.0	1.9	2.5	1.0
M401	2.6	4.0	1.5	3.0	1.0	1.0	3.4	3.2	1.8	2.0	1.0
W1-4221	2.3	4.0	1.0	2.2	1.0	1.0	2.0	1.8	1.3	2.3	1.0

*Not included in the mean.

Table 30. (Continued)

Strain	Madison Wis.	Shabbona Ill.	Dwight Ill.	St. Paul Minn. *	Lamberton Minn. *	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Eureka S.D.	Watertown S.D.	Brookings S.D.
A-100	+3	+6	+2			+ 9	+6	+6	+2	+3	+4
Chippewa	0	-2	-1			0	0	0	0	+1	+1
Chippewa 64	0	0	0			0	0	0	0	0	0
L10	+1	-1	0			+ 7	0	0	+1	+1	0
A1-540	+2	+4	+4			+10	+4	+6	+2	+3	+3
A2-5405	+3	+5	+4			+ 7	+6	+6	+3	+2	+3
A2-5407	0	0	0			0	+2	0	0	+1	0
A2-5504	+1	+3	+1			+ 6	+4	+4	+3	+1	+3
AX80-21	+2	+4	+1			+13	+2	+3	+2	-1	+4
M401	+1	+4	+2			+ 9	+2	+3	+2	0	+2
W1-4221	-1	-1	-2			0	-2	-4	-1	+1	0
Date planted	5-18	5-18	5-28	5-22	6-2	5-28	5-12	5-14	5-20	5-21	6-1
Chip. 64 mat.	9-20	9-25	9-24	--	--	10-5	9-22	9-18	10-12	10-4	9-28
Days to mat.	125	130	119	--	--	130	133	127	145	136	119

	Lodging							
						*		
A-100	1.6	1.3	2.3	3.0	2.8	2.0	1.2	1.4
Chippewa	1.8	1.9	2.7	3.5	1.8	2.0	1.2	1.4
Chippewa 64	1.8	2.0	2.5	4.0	2.0	2.0	1.2	1.3
L10	1.8	1.8	2.3	3.5	1.8	2.0	1.2	1.4
A1-540	1.0	1.8	2.0	2.5	2.0	2.0	1.1	1.4
A2-5405	2.0	2.0	2.1	3.0	2.8	2.0	1.3	1.3
A2-5407	1.5	1.6	2.4	4.5	2.2	2.0	1.2	1.3
A2-5504	2.1	2.2	2.5	4.0	2.5	2.0	1.4	1.5
AX80-21	2.1	1.4	2.2	4.5	3.8	2.0	1.2	1.6
M401	2.9	2.8	3.0	4.0	2.2	2.0	1.4	1.6
W1-4221	2.0	1.7	2.6	4.0	3.8	2.0	1.4	1.4

Table 31. Plant height and seed quality for Uniform Test I, 1965.

Strain	Mean of 21 Tests	Ridge-town Ont.	Harrow Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Colum-bus Ohio	East Lan-sing Mich.	Dun-dee Mich.	Knox Ind.	Lafa-yette Ind.	Du-rand Wis.
A-100	31	36	27	29	20	27	32	35	30	36	25
Chippewa	30	35	26	31	21	25	32	35	30	37	24
Chippewa 64	31	36	28	31	22	27	32	35	30	39	24
L10	32	36	26	31	24	27	33	36	30	39	25
A1-540	32	36	25	28	22	26	31	37	29	41	24
A2-5405	32	37	27	30	21	27	34	35	32	38	24
A2-5407	31	37	26	30	22	29	33	36	31	39	25
A2-5504	32	37	25	30	22	27	33	36	31	39	25
AX80-21	34	38	28	34	24	26	33	40	33	42	29
M401	32	42	26	30	24	26	34	39	29	40	25
W1-4221	30	38	25	27	20	23	30	35	30	36	24
	Mean of 16 Tests	Seed Quality									
					*	*					
A-100	1.8	3.0	1.2	1.0	1.0	1.0	2.0	2.0	1.5	1.5	1.0
Chippewa	1.6	2.0	1.5	1.0	1.0	1.0	1.0	2.0	1.5	1.5	1.0
Chippewa 64	1.6	2.0	1.5	1.0	1.0	1.0	1.0	2.0	1.0	1.5	1.0
L10	1.8	2.0	1.5	1.0	1.0	1.0	2.0	2.0	1.0	1.5	2.0
A1-540	1.6	2.0	1.8	1.0	1.0	1.0	2.0	2.0	1.5	1.0	1.0
A2-5405	1.6	1.0	2.0	1.0	1.0	1.0	2.0	2.0	1.5	1.5	1.0
A2-5407	1.8	2.0	1.2	1.0	1.0	1.0	2.0	2.0	1.5	1.5	2.0
A2-5504	1.8	2.0	1.0	1.0	1.0	1.0	2.0	2.0	1.5	1.5	1.0
AX80-21	2.4	4.0	2.5	1.5	1.0	1.0	2.7	3.0	2.0	1.5	2.0
M401	1.9	2.0	1.5	1.0	1.0	1.0	3.0	2.0	1.5	1.0	2.0
W1-4221	1.6	2.0	1.5	1.0	1.0	1.0	2.0	2.0	1.0	1.0	1.0

*Not included in the mean.

Table 31. (Continued)

Strain	Madison Wis.	Shabbona Ill.	Dwight Ill.	St. Paul Minn.	Lamberton Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Eureka S.D.	Watertown S.D.	Brookings S.D.
A-100	23	37	34	38	31	35	32	34	26	27	31
Chippewa	23	36	35	38	27	34	31	32	27	29	29
Chippewa 64	23	38	35	39	29	35	32	34	29	30	31
L10	25	38	36	39	30	34	32	36	26	28	31
A1-540	23	39	37	36	37	38	33	38	25	30	35
A2-5405	25	38	35	39	31	36	32	36	28	28	29
A2-5407	24	37	36	38	31	36	32	35	27	28	29
A2-5504	25	38	38	39	31	37	34	36	28	29	31
AX80-21	26	41	40	45	34	36	35	38	28	32	34
M401	24	39	37	39	30	36	32	33	25	29	28
W1-4221	22	33	33	37	31	35	32	32	28	29	29
	Seed Quality										
A-100	2.0	2.0	2.0	2.8	2.2	1.8	1.0	1.0			
Chippewa	2.0	1.5	1.9	2.5	2.0	1.5	1.1	1.3			
Chippewa 64	2.0	1.5	2.1	2.5	2.2	1.8	1.2	1.4			
L10	2.0	1.5	2.4	2.8	2.5	1.8	1.1	1.4			
A1-540	1.0	2.5	1.6	2.5	2.2	2.2	1.0	1.0			
A2-5405	1.0	1.9	2.6	2.5	2.5	1.5	1.1	1.0			
A2-5407	1.0	2.0	2.8	2.5	2.2	1.8	1.2	1.3			
A2-5504	2.0	2.5	2.9	2.5	2.5	1.8	1.2	1.2			
AX80-21	2.0	3.3	4.3	2.8	2.5	2.5	1.1	1.1			
M401	2.0	2.0	2.5	3.0	2.2	2.5	1.4	1.2			
W1-4221	1.0	2.4	2.3	2.2	1.8	1.8	1.3	1.6			

Table 32. Percentages of protein and oil for Uniform Test I, 1965.

Strain	Mean of 9 Tests	Ridge-town Ont.	Colum-bus Ohio	East Lansing Mich.	Knox Ind.	Madi-son Wis.	Shab-bona Ill.	Wa-seca Minn.	Kana-wha Iowa	Brook-ings S.D.
A-100	40.0	40.6	38.5	39.8	41.7	41.5	41.9	38.3	39.8	37.8
Chippewa	40.6	41.5	38.5	40.8	42.2	41.7	41.3	40.0	40.5	38.7
Chippewa 64	41.0	41.1	39.3	41.7	43.5	42.0	42.1	40.0	41.3	38.2
L10	41.0	40.5	39.3	41.6	42.5	42.3	41.0	39.8	41.4	40.2
A1-540	41.7	43.1	39.8	42.3	42.4	43.0	42.9	41.4	42.3	38.0
A2-5405	40.4	40.8	39.6	41.5	41.7	40.9	41.7	38.2	40.9	38.0
A2-5407	41.4	41.8	39.8	42.2	42.1	41.9	42.8	41.3	41.6	39.5
A2-5504	41.8	41.6	40.1	42.0	43.3	42.5	43.6	40.6	42.1	40.6
AX80-21	42.1	41.9	40.8	43.5	42.9	44.8	42.5	40.2	42.7	39.8
M401	39.9	40.7	39.0	40.9	40.9	40.1	41.1	38.6	39.6	37.8
W1-4221	41.4	41.6	41.0	42.1	42.9	43.0	42.5	39.9	42.3	37.6
	Mean of 9 Tests	Percentage of Oil								
A-100	21.1	21.7	23.4	20.9	21.9	20.2	20.9	20.5	21.1	19.3
Chippewa	20.4	20.6	22.7	19.8	21.0	19.2	20.4	20.4	21.1	18.2
Chippewa 64	20.1	20.2	22.5	19.5	20.5	19.3	20.2	20.0	21.1	17.5
L10	20.2	20.9	22.1	19.5	20.7	19.4	20.2	19.5	21.0	18.9
A1-540	20.0	19.9	22.6	19.3	20.8	19.5	20.0	20.0	20.4	17.6
A2-5405	20.7	21.0	22.6	20.3	21.5	20.0	20.6	20.1	21.3	19.3
A2-5407	20.4	20.5	22.5	19.3	21.0	19.8	20.2	20.3	20.7	19.0
A2-5504	20.0	20.1	22.6	19.4	21.1	19.1	19.9	19.2	20.4	18.5
AX80-21	19.6	19.5	21.5	18.4	20.3	18.3	20.6	19.4	20.2	18.2
M401	20.4	20.4	22.1	19.2	20.9	19.9	20.9	20.4	21.0	18.6
W1-4221	20.2	20.2	22.0	19.1	20.7	19.3	20.2	20.0	21.0	19.1

Table 33. Four-year summary of data for Uniform Test I, 1962-1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	74	74	61	57	73	54	59	35	35
A-100	35.5	2	+6.9	1.9	34	1.8	18.2	39.8	21.2
Chippewa	33.7	4	-0.3	1.9	33	1.8	14.8	40.5	20.3
Chippewa 64	33.9	3	0	1.8	35	1.8	15.6	40.6	20.2
A1-540*	36.4	1	+5.1	1.8	36	1.8	16.3	41.5	20.2

[1]Days earlier (-) or later (+) than Chippewa 64 which matured September 18, 119 days after planting.
*A8-1334 in 1962-63.

Table 34. Four-year summary of yield and yield rank for Uniform Test I, 1962-1965.

Strain	Mean of 74 Tests	Ridgetown Ont.	Harrow Ont.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Dundee Mich.[1]	Knox Ind.	Lafayette Ind.	Durand Wis.
Years Tested		1962-1965	1963-1965	1962-1965	1962-1965	1962-1965	1962-1965	1962-1965	1962-1965	1962-1965	1962-63, 1965
A-100	35.5	42.7	36.9	39.0	27.7	35.8	37.8	36.7	33.8	45.4	19.6
Chippewa	33.7	41.6	35.7	32.0	26.5	31.9	35.4	32.6	31.2	41.9	16.9
Chippewa 64	33.9	43.2	36.5	33.8	26.2	31.0	34.8	32.5	32.5	42.1	17.0
A1-540*	36.4	44.6	31.7	34.7	25.0	31.5	37.4	36.3	34.9	47.2	18.9
						Yield Rank					
A-100	2	3	1	1	1	1	1	1	2	2	1
Chippewa	4	4	3	4	2	2	3	3	4	4	4
Chippewa 64	3	2	2	3	3	4	4	4	3	3	3
A1-540	1	1	4	2	4	3	2	2	1	1	2

[1]Ida, Michigan, 1962.
*A8-1334 in 1962-63.

Table 34. (Continued)

Strain	Madison Wis.	Shabbona Ill.	Dwight Ill.	St. Paul Minn.	Lamberton Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Eureka S.D.	Watertown S.D.	Brookings S.D.
Years Tested	1962-1965	1962-1965	1962-1965	1963-1965	1963-1965	1962-1965	1963-1965	1962-1965	1962, 1964-65	1962-1965	1962-1965
A-100	32.2	44.4	42.6	29.6	27.1	33.5	28.3	39.6	14.2	19.9	33.3
Chippewa	31.1	41.8	39.3	28.5	27.1	33.4	29.2	39.2	16.4	23.3	35.4
Chippewa 64	30.8	42.1	39.2	30.0	26.4	34.7	29.4	40.0	16.7	22.7	34.9
Al-540	29.5	47.7	40.9	30.4	32.9	36.8	32.6	44.1	17.4	27.4	38.7
	Yield Rank										
A-100	1	2	1	3	2	3	4	3	4	4	4
Chippewa	2	4	3	4	2	4	3	4	3	2	2
Chippewa 64	3	3	4	2	4	2	2	2	2	3	3
Al-540	4	1	2	1	1	1	1	1	1	1	1

UNIFORM PRELIMINARY TEST I, 1965

Strain	Originating Agency	Origin	Generation Composited
A-100	Anderson Bros., St. Peter, Minn.	Unknown	
Chippewa 64	Ill. A.E.S. & U.S.R.S.L.	Chippewa (8) x Blackhawk	29 F_3 lines
A2-5440	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Chippewa	F_7
A3-2204	Iowa A.E.S. & U.S.R.S.L.	C1105 x A54-3159	F_6
A3-2237	Iowa A.E.S. & U.S.R.S.L.	AX29-267-1-1-2 x A54-3159	F_6
L63-971	Ill. A.E.S. & U.S.R.S.L.	Harosoy (6) x T139	F_3
M54-160	Minn. A.E.S. & U.S.R.S.L.	Korean x II-42-37	F_5
M54-167	Minn. A.E.S. & U.S.R.S.L.	Grant x Harosoy	F_5
OAC87	Ontario Agr. College, Guelph, Ont.	[Sel. from Blackhawk x Mandarin (Ott.)] x Mandarin (Ott.)	F_8
OAC88	Ontario Agr. College, Guelph, Ont.	Same as above	F_8

Identification of Parent Strains

A54-3159	Hawkeye x Capital.
AX29-267-1-1-2	Sel. from Adams x Hawkeye.
C1105	Sel. from Hawkeye x Mandarin (Ottawa).
II-42-37	Sel. from Lincoln (2) x Richland.
T139	Chlorophyll deficient (y_3) selection found in Illini.

The relative yield of the two checks in this test was rather unexpected since the earlier Chippewa 64 had an average yield slightly higher than that of the late check, A-100. The top yielding strain, A2-5440, was intermediate in maturity and was the only one to yield significantly above the checks. Of the three strains earlier than Chippewa 64, M54-167, OAC87, OAC88, only M54-167 yielded well and it was somewhat below Chippewa 64.

Two strains, A3-2204 and A3-2237, are of interest because of their high protein content. L63-971 is a selection from BC_5 Harosoy and its performance, although rather mediocre, is worth noting since the strain, except for maturity, is genetically very close to the highly successful Group II variety, Harosoy.

Table 35. Descriptive data for the strains in Uniform Preliminary Test I, 1965.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color
A-100	W	G	Br	S	Y	Bf
Chippewa 64	P	T	Br	S	Y	Bl
A2-5440	P	T	Br	S	Y	G
A3-2204	P	G	Br	D	Y	Y
A3-2237	W	T	Tan	D	Y	Bl
L63-971	P	G	Br	D	Y	Y
M54-160	P	T	Br	S	Y	Bl
M54-167	P	G	Br	S	Y	Bf
OAC87	W	G	Br	S	Y	Y
OAC88	W	G	Br	S	Y	Y

Table 36. Summary of data for Uniform Preliminary Test I, 1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	13	13	13	7	13	8	9	7	7
A-100	30.1	5	+5.3	2.0	29	1.3	20.1	40.5	21.2
Chippewa 64	31.2	3	0	2.0	30	1.3	16.7	40.2	20.5
A2-5440	33.5	1	+2.8	2.1	30	1.7	20.4	40.4	20.8
A3-2204	28.3	8	+4.1	2.0	29	1.5	20.9	43.0	18.7
A3-2237	29.6	7	+1.1	1.6	28	1.5	18.5	42.8	19.9
L63-971	29.9	6	+0.7	1.9	28	1.6	18.7	41.0	20.6
M54-160	31.4	2	0	2.5	27	1.7	21.5	40.0	22.4
M54-167	30.2	4	-2.0	1.8	27	1.9	18.6	40.0	21.1
OAC87	28.0	9	-2.6	2.2	25	1.9	18.2	40.0	20.5
OAC88	27.2	10	-3.8	1.5	24	2.1	17.5	40.2	21.2

[1]Days earlier (-) or later (+) than Chippewa 64 which matured September 24, 126 days after planting.

Table 37. Disease data for Uniform Preliminary Test I, 1965.

Strain	Bacterial Blight	Brown Stem Rot	Frogeye Race 2	Phytophthora Rot	Pod and Stem Blight	Purple Stain
	Ill. a[1]	Ill. n[1]	Ind. a	Ind. a	Del. n	Del. n
A-100	4	3	S	S	1.7	1.0
Chippewa 64	4	3	S	R	1.7	1.3
A2-5440	3	4	S	S	1.5	1.5
A3-2204	3	4	S	S	3.0	1.5
A3-2237	4	4	S	S	1.8	1.5
L63-971	3	4	S	S	1.5	1.5
M54-160	3	4	S	S	1.5	1.0
M54-167	4	3	S	S	1.5	1.0
OAC87	4	3	S	S	1.5	1.0
OAC88	4	3	S	S	2.0	1.0

[1]a = artificial inoculation; n = natural infection.

Table 38. Yield and yield rank for Uniform Preliminary Test I, 1965.

Strain	Mean of 13 Tests	Ridge-town Ont.	Harrow Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Colum-bus Ohio	East Lansing Mich.
A-100	30.1	40.4	27.8	40.0	26.6	20.5	43.0
Chippewa 64	31.2	39.4	26.4	48.9	23.1	19.0	39.8
A2-5440	33.5	44.8	30.5	49.0	24.9	26.9	45.2
A3-2204	28.3	38.3	25.0	38.8	20.7	15.9	39.5
A3-2237	29.6	40.5	24.4	45.1	24.9	15.1	40.0
L63-971	29.9	39.6	26.6	46.0	23.8	17.5	42.9
M54-160	31.4	38.9	30.0	46.4	21.7	16.9	41.1
M54-167	30.2	44.8	30.1	43.8	17.5	16.1	41.1
OAC87	28.0	36.3	27.0	32.5	17.5	19.1	36.6
OAC88	27.2	38.8	23.6	35.1	16.3	14.6	33.3
Coef. of Var. (%)		7.3	8.9	14.9	13.7	15.5	6.7
L.S.D. (5%)		6.7	N.S.	N.S.	N.S.	6.4	3.8
Row Spacing (In.)		24	40	28	32	28	28
	Yield Rank						
A-100	5	4	4	7	1	2	2
Chippewa 64	3	6	7	2	5	4	7
A2-5440	1	1	1	1	2	1	1
A3-2204	8	9	8	8	7	8	8
A3-2237	7	3	9	5	2	9	6
L63-971	6	5	6	4	4	5	3
M54-160	2	7	3	3	6	6	4
M54-167	4	1	2	6	8	7	4
OAC87	9	10	5	10	8	3	9
OAC88	10	8	10	9	10	10	10

Table 38. (Continued)

Strain	Madison Wis.	Shabbona Ill.	Waseca Minn.	Kanawha Iowa	Eureka S.D.	Watertown S.D.	Brookings S.D.
A-100	31.3	49.8	23.1	39.0	12.0	15.4	22.1
Chippewa 64	31.9	43.7	32.5	42.5	15.8	17.9	24.5
A2-5440	31.1	49.5	35.2	44.6	14.1	16.6	22.9
A3-2204	30.4	44.8	28.0	44.7	11.2	12.8	17.9
A3-2237	28.1	45.9	29.9	40.4	13.9	15.9	20.2
L63-971	26.7	49.2	28.1	36.2	18.2	14.2	19.9
M54-160	33.8	41.7	35.4	42.4	19.6	19.3	21.5
M54-167	29.1	40.1	29.6	42.8	19.3	16.9	22.0
OAC87	29.0	38.8	27.7	36.4	19.5	19.1	25.0
OAC88	21.4	37.7	26.4	36.1	21.0	22.5	27.0
Coef. of Var. (%)	4.8	3.4	6.9	7.3	10.5	11.1	11.7
L.S.D. (5%)	3.1	3.4	4.3	6.7	3.9	4.3	5.9
Row Spacing (In.)	36	40	40	40	42	40	40
	Yield Rank						
A-100	3	1	10	7	9	8	5
Chippewa 64	2	6	3	4	6	4	3
A2-5440	4	2	2	2	7	6	4
A3-2204	5	5	7	1	10	10	10
A3-2237	8	4	4	6	8	7	8
L63-971	9	3	6	9	5	9	9
M54-160	1	7	1	5	2	2	7
M54-167	6	8	5	3	4	5	6
OAC87	7	9	8	8	3	3	2
OAC88	10	10	9	10	1	1	1

Table 39. Maturity, days earlier (-) or later (+) than Chippewa 64, for Uniform Preliminary Test I, 1965.

Strain	Mean of 13 Tests	Ridge-town Ont.	Harrow Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Colum-bus Ohio	East Lansing Mich.
A-100	+5.3	+9	+4	+3	+4	+6	+12
Chippewa 64	0	0	0	0	0	0	0
A2-5440	+2.8	+2	+1	+3	+2	+4	+ 6
A3-2204	+4.1	+6	+1	+3	+3	+6	+ 6
A3-2237	+1.1	+3	-6	0	-1	+5	0
L63-971	+0.7	-1	0	0	+1	+5	+ 2
M54-160	0	+1	-1	0	-1	+3	0
M54-167	-2.0	-1	-4	0	-2	+2	- 2
OAC87	-2.6	-2	-9	0	-3	+2	+ 1
OAC88	-3.8	-2	-9	0	-4	0	- 1
Date planted	5-21	5-17	5-20	5-24	5-18	5-12	5-25
Chippewa 64 matured	9-24	9-22	9-20	9-15	9-13	9-9	10-1
Days to mature	126	128	123	114	118	120	129

Table 39. (Continued)

Strain	Madi-son Wis.	Shab-bona Ill.	Wa-seca Minn.	Kana-wha Iowa	Eureka S.D.	Water-town S.D.	Brook-ings S.D.
A-100	+4	+ 7	+9	+5	+1	+2	+3
Chippewa 64	0	0	0	0	0	0	0
A2-5440	+5	+ 6	+5	+3	-1	+1	0
A3-2204	+4	+ 4	+9	+7	+1	+2	+1
A3-2237	0	+ 1	+5	+5	0	+1	+1
L63-971	+1	+ 2	+1	-3	0	+2	-1
M54-160	0	+ 2	+1	-2	-2	0	-1
M54-167	-1	- 7	-1	-4	-2	-1	-3
OAC87	-1	-11	-2	-5	-3	0	-1
OAC88	-1	-12	-5	-8	-3	-1	-4
Date planted	5-18	5-18	5-28	5-14	5-20	5-21	6-1
Chippewa 64 matured	9-20	9-25	10-4	9-17	10-13	10-4	9-28
Days to mature	125	130	129	126	146	136	119

UNIFORM TEST II, 1965

Strain	Originating Agency	Origin	Generation Composited
Amsoy (A1-939)	Iowa A.E.S. & U.S.R.S.L.	Adams x Harosoy	F_8
Harosoy	Research Station, Harrow, Ont.	Mandarin (Ottawa) (2) x A.K. (Harrow)	F_5
Harosoy 63	Ill. A.E.S. & U.S.R.S.L.	Harosoy (8) x Blackhawk	3 F_3 lines
L2A	Ill. A.E.S. & U.S.R.S.L.	Harosoy 63 x [Harosoy (6) x S54-1207]	6 F_3 lines
Hawkeye 63	Ill. A.E.S. & U.S.R.S.L.	Hawkeye (7) x Blackhawk	11 F_3 lines
Lindarin 63	Purdue A.E.S. & U.S.R.S.L.	Lindarin (8) x Mukden	53 F_3 lines
SL6	Ill. & Purdue A.E.S. & U.S.R.S.L.	[Lindarin (8) x Mukden] x [Lindarin (6) x L58-2080]	4 F_3 lines
A1-439	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Capital	F_9
A1-1051	Iowa A.E.S. & U.S.R.S.L.	Harosoy x Clark	F_8
AX84-90	Iowa A.E.S. & U.S.R.S.L.	[Mandarin (Ottawa) x Jogun] x [Mandarin (Ottawa) x Kanro]	F_6
AX84-98	Iowa A.E.S. & U.S.R.S.L.	Same as above	F_6
C1335	Purdue A.E.S. & U.S.R.S.L.	Harosoy x C1069	F_6
L62-1932	Ill. A.E.S. & U.S.R.S.L.	Clark (6) x P.I. 86.024	F_3
M405	Minn. A.E.S. & U.S.R.S.L.	Grant x Harosoy	F_5
W1-4243	Wis. A.E.S. & U.S.R.S.L.	Blackhawk x Seneca ?	F_6

Identification of Parent Strains

C1069	F_7 line from Lincoln x Ogden, from same F_4 line as Kent, in Uniform Test IV in 1954-58.
L58-2080	Pustule resistant F_7 line from Hawkeye x Lee.
S54-1207	Sel. from Hawkeye x (L49-4091 x L46-2132-1). L49-4091 is a pustule resistant F_4 line from [F_3 Lincoln (2) x Richland] x (Lincoln x CNS). L46-2132-1 is an F_8 line from Lincoln (2) x Richland from the same F_4 plant as Clark and Shelby.
P.I. 86.024	Introduced from the Tokachi Branch Experiment Station, Obihiro, Japan, in 1930 under the name "Daizu hinshu satei".

The four-year summaries in Tables 47 and 48 present data for A1-439 and five named varieties. A1-439 was equal to Amsoy in mean yield with slightly higher yield than Amsoy at more northern locations. Lodging of A1-439 was only slightly more, on the average. The four-year mean yield for Harosoy 63 was .9 bushel below Harosoy and Harosoy 63 was almost a day earlier. Amsoy and A1-439 had a two-bushel or five percent yield advantage over Harosoy. An outline of the development of Amsoy is given at the end of this section.

L2, a composite of twenty-two pustule and phytophthora resistant F_3 lines, was in this test in 1962 and 1963 but averaged slightly below both Harosoy and Harosoy 63 in yield. The individual lines were tested and selected in 1963 and 1964, and the

final six selections composited as L2A. This may have been effective since in 1965 with twenty-eight locations, L2A yielded about the same as Harosoy and ahead of Harosoy 63.

The four lines composited as SL6 were selected from a large number of such lines grown in 1964 tests in Illinois and Indiana. This also appears to have been effective since SL6 yielded slightly better than Lindarin 63 in this test and should therefore be equal to Lindarin in performance in the absence of disease, since pustule and phytophthora were apparently not factors in these tests.

A1-1051, in addition to good agronomic performance, has an outstanding protein content of the seed, three percent higher than Harosoy, with oil only .7 percent lower.

The two large-seeded strains, AX84-90 and AX84-98, were consistently low in yield, about ten percent below Harosoy, but had excellent lodging resistance.

C1335 was the high yielder in the test and was of late Group II maturity. L62-1932 is of interest since it is nearly isogenic to Clark with a single gene difference for maturity. It yielded less than Amsoy but was earlier and more lodging resistant. M405 was low in mean yield but very high in oil content. W1-4243 yielded along with the best strains in the test and was similar to A1-439 in the other traits tested.

AMSOY

Amsoy is the progeny of an F_7 plant and was developed by C. R. Weber at Ames, Iowa. It is Group II maturity. A history of its development is given below:

1952 Cross AX56, Adams x Harosoy, made at Ames by C. R. Weber.

1953 F_1 Grown in field at Ames.

1954 Seed from F_1 retained in cold storage room.

1955 F_2 Space planted with 70 plants selected for Breeding Study. AX56P64 was one of these.

1956 F_3 Plant rows with 3 single plants including AX56P64-1, selected in each row.

1957 F_4 Plant rows selected, including one from AX56P64-1, and harvested in bulk.

1958 F_5 Replicated test in Breeding Methods Study.

1959 F_6 Best performing lines from above study retained and replicated at Ames.

1960 F_7 Best performing selections, including AX56P64-1, tested in Uniform Preliminary Test II. Selected 5 plants from AX56P64-1.

1961 F_8 AX56P64-1 tested in Uniform Test II. Selected 2 plant rows at Ames from AX56P64-1, including A1-939, and bulked, each on a row basis.

1962 F_9 AX56P64-1 tested in Uniform Test II. AX56P64-1 and daughter line, A1-939, tested in 2 replicated tests in Iowa. Six pounds of A1-939 harvested for further increase.

1963 F_{10} AX56P64-1 and A1-939 tested in Uniform Test II. A1-939 equal or superior to AX56P64-1. Increased A1-939 to 11 bushels.

1964 F_{11} A1-939 increased to 1038 bushels and tested in Uniform Test II.

1965 F_{12} Distributed to following states for multiplication in 1965: Illinois (416 bu.); Iowa (287 bu.); Indiana (200 bu.); Nebraska (43 bu.); Missouri (40 bu.); Minnesota (39 bu.); and South Dakota (13 bu.). Tested in Uniform Test II.

Named Amsoy and released in July, 1965.

Table 40. Regional testing history and descriptive data for the strains in Uniform Test II, 1965.

Strain	Years in Uniform Test II	Previous Regional Test	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color
Amsoy	3[1]	None	P	G	Tan	S	Y	Y
Harosoy	15	None	P	G	Br	D	Y	Y
Harosoy 63	5	None	P	G	Br	D	Y	Y
L2A	1	L2 in '62 & '63	P	G	Br	D	Y	Y
Hawkeye 63	6	None	P	G	Br	D	Y	Ib
Lindarin 63	3[2]	None	P	G	Br	D	Y	Bf
SL6	1	None	P	G	Br	D	Y	Bf
A1-439	2[3]	P.T. II	P	G	Br	D	Y	Y
A1-1051	2	P.T. II	P	T	Br	D	Y	Br
AX84-90	1	None	P	G	Br	D	Y	Y
AX84-98	1	None	P	G	Tan	D	Y	Y
C1335	1	P.T. II	P	G	Br	D	Y	G
L62-1932	1	P.T. II	P	T	Br	D	Y	Bl
M405	1	P.T. II	W	T	Br	D	Y	Y
W1-4243	1	P.T. II	P	Lt	Br	D	Y	Bl

[1]AX56P64-1 in 1961-62.
[2]C1294 in 1961, C1294R in 1962.
[3]A8-932 in 1962-63.

Table 41. Summary of data for Uniform Test II, 1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	28	28	26	24	27	26	19	13	13
Amsoy	40.8	2	+4.8	2.3	38	2.2	17.5	38.9	22.5
Harosoy	39.0	6	+0.9	2.3	38	1.9	18.2	40.3	21.4
Harosoy 63	37.9	9	0	2.5	38	1.9	18.3	40.4	21.4
L2A	38.9	7	+0.1	2.5	38	2.0	18.1	40.4	21.3
Hawkeye 63	36.9	11	+6.7	2.2	39	1.9	18.7	40.4	21.5
Lindarin 63	36.7	12	+1.6	1.9	34	1.7	16.6	40.8	21.3
SL6	37.7	10	+0.7	1.9	34	1.7	15.5	40.6	21.0
A1-439	40.3	3	+1.8	2.3	37	2.0	16.1	39.9	21.7
A1-1051	39.9	5	+1.7	2.2	35	1.5	21.3	43.5	20.7
AX84-90	35.1	14	-1.3	1.4	32	2.8	26.8	39.9	20.9
AX84-98	34.8	15	+3.7	1.5	30	2.1	27.0	40.2	20.9
C1335	42.6	1	+9.7	2.2	37	2.2	20.0	41.0	21.0
L62-1932	38.9	7	+2.7	2.0	35	1.8	19.1	41.1	21.7
M405	36.1	13	+0.4	1.7	33	2.2	17.1	39.2	23.0
W1-4243	40.1	4	+2.8	2.3	38	1.8	17.2	39.7	21.8

[1]Days earlier (-) or later (+) than Harosoy 63 which matured September 20, 121 days after planting.

Table 42. Disease data for Uniform Test II, 1965.

Strain	Bacterial Blight		Bacterial Pulstule	Brown Stem Rot	Frogeye Race 2	Phytophthora Rot	Pod and Stem Blight	Purple Stain
	Ill.	Ia.	Ia.	Ill.	Ind.	Ind.	Del.	Del.
	a[1]	a	a	n[1]	a	a	n	n
Amsoy	4	3	4	4	S	S	3.2	2.3
Harosoy	4	3	4	4	S	S	1.5	1.0
Harosoy 63	4	3	4	4	S	R	1.5	1.5
L2A	4	4	4	4	S	R	1.5	1.0
Hawkeye 63	3	3	4	4	S	R	1.0	1.5
Lindarin 63	4	3	4	4	S	R	1.5	1.5
SL6	4	4	2	4	S	R	1.5	1.2
Al-439	3	3	4	4	S	S	2.0	1.2
Al-1051	4	4	5	4	S	S	2.4	1.0
AX84-90	4	4	3	4	R	S	3.4	1.0
AX84-98	4	4	4	4	Seg.	S	2.0	1.0
C1335	4	5	3	4	R	S	1.5	1.5
L62-1932	4	4	3	4	S	S	3.5	1.5
M405	3	3	5	4	S	S	1.8	1.3
W1-4243	3	3	4	4	S	S	1.7	1.0

[1]a = artificial inoculation; n = natural infection.

Table 43. Yield and yield rank for Uniform Test II, 1965.

Strain	Mean of 28 Tests	Ridgetown Ont.	Harrow Ont.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Dundee Mich.	Knox Ind.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Madison Wis.	Shabbona Ill.	Dwight Ill.
Amsoy	40.8	43.0	29.4	47.8	23.9	39.3	41.6	38.4	37.7	61.3	50.5	37.0	32.7	49.1	52.1
Harosoy	39.0	41.8	34.9	48.6	22.8	38.6	39.2	39.7	35.5	53.2	46.8	31.9	31.4	46.9	53.2
Har. 63	37.9	41.1	32.8	44.2	24.4	36.5	36.8	38.9	42.4	52.8	45.4	31.9	31.4	44.9	50.7
L2A	38.9	44.6	33.5	46.6	26.3	40.3	40.1	41.2	39.2	52.7	43.8	32.3	31.0	46.6	49.6
Hawk. 63	36.9	35.6	29.0	48.8	21.1	35.6	34.6	38.1	40.1	51.9	44.2	31.6	35.8	45.0	46.9
Lind. 63	36.7	39.7	33.4	38.9	21.9	32.8	37.7	36.5	39.9	51.0	46.5	29.2	32.9	42.1	46.3
SL6	37.7	38.6	32.0	40.4	24.1	38.8	37.3	35.2	38.5	52.6	44.1	31.5	31.9	43.2	47.1
A1-439	40.3	50.7	33.7	42.8	21.8	30.3	44.6	39.9	40.4	52.5	44.0	24.1	34.4	51.8	54.3
A1-1051	39.9	42.5	34.6	52.9	21.3	44.3	36.3	37.2	37.7	53.0	41.9	26.3	32.6	50.7	49.0
AX84-90	35.1	38.4	28.2	36.5	15.9	26.4	34.0	34.6	27.1	51.6	35.0	27.3	27.8	39.7	47.3
AX84-98	34.8	34.8	26.1	36.6	12.9	29.4	30.2	34.4	31.8	50.0	38.7	31.8	28.4	41.4	49.9
C1335	42.6	36.3	34.8	50.2	25.5	51.0	36.8	34.5	48.4	62.6	53.3	36.9	36.9	48.9	53.4
L62-1932	38.9	44.5	31.5	47.7	23.6	45.0	38.1	36.4	42.4	51.7	45.0	23.2	33.9	48.9	50.0
M405	36.1	41.8	28.1	44.1	20.0	38.2	36.0	35.1	30.6	50.6	38.0	29.8	29.3	45.9	48.0
W1-4243	40.1	49.1	32.5	48.7	23.8	41.2	39.7	36.2	41.6	54.9	43.5	27.1	33.6	49.5	49.5
C.V.(%)		7.7	11.1	9.0	13.1	14.7	7.2	11.3	8.2	8.3	6.5	11.4	8.2	5.1	8.1
L.S.D.(5%)		4.6	5.0	5.8	4.1	7.9	3.8	N.S.	4.1	6.5	4.1	4.9	3.8	3.3	N.S.
R.Sp.(In.)		24	40	28	32	28	28	40	38	38	38	38	36	40	38

	Yield Rank														
Amsoy	2	5	11	6	5	6	2	5	10	2	2	1	7	4	4
Harosoy	6	7	1	5	8	8	5	3	12	4	3	4	10	7	3
Har. 63	9	9	7	9	3	10	9	4	2	6	5	4	10	11	5
L2A	7	3	5	8	1	5	3	1	8	7	10	3	12	8	8
Hawk. 63	11	14	12	3	12	11	13	6	6	10	7	7	2	10	14
Lind. 63	12	10	6	13	9	12	7	8	7	13	4	10	6	13	15
SL6	10	11	9	12	4	7	8	11	9	8	8	8	9	12	13
A1-439	3	1	4	11	10	13	1	2	5	9	9	14	3	1	1
A1-1051	5	6	3	1	11	3	11	7	10	5	12	13	8	2	10
AX84-90	14	12	13	15	14	15	14	13	15	12	15	11	15	15	12
AX84-98	15	15	15	14	15	14	15	15	13	15	13	6	14	14	7
C1335	1	13	2	2	2	1	9	14	1	1	1	2	1	5	2
L62-1932	7	4	10	7	7	2	6	9	2	11	6	15	4	5	6
M405	13	7	14	10	13	9	12	12	14	14	14	9	13	9	11
W1-4243	4	2	8	4	6	4	4	10	4	3	11	12	5	3	9

*Not included in the mean.
[1]Three replications.

Table 43. (Continued)

Strain	Ur-bana Ill.	Gi-rard Ill.[1]	Edge-wood Ill.	Eldo-rado Ill.	Car-bon-dale Ill.	Lam-ber-ton Minn. *	Wa-seca Minn.	Suth-er-land Iowa	Kana-wha Iowa	Inde-pen-dence Iowa	Ames Iowa	Kirks-ville Mo.	Co-lum-bia Mo.	Brook-ings S.D. *	Cen-ter-ville S.D.	Lin-coln Nebr.
Amsoy	57.3	49.6	35.8	49.0	37.9	20.5	23.9	29.6	45.0	36.8	28.6	38.3	40.9	19.7	40.8	44.5
Har.	51.4	41.9	32.8	49.0	35.7	18.9	27.8	29.5	40.8	37.6	27.8	34.9	36.4	20.5	37.7	45.3
Hr.63	48.7	40.3	29.8	45.8	37.2	22.9	28.4	28.3	40.8	36.6	27.0	32.0	34.4	20.5	35.6	41.9
L2A	50.7	43.2	31.4	46.9	36.1	22.3	29.2	28.7	38.6	38.3	26.5	33.1	36.2	22.4	38.1	43.3
Hk.63	50.6	41.6	31.5	45.3	33.6	15.1	20.0	26.8	36.3	34.7	26.3	33.9	37.6	14.0	36.3	41.7
Ln.63	48.4	40.0	32.3	43.4	34.7	18.8	23.4	27.9	38.7	34.4	24.1	34.7	34.1	17.9	36.7	45.3
SL6	49.0	40.7	33.9	45.3	34.8	19.8	26.9	28.2	39.4	34.7	26.2	35.4	37.1	21.3	42.0	46.3
-439	57.5	42.4	37.6	45.1	35.2	24.2	35.0	32.0	45.9	40.6	28.3	35.7	33.8	26.3	45.5	47.1
-1051	49.1	44.7	37.0	47.2	36.2	21.7	29.1	34.3	44.6	42.1	28.1	36.1	39.2	21.3	45.7	43.4
84-90	45.3	39.1	30.8	42.0	37.2	22.3	29.9	26.7	43.0	37.2	25.4	33.6	32.3	21.6	43.7	48.1
84-98	51.0	41.1	34.3	41.4	35.2	9.1	20.9	23.7	39.9	35.0	26.9	34.1	30.1	13.8	41.7	43.3
C1335	58.5	53.4	38.3	54.0	44.3	13.6	23.0	30.4	43.0	39.6	31.6	38.0	43.2	10.8	39.6	45.6
-1932	50.6	44.2	31.8	48.8	33.5	19.3	25.6	29.1	42.0	35.4	28.6	34.0	39.8	21.3	41.0	42.2
M405	47.8	31.7	28.7	43.5	33.8	22.6	31.7	30.0	41.0	37.3	25.8	32.1	29.7	21.9	44.7	36.7
-4243	52.3	41.8	33.9	47.6	35.3	21.5	32.0	31.4	43.7	39.3	29.5	37.0	39.1	22.8	44.5	44.2
CV(%)	4.8	5.8	9.1	6.3	--	11.4	8.6	8.3	5.4	7.8	5.0	6.5	7.5	12.3	10.6	7.6
LSD(5%)	3.5	4.1	4.3	4.2	--	3.1	3.3	3.3	3.0	3.9	1.9	3.2	3.9	3.5	6.2	4.8
RS(In.)	40	30	38	36	40	40	40	40	40	40	40	38	38	40	40	40

Yield Rank

Amsoy	3	2	4	2	2	8	11	6	2	9	3	1	2	11	9	7
Har.	5	7	8	2	7	11	8	7	9	6	7	7	8	9	12	5
Hr.63	12	12	14	8	3	2	7	10	9	10	8	15	10	9	15	13
L2A	7	5	12	7	6	4	5	9	14	5	10	13	9	3	11	10
Hk.63	8	9	11	9	14	13	15	13	15	13	11	11	6	13	14	14
Ln.63	13	13	9	13	12	12	12	12	13	15	15	8	11	12	13	5
SL6	11	11	6	9	11	9	9	11	12	13	12	6	7	6	6	3
-439	2	6	2	11	9	1	1	2	1	2	5	5	12	1	2	2
-1051	10	3	3	6	5	6	6	1	3	1	6	4	4	6	1	9
84-90	15	14	13	14	3	4	4	14	5	8	14	12	13	5	5	1
84-98	6	10	5	15	9	15	14	15	11	12	9	9	14	14	7	10
C1335	1	1	1	1	1	14	13	4	5	3	1	2	1	15	10	4
-1932	8	4	10	4	15	10	10	8	7	11	3	10	3	6	8	12
M405	14	15	15	12	13	3	3	5	8	7	13	14	15	4	3	15
-4243	4	8	6	5	8	7	2	3	4	4	2	3	5	2	4	8

Table 44. Maturity, days earlier (-) or later (+) than Harosoy 63, and lodging for Uniform Test II, 1965.

Strain	Mean of 26 Tests	Ridge-town Ont.	Har-row Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	Dun-dee Mich.	Knox Ind.	Bluff-ton Ind.	Lafa-yette Ind.	Green-field Ind.	Wor-thing-ton Ind. *	Madi-son Wis.	Shab-bona Ill.	Dwight Ill.
Amsoy	+4.8	+ 4	+1	+10	+ 2	+1	+ 6	+4	+ 4	+ 4	+4		+ 6	+ 7	+ 7
Harosoy	+0.9	+ 1	0	+ 1	+ 1	-2	+ 1	0	+ 1	+ 3	+1		+ 2	+ 1	+ 1
Har. 63	0	0	0	0	0	0	0	0	0	0	0		0	0	0
L2A	+0.1	- 1	-1	0	0	-2	0	-1	+ 1	0	0		0	+ 1	0
Hawk. 63	+6.7	+ 6	+3	+ 9	+ 3	0	+ 8	+3	+10	+12	+4		+ 8	+ 7	+10
Lind. 63	+1.6	+ 5	+2	+ 7	+ 2	0	- 2	-1	+ 1	+ 5	0		+ 1	+ 1	+ 1
SL6	+0.7	0	+1	0	+ 3	+1	- 3	-2	- 1	+ 3	-1		+ 7	- 1	- 1
Al-439	+1.8	+ 4	+1	+ 7	0	+1	+ 3	+1	0	+ 2	-1		+ 3	+ 5	+ 7
Al-1051	+1.7	+ 1	+1	+11	+ 3	+1	- 6	-2	+ 4	+ 4	-1		+ 3	+ 2	0
AX84-90	-1.3	- 2	-1	- 8	- 6	-4	- 9	-9	- 4	+ 1	-3		+ 4	- 4	- 7
AX84-98	+3.7	+ 5	-1	+ 7	+ 1	-3	+ 4	+2	+ 4	+ 9	-3		+ 5	+ 3	- 1
C1335	+9.7	+10	+5	+21	+14	+4	+11	+5	+16	+20	+9		+13	+11	+11
L62-1932	+2.7	0	+1	+12	+ 4	+3	- 5	0	+ 5	+ 3	0		+ 3	+ 2	+ 2
M405	+0.4	+ 1	+2	+ 4	+ 5	+3	- 7	-4	+ 3	+ 2	0		- 1	+ 1	- 3
W1-4243	+2.8	+ 3	0	+10	+ 5	+1	- 3	+1	+ 2	+ 3	-3		+ 1	+ 4	+ 3
Date pltd.		5-20	5-17	5-20	5-24	5-18	5-12	5-21	5-27	5-14	5-14	5-21	5-12	5-18	5-18	5-28
Har. 63 mat.		9-18	10-3	9-23	9-18	9-15	9-17	10-8	10-4	9-9	9-14	9-22	--	9-26	10-1	9-30
Da. to mat.		121	139	126	117	120	128	140	130	118	123	124	--	131	136	125

	Mean of 24 Tests	Lodging													
			*		*	*									
Amsoy	2.3	5.0	1.0	3.0	1.0	1.0	3.0	2.3	1.0	2.0	2.5	3.1	1.6	2.2	3.3
Harosoy	2.3	5.0	1.0	3.0	1.0	1.0	2.7	2.5	1.3	3.0	2.8	3.3	1.6	2.4	3.1
Har. 63	2.5	5.0	1.0	4.0	1.0	1.0	3.0	2.0	1.8	3.0	2.8	3.4	2.1	2.2	3.2
L2A	2.5	5.0	1.0	3.7	1.0	1.0	3.0	2.3	1.8	3.0	3.0	3.2	2.0	2.5	3.4
Hawk. 63	2.2	5.0	1.0	2.0	1.0	1.0	3.0	2.0	1.0	2.5	1.8	3.4	1.9	1.6	2.9
Lind. 63	1.9	4.0	1.0	1.7	1.0	1.0	2.5	1.6	1.0	2.0	1.8	2.7	1.5	1.9	2.4
SL6	1.9	4.0	1.0	3.0	1.0	1.0	2.4	1.6	1.0	2.0	1.5	3.1	1.5	1.9	2.2
Al-439	2.3	5.0	1.0	2.7	1.0	1.0	2.9	2.1	1.8	2.8	3.0	3.3	1.9	2.4	2.9
Al-1051	2.2	4.0	1.0	3.5	1.0	1.0	3.5	2.3	1.3	2.3	2.0	3.0	2.0	3.1	3.0
AX84-90	1.4	2.0	1.0	1.0	1.0	1.0	1.0	1.3	1.0	1.3	1.3	2.6	1.4	1.2	1.7
AX84-98	1.5	3.0	1.0	1.0	1.0	1.0	1.6	1.4	1.0	2.0	1.3	2.9	1.5	1.6	1.9
C1335	2.2	5.0	1.0	3.5	1.0	1.0	3.0	2.5	1.5	2.0	2.3	3.0	1.9	2.7	3.0
L62-1932	2.0	5.0	1.0	1.7	1.0	1.0	3.0	2.0	1.3	2.3	1.8	3.1	2.5	2.2	2.6
M405	1.7	4.0	1.0	1.7	1.0	1.0	1.3	1.8	1.3	2.8	1.8	3.1	1.5	1.6	2.3
W1-4243	2.3	5.0	1.0	3.5	1.0	1.0	3.2	1.8	1.3	2.8	2.3	3.7	2.0	2.1	3.1

*Not included in the mean.

Table 44. (Continued)

Strain	Urbana Ill.	Girard Ill.	Edgewood Ill.	Eldorado Ill.	Carbondale Ill.	Lamberton Minn. *	Waseca Minn. *	Sutherland Iowa	Kanawha Iowa	Independence Iowa	Ames Iowa	Kirksville Mo.	Columbia Mo.	Brookings S.D. *	Centerville S.D.	Lincoln Nebr.
Amsoy	+5	+7	+5	+3	-2			+ 8	+ 7	+ 4	+ 9	+7	+9	+1	-1	+4
Har.	0	+3	0	0	-1			+ 1	+ 2	+ 1	+ 3	+2	+1	0	0	0
Hr. 63	0	0	0	0	0			0	0	0	0	0	0	0	0	0
L2A	-1	+2	0	0	-2			- 1	+ 1	- 1	0	+3	0	-1	0	+4
Hk. 63	+7	+8	+8	+5	+4			+13	+10	+ 8	+10	+6	+6	+3	+1	+4
Ln. 63	+1	0	+4	-1	-1			+ 4	+ 2	+ 3	+ 5	+1	+1	+3	-2	+2
SL6	0	+1	+4	-1	-2			+ 1	+ 1	+ 2	+ 3	0	0	0	-1	+4
-439	+4	-2	+2	0	-2			+ 3	+ 1	+ 1	+ 5	+3	0	-1	-2	+2
-1051	+2	+2	+2	+3	0			+ 5	+ 3	+ 2	+ 5	-1	0	+1	-2	+3
84-90	-3	-5	-1	-1	-1			+ 8	+ 5	0	+ 5	+5	+1	0	+1	+4
84-98	0	+6	+6	-1	-2			+14	+11	+10	+12	+2	+1	+7	+2	+4
C1335	+8	+9	+6	+4	+3			+14	+12	+ 9	+12	+9	+8	+4	+3	+6
-1932	+2	0	+4	+3	+2			+ 8	+ 5	+ 5	+ 9	-2	+2	+2	0	+2
M405	0	-5	+2	+1	-1			+ 6	- 1	+ 1	+ 3	-2	0	0	-1	+2
-4243	+4	+2	+3	+3	0			+10	+ 4	+ 5	+ 9	0	+2	+1	+1	+3
D.pltd.	5-20	5-17	5-18	5-13	5-12	6-2	5-28	5-12	5-14	5-7	5-31	6-10	5-18	6-1	5-24	5-28
Mat.	9-13	9-2	8-24	8-19	8-16	--	--	9-15	9-23	9-21	9-17	9-30	9-4	10-5	10-10	9-25
D. to m.	116	108	98	98	96	--	--	126	132	137	109	112	109	126	139	120

Lodging

						*										
Amsoy	2.4	2.1	1.2	2.8	1.0	3.0	2.5	1.4	1.5	1.3	1.1	2.4	3.8			2.6
Har.	2.9	2.5	1.3	2.1	1.0	3.0	2.5	1.4	1.7	1.4	1.3	2.4	2.0			3.1
Hr. 63	3.1	2.2	1.6	2.1	2.0	3.2	2.5	1.4	1.7	1.5	1.2	2.6	2.0			3.0
L2A	2.9	2.5	1.6	2.3	2.0	3.5	2.2	1.4	1.7	1.4	1.3	2.5	2.5			3.5
Hk. 63	2.2	1.8	1.3	2.0	2.0	3.2	2.8	1.4	1.8	1.5	1.2	1.9	2.5			2.4
Ln. 63	2.1	1.7	1.2	1.4	2.0	2.8	2.0	1.3	1.4	1.2	1.2	1.8	2.3			1.8
SL6	2.0	1.4	1.2	1.8	1.0	2.5	2.2	1.3	1.5	1.4	1.2	1.8	2.3			2.3
-439	3.2	2.2	1.2	2.5	1.0	3.0	2.0	1.4	1.6	1.4	1.2	2.5	2.5			2.8
-1051	2.4	1.8	1.2	2.5	1.0	3.2	2.0	1.4	1.6	1.4	1.3	2.2	2.5			1.9
84-90	1.5	1.1	1.1	1.3	1.0	2.8	2.2	1.2	1.4	1.2	1.2	1.8	2.0			1.1
84-98	1.7	1.3	1.0	1.2	1.0	3.8	2.8	1.0	1.4	1.1	1.1	1.4	1.5			1.1
C1335	2.2	1.4	1.1	1.6	1.0	2.2	2.5	1.4	1.6	1.4	1.4	2.0	2.8			1.9
-1932	1.8	1.5	1.2	1.6	1.0	3.5	2.0	1.3	1.6	1.2	1.4	1.8	1.8			1.4
M405	1.8	2.1	1.1	1.3	1.0	1.8	2.0	1.2	1.4	1.2	1.2	1.7	1.3			1.1
-4243	2.3	2.0	1.4	1.9	1.0	3.5	2.8	1.4	1.6	1.3	1.2	2.1	2.5			1.8

Table 45. Plant height and seed quality for Uniform Test II, 1965.

Strain	Mean of 27 Tests	Ridge-town Ont.	Har-row Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	Dun-dee Mich.	Knox Ind.	Bluff-ton Ind.	Lafa-yette Ind.	Green-field Ind.	Wor-thing-ton Ind.	Madi-son Wis.	Shab-bona Ill.	Dwight Ill.
Amsoy	38	44	24	37	23	**27**	**42**	38	38	45	47		28	44	43
Harosoy	38	44	26	36	23	29	42	40	38	44	47		27	43	44
Har. 63	38	47	25	37	24	28	41	40	39	47	46		28	40	43
L2A	38	44	25	38	25	29	43	40	38	46	46		28	44	43
Hawk. 63	39	43	25	36	25	27	43	37	39	44	45		29	44	44
Lind. 63	34	41	24	32	23	29	39	34	36	42	42		26	39	38
SL6	34	40	23	32	22	28	39	33	35	42	41		27	37	37
A1-439	37	44	25	34	23	25	42	36	36	45	44		28	44	41
A1-1051	35	43	25	34	22	26	39	34	35	42	41		25	39	39
AX84-90	32	39	20	28	16	21	32	31	28	**42**	38		24	35	34
AX84-98	30	36	20	31	19	22	34	32	28	37	33		22	36	36
C1335	37	42	28	36	26	35	41	**37**	39	44	45		29	45	40
L62-1932	35	40	25	33	24	30	38	35	36	41	41		26	39	39
M405	33	39	24	32	25	30	38	31	33	41	38		25	39	36
W1-4243	38	41	25	35	24	29	40	35	36	42	40		25	39	39

	Mean of 26 Tests	Seed Quality														
Amsoy	2.2	2.0	2.0	1.0	1.0	2.0	3.0	1.5	1.5	2.0	2.5	4.0	2.0	2.5	2.8
Harosoy	1.9	1.0	1.0	1.0	1.0	1.0	2.0	1.5	1.0	1.5	2.5	3.0	2.0	2.3	2.3
Har. 63	1.9	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.5	2.5	3.5	2.0	2.4	2.1
L2A	2.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.5	3.0	3.5	2.0	2.4	2.1
Hawk. 63	1.9	1.0	1.5	1.0	1.0	1.0	2.0	1.0	1.5	1.5	2.5	3.5	2.0	1.8	2.1
Lind. 63	1.7	1.0	1.2	1.0	1.0	1.0	2.0	1.0	1.0	1.5	2.5	3.5	2.0	2.0	2.0
SL6	1.7	1.0	1.2	1.0	1.0	1.0	2.0	1.0	1.0	1.5	2.0	3.5	1.0	1.6	1.5
A1-439	2.0	2.0	1.2	1.0	1.0	2.0	3.0	1.5	1.5	1.5	2.5	3.0	2.0	2.4	2.0
A1-1051	1.5	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.5	1.5	2.0	1.0	1.8	1.6
AX84-90	2.8	3.0	2.0	2.0	1.5	3.0	3.5	2.0	2.5	2.5	2.5	2.5	2.0	3.5	4.0
AX84-98	2.1	2.0	1.2	1.0	1.2	1.2	3.5	1.5	1.5	2.0	2.0	2.5	2.0	2.5	3.0
C1335	2.2	2.0	2.5	1.0	1.0	1.0	3.0	1.5	1.5	2.0	2.0	3.5	2.0	2.0	3.0
L62-1932	1.8	1.0	1.0	1.0	1.0	1.0	3.0	1.5	1.0	1.5	1.5	2.5	2.0	2.3	2.3
M405	2.2	2.0	1.2	1.0	1.0	2.7	2.0	1.5	1.5	2.0	3.5	2.0	2.0	2.5	2.3
W1-4243	1.8	1.0	1.0	1.0	1.0	1.0	2.0	1.5	1.5	1.5	2.0	2.5	2.0	2.3	1.8

*Not included in the mean.

Table 45. (Continued)

Strain	Urbana Ill.	Girard Ill.	Edgewood Ill.	Eldorado Ill.	Carbondale Ill.	Lamberton Minn.*	Waseca Minn.	Sutherland Iowa	Kanawha Iowa	Independence Iowa	Ames Iowa	Kirksville Mo.	Columbia Mo.	Brookings S.D.*	Centerville S.D.	Lincoln Nebr.
Amsoy	37	41	39	43	39	33	39	38	42	36	34	39	33	38	39	44
Har.	37	42	39	45	39	35	39	38	42	38	34	38	34	38	38	43
Hr. 63	39	43	38	42	39	34	38	38	42	40	34	39	35	38	40	45
L2A	36	40	39	43	40	37	39	36	42	38	33	40	33	38	39	45
Hk. 63	38	42	39	44	40	40	41	41	44	37	35	39	36	41	40	46
In. 63	34	37	34	39	36	32	36	33	37	33	28	34	30	31	36	39
SL6	32	35	33	38	39	30	36	32	36	33	28	32	31	31	35	39
-439	37	38	37	39	40	35	39	37	40	36	32	37	32	34	37	42
-1051	32	38	34	37	39	33	37	35	37	34	30	32	30	33	37	38
84-90	31	33	32	34	40	33	36	35	40	32	30	35	27	32	38	38
84-98	29	32	28	32	41	31	33	30	36	27	26	29	25	28	31	32
C1335	36	39	35	41	40	35	38	38	41	36	34	33	31	35	36	40
-1932	34	38	33	40	41	33	35	34	38	32	30	31	31	33	36	38
M405	33	35	31	37	41	31	34	32	36	32	28	31	29	31	33	37
-4243	37	39	37	40	39	35	36	35	39	33	30	34	33	33	37	39

Seed Quality

									*							
Amsoy	3.1	3.2	2.0	3.5	2.0	2.5	2.2	1.4	1.0	1.6	1.2	2.3	3.8			2.3
Har.	2.0	3.0	2.1	3.3	1.0	2.5	2.2	1.5	1.0	1.3	1.1	2.2	2.8			2.6
Hr. 63	2.0	2.7	2.5	3.3	2.0	2.5	2.2	1.6	1.0	1.4	1.3	2.0	2.6			2.9
L2A	2.8	2.8	2.5	3.5	1.0	2.5	2.2	1.6	1.0	1.5	1.2	2.3	2.9			3.1
Hk. 63	2.1	2.7	2.5	2.9	2.0	3.0	2.5	1.0	1.0	1.0	1.0	2.1	3.8			1.6
In. 63	2.0	2.2	2.0	2.5	1.0	2.5	2.2	1.3	1.0	1.3	1.1	2.2	2.9			1.6
SL6	2.1	2.2	2.0	2.1	1.0	2.8	2.5	1.5	1.0	1.3	1.2	2.0	3.4			2.3
-439	3.0	2.3	1.5	2.4	2.0	2.5	2.0	1.7	1.0	2.2	1.3	2.0	3.1			3.0
-1051	2.1	2.2	1.5	3.1	1.0	2.5	1.8	1.6	1.0	1.1	1.0	1.0	2.8			1.4
84-90	4.1	4.0	3.4	3.5	2.0	2.8	2.0	2.4	1.0	2.8	2.5	2.6	4.3			3.3
84-98	2.6	3.8	2.9	3.3	2.0	3.0	2.8	1.5	1.0	1.2	1.0	2.1	3.8			1.4
C1335	2.6	3.0	2.9	3.5	2.0	3.5	3.0	1.3	1.0	1.0	1.0	1.8	3.9			1.9
-1932	1.9	2.5	2.3	3.0	1.0	2.2	1.8	1.5	1.0	1.3	1.2	2.0	3.3			2.0
M405	3.0	2.3	2.3	3.5	2.0	2.8	2.2	2.1	1.0	2.1	1.3	2.6	3.6			2.8
-4243	1.8	2.5	2.1	3.4	1.0	2.5	2.5	1.3	1.0	1.2	1.2	1.5	2.9			2.1

Table 46. Percentages of protein and oil for Uniform Test II, 1965.

Strain	Mean of 13 Tests	Harrow Ont.	Columbus Ohio	Knox Ind.	Lafayette Ind.	Madison Wis.	Shabbona Ill.
Amsoy	38.9	36.6	37.7	39.9	39.7	41.4	41.0
Harosoy	40.3	37.6	37.8	42.0	41.8	42.9	41.7
Harosoy 63	40.4	38.0	38.7	41.9	41.6	43.1	41.4
L2A	40.4	37.8	38.1	42.1	41.8	43.2	40.8
Hawkeye 63	40.4	37.5	38.3	42.6	41.4	41.5	42.3
Lindarin 63	40.8	38.0	38.4	42.4	41.9	43.3	42.6
SL6	40.6	38.1	39.5	43.1	41.9	44.7	42.9
A1-439	39.9	37.1	38.5	41.2	41.4	42.6	41.6
A1-1051	43.5	41.0	42.3	45.8	45.2	44.7	44.3
AX84-90	39.9	38.8	38.9	40.6	40.6	43.0	41.1
AX84-98	40.2	38.8	38.9	41.2	42.2	43.1	41.0
C1335	41.0	38.4	40.4	43.4	42.8	44.6	42.1
L62-1932	41.1	37.9	40.5	43.7	42.8	43.4	41.8
M405	39.2	36.6	38.7	40.4	40.2	40.4	40.1
W1-4243	39.7	36.4	38.1	42.1	40.6	40.4	41.0
	Mean of 13 Tests	Percentage of Oil					
Amsoy	22.5	23.3	23.9	22.0	22.4	20.1	21.1
Harosoy	21.4	22.5	22.8	20.8	21.3	18.6	20.0
Harosoy 63	21.4	22.2	22.4	21.0	21.4	19.0	20.1
L2A	21.3	22.7	22.8	20.8	21.6	18.8	19.9
Hawkeye 63	21.5	22.7	23.6	20.8	21.9	19.1	20.3
Lindarin 63	21.3	21.8	22.6	20.9	21.2	19.1	19.9
SL6	21.0	21.6	21.9	20.3	20.9	18.6	19.2
A1-439	21.7	23.0	22.7	21.1	21.2	18.9	20.5
A1-1051	20.7	21.6	21.4	20.3	20.3	18.7	19.4
AX84-90	20.9	21.6	22.2	20.1	20.0	18.4	20.0
AX84-98	20.9	22.0	22.3	19.8	20.2	18.6	20.1
C1335	21.0	21.9	22.1	20.0	21.1	18.6	19.7
L62-1932	21.7	22.5	22.3	20.7	21.4	19.8	19.7
M405	23.0	23.4	24.0	22.2	23.0	20.8	21.6
W1-4243	21.8	22.9	23.0	21.0	21.7	19.3	20.1

Table 46. (Continued)

Strain	Urbana Ill.	Eldorado Ill.	Kanawha Iowa	Ames Iowa	Columbia Mo.	Centerville S.D.	Lincoln Nebr.
Amsoy	37.8	40.7	37.7	38.9	39.4	37.3	37.4
Harosoy	39.4	41.3	39.7	40.7	40.9	39.3	39.3
Harosoy 63	40.0	41.7	39.6	40.6	39.8	39.7	39.5
L2A	39.8	41.5	39.3	40.9	41.2	39.8	39.4
Hawkeye 63	39.5	41.9	39.6	41.2	41.4	39.5	38.9
Lindarin 63	40.0	41.4	39.9	40.6	43.5	40.0	38.1
SL6	39.0	40.7	39.9	40.0	40.0	40.5	37.8
A1-439	39.3	40.8	39.7	40.1	39.3	39.3	37.5
A1-1051	43.5	45.0	43.7	43.1	42.2	42.1	42.5
AX84-90	38.9	40.4	38.9	39.9	38.5	40.0	38.6
AX84-98	39.2	40.5	39.5	40.5	39.0	40.4	38.0
C1335	40.4	42.0	39.8	41.1	40.2	40.5	37.3
L62-1932	41.1	41.6	40.3	40.5	40.3	40.6	39.7
M405	39.0	41.0	38.4	39.7	39.5	38.8	37.4
W1-4243	39.8	40.7	39.3	40.4	39.9	39.0	37.8

	Percentage of Oil						
Amsoy	24.0	24.2	21.4	22.3	23.5	20.7	23.3
Harosoy	21.9	23.8	20.9	21.3	22.5	19.7	21.7
Harosoy 63	21.9	23.2	21.3	21.7	22.0	19.7	22.4
L2A	21.8	23.4	20.2	21.4	22.6	19.4	22.1
Hawkeye 63	22.4	23.0	21.1	20.6	21.6	19.4	22.7
Lindarin 63	21.0	23.5	21.3	21.8	22.4	19.1	22.8
SL6	21.7	23.4	21.6	21.1	22.0	18.7	22.4
A1-439	22.2	22.9	21.5	21.7	22.8	20.0	23.0
A1-1051	21.0	21.8	20.6	21.1	21.6	19.6	21.6
AX84-90	22.2	22.4	20.0	21.0	22.4	18.9	22.0
AX84-98	22.2	22.2	20.1	20.6	22.2	18.9	22.5
C1335	21.9	23.0	20.9	21.1	22.2	19.3	21.7
L62-1932	22.5	24.1	21.3	22.0	23.2	20.5	22.1
M405	23.6	24.5	23.1	23.0	23.8	21.5	24.2
W1-4243	22.3	23.8	21.2	21.7	22.3	20.5	23.5

Table 47. Four-year summary of data for Uniform Test II, 1962-1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	111	111	95	98	109	92	83	56	56
Amsoy[2]	40.0	2	+3.6	2.3	41	2.1	16.8	38.8	22.0
Harosoy	37.8	3	+0.8	2.6	40	2.0	17.4	40.4	20.9
Harosoy 63	36.9	4	0	2.7	41	2.0	17.3	40.4	20.9
Hawkeye 63	34.6	6	+5.4	2.4	41	1.9	17.6	40.5	21.0
Lindarin 63[3]	36.4	5	+0.7	2.1	37	1.9	15.9	40.4	21.0
A1-439[4]	40.1	1	+1.2	2.5	39	1.9	15.4	39.6	21.3

[1]Days earlier (-) or later (+) than Harosoy 63 which matured September 18, 119 days after planting.
[2]AX56P64-1 in 1962.
[3]C1294R in 1962.
[4]A8-932 in 1962-63.

Table 48. Four year summary of yield and yield rank for Uniform Test II, 1962-1965.

Strain	Mean of 111 Tests	Ridgetown Ont.	Harrow Ont.	Freehold N.J.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Dundee Mich.	Knox Ind.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Madison Wis.
Years Tested		1962-1965	1962-1965	1962-1964	1962-1965	1962-1965	1962-1965	1962-1964	1962-1965	1962-1965	1962-1965	1962-1965	1962-1965	1962-1965	1962-1965
Amsoy[1]	40.0	44.7	34.5	34.9	36.2	28.4	32.6	35.3	37.0	41.7	42.1	51.9	40.2	49.7	34.5
Harosoy	37.8	41.7	33.0	34.0	35.3	28.7	36.7	34.0	35.1	40.5	39.6	49.1	36.7	43.0	32.3
Har. 63	36.9	42.9	33.0	31.0	33.4	28.9	33.5	33.8	34.5	38.2	41.8	47.1	41.6	43.4	30.9
Hawk. 63	34.6	37.0	31.9	29.5	31.3	27.2	32.0	30.7	32.1	35.8	39.9	44.8	40.5	38.8	32.9
Lind. 63[2]	36.4	40.1	33.5	31.8	32.6	26.5	31.7	33.8	34.2	37.4	40.3	45.9	42.6	42.7	33.0
A1-439[3]	40.1	49.5	33.5	34.8	34.4	28.4	32.9	36.5	38.9	40.5	44.3	49.9	37.9	40.4	37.2
		Yield Rank													
Amsoy	2	2	1	1	1	3	4	2	2	1	2	1	4	1	2
Harosoy	3	4	4	3	2	2	1	3	3	2	6	3	6	3	5
Har. 63	4	3	4	5	4	1	2	4	4	4	3	4	2	2	6
Hawk. 63	6	6	6	6	6	5	5	6	6	6	5	6	3	6	4
Lind. 63	5	5	2	4	5	6	6	4	5	5	4	5	1	4	3
A1-439	1	1	2	2	3	3	3	1	1	2	1	2	5	5	1

[1]AX56P64-1 in 1962.
[2]C1294R in 1962.
[3]A8-932 in 1962-63.

Table 48. (Continued)

Strn.	Shab-bona Ill.	Dwight Ill.	Ur-bana Ill.	Gi-rard Ill.	Edge-wood Ill.	Eldo-rado Ill.	Car-bon-dale Ill.	Lam-ber-ton Minn.	Wa-seca Minn.	Suth-er-land Iowa	Kana-wha Iowa	Inde-pen-dence Iowa	Ames Iowa	Co-lum-bia Mo.	Cen-ter-ville S.D.	Lin-coln Nebr.
Yrs.	1962-	1962-	1962-	1962-	1962-	1964-	1964-	1962-	1962-	1962-	1962-	1962-	1962-	1962-	1962-	1962-63,
Tstd.	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965
Amsoy	48.3	44.5	50.4	44.7	35.9	49.0	29.0	30.0	33.3	38.5	45.7	35.9	39.0	36.3	42.3	46.1
Har.	46.0	42.7	46.7	40.6	34.5	44.4	27.7	29.3	32.4	36.7	40.2	33.6	35.8	33.8	38.0	43.2
Hr.63	44.7	41.0	45.8	37.5	33.4	38.5	28.6	29.8	32.2	36.2	39.6	33.4	34.9	31.4	37.6	43.6
Hk.63	38.4	38.7	41.7	39.0	32.1	38.0	25.7	24.7	27.5	34.6	35.6	31.2	32.7	31.9	37.8	42.5
Ln.63	41.5	40.1	43.7	40.2	33.7	41.0	26.5	28.2	31.0	34.8	40.0	33.5	33.1	30.9	39.1	45.5
-439	47.9	44.4	50.1	44.9	37.4	41.5	27.7	33.8	38.4	41.4	44.6	38.8	37.3	32.8	44.2	46.5
	Yield Rank															
Amsoy	1	1	1	2	2	1	1	2	2	2	1	2	1	1	2	2
Har.	3	3	3	3	3	2	3	4	3	3	3	3	3	2	4	5
Hr.63	4	4	4	6	5	5	2	3	4	4	5	5	4	5	6	4
Hk.63	6	6	6	5	6	6	6	6	6	6	6	6	6	4	5	6
Ln.63	5	5	5	4	4	4	5	5	5	5	4	4	5	6	3	3
-439	2	2	2	1	1	3	3	1	1	1	2	1	2	3	1	1

UNIFORM PRELIMINARY TEST II, 1965

Strain	Originating Agency	Origin	Generation Composited
Amsoy (A1-939)	Iowa A.E.S. & U.S.R.S.L.	Adams x Harosoy	F_8
Harosoy 63	Ill. A.E.S. & U.S.R.S.L.	Harosoy (8) x Blackhawk	3 F_3 lines
A3-2437	Iowa A.E.S. & U.S.R.S.L.	AX29-267-1-1-2 x A54-3159	F_6
A3-2439	Iowa A.E.S. & U.S.R.S.L.	AX29-267-1-1-2 x A54-3159	F_6
C1347	Purdue A.E.S. & U.S.R.S.L.	Lindarin x Ford	F_6
C1350	Purdue A.E.S. & U.S.R.S.L.	Lindarin x Ford	F_6
C1362	Purdue A.E.S. & U.S.R.S.L.	Lindarin x Harosoy	F_6
C1375	Purdue A.E.S. & U.S.R.S.L.	CX322 x CX323	F_5
C1376	Purdue A.E.S. & U.S.R.S.L.	CX291-42-1 x CX258-2-3-2	F_5
L63-1397	Ill. A.E.S. & U.S.R.S.L.	Harosoy (6) x T207	F_4
0-1259	Research Station, Harrow, Ont.	3-7/50 x Chippewa	F_6

Identification of Parent Strains

A54-3159	Hawkeye x Capital.
AX29-267-1-1-2	Adams x Hawkeye.
CX322	Sel. from Lindarin x sel. from (P.I. 65.338 x C1079). C1079 is a F_7 line from Lincoln x Ogden; from same F_4 line as Kent.
CX323	Sel. from Lindarin x L49-4196-12. L49-4196 is a selection from [F_3 Lincoln (2) x Richland] x (Lincoln x CNS).
CX258-2-3-2	P.I. 65.338 x C1079.
CX291-42-1	Mukden x C1069. C1069 is a F_7 line from Lincoln x Ogden, from the same F_4 line as Kent, in Uniform Test IV in 1954-58.
3-7/50	F_3 line from Harman x 9/42. 9/42 is a sel. from Mandarin x A.K. (Harrow).
T207	Pure line of P.I. 80.837 which is a selection of unknown origin from the original P.I. 80.837.

The only strains which yielded better than Amsoy were the four C strains which averaged about five days later than Amsoy. C1362 had unusually high yield at a number of locations.

The two early strains, 0-1259 and L63-1397, yielded about the same as Harosoy 63. L63-1397 is of interest since it is nearly isogenic to Harosoy except for the gene $\underline{Dt_2}$, which stops stem growth toward the end of the flowering period. This shortened plant height by about an average five inches and considerably reduced the lodging tendency of Harosoy. Since only the upper internodes are reduced, the short height should not be a disadvantage at harvest time.

Table 49. Descriptive data for the strains in Uniform Preliminary Test II, 1965.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color
Amsoy	P	G	Tan	S	Y	Y
Harosoy 63	P	G	Br	D	Y	Y
A3-2437	W	G	Br	D	Y	Bf
A3-2439	W	G	Br	D	Y	Bf
C1347	P	G	Br	D	Y	Ib
C1350	P	G	Br	D	Y	Bf
C1362	P	G	Br	D	Y	Dbf
C1375	P	G	Br	D	Y	Bf
C1376	P	G	Br	S	Y	Ib
L63-1397	P	G	Br	D	Y	Y
0-1259	P	G	Br	S	Y	Bf

Table 50. Summary of data for Uniform Preliminary Test II, 1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	16	16	15	12	16	11	10	8	8
Amsoy	39.6	5	+3.5	1.9	36	2.0	17.9	37.9	22.8
Harosoy 63	36.9	7	0	2.1	36	1.5	18.5	39.6	21.5
A3-2437	35.7	10	+8.3	2.2	36	1.9	19.0	41.1	21.5
A3-2439	35.2	11	+8.3	2.0	36	1.8	18.8	41.0	21.7
C1347	41.3	3	+8.1	2.1	36	1.7	17.7	39.6	21.5
C1350	40.7	4	+8.8	2.0	34	1.9	18.5	40.6	21.1
C1362	44.2	1	+8.9	1.9	38	1.8	18.0	39.4	21.6
C1375	41.6	2	+8.1	2.5	33	2.0	17.8	39.9	22.1
C1376	38.2	6	+5.3	2.0	33	1.5	18.6	41.1	21.2
L63-1397	36.8	9	-0.5	1.7	31	1.4	18.3	40.0	21.4
0-1259	36.9	7	-0.3	2.1	35	1.9	17.0	38.8	22.4

[1]Days earlier (-) or later (+) than Harosoy 63 which matured September 23, 124 days after planting.

Table 51. Disease data for Uniform Preliminary Test II, 1965.

Strain	Bacterial Blight Ill. a[1]	Brown Stem Rot Ill. n[1]	Frogeye Race 2 Ind. a	Phytophthora Rot Ind. a	Pod and Stem Blight Del. n	Purple Stain Del. n
Amsoy	4	3	S	S	3.3	2.3
Harosoy 63	4	4	S	R	1.5	1.5
A3-2437	3	1	S	S	2.5	1.8
A3-2439	3	4	S	S	2.5	1.7
C1347	3	4	S	S	3.0	2.0
C1350	4	4	S	S	4.0	3.0
C1362	4	1	S	S	4.0	3.5
C1375	4	3	S	S	3.0	1.8
C1376	5	3	S	R	3.5	1.5
L63-1397	4	3	S	S	1.5	1.0
O-1259	4	1	S	S	1.5	1.0

[1]a = artificial inoculation; n = natural infection.

Table 52. Yield and yield rank for Uniform Preliminary Test II, 1965.

Strain	Mean of 16 Tests	Ridge-town Ont.	Har-row Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	Knox Ind.	Lafa-yette Ind.	Madi-son Wis.
Amsoy	39.6	40.8	26.2	49.9	27.5	36.6	34.0	55.5	35.5
Harosoy 63	36.9	40.4	30.7	42.4	26.8	37.0	32.5	48.6	32.5
A3-2437	35.7	37.3	33.0	39.7	20.5	32.8	26.8	46.4	38.1
A3-2439	35.2	34.0	33.0	37.2	19.2	37.9	29.0	46.2	33.1
C1347	41.3	36.1	35.5	52.1	31.8	48.2	33.5	57.6	39.0
C1350	40.7	38.2	35.0	45.2	23.5	50.7	28.9	60.5	42.8
C1362	44.2	35.5	38.9	47.9	31.6	54.2	35.0	60.8	42.4
C1375	41.6	31.9	40.9	48.3	29.5	49.1	34.9	55.9	36.4
C1376	38.2	33.9	24.8	46.4	29.7	44.2	31.4	52.0	36.7
L63-1397	36.8	37.5	31.6	46.4	29.9	41.0	29.7	45.9	31.7
0-1259	36.9	40.4	32.5	46.7	25.4	34.8	34.8	47.4	30.6
Coef. of Var. (%)		10.9	11.3	11.7	9.4	9.8	11.6	7.6	4.1
L.S.D. (5%)		N.S.	8.3	N.S.	5.6	9.3	N.S.	6.3	3.3
Row Spacing (In.)		24	40	28	32	28	40	38	36

	Yield Rank								
Amsoy	5	1	10	2	6	9	4	5	7
Harosoy 63	7	2	9	9	7	8	6	7	9
A3-2437	10	6	5	10	10	11	11	9	4
A3-2439	11	9	5	11	11	7	9	10	8
C1347	3	7	3	1	1	4	5	3	3
C1350	4	4	4	8	9	2	10	2	1
C1362	1	8	2	4	2	1	1	1	2
C1375	2	11	1	3	5	3	2	4	6
C1376	6	10	11	6	4	5	7	6	5
L63-1397	9	5	8	6	3	6	8	11	10
0-1259	7	2	7	5	8	10	3	8	11

*Not included in the mean.

Table 52. (Continued)

Strain	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Ames Iowa	Kirksville Mo.	Columbia Mo.	Brookings S.D.*	Centerville S.D.	Lincoln Nebr.
Amsoy	55.0	50.3	43.8	28.8	39.3	41.8	16.1	35.0	34.2
Harosoy 63	45.5	47.3	36.6	23.0	31.7	36.7	20.3	41.8	36.6
A3-2437	51.4	47.7	37.2	23.8	32.5	34.1	11.0	37.5	32.6
A3-2439	47.3	48.5	34.0	26.6	34.2	33.4	6.8	37.2	32.6
C1347	52.2	55.6	36.2	25.0	37.0	42.5	9.0	36.1	42.3
C1350	46.5	56.6	39.8	28.0	39.4	41.5	13.1	37.2	38.1
C1362	54.9	61.1	40.8	29.3	40.2	46.1	12.2	42.8	45.6
C1375	47.0	59.5	42.2	30.2	36.8	39.6	13.5	40.5	42.7
C1376	50.0	50.3	39.2	24.8	34.0	37.2	12.9	34.1	42.7
L63-1397	44.5	45.1	38.0	24.8	33.3	34.3	21.7	37.5	37.1
0-1259	45.3	48.0	37.5	21.6	34.3	33.1	14.1	40.0	37.5
Coef. of Var. (%)	6.3	4.3	5.5	7.7	4.5	5.0	12.5	6.7	10.7
L.S.D. (5%)	6.9	5.0	4.3	4.4	3.6	4.2	3.8	5.7	9.0
Row Spacing (In.)	38	40	40	40	38	38	40	40	40

	Yield Rank								
Amsoy	1	5	1	3	3	3	3	10	9
Harosoy 63	9	10	9	10	11	7	2	2	8
A3-2437	4	9	8	9	10	9	9	5	10
A3-2439	6	7	11	5	7	10	11	7	10
C1347	3	4	10	6	4	2	10	9	4
C1350	8	3	4	4	2	4	6	7	5
C1362	2	1	3	2	1	1	8	1	1
C1375	7	2	2	1	5	5	5	3	2
C1376	5	5	5	7	8	6	7	11	2
L63-1397	11	11	6	7	9	8	1	5	7
0-1259	10	8	7	11	6	11	4	4	6

Table 53. Maturity, days earlier (-) or later (+) than Harosoy 63, for Uniform Preliminary Test II, 1965.

Strain	Mean of 15 Tests	Ridge-town Ont.	Har-row Ont.	Hoyt-ville Ohio *	Woos-ter Ohio	Co-lum-bus Ohio	Knox Ind.	Lafa-yette Ind.	Madi-son Wis.
Amsoy	+3.5	+ 5	+2	+ 8	-1	+ 2	+2	+ 6	+ 2
Harosoy 63	0	0	0	0	0	0	0	0	0
A3-2437	+8.3	+10	+7	+18	+6	+ 2	+5	+17	+ 9
A3-2439	+8.3	+11	+4	+18	+3	+13	+4	+19	+ 8
C1347	+8.1	+10	+7	+18	+7	+12	+4	+15	+ 7
C1350	+8.8	+10	+7	+18	+8	+10	+4	+14	+ 9
C1362	+8.9	+12	+5	+18	0	+11	+4	+18	+ 9
C1375	+8.1	+12	+7	+18	+6	+10	+3	+12	+10
C1376	+5.3	+10	+4	+18	-1	+ 4	+3	+13	+ 6
L63-1397	-0.5	- 2	0	0	-2	+ 3	-2	+ 4	- 1
0-1259	-0.3	+ 3	0	0	-3	+ 2	-5	+ 2	- 2
Date planted	5-22	5-17	5-20	5-24	5-18	5-12	5-27	5-14	5-18
Harosoy 63 matured	9-23	10-1	9-22	9-18	9-20	9-16	10-4	9-16	9-26
Days to mature	124	137	125	117	125	127	130	125	131

*Not included in the mean.

Table 53. (Continued)

Strain	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Ames Iowa	Kirksville Mo.	Columbia Mo.	Brookings S.D. *	Centerville S.D.	Lincoln Nebr.
Amsoy	+ 1	+ 2	+ 8	+ 6	+ 8	+ 4	+3	-1	+6
Harosoy 63	0	0	0	0	0	0	0	0	0
A3-2437	+ 9	+ 7	+12	+11	+12	+ 9	+4	+1	+8
A3-2439	+ 8	+ 8	+12	+10	+12	+ 6	+5	0	+6
C1347	+ 9	+ 9	+12	+11	+ 3	+ 6	+3	+1	+9
C1350	+ 9	+10	+12	+13	+ 4	+10	+5	+4	+8
C1362	+10	+13	+14	+11	+ 9	+10	+4	+1	+7
C1375	+ 9	+ 8	+ 8	+10	+10	+ 5	+4	+4	+8
C1376	+ 6	+ 5	+12	+ 9	+ 2	+ 4	+3	-2	+5
L63-1397	- 5	- 3	0	+ 1	0	0	-1	-3	+3
0-1259	- 5	- 1	+ 2	+ 5	0	0	+1	-1	-1
Date planted	5-28	5-20	5-14	5-31	6-10	5-18	6-1	5-24	5-28
Harosoy 63 matured	10-3	9-13	9-22	9-19	9-28	9-3	10-6	10-11	9-25
Days to mature	128	116	131	111	110	108	127	140	120

UNIFORM TEST III, 1965

Strain	Originating Agency	Origin	Generation Composited
Shelby	Ill. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_8
SL4	Purdue & Ill. A.E.S. & U.S.R.S.L.	[Shelby (7) x L49-4091] x [Shelby (8) x Mukden]	F_3 lines
Wayne	Ill. A.E.S. & U.S.R.S.L.	L49-4091 x Clark	F_5
A2-5432	Iowa A.E.S. & U.S.R.S.L.	Clark x Chippewa	F_7
C1317	Purdue A.E.S. & U.S.R.S.L.	C1223 (8) x Mukden	2 F_3 lines
C1336	Purdue A.E.S. & U.S.R.S.L.	Harosoy x C1069	F_6
L61-1112	Ill. A.E.S. & U.S.R.S.L.	Clark (3) x T117	F_3

Identification of Parent Strains

C1069 — F_7 line from Lincoln x Ogden, from same F_4 line as Kent, in Uniform Test IV in 1954-58.

C1223 — F_6 line from C1070 x Adams, in Uniform Test III in 1960-61. C1070 is a F_7 line from Lincoln x Ogden, from same F_4 line as Kent.

L49-4091 — Pustule resistant F_4 line from [F_3 Lincoln (2) x Richland] x (Lincoln x CNS), in Uniform Test IV in 1951 and III in 1952-53.

Three-year means for C1317 and the two check varieties are given in Tables 60 and 61. C1317 shows better lodging resistance and slightly higher oil content, while Wayne had the higher mean yield and protein content. C1317 carries resistance to phytophthora and race 2 of frogeye but is susceptible to pustule.

L61-1112 is in this test for the second year and again averaged just slightly below Wayne in yield. It is short and fairly lodging resistant due to the Dt_2 gene which terminates stem growth abruptly toward the end of the flowering period.

SL4, a Shelby backcross strain resistant to pustule and phytophthora, was tested for the first time this year. It performed like Shelby in most respects, but, in common with most similarly developed strains, averaged slightly lower in yield.

The remaining two strains, A2-5432 and C1336, were new to the test this year. They averaged a day earlier than Shelby and were not significantly different in yield from Shelby.

Table 54. Regional testing history and descriptive data for the strains in Uniform Test III, 1965.

Strain	Years in Uniform Test III	Previous Regional Test	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color
Shelby	14	None	P	T	Br	D	Y	Bl
SL4	1	None	P	T	Br	D	Y	Bl
Wayne	5	P.T. III	W	T	Br	S	Y	Bl
A2-5432	1	P.T. III	P	T	Br	S	Y	Bl
C1317	3	None	W	G	Tan	S	Y	Bf
C1336	1	P.T. III	P	G	Br	D	Y	G
L61-1112	2	P.T. III	P	T	Br	D	Y	Bl

Table 55. Summary of data for Uniform Test III, 1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	26	26	24	23	25	20	19	12	12
Shelby	39.7	5	0	2.2	38	1.9	16.7	39.4	21.8
SL4	38.6	7	-0.9	2.2	39	2.0	16.2	38.9	22.0
Wayne	42.5	1	+1.8	2.2	38	2.1	18.3	40.3	21.5
A2-5432	40.6	3	-1.0	1.9	34	1.8	15.8	39.1	22.2
C1317	40.0	4	+1.5	1.6	36	2.0	17.2	38.8	22.1
C1336	39.3	6	-0.9	1.7	36	1.9	18.6	40.3	21.5
L61-1112	40.9	2	+3.6	1.9	33	1.9	16.1	40.0	21.3

[1]Days earlier (-) or later (+) than Shelby which matured September 28, 127 days after planting.

Table 56. Disease data for Uniform Test III, 1965.

Strain	Bacterial Blight		Bacterial Pustule	Brown Stem Rot	Frogeye Race 2	Phytophthora Rot	Pod and Stem Blight	Purple Stain
	Ill.	Ia.	Ia.	Ill.	Ind.	Ind.	Del.	Del.
	a[1]	a	a	n[1]	a	a	n	n
Shelby	4	3	4	4	S	S	4.5	3.0
SL4	4	3	1	4	S	R	3.5	2.5
Wayne	4	3	2	4	S	S	3.5	3.0
A2-5432	4	3	4	4	S	S	2.8	2.0
C1317	4	5	5	4	R	R	1.5	1.8
C1336	4	5	5	4	R	S	2.0	1.5
L61-1112	4	4	5	4	S	S	3.5	2.5

[1]a = artificial inoculation; n = natural infection.

Table 57. Yield, yield rank, and maturity, days earlier (-) or later (+) than Shelby, for Uniform Test III, 1965.

Strain	Mean of 26 Tests	Harrow Ont.	Newark Del.	Georgetown Del.*	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Evansville Ind.	Urbana Ill.	Girard Ill.[1]	Edgewood Ill.
Shelby	39.7	38.0	36.9	8.9	51.2	30.4	34.8	41.5	58.8	46.8	34.7	33.7	54.0	47.7	30.3
SL4	38.6	35.9	36.3	8.9	48.0	28.9	31.8	37.6	55.5	45.5	32.0	36.2	51.7	44.0	30.7
Wayne	42.5	43.4	34.0	10.5	53.9	36.9	39.6	45.5	65.0	50.6	34.2	38.6	57.2	51.4	38.4
A2-5432	40.6	35.6	34.5	9.6	45.5	31.2	32.1	41.8	56.7	45.0	36.9	36.3	55.0	46.4	34.0
C1317	40.0	42.5	39.8	4.9	50.3	31.0	26.1	44.6	57.5	55.4	32.0	41.5	57.9	44.8	31.4
C1336	39.3	38.4	33.2	26.1	42.6	30.4	35.0	43.8	59.6	46.4	38.0	43.2	53.2	50.2	33.8
L61-1112	40.9	41.1	38.5	8.1	43.9	28.1	33.1	42.9	61.7	54.3	32.2	40.1	57.5	49.2	33.3
C.V.(%)		11.3	6.9	20.6	11.2	12.7	11.6	6.2	10.4	7.7	11.2	6.9	3.5	6.3	14.0
L.S.D.(5%)		N.S.	3.7	3.4	7.2	5.4	5.6	3.6	8.7	5.4	5.6	3.9	2.9	N.S.	N.S.
R.Sp.(In.)		40	36	36	28	32	28	38	38	38	38	40	40	30	38

Yield Rank

Shelby	5	5	3	4	2	4	3	6	4	4	3	7	5	4	7
SL4	7	6	4	4	4	6	6	7	7	6	6	6	7	7	6
Wayne	1	1	6	2	1	1	1	1	1	3	4	4	3	1	1
A2-5432	3	7	5	3	5	2	5	5	6	7	2	5	4	5	2
C1317	4	2	1	7	3	3	7	2	5	1	6	2	1	6	5
C1336	6	4	7	1	7	4	2	3	3	5	1	1	6	2	3
L61-1112	2	3	2	6	6	7	4	4	2	2	5	3	2	3	4

	Mean of 24 Tests	Maturity													
				*							*				
Shelby	0	0	0	0	0	0	0	0	0	0		0	0	0	0
SL4	-0.9	0	0	- 4	0	0	-3	-1	+1	0		+1	+1	-2	-1
Wayne	+1.8	0	+2	+ 1	0	-2	-2	+5	+6	+1		+8	+2	0	+1
A2-5432	-1.0	-1	0	- 6	0	0	-1	-2	-2	-2		+3	-3	-4	-1
C1317	+1.5	+3	0	- 6	-5	+7	+6	+3	+6	+3		+3	+3	0	-4
C1336	-0.9	0	+2	-10	-4	+7	+3	0	-2	+2		+1	-4	0	-3
L61-1112	+3.6	+1	0	- 3	+7	+3	+9	+6	+6	+3		+4	+5	+3	+2
Date pltd.		5-24	5-20	6-11	5-18	5-24	5-18	5-12	5-14	5-14	5-21	5-12	5-24	5-20	5-17	5-18
Shelby mat.		9-28	10-3	10-4	9-16	10-20	10-4	10-3	9-27	9-30	10-2	--	9-22	9-29	9-16	9-8
Da. to mat.		127	136	115	121	149	139	144	136	139	134	--	121	132	122	113

*Not included in the mean.
[1]Three replications.
[2]Irrigated.

Table 57. (Continued)

Strain	Eldorado Ill.	Carbondale Ill.	Ames Iowa	Ottumwa Iowa	Kirksville Mo.	Columbia Mo.	Centerville S.D.	Lincoln Nebr.	Scandia Kans.[2] *	Powhattan Kans.	Colby Kans.[2]	Manhattan Kans.	Manhattan Kans.[2] *	Newton Kans.	Mound Valley Kans.
Shelby	49.5	37.4	25.1	48.6	41.3	39.2	30.2	41.3	22.4	34.5	35.2	45.2	50.8	35.7	30.9
SL4	47.8	36.2	25.7	43.9	38.9	40.6	34.3	38.6	22.5	39.2	37.2	45.3	50.6	32.2	30.5
Wayne	55.1	43.2	27.8	48.4	37.6	45.5	28.9	46.6	26.1	38.3	33.0	45.5	54.5	34.1	32.5
A2-5432	53.9	40.1	27.8	48.5	38.6	42.0	38.1	48.8	31.8	40.5	33.7	42.5	52.6	37.5	31.4
C1317	51.1	37.9	25.7	44.0	37.0	43.2	24.3	44.0	20.1	36.7	33.9	42.0	50.5	36.0	28.4
C1336	47.4	39.0	27.1	45.0	36.8	40.8	32.2	42.1	19.1	35.4	30.6	35.4	48.8	31.5	30.1
L61-1112	53.0	40.7	25.4	47.8	42.2	42.7	33.8	43.1	30.5	38.5	34.5	40.2	53.2	31.5	34.4
CV(%)	5.2	--	6.3	9.1	5.3	5.7	10.4	4.8	33.6	8.9	12.1	14.5	9.6	10.2	--
LSD(5%)	3.9	--	2.2	5.6	3.1	3.5	4.9	3.1	N.S.	N.S.	6.0	N.S.	N.S.	N.S.	--
RS(In.)	36	40	40	40	38	38	40	40	30	40	20	40	36	40	40

Yield Rank

Shelby	5	6	7	1	2	7	5	6	5	7	2	3	4	3	4
SL4	6	7	4	7	3	6	2	7	4	2	1	2	5	5	5
Wayne	1	1	1	3	5	1	6	2	3	4	6	1	1	4	2
A2-5432	2	3	1	2	4	4	1	1	1	1	5	4	3	1	3
C1317	4	5	4	6	6	2	7	3	6	5	4	5	6	2	7
C1336	7	4	3	5	7	5	4	5	7	6	7	7	7	6	6
L61-1112	3	2	6	4	1	3	3	4	2	3	3	6	2	6	1

Maturity

Shelby	0	0	0	0	0	0	0	0	0	0		0	0	0	0
SL4	-3	-1	-2	0	0	-1	-3	-2	0	-2		- 1	0	-2	0
Wayne	+3	+2	+1	+3	+1	+2	+2	+1	0	0		+ 1	0	+5	+2
A2-5432	-5	-2	-2	-1	0	-2	-2	0	-1	-3		- 4	-4	+7	+2
C1317	-5	-3	+4	0	+3	0	+1	-1	-1	-2		+ 2	-3	+4	+7
C1336	-5	-2	-2	-3	+1	-2	+1	-2	-3	-2		-11	-6	+4	-1
L61-1112	+4	+3	+4	+4	+3	+2	0	+3	-1	-1		+ 1	-1	+9	+5
Date pltd.	5-13	5-12	5-31	5-13	6-10	5-18	5-24	5-28	5-19	6-14	5-29	5-29	6-17	5-28	6-18
Shelby mat.	9-1	8-27	10-4	9-30	10-9	9-17	10-18	10-8	10-3	10-10	10-15	9-28	10-11	9-28	9-27
Da. to mat.	111	107	126	140	121	122	147	133	137	118	139	122	116	123	101

Table 58. Lodging, plant height, and seed quality for Uniform Test III, 1965.

Strain	Mean of 23 Tests	Harrow Ont.	New-ark Del.	George-town Del. *	Hoyt-ville Ohio	Woos-ter Ohio *	Co-lum-bus Ohio	Bluff-ton Ind.	Lafa-yette Ind.	Green-field Ind.	Wor-thing-ton Ind.	Evans-ville Ind.	Ur-bana Ill.	Gi-rard Ill.	Edge-wood Ill.
Shelby	2.2	2.0	2.3	2.8	2.7	1.0	1.2	2.0	2.5	2.0	3.8	3.5	2.6	2.7	1.5
SL4	2.2	2.0	1.8	3.0	2.5	1.0	1.0	2.0	3.0	1.9	4.0	3.3	3.0	3.4	1.6
Wayne	2.2	2.2	1.8	2.6	2.5	1.0	1.0	1.8	2.3	1.9	3.0	3.3	2.7	2.7	1.3
A2-5432	1.9	1.5	1.0	2.4	2.2	1.0	1.0	1.0	2.0	1.9	3.3	3.0	2.4	2.6	1.2
C1317	1.6	1.8	1.3	1.8	1.0	1.0	1.0	1.0	1.8	1.6	3.0	2.1	2.3	1.9	1.4
C1336	1.7	1.2	1.0	1.8	2.2	1.0	1.0	1.0	1.3	1.8	3.3	2.8	2.1	2.2	1.2
L61-1112	1.9	2.2	1.8	2.3	2.2	1.0	1.0	1.5	2.0	1.8	2.8	3.3	2.5	2.4	1.3

	Mean of 25 Tests	Plant Height													
				*											
Shelby	38	37	34	26	41	32	35	45	45	47		47	41	42	41
SL4	39	37	36	27	41	31	36	44	48	48		47	39	44	44
Wayne	38	35	33	26	40	30	32	41	47	45		47	40	44	41
A2-5432	34	32	29	24	34	25	31	38	42	39		39	36	38	36
C1317	36	36	37	23	38	27	30	40	44	47		42	39	40	37
C1336	36	32	33	28	39	29	34	42	47	46		43	39	41	39
L61-1112	33	35	31	22	38	26	32	38	39	36		38	35	36	31

	Mean of 20 Tests	Seed Quality													
				*	*	*				*					
Shelby	1.9	1.5	3.0	3.5	1.0	1.0	1.0	1.5	1.0	1.5	4.0	3.5	1.9	2.2	1.9
SL4	2.0	1.8	2.8	3.4	1.0	1.0	1.7	1.5	1.5	1.5	4.0	3.5	2.1	2.3	1.6
Wayne	2.1	1.2	3.1	3.3	1.0	1.0	1.0	1.5	1.5	1.5	4.5	4.0	2.0	2.5	2.0
A2-5432	1.8	1.8	2.5	2.9	1.0	1.0	1.0	1.5	1.5	1.5	3.5	3.5	1.8	2.2	1.4
C1317	2.0	1.8	2.1	2.3	1.0	1.0	1.2	1.0	1.5	1.5	4.0	3.5	2.3	2.5	1.6
C1336	1.9	1.2	4.0	2.9	1.0	1.0	1.0	1.5	1.0	1.5	4.0	3.0	2.3	1.8	1.9
L61-1112	1.9	2.2	2.4	3.0	1.0	1.0	1.0	1.5	1.0	1.5	3.5	3.5	2.3	2.3	1.6

*Not included in the mean.
[1]Irrigated.

Table 58. (Continued)

Strain	Eldorado Ill.	Carbondale Ill.	Ames Iowa	Ottumwa Iowa	Kirksville Mo.	Columbia Mo.	Centerville S.D.	Lincoln Nebr.	Scandia Kans.[1]	Powhattan Kans.	Colby Kans.[1]	Manhattan Kans.	Manhattan Kans.[1]	Newton Kans.	Mound Valley Kans.
									*				*		*
Shelby	3.1	1.0	1.3	2.5	1.9	3.5		2.9	1.3	1.7	1.3	1.4	1.8	1.6	1.0
SL4	2.8	1.0	1.4	2.7	1.7	3.0		2.6	1.4	1.6	2.0	1.6	1.8	1.7	1.0
Wayne	2.7	1.0	1.4	3.0	2.1	4.0		2.3	1.4	1.5	1.8	1.6	1.7	1.6	1.0
A2-5432	2.1	2.0	1.3	3.2	2.1	3.3		2.1	1.4	1.4	1.0	1.3	1.4	1.5	1.0
C1317	1.9	2.0	1.2	1.8	1.6	1.8		1.4	1.2	1.3	1.0	1.3	1.4	1.4	1.0
C1336	2.1	1.0	1.2	2.6	1.8	2.8		1.8	1.2	1.4	1.3	1.2	1.3	1.5	1.0
L61-1112	2.4	1.0	1.3	3.3	1.7	2.8		2.3	1.3	1.2	1.0	1.3	1.4	1.2	1.0
	Plant Height														
									*				*		
Shelby	46	41	36	46	37	36	38	43	32	31	33	33	41	26	20
SL4	47	42	36	47	37	38	39	45	31	31	33	36	40	27	21
Wayne	46	41	36	48	35	37	40	44	32	29	34	30	42	26	21
A2-5432	42	40	31	42	30	33	42	39	29	26	33	30	40	22	18
C1317	42	41	34	44	35	35	39	42	28	30	34	32	44	25	20
C1336	43	42	35	45	35	35	37	42	27	29	32	31	42	23	18
L61-1112	34	41	34	39	33	29	41	37	26	27	33	27	38	20	19
	Seed Quality														
			*						*				*		
Shelby	2.8	2.0	1.0	1.2	1.1	2.2		2.0	1.3	1.2		1.2	1.2	1.3	2.0
SL4	2.6	2.0	1.0	1.5	1.2	2.1		2.1	1.4	1.2		1.2	1.2	1.3	2.0
Wayne	3.4	1.0	1.0	1.6	1.2	2.1		1.8	1.2	1.3		1.3	1.2	1.3	3.0
A2-5432	2.4	1.0	1.0	1.2	1.1	2.2		1.1	1.2	1.2		1.1	1.2	1.2	3.0
C1317	2.5	1.0	1.0	1.2	1.5	2.9		1.0	1.3	1.2		1.2	1.1	1.3	4.0
C1336	2.9	1.0	1.0	1.2	1.0	1.8		2.5	1.2	1.3		1.1	1.2	1.4	2.0
L61-1112	2.6	2.0	1.0	1.1	1.0	1.8		3.0	1.3	1.3		1.2	1.1	1.3	2.0

Table 59. Percentages of protein and oil for Uniform Test III, 1965.

Strain	Mean of 12 Tests	Columbus Ohio	Lafayette Ind.	Worthington Ind.	Urbana Ill.	Eldorado Ill.
Shelby	39.4	37.9	40.8	41.2	40.2	42.2
SL4	38.9	35.9	40.2	40.7	40.0	41.1
Wayne	40.3	36.7	42.4	43.6	40.3	41.8
A2-5432	39.1	37.0	41.0	42.6	39.9	40.7
C1317	38.8	37.1	39.9	41.7	39.3	40.7
C1336	40.3	38.4	42.5	40.2	41.0	41.9
L61-1112	40.0	39.3	41.7	42.9	41.2	41.5
	Mean of 12 Tests	Percentage of Oil				
Shelby	21.8	22.8	21.0	21.9	21.6	22.5
SL4	22.0	23.1	21.5	21.8	22.1	22.4
Wayne	21.5	23.3	21.3	20.7	22.0	22.2
A2-5432	22.2	23.5	21.0	21.1	22.2	23.5
C1317	22.1	22.8	21.9	21.2	22.2	23.3
C1336	21.5	23.0	21.0	20.6	21.5	22.2
L61-1112	21.3	22.2	21.1	20.7	20.7	21.7

[1]Irrigated.

Table 59. (Continued)

Strain	Ames Iowa	Columbia Mo.	Centerville S.D.	Lincoln Nebr.	Colby Kans.[1]	Manhattan Kans.	Mound Valley Kans.
Shelby	37.8	41.1	38.9	36.9	34.9	38.3	42.5
SL4	37.7	40.2	38.2	37.0	33.9	38.2	43.5
Wayne	39.8	41.5	39.7	38.3	32.9	40.8	45.6
A2-5432	38.4	40.2	39.4	37.0	33.3	38.5	41.7
C1317	37.4	39.9	38.4	36.5	31.9	38.4	43.8
C1336	39.8	41.3	40.0	37.8	34.5	40.5	45.9
L61-1112	39.0	41.4	39.4	37.9	32.7	39.5	43.8
	Percentage of Oil						
Shelby	22.0	21.4	19.3	22.5	22.1	23.3	21.5
SL4	22.2	21.6	19.9	22.8	22.0	23.2	21.7
Wayne	21.4	21.2	18.1	21.6	22.4	22.6	21.5
A2-5432	22.0	21.7	19.6	22.9	22.9	24.0	22.0
C1317	22.3	21.3	19.3	22.9	22.6	23.0	22.5
C1336	21.5	20.7	19.4	22.1	22.0	22.4	21.0
L61-1112	21.9	20.4	20.1	21.5	22.9	21.3	21.6

Table 60. Three-year summary of data for Uniform Test III, 1963-1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	67	67	62	59	66	56	49	31	31
Shelby	38.0	3	0	2.1	40	2.0	16.2	39.8	21.7
Wayne	41.0	1	+2.0	2.0	40	2.1	17.7	40.7	21.2
C1317*	38.9	2	+1.1	1.6	39	2.2	16.8	38.9	22.0

[1]Days earlier (-) or later (+) than Shelby which matured September 24, 124 days after planting.
*Average of C1317-71 and C1317-99 in 1964.

Table 61. Three-year summary of yield and yield rank for Uniform Test III, 1963-1965.

Strain	Mean of 67 Tests	Harrow Ont.	Freehold N.J.	Newark Del.	Georgetown Del.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Evansville Ind.
Years Tested		1964-1965	1963-1964	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965
Shelby	38.0	40.7	19.3	39.1	19.7	41.0	29.0	34.7	37.2	50.3	45.2	44.7	37.9
Wayne	41.0	44.3	26.3	37.0	20.9	42.7	35.2	37.2	41.8	55.6	47.0	47.1	41.2
C1317	38.9	45.1	25.8	42.0	18.3	38.2	29.5	32.6	40.9	49.7	48.9	41.0	38.2
						Yield Rank							
Shelby	3	3	3	2	2	2	3	2	3	2	3	2	3
Wayne	1	2	1	3	1	1	1	1	1	1	2	1	1
C1317	2	1	2	1	3	3	2	3	2	3	1	3	2

[1]Irrigated.

Table 61. (Continued)

Strain	Urbana Ill.	Girard Ill.	Edgewood Ill.	Eldorado Ill.	Carbondale Ill.	Ames Iowa	Ottumwa Iowa	Columbia Mo.	Lincoln Nebr.	Powhattan Kans.	Manhattan Kans.	Manhattan Kans.[1]	Grand Junction Colo.[1]
Years Tested	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963, 1965	1963-1965	1963-1965	1963-1965	1963-1964
Shelby	45.1	41.9	36.7	45.1	30.8	33.6	42.4	33.4	46.3	28.4	39.8	41.6	28.4
Wayne	47.8	47.0	40.7	49.8	33.0	38.4	45.5	38.8	49.4	29.5	41.4	49.1	25.1
C1317	48.9	45.8	33.1	45.1	30.5	33.9	43.1	38.2	49.6	31.3	39.5	42.6	33.0
	Yield Rank												
Shelby	3	3	2	2	2	3	3	3	3	3	2	3	2
Wayne	2	1	1	1	1	1	1	1	2	2	1	1	3
C1317	1	2	3	2	3	2	2	2	1	1	3	2	1

UNIFORM PRELIMINARY TEST III, 1965

Strain	Originating Agency	Origin	Generation Composited
Shelby	Ill. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_8
Wayne	Ill. A.E.S. & U.S.R.S.L.	L49-4091 x Clark	F_5
A3-2414	Iowa A.E.S. & U.S.R.S.L.	Lindarin x A54-3159	F_6
C1359	Purdue A.E.S. & U.S.R.S.L.	Lindarin x Clark	F_6
C1361	Purdue A.E.S. & U.S.R.S.L.	Lindarin x Harosoy	F_6
C1367	Purdue A.E.S. & U.S.R.S.L.	Lindarin x Shelby	F_6
C1373	Purdue A.E.S. & U.S.R.S.L.	CX322 x CX323	F_5
L63-3297	Ill. A.E.S. & U.S.R.S.L.	Clark (6) x T141	F_3

Identification of Parent Strains

A54-3159 Hawkeye x Capital.

CX322 Sel. from Lindarin x sel. from P.I. 65.338 x C1079. C1079 is a F_7 line from Lincoln x Ogden, from same F_4 line as Kent.

CX323 Sel. from Lindarin x L49-4196-12. L49-4196 is a selection from [F_3 Lincoln (2) x Richland] x (Lincoln x CNS).

T141 Pure line of "Oni Hadaka" from Japan in 1930 as P.I. 84.987.

The six experimental strains in this test were somewhat disappointing since none of them averaged as high as Wayne in yield. C1367 yielded fairly well for an early Group III strain. A3-2414 and especially C1373 are of interest because of their high protein content.

The low yield of L63-3297 is at least partly due to competition of the other strains with this very short strain. It was entered because of some rather high yields in Illinois tests in 1964 and because of its interesting growth habit, but this year's results show the difficulty of testing diverse types in single-row plots.

Table 62. Descriptive data for the strains in Uniform Preliminary Test III, 1965.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color
Shelby	P	T	Br	D	Y	Bl
Wayne	W	T	Br	S	Y	Bl
A3-2414	P	G	Br	D	Y	Bf
C1359	P	G	Br	D	Y	Bf
C1361	P	G	Br	D	Y	Bf
C1367	P	T	Br	D	Y	Bl
C1373	P	G	Br	D	Y	Bf
L63-3297	P	T	Br	D	Y	Bl

Table 63. Summary of data for Uniform Preliminary Test III, 1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	15	15	14	12	15	12	10	7	7
Shelby	42.5	5	0	2.5	39	1.4	16.6	39.3	22.1
Wayne	46.2	1	+1.6	2.4	38	1.6	18.0	40.2	21.7
A3-2414	36.5	7	-3.8	2.6	35	1.8	14.8	41.1	20.5
C1359	42.7	4	+5.4	2.3	40	1.9	17.2	39.5	21.1
C1361	44.2	2	-0.4	2.1	39	1.6	17.0	39.3	21.6
C1367	43.3	3	-3.2	1.9	35	1.4	15.4	39.6	21.5
C1373	41.8	6	-0.1	2.1	38	1.5	16.0	42.5	21.2
L63-3297	30.0	8	+5.5	1.3	21	1.6	18.1	39.7	21.7

[1]Days earlier (-) or later (+) than Shelby which matured September 24, 133 days after planting.

Table 64. Disease data for Uniform Preliminary Test III, 1965.

Strain	Bacterial Blight		Brown Stem Rot		Frogeye Race 2	Phytophthora Rot	Pod and Stem Blight	Purple Stain
	Ill.		Ill.		Ind.	Ind.	Del.	Del.
	a[1]		n[1]		a	a	n	n
Shelby	4		4		S	S	4.5	3.0
Wayne	4		4		S	S	3.5	3.0
A3-2414	4		4		S	S	2.8	2.3
C1359	4		4		S	S	2.8	2.3
C1361	4		1		S	S	3.5	2.5
C1367	4		1		S	S	2.8	1.8
C1373	4		1		S	S	2.8	2.3
L63-3297	4		4		R	S	3.3	1.5

[1]a = artificial inoculation; n = natural infection.

Table 65. Yield, yield rank, and maturity, days earlier (-) or later (+) than Shelby, for Uniform Preliminary Test III, 1965.

Strain	Mean of 15 Tests	Georgetown Del.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Lafayette Ind.	Worthington Ind.	Urbana Ill.	Girard Ill.
		*							
Shelby	42.5	9.7	50.6	24.4	46.8	57.4	39.9	56.8	40.5
Wayne	46.2	14.0	59.5	29.0	50.0	60.1	41.8	61.5	46.1
A3-2414	36.5	9.5	31.2	17.6	33.1	53.6	35.3	45.2	44.9
C1359	42.7	15.6	39.9	25.0	55.2	52.6	41.7	62.1	42.3
C1361	44.2	12.9	50.1	21.2	37.1	59.5	48.8	59.7	46.3
C1367	43.3	9.0	48.6	24.3	44.5	59.7	47.2	58.9	40.7
C1373	41.8	8.6	43.7	28.9	45.2	57.4	45.8	52.0	42.8
L63-3297	30.0	5.0	46.7	20.6	11.4	42.4	15.3	48.1	27.7
Coef. of Var. (%)		16.7	9.2	16.0	14.5	5.9	10.7	6.7	6.6
L.S.D. (5%)		4.2	10.1	N.S.	13.9	5.4	7.0	8.7	6.5
Row Spacing (In.)		36	28	32	28	38	38	40	30
					Yield Rank				
Shelby	5	4	2	4	3	4	6	5	7
Wayne	1	2	1	1	2	1	4	2	2
A3-2414	7	5	8	8	7	6	7	8	3
C1359	4	1	7	3	1	7	5	1	5
C1361	2	3	3	6	6	3	1	3	1
C1367	3	6	4	5	5	2	2	4	6
C1373	6	7	6	2	4	4	3	6	4
L63-3297	8	8	5	7	8	8	8	7	8
	Mean of 14 Tests				Maturity				
		*					*		
Shelby	0	0	0	0	0	0		0	0
Wayne	+1.6	+2	0	- 4	+6	+2		+1	+2
A3-2414	-3.8	-9	-5	-12	0	-4		-7	-4
C1359	+5.4	+6	+4	+ 2	+6	+4		+8	+6
C1361	-0.4	-6	-5	-11	+1	-1		+1	0
C1367	-3.2	-8	-3	-10	-2	-5		-5	-4
C1373	-0.1	-4	-5	-10	+2	+2		-2	+1
L63-3297	+5.5	-2	+9	+ 5	+9	+4		+4	+3
Date planted	5-24	5-18	5-24	5-18	5-12	5-14	5-21	5-20	5-17
Shelby matured	10-4	9-16	10-20	10-12	10-4	10-4	--	9-30	9-17
Days to mature	133	121	149	147	145	143	--	133	123

*Not included in the mean.
[1]Irrigated.

Table 65. (Continued)

Strain	Ames Iowa	Ottumwa Iowa	Kirksville Mo.	Columbia Mo.	Centerville S.D.	Lincoln Nebr.	Powhattan Kans.	Manhattan Kans.	Manhattan Kans.[1] *
Shelby	24.9	48.0	40.0	38.9	32.7	47.1	47.7	41.7	35.3
Wayne	27.4	52.7	38.7	42.7	35.2	45.9	57.8	45.2	37.7
A3-2414	25.6	44.8	31.9	34.5	34.0	40.7	42.6	32.6	32.3
C1359	22.2	46.4	36.0	44.9	27.6	33.9	56.0	54.1	41.8
C1361	28.4	51.0	42.3	37.8	30.1	48.5	56.7	45.0	39.0
C1367	27.7	49.4	38.7	36.7	38.4	38.0	53.8	42.4	35.8
C1373	23.6	45.2	35.9	41.2	27.5	46.0	46.6	45.2	33.4
L63-3297	25.4	28.6	44.3	33.2	23.9	21.4	27.6	33.2	34.1
Coef. of Var. (%)	6.6	7.2	8.9	6.9	8.2	12.9	12.7	8.0	10.2
L.S.D. (5%)	4.0	7.8	8.4	6.3	6.0	12.2	N.S.	8.0	N.S.
Row Spacing (In.)	40	40	38	38	40	40	40	40	36
	Yield Rank								
Shelby	6	4	3	4	4	2	5	6	5
Wayne	3	1	4	2	2	4	1	2	3
A3-2414	4	7	8	7	3	5	7	8	8
C1359	8	5	6	1	6	7	3	1	1
C1361	1	2	2	5	5	1	2	4	2
C1367	2	3	4	6	1	6	4	5	4
C1373	7	6	7	3	7	3	6	2	7
L63-3297	5	8	1	8	8	8	8	7	6
	Maturity								
Shelby	0	0	0	0	0	0	0	0	0
Wayne	+2	+2	+2	+3	+2	+1	0	+ 4	-2
A3-2414	-1	-2	+1	-4	-4	-4	-2	- 5	+3
C1359	+4	+7	+7	+8	+6	+2	+4	+ 7	+4
C1361	-2	+1	+4	+2	-1	-3	+1	+ 7	+1
C1367	-2	-3	0	-3	-4	-3	0	- 1	+2
C1373	0	+1	+3	+2	+2	0	-1	+ 6	-3
L63-3297	+6	+4	+3	+4	+5	+5	+4	+12	+2
Date planted	5-31	5-13	6-10	5-18	5-24	5-28	6-14	5-29	6-17
Shelby matured	10-4	9-29	10-8	9-15	10-16	10-8	10-8	9-25	10-9
Days to mature	126	139	120	120	145	133	116	119	114

UNIFORM TEST IV, 1965

Strain	Originating Agency	Origin	Generation Composited
Bellatti L-263	Louis Bellatti, Mt. Pulaski, Ill.	Unknown, from Bavender Special	
Clark	Ill. A.E.S. & U.S.R.S.L.	Lincoln (2) x Richland	F_8
Clark 63	Ill. A.E.S. & U.S.R.S.L.	[Clark (5) x L49-4091] x [Clark (6) x Blackhawk]	13 F_3 lines
L9	Ill. A.E.S. & U.S.R.S.L.	Clark (6) x Chief	3 F_3 lines
L11	Ill. A.E.S. & U.S.R.S.L.	[Clark (6) x T201] x [Clark (6) x T145]	27 F_4 lines
L12	Ill. A.E.S. & U.S.R.S.L.	L6 x L11	30 F_4 lines
L62-1251	Ill. A.E.S. & U.S.R.S.L.	Clark (6) x T117	F_3
Kent	Purdue A.E.S. & U.S.R.S.L.	Lincoln x Ogden	F_7
SL5	Purdue & Ill. A.E.S. & U.S.R.S.L.	[Kent (7) x L49-4196] x [Kent (8) x Mukden]	F_3 lines
C1278	Purdue A.E.S. & U.S.R.S.L.	Clark x C1069	F_6
C1311	Purdue A.E.S. & U.S.R.S.L.	Wabash x C1069	F_6

Identification of Parent Strains

C1069	F_7 line from Lincoln x Ogden, from same F_4 line as Kent, in Uniform Test IV in 1954-58.
L6	Similar to Clark 63 but from [Clark (6) x L49-4091] x [Clark (8) x Blackhawk].
L49-4091	Pustule resistant F_4 line from [F_3 Lincoln (2) x Richland] x (Lincoln x CNS).
L49-4196	Same as above. Therefore, Clark (5) x L49-4091 and Kent (7) x L49-4196 are about equivalent to Clark (7) x CNS and Kent (9) x CNS, respectively.
T117	Selection from AK114 x P.I. 65.394.
T145	Brown-seeded line of unknown origin (also glabrous).
T201	Gray hilum line from Lincoln (2) x Richland (also non-nodulating).

Three-year means are given in Tables 73 and 74 for C1278 compared with the three check varieties. C1278 averaged higher than Clark in yield and even slightly higher than Kent although it is much earlier than Kent and almost as early as Clark. In appearance and other respects it is similar to Clark.

C1311 is the only other strain retained from last year's test. It has not yielded as well as C1278 although it is several days later, but it has the best seed quality of the strains in the test. At some locations, it has appeared heterogeneous for maturity.

SL5 is a Kent backcross strain carrying resistance to bacterial pustule and phytophthora rot. In 1965 it performed similarly to Kent but averaged 1.7 bushels lower in yield. Apparently these two diseases had little, if any, effect on yield at these test locations.

L9 is a Clark BC_5 strain carrying Np, the gene for tolerance to high levels of phosphorus. Clark is quite sensitive and readily stunted and killed by high phosphorus levels in nutrient solution culture. However, in the field there was no evidence of difference in growth or yield due to these two alleles at any of the test locations.

L11 is a Clark backcross developed for yellow hilum by selecting for the gene I (gray hilum) in Clark (6) x T201 and the gene r (brown hilum) in Clark (6) x T145 and crossing the two to produce yellow hilum (I r). L12 was developed for yellow hilum (I r) and pustule and phytophthora resistance (rxp Rps) by crossing L11 with L6. Both L11 and L12 yielded well relative to Clark but averaged a little later in maturity. Apparently they are not identical to Clark or Clark 63 in performance. Individual lines of L12 were tested in Illinois this year and the more Clark-like one(s) of these will be proposed for Uniform testing in 1966.

L62-1251 is a Clark BC_5 line carrying the gene Dt_2 which shortens the flowering period and plant height by terminating stem growth abruptly during the later part of the flowering period. We anticipated that this might improve lodging resistance but the 1965 data do not bear this out. However, perhaps more important is the unexpected higher seed quality found this year especially at locations such as Eldorado where poor seed quality, presumably caused by pod and stem blight, was very severe on Clark.

Bellatti L-263 was developed by selecting for lodging resistance starting with a field of Bavender Special many years ago. It bears a close resemblance to Clark and did not differ significantly from Clark in this test.

Table 66. Regional testing history and descriptive data for the strains in Uniform Test IV, 1965.

Strain	Years in Uniform Test IV	Previous Regional Test	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color
Bellatti L-263	1	None	P	T	Br	D	Y	Bl
Clark	15	None	P	T	Br	D	Y	Bl
Clark 63	4	None	P	T	Br	D	Y	Bl
L9	1	None	P	T	Br	D	Y	Bl
L11	1	None	P	T	Br	D	Y	Y
L12	1	None	P	T	Br	D	Y	Y
L62-1251	1	P.T. IV	P	T	Br	D	Y	Bl
Kent	12	P.T. IV	P	T	Br	D	Y	Bl
SL5	1	None	P	T	Br	D	Y	Bl
C1278	3	P.T. IV	P	T	Br	S	Y	Bl
C1311	2	P.T. IV	W	G	Tan	S	Y	Bf

Table 67. Summary of data for Uniform Test IV, 1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	18	18	17	16	18	17	14	10	10
Bellatti L-263	38.6	6	-0.2	2.1	38	2.5	17.2	40.9	22.1
Clark	37.5	10	-0.8	2.0	37	2.5	17.3	40.9	22.3
Clark 63	38.2	7	0	2.1	38	2.5	16.7	40.8	22.2
L9	37.8	9	0	2.1	37	2.3	17.1	41.4	22.0
L11	37.9	8	+1.4	2.1	38	2.6	16.9	40.7	22.1
L12	39.0	5	+1.2	2.2	39	2.7	16.9	40.5	22.0
L62-1251	37.1	11	-1.5	2.1	31	2.1	16.0	40.4	22.2
Kent	42.1	1	+7.7	1.9	37	2.3	18.5	40.6	22.4
SL5	40.4	4	+6.7	1.9	38	2.4	18.1	40.3	22.2
C1278	42.1	1	+3.1	1.9	38	2.4	18.8	41.1	22.0
C1311	41.1	3	+7.2	1.8	41	1.9	16.7	41.3	22.1

[1]Days earlier (-) or later (+) than Clark 63 which matured September 29, 129 days after planting.

Table 68. Disease data for Uniform Test IV, 1965.

Strain	Bacterial Blight		Bacterial Pustule	Brown Stem Rot	Frogeye Race 2	Phytophthora Rot	Pod and Stem Blight	Purple Stain
	Ill. a[1]	Ia. a	Ia. a	Ill. n[1]	Ind. a	Ind. a	Del. n	Del. n
Bellatti L-263	3	3	4	4	S	S	4.5	1.8
Clark	4	3	5	4	S	S	4.0	2.5
Clark 63	3	3	1	4	S	R	4.0	2.5
L9	3	3	5	4	S	S	4.0	2.5
L11	3	4	4	4	S	S	4.5	1.8
L12	3	3	2	4	S	R	4.5	2.0
L62-1251	3	3	3	4	S	S	4.3	1.7
Kent	4	3	4	4	R	S	1.8	2.0
SL5	4	3	1	3	R	R	2.0	2.0
C1278	4	4	4	1	R	S	2.5	2.3
C1311	4	3	4	3	R	S	2.0	1.5

[1]a = artificial inoculation; n = natural infection.

Table 69. Yield and yield rank for Uniform Test IV, 1965.

Strain	Mean of 18 Tests	Newark Del.	Georgetown Del.	Upper Marlboro Md.	Columbus Ohio	Worthington Ind.	Evansville Ind.	Urbana Ill.	Girard Ill.[1]	Edgewood Ill.	Eldorado Ill.
Bellatti L-263	38.6	40.4	27.4	46.8	38.6	37.1	35.7	54.7	47.6	34.4	52.2
Clark	37.5	33.1	24.6	46.1	40.8	35.1	31.6	53.4	45.6	34.7	49.9
Clark 63	38.2	38.5	24.4	45.8	41.1	33.8	37.1	54.5	48.1	32.3	48.9
L9	37.8	30.7	25.4	45.9	42.3	35.0	34.0	55.5	48.8	34.9	50.8
L11	37.9	28.4	24.5	47.9	42.2	35.8	31.4	57.4	45.7	34.2	51.1
L12	39.0	32.0	22.1	49.0	43.3	37.9	32.9	57.4	48.0	36.0	48.4
L62-1251	37.1	30.4	23.8	43.2	34.9	35.2	30.4	53.6	51.7	32.3	51.4
Kent	42.1	35.1	37.7	45.9	39.2	41.6	47.7	57.6	48.7	32.7	55.9
SL5	40.4	34.8	30.6	44.8	40.0	38.5	42.6	55.7	43.1	32.2	55.5
C1278	42.1	40.1	30.3	47.8	46.2	48.9	43.6	54.9	51.7	36.6	56.2
C1311	41.1	32.8	33.7	45.2	49.5	46.9	47.2	54.4	48.1	36.5	54.0
Coef. of Var. (%)		15.9	13.8	8.0	12.1	11.8	7.6	6.6	6.7	14.3	6.5
L.S.D. (5%)		N.S.	5.5	N.S.	7.1	6.5	4.2	N.S.	N.S.	N.S.	4.9
Row Spacing (In.)		36	36	36	28	38	40	40	30	38	36

	Yield Rank										
Bellatti L-263	6	1	5	4	10	6	6	7	8	6	5
Clark	10	6	7	5	7	9	9	11	10	5	9
Clark 63	7	3	9	8	6	11	5	8	5	9	10
L9	9	9	6	6	4	10	7	5	3	4	8
L11	8	11	8	2	5	7	10	2	9	7	7
L12	5	8	11	1	3	5	8	2	7	3	11
L62-1251	11	10	10	11	11	8	11	10	1	9	6
Kent	1	4	1	6	9	3	1	1	4	8	2
SL5	4	5	3	10	8	4	4	4	11	11	3
C1278	1	2	4	3	2	1	3	6	1	1	1
C1311	3	7	2	9	1	2	2	9	5	2	4

*Not included in the mean.
[1]Three replications.
[2]Irrigated.

Table 69. (Continued)

Strain	Carbondale Ill.	Miller City Ill.	Columbia Mo.	Portageville Mo.[2] *	Scandia Kans.[2] *	Powhattan Kans.	Colby Kans.[2]	Manhattan Kans.	Manhattan Kans.[2] *	Newton Kans.	Mound Valley Kans.
Bellatti L-263	34.7	33.9	35.5	43.4	31.1	37.0	27.0	48.8	43.9	33.0	30.7
Clark	33.2	33.4	36.5	40.6	32.0	37.9	25.6	49.7	48.3	31.6	31.8
Clark 63	36.2	33.1	38.9	45.2	30.4	40.1	26.6	47.7	49.9	32.2	29.0
L9	36.4	31.0	36.0	43.0	21.4	39.7	23.9	46.7	44.6	32.5	30.1
L11	37.8	33.3	34.8	42.7	31.8	39.9	25.3	49.0	42.5	31.7	31.5
L12	37.4	31.9	37.9	46.3	31.9	40.2	29.6	52.6	44.1	32.6	32.9
L62-1251	32.2	30.2	36.3	41.5	24.9	41.0	25.5	50.4	42.4	31.1	33.3
Kent	39.7	46.6	38.9	49.2	27.1	38.9	29.0	51.8	48.8	37.0	33.3
SL5	41.0	42.8	37.7	48.4	30.1	39.1	24.7	54.6	45.0	36.7	32.2
C1278	40.1	36.5	41.6	47.2	33.9	39.3	26.8	51.5	49.4	33.5	31.4
C1311	41.8	39.2	38.3	55.1	28.7	36.1	26.7	45.9	47.1	33.4	29.3
Coef. of Var.(%)	--	10.7	6.2	--	36.7	7.8	14.9	9.2	10.5	8.5	--
L.S.D.(5%)	--	5.5	3.3	--	N.S.	N.S.	5.4	N.S.	N.S.	2.5	--
Row Spacing(In.)	40	38	38	38	30	40	20	40	36	40	40

	Yield Rank										
Bellatti L-263	9	5	10	7	5	10	3	8	9	5	8
Clark	10	6	7	11	2	9	7	6	4	10	5
Clark 63	8	8	2	6	6	3	6	9	1	8	11
L9	7	10	9	8	11	5	11	10	7	7	9
L11	5	7	11	9	4	4	9	7	10	9	6
L12	6	9	5	5	3	2	1	2	8	6	3
L62-1251	11	11	8	10	10	1	8	5	11	11	1
Kent	4	1	2	2	9	8	2	3	3	1	1
SL5	2	2	6	3	7	7	10	1	6	2	4
C1278	3	4	1	4	1	6	4	4	2	3	7
C1311	1	3	4	1	8	11	5	11	5	4	10

Table 70. Maturity, days earlier (-) or later (+) than Clark 63, and lodging for Uniform Test IV, 1965.

Strain	Mean of 17 Tests	Newark Del.	Georgetown Del.	Upper Marlboro Md.	Columbus Ohio	Worthington Ind.	Evansville Ind.	Urbana Ill.	Girard Ill.	Edgewood Ill.	Eldorado Ill.
Bellatti L-263	-0.2	+ 3	- 1	-5	+ 1	0	-1	-1	0	-1	0
Clark	-0.8	0	- 1	-2	0	0	-1	-1	-1	-2	0
Clark 63	0	0	0	0	0	0	0	0	0	0	0
L9	0	0	+ 2	-3	+ 2	+ 2	-1	0	0	-2	+ 1
L11	+1.4	+ 3	+ 2	+1	+ 3	+ 2	+1	+2	+1	+1	+ 2
L12	+1.2	0	+ 4	0	+ 1	+ 3	0	+2	+1	+1	+ 2
L62-1251	-1.5	+ 3	- 5	-8	+ 1	- 1	-2	-2	0	-1	- 3
Kent	+7.7	+10	+10	+7	+ 9	+ 7	+7	+8	+3	+9	+11
SL5	+6.7	+10	+ 6	+6	+ 9	+ 5	+6	+7	+2	+8	+10
C1278	+3.1	+ 8	+ 2	-2	+ 7	+ 3	+1	+4	+3	+1	+ 7
C1311	+7.2	+ 8	+14	+5	+10	+10	+3	+5	+5	+9	+11
Date planted	5-23	6-11	5-18	5-27	5-12	5-12	5-24	5-20	5-17	5-18	5-13
Clark 63 matured	9-29	10-8	9-23	9-29	10-14	9-26	10-2	10-12	9-29	9-21	9-19
Days to mature	129	119	128	125	155	137	131	145	135	126	129
	Mean of 16 Tests	Lodging									
					*						
Bellatti L-263	2.1	1.5	1.8	2.1	2.0	3.3	3.5	2.6	3.4	1.2	2.7
Clark	2.0	1.3	2.3	2.2	2.0	3.4	3.3	2.7	3.1	1.2	2.6
Clark 63	2.1	1.3	2.4	2.2	2.0	3.5	3.5	2.6	2.8	1.2	2.9
L9	2.1	1.8	2.3	2.1	2.0	3.4	3.3	2.6	3.0	1.3	2.8
L11	2.1	1.0	2.1	2.6	2.0	3.4	3.5	2.4	3.1	1.4	3.0
L12	2.2	2.0	2.3	2.2	2.0	3.4	3.5	2.6	3.0	1.3	3.2
L62-1251	2.1	1.0	2.5	2.2	2.0	3.1	3.8	2.5	3.2	1.1	2.8
Kent	1.9	1.3	1.8	2.5	2.0	2.5	3.0	2.2	2.2	1.3	2.2
SL5	1.9	1.3	2.0	1.9	2.0	2.6	3.0	2.0	2.2	1.3	2.3
C1278	1.9	1.3	1.6	1.8	2.0	2.3	3.0	2.3	3.0	1.2	2.6
C1311	1.8	1.0	1.8	1.5	2.0	2.5	2.8	2.2	3.2	1.3	3.0

*Not included in the mean.
[1]Irrigated.

Table 70. (Continued)

Strain	Carbondale Ill.	Miller City Ill.	Columbia Mo.	Portageville Mo. *	Scandia Kans.[1] *	Powhattan Kans.	Colby Kans.[1] *	Manhattan Kans.	Manhattan Kans.[1] *	Newton Kans.	Mound Valley Kans.
Bellatti L-263	0	0	- 1	0	0	0		+1	0	+1	+1
Clark	-3	0	- 2	+ 1	0	0		0	0	0	0
Clark 63	0	0	0	0	0	0		0	0	0	0
L9	0	- 1	- 1	+ 2	0	0		0	0	0	+1
L11	+1	+ 1	+ 1	+ 3	0	0		+1	0	+1	+1
L12	+1	+ 1	0	+ 2	0	+ 1		+1	0	+2	0
L62-1251	-1	- 6	- 3	0	0	0		0	-1	+1	+1
Kent	+3	+ 8	+10	+ 9	+4	+10		+7	+6	+5	+7
SL5	+6	+ 7	+ 7	+ 8	+3	+ 9		+6	+5	+5	+5
C1278	+3	+ 2	+ 2	+ 3	0	+ 3		+2	+1	+4	+3
C1311	+8	+13	+ 9	+10	+2	+ 3		+7	+2	+1	+2
Date planted	5-12	5-13	5-18	5-14	5-19	6-14	5-25	5-29	6-17	5-28	6-18
Clark 63 matured	9-13	9-7	9-27	9-5	10-7	10-10	10-25	10-8	10-13	10-4	10-4
Days to mature	124	117	132	114	141	118	149	132	118	129	108

	Lodging										
				*	*				*		*
Bellatti L-263	2.0	1.6	2.3	1.9	1.5	1.8	1.0	1.8	1.8	1.4	1.0
Clark	1.0	1.7	1.8	1.8	1.4	1.8	1.0	1.5	1.8	1.3	1.0
Clark 63	2.0	1.7	2.0	2.0	1.7	1.7	1.0	1.7	1.8	1.3	1.0
L9	2.0	1.7	1.9	2.0	1.7	1.6	1.0	1.8	1.9	1.3	1.0
L11	2.0	1.5	2.1	1.9	1.7	1.9	1.0	1.7	1.9	1.4	1.0
L12	2.0	1.6	1.7	2.0	1.5	1.9	1.3	2.0	1.9	1.5	1.0
L62-1251	2.0	1.3	2.0	1.4	1.4	1.7	1.5	1.5	1.7	1.4	1.0
Kent	2.0	1.3	1.6	2.2	1.5	1.8	1.5	1.6	2.0	1.5	1.0
SL5	2.0	1.5	1.6	2.1	1.7	2.0	1.8	1.7	1.9	1.6	1.0
C1278	2.0	1.2	1.7	1.7	1.5	1.7	1.0	1.6	1.9	1.5	1.0
C1311	2.0	1.3	1.7	1.5	1.5	1.5	1.0	1.5	1.7	1.2	1.0

Table 71. Plant height and seed quality for Uniform Test IV, 1965.

Strain	Mean of 18 Tests	Newark Del.	Georgetown Del.	Upper Marlboro Md.	Columbus Ohio	Worthington Ind.	Evansville Ind.	Urbana Ill.	Girard Ill.	Edgewood Ill.	Eldorado Ill.
Bellatti L-263	38	32	34	39	40	43	45	41	42	40	48
Clark	37	30	35	38	35	43	44	41	43	38	48
Clark 63	38	35	34	40	37	44	44	42	44	39	49
L9	37	31	35	40	35	42	44	42	42	40	49
L11	38	31	37	39	34	42	44	42	43	40	49
L12	39	35	36	40	40	42	47	43	44	41	50
L62-1251	31	29	28	34	32	35	39	35	36	29	36
Kent	37	31	36	37	38	41	42	40	39	38	47
SL5	38	34	36	39	40	41	44	42	42	40	49
C1278	38	33	35	38	41	44	45	42	43	40	49
C1311	41	34	38	41	46	47	52	47	45	43	52
	Mean of 17 Tests	Seed Quality									
Bellatti L-263	2.5	2.9	3.8	1.8	1.2	4.0	3.5	1.3	2.8	2.5	4.1
Clark	2.5	2.9	4.0	1.8	1.2	4.0	4.0	1.4	2.5	2.4	4.3
Clark 63	2.5	2.8	4.0	2.0	1.0	4.0	4.5	1.4	2.5	2.3	4.5
L9	2.3	2.6	3.8	2.0	1.0	4.0	3.5	1.3	2.2	2.4	4.3
L11	2.6	2.9	3.8	3.0	1.2	4.0	4.0	1.4	2.8	2.6	4.3
L12	2.7	2.9	3.6	3.0	1.0	4.5	4.0	1.6	3.0	2.6	4.3
L62-1251	2.1	2.8	3.1	1.5	1.0	3.5	3.0	1.1	2.2	2.4	3.4
Kent	2.3	2.9	2.4	1.2	1.0	3.0	2.5	1.6	2.5	2.8	4.0
SL5	2.4	2.8	2.5	1.0	1.0	3.0	2.5	1.8	2.7	3.0	4.1
C1278	2.4	2.9	2.6	1.0	1.0	3.5	3.5	1.5	2.8	2.6	3.9
C1311	1.9	2.6	2.3	1.0	1.0	2.0	2.0	1.3	2.0	2.3	3.0

*Not included in the mean.
[1]Irrigated.

Table 71. (Continued)

Strain	Carbondale Ill.	Miller City Ill.	Columbia Mo.	Portageville Mo. *	Scandia Kans.[1] *	Powhattan Kans.	Colby Kans.[1]	Manhattan Kans.	Manhattan Kans.[1] *	Newton Kans.	Mound Valley Kans.
Bellatti L-263	43	42	37	40	35	31	34	35	43	28	21
Clark	44	42	37	39	34	31	34	37	42	29	19
Clark 63	45	45	38	41	34	32	34	37	43	30	20
L9	46	42	37	41	32	31	35	35	42	27	20
L11	45	43	39	41	36	31	34	35	43	28	22
L12	46	45	40	43	36	33	32	40	42	30	21
L62-1251	32	34	28	31	27	29	34	30	36	26	18
Kent	41	43	38	42	35	33	34	36	42	29	20
SL5	45	44	39	42	36	33	34	35	42	29	21
C1278	44	45	38	40	36	32	34	35	42	27	20
C1311	47	50	40	39	40	36	40	35	47	28	21

	Seed Quality									
				*	*			*		
Bellatti L-263	3.0	2.6	2.4	1.1	1.2	1.4	1.8	1.3	1.3	2.0
Clark	3.0	2.6	2.0	1.3	1.2	1.3	1.2	1.2	1.2	2.0
Clark 63	3.0	2.8	2.6	1.2	1.2	1.3	1.4	1.3	1.2	2.0
L9	2.0	2.6	2.3	1.5	1.2	1.2	1.4	1.3	1.2	2.0
L11	4.0	2.4	1.9	1.0	1.2	1.3	1.8	1.4	1.2	2.0
L12	4.0	2.5	2.2	1.4	1.2	1.2	2.0	1.2	1.2	2.0
L62-1251	2.0	2.1	1.8	1.3	1.2	1.3	1.5	1.2	1.2	2.0
Kent	4.0	3.1	1.9	1.8	1.2	1.2	1.7	1.2	1.3	2.0
SL5	5.0	3.3	2.1	2.0	1.3	1.3	1.7	1.2	1.2	2.0
C1278	4.0	3.0	2.1	1.1	1.2	1.3	1.6	1.3	1.3	3.0
C1311	3.0	3.3	2.1	2.1	1.2	1.3	1.5	1.2	1.2	1.0

Table 72. Percentages of protein and oil for Uniform Test IV, 1965.

Strain	Mean of 10 Tests	George-town Del.	Upper Marlboro Md.	Colum-bus Ohio	Evans-ville Ind.	Urbana Ill.
Bellatti L-263	40.9	40.9	39.7	39.0	42.6	40.5
Clark	40.9	41.1	39.8	39.8	42.2	40.4
Clark 63	40.8	41.9	39.9	38.9	41.8	40.5
L9	41.4	41.5	40.1	40.0	43.0	40.9
L11	40.7	40.0	40.3	39.6	42.6	39.5
L12	40.5	40.9	38.7	39.2	42.1	40.3
L62-1251	40.4	41.4	39.0	37.9	40.9	39.8
Kent	40.6	41.1	39.3	39.3	40.7	40.8
SL5	40.3	41.1	39.4	37.8	40.8	40.4
C1278	41.1	41.5	40.0	40.8	41.6	40.6
C1311	41.3	42.3	40.3	39.6	40.7	40.1
	Mean of 10 Tests	Percentage of Oil				
Bellatti L-263	22.1	22.7	22.4	21.9	22.7	21.0
Clark	22.3	22.5	22.7	22.1	22.8	21.3
Clark 63	22.2	22.5	22.4	22.1	22.1	21.5
L9	22.0	22.7	22.4	22.0	21.8	21.0
L11	22.1	22.6	22.2	22.0	22.6	21.5
L12	22.0	23.4	22.8	21.3	22.0	20.9
L62-1251	22.2	22.5	22.9	22.4	23.0	21.2
Kent	22.4	22.6	23.2	22.6	22.1	21.8
SL5	22.2	22.5	22.9	23.0	22.2	21.3
C1278	22.0	22.4	22.9	21.8	21.7	21.2
C1311	22.1	22.2	23.0	22.8	21.7	21.9

*Not included in the mean.
[1]Irrigated.

Table 72. (Continued)

Strain	Eldorado Ill.	Miller City Ill.	Columbia Mo.	Colby Kans.[1] *	Manhattan Kans.	Mound Valley Kans.
Bellatti L-263	42.5	41.3	42.1	30.8	38.5	41.7
Clark	42.4	41.1	41.3	30.5	39.2	41.9
Clark 63	41.9	40.8	41.5	30.9	38.3	42.0
L9	42.2	41.3	42.2	30.5	40.5	42.2
L11	42.9	40.7	41.8	30.3	38.5	41.5
L12	41.7	40.4	41.5	30.8	38.4	41.6
L62-1251	41.1	42.6	41.6	30.9	38.2	41.4
Kent	42.0	39.6	42.1	30.7	38.7	42.0
SL5	41.4	38.9	42.0	31.4	38.7	42.9
C1278	41.9	40.9	42.0	30.5	39.0	42.2
C1311	43.4	41.6	43.2	31.0	39.6	42.1
	Percentage of Oil					
Bellatti L-263	22.1	22.1	21.2	21.2 *	23.1	22.2
Clark	23.8	22.1	21.0	22.2	22.5	21.8
Clark 63	22.2	22.6	21.1	20.9	22.7	22.4
L9	22.3	22.2	21.4	21.1	22.3	22.3
L11	21.8	22.1	21.5	22.0	22.3	21.9
L12	21.7	22.6	21.7	21.7	22.1	21.6
L62-1251	22.5	20.9	21.4	23.1	23.0	22.0
Kent	21.6	23.3	21.6	21.7	22.4	22.3
SL5	21.6	22.6	21.2	21.6	22.7	22.1
C1278	22.1	21.9	22.0	21.7	22.7	21.5
C1311	21.5	22.8	20.9	21.4	22.6	21.6

Table 73. Three-year summary of data for Uniform Test IV, 1963-1965.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	46	46	44	40	46	43	33	25	25
Clark	37.5	3	-0.4	1.8	37	2.4	16.7	40.4	21.8
Clark 63	37.4	4	0	1.9	39	2.5	16.1	40.0	21.9
Kent	40.0	2	+7.0	1.6	37	2.5	17.9	40.4	22.1
C1278	40.4	1	+2.3	1.7	38	2.5	18.2	40.6	21.7

[1]Days earlier (-) or later (+) than Clark 63 which matured September 26, 126 days after planting.

Table 74. Three-year summary of yield and yield rank for Uniform Test IV, 1963-1965.

Strain	Mean of 46 Tests	Newark Del.	Georgetown Del.	Upper Marlboro Md.	Columbus Ohio	Worthington Ind.	Evansville Ind.	Edgewood Ill.
Years Tested		1963-1965	1964-1965	1964-1965	1963-1965	1963-1965	1963-1965	1964-1965
Clark	37.5	41.5	23.7	35.6	39.8	45.0	39.6	34.5
Clark 63	37.4	42.7	23.4	37.4	37.7	41.2	40.4	33.7
Kent	40.0	41.9	33.9	35.0	34.4	49.7	45.4	32.9
C1278	40.4	44.0	27.6	35.2	40.4	54.2	46.6	37.4
	Yield Rank							
Clark	3	4	3	2	2	3	4	2
Clark 63	4	2	4	1	3	4	3	3
Kent	2	3	1	4	4	2	2	4
C1278	1	1	2	3	1	1	1	1

[1]Irrigated.

Table 74. (Continued)

Strain	Eldorado Ill.	Carbondale Ill.	Miller City Ill.	Columbia Mo.	Portageville Mo.	Powhattan Kans.	Manhattan Kans.	Manhattan Kans.[1]	Mound Valley Kans.
Years Tested	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965	1963-1965
Clark	47.7	29.1	43.0	35.0	43.8	33.3	44.0	46.0	24.1
Clark 63	46.4	29.5	44.8	34.6	47.9	34.4	43.1	49.8	23.4
Kent	49.0	31.9	49.9	34.9	52.2	38.1	47.7	46.5	23.8
C1278	51.6	31.9	49.3	34.7	50.9	37.3	46.6	46.8	23.8
	Yield Rank								
Clark	3	4	4	1	4	4	3	4	1
Clark 63	4	3	3	4	3	3	4	1	4
Kent	2	1	1	2	1	1	1	3	2
C1278	1	1	2	3	2	2	2	2	2

SOYBEAN DISEASE INVESTIGATIONS IN 1965

Data for this section of the Report was furnished by:

K. L. Athow, Indiana
J. M. Dunleavy, Iowa
D. W. Chamberlain, Illinois
T. D. Wyllie, Missouri

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

Four diseases, namely, Phytophthora rot, stem canker, purple stain, and pod and stem blight are rated in a separate category because of either their destructive potential or their effect on the value of the seed. The severity classes for these diseases are determined as follows: 1 (no diseased plants in the field or no diseased seed in the sample); 2 (1-3% of the plants or the seed diseased); 3 (4-8% of the plants or seed diseased); 4 (9-19% of the plants or seed diseased); and 5 (20-100% of the plants or seed diseased). Prevalence rating is determined by the same method for all diseases.

SUMMARY OF DISEASE SURVEY DATA - 1965

Disease	Percent of Fields Infected		Average Severity	Average Prevalence	Disease Index
	Illinois, August 10-12				
	Measurable	Trace			
Bacterial Blight	64	10	2.2	2.9	4.1
Brown Spot	48	24	2.0	3.1	3.0
Bacterial Pustule	40	11	2.4	3.1	3.0
Brown Stem Rot	11	4	2.4	1.6	0.4
Phytophthora Rot	5	7	2.0	1.0	0.1
Downy Mildew	5	2	2.0	2.5	0.3
Wildfire	4	1	2.3	1.0	0.1
Yellow Mosaic		7	--	--	--
Bud Blight		5	--	--	--
Soybean Mosaic		2	--	--	--
	Iowa, July 8-9 and September 9-10				
Bacterial Blight	96		3.0	2.8	8.06
Root Rot	77		2.5	2.7	5.19
Brown Stem Rot	56		3.6	2.7	5.44
Downy Mildew	43		2.9	2.5	3.12
Bacterial Pustule	33		2.9	26	2.49
Brown Spot	26		2.3	2.1	1.26

SUMMARY OF DISEASE SURVEY DATA - 1965 (Continued)

Disease	Percent of Fields Infected	Average Severity	Average Prevalence	Disease Index
	Iowa (Continued)			
Stem Canker	21	2.1	1.4	0.62
Wildfire	11	2.3	1.5	0.38
Bud Blight	10	2.3	1.6	0.37
Bacterial Wilt	7	2.6	1.8	0.33
Yellow Mosaic	4	2.3	1.3	0.12
Alternaria Leafspot	1	2.0	1.0	0.02
	Indiana, August 2-6			
Brown Spot	71	2.8	1.1	2.2
Bacterial Pustule	41	2.8	1.9	2.2
Bacterial Blight	41	2.6	1.8	1.9
Bud Blight	40	2.5	1.6	1.6
Downy Mildew	24	3.1	2.7	2.0
Brown Stem Rot	7	2.8	3.3	0.6
Phytophthora Rot	4	2.8	1.4	0.2
	Missouri, August 5-6 and 10-13			
Brown Spot	63	3.16	2.71	5.39
Bacterial Blight	63	2.77	2.19	3.83
Bacterial Pustule	45	2.41	2.09	2.27
Downy Mildew	31	2.09	2.00	1.30
Wildfire	29	2.64	1.78	1.37
Rhizoctonia Root Rot	27	2.38	1.54	0.99
Brown Stem Rot	20	2.10	1.90	0.80

REGIONAL DISEASE REACTION TEST - 1965

Strain	Bacterial Blight		Strain	Bacterial Pustule
	Ill. a[1]	Ia. a		Ia. a
Lincoln*	4	4	Clark*	4
Flambeau**	3	3	Clark 63	1
Hawkeye	4	4	Harosoy 63	2
L56-1513	4	2	Lee**	1
L57-1885	3	2	Scott	2
P.I. 68.521	2	2	Wayne	1
P.I. 68.554	3	3	L2A	1
68.708	1	2	P.I. 90.763	2
90.763	4	4	96.333	1
153.213	3	2	153.213	2
166.147	3	2	215.693	2

*Susceptible check variety.
**Resistant check variety.
[1]Artificial inoculation.

GROWING CONDITIONS AT MOST OF THE TEST LOCATIONS IN 1965.

The following notes supplied by the cooperators provide information useful in interpreting strain performance at the individual test locations.

Temperature and rainfall graphs for most test locations for the 1965 season are included at the end of this report. The data are taken from "Climatological Data" published by the U. S. Weather Bureau.

Ridgetown, Ontario, Canada. Ridgetown had a cooler than normal summer, with a dry spring and close to average summer rainfall. There did not appear to be any serious disease or insect infestations, and there was no irrigation used on the plots. The soybean tests were considered indicative of the potential responses of the various varieties.

Soil Type: Brookston clay loam.
Fertilizer Application: 1,000 lbs./A. 3-11-11.

Harrow, Ontario, Canada. Uneven emergence resulted in ragged looking tests throughout most of the growing season. None of the plants produced nodules, although the land was inoculated prior to seeding. (This land had not been in legumes for many years.) Average moisture and temperature conditions existed during the early part of the growing season. July was dry, but cool temperatures helped to maintain favorable growth. August and September were wet and cool, resulting in delayed ripening. However, none of the varieties suffered injury from the first killing frost, which occurred on October 5. Yields, in general, were higher than expected.

Soil Type: Brady sandy loam.
Fertilizer Application: 500 lbs./A. 5-10-15.
Soil Analysis: pH, 5.1; P_2O_5, 126 lbs./A.; K_2O, 160 lbs./A.; Ca, 1200 lbs./A.; Mg, 40 lbs./A.

Freehold, New Jersey. Progress during the growing season was good at Freehold, where Tests II and III were located, but drouth in Salem County severely reduced yields of Test IV, making the results unrepresentative. Unfortunately, so many plot yields for Tests II and III were mixed in threshing that all confidence in the results was nullified.

Newark, Delaware. Temperatures were near normal throughout the growing season in 1965. Rainfall, however, was at least 1.5 inches below normal for this location every month during the growing season. Soil moisture was also deficient at the time of planting. Variability among replications was particularly noted in the Group IV test. Soybean growth was slightly poorer than normal, and yields were somewhat poorer than usual.

Soil Type: Matapeake silt loam.
Fertilizer Application: 0-64-64.
Soil Analysis: pH, 6.5; OM, 2.5%; P, High+; K, Medium; Mg, High; Mn, High+.

Georgetown, Delaware. Temperatures were near normal throughout the growing season. Rainfall was below normal in May, June, September, and October, but well above normal in July and August. Moisture was deficient at the time of planting and seedlings were slow emerging. Heavy rains were received 11 days following planting.

Seedlings were severely infected with root rots. Numerous other diseases, including pod and stem blight and brown stem rot, were prevalent later in the season. Some unidentified diseases may have been responsible for the reduced yields obtained. The Group III lines were affected more than the Group IV lines, but the infection was spotty in the field. Kent was the only variety that was acceptable with regard to yield, seed appearance, disease resistance, and other agronomic characteristics.

Soil Type: Norfolk sandy loam.
Fertilizer Application: 0-34-68.
Soil Analysis: pH, 6.3; OM, 2.0%; P, High+; K, Medium; Mg, Medium; Mn, Low.

Upper Marlboro, Maryland. Growing conditions were excellent. Rainfall was slightly below normal; however, the test plots showed no adverse effects due to lack of moisture.

Soil Type: Monmouth loamy fine sand.
Fertilizer Application: 200 lbs./A. 4-8-12.
Soil Analysis: pH, 6.3; P_2O_5, 146 - H; K_2O, 221 - H; Mg, 110 - H.

Hoytville, Ohio. Soil moisture was generally favorable for planting in May, and temperatures were slightly above normal. Below normal rainfall and below normal temperatures in June slowed growth of soybeans. A combination of below normal rainfall and below normal temperatures in July continued to retard growth. Soil moisture conditions improved through August, and growth and development appeared normal. Rainfall and temperature conditions for both September and October insured better than normal yields for the season.

Soil Type: Hoytville clay.
Fertilizer Application: None.
Soil Analysis: pH, 6.2; OM, 3%; P, 67 lbs./A.; K, 300 lbs./A.; Mg, 618 lbs./A.

Wooster, Ohio. Soil moisture was generally favorable for planting in May, and temperatures were slightly above normal. Soil moisture in June, although below normal, was adequate; however, temperatures (especially night time) were below normal and retarded growth. Extremely low soil moisture and below normal temperatures in July slowed progress of soybean growth. Soil moisture became more critical in August with below normal temperatures which appeared to have definitely slowed growth and decreased yields. Inadequate soil moisture and below normal temperatures for both September and October reduced yields considerably.

Soil Type: Wooster silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 7.3; OM, 2%; P, 79 lbs./A.; K, 172 lbs./A.

Columbus, Ohio. Soil moisture was somewhat excessive in May with only a few days suitable for planting. Temperatures were, generally, above normal. Soil moisture was above normal in June, but below normal temperatures slowed growth somewhat. Below normal rainfall and below normal temperatures in July resulted in slow growth of soybeans. Soil moisture conditions improved in August, and normal growth resumed. Excessive rainfall during September and October hampered harvesting but resulted in near normal yields and better than average yields for late-maturing varieties.

Soil Type: Miami-Brookston silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.5; OM, 2.5%; P, 92 lbs./A.; K, 204 lbs./A.

East Lansing, Michigan. Soil tilth was excellent and emergence was good on most plots except in Uniform Test II where one-half of the plots were planted too deep. Growth was good until the last of June. Between June 23 and August 16 there was about 1 inch of rainfall with the largest amount 0.20 inches. Rainfall was above normal after August 16. June and July temperatures were 2-3° F. below that of 1963-64 and August and September temperatures were 1-2° F. above.

Early strains were seriously affected by the drouth but a few yielded above 20 bushels per acre. The mid-season (Uniform Test I) strains for the area took full advantage of the rains and gave an average yield of 40+ bushels. This is higher than normal for this location. Uniform Test II (data not included) had 53 bushels per acre yield on one plot. The data from both Uniform Test II and Uniform Preliminary Test II was considered unreliable because of variation in emergence and stand and subsequent effect on yield.

Soil Type: Conover silt loam.
Fertilizer Application: 300 lbs./A. 5-20-20.

Dundee, Michigan. The soil was in good tilth at planting time and throughout the growing season. Growth was very good to excellent at all times; however, rainfall was about one-half of normal for May and June. Rainfall was above normal from August 15 to harvest time. Plots were free from weeds.

It was necessary to estimate maturity on four to six strains in Uniform Test II because a killing frost occurred well before maturity. Temperatures for June were 2° F. below that of 1963-64 and for July were 4° F. below.

Apparently leaf, stem, and root diseases were present in amounts sufficient to cause reduction in yield, but their effect on vegetative growth was light. Brown stem rot, Phytophthora root rot, and, in some cases, bacterial blight were the main diseases. There was reduced pod set on many strains.

The two vegetable strains, AX84-90 and AX84-98, and A1-1051 in Uniform Test II were partially to completely defoliated by a leaf disease beginning in early September. This was not observed in the East Lansing tests. The plant disease diagnostic laboratory at Michigan State University identified it as verticillium wilt (Verticillium albo-atrum).

Soil Type: Lenawee silty clay loam.
Fertilizer Application: None.

Knox, Indiana. Planting was timely on May 27 but emergence conditions were below average. Stands and early growth were variable. Growth was poor to good in different plots throughout the first half of the season and generally fair to good late in the season. Precipitation was 5.02 inches below the expected normal accumulation of 11.53 inches for May, June, and July. Precipitation was 10.44 inches for August and September, which was 4.15 inches above normal. Temperatures were slightly below normal during the growing season but there were 14 days with 90° F. or above and a high of 95°. The average 35 bushels per acre yield of all Group II varieties and

30 bushels for Group I is about 20% below the average expected for this locations. There was a moderate but variable amount of brown spot and bacterial pustule over the plot and a few plants in the very susceptible varieties were killed by Phytophthora. Most varieties were physiologically mature when a killing frost of 27° F. occurred October 5. Harvest conditions on October 12 and 13 were good when all plots were harvested.

Soil Type: Maumee loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.4; P, 109; K, 120 lbs./A.

Bluffton, Indiana. Planting was somewhat early on May 14 with good emergence and fair to good growth even though precipitation was 3.2 inches below the expected 11.1 inches normal for May through July. The August and September precipitation of 7.6 inches was 2.4 inches above normal. Temperatures were near normal for the season with 16 days of 90° F. or above and a high of 95° on a single day in July and two consecutive days in August. The average 38 and 41 bushels per acre Group II and Group III yields, respectively, are about 20 percent below the expected for this location. There was a moderate amount of brown spot and blight on the more susceptible varieties. Phytophthora was rather marked in some areas of the plot, especially in Uniform Test II. It caused a marked decrease in stand and yield on susceptible varieties such as Harosoy and Amsoy and the highly susceptible M405. All varieties were mature ahead of the 27° F. killing frost October 4. Harvest conditions were excellent on October 6.

Soil Type: Nappanee silt loam.
Fertilizer Applications: 300 lbs./A. 3-12-12 plus 4% Mn in the row.
Soil Analysis: pH, 6.4; P, 283; K, 255 lbs./A.

Lafayette, Indiana. Planting was somewhat early on May 14 with rather erratic emergence and poor early growth which probably caused some differential and erratic maturity. Precipitation was 2.3 inches below the expected normal of 5.9 inches for May and June. The 14.1 inches for July, August, and September was 3.6 inches above the normal with 6.8 inches occurring in September which caused erratic maturity with notes of somewhat questionable use. Harvest conditions were fair to good. Rains continued in October which delayed harvest. Temperatures were near normal with only 9 days with 90° F. or above. Yields were the highest ever observed at Lafayette. Many experimental strains, and the newly released Amsoy and Wayne, yielded from 60 to a high of 68 bushels per acre in some tests. There was a moderate amount of brown spot, considerable bacterial blight, and a small amount of stem canker throughout the plot. An occasional plant was killed by Phytophthora.

Soil Type: Chalmers silty clay loam.
Fertilizer Applications: 155 lbs./A. 5-20-20 plus 4% Mn in the row.
Soil Analysis: pH, 6.5; P, 132; K, 116 lbs./A.

Greenfield, Indiana. Planting was about the average date on May 21. The soil was somewhat cloddy and emergence variable, especially in the Phytophthora plots. Growth was somewhat retarded early but was excellent from early mid-season on to give the best average yields of 44 and 49 bushels per acre in Groups II and III, respectively, obtained at this location since 1952 when the respective groups averaged 48 and 52 bushels per acre. Precipitation was 4.9 inches for May and June, which is 3.5 inches below normal. It was near normal in July and August, and 2.2

inches above normal for September, with 12.7 inches for the three-month period. There were only 10 days with temperatures of 90° F. or above. There was moderate infection of bacterial blight and mildew in all tests and no observable Phytophthora in Groups II and III. The Phytophthora Test plots had moderate to heavy infection but not uniform throughout the plot area. All varieties matured ahead of frost. Harvest conditions were good.

Soil Type: Brookston-Crosby complex.
Fertilizer Application: 250 lbs./A. 5-20-20 in the row.
Soil Analysis: pH, 6.6; P, 392; K, 430 lbs./A.

Worthington, Indiana. Planting was early on May 12 in a well prepared seedbed. Emergence and early growth were excellent. The drift from herbicide Banville-D used on wheat research plots about one-fourth of a mile from the soybean plots caused some overall slight puckering of leaves and some reduced growth. This damage and excessive lodging were probably the major causes of low average yields of 30, 35, and 39 bushels per acre in Uniform Tests II, III, and IV, respectively. Recent average yields in this field have been 45 to 50 bushels per acre. Only in May was precipitation slightly below normal. The May through September average was 25.7 inches, 6.2 inches above normal. Only 12 days were 90° F. or above. Growth conditions appeared ideal; however, leaves showed some shredding due to driving rains or perhaps a little hail. There was heavy bacterial blight and brown spot throughout the plot. There was very little downy mildew, which had been very heavy in past years. There were no frost effects. Harvest conditions were generally fair to good but delayed in Groups II and III. Seed quality was poor with ratings primarily in the 2.5 to 4.0 category.

Soil Type: Genesee silt loam.
Fertilizer Applications: 10 Tons manure plus 225 lbs./A. 6-24-24 in the row.
Soil Analysis: pH, 5.6; P, 314; K, 225 lbs./A.

Evansville, Indiana. Planting was somewhat later than usual on May 24. Emergence and growth were good. Lodging was excessive and a possible factor in the 20 to 25 percent lower yields than usual. Average Groups III and IV yields were 39 and 42 bushels per acre. Seed quality was very poor, ranging from 2.0 to 4.5, with 3.5 and 4.0 ratings quite frequent. Precipitation was only 2.9 inches total for May and June which is 5.0 inches below normal. The 15.1 inches in July through September was 5.8 inches above normal. Although monthly summer temperatures averaged below normal, there were 28 days with 90° F. or above. High temperatures of 97° and 96° F. were reached in July and August, respectively. Shelby and Clark yields, compared with their Phytophthora-resistant counterparts, indicate possible Phytophthora effects although no killed plants were observed. There was a moderate amount of mildew, bacterial pustule, and brown spot. There was no frost damage. Harvest was delayed somewhat due to rains and harvest conditions were only fair.

Soil Type: Montgomery silty clay loam.
Fertilizer Application: 300 lbs./A. 3-10-12 liquid in the row. Treflan herbicide used over entire plot area.
Soil Analysis: pH, 5.6; P, 314; K, 225 lbs./A.

Ashland, Wisconsin. Planting was somewhat delayed, until June 2, due to excessive spring moisture conditions. The seedbed was rough, but good stands were obtained. Each of the months of the growing season had below normal temperatures. July and September were especially cool with average temperatures more than 5 degrees below

normal. The precipitation was adequate throughout the growing season. Good vegetative growth was produced by all of the soybean entries due to the good fertility and moisture conditions. Because of the growing season's low temperatures, less than one-third of the entries matured before the first killing frost.

Soil Type: Ontonagon silty clay loam.
Fertilizer Application: 300 lbs./A. 0-20-20.
Soil Analysis: pH, 6.9; OM, 32 tons; P, 55; K, 175.

Spooner, Wisconsin. The soybean nursery was planted May 28 under very good conditions. Rainfall for the month was 6.86 inches and temperatures were 3 degrees above normal. Temperatures were 2 degrees below normal in June, 3.7 degrees below normal in July, 2.4 degrees below normal in August, and 7.2 degrees below normal in September. Rainfall was plentiful except for a period of two weeks in July and the first three weeks in August, when it was very light. Rainfall was 1.5 inches below normal in June, 1.5 inches above normal in July, .88 inches below normal in August, and 2.04 inches above normal in September. The nursery was irrigated four times: June 24, July 30, August 16, and August 24. The first killing frost occurred September 26 when the temperatures dropped to 20 degrees. Due to the cool and cloudy weather from August 15 to September 25, the rate of maturing was very slow. None of the varieties was far enough along to be considered ripe. The earliest varieties were about 90 percent turned brown and nearly all leaves fallen when the first frost occurred.

Durand, Wisconsin. This nursery was planted June 7. Stands were excellent. Temperatures during the growing season averaged about 3° F. below normal. Rain was adequate but since the soil is a sand, short drouth periods occurred which reduced the yield of early varieties more than that of the late ones. A killing frost occurred September 26 which reduced the yield of Group I varieties.

Soil Type: Boone fine sandy loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.8; OM, 24; P, 84; K, 135.

Madison, Wisconsin. The nursery was planted May 18. Stands were excellent. Temperature during May was 4° F. above normal, but averaged 2 to 3 degrees below normal during the rest of the growing season. Rainfall was normal during April, but about 5 inches below normal during the period May 1 to August 10. During the last half of August and all of September, rainfall was heavy, with 9.4 inches during September. Frost did not occur until after all varieties were mature. Yield and growth of all varieties, the early more so than the late, were reduced as a result of the dry weather during most of the growing season. Plant height was about two-thirds of normal and yields averaged about 30 bushels per acre. Diseases were minor.

Soil Type: Miami silt loam.
Fertilizer Application: 200 lbs./A. 0-20-20.
Soil Analysis: pH, 7.3; OM, 18; P, 81; K, 140.

Shabbona, Illinois. Planting was on May 18 in a rough seedbed. Growth was only fair due to an inadequate amount of moisture from planting through early August. There was a light epiphytotic of bacterial blight and phytophthora root rot.

Soil Type: Flanagan silt loam.
Fertilizer Application: 300 lbs./A. 0-20-20.
Soil Analysis: pH, 5.8; P_1, 21 lbs./A.; P_2, 44 lbs./A.; K, 276 lbs./A.

Dwight, Illinois. Planting was on May 28 in a smooth moist seedbed. Emergence was very uneven. The available moisture was excellent all season, resulting in good growth and yields. Lodging started in early August. There was a light epiphytotic of bacterial blight.

Fertilizer Application: None.
Soil Analysis: pH, 6.2; P_1, 17 lbs./A.; P_2, 91 lbs./A.; K, 358 lbs./A.

Urbana, Illinois. Two replications of each Uniform Test strain were planted in adjacent fields on May 15 and May 24. Heavy rains following the May 24 planting, gullied the field, requiring replanting, in part. Moisture was adequate to surplus most of the growing season. Bacterial pustule was moderate to heavy and bacterial blight was slight to moderate on susceptible varieties. Harvest extended over quite a period of time due to rains which resulted in a slowing of maturity.

Soil Types: Flanagan and Catlin silt loam.
Fertilizer Application: None.
Soil Analysis: Field M-14--pH, 6.2; P_1, 28 lbs./A.; P_2, 111 lbs./A.; K, 306 lbs./A.
Field M-15--pH, 6.2; P_1, 86 lbs./A.; P_2, 130+ lbs./A.; L. 292 lbs./A.

Girard, Illinois. Planting was on May 17 in a smooth, moist, very soft seedbed. Three replications of two-row plots, one rod long, were grown in thirty-inch row spacing. Emergence was fair and moisture was adequate most of the growing season. Lodging started in early August. Ten to twenty percent of most strains in Uniform Test II were prematurely killed by an unknown cause. Most of the strains in Uniform Tests III and IV had green stems when mature.

Fertilizer Application: None.
Soil Analysis: pH, 6.2; P_1, 104 lbs./A.; P_2, 130 lbs./A.; K, 400+ lbs./A.

Edgewood, Illinois. Planting was on May 18 in a rough hard seedbed. Stands were fair to good. Moisture was adequate to surplus most of the growing season. Bacterial blight, bacterial pustule, and brown stem rot occurred with severities ranging up to severe, moderate, and severe, respectively. There was some premature killing in most Uniform Test II strains.

Fertilizer Application: 106 lbs./A. 0-0-60.
Soil Analysis: pH, 6.5; P_1, 17 lbs./A.; P_2, 111 lbs./A.; K, 110 lbs./A.

Eldorado, Illinois. Planting was on May 13 in a moist seedbed. Stands were good to very good. Bacterial blight, bacterial pustule, and downy mildew were moderate to general over the field. Stem canker appeared in early August. Most Uniform Test II varieties died prematurely, due to an unknown cause. Green stems and incomplete abscission of petioles occurred on most Group IV varieties along with very poor seed quality associated with pod and stem blight.

Fertilizer Application: 250 lbs./A. 3-10-12.
Soil Analysis: pH, 6.2; P_1, 33 lbs./A.; P_2, 107 lbs./A.; K, 314 lbs./A.

Carbondale, Illinois. Planting was on May 12 in an excellent seedbed. Adequate, well spaced rains during the growing period resulted in an excellent stand and growth The quality of seed from the early maturing varieties was very good, while that of the mid-season group was quite poor. The later maturing soybeans seemed to have

escaped the attacks of the pod and stem blight which apparently was the main cause of some extremely poor seeds.

Soil Type: Stoy silt loam.
Fertilizer Application: 300 lbs./A. 0-20-20.
Soil Analysis: pH, 6.5.

Miller City, Illinois. Planting was on May 13 in a moist, smooth, very tight seedbed. The center row of three-row plots was harvested from four replications for each strain. August was very dry, resulting in the poorest growth in many years at this location. Bacterial blight and bacterial pustule occurred generally over the field in slight to moderate severity. Traces of brown spot, wildfire, and soybean mosaic virus were noted. Frost damaged the Groups V and VI varieties, but, in general, these late varieties (not reported here) had higher yields than those of Group IV, which is not true in most seasons here.

Fertilizer Application: None.
Soil Analysis: pH, 6.4; P_1, 104 lbs./A.; P_2, 130+ lbs./A.; K, 350 lbs./A.

Crookston, Minnesota. Planting was timely (May 20) and stands were good. The field had not previously produced soybeans, and no inoculant was used. Consequently, nodulation was very poor and plant color was sub-optimum. Temperatures, in general, were subnormal during the growing season. The Group 00 test matured pretty well, but most of the lines in Group 0 were somewhat immature at the first freeze on September 26. Moisture conditions were favorable, and weeds were well controlled by 3 pounds of Amiben per acre preemergence. Group 00 data should be quite reliable, Group 0 less so. The location of the plots is considerably different from previous years. The soil was better drained, had a higher silt content and was classed as a Fargo silt loam. As noted below, P was low.

Soil Type: Fargo silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 7.8; OM, 5.7%; P, 6 lbs./A.; K, 330 lbs./A.

Morris, Minnesota. Planting was timely (May 19) and stands good. Growing conditions were relatively favorable all season and good yield comparisons were obtained. All strains in Uniform Test 0 matured before heavy frost on September 26. Weeds were no problem and were controlled by 3 pounds of Amiben per acre overall preemergence.

Soil Type: Barnes silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.2; OM, 6.9%; P, 15 lbs./A.; K, 410 lbs./A.

St. Paul, Minnesota. Uniform Tests 00, 0, and I were all planted in good time (May 22). Emergence and stands were good. Weeds were controlled by 3 pounds of Amiben preemergence overall plus two cultivations. Moisture was excessive at various intervals during the growing season. Temperatures were subnormal and lodging was rather severe. Nevertheless, yields were fairly high and yield comparisons satisfactory, especially for the earlier group. A very wet, cool September delayed maturity and prevented timely harvests of the earliest material (Group 00), somewhat reducing seed quality.

without causing serious injury. Growth response and yields were below average due to drouth. Disease was of little consequence throughout the season. This nursery was considered fair to good for making strain comparisons.

Soil Type: Primghar silty clay loam.
Fertilizer Application: None.
Soil Analysis: pH, 7.1; OM, Medium to high; N, 42 lbs./A.; P, 18.5 lbs./A.; K, 134 lbs./A.

Kanawha, Iowa. This nursery is located in north-central Iowa on level, productive Webster silty clay loam. Planting was completed on May 14 on land previously grown to oats. Stands were generally excellent and plots were kept weed-free. There was a heavy bacterial blight in the nursery. During the growing season, temperatures averaged -2.0° F. below normal with most of the cool temperatures occurring in June thru September. Although precipitation was deficient in May and June, all other months were near normal with September having an excess of +9.3 inches. The overall average from May through September was +6.0 inches above. These conditions permitted above average growth and yields. A later than normal frost permitted all strains to mature. Harvesting was completed under good conditions. This nursery was considered very good for making strain comparisons.

Soil Type: Webster silty clay loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.8; OM, High; N, 64 lbs./A.; P, 46.5 lbs./A.; K, 103 lbs./A.

Independence, Iowa. This nursery is located in northeast central Iowa on well-drained Kenyon loam, medium in productivity. Planting was completed on May 7. Stands were good and plots were kept weed-free. Temperatures averaged 2.0° F. below normal, with every month except May below. Precipitation was above normal (+4.7) for all growing season months except June (-1.9). September was +4.0 inches above normal. Growth, yield, and general response was above normal. Strains were not injured by frost. This nursery was considered good for making strain comparisons.

Soil Type: Kenyon loam.
Fertilizer Application: 40 lbs.K/A.
Soil Analysis: pH, 7.0; OM, Medium to high; N, 32 lbs./A.; P, 26.5 lbs./A.; K, 94 lbs./A.

Ames, Iowa. This nursery is centrally located on level, medium-productive Nicollet loam. Planting was completed on May 31 with subsequent stands excellent. Temperatures averaged near normal for the growing season (-.6) but May was 5.4° F. above normal and June, July, August, and September were -1.0 to -4.0° F. below normal. Precipitation for May through September was 1.0 inch above normal with June, July, and August all below normal. September was +4.0 inches above normal. Growth, yield, and general response was below normal due to drouth and brown stem rot. There was a low incidence of diseases other than a moderate amount of brown stem rot. Later strains were more severely affected than early ones. Later than normal frost permitted all strains to mature. Strain comparisons are believed to be fair to good.

Soil Type: Nicollet loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.3; OM, High; N, 64 lbs./A.; P, 25.0 lbs./A.; K, 87 lbs./A.

Soil Type: Waukegan silt loam.
Fertilizer Application: No commercial fertilizer, but land has been regularly heavily manured.
Soil Analysis: pH, 6.1; OM, 5.0%; P, 190 lbs./A.; K, 470 lbs./A.

Lamberton, Minnesota. Planting was somewhat late (June 2). Stands were satisfactory and weed control good with 3 pounds of Amiben per acre plus two cultivations. Moisture was over-abundant early in the season and late, but somewhat limited in mid-summer. There was considerable lodging. Yield levels were low and comparisons only fair. Frost damaged the Group II test. As shown below, phosphorus level was low.

Soil type: Nicollet silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 5.8; OM, 4.7%; P, 9 lbs./A.; K, 270 lbs./A.

Waseca, Minnesota. Planting was fairly well on time (May 28). Stands were satisfactory and growth was good during the season. Moisture was adequate to excessive at times and temperatures were subnormal. Yields were good, though not outstanding. Maturities were delayed to the extent that many of the later strains (in particular, the Group II test) were damaged by heavy frost on September 26. Comparisons in the Group I test were good. Weeds were controlled by 3 pounds of Amiben per acre pre-emergence plus two cultivations.

Soil Type: LeSueur silty clay loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.5; OM, 8.0%; P, 21 lbs./A.; K, 400 lbs./A.

Cresco, Iowa. This nursery is located in northeast Iowa on Cresco loam soil which is tight, cold, wet, slowly drained, and low in productivity. The nursery was planted on May 12 on corn land. On May 29 (some unifoliates beginning to unroll) a freeze of 27° F. occurred. After considerable transplanting, stands were good. Without transplanting, the nursery would have been lost. Temperatures were below normal for July, August, and September. Precipitation averaged +3.2 inches above normal and temperatures departed -1.4 below for the growing season. Excessive +6.0 inches above normal occurred in September. June, July, and August were below normal precipitation. Growth response and yields averaged above normal. Light frost singed a few later-maturing strains in late September. This nursery was considered good for making strain comparisons.

Soil Type: Cresco loam.
Fertilizer Application: 60 lbs. K/A.
Soil Analysis: pH, 6.3; OM, Medium to High; N, 45 lbs./A.; P, 28.5 lbs./A.; K, 100 lbs./A.

Sutherland, Iowa. This nursery represents the northwest section of Iowa with Primghar silty clay loam soil, medium high in productivity, and generally slightly undulating in topography. The nursery was planted May 12. Stands were excellent and plots were kept weed-free. Precipitation was above normal for May and excessive for September (+6.0), but June, July, and August were drouthy, which gave a season's average of +3.2 inches above normal. Temperatures for May through September averaged -1.4° F. below normal with July, August, and September departing greatest with -1.5, -1.7, and -8.2° F., respectively. Light frost occurred in late September

Ottumwa, Iowa. This nursery is in southeastern Iowa on flat, very productive Haig silty clay loam. The nursery was planted May 13. Transplanting made for excellent stands and weeds were controlled. Temperatures averaged below normal (-1.3° F.) with May +4.1° F. and other months 2.0 to 4.0° F. below normal. Precipitation averaged below normal for May and June but was excessive in September (10.3 inches above) and averaged 9.7 inches above normal for the season. Growth and yield response were above normal with ample moisture in July and August. Seed quality was much better than in 1964. Lodging was moderate to heavy, which is normal. Killing frost occurred late. Strain comparisons are believed to be good to excellent.

Soil Type: Haig silty clay loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.6; OM, Medium to high; N, 47 lbs./A.; P, 40.0 lbs./A.; K, 115 lbs./A.

Kirksville and Columbia, Missouri. The year 1965 was considered by many to have been cool and wet. The mean temperatures did tend to be slightly cooler than average but rainfall was slightly deficient in May, July, and August. This deficiency did not occur in September, when 8.9 and 10.6 inches of rain fell on Columbia and Kirksville, respectively. The average for September is less than 4 inches. Weeds were no problem, and plant growth was good with a bit more lodging than desired. Fall rains delayed some of the harvesting. Seed quality was not as good as desired.

Soil Type: Columbia--Mexico silt loam.
Fertilizer Application: None.

Portageville, Missouri. In general, the average temperatures were slightly below normal during the growing season, although there were a few periods of hotter weather. Rainfall was slightly below average during May, June, and July, and August was over 2 inches deficient. The soybeans were irrigated once on the clay and twice on the loam. September was exceptionally wet, with about 12 inches of rain (normal is 3.2 inches). Nearly all of the varieties had matured before the October 25 killing frost.

Soil Type: Salix silt loam and Sharkey clay.

Portage la Prairie, Manitoba, Canada. This test was seeded on June 4 because of wet weather during May. The late seeding combined with a very cool summer resulted in very low yields for the later maturing varieties which were not nearly mature at the time of the first killing frost on September 25. Moisture was available in adequate quantities throughout the summer.

Soil Type: Riverdale silty clay loam.
Fertilizer Application: None.

Winnipeg, Manitoba, Canada. The growing season seemed to be cool and moist. Precipitation was only slightly above normal, but temperatures in July and September were much below normal; 4.4° F. and 9.2° F., respectively. The tests were seeded on May 31. The preceding crop was barley. Emergence and early growth were reasonably uniform. Maturity for most crops was at least a week later than usual. Late varieties were damaged by fall frost. Variation in the yield of the late varieties probably contributed to the relatively large coefficient of variation (16.8%) for Uniform Test 00.

Soil Type: Riverdale silty clay.
Fertilizer Application: None.

Brandon, Manitoba, Canada. This test was planted May 12 and the rate of seeding was four to six inches apart. Late spring frosts damaged necks and cotyledons of some entries as they were emerging, but no apparent set-back resulted. Stands were very good and yields were exceptionally high. Flambeau had the best plant vigor throughout the season. Three entries, M384, 057-2921-M, and 057-2921-0, were too late maturing for this area.

Morden, Manitoba, Canada. The soybeans were grown on new breaking which had been summer fallowed in 1964. The soil was not tested, but the fertility is believed to be high. Precipitation from May 1 to September 30 totaled 15.6 inches, compared to an average of 12.5 inches. The rainfall was fairly uniformly distributed throughout the summer so that there was adequate moisture during most of the season. The beans were seeded on May 13 but did not emerge until early June because of cool temperatures. Growth throughout the entire season was slow, and yield was believed to be reduced by the low temperatures.

Soil Type: Morden heavy clay loam.
Fertilizer Application: None.

Casselton and Fargo, North Dakota. During the 1965 growing season, moisture conditions were above average for May, July, and September, about average for June, and below average for August. Temperatures during the growing season were below average except during September when the temperature was slightly above average. A frost (29° F.) occurred September 24, which hindered soybean development. For the most part, the 1965 growing season was too cool for soybeans.

Soil Type: Casselton--Bearden silty clay loam.
Fargo--Fargo clay.
Fertilizer Application: None.

Eureka, South Dakota. Planting date was about normal but abnormally low temperatures during the entire growing season caused extremely slow growth and development. Yields were about average for the area but the cool season caused some immaturity at killing frost.

Soil Type: Williams loam.
Fertilizer Application: 30-20-0.

Sisseton, South Dakota. The planting date (May 31) was about a week late due to heavy spring rains, and continued low temperatures caused very slow growth and development throughout the season. Early maturing entries produced good yields but later maturing entries did not become fully mature before killing frost.

Soil Type: Sandy loam.
Fertilizer Application: None.

Watertown, South Dakota. The planting date (May 21) was about normal but the entire growing season was far below normal in temperature, causing very slow growth and development. Yields were about average for the area; however, the cool season favored early maturing entries.

Soil Type: Kranzburg silt loam.
Fertilizer Application: 60-40-0.

Brookings, South Dakota. Planting on June 1 was on a newly terraced field which had been in bromegrass for several years. A very cold spring caused severe nitrogen deficiency symptoms in early growth stages in spite of a fall application of 100 pounds of nitrogen before plowing. The entire season was far below normal in temperature with no lack of moisture which favored early maturing entries. Yields were about 25 percent below average.

Soil Type: Vienna loam.
Fertilizer Application: 108:54:0, fall broadcast on bromegrass sod.

Centerville, South Dakota. The conditions at planting on May 24 were very good but the entire season was considerably below the normal temperature, causing slow growth and development. Yields were slightly above the area average but favored earlier maturing entries with some later lines being slightly immature at frost.

Soil Type: Poinsett sandy loam.
Fertilizer Application: 40-40-0.

Concord, Nebraska. An early frost prevented good estimates of variety performance. Some losses were encountered in harvesting, and the test was not considered suitable for evaluating strains.

Lincoln, Nebraska. The tests at Lincoln were considered reasonably good except for the earlier than normal frost. Good stands were obtained. The season was characterized by much higher than normal rainfall during May (+3.4"), June (+5.1"), July (+1.9"), and September (+4.9"). Only 1.6 inches of rain occurred in August. Temperatures were above normal at planting time in May but average temperatures were from 3 to 4 degrees cooler than normal from June through August, and 8.5° lower in September. Date of frost was September 24 when most plants were killed. A few plants in most plots escaped and were used to estimate maturities.

Soil Type: Wabash silty clay loam.
Fertilizer Application: None.
Soil Analysis: pH, 5.8; N, 11 ppm (Low); P, 95 ppm (Very high); K, 360 ppm (High).

Scandia, Kansas. Uniform Tests III and IV were planted May 19 under favorable conditions. Precipitation during the latter part of May and the remainder of the growing season was favorable for plant growth. Tillage operations for making irrigation furrows resulted in destroying much of the stand of many of the plots, consequently, little value may be placed on the test for comparative value. An early frost in September caused sufficient damage to lower the yield of all entries in these tests.

Powhattan, Kansas. Conditions were ideal for planting on June 14 and subsequent germination. Rainfall amounts were: June 9.9 inches, July 10.1 inches, August 3.6 inches, and September 10.9 inches, and the total for the four months was approximately 34.5 inches. The period from July 28 until August 18 had little effective precipitation. The wet September delayed harvest and impaired quality of some early maturing strains. Temperatures during July and August in 1965 were below normal and most favorable for plant growth.

Soil Type: Grundy silty clay loam.
Fertilizer Application: None.
Soil Analysis: pH, 5.8; OM, 2.3; P, 12; K, 344.

Colby, Kansas. The 1965 season was unusually wet and cool for this area. Approximately 25 inches of rainfall were received during the April to October period. Summer temperatures were well below average. A maximum temperature of 100° was reached on only one day. The fall was quite mild and wet. A light frost was received on September 24 but plant growth was not stopped. Variability was quite high in the test area, possibly due to enevenness in application of irrigation water, fertility level, or some other soil or environmental factors. Both pod set and seed set were poor for all soybeans. The area was preirrigated to wet soil to a depth of 6 feet prior to planting. Irrigation water was applied on July 21 and August 13 with amounts of 5.3 and 4.0 acre inches of water per acre applied on the two dates.

Soil Type: Keith silt loam.
Fertilizer Application: 100 lbs. N/A. prior to planting.

Manhattan, Kansas. All nurseries were planted May 29 under favorable weather conditions. Germination was rapid, and growth during the summer was not interrupted except for a brief period of high temperatures and moisture stress in late July and until August 18. Precipitation for the month of June, July, August, and September amounted to approximately 27 inches; however, only 6.5 inches of this amount fell during June and July. Temperatures during the growing season were below normal and very favorable for plant gorwth. Excessive rainfall in September delayed harvest of Group III and Preliminary Group III. Approximately 12 inches of irrigation water was applied to the irrigated tests during July and August.

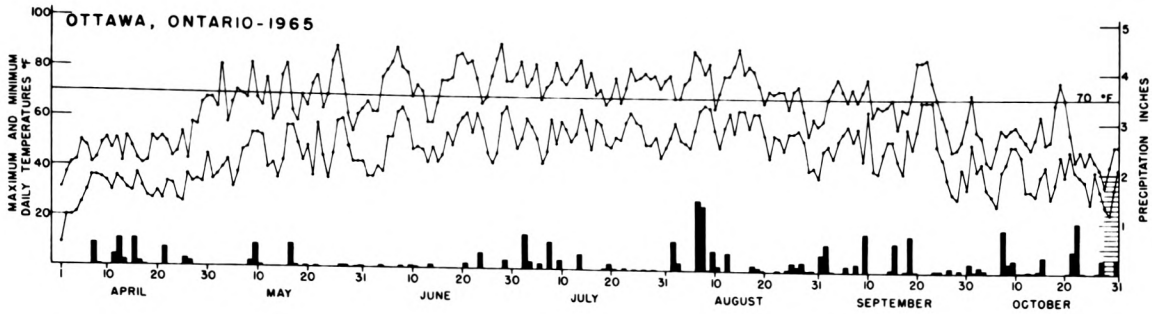
Soil Type: Hobbs silt loam (dryland) Sarpy fine sandy loam.
Fertilizer Application: None.
Soil Analysis: Dryland--pH, 5.7; OM, 2.4%; P, 28; K, 424; Ca, Free.
Irrigated--pH, 6.0; OM, 1.9; P, 15; K, 500+; Ca, Free.

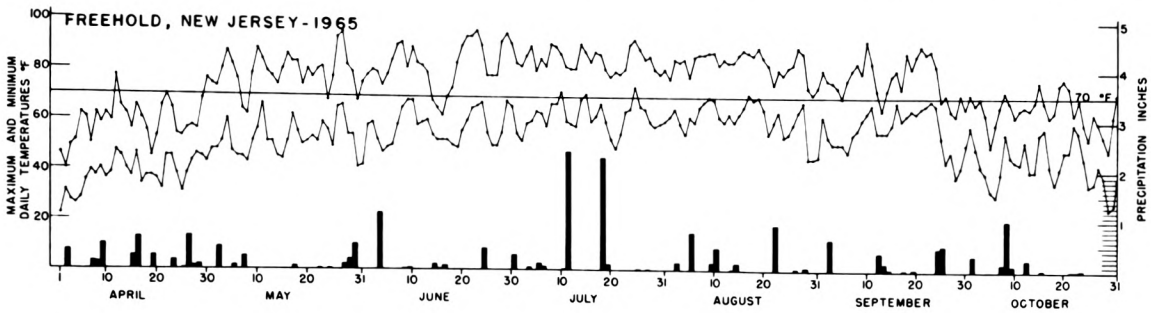
Newton, Kansas. Uniform Tests III and IV were planted May 28 under ideal conditions. Rainfall during the growing season was well above normal, with 13.9 inches falling during the month of June; 4.3 inches in July; 5.3 inches in August; and 7.1 inches in September, for a total of 30.6 inches for the four months. The normal annual rainfall for Newton is approximately 31 inches. Temperatures above 90° were common during July and August; the maximum average for July was 92° and August 92°. Plant growth was excellent, considering the above normal temperature.

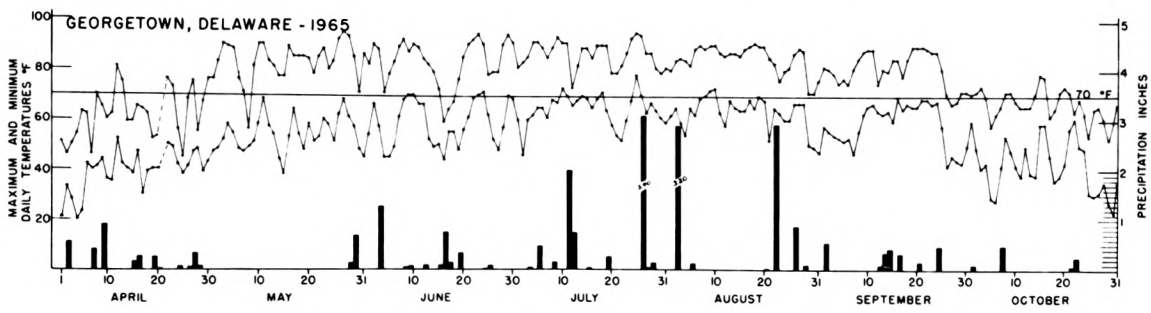
Soil Type: Goessel silty clay loam (probable).
Fertilizer Application: None.
Soil Analysis: pH, 6.1; OM, 1.9; P, 21; K, 500+.

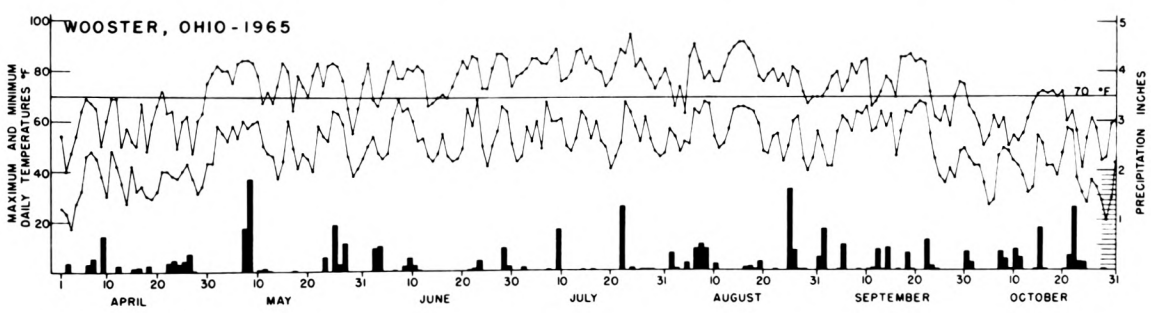
Mound Valley, Kansas. Due to excessive rainfall, the soybeans were not planted until June 18. The seedbed was in excellent condition, but heavy rains immediately after planting were responsible for some soil crusting. Seedling emergence was generally good. Inadequate moisture and high temperatures during July and early August reduced yields; however, the soybeans benefited greatly from late August rainfall. Insects and diseases were not a problem in this test.

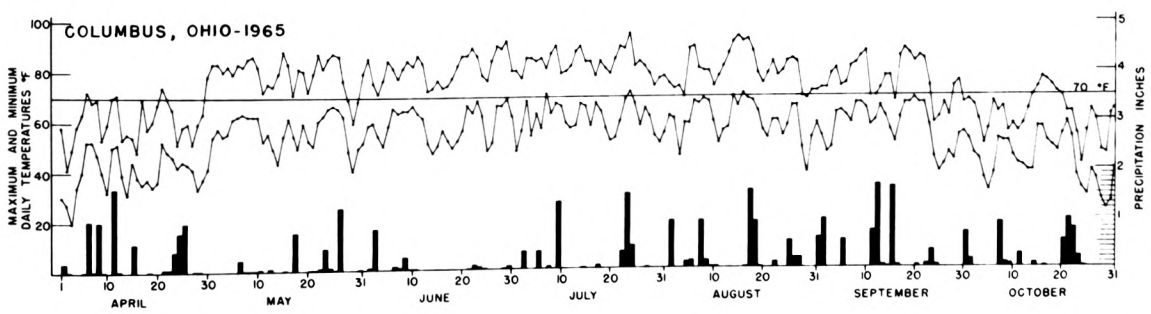
Soil Type: Parsons silt loam.
Fertilizer Application: 150 lbs./A. 12-24-12.

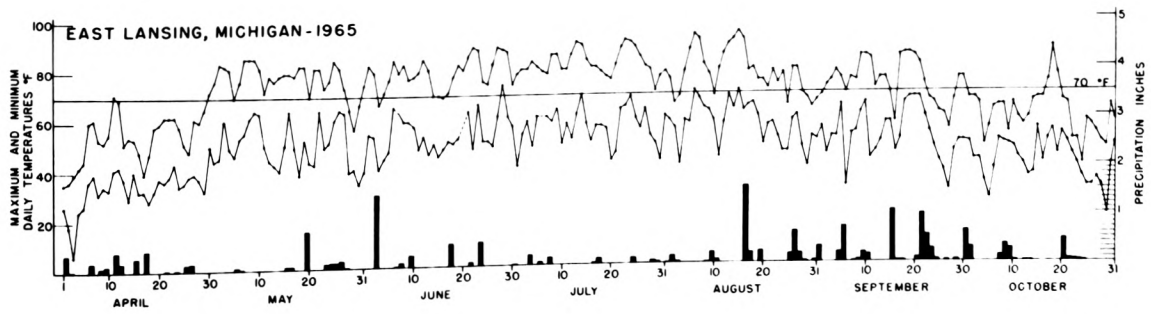

OTTAWA, ONTARIO-1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

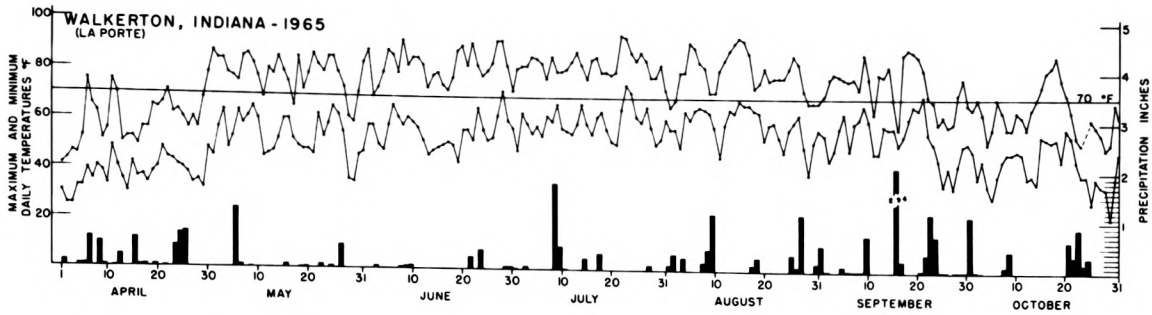

FREEHOLD, NEW JERSEY-1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

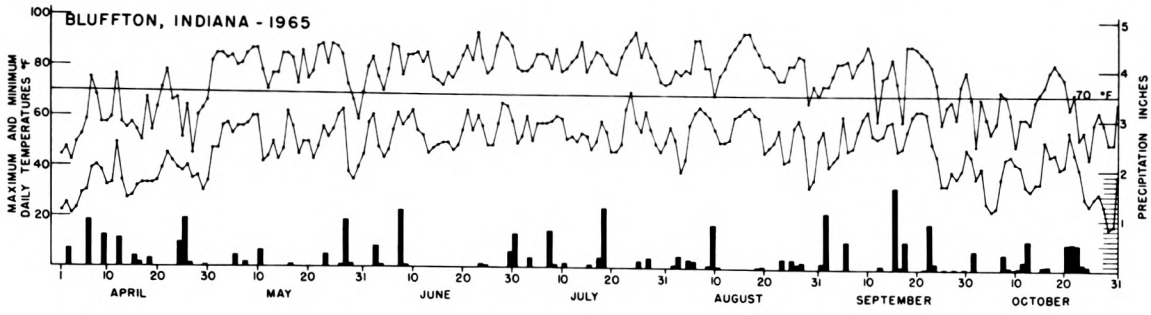

GEORGETOWN, DELAWARE - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

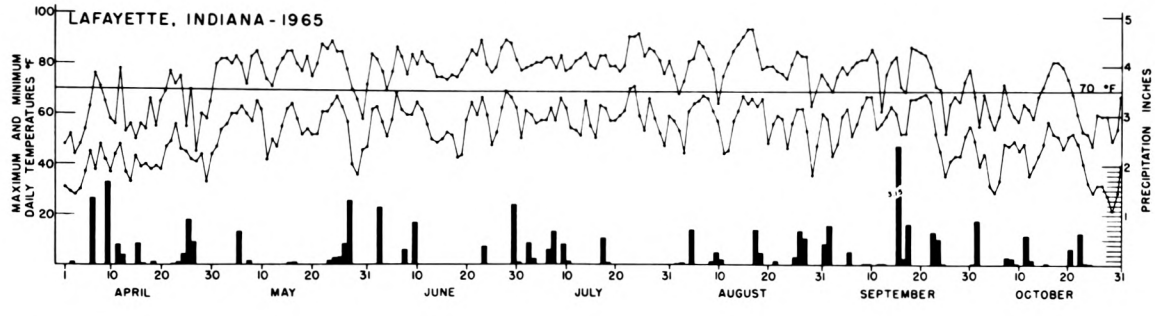

WOOSTER, OHIO - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

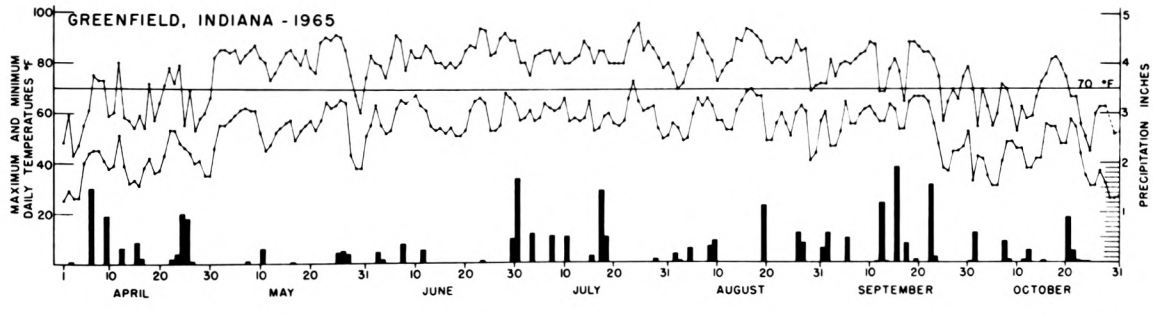

COLUMBUS, OHIO-1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

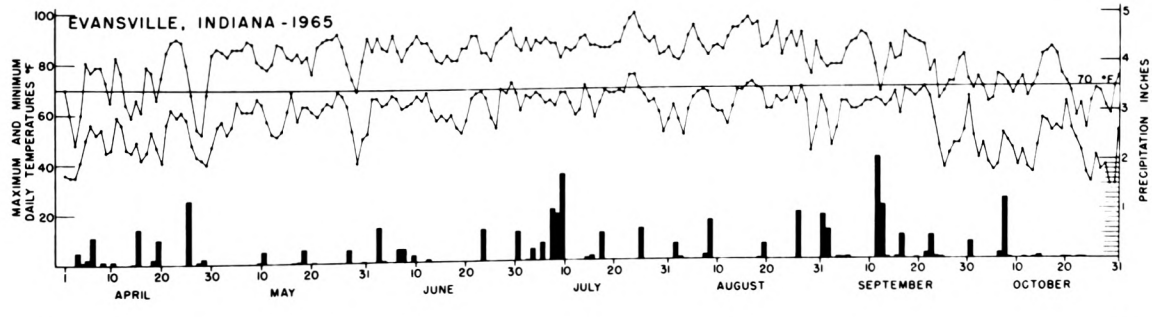

EAST LANSING, MICHIGAN-1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

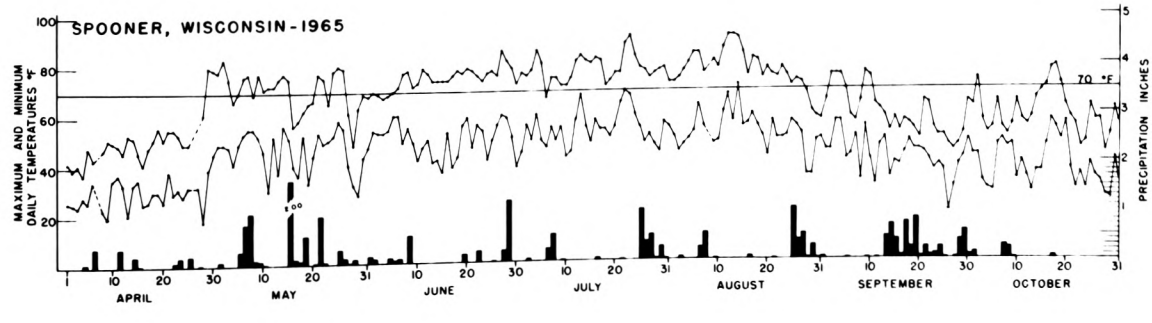

WALKERTON, INDIANA - 1965
(LA PORTE)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

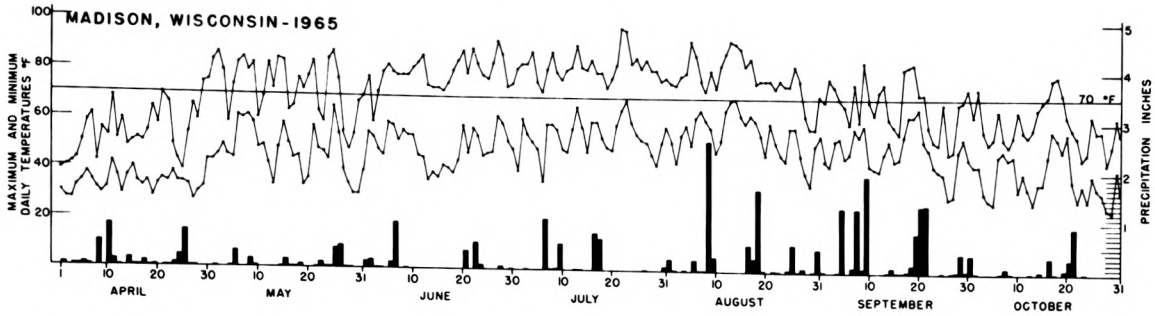

BLUFFTON, INDIANA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

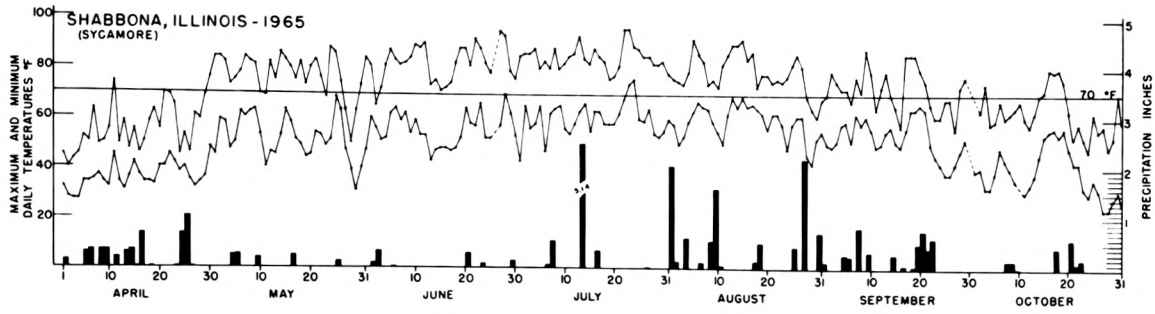

LAFAYETTE, INDIANA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

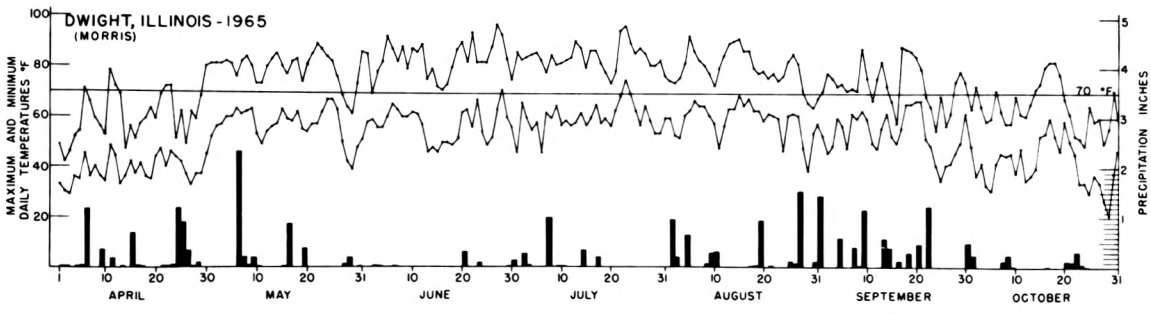

GREENFIELD, INDIANA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

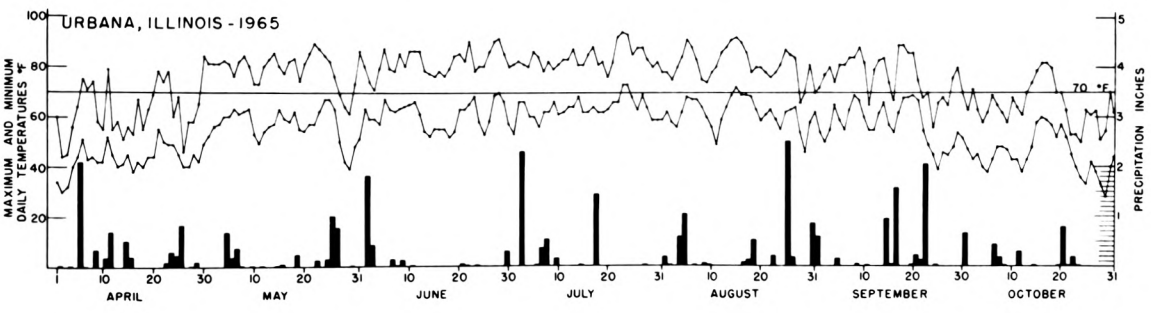

EVANSVILLE, INDIANA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

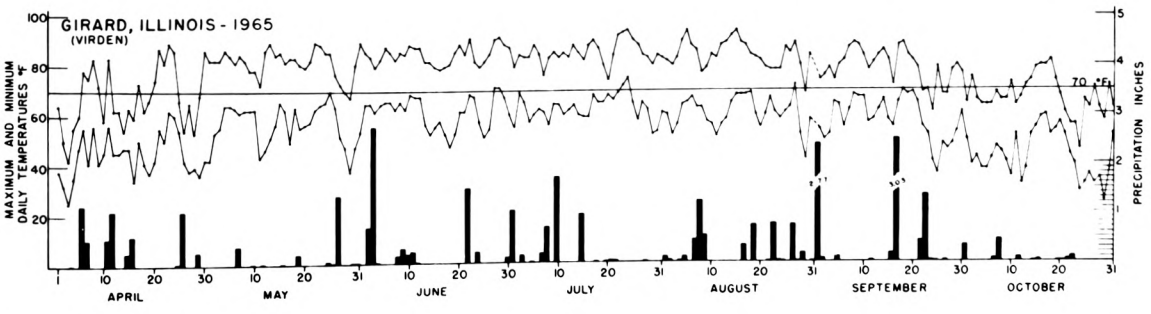

SPOONER, WISCONSIN - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

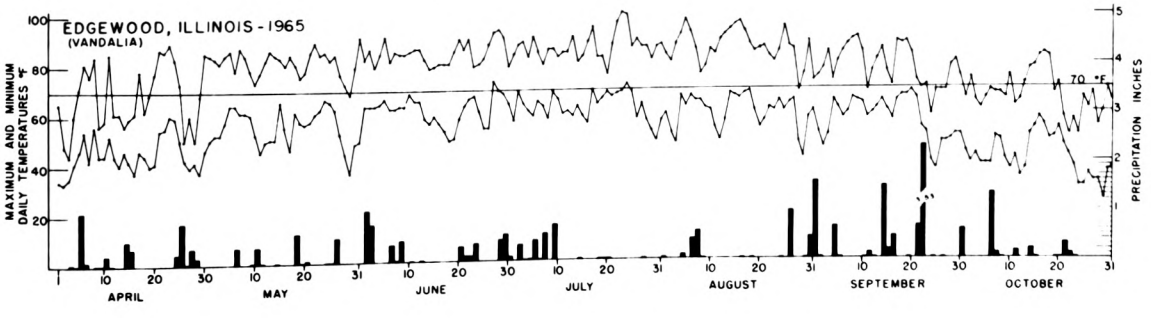

MADISON, WISCONSIN - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

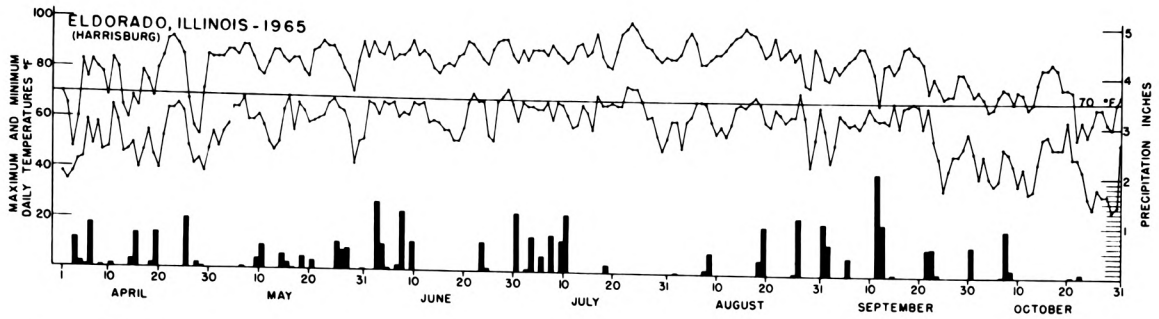

SHABBONA, ILLINOIS - 1965
(SYCAMORE)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

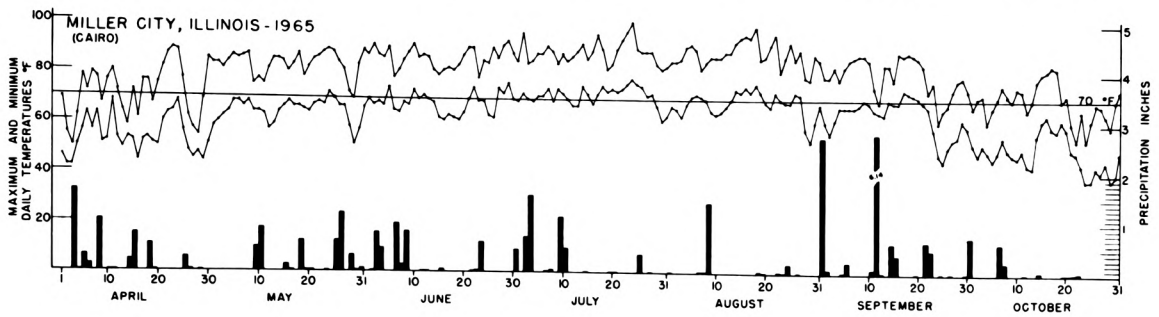

DWIGHT, ILLINOIS - 1965
(MORRIS)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

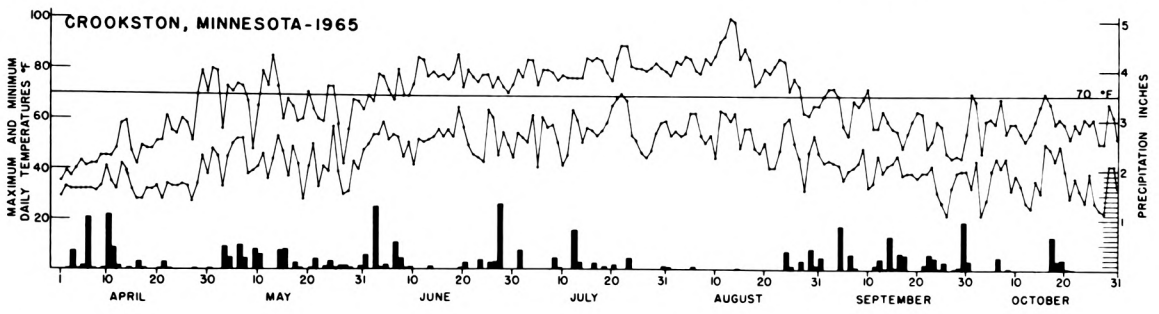

URBANA, ILLINOIS - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

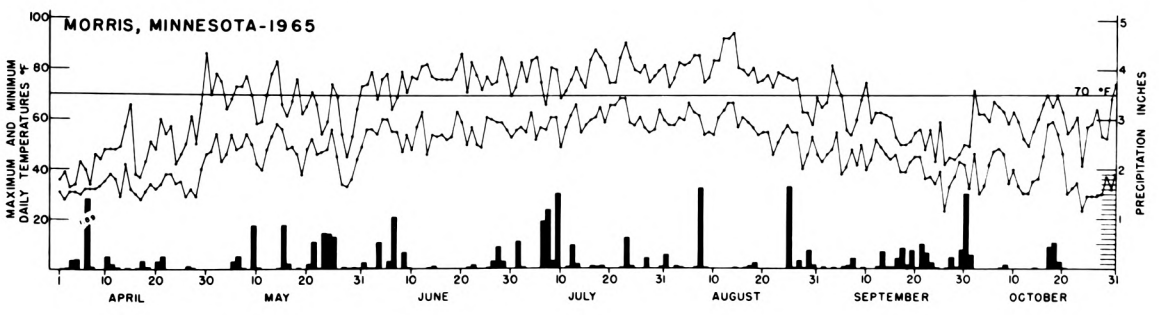

GIRARD, ILLINOIS - 1965
(VIRDEN)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

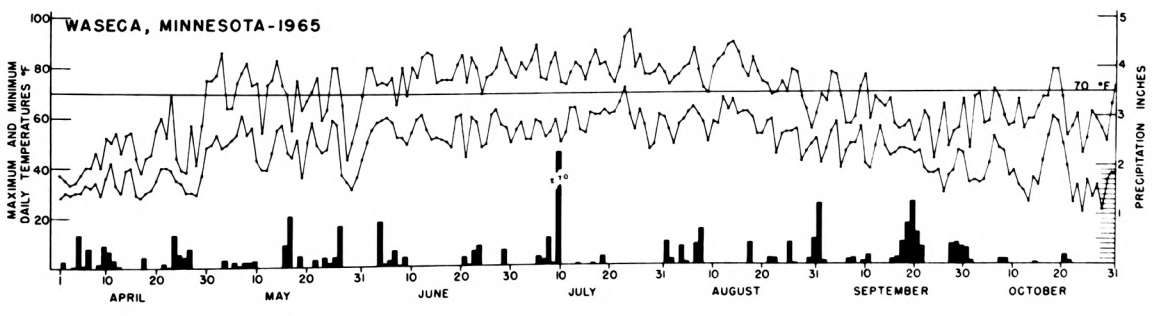

EDGEWOOD, ILLINOIS - 1965
(VANDALIA)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

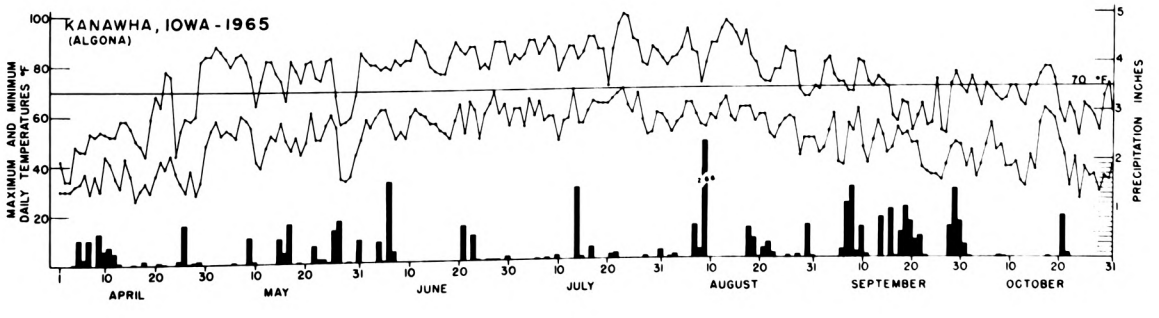

ELDORADO, ILLINOIS - 1965
(HARRISBURG)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

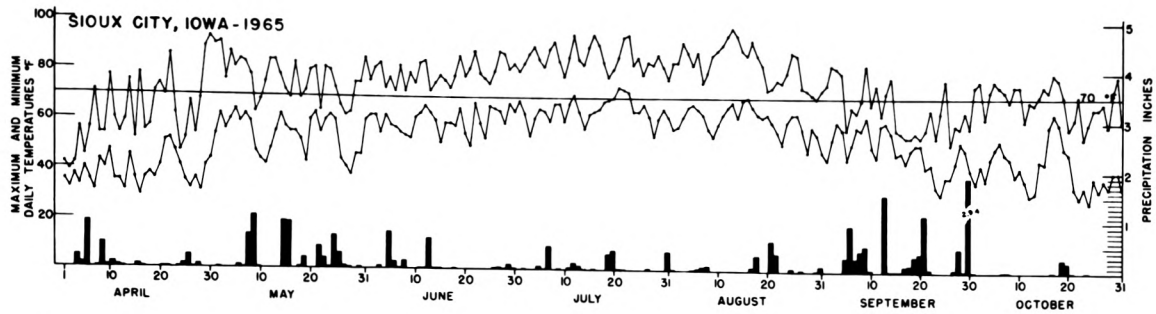

MILLER CITY, ILLINOIS - 1965
(CAIRO)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

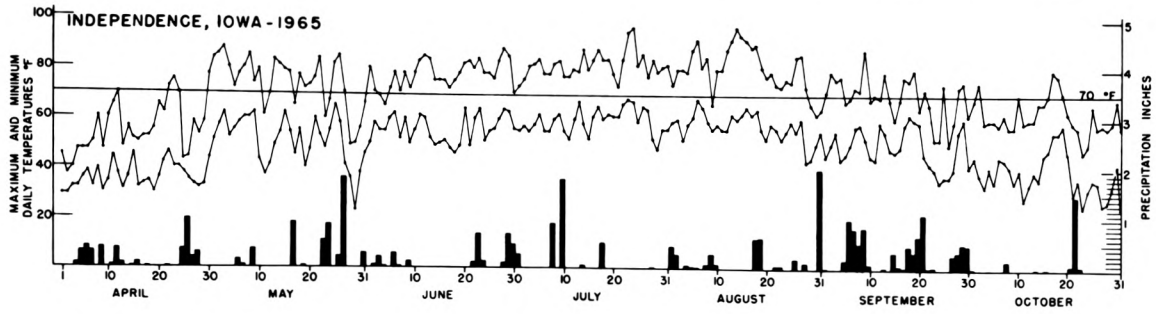

CROOKSTON, MINNESOTA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

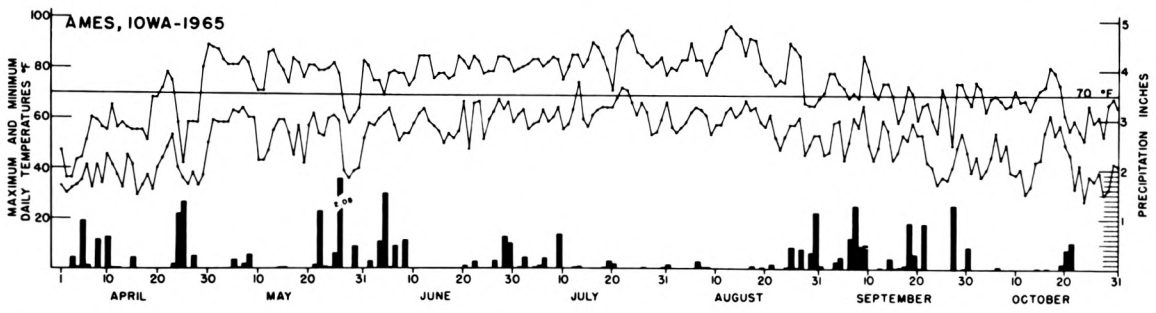

MORRIS, MINNESOTA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

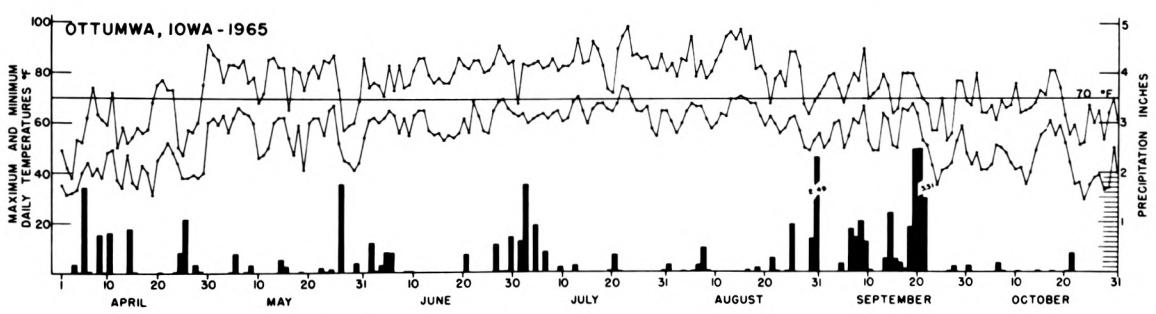

WASECA, MINNESOTA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

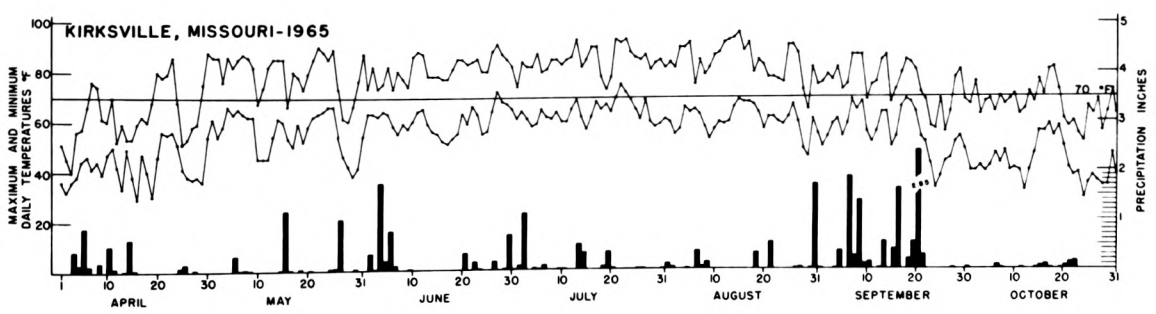

KANAWHA, IOWA - 1965
(ALGONA)
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

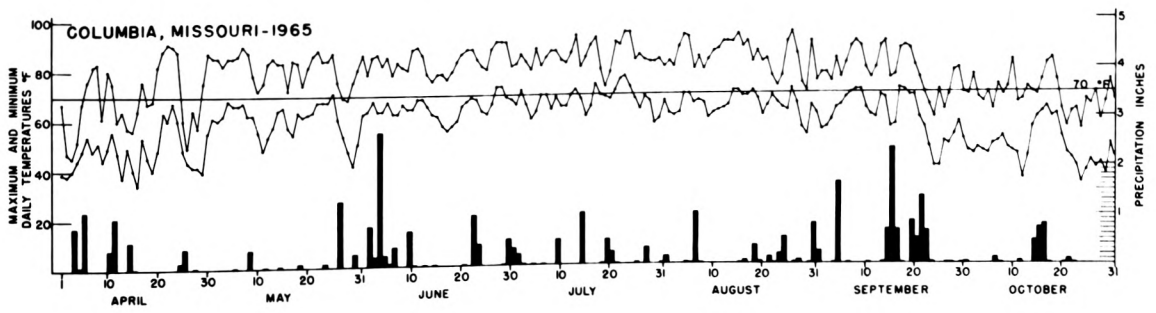

SIOUX CITY, IOWA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

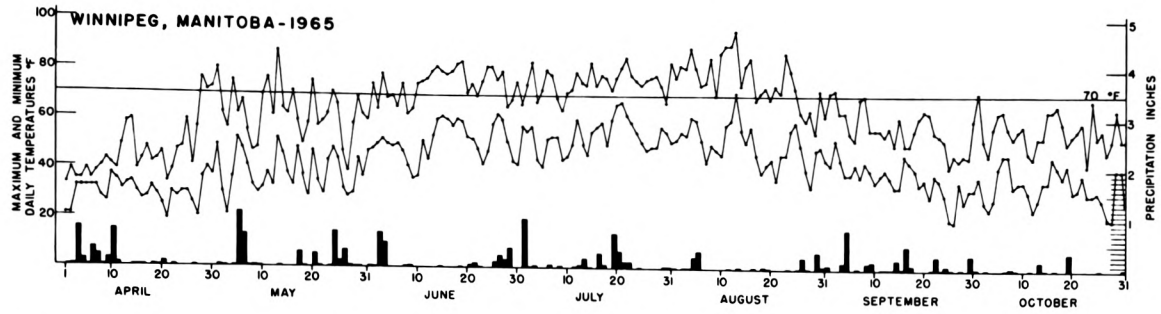

INDEPENDENCE, IOWA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

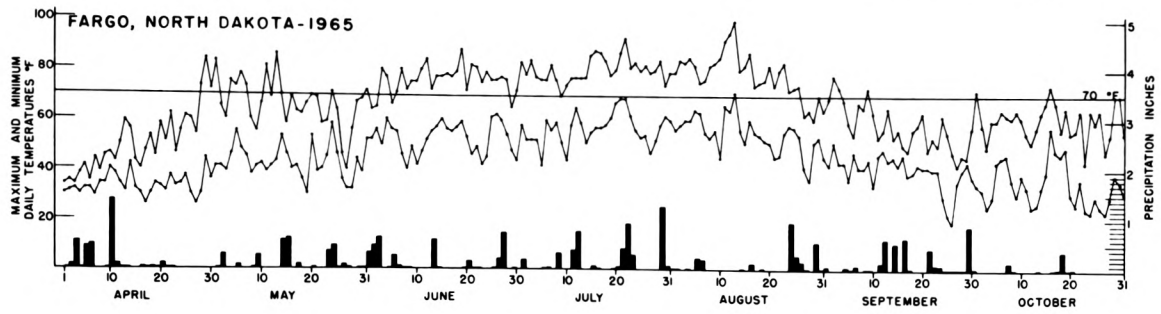

AMES, IOWA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

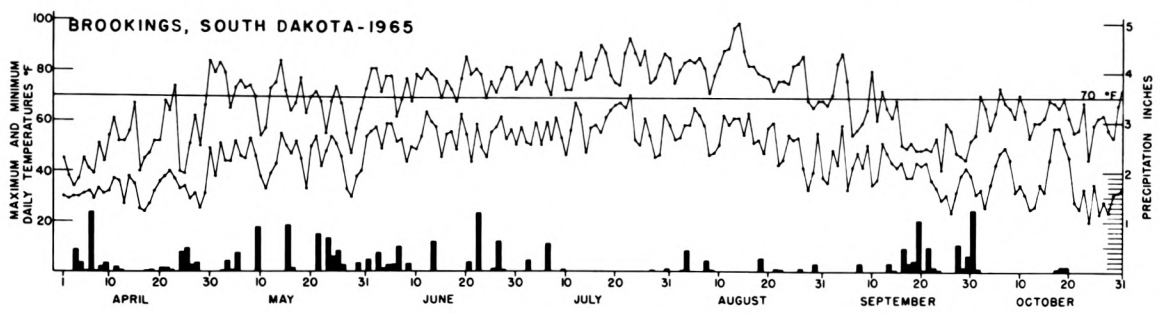

OTTUMWA, IOWA - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

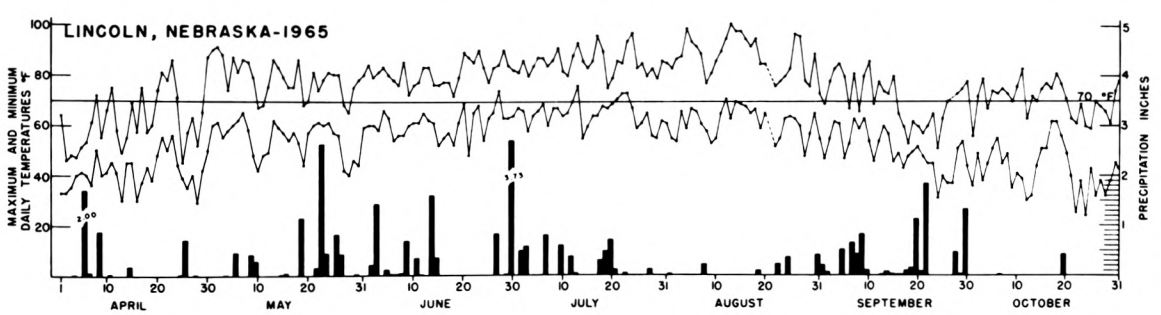

KIRKSVILLE, MISSOURI - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

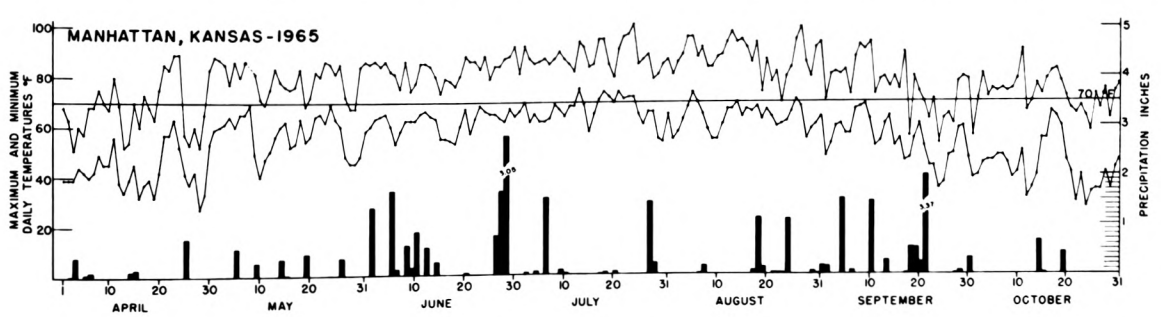

COLUMBIA, MISSOURI - 1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

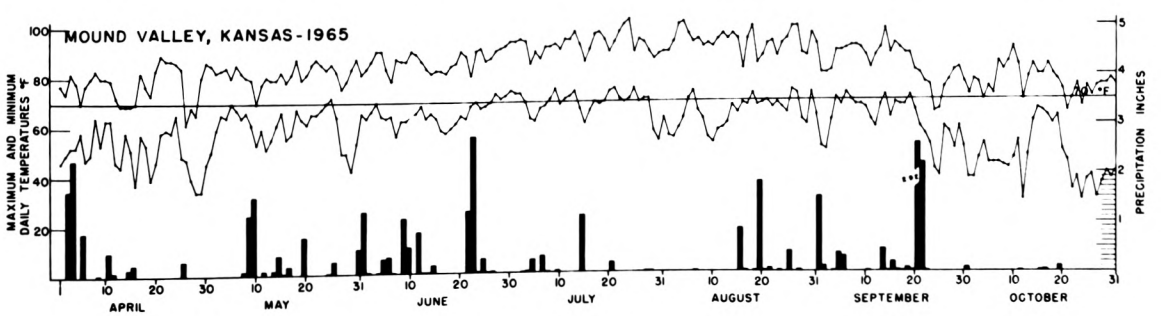

WINNIPEG, MANITOBA-1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


FARGO, NORTH DAKOTA-1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


BROOKINGS, SOUTH DAKOTA-1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


LINCOLN, NEBRASKA-1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
2.00
3.73
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


MANHATTAN, KANSAS-1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
3.09
3.37
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


MOUND VALLEY, KANSAS-1965
MAXIMUM AND MINIMUM DAILY TEMPERATURES °F
PRECIPITATION INCHES
70 °F
3.99
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER