RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS

PART I. NORTH CENTRAL STATES

****
1954
****

Compiled by:

J. L. Cartter, R. L. Bernard
Ruth E. Lawrence and Carolyn J. Younger[1]

From Data Supplied by:

R. L. Bernard, Illinois
J. W. Collier, New Jersey
F. I. Collins, Illinois
F. Dimmock, Ontario
R. J. Downs, Oregon
C. J. Franzke, South Dakota
D. G. Hanway, Nebraska
H. W. Indyk, Delaware
H. W. Johnson, Maryland
G. E. Jones, Ontario
L. C. Jones, Kansas
O. A. Krober, Illinois
J. W. Lambert, Minnesota
R. C. Leffel, Maryland
V. H. Peterson, Kansas
H. R. Pettigrove, Michigan
A. H. Probst, Indiana
H. H. Rampton, Oregon
C. O. Rydberg, Wisconsin
L. C. Saboe, Ohio
J. C. Sentz, Minnesota
J. W. Schmidt, Kansas
T. E. Stoa, North Dakota
E. F. Sullivan, Illinois
J. H. Torrie, Wisconsin
J. B. Washko, Pennsylvania
C. R. Weber, Iowa
L. F. Williams, Missouri

TABLE OF CONTENTS

---

[1]Senior Agronomist, Research Agronomist, Statistical Assistant, and Clerk-Stenographer, respectively.

[2]The results of the program of cooperative soybean disease research, conducted by the Forage and Range Section, is included in this report, since the two programs are closely integrated. The disease report was prepared by D. W. Chamberlain.

INTRODUCTION

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

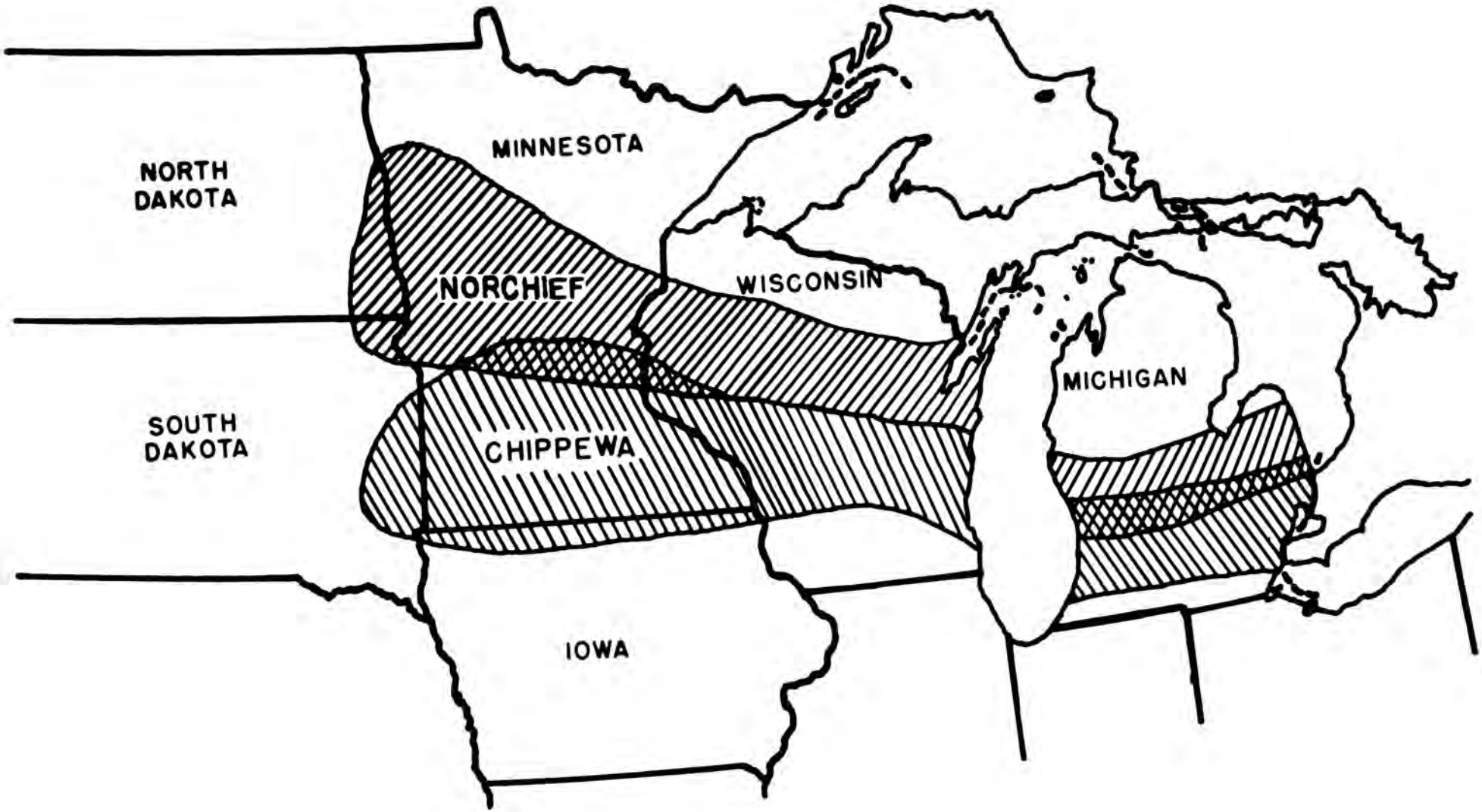
Three new strains were released in 1954, Norchief and Chippewa adapted to the northern part of the North Central Region, and Lee for the central part of the Southern Region. Norchief is the product of a cross involving Hawkeye, an improved strain cooperatively released a few years ago. Chippewa is a backcross with Lincoln as the recurrent parent, thus these two strains are from a second cycle of improvement using superior germ plasm. The area of adaptation of Norchief and Chippewa are shown on the map following page 2.

Lee, a high yielding, high oil variety resistant to pustule, wildfire, frog-eye and target spot, is the first strain from a cross designed purposely to breed for disease resistance.

The first soybean variety to be released as a product of the breeding program was Lincoln, distributed to seed producers in 1944. Since that time there have been a total of fifteen new soybean varieties developed by the Laboratory and the 24 cooperating Agricultural Experiment Stations. These strains with the parentage or origin and year of release are as follows:

Variety	Parentage	Year of Release
Lincoln	Mandarin x Manchu	1944
Roanoke	Mixed seedlot	1945
Hawkeye	Mukden x Richland	1948
Adams	Illini x Dunfield	1949
Monroe	Mukden x Mandarin	1949
Wabash	Dunfield x Mansoy	1949
Blackhawk	Mukden x Richland	1951
Dorman	Dunfield x Arksoy	1952
Jackson	Volstate x Palmetto	1952
Perry	Patoka x L7-1355	1952
Renville	Lincoln x (Lincoln x Richland)	1952
Clark	Lincoln x (Lincoln x Richland)	1953
Chippewa	Lincoln x (Lincoln x Richland)	1954
Lee	S-100 x CNS	1954
Norchief	Hawkeye x Flambeau	1954

The Uniform Soybean Tests were initiated in 1938 on a limited basis but the work was rapidly expanded until nine test groups were established to measure the yield and range of adaptation of the better strains developed through the breeding program. The first five groups include strains of proper maturity for the North



AREAS OF ADAPTATION OF NORCHIEF AND CHIPPEWA

Central States. The other four groups contain strains adapted to the Southern States. The summary of performance of the first five groups is included in Part I of this report. Information on the last four groups adapted to the southern part of the United States is contained in Part II of the report, which is issued separately.

Uniform Test, Group 0, contains the strains that will bloom and mature under the longer days encountered during summer in the Dakotas, Minnesota, and northern Wisconsin. Group I contains strains generally adapted to South Dakota, the southern parts of Minnesota, Wisconsin, and Michigan, and the northern part of Ohio. Groups II, III, and IV, respectively, include strains adapted to locations farther south in the North Central States and to other areas of similar latitude. In general, each group is arranged to include strains differing in maturity by not over ten to fifteen days. Maturity of the strains is expressed as so many days earlier or later than some well-known check or reference variety in the group.

Temperature and rainfall graphs and a brief statement of weather conditions during the 1954 season are included as an aid to interpretation of the agronomic and chemical data. The northern half of the North Central Region had adequate moisture throughout the season and as a result of favorable conditions yields were high. Subsoil moisture was generally low in the southern part of the region at planting time and remained inadequate throughout the growing season. The drouth was partly relieved in August during the period of pod-filling but the rains came too late to make a normal crop. At these southern locations seed quality, though better than in 1953, was too poor to permit determination of iodine number from the refractive index of the extracted oil.

COOPERATING AGENCIES AND PERSONNEL FOR THE NORTH CENTRAL REGION

Forage and Range Section, Beltsville, Maryland

D. F. Beard, Agronomist in Charge
H. W. Johnson, Research Agronomist, Director and Project Leader

Laboratory Headquarters, Urbana, Illinois

J. L. Cartter, Senior Agronomist, Director
Carolyn J. Younger, Clerk-Stenographer
Geraldine Epperson, Clerk-Stenographer
Eleanor M. Larson, Clerk-Stenographer[1]

Breeding and Genetics

R. L. Bernard, Research Agronomist
D. E. Rosenbery, Agricultural Aid
Marie J. Demlow, Clerk[1]
Ruth E. Lawrence, Statistical Assistant
S. J. Gibbons, Agricultural Aid
Marjorie M. Johnson, Clerk[1]
Elizabeth M. Berreis, Biological Science Aid[1]

Plant Physiology

R. W. Howell, Plant Physiologist
C. E. Burt, Agricultural Aid (½ time)
J. Joanne Hoover, Laboratory Helper[1]
E. T. Drabik, Physical Science Aid
G. B. Kessler, Biological Science Aid[1]
R. H. Johnson, Refrigerator Mechanic[1]

Chemical Analysis

F. I. Collins, Chemist
J. H. Conerty, Physical Science Aid
Della J. McGarrahan, Physical Science Aid
Sandra H. Rosenthal, Physical Science Aid[1]
O. A. Krober, Chemist
Marjorie L. Pedrotti, Physical Science Aid
Patricia E. Gillis, Physical Science Aid
V. E. Sedgwick, Physical Science Aid

Plant Pathology[2]

D. W. Chamberlain, Pathologist
C. E. Burt, Agricultural Aid (½ time)

Lafayette, Indiana

A. H. Probst, Research Agronomist

Ames, Iowa

C. R. Weber, Research Agronomist

St. Paul, Minnesota

J. C. Seutz, Research Agronomist

Columbia, Missouri

L. F. Williams, Research Agronomist

---

[1]Part time.
[2]Soybean pathology research under Project 31-5010.

Collaborators in the North Central States

Illinois Agricultural Experiment Station
Agronomy Department: C. M. Woodworth
Food Technology Department: R. T. Milner

Iowa Agricultural Experiment Station
Agronomy Department: I. J. Johnson

Kansas Agricultural Experiment Station
Agronomy Department: J. W. Schmidt

Michigan Agricultural Experiment Station
Farm Crops Department: H. R. Pettigrove

Minnesota Agricultural Experiment Station
Agronomy and Plant Genetics Department: J. W. Lambert

Missouri Agricultural Experiment Station
Field Crops Department: W. C. Etheridge

Nebraska Agricultural Experiment Station
Agronomy Department: D. G. Hanway

North Dakota Agricultural Experiment Station
Agronomy Department: T. E. Stoa

Ohio Agricultural Experiment Station
Agronomy Department: L. C. Saboe

Purdue Agricultural Experiment Station
Agronomy Department: H. H. Kramer

South Dakota Agricultural Experiment Station
Agronomy Department: C. J. Franzke

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

LOCATION OF COOPERATIVE NURSERIES

Location	Cooperator
Ottawa, Ontario, Canada	F. Dimmock, Central Exp. Farm
Guelph, Ontario, Canada	G. E. Jones, Ontario Agr. College
State College, Pennsylvania	John B. Washko, Pa. Agr. Exp. Sta.
Landisville, Pennsylvania	Tobacco Substation, Pa. State Univ.
Middlesex County, New Jersey	E. H. Jurgelski
Freehold, New Jersey	Hugh Oakley
Burlington County, New Jersey	W. Lippincott
Newark, Delaware	Henry W. Indyk, Del. Agr. Exp. Sta.
Georgetown, Delaware	Henry W. Indyk, Georgetown Substation, Del. A. E. S.
Beltsville, Maryland	R. C. Leffel, Forage and Range Section, U. S. D. A.
Cortland, Ohio	Lewis C. Saboe, Trumbull County Exp. Farm
Hoytville, Ohio	Lewis C. Saboe, Northwestern Substation
Wooster, Ohio	Lewis C. Saboe, Ohio Agr. Exp. Sta.
Columbus, Ohio	Lewis C. Saboe, Ohio State Univ.
Mt. Healthy, Ohio	Lewis C. Saboe, Hamilton County Exp. Farm
East Lansing, Michigan	H. R. Pettigrove, Mich. Agr. Exp. Sta.
Ottawa Lake, Michigan	Ed Brodbeck, Farmer Cooperator
Walkerton, Indiana	Elburt F. Place, Farmer Cooperator
Bluffton, Indiana	Gerald and Homer Bayless, Farmer Cooperators
Lafayette, Indiana	O. W. Luetkemeier, Purdue Agr. Exp. Sta.
Greenfield, Indiana	Benjamin Roney and James Marx, Farmer Cooperators
Worthington, Indiana	Frederic Sloan, Farmer Cooperator
Evansville, Indiana	Bernard Wagner, Farmer Cooperator
Spooner, Wisconsin	Carl Rydberg, Spooner Br., Wis. Agr. Exp. Sta.
Durand, Wisconsin	J. H. Torrie, Wis. Agr. Exp. Sta.
Madison, Wisconsin	J. H. Torrie, Wis. Agr. Exp. Sta.
Shabbona, Illinois	R. R. Bell, N. Ill. Exp. Field
Dwight, Illinois	Frank Roeder, Farmer Cooperator
Urbana, Illinois	C. H. Farnham, Ill. Agr. Exp. Sta.
Eldorado, Illinois	Cyril Wagner, Farmer Cooperator
Carbondale, Illinois	E. F. Sullivan, Southern Ill. Univ.
Morris, Minnesota	J. W. Lambert, Branch Minn. Agr. Exp. Sta.
St. Paul, Minnesota	J. W. Lambert, Minn. Agr. Exp. Sta.
Waseca, Minnesota	J. W. Lambert, S. E. Branch, Minn. Agr. Exp. Sta.
Cresco, Iowa	Howard County Agr. Exp. Assoc.
Kanawha, Iowa	Northern Iowa Agr. Exp. Assoc.
Marcus, Iowa	John Sand, Farmer Cooperator
Independence, Iowa	Carrington-Clyde Exp. Assoc.
Ames, Iowa	Iowa Agr. Exp. Sta.
Ottumwa, Iowa	A. E. Newquist, Farmer Cooperator
Norborne, Missouri	Marvin Moentmann, Farmer Cooperator
Laddonia, Missouri	Carver Brown, Farmer Cooperator
Columbia, Missouri	Missouri Agr. Exp. Sta.
Casselton, North Dakota	T. E. Stoa, N. D. Agr. Exp. Sta.
Fargo, North Dakota	T. E. Stoa, N. D. Agr. Exp. Sta.
Rosholt, South Dakota	Irvin Voss, Farmer Cooperator
Brookings, South Dakota	C. J. Franzke, Agr. Exp. Sta.
Viborg, South Dakota	Timon Swenson, Farmer Cooperator
Lincoln, Nebraska	D. G. Hanway, Nebr. Agr. Exp. Sta.
Manhattan, Kansas	J. W. Schmidt, Kansas State College
Columbus, Kansas	Verlin H. Peterson, S. E. Kansas Exp. Field
Medford, Oregon	Ray Downs, S. Oregon Branch Exp. Sta.

LOCATION OF COOPERATIVE NURSERIES (CONTINUED)

Location	Kind of Soil	Uniform Group Tests					Prel. Test
		0	I	II	III	IV	I
Ottawa, Ont., Canada	Grenville Sandy Loam	x					
Guelph, Ont., Canada	Guelph Sandy Loam	x					
State College, Pa.	Hagerstown Silt Loam		x	x			
Landisville, Pa.	Dunsmore Silt Loam				x	x	
Middlesex Co., N.J.	Keyport Fine Sandy Loam			x			
Freehold, N. J.	Colts Neck Fine Sandy Loam				x		
Burlington Co., N.J.	Freehold Fine Sandy Loam			x			
Newark, Del.	Sassafras Loam			x	x		
Georgetown, Del.	Norfolk Loamy Sand				x	x	
Beltsville, Md.	Riverdale Silt Loam				x	x	
Cortland, Ohio	Mahoning Silty Clay Loam	x	x				
Hoytville, Ohio	Brookston Clay	x	x	x			
Wooster, Ohio	Wooster Silt Loam		x	x			
Columbus, Ohio	Miami-Brookston Silty Clay Loam		x	x	x	x	x
Mt. Healthy, Ohio	Fincastle Silt Loam				x		
East Lansing, Mich.	Clay Loam (Group 0, Muck)	x	x	x			
Ottawa Lake, Mich.	Clay Loam	x	x	x			
Walkerton, Ind.	Maumee Loam		x	x			x
Bluffton, Ind.	Nappanee Silt Loam		x	x			x
Lafayette, Ind.	Floyd-Raub Complex		x	x	x		x
Greenfield, Ind.	Brookston-Crosby Complex			x	x		
Worthington, Ind.	Genesee Silt Loam				x	x	
Evansville, Ind.	Montgomery Silty Clay Loam					x	
Spooner, Wis.	Loamy Sand	x					
Durand, Wis.	Boone Fine Sandy Loam	x	x				
Madison, Wis.	Miami Silt Loam		x	x			x
Shabbona, Ill.	Brenton Silt L. & Harpster Silty C. L.		x	x			
Dwight, Ill.	Elliot Silt			x	x		
Urbana, Ill.	Flanagan and Catlin Silt Loam			x	x	x	
Eldorado, Ill.	Drab Clay Loam				x	x	
Carbondale, Ill.	Bonnie Silt Loam					x	
Morris, Minn.	Barnes Silt Loam	x					
St. Paul, Minn.	Waukegan Silt Loam	x	x				x
Waseca, Minn.	LeSueur Silty Clay Loam		x	x			x
Cresco, Iowa	Carrington Plastic Till Phase		x				
Kanawha, Iowa	Webster Silty Clay Loam		x	x			x
Marcus, Iowa	Galva Silt Loam			x			
Independence, Iowa	Carrington Silt Loam			x			
Ames, Iowa	Webster Silty Clay Loam			x	x		
Ottumwa, Iowa	Haig Silt Loam				x		
Norborne, Mo.	Buckner Loam				x	x	
Laddonia, Mo.	Putnam Silt Loam				x	x	
Columbia, Mo.	Putnam Silt Loam				x	x	
Casselton, N. D.	Bearden Silty Clay Loam	x					
Fargo, N. D.	Fargo Clay	x					
Rosholt, S. D.	Sandy Loam	x					
Brookings, S. D.	Barnes Sandy Loam		x				x
Viborg, S. D.	Silt Loam			x			
Lincoln, Nebr.	Wabash Silt Loam			x	x		
Manhattan, Kans.	Elmo Silt Loam				x	x	
Columbus, Kans.	Cherokee Silt Loam				x	x	
Medford, Ore.	Medford Clay Loam	x					

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

METHODS

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

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

Maturity is taken as the date when most of the pods are ripe, most of the leaves have dropped, and the stems are fairly dry. Maturity is expressed as days earlier (-) or later (+) than the average of a standard reference variety. Reference varieties used for the Uniform Tests are as follows: Group 0, Mandarin (Ottawa); Group I, Mandarin (Ottawa); Group II, Hawkeye; Group III, Lincoln; and Group IV, Wabash.

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

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

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

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

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

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

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

Chemical composition of the seed was determined on samples submitted to the Laboratory in Urbana. Percentages of oil and protein are expressed on a moisture-free basis. In the case of the Preliminary Test, analysis was made on a composite sample of four replications for each strain.

Calculating Summary Means. In most cases where the lodging and seed quality notes are all 1 at a location, indicating no expression of strain differences, these locations are not included in the mean.

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

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

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

UNIFORM TEST, GROUP O

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

Strain	Source or Originating Agency	Origin
Capital	Central Exp. Farm, Ottawa	Sel. from Strain 171 x A.K.(Harrow)
Chippewa (L6-8275)	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
Comet (O-48-36)	Central Exp. Farm, Ottawa	Sel. from Pagoda x Mandarin
Flambeau	Wis. Agr. Exp. Sta.	Sel. from Intr. from Russia
Hardome	Dominion Exp. Farm, Harrow	Sel. from Mandarin x (Mand. x A.K.)
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Norchief (W8S-1460)	Wis. A.E.S. & U.S.R.S.L.	Sel. from Hawkeye x Flambeau
Renville	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W6S-292	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Seneca
W9S-2703	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Flambeau
WOS-3138	Wis. A.E.S. & U.S.R.S.L.	Sel. from Hawkeye x Flambeau
WOS-3147	Wis. A.E.S. & U.S.R.S.L.	Sel. from Mukden x Flambeau
WOS-3180	Wis. A.E.S. & U.S.R.S.L.	Sel. from Mukden x Flambeau
WOS-3257	Wis. A.E.S. & U.S.R.S.L.	Sel. from Mukden x Flambeau
WOS-3386	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Flambeau

Uniform Test, Group O, was grown at 14 locations in 1954 and summaries of these data are presented in tables 1 through 8. A comparison of 1954 yields with 1953 at those locations where the test was grown both years indicates practically no change in average yield. East Lansing, Michigan and Casselton, North Dakota, however, showed appreciable decreases, while most of the other locations showed moderate increases or no change.

Two strains were in this test for the first time in 1954. Strain WOS-3147 yielded well considering its early maturity but was exceeded in this respect by some of the other Wisconsin strains. Strain WOS-3257 yielded the same as Mandarin (Ottawa) but appears to be somewhat earlier.

Four strains have been in the test for only two years. Strain WOS-3386 stands out in the test for its high yield and for its early maturity, ranking second in the test in yield and averaging over two days earlier than Mandarin (Ottawa). Strain W9S-2703 is also worthy of note, being about as early as Norchief and outyielding it by two bushels. The other two, WOS-3180 and WOS-3138, are about equivalent to Mandarin (Ottawa), yielding a little less and maturing a little earlier.

Strain W6S-292 has been in the test for five years and, having yielded highest in the group, will be named and released next year. It is of the same maturity as Mandarin (Ottawa) and is intermediate between Norchief and Chippewa in this respect.

On a three-year average the named varieties have yielded in the following order: Chippewa, Capital, Renville, Mandarin (Ottawa), Hardome, Comet, Norchief, and Flambeau. This follows closely the order of maturity from late to early.

Three strains in this group became named varieties this year; the Canadian strain O-48-36 was named Comet, strain L6-8275 became Chippewa (see Uniform Test, Group I, for development), and strain W8S-1460 was named Norchief (see map following page 2 for area of adaptation of the latter two).

The origin, development, and description of Norchief (W8S-1460) are given below:

1944 - Cross A45-251 (Hawkeye) x Flambeau made by J. H. Torrie at Madison, Wisconsin.

1945 - F_1 grown at Madison, Wisconsin, by J. H. Torrie.

1946 - F_2 grown at Madison, Wisconsin, by J. H. Torrie.

1947 - F_3 bulk grown at Spooner, Wisconsin, by C. O. Rydberg.

1948 - F_4 selection bulked in 1948 by C. O. Rydberg.

1949 - F_5 grown in preliminary yield test at Spooner, Wisconsin.

1950-52 - F_6 through F_8 grown in Uniform Test, Group O.

1953 - F_9 grown in Uniform Test, Group O. Thirty-five bushels of seed raised at Spooner, Wisconsin.

W8S-1460 is about three days later than Flambeau in maturity, and is superior to Flambeau in yield, lodging resistance, and oil content. It has purple flowers, brown pubescence, and yellow seed with a black hilum.

Table 1. Summary of agronomic and chemical data for the strains in the Uniform Test, Group 0, 1954.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	10	6	7	10	10	10	10	10
W6S-292	32.0	+0.7	2.1	31	1.8	16.9	39.5	20.1
WOS-3386	31.7	-3.7	2.2	32	1.6	16.2	40.4	19.5
Chippewa	31.6	+2.8	1.7	33	1.8	15.9	39.7	20.2
Hardome	30.7	-0.8	2.8	34	1.8	17.1	40.7	19.6
WOS-3147	30.1	-2.7	1.8	31	1.6	17.4	41.9	19.5
W9S-2703	29.6	-5.8	1.6	29	1.9	16.8	41.3	19.7
Capital	29.1	+0.7	2.7	34	2.0	14.4	40.0	19.8
Comet	29.0	-2.3	1.7	32	1.8	17.0	39.7	19.7
Renville	28.9	+1.7	1.7	31	2.1	17.4	39.3	20.8
WOS-3257	28.3	-2.2	2.3	30	2.0	16.8	42.3	19.0
WOS-3180	28.2	-2.0	2.1	30	1.9	17.9	41.9	19.1
Mandarin (Ottawa)	28.2	0	1.7	28	1.6	20.5	41.2	19.4
WOS-3138	27.5	-2.3	1.7	29	2.0	17.7	41.3	19.7
Norchief	27.0	-4.8	2.0	28	2.1	17.3	40.7	20.0
Flambeau	25.3	-9.3	2.8	29	2.3	16.7	41.9	18.6
Mean	29.1		2.1	31	1.9	17.1	40.8	19.6

[1]Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 117 days to mature.

Table 2. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group 0, 1954.

Strain	Mean of 10 Tests[1]	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Hoyt-ville Ohio	East Lansing Mich.	Ottawa Lake Mich.	Spooner Wis.
W6S-292	32.0	32.6	34.6	10.5	33.2	23.1	36.1	34.1
WOS-3386	31.7	36.8	29.7	9.0	32.6	24.7	33.2	35.0
Chippewa	31.6	35.0	32.3	14.0	35.2	21.5	42.9	37.0
Hardome	30.7	38.2	27.3	11.0	37.3	30.4	39.5	33.8
WOS-3147	30.1	33.5	33.4	6.8	29.0	32.6	27.0	33.6
W9S-2703	29.6	33.8	29.3	8.0	30.4	32.3	31.2	35.0
Capital	29.1	28.2	29.9	9.4	34.1	27.6	34.2	31.4
Comet	29.0	29.5	27.6	8.3	32.9	30.8	34.0	36.5
Renville	28.9	36.2	26.4	9.5	30.4	25.3	37.9	30.9
WOS-3257	28.3	30.7	26.4	7.5	25.4	33.4	29.7	32.5
WOS-3180	28.2	33.0	28.1	8.0	26.5	32.8	26.9	36.4
Mandarin (Ottawa)	28.2	32.0	25.6	9.5	28.8	37.1	36.6	37.1
WOS-3138	27.5	27.9	25.8	7.5	28.9	36.1	23.5	31.9
Norchief	27.0	26.0	26.3	6.3	26.1	27.6	25.6	31.6
Flambeau	25.3	29.8	23.0	6.8	24.6	23.2	19.8	29.3
Mean	29.1	32.2	28.4	8.8	30.4	29.2	31.9	33.7
Coef. of Var. (%)		9.2	12.4	24.4	9.2	--	--	8.9
Bu. Nec. for Sig. (5%)		4.2	4.8	3.1	4.0	--	--	4.3
Row Spacing (In.)		30	24	42	36	28	28	36

	Yield Rank						
W6S-292	8	1	3	4	14	5	7
WOS-3386	2	5	7	6	12	8	5
Chippewa	4	3	1	2	15	1	2
Hardome	1	9	2	1	8	2	8
WOS-3147	6	2	13	9	5	11	9
W9S-2703	5	6	9	7	6	9	5
Capital	13	4	6	3	9	6	13
Comet	12	8	8	5	7	7	3
Renville	3	10	4	7	11	3	14
WOS-3257	10	10	11	14	3	10	10
WOS-3180	7	7	9	12	4	12	4
Mandarin (Ottawa)	9	14	4	11	1	4	1
WOS-3138	14	13	11	10	2	14	11
Norchief	15	12	15	13	9	13	12
Flambeau	11	15	13	15	13	15	15

[1]Cortland, Ohio; East Lansing and Ottawa Lake, Michigan; and Medford, Oregon not included in the mean.

Table 2. (Continued)

Strain	Durand Wis.	Morris Minn.	St. Paul Minn.	Cassel-ton N.D.	Fargo N.D.	Rosholt S.D.	Medford Ore.
W6S-292	13.2	40.0	46.2	27.5	35.9	22.5	13.3
WOS-3386	13.2	37.3	45.8	28.0	31.5	27.4	14.2
Chippewa	16.7	39.6	47.7	21.1	29.4	22.2	15.8
Hardome	15.3	34.8	38.3	24.7	35.5	22.2	11.3
WOS-3147	15.2	34.0	40.3	25.1	30.6	26.4	11.7
W9S-2703	12.5	37.3	33.4	24.9	31.2	27.9	14.9
Capital	15.3	37.3	40.8	23.7	28.6	21.4	8.2
Comet	16.6	30.5	36.3	21.9	32.9	24.8	11.8
Renville	12.5	34.2	41.1	22.2	33.6	21.1	9.7
WOS-3257	15.3	35.7	38.3	23.4	30.9	24.1	12.1
WOS-3180	14.4	32.9	38.1	25.4	25.9	21.3	12.9
Mandarin (Ottawa)	16.2	31.7	40.0	23.1	26.5	21.0	9.9
WOS-3138	14.4	34.7	36.2	23.6	28.8	23.2	15.1
Norchief	13.2	34.6	38.4	23.5	30.7	19.4	14.1
Flambeau	13.0	34.7	25.7	23.3	31.1	18.0	10.8
Mean	14.5	35.3	39.1	24.1	30.9	22.9	12.4
Coef. of Var. (%)	9.8	6.7	8.2	11.1	11.4	20.1	--
Bu. Nec. for Sig. (5%)	2.0	3.4	4.5	3.8	5.0	N.S.	--
Row Spacing (In.)	36	24	24	24	24	42	36

	Yield Rank						
W6S-292	10	1	2	2	1	7	6
WOS-3386	10	3	3	1	5	2	4
Chippewa	1	2	1	15	11	8	1
Hardome	4	7	9	6	2	8	11
WOS-3147	7	12	6	4	10	3	10
W9S-2703	14	3	14	5	6	1	3
Capital	4	3	5	7	13	10	15
Comet	2	15	12	14	4	4	9
Renville	14	11	4	13	3	12	14
WOS-3257	4	6	9	10	8	5	8
WOS-3180	8	13	11	3	15	11	7
Mandarin (Ottawa)	3	14	7	12	14	13	13
WOS-3138	8	8	13	8	12	6	2
Norchief	10	10	8	9	9	14	5
Flambeau	13	8	15	11	7	15	12

Table 3. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and lodging data for the strains in the Uniform Test, Group O, 1954.

