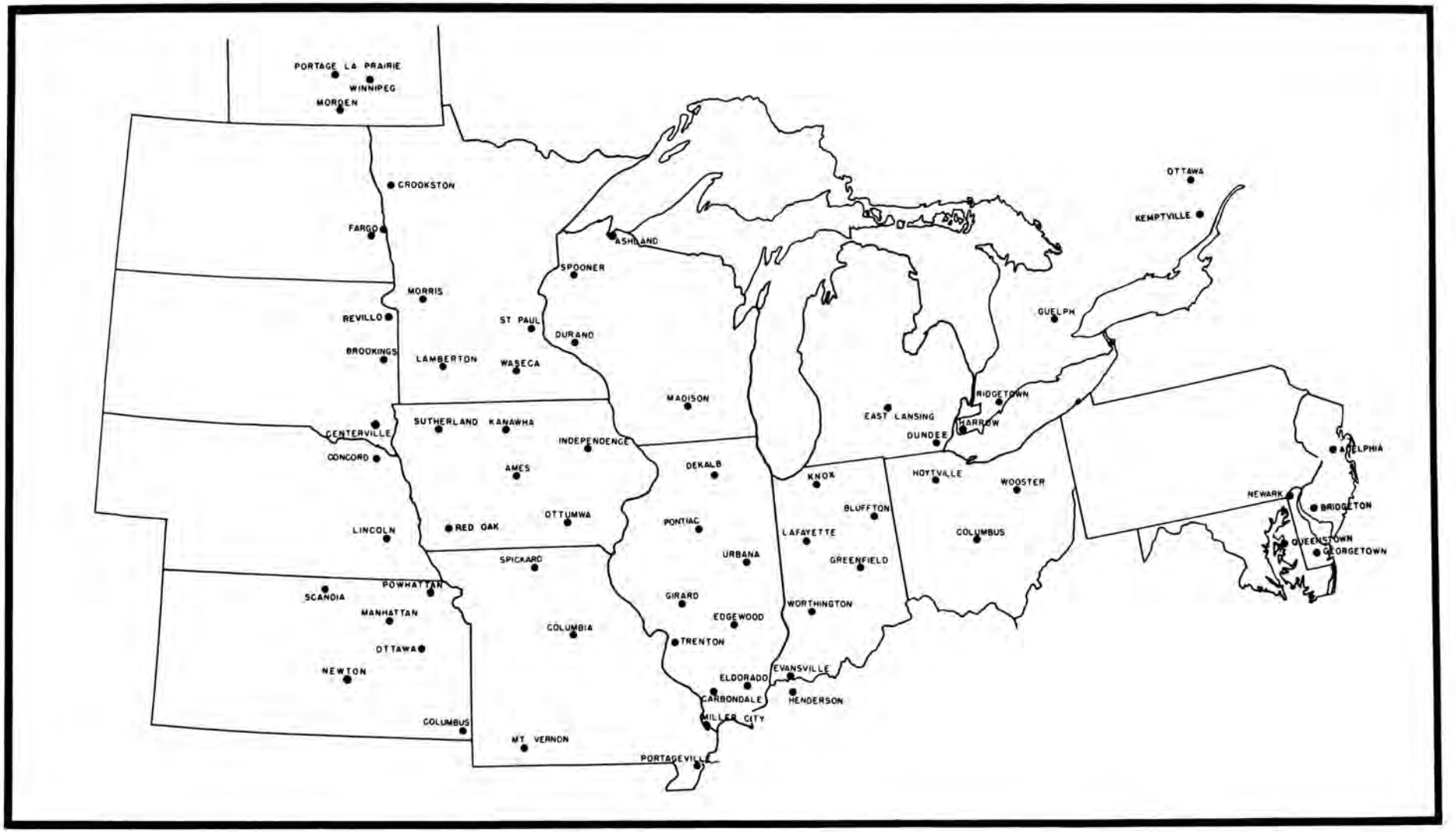


LOCATIONS OF UNIFORM SOYBEAN TESTS, NORTHERN STATES, 1967

THE UNIFORM SOYBEAN TESTS

NORTHERN STATES

1967

RSLM 233

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

TABLE OF CONTENTS

Issued Feb. 1968

Soybean Investigations, Oilseed and Industrial Crops Research Branch

Crops Research Division, Agricultural Research Service, USDA

R. W. Howell, Branch Chief
B. E. Caldwell, Soybean Investigations Leader

U. S. Regional Soybean Laboratory, Urbana, Illinois

R. L. Cooper, Agronomist-in-Charge
C. J. Younger, Admin. Asst.
J. K. Evon, Clerk-Typist
R. L. Warsaw, Crops Res. Helper

D. W. Chamberlain, Plant Pathologist
L. E. Gray, Plant Pathologist

F. I. Collins, Chemist
O. A. Krober, Chemist (on leave)
R. L. Bishop, Chemist
S. J. Gibbons, Phys. Sci. Technician
V. E. Sedgwick, Phys. Sci. Technician

R. L. Bernard, Geneticist
R. E. Lawrence, Statistical Clerk
C. R. Cremeens, Agric. Res. Technician
D. A. Lindahl, Agric. Res. Technician
P. J. Amdor, Crops Res. Helper
E. M. Berreis, Laboratory Helper

W. L. Ogren, Plant Physiologist
M. B. Woodall, Biol. Lab. Technician

R. W. Rinne, Plant Physiologist
R. H. Johnson, Instrument Maker
A. J. Maggio, Agric. Res. Technician
A. M. Trapani, Research Assistant

Lafayette, Indiana

T. S. Abney, Plant Pathologist
A. H. Probst, Agronomist
J. R. Wilcox, Geneticist
R. J. Martin, Research Assistant
R. W. Felix, Technician*
P. E. Stingle, Technician*

Ames, Iowa

J. M. Dunleavy, Plant Pathologist
H. Tachibana, Plant Pathologist
R. C. Clark, Agric. Res. Technician
J. W. Fisher, Agric. Res. Technician
A. Quinones, Technician*
D. Strissel, Technician*

Beltsville, Maryland

B. E. Caldwell, Agronomist
G. D. Sloger, Plant Physiologist
H. G. Vest, Jr., Plant Pathologist
D. F. Weber, Microbiologist
C. E. Bass, Agric. Res. Technician
V. L. Miller, Agric. Res. Technician
C. G. Teague, Agric. Res. Technician
J. D. Vasvery, Agric. Res. Technician

Columbia, Missouri

V. D. Luedders, Agronomist
R. D. Scherff, Plant Pathologist
E. R. Smith, Agric. Res. Technician

Brawley, California

B. H. Beard, Agronomist

Collaborators in the Northern State Agricultural Experiment Stations

Delaware:	R. H. Cole	Missouri:	L. A. Duclos
Illinois:	H. H. Hadley	Nebraska:	J. H. Williams
Indiana:	F. L. Patterson	North Dakota:	R. E. Bothun
Kansas:	E. L. Mader	Ohio:	A. F. Schmitthenner
Michigan:	S. C. Hildebrand		P. E. Smith
Minnesota:	H. W. Johnson	South Dakota:	A. O. Lunden
	B. W. Kennedy	Wisconsin:	J. H. Torrie
	J. W. Lambert		

*Full-time state employee

UNIFORM TEST PARTICIPANTS - 1967

U. U. Alexander
University of Nebraska
Northeast Station
Concord, Nebraska 68728

L. J. Anderson
Canada Dept. of Agriculture
Research Station
Harrow, Ontario

B. H. Beard, ARS, USDA
Southwestern Irrigation Field Sta.
Brawley, California 92227

R. L. Bernard, ARS, USDA
U. S. Regional Soybean Lab.
University of Illinois
Urbana, Illinois 61801

R. L. Bishop, ARS, USDA
U. S. Regional Soybean Lab.
University of Illinois
Urbana, Illinois 61801

R. E. Bothun
Department of Agronomy
North Dakota State University
Fargo, North Dakota 58100

D. B. Broersma
State Natural History Survey
University of Illinois
Urbana, Illinois 61801

D. R. Browning
Agronomy Research Center
Southern Illinois University
Carbondale, Illinois 62901

D. W. Chamberlain, ARS, USDA
U. S. Regional Soybean Lab.
University of Illinois
Urbana, Illinois 61801

R. H. Cole
Department of Agronomy
University of Delaware
Newark, Delaware 19711

F. I. Collins, ARS, USDA
U. S. Regional Soybean Lab.
University of Illinois
Urbana, Illinois 61801

R. L. Cooper, ARS, USDA
U. S. Regional Soybean Lab.
University of Illinois
Urbana, Illinois 61801

H. W. Crittenden
Department of Plant Pathology
University of Delaware
Newark, Delaware 19711

J. D. Curtis
Kemptville Agricultural School
Kemptville, Ontario

L. S. Donovan
Genetics and Plant Breeding Research Inst.
Canada Dept. of Agriculture
Ottawa, Ontario

L. A. Duclos
University of Missouri
Delta Center
Portageville, Missouri 63873

J. M. Dunleavy, ARS, USDA
Dept. of Botany and Plant Pathology
Iowa State University
Ames, Iowa 50010

W. R. Fehr
Department of Agronomy
Iowa State University
Ames, Iowa 50010

J. E. Giesbrecht
Canada Dept. of Agriculture
Experimental Farm
Morden, Manitoba

E. E. Hartwig, ARS, USDA
Delta Branch Experiment Station
Stoneville, Mississippi 38776

S. C. Hildebrand
Department of Crop Science
Michigan State University
East Lansing, Michigan 48823

J. R. Justin
Department of Soils & Farm Crops
Rutgers University
New Brunswick, New Jersey 08903

UNIFORM TEST PARTICIPANTS - 1967 (Continued)

G. L. Kilgore
Kansas State University
Southeast Kansas Experiment Station
Mound Valley, Kansas 67354

P. F. Knowles
Department of Agronomy
University of California
Davis, California 95616

J. W. Lambert
Department of Agronomy
University of Minnesota
St. Paul, Minnesota 55101

F. A. Laviolette
Dept. of Botany and Plant Pathology
Purdue University
Lafayette, Indiana 47901

M. LeBaron
University of Idaho
Twin Falls Experiment Station
Kimberly, Idaho 83341

V. D. Luedders, ARS, USDA
Department of Agronomy
University of Missouri
Columbia, Missouri 65201

A. O. Lunden
Department of Agronomy
South Dakota State University
Brookings, South Dakota 57006

E. L. Mader
Department of Agronomy
Kansas State University
Manhattan, Kansas 66502

A. D. McLaren
Western Ontario Agricultural
School and Experiment Farm
Ontario Dept. of Agriculture
Ridgetown, Ontario

A. H. Probst, ARS, USDA
Department of Agronomy
Purdue University
Lafayette, Indiana 47901

C. O. Rydberg
University of Wisconsin
Experimental Farm
Spooner, Wisconsin 54801

J. F. Shane
Department of Agronomy
University of Kentucky
Lexington, Kentucky 40506

P. E. Smith
Department of Agronomy
Ohio State University
Columbus, Ohio 43210

B. R. Stefansson
Department of Plant Science
University of Manitoba
Winnipeg, Manitoba

H. Tachibana, ARS, USDA
Dept. of Botany and Plant Pathology
Iowa State University
Ames, Iowa 50010

J. W. Tanner
Department of Crop Science
University of Guelph
Guelph, Ontario

G. H. Tenpas
University of Wisconsin
Experimental Farm
Ashland, Wisconsin 54806

J. H. Torrie
Department of Agronomy
University of Wisconsin
Madison, Wisconsin 53706

H. G. Vest, ARS, USDA
Plant Industry Station
Beltsville, Maryland 20705

J. R. Wilcox, ARS, USDA
Department of Agronomy
Purdue University
Lafayette, Indiana 47901

J. H. Williams
Department of Agronomy
University of Nebraska
Lincoln, Nebraska 68503

INTRODUCTION

The U. S. Regional Soybean Laboratory conducts research directed toward breeding better varieties of soybeans in cooperation with federal and state research personnel in all important soybean producing states and with research workers in two provinces in Canada. The purpose of the Uniform Soybean Tests is to evaluate critically the best of the experimental soybean lines developed by these researchers.

A test is established for each of ten maturity groups. Test 00 includes maturity Group 00 strains for the northern fringe of the present area of soybean production. Uniform Tests 0 through IV include later strains adapted to locations progressively farther south in the North Central States and areas of similar latitude. Each year new selections are added and others that have been sufficiently tested are dropped. The summary of performance of strains in Uniform Tests 00 through IV in the northern states is included in this report. The report on Uniform Tests IVS through VIII in the southern states is issued separately.

Data from the Uniform Tests form the basis for decisions on the regional release of soybean varieties. 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.

Corsoy, which has been tested in Uniform Test II since 1964, was released in July 1967 by the experiment stations of Illinois, Iowa, Minnesota, Nebraska, Ohio, South Dakota, and Wisconsin, in cooperation with the Crops Research Division. It was selected by Dr. C. R. Weber at Ames, Iowa. Verde, a large and green-seeded variety which was tested in Preliminary III in 1966 (as UD3210-31-14), was released by the Delaware Agricultural Experiment Station in 1967. It was selected for edible purposes by Dr. H. W. Crittenden at the Delaware station.

METHODS

Uniform Tests are planted in single rod-row plots with four replications or double-row plots with three replications. Preliminary Tests are planted in single or double rod-row plots with two replications. At some locations where growth is usually heavy or where rows are closely spaced, border rows are used between different varieties within the test. Usually 18 to 20 feet of row are planted and only 16 to 17 feet harvested to eliminate end of row effects. Seeds are packeted at a rate of 200 viable seeds per packet.

Parentage. Parent strains other than named varieties are identified in Table 84.

Previous Testing. The number of previous years in the same Uniform Test is given or, in the case of new entries, a reference to last year's test. The previous regional test is abbreviated: U.T. 0 for Uniform Test 0, P.T. III for Preliminary Test III, etc., and only the most recent test is listed. Testing of similar ancestral strains is listed 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, Tan = tan
Seed Coat Luster: D = dull, S = shiny, I = intermediate
Seed Coat Color: Y = yellow, G = gray, Lg = light gray
Hilum Color: Bl = black, Ib = imperfect black, Br = brown, Bf = buff, G = gray, Tan = tan, Y = yellow, light (L) or dark (D) shades are abbreviated as Lbf = light buff

Yield is measured after the seeds have been dried to a uniform moisture content and is recorded in bushels (60 pounds) per acre to the nearest tenth. To convert to kilograms per are (or quintals per hectare) multiply by .6725 (1 kg/are = 1.487 bu/acre).

Maturity is the date when approximately 95% of the pods are ripe. Delayed leaf drop and green stems are not considered in assigning maturity but may be noted separately. Maturity is expressed as days earlier (-) or later (+) than the average of the reference variety. To aid in maturity group classification, one earlier and one later "tie" variety are listed on the maturity table for each Uniform and Preliminary Test except 00. These are not included in the regional mean since data are not available from all locations. Reference and tie varieties for 1967 and the maturity group limits relative to the reference variety are:

Maturity Group	Reference	Group Range	Early Tie	Late Tie
00	Portage	-2 to +6		
0	Merit	-4 to +4	Flambeau (00)	Chippewa 64 (I)
I	Chippewa 64	-2 to +6	Traverse (0)	Harosoy 63 (II)
II	Harosoy 63	-3 to +5	Hark (I)	Wayne (III)
III	Wayne	-4 to +4	Amsoy (II)	Clark 63 (IV)
IV	Clark 63	-1 to +9	Wayne (III)	Hill (V)

These maturity group ranges are based on long-time means over many locations. When using data from fewer environments, the interval between reference varieties may differ from that implied above, but the division between maturity groups can be estimated in proportion to the above figures.

Lodging is rated at maturity according to the following scores:

1 Almost all plants erect
2 All plants leaning slightly or a few plants down
3 All plants leaning moderately (45°), 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 the average length of plants from the ground to the tip of the main stem at the time of maturity and is reported to the nearest inch (1 inch equals 2.54 centimeters).

Seed Quality is rated according to the following scores considering the amount and degree of wrinkling, defective seed coat, greenishness, and moldy or rotten seeds. (Threshing or handling damage is not considered, and pigment, including mottling, is noted separately.)

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

Weight per seed is the weight of 100 seeds in grams to the nearest tenth.

Seed Composition is measured on samples submitted to the Laboratory. A 60- to 70-gram sample of clean seeds is prepared by taking an equal volume or weight of seeds from each replication. Protein percentage is measured using the Kjeldahl method and oil percentage is measured using nuclear magnetic resonance. These percentages are expressed on a moisture-free basis.

Shattering is scored 14 days after maturity, or at another specified time if more appropriate, and is 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

Disease Reactions are listed according to "Soybean Disease Classification Standards", March 1955, unless otherwise specified. Disease reaction is scored from 1 (healthy) to 5 (heavily infected). The state where the test was made is identified in the column heading, and a small letter "a" or "n" under the state signifies artificial or natural infection. When an agronomic test is rated for disease infection the location is specified. 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.

Abbreviation	Disease or Insect	Organism
BB	Bacterial blight	Pseudomonas glycinea
BBV	Bud blight	Tobacco ringspot virus
BP	Bacterial pustule	Xanthomonas phaseoli var. sojensis
BS	Brown spot	Septoria glycines
BSR	Brown stem rot	Cephalosporium gregatum
CN	Cyst nematode	Heterodora glycines
DM	Downy mildew	Peronospora manshurica
FE1, FE2	Frogeye race 1, 2	Cercospora sojina
PR	Phytophthora rot	Phytophthora megasperma var. sojae
PS	Purple stain	Cercospora kikuchii
PSB	Pod and stem blight	Diaporthe phaseolorum var. sojae
Py	Pythium root rot	Pythium debaryanum
RK (followed by the initial of the specific nematode)	Root knot nematode	Meloidogyne spp.
RR	Rhizoctonia root rot	Rhizoctonia solani
SB	Sclerotial blight	Sclerotium rolfsii
SC	Stem canker	Diaporthe phaseolorum var. caulivora
SCM	Seed corn maggot	Hylemya platura
SMV	Soybean mosaic	Soja virus 1
TS	Target spot	Corynespora cassiicola
WF	Wildfire	Pseudomonas tabaci
YMV	Yellow mosaic	Phaseolus virus 2

Strain Designation. Experimental (i.e. unreleased) strains are identified with number and a code letter prefix. These letters indicate the originating agency as follows:

A	Iowa A.E.S. and U.S.R.S.L.
C	Purdue A.E.S. and U.S.R.S.L.
CM	Canada Dept. of Agriculture, Morden, Manitoba
D	Mississippi A.E.S. and U.S.R.S.L.
E	Michigan A.E.S. and U.S.R.S.L.
FC	Forage and Range Research Branch, U.S.D.A.
H	Ohio A.E.S. and U.S.R.S.L.
K	Kansas A.E.S. and U.S.R.S.L.
L	Illinois A.E.S. and U.S.R.S.L.
M	Minnesota A.E.S. and U.S.R.S.L.
Md	Maryland A.E.S. and U.S.R.S.L.
ND	North Dakota A.E.S. and U.S.R.S.L.
O	Central Experiment Farm, Ottawa, Ontario
O	Research Station, Harrow, Ontario
OAC	University of Guelph, Guelph, Ontario
PI	Plant Introduction Investigations, New Crops Research Branch, U.S.D.A.
S	Missouri A.E.S. and U.S.R.S.L.
SD	South Dakota A.E.S. and U.S.R.S.L.
SL	Two or more state experiment stations and U.S.R.S.L.
T	Soybean Genetic Type Collection, U.S.R.S.L.
U	Nebraska A.E.S. and U.S.R.S.L.
UD	Delaware A.E.S. and U.S.R.S.L.
UM	University of Manitoba, Winnipeg, Manitoba
W	Wisconsin A.E.S. and U.S.R.S.L.

UNIFORM TEST LOCATIONS - 1967

Location	Tests Conducted by	Uniform Tests						Preliminary Tests					
		00	0	I	II	III	IV	00	0	I	II	III	IV
Ottawa, Ont.	L. S. Donovan	x						x					
Kemptville, Ont.	J. D. Curtis	x	x					x	x				
Guelph, Ont.	D. J. Hume, J. W. Tanner	x	x					x	x				
Ridgetown, Ont.	A. D. McLaren		x	x	x				x	x	x		
Harrow, Ont.	L. J. Anderson			x	x	x				x	x		
Adelphia, N. J.	J. R. Justin				x	x							
Bridgeton, N. J.	"						x						
Georgetown, Del.	R. H. Cole					x	x						
Queenstown, Md.	H. G. Vest						x						
Linkwood, Md.	"						x						x
Hoytville, Ohio	P. E. Smith			x	x	x				x	x	x	
Wooster, Ohio	"			x	x	x				x	x	x	
Columbus, Ohio	"		x	x	x	x	x			x	x	x	
East Lansing, Mich.	S. C. Hildebrand		x	x	x				x	x	x		
Dundee, Mich.	"			x	x								
Knox, Ind.	A. H. Probst, J. R. Wilcox			x	x								
Bluffton, Ind.	" "			x	x	x					x		
Lafayette, Ind.	" "			x	x	x	x				x	x	
Greenfield, Ind.	" "				x	x							
Worthington, Ind.	J. R. Wilcox, A. H. Probst				x	x	x					x	x
Evansville, Ind.	" "					x	x						x
Henderson, Ky.	J. F. Shane						x						
Ashland, Wis.	G. H. Tenpas	x						x					
Spooner, Wis.	C. O. Rydberg		x						x				
Durand, Wis.	J. H. Torrie		x	x									
Madison, Wis.	"			x	x					x	x		
DeKalb, Ill.	R. L. Bernard, R. L. Cooper			x	x					x			
Pontiac, Ill.	" "			x	x								
Urbana, Ill.	R. L. Bernard			x	x	x	x				x	x	
Girard, Ill.	"				x	x	x						
Edgewood, Ill.	"				x	x	x					x	
Trenton, Ill.	"				x	x	x					x	x
Eldorado, Ill.	"					x	x					x	x
Carbondale, Ill.	D. R. Browning					x	x						x
Miller City, Ill.	R. L. Bernard						x						
Crookston, Minn.	J. W. Lambert	x	x					x					
Morris, Minn.	"	x	x										
St. Paul, Minn.	"	o	o	o					o				
Lamberton, Minn.	"			x	x								
Waseca, Minn.	"			x	x					x			
Sutherland, Ia.	W. R. Fehr			x	x					x			
Kanawha, Ia.	"			x	x					x	x		
Independence, Ia.	"				x								
Ames, Ia.	"				x	x					x	x	
Ottumwa, Ia.	"					x						x	
Red Oak, Ia.	"					x						x	
Spickard, Mo. (Upland)	V. D. Luedders				o	o					o	o	
Spickard, Mo. (Bottomland)	"				o	o					o	o	
Columbia, Mo.	"				x	x	x				x	x	x
Mt. Vernon, Mo.	"						x						x

UNIFORM TEST LOCATIONS - 1967 (Continued)

Location	Tests Conducted by	Uniform Tests						Preliminary Tests					
		00	0	I	II	III	IV	00	0	I	II	III	IV
Portageville, Mo.(Loam)	L. A. Duclos					x	x						o
Portageville, Mo.(Gumbo)	"					x	x						
Portage la Prairie, Man.	J. E. Giesbrecht	x						x					
Winnipeg, Man.	B. R. Stefansson	x						x					
Morden, Man.	J. E. Giesbrecht	x						x	x				
Fargo, N. D.	R. E. Bothun	x	x					x	x				
Revillo, S. D.	A. O. Lunden		x	x					x	x			
Brookings, S. D.	"			x	x					x	x		
Centerville, S. D.	"				x	x					x	x	
Concord, Nebr.	U. U. Alexander			x	x	x					x		
Lincoln, Nebr.	J. H. Williams				x	x	x				x	x	
Scandia, Kans.	E. L. Mader					x	x						
Powhattan, Kans.	"					x	x					x	x
Manhattan, Kans.	"					x	x					x	x
Manhattan, Kans.(Irrig.)	"					x	x					x	x
Ottawa, Kans.	"					x	x					x	x
Newton, Kans.	"					x	x						
Columbus, Kans.	G. L. Kilgore					x	x						
Kimberly, Idaho	M. J. LeBaron	x	x										
Ontario, Ore.	D. W. Force		o						o				
Davis, Cal.	P. F. Knowles	o	o	o	o								
Fresno, Cal.	B. H. Beard	o	o	o	o	o	o						
Five Points, Cal.	"	o	o	o	o	o	o	o	o	o	o	o	o
Corcoran, Cal.	"	x			x	x	x						
Wasco, Cal.	"				o	o	o						
Shafter, Cal.	"				o	o	o						
Number of locations with agronomic data (x)		12	12	22	32	34	29	9	8	13	17	19	12

Disease, Insect, and Shattering Tests

Georgetown, Del.	PS,PSB	H. W. Crittenden			D	D	D	D			D	D	D	D
Lafayette, Ind.	FE2,PR	F. A. Laviolette	D	D	D	D	D	D	D	D	D	D	D	D
Worthington, Ind.	DM	"	D	D	D	D	D	D	D	D	D	D	D	D
Urbana, Ill.	BB,BP,BSR	D. W. Chamberlain	D	D	D	D	D	D	D	D	D	D	D	D
Urbana, Ill.	SCM	D. B. Broersma			I	I	I	I						
Ames, Ia.	BBa,BS,Py	J. M. Dunleavy	D	D	D	D	D	D						
Ames, Ia.	BBn,PR	H. Tachibana	D	D	D	D	D	D						
Urbana, Ill.	Shattering	R. L. Bernard	S	S	S	S	o	o	S	S	S	S	o	o
Stoneville, Miss.	Shattering	E. E. Hartwig					S	S					S	S

x Agronomic test.
o Test failed or data not reported.
D Disease test.
I Insect test.
S Shattering test.

UNIFORM TEST 00, 1967

Strain	Parentage	Generation Composited	Previous Testing (years)
1. Altona	052-903 x Flambeau	F_5	3
2. Flambeau	Introduction from Russia	--	9
3. Portage	Acme x Comet	F_5	7
4. CM1	Crest x L48-7289	F_5	2
5. M55-25	Acme x Chippewa	F_5	P.T. 00
6. M55-48	Acme x Chippewa	F_5	P.T. 00
7. M55-134	Pagoda 25 x Chippewa	F_5	1965 P.T. 00
8. M424	Acme x Hardome	F_5	2
9. UM20	Crest x Chippewa	F_6	P.T. 00

The yield level averaged slightly below normal for Group 00 this year despite the exceptionally high yields at Kemptville. The three-year means of Tables 8 and 9 show CM1 and M424 to average the same in yield. They were between Altona and Portage in both yield and maturity. CM1 showed superior lodging resistance but averaged slightly later than M424 and had low protein percentage. Among the four new entries in the test, there was no apparent advance in yield over the comparable check varieties.

Table 1. Descriptive data and shattering scores, Uniform Test 00, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering Urbana Illinois[1]
Altona	P	T	Br	S	Y	Bl	3.5
Flambeau	P	T	Br	S	Y	Bl	2.5
Portage	P	G	Br	D+S	Y	Y	5.0
CM1	P	G	Br	D	Y	G	3.0
M55-25	P	T	Br	I	Y	Y	2.5
M55-48	P	G	Br	S	Y	G	2.0
M55-134	P	G	Br	D	Y	G	2.0
M424	P	G	Br	S	Y	Y	2.5
UM20	P	T	Br	S	Y	Bl	2.0

[1]Mean of two replications. Scored one month after maturity.

Table 2. Summary of data, Uniform Test 00, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	10	10	9	5	10	7	8	4	4
Altona	27.2	1	+1.8	1.5	27	2.4	16.6	39.8	20.9
Flambeau	26.0	4	+5.6	2.5	28	2.7	15.5	41.0	19.2
Portage	24.9	7	0	1.2	26	2.1	16.8	38.6	20.7
CM1	26.1	3	+2.4	1.2	29	2.9	15.1	37.1	21.0
M55-25	23.8	9	+1.9	1.4	25	2.3	15.5	39.8	20.4
M55-48	24.2	8	+2.1	1.3	26	2.2	14.8	38.8	20.2
M55-134	26.5	2	+5.4	1.5	29	2.4	16.8	39.7	19.6
M424	26.0	4	+1.8	1.7	27	2.3	16.0	38.6	21.0
UM20	25.7	6	+4.0	1.3	26	2.9	16.1	39.4	20.9

[1]Days earlier (-) or later (+) than Portage which matured September 11, 111 days after planting.

Table 3. Disease data, Uniform Test 00, 1967.

Strain	BB			BP	BS	FE2	BSR	PR		Py[1]
	Ill.	Ia.	Ia.	Ill.	Ia.	Ind.	Ill.	Ind.	Ia.	Ia.
	n	n	a	a	a	a	n	a	a	a
Altona	1	2	1	1	2	5	3	R	S	3.7
Flambeau	1	1	1	1	3	5	2	S	S	4.0
Portage	2	4	2	2	3	5	2	S	S	4.3
CM1	2	1	1	2	4	5	2	S	S	3.6
M55-25	2	3	2	1	5	5	2	R+S	S	4.6
M55-48	2	4	3	2	2	4	2	R+S	S	3.9
M55-134	2	3	2	1	1	5	2	S	S	4.8
M424	2	4	2	1	2	5	2	S	S	4.1
UM20	2	4	1	3	3	4	2	S	S	3.7

a = artificial inoculation; n = natural infection.
[1]In greenhouse soil. 1 (healthy) to 5 (not emerged).

Table 4. Yield and yield rank, Uniform Test 00, 1967.

Strain	Mean of 10 Tests	Ottawa Ont.[1]	Kempt-ville Ont.	Guelph Ont.	Ashland Wis.	Crooks-ton Minn.
Altona	27.2	28.8	49.3	32.0	28.1	13.8
Flambeau	26.0	30.6	41.3	34.1	25.2	12.8
Portage	24.9	25.2	44.4	30.5	22.4	12.2
CM1	26.1	25.6	45.8	31.2	29.3	14.6
M55-25	23.8	24.7	39.5	29.0	23.2	13.3
M55-48	24.2	27.4	39.5	28.9	20.9	13.7
M55-134	26.5	28.3	48.0	28.0	23.7	14.8
M424	26.0	27.8	45.3	32.7	24.7	16.1
UM20	25.7	27.0	40.3	30.3	26.8	14.3
Coef. of Var. (%)		6.9	10.7	4.9	13.1	17.6
L.S.D. (5%)		2.7	6.8	2.2	4.9	3.6
Row Spacing (In.)		36	21	24	24	24
	Yield Rank					
Altona	1	2	1	3	2	5
Flambeau	4	1	6	1	4	8
Portage	7	8	5	5	8	9
CM1	3	7	3	4	1	3
M55-25	9	9	8	7	7	7
M55-48	8	5	8	8	9	6
M55-134	2	3	2	9	6	2
M424	4	4	4	2	5	1
UM20	6	6	7	6	3	4

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

Table 4. (Continued)

Strain	Morris Minn.	Portage la Prairie Man.	Winnipeg Man.	Morden Man.	Fargo N.D.	Kimberly Idaho[1] *	Corcoran Cal.[1] *
Altona	21.8	28.7	23.5	26.7	19.2	18.6	23.8
Flambeau	22.8	26.2	20.7	26.7	19.3	18.9	21.9
Portage	19.9	27.7	22.6	26.6	17.6	12.3	26.1
CM1	21.4	27.6	20.8	26.3	18.4	13.2	26.0
M55-25	20.9	26.0	20.2	23.2	17.9	19.5	25.4
M55-48	20.9	26.7	21.5	24.2	18.7	19.7	27.7
M55-134	24.4	28.2	21.9	26.9	21.1	19.4	30.8
M424	19.8	28.2	21.3	25.7	18.8	23.0	26.6
UM20	22.5	28.6	21.5	26.7	19.1	24.4	30.9
Coef. of Var. (%)	8.2	5.9	9.2	8.9	5.2	18.3	9.0
L.S.D. (5%)	2.6	2.3	N.S.	3.3	1.4	5.0	3.5
Row Spacing (In.)	30	36	24	30	40	24	30

	Yield Rank						
Altona	4	1	1	2	3	7	8
Flambeau	2	8	8	2	2	6	9
Portage	8	5	2	5	9	9	5
CM1	5	6	7	6	7	8	6
M55-25	6	9	9	9	8	4	7
M55-48	6	7	4	8	6	3	3
M55-134	1	3	3	1	1	5	2
M424	9	3	6	7	5	2	4
UM20	3	2	4	2	4	1	1

Table 5. Maturity, days earlier (-) or later (+) than Portage, and lodging scores, Uniform Test 00, 1967.

Strain	Mean of 9 Tests	Ottawa Ont.[1]	Kempt-ville Ont.	Guelph Ont.	Ashland Wis.	Crooks-ton Minn.
Altona	+1.8	0	+1	0	+ 5	-5
Flambeau	+5.6	+3	+2	+ 6	+ 9	0
Portage	0	0	0	0	0	0
CM1	+2.4	+4	+2	+ 1	+ 7	-4
M55-25	+1.9	+1	0	+ 2	+ 5	-3
M55-48	+2.1	-1	+2	+ 5	+ 4	-2
M55-134	+5.4	+5	+3	+11	+11	+1
M424	+1.8	+2	+2	+ 1	+ 5	-5
UM20	+4.0	+2	+1	+12	+ 7	-1
Date planted	5-23	5-15	5-29	5-29	5-25	5-24
Portage matured	9-11	9-12	9-11	10-1	9-16	9-13
Days to mature	111	120	105	125	114	112
	Mean of 5 Tests	Lodging Score				
					*	*
Altona	1.5	1.0	3.0	1.1	1.0	1.0
Flambeau	2.5	1.5	5.0	1.3	1.0	1.0
Portage	1.2	1.0	2.0	1.0	1.0	1.0
CM1	1.2	1.0	2.0	1.0	1.0	1.0
M55-25	1.4	1.0	2.0	1.2	1.0	1.0
M55-48	1.3	1.0	2.0	1.2	1.0	1.0
M55-134	1.5	1.0	3.0	1.3	1.0	1.0
M424	1.7	1.5	3.0	1.1	1.0	1.0
UM20	1.3	1.0	2.0	1.1	1.0	1.0

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

Table 5. (Continued)

Strain	Morris Minn.	Portage la Prairie Man.	Winnipeg Man.	Morden Man.	Fargo N.D.	Kimberly Idaho[1]	Corcoran Cal.[1]
		*				*	*
Altona	+6		+1	0	+ 8	+ 5	0
Flambeau	+7		+8	+4	+11	+ 3	0
Portage	0		0	0	0	0	0
CM1	+5		+1	+1	+ 5	+ 2	0
M55-25	+5		0	+1	+ 6	+ 3	0
M55-48	+4		+1	0	+ 6	+ 5	0
M55-134	+6		+5	+2	+ 5	+ 5	0
M424	+4		+2	0	+ 5	+11	0
UM20	+5		+2	+1	+ 7	+11	+12
Date planted	5-26	5-29	5-18	5-16	5-25	5-28	5-25
Portage matured	8-30	9-29	9-10	9-5	9-2	9-5	8-21
Days to mature	96	123	115	112	100	100	88

	Lodging Score					
	*			*	*	*
Altona	1.0	1.3	1.0	1.0	1.0	1.0
Flambeau	1.0	3.0	1.8	1.0	1.0	2.0
Portage	1.0	1.0	1.0	1.0	1.0	1.0
CM1	1.0	1.0	1.0	1.0	1.0	2.0
M55-25	1.0	1.8	1.0	1.0	1.0	1.0
M55-48	1.0	1.5	1.0	1.0	1.0	2.0
M55-134	1.0	1.3	1.0	1.0	1.0	2.0
M424	1.0	1.8	1.0	1.0	1.0	2.0
UM20	1.0	1.5	1.0	1.0	1.0	1.0

Table 6. Plant height and seed quality scores, Uniform Test 00, 1967.

Strain	Mean of 10 Tests	Ottawa Ont.[1]	Kempt-ville Ont.	Guelph Ont.	Ashland Wis.	Crooks-ton Minn.
Altona	27	30	40	26	20	18
Flambeau	28	30	37	28	23	19
Portage	26	30	38	26	20	19
CM1	29	33	43	30	23	20
M55-25	25	29	35	26	21	19
M55-48	26	30	38	26	21	17
M55-134	29	31	40	28	21	21
M424	27	30	37	28	22	21
UM20	26	29	32	25	21	20
	Mean of 7 Tests	Seed Quality Score				
Altona	2.4	2.0	2.0	2.0	2.0*	2.5
Flambeau	2.7	2.0	2.0	3.0	2.0	2.8
Portage	2.1	2.0	1.0	2.0	2.0	3.0
CM1	2.9	3.0	2.0	3.0	2.0	3.0
M55-25	2.3	2.0	1.0	2.0	2.0	2.8
M55-48	2.2	2.0	1.0	3.0	2.0	2.5
M55-134	2.4	2.0	1.0	3.0	2.0	2.8
M424	2.3	2.0	2.0	2.0	2.0	2.8
UM20	2.9	2.5	3.0	3.0	2.0	2.8

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

Table 6. (Continued)

Strain	Morris Minn.	Portage la Prairie Man.	Winnipeg Man.	Morden Man.	Fargo N.D.	Kimberly Idaho[1]	Corcoran Cal.[1]
							*
Altona	18	34	30	24	26		26
Flambeau	20	36	36	27	26		28
Portage	16	32	29	24	25		30
CM1	20	36	32	26	27		35
M55-25	18	31	28	23	24		27
M55-48	18	33	29	23	25		34
M55-134	20	37	34	27	27		31
M424	17	32	31	26	26		33
UM20	18	32	30	25	24		31

	Seed Quality Score				
				*	*
Altona	2.8	3.0	2.8	2.0	4.0
Flambeau	2.8	3.0	3.5	1.0	5.0
Portage	2.5	2.0	2.0	1.0	4.0
CM1	2.8	3.0	3.3	1.0	3.0
M55-25	2.2	3.0	2.8	1.0	3.0
M55-48	2.5	2.0	2.3	1.0	3.0
M55-134	2.8	3.0	2.5	1.0	2.0
M424	2.5	2.0	2.5	1.0	4.0
UM20	2.8	3.0	3.0	1.0	3.0

Table 7. Percentages of protein and oil, Uniform Test 00, 1967.

Strain	Mean of 4 Tests	Ashland Wis.	Crookston Minn.	Morden Man.	Fargo N.D.
Altona	39.8	41.6	37.5	41.9	38.1
Flambeau	41.0	42.9	38.2	44.1	38.6
Portage	38.6	38.2	37.4	41.8	37.1
CM1	37.1	38.5	33.6	40.8	35.6
M55-25	39.8	40.9	36.3	43.2	38.9
M55-48	38.8	40.0	35.6	42.0	37.5
M55-134	39.7	43.4	35.6	41.7	37.9
M424	38.6	39.6	35.0	41.5	38.2
UM20	39.4	42.3	35.4	42.1	37.8
	Mean of 4 Tests	Percentage of Oil			
Altona	20.9	19.1	22.5	19.9	22.1
Flambeau	19.2	16.8	20.0	18.3	21.7
Portage	20.7	19.4	21.6	19.6	22.3
CM1	21.0	18.8	22.5	19.7	22.8
M55-25	20.4	19.0	21.1	19.5	22.1
M55-48	20.2	18.5	21.1	19.0	22.2
M55-134	19.6	17.1	20.8	18.9	21.6
M424	21.0	19.5	21.9	20.2	22.3
UM20	20.9	19.2	22.2	19.6	22.5

Table 8. Three-year summary of data, Uniform Test 00, 1965-1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	26	26	21	19	26	22	22	15	15
Altona	28.0	2	+5.1	2.2	28	2.6	17.4	39.7	19.8
Flambeau	28.9	1	+7.9	3.2	30	2.6	15.7	40.8	18.5
Portage	26.2	5	0	1.5	27	2.3	17.1	38.6	19.8
CM1	27.6	3	+4.2	1.5	30	3.0	15.3	37.4	19.7
M424	27.6	3	+2.9	2.2	28	2.3	16.1	39.0	20.0

[1]Days earlier (-) or later (+) than Portage which matured September 16, 113 days after planting.

Table 9. Three-year summary of yield and yield rank, Uniform Test 00, 1965-1967.

Strain	Mean of 26 Tests	Guelph Ont.	Ashland Wis.	Crookston Minn.	Morris Minn.	St. Paul Minn.	Portage la Prairie Man.	Winnipeg Man.	Brandon Man.	Morden Man.
Years Tested		1966-1967	1965-1967	1965-1967	1966-1967	1965-1966	1965-1967	1965-1967	1965-1966	1965-1967
Altona	28.0	35.1	25.7	16.8	24.9	34.4	29.6	25.2	29.8	27.7
Flambeau	28.9	35.9	20.6	20.3	27.5	39.9	24.1	25.8	34.9	29.4
Portage	26.2	33.5	22.2	15.5	23.7	31.5	30.1	22.4	31.3	26.1
CM1	27.6	34.2	24.9	19.4	25.0	33.8	28.9	24.1	29.3	29.6
M424	27.6	35.4	21.4	19.3	23.7	34.9	29.2	22.9	31.7	26.9
	Yield Rank									
Altona	2	3	1	4	3	3	2	2	4	3
Flambeau	1	1	5	1	1	1	5	1	1	2
Portage	5	5	3	5	4	5	1	5	3	5
CM1	3	4	2	2	2	4	4	3	5	1
M424	3	2	4	3	4	2	3	4	2	4

PRELIMINARY TEST 00, 1967

Strain	Parentage	Generation Composited	Previous Testing
1. Flambeau			
2. Portage			
3. CM21	Acme x L48-7289	F_6	P.T. 00
4. CM24	Acme x L48-7289	F_7	
5. CM29	Acme x L48-7289	F_7	
6. CM30	Acme x L48-7289	F_7	
7. CM31	Acme x Monroe	F_7	
8. CM61	Acme x L48-7289	F_9	
9. M55-47	Acme x Chippewa	F_5	
10. M55-59	Acme x Chippewa	F_5	
11. M59-100	II-54-139 x II-54-232	F_5	

These experimental lines, in general, performed rather well relative to the check varieties. Among the earlier selections, CM61 was outstanding, one day later than Portage and almost 20 percent higher in average yield. Three of the later strains outyielded Flambeau: CM21, one to two days earlier and the highest in regional yield; M55-47, the same maturity as Flambeau and one bushel higher in yield; and M59-100, which is probably too late for Group 00 since it averaged over three days later than Flambeau.

Table 10. Descriptive data and shattering scores, Preliminary Test 00, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering Urbana Illinois[1]
Flambeau	P	T	Br	S	Y	Bl	2.5
Portage	P	G	Br	D+S	Y	Y	5.0
CM21	P	G	Br	S	Y	G	3.5
CM24	P	G	Br	D	Y	Lib	3.5
CM29	P	G	Br	S	Y	Y	2.5
CM30	P	G	Br	D	Y	Lib	3.5
CM31	W	G	Br	D	Y	Y	4.0
CM61	P	G	Br	S	Y	G	4.0
M55-47	P	G	Br	D	Y	Bf	2.0
M55-59	P	T	Br	D	Y	Br	3.0
M59-100	W	G	Br	D	Y	Y	1.0

[1]Mean of two replications. Scored one month after maturity.

Table 11. Summary of data, Preliminary Test 00, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	9	9	8	5	9	6	7	3	3
Flambeau	26.5	5	+4.9	2.3	29	2.6	15.7	41.5	19.3
Portage	22.6	11	0	1.1	26	2.3	16.8	38.7	20.3
CM21	27.9	1	+3.3	1.4	31	2.6	15.5	38.5	19.8
CM24	25.9	7	+3.4	1.5	29	2.3	18.3	37.6	21.5
CM29	25.7	8	+1.6	2.0	30	2.6	16.7	38.8	20.2
CM30	26.4	6	+3.4	1.6	31	2.3	17.5	37.1	21.9
CM31	25.6	9	+1.6	1.2	29	2.6	17.3	39.2	20.6
CM61	26.9	3	+1.0	1.2	31	2.7	15.7	37.9	20.0
M55-47	27.5	2	+5.5	1.6	28	2.5	16.9	39.6	20.4
M55-59	25.4	10	+0.9	2.1	28	2.5	16.2	38.9	19.2
M59-100	26.8	4	+8.5	1.1	28	2.0	15.8	38.9	21.1

[1]Days earlier (-) or later (+) than Portage which matured September 12, 113 days after planting.

Table 12. Disease data, Preliminary Test 00, 1967.

Strain	BB		BP		FE2	BSR		PR	
	Ill.		Ill.		Ind.	Ill.		Ind.	
	n		a		a	n		a	
Flambeau	1		1		5	2		S	
Portage	1		2		5	2		S	
CM21	2		3		5	2		S	
CM24	1		3		5	2		S	
CM29	2		3		5	3		S	
CM30	2		3		5	2		S	
CM31	2		3		5	1		R	
CM61	2		2		5	2		S	
M55-47	2		2		5	3		S	
M55-59	2		3		5	2		S	
M59-100	2		1		4	2		S	

a = artificial inoculation; n = natural infection.

Table 13. Yield and yield rank, Preliminary Test 00, 1967.

Strain	Mean of 9 Tests	Ottawa Ont.[1]	Kemptville Ont.	Guelph Ont.	Ashland Wis.	Crookston Minn.	Portage la Prairie Man.	Winnipeg Man.	Morden Man.	Fargo N.D.
Flambeau	26.5	33.4	44.7	30.6	20.0	14.9	26.9	21.5	28.7	18.2
Portage	22.6	22.5	36.4	27.1	13.8	13.6	26.9	21.0	25.1	16.8
CM21	27.9	29.6	48.5	30.7	21.6	14.5	28.7	24.0	34.2	19.4
CM24	25.9	25.5	42.5	31.0	25.8	15.9	26.2	20.8	26.1	19.5
CM29	25.7	19.7	40.9	26.6	28.6	17.0	29.2	24.2	26.9	17.8
CM30	26.4	27.7	42.1	32.1	27.1	14.4	27.8	20.9	27.0	18.2
CM31	25.6	36.0	38.1	29.3	24.0	13.9	25.3	23.2	23.4	17.3
CM61	26.9	28.4	41.8	29.4	26.3	18.4	27.5	21.7	29.0	19.8
M55-47	27.5	31.2	50.5	25.4	28.1	14.6	31.3	23.5	22.0	20.6
M55-59	25.4	35.6	41.1	22.9	21.3	15.1	24.4	22.5	28.7	17.2
M59-100	26.8	33.6	39.6	30.1	19.7	14.3	31.6	20.3	30.5	21.1
Coef. of Var. (%)		9.0	10.1	12.1	18.3	13.4	6.6	10.4	8.5	3.0
L.S.D. (5%)		5.6	9.6	7.8	N.S.	4.5	4.0	N.S.	5.2	1.2
Row Spacing (In.)		36	21	24	24	24	36	24	30	40

	Yield Rank									
Flambeau	5	4	3	4	9	5	7	7	5	6
Portage	11	10	11	8	11	11	7	8	9	11
CM21	1	6	2	3	7	7	4	2	1	5
CM24	7	9	4	2	5	3	9	10	8	4
CM29	8	11	8	9	1	2	3	1	7	8
CM30	6	8	5	1	3	8	5	9	6	6
CM31	9	1	10	7	6	10	10	4	10	9
CM61	3	7	6	6	4	1	6	6	3	3
M55-47	2	5	1	10	2	6	2	3	11	2
M55-59	10	2	7	11	8	4	11	5	4	10
M59-100	4	3	9	5	10	9	1	10	2	1

[1]Irrigated.

Table 14. Maturity, days earlier (-) or later (+) than Portage, Preliminary Test 00, 1967.

Strain	Mean of 8 Tests	Ottawa Ont.[1]	Kemptville Ont.	Guelph Ont.	Ashland Wis.	Crookston Minn.	Portage la Prairie Man. *	Winnipeg Man.	Morden Man.	Fargo N.D.
Flambeau	+4.9	+1	+ 5	+6	+10	-3		+5	+3	+12
Portage	0	0	0	0	0	0		0	0	0
CM21	+3.3	+5	+ 4	+1	+ 8	+3		0	+1	+ 4
CM24	+3.4	+1	+ 5	+6	+10	0		+1	+1	+ 3
CM29	+1.6	+4	+ 5	-5	+ 9	-5		+1	+1	+ 3
CM30	+3.4	+1	+ 5	+6	+ 9	0		+2	+1	+ 3
CM31	+1.6	-3	+ 4	+4	+ 5	-4		+3	+1	+ 3
CM61	+1.0	+1	+ 3	-4	+ 8	-6		+1	+1	+ 4
M55-47	+5.5	+5	+15	+7	+ 9	0		+3	+3	+ 2
M55-59	+0.9	-2	+ 4	-4	+ 6	-2		+1	+1	+ 3
M59-100	+8.5	+3	+16	0	+12	+4		+9	+9	+15
Date planted	5-22	5-15	5-29	5-29	5-25	5-24	5-29	5-18	5-16	5-25
Portage matured	9-12	9-17	9-8	9-28	9-16	9-12	9-29	9-12	9-5	9-1
Days to mature	113	125	102	122	114	111	123	117	112	99

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

UNIFORM TEST 0, 1967

Strain	Parentage	Generation Composited	Previous Testing (years)
1. Grant	Lincoln x Seneca	F_6	17
2. Merit	Blackhawk x Capital	F_8	9
3. Traverse	Lincoln x Mandarin (Ottawa)	F_5	3
4. M55-67	Grant x Acme	F_5	P.T. 00
5. M58-14	(M10 x PI 194.633) x Chippewa	F_5	P.T. 0
6. M391-4	Capital x Renville	F_5	2 as M391-1
7. M393	Capital x Renville	F_5	U.T. 00
8. OAC85	(Lincoln x Flambeau) x Goldsoy	F_8	2
9. SD643	Colchicine-treated Chippewa	M_7	P.T. 0
10. W3S-177	W0S-3386 x Clark	F_5	P.T. 0
11. W3S-236	W0S-3386 x Clark	F_5	P.T. 0
12. W4S-209	Seneca x W0S-3386	F_6	P.T. 0

The three-year means presented in Tables 22 and 23 include three named varieties and two experimental strains. Grant has a slight edge in yield over Traverse but when seed composition is considered, the value per acre of Traverse is greater. The early strain, OAC85, is earlier than Merit yet yields as well on the average. The M391 selections are between Merit and Traverse in maturity and yield.

M393 was in this test in 1965 and in Uniform Test 00 in 1966. It has yielded well for its maturity and has unusually high oil content.

The remaining strains were advanced from 1966 Preliminary Tests. M58-14 and the three W strains yielded well for their maturity and should probably be tested further.

Table 15. Descriptive data and shattering scores, Uniform Test 0, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering Urbana Illinois[1]
Grant	W	Lt	Br	S	Y	Bl	2.0
Merit	W	G	Br	D	Y	Bf	1.0
Traverse	W	G	Br	S	Y	Y	3.0
M55-67	P	G	Br	S	Y	Y	2.0
M56-14	P	T	Br	S+D	Y	Bl	2.0
M391-4	P	T	Br	D	Y	Y	1.5
M393	P	G	Br	S	Y	Y	1.0
OAC85	W	T	Br	S	Y	Y	2.5
SD643	P	G	Br	D	Y	Y	4.0
W3S-177	P	T	Br	S	Y	Bl	1.5
W3S-236	W	T	Br	S	Y	Bl	1.0
W4S-209	W	Lt	Br	D	Y	Bl	2.0

[1]Mean of two replications. Scored one month after maturity.

Table 16. Summary of data, Uniform Test 0, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	9	9	9	6	9	7	6	5	5
Grant	33.8	1	+1.8	2.1	28	2.0	15.9	39.3	20.3
Merit	30.3	11	0	1.5	29	1.7	14.0	38.2	21.4
Traverse	32.4	3	+4.2	1.7	29	1.7	16.9	40.1	20.6
M55-67	30.8	10	+0.9	1.4	26	1.5	17.9	40.9	20.2
M58-14	32.0	5	-0.8	1.2	28	1.8	14.9	40.5	19.4
M391-4	32.2	4	+1.0	1.4	28	2.2	16.4	39.2	21.7
M393	31.8	6	-5.8	1.3	24	1.8	15.4	38.8	22.1
OAC85	31.0	9	-3.9	1.5	29	1.9	14.5	40.4	19.9
SD643	29.9	12	+2.6	1.5	25	1.5	19.2	41.1	19.9
W3S-177	33.1	2	+0.4	2.0	30	1.6	14.8	40.2	19.5
W3S-236	31.7	7	-2.2	1.3	27	1.6	15.3	40.8	19.9
W4S-209	31.7	7	-2.9	1.7	29	2.0	16.0	40.2	20.0

[1]Days earlier (-) or later (+) than Merit which matured September 22, 119 days after planting.

Table 17. Disease data, Uniform Test 0, 1967.

Strain	BB			BP	BS	DM	FE2	BSR	PR		Pyl
	Ill.	Ia.	Ia.	Ill.	Ia.	Ind.	Ind.	Ill.	Ind.	Ia.	Ia.
	n	n	a	a	a	n	a	n	a	a	a
Grant	2	4	1	4	4	1	4	2	S	S	4.1
Merit	2	3	1	2	3	1	5	2	R	R	4.3
Traverse	2	4	3	1	4	2	4	2	S	S	3.0
M55-67	2	3	3	1	2	2	5	2	S	S	4.8
M58-14	2	3	3	1	2	1	4	2	S	S	3.9
M391-4	2	1	1	2	2	1	4	1	S	S	4.7
M393	1	3	1	2	2	--	5	2	S	S	4.5
OAC85	--	4	3	--	4	2	5	1	S	S	4.2
SD643	2	4	2	2	2	1	5	1	S	S	3.8
W3S-177	2	2	2	3	1	2	4	2	S	S	4.1
W3S-236	2	2	3	1	2	1	5	2	S	S	4.5
W4S-209	3	2	3	2	3	1	4	2	S	S	4.6

a = artificial inoculation; n = natural infection.
[1]In greenhouse soil. 1 (healthy) to 5 (not emerged).

Table 18. Yield and yield rank, Uniform Test 0, 1967.

Strain	Mean of 9 Tests	Kempt-ville Ont.	Guelph Ont.	Ridge-town Ont.	Colum-bus Ohio	East Lansing Mich.
					*	
Grant	33.8	49.1	33.4	50.6	8.6	42.3
Merit	30.3	44.5	28.9	44.9	5.8	34.8
Traverse	32.4	44.8	26.6	50.7	12.8	43.9
M55-67	30.8	47.0	31.9	45.5	8.8	34.5
M58-14	32.0	40.8	30.5	49.5	12.0	39.3
M391-4	32.2	45.7	32.0	47.6	10.2	38.0
M393	31.8	47.5	31.3	42.5	7.6	35.4
OAC85	31.0	50.0	28.0	44.9	5.9	36.0
SD643	29.9	41.4	25.5	42.5	9.9	38.8
W3S-177	33.1	42.9	29.2	54.3	12.8	40.8
W3S-236	31.7	46.5	31.4	49.3	5.2	33.4
W4S-209	31.7	49.1	32.8	47.5	8.2	36.7
Coef. of Var. (%)		8.7	6.5	7.1	--	6.2
L.S.D. (5%)		6.7	2.7	4.8	--	3.3
Row Spacing (In.)		21	24	24	28	28

	Yield Rank					
Grant	1	2	1	3	7	2
Merit	11	9	9	9	11	10
Traverse	3	8	11	2	1	1
M55-67	10	5	4	8	6	11
M58-14	5	12	7	4	3	4
M391-4	4	7	3	6	4	6
M393	6	4	6	11	9	9
OAC85	9	1	10	9	10	8
SD643	12	11	12	11	5	5
W3S-177	2	10	8	1	1	3
W3S-236	7	6	5	5	12	12
W4S-209	7	2	2	7	8	7

*Not included in the mean.

Table 18. (Continued)

Strain	Spooner Wis.	Durand Wis.	Crookston Minn. *	Morris Minn.	Fargo N.D.	Revillo S.D.	Kimberly Idaho *
Grant	26.9	27.7	8.6	29.2	19.7	25.3	20.9
Merit	28.6	22.6	10.1	25.2	20.5	23.0	25.7
Traverse	28.2	24.7	10.2	26.8	20.8	25.2	18.7
M55-67	29.1	22.2	8.6	27.1	18.8	21.1	21.1
M58-14	31.8	23.4	9.1	26.2	18.2	28.3	22.0
M391-4	29.8	23.4	8.4	28.8	21.0	23.1	19.6
M393	31.5	20.6	12.8	31.3	21.7	24.0	18.8
OAC85	31.4	19.4	12.1	27.8	18.9	22.8	18.4
SD643	28.6	23.9	7.8	25.4	19.4	23.2	23.1
W3S-177	30.9	26.4	8.2	26.8	19.4	26.8	23.6
W3S-236	32.8	22.6	11.0	28.0	18.0	23.0	18.2
W4S-209	30.1	21.4	10.1	26.4	18.3	22.6	19.8
Coef. of Var. (%)	9.1	7.3	30.8	9.4	6.3	7.2	18.3
L.S.D. (5%)	3.5	2.4	4.3	3.7	1.7	2.5	5.0
Row Spacing (In.)	36	36	24	30	40	36	24

	Yield Rank						
Grant	12	1	8	2	5	3	6
Merit	11	7	5	12	4	8	1
Traverse	9	3	4	7	3	4	10
M55-67	8	9	8	6	9	12	5
M58-14	2	5	7	10	11	1	4
M391-4	7	5	10	3	2	7	8
M393	3	11	1	1	1	5	9
OAC85	4	12	2	5	8	10	11
SD643	9	4	12	11	6	6	3
W3S-177	5	2	11	7	6	2	2
W3S-236	1	7	3	4	12	8	12
W4S-209	6	10	5	9	10	11	7

Table 19. Maturity, days earlier (-) or later (+) than Merit, and lodging scores, Uniform Test 0, 1967.

Strain	Mean of 9 Tests	Kemptville Ont.	Guelph Ont.	Ridgetown Ont.	Columbus Ohio *	East Lansing Mich.
Grant	+1.8	0	+ 4	+ 3	- 5	+ 6
Merit	0	0	0	0	0	0
Traverse	+4.2	+ 4	+ 5	+ 4	+ 6	+11
M55-67	+0.9	+ 1	+ 2	0	+ 8	+ 5
M58-14	-0.8	- 4	+ 2	0	+10	+ 1
M391-4	+1.0	- 1	+ 2	0	+ 8	+ 6
M393	-5.8	- 9	- 4	- 4	+10	- 5
OAC85	-3.9	- 6	- 4	- 3	+12	- 4
SD643	+2.6	+ 6	+ 5	+ 5	+10	+ 7
W3S-177	+0.4	- 3	0	+ 5	+13	+ 5
W3S-236	-2.2	- 6	- 1	0	+20	- 1
W4S-209	-2.9	- 4	- 1	0	+16	- 3
Flambeau (00)		-12	+ 4	--	--	--
Chippewa 64 (I)		--	+11	+10	+15	+14
Date planted	5-26	5-29	5-29	5-19	5-20	5-23
Merit matured	9-22	9-25	10-3	9-8	8-29	9-21
Days to mature	119	119	127	112	101	121

	Mean of 6 Tests	Lodging Score				
					*	
Grant	2.1	2.0	1.3	3.0	1.0	2.5
Merit	1.5	2.0	1.1	2.0	1.0	1.5
Traverse	1.7	1.0	1.3	3.0	1.0	2.0
M55-67	1.4	2.0	1.2	2.0	1.0	1.0
M58-14	1.2	1.0	1.1	2.0	1.0	1.0
M391-4	1.4	1.0	1.4	2.0	1.0	1.5
M393	1.3	1.0	1.1	2.0	1.0	1.5
OAC85	1.5	2.0	1.1	2.0	1.0	1.5
SD643	1.5	2.0	1.1	2.0	1.0	1.5
W3S-177	2.0	3.0	1.3	3.0	1.0	2.0
W3S-236	1.3	1.0	1.1	2.0	1.0	1.5
W4S-209	1.7	2.0	1.2	2.0	1.0	1.5

*Not included in the mean.

Table 19. (Continued)

Strain	Spooner Wis.	Durand Wis.	Crookston Minn. *	Morris Minn.	Fargo N.D.	Revillo S.D.	Kimberly Idaho *
Grant	-1	+2	+ 2	- 1	+1	+2	0
Merit	0	0	0	0	0	0	0
Traverse	+1	+5	0	0	+3	+5	+ 2
M55-67	-2	+1	+ 2	- 1	-1	+3	0
M58-14	-4	-2	0	- 2	+1	+1	0
M391-4	-2	0	+ 2	- 1	+4	+1	0
M393	-7	-8	- 3	-12	-3	0	0
OAC85	-8	-4	-12	- 6	-2	+2	0
SD643	+1	+6	+ 2	- 4	-3	0	0
W3S-177	-3	+1	+ 2	- 2	+1	0	0
W3S-236	-7	-1	0	- 4	-1	+1	0
W4S-209	-7	-2	0	- 8	-4	+3	0
Flambeau	-7	--	-11	-14	-8	--	-19
Chippewa 64	+5	+9	--	+ 5	--	+5	--
Date planted	5-29	5-30	5-24	5-26	5-25	5-29	5-28
Merit matured	9-28	9-15	9-24	9-20	9-21	9-30	9-27
Days to mature	122	108	123	117	119	124	122

	Lodging Score					
			*	*	*	*
Grant	2.0	1.8	1.0	1.0	1.0	2.0
Merit	1.5	1.1	1.0	1.0	1.0	2.0
Traverse	1.0	1.9	1.0	1.0	1.0	3.0
M55-67	1.0	1.0	1.0	1.0	1.0	2.0
M58-14	1.0	1.3	1.0	1.0	1.0	2.0
M391-4	1.0	1.3	1.0	1.0	1.0	2.0
M393	1.0	1.0	1.0	1.0	1.0	2.0
OAC85	1.0	1.1	1.0	1.0	1.0	2.0
SD643	1.0	1.3	1.0	1.0	1.0	2.0
W3S-177	1.0	1.4	1.0	1.0	1.0	2.0
W3S-236	1.0	1.0	1.0	1.0	1.0	2.0
W4S-209	1.5	2.0	1.0	1.0	1.0	2.0

Table 20. Plant height and seed quality scores, Uniform Test 0, 1967.

Strain	Mean of 9 Tests	Kempt-ville Ont.	Guelph Ont.	Ridge-town Ont.	Colum-bus Ohio *	East Lansing Mich.
Grant	28	37	28	30	16	27
Merit	29	41	27	29	14	27
Traverse	29	39	26	32	16	27
M55-67	26	36	28	26	13	24
M58-14	28	39	26	34	17	26
M391-4	28	37	27	30	14	25
M393	24	34	21	23	12	23
OAC85	29	40	29	33	15	28
SD643	25	38	24	25	14	23
W3S-177	30	42	28	34	15	28
W3S-236	27	38	26	29	14	25
W4S-209	29	43	29	29	15	27

	Mean of 7 Tests	Seed Quality Score				
					*	
Grant	2.0	2.0	3.0	2.0	1.2	1.5
Merit	1.7	1.0	2.0	2.0	1.0	1.0
Traverse	1.7	2.0	2.0	2.0	1.0	1.0
M55-67	1.5	1.0	2.0	2.0	1.0	1.5
M58-14	1.8	3.0	2.0	2.0	1.0	1.0
M391-4	2.2	3.0	3.0	2.0	1.2	2.0
M393	1.8	1.0	3.0	2.0	1.2	1.5
OAC85	1.9	3.0	2.0	2.0	1.2	1.5
SD643	1.5	2.0	2.0	1.0	1.2	1.0
W3S-177	1.6	2.0	2.0	1.0	1.0	1.0
W3S-236	1.6	2.0	2.0	1.0	1.0	1.5
W4S-209	2.0	3.0	2.0	3.0	1.0	1.0

*Not included in the mean.

Table 20. (Continued)

Strain	Spooner Wis.	Durand Wis.	Crookston Minn. *	Morris Minn.	Fargo N.D.	Revillo S.D.	Kimberly Idaho
Grant	31	23	18	25	27	23	
Merit	33	22	19	26	32	25	
Traverse	31	22	20	27	30	26	
M55-67	28	22	18	22	25	22	
M58-14	33	22	18	25	27	23	
M391-4	30	22	20	26	28	24	
M393	24	20	17	21	25	22	
OAC85	31	23	20	26	30	24	
SD643	27	21	18	22	26	22	
W3S-177	34	23	21	26	29	28	
W3S-236	30	22	19	24	27	24	
W4S-209	30	23	20	24	31	25	

	Seed Quality Score				
		*			*
Grant	2.0	3.2	2.5	1.2	2.0
Merit	2.0	3.0	2.5	1.1	2.0
Traverse	1.0	3.2	2.2	1.4	3.0
M55-67	1.0	3.2	2.2	1.1	2.0
M58-14	1.0	3.2	2.5	1.3	2.0
M391-4	2.0	4.0	2.5	1.1	2.0
M393	1.5	3.0	2.5	1.1	2.0
OAC85	1.5	3.0	2.5	1.1	2.0
SD643	1.5	3.5	2.2	1.1	2.0
W3S-177	2.0	4.0	2.2	1.1	2.0
W3S-236	1.0	3.5	2.5	1.2	2.0
W4S-209	1.0	3.2	2.8	1.0	2.0

Table 21. Percentages of protein and oil, Uniform Test 0, 1967.

Strain	Mean of 5 Tests	East Lansing Mich.	Spooner Wis.	Morris Minn.	Fargo N.D.	Revillo S.D.
Grant	39.3	38.7	41.2	38.9	36.4	41.2
Merit	38.2	36.3	39.9	37.8	37.5	39.4
Traverse	40.1	39.5	41.2	39.4	37.7	42.5
M55-67	40.9	40.9	43.1	40.2	36.8	43.7
M58-14	40.5	39.7	41.5	40.5	37.7	43.2
M391-4	39.2	38.9	41.2	38.7	36.0	41.0
M393	38.8	39.1	40.4	38.2	36.8	39.5
OAC85	40.4	39.3	42.4	39.7	37.8	42.8
SD643	41.1	40.0	42.9	40.1	39.0	43.4
W3S-177	40.2	39.5	42.0	39.6	38.0	42.0
W3S-236	40.8	39.7	42.8	40.9	38.0	42.5
W4S-209	40.2	40.2	42.5	40.1	37.1	41.0
	Mean of 5 Tests	Percentage of Oil				
Grant	20.3	20.4	18.4	20.3	22.3	19.9
Merit	21.4	22.0	19.0	21.4	22.8	21.6
Traverse	20.6	20.8	18.7	20.6	22.5	20.5
M55-67	20.2	20.0	18.0	20.2	22.7	20.1
M58-14	19.4	19.6	17.1	19.6	21.6	19.1
M391-4	21.7	22.0	19.3	22.3	23.6	21.5
M393	22.1	21.6	20.1	22.7	23.6	22.7
OAC85	19.9	20.6	17.9	19.9	21.9	19.3
SD643	19.9	19.7	17.9	20.2	21.6	20.2
W3S-177	19.5	18.4	18.0	19.9	21.2	20.1
W3S-236	19.9	19.8	16.9	20.3	21.8	20.7
W4S-209	20.0	19.6	17.7	20.5	22.0	20.1

Table 22. Three-year summary of data, Uniform Test 0, 1965-1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	30	30	25	22	29	23	19	17	17
Grant	32.6	1	+2.5	2.5	29	2.0	16.8	40.0	19.8
Merit	29.8	4	0	1.8	30	1.9	14.7	39.0	21.0
Traverse	32.1	2	+4.1	2.1	31	2.0	18.0	40.7	20.4
M391-4[2]	31.3	3	+1.2	1.8	31	2.1	16.5	39.9	21.1
OAC85	29.5	5	-3.3	1.9	31	2.2	14.9	41.2	19.5

[1]Days earlier (-) or later (+) than Merit which matured September 20, 118 days after planting.
[2]M391-1 in 1965 and 1966.

Table 23. Three-year summary of yield and yield rank, Uniform Test 0, 1965-1967.

Strain	Mean of 30 Tests	Guelph Ont.	Ridgetown Ont.	Columbus Ohio	East Lansing Mich.	Spooner Wis.	Durand Wis.	Crookston Minn.	Morris Minn.	St. Paul Minn.	Fargo N.D.[1]	Sisseton S.D.
Years Tested		1966-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1966	1965-1967	1965-1966
Grant	32.6	36.5	48.4	17.8	39.0	31.1	22.5	14.9	32.9	42.7	27.3	22.1
Merit	29.8	33.1	43.4	13.2	32.2	28.7	19.2	17.1	30.5	42.9	27.7	20.9
Traverse	32.1	35.4	48.2	21.0	37.9	28.2	20.1	16.6	33.6	42.5	28.4	21.9
M391-4	31.3	36.0	45.9	16.6	34.9	29.6	19.7	15.8	33.3	42.5	29.2	22.2
OAC85	29.5	35.1	43.5	12.9	30.8	30.7	17.7	17.8	30.9	37.9	26.5	21.2
	Yield Rank											
Grant	1	1	1	2	1	1	1	5	3	2	4	2
Merit	4	5	5	4	4	4	4	2	5	1	3	5
Traverse	2	3	2	1	2	5	2	3	1	3	2	3
M391-4	3	2	3	3	3	3	3	4	2	3	1	1
OAC85	5	4	4	5	5	2	5	1	4	5	5	4

[1]Casselton, 1965.

PRELIMINARY TEST 0, 1967

Strain	Parentage	Generation Composited	Previous Testing
1. Merit			
2. Traverse			
3. CM54	UM3 x 057-2921	F_7	
4. CM57	Acme x Monroe	F_7	
5. CM59	PI 257.438 selection		
6. CM64	Acme x Monroe	F_7	
7. CM70	Crest x L48-7289	F_7	
8. CM71	H24088 x Crest	F_7	
9. CM72	H24088 x Crest	F_7	
10. M55-130	Acme x Chippewa	F_5	
11. M59-109	II-54-139 x II-54-232	F_5	
12. M59-121	II-54-240 x II-54-139	F_5	
13. M59-211	Lindarin x Harosoy	F_5	
14. M59-253	Lindarin x Harosoy	F_5	
15. SD645	(Blackhawk x Clark) x (Adams x Clark)*	F_8	P.T. I
16. SD646	(Adams x Clark) x Mandarin (Ottawa)*	F_7	P.T. I
17. W3S-179	WOS-3386 x Clark	F_5	
18. W3S-184	WOS-3386 x Clark	F_5	
19. W4S-202	Hardome x Chippewa	F_5	

*From colchicine-treated F_1.

A number of strains in this test outperformed the two check varieties. M59-121 was particularly outstanding, outyielding the checks in almost every test and only one to two days later than Merit. Among the early lines, CM54 had the best performance and, in addition, is phytophthora resistant but is segregating for hilum color.

Table 24. Descriptive data and shattering scores, Preliminary Test 0, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering Urbana Illinois[3]
Merit	W	G	Br	D	Y	Bf	1.5
Traverse	W	G	Br	S	Y	Y	3.0
CM54	P	G	Br	S	Y	Bf+Y[1]	3.0
CM57	P	G	Br	S	Y	Bf+Y	2.0
CM59	W	T	Br	S	Y	Br	1.0
CM64	P	G	Br	S	Y	Bf	1.5
CM70	W	T	Br	S	G	G	2.5
CM71	W	T	Br	S	G	G	1.5
CM72	W	T	Br	S	G	G	1.5
M55-130	P	G	Br	S	Y	G+Lbf	1.5
M59-109	W	G	Br	D	Y	Y	1.0
M59-121	W	T	Br	D	Y	Bl[2]	2.5
M59-211	P	G	Br	D	Y	Y	2.5
M59-253	P	G	Br	D	Y	Y	2.0
SD645	P	T	Br	S	Y	Bl	1.0
SD646	W	G	Br	S	Y	Bl	3.5
W3S-179	P	T	Br	D	G	Bl	1.0
W3S-184	P	T	Br	D	G	Bl	1.0
W4S-202	P	T	Br	S	Y	Bl	1.0

[1]Segregating hilum with imperfect abscission.
[2]Oval hilum.
[3]Mean of two replications. Scored one month after maturity.

Table 25. Summary of data, Preliminary Test 0, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	8	8	7	5	8	7	6	5	5
Merit	32.6	8	0	2.1	31	1.9	14.1	39.7	21.3
Traverse	31.9	10	+3.9	1.9	30	1.9	17.2	40.5	20.7
CM54	31.2	12	-5.0	1.8	30	2.2	14.9	39.8	20.1
CM57	29.6	17	-2.6	1.8	29	2.1	19.1	39.8	21.0
CM59	30.4	13	-1.3	2.2	29	1.9	16.5	41.5	19.9
CM64	29.7	16	-3.9	1.8	28	2.4	18.4	39.4	21.5
CM70	29.5	18	-6.4	1.5	29	2.8	17.5	39.9	20.7
CM71	28.6	19	-5.3	1.6	28	2.7	17.1	40.4	21.1
CM72	30.1	14	-6.0	1.3	29	2.7	17.3	40.2	20.7
M55-130	34.0	4	+1.1	1.5	29	1.9	15.2	40.7	19.5
M59-109	32.4	9	+5.0	2.3	29	1.9	15.7	37.4	22.2
M59-121	37.3	1	+1.4	2.0	33	2.0	15.3	37.6	21.2
M59-211	29.9	15	+3.6	1.9	29	2.0	18.7	41.2	19.9
M59-253	32.7	7	+4.3	1.5	29	1.9	18.2	40.9	19.9
SD645	31.6	11	+4.3	2.1	30	1.9	15.4	39.9	19.7
SD646	33.5	6	+4.0	2.4	29	2.0	15.7	39.6	20.3
W3S-179	36.4	2	+5.4	2.5	32	2.3	15.1	39.7	19.8
W3S-184	35.4	3	+5.6	2.3	32	2.4	14.5	40.3	19.7
W4S-202	33.9	5	+2.4	2.3	33	1.9	14.6	40.0	20.7

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

Table 26. Disease data, Preliminary Test 0, 1967.

Strain	BB Ill. n	BP Ill. a	DM Ind. n	FE2 Ind. a	BSR Ill. n	PR Ind a
Merit	1	1	1	5	2	R
Traverse	2	1	2	4	2	S
CM54	1	1	1	4	3	R
CM57	3	1	2	5	2	S
CM59	2	2	2	4	2	S
CM64	3	1	1	5	2	S
CM70	1	1	2	5	2	S
CM71	1	1	2	4	2	S
CM72	1	1	2	4	3	S
M55-130	3	3	2	3	3	S
M59-109	2	2	2	3	2	S
M59-121	2	3	1	4	2	S
M59-211	3	1	1	5	2	S
M59-253	2	2	2	4	2	S
SD645	1	3	3	5	1	S
SD646	2	1	2	5	2	S
W3S-179	2	3	3	4	2	S
W3S-184	1	2	3	4	2	S
W4S-202	2	3	2	4	2	S

a = artificial inoculation; n = natural infection.

Table 27. Yield, Preliminary Test 0, 1967.

Strain	Mean of 8 Tests	Kemptville Ont.	Guelph Ont.	Ridgetown Ont.	East Lansing Mich.	Spooner Wis.	Morden Man.	Fargo N.D.	Revillo S.D.
Merit	32.6	41.4	29.2	49.5	36.0	29.1	29.5	20.2	26.0
Traverse	31.9	36.3	25.1	46.8	42.2	29.0	28.5	18.9	28.0
CM54	31.2	42.6	28.0	46.0	32.0	31.8	27.5	17.2	24.3
CM57	29.6	43.2	28.4	35.6	31.0	32.4	28.7	17.7	20.1
CM59	30.4	44.6	31.8	41.3	30.6	33.2	24.8	16.9	19.9
CM64	29.7	39.3	26.8	42.9	30.3	32.2	28.9	16.8	20.3
CM70	29.5	43.6	30.6	32.4	29.3	29.8	28.0	17.8	24.2
CM71	28.6	37.3	26.8	37.9	29.9	32.0	27.2	17.0	21.0
CM72	30.1	41.5	31.6	35.8	29.2	31.0	30.3	18.7	23.0
M55-130	34.0	41.2	31.6	47.6	39.7	32.0	32.2	20.1	27.2
M59-109	32.4	39.8	29.8	48.4	42.5	26.1	29.8	17.4	25.2
M59-121	37.3	45.7	36.4	55.3	41.7	32.8	36.1	20.4	30.2
M59-211	29.9	37.1	29.0	43.4	35.7	26.6	27.3	17.5	22.4
M59-253	32.7	38.5	28.2	49.5	40.5	26.2	35.3	18.6	24.4
SD645	31.6	34.9	28.1	48.6	39.7	26.3	27.6	18.1	29.4
SD646	33.5	36.1	28.8	62.9	37.5	29.5	31.2	16.6	25.1
W3S-179	36.4	38.4	32.3	63.3	42.7	29.3	39.5	18.7	26.6
W3S-184	35.4	34.1	31.3	60.6	45.0	28.8	35.9	16.2	31.6
W4S-202	33.9	42.6	31.1	52.8	37.1	28.7	34.4	19.3	25.1
Coef. of Var. (%)		8.0	9.4	10.8	7.5	7.8	13.2	7.4	12.0
L.S.D. (5%)		6.7	5.9	10.7	3.6	N.S.	N.S.	2.8	8.9
Row Spacing (In.)		21	24	24	28	36	36	40	36

Table 28. Yield rank, Preliminary Test 0, 1967.

Strain	Mean of 8 Tests	Kemptville Ont.	Guelph Ont.	Ridgetown Ont.	East Lansing Mich.	Spooner Wis.	Morden Man.	Fargo N.D.	Revillo S.D.
Merit	8	8	10	6	11	12	10	2	7
Traverse	10	16	19	11	4	13	13	5	4
CM54	12	5	16	12	13	7	16	14	12
CM57	17	4	13	18	14	3	12	11	18
CM59	13	2	3	15	15	1	19	16	19
CM64	16	11	17	14	16	4	11	17	17
CM70	18	3	8	19	18	9	14	10	13
CM71	19	14	17	16	17	5	18	15	16
CM72	14	7	4	17	19	8	8	6	14
M55-130	4	9	4	10	7	5	6	3	5
M59-109	9	10	9	9	3	19	9	13	8
M59-121	1	1	1	4	5	2	2	1	2
M59-211	15	15	11	13	12	16	17	12	15
M59-253	7	12	14	6	6	18	4	8	11
SD645	11	18	15	8	7	17	15	9	3
SD646	6	17	12	2	9	10	7	18	9
W3S-179	2	13	2	1	2	11	1	6	6
W3S-184	3	19	6	3	1	14	3	19	1
W4S-202	5	5	7	5	10	15	5	4	9

Table 29. Maturity, days earlier (-) or later (+) than Merit, Preliminary Test 0, 1967.

Strain	Mean of 7 Tests	Kemptville Ont.	Guelph Ont.	Ridgetown Ont.	East Lansing Mich.	Spooner Wis.	Morden Man. *	Fargo N.D.	Revillo S.D.
Merit	0	0	0	0	0	0	0	0	0
Traverse	+3.9	+ 2	+ 5	+3	+10	0	+ 1	+3	+4
CM54	-5.0	- 6	- 6	-3	- 5	- 8	- 6	-6	-1
CM57	-2.6	0	- 3	-3	+ 3	-10	-11	-8	+3
CM59	-1.3	- 2	+ 4	+2	- 2	-10	- 5	-5	+4
CM64	-3.9	0	- 5	-1	- 2	-10	-10	-8	-1
CM70	-6.4	- 9	- 6	-6	- 5	-11	-12	-7	-1
CM71	-5.3	- 6	- 5	-6	- 5	-11	-10	-6	+2
CM72	-6.0	- 9	- 3	-8	- 4	-11	-11	-7	0
M55-130	+1.1	+ 1	+ 4	-1	+ 6	- 2	- 1	-2	+2
M59-109	+5.0	+ 2	+10	+5	+11	+ 2	--	+1	+4
M59-121	+1.4	0	- 1	+1	+ 7	- 2	--	+2	+3
M59-211	+3.6	+ 3	+ 2	+3	+10	+ 1	--	+1	+5
M59-253	+4.3	+ 2	+11	+2	+10	+ 1	--	+2	+2
SD645	+4.3	+ 3	+10	+4	+12	- 2	--	+3	0
SD646	+4.0	+ 3	+ 9	+4	+11	- 2	--	+2	+1
W3S-179	+5.4	+ 5	+ 9	+6	+15	- 2	--	+4	+1
W3S-184	+5.6	+ 4	+13	+6	+13	- 2	--	+3	+2
W4S-202	+2.4	+ 2	+ 5	+4	+11	- 5	--	0	0
Flambeau (00)		-11	+ 3	--	--	--	-11	-8	--
Chippewa 64 (I)		--	+10	+9	+14	--	--	--	+4
Date planted	5-26	5-29	5-29	5-19	5-23	5-29	5-16	5-25	5-29
Merit matured	9-24	9-24	10-4	9-9	9-21	9-28	9-20	9-21	10-1
Days to mature	121	118	128	113	121	122	127	119	125

*Not included in the mean.

UNIFORM TEST I, 1967

Strain	Parentage	Generation Composited	Previous Testing (years)
1. A-100	Unknown	--	5
2. Chippewa 64	Chippewa[8] x Blackhawk	29 F_3 lines	5
3. Hark	Hawkeye x Harosoy	F_9	3
4. A2-5405	Clark x Chippewa	F_7	2
5. A2-5407	Clark x Chippewa	F_7	2
6. A2-5440	Harosoy x Chippewa	F_7	1
7. M54-160	Korean x II-42-37	F_5	1
8. W1-4221	Grant x Chippewa	F_6	2
9. W3-1010-3	Seneca x Chippewa	F_5	P.T. I
10. W3-4731	Seneca x Norchief	F_5	P.T. I
11. W4-3351	W9-1982-32 x Chippewa	F_5	P.T. I

Three-year means are presented in Tables 37 and 38 for three varieties and three lines. A2-5405 was the top yielder in the test. It is about the same maturity as A-100 and Hark. It had more shattering resistance than Hark but was quite susceptible to downy mildew. A2-5407 and W1-4221 matured about the same as Chippewa 64 and showed only a slight yield advantage.

Two strains, A2-5440 and M54-160, have been tested two years. A2-5440 was close to A2-5405 in mean performance except for being more shattering susceptible and more downy mildew resistant. M54-160 is an earlier strain very comparable to A2-5407 and W1-4221 but with a shift in seed composition from protein to oil.

The three new entries this year, although including some phytophthora resistance, failed to yield as well as the check varieties.

Table 30. Descriptive data and shattering scores, Uniform Test I, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering Urbana Illinois[1]
A-100	W	G	Br	S	Y	Bf	1.0
Chippewa 64	P	T	Br	S	Y	Bl	1.0
Hark	P	G	Br	D	Y	Y	3.2
A2-5405	P	T	Br	S	Y	Bl	1.0
A2-5407	P	T	Br	S	Y	Bl	1.2
A2-5440	P	T	Br	S	Y	G	2.6
M54-160	P	T	Br	S	Y	Bl	2.4
W1-4221	P	Lt	Br	S	Y	Bl	3.0
W3-1010-3	W	T	Br	D	Y	Bl	1.4
W3-4731	P	Lt	Br	D	Y	Bl	1.4
W4-3351	P	T	Br	S	Y	Bl	1.6

[1]Mean of five replications. Scored 1 month after maturity.

Table 31. Summary of data, Uniform Test I, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	20	20	17	15	20	15	16	9	9
A-100	36.1	4	+6.5	1.6	31	1.5	18.7	40.0	20.8
Chippewa 64	34.5	8	0	1.6	30	1.9	16.2	41.2	19.9
Hark	36.7	3	+3.7	1.4	31	1.5	16.7	42.5	20.1
A2-5405	37.6	1	+4.6	1.8	30	1.8	17.4	41.0	20.4
A2-5407	34.6	6	+0.5	1.6	30	1.8	16.4	41.5	20.2
A2-5440	37.6	1	+3.4	1.8	31	1.8	19.0	41.2	20.2
M54-160	34.6	6	+0.4	1.9	27	1.8	19.4	40.4	21.6
W1-4221	35.5	5	-0.4	1.9	29	1.7	16.8	41.6	20.0
W3-1010-3	34.4	9	+4.8	1.8	33	1.5	14.9	40.5	20.2
W3-4731	33.8	10	+0.2	1.7	32	2.0	18.2	41.0	19.3
W4-3351	33.0	11	-1.6	1.7	32	1.9	16.5	40.1	20.6

[1]Days earlier (-) or later (+) than Chippewa 64 which matured September 19, 117 days after planting.

Table 32. Disease and insect data, Uniform Test I, 1967.

Strain	BB				BP	BS	DM		FE2	BSR	PR		Py[1]	SCM[2]
	DeKalb						DeKalb							
	Ill.	Ill.	Ia.	Ia.	Ill.	Ia.	Ill.	Ind.	Ind.	Ill.	Ind.	Ia.	Ia.	Ill.
	n	n	n	a	a	a	n	n	a	n	a	a	a	a
A-100	3	2.0	2	4	3	3	3.3	4	4	2	S	S	4.3	2.2
Chippewa 64	3	1.0	2	3	3	4	3.8	3	4	3	R	R	4.5	1.2
Hark	1	1.2	2	3	1	2	2.2	2	4	3	S	S	3.3	.4
A2-5405	1	1.5	3	2	4	4	4.2	4	3	2	S	S	3.9	1.3
A2-5407	1	1.0	2	2	3	4	3.8	3	3	3	S	S	4.7	1.7
A2-5440	2	1.2	2	2	3	3	2.8	2	3	2	S	S	4.2	2.7
M54-160	3	1.0	2	2	4	2	1.0	3	4	2	S	S	4.1	1.0
W1-4221	1	1.3	2	2	3	3	2.8	3	5	1	S	S	4.0	1.7
W3-1010-3	2	1.3	3	2	3	2	2.8	3	4	2	R	R	4.7	1.8
W3-4731	1	1.0	3	2	4	3	3.7	4	5	2	R	S	4.3	3.6
W4-3351	2	1.3	3	2	2	4	2.3	3	4	3	S	S	4.2	1.8

a = artificial inoculation; n = natural infection.
[1]In greenhouse soil. 1 (healthy) to 5 (not emerged).
[2]Average number of maggots per seed.

Table 33. Yield and yield rank, Uniform Test I, 1967.

Strain	Mean of 20 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.	Bluff-ton Ind.	Lafa-yette Ind.
					*	*					
A-100	36.1	53.3	31.8	22.6	7.9	21.1	43.7	44.7	29.8	29.8	46.7
Chippewa 64	34.5	55.2	28.5	21.4	7.2	14.2	40.5	38.2	26.6	29.5	39.5
Hark	36.7	61.9	28.4	18.1	4.4	15.7	42.8	44.9	30.6	29.7	43.3
A2-5405	37.6	57.5	34.2	24.1	8.1	17.1	44.2	40.4	30.9	30.8	48.2
A2-5407	34.6	48.4	30.4	19.0	6.9	11.6	44.0	34.5	26.2	26.6	42.3
A2-5440	37.6	57.9	30.4	20.4	9.2	15.4	46.3	42.0	29.8	32.2	50.2
M54-160	34.6	48.7	27.9	20.7	5.4	14.9	45.2	38.5	25.3	24.2	38.7
W1-4221	35.5	57.2	31.7	22.5	5.9	10.8	46.4	38.4	27.5	28.2	44.7
W3-1010-3	34.4	53.2	29.3	21.0	7.1	10.4	43.5	37.9	30.0	31.3	44.6
W3-4731	33.8	59.4	29.9	21.8	4.9	11.7	40.0	34.5	25.8	29.6	42.6
W4-3351	33.0	51.2	27.8	17.0	5.2	8.5	40.9	36.4	27.4	21.5	41.9
Coef. of Var. (%)		8.1	9.8	--	--	--	4.8	7.4	7.5	11.3	4.6
L.S.D. (5%)		6.4	N.S.	--	--	--	2.8	4.1	3.1	4.7	2.9
Row Spacing (In.)		24	40	32	32	28	28	28	40	38	38
						Yield Rank					
A-100	4	7	2	2	3	1	6	2	4	4	3
Chippewa 64	8	6	8	5	4	6	10	7	8	7	10
Hark	3	1	9	10	11	3	8	1	2	5	6
A2-5405	1	4	1	1	2	2	4	4	1	3	2
A2-5407	6	11	4	9	6	8	5	10	9	9	8
A2-5440	1	3	4	8	1	4	2	3	4	1	1
M54-160	6	10	10	7	8	5	3	5	11	10	11
W1-4221	5	5	3	3	7	9	1	6	6	8	4
W3-1010-3	9	8	7	6	5	10	7	8	3	2	5
W3-4731	10	2	6	4	10	7	11	10	10	6	7
W4-3351	11	9	11	11	9	11	9	9	7	11	9

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

Table 33. (Continued)

Strain	Durand Wis.	Madison Wis.	DeKalb Ill.	Pontiac Ill.	Urbana Ill.	Lamberton Minn.	Waseca Minn.	Sutherland Iowa	Kanawha Iowa	Revillo S.D.	Brookings S.D.	Concord Nebr.[1]
A-100	25.4	41.1	50.9	51.5	45.6	28.0	38.4	30.6	30.0	27.9	22.4	27.8
Chippewa 64	24.6	36.1	47.2	51.3	42.3	27.7	38.1	30.1	28.9	29.5	18.8	35.1
Hark	25.7	37.6	50.9	54.5	44.5	29.8	37.5	31.6	32.7	29.8	19.2	40.5
A2-5405	28.5	39.9	49.9	53.0	44.1	30.6	39.4	32.6	32.6	30.0	19.6	40.7
A2-5407	26.4	39.0	48.6	48.9	41.5	25.7	37.4	32.0	31.6	28.4	21.9	38.4
A2-5440	24.8	41.1	52.3	53.6	42.9	30.0	38.7	32.9	33.8	30.8	19.2	41.8
M54-160	27.5	39.4	50.7	48.0	42.1	27.3	39.6	30.4	30.5	25.9	22.4	38.1
W1-4221	22.4	42.5	49.3	50.6	43.0	27.7	38.0	31.6	30.6	27.2	20.2	30.2
W3-1010-3	26.5	35.1	49.5	48.6	39.8	27.0	33.9	27.0	28.5	25.4	19.9	36.7
W3-4731	21.5	35.8	46.9	45.8	41.6	25.6	37.2	29.3	28.5	27.2	19.8	32.2
W4-3351	25.2	41.5	49.0	44.8	42.7	26.8	30.7	31.4	27.9	24.8	21.0	30.4
C.V.(%)	8.5	10.8	3.6	4.6	4.9	10.4	8.4	7.1	5.4	13.1	7.9	9.3
L.S.D.(5%)	3.0	N.S.	3.1	3.3	N.S.	4.2	4.5	3.0	2.3	N.S.	2.3	4.8
R.Sp.(In.)	36	36	30	38	30	30	30	40	40	36	40	30
	Yield Rank											
A-100	6	3	2	4	1	4	4	7	7	6	1	11
Chippewa 64	9	9	10	5	7	5	5	9	8	4	11	7
Hark	5	8	2	1	2	3	7	4	2	3	9	3
A2-5405	1	5	5	3	3	1	2	2	3	2	8	2
A2-5407	4	7	9	7	10	10	8	3	4	5	3	4
A2-5440	8	3	1	2	5	2	3	1	1	1	9	1
M54-160	2	6	4	9	8	7	1	8	6	9	1	5
W1-4221	10	1	7	6	4	5	6	4	5	7	5	10
W3-1010-3	3	11	6	8	11	8	10	11	9	10	6	6
W3-4731	11	10	11	10	9	11	9	10	9	7	7	8
W4-3351	7	2	8	11	6	9	11	6	11	11	4	9

Table 34. Maturity, days earlier (-) or later (+) than Chippewa 64, and lodging scores, Uniform Test I, 1967.

Strain	Mean of 17 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.	Bluff-ton Ind.	Lafa-yette Ind.
A-100	+6.5	+7	+ 9	+1	+12	+4	+ 8	+11	+6	+6	+ 7
Chippewa 64	0	0	0	0	0	0	0	0	0	0	0
Hark	+3.7	+5	+ 6	-1	+ 4	+3	+ 1	+ 9	+4	+3	+ 3
A2-5405	+4.6	+5	+ 6	+1	+ 3	+2	+ 4	+ 8	+3	+5	+ 5
A2-5407	+0.5	0	+ 1	+2	+ 1	+1	0	+ 4	0	-1	+ 1
A2-5440	+3.4	+4	+ 4	0	+ 2	+2	+ 5	+ 9	+5	+3	+ 5
M54-160	+0.4	+2	0	+2	0	-3	- 1	+ 3	-2	-3	+ 1
W1-4221	-0.4	0	0	+2	0	-5	+ 1	+ 3	-2	-5	- 1
W3-1010-3	+4.8	+5	+ 6	+1	+ 4	+1	+ 2	+12	+7	+4	+ 6
W3-4731	+0.2	+1	0	+1	+ 1	-4	0	+ 4	+1	-1	0
W4-3351	-1.6	-4	- 2	+3	+ 3	-1	- 3	0	-5	-6	- 1
Traverse (0)		-6	--	--	--	-9	- 4	--	--	--	--
Harosoy 63 (II)		+9	+10	+3	+11	+3	+14	+18	+7	+5	+10
Date planted	5-25	5-19	6-1	6-15	5-20	5-20	5-23	5-26	6-8	5-31	5-25
Chippewa 64 mat.	9-19	9-18	9-10	10-10	9-4	9-13	10-5	9-18	9-30	9-14	9-10
Days to mature	117	122	101	117	107	116	135	115	114	106	108

	Mean of 15 Tests	Lodging Score									
				*	*	*		*			
A-100	1.6	3.0	1.2	1.0	1.0	1.0	2.0	1.0	1.4	1.0	2.0
Chippewa 64	1.6	4.0	1.2	1.0	1.0	1.0	1.5	1.0	1.1	1.3	2.0
Hark	1.4	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.3
A2-5405	1.8	4.0	1.2	1.0	1.0	1.0	2.0	1.0	1.4	1.0	1.5
A2-5407	1.6	4.0	1.5	1.0	1.0	1.0	2.0	1.0	1.3	1.0	1.5
A2-5440	1.8	4.0	1.2	1.0	1.0	1.0	1.5	1.0	1.4	1.0	2.0
M54-160	1.9	4.0	2.0	1.0	1.0	1.0	2.0	1.0	1.4	1.0	2.8
W1-4221	1.9	4.0	1.8	1.0	1.0	1.0	2.0	1.0	1.4	1.3	2.0
W3-1010-3	1.8	4.0	1.5	1.0	1.0	1.0	2.0	1.0	1.8	1.0	2.0
W3-4731	1.7	3.0	1.0	1.0	1.0	1.0	2.5	1.0	1.4	1.0	2.0
W4-3351	1.7	3.0	1.5	1.0	1.0	1.0	1.5	1.0	1.5	1.0	2.0

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

Table 34. (Continued)

Strain	Durand Wis.	Madison Wis.	DeKalb Ill.	Pontiac Ill.	Urbana Ill.	Lamberton Minn.	Waseca Minn.	Sutherland Iowa	Kanawha Iowa	Revillo S.D.	Concord Nebr.[1]
	*										*
A-100		+4	+12	+8	+6	+6	+4	+7	+4	+4	--
Chippewa 64		0	0	0	0	0	0	0	0	0	0
Hark		+3	+ 6	+6	+4	+4	+5	+3	-1	+3	--
A2-5405		+4	+ 6	+7	+5	+4	+4	+6	+3	+2	--
A2-5407		0	0	+2	0	0	0	+1	-1	0	+2
A2-5440		+4	+ 4	+7	+4	0	+2	+1	-1	+1	+3
M54-160		+3	+ 2	+1	+1	0	+2	-2	-3	0	+2
W1-4221		+1	+ 1	+1	-2	0	+1	-3	-3	0	-1
W3-1010-3		+4	+ 6	+6	+5	+5	+2	+4	+3	+3	--
W3-4731		+2	- 1	+1	+1	0	+1	-3	-3	0	0
W4-3351		-2	- 1	+1	-2	-1	0	-2	-3	0	-1
Traverse	-4	-4	- 1	-1	-3	-6	-2	--	--	0	--
Harosoy 63	--	+5	+12	+8	+5	+5	+7	+3	+1	--	--
Date planted	5-30	5-17	5-16	5-23	5-18	5-18	5-31	5-19	5-18	5-29	6-3
Chippewa 64 mat.	9-24	9-17	9-9	9-7	8-29	9-14	9-28	9-17	9-19	10-5	9-24
Days to mature	117	123	116	107	103	119	120	121	124	129	113

	Lodging Score										
						*					
A-100	1.8	2.3	1.4	1.5	1.2	1.0	1.8	1.0	1.2		1.0
Chippewa 64	1.5	2.1	1.4	1.5	1.2	1.0	1.8	1.0	1.2		1.2
Hark	1.0	1.9	1.3	2.1	1.0	1.0	1.5	1.0	1.1		1.0
A2-5405	1.8	2.8	1.6	1.9	1.2	1.0	2.2	1.0	1.1		1.8
A2-5407	1.8	1.8	1.4	1.9	1.1	1.0	2.0	1.0	1.1		1.2
A2-5440	1.4	3.1	1.5	1.9	1.5	1.0	2.5	1.0	1.2		1.5
M54-160	1.5	3.1	1.8	2.0	1.1	1.0	2.5	1.0	1.3		1.0
W1-4221	1.5	3.1	1.5	1.8	1.3	1.0	2.2	1.1	1.3		1.8
W3-1010-3	1.9	2.6	1.5	1.6	1.3	1.0	2.2	1.0	1.1		1.2
W3-4731	1.3	3.0	1.3	1.7	1.7	1.0	1.8	1.1	1.3		1.0
W4-3351	1.5	2.6	1.6	2.0	1.2	1.0	2.0	1.1	1.3		1.5

Table 35. Plant height and seed quality scores, Uniform Test I, 1967.

Strain	Mean of 20 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.	Bluff-ton Ind.	Lafa-yette Ind.
					*	*					
A-100	31	32	30	29	16	19	29	33	28	27	33
Chippewa 64	30	33	29	29	15	19	29	32	30	30	33
Hark	31	31	28	26	13	17	26	32	30	28	34
A2-5405	30	31	30	27	15	18	28	32	29	29	33
A2-5407	30	33	30	27	13	18	29	31	29	28	32
A2-5440	31	35	30	28	14	19	30	33	32	31	34
M54-160	27	30	28	26	12	15	29	29	28	25	28
W1-4221	29	33	29	28	13	15	30	30	28	28	32
W3-1010-3	33	34	32	32	16	18	32	34	33	34	37
W3-4731	32	37	30	31	13	18	30	32	32	33	37
W4-3351	32	37	32	31	17	17	30	34	32	32	37

	Mean of 15 Tests	Seed Quality Score									
				*	*	*					*
A-100	1.5	1.0	1.2	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.0
Chippewa 64	1.9	2.0	2.8	1.0	1.2	1.0	1.0	2.5	1.5	1.0	1.0
Hark	1.5	1.0	2.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.0
A2-5405	1.8	2.0	1.5	1.0	1.0	1.0	1.0	2.0	1.5	1.0	1.0
A2-5407	1.8	2.0	2.5	1.0	1.0	1.0	1.0	2.0	1.5	1.0	1.0
A2-5440	1.8	2.0	1.5	1.0	1.2	1.0	1.5	2.0	1.5	1.0	1.0
M54-160	1.8	3.0	2.0	1.0	1.2	1.0	1.5	1.5	1.0	1.0	1.0
W1-4221	1.7	2.0	1.5	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0
W3-1010-3	1.5	2.0	1.5	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0
W3-4731	2.0	3.0	2.2	1.0	1.0	1.0	1.5	2.5	1.0	1.0	1.0
W4-3351	1.9	1.0	2.8	1.0	1.0	1.0	1.5	2.5	1.5	1.5	1.0

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

Table 35. (Continued)

Strain	Durand Wis.	Madison Wis.	DeKalb Ill.	Pontiac Ill.	Urbana Ill.	Lamberton Minn.	Waseca Minn.	Sutherland Iowa	Kanawha Iowa	Revillo S.D.	Brookings S.D.	Concord Nebr.[1]
A-100	26	32	36	36	30	29	36	30	32	33	28	23
Chippewa 64	23	33	34	35	28	27	36	30	31	30	27	26
Hark	25	31	37	40	30	29	37	33	31	31	26	25
A2-5405	23	31	36	36	30	28	36	30	32	28	24	24
A2-5407	23	31	34	35	27	25	36	31	31	27	26	26
A2-5440	24	32	34	38	31	30	36	32	30	32	26	26
M54-160	21	29	31	31	26	25	32	25	26	29	28	23
W1-4221	23	33	33	34	25	26	34	28	29	29	25	24
W3-1010-3	27	33	39	40	29	28	39	31	32	34	30	26
W3-4731	25	30	35	36	29	28	38	28	30	33	30	28
W4-3351	25	33	36	37	30	28	36	31	31	32	29	26

	Seed Quality Score										
							*	*			
A-100	2.0	1.5	1.6	2.2	2.2	2.5	1.0	1.0	1.2	1.6	1.7
Chippewa 64	2.0	1.8	2.3	2.5	2.5	2.5	1.0	1.0	1.2	2.0	1.1
Hark	2.0	1.0	1.1	1.1	2.2	3.2	1.0	1.0	1.0	1.1	1.8
A2-5405	2.0	1.2	1.8	2.3	2.5	2.5	1.0	1.0	1.9	2.4	1.4
A2-5407	2.0	1.5	2.0	2.0	2.8	2.2	1.0	1.0	1.2	1.6	1.0
A2-5440	3.0	1.7	2.3	2.0	2.5	2.8	1.0	1.0	1.1	1.3	1.3
M54-160	2.0	2.0	2.4	2.0	2.2	2.5	1.0	1.0	1.1	1.1	1.0
W1-4221	2.0	1.5	2.5	2.2	2.5	2.5	1.0	1.0	1.0	1.1	1.2
W3-1010-3	2.0	1.0	1.3	1.7	2.8	2.2	1.0	1.0	1.0	1.1	1.6
W3-4731	2.0	2.2	2.5	2.2	2.8	2.5	1.0	1.0	1.1	1.0	1.9
W4-3351	2.0	2.2	2.6	2.8	2.8	2.5	1.0	1.0	1.0	1.1	1.1

Table 36. Percentages of protein and oil, Uniform Test I, 1967.

Strain	Mean of 9 Tests	Ridge-town Ont.	Colum-bus Ohio *	East Lan-sing Mich.	Knox Ind.	Madi-son Wis.	DeKalb Ill.	Urbana Ill.	Wa-seca Minn.	Kana-wha Iowa	Brook-ings S.D.
A-100	40.0	39.4	39.7	38.5	39.1	40.9	40.6	41.0	40.0	38.9	41.9
Chippewa 64	41.2	41.6	40.6	40.0	40.3	43.5	40.3	40.5	42.0	39.5	43.1
Hark	42.5	41.5	41.5	41.8	42.0	44.3	42.1	40.5	44.1	41.5	44.3
A2-5405	41.0	41.4	40.1	40.8	39.2	43.2	40.5	41.0	40.9	39.5	42.8
A2-5407	41.5	41.0	41.1	40.5	39.9	42.6	41.2	41.8	42.3	41.2	43.3
A2-5440	41.2	40.5	40.7	40.4	40.3	43.1	41.1	39.6	42.5	40.6	43.1
M54-160	40.4	40.6	40.2	39.7	39.0	42.1	39.7	39.9	41.5	38.7	42.1
W1-4221	41.6	41.3	39.4	41.2	41.2	42.9	41.0	40.5	42.7	40.8	42.7
W3-1010-3	40.5	39.9	40.2	39.5	40.1	42.0	39.9	40.4	40.5	39.6	42.4
W3-4731	41.0	40.5	40.3	39.8	41.3	42.0	40.4	40.2	41.5	40.3	42.9
W4-3351	40.1	39.4	39.9	38.5	39.4	41.4	39.4	39.8	41.3	38.9	42.8

	Mean of 9 Tests	Percentage of Oil									
			*								
A-100	20.8	21.3	22.3	20.7	20.7	20.3	20.1	22.9	19.4	22.0	20.1
Chippewa 64	19.9	20.5	21.7	20.1	19.7	18.7	19.4	22.3	18.8	21.0	18.7
Hark	20.1	20.5	22.0	20.0	20.6	19.5	19.3	22.5	18.2	21.4	19.0
A2-5405	20.4	20.7	22.3	20.3	20.8	19.4	19.8	22.4	19.0	21.7	19.3
A2-5407	20.2	20.2	21.2	19.8	21.0	19.8	19.9	21.4	18.8	21.4	19.3
A2-5440	20.2	20.5	22.3	19.3	20.4	19.0	19.7	23.0	18.6	22.0	19.3
M54-160	21.6	21.8	23.9	21.5	23.0	21.0	19.1	23.4	20.6	23.3	20.7
W1-4221	20.0	21.2	22.0	20.0	20.0	18.9	19.2	22.3	18.6	20.7	19.3
W3-1010-3	20.2	20.3	22.1	19.6	20.2	19.8	19.8	22.0	19.0	21.7	19.6
W3-4731	19.3	19.5	21.1	19.3	19.4	18.9	18.9	21.3	18.3	20.5	17.7
W4-3351	20.6	21.2	22.6	21.0	21.1	19.8	20.2	22.5	18.9	21.6	19.4

*Not included in the mean.

Table 37. Three-year summary of data, Uniform Test I, 1965-1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	61	61	52	43	60	49	45	27	27
A-100	35.8	2	+6.1	1.7	32	1.7	19.1	40.2	20.9
Chippewa 64	34.1	6	0	1.7	32	1.8	16.3	41.1	20.1
Hark	35.6	3	+4.5	1.5	33	1.6	17.0	42.1	20.1
A2-5405	37.8	1	+5.0	1.8	32	1.8	17.7	40.8	20.6
A2-5407	35.1	5	+0.6	1.7	32	1.8	16.7	41.5	20.3
W1-4221	35.2	4	-0.7	2.0	30	1.7	17.4	41.4	20.0

[1]Days earlier (-) or later (+) than Chippewa 64 which matured September 19, 119 days after planting.

Table 38. Three-year summary of yield and yield rank, Uniform Test I, 1965-1967.

Strain	Mean of 61 Tests	Ridgetown Ont.	Harrow Ont.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Dundee Mich.	Knox Ind.	Lafayette Ind.
Years Tested		1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965, 1967	1965-1967
A-100	35.8	48.9	38.9	38.0	17.6	26.7	44.0	43.8	30.4	45.1
Chippewa 64	34.1	48.4	34.6	36.1	18.4	20.4	40.4	39.4	27.4	41.1
Hark	35.6	52.6	34.9	34.7	15.2	17.9	42.1	44.9	31.5	44.8
A2-5405	37.8	53.3	39.9	42.0	20.5	24.6	45.7	43.5	31.1	47.3
A2-5407	35.1	47.2	36.3	35.3	18.5	21.1	43.7	39.5	28.4	42.3
W1-4221	35.2	51.8	36.5	34.1	17.4	16.7	45.1	41.0	28.2	42.4
		Yield Rank								
A-100		2	4	2	2	4	1	3	2	3	2
Chippewa 64		6	5	6	3	3	4	6	6	6	6
Hark		3	2	5	5	6	5	5	1	1	3
A2-5405		1	1	1	1	1	2	1	3	2	1
A2-5407		5	6	4	4	2	3	4	5	4	5
W1-4221		4	3	3	6	5	6	2	4	5	4

Table 38. (Continued)

Strain	Durand Wis.	Madison Wis.	DeKalb Ill.	Pontiac Ill.	Urbana Ill.	St. Paul Minn.	Lamberton Minn.	Waseca Minn.	Kanawha Iowa	Brookings S.D.	Concord Nebr.
Years Tested	1965-1967	1965-1967	1965-1967	1965-1967	1966-1967	1965-1966	1965-1967	1965-1967	1965-1967	1965-1967	1966-1967
A-100	24.0	38.0	48.9	45.1	39.4	37.9	29.8	34.4	35.7	25.0	33.9
Chippewa 64	23.1	35.0	45.3	43.0	35.7	37.4	28.9	35.0	34.8	23.9	36.8
Hark	24.7	36.5	47.0	44.7	38.4	33.0	31.7	36.8	38.6	26.2	39.8
A2-5405	26.2	39.5	49.4	48.1	39.5	38.5	33.1	37.6	38.3	25.3	41.3
A2-5407	23.8	37.0	45.5	43.5	36.8	40.9	29.1	37.1	37.4	25.1	36.2
W1-4221	22.3	38.3	45.8	43.7	36.1	40.8	29.7	37.1	36.6	26.0	35.0
	Yield Rank										
A-100	3	3	2	2	2	4	3	6	5	5	6
Chippewa 64	5	6	6	6	6	5	6	5	6	6	3
Hark	2	5	3	3	3	6	2	4	1	1	2
A2-5405	1	1	1	1	1	3	1	1	2	3	1
A2-5407	4	4	5	5	4	1	5	2	3	4	4
W1-4221	6	2	4	4	5	2	4	2	4	2	5

PRELIMINARY TEST I, 1967

Strain	Parentage	Generation Composited
1. Chippewa 64		
2. Hark		
3. A63-2204	C1105 x A54-3159	F_6
4. AX144-69-1	Lindarin x A54-3202	F_6
5. L16	$L10^6$ x L11	20 F_4 lines
6. L64-4149	$Harosoy^6$ x T175	F_3
7. M54-254	Grant x Harosoy?	F_9
8. M57-69	5-1 x M10	F_5
9. M59-85	II-54-139 x II-54-232	F_5
10. M59-120	II-54-240 x II-54-139	F_5
11. M59-213	Blackhawk x Harosoy	F_5
12. W3-4445	Chippewa x Seneca	F_5
13. W3-4997	Hardome x Chippewa	F_5
14. W4-3518	C1128 x Hardome	F_5
15. W4-3561	C1128 x Hardome	F_5
16. W4-3656	C1128 x Hardome	F_5

The outstanding strain in this test was M59-120, which averaged over 10% higher in yield than the checks. It was between Hark and Chippewa 64 in maturity and somewhat higher in oil and lower in protein. M57-69, W3-4445, and W4-3656 also showed promising performance. M59-213 is an early Group I selection that performed well and in addition is phytophthora resistant.

L16 is a combination of Chippewa backcrosses that combines phytophthora and pustule resistance with yellow hilum (genes I and r). Its yield performance did not come up to that of Chippewa 64 and at some locations the seeds were considerably more mottled than those of Chippewa 64. This may be an effect of the I gene for light hilum since heavy mottling associated with yellow or gray hilum occurs in other populations.

L64-4149 is an early version of Harosoy, differing from it mainly in perhaps one maturity gene. It is interesting that it performed similarly to Hark, averaging only one-half bushel below Hark's yield.

Table 39. Descriptive data and shattering scores, Preliminary Test I, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering Urbana Illinois[1]
Chippewa 64	P	T	Br	S	Y	Bl	1.0
Hark	P	G	Br	D	Y	Y	2.5
A63-2204	P	G	Br	D	Y	Y	1.5
AX144-69-1	P	G	Br	D	Y	Ib	1.0
L16	P	T	Br	S	Y	Y	1.0
L64-4149	P	G	Br	D	Y	Y	3.5
M54-254	W	T	Br	D	Y	Y	1.5
M57-69	P	G	Br	D	Y	Ib	1.0
M59-85	W	G	Br	S	Y	Y	1.0
M59-120	W	T	Br	D	Y	Br	2.0
M59-213	P	G	Br	D	Y	Y	3.0
W3-4445	P	G	Br	D	Y	Y	1.0
W3-4997	P	Lt	Br	S	Y	Ib	1.0
W4-3518	P	G	Br	S	Y	G	1.5
W4-3561	P	G	Tan	S	Y	Ib	3.0
W4-3656	P	G	Tan	S	Y	G	1.0

[1]Mean of two replications. Scored one month after maturity.

Table 40. Summary of data, Preliminary Test I, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	10	10	9	8	10	8	8	7	7
Chippewa 64	35.9	8	0	1.9	31	2.0	16.1	41.1	19.8
Hark	35.9	8	+3.4	1.4	31	1.9	17.1	42.7	19.4
A64-2204	35.0	14	+4.7	1.6	30	1.6	19.4	42.8	18.6
AX144-69-1	35.5	12	+1.3	1.7	28	1.8	14.4	41.5	20.1
L16	34.5	15	+2.0	1.8	32	2.9	16.0	41.5	19.4
L64-4149	35.4	13	+3.6	2.0	33	1.8	18.5	42.1	19.7
M54-254	36.6	6	+5.6	1.6	30	1.7	16.7	40.5	20.7
M57-69	37.7	2	+1.9	1.5	29	2.1	16.5	40.6	20.9
M59-85	36.1	7	+4.4	2.0	32	1.7	14.8	39.7	21.2
M59-120	40.4	1	+2.7	2.1	31	2.2	18.7	40.2	20.9
M59-213	36.9	5	-1.3	1.4	31	1.8	17.2	40.3	20.5
W3-4445	37.7	2	+0.4	2.2	32	1.7	16.1	40.9	19.7
W3-4997	34.1	16	+0.2	1.9	32	2.1	16.6	41.4	19.7
W4-3518	35.8	10	+4.6	2.2	36	1.8	16.9	41.0	19.6
W4-3561	35.6	11	+0.1	1.9	32	1.9	17.3	40.5	19.9
W4-3656	37.7	2	+1.9	1.8	34	2.5	17.6	40.0	20.4

[1]Days earlier (-) or later (+) than Chippewa 64 which matured September 21, 121 days after planting.

Table 41. Disease data, Preliminary Test I, 1967.

Strain	BB	BP	DM		FE2	BSR	PR
			DeKalb				
	Ill.	Ill.	Ill.	Ind.	Ind.	Ill.	Ind.
	n	a	n	n	a	n	a
Chippewa 64	2	3	3.5	3	4	3	R
Hark	1	1	2.5	2	4	3	S
A63-2204	1	3	2.5	2	4	3	S
AX144-69-1	2	1	2.0	1	4	2	S
L16	2	1	4.0	4	3	3	R?
L64-4149	1	3	1.0	2	5	2	S
M54-254	3	4	3.3	3	5	3	S
M57-69	3	2	1.0	3	3	3	S
M59-85	2	3	2.3	3	2	2	S
M59-120	1	3	3.8	2	4	2	S
M59-213	1	3	1.5	3	4	2	R
W3-4445	1	3	1.8	2	4	2	S
W3-4997	3	3	1.1	2	5	2	S
W4-3518	1	3	1.8	3	3	2	S
W4-3561	1	2	1.3	2	5	2	S
W4-3656	1	3	1.8	2	4	3	S

a = artificial inoculation; n = natural infection.

Table 42. Yield and yield rank, Preliminary Test I, 1967.

Strain	Mean of 10 Tests	Ridge-town Ont.	Harrow Ont.	Hoyt-ville Ohio *	Woos-ter Ohio *	Colum-bus Ohio *	East Lansing Mich.
Chippewa 64	35.9	55.0	32.5	19.2	9.2	14.8	44.0
Hark	35.9	54.3	27.2	20.0	6.4	18.1	42.1
A63-2204	35.0	50.7	35.4	15.1	7.0	14.3	45.6
AX144-69-1	35.5	53.3	25.6	16.8	5.1	14.6	45.4
L16	34.5	50.4	31.2	19.7	7.5	5.7	41.1
L64-4149	35.4	59.8	37.8	15.5	10.3	15.8	46.3
M54-254	36.6	55.7	25.8	14.2	10.7	18.0	48.1
M57-69	37.7	58.4	32.4	13.0	9.2	14.3	46.8
M59-85	36.1	63.4	29.1	17.3	12.4	12.6	44.5
M59-120	40.4	65.6	35.7	20.7	7.3	10.2	46.5
M59-213	36.9	58.3	37.6	14.3	5.0	7.4	41.3
W3-4445	37.7	53.2	31.4	17.6	10.7	23.0	44.7
W3-4997	34.1	48.0	30.6	19.1	7.1	16.7	42.4
W4-3518	35.8	56.3	31.0	20.5	9.9	8.8	44.3
W4-3561	35.6	56.4	34.3	19.3	8.7	6.8	42.6
W4-3656	37.7	60.5	31.9	24.0	8.8	12.6	47.2
Coef. of Var. (%)		7.6	17.5	--	--	--	7.0
L.S.D. (5%)		9.1	N.S.	--	--	--	4.4
Row Spacing (In.)		24	40	32	32	28	28

	Yield Rank						
Chippewa 64	8	10	6	7	6	6	11
Hark	8	11	14	4	14	2	14
A63-2204	14	14	4	13	13	8	6
AX144-69-1	12	12	16	11	15	7	7
L16	15	15	10	5	10	16	16
L64-4149	13	4	1	12	4	5	5
M54-254	6	9	15	15	2	3	1
M57-69	2	5	7	16	6	8	3
M59-85	7	2	13	10	1	10	9
M59-120	1	1	3	2	11	12	4
M59-213	5	6	2	14	16	14	15
W3-4445	2	13	9	9	2	1	8
W3-4997	16	16	12	8	12	4	13
W4-3518	10	8	11	3	5	13	10
W4-3561	11	7	5	6	9	15	12
W4-3656	2	3	8	1	8	10	2

*Not included in the mean.

Table 42. (Continued)

Strain	Madison Wis.	DeKalb Ill.	Waseca Minn.	Sutherland Iowa	Kanawha Iowa	Revillo S.D.	Brookings S.D.
Chippewa 64	40.3	45.8	35.7	27.2	30.9	26.6	21.0
Hark	36.5	50.9	39.4	27.8	32.4	28.5	20.0
A63-2204	35.2	44.1	40.2	25.7	30.5	22.9	19.4
AX144-69-1	39.5	50.3	37.6	26.3	29.7	24.8	22.3
L16	35.0	46.5	37.4	28.7	29.6	25.7	19.4
L64-4149	36.9	50.4	30.5	26.3	30.7	18.6	16.8
M54-254	38.0	51.7	39.1	30.7	31.8	26.3	18.6
M57-69	36.2	49.6	43.4	27.3	30.6	33.5	18.9
M59-85	37.0	49.6	31.7	28.1	29.2	25.6	22.6
M59-120	39.5	54.8	43.5	30.1	32.7	33.5	22.4
M59-213	37.2	52.5	39.8	26.5	28.2	25.7	21.9
W3-4445	41.1	50.7	45.3	28.1	30.8	30.5	20.7
W3-4997	35.1	46.2	39.0	27.7	29.8	22.5	19.8
W4-3518	38.6	48.6	35.9	28.6	33.7	24.0	17.3
W4-3561	37.0	47.9	34.0	25.7	29.8	28.2	19.7
W4-3656	38.7	49.9	34.4	31.8	33.1	27.3	21.9
Coef. of Var. (%)	4.7	5.1	10.0	8.0	5.8	10.7	11.0
L.S.D. (5%)	3.4	N.S.	8.1	4.7	3.8	8.5	N.S.
Row Spacing (In.)	36	30	30	40	40	36	40
				Yield Rank			
Chippewa 64	2	15	12	11	6	7	6
Hark	12	4	6	8	4	4	8
A63-2204	14	16	4	15	10	14	11
AX144-69-1	3	7	9	13	13	12	3
L16	16	13	10	4	14	9	11
L64-4149	11	6	16	13	8	16	16
M54-254	7	3	7	2	5	8	14
M57-69	13	9	3	10	9	1	13
M59-85	9	9	15	6	15	11	1
M59-120	3	1	2	3	3	1	2
M59-213	8	2	5	12	16	9	4
W3-4445	1	5	1	6	7	3	7
W3-4997	15	14	8	9	11	15	9
W4-3518	6	11	11	5	1	13	15
W4-3561	9	12	14	15	11	5	10
W4-3656	5	8	3	1	2	6	4

Table 43. Maturity, days earlier (-) or later (+) than Chippewa 64, Preliminary Test I, 1967.

Strain	Mean of 9 Tests	Ridge-town Ont.	Harrow Ont.	Hoyt-ville Ohio *	Woos-ter Ohio *	Colum-bus Ohio *	East Lansing Mich.
Chippewa 64	0	0	0	0	0	0	0
Hark	+3.4	+7	+ 6	+2	+ 5	+ 1	0
A63-2204	+4.7	+8	+ 8	+4	+ 6	0	+ 3
AX144-69-1	+1.3	+5	+ 4	+4	+ 3	- 1	- 2
L16	+2.0	+5	+ 4	+2	+ 3	0	+ 1
L64-4149	+3.6	+7	+ 6	+2	+ 7	0	0
M54-254	+5.6	+8	+ 8	+2	+13	+ 1	+ 4
M57-69	+1.9	+6	+ 6	+3	+ 6	- 5	- 1
M59-85	+4.4	+7	+ 6	+5	+ 8	+ 2	- 1
M59-120	+2.7	+8	+ 8	+2	+ 3	+ 1	0
M59-213	-1.3	+3	+ 3	+4	+ 5	- 3	- 4
W3-4445	+0.4	+4	+ 3	+2	+ 7	- 1	0
W3-4997	+0.2	-1	+ 2	+2	+ 4	- 3	0
W4-3518	+4.6	+5	+ 8	+4	+ 8	- 3	+ 7
W4-3561	+0.1	-2	+ 4	+4	+ 6	- 5	- 1
W4-3656	+1.9	+5	+ 3	+5	+ 7	- 7	0
Traverse (0)		-5	--	--	--	-12	- 5
Harosoy 63 (II)		+9	+10	+4	+ 8	+ 1	+13
Date planted	5-23	5-19	6-1	6-15	5-20	5-20	5-23
Chippewa 64 matured	9-21	9-17	9-10	10-8	9-3	9-16	10-6
Days to mature	121	121	101	115	106	119	136

*Not included in the mean.

Table 43. (Continued)

Strain	Madi-son Wis.	DeKalb Ill.	Waseca Minn.	Suther-land Iowa	Kana-wha Iowa	Revillo S.D.
Chippewa 64	0	0	0	0	0	0
Hark	+3	+ 5	+4	+1	+1	+4
A63-2204	+4	+10	+3	0	+2	+4
AX144-69-1	+2	+ 3	+2	-2	-1	+1
L16	+2	+ 1	+2	0	0	+3
L64-4149	+4	+ 6	+4	0	0	+5
M54-254	+5	+ 9	+3	+3	+4	+6
M57-69	-2	+ 4	+2	-1	+2	+1
M59-85	+3	+12	+6	+2	0	+5
M59-120	+1	+ 2	+2	0	0	+3
M59-213	-4	- 1	0	-6	-4	+1
W3-4445	-1	+ 2	+2	-4	-4	+2
W3-4997	+1	0	+2	-2	-1	+1
W4-3518	+3	+ 6	+4	+1	+4	+3
W4-3561	0	0	+2	-2	-2	+2
W4-3656	+1	+ 1	+3	0	+2	+2
Traverse	-2	- 1	-2	--	--	+1
Harosoy 63	+7	+12	+7	+2	+2	--
Date planted	5-17	5-16	5-31	5-19	5-18	5-29
Chippewa 64 matured	9-15	9-9	9-28	9-18	9-18	10-4
Days to mature	121	116	120	122	123	128

UNIFORM TEST II, 1967

Strain	Parentage	Generation Composited	Previous Testing (years)
1. Amsoy	Adams x Harosoy	F_8	4
2. Corsoy	Harosoy x Capital	F_9	3
3. Harosoy	Mandarin (Ottawa)^2 x A.K. (Harrow)	F_5	16
4. Harosoy 63	Harosoy^8 x Blackhawk	3 F_3 lines	6
5. Lindarin 63	Lindarin^8 x Mukden	53 F_3 lines	4
6. A1-1051	Harosoy x Clark	F_8	3
7. C1376	CX291-42-1 x CX258-2-3-2	F_6	1
8. C1424	C1253 x Kent	F_7	P.T. II
9. C1426	C1253 x Kent	F_7	P.T. II
10. C1429	C1253 x Kent	F_7	P.T. II
11. C1430	C1253 x Kent	F_7	P.T. II
12. C1431	C1253 x Kent	F_7	P.T. II

Regional mean yields were down one to two bushels from last year. Ridgetown, Ontario, with 64 bushels for Corsoy (57 for the four-year mean), had the most outstanding yield for this group.

One experimental strain, A1-1051, has been in the test four years, and the four-year means are presented in Tables 51 and 52. It has not yielded quite as well as Amsoy and Corsoy but has generally outyielded the older varieties. It appeared to be highly susceptible to phytophthora rot at Edgewood, Illinois, more so than Harosoy or Amsoy. It is being considered for release because of its high protein content. Among the named varieties, Corsoy led in yield, and it had a very favorable year in 1967, averaging 2.5 bushels above Amsoy. Harosoy 63 outyielded Harosoy in 1967, largely because of two or three locations where phytophthora affected yields.

C1376 has been in the test two years. It has a protein content almost as high as A1-1051 and it is phytophthora resistant. A1-1051 has a higher regional mean yield, but in the eastern part of the Midwest, C1376 has usually yielded more.

The remaining five C strains are all new entries, and all are phytophthora-resistant selections from C1253 x Kent. C1426 was the best in over-all performance, averaging a bushel above Corsoy (but six days later in maturity). It had excellent lodging resistance and seed composition. C1431 performed similarly. C1429 averaged two bushels below C1426 but was still above Amsoy. C1424 had good yield and was high in protein but not so high as C1376 or A1-1051. C1430 was too late for II maturity and was low in yield at almost all locations.

CORSOY

Corsoy is an F_8 plant progeny selected by C. R. Weber in Iowa. A detailed outline of its origin and development is given below:

1952 - Cross, AX53, Harosoy x Capital, made at Ames by C. R. Weber.

1953 - F_1 Hybrid grown in field at Ames.

1954-56 - F_2 to F_4 Grown as bulk hybrid population at Ames.

1957 - F_5 Bulk hybrid grown, and early, mid, and late plant selections made at Ames.

1958 - F_6 Early plants grown in 5-foot rows at Kanawha and bulked on row basis. A8-932 was row that later gave rise to A1-439.

1959 - F_7 Preliminary replicated test at Kanawha. A8-932 was top yield.

1960 - F_8 Preliminary replicated tests at Kanawha and Sutherland. Selected five single plants from A8-932 at Ames.

1961 - F_9 A8-932 in Uniform Preliminary Test I. Plant rows grown at Ames, selected two, and bulked them separately as A1-438 and A1-439.

1962 - F_{10} A8-932 in Uniform Test I. A8-932, A1-438, and A1-439 in two replicated tests in Iowa.

1963 - F_{11} A8-932 in Uniform Test II. A8-932, A1-438, and A1-439 in Uniform Preliminary Test II. A1-439 superior in regional tests. Increased remnant seed (1961) of A1-438 and A1-439 to 20 pounds at Ames.

1964 - F_{12} A1-439 in Uniform Test II. Placed seed of A1-439 into coldroom at Ames.

1965 - A1-439 in Uniform Test II. Increased A1-439 to 40 bushels at Ames, and this seed had 0.2% self buff seed.

1966 - A1-439 in Uniform Test II. Iowa distributed 40 bushels to the participating states for multiplication in 1966 on basis of 1965 state acreage in soybeans and the 1963 percentage of Chippewa, Blackhawk, Harosoy, and Lindarin.

	1965 Seed Distribution	1966 Production
Illinois	10 bu	442 bu
Iowa	10	695[2]
Minnesota	11	744
Nebraska	1	40 est
Ohio	6	350 est
South Dakota	1	40 est
Wisconsin	1[1]	--
Total	40 bu	2,311 bu

[1]Increased in Iowa.
[2]63 bu. of Iowa's 695 sent to Wisconsin.

1967 - A1-439 in Uniform Test II. Increased, named, and publicity released July 20, 1967.

Table 44. Descriptive data and shattering scores, Uniform Test II, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering Urbana Illinois[1]
Amsoy	P	G	Tan	S	Y	Y	3.0
Corsoy	P	G	Br	D	Y	Y	1.5
Harosoy	P	G	Br	D	Y	Y	4.0
Harosoy 63	P	G	Br	D	Y	Y	4.0
Lindarin 63	P	G	Br	D	Y	Bf	2.0
Al-1051	P	T	Br	D	Y	Br	1.0
C1376	P	G	Br	S	Y	Ib	1.0
C1424	P	T	Br	I	Y	Bl	3.0
C1426	P	G	Br	S	Y	Ib	2.5
C1429	P	G	Br	S	Y	Ib	2.5
C1430	P	T	Br	I	Y	Bl	3.0
C1431	P	G	Br	D	Y	Ib	3.0

[1]Mean of two replications. Scored 40 days after maturity.

Table 45. Summary of data, Uniform Test II, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	29	29	24	25	28	21	20	14	14
Amsoy	38.9	6	+3.3	1.7	37	2.1	17.6	38.7	21.6
Corsoy	41.4	3	-0.4	1.8	35	1.8	16.5	39.9	21.1
Harosoy	37.6	8	+0.4	2.0	37	2.1	18.1	40.8	20.5
Harosoy 63	38.4	7	0	2.1	37	2.0	18.4	40.9	20.7
Lindarin 63	36.8	10	+0.3	1.6	34	1.7	16.6	40.6	20.7
Al-1051	37.2	9	+1.0	1.9	33	1.8	20.7	42.8	20.2
C1376	35.8	11	+6.2	2.0	35	2.0	17.6	42.4	20.3
C1424	39.3	5	+3.7	1.6	37	1.9	17.1	42.0	20.4
C1426	42.4	1	+5.9	1.7	38	1.9	19.6	40.4	21.2
C1429	40.3	4	+6.1	1.6	36	1.9	19.4	40.1	21.1
C1430	35.4	12	+8.5	1.9	41	2.3	19.6	42.8	20.6
C1431	42.0	2	+4.9	1.5	35	2.1	18.0	40.2	21.2

[1]Days earlier (-) or later (+) than Harosoy 63 which matured September 20, 119 days after planting.

Table 46. Disease and insect data, Uniform Test II, 1967.

Strain	BB				BP	BS	DM			FE2	BSR	PR		Py[1]	PSB	PS	SCM[2]
	DeKalb						DeKalb	Edgewood									
	Ill.	Ill.	Ia.	Ia.	Ill.	Ia.	Ill.	Ill.	Ind.	Ind.	Ill.	Ind.	Ia.	Ia.	Del.	Del.	Ill.
	n	n	n	a	a	a	n	n	n	a	n	a	a	a	n	n	a
Amsoy	2	2.0	4	2	3	2	1.5	2.3	2.0	4	3	S	S	4.8	3.3	2.5	.9
Corsoy	2	1.0	2	2	2	3	1.5	2.3	1.5	4	3	S	S	3.8	1.5	1.0	1.3
Harosoy	2	3.2	3	2	3	3	1.2	2.8	1.8	5	3	S	S	3.8	3.0	2.0	1.4
Harosoy 63	1	3.3	3	3	2	4	1.0	2.4	1.8	5	3	R	R	4.4	2.5	1.5	1.0
Lindarin 63	1	2.7	3	3	4	4	1.5	2.5	1.5	4	3	R	R	3.3	2.5	1.5	1.8
A1-1051	1	1.5	2	3	3	4	2.3	3.2	4.5	5	3	S	S	4.1	3.0	1.5	1.0
C1376	1	1.7	3	2	3	3	1.7	3.3	2.0	3	4	R	R	4.9	1.5	1.5	1.2
C1424	1	1.3	3	1	1	1	2.7	2.5	2.8	4	3	R	R	4.3	1.7	1.0	1.1
C1426	1	2.0	3	4	1	3	3.8	4.8	4.0	4	3	R	R	4.4	2.0	1.5	1.6
C1429	2	1.2	3	1	1	4	3.0	3.2	3.5	2	3	R	R	4.7	2.0	1.3	1.3
C1430	1	1.3	3	2	3	5	2.0	2.6	3.8	1	3	R	R	4.7	2.7	2.0	1.8
C1431	2	2.3	3	2	2	2	3.2	3.5	4.0	3	3	R	R	4.4	2.7	1.7	.8

a = artificial inoculation; n = natural infection.
[1]In greenhouse soil. 1 (healthy) to 5 (not emerged).
[2]Average number of maggots per seed.

Table 47. Yield and yield rank, Uniform Test II, 1967.

Strain	Mean of 29 Tests	Ridge-town Ont.	Har-row Ont.	Adel-phia N.J.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	East Lan-sing Mich.	Dun-dee Mich.	Knox Ind.	Bluff-ton Ind.	Lafa-yette Ind.	Green-field Ind.	Wor-thing-ton Ind.	Madi-son Wis.	DeKalb Ill.
						*	*									
Amsoy	38.9	58.1	27.1	33.4	24.7	6.9	12.7	41.3	39.1	33.2	29.8	55.1	25.9	53.4	34.2	53.9
Corsoy	41.4	64.6	30.1	40.0	20.6	6.9	13.9	49.1	38.3	31.4	32.6	50.3	25.5	42.8	44.4	57.7
Harosoy	37.6	58.2	27.6	37.7	25.2	10.5	16.5	44.9	38.1	28.9	26.9	50.4	18.8	52.9	38.3	48.9
Harosoy 63	38.4	60.3	26.6	38.2	23.5	10.1	17.2	42.8	41.9	32.3	33.7	48.4	31.2	50.8	37.5	49.7
Lindarin 63	36.8	50.7	24.5	38.8	20.9	9.1	17.6	39.8	38.6	27.3	34.2	46.7	28.8	48.9	35.5	48.3
A1-1051	37.2	51.7	27.2	39.3	23.5	10.9	13.5	47.1	37.4	24.9	27.5	46.7	20.4	45.0	39.0	50.1
C1376	35.8	46.0	27.3	33.6	27.3	11.8	21.4	41.4	39.5	31.0	35.7	51.7	31.5	47.2	34.9	44.1
C1424	39.3	57.3	28.0	45.0	21.0	8.4	14.7	46.6	41.8	31.8	37.0	50.6	30.0	48.1	32.5	50.1
C1426	42.4	66.0	32.4	40.9	24.1	11.5	11.4	48.7	44.3	32.7	36.2	55.6	32.8	51.1	40.4	51.7
C1429	40.3	59.3	31.3	39.5	25.2	9.6	21.0	44.6	42.8	34.1	37.3	54.9	36.8	52.2	38.1	50.4
C1430	35.4	51.5	26.6	39.8	26.3	9.8	16.2	37.9	37.6	28.7	33.1	45.9	29.2	46.1	30.3	42.6
C1431	42.0	58.6	29.5	42.2	27.2	9.1	17.4	48.3	46.0	30.7	36.5	53.0	32.3	47.4	39.5	54.8
C.V. (%)		7.3	15.1	12.1	--	--	--	6.2	9.5	6.7	10.0	5.5	14.3	6.9	8.8	3.6
L.S.D. (5%)		6.0	N.S.	6.9	--	--	--	3.9	5.5	3.0	4.8	4.1	5.8	4.9	4.6	3.1
Row Sp. (In.)		24	40	25	32	32	28	28	28	40	38	38	38	38	36	30
								Yield Rank								
Amsoy	6	7	9	12	6	11	11	10	7	2	10	2	9	1	10	3
Corsoy	3	2	3	4	12	11	9	1	9	6	9	8	10	12	1	1
Harosoy	8	6	6	10	4	4	6	6	10	9	12	7	12	2	5	9
Harosoy 63	7	3	10	9	8	5	5	8	4	4	7	9	5	5	7	8
Lindarin 63	10	11	12	8	11	8	3	11	8	11	6	10	8	6	8	10
A1-1051	9	9	8	7	8	3	10	4	12	12	11	10	11	11	4	6
C1376	11	12	7	11	1	1	1	9	6	7	5	5	4	9	9	11
C1424	5	8	5	1	10	10	8	5	5	5	2	6	6	7	11	6
C1426	1	1	1	3	7	2	12	2	2	3	4	1	2	4	2	4
C1429	4	4	2	6	4	7	2	7	3	1	1	3	1	3	6	5
C1430	12	10	10	5	3	6	7	12	11	10	8	12	7	10	12	12
C1431	2	5	4	2	2	8	4	3	1	8	3	4	3	8	3	2

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

Table 47. (Continued)

Strain	Pontiac Ill.	Urbana Ill.	Girard Ill.	Edgewood Ill.	Trenton Ill.	Lamberton Minn.	Waseca Minn.	Sutherland Iowa	Kanawha Iowa	Independence Iowa	Ames Iowa	Columbia Mo.	Brookings S.D.	Centerville S.D.	Concord Nebr.[1]	Lincoln Nebr.[1]	Corcoran Cal.[1] *
Amsoy	50.5	46.8	52.6	43.8	52.5	34.1	31.2	31.2	32.9	39.3	41.5	26.3	18.9	38.4	33.7	45.8	33.2
Corsoy	54.8	50.5	49.4	48.1	52.9	38.0	47.8	30.3	35.3	41.6	40.5	30.9	22.1	43.9	39.3	47.8	31.4
Harosoy	48.7	44.6	50.0	40.6	50.0	30.1	33.8	25.7	31.4	37.5	38.2	30.0	17.9	39.4	34.5	42.1	30.4
Har. 63	51.2	44.6	49.7	45.2	49.7	32.6	34.2	26.8	28.8	37.8	37.4	28.7	17.8	39.8	32.7	40.1	26.6
Lind. 63	47.9	40.6	48.5	52.5	48.5	31.1	35.1	24.2	28.4	36.2	36.6	30.7	17.5	34.7	28.7	43.0	26.6
A1-1051	49.2	44.5	44.6	25.2	42.5	36.2	35.2	33.1	31.5	39.3	40.9	33.0	18.9	37.7	40.9	46.6	30.5
C1376	46.7	44.6	44.7	43.9	44.9	27.5	19.6	28.7	31.3	31.8	36.1	23.5	10.1	36.4	31.4	45.2	25.7
C1424	47.8	44.5	45.9	47.8	48.1	34.8	29.4	31.8	31.1	38.2	41.7	29.6	17.9	37.7	42.7	51.9	20.7
C1426	55.5	47.9	53.8	50.8	53.2	38.1	40.0	32.2	35.2	41.4	46.9	30.3	17.0	41.4	35.3	52.3	19.7
C1429	51.8	47.8	50.1	46.3	54.2	33.8	31.0	31.7	33.7	37.4	39.5	26.3	16.5	41.3	36.8	44.8	23.1
C1430	43.7	39.7	45.0	46.2	45.1	28.7	22.0	28.5	30.1	36.7	40.5	27.1	10.8	33.9	26.6	47.1	12.8
C1431	53.6	51.3	52.5	54.5	51.5	38.0	36.9	36.2	34.0	41.9	42.2	32.0	18.4	42.0	36.8	51.5	28.4
CV(%)	6.5	4.7	3.6	13.2	6.3	9.4	13.6	7.7	6.0	5.6	6.0	6.7	8.1	8.5	7.3	12.7	21.0
LSD(5%)	4.7	3.6	3.0	8.6	5.3	4.5	6.5	3.1	2.6	2.9	3.2	3.3	2.0	4.7	3.5	8.5	7.8
RS(In.)	38	30	30	38	36	30	30	40	40	40	40	36	40	40	30	40	30

Yield Rank

Amsoy	6	5	2	10	4	6	8	6	5	4	4	10	2	7	8	7	1
Corsoy	2	2	7	4	3	2	1	7	1	2	6	3	1	1	3	4	2
Harosoy	8	6	5	11	6	10	7	11	7	8	9	6	5	6	7	11	4
Har. 63	5	6	6	8	7	8	6	10	11	7	10	8	7	5	9	12	6
Lind. 63	9	11	8	2	8	9	5	12	12	11	11	4	8	11	11	10	6
A1-1051	7	9	12	12	12	4	4	2	6	4	5	1	2	8	2	6	3
C1376	11	6	11	9	11	12	12	8	8	12	12	12	12	10	10	8	8
C1424	10	9	9	5	9	5	10	4	9	6	3	7	5	8	1	2	10
C1426	1	3	1	3	2	1	2	3	2	3	1	5	9	3	6	1	11
C1429	4	4	4	6	1	7	9	5	4	9	8	10	10	4	4	9	9
C1430	12	12	10	7	10	11	11	9	10	10	6	9	11	12	12	5	12
C1431	3	1	3	1	5	2	3	1	3	1	2	2	4	2	4	3	5

Table 48. Maturity, days earlier (-) or later (+) than Harosoy 63, and lodging scores, Uniform Test II, 1967.

Strain	Mean of 24 Tests	Ridgetown Ont.	Harrow Ont.	Adelphia 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.	DeKalb Ill.
Amsoy	+3.3	+ 3	+1		0	0	+ 1	+ 3	+1	0	+ 5	+ 3	0	+ 3	+7	+ 6
Corsoy	-0.4	+ 2	-4		+ 2	0	0	- 1	-1	-1	+ 1	- 1	+1	+ 2	+1	- 5
Harosoy	+0.4	+ 2	0		0	- 1	0	- 1	+1	0	+ 1	0	0	0	+1	+ 1
Harosoy 63	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0
Lindarin 63	+0.3	+ 3	-3		+ 1	0	0	+ 3	0	-2	- 2	- 1	0	- 1	+1	0
A1-1051	+1.0	+ 3	-2		+ 1	+ 1	+ 5	+ 5	-1	-1	+ 2	0	-1	0	+1	0
C1376	+6.2	+ 8	+5		0	+ 1	+ 4	+10	+2	+1	+ 7	+ 6	+4	+ 4	+8	+ 7
C1424	+3.7	+ 5	+1		+ 1	+ 1	+ 4	+ 6	+1	+2	+ 7	+ 2	+4	+ 2	+3	+ 6
C1426	+5.9	+ 6	+5		+ 2	+ 2	+13	+ 9	+3	+7	+10	+ 4	+7	+ 3	+6	+ 6
C1429	+6.1	+ 9	+3		+ 5	+ 3	+12	+ 9	+3	+5	+ 8	+ 4	+5	+ 2	+6	+ 6
C1430	+8.5	+13	+5		+ 5	+ 4	+15	+13	+8	+9	+11	+ 6	+6	+ 5	+9	+13
C1431	+4.9	+ 4	+2		+ 7	- 1	+15	+11	0	+2	+ 8	+ 4	+4	+ 3	+4	+ 4
Hark (I)		- 4	-4		- 3	- 7	0	-13	-9	-3	- 2	- 7	--	--	0	- 6
Wayne (III)		--	+8		+12	+13	+25	--	+6	--	+13	+14	+6	+10	--	+16
Date planted	5-24	5-19	6-1	6-7	6-15	5-20	5-20	5-23	5-26	6-8	5-31	5-25	6-2	5-22	5-17	5-16
Har. 63 mat.	9-20	9-27	9-20	--	10-12	9-15	9-16	10-19	10-6	10-7	9-19	9-20	9-20	9-7	9-22	9-21
Days to mat.	119	131	111	--	119	118	119	149	133	121	111	118	110	108	128	128

	Mean of 25 Tests	Lodging Score														
					*	*	*									
Amsoy	1.7	4.0	1.0	1.0	1.0	1.0	1.0	1.5	1.0	1.4	1.0	2.4		2.1	2.0	1.3
Corsoy	1.8	3.0	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.8	1.0	2.0		2.4	2.9	1.6
Harosoy	2.0	3.0	1.2	2.0	1.0	1.0	1.0	2.0	1.5	2.0	1.0	2.4		2.5	3.4	2.1
Harosoy 63	2.1	3.0	1.2	2.0	1.0	1.0	1.0	2.0	1.0	2.3	1.3	2.4		2.5	3.5	2.5
Lindarin 63	1.6	3.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.3	1.0	2.0		2.1	2.3	1.4
A1-1051	1.9	4.0	1.0	1.0	1.0	1.0	1.0	2.0	1.5	1.5	1.0	2.0		2.0	2.1	2.6
C1376	2.0	5.0	1.0	1.0	1.0	1.0	1.0	3.0	1.5	1.6	1.0	2.5		2.9	2.3	1.8
C1424	1.6	3.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.1	1.0	2.0		1.5	2.3	1.5
C1426	1.7	3.0	1.0	1.0	1.0	1.0	1.0	1.5	1.5	1.3	1.0	2.0		1.3	2.9	1.4
C1429	1.6	4.0	1.0	1.0	1.0	1.0	1.0	2.0	1.5	1.0	1.0	2.3		1.4	1.5	1.4
C1430	1.9	4.0	1.0	1.0	1.0	1.0	1.0	2.5	2.0	1.6	1.0	2.0		1.3	2.8	1.4
C1431	1.5	3.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.1	1.0	1.5		1.0	2.1	1.3

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

Table 48. (Continued)

Strain	Pontiac Ill.	Urbana Ill.	Girard Ill.	Edgewood Ill.	Trenton Ill.	Lamberton Minn.	Waseca Minn.	Sutherland Iowa	Kanawha Iowa	Independence Iowa	Ames Iowa	Columbia Mo.	Brookings S.D.	Centerville S.D.	Concord Nebr.[1]	Lincoln Nebr.[1]	Corcoran Cal.[1]
															*		*
Amsoy	+ 2	+ 3	+ 6	+2	+ 4	+4	+ 5	+ 5	+ 5		+ 6	+ 4				+ 2	0
Corsoy	- 1	0	- 1	+1	- 2	+1	- 1	0	- 1		0	0				- 1	-1
Harosoy	+ 1	0	+ 1	0	0	+1	0	+ 1	0		0	0				0	+1
Har. 63	0	0	0	0	0	0	0	0	0		0	0				0	0
Lind. 63	- 1	0	0	0	0	+3	- 1	- 1	+ 1		+ 2	+ 1				+ 4	-1
A1-1051	+ 1	+ 1	+ 2	0	0	+3	+ 2	- 1	+ 2		+ 4	+ 1				+ 1	0
C1376	+ 6	+ 8	+10	+3	+ 4	+8	+10	+ 8	+10		+10	+ 5				+ 4	+2
C1424	+ 4	+ 4	+ 4	+2	+ 3	+5	+ 5	+ 4	+ 6		+ 5	+ 4				+ 3	+1
C1426	+ 4	+ 6	+ 8	+3	+ 5	+7	+ 3	+ 7	+ 9		+10	+ 6				+ 6	+7
C1429	+ 4	+ 8	+ 8	+3	+ 4	+7	+ 6	+ 8	+12		+10	+ 4				+ 7	+6
C1430	+ 7	+ 9	+12	+5	+ 6	+9	+ 9	+ 8	+10		+12	+ 8				+ 6	+7
C1431	+ 4	+ 5	+ 7	+2	+ 5	+8	0	+ 6	+ 8		+ 9	+ 4				+ 6	+2
Hark	- 2	- 1	--	-5	--	-1	- 2	- 1	0		0	--				- 2	--
Wayne	+10	+13	+15	+6	+11	--	--	+12	+12		+12	+11				+18	+4
D. pltd.	5-23	5-18	5-22	6-7	5-23	5-18	5-31	5-19	5-18	5-15	5-20	5-10	6-6	6-5	6-3	5-22	5-25
Har. 63	9-15	9-3	9-5	9-19	9-7	9-19	10-5	9-20	9-20	--	9-16	8-25	--	--	--	9-18	9-13
Da. to mat.	115	108	106	104	107	124	127	124	125	--	119	107	--	--	--	119	111
	Lodging Score																
																	*
Amsoy	2.3	1.2	2.3	1.7	3.0	1.2	2.8	1.0	1.1	1.7	1.1	1.3			1.0	1.3	2.0
Corsoy	2.3	1.4	2.4	2.1	3.8	1.5	2.5	1.1	1.2	1.4	1.1	1.6			1.2	1.9	2.0
Harosoy	2.6	1.3	3.1	2.8	4.2	1.8	2.2	1.1	1.1	1.8	1.1	2.5			1.0	1.5	2.0
Har. 63	2.6	1.5	3.0	2.9	4.1	1.5	2.8	1.0	1.1	1.8	1.1	2.2			1.2	1.8	2.0
Lind. 63	1.7	1.2	2.3	1.8	3.4	1.2	2.2	1.1	1.1	1.7	1.2	1.5			1.0	1.0	2.0
A1-1051	2.6	1.6	2.5	1.6	3.9	1.5	3.2	1.0	1.2	1.7	1.2	1.5			2.0	1.0	3.0
C1376	2.7	1.3	2.2	1.5	3.8	1.5	3.5	1.1	1.1	2.1	1.2	1.7			1.2	1.1	2.0
C1424	2.5	1.2	2.8	1.5	2.8	1.2	3.0	1.0	1.1	2.0	1.0	1.4			1.0	1.0	1.0
C1426	2.3	1.4	2.1	1.9	2.8	1.2	2.0	1.1	1.2	1.6	1.2	1.3			1.5	2.0	1.0
C1429	2.1	1.2	2.6	1.4	3.0	1.0	2.5	1.0	1.1	1.7	1.1	1.1			1.0	1.6	2.0
C1430	2.2	1.6	3.8	2.1	4.0	1.2	2.8	1.1	1.1	1.9	1.2	1.2			2.0	1.6	1.0
C1431	1.9	1.3	1.8	1.9	2.7	1.5	2.5	1.0	1.1	1.4	1.1	1.1			1.2	1.1	2.0

Table 49. Plant height and seed quality scores, Uniform Test II, 1967.

Strain	Mean of 28 Tests	Ridge-town Ont.	Har-row Ont.	Adel-phia N.J.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	East Lan-sing Mich.	Dun-dee Mich.	Knox Ind.	Bluff-ton Ind.	Lafa-yette Ind.	Green-field Ind.	Wor-thing-ton Ind.	Madi-son Wis.	DeKalb Ill.
						*	*									
Amsoy	37	34	30	40	31	15	17	33	36	35	31	42		44	39	43
Corsoy	35	31	31	40	32	14	18	32	33	34	35	39		42	36	40
Harosoy	37	37	30	41	33	17	20	37	35	35	33	42		43	38	41
Harosoy 63	37	34	30	42	37	15	22	36	36	36	35	40		46	39	40
Lindarin 63	34	33	27	40	30	16	21	32	33	30	31	37		40	38	37
A1-1051	33	32	28	36	29	15	20	31	32	30	29	37		36	35	37
C1376	35	32	28	34	33	17	24	35	33	31	32	42		37	38	41
C1424	37	32	33	43	31	17	22	35	35	34	36	41		43	39	44
C1426	38	34	32	42	34	19	23	32	36	35	35	41		44	38	40
C1429	36	37	33	40	28	19	22	32	34	34	33	40		41	38	40
C1430	41	37	34	46	36	19	21	37	40	39	36	45		46	37	48
C1431	35	32	30	37	28	15	20	31	34	32	33	39		38	36	38

	Mean of 21 Tests	Seed Quality Score														
		*			*	*	*			*						
Amsoy	2.1	2.0	3.0	3.0	1.0	1.0	1.0	1.5	1.0	1.0	1.0	1.5	2.5	1.5	3.0	1.8
Corsoy	1.8	2.0	3.0	2.0	1.0	1.0	1.0	1.5	1.0	1.0	1.5	1.5	2.0	1.5	2.0	1.2
Harosoy	2.1	2.0	3.0	2.0	1.0	1.2	1.0	1.0	1.0	1.0	1.0	1.5	3.0	1.5	3.0	1.5
Harosoy 63	2.0	2.0	2.5	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.5	2.5	1.5	2.0	1.5
Lindarin 63	1.7	2.0	2.2	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.5	1.5	2.0	1.2
A1-1051	1.8	2.0	1.5	3.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.5	2.5	1.5	1.0	1.5
C1376	2.0	2.0	3.0	2.0	1.0	1.0	1.0	1.5	1.0	1.0	1.0	1.5	1.5	1.5	2.0	1.7
C1424	1.9	2.0	2.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.0	1.0	2.5	1.5	2.0	1.7
C1426	1.9	2.0	1.8	3.0	1.0	1.2	1.0	1.0	1.5	1.0	1.0	1.0	2.0	1.5	2.0	1.3
C1429	1.9	2.0	2.2	1.0	1.0	1.0	1.0	1.0	1.5	1.0	1.0	1.0	2.0	1.5	1.0	1.5
C1430	2.3	2.0	1.5	2.0	1.0	1.7	1.0	3.0	1.0	1.0	1.0	1.0	2.0	2.0	3.0	1.3
C1431	2.1	2.0	2.0	4.0	1.0	1.2	1.0	1.0	2.0	1.0	1.0	1.5	2.0	2.0	2.0	1.5

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

Table 49. (Continued)

Strain	Pontiac Ill.	Urbana Ill.	Girard Ill.	Edgewood Ill.	Trenton Ill.	Lamberton Minn.	Waseca Minn.	Sutherland Iowa	Kanawha Iowa	Independence Iowa	Ames Iowa	Columbia Mo.	Brookings S.D.	Centerville S.D.	Concord Nebr.[1]	Lincoln Nebr.[1]	Corcoran Cal.[1]
																	*
Amsoy	45	37	43	42	44	34	40	33	38	42	35	31	31	41	29	44	45
Corsoy	40	33	36	39	41	33	38	30	32	39	34	33	30	36	28	37	36
Harosoy	45	34	38	41	45	34	40	30	34	42	34	34	31	40	28	39	44
Har. 63	44	35	38	42	47	34	39	32	34	43	34	33	32	40	28	39	46
Lind. 63	39	31	36	39	40	32	38	26	31	40	31	30	30	32	25	38	39
A1-1051	40	31	36	34	39	31	37	28	32	39	32	28	27	34	29	37	39
C1376	45	37	42	40	40	30	38	30	37	40	33	26	29	34	26	37	41
C1424	45	35	42	43	45	36	40	31	35	42	36	32	28	41	31	41	39
C1426	43	37	43	43	44	33	40	34	38	43	38	33	30	38	30	43	41
C1429	40	35	42	40	42	32	39	32	36	40	35	27	28	37	27	39	38
C1430	50	41	48	44	47	35	42	38	42	47	40	36	30	40	30	43	43
C1431	43	33	40	40	40	32	38	32	34	41	34	29	28	38	28	39	37

	Seed Quality Score																
								*	*		*						*
Amsoy	1.8	1.7	2.5	2.0	2.2	2.5	3.2	1.0	1.0		1.0	2.5		1.0	2.4	2.1	3.0
Corsoy	1.5	1.5	1.3	2.4	1.7	2.2	2.5	1.0	1.0		1.0	2.4		1.0	1.6	1.8	2.0
Harosoy	1.9	1.3	2.5	2.6	2.2	2.2	3.2	1.0	1.0		1.0	3.8		1.0	2.2	2.3	2.0
Har. 63	2.0	1.0	2.5	2.5	2.3	2.2	2.8	1.0	1.0		1.0	4.0		1.0	2.0	1.6	2.0
Lind. 63	1.5	1.8	1.7	1.8	2.0	2.3	3.2	1.0	1.0		1.0	2.5		1.0	1.8	1.5	2.0
A1-1051	1.6	1.5	1.8	2.8	2.0	2.2	3.2	1.0	1.0		1.0	2.3		1.0	1.5	1.0	2.0
C1376	1.6	2.7	2.2	2.0	2.7	3.0	3.2	1.0	1.0		1.0	3.5		1.0	2.6	1.4	3.0
C1424	1.5	1.8	2.2	2.4	1.8	2.5	3.2	1.0	1.0		1.0	2.4		1.0	3.1	1.8	3.0
C1426	1.8	2.3	2.5	2.3	2.3	2.2	3.0	1.0	1.0		1.0	2.5		1.0	3.0	1.4	3.0
C1429	2.5	2.7	2.7	2.6	2.5	2.5	3.2	1.0	1.0		1.0	2.0		1.2	2.9	2.0	2.0
C1430	2.1	2.7	2.8	3.0	3.2	3.0	3.5	1.0	1.0		1.0	3.5		1.6	4.1	1.8	4.0
C1431	2.0	1.8	2.8	2.6	2.5	2.5	3.2	1.0	1.0		1.0	2.0		1.1	2.6	1.8	2.0

Table 50. Percentages of protein and oil, Uniform Test II, 1967.

Strain	Mean of 14 Tests	Harrow Ont.	Adelphia N.J.	Columbus Ohio *	East Lansing Mich.	Knox Ind.	Lafayette Ind.	Madison Wis.
Amsoy	38.7	38.0	39.9	38.5	36.9	39.2	38.4	42.3
Corsoy	39.9	39.4	41.0	40.0	39.1	40.1	38.6	42.8
Harosoy	40.8	40.2	42.3	40.3	39.9	41.4	40.1	43.3
Harosoy 63	40.9	40.9	42.4	39.7	40.2	41.4	39.8	43.3
Lindarin 63	40.6	41.4	42.2	40.9	41.2	41.7	40.7	43.9
A1-1051	42.8	42.2	44.7	42.6	42.3	42.7	42.4	45.6
C1376	42.4	41.3	44.5	41.3	42.7	43.5	41.9	44.9
C1424	42.0	42.0	43.4	41.7	41.6	42.7	41.5	44.9
C1426	40.4	39.4	42.5	41.5	40.5	41.5	40.3	41.8
C1429	40.1	38.9	42.4	37.6	40.6	41.1	39.7	42.8
C1430	42.8	42.4	44.9	42.4	43.9	44.6	42.3	45.0
C1431	40.2	40.0	42.2	38.8	40.5	40.1	39.9	42.3

	Mean of 14 Tests	Percentage of Oil						
				*				
Amsoy	21.6	22.0	22.4	23.0	20.9	21.0	22.0	19.6
Corsoy	21.1	20.9	21.4	23.0	20.4	21.2	21.7	18.6
Harosoy	20.5	20.7	21.2	22.1	19.9	20.3	20.6	19.3
Harosoy 63	20.7	20.7	21.2	21.5	20.1	20.2	20.8	19.5
Lindarin 63	20.7	20.9	21.7	22.1	19.4	20.3	20.5	18.7
A1-1051	20.2	21.5	20.1	21.8	19.3	19.8	19.8	19.2
C1376	20.3	21.2	20.8	24.0	19.2	20.1	20.0	18.8
C1424	20.4	20.6	20.8	21.5	19.7	19.8	20.9	19.2
C1426	21.2	21.5	21.1	22.6	20.4	20.3	21.1	19.8
C1429	21.1	21.5	22.1	22.3	20.0	20.5	21.1	19.8
C1430	20.6	20.6	20.6	21.5	19.9	19.7	20.3	19.8
C1431	21.2	21.1	20.9	22.0	20.0	21.1	21.0	19.9

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

Table 50. (Continued)

Strain	DeKalb Ill.	Urbana Ill.	Lamberton Minn.	Kanawha Iowa	Ames Iowa	Columbia Mo.	Centerville S.D.	Lincoln Nebr.[1]
Amsoy	39.3	38.0	37.2	38.2	38.9	40.8	36.3	37.7
Corsoy	39.7	39.0	38.2	40.8	40.5	42.1	39.3	38.3
Harosoy	41.7	40.3	38.6	40.9	40.4	43.0	39.7	39.3
Harosoy 63	41.6	40.6	38.6	40.4	40.7	42.5	40.3	39.3
Lindarin 63	41.3	40.2	38.5	39.2	39.0	42.0	38.4	38.6
A1-1051	43.9	43.0	40.6	42.4	44.1	43.7	41.3	40.9
C1376	44.2	41.6	40.4	42.4	43.6	42.8	39.8	40.3
C1424	43.4	40.3	40.2	41.2	42.8	43.4	40.5	40.6
C1426	40.0	39.0	37.7	39.5	41.8	44.2	39.0	38.9
C1429	41.7	38.6	37.5	39.5	40.1	41.5	39.2	38.1
C1430	43.7	41.2	40.6	42.0	43.0	44.3	41.2	40.7
C1431	40.6	39.4	39.2	39.9	40.5	41.7	38.2	38.9
	Percentage of Oil							
Amsoy	20.0	22.8	21.8	21.7	21.4	22.5	22.0	21.6
Corsoy	20.2	22.6	21.5	21.2	20.8	21.8	21.4	21.9
Harosoy	18.8	21.2	20.7	21.7	20.9	20.7	20.2	21.0
Harosoy 63	19.1	21.1	20.9	21.8	20.9	21.1	20.4	21.3
Lindarin 63	19.3	21.1	20.8	21.6	21.2	20.7	21.5	21.8
A1-1051	18.4	20.6	20.6	20.9	19.8	21.4	20.5	21.3
C1376	18.5	21.0	20.3	20.5	19.3	21.4	21.3	21.3
C1424	18.4	21.1	20.2	21.3	20.3	21.1	20.9	21.2
C1426	20.3	22.4	21.9	21.6	20.3	22.0	21.9	22.5
C1429	19.7	22.1	21.3	21.7	21.0	21.7	21.5	21.6
C1430	19.1	21.3	21.0	21.1	20.7	21.5	21.5	21.6
C1431	20.1	22.1	21.9	21.4	21.4	21.8	21.9	22.2

Table 51. Four-year summary of data, Uniform Test II, 1965-1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	117	117	101	99	114	97	80	57	57
Amsoy	39.7	2	+3.6	2.0	39	2.1	17.3	38.7	22.0
Corsoy	40.6	1	+0.9	2.2	37	2.0	15.9	39.7	21.4
Harosoy	37.7	4	+0.6	2.3	39	2.0	17.8	40.5	20.9
Harosoy 63	37.1	5	0	2.4	39	2.0	18.0	40.5	21.0
Lindarin 63	36.5	6	+1.1	1.8	35	1.8	16.4	40.6	20.9
A1-1051	38.2	3	+1.6	2.1	35	1.7	20.6	43.1	20.4

[1]Days earlier (-) or later (+) than Harosoy 63 which matured September 19, 118 days after planting.

Table 52. Four-year summary of yield and yield rank, Uniform Test II, 1965-1967.

Strain	Mean of 117 Tests	Ridgetown Ont.	Harrow Ont.	Adelphia N.J.[1]	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		1964-1967	1964-1967	1964, 1966-67	1964-1967	1964-1967	1964-1967	1964, 1966-67	1964-1967	1964-65 1967	1964-1967	1964-1967	1964-1967	1964-1967	1964-1967
Amsoy	39.7	52.0	36.8	31.1	37.2	23.3	29.7	42.4	42.5	38.5	39.6	50.7	34.3	48.6	35.0
Corsoy	40.6	57.6	36.1	32.0	33.4	23.3	27.1	46.4	43.8	38.1	43.9	50.1	32.6	40.0	38.7
Harosoy	37.7	49.7	36.9	31.1	34.4	23.8	32.1	42.8	40.3	37.2	36.7	47.0	29.2	44.1	34.6
Har. 63	37.1	51.0	35.4	31.0	31.5	25.1	29.7	41.7	41.8	37.0	40.9	45.1	35.3	42.0	34.0
Lind. 63	36.5	46.9	34.6	30.5	31.4	22.6	28.9	39.1	39.5	34.6	39.7	44.7	35.5	42.2	34.5
A1-1051	38.2	49.8	37.9	30.3	38.4	21.8	32.2	45.8	38.8	33.9	38.2	46.6	27.5	37.4	36.5
		Yield Rank													
Amsoy	2	2	3	2	2	3	3	4	2	1	4	1	3	1	3
Corsoy	1	1	4	1	4	3	6	1	1	2	1	2	4	5	1
Harosoy	4	5	2	2	3	2	2	3	4	3	6	3	5	2	4
Har. 63	5	3	5	4	5	1	3	5	3	4	2	5	2	4	6
Lind. 63	6	6	6	5	6	5	5	6	5	5	3	6	1	3	5
A1-1051	3	4	1	6	1	6	1	2	6	6	5	4	6	6	2

[1]Freehold, 1964 and 1966.

Table 52. (Continued)

Strain	De-Kalb Ill.	Pon-tiac Ill.	Ur-bana Ill.	Gi-rard Ill.	Edge-wood 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.	Con-cord Nebr.	Lin-coln Nebr.
Years Tested	1964-1967	1964-1967	1964-1967	1964-1967	1964-1967	1964-1967	1964-1967	1964-1967	1964-1967	1964-1967	1964-1967	1964-1967	1964-1967	1964, 1966-67	1965-1967
Amsoy	51.3	46.2	44.0	43.0	35.7	30.0	34.6	34.3	37.6	36.5	38.1	37.0	39.1	40.2	48.7
Corsoy	51.9	48.2	45.5	41.1	37.7	34.5	43.5	35.9	40.6	40.1	39.3	35.4	43.3	44.8	47.5
Harosoy	48.3	44.6	40.6	37.7	31.8	28.5	34.9	31.2	36.7	35.0	36.2	35.5	37.5	40.5	47.8
Har. 63	46.3	44.5	39.7	36.4	32.5	29.2	35.1	31.6	35.5	35.2	35.6	33.2	36.4	39.4	41.1
Lind.63	45.2	42.4	38.1	39.9	35.5	28.0	33.2	30.9	34.4	34.6	33.6	34.7	35.1	35.1	47.4
A1-1051	47.9	44.3	40.5	41.0	30.5	31.1	36.9	36.4	37.4	37.2	36.8	37.4	39.1	39.5	47.2
	Yield Rank														
Amsoy	2	2	2	1	2	3	5	3	2	3	2	2	2	3	1
Corsoy	1	1	1	2	1	1	1	2	1	1	1	4	1	1	3
Harosoy	3	3	3	5	5	5	4	5	4	5	4	3	4	2	2
Har. 63	5	4	5	6	4	4	3	4	5	4	5	6	5	5	6
Lind. 63	6	6	6	4	3	6	6	6	6	6	6	5	6	6	4
A1-1051	4	5	4	3	6	2	2	1	3	2	3	1	2	4	5

PRELIMINARY TEST II, 1967

Strain	Parentage	Generation Composited
1. Amsoy		
2. Harosoy 63		
3. AX143-152-1	Lindarin x A54-3159	F_6
4. AX144-79-1	Lindarin x A54-3202	F_6
5. AX144-79-2	Lindarin x A54-3202	F_6
6. AX144-203-1	Lindarin x A54-3202	F_6
7. AX144MCD231	Lindarin x A54-3202	F_5
8. C1415	C1069 x Chippewa	F_7
9. C1444	C1253 x Kent	F_7
10. C1445	C1253 x Kent	F_7
11. C1446	C1253 x Kent	F_7
12. C1447	C1253 x Kent	F_7
13. C1448	C1253 x Kent	F_7
14. C1453	C1266R x C1253	F_7
15. 0-378-28	Harosoy 63 x C1270	F_4

From a yield standpoint, only three strains did as well or slightly better than Amsoy. They are C1453 and C1447, both phytophthora resistant, and AX144MCD231, a very short, lodging-resistant selection. Several of the lines in the test, including C1447, showed some increase in protein content. AX144-203-1 is noteworthy in that it was appreciably above the checks in both oil and protein content of the seeds. A number of the strains appeared to have improved shattering resistance over the rather poor performing Amsoy and Harosoy 63.

Table 53. Descriptive data and shattering scores, Preliminary Test II, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering Urbana Illinois[1]
Amsoy	P	G	Tan	S	Y	Y	3.5
Harosoy 63	P	G	Br	D	Y	Y	4.5
AX143-152-1	P	T	Br	D	Y	Br	1.5
AX144-79-1	P	G	Br	D	Y	Bf	1.5
AX144-79-2	P	G	Br	D	Y	Ib	2.0
AX144-203-1	P	T	Br	D	Y	Bl	1.0
AX144MCD231	P	G	Br	D	Y	Bf	3.0
C1415	P	T	Br	S	Y	Bl	1.0
C1444	P	G	Br	S	Y	Ib	5.0
C1445	P	T	Br	D	Y	Bl	3.5
C1446	P	T	Br	I	Y	Bl	3.0
C1447	P	G	Br	D	Y	Ib	2.5
C1448	P	G	Br	D	Y	Ib	4.0
C1453	P	G	Br	D	Y	Ib	3.0
0-378-28	P	G	Br	D	Y	Y	2.0

[1]Mean of two replications. Scored 40 days after maturity.

Table 54. Summary of data, Preliminary Test II, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	16	16	13	11	16	11	12	9	9
Amsoy	36.1	3	+3.5	1.7	35	2.0	16.9	38.8	21.6
Harosoy 63	34.5	10	0	2.0	35	1.8	17.5	40.8	20.6
AX143-152-1	34.9	8	+0.4	1.8	32	1.7	19.4	42.4	20.2
AX144-79-1	33.7	11	+0.1	1.4	27	1.6	15.6	41.2	21.0
AX144-79-2	31.7	15	-2.0	1.1	25	1.5	14.0	41.6	21.1
AX144-203-1	32.8	14	-0.8	1.4	28	1.6	17.3	42.8	22.2
AX144MCD231	36.0	4	+0.4	1.3	31	1.5	15.0	42.0	20.2
C1415	35.6	5	+9.8	1.9	33	2.4	18.2	39.8	21.9
C1444	33.5	12	+2.3	1.6	35	1.6	16.3	41.7	21.4
C1445	34.8	9	+1.2	1.6	34	1.5	17.6	42.8	21.3
C1446	35.2	7	+4.2	2.0	34	1.9	18.1	41.6	21.6
C1447	37.5	2	+4.2	1.9	34	2.0	18.0	42.0	21.5
C1448	33.2	13	+5.5	1.6	34	2.0	18.8	41.7	21.2
C1453	37.9	1	+0.9	1.7	34	1.6	15.5	40.9	21.6
0-378-28	35.4	6	+2.8	1.5	32	2.1	19.6	41.1	20.8

[1]Days earlier (-) or later (+) than Harosoy 63 which matured September 23, 120 days after planting.

Table 55. Disease data, Preliminary Test II, 1967.

Strain	BB Ill. n	BP Ill. a	DM Ind. n	FE2 Ind. a	BSR Ill. n	PR Ind. a	PSB Del. n	PS Del. n
Amsoy	2	3	2.0	4	4	S	3.3	2.5
Harosoy 63	2	2	1.8	5	3	R	2.5	1.5
AX143-152-1	2	3	2.0	3	3	S	3.0	1.0
AX144-79-1	1	2	3.0	5	3	S	2.7	2.0
AX144-79-2	2	3	3.0	5	3	S	1.5	1.0
AX144-203-1	1	3	2.0	4	3	S	1.5	2.5
AX144MCD231	2	3	2.0	4	3	S	2.5	1.7
C1415	1	2	4.0	2	3	S	3.5	2.3
C1444	1	2	2.0	1	3	R	1.3	1.3
C1445	1	3	2.0	4	3	R	2.7	1.5
C1446	1	1	3.0	5	3	R	2.0	1.3
C1447	2	4	2.0	4	3	R	3.0	1.5
C1448	2	3	2.0	1	3	R	2.3	1.0
C1453	3	1	3.0	2	3	R	2.5	1.3
0-378-28	1	3	3.0	4	3	R	2.0	1.3

a = artificial inoculation; n = natural infection.

Table 56. Yield and yield rank, Preliminary Test II, 1967.

Strain	Mean of 16 Tests	Ridge-town Ont.	Har-row Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	East Lan-sing Mich.	Bluff-ton Ind.	Lafa-yette Ind.
					*				
Amsoy	36.1	59.7	39.0	24.9	8.3	14.8	42.1	32.0	47.7
Harosoy 63	34.5	60.6	37.8	18.8	7.7	18.3	42.9	34.8	44.8
AX143-152-1	34.9	58.2	35.1	16.9	7.7	21.8	41.4	31.1	36.6
AX144-79-1	33.7	52.3	35.8	16.7	6.1	20.7	41.4	22.6	41.7
AX144-79-2	31.7	49.2	29.4	13.4	7.4	24.7	39.1	27.2	37.5
AX144-203-1	32.8	49.8	37.5	16.0	8.4	20.1	38.4	27.5	40.5
AX144MCD231	36.0	57.7	37.8	19.4	9.0	27.4	44.4	28.4	43.2
C1415	35.6	50.9	36.8	24.6	13.8	18.9	38.4	32.9	51.6
C1444	33.5	55.0	38.7	23.5	9.4	16.5	37.6	38.0	42.1
C1445	34.8	52.8	37.7	24.8	6.6	18.3	39.5	34.6	41.7
C1446	35.2	53.5	33.9	18.6	7.7	20.0	39.7	34.1	45.1
C1447	37.5	58.8	36.1	27.3	7.3	26.8	41.2	35.2	45.4
C1448	33.2	51.0	36.8	18.8	5.7	16.4	40.4	33.1	44.4
C1453	37.9	56.5	37.6	20.9	5.8	21.2	44.4	35.7	47.1
0-378-28	35.4	55.9	38.3	22.8	7.1	13.8	42.3	34.4	45.1
Coef. of Var. (%)		8.3	6.3	--	--	--	5.8	9.5	3.6
L.S.D. (5%)		N.S.	N.S.	--	--	--	3.3	6.5	3.3
Row Spacing (In.)		24	40	32	32	28	28	38	38

	Yield Rank								
Amsoy	3	2	1	2	5	14	5	10	2
Harosoy 63	10	1	4	9	6	10	3	4	7
AX143-152-1	8	4	13	12	6	4	6	11	15
AX144-79-1	11	11	12	13	13	6	7	15	11
AX144-79-2	15	15	15	15	9	3	12	14	14
AX144-203-1	14	14	8	14	4	7	13	13	13
AX144MCD231	4	5	5	8	3	1	1	12	9
C1415	5	13	9	4	1	9	13	9	1
C1444	12	8	2	5	2	12	15	1	10
C1445	9	10	6	3	12	10	11	5	11
C1446	7	9	14	11	6	8	10	7	5
C1447	2	3	11	1	10	2	8	3	4
C1448	13	12	9	9	15	13	9	8	8
C1453	1	6	7	7	14	5	1	2	3
0-378-28	6	7	3	6	11	15	4	6	5

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

Table 56. (Continued)

Strain	Madison Wis.	Urbana Ill.	Kanawha Iowa	Ames Iowa	Columbia Mo.	Brookings S.D.	Centerville S.D.	Concord Nebr.[1]	Lincoln Nebr.[1]
Amsoy	37.2	43.1	33.0	46.7	24.9	16.9	35.7	32.0	48.2
Harosoy 63	36.5	40.3	27.9	41.8	25.5	16.2	33.0	34.3	38.9
AX143-152-1	38.3	35.2	29.0	38.3	24.8	19.8	37.5	38.3	56.6
AX144-79-1	35.2	43.1	26.6	38.2	28.6	20.9	35.7	37.8	42.6
AX144-79-2	32.0	33.6	27.5	33.6	23.6	22.6	37.8	30.5	45.0
AX144-203-1	31.3	36.3	31.4	40.6	27.4	21.3	29.7	34.3	42.6
AX144MCD231	36.1	40.0	31.5	43.0	31.9	21.5	32.7	33.0	48.6
C1415	32.6	44.0	34.4	47.2	17.6	17.2	36.7	37.8	47.5
C1444	35.5	39.9	27.0	38.5	19.3	18.1	34.6	27.8	43.2
C1445	34.3	38.9	29.9	42.3	24.6	18.8	34.8	37.2	46.1
C1446	38.1	39.4	31.7	44.3	18.6	20.1	38.6	39.1	49.1
C1447	38.0	43.8	31.2	44.4	23.4	19.8	30.5	36.0	61.4
C1448	34.9	38.5	29.6	40.8	18.6	16.8	32.6	29.8	49.2
C1453	41.5	45.1	32.3	45.7	30.6	22.9	36.5	40.3	48.7
0-378-28	37.4	38.1	30.8	46.1	28.6	18.9	33.8	30.0	50.4
Coef. of Var. (%)	4.7	4.7	5.1	5.2	11.5	7.6	11.6	7.9	11.8
L.S.D. (5%)	3.4	4.0	3.3	4.7	6.1	3.2	N.S.	5.9	12.1
Row Spacing (In.)	36	40	40	40	36	40	40	30	40

	Yield Rank								
Amsoy	6	4	2	2	7	13	6	11	8
Harosoy 63	7	6	12	9	6	15	11	8	15
AX143-152-1	2	14	11	13	8	7	3	3	2
AX144-79-1	10	4	15	14	3	5	6	4	13
AX144-79-2	14	15	13	15	10	2	2	12	11
AX144-203-1	15	13	6	11	5	4	15	8	13
AX144MCD231	8	7	5	7	1	3	12	10	7
C1415	13	2	1	1	15	12	4	4	9
C1444	9	8	14	12	12	11	9	15	12
C1445	12	10	9	8	9	9	8	6	10
C1446	3	9	4	6	13	6	1	2	5
C1447	4	3	7	5	11	7	14	7	1
C1448	11	11	10	10	13	14	13	14	4
C1453	1	1	3	4	2	1	5	1	6
0-378-28	5	12	8	3	3	8	10	13	3

Table 57. Maturity, days earlier (-) or later (+) than Harosoy 63, Preliminary Test II, 1967.

Strain	Mean of 13 Tests	Ridge-town Ont.	Har-row Ont.	Hoyt-ville Ohio	Woos-ter Ohio	Co-lum-bus Ohio	East Lan-sing Mich.	Bluff-ton Ind.	Lafa-yette Ind.
					*				
Amsoy	+3.5	+ 5	+1	0	+ 1	- 1	+ 7	+ 4	+ 4
Harosoy 63	0	0	0	0	0	0	0	0	0
AX143-152-1	+0.4	+ 4	-5	+2	+ 1	+ 2	+ 2	- 2	- 1
AX144-79-1	+0.1	+ 1	-4	+3	+ 1	+ 2	- 3	+ 2	+ 3
AX144-79-2	-2.0	- 2	-4	+1	0	- 1	- 4	- 3	- 2
AX144-203-1	-0.8	- 1	-5	+4	+ 4	+ 1	- 6	- 3	- 1
AX144MCD231	+0.4	+ 2	-2	+5	+ 3	- 1	+ 1	- 1	+ 1
C1415	+9.8	+10	+5	+5	+ 8	+19	+15	+ 9	+10
C1444	+2.3	+ 2	-1	+5	+ 3	+ 2	+ 4	+ 5	+ 4
C1445	+1.2	+ 2	0	+7	+ 1	+ 3	- 1	- 1	+ 1
C1446	+4.2	+ 7	+2	+7	+ 2	+ 1	+ 8	+ 1	+ 5
C1447	+4.2	+ 6	+2	+7	+ 1	+ 3	+ 4	+ 1	+ 6
C1448	+5.5	+ 6	+1	+6	0	+ 1	+15	+10	+ 5
C1453	+0.9	+ 2	-3	+5	+ 2	+ 7	- 1	- 3	+ 2
0-378-28	+2.8	+ 1	+1	+7	+ 3	+ 8	+ 5	+ 3	+ 4
Hark (I)		- 2	-4	-2	- 3	0	-10	- 2	0
Wayne (III)		--	+8	+8	+20	+22	--	+13	+21
Date planted	5-23	5-19	6-1	6-15	5-20	5-20	5-23	5-31	5-25
Harosoy 63 matured	9-20	9-26	9-20	10-12	9-11	9-17	10-16	9-19	9-13
Days to mature	120	130	111	119	114	120	146	111	111

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

Table 57. (Continued)

Strain	Madison Wis.	Urbana Ill.	Kanawha Iowa	Ames Iowa	Columbia Mo.	Brookings S.D.	Centerville S.D.	Concord Nebr.[1]	Lincoln Nebr.[1]
						*	*	*	
Amsoy	+6	+ 5	+ 5	+ 6	+ 2				+ 1
Harosoy 63	0	0	0	0	0				0
AX143-152-1	0	+ 1	+ 2	- 3	+ 3				0
AX144-79-1	+1	+ 4	- 1	- 2	+ 2				- 7
AX144-79-2	-1	+ 2	- 1	- 4	0				- 7
AX144-203-1	+3	+ 1	+ 3	- 2	- 1				- 4
AX144MCD231	0	+ 1	+ 2	- 2	+ 1				- 2
C1415	+7	+13	+13	+10	+ 6				+ 6
C1444	-1	+ 4	+ 3	+ 2	+ 1				0
C1445	0	+ 2	+ 3	- 2	+ 2				0
C1446	+5	+ 6	+ 3	+ 4	+ 4				+ 2
C1447	+3	+ 6	+ 6	+ 3	+ 2				+ 5
C1448	+2	+ 6	+ 6	+ 4	+ 5				+ 5
C1453	-1	+ 2	+ 4	0	- 1				- 1
0-378-28	+1	+ 3	+ 3	0	+ 2				- 2
Hark	-2	+ 1	- 1	--	--				- 5
Wayne	--	+15	--	+13	+10				+15
Date planted	5-17	5-21	5-18	5-20	5-10	6-6	6-5	6-3	5-22
Harosoy 63 matured	9-22	9-1	9-19	9-18	8-26	--	--	--	9-21
Days to mature	128	103	124	121	108	--	--	--	122

UNIFORM TEST III, 1967

Strain	Parentage	Generation Composited	Previous Testing (years)
1. Adelphia	C1070 x Adams	F_6	3*
2. C1421	Adelphia^8 x Mukden	7 F_2 lines	1
3. Shelby	Lincoln^2 x Richland	F_8	15
4. Wayne	L49-4091 x Clark	F_5	6
5. L15	Wayne^6 x Clark 63	8 F_3 lines	P.T. III
6. A2-5432	Clark x Chippewa	F_7	2
7. C1362	Lindarin x Harosoy	F_7	1
8. C1432	C1253 x Kent	F_7	P.T. II
9. C1435	C1253 x Kent	F_7	P.T. III
10. C1437	C1253 x Kent	F_7	P.T. III

*1960, 1961, 1966.

The average yield performance was somewhat lower than in 1966 but yields were at a satisfactory level except at Harrow and locations in Ohio and Kansas. Drouth was the major factor at these locations. The 71.5 bushel yield of C1437 at Manhattan under irrigation is notable.

A three-year summary is presented to compare A2-5432 with the two check varieties. A2-5432 has yielded rather consistently below Wayne but is two to three days earlier. It is a short, erect variety. Its higher oil content is more than offset by Wayne's higher protein.

C1421 and L15, which are phytophthora-resistant backcross versions of Adelphia and Wayne, respectively, both show the bushel or two lower yield that has been so often encountered in phytophthora resistant backcross varieties. This is true in spite of the fact that Greenfield, Edgewood, and perhaps other locations where phytophthora affected yields were included in the regional mean. Otherwise, these strains were similar to the recurrent parents.

C1362 has been in the test two years and has yielded only about a bushel below Wayne despite its earlier maturity. It appears to be superior to A2-5432 and was the top yielder at several locations in 1967.

Of the remaining three C strains, C1437 appears to be superior and is the only strain in the test to outyield Wayne in the regional mean. It is slightly poorer in composition but better in lodging and shattering resistance than Wayne. C1435, although not superior in yield, has excellent seed composition.

VERDE

Verde is the progeny of an F_6 plant and was developed in Delaware by H. W. Crittenden. A history of its development is given below:

1956 - Cross was made at Beltsville by R. C. Leffel. Aoda x A50-7445. A50-7445 had been obtained from C. R. Weber at Ames, Iowa and was from the cross of Richland x Jogun. Code number for the cross: 3210.

1957 - F_1 Hybrid grown at Beltsville.

1958 - F_2 Grown at Beltsville.

1959 - F_3 Grown at the Substation Division, University of Delaware, Georgetown, Delaware.

1960 - F_4 Grown at Georgetown. Single plant selections were made on a basis of resistance to Diaporthe phaseolorum var. sojae and resistance to Cercospora kikuchii.

1961 - F_5 Single plant selections were selected on a basis of resistance to the two fungi listed above, also on the basis of large seed and good flavor.

1962 - F_6 A single plant was selected which had the attributes listed above that was designated as UD3210-31-14.

1963 - F_7 A group of UD3210 lines were compared for yield, seed holding, and standing ability. UD3210-31-14 was selected for increase.

1964 - F_8 UD3210-31-14 was increased to several pounds at Georgetown.

1965 - F_9 UD3210-31-14 was increased to 5 bushels at Georgetown.

1966 - F_{10} UD3210-31-14 was increased to 80 bushels at Georgetown. In Uniform Preliminary Test III.

1967 - Named Verde and publicity released on May 1.

Table 58. Descriptive data and shattering scores, Uniform Test III, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering	
							Stoneville	Mississippi[1]
Adelphia	W	G	Tan	S	Y	Bf	1.5	
C1421	W	G	Tan	S	Y	Bf	1.5	
Shelby	P	T	Br	D	Y	Bl	1.5	
Wayne	W	T	Br	S	Y	Bl	3.0	
L15	W	T	Br	S	Y	Bl	3.0	
A2-5432	P	T	Br	S	Y	Bl	1.5	
C1362	P	G	Br	D	Y	Dbf	1.5	
C1432	P	T	Br	D	Y	Bl	4.0	
C1435	P	G	Br	S	Y	Ib	1.5	
C1437	P	T	Br	D	Y	Bl	2.0	

[1]Mean of two replications. Scored 14 days after maturity.

Table 59. Summary of data, Uniform Test III, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	31	31	27	27	30	26	24	13	13
Adelphia	36.5	7	+3.2	1.7	36	1.8	15.4	39.4	21.7
C1421	34.8	9	+3.1	1.7	37	1.7	15.5	39.4	21.6
Shelby	34.6	10	-1.4	2.5	40	1.7	14.5	39.7	21.2
Wayne	39.8	2	0	2.4	39	1.8	16.5	40.5	21.3
L15	38.5	3	+0.5	2.5	39	1.9	16.5	40.1	21.2
A2-5432	36.7	6	-2.5	2.0	34	1.8	14.1	39.2	21.7
C1362	38.4	4	-2.1	2.1	39	1.9	15.8	39.4	21.7
C1432	35.7	8	-3.1	1.8	34	1.9	17.3	39.6	21.8
C1435	37.6	5	-1.6	1.7	36	1.7	18.8	41.4	21.5
C1437	40.3	1	+1.1	2.1	40	2.0	17.5	39.1	21.3

[1]Days earlier (-) or later (+) than Wayne which matured September 23, 121 days after planting.

Table 60. Disease and insect data, Uniform Test III, 1967.

Strain	BB			BP	BS	DM Edgewood		FE2	BSR	PR		Py[1]	PSB	PS	SCM[2]
	Ill.	Ia.	Ia.	Ill.	Ia.	Ill.	Ind.	Ind.	Ill.	Ind.	Ia.	Ia.	Del.	Del.	Ill.
	n	a	n	a	a	n	n	a	n	a	a	a	n	n	a
Adelphia	1	3	3	3	2	4.8	4.2	4	1	S	S	4.2	2.0	1.5	1.9
C1421	3	2	3	3	2	4.9	4.5	5	3	R	R	4.8	2.5	1.5	1.5
Shelby	3	3	4	3	4	4.8	4.5	4	4	S	R	4.6	4.0	3.0	1.0
Wayne	2	3	3	1	4	4.9	4.0	2	4	S	S	4.3	4.0	3.0	1.5
L15	2	1	3	1	2	4.8	4.0	2	4	R	R	4.4	4.0	2.0	2.0
A2-5432	1	2	2	3	3	4.8	3.8	3	4	S	S	3.5	3.0	1.5	1.8
C1362	1	3	2	3	5	3.3	2.8	5	4	S	S	3.9	2.0	1.5	1.7
C1432	1	3	2	1	4	3.6	4.5	5	4	R	R	4.2	3.0	2.0	1.7
C1435	1	2	2	1	3	3.2	2.5	4	4	R	R	4.5	2.0	2.0	2.1
C1437	2	3	2	2	3	4.1	2.8	5	4	R	R	3.9	3.5	2.5	1.5

a = artificial inoculation; n = natural infection.
[1]In greenhouse soil. 1 (healthy) to 5 (not emerged).
[2]Average number of maggots per seed.

Table 61. Yield and yield rank, Uniform Test III, 1967.

Strain	Mean of 31 Tests	Harrow Ont.	Adelphia N.J. *	Georgetown Del.	Hoytville Ohio	Wooster Ohio *	Columbus Ohio	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Evansville Ind.	Urbana Ill.	Girard Ill.	Edgewood Ill.	Trenton Ill.	Eldorado Ill.	Carbondale Ill.
Adelphia	36.5	24.3	44.5	36.1	24.6	16.6	33.3	34.7	50.7	30.3	51.1	55.4	44.2	39.5	41.0	46.4	48.2	49.1
C1421	34.8	24.8	35.6	34.2	19.4	14.9	28.1	37.6	45.3	31.3	48.1	54.7	47.3	40.5	40.6	45.5	46.0	48.5
Shelby	34.6	23.4	37.6	37.2	22.4	13.2	23.4	33.8	44.2	31.7	45.7	48.3	46.7	37.1	41.1	43.6	42.4	40.7
Wayne	39.8	31.8	37.6	48.2	30.9	15.6	27.9	38.1	53.7	34.0	58.5	52.0	46.3	46.6	50.4	47.1	50.7	48.1
L15	38.5	29.0	33.7	44.7	32.4	16.7	19.4	37.2	49.7	35.7	56.5	52.8	46.4	43.1	52.6	45.4	49.9	45.9
A2-5432	36.7	29.6	30.6	40.5	23.9	12.0	26.5	34.9	49.0	30.3	49.9	46.4	48.5	43.2	45.6	47.9	44.4	45.1
C1362	38.4	24.8	35.0	38.7	23.8	11.5	32.9	37.8	53.3	30.1	58.9	57.7	47.9	46.8	46.2	53.9	47.3	47.4
C1432	35.7	26.2	36.9	35.0	16.1	9.8	17.2	38.8	50.5	28.9	47.5	50.9	47.5	50.4	50.8	52.2	49.4	41.0
C1435	37.6	24.2	40.9	45.2	23.0	12.6	23.2	37.1	49.5	31.3	51.1	53.2	45.3	49.8	44.8	48.7	47.0	45.6
C1437	40.3	26.4	43.2	39.8	24.4	16.7	35.5	42.6	51.9	31.7	59.9	56.0	49.0	44.8	46.2	48.4	46.2	47.2
C.V.(%)		10.6	21.7	7.4	--	--	--	6.9	7.0	10.0	7.7	6.1	8.7	6.9	14.0	8.5	4.1	--
L.S.D.(5%)		4.1	N.S.	4.3	--	--	--	3.8	5.1	4.6	5.9	4.7	N.S.	5.3	N.S.	N.S.	3.3	--
R.Sp.(In.)		40	25	34	32	32	28	38	38	38	38	38	30	30	38	36	36	40

	Yield Rank																	
Adelphia	7	8	1	8	3	3	2	9	4	7	5	3	10	9	9	7	4	1
C1421	9	6	7	10	9	5	4	5	9	5	8	4	5	8	10	8	8	2
Shelby	10	10	4	7	8	6	7	10	10	3	10	9	6	10	8	10	10	10
Wayne	2	1	4	1	2	4	5	3	1	2	3	7	8	4	3	6	1	3
L15	3	3	9	3	1	1	9	6	6	1	4	6	7	7	1	9	2	6
A2-5432	6	2	10	4	5	8	6	8	8	7	7	10	2	6	6	5	9	8
C1362	4	6	8	6	6	9	3	4	2	9	2	1	3	3	4	1	5	4
C1432	8	5	6	9	10	10	10	2	5	10	9	8	4	1	2	2	3	9
C1435	5	9	3	2	7	7	8	7	7	5	5	5	9	2	7	3	6	7
C1437	1	4	2	5	4	1	1	1	3	3	1	2	1	5	4	4	7	5

*Not included in the mean.
[1]Loam.
[2]Gumbo.
[3]Irrigated.

Table 61. (Continued)

Strain	Ames Iowa	Ottumwa Iowa	Red Oak Iowa	Columbia Mo.	Portageville Mo.[1,3]	Portageville Mo.[2,3]	Centerville S.D.	Concord Nebr.[3]	Lincoln Nebr.[3]	Scandia Kans.[3]	Powhattan Kans.	Manhattan Kans.	Manhattan Kans.[3]	Ottawa Kans.	Newton Kans.	Columbus Kans.	Corcoran Cal.[3]*
Adelphia	34.5	44.7	44.4	27.1	31.3	15.5	22.7	23.5	40.7	31.6	31.5	34.0	61.4	38.1	17.2	24.1	30.9
C1421	35.1	39.0	42.8	24.2	28.0	19.4	26.4	22.7	36.8	30.8	32.9	29.7	56.6	32.2	15.2	15.6	27.3
Shelby	39.1	40.7	44.6	25.5	27.8	22.5	31.4	28.4	35.0	29.7	32.0	19.2	57.6	37.9	22.3	17.1	22.2
Wayne	41.5	45.1	46.4	30.1	36.5	20.5	32.2	32.7	52.5	31.5	31.9	27.0	61.8	44.2	17.5	17.7	30.5
L15	40.6	44.3	49.3	28.6	32.3	23.8	28.0	34.5	43.5	32.0	35.7	28.0	54.5	38.4	18.2	20.6	34.6
A2-5432	41.2	40.8	45.7	27.1	32.5	15.3	39.2	34.8	43.7	31.1	27.2	21.0	55.2	38.9	22.2	16.6	32.4
C1362	41.8	43.1	47.3	32.4	31.1	16.0	34.2	33.2	40.0	32.5	27.8	20.3	63.7	35.5	25.5	18.1	40.1
C1432	41.3	43.0	47.8	21.4	29.8	21.1	33.3	28.2	39.6	28.3	30.2	14.8	53.2	28.5	20.8	23.6	27.1
C1435	38.0	43.5	43.6	26.4	32.0	22.1	34.4	33.6	39.3	35.5	29.4	18.3	63.8	39.6	21.7	24.5	25.9
C1437	40.7	47.3	53.7	28.3	32.0	22.4	36.1	31.9	46.4	36.3	34.8	29.2	71.5	39.0	20.9	28.0	44.3
CV(%)	5.3	10.9	5.6	5.8	5.6	10.0	8.9	10.6	14.7	10.8	8.2	12.6	12.8	17.3	18.3	17.6	22.0
LSD(5%)	2.9	6.4	3.6	3.2	3.0	3.4	4.1	4.7	8.9	N.S.	3.8	4.4	11.1	7.5	N.S.	3.4	10.1
RS(In.)	40	38	38	36	38	38	40	30	40	30	38	36	36	30	30	30	30

	Yield Rank																
Adelphia	10	3	8	5	6	9	10	9	5	5	6	1	5	6	9	3	5
C1421	9	10	10	9	9	7	9	10	9	8	3	2	7	9	10	10	7
Shelby	7	9	7	8	10	2	7	7	10	9	4	8	6	7	2	8	10
Wayne	2	2	5	2	1	6	6	5	1	6	5	5	4	1	8	7	6
L15	6	4	2	3	3	1	8	2	4	4	1	4	9	5	7	5	3
A2-5432	4	8	6	5	2	10	1	1	3	7	10	6	8	4	3	9	4
C1362	1	6	4	1	7	8	4	4	6	3	9	7	3	8	1	6	2
C1432	3	7	3	10	8	5	5	8	7	10	7	10	10	10	6	4	8
C1435	8	5	9	7	4	4	3	3	8	2	8	9	2	2	4	2	9
C1437	5	1	1	4	4	3	2	6	2	1	2	3	1	3	5	1	1

Table 62. Maturity, days earlier (-) or later (+) than Wayne, and lodging scores, Uniform Test III, 1967.

Strain	Mean of 27 Tests	Harrow Ont.	Adelphia N.J. *	Georgetown Del.	Hoytville Ohio	Wooster Ohio *	Columbus Ohio	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Evansville Ind.	Urbana Ill.	Girard Ill.	Edgewood Ill.	Trenton Ill.	Eldorado Ill.	Carbondale Ill.
Adelphia	+3.2	+10		0	- 5	+12	+ 5	+3	+ 6	+8	+3	0	+ 7	+2	+4	+2	+ 1	+ 1
C1421	+3.1	+10		0	- 5	+12	+ 6	+3	+ 6	+8	+2	0	+ 7	+2	+5	+1	+ 1	+ 1
Shelby	-1.4	- 2		-2	- 2	- 2	0	-3	- 3	0	-4	0	0	-5	-1	-4	- 2	0
Wayne	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L15	+0.5	+ 1		+1	- 3	0	- 3	-1	0	+1	+2	0	+ 2	+1	+2	0	+ 1	+ 2
A2-5432	-2.5	- 3		-4	- 3	- 3	- 1	-2	- 6	-1	-4	-3	- 2	-5	-1	-5	- 8	- 3
C1362	-2.1	- 2		-5	- 2	+ 3	- 1	-1	- 3	0	+1	+1	- 5	-6	0	-2	- 7	+ 3
C1432	-3.1	- 2		-7	0	+10	0	-3	- 6	0	-6	-2	- 5	-7	-2	-7	- 8	- 6
C1435	-1.6	- 2		-3	- 3	+ 3	0	0	- 3	+2	-5	-1	- 4	-3	+2	-1	- 3	- 5
C1437	+1.1	+ 1		-1	+ 1	+ 6	+ 3	+2	0	+4	+1	+1	+ 2	-3	+6	-2	- 1	+ 2
Amsoy (II)		- 7		--	-12	-13	-22	-8	-11	-6	-7	--	-10	-9	-4	-7	-12	-10
Clark 63 (IV)		--		+7	--	--	+ 6	+3	+ 7	+7	+5	+4	+ 6	+6	+8	+4	+ 4	+ 7
Date planted		5-25	6-1	6-7	5-18	6-15	5-20	5-20	5-31	5-25	6-2	5-22	5-23	5-18	5-22	6-7	5-23	5-24	5-22
Wayne mat.		9-23	9-28	--	9-20	10-24	9-28	10-9	10-2	10-4	9-26	9-17	9-19	9-16	9-20	9-25	9-18	9-15	9-11
Days to mat.		121	119	--	125	131	131	142	124	132	116	118	119	121	121	110	118	114	112

	Mean of 27 Tests	Lodging Score															
			*		*	*	*										
Adelphia	1.7	1.0	1.0	1.1	1.0	1.0	1.0	1.0	2.0	1.4	2.0	1.2	2.4	1.8	2.6	2.9	3.0
C1421	1.7	1.0	1.0	1.4	1.0	1.0	1.0	1.0	2.0	1.4	1.8	1.3	2.5	2.1	2.6	3.6	3.0
Shelby	2.5	1.2	2.0	2.5	1.0	1.0	1.0	2.3	3.0	2.5	3.8	1.6	4.5	3.3	4.0	4.7	4.0
Wayne	2.4	1.2	3.0	2.0	1.0	1.0	1.0	1.5	2.8	2.3	3.0	1.3	4.1	2.1	4.2	4.3	4.0
L15	2.5	1.5	4.0	2.1	1.0	1.0	1.0	1.8	2.8	2.8	3.0	1.4	4.2	2.5	4.5	4.4	4.0
A2-5432	2.0	1.0	3.0	1.9	1.0	1.0	1.0	1.8	2.5	2.5	2.8	1.3	2.3	1.7	3.6	2.7	3.0
C1362	2.1	1.0	2.0	1.4	1.0	1.0	1.0	1.3	2.3	1.9	2.8	1.2	3.0	2.3	4.0	3.7	4.0
C1432	1.8	1.0	2.0	1.5	1.0	1.0	1.0	1.0	2.0	1.8	2.8	1.2	2.7	1.8	3.1	2.8	4.0
C1435	1.7	1.0	1.0	1.5	1.0	1.0	1.0	1.0	1.3	1.0	2.3	1.2	2.7	2.3	3.3	3.4	3.0
C1437	2.1	1.0	1.0	1.6	1.0	1.0	1.0	1.3	2.5	1.8	3.0	1.3	3.4	3.4	3.2	3.7	3.0

*Not included in the mean.
[1]Loam.
[2]Gumbo.
[3]Irrigated.

Table 62. (Continued)

Strain	Ames Iowa	Ottumwa Iowa *	Red Oak Iowa *	Columbia Mo.	Portageville Mo.[1,3]	Portageville Mo.[2,3]	Centerville S.D. *	Concord Nebr.[3] *	Lincoln Nebr.[3]	Scandia Kans.[3]	Powhattan Kans.	Manhattan Kans.	Manhattan Kans.[3]	Ottawa Kans.	Newton Kans.	Columbus Kans.	Corcoran Cal.[3] *
Adelphia	+ 9			+2	0	+4			+ 4	+1	+5	+ 3	+3	+2	+2	+5	+ 8
C1421	+ 9			+2	0	+3			+ 3	+1	+4	+ 3	+3	+2	+2	+4	+ 8
Shelby	- 2			-1	-2	-3			- 4	-1	0	0	0	0	0	+2	0
Wayne	0			0	0	0			0	0	0	0	0	0	0	0	0
L15	+ 2			+1	+1	+1			+ 1	0	+1	+ 1	0	0	-2	+1	+ 1
A2-5432	- 1			-5	-1	+3			- 3	-1	-1	- 4	-1	-1	-1	0	+ 2
C1362	- 2			-3	-3	-3			- 3	-3	-4	- 5	-2	-2	0	+2	+ 3
C1432	- 3			-5	-3	-1			- 5	-1	-1	- 9	+1	+2	0	+2	+ 1
C1435	- 2			0	-1	-1			- 1	-1	-3	- 6	+1	+1	-2	0	+ 4
C1437	+ 3			0	-1	+2			+ 4	0	+2	+ 2	+2	+3	-1	-1	+ 6
Amsoy	-10			-8	--	--			-14	-7	-7	-13	-7	-3	-6	--	- 4
Clark 63	+ 8			+8	+8	+5			+ 9	+6	+6	+ 9	+5	+7	+7	+2	+10
D. pltd.	5-20	5-20	5-17	5-10	5-19	6-5	6-5	6-3	5-22	5-13	5-16	6-6	5-18	5-17	5-24	6-7	5-25
Wayne mat.	10-1	--	--	9-6	9-3	9-16	--	--	10-4	9-21	9-21	9-27	9-22	9-14	9-19	9-24	9-17
Da. to mat.	134	--	--	119	107	103	--	--	135	131	128	113	127	120	118	109	115

	Lodging Score																
																	*
Adelphia	1.3	1.2	1.6	1.1	1.5	1.2		1.0	1.8	1.9	1.4	1.4	3.4	1.8	1.6	1.5	2.0
C1421	1.3	1.2	1.5	1.2	1.5	1.5		1.2	1.6	1.7	1.5	1.4	3.2	1.9	1.6	1.1	1.0
Shelby	1.3	1.4	1.3	1.3	2.3	1.5		1.8	2.0	3.0	1.6	1.3	3.3	3.0	2.3	3.0	3.0
Wayne	1.3	1.2	1.4	1.5	2.8	1.2		1.5	2.6	3.6	1.4	1.4	2.9	3.4	2.8	2.0	3.0
L15	1.3	1.3	1.3	1.6	2.7	1.2		2.0	2.8	3.5	1.4	1.5	3.6	3.3	2.7	1.5	3.0
A2-5432	1.2	1.2	1.2	1.4	1.8	1.3		1.3	1.6	2.9	1.3	1.3	2.8	3.3	2.4	1.3	3.0
C1362	1.1	1.1	1.1	1.3	2.0	1.2		1.5	2.0	2.9	1.2	1.2	2.4	3.2	2.8	1.5	2.0
C1432	1.1	1.1	1.2	1.3	1.5	1.3		1.5	1.6	2.0	1.3	1.1	2.1	2.9	1.9	1.4	2.0
C1435	1.0	1.1	1.1	1.1	1.8	1.0		1.0	1.8	1.5	1.3	1.3	1.9	2.2	1.6	1.4	1.0
C1437	1.2	1.2	1.3	1.2	2.2	1.3		1.3	2.1	2.8	1.5	1.5	2.6	2.5	2.2	1.8	2.0

Table 63. Plant height and seed quality scores, Uniform Test III, 1967.

Strain	Mean of 30 Tests	Harrow Ont.	Adelphia N.J. *	Georgetown 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.	Tren-ton Ill.	Eldo-rado Ill.	Car-bon-dale Ill.
Adelphia	36	30	41	33	32	19	25	32	43		42	44	38	43	40	44	44	39
C1421	37	31	43	33	33	19	24	35	43		41	45	39	45	39	46	44	40
Shelby	40	32	46	37	34	20	28	37	46		46	48	44	46	45	48	48	44
Wayne	39	32	40	38	37	22	29	35	45		43	44	42	43	41	44	44	42
L15	39	33	42	37	35	22	27	37	46		42	45	43	44	42	48	45	45
A2-5432	34	28	38	34	30	19	27	31	41		37	40	36	42	38	39	40	36
C1362	39	30	44	34	31	19	25	38	43		48	48	38	44	44	49	47	45
C1432	34	28	38	31	29	17	25	32	39		40	43	35	42	40	41	42	38
C1435	36	29	41	35	28	18	25	33	42		41	45	35	42	41	46	43	41
C1437	40	30	44	36	34	22	31	36	45		44	47	42	45	44	49	47	45

	Mean of 26 Tests		Seed Quality Score															
			*		*	*		*										
Adelphia	1.8	3.5	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.5	2.0	1.3	2.0	2.0	2.2	1.0
C1421	1.7	2.8	2.0	1.0	1.0	1.2	1.0	1.0	1.0	1.5	2.0	1.5	1.8	1.3	2.0	2.0	2.3	1.0
Shelby	1.7	1.2	3.0	2.4	1.0	1.0	1.2	1.0	1.5	1.5	1.5	1.5	1.2	1.7	2.3	2.2	1.8	2.0
Wayne	1.8	1.2	4.0	2.1	1.0	1.0	1.0	1.0	1.5	2.0	1.5	1.5	2.0	2.0	2.0	2.2	2.2	1.0
L15	1.9	1.5	3.0	2.3	1.0	1.0	1.2	1.0	1.5	1.5	1.0	1.5	2.0	2.0	2.0	2.2	2.2	1.0
A2-5432	1.8	1.5	3.0	2.0	1.0	1.2	1.2	1.0	1.5	2.0	1.5	1.5	2.0	2.0	2.8	2.0	2.2	1.0
C1362	1.9	1.2	2.0	1.6	1.0	1.0	1.0	1.0	1.5	2.0	2.0	1.5	1.7	1.7	2.3	1.8	1.5	3.0
C1432	1.9	1.8	3.0	1.8	1.0	1.2	1.2	1.0	1.5	1.5	1.5	1.5	2.2	2.3	2.6	2.7	2.2	1.5
C1435	1.7	1.2	2.0	1.6	1.0	1.0	1.0	1.0	1.5	1.5	1.0	1.5	2.3	2.0	2.4	1.8	2.3	1.0
C1437	2.0	2.2	2.0	1.8	1.0	1.0	1.0	1.0	1.5	1.5	2.0	1.5	2.2	2.5	2.0	2.5	2.5	2.0

*Not included in the mean.
[1]Loam.
[2]Gumbo.
[3]Irrigated.

Table 63. (Continued)

Strain	Ames Iowa	Ottumwa Iowa	Red Oak Iowa	Columbia Mo.	Portageville Mo.[1,3]	Portageville Mo.[2,3]	Centerville S.D.	Concord Nebr.[3]	Lincoln Nebr.[3]	Scandia Kans.[3]	Powhattan Kans.	Manhattan Kans.	Manhattan Kans.[3]	Ottawa Kans.	Newton Kans.	Columbus Kans.	Corcoran Cal.[3]
																	*
Adelphia	39	41	41	30	34	20	35	29	41	40	31	30	44	38	34	30	42
C1421	40	41	40	29	33	24	37	30	42	41	32	30	44	38	34	30	42
Shelby	42	44	44	33	41	30	38	31	46	43	34	31	47	41	38	35	48
Wayne	40	44	43	32	41	25	38	28	45	41	34	33	45	41	34	32	46
L15	42	46	44	32	40	26	40	31	42	42	35	33	47	42	35	32	47
A2-5432	36	37	40	30	34	21	33	27	39	39	30	25	40	37	30	29	43
C1362	42	41	41	35	38	22	40	29	46	43	31	34	48	39	36	36	47
C1432	34	38	36	28	32	23	32	25	40	38	30	28	41	35	31	32	44
C1435	38	39	36	26	36	25	38	25	44	41	31	28	42	38	36	33	42
C1437	41	44	42	31	42	27	40	30	45	43	34	32	46	42	37	35	50

Seed Quality Score

	*	*	*														*
Adelphia	1.0	1.0	1.0	1.8	3.0	2.5	2.0	3.0	3.5	2.2	1.4	1.6	1.4	1.3	1.3	1.2	2.0
C1421	1.0	1.0	1.0	1.8	2.7	2.3	1.5	3.0	2.4	1.9	1.4	1.8	1.4	1.3	1.4	1.1	2.0
Shelby	1.0	1.0	1.0	2.0	1.5	1.8	1.1	2.6	1.6	2.6	1.3	1.5	1.5	1.4	1.7	2.0	3.0
Wayne	1.0	1.0	1.0	2.5	2.0	2.5	1.1	2.4	1.5	2.7	1.4	1.5	1.7	1.7	2.0	1.8	3.0
L15	1.0	1.0	1.0	2.3	1.5	2.2	1.3	3.6	1.6	3.0	1.3	1.6	1.7	1.8	2.0	2.5	3.0
A2-5432	1.0	1.0	1.0	2.0	1.8	2.5	1.1	2.5	1.3	2.9	1.2	1.8	1.6	1.5	1.6	1.3	3.0
C1362	1.0	1.0	1.0	2.8	1.8	2.0	1.1	2.5	3.5	2.5	1.5	1.9	1.8	1.9	1.4	1.8	2.0
C1432	1.0	1.0	1.0	2.5	1.5	2.3	1.2	3.0	2.0	2.9	1.3	1.5	1.6	1.8	2.4	1.6	2.0
C1435	1.0	1.0	1.0	3.0	1.5	2.5	1.1	3.3	1.8	2.5	1.3	1.5	1.4	1.5	1.6	1.3	2.0
C1437	1.0	1.0	1.0	2.0	1.7	2.5	1.1	3.3	2.3	3.4	1.4	2.1	1.7	1.4	2.4	1.8	3.0

Table 64. Percentages of protein and oil, Uniform Test III, 1967.

Strain	Mean of 13 Tests	Adelphia N.J. *	Georgetown Del.	Columbus Ohio	Lafayette Ind.	Worthington Ind.	Urbana Ill.
Adelphia	39.4	41.9	39.9	36.4	40.5	39.8	39.6
C1421	39.4	41.4	41.1	37.6	40.2	38.9	39.0
Shelby	39.7	42.2	41.9	37.4	39.8	39.5	39.0
Wayne	40.5	43.3	43.0	39.5	40.9	39.4	40.1
L15	40.1	43.6	42.2	39.5	40.2	39.8	39.7
A2-5432	39.2	43.0	41.5	37.0	39.6	39.5	37.8
C1362	39.4	42.1	41.2	38.3	39.8	40.2	38.5
C1432	39.6	42.7	40.1	38.3	39.3	38.6	38.8
C1435	41.4	44.9	42.1	40.3	42.8	40.6	40.4
C1437	39.1	42.2	41.5	38.1	39.6	39.0	37.3
	Mean of 13 Tests	Percentage of Oil					
Adelphia	21.7	20.8 *	21.4	23.1	19.9	21.1	21.1
C1421	21.6	20.8	21.1	22.8	20.2	21.7	21.1
Shelby	21.2	20.1	20.7	22.1	20.3	21.4	20.8
Wayne	21.3	20.2	21.2	22.1	20.1	21.4	20.8
L15	21.2	20.0	20.8	21.8	19.8	21.2	20.4
A2-5432	21.7	20.9	20.8	22.3	20.7	21.1	21.8
C1362	21.7	19.8	21.2	22.6	20.2	20.5	22.2
C1432	21.8	20.6	21.2	22.6	20.3	22.3	22.1
C1435	21.5	20.1	21.3	22.1	19.9	21.9	22.1
C1437	21.3	20.6	20.1	21.5	20.8	21.2	21.4

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

Table 64. (Continued)

Strain	Eldorado Ill.	Ames Iowa	Columbia Mo.	Portageville Mo.[1,2]	Lincoln Nebr.[2]	Powhattan Kans.	Manhattan Kans.[2]	Ottawa Kans.
Adelphia	40.3	38.9	42.5	39.9	37.6	37.4	39.0	39.8
C1421	40.8	38.6	41.7	40.4	36.9	37.2	39.1	40.9
Shelby	40.6	39.1	41.7	40.5	38.1	36.7	39.9	41.3
Wayne	42.7	39.8	42.4	40.2	39.0	37.4	41.3	41.4
L15	41.1	39.0	42.9	40.1	38.9	36.7	40.0	41.7
A2-5432	41.0	38.3	42.0	39.8	37.1	36.3	39.0	40.6
C1362	39.9	39.3	41.7	38.6	38.2	36.7	39.0	40.2
C1432	41.7	38.6	41.9	40.7	37.6	37.1	39.6	41.9
C1435	43.9	40.1	43.3	42.2	40.6	38.3	42.0	42.0
C1437	41.3	38.2	41.7	40.5	35.9	35.7	38.6	40.4
	Percentage of Oil							
Adelphia	21.0	21.5	21.2	22.3	21.8	23.0	21.8	22.4
C1421	21.0	21.1	21.3	22.0	21.3	23.0	22.2	22.2
Shelby	20.5	20.5	20.7	22.4	20.7	23.0	21.9	21.2
Wayne	20.7	21.0	20.3	22.8	21.5	22.4	21.9	21.3
L15	20.6	20.9	20.4	22.2	20.8	22.9	21.8	21.6
A2-5432	20.9	21.9	21.0	22.4	21.2	23.9	22.4	22.1
C1362	21.6	21.8	21.1	22.3	21.0	22.9	22.1	22.2
C1432	21.1	22.2	21.6	21.3	21.3	23.2	22.1	22.4
C1435	20.2	21.9	21.4	21.9	20.7	22.7	21.8	21.6
C1437	20.3	22.5	20.3	21.9	21.5	22.5	22.2	21.1

Table 65. Three-year summary of data, Uniform Test III, 1965-1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	88	88	79	76	85	70	65	39	39
Shelby	37.2	3	-1.4	2.3	39	1.8	15.7	39.8	21.3
Wayne	41.0	1	0	2.2	38	1.9	17.6	40.7	21.3
A2-5432	39.1	2	-2.5	1.8	34	1.8	15.1	39.4	21.8

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

Table 66. Three-year summary of yield and yield rank, Uniform Test III, 1965-1967.

Strain	Mean of 88 Tests	Harrow Ont.	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.	Tren-ton Ill.
Years Tested		1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1966-1967
Shelby	37.2	34.7	19.7	38.1	24.7	32.8	40.5	47.6	38.1	41.3	42.5	45.7	39.8	32.2	41.2
Wayne	41.0	39.5	25.8	44.9	29.4	36.3	44.4	55.4	41.3	45.3	46.8	48.3	46.5	42.3	47.5
A2-5432	39.1	36.6	20.3	41.1	24.6	34.9	40.9	50.3	35.7	44.6	42.9	48.5	42.4	37.3	46.3
							Yield Rank								
Shelby	3	3	3	3	2	3	3	3	2	3	3	3	3	3	3
Wayne	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1
A2-5432	2	2	2	2	3	2	2	2	3	2	2	1	2	2	2

[1]Irrigated.
[2]Loam.

Table 66. (Continued)

Strain	Eldorado Ill.	Carbondale Ill.	Ames Iowa	Ottumwa Iowa	Columbia Mo.	Portageville Mo.[1,2]	Centerville S.D.	Lincoln Nebr.[1]	Scandia Kans.[1]	Powhattan Kans.	Manhattan Kans.	Manhattan Kans.[1]	Ottawa Kans.	Newton Kans.	Columbus Kans.
Years Tested	1965-1967	1965-1967	1965-1967	1965-1967	1965-1967	1966-1967	1965-1967	1965-1967	1965-1967	1965,1967	1965-1967	1965-1967	1966-1967	1965-1967	1966-1967
Shelby	47.8	38.1	34.1	41.9	34.8	32.2	32.7	42.0	26.1	34.3	31.9	49.3	37.8	27.2	34.5
Wayne	53.7	43.0	37.7	45.5	42.0	36.8	32.4	48.8	28.8	37.8	34.8	52.8	41.9	24.0	34.9
A2-5432	50.7	40.3	36.8	42.2	37.8	33.6	39.7	47.5	31.5	36.0	31.0	50.7	40.5	28.0	35.9
	Yield Rank														
Shelby	3	3	3	3	3	3	2	3	3	3	2	3	3	2	3
Wayne	1	1	1	1	1	1	3	1	2	1	1	1	1	3	2
A2-5432	2	2	2	2	2	2	1	2	1	2	3	2	2	1	1

PRELIMINARY TEST III, 1967

Strain	Parentage	Generation Composited
1. Wayne		
2. C1449	C1253 x Kent	F_7
3. C1450	C1253 x Kent	F_7
4. C1451	C1253 x Kent	F_7
5. C1454	C1266R x C1253	F_7
6. C1458	C1266R x C1253	F_7

This small test consisted of Wayne and five phytophthora-resistant C strains. C1449 equalled the yield of Wayne and was higher at many locations, but the other lines were lower on the average. Lodging, in general, was similar to Wayne except the early line, C1450, which was appreciably more erect.

Table 67. Descriptive data and shattering scores, Preliminary Test III, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering Stoneville Mississippi[1]
Wayne	W	T	Br	S	Y	Bl	3.0
C1449	P	G	Br	S	Y	Ib	3.0
C1450	P	G	Br	S	Y	Ib	4.0
C1451	P	T	Br	D	Y	Bl	4.0
C1454	P	G	Br	S	Y	Ib	3.0
C1458	P	G	Br	D	Y	Ib+Bf	2.5

[1]Mean of two replications. Scored 14 days after maturity.

Table 68. Summary of data, Preliminary Test III, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	16	16	13	12	16	11	11	8	8
Wayne	43.8	2	0	2.4	39	1.6	17.4	41.0	20.9
C1449	43.9	1	+1.8	2.7	43	1.7	15.5	38.8	21.9
C1450	38.6	6	-1.8	1.5	37	2.1	19.9	39.6	22.4
C1451	39.2	5	+4.2	2.7	43	1.7	15.2	40.4	21.4
C1454	41.3	4	+2.5	2.5	44	1.8	14.4	40.7	21.5
C1458	42.0	3	+2.0	2.8	46	1.9	16.0	40.6	21.3

[1]Days earlier (-) or later (+) than Wayne which matured September 25, 125 days after planting.

Table 69. Disease data, Preliminary Test III, 1967.

Strain	BB	BP	DM		FE2	BSR	PR	PSB	PS
			Edgewood						
	Ill.	Ill.	Ill.	Ind.	Ind.	Ill.	Ind.	Del.	Del.
	n	a	n	n	a	n	a	n	n
Wayne	1	1	5.0	3.0	2	4	S	4.0	3.0
C1449	2	2	4.7	3.5	5	4	R	2.3	1.3
C1450	3	1	5.0	4.0	2	4	R	2.3	1.0
C1451	2	2	5.0	4.0	2	4	R	1.7	1.3
C1454	1	1	1.2	2.0	4	4	S	2.0	1.3
C1458	1	1	5.0	5.0	3	4	R+S	3.0	1.7

a = artificial inoculation; n = natural infection.

Table 70. Yield, yield rank, and maturity, days earlier (-) or later (+) than Wayne, Preliminary Test III, 1967.

Strain	Mean of 16 Tests	Hoyt-ville Ohio	Woos-ter Ohio *	Co-lum-bus Ohio	Lafa-yette Ind.	Wor-thing-ton Ind.	Ur-bana Ill.	Edge-wood Ill.	Tren-ton Ill.	Eldo-rado Ill.
Wayne	43.8	31.8	9.8	42.7	48.7	58.3	46.8	44.3	48.1	42.4
C1449	43.9	21.7	8.8	33.6	47.2	63.8	50.2	48.7	50.6	45.9
C1450	38.6	21.0	7.5	14.1	47.9	43.9	45.1	44.5	51.3	44.8
C1451	39.2	23.8	9.9	23.9	48.1	49.9	47.2	40.2	39.8	41.3
C1454	41.3	28.3	6.8	28.5	47.1	55.3	46.3	41.0	49.5	62.5
C1458	42.0	30.2	11.1	15.8	52.8	55.6	47.5	45.0	50.1	45.8
Coef. of Var. (%)		--	--	--	4.6	10.4	2.3	7.4	16.7	3.4
L.S.D. (5%)		--	--	--	N.S.	N.S.	N.S.	N.S.	N.S.	4.5
Row Spacing (In.)		32	32	28	38	38	40	38	36	36
					Yield Rank					
Wayne	2	1	3	1	2	2	4	4	5	5
C1449	1	5	4	2	5	1	1	1	2	2
C1450	6	6	5	6	4	6	6	3	1	4
C1451	5	4	2	4	3	5	3	6	6	6
C1454	4	3	6	3	6	4	5	5	4	1
C1458	3	2	1	5	1	3	2	2	3	3
	Mean of 13 Tests				Maturity					
Wayne	0	0	0 *	0	0	0	0	0	0	0
C1449	+1.8	+2	0	0	0	+1	+ 1	+2	+5	+ 3
C1450	-1.8	+2	+ 3	0	+ 1	-4	- 2	-2	-3	- 5
C1451	+4.2	+7	+ 5	+ 5	+ 4	+2	+ 1	+7	+7	+ 4
C1454	+2.5	+5	+ 2	- 1	- 1	+4	- 2	+6	+9	+ 3
C1458	+2.0	+2	+ 3	+ 3	+ 1	+2	0	+5	+4	+ 1
Amsoy (II)	-9.5	-8	-19	-23	- 7	-6	-13	-5	-6	-13
Clark 63 (IV)		--	--	+ 6	+11	+6	+ 3	+7	+5	+ 3
Date planted	5-23	6-15	5-20	5-20	5-25	5-22	5-19	6-7	5-23	5-24
Wayne matured	9-25	10-20	10-1	10-9	9-30	9-16	9-19	9-26	9-17	9-16
Days to mature	125	127	134	142	128	117	123	111	117	115

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

Table 70. (Continued)

Strain	Ames Iowa	Ottumwa Iowa	Red Oak Iowa	Columbia Mo.	Centerville S.D.	Lincoln Nebr.[1]	Powhattan Kans.	Manhattan Kans. *	Manhattan Kans.[1]	Ottawa Kans. *
Wayne	43.2	44.4	45.6	26.6	37.6	57.1	33.0	24.5	50.9	43.5
C1449	43.4	44.7	51.0	25.9	34.7	53.4	32.4	28.1	55.0	33.3
C1450	39.3	34.4	43.1	21.4	32.4	50.5	31.8	18.4	52.6	34.4
C1451	39.3	40.8	44.9	21.8	35.1	54.5	33.1	23.3	44.2	33.0
C1454	37.7	37.0	43.8	25.3	31.8	46.6	31.6	31.6	49.2	24.6
C1458	41.5	39.7	49.6	30.3	34.5	43.8	32.6	30.9	57.9	29.1
Coef. of Var. (%)	3.5	4.3	6.8	5.3	9.6	12.6	1.2	28.2	9.9	28.1
L.S.D. (5%)	3.3	3.9	7.1	3.4	N.S.	16.5	N.S.	N.S.	N.S.	N.S.
Row Spacing (In.)	40	38	38	36	40	40	38	36	36	30
	Yield Rank									
Wayne	2	2	3	2	1	1	2	4	4	1
C1449	1	1	1	3	3	3	4	3	2	3
C1450	4	6	6	6	5	4	5	6	3	2
C1451	4	3	4	5	2	2	1	5	6	4
C1454	6	5	5	4	6	5	6	1	5	6
C1458	3	4	2	1	4	6	3	2	1	5
	Maturity									
	*	*		*			*		*	
Wayne	0			0		0	0	0	0	0
C1449	+4			+2		+ 4	-1	+ 1	+1	-1
C1450	0			-3		- 1	-3	- 4	-3	-1
C1451	+4			-1		+ 8	+3	0	+4	+1
C1454	+1			+3		+ 5	+1	- 2	-1	-1
C1458	+4			+1		+ 2	+1	- 1	0	+1
Amsoy	-6			-7		-16	-7	-13	-7	-4
Clark 63	--			+9		+ 7	+6	+ 9	+5	+6
Date planted	5-20	5-20	5-17	5-10	6-5	5-22	5-16	6-6	5-18	5-17
Wayne matured	9-28	--	--	9-5	--	10-6	9-21	9-27	9-22	9-15
Days to mature	131	--	--	118	--	137	128	113	127	121

UNIFORM TEST IV, 1967

Strain	Parentage	Generation Composited	Previous Testing (years)
1. Clark 63	(Clark^5 x L49-4091) x (Clark^6 x Blackhawk)	13 F_3 lines	5
2. Custer	[((Peking x Scott^4)^3 x ($\underline{ii}$ $\underline{Rhg}_4$ line from Peking x Scott^2)) x (Scott^9 x Blackhawk)] x (Peking x Scott^5)	23 F_3 lines	1
3. Kent	Lincoln x Ogden	F_7	13
4. C1278	C1069 x Clark	F_7	4
5. C1311	Wabash x C1069	F_7	3
6. C1423	C1266R^8 x C1253	9 F_3 lines	P.T. IV
7. C1439	C1253 x Kent	F_7	P.T. IV

Yields averaged somewhat below those of last year but most locations produced satisfactory yields. The very high yields at Evansville (66.1 bu.) and Manhattan (72.2) were notable.

The four-year mean shows C1278 yielding slightly better than Kent and well ahead of Clark 63. C1278 has the good lodging resistance of Kent but is almost as early as Clark. It also was better in shattering resistance, one of the weak points of Kent.

C1311 is somewhat later than C1278, and it has not yielded as well. Its strong point is its improved seed quality.

The remaining two strains, C1423 and C1439, are phytophthora resistant but, in general, did not perform as well as C1278, although C1423 ranked first in yield at a number of locations.

Table 71. Descriptive data and shattering scores, Uniform Test IV, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering	
							Stoneville	Mississippi[2]
Clark 63	P	T	Br	D	Y	Bl	1.0	
Custer	P	G[1]	Br	S	Y	Ib	2.5	
Kent	P	T	Br	I	Y	Bl	3.0	
C1278	P	T	Br	S	Y	Bl	1.5	
C1311	W	G	Tan	S	Y	Bf	2.5	
C1423	P	G	Br	D	Y	Bf	2.5	
C1439	P	G	Br	S	Y	Ib	2.5	

[1]Semi-appressed pubescence.
[2]Mean of two replications. Scored 14 days after maturity.

Table 72. Summary of data, Uniform Test IV, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	27	27	26	26	27	25	21	15	15
Clark 63	36.3	6	0	2.8	40	1.8	15.1	39.8	21.5
Custer	32.2	7	+6.7	3.0	45	1.9	14.8	37.2	21.1
Kent	38.7	4	+6.8	2.1	40	1.7	17.2	39.7	21.8
C1278	40.6	1	+1.7	2.2	40	1.8	17.2	40.0	21.5
C1311	39.0	3	+4.1	2.1	44	1.5	15.5	40.3	21.2
C1423	39.5	2	+1.5	2.7	45	2.0	15.9	40.8	21.4
C1439	37.6	5	+2.7	2.5	46	1.8	16.1	39.2	22.7

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

Table 73. Disease and insect data, Uniform Test IV, 1967.

Strain	BB			BP	BS	DM		FE2	BSR	PR		Py[1]	PSB	PS	SCM[2]
	Ill.	Ia.	Ia.	Ill.	Ia.	Edgewood Ill.	Ind.	Ind.	Ill.	Ind.	Ia.	Ia.	Del.	Del.	Ill.
	n	a	n	a	a	n	n	a	n	a	a	a	n	n	a
Clark 63	1	3	2	1	4	4.2	4.8	5	4	R	R	4.4	4.0	2.5	1.9
Custer	1	4	2	2	4	4.3	3.8	5	4	R	R	4.1	2.0	1.5	2.0
Kent	3	3	2	1	4	3.7	1.3	1	4	S	S	4.5	1.5	2.3	1.1
C1278	3	2	2	2	3	4.5	4.5	1	4	S	S	4.4	2.7	1.7	1.6
C1311	1	2	2	3	3	5.0	4.3	3	4	S	S	4.1	2.3	1.0	2.2
C1423	1	3	3	2	3	3.8	4.0	3	4	R	R	4.6	2.0	2.0	1.5
C1439	1	4	2	3	4	5.0	4.5	5	4	R	R	4.6	1.5	1.5	1.2

a = artificial inoculation; n = natural infection.
[1]In greenhouse soil. 1 (healthy) to 5 (not emerged).
[2]Average number of maggots per seed.

Table 74. Yield, yield rank, and maturity, days earlier (-) or later (+) than Clark 63, Uniform Test IV, 1967.

Strain	Mean of 27 Tests	Bridgeton N.J. *	George-town Del.	Queens-town Md.	Link-wood Md.	Co-lum-bus Ohio	Lafa-yette Ind.	Wor-thing-ton Ind.	Evans-ville Ind.	Hen-der-son Ky.	Ur-bana Ill.	Gi-rard Ill.	Edge-wood Ill.	Tren-ton Ill.	El-do-rado Ill.
Yield															
Clark 63	36.3	26.6	40.4	46.6	36.7	30.8	44.8	41.6	41.8	41.3	42.6	37.4	38.7	45.8	43.3
Custer	32.2	37.1	40.3	42.4	34.6	37.6	32.7	36.9	40.0	30.4	36.2	32.7	36.2	37.9	43.9
Kent	38.7	50.8	35.1	43.2	34.8	36.5	48.5	50.0	54.3	46.8	43.9	44.9	51.5	49.5	45.1
C1278	40.6	34.1	47.4	51.7	33.6	26.4	49.6	50.8	66.1	46.3	43.7	44.4	44.2	52.4	43.8
C1311	39.0	52.7	47.3	39.2	35.1	36.2	46.6	51.2	53.0	42.4	44.4	39.3	44.1	45.6	41.2
C1423	39.5	37.4	34.5	49.1	36.1	30.6	51.3	54.1	60.6	45.9	46.5	46.7	56.2	52.7	43.9
C1439	37.6	41.8	39.9	46.5	35.2	41.9	41.6	50.9	58.1	43.1	42.0	36.3	43.8	47.1	45.5
CV (%)		19.5	6.4	4.2	4.8	--	6.1	11.0	8.4	10.1	6.7	6.4	7.5	5.0	7.1
LSD (5%)		12.2	3.9	3.7	3.1	--	4.1	7.8	6.7	7.6	5.1	4.6	5.0	4.2	N.S.
R.Sp.(In.)		36	34	30	38	28	38	38	38	40	30	30	38	36	36
Yield Rank															
Clark 63	6	7	3	3	1	5	5	6	6	6	5	5	6	5	6
Custer	7	5	4	6	6	2	7	7	7	7	7	7	7	7	3
Kent	4	2	6	5	5	3	3	5	4	1	3	2	2	3	2
C1278	1	6	1	1	7	7	2	4	1	2	4	3	3	2	5
C1311	3	1	2	7	4	4	4	2	5	5	2	4	4	6	7
C1423	2	4	7	2	2	6	1	1	2	3	1	1	1	1	3
C1439	5	3	5	4	3	1	6	3	3	4	6	6	5	4	1
Maturity	Mean of 26 Tests	*													
Clark 63	0		0	0	0	0	0	0	0	0	0	0	0	0	0
Custer	+6.7		0	+ 7	+ 6	+3	+5	+9	+7	- 1	+11	+8	+8	+10	+12
Kent	+6.8		+ 4	+ 5	+ 5	+4	+6	+7	+4	+ 2	+ 7	+8	+7	+ 9	+ 8
C1278	+1.7		+ 2	+ 2	0	+5	+3	+2	+1	- 2	+ 4	+5	+1	+ 3	+ 2
C1311	+4.1		+ 2	+ 3	+ 5	+6	+5	+6	+3	0	+ 8	+6	+3	+ 6	+ 5
C1423	+1.5		+ 1	+ 1	- 1	+4	-1	+3	+3	- 6	+ 3	+2	+2	+ 4	+ 2
C1439	+2.7		+ 1	+ 2	+ 2	+3	-1	+4	+3	+ 1	+ 2	+4	+2	+ 3	+ 4
Wayne (III)			- 7	-10	- 7	-6	-7	-5	-4	- 5	- 4	-6	-8	- 4	- 4
Hill (V)			+19	+20	+21	--	--	--	--	+18	+35	--	--	--	+31
D.pltd.	5-23	5-31	5-18	5-29	6-6	5-20	5-25	5-22	5-23	5-10	5-18	5-22	6-7	5-23	5-24
Clk.63	9-26	--	9-27	9-30	9-27	10-15	10-11	9-22	9-23	9-24	9-22	9-26	10-3	9-22	9-19
Days	126	--	132	124	113	148	139	123	123	137	127	127	118	122	118

*Not included in the mean.
[1]Loam.
[2]Gumbo.
[3]Irrigated.

Table 74. (Continued)

Strain	Carbondale Ill.	Miller City Ill.	Columbia Mo.	Mt. Vernon Mo.	Portageville Mo.[1,3]	Portageville Mo.[2,3]	Lincoln Nebr.[3]	Scandia Kans.[3]	Powhattan Kans.	Manhattan Kans.	Manhattan Kans.[3]	Ottawa Kans.	Newton Kans.	Columbus Kans.	Corcoran Cal.[3]
															*
Clark 63	44.3	36.1	27.1	28.1	30.4	20.3	36.6	32.2	33.5	33.7	50.9	34.1	17.1	23.9	19.3
Custer	39.7	39.6	24.2	23.0	33.0	20.5	26.8	18.1	26.1	29.6	36.9	29.5	14.5	26.0	20.6
Kent	46.6	42.6	26.6	30.3	28.9	19.9	46.7	24.0	25.7	41.1	59.3	30.7	12.9	24.9	38.6
C1278	49.9	42.9	27.8	28.6	31.4	20.6	50.0	28.3	31.7	36.2	72.2	35.0	15.5	26.5	25.4
C1311	45.8	43.1	26.9	28.0	33.4	22.9	48.1	27.2	34.3	36.1	68.7	33.5	14.2	25.9	29.1
C1423	45.9	37.9	27.6	28.4	32.3	20.4	34.1	27.8	36.9	38.5	52.5	33.5	16.0	27.2	20.9
C1439	43.2	34.9	25.6	29.6	28.4	20.6	42.7	28.1	29.3	33.3	52.8	33.0	16.1	26.7	23.8
CV(%)	--	9.8	8.9	9.7	9.5	14.2	17.3	16.3	14.1	8.6	16.7	10.8	16.1	8.8	25.0
LSD(5%)	--	N.S.	5.0	4.8	5.2	5.2	10.5	6.4	6.5	4.5	14.0	N.S.	N.S.	N.S.	9.5
RS(In.)	40	38	36	30	38	38	40	30	38	36	36	30	30	30	30
	Yield Rank														
Clark 63	5	6	3	5	5	6	5	1	3	5	6	2	1	7	7
Custer	7	4	7	7	2	4	7	7	6	7	7	7	5	4	6
Kent	2	3	5	1	6	7	3	6	7	1	3	6	7	6	1
C1278	1	2	1	3	4	2	1	2	4	3	1	1	4	3	3
C1311	4	1	4	6	1	1	2	5	2	4	2	3	6	5	2
C1423	3	5	2	4	3	5	6	4	1	2	5	3	3	1	5
C1439	6	7	6	2	7	2	4	3	5	6	4	5	2	2	4
	Maturity														
				*											*
Clark 63	0	0	0		0	0	0	0	0	0	0	0	0	0	0
Custer	+11	+ 5	+5		+ 5	+ 2	+7	+9	+13	+12	+ 8	+ 5	+ 6	+2	+ 1
Kent	+ 8	+ 6	+3		+ 6	+10	+7	+8	+13	+13	+ 9	+ 4	+ 5	+8	+ 2
C1278	0	+ 3	+1		- 1	+ 3	+2	+3	+ 1	+ 4	0	+ 1	- 1	+1	+ 1
C1311	+ 3	+ 5	+5		+ 5	+ 6	+2	+7	+ 4	+ 8	+ 2	0	0	+2	0
C1423	+ 6	- 1	+1		- 1	+ 2	+1	+6	+ 1	+ 6	0	0	0	+1	0
C1439	+ 6	+ 2	+3		+ 4	+ 2	+3	+5	+ 3	+10	- 1	+ 1	+ 1	+1	0
Wayne	- 7	--	-9	--	- 8	- 5	-7	-6	- 6	- 9	- 5	- 7	- 7	-2	-10
Hill	--	+17	--	+38	+30	+20	--	--	+23	+16	+21	+28	+18	--	--
D.pltd.	5-22	5-24	5-10	5-23	5-19	6-5	5-22	5-13	5-16	6-6	5-18	5-17	5-24	6-7	5-25
Clk.63	9-18	9-20	9-14	9-19	9-11	9-21	10-13	9-27	9-27	10-6	9-27	9-21	9-26	9-26	9-27
Days	119	119	127	119	115	108	144	137	134	122	132	127	125	111	125

Table 75. Lodging scores, plant height, and seed quality scores, Uniform Test IV, 1967.

Strain	Mean of 26 Tests	Bridgeton N.J.	Georgetown Del.	Queenstown Md.	Linkwood Md.	Columbus Ohio	Lafayette Ind.	Worthington Ind.	Evansville Ind.	Henderson Ky.	Urbana Ill.	Girard Ill.	Edgewood Ill.	Trenton Ill.	Eldorado Ill.
		*				*									
Clark 63	2.8	4.0	2.5	3.2	3.7	1.0	2.8	3.8	4.0	2.0	1.5	4.1	3.6	4.7	4.1
Custer	3.0	4.0	2.8	3.3	1.4	1.0	3.0	2.8	4.0	2.7	2.1	4.7	4.0	4.9	4.3
Kent	2.1	4.0	2.0	3.4	1.4	1.0	2.3	2.1	3.0	1.3	1.4	2.7	2.6	2.9	2.6
C1278	2.2	5.0	1.8	3.3	2.7	1.0	1.8	2.4	2.0	1.3	1.5	2.9	3.0	3.2	3.4
C1311	2.1	5.0	1.5	3.6	1.5	1.0	1.8	2.4	2.5	3.0	1.2	3.1	3.1	3.6	3.8
C1423	2.7	4.0	2.5	3.6	2.2	1.0	2.5	2.5	3.3	3.7	1.5	4.5	3.8	4.4	3.8
C1439	2.5	5.0	2.8	3.3	1.9	1.0	2.3	2.3	3.3	2.7	1.4	4.2	3.8	4.6	3.7

	Mean of 27 Tests	Plant Height													
		*													
Clark 63	40	43	40	43	39	31	44	45	46	44	42	46	43	46	43
Custer	45	49	44	53	46	30	46	51	50	47	48	46	48	52	46
Kent	40	43	40	42	43	34	45	45	46	44	41	46	45	46	44
C1278	40	42	41	41	38	34	43	43	47	45	43	47	44	44	46
C1311	44	44	44	48	43	35	48	49	50	51	45	51	48	51	47
C1423	45	44	43	47	46	33	48	50	50	50	46	52	49	53	51
C1439	46	53	43	55	35	33	47	53	54	54	47	50	51	58	53

	Mean of 25 Tests	Seed Quality Score													
		*		*					*						
Clark 63	1.8	3.0	2.5	2.0	2.0	1.0	1.5	1.5	1.5	2.0	1.2	1.8	1.8	2.5	2.5
Custer	1.9	2.0	2.0	2.0	3.0	1.0	1.5	2.0	1.5	1.3	1.7	1.5	2.1	2.3	2.3
Kent	1.7	2.0	2.1	2.0	2.0	1.0	1.5	1.5	1.5	1.7	1.7	1.7	1.6	1.8	2.3
C1278	1.8	3.0	2.0	2.0	2.0	1.0	1.5	2.0	1.5	2.3	1.7	1.5	1.6	2.2	2.3
C1311	1.5	2.0	2.1	2.0	2.0	1.5	2.0	1.5	1.5	2.0	1.2	1.3	1.5	1.3	1.7
C1423	2.0	2.0	2.5	2.0	2.0	1.2	1.5	2.5	1.5	2.0	1.2	1.5	1.8	2.0	2.7
C1439	1.8	2.0	1.9	2.0	2.0	1.0	1.0	2.0	1.5	1.7	1.7	1.5	1.3	2.3	2.3

*Not included in the mean.
[1]Loam.
[2]Gumbo.
[3]Irrigated.

Table 75. (Continued)

Strain	Carbondale Ill.	Miller City Ill.	Columbia Mo.	Mt. Vernon Mo.	Portageville Mo.[1,3]	Portageville Mo.[2,3]	Lincoln Nebr.[3]	Scandia Kans.[3]	Powhattan Kans.	Manhattan Kans.	Manhattan Kans.[3]	Ottawa Kans.	Newton Kans.	Columbus Kans.	Corcoran Cal.[3]
															*
Clark 63	4.0	1.4	1.6	3.0	1.7	1.7	3.3	3.3	1.4	1.5	3.4	2.5	2.5	1.3	2.0
Custer	4.0	2.1	2.3	3.0	2.5	1.3	4.0	3.5	1.6	1.8	3.8	3.0	2.9	1.2	2.0
Kent	3.0	1.3	1.4	2.0	1.2	1.2	2.7	2.0	1.4	1.5	3.0	2.1	2.1	1.1	2.0
C1278	3.0	1.5	1.7	2.3	1.0	1.2	2.1	2.6	1.3	1.6	2.9	2.4	2.1	1.1	2.0
C1311	2.0	1.4	1.6	2.6	1.5	1.2	1.9	2.2	1.2	1.3	2.5	2.2	1.6	1.1	1.0
C1423	4.0	1.4	1.6	3.6	1.5	1.0	3.7	2.9	1.5	1.6	3.0	2.7	1.9	1.4	2.0
C1439	4.0	1.6	1.3	2.3	2.0	1.5	3.5	1.6	1.5	1.3	3.2	2.6	2.0	1.2	1.0
	Plant Height														
															*
Clark 63	43	36	32	47	38	29	43	40	35	33	45	40	36	34	47
Custer	48	46	42	59	43	31	52	45	40	39	49	44	41	42	50
Kent	45	39	30	47	38	26	44	39	33	30	43	37	36	34	48
C1278	43	41	29	48	39	26	44	39	34	30	46	39	36	35	46
C1311	49	46	34	50	43	28	51	42	36	30	50	40	40	37	52
C1423	47	42	35	59	44	31	45	43	39	36	49	43	41	41	47
C1439	53	44	37	57	46	33	49	43	39	34	52	46	42	42	48
	Seed Quality Score														
															*
Clark 63	3.0	1.7	2.0	2.5	1.5	2.2	1.1	2.1	1.5	1.4	1.5	1.3	1.4	1.4	2.0
Custer	3.0	2.2	1.6	3.5	2.5	2.2	1.8	1.4	1.8	1.3	1.6	1.6	1.5	1.1	3.0
Kent	2.0	2.2	2.0	2.5	1.5	2.2	1.1	1.5	1.6	1.6	1.4	1.7	1.7	1.8	3.0
C1278	2.0	2.2	2.3	2.2	1.5	2.3	1.1	1.8	1.5	1.4	1.4	1.4	1.4	1.5	2.0
C1311	1.0	1.7	1.7	2.5	1.5	1.5	1.4	1.3	1.3	1.4	1.2	1.3	1.3	1.4	2.0
C1423	2.0	1.7	2.0	3.5	2.0	2.0	2.1	2.0	2.0	2.3	1.6	1.9	1.4	2.0	2.0
C1439	1.0	1.7	1.8	3.0	1.5	2.5	2.5	1.6	1.6	1.6	1.8	1.5	1.5	1.3	2.0

Table 76. Percentages of protein and oil, Uniform Test IV, 1967.

Strain	Mean of 15 Tests	Bridgeton N.J. *	Georgetown Del.	Queenstown Md.	Linkwood Md.	Columbus Ohio	Evansville Ind.	Henderson Ky.	Urbana Ill.
Clark 63	39.8	40.5	41.5	42.5	41.8	38.6	40.7	42.3	38.5
Custer	37.2	39.4	37.9	38.9	37.7	38.4	37.1	39.4	36.7
Kent	39.7	41.5	40.9	42.0	41.4	38.6	39.4	41.8	38.5
C1278	40.0	41.9	41.2	44.0	42.2	35.8	40.0	41.8	39.0
C1311	40.3	41.2	42.6	42.3	41.4	38.3	40.3	39.7	39.0
C1423	40.8	42.6	42.8	43.1	41.2	39.9	40.5	42.5	40.0
C1439	39.2	39.9	40.4	40.8	40.5	37.1	39.3	42.3	37.3

	Mean of 15 Tests	Percentage of Oil						
		*						
Clark 63	21.5	21.4	20.6	20.1	21.5	22.6	20.8	21.2	20.6
Custer	21.1	20.2	20.9	20.4	21.2	22.6	20.1	20.2	20.8
Kent	21.8	21.8	20.7	21.4	21.6	23.1	21.8	21.9	20.4
C1278	21.5	21.4	21.1	20.1	21.1	21.1	21.5	21.3	20.7
C1311	21.2	21.4	20.3	20.4	20.6	22.3	21.0	20.5	21.3
C1423	21.4	21.7	20.3	20.7	21.1	21.8	21.2	21.0	21.1
C1439	22.7	22.6	22.1	22.6	23.0	22.9	23.0	22.3	22.6

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

Table 76. (Continued)

Strain	Eldorado Ill.	Miller City Ill.	Columbia Mo.	Portageville Mo.[1,2]	Lincoln Nebr.[2]	Powhattan Kans.	Manhattan Kans.[2]	Ottawa Kans.
Clark 63	41.5	37.5	41.8	38.3	37.8	37.2	36.9	39.5
Custer	38.4	33.8	39.5	34.1	36.7	36.0	36.4	37.5
Kent	40.8	38.4	42.0	38.0	38.3	37.0	38.7	39.5
C1278	41.2	39.1	41.7	38.6	38.0	38.3	39.3	40.1
C1311	41.8	40.2	43.5	39.1	37.9	37.7	39.6	41.6
C1423	42.2	40.3	42.6	39.4	38.9	38.0	39.2	41.1
C1439	40.1	38.2	41.4	37.6	37.5	36.8	38.8	39.8
	Percentage of Oil							
Clark 63	21.9	22.5	21.0	23.0	20.9	22.5	21.9	21.8
Custer	20.2	22.5	20.5	23.0	19.3	21.9	20.8	21.5
Kent	21.7	22.5	20.9	22.6	21.7	23.3	22.2	21.6
C1278	21.6	21.8	20.9	22.6	21.7	22.3	22.4	22.4
C1311	21.1	22.0	20.3	22.0	21.2	22.4	21.3	21.2
C1423	21.7	21.7	21.0	22.4	20.6	22.5	21.7	21.6
C1439	22.4	23.1	21.3	23.5	21.8	23.3	23.7	22.4

Table 77. Four-year summary of data, Uniform Test IV, 1964-1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	83	83	78	75	81	77	62	45	45
Clark 63	37.0	4	0	2.2	39	2.2	16.0	40.3	21.7
Kent	39.8	2	+7.3	1.8	39	2.1	18.0	40.2	22.0
C1278	40.7	1	+2.3	1.8	39	2.2	18.0	40.6	21.6
C1311	38.9	3	+5.7	1.8	43	1.8	16.0	40.9	21.4

[1]Days earlier (-) or later (+) than Clark 63 which matured September 28, 126 days after planting.

Table 78. Four-year summary of yield and yield rank, Uniform Test IV, 1964-1967.

Strain	Mean of 83 Tests	Bridgeton N.J.[1]	Newark Del.	Georgetown Del.	Linkwood Md.	Columbus Ohio	Worthington Ind.	Evansville Ind.	Henderson Ky.	Urbana Ill.	Girard Ill.	Edgewood Ill.	Trenton Ill.	Eldorado Ill.
Years Tested		1966-1967	1964-1966	1964-1967	1966-1967	1964-1967	1964-1967	1964-1967	1966-1967	1965-1967	1965-1967	1964-1967	1966-1967	1964-1967
Clark 63	37.0	27.4	32.4	26.5	32.0	34.0	40.4	42.0	47.2	45.7	41.0	33.8	43.5	48.0
Kent	39.8	40.4	32.9	36.4	33.5	35.5	50.4	50.2	49.9	47.7	43.5	37.1	47.4	52.4
C1278	40.7	31.3	35.0	28.4	34.8	36.8	53.1	52.4	48.5	47.4	44.3	38.3	50.8	53.0
C1311	38.9	41.6	30.7	30.9	34.9	39.9	51.4	49.0	46.4	47.1	40.6	36.0	46.2	48.0
		Yield Rank												
Clark 63	4	4	3	4	4	4	4	4	3	4	3	4	4	3
Kent	2	2	2	1	3	3	3	2	1	1	2	2	2	2
C1278	1	3	1	3	2	2	1	1	2	2	1	1	1	1
C1311	3	1	4	2	1	1	2	3	4	3	4	3	3	3

[1]Salem, 1966.
[2]Irrigated.
[3]Loam.

Table 78. (Continued)

Strain	Carbondale Ill.	Miller City Ill.	Columbia Mo.	Portageville Mo.[2,3]	Lincoln Nebr.[2]	Scandia Kans.[2]	Powhattan Kans.	Colby Kans.[2]	Manhattan Kans.	Manhattan Kans.[2]	Ottawa Kans.	Newton Kans.	Columbus Kans.	Corcoran Cal.[2]
Years Tested	1964-1967	1964-1967	1964-1967	1964-1967	1966-1967	1965, 1967	1964-1967	1965-1966	1964-1967	1964-1967	1966-1967	1965-1967	1966-1967	1966-1967
Clark 63	35.5	40.2	35.4	40.7	40.2	31.3	36.8	32.4	40.5	47.9	35.2	24.2	34.6	28.6
Kent	39.2	45.1	35.1	41.8	50.9	25.6	36.8	34.4	43.2	49.1	30.5	23.0	38.7	38.9
C1278	38.3	43.4	36.5	43.0	52.3	31.1	38.0	35.1	42.4	53.7	33.4	25.2	39.5	31.5
C1311	38.8	44.0	34.1	42.0	49.2	28.0	35.9	33.7	39.4	51.0	34.6	23.0	39.9	34.2
	Yield Rank													
Clark 63	4	4	2	4	4	1	2	4	3	4	1	2	4	4
Kent	1	1	3	3	2	4	2	2	1	3	4	3	3	1
C1278	3	3	1	1	1	2	1	1	2	1	3	1	2	3
C1311	2	2	4	2	3	3	4	3	4	2	2	3	1	2

PRELIMINARY TEST IV, 1967

Strain	Parentage	Generation Composited
1. Clark 63		
2. Kent		
3. C1452	C1253 x Kent	F_7
4. C1455	C1266R x C1253	F_7
5. C1456	C1266R x C1253	F_7
6. C1457	C1266R x C1253	F_7
7. Md62-3103	Unknown[1]	F_4
8. Md64-4749	Clark[2] x (Dunfield x T106-6)	F_4
9. Md64-4978	Clark[2] x (Dunfield x T106-6)	F_4

[1]From second cycle of intermatings with 20 original strains.

The four C strains are phytophthora resistant, quite tall, and apparently somewhat susceptible to shattering. The two late ones, C1452 and C1457 (two days earlier than Kent), had the highest yield in the test, even outyielding Kent on the average. The remaining two C strains and the three Md selections were similar to Clark 63 in maturity but one to three bushels higher in average yield. This is probably not enough to beat C1278, the best yielder in Uniform Test IV. Two of the Md strains were very similar to Clark, but Md62-3103 showed resistance to frogeye race 2 in Indiana and to pod and stem blight in Delaware, and averaged high in oil percentage.

Table 79. Descriptive data and shattering scores, Preliminary Test IV, 1967.

Strain	Flower Color	Pubescence Color	Pod Color	Seed Coat Luster	Seed Coat Color	Hilum Color	Shattering Stoneville Mississippi[1]
Clark 63	P	T	Br	D	Y	Bl	1.0
Kent	P	T	Br	I	Y	Bl	3.5
C1452	P	G	Br	D	Y	Ib	3.0
C1455	P	G	Br	D	Y	Bf	3.0
C1456	P	G	Br	D	Y	Ib	3.0
C1457	P	G	Br	S	Y	Bf	3.5
Md62-3103	W	T	Br	S	Y	Bl	1.5
Md64-4749	P	T	Br	D	Y	Bl	1.5
Md64-4978	P	T	Br	D	Y	Bl	1.5

[1]Mean of two replications. Scored 14 days after maturity.

Table 80. Summary of data, Preliminary Test IV, 1967.

Strain	Yield	Rank	Maturity[1]	Lodging	Height	Seed Quality	Seed Weight	Seed Composition	
								Protein	Oil
No. of Tests	11	11	10	11	10	11	8	6	6
Clark 63	36.8	9	0	3.2	41	2.0	15.3	39.6	21.5
Kent	40.8	3	+6.4	2.3	41	2.1	17.7	40.1	22.0
C1452	42.0	2	+4.7	2.7	48	2.0	15.8	38.6	22.6
C1455	40.1	4	+1.6	2.9	49	1.9	16.2	42.1	21.0
C1456	38.9	5	-0.8	3.2	47	2.5	15.7	40.6	21.9
C1457	43.8	1	+4.3	2.8	47	1.9	17.2	40.9	21.4
Md62-3103	37.9	8	+0.9	2.8	36	2.1	16.1	40.0	22.7
Md64-4749	38.0	7	-0.2	3.0	39	2.1	16.0	40.6	21.6
Md64-4978	38.1	6	+0.6	3.1	39	2.1	16.1	40.2	21.6

[1]Days earlier (-) or later (+) than Clark 63 which matured September 22, 124 days after planting.

Table 81. Disease data, Preliminary Test IV, 1967.

Strain	BB		BP		DM	FE2		BSR	PR		PSB	PS
	Ill.		Ill.		Ind.	Ind.		Ill.	Ind.		Del.	Del.
	n		a		n	a		n	a		n	n
Clark 63	2		1		3.5	5		4	R		4.0	2.5
Kent	2		2		2.0	1		4	S		1.5	2.3
C1452	1		1		3.5	4		4	R		1.3	1.3
C1455	1		3		5.0	3		4	R		2.3	2.5
C1456	1		4		4.0	3		4	R		3.0	1.7
C1457	1		1		4.0	5		4	R		2.7	2.3
Md62-3103	3		4		3.0	2		4	S		1.5	2.7
Md64-4749	2		3		3.5	5		4	S		4.0	2.5
Md64-4978	2		4		4.5	5		4	S		4.0	2.5

a = artificial inoculation; n = natural infection.

Table 82. Yield and yield rank, Preliminary Test IV, 1967.

Strain	Mean of 11 Tests	Link-wood Md.	Wor-thing-ton Ind.	Evans-ville Ind.	Tren-ton Ill.	Eldo-rado Ill.	Car-bon-dale Ill.	Co-lum-bia Mo.	Mt. Ver-non Mo.	Pow-hat-tan Kans.	Man-hat-tan Kans.*	Man-hat-tan Kans.[1]	Ot-tawa Kans.
Clark 63	36.8	35.0	44.0	50.1	35.4	37.9	43.1	28.8	29.8	29.7	28.5	45.3	25.4
Kent	40.8	36.2	51.5	50.9	53.6	47.8	49.4	20.0	27.2	27.2	28.3	52.6	32.8
C1452	42.0	43.8	56.6	52.2	42.8	49.9	48.7	22.5	22.0	31.5	34.0	56.4	35.8
C1455	40.1	39.9	49.7	55.0	48.2	40.8	45.0	31.1	28.6	30.1	35.9	43.1	29.3
C1456	38.9	35.4	51.5	55.6	40.7	41.2	50.0	27.1	12.8	29.3	16.4	56.3	28.2
C1457	43.8	39.7	51.1	62.2	51.0	46.5	52.4	26.7	32.4	31.3	31.7	48.7	39.4
Md62-3103	37.9	38.6	49.7	48.9	36.4	39.4	49.0	22.2	29.6	29.4	31.5	48.4	25.6
Md64-4749	38.0	37.4	45.4	45.3	35.4	36.1	44.6	23.7	29.5	29.6	31.7	54.6	36.0
Md64-4978	38.1	33.8	47.1	46.2	39.4	40.5	46.2	27.1	28.5	28.1	27.9	47.1	35.0
C.V.(%)		10.9	7.6	14.6	10.5	9.9	--	10.5	11.4	10.0	24.5	14.8	13.9
L.S.D.(5%)		9.6	8.3	N.S.	10.3	N.S.	--	6.1	7.0	N.S.	N.S.	N.S.	N.S.
Row Sp.(In.)		38	38	38	36	36	40	36	30	38	36	36	30
	Yield Rank												
Clark 63	9	8	9	6	8	8	9	2	2	4	6	8	9
Kent	3	6	2	5	1	2	3	9	7	9	7	4	5
C1452	2	1	1	4	4	1	5	7	8	1	2	1	3
C1455	4	2	5	3	3	5	7	1	5	3	1	9	6
C1456	5	7	2	2	5	4	2	3	9	7	9	2	7
C1457	1	3	4	1	2	3	1	5	1	2	3	5	1
Md62-3103	8	4	5	7	7	7	4	8	3	6	5	6	8
Md64-4749	7	5	8	9	8	9	8	6	4	5	3	3	2
Md64-4978	6	9	7	8	6	6	6	3	6	8	8	7	4

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

Table 83. Maturity, days earlier (-) or later (+) than Clark 63, Preliminary Test IV, 1967.

Strain	Mean of 10 Tests	Linkwood Md.	Worthington Ind.	Evansville Ind.	Trenton Ill.	Eldorado Ill.	Carbondale Ill.	Columbia Mo.	Mt. Vernon Mo.	Powhattan Kans.	Manhattan Kans.	Manhattan Kans.[1]	Ottawa Kans.
									*		*		
Clark 63	0	0	0	0	0	0	0	0		0	0	0	0
Kent	+6.4	+ 6	+7	+6	+6	+ 5	+10	+3		+ 9	+13	+ 7	+ 5
C1452	+4.7	+ 4	+8	+6	+6	+ 7	+12	+3		0	+ 6	+ 2	- 1
C1455	+1.6	+ 4	+2	+1	+4	+ 1	+ 3	+1		- 1	+ 2	+ 3	- 2
C1456	-0.8	0	-3	+1	-2	- 1	0	-2		- 2	+ 8	+ 3	- 2
C1457	+4.3	+ 6	+7	+5	+6	+ 7	+ 9	+3		+ 1	+ 5	+ 1	- 2
Md62-3103	+0.9	0	+2	+2	0	+ 1	+ 2	-1		- 2	+ 3	+ 6	- 1
Md64-4749	-0.2	0	0	-1	0	+ 1	- 1	-3		0	+ 1	+ 1	+ 1
Md64-4978	+0.6	0	+1	0	+1	+ 1	0	-1		+ 1	+ 6	+ 2	+ 1
Wayne (III)		- 6	-5	-3	-6	- 5	- 7	-9	--	- 7	-16	- 5	- 7
Hill (V)		+22	--	--	--	+30	--	--	+39	+22	+ 9	+21	+28
Date planted	5-21	6-6	5-22	5-23	5-23	5-24	5-22	5-10	5-23	5-16	6-6	5-18	5-17
Clark 63 mat.	9-22	9-26	9-22	9-22	9-24	9-20	9-18	9-14	9-18	9-28	10-13	9-27	9-21
Days to mat.	124	112	123	122	124	119	119	127	118	135	129	132	127

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

Table 84. Identification of parent strains not in current tests.

Strain	Parentage	Generation Composited	Previous Testing
II-42-37	Lincoln^2 x Richland	--	--
II-54-139	Renville x Capital	--	--
II-54-232	(Lincoln^2 x Richland) x Korean	--	--
II-54-240	(Lincoln^2 x Richland) x Korean	--	--
5-1	M10 x PI 180.501	--	--
A54-3159	Hawkeye x Capital	--	--
A54-3202	Hawkeye x Capital	--	--
C1069	Lincoln x Ogden. From same F_3 plant as Kent.	F_7	54-58 U.T. IV
C1070	Lincoln x Ogden. From same F_3 plant as Kent.	F_7	53 P.T. IV
C1079	Lincoln x Ogden. From same F_3 plant as Kent.	F_7	54-56 U.T. IV
C1105	Hawkeye x Mandarin (Ottawa)	F_7	56 U.T. II
C1128	Wabash x Hawkeye	--	54-58 U.T. II, 58,62 U.T. III
C1253	Blackhawk x Harosoy. Phytophthora resistant.	F_6	64 P.T. II
C1266R	Harosoy x C1079	F_6	62-63 U.T. IV
C1270	Mandarin (Ottawa) x Clark	F_7	--
CX258-2-3-2	PI 65.338 x C1079	--	--
CX291-42-1	Mukden x C1069	--	--
H24088	Monroe x Lincoln	--	56 U.T. III
L10	[Chippewa^8 x (C1128^2 x S54-1207)] x (Chippewa^{10} x Blackhawk). Pustule and phytophthora resistant.	13 F_3 lines	65 U.T. I
L11	(Clark^6 x T201) x (Clark^6 x T145). Yellow hilum (I r)	27 F_4 lines	65 U.T. IV
L48-7289	Seneca x Richland	--	50-51 U.T. II
L49-4091	(F_3 Lincoln^2 x Richland) x (F_1 Lincoln x CNS). Pustule resistant.	F_4	51 U.T. IV, 52-53 U.T. III
M10	Lincoln^2 x Richland	--	49-51 U.T. I
O-52-903	Strain 753-1 from Sven A. Holmberg, Norrkoping, Sweden, same as PI 194.654	--	60-61 U.T. 00
O-57-2921	Blackhawk x Capital	F_7	60-61 U.T. 0, 62-65 U.T. 00
PI 180.501	Strain No. 18 from Germany, from Mandschurische Herkunft x USA 54.616	--	65 U.T. 00 as 060-3396
PI 194.633	Strain 733-4 from Sven A. Holmberg, Norrkoping, Sweden	--	60 P.T. 00 as Me27A
PI 257.438	Sel. C25/58R; (441 x 866)S from Dr. Wilhelm Rudorf, Koln-Vogelsang, Germany	--	--
S54-1207	Hawkeye x (L49-4091 x sib of Clark)	--	57 U.T. III
T106-6	G. ussuriensis from Manchuria, Group II	--	--
T145	Origin unknown. Brown seed (r), glabrous plant (P_1)	--	--
T175	Origin unknown	--	--
T201	Lincoln^2 x Richland. Gray hilum (I)	--	--
UM3	Sel. from PI 194.630, strain 698-3-5 from Sven A. Holmberg, Norrkoping, Sweden	--	59 P.T. 00
WOS-3386	Lincoln x Flambeau	--	53-56 U.T. 0
W9-1982-32	Hawkeye x Wisconsin Manchu 3	F_8	57-59 U.T. I

GROWING CONDITIONS AT TEST LOCATIONS IN 1967

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

Temperature and rainfall maps for the 1967 season are included at the end of this report. The maps are taken from the Weekly Weather and Crop Bulletins published by the Environmental Data Service of the U. S. Department of Commerce.

Ottawa, Ontario, Canada. The May 15 planting was near the average date. Germination and emergence were slow. Temperatures during the last two weeks in May and early June were below normal. Rainfall was above normal in that period. This situation was reversed in mid-summer when it became necessary to irrigate. Plots received about two inches of water in one irrigation in mid-July. Growth, when complete, was greater than normal but maturity was delayed 7 to 10 days by cool weather in late August and early September.

Cooperator: L. S. Donovan.
Soil Type: Grenville loam.
Fertilizer Application: 400 lbs./A. 5-20-20.
Soil Analysis: pH, 6.5.

Kemptville, Ontario, Canada. The Kemptville area had an excellent growing season in 1967. The rainfall for April, May, June, and July was 2.81 inches above normal with most of this rainfall coming in June and July. Temperature was above normal in all months except May. Some weeds were a problem in the early part of the season but these were kept under control by hand hoeing.

Cooperator: Kemptville Agricultural School.
Soil Type: Mountain sandy loam.
Fertilizer Application: 500 lbs./A. 0-15-30.

Guelph, Ontario, Canada. The spring was cool and wet, emergence was slow, but stands were good. Growth conditions were such that the plants were quite luxuriant but not sufficiently so as to result in lodging being a problem. The summer was a little cooler than normal, resulting in slightly later maturity. Yields were disappointingly low.

Cooperator: D. J. Hume and J. W. Tanner.
Soil Type: Guelph loam.
Fertilizer Application: 300 lbs./A. 5-20-20.
Soil Analysis: pH, 7.1; OM, 3; N = 80 bu. corn; P, 450; K, 250; Ca, High; Mg, Medium low.

Ridgetown, Ontario, Canada. Planting was on May 19 with good soil moisture conditions but cool temperatures prevailing. Emergence was fair to good in all plots. Above normal rainfall was recorded from June to October with below normal temperatures in July and August. Growth was luxuriant and considerable lodging resulted. No unusual insect or disease conditions were observed.

Cooperator: Western Ontario Agricultural School.
Soil Type: Brookston clay loam.
Fertilizer Application: 30-110-110.

Harrow, Ontario, Canada. Moisture conditions during the early part of the growing season were below average, resulting in uneven germination and slow growth. Rainfall during July was above average but temperatures were lower than normal. Severe drouth in August, and to a lesser extent in September, affected growth and pod fill but hastened maturity. There was very little lodging. All tests were harvested prior to the first killing frost, November 5. Yields varied considerably and were much lower than in previous years.

Cooperator: Canada Department of Agriculture, Research Station.
Soil Type: Brady sandy loam.
Fertilizer Application: 500 lbs./A. 5-10-15.

Adelphia, New Jersey. The growing season in central New Jersey was characterized by above-normal rainfall and slightly below-normal temperatures. Soil moisture had been recharged overwinter so moisture was more than adequate for crops. The last two weeks in May and the first two weeks in June were dry, but crops did not suffer. Vegetative growth was slightly excessive. Killing frost did not occur until after all varieties were mature.

Cooperator: Soils and Crops Department, Rutgers University.
Soil Type: Freehold loam.
Fertilizer Application: 250 lbs./A. 0-20-20.

Bridgeton, New Jersey. The growing season in southern New Jersey was wetter and slightly cooler than normal. Soil moisture was recharged at planting time. The end of May and early June were dry, but crops did not suffer. Cloudy skies were common during the growing season. Excessively heavy rains fell in August. Vegetative growth was abundant and lodging severe. Killing frost was not a factor in this trial.

Cooperator: Robert Strosnyder.
Fertilizer Application: 250 lbs./A. 0-20-20.

Georgetown, Delaware. Soybean growth was outstanding during the 1967 season. Rainfall was average or slightly above average in May, June, July, and September. August rainfall was 12.4 inches, considerably above average. Temperatures were normal in June but below normal the remainder of the season. May and September temperatures were five degrees below the normals for the area. Seedling diseases and diseases of the seed were not as prevalent as they usually have been at this location.

Cooperator: University Substation Division.
Soil Type: Norfolk sandy loam.
Fertilizer Application: No N; 45 lbs./A. P_2O_5; 90 lbs./A. K_2O.
Soil Analysis: pH, 6.3; OM, 0.9; P, Medium; K, Medium; Ca, Medium; Mg, High; Mn, Low.

Queenstown, Maryland. The plantings in late May were followed by cool, damp weather throughout the month of June. Most of July was cooler and drier than normal with the rains coming at the end of the month. August was cooler and wetter than normal by several inches. September and October were drier and cooler than normal. The excess moisture caused extreme lodging of all lines and varieties. Diseases were negligible.

Cooperator: University of Maryland.
Soil Type: Mattapex silt loam.
Soil Analysis: pH, 6.1; P, 135 Medium; K, 123 Medium; Mg, 224+ Very high.

Linkwood, Maryland. May and June were slightly cooler and wetter than normal, making planting later than usual. July was slightly cooler with 2" less rainfall than normal. Rainfall for July occurred at the end of the month and continued on into August. August was wetter than normal by 7" and slightly cooler. Early September temperatures were in the low 40's and 50's and the entire month was drier than normal, as was the month of October. The excess moisture in late July and August encouraged luxuriant plant growth which resulted in a greater than normal amount of lodging in all varieties and lines.

Cooperator: James Johnson.
Soil Type: Sassafras sandy loam.
Fertilizer Application: 300 lbs./A. 0-15-30.
Soil Analysis: pH, 6.3; P, 175 High; K, 159 Medium; Mg, 224+ Very high.

Hoytville, Ohio. Due to wet soil conditions, test plots could not be planted until June 15 and a heavy killing frost occurred on October 20. Rainfall was near normal and temperatures below normal throughout the growing season.

Soil Type: Hoytville clay.
Fertilizer Application: None.
Soil Analysis: pH, 7.0; OM, 2%; P, 132 lbs./A.; K, 240 lbs./A.

Wooster, Ohio. Rainfall was so deficient that it caused a serious drouth during the entire growing season. Temperatures were generally below normal.

Soil Type: Wooster silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.6; OM, 3.5%; P, 54 lbs./A.; K, 366 lbs./A.

Columbus, Ohio. Precipitation was above normal the first half of May and temperatures were below normal until June, during which time they were above normal. Temperatures during the remainder of the growing season were below normal. Rainfall throughout the growing season was below normal but distribution was good.

Soil Type: Miami-Brookston silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.4; OM, 2.5%; P, 60 lbs./A.; K, 216 lbs./A.

East Lansing, Michigan. Seed was planted on May 23 when soil tilth was only fair. Rainfall was very low for May, especially the last part of the month. A rain did not occur until June 7, resulting in delayed and variable emergence. Delayed emergence made it difficult to rate maturity accurately. Stands were mostly fair. June rainfall was high (except the first week), July was low, August low for the first 20 days and good thereafter, and there was no fainfall the first 20 days of September. A killing frost did not occur until October 20, almost one month later than normal. Some of the later strains in Group II were still not ripe on October 20.

Cooperator: Michigan State University.
Soil Type: Conover loam.
Fertilizer Application: 250 lbs./A. 5-20-20 just before planting.
Soil Analysis: None. Previous tests have shown P and K as medium with a pH of 6.6 to 6.8.

Dundee, Michigan. This nursery was planted on May 26. Rainfall was low during May, especially the last part of the month. A rain did not occur until about June 7, resulting in delayed emergence and early weed problems. Delayed emergence also made it difficult to assign accurate maturity ratings. Stands were fair. Rainfall was good for June (except the first week), fair during July, low in August (1.5 inches), and there was no rainfall the first three weeks of September. Temperatures for August and September were 4.4 to 5.5 degrees below normal. Diseases were present but did not appear to affect yield significantly. One strain in Group II, A1-1051, was partially defoliated by a leaf disease. This also occurred in 1965 at this location. It was not identified but was called verticillium wilt in 1965. This did not occur at East Lansing.

Cooperator: Russell Houpt & Son.
Soil Type: Lenawee silty clay loam.
Fertilizer Application: None.
Soil Analysis: None. Has always been high in P, K, and Ca with a pH of about 7.0.

Knox, Indiana. Planting was delayed about a week to June 8 due to surface flooding caused by excessive April rains. Soil conditions were fairly good at planting. Stands were fairly good. Growth was good early but was slowed considerably by summer drouth. Precipitation was 1.52, 0.75, and 0.77 inches below normal during July through September. Average temperatures were 4.7, 5.6, and 3.5 degrees below normal for the same period. Intermittent late September and October rains delayed harvest until October 27. Harvest conditions were fair to poor. Light frost September 23 may have reduced yields some in the latest varieties in Uniform Group II. Phytophthora rot was observed to a very slight extent in some rows and was especially noticeable in Harosoy. Bacterial blight was observed in some areas of the plot and was especially heavy on A-100.

Cooperator: Frank Pulver.
Soil Type: Maumee loam.
Fertilizer Application: No known.
Herbicide: None used on soybeans.
Soil Analysis: pH, 6.3; P, 92 lbs./A.; K, 75 lbs./A.

Bluffton, Indiana. Planting was ten to twelve days later than normal in a well prepared seed bed. Emergence conditions and stands were good but summer growth was quite poor and variable due to drouth. Total June through September rainfall was only 9.08 inches, 5.04 inches below normal. Temperatures were below normal throughout the growing season. There were only six days in June and one each in July and August with temperatures of 90° or above. Some very slight injury was noted due to Amiben and also due to Mn spray. Phytophthora was evident from very slight to moderate amounts on susceptible varieties throughout the plot. Brown stem rot was quite marked in late Group II and all Group III varieties. Harvest conditions were good. Yields at this location were about 10 to 12 bushels below the average of other years.

Cooperator: Gerald Bayless & Sons.
Soil Type: Nappanee silt loam.
Fertilizer Application: 200 lbs./A. 6-24-12 in the row + 6 lbs./A. Mn as spray.
Herbicide: 10 lbs./A. granular Amiben.
Soil Analysis: pH, 6.5; P, 130 lbs./A.; K, 158 lbs./A.

Lafayette, Indiana. Planting was near the average date on May 23 in excellently prepared soil and with good emergence conditions. Although there was an extended summer drouth, growth was good and yields were excellent with most tests averaging 48 to 53 bushels per acre. May rainfall was average with 3.85 inches, but only 6.30 inches occurred in June through September, 6.60 inches below normal. June and July rainfall was only 2.23 inches, a near all-time low. There were only four summer days with temperatures of 90° F or above. Indiana has never before had a dry and simultaneously a cool summer in recorded history which began in 1880. There were several scattered areas which showed killing from residual Atrazine. This suggests that there might have been yield depression in other areas where killing was not present. Soybeans followed 12 years of continuous corn. Diseases were of little consequence. There was some scattered bacterial blight and occasional plants killed by stem canker. Harvest conditions were generally good to excellent in advanced yield trials but only fair to poor in a number of less advanced tests and other studies.

Cooperator: O. W. Luetkemeier.
Soil Type: Chalmers silty clay.
Fertilizer Application: 440 lbs./A. 0-0-60 plowed down 11/5/66; 450 lbs./A. 0-52-0 broadcast 5/20/67; 185 lbs. 5-20-20 + 4% Mn./A. in row.
Herbicide: 1 qt. Treflan per A.
Soil Analysis: pH, 6.4; P, 84; K, 115.

Greenfield, Indiana. Planting was about 10 days later than average with fairly good planting conditions. Stands were fairly good but growth was only fair to poor due to a severe summer drouth. Rainfall was excessive in May, but June through September rainfall was only 5.02 inches, 7.53 inches below normal. Temperatures were below normal in all summer months with only four, eight, and one days in June, July, and August with 90° or above. Phytophthora damage was evident in slight to moderate amounts in susceptible varieties throughout the plot. Most serious phytophthora effects were in A1-1051, Harosoy, Amsoy, and Corsoy, in that order. Brown stem rot was very prevalent, especially in the Group III varieties. Downy mildew was evident throughout the plot. Stem canker was noted in small amounts. Harvest was late and conditions were fair to poor. The bundles of soybeans were transported to Lafayette for drying and threshing. Yields were only about 65 percent of the capability of this soil type.

Cooperator: Mrs. Raymond Roney
Soil Type: Brookston-Crosby complex.
Fertilizer Application: 145 lbs./A. 4-27-20 + trace elements in the row.
Herbicide: None used on soybeans.
Soil Analysis: pH, 6.2; P, 240 lbs./A.; K, 135 lbs./A.

Worthington, Indiana. Planting was on May 22 which is about a week later than average for this area. Planting, emergence, conditions, and stands were excellent. Vegetative growth was excellent and yields were very good but not up to expectation

in relation to the vegetative growth. Drouth occurred in late August through mid-September. The June through September rainfall was 10.86 inches, 4.19 inches below normal. Summer temperatures were below normal with only eight days with 90° F. or above. Downy mildew was fairly prevalent. Harvest conditions were excellent through Group III maturity but only fair for later varieties. Yields were very good, ranging from about 47 to 53 bushels per acre for the various tests.

Cooperator: Frederic Sloan.
Soil Type: Genesee silt loam.
Fertilizer Application: 500 lbs./A. 6-12-18 plowed down, 140 lbs./A. 0-24-24 in row.
Herbicide: None on soybeans.
Soil Analysis: pH, 7.8; P, 398 lbs./A.; K, 139 lbs./A.

Evansville, Indiana. Planting was eight to ten days late for this location and area. Soil and emergence conditions were good and good stands resulted. Growth was excellent. Rainfall was only 1.60 inches in June, 2.14 inches below normal, but 2.12 inches above normal in July. Rainfall was well below normal in early September with only 1.19 inches occurring for the month. Summer temperatures were a record low and there were only seven days, all in June, in which the temperatures were 90° F. or above. Frequent 100° F. days are usually experienced at this location. Except for brown stem rot, which occurred with light to moderate severity throughout the plot, diseases were of little consequence. Harvest conditions were fair to poor with only Uniform Tests III and IV being harvested under good conditions. Yields were excellent with tests averaging from 52 to 58 bushels per acre. Lodging was excessive, much of it due to a 3-inch rain in one and one-half hours along with wind on July 10.

Cooperator: Bernard V. Wagner.
Soil Type: Montgomery silty clay loam.
Fertilizer Application: 500 lbs./A. 0-0-62 plowed under, 400 lbs./A. 8-25-3 in the row.
Herbicide: 1 1/2 pts. Treflan/A.
Soil Analysis: pH, 6.5; P, 341 lbs./A.; K, 165 lbs./A.

Henderson, Kentucky. The plots were planted May 9. The soil was in good condition but a 4-inch rain on May 12 sealed the land before the plants emerged, thus requiring harrowing off and rotary hoeing. Alanap plus CIPC was used banded at planting time. The plots were cultivated twice and weeds were controlled. It was a good growing season, but heavy rains at four different times beat the beans down, resulting in more lodging than normal at harvest. No insect or disease problems were noticeable. Cultivation was shallow and level. Most plots had good stands.

Cooperator: Allen Toy.
Soil Type: Sharkey silt loam, overwashed with some Wakeland silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 5.6; P, 14; K, 148.

Ashland, Wisconsin. The nursery was planted May 25 which is near normal for this location. Total rainfall and distribution for the entire growing season was near normal. Temperatures, however, were considerably below normal. Mean temperatures were below normal by 4.5, 2.0, 3.6, and 2.2 degrees for May, June, July, and August, respectively. September temperatures were 0.6 degrees above normal, however, a

killing frost occurred on September 10. This was about ten days earlier than normal. Plant growth and yields were somewhat depressed.

Cooperator: University of Wisconsin Experimental Farm.
Soil Type: Sandy loam.
Fertilizer Application: 300 lbs./A. 5-20-20.
Soil Analysis: pH, 5.8; OM, 35; P, 132; K, 305.

Spooner, Wisconsin. Temperatures for May were 5.5 degrees below normal and rainfall 1.81 inches below normal. Temperatures ranged in the mid-70's the last week with no precipitation. The soybean test was planted May 29 under somewhat drouth conditions. Temperatures in June were very near the normal of 65 degrees but rainfall was 6.5 inches above normal. Total accumulation for the month was 10.69 inches distributed throughout the 30 days. Temperatures in July were three degrees below the normal of 70 degrees and rainfall was 2.88 inches below the normal of 3.95 inches. Temperatures in August were below the normal of 68 degrees but rainfall was .94 inches above the normal of 4.2 inches with very good distribution throughout the month. Temperatures in September were one degree below the normal of 58.4 degrees but rainfall was 1.61 inches below normal, which tended to hasten maturity before the first frost September 24. However, the later varieties did not completely freeze down until September 28 when temperatures fell to 24 degrees.

Cooperator: University Experimental Farm.
Soil Type: Pence loamy sand.
Fertilizer Application: 250 lbs./A. 5-10-30.
Soil Analysis: pH, 6.7; OM, 31; P, 245; K, 300.

Durand, Wisconsin. Stands were good and disease was minor. Yields were average for sandy loam. Temperatures averaged below normal by four to six degrees during May, June, and August, normal during July, and two degrees below normal during September. Rainfall was above normal during June and August, normal in September, and below normal during May and July.

Cooperator: Anton Sam.
Soil Type: Boone fine sandy loam.
Soil Analysis: pH, 6.1; OM, 31; P, 120 lbs./A.; K, 225 lbs./A.

Madison, Wisconsin. The nursery was planted May 17. Stands were excellent. Disease and insect damage was at a minimum. Rainfall during April, May, and June was three and three-fourth inches above normal and 2.8 inches below normal during July and August. During the period May through September, temperatures averaged 4.5 degrees below normal except during July when they were normal. Growth was heavy up to July 15, thereafter drouth affected growth and the yield, especially of the later varieties, was reduced.

Cooperator: University of Wisconsin.
Soil Type: Miami silt loam.
Fertilizer Application: 200 lbs./A. 0-20-20.
Soil Analysis: pH, 6.8; OM, 28; P, 92; K, 190.

DeKalb, Illinois. Planting was on May 16 in a tight, rough, slightly wet seedbed. Moisture was adequate most of the season. Growth and yields were good. The center two rows of four-row plots were harvested with three replications for each strain

(in Preliminary Test I, 2-row plots and two replications were used). There was a light epiphytotic of bacterial pustule, and bacterial blight and downy mildew varied from slight to severe depending on strain and plot variation. Very little evidence of insect feeding was seen.

Cooperator: Richard R. Bell, Northern Illinois Agronomy Research Center.
Soil Type: Flanagan silt loam.
Fertilizer Application: None.
Herbicide: One quart of Treflan incorporated per acre.
Soil Analysis: pH, 6.1; P_1, 35 lbs./A.; P_2, 90 lbs./A.; K, 276 lbs./A.

Pontiac, Illinois. Planting was on May 23 in a very cloddy, dry seedbed. The top two inches of soil stayed loose all season. Growth and yields were excellent. Four replications of single rod-row plots were harvested. Light to moderate downy mildew and bacterial blight were observed. Harvest conditions were good on October 3.

Cooperator: Donald Alltop.
Soil Type: Dodgeville silt loam.
Fertilizer Application: None.
Herbicide: Amiben broadcast at manufacturer's recommended rate.
Soil Analysis: pH, 6.2; P_1, 63 lbs./A.; P_2, 125 lbs./A.; K, 630 lbs./A.

Urbana, Illinois. Planting was on May 18 in a smooth seedbed. Emergence was good. The first rain after planting was seven-tenths of an inch on July 18. The entire growing season was very dry. There was a slight epiphytotic of bacterial blight. Growth was poor and there was very little lodging. The center two rows of four-row plots were harvested from three replications. Group II strains had the highest yields.

Cooperator: M. G. Oldham, Illinois Agricultural Experiment Station.
Soil Type: Flanagan silt loam.
Herbicide: Treflan at 24 oz./A., incorporated.
Soil Analysis: pH, 6.4; P_1, 80 lbs./A.; P_2, 125+ lbs./A.; K, 326 lbs./A.

Girard, Illinois. Planting was on May 22 in a moist, smooth seedbed. Emergence and growth were very good. The center two rows of four-row plots were harvested from three replications for each strain. Soil moisture was adequate to surplus all season. Group II yields were excellent. Group III and IV yields were fair. Bacterial blight was moderate and downy mildew was moderate to severe.

Cooperator: Lloyd Brothers.
Soil Type: Harrison silt loam.
Fertilizer Application: None.
Herbicide: Amiben banded at manufacturer's recommended rate.
Soil Analysis: pH, 6.5; P_1, 36 lbs./A.; P_2, 96 lbs./A.; K, 194 lbs./A.

Edgewood, Illinois. Planting was delayed until June 7 due to wet soil. Planting was in an excellently prepared moist seedbed. Rain compacted the soil and stands were poor to good. Phytophthora was severe in some areas of the field, doing the most damage to A1-1051. Downy mildew was heavy and brown spot was slight. Green stems and rain made harvesting difficult. Four replications of single rod-row plots were harvested.

Cooperator: John Wilson.
Soil Type: Cisne silt loam.
Fertilizer Application: 110 lbs./A. of potash.
Herbicide: One-half the manufacturer's recommended rate of Amiben and Randox, banded.
Soil Analysis: pH, 6.3; P_1, 43 lbs./A.; P_2, 120 lbs./A.; K, 186 lbs./A.

Trenton, Illinois. Planting was timely on May 23 in a fairly loose, smooth seedbed. Plant emergence was good for most strains. Growth was excellent all season. Most of the season there was a surplus of moisture. Uniform Tests II and III were grown in two-row plots and both rows were harvested. Uniform Tests IV and IVS were grown in four-row plots and the center two were harvested. Diseases observed included moderate to heavy downy mildew, slight bacterial pustule, bacterial blight, and brown spot. Sixty to eighty percent of the plants had brown stem rot. Seed quality was good.

Cooperator: Fred Bergmann.
Soil Type: Harrison silt loam.
Fertilizer Application: 200 lbs./A. of potash.
Herbicide: Treflan incorporated at 24 oz./A.
Soil Analysis: pH, 5.9; P_1, 36 lbs./A.; P_2, 115 lbs./A.; K, 210 lbs./A.

Eldorado, Illinois. Planting was on May 24 in a smooth, slightly tight seedbed. Emergence and stands ranged from good to excellent. Vegetative growth was heavy and lodging started in early July. There were a lot of podless plants and branches. Thrips worked the field heavily early in the season. The center two rows of four-row plots were harvested from three replications. Yields were not as good as expected. Downy mildew was severe, brown spot was moderate to heavy, and bacterial pustule was slight. Harvest extended over a long period due to poor conditions. Seed quality was very good for this location.

Cooperator: Marshall Grisham.
Soil Type: Harco silt loam.
Fertilizer Application: None.
Herbicide: One-half gallon of Amiben in a fourteen-inch band/A.
Soil Analysis: pH, 6.1; P_1, 49 lbs./A.; P_2, 107 lbs./A.; K, 226 lbs./A.

Miller City, Illinois. Planting was on May 24 in a lumpy to smooth, tight seedbed. Emergence and stands ranged from poor to good, depending on the variety. Heavy thrip damage occurred early in the season. The first month after planting was dry, but during the rest of the season moisture was adequate to surplus. The center two rows of four-row plots were harvested from three replications for each strain. Downy mildew was severe, brown spot was moderate to heavy, and bacterial pustule was slight. This field has been in soybeans since 1954.

Cooperator: Malcolm Patton.
Soil Type: Okaw fine sandy loam.
Fertilizer Application: None.
Herbicide: Band application of three pints of Amiben per acre.
Soil Analysis: pH, 6.3; P_1, 34 lbs./A.; P_2, 68 lbs./A.; K, 253 lbs./A.

Crookston, Minnesota. Planting was on May 24 (near average) and stands were good. There was adequate rainfall in June but it was extremely dry in July, August, and

September. Plant height was short, pod set poor, and yields low. Nearly everything matured before frost on September 27. Block x variety interactions were high. The tests at this location were below par this year. Temperatures were somewhat below normal most of the summer.

Cooperator: J. R. Lofgren.
Soil Type: Fargo silty clay.
Fertilizer Application: Fertilized for sugar beets in 1966.
Soil Analysis: pH, 7.6; OM, 7.3 (very high); P, 135 lbs./A. (very high); K, 460 lbs./A. (very high).

Morris, Minnesota. Planting was on May 26 (slightly later than average) and emergence and stands were good. There was adequate rain in June and growth was very good until early August despite an almost total absence of precipitation in July. The weather remained dry through September. Yields were reduced by drouth. Temperatures averaged below normal. Frost occurred on September 27. All varieties in Groups 00 and 0 had matured before this date.

Cooperator: R. L. Thompson and S. D. Evans.
Soil Type: Barnes silt loam.
Fertilizer Application: 250 lbs./A. 0-20-20, fall 1966.
Soil Analysis: pH, 6.1; OM, 6.4 (very high); P, 22 lbs./A. (medium); K, 320 lbs./A. (very high).

St. Paul, Minnesota. The Groups 00, 0, and I tests planted on May 12 had an excellent start but were heavily damaged by hail on June 30. Some varieties recovered to a considerable extent, but others did not. Consequently, the tests were not harvested.

Cooperator: J. W. Lambert.

Lamberton, Minnesota. This nursery was planted May 18 (about average) and emergence was good. Row lengths planted with a multiple-row planter were a little shorter than the intended 18 feet. The harvested lengths in most cases were less than 16 feet. There was adequate rain in June but very dry in July, August, and September. Temperatures were a little below normal for the summer. Yield levels were below average. Most varieties in Groups I and II had matured before the killing frost on September 27.

Cooperator: W. W. Nelson.
Soil Type: Webster silty clay loam.
Fertilizer Application: 200 lbs./A. 0-46-0, spring 1967.

Waseca, Minnesota. The tests were planted on May 31 (later than average). Emergence and stands were good and there was excellent growth all summer. Rainfall was adequate to excessive in June and fairly adequate the remainder of the summer. Temperatures were below normal. The yield level was average or above in Group I. Many strains in the Group II test were immature at the September 27 frost date, with resulting poor quality seed.

Cooperator: J. R. Thompson.
Soil Type: Nicollet silty clay loam.
Fertilizer Application: None.
Soil Analysis: pH, 5.8; OM, 6.3 (very high); P, 67 lbs./A. (very high); K, 375 lbs./A.

Sutherland, Iowa. Soil moisture was extremely low at planting. June 15 there was a moderately severe hail storm which caused extensive stem bruising and 25 percent defoliation. Rain and cool temperatures during June and early July suppressed normal growth. Temperatures during the remainder of the season were near normal, however, a frost on September 27 prevented normal maturity of later varieties. The over-all growing conditions were considered the poorest of any location. The nursery was not considered good for making strain comparisons.

Cooperator: Northwest Iowa Experimental Association.
Soil Type: Primghar silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.6; OM, High; N, 36 lbs./A.; P, 19 lbs./A.; K, 119 lbs./A.

Kanawha, Iowa. Soil moisture was extremely low at planting. During June this condition was corrected by three weeks of wet weather. Moisture during the remainder of the season was normal. Temperatures were below normal during June and early July. This caused the plants to be unusually short during early vegetative growth. A frost on September 27 prevented normal maturity of later varieties. Disease incidence was low. Conditions were good for strain comparisons.

Cooperator: Northern Iowa Experimental Association.
Soil Type: Webster silty clay loam.
Fertilizer Application: 200 lbs./A. 0-20-20 fall 1966, plowed under.
Soil Analysis: pH, 6.8; OM, High; N, 32 lbs./A.; P, 16 lbs./A.; K, 80 lbs./A.

Independence, Iowa. Precipitation was good to heavy throughout the growing season. Temperatures were below normal during June and early July, but normal the remainder of the season. Disease incidence was low. Conditions were good for strain comparisons.

Cooperator: Carrington-Clyde Experimental Association.
Soil Type: Kenyon loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.7; OM, High; N, 41 lbs./A.; P, 21 lbs./A.; K, 124 lbs./A.

Ames, Iowa. Soil moisture was extremely low at planting. During June this condition was corrected by three weeks of wet weather. Moisture during the remainder of the season was normal. Temperatures were below normal during June and early July. This caused the plants to be unusually short during early vegetative growth. Temperature during the remainder of the year was normal. Bacterial blight and brown spot were observed early in the season. Bacterial pustule was not observed. Incidence of brown stem rot was 5 to 10 percent infected plants. Conditions were good for making strain comparisons.

Cooperator: Agronomy Farm, Ames, Iowa Agricultural Experiment Station.
Soil Type: Nicollet loam.
Fertilizer Application: 400 lbs. 0-20-20 fall 1966, plowed under.
Soil Analysis: pH, 6.8; OM, High; N, 38 lbs./A.; P, 58 lbs./A.; K, 138 lbs./A.

Ottumwa, Iowa. Moisture conditions were favorable during the growing season. Temperatures were below normal during June and early July, but near normal the remainder of the season. Disease incidence was low. Conditions were very good for variety comparisons.

Cooperator: A. E. Newquist.
Soil Type: Haig silty clay loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.7; OM, High; N, 39 lbs./A.; P, 29 lbs./A.; K, 162 lbs./A.

Red Oak, Iowa. This nursery was added in 1967 to provide better variety information from southern Iowa. Located in southwest Iowa, the nursery is typical of the rolling terrain frequented by terraces. Moisture conditions were good to heavy throughout the growing season. Temperatures were normal. Disease incidence was low. This location has proven to be excellent for variety and strain comparisons.

Cooperator: Howard Jackson.
Soil Type: Marshall silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.8; OM, High; N, 35 lbs./A.; P, 18 lbs./A.; K, 375 lbs./A.

Columbia, Missouri. Planting was on May 10 in a good seedbed. Stands were good except for a few strains that had poor seed quality. Two pounds of Amiben per acre did a good job of weed control although a few weeds had to be controlled later. In general, temperatures were slightly below normal although this wasn't always obvious. The outstanding feature of the 1967 growing season was the severe drouth in late summer. Height, lodging, and yield were reduced, whereas, maturity was hastened.

Cooperator: University of Missouri.
Soil Type: Mexico silt loam.
Fertilizer Application: 300 lbs./A. 8-32-16.
Soil Analysis (soil test taken before fertilizer application): pH, 6.3; OM, 2.6%; P, 217; K, 170; Ca, 4,250; Mg, 260.

Mt. Vernon, Missouri. Planting on May 23 was later than desired, but stands were fairly good. Two pounds of Amiben per acre did not control the weeds as well as desired. Rainfall and temperatures were suitable for growth--too much so, perhaps, since lodging was severe.

Cooperator: University of Missouri.
Soil Type: Huntington silt loam.

Portageville, Missouri. Precipitation was above the average during the spring so planting was later than normal. The summer was cool and wet which seemed to have favored growth of soybeans. These tests were irrigated only once. Maturity was a few days later than normal due to late planting and a cool summer. In general, climatic conditions favored soybeans. Yields were above normal. The summer may have been too wet for clay soil, because phytophthora was a problem this year.

Soil Type: Loam and Sharkey clay.
Fertilizer Application: Loam, 100 lbs./A. 0-50-50, and clay, none.
Soil Analysis (Loam only): pH, 5.8; OM, 1.3; P, 339; K, 430; Ca, 2,800; Mg, 380.

Portage la Prairie, Manitoba, Canada. The test was seeded on May 29 and emerged on June 10. The soil was well saturated with moisture prior to planting time. Drouth conditions during the summer somewhat reduced the yields. Total precipitation during the growing season was only 6.9 inches which is approximately half the normal

amount received. Temperatures were near normal for June, July, and August but September was considerably above average.

Cooperator: Research Sub-station.
Soil Type: Riverdale silty clay loam.
Fertilizer Application: None.

Winnipeg, Manitoba, Canada. The tests were grown on land which produced a crop of barley in 1966. Although precipitation was about one inch below normal in May and June, moisture appeared to be adequate for satisfactory growth until the end of August. Temperatures were 5.9, 1.2, 2.6, and 2.5° F. below normal during May, June, July, and August, respectively. Below normal temperatures during most of the growing season and below normal precipitation in September may account for relatively low yields from the later varieties such as Flambeau.

Cooperator: University of Manitoba.
Soil Type: Riverdale silty clay.
Fertilizer Application: None.

Morden, Manitoba, Canada. The soybeans were grown on summer fallow. Weeds were well controlled with the application of one pound of trifluoralin per acre. The soil was well saturated with moisture before seeding time. However, during the period May 1 to August 31 we only received 5.5 inches of rain compared to the long-term average of 11.1 inches. During the period May 15 to September 20, 1,854 degree days were accumulated (above base of 50° F.), compared to a long-term mean of 1,740. The first killing frost occurred September 27. Soybeans were seeded May 16 and harvested September 21. Yields could have been considerably higher with more rainfall.

Cooperator: Research Station, Morden, Man.
Soil Type: Morden heavy clay loam.
Fertilizer Application: None.

Fargo, North Dakota. The very dry and cool growing season was not conducive to high soybean seed yields. Precipitation was less than expected for each of the months of May through September. The total departure from expected for the growing period, May to September, was -7.55 inches of rain. For the same period, temperatures were also below those expected for each of the months except September when the temperatures averaged 2.0 degrees higher than expected. The warmer weather during September was very beneficial to the soybean crop. All of the soybean varieties matured before the first frost on September 27, 1967.

Cooperator: R. E. Bothun.
Soil Type: Fargo clay.

Revillo, South Dakota. Growth conditions were near normal in 1967. This test was in the lowland flood plain area of the Whetstone valley in northeastern South Dakota, with yield and seed quality better than the Brookings test.

Cooperator: A. O. Lunden.
Soil Type: Forman clay loam.
Fertilizer Application: None.

Brookings, South Dakota. Planting was on June 6. Extremely dry conditions caused late emergence and low summer temperatures produced very slow plant development. Yields were about 25 percent below normal. The field was located on land recently removed from a long-term bromegrass pasture planting and moisture reserve was short.

Cooperator: A. O. Lunden.
Soil Type: Vienna loam.
Fertilizer Application: 0-45-60.
Soil Analysis: pH, 6.9; N, Fair; P, 16 lbs./A.; K, 197 lbs./A.

Centerville, South Dakota. Planting was on June 5. Environmental conditions were generally unfavorable with a very dry spring causing delayed emergence and a very cool summer causing very slow growth. Yields were about 25 percent below average.

Cooperator: A. O. Lunden.
Soil Type: Poinsett sandy loam.
Fertilizer Application: 0-40-0.

Concord, Nebraska. Rainfall departures from normal were May, +1.74; June, +7.42; July, -1.01; August, -1.42; September, -1.86. Temperature departures from normal were May, -6.2°; June, -4.8°; July, -5.6°; August, -5.3°; September, -4.9°. June rainfall resulted in the plot being flooded once. Early growth was slow and maturity delayed somewhat, as a result of flooding. A total of four inches of irrigation water was applied during the period July 15 to 25.

Cooperator: Northeast Station.
Soil Type: Judson-Wabash bottomland complex (Silty clay loam).
Fertilizer Application: None. (Corn in 1966 received 120# N + 40# P_2O_5.)

Lincoln, Nebraska. All tests at this location were planted May 22 in good seedbed conditions and good stands emerged. The area had been treated with Amiben but it failed to control weeds. The month of June was extremely wet, about 13 inches of rainfall, and this necessitated hand weeding at the 3- to 4-trifoliate leaf stage. July and August were below normal in rainfall and the tests were supplemented with two irrigations, saturation of profile by furrow flow, on July 27 and August 18. The entire growing season was cooler than normal and frost occurred on October 20 heavy enough to kill plants. Group IV was damaged some by light frost on October 11. All others matured ahead of frost.

Cooperator: University of Nebraska Agronomy Department.
Soil Type: Colo silty clay loam.
Fertilizer Application: None.

Scandia, Kansas. This test was planted May 13 in a fairly good seedbed. Stands were spotty in both tests. Growing conditions were good throughout the summer but a severe hail September 5 caused considerable damage to the late maturing strains in Group IV, consequently, the data is not too reliable. The tests had a total of 12 acre inches of irrigation water applied in July and August.

Cooperator: Kansas Agricultural Experiment Station.
Soil Type: Silty clay loam.
Fertilizer Application: None.

Powhattan, Kansas. Tests at Powhattan were planted May 16 in a fairly dry seedbed, but good stands were established. Rainfall during June and July was satisfactory for favorable plant growth. Only .81 of an inch of moisture was recorded for August but temperatures during the month were favorable for growth.

Cooperator: Kansas Agricultural Experiment Station.
Soil Type: Grundy silty clay loam.
Fertilizer Application: None.
Soil Analysis: pH, 5.8; OM, 2.4%; P, 17 lbs.; K, 320 lbs.; Ca, Adequate; Mg, Adequate.

Manhattan, Kansas. Planting was delayed until June 6 because of dry weather during May. Stands were good for all entries. Growing conditions in June and July were ideal but August was dry. Part of the tests were planted on a drouthy soil; consequently, some plants in some entries in each test, especially Group III and Preliminary Group III, failed to develop seed and did not mature properly. Treflan was used for pre-emergence weed control.

Cooperator: Kansas Agricultural Experiment Station.
Soil Type: Unnamed silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 6.8; OM, 2.5%; P, 57 lbs.; K, 500+ lbs.; Ca, Adequate; Mg, Adequate.

Manhattan, Kansas (irrigated). Planting was on May 18 on a sandy loam soil. Growing conditions were good during the summer but weed control was difficult during the early growth stages. Irrigations of approximately four acre inches each were applied in early July, late July, and early August.

Cooperator: Kansas Agricultural Experiment Station.
Soil Type: Sarpy fine sandy loam.
Fertilizer Application: None.
Soil Analysis: pH, 7.1; OM, 1.3%; P, 47 lbs.; K, 500+ lbs.; Ca, Adequate; Mg, Adequate.

Ottawa, Kansas. Tests at Ottawa were planted May 17 under very favorable conditions. Moisture was adequate during June and July but during August a total of .79 of an inch was recorded as light showers. Fortunately, temperatures were not excessively high during the dry periods.

Cooperator: Kansas Agricultural Experiment Station.
Soil Type: Woodson silt loam.
Fertilizer Application: None.
Soil Analysis: pH, 5.9; OM, 2.5%; P, 24 lbs.; K, 150 lbs.; Ca, Adequate; Mg, Adequate.

Newton, Kansas. The tests were planted May 24 in a fair seedbed. Growing conditions were excellent during June and most of July. High temperatures and limited moisture in late July and August caused early maturity, especially in Group III.

Cooperator: Kansas Agricultural Experiment Station.
Soil Type: Gossel silty clay loam.
Fertilizer Application: None
Soil Analysis: pH, 6.1; OM, 2.3%; P, 23 lbs.; K, 400 lbs.; Ca, Adequate; Mg, Adequate.

Columbus, Kansas. The growing season can be stated in one word, "WET". All plots had trouble emerging because they received a 3.95 inch rain just after planting. The summer was also cool. Highest temperature was 97°. All plots seemed to be reduced by the wet, cool and cloudy weather. Diseases did not appear to be a serious problem. Stink bugs did some damage to the leaves of the later varieties but the beans were far enough along that no reduction in yield occurred.

Cooperator: Southeast Kansas Experiment Station.
Soil Type: Cherokee silt loam.
Fertilizer Application: 0-40-40.
Soil Analysis: pH, 5.9; OM, 1.1; P, 12; K, 122.

Kimberly, Idaho. The soybeans were planted May 28, emergence was good, and early season growth seemed good. Mid-July and August had temperatures averaging about two degrees above normal. This did not appear to affect pollination and seed development. However, the yields were not as high as limited data from prior trials would indicate. The area was preplant irrigated and received six irrigations during the season. No soil test was made but the crop history of alfalfa in 1966 and cereal in 1965 always produces good fertility for field beans. The soybean seed was planted with an excess of legume inoculum. To our knowledge there was no serious disease problem. A limited amount of seed shatter in cut piles contributed to variable data.

Cooperator: University of Idaho Twin Falls Experiment Station.
Soil Type: Portneuf silt loam.
Fertilizer Application: 50 lbs./A. P_2O_5 fall 1966.
Soil Analysis (1966): pH, 7.9; N, Medium; K, High; Ca, High.

Ontario, Oregon. A cool, moist spring was followed by an intensely hot, dry summer and a warm to cool, dry fall. May through September rainfall (1.84, 1.15, trace, trace, 0.81 inches) was aided by a late April pre-irrigation and 10 furrow irrigations (June 24, 27, July 1, 11, 16, 22, 28-29, August 5, 15, and 23-25). A record of 70 consecutive daily highs of 90° F. included more than a dozen days with 100° (113° maximum). This test was planted on a concave slope between a corn nursery and an orchard which may have modified the immediate microclimate. The last excessive irrigation delayed certain maturities. Deficiencies of Fe, Mn, and/or Zn were suspected. No serious diseases were observed. Chlordane dust applied July 1 diminished a potential grasshopper problem. Immediate Kelthane treatments on August 15 and 24 checked but did not control invading spider mites. These Arachnida flourished only on specific plots but the data revealed no apparent varietal resistance. Strain mean yields were good, ranging from 45 to 55 bushels in Uniform Test 0 but data were not obtained in time to include in this report.

Cooperator: E. N. Hoffman and L. A. Fitch.
Soil Type: Owyhee silty clay loam (Mollic).
Fertilizer Application: 39# P as P_2O_5 plowed down in fall of 1966, 65# N as NH_4NO_3 sidedressed on June 26, 1967.
Soil Analysis (On Adjacent Area Sampled April 25, 1967): pH, 7.5-7.8; OM, NA (2%); N, NA; P, 20-40 lbs./A.; K, 780 lbs./A.; Ca, 13.2-15.4 meq./100 g.; Mg, 6.1-6.5 meq./100 g.

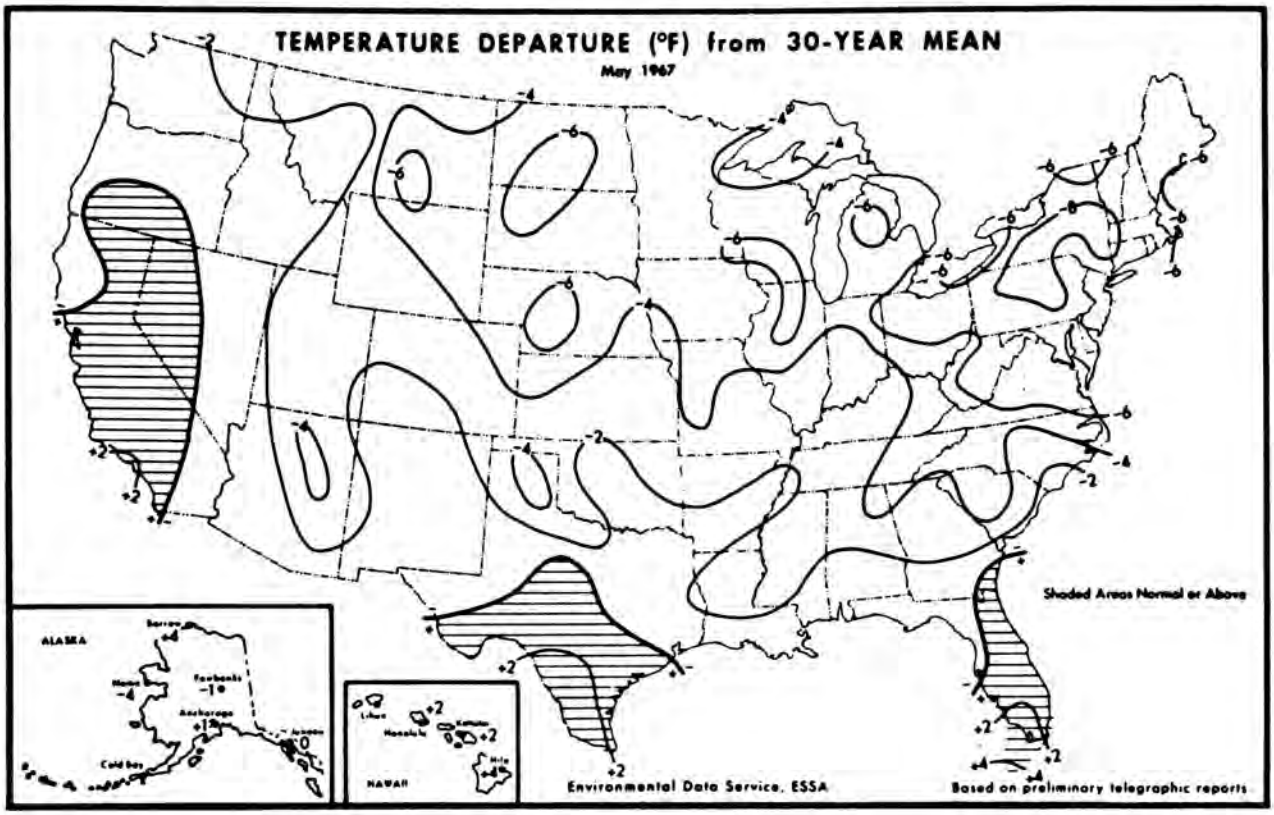
Davis, California. The plots for the Uniform Test were pre-irrigated to field capacity on June 6, 1967. The soybeans were inoculated on the planter and planted

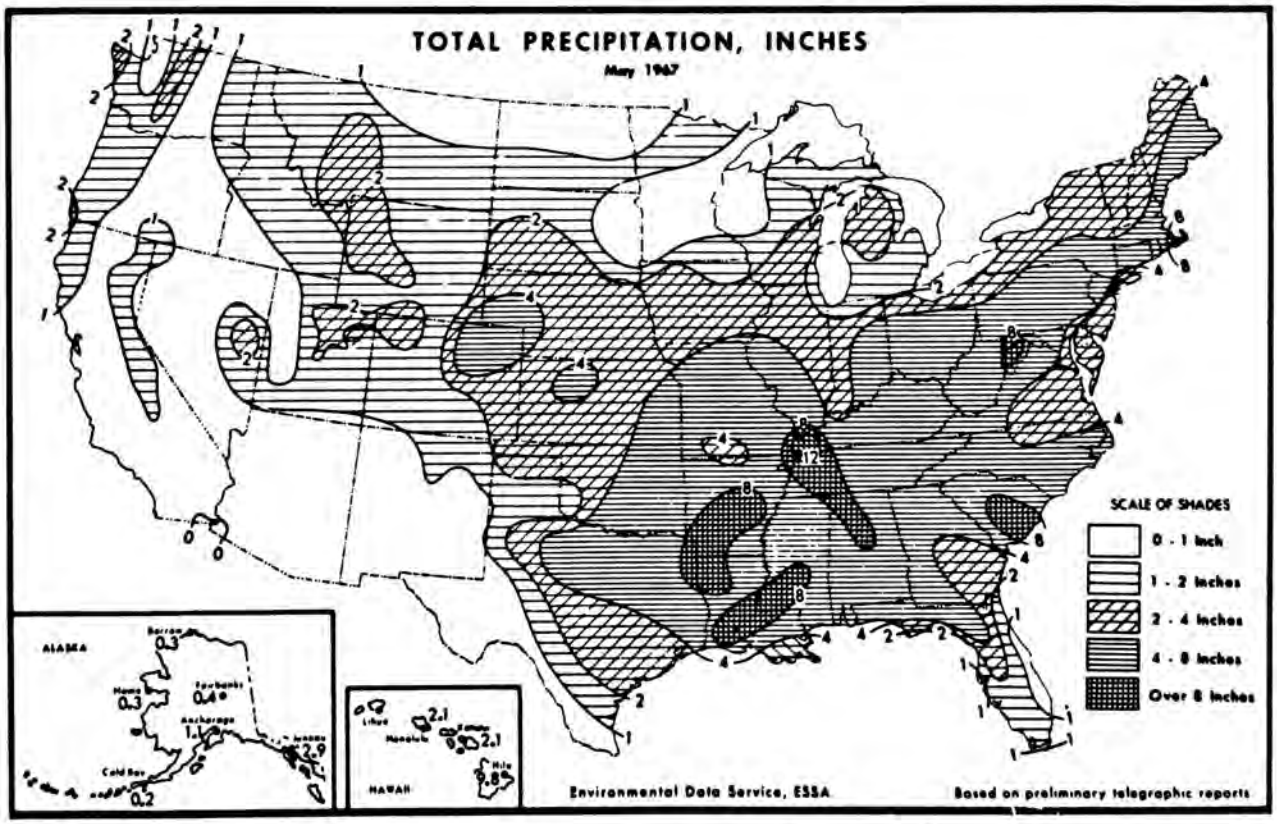
June 15. First emergence was observed four days later. No chemical soil treatment or fertilizer was used. A mite infestation developed with all plants showing damage. The degree of infestation was less on the later maturing types. Yields ranged from 3.6 to 19.0 and seed size from 5.5 to 12.1. Data were not obtained in time to include in this report.

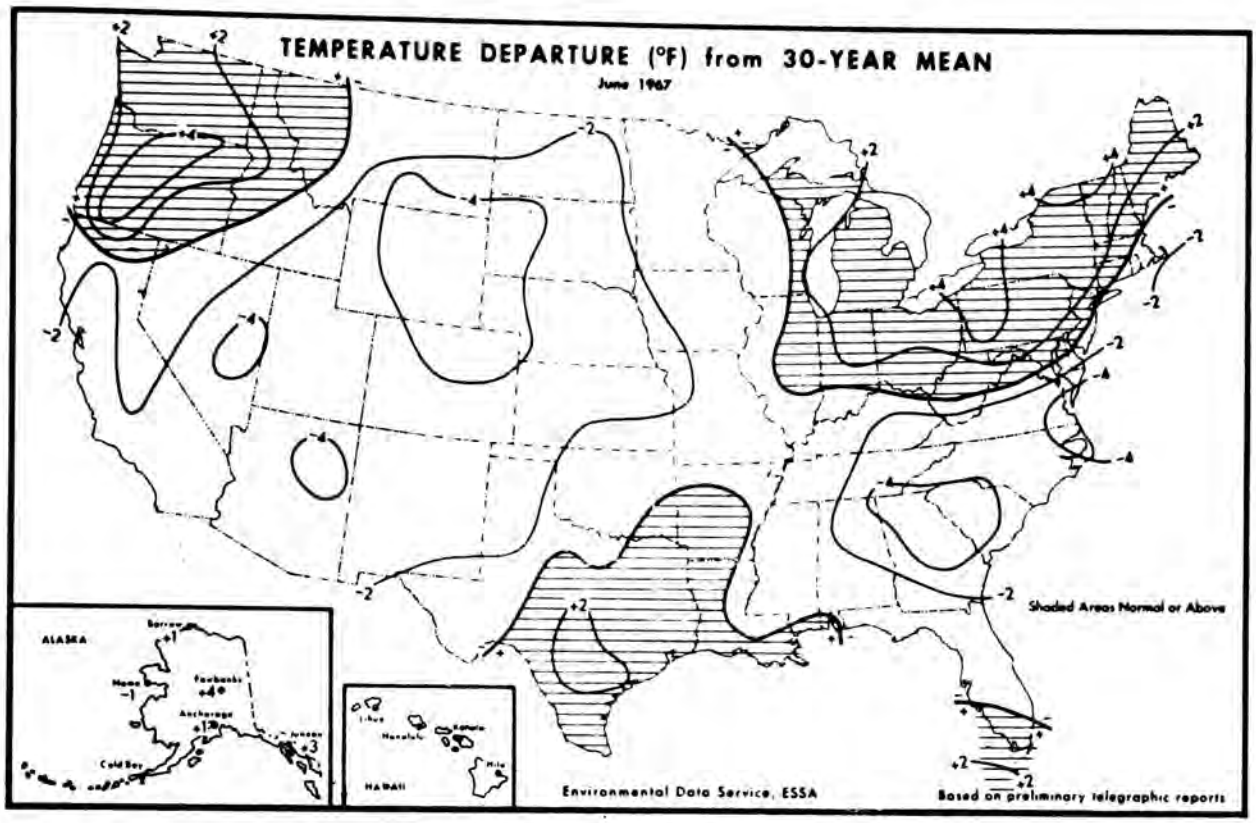
Cooperator: University of California.
Soil Type: Yolo silty clay.
Fertilizer Application: None.

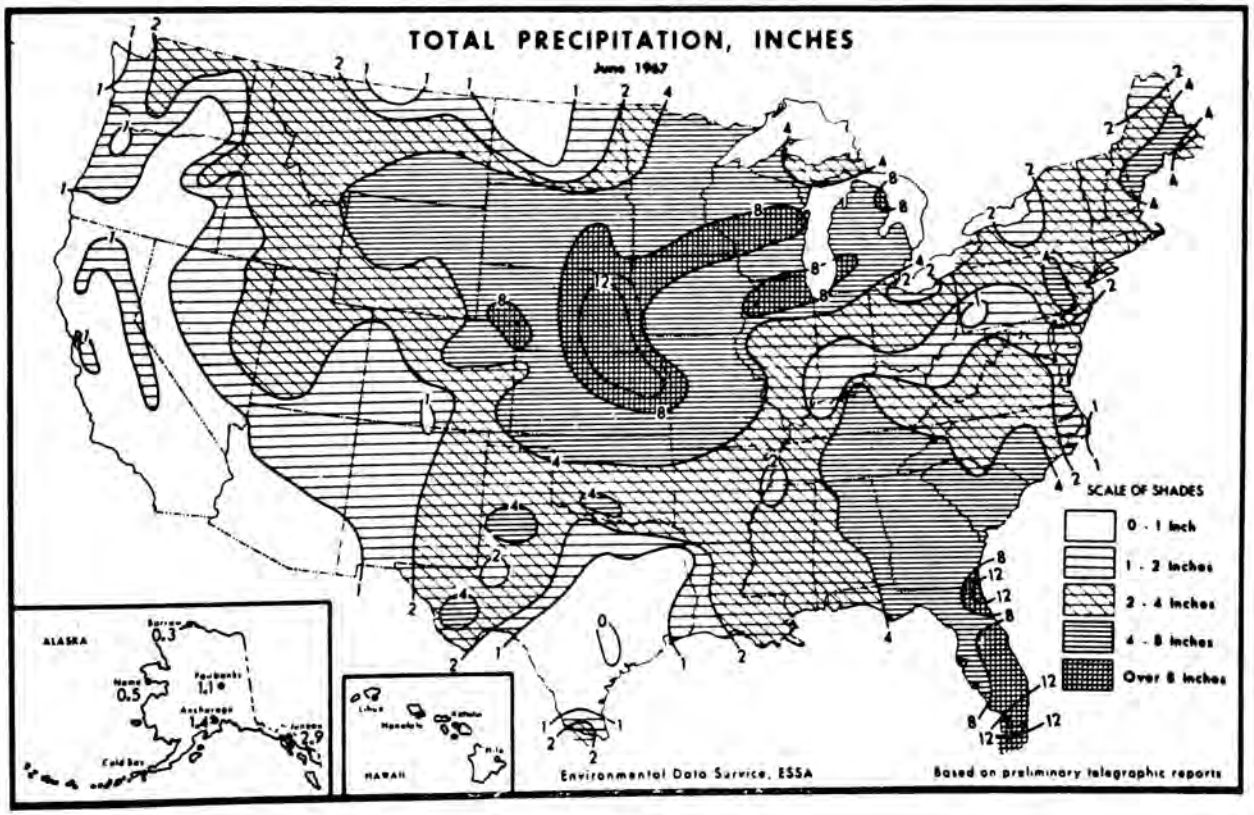
Corcoran, California. One pound of Treflan was applied pre-plant which controlled all weeds except puncture vine. Growth was good throughout the season except for one corner of the field that affected one replication on all tests. The plots were pre-irrigated, seedbed prepared, seeded, and irrigated at about the 8-inch growth stage. A total of four irrigations after seeding were used.

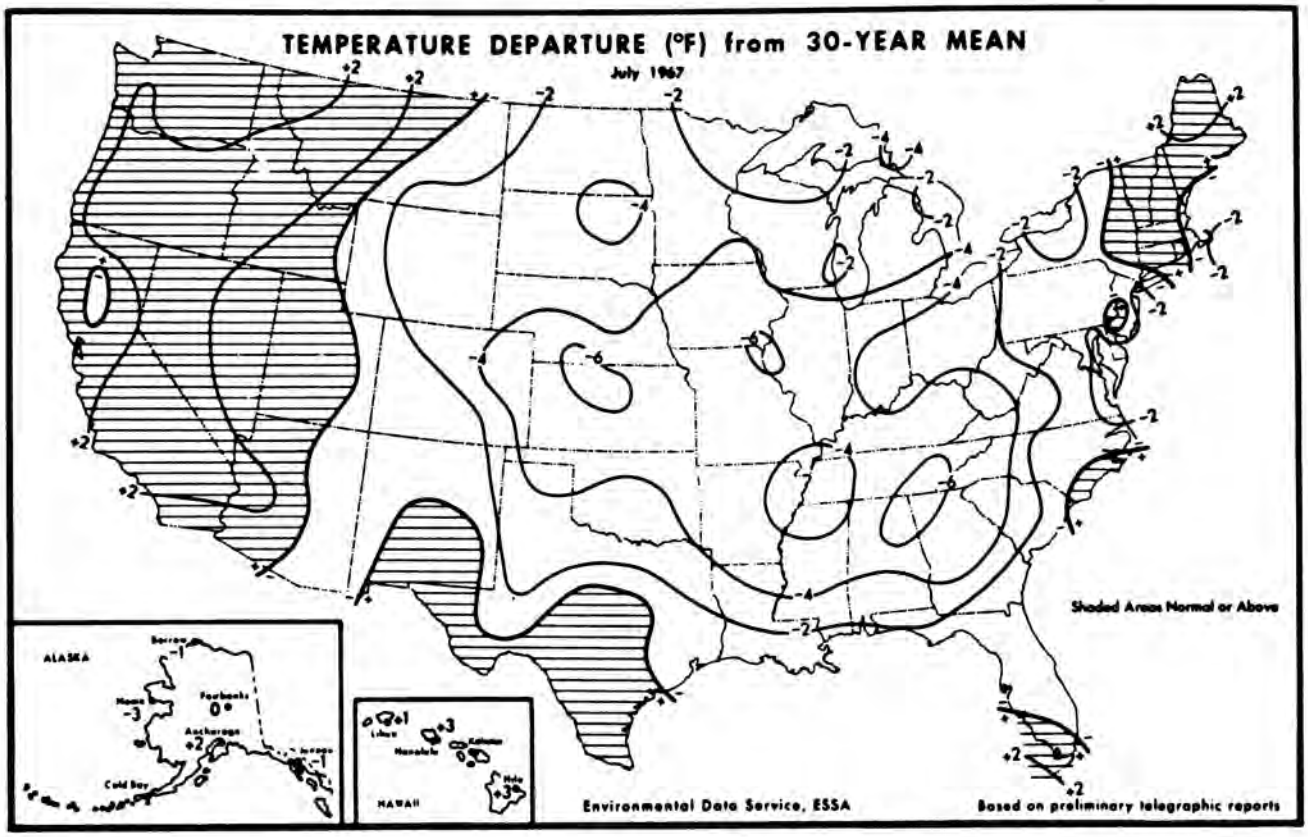
Cooperator: Audy Bell.
Soil Type: Chens clay.
Fertilizer Application: None.

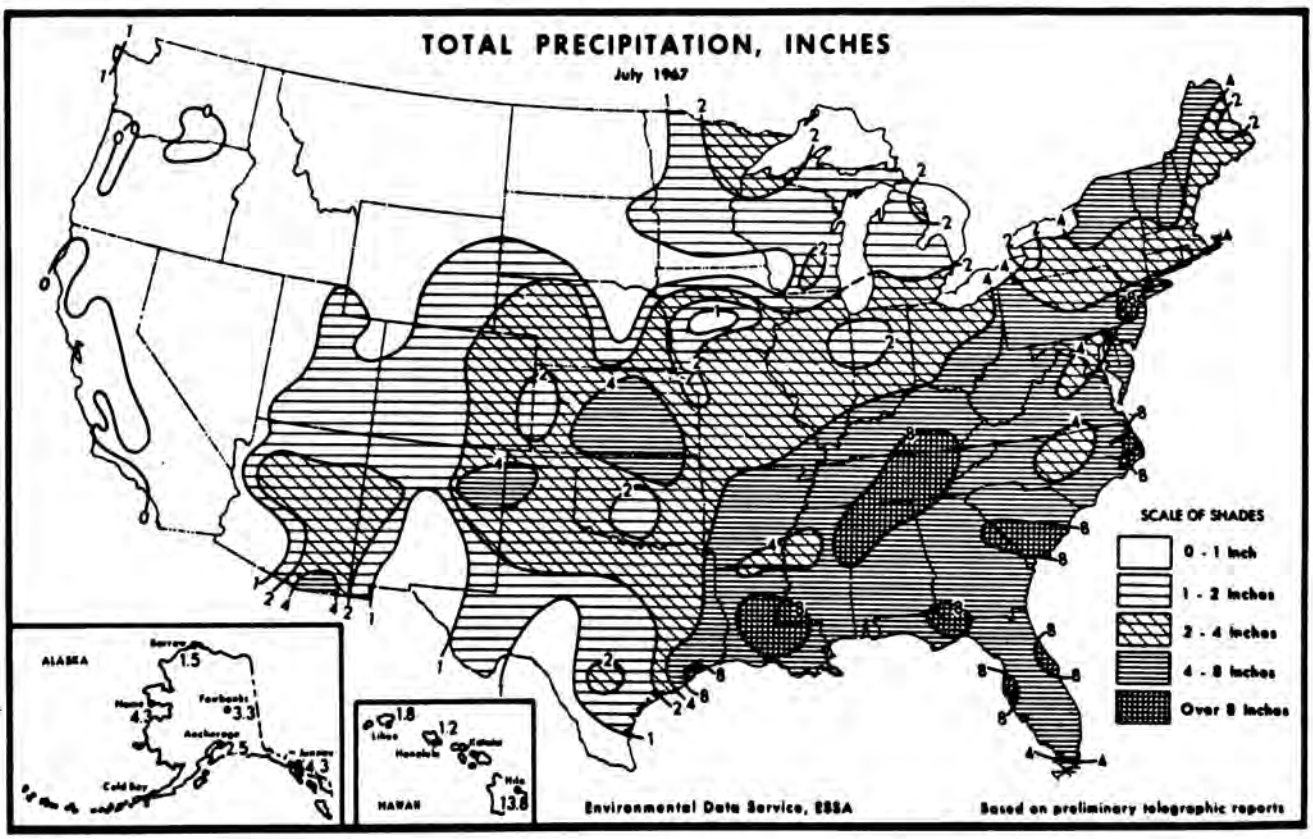

TEMPERATURE DEPARTURE (°F) from 30-YEAR MEAN
May 1967
Shaded Areas Normal or Above
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports

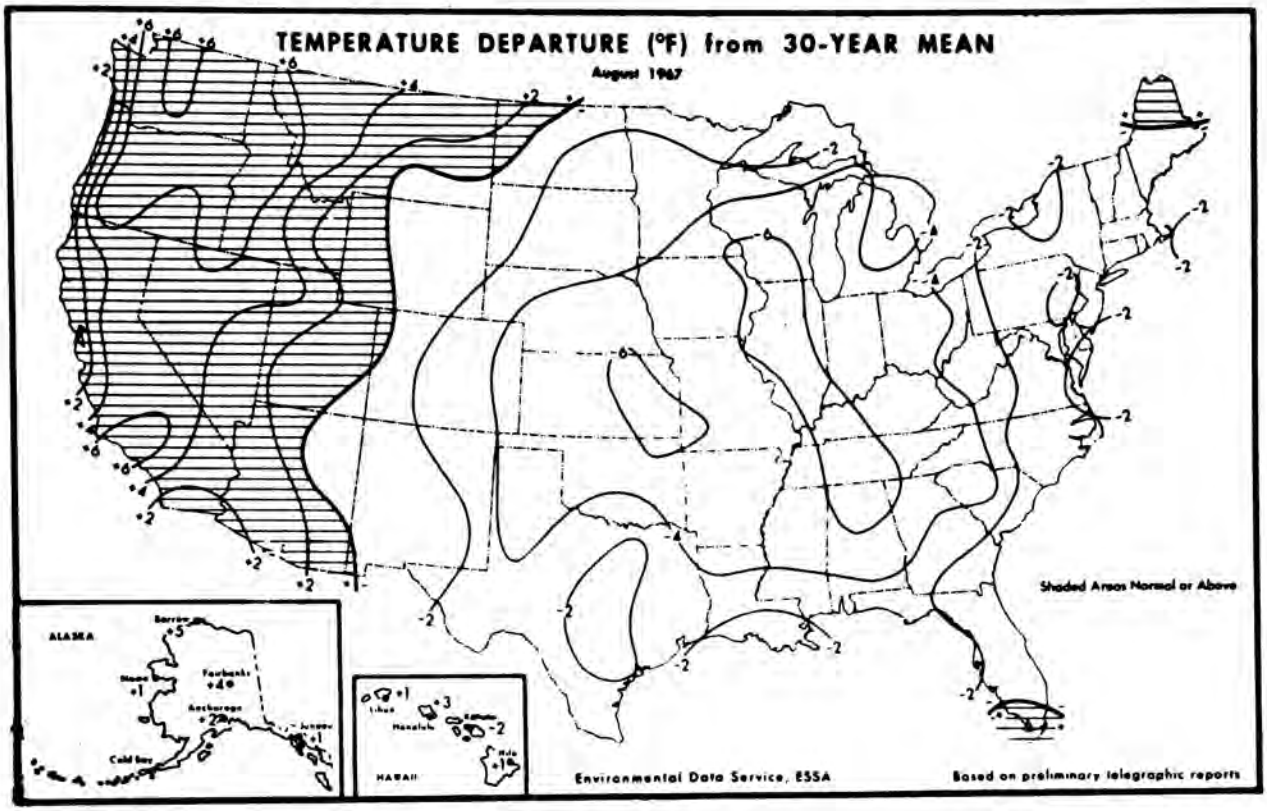

TOTAL PRECIPITATION, INCHES
May 1967
SCALE OF SHADES
0 - 1 Inch
1 - 2 Inches
2 - 4 Inches
4 - 8 Inches
Over 8 Inches
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports

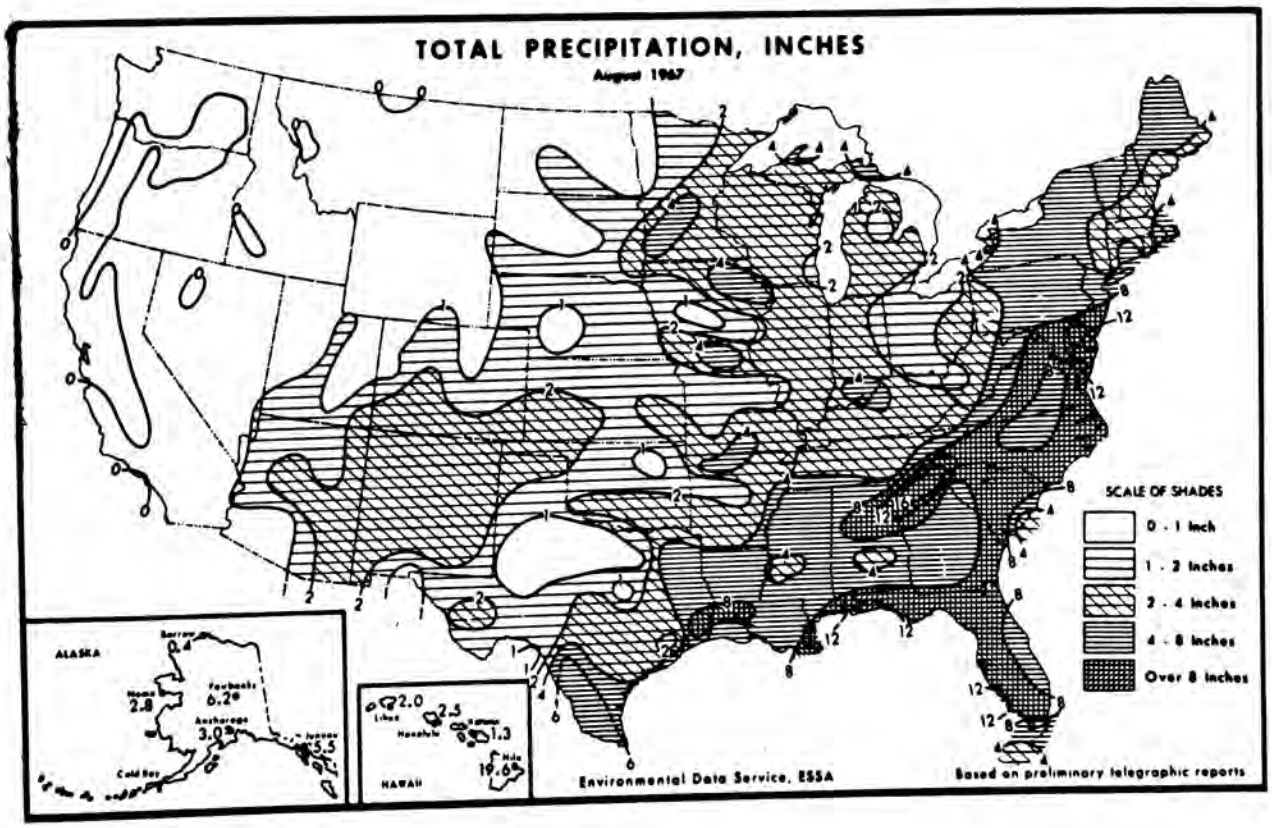

TEMPERATURE DEPARTURE (°F) from 30-YEAR MEAN
June 1967
Shaded Areas Normal or Above
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports

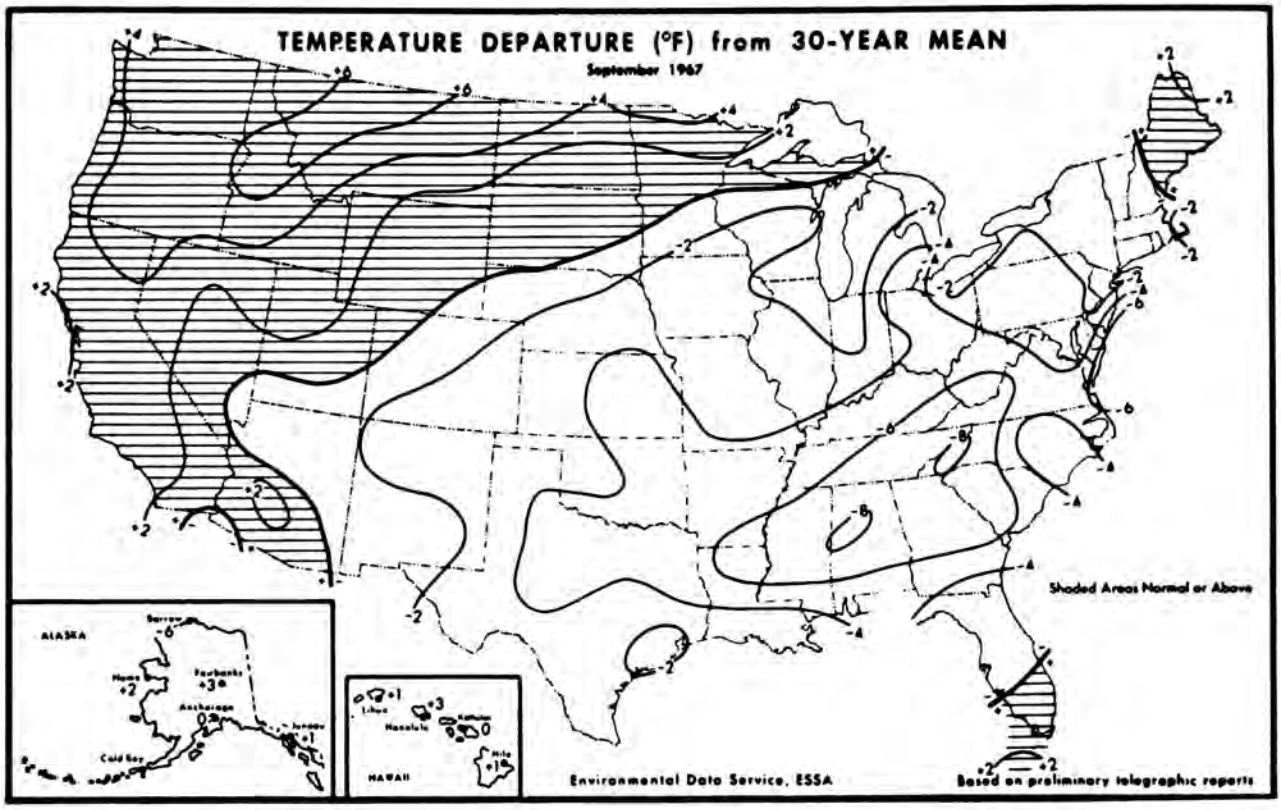

TOTAL PRECIPITATION, INCHES
June 1967
SCALE OF SHADES
0 - 1 inch
1 - 2 inches
2 - 4 inches
4 - 8 inches
Over 8 inches
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports

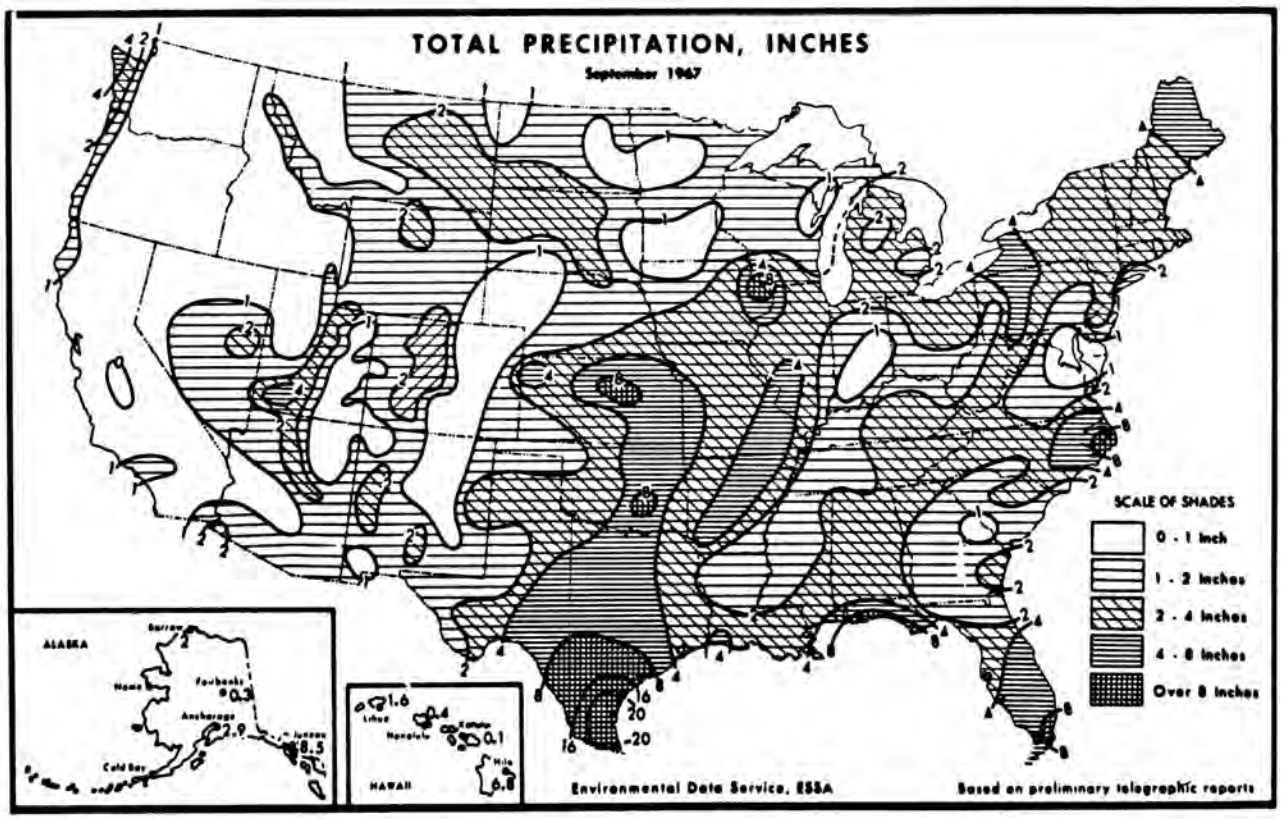

TEMPERATURE DEPARTURE (°F) from 30-YEAR MEAN
July 1967
Shaded Areas Normal or Above
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports

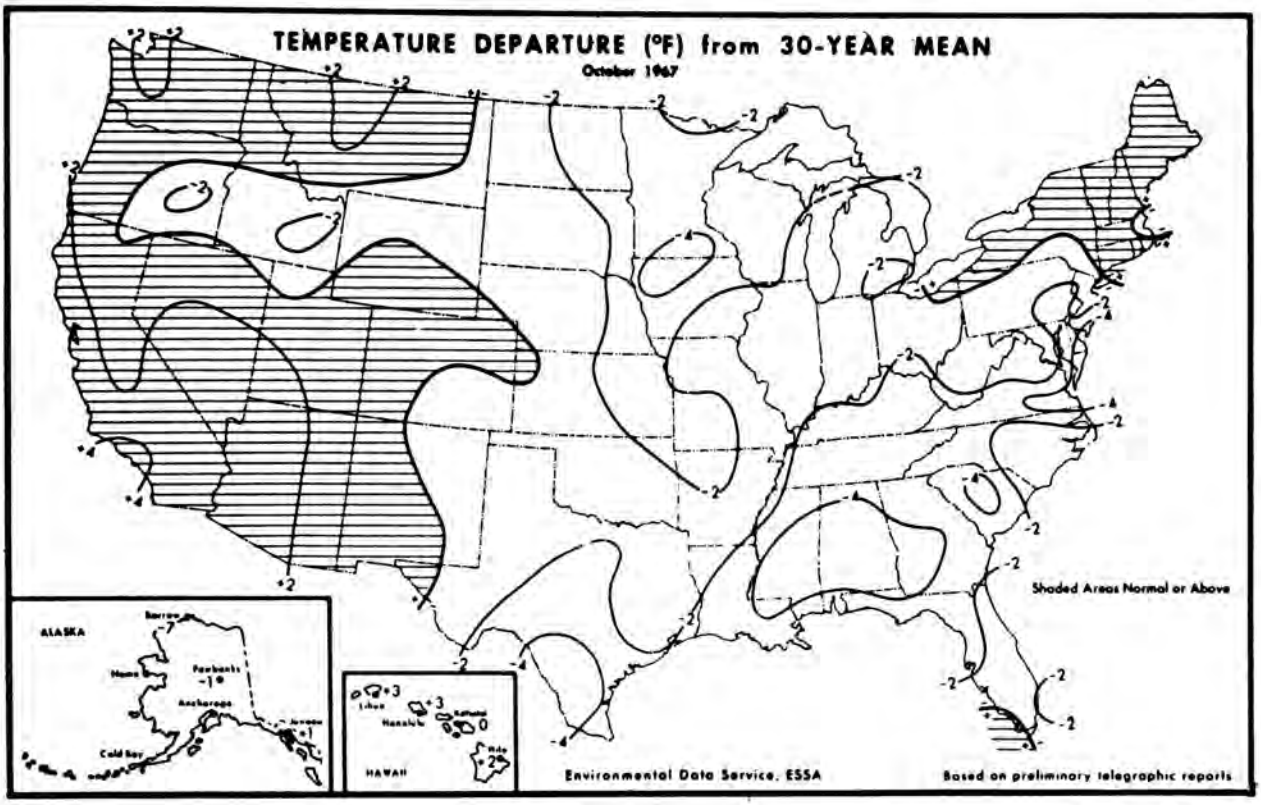

TOTAL PRECIPITATION, INCHES
July 1967
SCALE OF SHADES
0 - 1 Inch
1 - 2 Inches
2 - 4 Inches
4 - 8 Inches
Over 8 Inches
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports

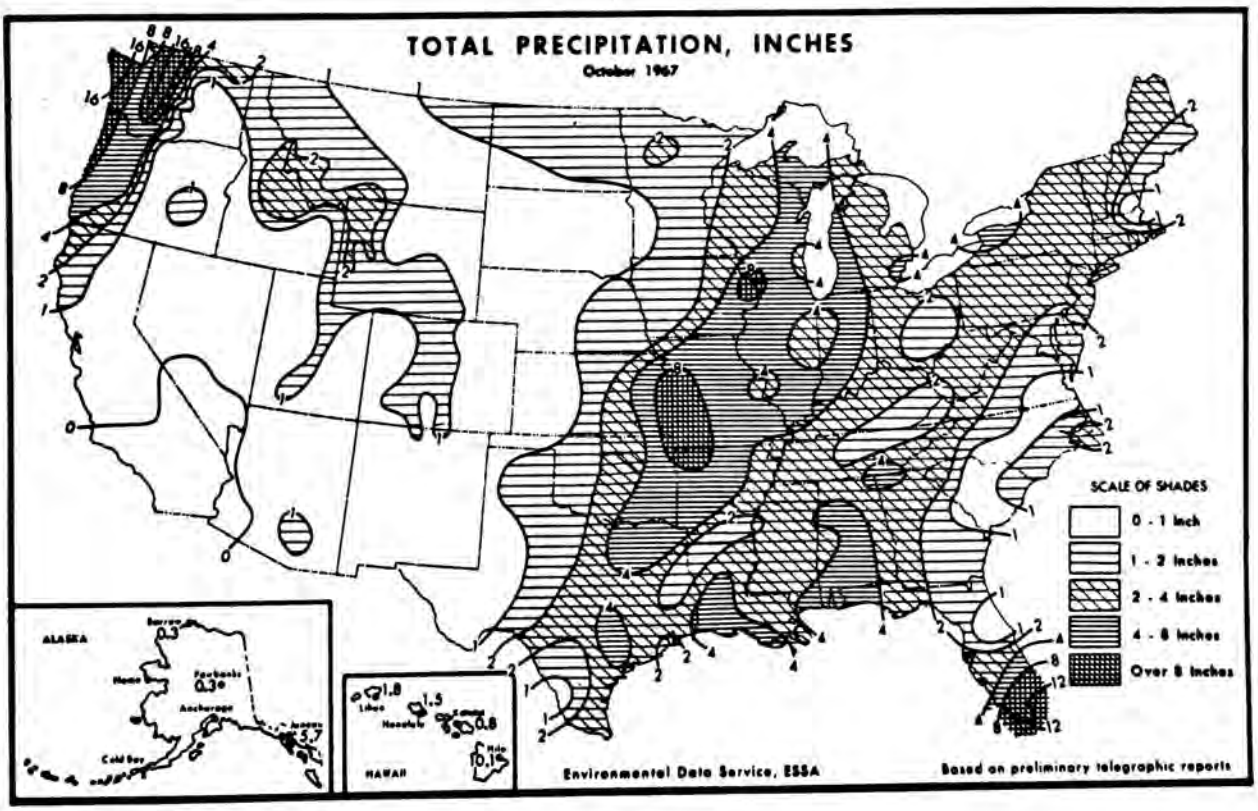

TEMPERATURE DEPARTURE (°F) from 30-YEAR MEAN
August 1967
Shaded Areas Normal or Above
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports


TOTAL PRECIPITATION, INCHES
August 1967
SCALE OF SHADES
0 - 1 Inch
1 - 2 Inches
2 - 4 Inches
4 - 8 Inches
Over 8 Inches
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports


TEMPERATURE DEPARTURE (°F) from 30-YEAR MEAN
September 1967
Shaded Areas Normal or Above
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports


TOTAL PRECIPITATION, INCHES
September 1967
SCALE OF SHADES
0 - 1 Inch
1 - 2 Inches
2 - 4 Inches
4 - 8 Inches
Over 8 Inches
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports


TEMPERATURE DEPARTURE (°F) from 30-YEAR MEAN
October 1967
Shaded Areas Normal or Above
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports


TOTAL PRECIPITATION, INCHES
October 1967
SCALE OF SHADES
0 - 1 Inch
1 - 2 Inches
2 - 4 Inches
4 - 8 Inches
Over 8 Inches
ALASKA
HAWAII
Environmental Data Service, ESSA
Based on preliminary telegraphic reports