Strain	Mean of 6 Tests[1]	Ottawa Ontario	Guelph Ontario	Hoyt-ville Ohio	East Lansing Mich.	Spooner Wis.
W6S-292	+0.7	+ 1	0	+ 1		+ 6
WOS-3386	-3.7	+ 4	- 4	- 3		- 7
Chippewa	+2.8	--	- 2	+ 4		+ 5
Hardome	-0.8	- 7	- 2	+ 1		- 1
WOS-3147	-2.7	- 1	- 7	- 2		- 6
W9S-2703	-5.8	0	- 4	0		- 7
Capital	+0.7	0	- 5	+ 2		+ 1
Comet	-2.3	- 6	- 4	- 3		- 2
Renville	+1.7	--	--	+ 6		- 1
WOS-3257	-2.2	+ 4	- 5	- 2		- 3
WOS-3180	-2.0	- 1	- 6	- 2		- 5
Mandarin (Ottawa)	0	0	0	0		0
WOS-3138	-2.3	- 2	- 9	- 1		- 6
Norchief	-4.8	- 4	- 6	- 3		- 7
Flambeau	-9.3	- 7	-11	- 5		- 9
Date planted		5/18	5/21	5/28		6/2
Mand. (Ott.) matured		10/7	10/8	9/14		9/25
Days to mature	117	142	140	109		115

	Mean of 7 Tests[2]	Lodging			
W6S-292	2.1	1.0	1.8	3.0	4.0
WOS-3386	2.2	1.3	2.0	3.3	2.5
Chippewa	1.7	1.5	2.0	3.8	1.8
Hardome	2.8	1.0	3.0	4.0	3.8
WOS-3147	1.8	1.5	1.8	2.8	1.8
W9S-2703	1.6	1.0	1.8	2.8	1.3
Capital	2.7	1.5	2.8	3.5	4.0
Comet	1.7	1.0	1.5	3.8	2.8
Renville	1.7	1.7	2.0	3.3	1.5
WOS-3257	2.3	1.0	1.5	3.3	3.3
WOS-3180	2.1	1.5	2.0	2.8	1.8
Mandarin (Ottawa)	1.7	1.0	1.5	3.3	1.8
WOS-3138	1.7	1.0	1.3	2.0	2.8
Norchief	2.0	1.0	2.0	3.8	2.0
Flambeau	2.8	1.7	2.5	4.0	3.3
Mean	2.1	1.2	2.0	3.3	2.6

[1]Ottawa and Guelph, Ontario; Fargo, North Dakota; and Medford, Oregon not included in the mean.

[2]East Lansing, Michigan; Morris, Minnesota; Rosholt, South Dakota; and Medford, Oregon not included in the mean.

Table 3. (Continued)

Strain	Durand Wis.	Morris Minn.	St. Paul Minn.	Casselton N.D.	Fargo N.D.	Rosholt S.D.	Medford Ore.
W6S-292	- 3	0	- 2		- 1	+ 2	-15
WOS-3386	- 7	- 1	- 7		+ 1	+ 3	-23
Chippewa	- 1	+ 2	+ 2		--	+ 5	0
Hardome	- 2	0	- 2		- 1	- 1	0
WOS-3147	- 3	- 2	- 6		- 3	+ 3	-15
W9S-2703	-16	- 1	-14		- 1	+ 3	-15
Capital	- 3	+ 1	+ 1		--	+ 2	-15
Comet	- 3	- 2	- 3		- 5	- 1	- 8
Renville	- 1	+ 3	+ 1		--	+ 2	0
WOS-3257	- 4	- 2	- 1		- 6	- 1	- 8
WOS-3180	- 4	- 2	- 2		- 4	+ 3	- 8
Mandarin (Ottawa)	0	0	0		0	0	0
WOS-3138	- 3	- 3	- 3		- 5	+ 2	- 8
Norchief	- 8	- 3	-11		- 3	+ 3	-15
Flambeau	-17	- 4	-20		- 5	- 1	-23
Date planted	5/21	5/26	5/21		6/2	5/17	5/11
Mand. (Ott.) matured	9/9	9/17	9/24		9/22	9/22	10/22
Days to mature	111	114	126		112	128	164

	Lodging						
W6S-292	1.3	1.0	4.7	1.0	1.0	1.0	1.8
WOS-3386	1.8	1.0	4.0	1.3	2.8	1.0	3.3
Chippewa	1.0	1.0	3.7	1.0	1.0	1.0	1.3
Hardome	2.1	1.0	4.7	2.0	2.8	1.0	3.0
WOS-3147	1.1	1.0	4.0	1.5	1.0	1.0	2.0
W9S-2703	1.4	1.0	3.0	1.3	1.3	1.0	1.3
Capital	2.0	1.0	4.7	2.0	1.8	1.0	1.3
Comet	1.4	1.0	3.2	1.0	1.3	1.0	2.0
Renville	1.0	1.0	3.7	1.0	1.0	1.0	1.5
WOS-3257	1.4	1.0	5.0	2.3	1.3	1.0	1.3
WOS-3180	1.6	1.0	4.7	1.8	1.5	1.0	2.0
Mandarin (Ottawa)	1.3	1.0	4.5	1.0	1.0	1.0	1.3
WOS-3138	1.1	1.0	4.0	1.0	1.0	1.0	1.0
Norchief	1.3	1.0	5.0	1.5	1.0	1.0	1.5
Flambeau	2.0	1.0	4.5	3.3	2.0	1.0	1.0
Mean	1.5	1.0	4.2	1.5	1.5	1.0	1.7

Table 4. Summary of height data and percentage oil for the strains in the Uniform Test, Group 0, 1954.

Strain	Mean of 10 Tests[1]	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Hoyt-ville Ohio	East Lansing Mich.	Ottawa Lake Mich.	Spooner Wis.
W6S-292	31	30	24		26	34	31	34
WOS-3386	32	35	23		28	32	32	33
Chippewa	33	33	26		30	34	29	36
Hardome	34	38	23		31	33	31	37
WOS-3147	31	31	21		26	32	29	33
W9S-2703	29	30	21		26	32	32	32
Capital	34	35	24		32	31	28	35
Comet	32	31	22		29	30	31	37
Renville	31	34	23		27	31	30	32
WOS-3257	30	33	21		24	34	27	34
WOS-3180	30	28	20		25	35	29	33
Mandarin (Ottawa)	28	28	21		24	28	29	32
WOS-3138	29	28	19		26	33	29	34
Norchief	28	26	20		25	33	30	31
Flambeau	29	31	20		26	31	30	30
Mean	31	31	22		27	32	30	34

	Mean of 10 Tests[2]	Percentage of Oil				
W6S-292	20.1	19.2	19.2	19.5	20.4	18.7
WOS-3386	19.5	18.3	18.5	18.7	20.0	18.1
Chippewa	20.2	18.8	19.3	19.8	21.0	18.8
Hardome	19.6	18.3	18.7	18.8	20.7	18.3
WOS-3147	19.5	17.7	18.6	18.7	20.0	18.2
W9S-2703	19.7	18.1	18.5	19.4	20.6	17.9
Capital	19.8	18.1	18.8	20.2	20.5	18.8
Comet	19.7	18.4	18.7	19.1	20.7	18.7
Renville	20.8	19.3	19.4	20.4	22.0	19.1
WOS-3257	19.0	17.3	17.8	18.2	19.9	17.1
WOS-3180	19.1	17.7	18.0	18.5	19.5	17.5
Mandarin (Ottawa)	19.4	18.5	18.6	19.3	20.4	18.1
WOS-3138	19.7	17.8	18.6	19.3	20.6	18.1
Norchief	20.0	19.0	18.9	19.5	20.7	18.7
Flambeau	18.6	17.2	17.0	17.8	19.6	17.5
Mean	19.6	18.2	18.6	19.1	20.4	18.2

[1]East Lansing and Ottawa Lake, Michigan and Medford, Oregon not included in the mean.

[2]Cortland, Ohio and Medford, Oregon not included in the mean.

Table 4. (Continued)

Strain	Durand Wis.	Morris Minn.	St. Paul Minn.	Casselton N.D.	Fargo N.D.	Rosholt S.D.	Medford Ore.
W6S-292	26	26	40	41	30	33	32
WOS-3386	26	28	40	39	32	34	40
Chippewa	25	28	39	42	34	37	36
Hardome	33	31	41	42	35	27	40
WOS-3147	26	25	39	42	30	32	33
W9S-2703	26	22	36	39	29	32	34
Capital	27	30	44	44	31	34	28
Comet	29	24	41	43	32	31	33
Renville	24	28	38	37	32	32	32
WOS-3257	25	26	39	39	30	31	32
WOS-3180	25	25	40	40	29	33	33
Mandarin (Ottawa)	26	22	38	35	29	27	31
WOS-3138	24	21	37	40	27	33	31
Norchief	25	20	36	38	28	29	33
Flambeau	27	24	35	40	29	25	34
Mean	26	25	39	40	30	31	33

	Percentage of Oil						
W6S-292	20.4	19.9	22.0	20.7	20.6	20.3	19.1
WOS-3386	19.3	19.4	21.4	20.5	19.7	19.4	18.8
Chippewa	20.7	20.4	21.9	19.9	21.1	20.5	19.0
Hardome	19.8	19.4	20.8	20.2	20.1	19.6	18.2
WOS-3147	19.5	19.5	21.2	20.0	20.1	20.0	18.4
W9S-2703	19.3	20.0	21.4	20.2	20.2	20.3	18.4
Capital	19.9	19.5	21.7	19.6	20.1	21.0	20.0
Comet	19.0	19.7	20.8	20.8	19.7	20.6	18.9
Renville	21.9	20.8	23.2	20.1	21.1	21.5	19.0
WOS-3257	20.0	18.8	21.1	19.2	20.1	19.0	17.4
WOS-3180	19.9	18.9	20.2	19.6	20.0	19.3	17.4
Mandarin (Ottawa)	19.6	19.2	20.7	19.5	20.1	19.7	18.6
WOS-3138	20.5	19.7	21.3	19.7	20.2	20.4	18.8
Norchief	19.9	20.0	22.1	20.2	19.9	20.9	19.0
Flambeau	18.4	18.4	19.9	19.8	18.8	19.3	18.1
Mean	19.9	19.6	21.3	20.0	20.1	20.1	18.6

Table 5. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group 0, 1953-54.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	22	13	16	20	18	22	22	22
W6S-292	34.1	+0.5	2.4	32	1.9	16.3	39.7	20.2
WOS-3386	33.2	-2.2	2.7	33	1.8	15.3	40.7	19.8
Chippewa	32.7	+3.4	2.0	34	2.1	14.7	40.0	20.3
W9S-2703	32.0	-3.9	1.9	30	1.9	16.4	41.1	20.2
Renville	32.0	+2.5	1.9	32	2.2	16.4	39.3	21.0
Capital	31.5	+0.9	3.1	34	2.0	13.4	40.1	20.3
Mandarin (Ottawa)	31.4	0	1.8	30	1.6	19.4	41.4	19.7
Hardome	31.2	-0.3	3.0	36	2.1	16.2	40.6	20.0
WOS-3180	31.1	-1.4	2.4	31	2.4	17.2	41.8	19.4
Comet	30.4	-2.5	1.9	33	1.8	16.3	39.7	20.0
WOS-3138	30.2	-1.9	2.1	31	2.1	16.9	41.3	20.0
Norchief	30.1	-4.2	2.2	29	2.1	16.9	40.6	20.3
Flambeau	26.3	-7.2	3.1	30	2.4	16.5	41.7	19.2
Mean	27.1		2.3	32	2.0	16.3	40.6	20.0

[1]Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 118 days to mature.

Table 6. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group 0, 1953-54.

Strain	Mean of 22 Tests	Ottawa Ontario	Guelph Ontario	Hoyt-ville Ohio	East Lansing Mich.	Ottawa Lake Mich.[1]
W6S-292	34.1	32.8	30.3	30.2	32.6	37.9
WOS-3386	33.2	33.1	26.5	30.5	35.7	38.4
Chippewa	32.7	30.9	27.4	33.6	32.3	43.5
W9S-2703	32.0	32.8	26.7	31.2	39.8	36.7
Renville	32.0	34.8	25.0	30.4	33.7	41.2
Capital	31.5	30.5	27.2	31.3	34.6	35.2
Mandarin (Ottawa)	31.4	31.8	24.8	30.0	40.1	38.6
Hardome	31.2	36.1	23.6	33.2	34.4	38.2
WOS-3180	31.1	31.6	26.3	27.1	41.0	32.6
Comet	30.4	29.6	25.3	31.6	34.3	37.0
WOS-3138	30.2	28.8	23.6	28.3	38.3	33.1
Norchief	30.1	28.2	25.0	26.2	39.0	31.1
Flambeau	26.3	31.4	22.1	23.2	29.4	22.8
Mean	27.1	31.7	25.7	29.8	35.8	35.9

	Yield Rank				
W6S-292	4	1	8	11	6
WOS-3386	3	5	6	6	4
Chippewa	9	2	1	12	1
W9S-2703	4	4	5	3	8
Renville	2	8	7	10	2
Capital	10	3	4	7	9
Mandarin (Ottawa)	6	10	9	2	3
Hardome	1	11	2	8	5
WOS-3180	7	6	11	1	11
Comet	11	7	3	9	7
WOS-3138	12	11	10	5	10
Norchief	13	8	12	14	12
Flambeau	8	13	13	13	13

[1]Deerfield, Michigan, 1953.
[2]Fall City, Wisconsin, 1953.

Table 6. (Continued)

Strain	Spooner Wis.	Durand Wis.[2]	Morris Minn.	St. Paul Minn.	Casselton N.D.	Fargo N.D.
W6S-292	37.1	24.7	38.2	48.7	32.3	33.6
WOS-3386	34.9	25.6	37.2	42.0	31.5	30.4
Chippewa	35.5	23.7	37.1	48.9	25.2	27.6
W9S-2703	35.5	23.4	36.6	34.8	28.5	30.3
Renville	33.3	23.0	32.9	45.4	27.7	30.5
Capital	32.3	24.3	36.2	42.5	29.7	28.5
Mandarin (Ottawa)	37.5	26.9	32.7	39.5	30.2	26.4
Hardome	33.4	24.3	35.7	39.3	26.1	30.9
WOS-3180	34.9	24.7	33.8	39.2	28.8	27.2
Comet	35.7	24.5	33.7	33.1	26.6	28.8
WOS-3138	34.1	23.9	34.3	37.7	29.2	28.5
Norchief	33.4	24.2	32.9	38.6	27.5	30.1
Flambeau	25.8	21.3	32.3	29.5	26.0	28.9
Mean	34.1	24.2	34.9	39.9	28.4	29.4
	Yield Rank					
W6S-292	2	3	1	2	1	1
WOS-3386	6	2	2	5	2	4
Chippewa	4	10	3	1	13	11
W9S-2703	4	11	4	11	7	5
Renville	11	12	10	3	8	3
Capital	12	6	5	4	4	9
Mandarin (Ottawa)	1	1	12	6	3	13
Hardome	9	6	6	7	11	2
WOS-3180	6	3	8	8	6	12
Comet	3	5	9	12	10	8
WOS-3138	8	9	7	10	5	9
Norchief	9	8	10	9	9	6
Flambeau	13	13	13	13	12	7

Table 7. Three-year summary of agronomic and chemical data for the strains in the Uniform Test, Group 0, 1952-54.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	33	21	23	32	31	32	36	36
W6S-292	34.9	0	2.3	31	1.9	16.3	39.9	20.2
Chippewa	33.6	+3.0	1.8	33	2.0	14.8	40.5	20.2
Capital	32.8	+0.9	2.9	33	2.0	13.4	40.4	20.3
Renville	32.7	+2.7	1.7	31	2.2	16.8	39.6	20.9
Mandarin (Ottawa)	32.2	0	1.6	29	1.6	19.3	41.6	19.7
Hardome	32.1	-0.4	2.8	35	2.1	16.3	40.9	19.8
Comet	30.5	-2.3	1.8	32	1.9	16.4	40.0	20.0
Norchief	30.4	-3.9	1.8	29	2.1	16.7	40.8	20.2
Flambeau	26.5	-6.6	3.0	29	2.4	16.3	41.9	19.1
Mean	31.7		2.2	31	2.0	16.3	40.6	20.0

[1]Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 118 days to mature.

Table 8. Three-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group O, 1952-54.

Strain	Mean of 33 Tests	Ottawa Ontario	Guelph Ontario	Hoyt-ville Ohio	Colum-bus Ohio	East Lansing Mich.	Ottawa Lake Mich.[1]
Years Tested		1952-1954	1952-1954	1952-1954	1952-1953	1952-1954	1952-1954
W6S-292	34.9	38.2	33.4	30.8	27.0	38.2	38.5
Chippewa	33.6	36.4	29.8	33.2	28.9	35.6	41.9
Capital	32.8	35.3	31.3	30.3	26.3	38.3	35.4
Renville	32.7	37.1	27.2	30.6	28.5	38.0	38.3
Mandarin (Ottawa)	32.2	35.5	28.2	29.2	26.6	42.7	38.0
Hardome	32.1	40.1	27.6	31.7	21.5	35.9	37.9
Comet	30.5	33.2	28.5	30.3	23.5	35.4	34.2
Norchief	30.4	32.1	28.3	24.4	21.0	40.0	30.4
Flambeau	26.5	33.9	26.5	21.7	15.3	32.0	24.0
Mean	31.7	35.8	29.0	29.1	24.3	37.3	35.4
		Yield Rank					
W6S-292		2	1	3	3	4	2
Chippewa		4	3	1	1	7	1
Capital		6	2	5	5	3	6
Renville		3	8	4	2	5	3
Mandarin (Ottawa)		5	6	7	4	1	4
Hardome		1	7	2	7	6	5
Comet		8	4	5	6	8	7
Norchief		9	5	8	8	2	8
Flambeau		7	9	9	9	9	9

[1]Deerfield, Michigan, 1952-53.
[2]Fall City, Wisconsin, 1952-53.

Table 8. (Continued)

Strain	Spooner Wis.	Durand Wis.[2]	Morris Minn.	St. Paul Minn.	Casselton N.D.	Fargo N.D.	Rosholt S.D.
Years Tested	1952-1954	1952-1954	1952-1954	1952-1954	1952-1954	1952-1954	1952, 1954
W6S-292	39.3	24.7	35.5	42.2	34.5	30.4	24.2
Chippewa	37.8	25.2	35.9	43.5	30.1	24.2	20.0
Capital	34.4	24.7	36.4	40.3	32.9	27.5	20.7
Renville	35.8	23.5	32.8	41.9	32.5	26.9	18.7
Mandarin (Ottawa)	38.3	27.2	31.1	35.7	33.6	24.4	18.8
Hardome	35.4	24.9	34.5	38.2	29.2	25.9	18.3
Comet	36.9	24.4	30.8	29.6	30.6	23.4	21.6
Norchief	35.7	23.7	30.9	36.1	30.8	30.8	18.5
Flambeau	27.1	20.3	30.7	27.0	28.2	28.6	14.8
Mean	35.6	24.3	33.2	37.2	31.4	26.9	19.5
	Yield Rank						
W6S-292	1	4	3	2	1	2	1
Chippewa	3	2	2	1	7	8	4
Capital	8	4	1	4	3	4	3
Renville	5	8	5	3	4	5	6
Mandarin (Ottawa)	2	1	6	7	2	7	5
Hardome	7	3	4	5	8	6	8
Comet	4	6	8	8	6	9	2
Norchief	6	7	7	6	5	1	7
Flambeau	9	9	9	9	9	3	9

UNIFORM TEST, GROUP I

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

Strain	Source or Originating Agency	Origin
Blackhawk	Iowa A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
Chippewa (L6-8275)	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
Earlyana	Purdue Agr. Exp. Sta.	Sel. from a natural hybrid
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Monroe	Ohio A.E.S. & U.S.R.S.L.	Sel. from Mukden x Mandarin
Renville	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
AOK-2206	Iowa A.E.S. & U.S.R.S.L.	Sel. from Hawkeye x Mandarin (Ottawa)
AOK-3808	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)

Uniform Test, Group I, was grown at 18 locations in 1954, and data from these locations are presented in tables 9 through 16. At the 11 locations where this test was also grown in 1953, yield showed an average increase of 4.7 bushels, from 29.1 to 33.8. Increases were shown at all locations, except at Madison, Wisconsin, with the increase amounting to as much as 10 bushels at one location, State College, Pennsylvania.

No new entries were added to this test in 1954. The two strains, AOK-2206 and AOK-3808, have been tested two years and have been leading the test in yield. They are remarkably similar to each other in yield performance and maturity, with AOK-2206 being a little taller and AOK-3808 averaging 0.5 percent higher in oil content. They are of about the same maturity as Blackhawk but have yielded two bushels more on the average.

A new variety, Chippewa (formerly L6-8275), was released this year. Over the last two years it has averaged only one-half bushel less than the two Iowa strains and is 5 days earlier. On a six-year average, Blackhawk has equaled it in yield but is 5.5 days later. Chippewa is the same maturity as Renville, which it outyields, and is only 3 days later than Mandarin (Ottawa), which it exceeded in yield by 3.5 bushels.

The origin and development of Chippewa (L6-8275) is given below.

1941 - Cross between Lincoln (L6-685) and Richland made by M. G. Weiss at Ames, Iowa.

1942 - Greenhouse backcross of F_1 (Lincoln x Richland) to Lincoln made by L. F. Williams at Urbana, Illinois.

1942 - BC_1. 700 plants grown at Urbana, Illinois.

1943 - BC_1S_1. 700 plant rows grown at Urbana, Illinois, and plant selections made from them.

1944 - BC_1S_2. 2,000 plant rows grown at Urbana, Illinois. Plant selections made from best strains.

1945 - BC_1S_3. Yield test at Urbana, Illinois. Plant selections made from best strains.

1946 - BC_1S_4. Strain bulked and designated L6-8275.

1947 - BC_1S_5. Yield tests at Urbana, Illinois.

1948 - BC_1S_6. Yield test, Preliminary Test, Group I.

1949-53 - Yield test, Uniform Test, Group I.

1952-53 - Yield test, Uniform Test, Group O.

1953 - BC_1S_{11}. Increase of breeder's seed.

Chippewa is similar to Blackhawk in oil content, two inches shorter, and less subject to lodging. It has purple flowers, brown pubescence, and a yellow seed coat with a black hilum.

Table 9. Summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1954.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	16	12	14	15	14	16	16	16
AOK-2206	36.1	+10.8	1.9	35	1.7	17.9	40.9	19.8
AOK-3808	36.4	+10.0	1.9	33	1.7	17.6	40.7	20.3
Blackhawk	33.8	+10.0	2.1	34	1.7	17.4	39.9	20.7
Chippewa	32.9	+ 5.0	1.9	31	2.0	16.4	40.0	20.9
Earlyana	31.9	+11.6	3.2	37	2.1	17.7	41.7	20.1
Monroe	31.8	+ 7.8	2.6	38	1.6	17.0	41.4	20.0
Renville	27.9	+ 4.7	1.7	28	2.7	19.1	40.0	21.7
Mandarin (Ottawa)	27.5	0	1.5	26	2.1	19.9	41.2	19.9
Mean	32.3		2.1	33	2.0	17.9	40.7	20.4

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

Table 10. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1954.

Strain	Mean of 16 Tests[1]	State College Pa.	Cort-land Ohio	Hoyt-ville Ohio	Woos-ter Ohio	Colum-bus Ohio	E. Lan-sing Mich.	Ottawa Lake Mich.	Walker-ton Ind.
AOK-2206	36.1	30.8	21.1	44.9	19.0	36.0	19.5	39.7	40.3
AOK-3808	36.4	32.7	25.2	41.3	23.3	32.2	18.6	42.5	38.6
Blackhawk	33.8	30.7	20.8	39.6	21.3	38.5	12.9	41.4	34.5
Chippewa	32.9	28.5	20.0	34.9	20.4	36.1	17.2	40.5	33.5
Earlyana	31.9	28.1	18.6	37.9	23.5	36.7	17.3	34.3	31.5
Monroe	31.8	28.1	17.9	40.1	20.2	33.3	16.4	35.3	34.8
Renville	27.9	27.1	16.0	32.8	19.1	29.3	17.4	32.6	28.6
Mandarin (Ottawa)	27.5	27.5	12.3	29.0	16.9	25.2	15.2	33.0	35.3
Mean	32.3	29.2	19.0	37.6	20.5	33.4	16.8	37.4	34.6
C.V. (%)		--	11.3	9.2	9.1	--	--	--	8.9
Bu. N.F.S. (5%)		--	3.1	5.1	2.7	--	--	--	4.5
Row Sp. (In.)		36	42	36	28	28	28	28	38
		Yield Rank							
AOK-2206		2	2	1	7	4	1	4	1
AOK-3808		1	1	2	2	6	2	1	2
Blackhawk		3	3	4	3	1	8	2	5
Chippewa		4	4	6	4	3	5	3	6
Earlyana		5	5	5	1	2	4	6	7
Monroe		5	6	3	5	5	6	5	4
Renville		8	7	7	6	7	3	8	8
Mandarin (Ottawa)		7	8	8	8	8	7	7	3

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

Table 10. (Continued)

Strain	Bluffton Ind.	Lafayette Ind.	Durand Wis.	Madison Wis.	Shabbona Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.
AOK-2206	48.1	45.2	25.8	44.6	36.9	38.9	40.6	33.6	40.4	30.5
AOK-3808	47.6	40.0	23.4	47.1	35.9	42.5	45.8	32.4	39.8	33.7
Blackhawk	45.5	36.0	25.2	40.0	35.2	33.1	44.1	29.4	37.0	29.9
Chippewa	40.7	37.8	18.6	38.0	35.9	38.8	44.3	31.5	37.5	29.6
Earlyana	44.5	34.1	25.7	35.0	33.3	39.7	34.0	25.7	35.2	27.9
Monroe	39.7	34.9	23.4	35.5	31.9	35.3	41.0	28.8	37.0	26.1
Renville	31.8	32.8	14.5	34.4	28.9	34.7	37.1	23.8	28.8	26.2
Mandarin (Ottawa)	35.7	29.4	16.6	31.1	25.6	36.9	34.5	28.3	27.2	28.2
Mean	41.7	36.3	21.7	38.2	33.0	37.5	40.2	29.2	35.4	29.0
C.V. (%)	9.7	5.7	11.7	7.6	5.8	12.2	9.5	7.1	7.2	12.8
Bu. N.F.S. (5%)	5.8	3.0	3.8	4.4	2.8	6.4	5.5	3.0	3.8	N.S.
Row Sp. (In.)	40	40	36	36	40	24	24	42	40	42
	Yield Rank									
AOK-2206	1	1	1	2	1	3	5	1	1	2
AOK-3808	2	2	4	1	2	1	1	2	2	1
Blackhawk	3	4	3	3	4	8	3	4	4	3
Chippewa	5	3	6	4	2	4	2	3	3	4
Earlyana	4	6	2	6	5	2	8	7	6	6
Monroe	6	5	4	5	6	6	4	5	4	8
Renville	8	7	8	7	7	7	6	8	7	7
Mandarin (Ottawa)	7	8	7	8	8	5	7	6	8	5

Table 11. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and lodging data for the strains in the Uniform Test, Group I, 1954.

Strain	Mean of 12 Tests[1]	State College Pa.	Hoyt-ville Ohio	Woos-ter Ohio	Colum-bus Ohio	E. Lan-sing Mich.	Walker-ton Ind.	Bluff-ton Ind.
AOK-2206	+10.8		+11	+ 2		+ 2	+12	+ 9
AOK-3808	+10.0		+10	+ 3		+ 2	+10	+10
Blackhawk	+10.0		+10	+ 1		+ 3	+ 9	+ 9
Chippewa	+ 5.0		+ 5	+ 4		0	+ 3	+ 4
Earlyana	+11.6		+10	+ 2		+ 4	+10	+12
Monroe	+ 7.8		+ 8	+ 1		+ 1	+ 9	+ 5
Renville	+ 4.7		+ 6	+ 3		+ 2	+ 4	+12
Mandarin (Ottawa)	0		0	0		0	0	0
Date planted			5/28	6/3		--	6/9	5/19
Mandarin (Ott.) matured			9/14	9/14		--	9/16	9/9
Days to mature	111		109	103		--	99	113

	Mean of 14 Tests	Lodging				
AOK-2206	1.9	1.0	2.0	1.0	1.3	2.5
AOK-3808	1.9	1.8	2.0	1.5	1.5	2.5
Blackhawk	2.1	1.8	2.5	1.8	2.0	2.5
Chippewa	1.9	1.3	1.5	1.5	2.0	3.3
Earlyana	3.2	2.8	3.5	2.8	3.3	4.3
Monroe	2.6	1.8	2.0	1.8	3.0	4.0
Renville	1.7	1.0	1.3	1.0	1.8	2.3
Mandarin (Ottawa)	1.5	1.0	1.5	1.2	1.3	2.0
Mean	2.1	1.6	2.0	1.6	2.0	2.9

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

Table 11. (Continued)

Strain	Lafayette Ind.	Durand Wis.	Madison Wis.	Shabbona Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.
AOK-2206	+10		+13	+11	+11	+20	+12	+17	+ 4
AOK-3808	+10		+ 8	+13	+ 7	+19	+13	+13	+ 4
Blackhawk	+ 8		+12	+13	+12	+17	+13	+13	+ 3
Chippewa	+ 6		+ 2	+ 9	+ 1	+10	+ 6	+ 7	+ 3
Earlyana	+10		+15	+12	+ 9	+23	+14	+17	+ 5
Monroe	+ 4		+ 8	+11	+ 6	+15	+13	+12	+ 2
Renville	+ 8		+ 1	+ 3	0	+12	+ 1	+ 3	+ 3
Mandarin (Ottawa)	0		0	0	0	0	0	0	0
Date planted	5/18		5/21	5/18	5/21	5/19	5/19	5/20	5/19
Mandarin (Ott.) matured	8/31		9/5	9/7	9/25	9/5	9/14	9/5	9/19
Days to mature	105		107	112	127	109	118	108	123

	Lodging								
AOK-2206	1.3	1.5	3.0	2.0	4.5	1.7	2.3	1.0	1.0
AOK-3808	1.0	1.3	2.0	2.3	4.7	1.7	2.3	1.1	1.0
Blackhawk	1.3	1.5	3.0	2.5	5.0	1.6	2.4	1.0	1.0
Chippewa	1.3	1.0	1.6	3.0	4.0	1.4	1.8	1.2	1.0
Earlyana	3.0	2.0	4.0	3.0	5.0	3.1	3.3	2.2	2.0
Monroe	2.3	1.6	3.3	4.0	4.7	2.1	3.2	1.7	1.0
Renville	1.0	1.1	1.3	4.0	3.7	1.4	1.6	1.0	1.0
Mandarin (Ottawa)	1.0	1.3	1.1	1.8	4.2	1.5	1.4	1.0	1.0
Mean	1.5	1.4	2.4	2.8	4.5	1.8	2.3	1.3	1.1

Table 12. Summary of height data and percentage of oil for the strains in the Uniform Test, Group I, 1954.

Strain	Mean of 15 Tests[1]	State College Pa.	Cort-land Ohio	Hoyt-ville Ohio	Woos-ter Ohio	Colum-bus Ohio	E. Lan-sing Mich.	Ottawa Lake Mich.	Walker-ton Ind.
AOK-2206	35	26		36	18	30	33	26	38
AOK-3808	33	26		33	19	28	29	28	36
Blackhawk	34	28		34	21	32	31	28	35
Chippewa	31	25		30	16	30	29	28	35
Earlyana	37	30		36	23	35	35	28	41
Monroe	38	33		40	21	35	34	27	46
Renville	28	21		29	17	26	28	26	29
Mandarin (Ottawa)	26	22		25	14	24	26	27	29
Mean	33	26		33	19	30	31	27	36

	Mean of 16 Tests	Percentage of Oil					
AOK-2206	19.8	19.4	19.3	19.9	20.3	20.3	19.9
AOK-3808	20.3	20.3	19.0	20.5	20.2	20.7	20.6
Blackhawk	20.7	20.4	20.0	20.9	21.1	20.9	20.7
Chippewa	20.9	19.9	19.7	20.9	21.0	21.0	21.5
Earlyana	20.1	19.6	18.9	20.1	19.8	20.3	20.5
Monroe	20.0	19.4	18.9	20.2	20.5	20.5	20.4
Renville	21.7	20.2	20.2	21.9	21.9	22.1	21.4
Mandarin (Ottawa)	19.9	19.2	18.7	19.8	20.6	20.4	19.3
Mean	20.4	19.8	19.3	20.5	20.7	20.8	20.5

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

Table 12. (Continued)

Strain	Bluffton Ind.	Lafayette Ind.	Durand Wis.	Madison Wis.	Shabbona Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.
AOK-2206	33	33	29	42	36	51	35	38	37	41
AOK-3808	33	32	27	39	34	44	33	36	36	34
Blackhawk	32	33	30	40	36	42	36	36	35	39
Chippewa	32	30	27	39	32	40	32	32	34	33
Earlyana	39	36	30	45	40	47	38	40	40	42
Monroe	33	37	33	45	38	49	39	42	42	43
Renville	28	27	26	32	29	38	28	30	27	32
Mandarin (Ottawa)	23	23	26	30	26	40	27	28	24	31
Mean	32	31	29	39	34	44	34	35	34	37

	Percentage of Oil									
AOK-2206	19.9	21.0	19.1	20.1	20.4	19.5	19.2	18.9	19.9	19.7
AOK-3808	20.0	21.6	20.0	20.8	21.3	19.9	19.7	19.2	20.7	20.7
Blackhawk	20.5	22.1	19.4	20.7	21.7	20.3	20.7	19.5	21.1	21.0
Chippewa	19.9	22.2	21.1	21.5	21.6	20.7	21.0	20.4	21.2	21.0
Earlyana	20.2	21.8	18.9	20.6	21.2	19.6	19.5	19.6	20.5	20.4
Monroe	19.9	21.3	19.3	20.1	20.6	19.8	19.7	18.6	20.7	20.5
Renville	21.3	23.2	21.3	21.9	22.6	21.9	22.0	21.4	22.4	21.8
Mandarin (Ottawa)	19.4	20.5	19.7	20.2	20.5	19.6	19.5	19.1	20.8	20.3
Mean	20.1	21.7	19.9	20.7	21.2	20.2	20.2	19.6	20.9	20.7

Table 13. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1953-54.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	30	22	25	27	26	31	31	31
AOK-2206	32.6	+ 9.4	2.0	37	1.7	16.1	40.7	19.8
AOK-3808	32.4	+ 9.0	1.9	35	1.6	15.8	40.8	20.3
Chippewa	31.8	+ 4.0	1.8	33	1.9	15.1	40.4	20.8
Blackhawk	30.6	+ 8.8	2.2	35	1.7	15.8	40.0	20.8
Monroe	28.8	+ 7.8	2.7	40	1.7	15.3	41.6	19.9
Earlyana	28.2	+10.5	3.2	39	2.3	16.1	41.8	19.9
Mandarin (Ottawa)	26.4	0	1.6	28	2.0	18.5	41.8	19.9
Mean	30.1		2.2	35	1.8	16.1	41.0	20.2

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

Table 14. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1953-54.

Strain	Mean of 30 Tests	State College Pa.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Ottawa Lake Mich.[1]
AOK-2206	32.6	25.7	39.3	17.7	33.4	38.2
AOK-3808	32.4	26.5	34.8	19.5	31.7	37.1
Chippewa	31.8	23.5	33.9	19.7	34.4	37.0
Blackhawk	30.6	25.2	36.1	18.6	35.2	36.7
Monroe	28.8	22.6	33.4	18.4	32.2	32.7
Earlyana	28.2	23.5	34.6	18.1	31.3	27.1
Mandarin (Ottawa)	26.4	22.9	27.6	14.0	25.0	32.0
Mean	30.1	24.3	34.2	18.0	31.9	34.4
			Yield Rank			
AOK-2206		2	1	6	3	1
AOK-3808		1	3	2	5	2
Chippewa		4	5	1	2	3
Blackhawk		3	2	3	1	4
Monroe		7	6	4	4	5
Earlyana		4	4	5	6	7
Mandarin (Ottawa)		6	7	7	7	6

[1]Deerfield, Michigan, 1953.
[2]Fall City, Wisconsin, 1953.

Table 14. (Continued)

Strain	Walker-ton Ind.	Dur-and Wis.[2]	Shab-bona Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kana-wha Iowa
AOK-2206	39.1	24.0	32.1	38.4	40.2	28.6	36.9
AOK-3808	38.7	22.2	33.8	40.3	44.5	28.7	37.2
Chippewa	36.2	23.6	32.4	40.9	42.7	27.6	35.2
Blackhawk	31.8	24.4	31.5	32.3	38.6	25.0	33.7
Monroe	34.4	22.8	28.7	32.5	35.7	25.4	32.5
Earlyana	33.0	22.1	30.7	33.4	30.9	24.1	32.3
Mandarin (Ottawa)	30.3	24.0	24.7	32.3	33.4	21.0	26.0
Mean	34.8	23.3	30.6	35.7	38.0	25.8	33.4
	Yield Rank						
AOK-2206	1	2	3	3	3	2	2
AOK-3808	2	6	1	2	1	1	1
Chippewa	3	4	2	1	2	3	3
Blackhawk	6	1	4	6	4	5	4
Monroe	4	5	6	5	5	4	5
Earlyana	5	7	5	4	7	6	6
Mandarin (Ottawa)	7	2	7	6	6	7	7

Table 15. Six-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1949-54.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	89	65	75	83	76	89	89	89
Chippewa	30.3	+ 3.1	1.5	33	1.8	15.2	41.1	20.4
Blackhawk	30.2	+ 8.6	1.9	35	1.6	15.7	40.7	20.5
Earlyana	28.2	+10.2	3.0	38	2.2	16.0	42.5	19.7
Monroe	27.9	+ 6.6	2.4	39	1.5	15.1	42.2	19.6
Mandarin (Ottawa)	26.8	0	1.3	28	1.9	18.6	42.6	19.5
Mean	28.7		2.0	35	1.8	16.1	41.8	19.9

[1]Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 110 days to mature.

Table 16. Six-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1949-54.

Strain	Mean of 89 Tests	Guelph Ontario	State College Pa.	Hoytville Ohio[1]	Wooster Ohio	Columbus Ohio	E. Lansing Mich.	Ottawa Lake Mich.[2]	Walkerton Ind.
Years Tested		1949-1953	1949-1954	1949-50 1952-54	1951-1954	1949-1954	1951-52 1954	1950-1954	1949-1954
Chippewa	30.3	26.5	25.7	31.1	26.3	29.4	22.4	30.8	35.0
Blackhawk	30.2	26.4	27.0	34.2	26.1	29.4	23.0	33.3	35.2
Earlyana	28.2	23.3	26.4	33.4	25.5	27.7	23.0	26.7	37.5
Monroe	27.9	23.8	25.5	30.6	24.7	28.1	22.7	30.3	34.7
Mandarin (Ott.)	26.8	25.7	24.3	27.6	20.0	24.9	19.4	28.7	33.1
Mean	28.7	25.1	25.8	31.4	24.5	27.9	22.1	30.0	35.1
		Yield Rank							
Chippewa		1	3	3	1	1	4	2	3
Blackhawk		2	1	1	2	1	1	1	2
Earlyana		5	2	2	3	4	1	5	1
Monroe		4	4	4	4	3	3	3	4
Mandarin (Ott.)		3	5	5	5	5	5	4	5

[1]Holgate, Ohio, 1949-50.
[2]Deerfield, Michigan, 1950-53.
[3]Eau Claire, Wisconsin, 1949-50; Fall City, Wisconsin, 1951-53.
[4]Compton, Illinois, 1949-50.

Table 16. (Continued)

Strain	Spooner Wis.	Durand Wis.[3]	Madison Wis.	Shabbona Ill.[4]	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.
Years Tested	1952-1953	1949-1954	1949-52 1954	1949-1954	1949-50 1952-54	1949-1954	1949-1954	1949-1954	1949-50, 1952,1954
Chippewa	35.3	26.0	34.3	31.1	37.8	36.0	25.5	34.8	21.7
Blackhawk	33.5	24.3	37.2	30.5	29.2	35.1	25.1	35.0	23.0
Earlyana	24.9	21.1	33.0	29.5	27.6	29.8	24.2	32.3	21.5
Monroe	28.4	21.9	33.2	28.6	29.5	29.8	24.0	30.4	20.3
Mandarin (Ott.)	39.7	24.1	30.1	26.1	31.2	30.8	20.2	28.2	21.7
Mean	32.4	23.5	33.6	29.2	31.1	32.3	23.8	32.1	21.6
	Yield Rank								
Chippewa	2	1	2	1	1	1	1	2	2
Blackhawk	3	2	1	2	4	2	2	1	1
Earlyana	5	5	4	3	5	4	3	3	4
Monroe	4	4	3	4	3	4	4	4	5
Mandarin (Ott.)	1	3	5	5	2	3	5	5	2

PRELIMINARY TEST, GROUP I

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

Strain	Source or Originating Agency	Origin
Blackhawk	Iowa A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
Earlyana	Purdue Agr. Exp. Sta.	Sel. from a natural hybrid
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Monroe	Ohio A.E.S. & U.S.R.S.L.	Sel. from Mukden x Mandarin
Renville	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
C1105	Purdue A.E.S. & U.S.R.S.L.	Sel. from A4-107-12 x Mandarin (Ott.)
C1106	Purdue A.E.S. & U.S.R.S.L.	Sel. from A4-107-12 x Mandarin (Ott.)
C1109	Purdue A.E.S. & U.S.R.S.L.	Sel. from Mukden x Mandarin (Ott.)
C1112	Purdue A.E.S. & U.S.R.S.L.	Sel. from Mandarin (Ott.) x Lincoln
C1117	Purdue A.E.S. & U.S.R.S.L.	Sel. from Mandarin (Ott.) x Lincoln
C1119	Purdue A.E.S. & U.S.R.S.L.	Sel. from Mandarin (Ott.) x Lincoln
C1121	Purdue A.E.S. & U.S.R.S.L.	Sel. from Mandarin (Ott.) x Lincoln
H10042	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x C11)
M12	Minn. A.E.S. & U.S.R.S.L.	Sel. from Hawkeye x Flambeau
M13	Minn. A.E.S. & U.S.R.S.L.	Sel. from Hawkeye x Ontario
W9-1486	Wis. A.E.S. & U.S.R.S.L.	Sel. from Hawkeye x Flambeau
W9-2024	Wis. A.E.S. & U.S.R.S.L.	Sel. from Hawkeye x Flambeau

The Preliminary Test, Group I, was grown at 9 locations in 1954. Summaries of the data are presented in tables 17 through 21.

In general, yields of the experimental strains were directly correlated with lateness of maturity. The highest yielding line was C1105, which outyielded Blackhawk by 3.7 bushels and averaged 4 days later in maturity but it was rather low in oil content. The seven selections from crosses involving Mandarin (Ottawa) can be characterized as being rather high in yield (all but two exceed the named varieties), late in maturity for Group I (from 1.5 to 5.2 days later than Blackhawk), and low in oil content (from 19.3 to 20.8).

Three of the four selections from Hawkeye x Flambeau were among the earliest lines in the test and their yields were correspondingly low. Strain W9-2024, however, was about 10 days later and ranked fourth in yield. Strain W9-1486 was very early and should probably be classed as Group 0 maturity. The remaining selection, H10042, was of fairly good yield but was exceeded by Blackhawk and averaged 2 days later in maturity.

Table 17. Summary of agronomic and chemical data for the strains in the Preliminary Test, Group I, 1954.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	9	8	9	9	8	9	9	9
C1105	41.5	+14.6	2.1	39	1.1	20.7	41.9	19.3
C1117	41.1	+14.1	2.1	36	1.4	18.2	41.5	20.6
C1121	39.3	+14.4	2.2	35	1.6	19.1	40.9	20.8
W9-2024	39.7	+15.0	2.4	41	1.9	20.7	40.5	21.1
C1106	39.6	+12.3	2.0	40	1.4	19.1	40.9	20.6
C1119	38.8	+11.9	2.5	38	1.8	19.2	42.4	20.3
Blackhawk	37.6	+10.4	2.1	36	1.6	17.5	39.7	21.0
C1112	38.2	+12.0	2.5	39	1.5	17.7	41.8	20.4
C1109	37.6	+15.6	2.3	43	1.8	19.2	41.9	19.6
H10042	37.3	+12.4	2.1	38	1.7	18.2	39.9	21.2
Monroe	35.2	+ 7.6	2.7	41	1.3	16.8	40.7	20.2
Earlyana	35.4	+12.5	3.3	40	1.9	17.7	41.5	20.4
M12	34.7	+ 5.0	1.9	31	1.7	18.8	40.5	21.5
M13	33.8	+ 6.4	2.1	34	1.8	18.9	39.8	22.0
Mandarin (Ottawa)	31.7	0	1.6	28	1.8	20.3	41.0	20.1
Renville	31.6	+ 5.4	1.6	30	2.7	19.4	40.1	22.0
W9-1486	31.5	+ 2.3	1.8	33	1.6	18.3	40.7	21.2
Mean	36.7		2.2	37	1.7	18.8	40.9	20.7

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

Table 18. Summary of yield in bushels per acre for the strains in the Preliminary Test, Group I, 1954.

Strain	Mean of 9 Tests	Columbus Ohio	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.	Madison Wis.	St. Paul Minn.	Waseca Minn.	Kanawha Iowa	Brookings S.D.
C1105	41.5	41.2	42.6	49.4	44.5	47.8	35.7	43.4	39.4	29.0
C1117	41.1	45.6	39.0	46.1	45.6	45.0	35.4	40.3	41.9	30.7
C1121	39.3	38.0	41.1	44.8	45.1	44.3	36.3	44.0	36.8	23.4
W9-2024	39.7	39.1	37.6	45.9	35.6	43.2	39.0	45.1	41.8	29.9
C1106	39.6	43.0	38.6	46.6	37.4	44.6	36.6	41.1	39.0	29.6
C1119	38.8	36.5	33.5	44.8	40.2	47.7	42.0	43.1	36.4	24.9
Blackhawk	37.6	38.5	34.5	45.5	36.0	40.0	33.1	44.1	37.0	29.9
C1112	38.2	37.6	39.0	42.7	42.4	40.8	33.7	40.7	38.8	27.9
C1109	37.6	41.3	37.3	37.7	36.2	44.9	34.9	38.3	41.4	26.4
H10042	37.3	32.8	33.0	41.3	36.2	42.5	43.0	42.8	34.9	29.0
Monroe	35.2	33.3	34.8	39.7	34.9	35.5	35.3	41.0	37.0	26.1
Earlyana	35.4	36.7	31.5	44.5	34.1	35.0	39.7	34.0	35.2	27.9
M12	34.7	32.5	32.2	38.5	30.7	38.9	40.4	36.8	34.3	28.8
M13	33.8	29.5	29.8	37.9	29.6	38.9	39.5	39.4	33.1	26.4
Mandarin (Ott.)	31.7	25.2	35.3	37.5	29.4	31.1	36.9	34.5	27.2	28.2
Renville	31.6	29.3	28.6	31.8	32.8	34.4	34.7	37.1	28.8	26.2
W9-1486	31.5	25.3	30.3	33.1	26.8	38.2	34.7	36.8	30.8	27.4
Mean	36.7	35.6	35.2	41.6	36.3	40.8	37.1	40.1	36.1	27.7
C.V. (%)		--	8.9	9.7	5.7	7.6	--	--	7.1	--
Bu. N.F.S. (5%)		--	4.5	5.8	3.0	4.4	--	--	3.6	--
Row Sp. (In.)		28	38	40	40	36	24	24	40	42

Table 19. Summary of yield rank for the strains in the Preliminary Test, Group I, 1954.

Strain	Columbus Ohio	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.	Madison Wis.	St. Paul Minn.	Waseca Minn.	Kanawha Iowa	Brookings S.D.
C1105	4	1	1	3	1	10	4	4	5
C1117	1	3	3	1	3	11	10	1	1
C1121	7	2	6	2	6	9	3	9	17
W9-2024	5	6	4	10	7	6	1	2	2
C1106	2	5	2	6	5	8	7	5	4
C1119	10	11	6	5	2	2	5	10	16
Blackhawk	6	10	5	9	10	17	2	7	2
C1112	8	3	9	4	9	16	9	6	9
C1109	3	7	14	7	4	13	12	3	12
H10042	12	12	10	7	8	1	6	12	5
Monroe	11	9	11	11	14	12	8	7	15
Earlyana	9	14	8	12	15	4	17	11	9
M12	13	13	12	14	11	3	14	13	7
M13	14	16	13	15	11	5	11	14	12
Mandarin (Ottawa)	17	8	15	16	17	7	16	17	8
Renville	15	17	17	13	16	14	13	16	14
W9-1486	16	15	16	17	13	14	14	15	11

Table 20. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa) for the strains in the Preliminary Test, Group I, 1954.

Strain	Mean of 8 Tests	Walker-ton Ind.	Bluff-ton Ind.	Lafay-ette Ind.	Madi-son Wis.	St. Paul Minn.	Waseca Minn.	Kana-wha Iowa	Brook-ings S.D.
C1105	+14.6	+17	+11	+13	+14	+15	+21	+20	+ 6
C1117	+14.1	+14	+12	+12	+16	+14	+19	+19	+ 7
C1121	+14.4	+14	+11	+11	+12	+16	+22	+19	+10
W9-2024	+15.0	+17	+12	+13	+13	+13	+23	+19	+10
C1106	+12.3	+12	+ 7	+12	+11	+13	+18	+18	+ 7
C1119	+11.9	+14	+ 9	+10	+10	+10	+20	+15	+ 7
Blackhawk	+10.4	+ 9	+ 9	+ 8	+12	+12	+17	+13	+ 3
C1112	+12.0	+11	+ 9	+11	+11	+14	+18	+17	+ 5
C1109	+15.6	+15	+ 9	+11	+20	+15	+24	+20	+11
H10042	+12.4	+14	+ 7	+11	+12	+10	+21	+18	+ 6
Monroe	+ 7.6	+ 9	+ 5	+ 4	+ 8	+ 6	+15	+12	+ 2
Earlyana	+12.5	+10	+12	+10	+15	+ 9	+23	+17	+ 4
M12	+ 5.0	+ 4	+ 4	+ 5	+ 4	+ 3	+12	+ 6	+ 2
M13	+ 6.4	+ 5	+ 5	+ 5	+ 6	+ 5	+11	+10	+ 4
Mandarin (Ottawa)	0	0	0	0	0	0	0	0	0
Renville	+ 5.4	+ 4	+12	+ 8	+ 1	0	+12	+ 3	+ 3
W9-1486	+ 2.3	+ 2	+ 4	+ 2	+ 2	+ 1	+ 5	+ 1	+ 1
Date planted		6/9	5/19	5/18	5/21	5/21	5/19	5/20	5/19
Mandarin (Ott.) matured		9/16	9/9	8/31	9/5	9/25	9/5	9/5	9/19
Days to mature	111	99	113	105	107	127	109	108	123

Table 21. Summary of percentage of oil for the strains in the Preliminary Test, Group I, 1954.

Strain	Mean of 9 Tests	Columbus Ohio	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.	Madison Wis.	St. Paul Minn.	Waseca Minn.	Kanawha Iowa	Brookings S.D.
C1105	19.3	19.5	19.0	19.4	21.7	18.4	18.8	18.7	19.0	19.1
C1117	20.6	20.6	20.6	20.8	22.0	19.6	19.9	20.1	21.6	20.0
C1121	20.8	20.5	21.4	20.3	22.8	19.6	20.5	20.8	21.3	19.9
W9-2024	21.1	20.8	20.6	20.7	23.0	21.3	21.1	20.6	21.3	20.5
C1106	20.6	20.6	20.3	20.0	23.2	20.1	19.9	20.0	21.3	20.2
C1119	20.3	20.5	20.0	19.6	21.8	20.3	20.6	19.7	20.4	19.9
Blackhawk	21.0	21.2	20.8	20.6	23.1	20.7	20.3	20.7	20.6	21.0
C1112	20.4	20.5	20.1	20.3	21.6	20.0	19.6	20.1	21.0	20.0
C1109	19.6	19.9	19.2	18.7	21.9	18.8	19.9	19.4	19.8	18.7
H10042	21.2	21.4	20.9	21.2	22.7	20.8	20.7	20.4	22.0	20.5
Monroe	20.2	20.5	20.3	19.6	21.6	20.1	19.8	19.7	19.8	20.5
Earlyana	20.4	20.1	20.4	20.5	23.0	20.6	19.6	19.5	19.8	20.4
M12	21.5	21.2	21.5	20.8	22.9	20.7	21.4	21.6	22.2	21.0
M13	22.0	21.7	21.9	20.7	23.4	21.8	22.6	22.2	22.3	21.4
Mandarin (Ott.)	20.1	20.0	20.1	19.4	21.2	20.2	19.6	19.5	21.0	20.3
Renville	22.0	21.7	21.2	21.5	23.6	21.9	21.9	22.0	22.1	21.8
W9-1486	21.2	20.5	21.2	20.9	22.2	21.1	21.4	20.9	21.7	21.0
Mean	20.7	20.7	20.6	20.3	22.5	20.4	20.4	20.3	21.0	20.4

UNIFORM TEST, GROUP II

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

Strain	Source or Originating Agency	Origin
Adams	Iowa A.E.S. & U.S.R.S.L.	Sel. from Illini x Dunfield
Blackhawk	Iowa A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
Harosoy	Harrow Exp. Sta., Harrow, Ont.	Sel. from Mandarin x (Mandarin x A.K.)
Hawkeye	Iowa A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
Lincoln	Ill. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x Manchu
Richland	Purdue Agr. Exp. Sta.	Sel. from P. I. 70502-2
A0-8618	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
AX29-163-1-2	Iowa A.E.S. & U.S.R.S.L.	Sel. from Adams x Hawkeye
C1056	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x A45-251)
C1128	Purdue A.E.S. & U.S.R.S.L.	Sel. from Wabash x A4-107-12
H13116	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x C11)
H13501	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x C11)
H14025	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Quebec 92
H14521	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ontario
H15548	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x P. I. 68666
L9-5139	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)

Uniform Test, Group II, was grown at 24 locations in 1954, and summaries of the data from this test are presented in tables 22 through 29. Considering the 21 locations common to both years, 1954 yields for this test averaged 37 bushels per acre or 7 bushels greater than in 1953. Moderate to marked increases occurred at most locations up to an increase of 27 bushels at Lincoln, Nebraska, due in part to two irrigations in 1954. Two locations in Indiana, Walkerton and Greenfield, showed slight decreases. Independence and Ames, Iowa, and Madison, Wisconsin, showed almost no change.

There are eight strains which were tested for the first time in 1954. Three of these, L9-5139, C1128, and H13501, were high in yield, surpassing Lincoln by 1.4 to 2.4 bushels and were also 1 to 2 days earlier. These three are also rather high in oil content. C1128 is the only one of the eight not derived from a Lincoln cross. Strain H14521 yielded well considering its early maturity. Strain H13116 equaled Hawkeye in yield but was 4 days later. Two of the strains, H15548 and AX29-163-1-2, were the latest maturing in the test, being 3 days and 1 day later than Lincoln, and were slightly exceeded in yield by Lincoln. Strain H14025 was very low in yield in this test.

Strain C1056 has been tested two years and has been exceeded only slightly in yield by Adams and Lincoln. It averaged 1 day earlier than Adams and 4 days earlier than Lincoln.

Strain A0-8618 has been topping the test in yield for 3 years and appears to be slightly earlier than Lincoln.

On a four-year average the named varieties have yielded in the following order: Lincoln (highest), Adams, Harosoy, Hawkeye, Blackhawk, and Richland.

Table 22. Summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1954.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	22	16	19	22	18	22	21	21
A0-8618	40.8	+ 5.3	2.3	38	2.0	17.5	40.6	20.7
L9-5139	40.2	+ 6.5	2.5	39	1.9	16.5	39.9	21.1
C1128	39.4	+ 4.8	1.9	39	1.9	17.9	39.7	21.8
H13501	39.2	+ 5.8	2.3	40	2.2	16.2	39.7	21.3
C1056	37.9	+ 3.2	2.6	37	1.9	17.9	39.5	21.6
Lincoln	37.8	+ 7.2	2.5	39	2.0	15.6	39.9	21.1
H15548	37.6	+10.1	2.9	37	2.4	15.1	40.1	20.8
Adams	37.3	+ 5.9	2.4	37	1.8	15.9	39.6	21.4
H14521	37.1	+ 2.9	2.2	36	2.3	20.1	39.7	21.4
Harosoy	36.7	- 2.2	2.2	35	1.8	18.8	40.9	20.7
AX29-163-1-2	36.5	+ 8.2	3.0	39	2.2	17.0	39.2	21.7
Hawkeye	36.1	0	1.7	34	1.6	19.0	40.7	21.2
H13116	36.0	+ 4.2	2.2	37	2.2	18.1	40.3	20.8
Richland	33.9	+ 1.6	1.8	32	2.1	18.4	40.5	20.4
Blackhawk	33.7	- 4.3	1.9	32	1.9	16.8	40.4	20.9
H14025	29.9	+ 4.3	1.9	33	2.6	18.6	42.2	20.1
Mean	36.9		2.3	37	2.1	17.5	40.2	21.1

[1]Days earlier (-) or later (+) than Hawkeye. Hawkeye required 125 days to mature.

Table 23. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1954.

Strain	Mean of 22 Tests[1]	State College Pa.	Middlesex Co. N.J.	Burlington Co. N.J.	Newark Del.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Ottawa Lake Mich.	Walkerton Ind.	Bluffton Ind.
A0-8618	40.8	33.0	38.3	40.7	38.7	41.3	24.4	37.2	16.4	38.2	35.8	49.5
L9-5139	40.2	36.4	36.0	39.2	42.3	39.0	26.2	38.5	18.4	38.7	32.9	41.9
C1128	39.4	35.6	33.5	42.4	36.4	39.5	20.9	34.7	16.2	39.3	38.7	49.9
H13501	39.2	34.4	39.0	34.1	40.4	38.5	24.4	38.0	16.3	38.7	33.4	48.3
C1056	37.9	33.2	39.2	33.0	37.0	37.0	23.4	31.6	17.5	35.2	32.6	44.3
Lincoln	37.8	33.8	36.6	41.8	42.2	35.8	26.0	30.9	15.4	35.6	29.8	47.1
H15548	37.6	33.7	40.8	42.0	43.0	35.8	27.8	38.0	17.5	37.4	33.1	43.1
Adams	37.3	34.0	35.4	30.1	35.9	41.0	24.2	34.6	17.5	35.8	32.7	44.1
H14521	37.1	32.7	41.3	34.6	37.0	36.3	23.6	35.6	18.0	37.6	31.8	45.0
Harosoy	36.7	34.8	34.4	35.0	33.9	35.1	20.3	34.4	15.9	41.7	38.2	53.2
AX29-163-1-2	36.5	32.6	33.8	29.5	35.2	38.3	21.5	39.7	14.8	31.6	31.1	39.8
Hawkeye	36.1	30.0	32.5	28.5	32.9	39.5	19.3	37.1	14.9	38.4	33.6	44.4
H13116	36.0	31.3	34.1	34.6	39.1	32.8	25.1	33.8	17.8	30.6	30.0	42.3
Richland	33.9	28.0	33.8	33.1	33.6	32.3	23.6	36.8	17.2	33.3	28.9	42.0
Blackhawk	33.7	30.7	31.1	33.4	32.6	31.8	19.6	28.8	18.5	33.2	30.5	43.9
H14025	29.9	24.0	31.6	31.7	30.6	32.5	21.1	21.5	14.6	28.8	27.3	36.7
Mean	36.9	32.4	35.7	35.2	36.9	36.6	23.2	34.5	16.7	35.9	32.5	44.7
C.V.(%)		--	13.1	15.8	7.4	11.2	11.4	12.6	--	--	7.0	8.9
B.N.F.S.(5%)		--	N.S.	7.9	3.9	5.9	3.8	6.2	--	--	3.2	5.7
Row Sp.(In.)		36	30	21	36	36	28	28	28	28	38	40
		Yield Rank										
A0-8618		9	5	4	6	1	5	5	9	6	3	3
L9-5139		1	7	5	2	5	2	2	2	3	7	14
C1128		2	13	1	9	3	13	9	11	2	1	2
H13501		4	4	9	4	6	5	3	10	3	5	4
C1056		8	3	12	7	8	10	13	5	11	9	8
Lincoln		6	6	3	3	10	3	14	13	10	14	5
H15548		7	2	2	1	10	1	3	5	8	6	11
Adams		5	8	14	10	2	7	10	5	9	8	9
H14521		10	1	7	7	9	8	8	3	7	10	6
Harosoy		3	9	6	12	12	14	11	12	1	2	1
AX29-163-1-2		11	11	15	11	7	11	1	15	14	11	15
Hawkeye		14	14	16	14	3	16	6	14	5	4	7
H13116		12	10	7	5	13	4	12	4	15	13	12
Richland		15	11	11	13	15	8	7	8	12	15	13
Blackhawk		13	16	10	15	16	15	15	1	13	12	10
H14025		16	15	13	16	14	12	16	16	16	16	16

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

Table 23. (Continued)

Strain	Lafayette Ind.	Greenfield Ind.	Madison Wis.	Shabbona Ill.	Dwight Ill.	Urbana Ill.	Waseca Minn.	Kanawha Iowa	Marcus Iowa	Independence Iowa	Ames Iowa	Viborg S.D.	Lincoln Nebr.
A0-8618	43.7	41.1	49.5	35.9	47.0	38.1	40.4	42.2	50.6	36.8	40.8	49.4	42.2
L9-5139	43.2	46.4	51.4	33.8	46.3	37.3	42.4	40.6	49.3	36.4	41.0	38.1	45.6
C1128	43.0	40.0	51.9	38.1	47.5	40.5	38.6	39.8	48.5	35.6	34.9	41.0	36.4
H13501	42.9	43.8	45.0	33.0	49.0	37.2	35.4	40.6	49.0	37.5	38.0	42.2	38.2
C1056	41.6	43.0	44.5	32.4	45.8	38.4	37.3	39.9	50.3	34.8	36.4	40.8	38.3
Lincoln	39.9	43.4	50.8	32.1	42.1	34.4	37.8	34.9	49.1	37.0	39.3	30.7	37.1
H15548	41.7	44.6	34.0	30.4	39.0	35.8	31.5	33.0	45.4	38.3	43.4	29.5	42.3
Adams	42.4	37.5	44.2	35.1	47.3	36.9	36.1	36.2	46.3	35.8	36.1	37.5	37.2
H14521	39.3	38.3	46.3	32.2	43.7	35.8	38.7	36.2	47.9	34.0	32.7	36.5	37.4
Harosoy	40.8	28.8	44.8	30.9	45.4	36.8	40.6	36.1	46.0	34.5	31.4	35.2	37.4
AX29-163-1-2	41.3	41.1	36.4	34.0	45.0	36.4	30.0	36.9	50.0	35.2	38.4	39.3	37.5
Hawkeye	38.2	34.5	42.1	34.2	46.4	37.8	37.9	37.8	48.0	33.4	33.0	33.8	39.9
H13116	38.5	38.6	46.0	33.3	38.6	37.3	37.5	34.0	45.1	32.5	35.4	35.2	37.4
Richland	33.5	31.1	38.4	29.8	41.9	32.1	33.0	33.6	44.5	27.2	34.0	36.9	38.2
Blackhawk	31.8	27.5	43.6	33.6	38.0	32.1	35.9	36.1	45.4	33.5	30.6	37.8	33.8
H14025	31.7	26.8	42.4	23.6	34.3	27.7	32.5	27.9	37.8	27.8	30.4	27.4	29.5
Mean	39.6	37.9	44.5	32.7	43.6	35.9	36.6	36.6	47.1	34.4	36.0	37.0	38.0
C.V.(%)	6.1	7.3	8.9	8.2	6.4	7.5	10.5	5.0	6.5	8.1	7.6	8.4	8.6
B.N.F.S.(5%)	3.4	4.0	5.5	3.8	4.0	3.8	5.5	2.6	4.4	4.0	3.9	4.4	4.6
Row Sp.(In.)	40	38	36	40	40	40	24	40	40	40	40	42	38
	Yield Rank												
A0-8618	1	6	4	2	4	3	3	1	1	4	3	1	3
L9-5139	2	1	2	6	6	5	1	2	4	5	2	6	1
C1128	3	8	1	1	2	1	5	5	7	7	10	3	14
H13501	4	3	7	9	1	7	12	2	6	2	6	2	6
C1056	7	5	9	10	7	2	9	4	2	9	7	4	5
Lincoln	10	4	3	12	11	13	7	12	5	3	4	14	13
H15548	6	2	16	14	13	11	15	15	12	1	1	15	2
Adams	5	11	10	3	3	8	10	8	10	6	8	8	12
H14521	11	10	5	11	10	11	4	8	9	11	13	10	9
Harosoy	9	14	8	13	8	9	2	10	11	10	14	11	9
AX29-163-1-2	8	6	15	5	9	10	16	7	3	8	5	5	8
Hawkeye	13	12	13	4	5	4	6	6	8	13	12	13	4
H13116	12	9	6	8	14	5	8	13	14	14	9	11	9
Richland	14	13	14	15	12	14	13	14	15	16	11	9	6
Blackhawk	15	15	11	7	15	14	11	10	12	12	15	7	15
H14025	16	16	12	16	16	16	14	16	16	15	16	16	16

Table 24. Summary of maturity data, days earlier (-) or later (+) than Hawkeye, and lodging data for the strains in the Uniform Test, Group II, 1954.

Strain	Mean of 16 Tests[1]	State College Pa.	Middlesex Co. N.J.	Burlington Co. N.J.	Newark Del.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.
A0-8618	+ 5.3	+ 2			+ 7	+ 7	+ 7			+ 3	+ 5
L9-5139	+ 6.5	+ 2			+10	+ 6	+ 9			+ 3	+ 7
C1128	+ 4.8	- 4			+10	+10	+ 5			+ 2	+ 3
H13501	+ 5.8	- 4			+ 8	+ 7	+ 5			+ 3	+ 8
C1056	+ 3.2	+ 4			+ 5	0	+ 6			+ 1	+ 4
Lincoln	+ 7.2	+ 2			+10	+ 7	+ 9			+ 2	+ 5
H15548	+10.1	+ 4			+10	+13	+ 7			+ 6	+ 9
Adams	+ 5.9	- 5			+ 6	+10	+ 4			+ 2	+ 6
H14521	+ 2.9	- 4			+11	0	+ 3			0	+ 1
Harosoy	- 2.2	-19			0	0	+ 1			- 4	- 5
AX29-163-1-2	+ 8.2	+ 4			+10	+14	+ 5			+ 4	+ 7
Hawkeye	0	0			0	0	0			0	0
H13116	+ 4.2	- 4			+12	+ 1	+ 6			+ 1	+ 5
Richland	+ 1.6	+ 4			+ 4	+ 8	+ 1			- 2	+ 1
Blackhawk	- 4.3	--			+ 1	+ 3	- 3			- 5	- 8
H14025	+ 4.3	- 2			+11	+10	+ 3			+ 2	+ 3
Date planted		6/1			5/28	5/28	6/3			5/19	5/18
Hawkeye matured		10/6			9/20	10/10	9/21			9/24	9/16
Days to mature	125	127			115	135	110			128	121
	Mean of 19 Tests	Lodging									
A0-8618	2.3	2.5	2.7	2.8	2.0	2.5		2.3	2.8		2.3
L9-5139	2.5	2.3	2.0	3.3	2.5	2.8		2.0	3.0		2.8
C1128	1.9	2.0	2.0	3.0	2.3	2.0		1.5	2.3		2.0
H13501	2.3	2.0	2.7	2.8	3.0	2.5		1.8	2.0		2.5
C1056	2.6	2.5	2.7	3.5	2.8	2.3		2.3	2.5		2.8
Lincoln	2.5	2.0	3.0	2.8	2.5	2.5		1.8	2.5		2.8
H15548	2.9	2.3	2.0	3.0	2.5	2.8		2.3	3.5		3.0
Adams	2.4	2.0	4.0	3.3	2.8	2.0		1.5	2.0		2.5
H14521	2.2	1.8	1.7	3.5	2.5	2.0		1.5	2.3		2.0
Harosoy	2.2	2.0	1.7	4.0	2.3	2.5		1.5	2.0		2.3
AX29-163-1-2	3.0	3.0	2.0	3.5	3.5	2.8		3.0	2.5		3.0
Hawkeye	1.7	1.0	2.0	3.3	1.3	1.5		1.3	1.5		2.0
H13116	2.2	1.8	2.0	3.0	2.0	2.0		1.8	2.5		2.3
Richland	1.8	1.5	2.3	2.8	1.5	1.8		1.3	1.7		2.0
Blackhawk	1.9	1.8	2.7	4.3	1.3	1.3		1.0	1.3		1.8
H14025	1.9	1.3	1.3	2.3	1.0	1.8		1.8	2.0		2.3
Mean	2.3	2.0	2.3	3.2	2.2	2.2		1.8	2.3		2.4

[1]State College, Pennsylvania not included in the mean.

Table 24. (Continued)

Strain	Green-field Ind.	Madi-son Wis.	Shab-bona Ill.	Dwight Ill.	Ur-bana Ill.	Wa-seca Minn.	Kana-wha Iowa	Mar-cus Iowa	Inde-pen-dence Iowa	Ames Iowa	Vi-borg S.D.	Lin-coln Nebr.
A0-8618	+ 4	+ 3		+ 7	+ 7	+ 6	+ 4	+ 6	+ 6	+ 6	+ 3	+ 3
L9-5139	+ 2	+ 6		+ 6	+ 8	+ 6	+ 6	+ 8	+ 4	+ 8	+ 7	+ 8
C1128	+ 4	+ 2		+ 6	+ 6	+ 6	+ 3	+ 5	+ 6	+ 3	+ 3	+ 3
H13501	+ 5	+ 3		+ 6	+ 8	+ 6	+ 5	+ 7	+ 6	+ 7	+ 3	+ 5
C1056	+ 2	+ 2		+ 4	+ 6	+ 3	0	+ 4	+ 7	+ 3	+ 2	+ 2
Lincoln	+ 5	+ 7		+ 8	+ 9	+ 6	+ 6	+ 8	+ 8	+10	+ 9	+ 6
H15548	+ 6	+ 9		+14	+11	+ 6	+12	+13	+10	+16	+11	+ 9
Adams	+ 5	+ 8		+ 7	+10	+ 5	+ 2	+ 6	+ 7	+ 7	+ 5	+ 4
H14521	+ 6	0		+ 3	+ 8	+ 3	0	+ 3	+ 3	+ 3	+ 1	+ 2
Harosoy	- 2	- 2		- 1	- 2	- 7	- 3	- 3	0	- 5	- 2	0
AX29-163-1-2	+ 2	+ 8		+11	+ 7	+ 6	+ 9	+ 9	+ 8	+11	+12	+ 8
Hawkeye	0	0		0	0	0	0	0	0	0	0	0
H13116	+ 7	+ 4		+ 6	+ 9	+ 3	0	+ 2	+ 2	+ 3	+ 3	+ 3
Richland	+ 2	+ 1		+ 5	+ 1	0	- 1	+ 2	+ 2	- 2	+ 3	+ 1
Blackhawk	- 6	- 8		- 5	- 3	- 7	- 6	- 4	- 3	- 9	- 3	- 3
H14025	+ 8	+ 2		+ 6	+ 7	+ 6	+ 2	0	+ 4	+ 3	+ 1	+ 1
Date planted	5/13	5/21		5/15	5/21	5/19	5/20	5/21	5/13	5/11	5/18	5/31
Hawkeye matured	9/17	9/29		9/16	9/8	10/2	9/26	9/22	9/22	9/16	9/28	9/19
Days to mature	127	131		124	110	136	129	124	132	128	133	111

	Lodging										
A0-8618	1.5	3.0	3.0	3.3	2.0	1.7	2.1	2.2	1.6	1.0	2.5
L9-5139	1.8	3.5	3.0	4.0	2.3	1.7	2.2	1.9	1.6	1.0	3.0
C1128	1.0	2.5	3.0	2.3	1.5	1.4	1.8	2.1	1.5	1.0	1.8
H13501	2.3	3.6	2.8	3.0	2.0	1.7	2.4	2.1	1.6	1.0	2.5
C1056	2.0	3.9	3.8	3.3	2.5	1.6	2.3	2.2	1.8	1.5	2.5
Lincoln	2.5	3.6	3.8	3.5	2.3	2.0	2.3	2.4	1.7	1.0	3.0
H15548	2.0	4.0	4.0	4.3	3.5	2.7	2.9	2.6	2.1	2.0	3.5
Adams	1.3	3.6	3.0	2.3	3.0	1.7	2.2	2.2	2.0	1.0	3.5
H14521	1.5	3.4	3.3	2.8	2.0	1.4	2.1	2.2	1.5	1.0	2.5
Harosoy	1.0	3.9	3.3	2.8	1.5	1.4	1.9	1.7	1.8	1.0	2.5
AX29-163-1-2	2.3	4.4	3.0	4.0	2.8	2.3	2.9	2.3	2.4	2.0	4.5
Hawkeye	1.0	3.4	1.8	2.3	1.8	1.2	1.4	1.6	1.2	1.0	1.8
H13116	1.5	3.5	3.8	3.0	2.0	1.6	2.0	2.0	1.6	1.0	2.2
Richland	1.0	2.8	2.5	2.0	1.0	1.4	1.9	2.2	1.2	1.0	1.5
Blackhawk	1.0	3.3	2.5	2.3	1.3	1.2	1.4	1.9	1.4	1.0	2.5
H14025	1.0	2.8	4.5	3.0	1.3	1.3	1.7	2.0	1.3	1.0	2.8
Mean	1.5	3.5	3.2	3.0	2.1	1.6	2.1	2.1	1.6	1.2	2.7

Table 25. Summary of height data and percentage of oil for the strains in the Uniform Test, Group II, 1954.

Strain	Mean of 22 Tests[1]	State College Pa.	Middlesex Co. N.J.	Burlington Co. N.J.	Newark Del.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Ottawa Lake Mich.	Walkerton Ind.	Bluffton Ind.
A0-8618	38	35	29	33	30	40	25	39	33	22	42	38
L9-5139	39	35	29	36	31	41	28	36	34	23	44	40
C1128	39	36	29	33	32	42	24	35	35	21	46	41
H13501	40	35	26	34	31	42	29	38	34	25	44	44
C1056	37	33	28	33	30	38	29	37	34	21	42	36
Lincoln	39	34	29	35	33	40	30	38	34	25	41	37
H15548	37	31	29	35	32	38	26	35	35	21	39	32
Adams	37	34	25	34	29	40	28	36	31	26	44	33
H14521	36	30	25	33	28	39	26	35	34	21	41	36
Harosoy	35	32	26	31	28	37	22	34	32	22	44	33
AX29-163-1-2	39	34	25	32	31	40	26	37	33	22	45	35
Hawkeye	34	29	24	30	25	36	20	34	31	22	38	35
H13116	37	32	26	34	29	41	27	36	33	20	40	37
Richland	32	30	24	30	27	34	23	33	30	25	35	34
Blackhawk	32	28	25	28	26	34	21	28	32	24	35	30
H14025	33	27	23	29	24	36	28	33	33	21	38	32
Mean	37	32	26	33	29	39	26	35	33	23	41	36

	Mean of 21 Tests	Percentage of Oil								
A0-8618	20.7	20.0	22.8	20.2	21.2	19.7	20.0	20.4	20.0	20.6
L9-5139	21.1	19.8	23.2	20.3	21.8	20.0	20.4	20.6	20.6	21.2
C1128	21.8	21.2	23.9	21.8	22.5	20.6	21.0	22.3	21.3	21.4
H13501	21.3	20.3	23.0	21.0	22.0	20.2	21.0	21.5	21.0	21.2
C1056	21.6	20.9	24.3	21.3	21.3	21.1	19.8	21.2	21.7	21.2
Lincoln	21.1	20.2	22.2	20.4	22.2	19.8	20.4	20.9	20.8	21.4
H15548	20.8	20.0	23.2	20.5	22.1	19.6	21.1	21.1	19.6	20.7
Adams	21.4	19.9	23.3	21.0	21.7	20.1	21.5	21.4	20.5	21.1
H14521	21.4	21.1	24.1	21.0	21.6	20.4	20.9	21.3	20.7	20.9
Harosoy	20.7	19.9	22.9	20.2	21.1	20.3	20.3	20.3	20.2	20.2
AX29-163-1-2	21.7	20.9	24.7	21.1	22.4	20.5	21.3	21.6	20.5	21.1
Hawkeye	21.2	20.6	23.5	21.7	21.9	20.4	20.7	21.3	20.6	20.7
H13116	20.8	20.4	23.1	19.5	20.6	20.1	20.3	20.7	20.6	20.6
Richland	20.4	19.9	23.3	20.1	20.5	20.1	20.4	20.7	20.0	19.9
Blackhawk	20.9	20.4	22.8	21.0	20.8	20.5	20.9	20.7	20.7	20.3
H14025	20.1	19.4	22.0	19.8	20.0	20.0	19.7	19.8	19.8	19.8
Mean	21.1	20.3	23.3	20.7	21.5	20.2	20.6	21.0	20.5	20.8

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

Table 25. (Continued)

Strain	Lafayette Ind.	Greenfield Ind.	Madison Wis.	Shabbona Ill.	Dwight Ill.	Urbana Ill.	Waseca Minn.	Kanawha Iowa	Marcus Iowa	Independence Iowa	Ames Iowa	Viborg S.D.	Lincoln Nebr.
A0-8618	41	33	44	43	48	34	44	40	46	38	40	37	43
L9-5139	42	35	44	44	46	38	44	41	47	38	39	38	46
C1128	43	33	44	44	48	35	42	41	48	38	38	40	44
H13501	44	36	45	48	52	37	46	42	50	40	42	36	47
C1056	39	32	41	41	43	33	42	38	41	38	36	40	42
Lincoln	41	36	43	44	46	36	43	40	46	40	40	39	48
H15548	37	36	42	39	40	36	46	39	44	38	41	37	40
Adams	38	31	45	44	45	30	40	40	45	37	38	38	42
H14521	38	31	41	41	43	35	39	37	42	39	36	35	42
Harosoy	38	27	44	39	43	28	39	36	40	38	34	37	41
AX29-163-1-2	41	34	46	47	51	34	43	41	46	41	40	41	42
Hawkeye	37	27	42	42	43	28	37	37	42	37	32	40	40
H13116	39	34	42	41	43	32	41	38	42	36	36	37	42
Richland	31	27	38	37	34	24	39	34	42	33	31	29	35
Blackhawk	34	28	40	38	36	27	38	38	38	36	31	36	36
H14025	32	25	40	36	38	27	40	35	38	34	31	34	38
Mean	38	32	43	42	44	32	41	39	44	38	37	37	42

	Percentage of Oil											
A0-8618	22.1	21.8	19.8	20.7	20.6	21.9	19.2	20.0	20.0	19.2	23.0	21.8
L9-5139	22.8	22.3	20.2	21.3	20.8	21.8	18.6	20.9	20.2	19.9	22.9	22.6
C1128	23.3	22.7	20.4	21.5	22.0	23.3	20.1	20.9	20.8	19.7	24.0	23.0
H13501	22.3	22.9	19.9	21.1	21.4	22.0	19.2	20.7	20.6	19.6	23.6	22.7
C1056	23.4	22.9	20.6	22.0	21.9	22.4	19.8	21.5	21.0	19.5	23.7	23.0
Lincoln	22.1	22.2	20.2	21.1	21.2	21.9	18.8	21.0	20.8	19.6	23.0	22.2
H15548	21.6	22.4	19.7	19.8	20.9	21.6	17.9	19.9	20.0	19.9	22.2	22.9
Adams	22.9	23.0	20.0	21.4	21.7	22.5	19.8	20.7	19.9	20.2	23.5	22.7
H14521	23.0	22.1	20.3	21.0	21.9	22.4	20.0	21.2	20.4	19.8	22.7	22.9
Harosoy	22.0	21.4	19.5	20.4	21.3	22.0	19.6	20.6	19.6	19.5	22.1	21.5
AX29-163-1-2	23.1	23.3	19.8	21.5	21.8	22.6	19.1	21.3	21.1	20.7	23.8	23.5
Hawkeye	22.6	22.0	20.1	20.8	21.3	22.2	19.7	20.3	19.9	19.7	22.6	22.2
H13116	21.9	20.8	19.4	20.4	21.1	21.2	19.8	20.4	20.2	19.4	22.9	22.4
Richland	21.5	21.4	19.2	20.1	20.1	21.1	19.3	20.3	19.5	18.7	21.1	21.4
Blackhawk	22.0	22.0	19.7	21.8	20.6	21.9	20.0	20.4	19.6	20.1	21.7	21.3
H14025	20.9	20.8	19.2	19.9	19.6	21.1	18.9	19.9	19.4	19.3	21.1	21.1
Mean	22.3	22.1	19.9	20.9	21.1	22.0	19.4	20.6	20.2	19.7	22.7	22.3

Table 26. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1953-54.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	44	29	38	42	34	44	44	44
A0-8618	37.0	+5.2	2.1	39	2.2	16.3	40.3	20.6
Adams	34.7	+3.6	2.3	39	1.7	14.7	39.6	21.4
Lincoln	34.1	+6.6	2.3	40	1.9	14.3	39.9	21.0
C1056	33.9	+2.3	2.4	38	1.8	16.2	40.0	21.2
Harosoy	33.2	-3.0	2.2	37	1.8	17.3	41.0	20.6
Hawkeye	32.9	0	1.8	36	1.6	17.3	40.8	21.0
Richland	31.0	+1.1	1.8	33	2.1	17.1	40.3	20.5
Blackhawk	30.5	-6.4	1.8	33	2.1	15.7	40.5	20.9
Mean	33.4		2.1	37	1.9	16.1	40.3	20.9

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

Table 27. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1953-54.

Strain	Mean of 44 Tests	State College Pa.	Middlesex Co. N.J.[1]	Burlington Co. N.J.[2]	Newark Del.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Ottawa Lake Mich.[3]	Walkerton Ind.	Bluffton Ind.
A0-8618	37.0	27.7	30.7	34.1	34.4	36.9	20.9	31.6	34.1	37.5	47.3
Adams	34.7	28.8	30.6	27.7	33.8	36.3	20.6	29.2	30.4	35.6	44.5
Lincoln	34.1	28.4	27.4	34.3	37.5	32.5	21.8	27.2	28.8	33.8	44.8
C1056	33.9	28.0	31.6	26.8	31.6	32.8	18.9	28.2	30.1	35.6	44.2
Harosoy	33.2	29.0	27.0	30.0	29.1	33.2	16.0	25.2	35.4	39.3	45.0
Hawkeye	32.9	26.5	30.2	25.7	29.1	33.9	18.3	31.7	31.2	32.7	42.2
Richland	31.0	24.6	30.4	29.8	30.6	30.9	20.8	29.9	28.2	32.2	38.3
Blackhawk	30.5	25.2	29.0	28.6	29.4	29.2	18.0	24.7	29.6	29.4	40.6
Mean	33.4	27.3	29.6	29.6	31.9	33.2	19.4	28.5	31.0	34.5	43.4

	Yield Rank									
A0-8618	5	2	2	2	1	2	2	2	2	1
Adams	2	3	6	3	2	4	4	4	3	4
Lincoln	3	7	1	1	6	1	6	7	5	3
C1056	4	1	7	4	5	5	5	5	3	5
Harosoy	1	8	3	7	4	8	7	1	1	2
Hawkeye	6	5	8	7	3	6	1	3	6	6
Richland	8	4	4	5	7	3	3	8	7	8
Blackhawk	7	6	5	6	8	7	8	6	8	7

[1]New Brunswick, New Jersey, 1953.
[2]Burlington, New Jersey, 1953.
[3]Deerfield, Michigan, 1953.

Table 27. (Continued)

Strain	Lafayette Ind.	Greenfield Ind.	Madison Wis.	Shabbona Ill.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Independence Iowa	Ames Iowa	Lincoln Nebr.
A0-8618	39.9	43.6	50.0	33.4	40.0	35.6	37.5	49.4	38.4	42.0	27.1
Adams	41.0	42.1	45.1	33.0	40.3	33.8	34.1	44.7	37.3	38.2	25.7
Lincoln	36.6	44.8	48.2	29.9	35.6	32.1	31.3	46.8	35.6	37.5	24.7
C1056	38.3	43.2	43.0	30.0	38.2	31.8	35.9	47.8	34.5	36.9	25.1
Harosoy	38.1	35.5	44.8	31.1	38.4	34.9	35.4	45.8	35.3	34.5	24.6
Hawkeye	37.3	38.0	42.3	31.0	36.5	31.0	34.9	46.7	33.9	36.4	25.9
Richland	31.3	35.0	36.7	27.1	33.6	29.4	29.3	41.8	29.9	37.5	24.6
Blackhawk	33.3	31.8	43.8	29.3	32.2	28.1	34.1	43.2	33.3	31.8	21.3
Mean	37.0	39.3	44.2	30.6	36.9	32.1	34.1	45.8	34.8	36.9	24.9
	Yield Rank										
A0-8618	2	2	1	1	2	1	1	1	1	1	1
Adams	1	4	3	2	1	3	5	6	2	2	3
Lincoln	6	1	2	6	6	4	7	3	3	3	5
C1056	3	3	6	5	4	5	2	2	5	5	4
Harosoy	4	6	4	3	3	2	3	5	4	7	6
Hawkeye	5	5	7	4	5	6	4	4	6	6	2
Richland	8	7	8	8	7	7	8	8	8	3	6
Blackhawk	7	8	5	7	8	8	5	7	7	8	8

Table 28. Four-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1951-54.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	90	61	80	85	72	92	92	92
Lincoln	34.5	+5.9	2.2	39	1.9	14.5	40.4	21.0
Adams	33.8	+2.8	2.1	39	1.7	14.4	39.8	21.2
Harosoy	33.6	-3.0	1.9	37	1.7	17.3	40.5	20.6
Hawkeye	32.7	0	1.6	36	1.5	17.4	41.2	20.9
Blackhawk	30.3	-6.2	1.8	34	1.9	15.6	40.4	21.0
Richland	30.2	+0.9	1.7	33	2.0	16.8	40.5	20.4
Mean	32.5		1.9	36	1.8	16.0	40.5	20.9

[1]Days earlier (-) or later (+) than Hawkeye. Hawkeye required 121 days to mature.

Table 29. Four-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1951-54.

Strain	Mean of 90 Tests	State College Pa.	Middlesex Co. N.J.[1]	Burlington Co. N.J.[2]	Newark Del.	Hoytville Ohio	Wooster Ohio	Columbus Ohio	Mt. Healthy Ohio	East Lansing Mich.	Ottawa Lake Mich.[3]	Walkerton Ind.
Years Tested		1951-1954	1951-1954	1951-1954	1951 1953-54	1952-1954	1951-1954	1951-1954	1951-1953	1951-52 1954	1951-1954	1951-1954
Lincoln	34.5	30.5	32.1	31.6	36.3	34.0	29.1	26.3	30.5	21.9	25.6	37.1
Adams	33.8	28.6	32.0	27.0	33.3	36.7	27.2	27.1	27.4	20.0	25.4	38.6
Harosoy	33.6	28.8	31.4	29.3	30.0	35.2	23.9	24.6	27.7	18.9	30.8	42.3
Hawkeye	32.7	27.9	31.8	26.1	29.6	34.2	24.8	26.3	28.6	16.9	27.6	37.3
Blackhawk	30.3	24.2	30.1	26.9	29.2	30.1	24.4	22.4	25.8	19.3	28.2	34.1
Richland	30.2	24.3	30.2	27.2	30.3	32.0	25.0	24.6	26.0	20.5	26.9	35.1
Mean	32.5	27.4	31.3	28.0	31.5	33.7	25.7	25.2	27.7	19.6	27.4	37.4
		Yield Rank										
Lincoln		1	1	1	1	4	1	2	1	1	5	4
Adams		3	2	4	2	1	2	1	4	3	6	2
Harosoy		2	4	2	4	2	6	4	3	5	1	1
Hawkeye		4	3	6	5	3	4	2	2	6	3	3
Blackhawk		6	6	5	6	6	5	6	6	4	2	6
Richland		5	5	3	3	5	3	4	5	2	4	5

[1]New Brunswick, New Jersey, 1951-53.
[2]Columbus, New Jersey, 1951-52; Burlington, New Jersey, 1953.
[3]Deerfield, Michigan, 1951-53.
[4]Centerville, South Dakota, 1951-52.

Table 29. (Continued)

Strain	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Madison Wis.	Shabbona Ill.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Independence Iowa	Ames Iowa	Viborg S.D.[4]	Lincoln Nebr.
Years Tested	1951-1954	1951-1954	1951-1954	1951-1954	1951-1954	1951-1954	1951-1954	1951-1954	1951-1954	1951-1954	1951-1954	1951-52	1951-1954
Lincoln	45.7	39.5	48.8	43.0	26.1	33.6	37.1	30.3	40.0	33.5	40.1	24.4	29.9
Adams	43.4	38.6	45.7	41.1	27.4	37.0	37.9	31.6	39.6	34.0	39.6	23.8	28.4
Harosoy	42.6	37.8	40.1	42.9	29.1	36.6	38.2	33.1	39.6	33.9	37.0	24.5	28.1
Hawkeye	41.1	37.2	41.8	39.0	26.3	35.5	37.5	33.9	40.1	32.7	38.5	22.3	28.3
Blackhawk	38.7	32.0	34.5	41.5	26.1	31.6	31.0	33.0	39.3	31.7	32.9	26.1	22.8
Richland	37.3	32.8	38.1	35.2	23.2	31.2	32.4	28.4	36.0	28.6	36.7	22.5	27.0
Mean	41.5	36.3	41.5	40.5	26.4	34.3	35.7	31.7	39.1	32.4	37.5	23.9	27.4
	Yield Rank												
Lincoln	1	1	1	1	4	4	4	5	2	3	1	3	1
Adams	2	2	2	4	2	1	2	4	3	1	2	4	2
Harosoy	3	3	4	2	1	2	1	2	3	2	4	2	4
Hawkeye	4	4	3	5	3	3	3	1	1	4	3	6	3
Blackhawk	5	6	6	3	4	5	6	3	5	5	6	1	6
Richland	6	5	5	6	6	6	5	6	6	6	5	5	5

UNIFORM TEST, GROUP III

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

Strain	Source or Originating Agency	Origin
Clark	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
Dunfield	Purdue Agr. Exp. Sta.	Sel. from P. I. 36846
Illini	Ill. Agr. Exp. Sta.	Sel. from A. K.
Lincoln	Ill. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x Manchu
AO-8618	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
C859	Purdue A.E.S. & U.S.R.S.L.	Sel. from Dunfield x Lincoln
C1060	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x A45-251)
L9-5139	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
U9-2	Nebr. A.E.S. & U.S.R.S.L.	Sel. from mixed seed
UO-41	Nebr. A.E.S. & U.S.R.S.L.	Sel. from U9-2

Uniform Test, Group III, data were obtained from 21 locations in 1954, and are presented in tables 30 through 37. The average yield for 19 locations common to 1953 and 1954 was 33 bushels in 1954, a marked increase over the 26-bushel yield of 1953. Seven of these locations showed only slight changes in yield. Landisville, Pennsylvania; Newark, New Jersey; Beltsville, Maryland; Columbus and Mt. Healthy, Ohio; Worthington, Indiana; Dwight and Urbana, Illinois; Ames and Ottumwa, Iowa; and Lincoln, Nebraska had increases of from 5 bushels at Newark to 30 bushels at Lincoln. Columbia, Missouri was the only location with strongly reduced yields in 1954 over 1953. The test in southeastern Kansas was low in yield both seasons.

The two strains grown in this test for the first time in 1954, C859 and UO-41, yielded the same and were exceeded only by Clark. They were 1.7 and 3.4 days earlier than Clark. They outyielded Lincoln by almost 3 bushels but were 3.3 and 1.6 days later. Strains UO-41 yielded the same but averaged 1 day earlier than its source strain, U9-2. Strain UO-41 and U9-2 were high in oil content, equaled only by Dunfield.

Two strains in this test were entered the previous year, 1953, for the first time. Strain U9-2 has performed well, averaging over 2 days earlier and only 1.4 bushels less than Clark. It has outyielded Lincoln by 2.4 bushels but is 2.6 days later. Strain C1060 yielded a bushel less than U9-2 and is about one day later.

The remaining two unnamed lines have been included in this test for three years. Strain L9-5139 has yielded two bushels more than Lincoln on a 3-year average and is of the same maturity. Strain AO-8618 has yielded only slightly more than Lincoln and has averaged 1.3 days earlier. Both strains have been outyielded by Clark, and on the basis of 2 years' data, they have been outyielded by most of the other experimental strains.

Clark is the latest in maturity and highest in yield in the test on a three-year average. Among the other named varieties, Lincoln is 4 bushels ahead of Illini and Dunfield, the poorest yielders of the group.

Table 30. Summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1954.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	19	14	16	18	16	19	19	19
Clark	38.3	+5.0	1.9	37	1.9	16.6	40.8	21.3
C859	35.8	+3.3	2.5	39	2.0	14.2	39.0	21.7
U9-2	35.8	+2.6	2.3	34	2.6	18.6	39.5	22.1
UO-41	35.8	+1.6	2.3	33	2.6	18.4	39.6	22.3
L9-5139	35.2	0	2.2	36	2.2	16.1	40.7	21.5
C1060	34.5	+3.9	2.4	35	2.2	15.8	40.1	21.4
AO-8618	33.9	-1.6	2.0	35	2.4	17.0	41.4	21.2
Lincoln	33.0	0	2.3	36	2.5	14.8	40.8	21.4
Illini	29.2	-0.2	4.0	37	2.4	14.4	40.9	20.8
Dunfield	28.9	-2.3	3.1	34	2.4	15.8	39.7	22.2
Mean	34.0		2.5	36	2.3	16.2	40.3	21.6

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

Table 31. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1954.

Strain	Mean of 19 Tests[1]	Landis-ville Pa.	Free-hold N.J.	New-ark Del.	George-town Del.	Belts-ville Md.	Colum-bus Ohio	Mt. Healthy Ohio	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.
Clark	38.3	49.8	37.5	44.6	22.2	41.2	38.1	41.9	39.0	42.7	56.2
C859	35.8	47.8	35.3	37.2	19.7	37.3	33.1	35.5	34.8	45.7	53.9
U9-2	35.8	47.6	36.1	43.9	19.0	36.1	36.7	37.8	34.7	44.2	50.1
UO-41	35.8	43.7	37.2	40.0	18.8	33.8	39.2	37.8	36.0	46.6	51.8
L9-5139	35.2	44.0	30.2	38.2	19.0	32.8	36.5	40.7	40.0	44.7	50.7
C1060	34.5	44.1	33.1	40.6	21.2	36.7	32.3	33.3	34.0	42.1	52.2
AO-8618	33.9	40.0	33.2	35.9	17.4	34.8	35.0	38.8	39.1	40.2	44.1
Lincoln	33.0	42.8	31.6	38.5	19.2	33.2	30.5	34.2	37.5	42.5	43.8
Illini	29.2	38.8	27.4	33.3	14.2	26.4	29.0	28.8	35.6	38.4	32.9
Dunfield	28.9	32.3	23.2	28.5	16.4	31.8	27.0	29.5	37.9	37.0	38.7
Mean	34.0	43.1	32.5	38.1	18.7	34.4	33.7	35.8	36.9	42.4	47.4
C.V.(%)		--	11.4	8.3	13.0	13.3	12.6	10.9	5.1	7.1	8.1
Bu.N.F.S.(5%)		--	5.4	4.6	3.5	6.6	6.2	5.6	2.7	4.3	5.3
Row Sp.(In.)		40	28	36	36	40	28	28	40	38	38

	Yield Rank									
Clark	1	1	1	1	1	2	1	3	5	1
C859	2	4	7	3	2	6	6	8	2	2
U9-2	3	3	2	5	4	3	4	9	4	6
UO-41	6	2	4	7	6	1	4	6	1	4
L9-5139	5	8	6	5	8	4	2	1	3	5
C1060	4	6	3	2	3	7	8	10	7	3
AO-8618	8	5	8	8	5	5	3	2	8	7
Lincoln	7	7	5	4	7	8	7	5	6	8
Illini	9	9	9	10	10	9	10	7	9	10
Dunfield	10	10	10	9	9	10	9	4	10	9

[1]Columbia, Missouri and Columbus, Kansas not included in the mean.

Table 31. (Continued)

Strain	Dwight Ill.	Urbana Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.	Columbus Kans.
Clark	42.1	37.7	34.3	48.4	45.5	26.0	20.0	11.6	48.4	12.4	4.6
C859	44.0	39.3	35.9	42.2	42.6	20.2	22.1	10.0	41.1	13.0	5.7
U9-2	44.5	38.1	31.6	40.6	39.9	21.7	24.1	10.7	41.8	11.7	4.9
UO-41	45.2	38.5	29.0	42.3	40.8	17.8	22.7	12.1	44.6	14.0	4.7
L9-5139	42.9	35.9	31.9	39.0	43.7	22.8	19.6	8.4	43.6	12.4	5.0
C1060	35.0	35.8	34.4	43.5	43.7	19.1	18.7	10.5	42.6	12.9	4.1
AO-8618	47.7	39.1	28.0	37.6	36.8	20.3	21.1	9.7	43.0	12.7	4.6
Lincoln	43.0	35.0	29.1	37.7	40.8	22.5	19.6	7.7	35.1	11.2	4.7
Illini	37.8	34.2	27.8	36.2	33.0	19.0	18.1	8.2	29.3	15.5	5.4
Dunfield	38.6	34.5	22.2	33.9	31.4	19.9	19.3	6.4	31.8	14.9	4.7
Mean	42.1	36.8	30.4	40.1	39.8	20.9	20.5	9.5	40.1	13.1	4.8
C.V.(%)	7.7	8.6	7.9	6.8	7.6	16.3	9.8	--	8.7	22.0	--
B.N.F.S.(5%)	4.7	N.S.	3.5	4.0	4.4	N.S.	2.9	--	5.0	N.S.	--
Row Sp.(In.)	40	40	40	40	40	40	40	36	38	40	40
	Yield Rank										
Clark	7	5	3	1	1	1	5	2	1	7	8
C859	4	1	1	4	4	6	3	5	7	4	1
U9-2	3	4	5	5	7	4	1	3	6	9	4
UO-41	2	3	7	3	5	10	2	1	2	3	5
L9-5139	6	6	4	6	2	2	6	7	3	7	3
C1060	10	7	2	2	2	8	9	4	5	5	10
AO-8618	1	2	8	8	8	5	4	6	4	6	8
Lincoln	5	8	6	7	5	3	6	9	8	10	5
Illini	9	10	9	9	9	9	10	8	10	1	2
Dunfield	8	9	10	10	10	7	8	10	9	2	5

Table 32. Summary of maturity data, days earlier (-) or later (+) than Lincoln, and lodging for the strains in the Uniform Test, Group III, 1954.

Strain	Mean of 14 Tests[1]	Landis-ville Pa.	Free-hold N.J.	New-ark Del.	George-town Del.	Belts-ville Md.	Colum-bus Ohio	Mt. Healthy Ohio	Lafay-ette Ind.	Green-field Ind.
Clark	+5.0			+ 7		+ 4			+ 3	+ 2
C859	+3.3			+ 5		+ 6			+ 3	+ 1
U9-2	+2.6			+ 5		+ 4			+ 2	+ 1
UO-41	+1.6			+ 2		+ 1			+ 2	+ 1
L9-5139	0			0		+ 1			0	- 2
C1060	+3.9			+ 4		+ 5			+ 3	0
AO-8618	-1.6			- 4		- 1			0	0
Lincoln	0			0		0			0	0
Illini	-0.2			0		- 3			0	+ 1
Dunfield	-2.3			- 2		0			- 3	- 2
Date planted				5/28		5/29			5/18	5/13
Lincoln matured				10/1		9/29			9/22	9/22
Days to mature	123			126		123			127	132

	Mean of 16 Tests[2]	Lodging								
Clark	1.9	2.5	2.0	2.0	1.0	1.0	1.0	2.0	2.8	2.3
C859	2.5	3.3	2.3	3.3	1.0	2.5	1.8	2.8	3.5	2.3
U9-2	2.3	2.5	2.5	2.5	1.0	2.5	2.0	3.0	2.8	1.3
UO-41	2.3	2.3	2.8	3.0	1.0	2.5	1.8	3.0	3.0	1.5
L9-5139	2.2	2.5	2.5	2.8	1.0	2.2	2.5	2.5	2.5	2.0
C1060	2.4	2.5	2.3	2.5	1.0	1.8	1.5	2.8	3.0	2.3
AO-8618	2.0	2.3	2.3	1.8	1.0	2.2	2.0	2.0	2.3	1.8
Lincoln	2.3	2.8	2.3	2.8	1.0	2.0	2.0	2.3	3.0	2.0
Illini	4.0	3.5	4.0	4.5	1.0	4.8	3.5	4.0	4.0	4.0
Dunfield	3.1	3.0	3.8	3.8	1.0	3.5	3.0	3.5	3.8	3.0
Mean	2.5	2.7	2.7	2.9	1.0	2.5	2.1	2.8	3.1	2.3

[1]Columbus, Kansas not included in the mean.
[2]Georgetown, Delaware; Laddonia, Missouri; and Columbus, Kansas not included in the mean.

Table 32. (Continued)

Strain	Worthington Ind.	Dwight Ill.	Urbana Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Laddonia Mo.	Lincoln Nebr.	Manhattan Kans.	Columbus Kans.
Clark	+ 4	+ 3	+ 4	+ 7	+ 9	+ 6	+ 5	+ 6	+ 4	+ 6	+10
C859	0	+ 5	+ 3	+ 6	+ 6	+ 4	+ 1	+ 1	+ 4	+ 1	+ 1
U9-2	+ 2	+ 5	+ 1	+ 5	+ 3	+ 1	0	+ 3	+ 1	+ 4	0
UO-41	+ 3	+ 3	+ 1	+ 2	- 1	- 1	+ 1	+ 4	0	+ 4	+ 1
L9-5139	0	+ 2	- 3	+ 2	- 1	- 1	+ 1	0	0	0	0
C1060	+ 3	+ 4	+ 3	+ 5	+ 9	+ 3	+ 3	+ 4	+ 4	+ 4	+ 5
AO-8618	+ 1	- 1	- 3	0	- 3	- 4	- 1	- 2	- 4	0	- 1
Lincoln	0	0	0	0	0	0	0	0	0	0	0
Illini	+ 1	+ 1	- 2	+ 2	+ 1	+ 1	- 4	- 4	+ 2	+ 1	- 9
Dunfield	- 1	- 3	- 4	- 2	- 2	- 2	- 5	- 5	- 2	+ 1	- 2
Date planted	5/14	5/15	5/21	5/13	5/11	5/14	5/21	6/11	5/31	6/7	5/21
Lincoln matured	9/22	9/25	9/18	9/8	9/27	9/20	9/18	9/20	9/26	9/19	9/14
Days to mature	131	133	120	118	139	129	120	101	118	104	116
	Lodging										
Clark	1.8	3.0	1.8	1.8	1.6	2.2		1.0	2.5	1.0	1.0
C859	3.0	3.0	2.5	1.8	1.6	2.4		1.0	3.0	1.0	1.0
U9-2	2.8	3.3	1.8	1.5	1.8	2.1		1.0	2.8	1.0	1.0
UO-41	2.5	3.8	2.0	1.3	1.6	2.0		1.0	2.5	1.0	1.0
L9-5139	2.8	2.8	1.8	1.5	1.5	2.0		1.0	2.8	1.0	1.0
C1060	2.8	4.5	2.3	1.8	2.1	2.4		1.0	3.2	1.0	1.0
AO-8618	2.3	3.0	1.5	1.3	1.5	2.1		1.0	1.8	1.0	1.0
Lincoln	2.8	2.8	2.3	1.5	1.6	2.4		1.0	2.5	1.0	1.0
Illini	4.0	5.0	5.0	4.3	3.0	3.6		1.0	5.0	1.5	1.0
Dunfield	3.0	2.8	4.0	2.0	2.1	3.1		1.0	4.0	1.0	1.0
Mean	2.8	3.4	2.5	1.9	1.8	2.4		1.0	3.0	1.1	1.0

Table 33. Summary of height data and percentage of oil for the strains in the Uniform Test, Group III, 1954.

Strain	Mean of 18 Tests[1]	Landis-ville Pa.	Free-hold N.J.	New-ark Del.	George-town Del.	Belts-ville Md.	Colum-bus Ohio	Mt. Healthy Ohio	Lafay-ette Ind.	Green-field Ind.
Clark	37	34	31	30	20	40	41		43	38
C859	39	37	34	36	22	44	42		44	40
U9-2	34	28	28	30	20	39	36		40	36
UO-41	33	27	27	29	19	37	34		38	34
L9-5139	36	31	28	30	21	41	39		41	37
C1060	35	27	27	28	19	42	39		42	35
AO-8618	35	28	29	30	20	39	36		41	35
Lincoln	36	31	29	31	21	40	39		41	38
Illini	37	28	27	34	20	40	37		44	38
Dunfield	34	29	28	34	23	40	36		41	36
Mean	36	30	29	31	21	40	38		42	37
	Mean of 19 Tests	Percentage of Oil								
Clark	21.3	20.8	20.5	22.3	22.4	22.1	20.4	21.2	21.9	22.5
C859	21.7	21.0	21.8	21.7	22.7	21.8	20.4	20.5	20.9	23.1
U9-2	22.1	21.1	21.3	22.3	22.7	22.8	21.1	21.3	22.2	22.9
UO-41	22.3	21.0	21.6	22.2	22.6	22.7	21.6	21.4	22.8	22.8
L9-5139	21.5	21.4	20.8	22.0	22.6	22.1	20.6	21.0	22.2	22.0
C1060	21.4	21.1	21.6	22.1	22.3	22.7	20.4	20.4	21.7	22.3
AO-8618	21.2	20.5	20.4	21.0	21.8	20.9	20.2	20.1	21.8	21.6
Lincoln	21.4	21.0	21.3	21.9	22.4	21.4	20.8	20.4	21.6	22.1
Illini	20.8	19.7	20.3	20.6	21.4	20.0	20.2	20.1	20.8	20.9
Dunfield	22.2	20.6	21.5	21.8	22.9	21.5	21.8	21.6	22.5	22.6
Mean	21.6	20.8	21.1	21.8	22.4	21.8	20.8	20.8	21.8	22.3

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

Table 33. (Continued)

Strain	Worth-ington Ind.	Dwight Ill.	Ur-bana Ill.	Eldor-ado Ill.	Ames Iowa	Ottum-wa Iowa	Nor-borne Mo.	Lad-donia Mo.	Colum-bia Mo.	Lin-coln Nebr.	Man-hattan Kans.
Clark	43	50	40	34	42	40	32	31	17	46	24
C859	45	51	43	35	45	44	33	30	16	50	25
U9-2	41	47	36	33	40	37	29	29	13	41	21
UO-41	39	45	34	31	38	36	29	27	13	42	23
L9-5139	44	47	38	32	42	40	31	30	14	44	24
C1060	42	47	38	33	42	37	32	29	14	45	23
AO-8618	43	49	38	32	40	38	32	28	14	44	24
Lincoln	43	49	39	35	40	39	33	29	14	44	26
Illini	43	59	40	36	45	44	30	25	13	50	29
Dunfield	39	46	37	32	40	38	29	24	12	42	23
Mean	42	49	38	33	41	39	31	28	14	45	24

	Percentage of Oil									
Clark	21.7	21.3	21.1	21.1	21.3	22.2	21.1	20.7	22.5	17.9
C859	22.5	21.3	21.8	22.5	22.1	23.2	20.9	21.5	22.6	20.2
U9-2	22.1	21.9	22.6	22.2	22.7	23.3	21.8	22.3	23.4	20.8
UO-41	22.3	22.2	22.6	22.3	22.8	23.4	22.1	22.6	23.1	21.0
L9-5139	21.8	21.3	21.5	21.5	22.1	22.5	21.1	20.8	21.9	18.5
C1060	21.7	21.3	21.1	21.3	21.5	23.2	21.4	20.2	22.8	17.9
AO-8618	21.2	21.0	21.9	21.5	21.7	22.9	20.8	20.4	22.3	20.0
Lincoln	21.3	21.4	21.6	21.1	21.9	22.7	21.6	20.6	22.2	18.9
Illini	21.0	19.9	21.2	21.5	21.8	22.7	20.9	21.3	21.3	19.9
Dunfield	22.6	21.6	22.7	22.6	23.2	23.6	21.7	23.4	22.6	21.9
Mean	21.8	21.3	21.8	21.8	22.1	23.0	21.3	21.4	22.5	19.7

Table 34. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1953-54.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	42	31	35	39	37	41	42	42
Clark	32.8	+4.9	1.7	37	1.9	15.6	40.2	21.4
U9-2	31.4	+2.6	2.1	35	2.6	17.1	39.2	21.9
L9-5139	31.0	-0.1	2.0	37	2.1	15.0	40.2	21.5
C1060	30.3	+3.5	2.2	36	2.0	14.8	39.7	21.4
AO-8618	29.6	-1.2	1.9	36	2.5	15.8	40.8	21.1
Lincoln	29.0	0	2.1	37	2.4	13.9	40.1	21.4
Illini	25.5	-0.5	3.6	39	2.4	13.3	40.5	20.8
Dunfield	24.9	-2.3	2.9	35	2.4	14.9	39.3	21.8
Mean	29.3		2.3	37	2.3	15.1	40.0	21.4

[1]Days earlier (-) or later (+) than Lincoln. Lincoln required 121 days to mature.

Table 35. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1953-54.

Strain	Mean of 42 Tests	Landisville Pa.	Newark Del.	Georgetown Del.	Beltsville Md.	Columbus Ohio	Mt. Healthy Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.
Clark	32.8	39.3	40.4	23.2	34.6	33.9	35.1	38.8	45.9	49.6
U9-2	31.4	37.7	38.4	19.1	35.4	32.7	31.1	34.3	45.4	42.8
L9-5139	31.0	36.3	37.8	18.7	30.5	32.1	33.8	36.9	45.6	45.0
C1060	30.3	37.5	41.0	22.1	34.5	28.5	28.6	34.3	44.0	44.8
AO-8618	29.6	30.9	34.1	17.8	31.6	29.7	31.7	36.5	44.0	38.6
Lincoln	29.0	33.8	36.7	19.0	30.2	27.1	29.1	35.6	44.5	39.4
Illini	25.5	30.1	31.3	16.9	24.6	25.5	22.3	34.3	40.2	29.1
Dunfield	24.9	26.2	27.5	16.3	28.7	21.5	23.7	35.1	38.1	33.5
Mean	29.3	34.0	35.9	19.1	31.3	28.9	29.4	35.7	43.5	40.4

	Yield Rank								
Clark	1	2	1	2	1	1	1	1	1
U9-2	2	3	3	1	2	4	6	3	4
L9-5139	4	4	5	5	3	2	2	2	2
C1060	3	1	2	3	5	6	6	5	3
AO-8618	6	6	6	4	4	3	3	5	6
Lincoln	5	5	4	6	6	5	4	4	5
Illini	7	7	7	8	7	8	6	7	8
Dunfield	8	8	8	7	8	7	5	8	7

[1]Thayer, Kansas, 1953.

Table 35. (Continued)

Strain	Dwight Ill.	Ur-bana Ill.	Eldor-ado Ill.	Ames Iowa	Ottum-wa Iowa	Nor-borne Mo.	Lad-donia Mo.	Colum-bia Mo.	Lin-coln Nebr.	Man-hattan Kans.	Colum-bus Kans.[1]
Clark	32.9	31.7	32.8	41.5	35.0	24.1	22.2	17.8	29.1	12.9	8.5
U9-2	36.4	34.6	35.1	37.7	33.2	23.5	24.2	16.1	26.3	11.7	9.3
L9-5139	34.6	31.7	30.7	36.7	34.1	23.5	21.9	13.9	27.6	11.4	7.4
C1060	29.2	30.2	30.2	35.3	33.6	22.3	20.1	15.3	26.3	14.4	7.2
AO-8618	38.2	33.6	28.5	38.0	31.6	21.2	23.0	13.8	26.9	12.4	7.4
Lincoln	34.2	31.1	27.2	34.7	32.8	24.4	21.4	13.0	23.4	12.0	7.3
Illini	29.9	27.5	25.6	34.4	29.0	19.2	18.6	12.3	19.7	11.6	6.9
Dunfield	31.1	28.4	23.2	29.7	26.8	19.1	20.8	10.9	21.1	11.2	6.5
Mean	33.3	31.1	29.2	36.0	32.0	22.2	21.5	14.1	25.1	12.2	7.6
	Yield Rank										
Clark	5	3	2	1	1	2	3	1	1	2	2
U9-2	2	1	1	3	4	3	1	2	4	5	1
L9-5139	3	3	3	4	2	3	4	4	2	7	3
C1060	8	6	4	5	3	5	7	3	4	1	6
AO-8618	1	2	5	2	6	6	2	5	3	3	3
Lincoln	4	5	6	6	5	1	5	6	6	4	5
Illini	7	8	7	7	7	7	8	7	8	6	7
Dunfield	6	7	8	8	8	8	6	8	7	8	8

Table 36. Three-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1952-54.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	64	47	54	58	56	63	64	64
Clark	35.2	+5.0	1.8	38	1.7	15.8	40.1	21.5
L9-5139	32.8	-0.1	2.1	39	1.9	15.3	40.2	21.4
AO-8618	31.3	-1.3	2.0	37	2.3	16.0	40.6	21.3
Lincoln	30.8	0	2.2	38	2.2	14.3	40.1	21.5
Illini	26.9	-0.3	3.6	41	2.2	13.7	40.5	20.7
Dunfield	25.7	-2.6	2.8	37	2.4	15.3	39.2	21.9
Mean	30.5		2.4	38	2.1	15.1	40.1	21.4

[1]Days earlier (-) or later (+) than Lincoln. Lincoln required 121 days to mature.

Table 37. Three-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1952-54.

Strain	Mean of 64 Tests	Landisville Pa.	Newark Del.	Beltsville Md.	Columbus Ohio	Mt. Healthy Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.
Clark	35.2	46.5	45.5	37.2	35.4	37.7	41.7	51.0	48.6
L9-5139	32.8	43.7	38.5	31.1	34.0	35.9	38.9	48.8	43.3
AO-8618	31.3	36.5	35.0	33.3	30.7	34.0	39.2	45.9	38.5
Lincoln	30.8	35.3	37.8	32.3	29.7	31.9	38.3	47.2	37.1
Illini	26.9	34.0	32.6	26.2	27.7	26.3	35.9	42.5	29.6
Dunfield	25.7	28.1	26.1	30.5	23.6	26.4	35.7	39.1	28.3
Mean	30.5	37.4	35.9	31.8	30.2	32.0	38.3	45.8	37.6
					Yield Rank				
Clark		1	1	1	1	1	1	1	1
L9-5139		2	2	4	2	2	3	2	2
AO-8618		3	4	2	3	3	2	4	3
Lincoln		4	3	3	4	4	4	3	4
Illini		5	5	6	5	6	5	5	5
Dunfield		6	6	5	6	5	6	6	6

[1]Thayer, Kansas, 1952-53.

Table 37. (Continued)

Strain	Dwight Ill.	Urbana Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Laddonia Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.	Columbus Kans.[1]
Clark	29.1	31.9	34.7	43.9	38.3	25.4	25.0	33.9	15.5	10.9
L9-5139	31.8	32.7	31.8	40.1	37.2	25.1	20.4	30.7	13.3	10.2
AO-8618	34.8	34.4	28.8	40.9	35.0	24.6	19.3	29.8	13.5	9.9
Lincoln	31.4	32.9	28.5	36.0	35.2	23.4	20.2	28.7	13.7	9.8
Illini	28.0	29.1	23.9	35.4	31.5	21.4	16.1	26.2	13.0	9.1
Dunfield	28.7	27.0	23.4	32.4	30.9	21.1	13.8	25.9	12.0	7.8
Mean	30.6	31.3	28.5	38.1	34.7	23.5	19.1	29.2	13.5	9.6
	Yield Rank									
Clark	4	4	1	1	1	1	1	1	1	1
L9-5139	2	3	2	3	2	2	2	2	4	2
AO-8618	1	1	3	2	4	3	4	3	3	3
Lincoln	3	2	4	4	3	4	3	4	2	4
Illini	6	5	5	5	5	5	5	5	5	5
Dunfield	5	6	6	6	6	6	6	6	6	6

UNIFORM TEST, GROUP IV

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

Strain	Source or Originating Agency	Origin
Chief	Ill. Agr. Exp. Sta.	Sel. from Illini x Manchu
Clark	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
Perry	Purdue A.E.S. & U.S.R.S.L.	Sel. from Patoka x L7-1355
Wabash	Purdue A.E.S. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C985	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
C1048	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Dunfield x A45-251)
C1065	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
C1068	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
C1069	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
C1071	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
C1074	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
C1076	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
C1078	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
C1079	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden

Yield data from Uniform Test, Group IV, were obtained from 14 locations in 1954, and data from these tests are summarized in tables 38 through 45. Considering the 10 locations common to both 1953 and 1954, the average yield of the Group IV test was 24 bushels in 1953 and 27 in 1954. Most of these locations showed moderate increases for 1954 except those in Missouri and Kansas. Columbia, Missouri had a severe decrease. At Manhattan, Kansas, yields were doubled, while in southeastern Kansas yields dropped to less than 4 bushels per acre.

Eight selections from the cross, Lincoln x Ogden, were tested for the first time in Uniform Test, Group IV, this year: C1065, C1068, C1069, C1071, C1074, C1076, C1078, and C1079. Strain C1068 had the highest over-all yield average in the test but was almost five days later than Clark. The other seven selections yielded less than Clark and C985 and were four to seven days later than Clark, ranging from one day earlier to two days later than C985.

An interesting observation at Urbana and Eldorado, Illinois in 1954 was the consistent relation between plant width or ground coverage and bean yield. Clark was the broadest and near the top in yield; Wabash and Chief were the narrowest and at the bottom in yield. The Lincoln x Ogden selections, as a group, were high in yield and also in mean plant width.

Of the two other unnamed strains in this test, C1048, which has been tested two years, has outyielded only Wabash and Chief and is four to five days later than these. Strain C985 has been tested four years and maintains a half bushel lead over Clark but has averaged eight days later.

For the named varieties the four-year summary shows Clark leading Perry by 2.3 bushels, followed by Chief and Wabash at 2.2 bushels less than Perry.

Table 38. Summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1954.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	12	8	9	12	11	12	12	12
C1068	33.9	+6.6	1.9	38	2.4	16.2	41.0	21.6
Clark	33.4	+1.9	1.8	36	2.2	15.6	41.2	21.2
C985	33.2	+7.8	2.3	40	2.6	15.5	40.9	21.5
C1065	33.0	+6.6	2.0	38	2.4	14.9	40.9	21.4
C1074	32.5	+7.6	2.3	42	2.5	16.4	40.9	21.5
C1076	32.4	+8.1	2.6	42	2.6	15.9	41.5	21.0
C1071	32.3	+7.0	2.3	39	2.5	14.9	40.0	22.2
C1079	32.0	+6.3	1.9	39	2.4	15.1	40.9	21.3
C1069	32.0	+9.6	2.6	43	2.7	15.9	40.8	21.6
C1078	31.9	+6.5	2.1	40	2.4	16.4	41.8	21.1
Perry	30.8	+4.5	1.8	37	2.6	15.5	41.8	21.2
C1048	29.8	+4.5	2.0	42	2.3	13.0	41.3	20.9
Wabash	29.4	0	2.5	40	2.3	13.9	40.4	21.6
Chief	28.2	+1.1	3.5	45	2.7	12.6	41.7	20.1
Mean	31.8		2.3	40	2.5	15.1	41.1	21.3

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

Table 39. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1954.

Strain	Mean of 12 Tests[1]	Landisville Pa.	Georgetown Del.	Beltsville Md.	Columbus Ohio	Worthington Ind.	Evansville Ind.
C1068	33.9	51.6	19.3	47.2	27.6	43.2	52.4
Clark	33.4	49.8	17.2	41.0	28.1	49.2	51.8
C985	33.2	53.6	21.5	45.2	25.7	49.3	43.8
C1065	33.0	49.7	19.4	46.2	28.7	45.3	51.5
C1074	32.5	46.6	19.3	51.0	26.1	45.9	48.2
C1076	32.4	49.4	21.4	42.8	21.8	50.2	46.8
C1071	32.3	45.2	17.7	40.5	28.4	45.2	51.7
C1079	32.0	43.8	20.1	51.4	28.0	41.9	50.6
C1069	32.0	50.4	21.0	36.2	20.7	52.2	46.5
C1078	31.9	46.6	16.1	48.8	25.0	45.3	50.0
Perry	30.8	45.0	12.9	38.4	27.9	42.8	49.2
C1048	29.8	46.7	21.8	39.9	25.6	45.8	38.6
Wabash	29.4	46.7	10.7	36.4	27.7	43.6	42.7
Chief	28.2	41.2	13.5	40.0	31.0	38.1	35.9
Mean	31.8	47.6	18.0	43.2	26.6	45.6	47.1
Coef. of Var. (%)		--	18.9	10.6	13.9	11.2	7.4
Bu. Nec. for Sig. (5%)		--	4.8	6.6	5.3	6.4	4.9
Row Spacing (In.)		40	36	40	28	38	38

	Yield Rank					
C1068	2	7	4	8	11	1
Clark	4	10	8	4	4	2
C985	1	2	6	10	3	11
C1065	5	6	5	2	7	4
C1074	9	7	2	9	5	8
C1076	6	3	7	13	2	9
C1071	11	9	9	3	9	3
C1079	13	5	1	5	13	5
C1069	3	4	14	14	1	10
C1078	9	11	3	12	7	6
Perry	12	13	12	6	12	7
C1048	7	1	11	11	6	13
Wabash	7	14	13	7	10	12
Chief	14	12	10	1	14	14

[1]Columbia, Missouri and Columbus, Kansas not included in the mean.

Table 39. (Continued)

Strain	Urbana Ill.	Eldorado Ill.	Carbondale Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.	Columbus Kans.
C1068	34.8	36.2	32.8	21.0	19.4	9.6	20.9	3.5
Clark	37.4	33.9	31.4	19.8	19.5	8.3	21.8	3.8
C985	32.8	35.8	30.4	21.6	16.5	8.2	22.6	4.1
C1065	32.7	34.8	30.5	19.7	16.5	8.7	20.4	2.8
C1074	31.6	33.5	31.5	19.7	17.2	7.0	19.9	4.6
C1076	30.8	38.3	28.4	18.8	18.8	9.9	21.6	3.6
C1071	31.8	36.3	31.4	17.7	18.3	10.4	23.9	4.0
C1079	31.3	33.5	31.0	17.9	16.7	10.4	17.9	4.2
C1069	31.1	37.6	31.9	18.2	15.0	10.3	22.9	3.0
C1078	31.5	36.2	30.5	20.1	17.6	8.2	15.1	3.9
Perry	34.6	33.9	29.7	18.7	15.8	6.6	20.1	4.8
C1048	25.3	32.2	29.6	19.7	15.6	7.1	16.5	3.2
Wabash	31.6	30.4	25.8	20.7	19.3	6.7	17.7	4.3
Chief	29.5	27.9	22.9	20.2	18.3	7.0	19.4	4.7
Mean	31.9	34.3	29.8	19.6	17.5	8.5	20.1	3.9
Coef. of Var. (%)	9.4	7.3	8.4	16.4	10.7	--	12.3	--
Bu. Nec. for Sig. (5%)	4.3	3.6	3.6	N.S.	2.7	--	3.5	--
Row Spacing (In.)	40	40	40	40	40	36	40	40
	Yield Rank							
C1068	2	4	1	2	2	5	6	11
Clark	1	8	4	6	1	7	4	9
C985	4	6	9	1	10	8	3	6
C1065	5	7	7	7	10	6	7	14
C1074	7	10	3	7	8	11	9	3
C1076	12	1	12	10	4	4	5	10
C1071	6	3	4	14	5	1	1	7
C1079	10	10	6	13	9	1	11	5
C1069	11	2	2	12	14	3	2	13
C1078	9	4	7	5	7	8	14	8
Perry	3	8	10	11	12	14	8	1
C1048	14	12	11	7	13	10	13	12
Wabash	7	13	13	3	3	13	12	4
Chief	13	14	14	4	5	11	10	2

Table 40. Summary of maturity data, days earlier (-) or later (+) than Wabash, and lodging data for the strains in the Uniform Test, Group IV, 1954.

Strain	Mean of 8 Tests[1]	Landisville Pa.	Georgetown Del.	Beltsville Md.	Columbus Ohio	Worthington Ind.	Evansville Ind.
C1068	+6.6			+ 5		+ 7	+ 6
Clark	+1.9			- 3		+ 1	+ 2
C985	+7.8			+ 5		+ 9	+ 7
C1065	+6.6			+ 4		+ 6	+ 6
C1074	+7.6			+ 7		+ 7	+ 6
C1076	+8.1			+ 7		+ 6	+ 7
C1071	+7.0			+ 6		+ 8	+ 6
C1079	+6.3			+ 6		+ 4	+ 6
C1069	+9.6			+ 7		+ 8	+10
C1078	+6.5			+ 6		+10	+ 6
Perry	+4.5			+ 3		+ 7	+ 6
C1048	+4.5			- 1		+ 3	+ 5
Wabash	0			0		0	0
Chief	+1.1			- 4		0	+ 4
Date planted				5/28		5/14	5/15
Wabash matured				10/13		9/26	9/22
Days to mature	124			138		135	130
	Mean of 9 Tests[2]	Lodging					
C1068	1.9	4.0	1.0	2.2	2.0	1.0	1.0
Clark	1.8	2.5	1.0	2.2	1.8	1.8	1.8
C985	2.3	4.0	1.0	2.5	1.8	1.8	2.0
C1065	2.0	4.0	1.0	2.0	1.5	1.3	1.3
C1074	2.3	4.0	1.0	2.8	2.0	1.5	1.8
C1076	2.6	4.0	1.0	3.0	2.3	1.8	2.0
C1071	2.3	4.0	1.0	2.5	2.0	2.0	2.0
C1079	1.9	3.8	1.0	2.5	1.3	1.3	2.0
C1069	2.6	4.0	1.0	3.5	2.0	2.0	2.0
C1078	2.1	3.8	1.0	2.8	2.0	1.5	2.0
Perry	1.8	3.8	1.0	2.5	1.5	1.0	1.8
C1048	2.0	4.0	1.0	2.2	2.0	2.0	1.3
Wabash	2.5	4.0	1.0	4.0	1.8	2.3	3.0
Chief	3.5	3.8	1.0	4.8	2.3	4.0	4.0
Mean	2.3	3.8	1.0	2.8	1.9	1.8	2.0

[1]Norborne and Columbia, Missouri and Columbus, Kansas not included in the mean.
[2]Georgetown, Delaware; Columbia, Missouri; and Columbus, Kansas not included in the mean.

Table 40. (Continued)

Strain	Urbana Ill.	Eldorado Ill.	Carbondale Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.	Columbus Kans.
C1068	+ 5	+ 6	+ 8	+ 8	+10	+20	+ 6	+16
Clark	+ 1	+ 4	+ 5	+ 2	+ 3	+ 6	+ 2	+11
C985	+ 6	+ 8	+ 9	+11	+10	+20	+ 8	+22
C1065	+ 6	+ 6	+ 7	+ 9	+10	+20	+ 8	+25
C1074	+ 6	+ 7	+ 8	+10	+11	+20	+ 9	+25
C1076	+ 7	+ 8	+10	+ 8	+12	+20	+ 8	+25
C1071	+ 7	+ 6	+ 7	+ 9	+ 9	+20	+ 7	+25
C1079	+ 6	+ 8	+ 6	--	+ 8	+19	+ 6	+21
C1069	+ 8	+ 9	+12	+11	+13	+20	+10	+25
C1078	+ 6	+ 6	+ 6	+ 9	+ 8	+19	+ 4	+21
Perry	+ 4	+ 5	+ 1	+ 9	+ 5	+ 5	+ 5	+ 6
C1048	+ 6	+ 5	+ 5	+10	+ 8	+17	+ 5	+22
Wabash	0	0	0	0	0	0	0	0
Chief	+ 1	+ 8	+ 1	+ 6	- 2	0	+ 1	0
Date planted	5/21	5/13	5/12	5/21	6/10	5/25	6/7	5/21
Wabash matured	9/21	9/15	9/16	9/22	9/24	9/23	9/25	9/13
Days to mature	123	125	127	124	106	121	110	115

	Lodging						
C1068	1.8	1.0	2.5		1.0	1.9	1.0
Clark	1.3	1.0	2.0		1.0	1.4	1.0
C985	1.8	1.5	3.0		1.0	2.1	1.0
C1065	1.5	1.0	3.0		1.0	2.0	1.0
C1074	2.3	1.5	2.3		1.0	2.2	1.0
C1076	2.5	1.8	3.5		1.0	2.2	1.0
C1071	2.5	1.5	2.3		1.0	2.2	1.0
C1079	1.5	1.0	2.5		1.0	1.6	1.0
C1069	2.8	1.8	2.8		1.0	2.6	1.0
C1078	1.8	1.5	2.0		1.0	1.5	1.0
Perry	1.0	1.0	2.0		1.0	1.3	1.0
C1048	1.8	1.5	1.5		1.0	1.9	1.0
Wabash	2.3	1.8	2.3		1.0	1.2	1.0
Chief	3.5	3.8	3.3		1.0	2.1	1.0
Mean	2.0	1.6	2.5		1.0	1.9	1.0

Table 41. Summary of height data and percentage of oil for the strains in the Uniform Test, Group IV, 1954.

Strain	Mean of 12 Tests[1]	Landisville Pa.	Georgetown Del.	Beltsville Md.	Columbus Ohio	Worthington Ind.	Evansville Ind.
C1068	38	39	19	46	44	38	45
Clark	36	34	19	45	41	38	45
C985	40	41	21	48	44	45	50
C1065	38	40	20	45	44	40	46
C1074	42	46	23	52	45	42	50
C1076	42	48	23	52	46	45	50
C1071	39	42	20	48	44	41	46
C1079	39	41	20	48	46	41	47
C1069	43	49	22	46	46	47	52
C1078	40	42	21	49	45	43	46
Perry	37	41	18	48	46	38	44
C1048	42	45	24	50	47	46	51
Wabash	40	44	19	49	45	45	48
Chief	45	40	22	56	48	46	57
Mean	40	42	21	49	45	43	48

	Mean of 12 Tests	Percentage of Oil					
C1068	21.6	21.2	21.8	22.2	20.4	22.3	22.5
Clark	21.2	20.8	23.3	21.2	19.3	21.9	22.6
C985	21.5	21.1	22.5	22.4	20.3	21.9	22.5
C1065	21.4	21.4	22.2	22.0	19.9	22.4	22.3
C1074	21.5	20.7	22.3	22.7	20.3	22.3	22.6
C1076	21.0	20.7	21.9	22.2	19.8	22.2	22.1
C1071	22.2	21.5	23.3	22.8	20.9	23.0	23.1
C1079	21.3	21.0	22.5	22.4	20.7	22.4	22.4
C1069	21.6	21.3	22.6	22.9	20.4	22.4	22.5
C1078	21.1	20.7	21.7	22.1	20.0	22.0	22.4
Perry	21.2	20.1	23.0	21.8	19.7	21.7	22.3
C1048	20.9	20.2	22.6	21.8	19.3	21.1	21.7
Wabash	21.6	20.1	22.6	21.6	19.9	22.2	22.6
Chief	20.1	18.5	21.1	20.7	19.0	20.7	21.5
Mean	21.3	20.7	22.4	22.1	20.0	22.0	22.4

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

Table 41. (Continued)

Strain	Urbana Ill.	Eldorado Ill.	Carbondale Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.
C1068	40	35	46	38	34	18	31
Clark	37	36	47	33	31	16	29
C985	42	42	49	36	32	19	31
C1065	40	36	45	36	32	18	27
C1074	43	40	52	39	35	20	33
C1076	42	43	50	39	34	20	33
C1071	41	39	48	37	33	20	32
C1079	39	41	47	37	32	20	28
C1069	45	44	52	41	35	20	33
C1078	41	40	49	36	34	19	28
Perry	40	35	48	31	30	16	27
C1048	40	44	53	42	34	19	33
Wabash	43	39	50	37	32	13	31
Chief	49	46	57	47	35	16	35
Mean	42	40	50	38	33	18	31

	Percentage of Oil					
C1068	21.3	21.9	22.5	20.9	21.2	20.7
Clark	21.3	21.5	22.4	20.6	19.9	19.8
C985	21.2	22.4	22.2	20.6	20.0	21.0
C1065	21.1	22.5	21.9	20.4	20.4	20.5
C1074	21.4	22.1	22.1	20.6	20.9	20.5
C1076	19.9	21.7	21.4	20.1	19.8	20.1
C1071	21.3	22.7	23.0	21.3	21.0	22.0
C1079	20.7	22.7	21.9	20.4	19.5	19.5
C1069	21.0	22.0	22.1	20.3	20.2	21.1
C1078	20.8	22.0	21.9	20.6	20.4	18.8
Perry	21.3	21.8	22.2	20.7	19.0	20.2
C1048	20.2	22.2	22.5	20.0	19.9	19.8
Wabash	21.5	22.5	22.4	21.2	21.1	21.7
Chief	19.5	20.9	20.7	20.2	18.9	19.5
Mean	20.9	22.1	22.1	20.6	20.2	20.4

Table 42. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1953-54.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	27	22	22	27	27	28	28	28
C985	29.3	+6.6	2.0	39	2.4	15.5	40.5	21.5
Clark	29.3	-0.7	1.8	36	2.2	15.2	40.7	21.3
Perry	26.9	+3.4	1.8	37	2.6	15.6	41.4	21.1
C1048	26.3	+3.8	1.9	41	2.2	12.8	40.9	21.0
Wabash	25.6	0	2.2	39	2.3	14.0	40.3	21.3
Chief	25.2	-1.9	3.0	45	2.6	12.1	40.9	20.2
Mean	27.1		2.1	40	2.4	14.2	40.8	21.6

[1]Days earlier (-) or later (+) than Wabash. Wabash required 125 days to mature.

Table 43. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1953-54.

Strain	Mean of 27 Tests	Landisville Pa.	Georgetown Del.	Columbus Ohio	Worthington Ind.	Urbana Ill.
C985	29.3	42.8	23.1	22.1	45.1	29.8
Clark	29.3	39.3	16.1	24.9	43.7	35.3
Perry	26.9	38.7	11.4	24.9	37.7	31.9
C1048	26.3	39.1	20.5	20.5	42.0	23.6
Wabash	25.6	38.0	14.0	21.8	38.9	27.2
Chief	25.2	32.5	16.9	24.9	35.5	27.1
Mean	27.1	38.4	17.0	23.2	40.5	29.2
		Yield Rank				
C985		1	1	4	1	3
Clark		2	4	1	2	1
Perry		4	6	1	5	2
C1048		3	2	6	3	6
Wabash		5	5	5	4	4
Chief		6	3	1	6	5

[1]Thayer, Kansas, 1953.

Table 43. (Continued)

Strain	Eldorado Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.	Columbus Kans.[1]
C985	40.8	22.5	18.0	17.0	15.7	6.5
Clark	40.2	20.2	19.7	17.1	17.0	6.3
Perry	33.7	20.2	17.9	14.6	15.2	6.8
C1048	35.4	21.1	17.7	13.6	13.7	6.2
Wabash	33.4	20.5	17.3	13.0	12.9	5.6
Chief	30.7	20.5	18.6	13.7	13.8	6.0
Mean	35.7	20.8	18.2	14.8	14.7	6.2
	Yield Rank					
C985	1	1	3	2	2	2
Clark	2	5	1	1	1	3
Perry	4	5	4	3	3	1
C1048	3	2	5	5	5	4
Wabash	5	3	6	6	6	6
Chief	6	3	2	4	4	5

Table 44. Four-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1951-54.

Strain	Mean Yield Bu./A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil
No. of Tests	60	47	50	59	53	60	60	60
C985	33.6	+7.4	2.1	41	2.2	15.9	40.3	21.7
Clark	33.1	-1.0	1.9	38	2.1	15.7	40.5	21.6
Perry	30.8	+4.7	2.0	39	2.4	16.1	41.0	21.4
Chief	28.6	-1.2	3.0	47	2.4	12.5	41.2	20.3
Wabash	28.6	0	2.4	41	2.0	14.2	40.1	21.3
Mean	30.9		2.3	41	2.2	14.9	40.6	21.3

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

Table 45. Four-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1951-54.

Strain	Mean of 60 Tests	Landisville Pa.	Georgetown Del.	Beltsville Md.	Worthington Ind.	Evansville Ind.	Urbana Ill.
Years Tested		1951-1954	1951-1954	1951-52 1954	1951-1954	1951-52 1954	1951-1954
C985	33.6	47.4	24.0	43.0	47.2	54.9	34.4
Clark	33.1	45.3	18.6	35.8	45.9	51.9	39.9
Perry	30.8	39.7	16.7	40.4	40.2	47.1	36.5
Chief	28.6	37.6	17.2	34.8	36.8	44.0	33.0
Wabash	28.6	39.1	15.7	31.4	40.1	45.3	33.3
Mean	30.9	41.8	18.4	37.1	42.0	48.6	35.4
		Yield Rank					
C985		1	1	1	1	1	3
Clark		2	2	3	2	2	1
Perry		3	4	2	3	3	2
Chief		5	3	4	5	5	5
Wabash		4	5	5	4	4	4

[1]Thayer, Kansas, 1952-53.

Table 45. (Continued)

Strain	Eldorado Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.	Mound Valley Kans.	Columbus Kans.[1]
Years Tested	1951-1954	1951 1953-54	1951-1954	1951-1954	1951-1954	1951-1953	1952-1954
C985	42.7	28.5	25.0	25.9	22.6	17.9	8.5
Clark	41.0	26.7	27.6	24.3	22.3	18.0	9.1
Perry	36.8	26.4	26.8	24.6	21.8	16.6	8.9
Chief	33.0	25.0	26.5	19.6	20.6	16.2	8.1
Wabash	34.2	24.3	24.5	20.1	18.9	15.8	8.1
Mean	37.5	26.2	26.1	22.9	21.2	16.9	8.5
	Yield Rank						
C985	1	1	4	1	1	2	3
Clark	2	2	1	3	2	1	1
Perry	3	3	2	2	3	3	2
Chief	5	4	3	5	4	4	4
Wabash	4	5	5	4	5	5	4

Table 46. Chemical composition of soybean seed grown at each of the Uniform Test locations in 1954 and the four-year mean for 1951-54.

Location	1954		Four-Year Mean	
	Percentage of Protein	Percentage of Oil	Percentage of Protein	Percentage of Oil
Group 0 (Mean of 15 strains in 1954, 14 in 1953, 13 in 1952, and 15 in 1951)				
Ottawa, Ontario	42.5	18.2	40.9	19.2
Guelph, Ontario	42.4	18.6	41.2	19.1
Cortland, Ohio	45.1	19.1	--	--
Hoytville, Ohio	39.8	20.4	--	--
Spooner, Wis.	41.0	18.2	41.8	18.4
Durand, Wis.[1]	39.7	19.9	41.7	19.5
Morris, Minn.	41.6	19.6	41.1	20.4
St. Paul, Minn.	39.9	21.3	--	--
Casselton, N. D.	37.8	20.0	--	--
Fargo, N. D.	40.7	20.1	41.1	19.3
Rosholt, S. D.	42.3	20.1	--	--
Medford, Oregon	38.3	18.6	--	--
Group I (Mean of 8 strains in 1954, 8 in 1953, 10 in 1952, and 13 in 1951)				
State College, Pa.	40.4	19.8	40.7	20.7
Cortland, Ohio	41.3	19.3	--	--
Hoytville, Ohio	39.8	20.5	--	--
Wooster, Ohio	40.6	20.7	42.4	20.2
Columbus, Ohio	39.9	20.8	41.1	20.8
Walkerton, Ind.	43.0	20.5	41.1	20.7
Bluffton, Ind.	43.4	20.1	--	--
Lafayette, Ind.	40.2	21.7	--	--
Durand, Wis.[1]	41.1	19.9	43.1	19.0
Madison, Wis.	40.7	20.7	41.8	20.0
Shabbona, Ill.	41.5	21.2	40.8	21.1
St. Paul, Minn.	37.8	20.2	--	--
Waseca, Minn.	40.2	20.2	41.9	19.7
Cresco, Iowa	41.4	19.6	42.4	19.5
Kanawha, Iowa	40.5	20.9	41.6	20.5
Brookings, S. D.	39.8	20.7	--	--

Table 46. (Continued)

Location	1954		Four-Year Mean	
	Percentage of Protein	Percentage of Oil	Percentage of Protein	Percentage of Oil
Group II (Mean of 16 strains in 1954, 14 in 1953; Composite of 14 in 1952, 13 in 1951)				
State College, Pa.	38.4	20.3	39.8	20.8
Middlesex Co., N. J.[2]	35.1	23.3	40.3	20.9
Burlington Co., N. J.[3]	40.8	20.7	41.7	20.3
Newark, Del.	40.3	21.5	--	--
Hoytville, Ohio	39.8	20.2	--	--
Wooster, Ohio	39.6	20.6	42.0	19.9
Columbus, Ohio	39.9	21.0	41.5	20.6
Walkerton, Ind.	42.0	20.5	40.1	21.0
Bluffton, Ind.	41.5	20.8	41.0	20.8
Lafayette, Ind.	40.3	22.3	40.8	21.4
Greenfield, Ind.	41.8	22.1	41.7	21.4
Madison, Wis.	39.7	19.9	40.8	19.8
Shabbona, Ill.	41.2	20.9	40.4	20.6
Dwight, Ill.	40.7	21.1	40.8	21.2
Urbana, Ill.	40.5	22.0	39.2	21.6
Waseca, Minn.	40.2	19.4	--	--
Kanawha, Iowa	40.1	20.6	41.0	20.5
Marcus, Iowa	40.6	20.2	40.8	20.4
Independence, Iowa	42.1	19.7	40.8	20.5
Ames, Iowa	39.7	22.7	39.8	21.4
Lincoln, Nebr.	39.3	22.3	40.2	21.6
Group III (Mean of 10 strains in 1954, 10 in 1953; Composite of 15 in 1952, 16 in 1951)				
Landisville, Pa.	39.7	20.8	40.4	20.7
Freehold, N. J.	38.2	21.1	--	--
Newark, Del.	39.1	21.8	39.5	21.4
Georgetown, Del.	41.0	22.4	--	--
Beltsville, Md.	40.9	21.8	37.1	23.2
Columbus, Ohio	39.3	20.8	40.9	20.1
Mt. Healthy, Ohio	40.5	20.8	40.4	21.0
Lafayette, Ind.	40.7	21.8	40.0	21.4

Table 46. (Continued)

Location	1954		Four-Year Mean	
	Percentage of Protein	Percentage of Oil	Percentage of Protein	Percentage of Oil
	(Group III Continued)			
Greenfield, Ind.	40.6	22.3	41.1	21.0
Worthington, Ind.	42.5	21.8	41.3	21.4
Dwight, Ill.	40.4	21.3	40.4	21.0
Urbana, Ill.	39.4	21.8	38.8	21.4
Eldorado, Ill.	41.6	21.8	41.5	21.4
Ames, Iowa	40.3	22.1	39.6	21.4
Ottumwa, Iowa	37.9	23.0	38.1	22.2
Norborne, Mo.	41.2	21.3	--	--
Laddonia, Mo.	41.4	21.4	41.1	21.0
Lincoln, Nebr.	38.5	22.5	39.6	21.3
Manhattan, Kans.	41.7	19.7	41.6	20.7
Group IV (Mean of 14 strains in 1954, 9 in 1953; Composite of 10 in 1952, 18 in 1951)				
Landisville, Pa.	39.8	20.7	40.5	20.6
Georgetown, Del.	41.4	22.4	--	--
Beltsville, Md.	40.0	22.1	--	--
Columbus, Ohio	39.6	20.0	--	--
Worthington, Ind.	41.8	22.0	40.6	21.6
Evansville, Ind.	40.4	22.4	--	--
Urbana, Ill.	40.6	20.9	39.5	21.3
Eldorado, Ill.	41.5	22.1	41.1	22.0
Carbondale, Ill.	42.3	22.1	--	--
Norborne, Mo.	41.3	20.6	--	--
Laddonia, Mo.	42.2	20.2	40.9	21.0
Manhattan, Kans.	42.0	20.4	41.6	20.9

[1]Fall City, Wisconsin, 1951-1953.
[2]New Brunswick, New Jersey, 1951-1953.
[3]Columbus, New Jersey, 1951-1952; Burlington, New Jersey, 1953.

SOYBEAN DISEASE INVESTIGATIONS IN 1954[1]

The 1954 season was the third in a consecutive series of hot, dry summers. Consequently, the pattern of disease incidence and severity has been much the same during the last three years. Most diseases were held to a minimum because of the heat, drouth, or a combination of both.

Bacterial blight, usually an important early-season disease, was reduced to trace amounts over most of the Midwest. The only area showing infection of any consequence was northern Iowa. The extreme heat throughout June effectively suppressed blight in Illinois, Indiana, and Missouri.

Bacterial pustule was probably the most prevalent leaf spot of 1954, but severe infection developed in relatively few areas. The warm weather apparently was a factor in the more northerly distribution of the disease this year, while low rainfall held damage to a minimum in the southern regions of the Midwest where pustule is usually more severe.

Brown stem rot was less prevalent and less severe than usual, even in central Illinois. Here the effect of high temperature was especially noticeable. The first symptoms appeared later than usual and the extent of browning in the infected stems was about 50% of that found in seasons favorable for brown stem rot development. As a consequence, very early varieties escaped the disease, giving an erroneous impression of resistance.

Diaporthe stem canker also appeared later than usual and was, generally speaking, less severe than usual. In southeastern Missouri, however, a disease attributed to Diaporthe sp. caused considerable damage, killing plants one to three weeks before maturity. Wabash, Perry, and Dorman were the varieties most severely damaged. Seed yield and quality were greatly reduced. Presumably, this disease is stem canker and represents the most serious damage attributable to this disease in 1954.

Rhizoctonia root rot was less prevalent in Illinois and Indiana than in 1953, and more prevalent in Iowa. In general, it caused little damage but one field in Iowa showed 100% infection.

The recently discovered root rot (Fusarium?), which was severe in localized areas of northwestern Ohio, occurred in Indiana, Illinois, Iowa, and Missouri. It appears to be confined to the heavier soil types, especially those subjected to flooding. In certain areas of north-central and southeastern Missouri this root rot caused considerable killing of plants with up to 50% reduction in stand.

Brown spot was generally below average in occurrence. In most cases infection was confined to the primary leaves.

Downy mildew appeared in northern Iowa and Indiana in appreciable amounts. In Iowa it was generally confined to the variety Blackhawk, which showed 100% infection in most fields inspected. Illinois had only traces of the disease in widely scattered fields in the northern half of the state.

---

[1]Project 31-5010, Forage and Range Section.

Of the virus diseases, only yellow mosaic was prevalent in the Midwest. It was of little economic importance since it appeared for the most part in only trace amounts. In southeastern Iowa, yellow mosaic appears to be increasing in intensity. One field showing 29% infection was found in this area of the state. This same area has also shown some increase in the amount of bud blight, one field showing 9% infection. Aside from this, bud blight appears to be of little importance. Common mosaic was rare in the Midwest in 1954.

Research on soybean diseases at the various stations is carried on along lines reported in previous years. Stem canker, with special emphasis on improved methods of inoculation and testing for resistance, is the main objective at Iowa. A G. gracilis line with resistance to stem canker has been found. This has been crossed with susceptible varieties to study the mode of inheritance of resistance.

Studies of the causal organisms of brown stem rot, bacterial blight, and bacterial pustule are being continued at Illinois, as well as testing introductions, strains, and varieties for resistance to these organisms. Work on the effect of certain antibiotics on the blight and pustule organisms are also under way at Illinois.

Studies on the recently discovered root rot (Fusarium?) have been initiated at Ohio and Missouri. Both stations are attempting to isolate the causal organism and demonstrate pathogenicity. Nurseries have been established in north-central Missouri, where 2,160 introductions were tested for resistance, and in northwestern Ohio, where 100 varieties were likewise tested. Results are not yet available for the Missouri trials. In the Ohio tests, Renville, Monroe, C1109, several of Dr. Saboe's lines, and a field selection made by Dr. Herbert W. Johnson appear to be quite resistant.

Disease research at Indiana is concerned with frog-eye, brown spot, and stem canker. For the frog-eye disease, it was determined that the resistance of Lincoln, Wabash, and Illini is controlled by the same dominant Mendelian factor. Illini, previously classified as intermediate in reaction, was found to be resistant, thus explaining the resistance of Adams (Illini x Dunfield). Perry and Chief, both intermediate in reaction to frog-eye, were crossed to study the possibility that modifying factors may be involved in the inheritance of the intermediate type reaction. The "isogenic" line technique is being used to measure yield losses caused by frog-eye under epiphytotic conditions. A total of 1,960 plant introductions have been evaluated for brown spot reaction. Two highly resistant introductions are being used in the study of inheritance of resistance to the disease.

WEATHER CONDITIONS AND GENERAL GROWTH RESPONSES AT MOST OF THE NURSERY LOCATIONS DURING THE 1954 SEASON

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

Temperature and rainfall at most of the nursery locations for the 1954 season are presented in graphs at the end of this section of the report. The daily mean temperatures and rainfall are taken from "Climatological Data" published by the Weather Bureau. The arc is the normal mean monthly temperature for the location.

Ottawa, Ontario, Canada. The season was quite a bit cooler and wetter than average, particularly during the period from the middle of August on. This interfered considerably with obtaining maturity data. No maturities are shown for the two varieties Renville and L6-8275. These two have always been rather late for Ottawa conditions and in a season such as 1954, they approached maturity very slowly, making it difficult to decide the exact date at which this stage was reached. The maturity of the remaining varieties and strains was not so difficult to determine.

Guelph, Ontario, Canada. The 1954 season at Guelph was characterized by exceptionally low temperatures, especially during August and September. A period of drouth through the latter part of June and extending to the first of August materially affected the soybean crop. The combination of the dry July and the cool season delayed maturity to a very marked degree. Several strains in Uniform Test, Group 0, did not mature normally before frost.

State College and Landisville, Pennsylvania. The summer of 1954 was the coolest since 1951 and distribution of rainfall was variable. The southeastern part of the state suffered a severe drouth that extended from mid-June through most of July. At State College rainfall distribution was much better. Two periods of moisture stress were experienced during the summer months in the State College area, one the last two weeks in June--the other the last two weeks in July. August was characterized by good rainfall distribution at State College and very wet conditions at Landisville. Some parts of southeastern Pennsylvania had nine inches of precipitation during August. September had hot weather early and late in the month and was the warmest September since 1945, with well distributed rainfall. October was the warmest since 1949 and had over five inches of rainfall largely due to Hurricane Hazel.

In general, Groups I and II had more favorable weather for growth in 1954 than Groups III and IV. Soybeans in the latter two groups were held in check by the drouth during their early stage of development but grew rapidly and longer when the rains came; hence they were not as mature as normally at the time of killing frost, which also came later than usual.

Newark, Delaware. Growth and yield of soybeans were good considering the unfavorable growth conditions. Rainfall for the May to September period was 11.2 inches, which was approximately 9.5 inches below normal. Deficiency of soil moisture was most severe during June and July. Temperatures above normal were recorded for June, July, August, and September. Thirty-three days with temperatures of 90° or above occurred during this period. Lack of moisture and high temperatures during the flowering and pod-development period resulted in severe flower and pod drop.

Georgetown, Delaware. Although rainfall for the May to September period was about normal, soil moisture was deficient during June, July, and part of August, which resulted in reduced yields. Temperatures were above normal, with 34 days of temperatures of 90° or above recorded during June, July, August, and September. The location of the test on a light-textured soil accentuated the severity of the drouth conditions. Severe damage was caused by an infestation of mites during the latter part of July. Although all varieties were affected to some extent, Perry, Chief, and Wabash appeared to be most susceptible.

Beltsville, Maryland. Mean daily temperatures were above normal in April, below normal in May, approximately normal in June, July, and August, and above normal in September and October. Rainfall was somewhat deficient throughout the growing season. The Group III Test received about two inches of irrigation water on July 10.

Stands, growth, weed control, and harvest conditions were excellent. Effects of drouth were visible only on the Group III Test during the month of September. Group IV was grown on a soil with an exceptionally good moisture-holding capacity. Quality of seed was good, and but few instances of disease were noted.

Hoytville, Ohio. The soil at this station is difficult to work, though a satisfactory seedbed was prepared. The growing season was favorable throughout the year. An excellent lodging differential was obtained on all plots. Height and yield were also very good. The stands were excellent at this station.

Wooster, Ohio. A heavy rain just at planting time at Wooster caused a relatively poor stand, and subsequent dry weather retarded the growth of soybeans to such an extent that there was very little or no lodging. Plants were very short and the yield poor. The plot was relatively free from weeds and disease throughout the entire season.

Columbus, Ohio. Although planting of the nursery tests at Columbus was delayed a little in the spring, relatively ideal conditions prevailed throughout the growing season. The weed problem was very acute. Generally speaking, stands were very good. There was a very much better lodging differential on the later strains than on the earlier strains.

Mt. Healthy, Ohio. The early part of the season was very wet and planting was delayed considerably. The summer was dry, resulting in almost no lodging and in low yields.

Walkerton, Indiana. This nursery was planted somewhat late on June 9. Growth conditions were ideal throughout the season. Growth was excellent. A light frost occurred October 2 and a killing frost October 7 which damaged varieties later in maturity than Hawkeye and prevented obtaining maturity notes on all varieties. Excessive rains in early October caused flooding in the plots for a period of about eight days. Depth of water ranged from about 1 to 3 inches on the lower portion of the plant stems but water damage to the crop was only slight.

Bluffton, Indiana. This was an excellent nursery except for irregular areas with manganese deficiency. It was planted very timely on May 19 on highly fertile soil. Emergence was excellent and growth was abundant with excellent yields. There was moderate bacterial blight infection and a trace of bacterial pustule, but no other diseases of consequence. Precipitation was 1.70 and 1.25 inches below normal in

May and September, respectively, but 3.16 inches above normal in August, which is twice normal. June was somewhat above normal in temperature, otherwise temperatures were near normal with the highest temperature for the season being 99° F. for only a single day in July.

Lafayette, Indiana. This was an excellent nursery. It was planted very timely on May 18. Most tests were harvested rather timely; some were delayed in harvest due to wet weather and there was slight shattering in some instances. Growth was good. Brown spot infection was moderate; bacterial blight, bacterial pustule, and mildew were slight; and there was a trace of stem canker and brown stem rot.

Rainfall was below normal in May and July and only 0.53 inches in September. August had an excess of rainfall with 5.50 inches. Temperatures were rather high in late June and very high for a two-week period in mid-July with consecutive days of 101, 100, and 106° F. August temperatures were moderate throughout, but early September was very hot.

Greenfield, Indiana. This was an excellent nursery. It was planted May 13, which was somewhat early. Growth was restricted, and maturity was early with a narrow spread between varieties due to high temperatures and low moisture conditions in the maturity period. There was practically no disease present. Yields were about average for this location. Some shattering occurred at harvest. Only 11.65 inches of rain fell during May through September, which was 7.00 inches below normal. Temperatures were above normal in each of the months May through September.

Worthington, Indiana. This was an excellent nursery. It was planted early on May 14. Harvest was very timely in Group IV, but somewhat late in Group III. There was very little disease with only a trace of bacterial pustule, brown spot, and mildew. Yields were very high considering the lack of rainfall and high temperatures during several growth periods.

Precipitation was below average for May, June, July, and September, while August was 2.93 inches above average. High temperatures prevailed throughout the latter two-thirds of June and all of July.

Evansville, Indiana. This was an excellent nursery with excellent growth. It was planted very timely on May 15. It was free of disease. There was slight manganese deficiency which was corrected early by spraying with manganese sulfate. Harvesting was somewhat delayed following some untimely October rains, and some losses were experienced by shattering. Yields were considered excellent considering drouthy conditions. Precipitation was somewhat below normal in May and July and rather deficient in June with only 1.35 inches, which was 2.52 inches below normal. Temperatures were above normal in June through September, and 74 days had temperatures of 90° F. or above with 40 days in this period being 95° F. or above.

Spooner, Wisconsin. In general, the weather was very favorable for soybean growth and production during the 1954 season. Rainfall was above normal in all four months and temperatures were above normal in June, but from .6° to 1.9° below normal in July, August, and September. The only drouth period during the summer occurred from August 3 to 14, and the soybean plots were irrigated August 12. Harvesting during September and the first seven days of October was generally impossible due to frequency of rainfall and cloudy weather though conditions were fairly good for harvesting the latter three weeks of October.

The varieties in the Group 0 trial behaved nearly normal in comparison to each other in all cases with the exception of W6S-292. No explanation can be given for its being so much later than Mandarin (Ottawa) this year in comparison to previous years.

Durand, Wisconsin. The soil at Durand is sandy and as a result, drouth can reduce yields considerably. Rainfall was adequate during the early part of the season but dry weather during late July and early August considerably reduced the yields of the Group 0 varieties. Group I varieties were able to take advantage of rainfall which occurred August 13 and, as a result, produced higher yields than the Group 0 varieties. In most years the drouth in this area occurs later and thus reduces the yield of the Group I strains more than it does those of Group 0. All varieties matured before frost.

Madison, Wisconsin. The 1954 season was very favorable for soybeans. Temperatures were above normal during June and September and only slightly below normal in July and August. Rainfall was about normal during May, August, and September, but 3.5 and 1.5 inches above normal for June and July, respectively. The heavy rainfall during June and July resulted in heavy vegetative growth. As a consequence, lodging was heavy. All varieties matured before fall frost.

Shabbona, Illinois. The 1953 season was dry and, consequently, the 1954 season started with a deficit in subsoil moisture in many areas of the state. Surface conditions were ideal for the May 18 planting and for early weed control. Associated with this condition were low humidity and low rainfall during the period when bacterial blight normally is spreading, which resulted in low infection even in an inoculated nursery. During the latter part of the growing season rainfall was adequate, giving good yields of high quality seed.

Dwight, Illinois. This test was planted May 15 on well prepared but dry soil. Germination was slow and irregular, but the test was saved by a timely rain. Moisture was inadequate in the spring but summer rains permitted good recovery and heavy vegetative growth. A rain and wind storm caused considerable lodging. Yields were good and seed quality excellent compared to more southern locations in the state.

Urbana, Illinois. Subsoil moisture was low at the start of the season and remained that way throughout the season. Moisture was adequate in the surface layer, and the nursery, planted May 21, emerged to a good stand. The heat and drouth occurred earlier in the 1954 season than in 1953, retarding vegetative growth to the point where the rows spaced 40" apart never filled in. Timely but not adequate rains at filling time resulted in fair yields, but seed quality was poor with a high amount of green heat-damaged seed.

Eldorado, Illinois. Soil moisture was adequate at planting time, May 13, and growth was fair throughout the season, resulting in bean yields only 5 bushels lower than the average of the last few years. The most severe drouth area during 1954 was in the south-central part of the state, between Urbana and Eldorado. The low humidity in this general area reduced the bacterial leaf spot diseases in the breeding nurseries to negligible amounts, and prevented the establishment of effective blight or pustule epiphytotics at either location.

Morris, Minnesota. The Group 0 trial was planted in a good seedbed of Barnes silt loam on May 26. Fertility was good, growth normal, and yields higher than average. Rainfall was somewhat deficient in midsummer. Frost occurred on September 22 after virtually all the adapted strains were mature. Weeds were well controlled.

St. Paul, Minnesota. The Group 0 and Group I trials were planted on May 20 in a good seedbed. Good emergence and good stands resulted in exceptionally rapid, early growth under almost ideal growing conditions. The tests were planted on Waukegan silt loam formed on glacial outwash, with good to excessive underdrainage. The fertility was high from copious applications of barnyeard manure and use of good crop sequence. No commercial fertilizer was used in the rotation. Moisture was adequate during virtually all of the season with slight drouth in mid-August. This was followed by abundant rain in late August and early September. Plant growth was heavy in rows spaced 24" apart which resulted in excessive lodging but higher than average yields. Weeds were well controlled. Difficult harvesting conditions resulted because of persistent rains and wet weather in late September and early October. The first killing frost occurred on October 7. There was some deterioration in seed quality of the early varieties.

Waseca, Minnesota. Group I and Group II trials were planted on May 19 in a good seedbed on LeSueur silty clay loam, high in fertility and moisture-holding capacity. Corn yields of 90 to 100 bushels have been common at this station in recent favorable years. In 1954 a 40-acre seed field of Chippewa soybeans averaged 40 bushels per acre in rows spaced 42 inches apart. Stands were good in the nurseries and growth normal throughout the summer with weeds under control. Yields were high and quality good despite long delay in harvesting due to wet, rainy weather. The majority of the Group II strains were frosted on September 22. Group I material was virtually all mature at that date. Group II maturity was definitely marginal at Waseca. This group was grown primarily for observation and to obtain data on late varieties that tend to be promoted by seedsmen in the southern part of Minnesota. Some of these, such as Harosoy, may have limited adaptation in the southern two tiers of counties.

Cresco, Iowa. This nursery is located in northeast Iowa on Carrington Plastic Till Phase soil, which is tight, cold, wet, slowly drained, and low in fertility. The nursery was planted on May 19 on corn land. Stands were fair to good and weeds were controlled. During the growing season, normal or above normal temperatures prevailed, except in May. The precipitation averaged higher than normal each month, except July. The precipitation for May through September was nearly 5.0 inches above normal. Growth, yields, and lodging were greater than normal for this location. A light frost occurred late in September and a killing frost occurred later than normal. Harvesting was completed under good conditions. This nursery was considered reasonably good for making strain comparisons.

Kanawha, Iowa. This nursery is located in north-central Iowa on level, fertile Webster silty clay loam, on which corn had been grown previously. Planting was completed on May 20. Stands were generally good to excellent and plots were kept weed-free. During the growing season temperatures averaged normal or above, except for May. Precipitation was never seriously deficient in any month and averaged nearly 11 inches in excess of normal. However, most of the excess was in June. These conditions permitted reasonably good growth and yields. Some bacterial blight and pustule occurred irregularly in the nursery in July. Although a light frost occurred late in September, a killing frost did not occur until after maturity.

Harvesting was completed under good conditions. This nursery was considered good for making strain comparisons.

Marcus, Iowa. This nursery represents the northwest section of Iowa with Galva silt loam soil, medium high in fertility and generally slightly undulating in topography. The nursery was planted May 21 on corn land. Stands were excellent and plots were kept weed-free. Temperatures were near normal or slightly above except for May, and precipitation was never seriously deficient in any month. Growth was excellent and lodging reasonably severe. Although a light frost occurred late in September, a killing frost occurred considerably later than normal, thus favoring late maturing strains. Yields at this location were highest in the state for the second consecutive year. Harvesting was completed under satisfactory conditions. This nursery was considered excellent for making strain comparisons.

Independence, Iowa. This nursery is located in northeast central Iowa on well drained Carrington silt loam, medium in fertility. Planting was completed on May 13. Stands were excellent and plots were kept weed-free. Temperatures averaged above normal, except for May and August. Precipitation was above normal for all months except July and September with an average of one inch above normal for May through September. Growth, yield, and general response were considered good for this location. Frost occurred later than normal. This nursery was considered good for making strain comparisons.

Ames, Iowa. This nursery is centrally located on level, reasonably fertile Webster silty clay loam. Planting was completed on May 11 with subsequent stands excellent. Temperatures were normal or above, except for May. Precipitation was above normal every month except July. Average precipitation for May through September was over 10 inches above normal with the greatest excess of 11 inches in August. Growth, yield, and general response were good. Frost occurred after the normal date. Adams did not yield as expected. Strain comparisons are believed to be good to very good.

Ottumwa, Iowa. This nursery was in southeastern Iowa on flat, very fertile Haig silt loam. The nursery was planted May 14, the earliest this nursery was ever planted. Stands were excellent and weeds were controlled. Temperatures averaged near or above normal every month, except May. Precipitation was below normal every month, except August. Average deficit for May through September was three inches. In spite of the precipitation deficit, growth, yield, and response were good to very good, although depressed a little. Adams did not yield as expected. Frost occurred much later than normal. Strain comparisons are believed to be good to very good.

Norborne, Missouri. The Norborne tests were planted May 19 in a good seedbed and emerged to satisfactory stands. The field was clean of weeds the end of July, but August rains brought up a heavy crop of morning glories. By early September many rows were bent over by the growth of vines. As a consequence, maturity, height, and lodging notes are not very dependable and yields were probably affected similarly.

The weather pattern was similar to that at Laddonia. Leaf diseases were unimportant, but the last three replications of Group IV were prematurely killed by what appeared to be stem canker. Major soil nutrients were adequate.

Laddonia, Missouri. The Laddonia tests were planted June 10 in a moist, well prepared seedbed, and stands were excellent. High temperatures throughout the growing season combined with subnormal rainfall seriously reduced growth and yields. June temperatures averaged 4°, July 9°, August 3°, and September 5° above normal. June rainfall was 1.5 inches below normal, July 3 inches below, August 2 inches above, and September 3.5 inches below. Yields were much lower than in 1953, and there was practically no lodging. In general, earlier strains yielded better than late ones. Stem canker and brown stem rot were both serious again and contributed to variability as well as lowering of the average yields. Major soil nutrients were above recommended level.

Columbia, Missouri. The Columbia tests were planted May 30 in a good seedbed and stands were excellent. The weather pattern was similar to that at Laddonia but somewhat more severe. Temperatures up to 116° were recorded in July, and from July 16 to August 1 there was no effective rainfall. Growth was very short and yields were very low. Grasshoppers did some damage to Group III, and garden webworms damaged Group IV to some extent. After the August 1 rain, the C985 strains remained green and duddy, with seed quality low, and purple spot prevalent. Many of the other Group IV strains were prematurely killed by stem canker. Five hundred pounds of 0-20-10 had been applied in early spring and levels of P and K were ample even before that. The field has a lime requirement of 1500 pounds, but the extremely poor growth and yield are hard to explain.

Wabash produced 37 bushels on this field in 1952 and only 6.7 in 1954, while on an adjacent field planted the same day, Wabash yielded 15.6 bushels. The disparity is even greater for C985--8.2 and 24.5 bushels with no dudding. Perhaps there is some nutrient imbalance.

Casselton and Fargo, North Dakota. May and early June temperatures were below normal with considerable cloudy weather. Rainfall was distinctly below normal for these two months. Soybeans planted in late May and early June made very slow progress for the first six weeks. Temperatures during July and August were slightly above normal allowing the crop to develop more favorably, although precipitation during this period continued below normal. Fair rains and moderate temperatures in early September were favorable.

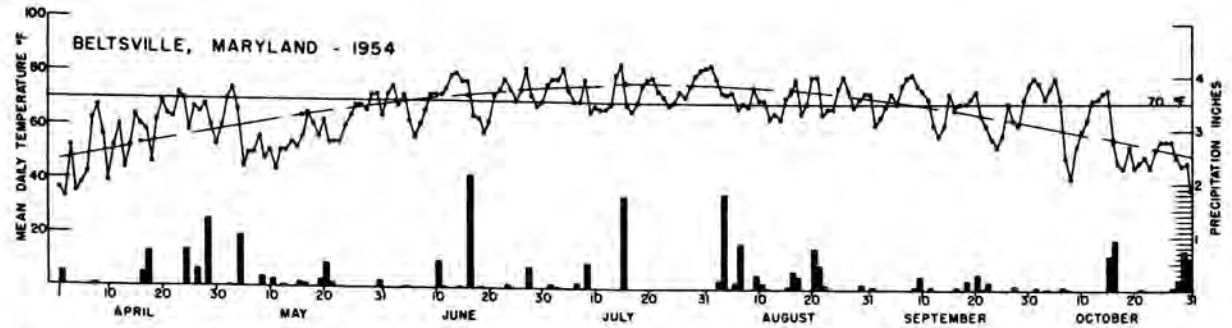
The first fall frost--fairly light (31°)--occurred on the morning of September 22. This destroyed most of the leaves of such later maturing varieties as Capital, Renville, and L6-8275, though earlier varieties were about ripe at that date. In the larger field plots at Fargo, the crop was not so far advanced as in the nurseries, and there such varieties as W6S-292 and Mandarin (Ottawa) also were not yet mature. Moderate temperature and good drying weather occurred during the latter part of September, allowing the crop to "mature" out. The first killing frost occurred on October 6. No important diseases were apparent in the nurseries at either Fargo or Casselton.

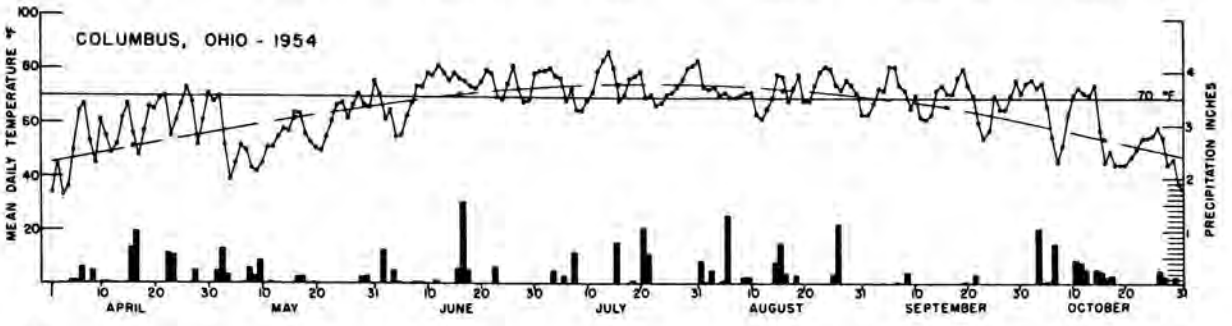
Lincoln, Nebraska. Stands were excellent and growth proceeded normally throughout the very dry period of June and July because of two light irrigations applied to alternate rows July 13 and July 23. Rain during August resulted in excellent yields and differential lodging. The Group II Test planted June 19 lodged very severely. Failure of stems to dry normally interfered with threshing.

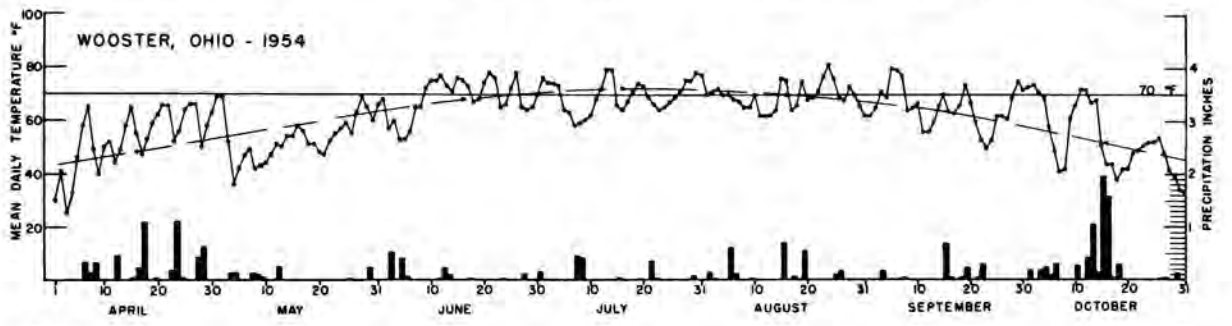
Bud blight was evident in the nursery in the latter part of June and throughout the remainder of the season. It probably reduced yield by at least 5%. Traces of

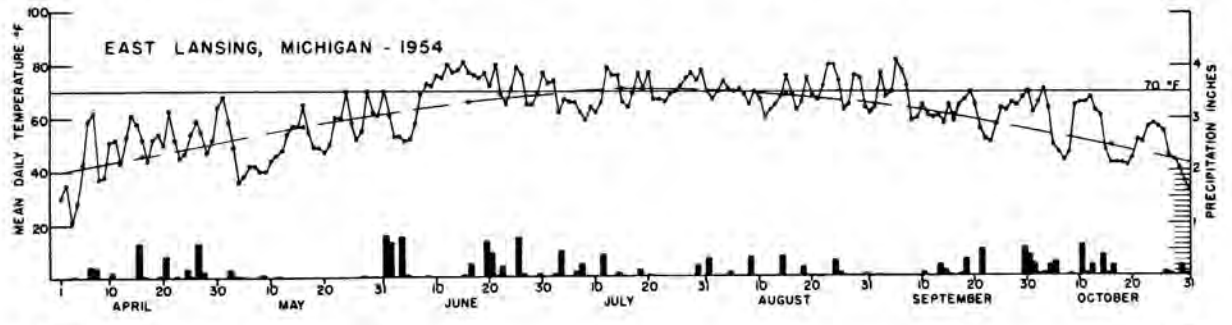
bacterial blight and bacterial pustule occurred. Numerous insects were present but damage, in general, was minor. The green clover worm was apparently the most damaging of the insects.

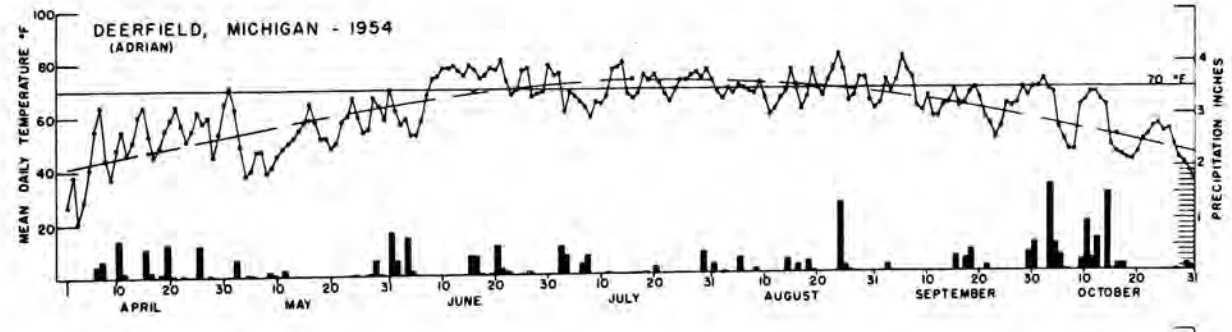
Manhattan, Kansas. The early part of the summer was extremely unfavorable for soybeans. High temperature and low rainfall during July were probably responsible for the relatively low yields. The Uniform Nursery was planted June 7 following 5.32 inches of rain the last four days of May and first two days of June. The month of June was hot, having three days with temperatures above 100 degrees and 10 days with temperatures above 95 degrees. Precipitation for the month of June was 5.23 inches all of which fell during the first 16 days. The mean maximum temperature for July was 99.3° with 16 days above 100°. Four extremely hot periods occurred during the month with temperature ranges as follows: July 3 through 7, 100 to 107°; July 12 through 15, 110 to 114°; July 18 through 21, 107 to 110°; and July 29 through 31, 100 to 102°. Only two effective rains of .57 and .72 inches fell during July. August had above average rainfall, 2.5 inches falling the first two days of the month. Scattered showers fell throughout the month bringing the total precipitation for August to 4.91 inches. The average maximum temperature for August was 92.1 degrees. September was hot with an average monthly maximum temperature of 89.8 degrees. Only one rain fell in September and that measured 1.18 inches on September 9.

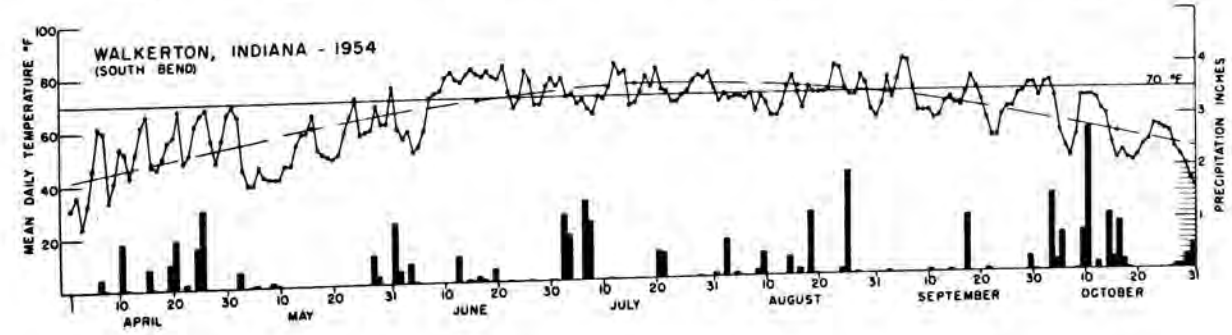

BELTSVILLE, MARYLAND - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

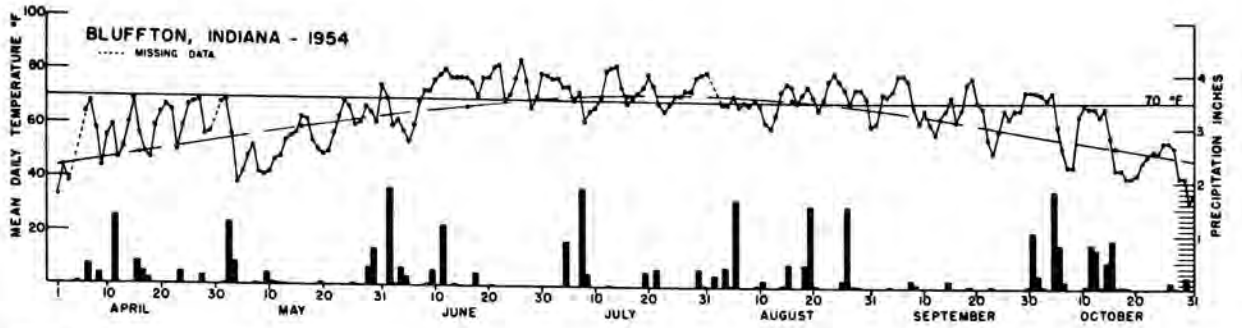

COLUMBUS, OHIO - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

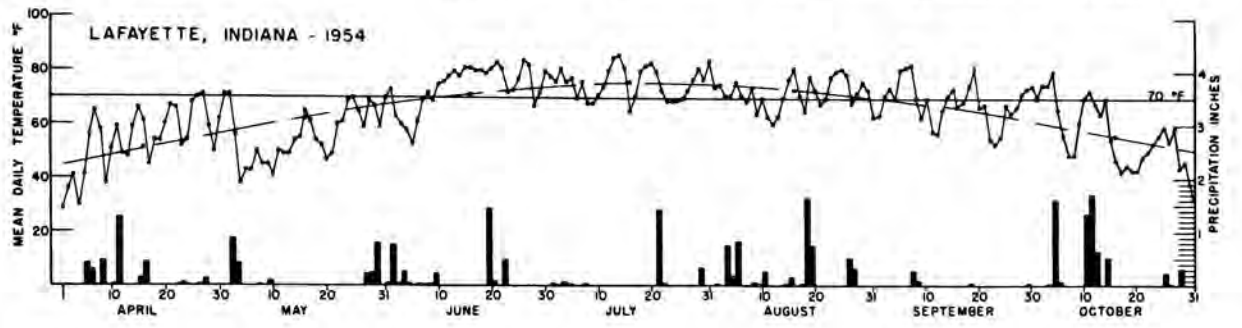

WOOSTER, OHIO - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

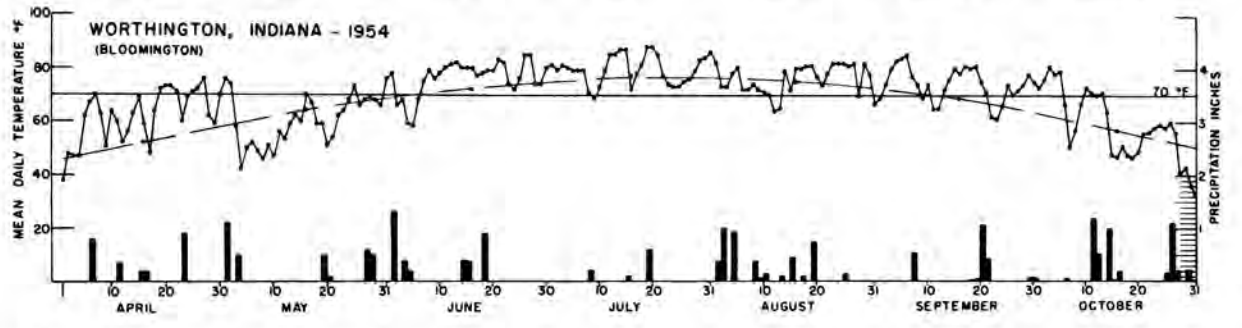

EAST LANSING, MICHIGAN - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

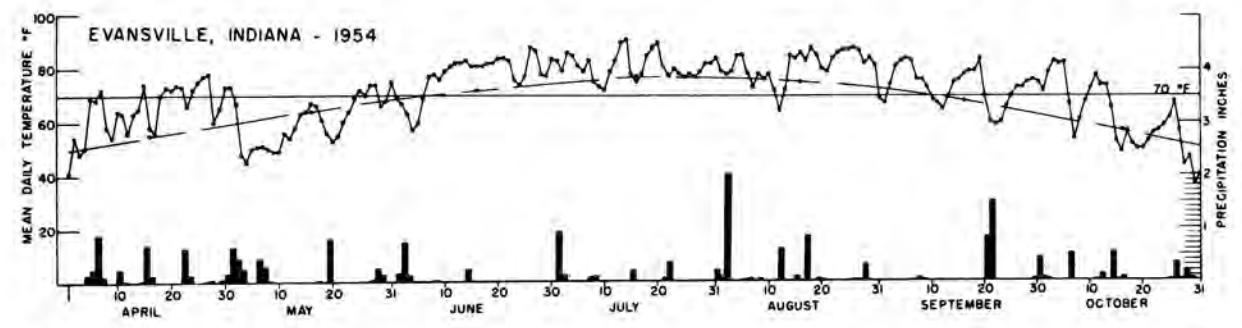

DEERFIELD, MICHIGAN - 1954
(ADRIAN)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

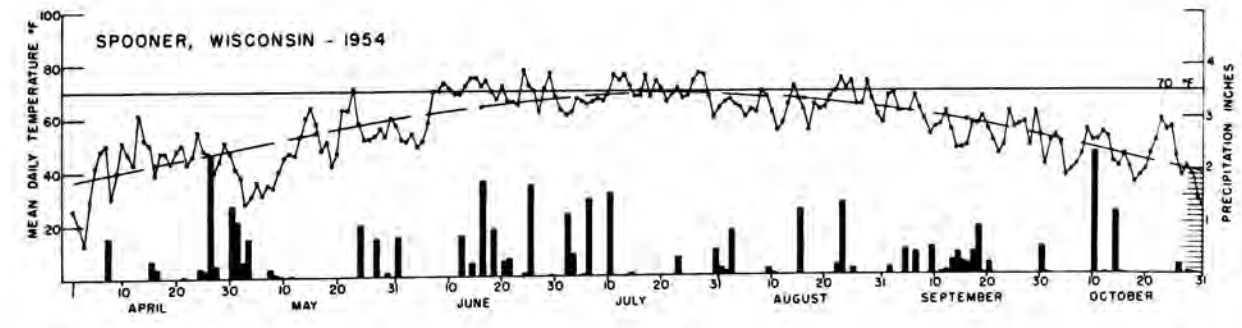

WALKERTON, INDIANA - 1954
(SOUTH BEND)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

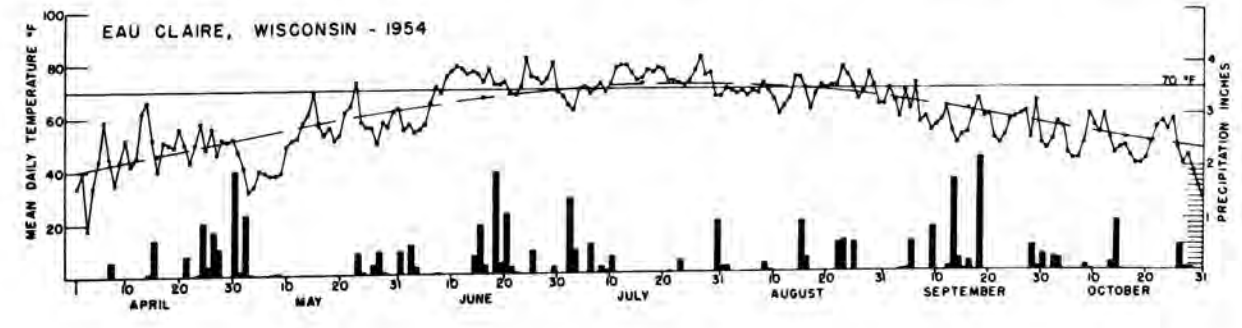

BLUFFTON, INDIANA - 1954
..... MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

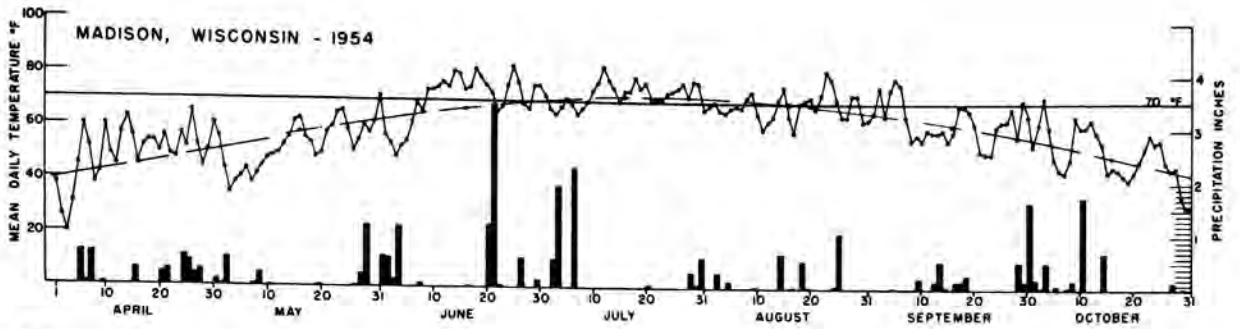

LAFAYETTE, INDIANA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

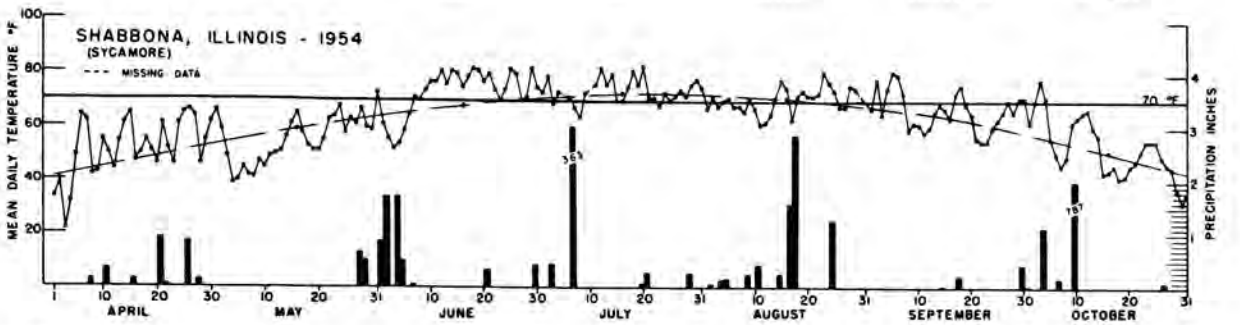

WORTHINGTON, INDIANA - 1954
(BLOOMINGTON)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

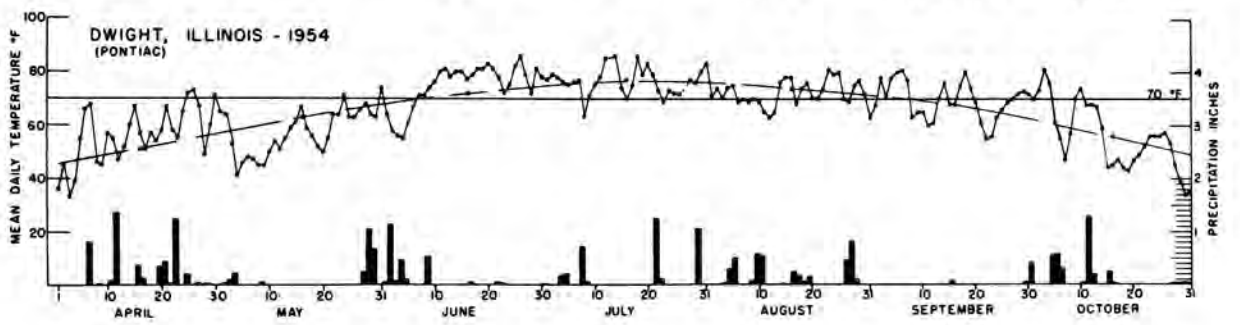

EVANSVILLE, INDIANA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

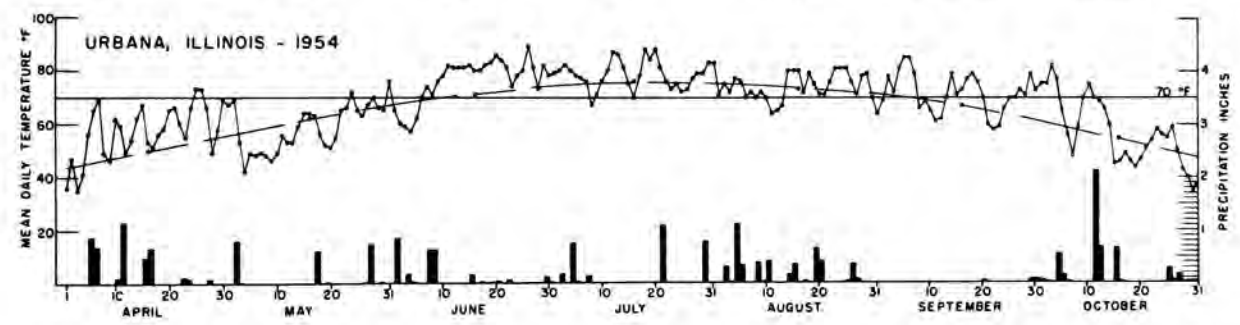

SPOONER, WISCONSIN - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

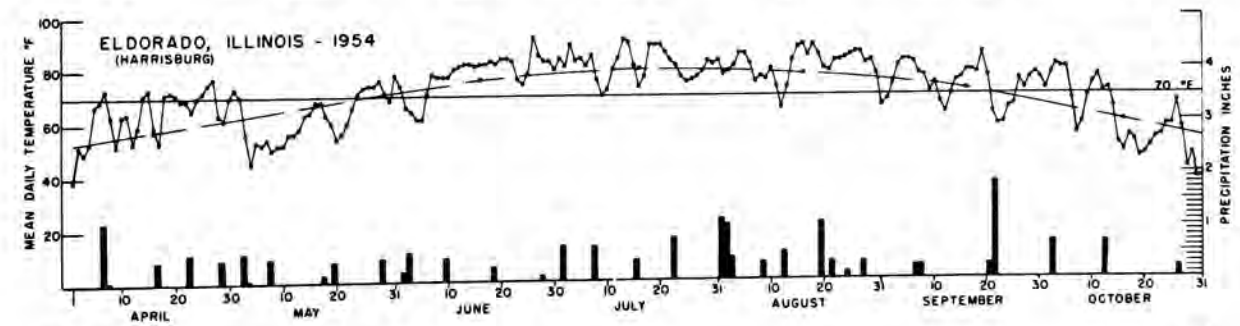

EAU CLAIRE, WISCONSIN - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

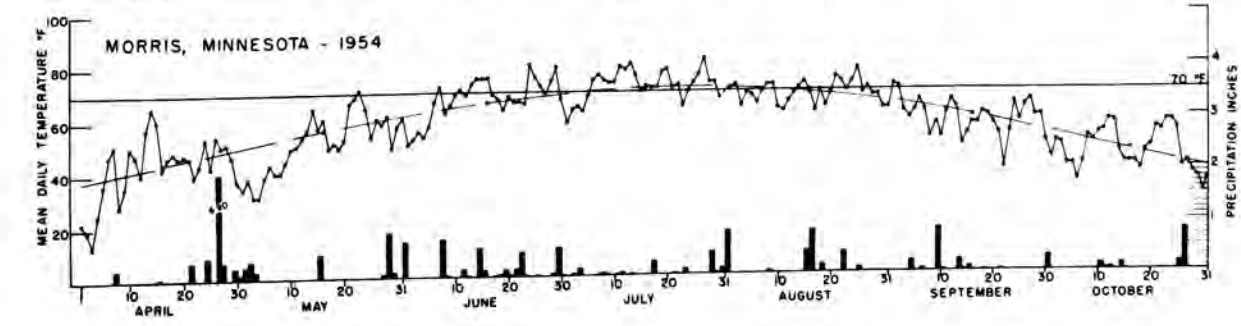

MADISON, WISCONSIN - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

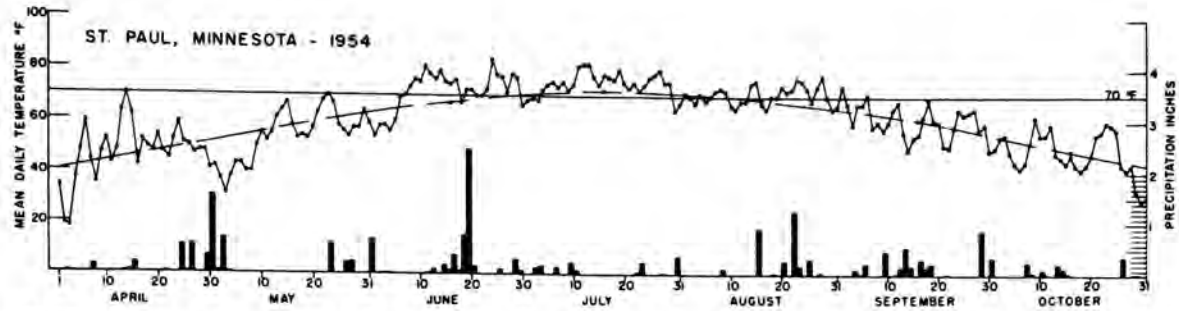

SHABBONA, ILLINOIS - 1954
(SYCAMORE)
--- MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

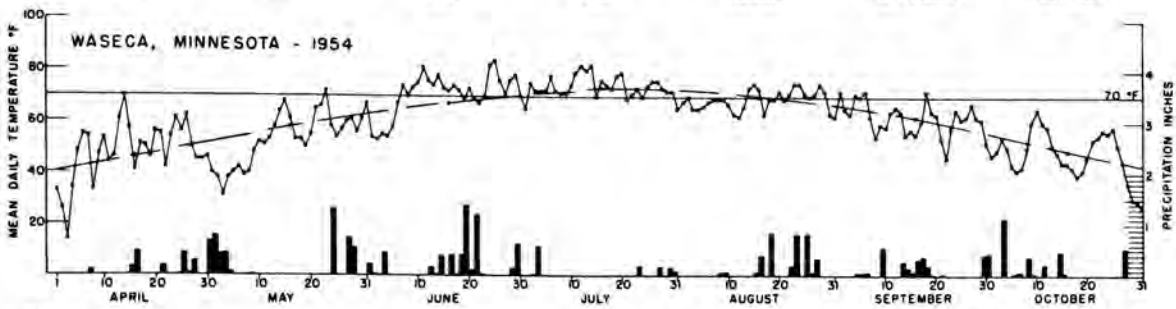

DWIGHT, ILLINOIS - 1954
(PONTIAC)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

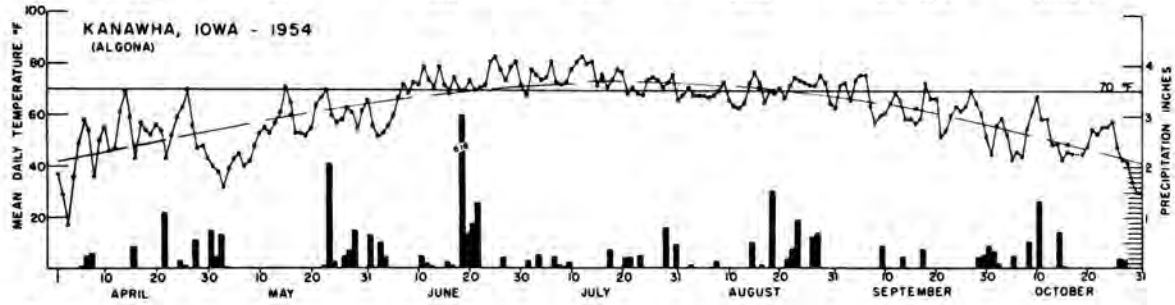

URBANA, ILLINOIS - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

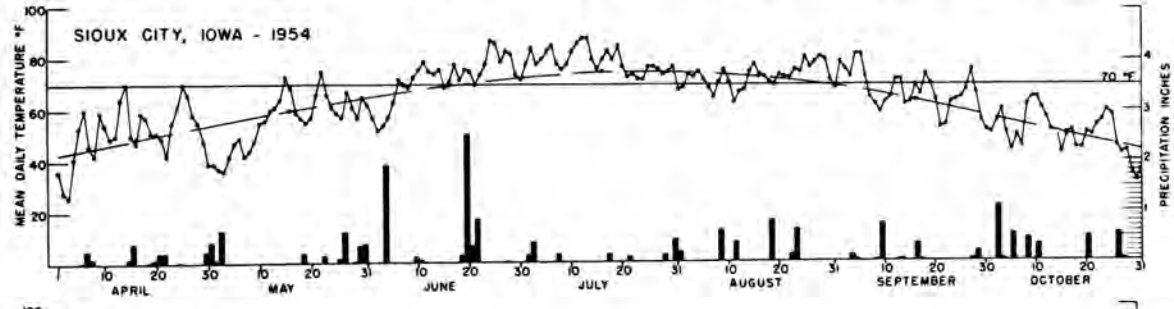

ELDORADO, ILLINOIS - 1954
(HARRISBURG)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

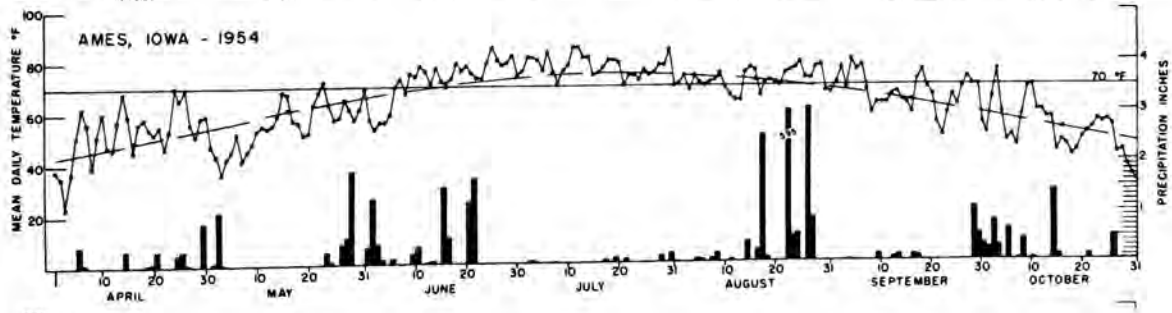

MORRIS, MINNESOTA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

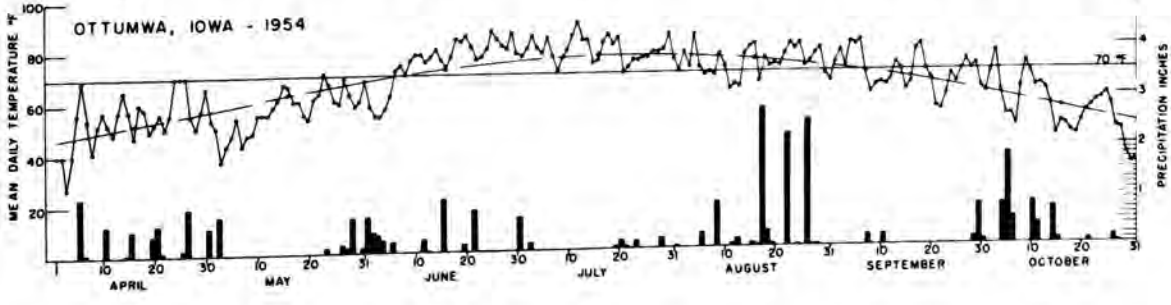

ST. PAUL, MINNESOTA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

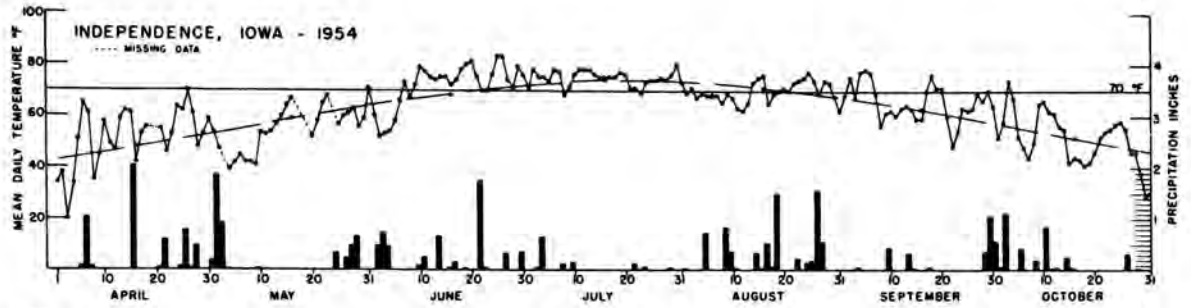

WASECA, MINNESOTA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

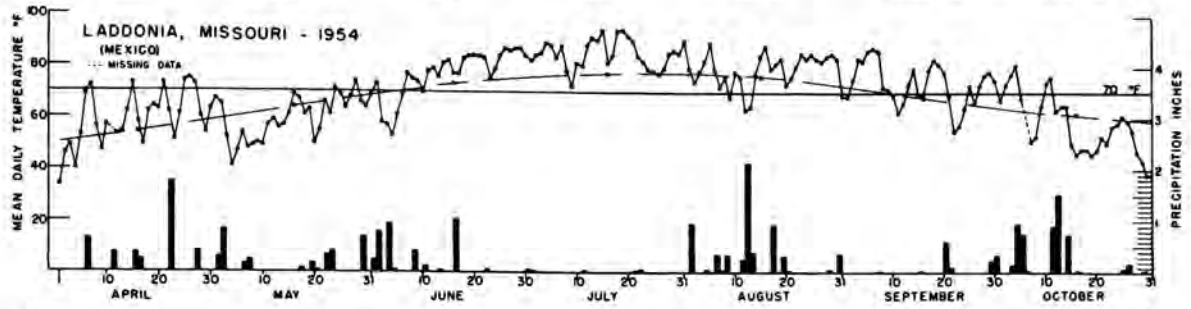

KANAWHA, IOWA - 1954
(ALGONA)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

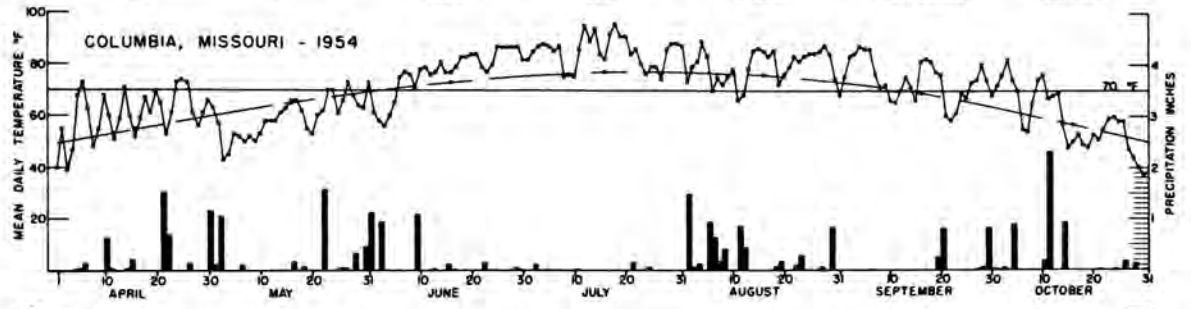

SIOUX CITY, IOWA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

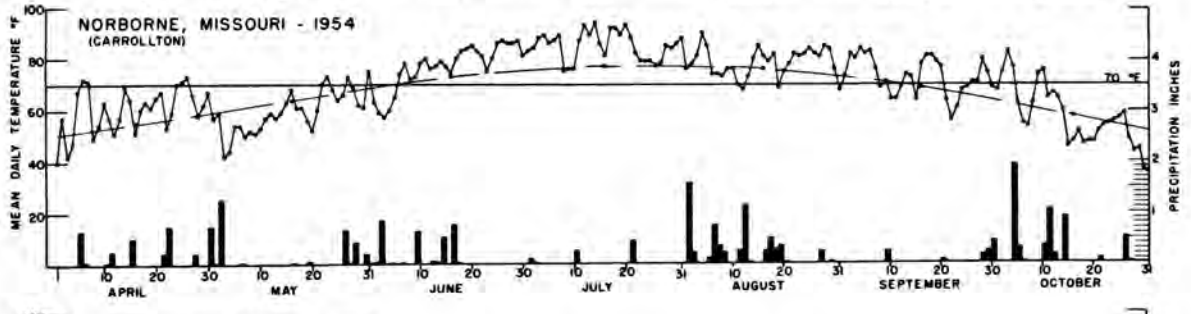

AMES, IOWA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

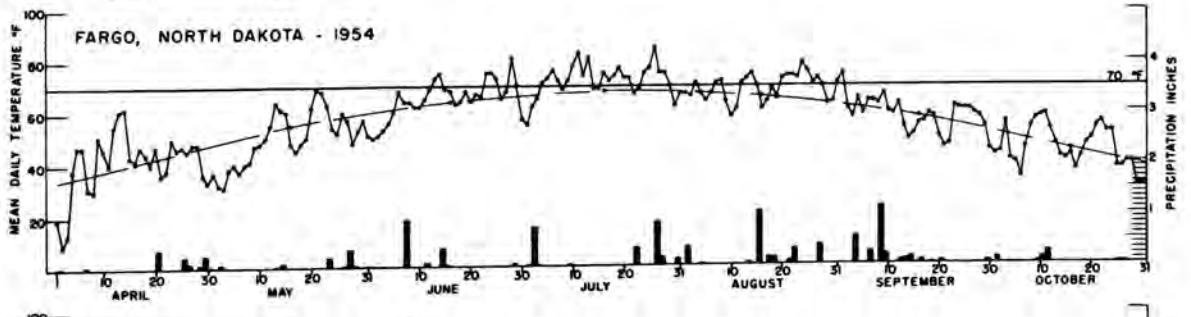

OTTUMWA, IOWA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

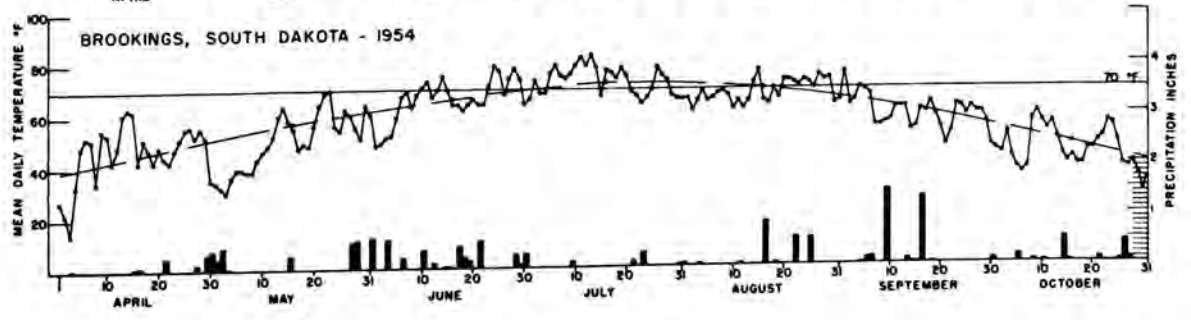

INDEPENDENCE, IOWA - 1954
---- MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

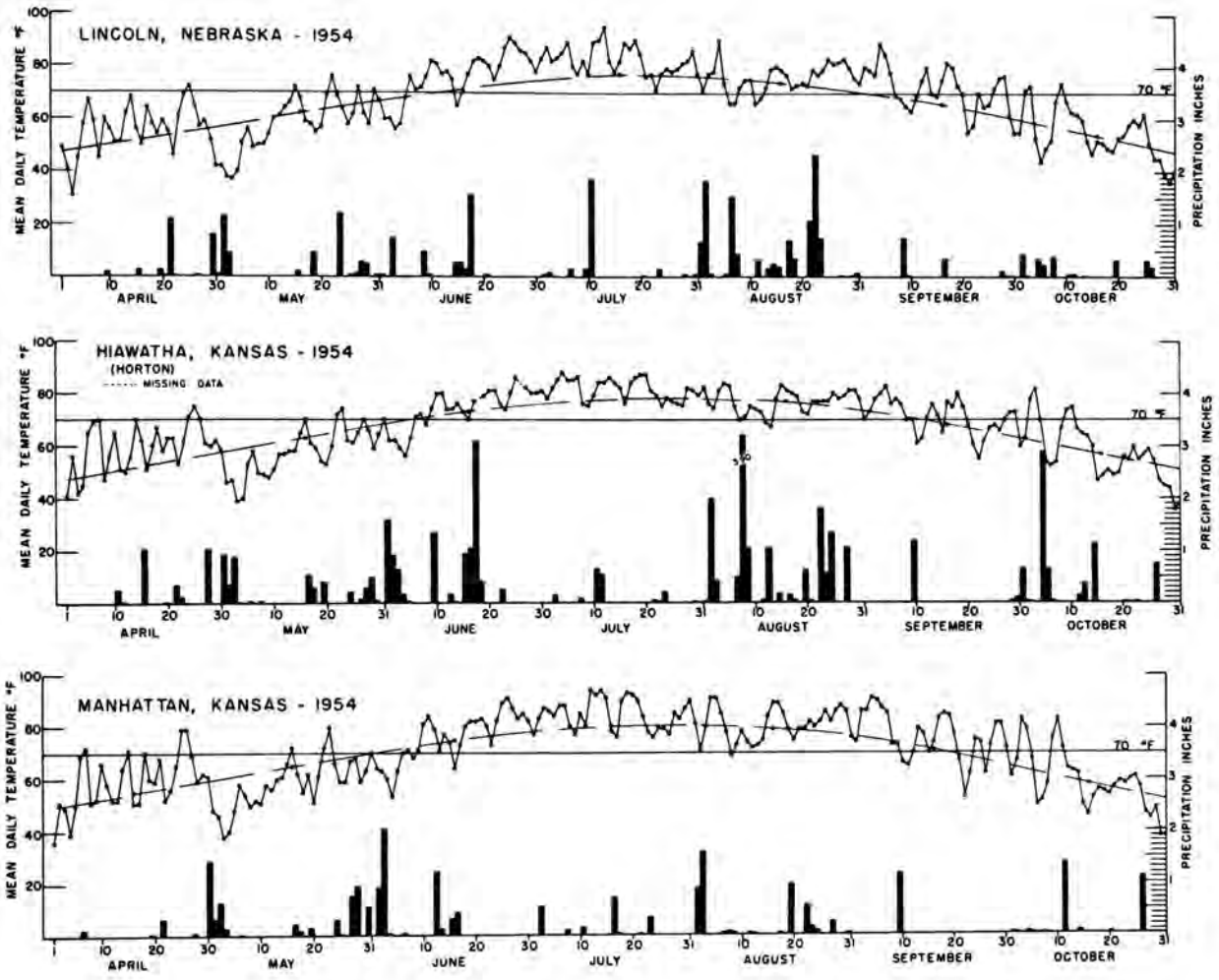

LADDONIA, MISSOURI - 1954
(MEXICO)
--- MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


COLUMBIA, MISSOURI - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


NORBORNE, MISSOURI - 1954
(CARROLLTON)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


FARGO, NORTH DAKOTA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


BROOKINGS, SOUTH DAKOTA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


LINCOLN, NEBRASKA - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
HIAWATHA, KANSAS - 1954
(HORTON)
----- MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
MANHATTAN, KANSAS - 1954
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER