U. S. REGIONAL SOYBEAN LABORATORY
URBANA, ILLINOIS

RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS, 1949 PART I. NORTH CENTRAL STATES

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

FEBRUARY, 1950
RSLM 153

RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS

PART I. NORTH CENTRAL STATES[1]

****
1949
****

Compiled by

Staff of the U. S. Regional Soybean Laboratory

CONTENTS

Introduction..... 2
Cooperation..... 3
Location of Tests..... 4
Methods..... 5
Uniform Test, Group 0..... 8
Preliminary Test, Group 0..... 17
Uniform Test, Group I..... 22
Preliminary Test, Group I..... 34
Uniform Test, Group II..... 41
Uniform Test, Group III..... 60
Uniform Test, Group IV..... 73
Preliminary Test, Group IV..... 88
Effect of Location on Composition..... 92
Disease Investigations[2]..... 95
Weather Summary..... 97

---

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 For this reason citation to particular statements in the Report should not be published unless permission has been granted previously by the Laboratory or the state station concerned.

[2]The results of the program of cooperative soybean disease research, conducted by the Division of Forage Crops and Diseases, is included in this report, since the two programs are closely integrated.

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 the twelve Agricultural Experiment Stations of the Southeastern Region.

The research program of the Laboratory has been directed toward the breeding of improved varieties and strains of soybeans for industrial use and the obtaining of fundamental information necessary to the efficient development of new strains. Several superior strains have been released as a result of the cooperative breeding and selection work, among them being Lincoln, Hawkeye, Monroe, Adams, and Wabash. The most promising selections tested during 1949 have been from a backcross (Lincoln x (Lincoln x Richland)). Selections from this parentage have yielded highest in the Uniform Tests, Groups 0, I, II, and III and in Preliminary Test, Group I.

Nine uniform test groups have been established to measure the yield and range of adaptation of the better strains that are being developed through the breeding program, the first five of which include strains of proper maturity for the North Central states. The other four groups contain strains adapted to the southern part of the United States, and a summary of performance of these will be found in Part II of this report, which is published separately.

Uniform Test, Group 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 10 to 15 days. Maturity of the strains is expressed as so many days earlier or later than some well-known check or reference variety in the group.

Temperature and rainfall graphs and brief statements of weather conditions at many of the 1949 nursery locations are presented to aid in interpreting the performance of strains under climatic conditions occurring in each locality.

COOPERATING AGENCIES AND PERSONNEL
FOR THE
NORTH CENTRAL REGION

Bureau of Plant Industry, Soils, and Agricultural Engineering:
Division of Forage Crops & Diseases: W. J. Morse, M. G. Weiss, J. L. Cartter, D. W. Chamberlain, F. I. Collins, C. V. Feaster, David Heusinkveld, O. A. Krober, D. F. McAlister, A. H. Probst, L. C. Saboe, C. R. Weber, and L. F. Williams.

Illinois Agricultural Experiment Station
Agronomy Department: W. L. Burlison and C. M. Woodworth

Iowa Agricultural Experiment Station
Farm Crops Department: I. J. Johnson

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

Michigan Agricultural Experiment Station
Agronomy Department: H. R. Pettigrove

Minnesota Agricultural Experiment Station
Agronomy Department: J. W. Lambert

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

Nebraska Agricultural Experiment Station
Agronomy Department, F. D. Keim, D. G. Hanway

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

Ohio Agricultural Experiment Station
Agronomy Department: J. L. Haynes, L. E. Thatcher

Purdue Agricultural Experiment Station
Agronomy Department: G. H. Cutler, H. H. Kramer

South Dakota Agricultural Experiment Station
Agronomy Department: M. W. Adams

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

LOCATION OF COOPERATIVE NURSERIES

Location	Cooperator	Uniform Group Tests					Prel. Tests		
		0	I	II	III	IV	0	I	IV
Ottawa, Ontario	Central Exp. Farm	x					x		
Guelph, Ontario	Ontario Agr. College	x	x						
State College, Pa.	Pa. Agr. Exp. Sta.		x	x					
Newark, Del.	Del. Agr. Exp. Sta.			x	x				
Beltsville, Md.	Forage Crops & Diseases, U.S.D.A.				x	x			x
Cortland, Ohio	Trumbull Co. Exp. Farm	x							
Holgate, Ohio	N.W. Br., Ohio Agr. Exp. Sta.		x	x					
Troy, Ohio	Miami Co. Exp. Farm		x						
Columbus, Ohio	Ohio State University	x	x	x	x			x	
Germantown, Ohio	Southwestern Exp. Farm			x					
Walkerton, Ind.	Elburt Place		x	x					
Bluffton, Ind.	Gerald and Homer Bayless			x					
Lafayette, Ind.	Purdue Agr. Exp. Sta.			x	x				
Greenfield, Ind.	Benjamin Roney			x	x				
Worthington, Ind.	Frederic Sloan			x	x	x			
Evansville, Ind.	Bernard Wagner					x			x
Spooner, Wis.	Spooner Br., Wis. A. E. S.	x					x		
Eau Claire, Wis.	Eau Claire County Farm	x	x				x	x	
Madison, Wis.	Wis. Agr. Exp. Sta.		x	x				x	
Compton, Ill.	Clarence Ackland		x	x				x	
Dwight, Ill.	Frank Roeder			x	x				
Urbana, Ill.	Ill. Agr. Exp. Sta.			x	x	x			
Clayton, Ill.	Russell S. Davis				x	x			
Stonington, Ill.	Frank Garwood & Sons				x	x			
Edgewood, Ill.	John Wilson				x	x			
Freeburg, Ill.	Loren Wilderman				x	x			x
Eldorado, Ill.	Cyril Wagner				x	x			x
Morris, Minn.	Branch, Minn. Agr. Exp. Sta.	x					x		
St. Paul, Minn.	Minn. Agr. Exp. Sta.	x	x				x		
Waseca, Minn.	S.E. Br., Minn. Agr. Exp. Sta.		x					x	
Cresco, Iowa	Howard Co. Agr. Exp. Assn.		x						
Kanawha, Iowa	N. Iowa Agr. Exp. Assn.		x	x				x	
Marcus, Iowa	John Sand			x					
Hudson, Iowa	Strayer Seed Farms			x					
Ames, Iowa	Iowa Agr. Exp. Sta.			x	x				
Ottumwa, Iowa	A. E. Newquist				x				
Norborne, Mo.	Marvin Moentmann				x	x			
Laddonia, Mo.	Carver Brown				x	x			
Elsberry, Mo.	Mo. Agr. Exp. Sta.				x	x			
Columbia, Mo.	Mo. Agr. Exp. Sta.				x	x			x
Park River, N.D.	Walsh Co. Agr. & Training School	x							
Fargo, N.D.	N.D. Agr. Exp. Sta.	x					x		
Rosholt, S.D.	Irvin Voss	x					x		
Brookings, S.D.	S.D. Agr. Exp. Sta.		x						
Centerville, S.D.	Albert Paulson			x					
Wakefield, Nebr.	Lawrence Carlson			x					
Lincoln, Nebr.	Nebr. Agr. Exp. Sta.			x	x				
Manhattan, Kans.	Kans. Agr. Exp. Sta.				x	x			x
Thayer, Kans.	S.E. Kans. Exp. Fields					x			
Prosser, Wash.	Irrigation Exp. Sta.	x							
Moses Lake, Wash.	Irrigation Exp. Sta.	x							
Corvallis, Ore.	Ore. Agr. Exp. Sta.	x					x		
Hermiston, Ore.	Umatilla Br., Exp. Sta.	x							

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

METHODS

All Uniform Tests are planted in replicated rod-row plots, using either a lattice or a randomized block design with four replications. Row widths used at the different test locations vary from 21 to 42 inches, depending upon the width in common use or the equipment available for handling the crop. Usually 18-20 feet of row is planted and only 16 or 16-1/2 feet harvested. Seed has been planted on the basis of 175 viable seeds per row.

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

Chemical composition is determined for each strain at each location in Group 0, Group I, the Preliminary Groups, and for some locations in Groups II, III, and IV. Chemical composition is determined for the remaining locations in Groups II, III, and IV on composite samples prepared by combining equal weights of seed from each location. The location composites are prepared by combining equal weights of seed of each of the strains in a Group Test at an individual location. Percentage composition of the seed is expressed on a dry basis (moisture free). Seed weights for each strain is determined on the variety composite or by individual locations, and is recorded as weight (in grams) per 100 seeds.

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

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

Height is determined as the average length of plants from the ground to the top extremity at time of maturity.

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

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

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

The factors considered in estimating seed quality are: Development of seed; wrinkling; damage; and color for the variety.

Calculating Means. In most cases where the lodging and seed quality notes are 1, indicating no difference between strains at a location, 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	Fl	Florida
K	Kansas	Ga	Georgia
E	Michigan	La	Louisiana
M	Minnesota	D	Mississippi
S	Missouri	N	North Carolina
U	Nebraska	Ok	Oklahoma
F	North Dakota	SC	South Carolina
H	Ohio	UT	Tennessee
B	South Dakota	TS	Texas
W	Wisconsin	V	Virginia

It is suggested that states cooperating in these Uniform Tests use a letter or letters to identify 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)
Flambeau	Wis. Agr. Exp. Sta.	Sel. from Intr. from Russia
Mandarin(Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Montreal Manchu	T. B. MacCauley, Montreal	Sel. from Manchu
Pridesoy	Twin City Seed Co., Minneapolis	Unknown
Pridesoy 57	Twin City Seed Co., Minneapolis	Sel. from Pridesoy
M8	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M9	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
O-255	Central Exp. Farm, Ottawa	Sel. from strain 171 x A.K.(Harrow)
W5-2260	Wis. A.E.S. & U.S.R.S.L.	Sel. from Ontario x Richland
W6S-326	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Pagoda
W6S-339	Wis. A.E.S. & U.S.R.S.L.	Sel. from Cayuga x Kabott
W6S-341	Wis. A.E.S. & U.S.R.S.L.	Sel. from Cayuga x Kabott

Group O was planted at sixteen locations in 1949. Data from fifteen of these are reported in tables 1-4. In 1948, data were reported from only eight locations, so this represents a big increase in number of locations. The locations from which Group O has not previously been reported are Guelph, Ontario; Cortland, Ohio; Prosser and Moses Lake, Washington; and Hermiston, Oregon. Prosser and Moses Lake are irrigated stations in a semi-arid area. They also had a heavy nitrogen application. Yields were good at most locations, but at Park River, N. D., and Rosholt, S. D., they were rather low. The exceptionally high yields at Columbus, Ohio, are rather surprising since Columbus is quite a bit south of the Group O area. As is usually the case, there is considerably more variety x location interaction in yield and maturity in Group O than in later groups. This is evident in tables 2 and 3 which give the yield rank and maturity data.

There are nine new entries in Group O in addition to the varieties Capital, Flambeau, Mandarin (Ottawa), and Montreal Manchu. Of the new entries all but W6S-339 were grown in Preliminary Group O in 1948. Most of the strains are closer in maturity to Mandarin than to Flambeau and only W6S-339 and W6S-341 are in the early end of the range. There is a definite tendency for these earlier strains to be lower in yield. When maturity is considered, W6S-339, Flambeau, Pridesoy 57, O-255, M8, and Capital are the higher yielding strains. It is interesting to note that all three of the strains with highest oil contents have Lincoln as one parent. Pridesoy 57 is evidently superior to Pridesoy in yield and oil content but neither of these is high enough in oil content to be satisfactory. Most of the new selections of Mandarin maturity are taller than Mandarin and are more erect than Montreal Manchu and Capital.

Four varieties have been tested in Group O for four years or more. Capital (Tables 5 and 6) has had a higher average yield and a higher oil content than the other three varieties but the three later varieties have all been very similar in yield. Flambeau has yielded very well considering that it is ten days earlier than the other strains.

Table 1. Summary of agronomic and chemical data for the strains in the Uniform Test, Group O, 1949.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	15	10	10	12	10	15	15	15	15
M8	29.5	- 0.3	1.5	31	1.5	15.3	38.8	21.3	131.7
Capital	29.4	+ 1.3	2.7	34	1.7	11.8	39.1	21.1	131.6
O-255	29.3	- 0.4	1.5	31	1.8	12.8	39.2	20.4	131.3
Montreal Manchu	28.6	+ 0.9	2.4	33	1.5	15.7	40.7	20.0	131.5
W5-2260	28.4	+ 0.3	1.9	29	1.9	16.8	38.3	20.6	128.2
Mandarin(Ottawa)	28.4	0	1.2	28	1.7	17.0	41.0	20.3	128.4
Pridesoy 57	28.2	- 2.9	1.3	28	1.7	14.7	41.8	19.7	130.3
M9	28.0	+ 0.9	1.6	31	2.3	16.6	39.6	21.7	131.1
W6S-326	27.4	+ 0.8	1.7	32	1.4	15.9	39.2	21.6	131.1
Pridesoy	26.8	- 2.2	1.9	28	1.7	12.7	42.7	18.9	132.8
Flambeau	24.8	- 8.9	2.2	29	2.1	15.3	40.6	20.1	128.8
W6S-339	23.6	-11.9	1.3	28	1.9	15.9	40.3	19.1	127.9
W6S-341	22.6	-12.3	1.4	28	1.9	15.8	40.7	19.6	128.0
Mean	27.3		1.7	30	1.8	15.9	40.1	20.3	130.2

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

Table 2. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group 0, 1949.

Strain	Mean of 15 Tests	Ottawa Ontario	Guelph Ontario	Cortland Ohio	Columbus Ohio	Spooner Wis.	Eau Claire Wis.	Morris Minn.
M8	29.5	20.2	37.4	31.5	39.6	29.0	30.2	22.0
Capital	29.4	23.7	35.4	29.6	35.9	31.0	30.6	25.2
O-255	29.3	23.5	33.4	25.5	37.6	33.5	28.7	24.0
Montreal Manchu	28.6	22.8	33.9	27.7	37.7	29.9	28.6	23.9
W5-2260	28.4	20.9	34.5	27.6	36.9	30.1	27.5	20.6
Mandarin (Ottawa)	28.4	23.2	32.1	29.6	37.3	31.2	27.2	21.5
Pridesoy 57	28.2	21.7	31.6	29.5	35.0	32.5	28.5	23.0
M9	28.0	19.1	38.0	30.9	37.8	29.7	26.5	19.6
W6S-326	27.4	22.0	35.5	31.5	33.3	31.4	26.0	19.6
Pridesoy	26.8	19.3	29.7	26.8	37.6	28.1	28.0	20.8
Flambeau	24.8	22.9	30.8	22.7	27.7	29.6	25.6	21.4
W6S-339	23.2	17.2	30.0	23.8	32.6	32.1	20.9	19.3
W6S-341	22.6	17.9	28.9	21.8	32.1	29.4	20.2	17.0
Mean	27.3	21.1	33.2	27.6	35.5	30.6	26.8	21.4
Coef. of Var. (%)		13.2	7.3	9.9	7.1	9.1	9.7	--
Bu. Nec. for Sig. (5%)		4.0	3.5	3.9	3.6	Not Sig.	3.7	2.9
				Yield Rank				
M8		9	2	1	1	12	2	5
Capital		1	4	4	8	6	1	1
O-255		2	7	10	4	1	3	2
Montreal Manchu		5	6	7	3	8	4	3
W5-2260		8	5	8	7	7	7	9
Mandarin (Ottawa)		3	8	4	6	5	8	6
Pridesoy 57		7	9	6	9	2	5	4
M9		11	1	3	2	9	9	10
W6S-326		6	3	1	10	4	10	10
Pridesoy		10	12	9	4	13	6	8
Flambeau		4	10	12	13	10	11	7
W6S-339		13	11	11	11	3	12	12
W6S-341		12	13	13	12	11	13	13

Table 2. (Continued).

Strain	St. Paul Minn.	Park River N. D.	Fargo N. D.	Rosholt S. D.	Prosser Wash.	Moses Lake Wash.	Corvallis Ore.	Hermiston Ore.
M8	50.7	13.6	27.5	13.3	31.0	41.4	19.6	34.9
Capital	44.7	13.4	31.4	17.6	33.4	34.2	23.4	31.9
O-255	46.9	15.7	32.7	16.3	33.0	36.0	21.5	31.7
Montreal Manchu	47.2	14.7	28.8	14.3	29.3	34.3	24.3	30.9
W5-2260	53.5	13.6	29.4	17.5	31.0	33.5	21.1	28.9
Mandarin (Ottawa)	51.0	12.6	27.8	14.3	29.6	39.7	18.8	29.6
Pridesoy 57	45.4	12.4	28.9	15.9	38.8	34.5	21.6	24.3
M9	50.2	12.0	26.9	13.4	27.9	35.7	21.2	31.6
W6S-326	45.0	12.4	24.2	13.9	27.0	37.0	21.2	30.7
Pridesoy	42.0	12.6	29.3	15.4	31.6	35.1	20.1	25.5
Flambeau	40.4	14.5	25.3	12.8	20.0	27.1	22.1	29.1
W6S-339	39.3	11.8	19.2	12.2	21.1	23.9	20.5	23.6
W6S-341	33.7	13.8	17.1	11.3	27.8	26.4	19.0	22.1
Mean	45.4	13.3	26.8	14.5	29.3	33.8	21.1	28.8
Coef. of Var. (%)	--	--	--	13.9	19.6	16.0	--	--
Bu. Nec. for Sig. (5%)	6.1	--	--	2.9	5.2	5.2	--	5.4
	Yield Rank							
M8	3	5	8	10	5	1	11	1
Capital	9	7	2	1	2	9	2	2
O-255	6	1	1	3	3	4	5	3
Montreal Manchu	5	2	6	6	8	8	1	5
W5-2260	1	5	3	2	5	10	8	9
Mandarin (Ottawa)	2	9	7	6	7	2	13	7
Pridesoy 57	7	10	5	4	1	7	4	11
M9	4	12	9	9	9	5	6	4
W6S-326	8	10	11	8	11	3	6	6
Pridesoy	10	8	4	5	4	6	10	10
Flambeau	11	3	10	11	13	11	3	8
W6S-339	12	13	12	12	12	13	9	12
W6S-341	13	4	13	13	10	12	12	13

Table 3. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and lodging for the strains in the Uniform Test, Group 0, 1949.

Strain	Mean of 10 Tests[1]	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Colum-bus Ohio	Spooner Wis.	Eau Claire Wis.
M8	- 0.3	- 6	-11	+ 9	0	- 3	
Capital	+ 1.3	- 6	- 6	+ 2	0	+ 4	
O-255	- 0.4	- 5	- 5	- 1	0	- 2	
Montreal Manchu	+ 0.9	- 3	- 1	+ 2	0	+ 2	
W5-2260	+ 0.3	- 3	-11	+ 4	0	+ 2	
Mandarin (Ottawa)	0	0	0	0	0	0	
Pridesoy 57	- 2.9	- 3	- 1	- 1	0	- 2	
M9	+ 0.9	- 3	0	+11	0	- 4	
W6S-326	+ 0.8	0	-11	+ 6	0	+ 1	
Pridesoy	- 2.2	- 1	-11	0	0	- 4	
Flambeau	- 8.9	-18	-14	- 1	-9	-12	
W6S-339	-11.9	-26	-16	- 2	-7	-18	
W6S-341	-12.3	-27	-17	- 2	-9	-18	
Date planted		5/19	5/20	6/1	5/28	5/27	
Mand. (Ott.) matured		9/24	9/16	9/3	8/26	9/12	
Days to mature	114	128	119	94	90	108	

	Mean of 10 Tests[2]	Lodging					
M8	1.5	1.0	1.8	2.0	1.0	1.8	1.0
Capital	2.7	2.0	1.8	2.2	2.0	4.0	2.8
O-255	1.5	1.0	1.0	1.0	1.2	1.8	1.0
Montreal Manchu	2.4	1.5	2.4	1.8	1.8	4.3	2.5
W5-2260	1.9	1.0	1.6	1.5	1.2	2.8	1.3
Mandarin (Ottawa)	1.2	1.0	1.0	1.0	1.0	1.0	1.0
Pridesoy 57	1.3	1.0	1.2	1.0	1.0	1.0	1.0
M9	1.6	1.0	1.8	1.8	1.0	2.0	1.3
W6S-326	1.7	1.0	1.9	1.8	1.8	1.8	1.0
Pridesoy	1.9	1.0	1.0	1.8	1.2	2.5	1.8
Flambeau	2.2	2.0	2.0	2.2	1.0	3.5	2.3
W6S-339	1.3	1.0	1.4	1.0	1.2	1.0	1.0
W6S-341	1.4	1.0	1.6	1.0	1.0	1.0	1.0
Mean	1.7	1.2	1.6	1.5	1.3	2.2	1.5

[1]Columbus and Moses Lake not included in the mean.
[2]Park River not included in the mean.

Table 3. (Continued)

Strain	Morris Minn.	St. Paul Minn.	Park River N.D.	Fargo N.D.	Rosholt S.D.	Moses Lake Wash.	Corvallis Ore.	Hermiston Ore.
M8	- 1	+2		+ 3	-4	+8	+ 3	+ 5
Capital	+15	+8		+ 6	-3	0	- 7	0
0-255	- 1	+5		+ 4	-1	+8	- 3	+ 5
Montreal Manchu	+ 7	+6		+ 3	0	+5	- 3	- 4
W5-2260	0	+4		+ 4	0	+8	- 2	+ 5
Mandarin (Ottawa)	0	0		0	0	0	0	0
Pridesoy 57	- 1	-2		- 2	-2	+5	-11	- 4
M9	+ 6	-1		+ 2	-2	+5	0	0
W6S-326	+ 8	+6		+ 4	-4	+8	- 7	+ 5
Pridesoy	+ 2	+4		0	-2	+5	- 6	- 4
Flambeau	- 1	-7		- 6	-2	0	-14	-14
W6S-339	- 4	-8		- 9	-3	+8	-23	-10
W6S-341	- 4	-8		-10	-4	+8	-23	-10
Date planted	5/25	5/20		6/7	5/28	5/10	5/12	5/20
Mand. (Ott.) matured	9/5	9/12		9/14	9/15	9/15	10/7	9/16
Days to mature	103	115		99	110	128	148	119

	Lodging				
M8	1.0	3.4	1.0	1.0	1.0
Capital	3.0	5.0	1.0	2.0	1.8
0-255	1.2	4.4	1.0	1.0	1.0
Montreal Manchu	2.5	4.9	1.0	1.5	1.0
W5-2260	1.5	4.4	1.0	2.0	1.2
Mandarin (Ottawa)	1.0	3.3	1.0	1.0	1.0
Pridesoy 57	1.2	3.5	1.0	1.0	1.5
M9	1.5	3.8	1.0	1.0	1.0
W6S-326	1.0	4.4	1.0	1.5	1.2
Pridesoy	2.0	4.8	1.0	1.0	1.8
Flambeau	2.5	3.9	1.0	1.0	1.6
W6S-339	1.0	3.4	1.0	1.0	1.0
W6S-341	1.5	3.6	1.0	1.0	1.0
Mean	1.6	4.1	1.0	1.2	1.2

Table 4. Summary of height data and percentage oil for the strains in the Uniform Test, Group 0, 1949.

Strain	Mean of 12 Tests	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Colum-bus Ohio	Spooner Wis.	Eau Claire Wis.	Morris Minn.
M8	31	32	31	22	30	37	29	30
Capital	34	32	33	25	30	42	30	35
O-255	31	33	30	20	26	40	33	30
Montreal Manchu	33	33	33	23	32	40	32	33
W5-2260	29	30	29	19	25	36	29	28
Mandarin (Ott.)	28	28	28	20	26	35	27	29
Pridesoy 57	28	27	28	20	24	36	27	27
M9	31	32	32	23	29	37	27	30
W6S-326	32	34	32	24	30	40	32	30
Pridesoy	28	27	29	21	26	36	28	28
Flambeau	29	31	28	21	22	35	27	28
W6S-339	28	30	27	20	27	33	26	27
W6S-341	28	29	26	20	26	34	27	26
Mean	30	31	30	21	27	37	29	29
	Mean of 15 Tests	Percentage Oil						
M8	21.3	20.5	20.2	21.1	22.2	19.3	20.9	20.7
Capital	21.1	19.8	20.0	20.6	20.8	19.7	20.6	19.9
O-255	20.4	19.4	19.5	20.0	20.2	18.4	19.9	19.2
Montreal Manchu	20.0	19.0	18.7	19.3	20.3	18.9	19.0	19.6
W5-2260	20.6	19.6	19.5	20.4	21.3	19.7	19.6	19.6
Mandarin (Ott.)	20.3	18.9	18.7	19.9	20.5	18.5	19.3	19.8
Pridesoy 57	19.7	18.7	18.3	19.3	19.2	17.7	19.3	19.0
M9	21.7	20.8	20.5	21.1	22.3	19.5	21.5	21.2
W6S-326	21.6	20.1	19.5	21.4	22.6	20.5	21.0	21.5
Pridesoy	18.9	17.8	17.4	18.4	19.4	16.7	18.2	17.5
Flambeau	20.1	19.8	19.3	19.4	20.8	19.1	19.4	19.4
W6S-339	19.1	17.1	18.7	18.3	19.8	19.1	19.3	19.2
W6S-341	19.6	17.8	18.7	18.5	20.0	20.2	20.0	20.0
Mean	20.3	19.2	19.2	19.8	20.7	19.0	19.8	19.7

Table 4. (Continued)

Strain	St. Paul Minn.	Park River N.D.	Fargo N.D.	Rosholt S.D.	Prosser Wash.	Moses Lake Wash.	Corvallis Ore.	Hermiston Ore.
M8	38		24	26		40	31	
Capital	47		25	30		38	38	
O-255	38		24	28		40	35	
Montreal Manchu	41		25	29		38	33	
W5-2260	34		23	26		36	31	
Mandarin (Ott.)	32		24	24		33	29	
Pridesoy 57	31		24	25		37	31	
M9	36		24	26		40	33	
W6S-326	39		24	27		38	33	
Pridesoy	32		24	26		35	29	
Flambeau	35		23	28		37	38	
W6S-339	31		22	25		32	31	
W6S-341	33		21	24		36	30	
Mean	36		24	26		37	32	

	Percentage Oil							
M8	21.6	23.2	21.7	22.7	22.1	20.6	20.5	21.6
Capital	21.3	22.7	21.6	22.1	23.2	21.8	20.6	22.1
O-255	20.0	21.4	21.0	22.1	21.9	20.5	20.4	21.5
Montreal Manchu	19.9	21.1	20.9	22.0	21.7	20.0	19.6	19.9
W5-2260	21.1	22.2	21.3	21.8	21.7	20.5	20.1	21.3
Mandarin (Ott.)	20.3	23.2	20.9	21.8	22.4	19.7	19.5	20.7
Pridesoy 57	19.9	22.0	20.4	21.3	21.8	18.7	19.2	20.9
M9	22.0	23.3	22.2	23.0	22.1	21.9	21.0	22.4
W6S-326	21.8	23.1	21.9	23.1	23.4	20.3	21.2	21.9
Pridesoy	19.1	21.5	19.4	20.4	21.0	18.8	18.2	19.8
Flambeau	20.0	21.9	20.7	21.5	21.2	19.3	19.7	20.4
W6S-339	19.6	21.7	18.8	20.2	19.7	18.2	18.5	19.0
W6S-341	19.9	21.5	19.1	20.1	20.1	18.9	18.8	19.7
Mean	20.5	22.2	20.8	21.7	21.7	19.9	19.8	20.9

Table 5. Four-year summary of agronomic and chemical data for the strains in the Uniform Test, Group 0, 1946-49.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	40	26	23	34	26	40	41	41	41
Capital	26.8	- 1.2	2.6	31	2.0	12.5	39.9	20.7	133.1
Montreal Manchu	26.5	- 1.5	2.2	32	1.5	16.0	41.3	19.6	133.6
Mandarin (Ott.)	25.7	0	1.2	27	2.2	17.5	41.9	19.8	130.5
Flambeau	23.2	-10.4	2.3	28	2.0	15.4	40.2	19.7	130.9
Mean	25.6		2.0	30	1.9	15.3	40.8	20.0	132.0

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

Table 6. Four-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group 0, 1946-1949.

Strain	Mean of 40 Tests	Ottawa Ont.	Ithaca N.Y.	Spooner Wis.	Eau Claire Wis.	Morris Minn.	St. Paul Minn.	Park River N.D.	Fargo N.D.	Rosholt S.D.	Corvallis Ore.
Years Tested		1946-1949	1946-1948	1946-1949	1947-1949	1946-1949	1946-47 1949	1946-47 1949	1946-1949	1947-1949	1946-1949
Capital	26.8	33.8	28.3	24.5	26.3	23.6	26.5	20.5	25.3	17.7	24.2
Montreal Manchu	26.5	32.6	26.5	24.8	26.9	23.4	27.6	21.4	26.3	14.8	25.4
Mandarin (Ott.)	25.7	29.7	27.1	25.1	25.7	22.4	29.4	18.8	24.8	14.4	22.4
Flambeau	23.2	28.2	21.4	22.3	23.5	23.3	22.9	20.1	23.4	13.5	20.3
Mean	25.6	31.1	25.8	24.2	25.6	23.2	26.6	20.2	25.0	15.1	23.1
		Yield Rank									
Capital		1	1	3	2	1	3	2	2	1	2
Montreal Manchu		2	3	2	1	2	2	1	1	2	1
Mandarin (Ott.)		3	2	1	3	4	1	4	3	3	3
Flambeau		4	4	4	4	3	4	3	4	4	4

PRELIMINARY TEST, GROUP O

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

Strain	Source or Originating Agency	Origin
Flambeau	Wis. Agr. Exp. Station	Sel. from Manchu
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
O-10	Central Exp. Farm, Ottawa	Sel. from a natural cross in Manchu
O-17	Central Exp. Farm, Ottawa	Sel. from Pagoda
O-200	Central Exp. Farm, Ottawa	Sel. from Manchu
W4-2115	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5S-4167	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Seneca
W6S-199	Wis. A.E.S. & U.S.R.S.L.	Sel. from Habaro x Goldsoy
W6S-283	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Kabott
W6S-292	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Seneca
W7S-727	Wis. A.E.S. & U.S.R.S.L.	Sel. from Seneca x Mandarin
W7S-955	Wis. A.E.S. & U.S.R.S.L.	Sel. from Cayuga x Kabott

The Preliminary Group O test was grown at eight locations in 1949 under a wide variety of conditions. Due, in part to abundant rainfall, yields at St. Paul were unusually high and lodging was especially severe. As is usual in Group O tests, variety x location interaction is quite noticeable. For instance, W7S-955, the earliest strain in the test (Tables 7-9), was first in yield at Spooner but 10th or lower at the other locations. A few strains proved to be later than Mandarin (Ottawa) and probably should be in Group I.

The most noticeable weakness of this material is its susceptibility to lodging. W4-2115, Mandarin (Ottawa), W7S-955, and O-17 are satisfactory in this respect, but many of the other strains such as O-200, good in other respects, have a high lodging score.

This is the first time that new selections of Mandarin maturity have exceeded Mandarin in yield in this test. This year there is a noticeable correlation between yield and maturity. When yields are corrected for maturity, O-17, W7S-955, Flambeau, O-200, and W6S-292 are the highest yielding strains.

Table 7. Summary of agronomic and chemical data for the strains in the Preliminary Test, Group 0, 1949

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	8	6	6	7	6	8	8	8	8
W6S-292	30.1	0	2.7	34	1.7	14.1	39.7	20.7	131.6
O-200	29.1	- 1.3	3.0	35	1.6	15.0	40.7	19.9	131.4
W4-2115	27.1	+ 0.7	1.8	34	1.8	14.0	40.1	21.0	131.6
W5S-4167	27.1	+ 1.2	2.7	34	1.9	14.3	40.3	20.5	131.3
Mandarin (Ottawa)	26.4	0	1.6	31	1.7	17.1	42.0	19.8	127.9
W6S-199	26.0	+ 2.5	2.7	36	1.8	16.4	43.3	19.1	131.6
W6S-283	24.8	+ 1.3	2.5	34	1.7	15.3	42.2	20.0	131.0
W7S-727	24.6	- 0.2	3.3	38	1.5	13.3	41.2	19.0	132.3
Flambeau	23.9	-11.0	3.3	32	2.6	15.3	41.7	19.8	127.7
O-10	23.2	- 3.7	2.8	34	1.8	13.6	42.5	19.5	134.8
W7S-955	20.1	-15.3	1.5	29	2.3	14.9	41.0	19.2	126.4
O-17	17.9	-17.7	1.7	29	1.7	16.3	41.1	19.9	124.4
Mean	25.0		2.5	33	1.8	15.0	41.3	19.9	130.2

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

Table 8. Summary of yield in bushels per acre and yield rank for the strains in the Preliminary Test, Group O, 1949.

Strain	Mean of 8 Tests	Ottawa Ontario	Spooner Wis.	Eau Claire Wis.	Morris Minn.	St. Paul Minn.	Fargo N. D.	Rosholt S. D.	Corvallis Ore.
W6S-292	30.1	23.8	32.3	33.1	18.4	61.1	32.7	17.9	21.6
O-200	29.1	27.8	29.3	26.5	21.8	49.9	33.1	18.6	25.8
W4-2115	27.1	22.1	27.4	29.9	19.1	52.2	29.4	16.9	20.0
W5S-4167	27.1	21.3	27.0	29.3	19.3	51.1	28.8	18.9	21.0
Mandarin (Ottawa)	26.4	24.9	30.2	25.8	17.7	45.3	30.6	17.0	19.5
W6S-199	26.0	21.5	28.9	27.3	17.7	43.8	30.3	16.4	21.7
W6S-283	24.8	24.6	26.9	29.7	17.4	41.7	25.3	15.7	17.3
W7S-727	24.6	22.4	28.3	26.0	17.3	42.8	24.5	16.6	18.7
Flambeau	23.9	20.5	31.7	24.4	17.6	39.9	23.7	15.1	18.5
O-10	23.2	20.2	28.6	24.1	16.6	39.2	22.9	15.4	18.2
W7S-955	20.1	19.9	32.7	15.9	12.9	34.8	18.1	9.2	17.6
O-17	17.9	21.3	25.7	27.3	2.8	33.0	14.5	1.9	16.7
Mean	25.0	22.5	29.1	26.6	16.6	44.6	26.2	15.0	19.7
Coef. of Var. (%)		14.0	10.2	13.4	--	--	--	--	--
Bu. Nec. for Sig. (5%)		4.5	4.3	5.1	2.7	7.6	--	--	--
				Yield Rank					
W6S-292		4	2	1	4	1	2	3	3
O-200		1	5	7	1	4	1	2	1
W4-2115		6	9	2	3	2	5	5	5
W5S-4167		8	10	4	2	3	6	1	4
Mandarin (Ottawa)		2	4	9	5	5	3	4	6
W6S-199		7	6	5	5	6	4	7	2
W6S-283		3	11	3	8	8	7	8	11
W7S-727		5	8	8	9	7	8	6	7
Flambeau		10	3	10	7	9	9	10	8
O-10		11	7	11	10	10	10	9	9
W7S-955		12	1	12	11	11	11	11	10
O-17		8	12	5	12	12	12	12	12

Table 9. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and percentage oil for the strains in the Preliminary Test, Group O, 1949.

Strain	Mean of 6 Tests[1]	Ottawa Ontario	Spooner Wis.	Eau Claire Wis.	Morris Minn.	St. Paul Minn.	Fargo N. D.	Rosholt S. D.	Corvallis Ore.
W6S-292	0	+ 1	+ 2		-2	+ 2	+ 5	-3	- 8
O-200	- 1.3	- 2	- 1		-4	+ 4	+ 3	+2	- 8
W4-2115	+ 0.7	- 1	- 3		-4	+ 3	+ 3	-3	+ 6
W5S-4167	+ 1.2	+ 1	+ 2		+2	+ 3	+ 5	-2	- 6
Mandarin (Ottawa)	0	0	0		0	0	0	0	0
W6S-199	+ 2.5	+ 3	+ 1		0	+ 3	+ 4	+2	+ 4
W6S-283	+ 1.3	+ 1	0		-2	+ 2	+ 1	-1	+ 6
W7S-727	- 0.2	+ 4	+ 1		-7	+ 1	+ 2	-3	- 2
Flambeau	-11.0	-17	-12		-8	-10	- 6	-2	-13
O-10	- 3.7	- 3	- 5		-3	- 2	- 1	-3	- 8
W7S-955	-15.3	-25	-17		-9	-10	- 9	-3	-22
O-17	-17.7	-25	-20		-9	-15	-12	-1	-25
Date planted		5/19	5/27		5/25	5/20	6/7	5/28	5/12
Mand. (Ott.) matured		9/22	9/12		9/8	9/14	9/14	9/15	10/4
Days to mature	112	126	108		106	117	99	110	115
	Mean of 8 Tests	Percentage Oil							
W6S-292	20.7	20.7	19.3	20.1	19.7	21.4	21.0	22.0	21.2
O-200	19.9	19.3	18.8	20.0	19.4	19.9	20.5	21.9	19.7
W4-2115	21.0	20.6	19.7	20.7	20.1	21.3	21.9	22.7	20.9
W5S-4167	20.5	20.0	19.3	19.2	20.0	20.8	21.2	22.0	21.5
Mandarin (Ottawa)	19.8	18.8	18.7	19.6	18.8	20.4	21.1	21.5	19.5
W6S-199	19.1	17.9	17.7	18.9	18.5	19.6	20.0	20.6	19.3
W6S-283	20.0	19.3	18.8	20.4	19.0	20.4	21.0	21.6	19.6
W7S-727	19.0	17.7	18.1	18.1	18.7	19.7	19.0	21.0	19.3
Flambeau	19.8	19.0	18.5	19.3	19.2	20.4	20.6	21.5	19.5
O-10	19.5	18.6	18.9	19.6	18.1	19.9	20.1	20.9	20.2
W7S-955	19.2	17.7	18.7	20.9	18.8	19.9	19.1	20.2	18.5
O-17	19.9	18.8	20.5	20.0	20.0	20.6	19.8	20.5	19.1
Mean	19.9	19.0	18.9	19.7	19.2	20.4	20.4	21.4	19.9

[1] Rosholt not included in the mean.

UNIFORM TEST, GROUP I

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

Strain	Source or Originating Agency	Origin
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
Habaro	U. S. Dept. of Agriculture	Sel. from P. I. 20405
Harly	Central Exp. Farm, Ottawa	Sel. from Mandarin x A. K. (Harrow)
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Monroe	Ohio A.E.S. & U.S.R.S.L.	Sel. from Mukden x Mandarin
A6K-549	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L6-8179	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L6-8275	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M1	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M10	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W4-3190	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W4-4018	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5-3633	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5-3638	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland

Group I was reported from fourteen locations in 1949. Of these, Guelph, Ontario; Troy, Ohio; and Walkerton, Indiana are new stations for Group I. Of the nine selections in Group I, A6K-549, L6-8179, L6-8275, M10, W4-3190, W4-4018, and W5-3633 were grown in Preliminary Group I in 1948. It is interesting to note that of the nine selections in Group I, eight are from the backcross Lincoln x (Lincoln x Richland) and one from the cross Lincoln x Richland. Harly was also grown in Preliminary Group I in 1948. Most of the selections in this group are in the late half of the range (tables 10-13), only L6-8275 and W4-3190 being in the early half. Although there is a tendency for the earlier strains to yield less, there is much less range in yield in this test than in most of the other groups. Of the later strains, it is difficult to decide which is the best since it is a question of yield in relation to maturity, but M10 has the edge because of its higher oil content. L6-8275 has yielded very well for its maturity. It was only two days later than Mandarin, yielded almost three bushels more, stood up as well, was five inches taller, and had .9 percent more oil. Harly has yielded about as well as it should for its maturity but not as well as expected. This strain is outstanding in height and lodging resistance, and certainly looks beautiful in the field. It is slightly low in oil content but should be a worthwhile addition to the breeding program.

M1 and W5-3638 have been in the Group I tests for two years (Tables 14 and 15). M1 is just about equal to Blackhawk in over-all performance. It is slightly higher in yield, somewhat earlier and shorter, and has slightly less oil. W5-3638 is not superior to Blackhawk in any respect.

Blackhawk has been in Group I for five years (Tables 16 and 17). In these tests it has proven to be generally superior to Earlyana in yield, earliness, resistance to lodging, and oil content. Blackhawk has yielded more than Earlyana at each of the 12 locations where it has been tested for several years (Table 16). Blackhawk was increased in 1949 as follows:

	Approximate Production (Bushels)
Iowa	230
South Dakota	30
Minnesota	90
Wisconsin	12
Michigan	40
Illinois	90
Indiana	40

Monroe has averaged about the same as Earlyana in yield, height, and oil content, is four or five days earlier, and stands up much better. It is not as widely adapted, however, as Blackhawk. Monroe was increased in 1949 as follows:

	Approximate Production (Bushels)
Ohio	32,500
Minnesota	700
Wisconsin	1,100

Table 10. Summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1949.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	14	12	13	14	11	14	14	14	14
A6K-549	33.2	+10.7	1.7	37	1.6	15.7	41.7	21.1	131.5
M10	32.2	+ 9.7	1.6	35	1.3	15.5	39.5	21.7	131.5
M1	32.1	+ 7.8	1.6	34	1.5	15.5	40.6	20.8	129.9
W5-3633	31.8	+ 7.8	2.0	34	1.5	16.2	40.7	21.4	132.1
L6-8179	31.5	+ 8.7	1.5	34	1.4	14.9	40.7	21.0	129.5
Blackhawk	31.4	+ 8.0	1.9	35	1.5	15.0	41.0	21.0	126.5
L6-8275	31.1	+ 1.8	1.3	32	1.9	14.4	41.0	20.9	130.5
W4-4018	30.6	+ 9.1	1.7	35	1.5	14.5	40.7	21.0	130.8
W4-3190	30.4	+ 5.1	2.0	36	1.8	15.5	41.1	21.3	130.3
Earlyana	30.3	+10.2	2.8	40	2.0	14.4	42.4	20.0	131.5
W5-3638	30.2	+ 7.7	2.0	35	1.9	14.9	41.4	20.8	131.0
Harly	29.2	+ 4.0	1.7	41	1.1	13.8	42.3	19.8	129.3
Habaro	29.2	+ 5.8	1.9	30	1.7	17.4	43.2	19.6	130.5
Mandarin (Ottawa)	28.3	0	1.3	27	2.2	17.5	42.5	20.0	126.5
Monroe	28.1	+ 5.3	2.0	40	1.2	13.9	41.5	20.5	129.5
Mean	30.6		1.8	35	1.6	15.3	41.4	20.7	130.1

[1] Days early (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 106 days to mature.

Table 11. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1949.

Strain	Mean of 14 Tests	Guelph Ontario	State College Pa.	Holgate Ohio	Troy Ohio	Columbus Ohio	Walkerton Ind.
A6K-549	33.2	36.5	31.2	38.1	41.9	40.2	43.7
M10	32.2	35.7	35.1	30.9	39.5	39.5	40.5
M1	32.1	37.5	33.5	31.8	34.8	39.4	45.2
W5-3633	31.8	33.7	31.2	33.3	37.0	38.1	45.0
L6-8179	31.5	38.4	29.8	29.7	35.5	37.1	40.9
Blackhawk	31.4	36.5	32.6	33.8	33.0	39.9	44.7
L6-8275	31.1	32.6	27.7	28.8	31.8	38.9	39.6
W4-4018	30.6	33.5	30.5	29.3	35.2	34.1	45.7
W4-3190	30.4	33.8	28.6	31.5	32.3	39.8	40.0
Earlyana	30.3	32.4	32.5	35.2	38.5	36.1	45.9
W5-3638	30.2	36.2	29.9	31.4	35.6	36.0	41.9
Harly	29.2	33.2	26.8	27.8	33.1	38.4	36.6
Habaro	29.2	33.4	28.9	30.4	35.5	36.0	40.7
Mandarin (Ottawa)	28.3	31.1	27.4	27.2	35.6	39.7	38.7
Monroe	28.1	33.4	29.4	27.4	33.3	37.4	33.4
Mean	30.6	34.5	30.3	31.1	35.5	38.0	41.5
Coef. of Var. (%)		7.4	7.4	12.3	7.1	5.9	9.8
Bu. Nec. for Sig. (5%)		3.8	3.3	5.5	3.6	3.3	5.8

	Yield Rank					
A6K-549	3	5	1	1	1	6
M10	6	1	8	2	5	10
M1	2	2	5	10	6	3
W5-3633	8	5	4	4	9	4
L6-8179	1	9	10	7	11	8
Blackhawk	4	3	3	13	2	5
L6-8275	13	13	12	15	7	12
W4-4018	9	7	11	9	15	2
W4-3190	7	12	6	14	3	11
Earlyana	14	4	2	3	12	1
W5-3638	5	8	7	5	13	7
Harly	12	15	13	12	8	14
Habaro	11	11	9	7	13	9
Mandarin (Ottawa)	15	14	15	5	4	13
Monroe	10	10	14	11	10	15

Table 11. (Continued)

Strain	Eau Claire Wis.	Madison Wis.	Compton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.
A6K-549	22.9	40.0	31.4	41.0	29.3	17.1	39.3	12.8
M10	22.7	37.2	31.0	49.6	25.1	18.9	33.8	11.3
M1	23.3	38.9	31.9	45.0	28.6	15.5	33.1	11.3
W5-3633	23.7	34.7	30.5	47.7	24.9	18.7	35.7	10.8
L6-8179	24.3	38.3	31.5	46.8	23.9	17.2	34.6	12.9
Blackhawk	23.4	36.3	27.5	36.4	26.7	20.7	36.3	12.1
L6-8275	28.0	35.7	29.7	47.1	25.9	20.1	36.8	12.0
W4-4018	21.6	34.8	30.8	40.7	27.8	19.3	33.2	12.5
W4-3190	25.8	32.6	30.4	36.2	27.6	19.0	34.8	13.3
Earlyana	19.4	35.3	25.8	39.9	22.6	16.2	33.6	10.3
W5-3638	23.9	33.9	27.6	43.2	23.2	15.4	34.1	11.0
Harly	21.9	32.1	29.8	42.5	23.4	18.1	33.7	11.4
Habaro	21.5	31.8	29.4	37.6	23.0	16.3	33.0	10.9
Mandarin (Ottawa)	24.0	30.2	25.5	40.4	21.3	14.4	30.0	10.1
Monroe	22.9	33.2	26.7	38.6	21.8	16.4	29.5	10.6
Mean	23.3	35.0	29.3	42.2	25.0	17.5	34.1	11.6
Coef. of Var. (%)	10.2	8.0	8.4	--	--	10.0	7.3	11.8
Bu. Nec. for Sig. (5%)	3.4	4.0	3.5	8.2	5.5	2.5	3.5	1.9

	Yield Rank							
A6K-549	9	1	3	8	1	9	1	3
M10	11	4	4	1	7	5	8	8
M1	8	2	1	5	2	13	12	8
W5-3633	6	9	6	2	8	6	4	12
L6-8179	3	3	2	4	9	8	6	2
Blackhawk	7	5	12	14	5	1	3	5
L6-8275	1	6	9	3	6	2	2	6
W4-4018	13	8	5	9	3	3	11	4
W4-3190	2	12	7	15	4	4	5	1
Earlyana	15	7	14	11	13	12	10	14
W5-3638	5	10	11	6	11	14	7	10
Harly	12	13	8	7	10	7	9	7
Habaro	14	14	10	13	12	11	13	11
Mandarin (Ottawa)	4	15	15	10	15	15	14	15
Monroe	9	11	13	12	14	10	15	13

Table 12. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and lodging for the strains in the Uniform Test, Group I, 1949.

Strain	Mean of 12 Tests[1]	Guelph Ontario	State College Pa.	Holgate Ohio	Troy Ohio	Columbus Ohio	Walkerton Ind.
A6K-549	+10.7	+6	+10	+9	+4	+11	+ 9
M10	+ 9.7	+7	+11	+9	+4	+12	+ 9
M1	+ 7.8	+4	+10	+5	+3	+ 8	+ 7
W5-3633	+ 7.8	+2	+ 8	+4	+4	+ 8	+10
L6-8179	+ 8.7	+2	+ 8	+5	+4	+11	+10
Blackhawk	+ 8.0	+4	+ 8	+8	+4	+ 9	+ 6
L6-8275	+ 1.8	-2	+ 3	+1	+4	+ 4	0
W4-4018	+ 9.1	+2	+ 8	+7	+4	+12	+ 8
W4-3190	+ 5.1	+3	+ 3	+3	+4	+ 6	+ 6
Earlyana	+10.2	+5	+ 8	+9	+4	+11	+12
W5-3638	+ 7.7	+3	+ 8	+4	+4	+ 7	+ 7
Harly	+ 4.0	+3	+ 3	+1	0	+ 5	+ 2
Habaro	+ 5.8	+2	+ 8	+8	+4	+ 7	+ 4
Mandarin (Ottawa)	0	0	0	0	0	0	0
Monroe	+ 5.3	+3	+ 3	+5	0	+ 6	+ 5
Date planted		5/20	5/31	6/7	5/19	5/28	5/31
Mand. (Ott.) matured		9/16	9/12	9/8	9/4	8/26	9/15
Days to mature	106	119	104	93	108	91	107
	Mean of 13 Tests[2]	Lodging					
A6K-549	1.7	1.5	1.8	1.0	1.0	1.5	1.3
M10	1.6	1.5	1.5	1.0	1.0	1.2	1.3
M1	1.6	1.3	1.5	1.0	1.0	1.0	1.4
W5-3633	2.0	2.2	2.3	1.0	1.0	1.8	2.1
L6-8179	1.5	1.4	1.8	1.0	1.0	1.0	1.5
Blackhawk	1.9	1.2	1.8	1.0	2.3	1.0	1.5
L6-8275	1.3	1.0	1.5	1.0	1.0	1.0	1.3
W4-4018	1.7	1.0	1.8	1.0	1.0	1.5	1.5
W4-3190	2.0	2.0	2.0	1.0	1.0	1.5	2.3
Earlyana	2.8	3.0	2.5	2.0	1.0	3.0	2.6
W5-3638	2.0	2.0	1.8	1.0	2.3	1.0	2.3
Harly	1.7	1.6	1.8	1.0	1.0	1.0	1.3
Habaro	1.9	1.4	1.3	1.2	1.0	1.2	2.8
Mandarin (Ottawa)	1.3	1.0	1.0	1.0	1.0	1.0	1.1
Monroe	2.0	1.5	1.8	1.0	1.0	1.5	2.3
Mean	1.8	1.6	1.7	1.1	1.2	1.3	1.8

[1]Troy not included in the mean.

[2]Cresco not included in the mean.

Table 12. (Continued)

Strain	Eau Claire Wis.	Madison Wis.	Compton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.
A6K-549		+7	+12	+7	+16	+18	+14	+9
M10		+5	+12	+6	+15	+12	+10	+8
M1		+2	+ 8	+6	+13	+14	+10	+7
W5-3633		+5	+ 7	+8	+10	+13	+10	+8
L6-8179		+4	+ 9	+7	+14	+18	+11	+5
Blackhawk		+4	+ 8	+7	+14	+10	+10	+8
L6-8275		0	+ 2	-1	+ 4	+ 5	+ 3	+3
W4-4018		+4	+10	+7	+15	+16	+12	+8
W4-3190		+2	+ 5	+6	+ 6	+10	+ 7	+4
Earlyana		+7	+12	+8	+15	+15	+13	+7
W5-3638		+4	+ 7	+7	+11	+15	+11	+8
Harly		+1	+ 2	+6	+10	+ 4	+ 7	+4
Habaro		+4	+ 3	+8	+11	+ 4	+ 5	+5
Mandarin (Ottawa)		0	0	0	0	0	0	0
Monroe		+1	+ 4	+5	+12	+ 7	+ 9	+4
Date planted		5/18	5/13	5/20	5/25	5/25	5/24	5/27
Mand. (Ott.) matured		9/11	8/29	9/17	8/30	9/7	9/4	9/10
Days to mature		116	108	120	97	105	103	106
	Lodging							
A6K-549	1.8	2.0	2.0	4.2	1.6	1.0	1.5	1.2
M10	1.5	2.3	1.5	3.9	1.4	1.0	1.5	1.0
M1	1.5	2.0	1.5	4.8	1.1	1.0	1.1	1.0
W5-3633	2.0	2.5	2.3	5.0	1.5	1.0	1.8	1.0
L6-8179	1.5	1.5	1.0	4.8	1.1	1.0	1.0	1.0
Blackhawk	1.8	2.0	2.3	5.0	1.8	1.0	1.3	1.5
L6-8275	1.0	1.0	1.5	4.0	1.0	1.0	1.0	1.0
W4-4018	1.8	2.3	2.0	4.5	1.5	1.0	1.5	1.0
W4-3190	2.0	3.0	2.5	4.9	1.4	1.0	1.8	1.0
Earlyana	4.0	3.0	3.0	5.0	2.8	1.0	2.4	1.6
W5-3638	2.0	2.0	2.3	5.0	1.4	1.0	1.5	1.2
Harly	2.3	2.0	2.3	4.5	1.6	1.0	1.1	1.2
Habaro	2.0	2.3	2.0	5.0	1.9	1.0	1.8	1.0
Mandarin (Ottawa)	1.3	1.5	1.3	3.2	1.1	1.0	1.0	1.0
Monroe	2.3	2.0	2.5	4.9	1.9	1.0	1.4	1.5
Mean	1.9	2.1	2.0	4.6	1.5	1.0	1.4	1.1

Table 13. Summary of height data and percentage oil for the strains in the Uniform Test, Group I, 1949.

Strain	Mean of 14 Tests	Guelph Ontario	State College Pa.	Hol-gate Ohio	Troy Ohio	Colum-bus Ohio	Walker-ton Ind.
A6K-549	37	38	32	33	36	36	41
M10	35	37	30	28	38	34	41
M1	34	38	31	30	31	34	40
W5-3633	34	36	33	28	37	34	40
L6-8179	34	37	30	28	31	32	42
Blackhawk	35	38	31	30	31	34	41
L6-8275	32	35	28	27	31	31	38
W4-4018	35	38	31	30	36	36	43
W4-3190	36	37	35	31	36	34	42
Earlyana	40	41	35	35	34	37	49
W5-3638	35	37	30	30	36	36	41
Harly	41	44	33	34	34	38	48
Habaro	30	32	25	26	28	29	34
Mandarin (Ott.)	27	28	23	23	27	26	32
Monroe	40	42	34	33	39	41	51
Mean	35	37	31	30	34	34	42
	Mean of 14 Tests	Percentage Oil					
A6K-549	21.1	20.1	22.3	22.8	21.7	22.6	21.0
M10	21.7	20.4	22.6	23.3	22.6	22.9	21.5
M1	20.8	20.0	21.5	22.1	21.5	22.0	20.6
W5-3633	21.4	20.0	22.6	23.0	22.3	22.8	21.6
L6-8179	21.0	19.8	22.1	22.5	21.4	22.0	21.0
Blackhawk	21.0	20.0	22.2	22.2	21.0	21.5	20.7
L6-8275	20.9	19.7	22.2	23.1	21.7	22.0	21.1
W4-4018	21.0	19.5	22.3	23.4	22.0	22.7	21.1
W4-3190	21.3	19.6	22.5	22.9	21.5	22.6	21.2
Earlyana	20.0	18.9	21.3	22.1	21.5	20.6	20.3
W5-3638	20.8	19.4	22.1	22.7	21.9	22.0	20.5
Harly	19.8	17.9	21.1	20.8	20.2	21.3	20.1
Habaro	19.6	17.5	20.7	21.9	20.9	20.9	20.2
Mandarin (Ott.)	20.0	17.8	21.7	21.4	20.4	21.0	20.2
Monroe	20.5	18.5	22.1	21.4	20.8	21.4	20.3
Mean	20.7	19.3	22.0	22.4	21.4	21.9	20.8

Table 13. (Continued)

Strain	Eau Claire Wis.	Madison Wis.	Compton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.
A6K-549	42	37	38	48	38	33	40	26
M10	37	37	35	43	33	27	35	22
M1	36	36	36	45	38	27	37	22
W5-3633	35	35	34	44	32	28	37	24
L6-8179	36	37	34	44	35	28	39	22
Blackhawk	38	37	35	48	35	31	39	25
L6-8275	33	35	32	41	32	29	36	21
W4-4018	36	35	36	46	35	32	39	23
W4-3190	37	36	37	44	34	31	39	24
Earlyana	44	43	38	54	40	35	44	27
W5-3638	36	36	36	46	34	31	37	24
Harly	48	45	40	57	40	34	46	26
Habaro	33	31	29	40	32	24	33	20
Mandarin (Ott.)	28	28	27	34	26	23	29	18
Monroe	42	42	41	56	40	31	43	25
Mean	37	37	35	46	35	30	38	23
	Percentage Oil							
A6K-549	18.0	20.8	21.9	20.7	19.8	20.2	21.7	21.1
M10	19.1	20.9	23.0	21.2	20.4	21.1	22.9	21.8
M1	18.4	20.1	21.7	21.1	20.8	20.0	21.3	20.7
W5-3633	18.8	20.7	22.4	21.6	19.7	20.8	21.9	21.0
L6-8179	18.5	20.9	21.7	21.2	20.4	19.8	21.7	20.5
Blackhawk	18.7	20.4	22.2	20.5	20.9	20.6	21.7	21.1
L6-8275	19.7	20.5	19.4	20.7	19.8	20.8	22.0	20.4
W4-4018	18.1	20.3	21.4	21.0	19.6	20.6	21.5	20.5
W4-3190	19.2	20.4	22.1	21.2	20.4	20.8	22.0	21.2
Earlyana	16.8	19.6	21.1	18.9	18.8	19.5	20.9	20.0
W5-3638	18.7	20.2	21.5	21.2	19.3	19.4	21.4	21.0
Harly	17.5	19.2	20.5	19.9	19.7	19.1	20.5	19.5
Habaro	16.9	18.2	20.5	18.9	19.0	18.6	20.5	19.3
Mandarin (Ott.)	19.2	18.5	20.7	19.9	19.0	18.8	21.3	20.1
Monroe	18.2	19.7	22.0	20.3	20.2	20.8	20.8	20.7
Mean	18.4	20.0	21.5	20.6	19.9	20.1	21.5	20.6

Table 14. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1948-49.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	26	21	24	25	22	26	26	26	26
M1	30.0	+6.9	1.6	33	1.8	16.0	40.8	20.9	129.6
Blackhawk	29.5	+8.6	1.7	34	1.6	15.4	40.8	21.2	126.3
W5-3638	29.2	+8.3	1.9	34	2.1	15.2	41.4	21.0	131.0
Earlyana	28.6	+9.6	2.7	38	2.2	15.1	42.6	20.1	131.1
Habaro	28.0	+6.1	1.8	28	1.9	17.9	43.2	19.5	129.9
Monroe	27.3	+4.7	2.0	38	1.6	14.5	42.0	20.4	128.8
Mandarin (Ottawa)	26.8	0	1.3	26	2.1	18.0	42.6	20.0	126.6
Mean	28.5		1.9	33	1.9	16.0	41.9	20.4	129.0

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

Table 15. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1948-49.

Strain	Mean of 26 Tests	State College Pa.	Holgate Ohio	Columbus Ohio	Eau Claire Wis.	Madison Wis.	Compton Ill.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.
M1	30.0	33.0	29.9	36.6	21.8	32.5	28.4	29.3	18.5	33.9	21.5
Blackhawk	29.5	33.1	29.4	35.7	22.2	31.4	27.5	27.2	20.8	34.1	22.2
W5-3638	29.2	30.7	28.5	33.9	22.5	31.4	27.8	26.1	18.2	35.0	22.3
Earlyana	28.6	32.4	29.2	30.5	19.8	30.1	25.7	25.2	18.0	33.9	21.9
Habaro	28.0	32.0	26.5	33.3	22.6	27.3	28.6	24.9	17.0	31.9	21.2
Monroe	27.3	30.7	25.7	31.4	23.9	28.3	26.2	24.7	17.1	30.3	19.4
Mandarin (Ott.)	26.8	27.8	25.5	30.5	24.5	26.0	26.9	24.5	15.2	29.6	22.0
Mean	28.5	31.4	27.8	33.0	22.5	29.6	27.3	26.0	17.8	32.7	21.5
			Yield Rank								
M1		2	1	1	6	1	2	1	2	3	5
Blackhawk		1	2	2	5	2	4	2	1	2	2
W5-3638		5	4	4	4	2	3	3	3	1	1
Earlyana		3	3	6	7	4	7	4	4	3	4
Habaro		4	5	3	3	6	1	5	6	5	6
Monroe		5	6	5	2	5	6	6	5	6	7
Mandarin (Ottawa)		7	7	6	1	7	5	7	7	7	3

Table 16. Five-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1945-49.

Strain	Mean of 57 Tests	Ithaca N.Y.	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Eau Claire Wis.	Madison Wis.
Years Tested		1946-1948	1945-1947	1945-1949	1945-1946	1945 1947-49	1945-1949
Blackhawk[1]	28.9	24.8	28.9	39.3	32.0	23.9	30.7
Earlyana	27.5	24.3	27.6	34.7	27.8	20.6	29.5
Monroe	27.3	26.4	28.7	36.2	30.5	24.3	28.6
Habaro	27.1	26.0	28.3	37.4	27.3	22.2	28.4
Mandarin (Ottawa)	26.9	23.9	27.4	35.4	28.0	23.9	25.8
Mean	27.5	25.1	28.2	36.6	29.1	23.0	28.6
		Yield Rank					
Blackhawk		3	1	1	1	2	1
Earlyana		4	4	5	4	5	2
Monroe		1	2	3	2	1	3
Habaro		2	3	2	5	4	4
Mandarin (Ottawa)		5	5	4	3	2	5

[1]Average of A3K-884 (1945-47) and Blackhawk (1948-49).

Table 17. Five-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1945-49.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	57	41	52	52	43	57	57	57	57
Blackhawk[2]	28.9	+8.8	1.7	34	1.6	15.7	41.6	20.5	127.7
Earlyana	27.5	+9.8	2.8	37	2.1	15.0	42.9	20.0	132.5
Monroe	27.3	+5.5	2.1	37	1.6	14.4	42.6	20.0	130.2
Habaro	27.1	+7.8	2.1	28	1.9	17.6	43.3	19.3	131.3
Mandarin (Ottawa)	26.9	0	1.3	26	1.8	17.8	42.7	19.9	128.3
Mean	27.5		2.0	32	1.8	16.1	42.6	19.9	130.0

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

[2]Average of A3K-884 (1945-47) and Blackhawk (1948-49).

Table 16. (Continued)

Strain	Compton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kana-wha Iowa	Brook-ings S.D.
Years Tested	1946-1949	1945, 1947, 1949	1945-1949	1945-1949	1945-1949	1945-1949
Blackhawk[1]	29.7	29.5	28.2	19.5	33.1	22.2
Earlyana	28.9	27.8	27.2	18.4	32.6	20.6
Monroe	28.1	28.7	26.8	18.0	30.7	19.2
Habaro	29.6	25.5	25.8	17.3	31.4	19.9
Mandarin (Ottawa)	28.1	32.7	25.9	17.9	29.9	21.6
Mean	28.9	28.8	26.8	18.2	31.5	20.7
	Yield Rank					
Blackhawk	1	2	1	1	1	1
Earlyana	3	4	2	2	2	3
Monroe	4	3	3	3	4	5
Habaro	2	5	5	5	3	4
Mandarin (Ottawa)	4	1	4	4	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
A6K-0649	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A6K-1428	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A6K-1521	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A6K-1801	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
Cornell 1136-5-3-1	N. Y. Agr. Exp. Sta.	Sel. from a natural cross in Seneca
C745	Ind. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L6-8091	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L6-8174	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M6	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M11	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5-3346	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5-3372	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W6-1787	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)

Only four new strains were added to Preliminary Group I in 1949. The other nine selections were carried over from the large Preliminary Group I in 1948. The selections in this test are all in the late half of the range, most of them being within a few days of Earlyana in maturity (Tables 18-20). All of these selections except Cornell 1136-5-3-1 are from the Lincoln x (Lincoln x Richland) backcross, although selected in five different states. Of the four new strains, A6K-1801 appears to be the best as it is higher in yield and lodging resistance and good in height and oil content.

W5-3372 is the highest yielding variety in the two-year summaries, tables 21 and 22. It is also good in lodging resistance and has a good oil content, but is rather late for Group I. There are no great differences in yield or maturity among the nine selections and all are satisfactory in lodging resistance and height. M6 and A6K-1428 are highest in oil content but these are among the lower yielding strains.

Table 18. Summary of agronomic and chemical data for the strains in the Preliminary Test, Group I, 1949.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	6	5	6	6	5	6	6	6	6
W5-3372	34.3	+11.6	1.6	36	1.2	14.4	40.6	20.9	130.6
A6K-1801	34.1	+ 8.0	1.4	36	1.4	15.4	41.2	21.1	129.4
A6K-0649	33.2	+ 6.8	1.5	38	2.0	15.5	42.8	20.5	129.2
W5-3346	33.1	+10.2	1.3	33	1.6	15.0	41.3	20.5	129.0
A6K-1521	33.1	+ 6.8	1.8	36	1.4	15.7	41.6	20.7	131.2
M6	32.7	+ 8.4	1.3	35	1.4	14.8	40.7	21.4	129.4
L6-8091	32.6	+ 8.4	1.3	33	1.2	16.9	42.2	21.1	131.2
A6K-1428	32.2	+ 7.8	1.7	36	1.8	15.5	41.5	21.2	131.4
M11	32.0	+ 8.0	1.7	32	2.0	16.4	42.6	21.0	129.8
W6-1787	31.9	+ 7.4	1.6	35	1.6	16.0	41.4	21.4	129.8
Blackhawk	31.8	+ 7.8	1.5	36	1.4	15.2	41.8	20.7	125.8
Cornell 1136-5-3-1	31.8	+10.8	1.6	33	1.0	16.1	40.7	20.5	127.9
L6-8174	31.8	+10.4	1.7	36	1.0	14.3	41.1	20.6	129.9
C745	31.1	+ 9.0	1.7	39	1.0	14.2	42.3	20.4	131.1
Earlyana	29.9	+10.6	3.0	40	2.0	13.9	42.6	19.9	130.9
Mandarin (Ottawa)	28.6	0	1.1	28	1.6	17.0	42.5	19.9	126.2
Mean	32.1		1.6	35	1.5	15.4	41.7	20.7	129.6

[1] Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 103 days to mature.

Table 19. Summary of yield in bushels per acre and yield rank for the strains in the Preliminary Test, Group I, 1949.

Strain	Mean of 6 Tests	Columbus Ohio	Eau Claire Wis.	Madison Wis.	Compton Ill.	Waseca Minn.	Kanawha Iowa
W5-3372	34.3	37.6	23.5	39.7	36.8	32.8	35.1
A6K-1801	34.1	34.4	25.6	39.3	35.0	32.9	37.5
A6K-0649	33.2	34.4	26.1	36.7	33.7	30.0	38.0
W5-3346	33.1	34.8	23.6	40.4	34.6	30.4	34.7
A6K-1521	33.1	36.2	23.9	38.4	32.2	29.8	37.9
M6	32.7	36.0	23.4	39.5	30.6	29.8	36.7
L6-8091	32.6	34.8	26.5	38.6	32.2	29.1	34.1
A6K-1428	32.2	34.5	24.8	37.1	30.3	30.1	36.6
M11	32.0	36.8	26.0	36.1	32.1	29.6	31.6
W6-1787	31.9	31.9	23.2	38.9	30.7	32.5	33.9
Blackhawk	31.8	31.3	23.6	31.8	31.1	31.5	41.6
Cornell 1136-5-3-1	31.8	37.3	23.5	36.0	34.8	24.9	34.3
L6-8174	31.8	31.9	22.4	37.4	31.8	30.8	36.4
C745	31.1	35.4	21.5	37.2	31.2	27.4	34.1
Earlyana	29.9	33.4	21.4	34.5	30.0	28.0	32.0
Mandarin (Ottawa)	28.6	32.0	24.0	30.7	27.2	25.7	31.8
Mean	32.1	34.5	23.9	37.0	32.1	29.7	35.4
Coef. of Var. (%)		6.2	8.6	6.1	6.5	--	6.6
Bu. Nec. for Sig. (5%)		3.1	3.0	3.3	3.5	4.1	3.3

	Yield Rank					
W5-3372	1	10	2	1	2	8
A6K-1801	10	4	4	2	1	4
A6K-0649	10	2	11	5	8	2
W5-3346	7	8	1	4	6	9
A6K-1521	4	7	7	6	9	3
M6	5	12	3	13	9	5
L6-8091	7	1	6	6	12	11
A6K-1428	9	5	10	14	7	6
M11	3	3	12	8	11	16
W6-1787	14	13	5	12	3	13
Blackhawk	16	8	15	11	4	1
Cornell 1136-5-3-1	2	10	13	3	16	10
L6-8174	14	14	8	9	5	7
C745	6	15	9	10	14	11
Earlyana	12	16	14	15	13	14
Mandarin (Ottawa)	13	6	16	16	15	15

Table 20. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and percentage oil for the strains in the Preliminary Test, Group I, 1949.

Strain	Mean of 5 Tests	Columbus Ohio	Eau Claire Wis.	Madison Wis.	Compton Ill.	Waseca Minn.	Kanawha Iowa
W5-3372	+11.6	+11		+7	+10	+16	+14
A6K-1801	+ 8.0	+ 5		+5	+ 8	+13	+ 9
A6K-0649	+ 6.8	+ 5		+5	+ 6	+10	+ 8
W5-3346	+10.2	+ 7		+8	+ 9	+16	+11
A6K-1521	+ 6.8	+ 5		+3	+ 6	+12	+ 8
M6	+ 8.4	+ 8		+5	+ 8	+13	+ 8
L6-8091	+ 8.4	+ 6		+5	+ 9	+12	+10
A6K-1428	+ 7.8	+ 6		+3	+ 7	+12	+11
M11	+ 8.0	+ 5		+5	+ 9	+12	+ 9
W6-1787	+ 7.4	0		+5	+ 9	+14	+ 9
Blackhawk	+ 7.8	+ 1		+6	+ 8	+14	+10
Cornell 1136-5-3-1	+10.8	+10		+5	+10	+14	+15
L6-8174	+10.4	+ 6		+8	+10	+16	+12
C745	+ 9.0	+ 7		+5	+10	+14	+ 9
Earlyana	+10.6	+ 4		+7	+12	+16	+14
Mandarin (Ottawa)	0	0		0	0	0	0
Date planted		5/28		5/18	5/13	5/25	5/24
Mand. (Ott.) matured		8/26		9/11	8/28	8/31	9/4
Days to mature	103	90		116	107	98	103

	Mean of 6 Tests	Percentage Oil					
W5-3372	20.9	21.0	19.1	20.5	22.2	21.1	21.7
A6K-1801	21.1	21.5	19.1	20.6	21.9	21.5	22.1
A6K-0649	20.5	20.7	19.1	19.6	21.6	20.3	21.4
W5-3346	20.5	20.4	18.3	20.1	22.1	20.2	21.7
A6K-1521	20.7	20.8	18.6	20.3	22.0	20.8	21.8
M6	21.4	22.1	19.7	20.6	22.6	21.0	22.4
L6-8091	21.1	21.9	20.0	20.4	21.7	20.9	21.5
A6K-1428	21.2	21.5	19.4	20.8	22.4	21.0	22.3
M11	21.0	21.8	19.9	20.0	21.3	21.2	21.6
W6-1787	21.4	22.3	19.5	20.6	21.9	22.0	22.0
Blackhawk	20.7	21.3	18.5	19.2	22.5	21.0	21.5
Cornell 1136-5-3-1	20.5	21.2	18.6	20.2	21.8	20.1	21.3
L6-8174	20.6	21.2	18.7	20.2	21.4	20.6	21.6
C745	20.4	20.9	17.8	20.4	21.4	20.3	21.7
Earlyana	19.9	21.1	17.5	19.2	21.0	19.7	20.6
Mandarin (Ottawa)	19.9	20.4	19.1	17.7	21.0	20.0	21.1
Mean	20.7	21.3	18.9	20.0	21.8	20.7	21.6

Table 21. Two-year summary of agronomic and chemical data for the strains in the Preliminary Test, Group I, 1948-49.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	11	9	10	10	9	11	11	11	11
W5-3372	31.7	+10.5	1.5	36	1.7	14.8	39.9	21.4	130.8
A6K-0649	31.1	+ 6.6	1.5	38	2.4	16.1	41.9	20.8	129.4
W5-3346	31.1	+ 9.9	1.4	33	1.8	15.7	40.5	20.8	128.9
Cornell 1136-5-3-1	30.6	+ 8.8	1.6	32	1.4	17.4	40.7	20.8	127.7
L6-8174	30.6	+ 9.2	1.6	35	1.4	15.0	40.5	21.0	129.8
L6-8091	30.5	+ 7.6	1.3	33	1.7	17.3	41.7	21.3	131.7
M6	30.4	+ 7.5	1.4	34	1.7	15.4	40.1	21.8	129.5
A6K-1521	30.3	+ 6.7	1.7	37	1.9	16.1	41.1	21.1	131.3
Blackhawk	30.3	+ 7.7	1.5	36	1.4	15.7	41.0	21.3	126.1
A6K-1428	30.2	+ 7.6	1.7	36	2.2	15.9	40.7	21.8	131.4
Mandarin (Ottawa)	27.4	0	1.1	27	1.6	18.2	42.6	20.0	126.0
Mean	30.4		1.5	34	1.7	16.1	41.0	21.1	129.3

[1]Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 107 days to mature.

Table 22. Two-year summary of yield in bushels per acre and yield rank for the strains in the Preliminary Test, Group I, 1948-49.

Strain	Mean of 11 Tests	Madison Wis.	Compton Ill.	Waseca Minn.	Kanawha Iowa
W5-3372	31.7	34.0	30.8	30.2	38.1
A6K-0649	31.1	31.9	29.8	30.8	36.2
W5-3346	31.1	32.9	29.3	32.0	36.5
Cornell 1136-5-3-1	30.6	32.0	29.8	27.0	35.3
L6-8174	30.6	32.0	29.4	30.2	36.1
L6-8091	30.5	32.5	28.7	29.2	35.0
M6	30.4	33.4	26.3	29.0	37.5
A6K-1521	30.3	32.7	28.1	27.8	35.9
Blackhawk	30.3	31.0	27.6	29.8	37.9
A6K-1428	30.2	32.0	27.5	28.2	35.9
Mandarin (Ottawa)	27.4	27.3	25.9	26.3	31.2
Mean	30.4	32.0	28.5	29.1	36.0

	Yield Rank			
W5-3372	1	1	3	1
A6K-0649	9	2	2	5
W5-3346	3	5	1	4
Cornell 1136-5-3-1	6	2	10	9
L6-8174	6	4	3	6
L6-8091	5	6	6	10
M6	2	10	7	3
A6K-1521	4	7	9	7
Blackhawk	10	8	5	2
A6K-1428	6	9	8	7
Mandarin (Ottawa)	11	11	11	11

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	Ia. A.E.S. & U.S.R.S.L.	Sel. from Illini x Dunfield
Bavender Special	Mr. Bavender, Whitten, Ia.	Farmer's selection
Blackhawk (A6K-937)	Ia. A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
Earlyana	Purdue Agr. Exp. Sta.	Sel. from a natural hybrid
Hawkeye	Ia. 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.	P. I. 70502-2
A7-6102	Ia. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A7-6323	Ia. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A7-6520	Ia. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A7-6905	Ia. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
C739	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
C776	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
H2804	Ohio A.E.S. & U.S.R.S.L.	Sel. from Richland x Scioto
H3665	Ohio A.E.S. & U.S.R.S.L.	Sel. from Richland x Wis. Manchu 3
H6150	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
H6403	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L6-8182	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L6-8477	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L7-1287	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)

Group II was grown at twenty-three locations in 1949 but poor stands at two places in Michigan reduced the reported data to twenty-one locations. Yields were generally good, averaging higher than in 1948.

Of the 13 selections in this test, 11 are from the backcross, Lincoln x (Lincoln x Richland). BC_1S_2 and BC_1S_3 selections were sent to seven states in 1943 and 1944 and most of this material was in the BC_1S_7 or BC_1S_8 generation in 1949. Selections of Group II maturity were entered from four states in 1949. H2804 (Richland x Scioto) and H6403 (Lincoln x (Lincoln x Richland)) were transferred from the 1948 Group I test where they had proved to be slightly too late. In 1949, these strains did not prove to be generally adapted in Group II territory (Tables 23-28).

When the average yields and maturities in table 23 are studied, it is evident that there is a high correlation between yield and maturity. The correlation coefficient was calculated to be +.886, a highly significant value. The regression

of yield on maturity proved to be +.454 bushels for each day later in maturity. When the actual yields were adjusted on the basis of regression (Table 23), A7-6323, A7-6905, and L7-1287, although fairly high in actual yield, proved not to have yielded enough to compensate for their later maturity, while Hawkeye and Adams, actually mediocre in yield, produced more seed than would be expected in strains of their maturity. C776 and H3665 also were fairly high yielders on the basis of maturity but the latter strain lodged badly under some conditions. Although rather low in actual yield, Blackhawk, the earliest strain in the test, has yielded somewhat more than might be expected for its maturity.

Probably the better of the new entries are A7-6102 and A7-6520. These are of Lincoln maturity, stand up well, and have yielded more than Lincoln. A7-6323 and L7-1287 are very nice looking strains in the field but, as mentioned above, they have not yielded well enough and A7-6323 is rather low in oil.

H6150 and L6-8182 have been in Group II for two years. In tables 29 and 30 it can be seen that H6150 has yielded slightly more, is slightly earlier, and has a higher oil content than Lincoln. L6-8182, of the same maturity as Hawkeye, is inferior to Hawkeye in yield, lodging resistance, height, and oil content.

In the three-year summaries, tables 31 and 32, Bavender Special has yielded slightly more than Lincoln and Adams, but is more susceptible to lodging, and has a lower oil content. Adams averaged the same yield as Lincoln, is earlier, and has a higher oil content. Adams has exceeded Lincoln in yield at seven of the nineteen locations: Columbus, Ohio; Compton and Urbana, Illinois, Kanawha and Hudson, Iowa; Centerville, South Dakota; and Wakefield, Nebraska. At the other twelve locations Lincoln has yielded more than Adams. Adams has been increased in 1949 to 25,000 bushels in Iowa and to 4,500 bushels in Illinois. Nebraska is planning a small increase in 1950.

Four strains have been in the Group II tests for seven years or more. Data for the period 1943-49 are presented in tables 33 and 34. During this period Hawkeye has averaged 3.9 bushels more than Richland and has been ahead of Richland at all locations. The increased yield of Hawkeye, together with its greater height and oil content, has resulted in a great expansion of Hawkeye acreage, not only to replace Richland, but also to replace some acreage of Lincoln and other later varieties.

Table 23. Summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1949.

Strain	Mean Yield Bu/A.	Adjusted Yield[1] Bu/A.	Rank	Maturity[2]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	21			18	19	20	13	21	21	21	21
A7-6102	38.0	35.4	2	+ 9.1	1.8	40	1.6	16.0	39.2	21.2	133.4
A7-6520	36.9	35.3	3	+ 6.8	2.0	41	1.4	13.3	38.7	21.0	134.0
Bav. Spec.	36.2	34.5	7	+ 7.1	3.4	39	1.6	16.0	40.3	20.3	136.3
H6150	36.0	34.3	8	+ 7.1	2.0	39	1.7	17.7	39.6	21.6	132.7
Lincoln	35.9	33.5	12	+ 8.5	2.2	41	1.3	14.0	39.5	21.3	135.1
A7-6323	35.6	32.8	15	+ 9.5	1.7	42	1.2	14.1	39.7	20.9	133.4
A7-6905	35.6	32.6	16	+10.0	1.6	41	1.4	15.3	39.0	20.6	133.9
L7-1287	35.2	32.4	18	+ 9.5	2.0	41	1.6	16.2	39.0	21.2	132.2
Adams	35.0	35.0	4	+ 3.2	2.1	40	1.5	14.0	39.4	21.7	130.6
Hawkeye	34.6	36.1	1	0	1.5	38	1.7	17.0	40.4	21.6	127.6
C776	33.9	34.9	5	+ 1.0	1.8	37	1.5	13.8	40.8	21.0	131.9
L6-8477	33.9	32.9	14	+ 5.6	1.5	39	1.7	16.3	38.8	21.9	132.9
H3665	33.8	34.7	6	+ 1.3	2.2	38	1.6	16.9	40.3	21.2	131.8
C739	33.5	33.9	11	+ 2.4	1.8	37	1.3	13.6	39.2	21.2	133.4
L6-8182	33.0	34.2	10	+ 0.7	1.4	36	1.8	13.7	40.3	20.9	134.1
Richland	30.4	32.3	19	- 0.9	1.6	33	1.9	15.3	40.1	20.6	128.7
Blackhawk	30.0	34.3	8	- 6.2	1.5	35	1.9	15.5	41.5	21.3	126.1
Earlyana	30.0	33.4	13	- 4.2	2.6	40	2.0	16.0	42.2	20.9	130.7
H2804	29.9	32.1	20	- 1.6	1.7	35	1.8	17.1	42.0	20.9	133.2
H6403	29.5	32.5	17	- 3.2	1.4	36	1.9	15.7	41.6	21.1	130.9
Mean	33.8				1.9	38	1.6	15.4	40.1	21.1	132.1

[1]Yields adjusted on a regression of .454 bushels for each day earlier or later than the mean,

[2]Days earlier (-) or later (+) than Hawkeye. Hawkeye required 117 days to mature.

Table 24. Summary of yield in bushels per acre for the strains in the Uniform Test, Group II, 1949.

Strain	Mean of 21 Tests	State College Pa.	New-ark Del.	Hol-gate Ohio	Colum-bus Ohio	German-town Ohio	Walker-ton Ind.	Bluff-ton Ind.	Lafay-ette Ind.	Green-field Ind.
A7-6102	38.0	37.2	42.4	46.2	38.6	41.4	56.5	43.3	38.3	48.7
A7-6520	36.9	36.1	41.1	45.1	36.0	38.7	51.3	43.0	35.5	45.7
Bavender Spec.	36.2	36.5	38.3	41.7	35.4	38.5	48.6	40.9	41.0	34.9
H6150	36.0	34.8	39.7	41.1	41.0	42.4	52.4	39.1	36.6	41.4
Lincoln	35.9	36.3	36.7	41.5	39.6	41.6	51.7	38.6	36.6	43.0
A7-6323	35.6	34.1	40.9	42.8	39.3	41.7	46.5	34.6	37.7	46.0
A7-6905	35.6	33.6	39.9	42.9	37.6	38.9	50.3	43.9	36.3	47.6
L7-1287	35.2	34.8	40.0	42.1	38.8	39.9	49.9	42.9	36.7	39.5
Adams	35.0	35.7	39.9	41.0	40.6	33.1	50.2	36.3	30.2	37.4
Hawkeye	34.6	34.1	35.1	34.3	37.5	33.8	48.0	38.8	33.2	42.3
C776	33.9	34.9	32.4	40.8	37.7	30.8	46.6	38.7	31.3	37.6
L6-8477	33.9	32.5	38.0	38.4	38.3	35.6	51.3	32.7	33.3	38.3
H3665	33.8	33.8	36.0	40.1	37.6	33.0	44.9	36.3	33.5	34.7
C739	33.5	34.3	36.0	39.0	36.7	37.5	48.7	36.6	33.4	33.0
L6-8182	33.0	32.4	37.0	33.2	36.0	29.2	49.4	35.0	29.1	41.5
Richland	30.4	29.1	33.1	34.5	37.6	29.3	41.8	30.3	31.1	32.2
Blackhawk	30.0	32.6	29.4	29.9	37.9	25.7	43.2	32.1	27.1	30.0
Earlyana	30.0	30.5	33.7	32.7	35.1	32.1	41.7	29.3	30.9	29.6
H2804	29.9	31.9	34.3	35.4	34.6	30.4	43.0	31.1	28.2	28.9
H6403	29.5	28.5	32.9	35.8	37.1	28.5	40.6	31.2	26.3	27.6
Mean	33.8	33.7	36.8	38.9	37.6	35.1	47.8	36.7	33.3	38.0
Coef. of Var.(%)		6.5	7.7	8.5	6.3	9.9	8.2	9.8	8.0	11.9
Bu.Nec. for Sig.(5%)		3.1	3.9	4.7	3.3	4.9	5.6	5.1	3.6	6.4

Table 24. (Continued)

Strain	Worth-ington Ind.	Madi-son Wis.	Comp-ton Ill.	Dwight Ill.	Urbana Ill.	Kana-wha Iowa	Marcus Iowa	Hud-son Iowa	Ames Iowa	Center-ville S.D.	Lin-coln Nebr.	Wake-field Nebr.
A7-6102	38.8	42.7	38.2	42.1	44.9	34.6	42.5	27.3	25.8	20.0	17.5	31.7
A7-6520	37.0	38.3	41.6	43.1	46.5	30.6	43.4	22.7	26.6	26.7	18.7	27.3
Bav. Spec.	34.2	37.9	35.5	42.3	40.3	31.4	45.7	32.3	29.8	25.7	21.4	28.1
H6150	32.0	40.8	39.7	42.9	44.4	25.8	41.2	22.7	26.1	21.6	19.1	30.3
Lincoln	31.9	42.0	39.6	43.8	39.9	27.4	45.2	24.3	26.7	25.0	18.3	24.2
A7-6323	33.2	43.6	38.8	41.8	41.0	27.1	40.1	25.2	25.2	21.9	18.6	28.5
A7-6905	35.8	37.9	33.6	39.8	44.4	26.8	40.0	24.9	24.0	20.5	17.2	30.8
L7-1287	31.0	35.1	38.9	42.2	39.9	26.9	40.5	26.9	24.9	20.8	17.6	29.2
Adams	30.3	38.3	42.4	39.4	47.1	29.6	40.1	25.5	25.0	24.6	18.7	28.7
Hawkeye	28.5	41.3	35.6	37.9	43.8	34.9	41.6	25.5	25.9	27.3	18.4	28.5
C776	29.5	41.4	37.1	40.0	45.6	30.8	38.4	22.2	25.2	24.4	20.4	27.0
L6-8477	30.1	41.8	37.2	38.8	43.8	29.5	39.2	25.0	24.5	20.9	19.3	23.5
H3665	26.9	38.0	37.4	35.3	40.4	29.3	42.4	28.6	24.0	25.8	21.6	29.9
C739	34.3	37.7	37.5	38.5	42.0	27.6	37.9	23.3	25.5	21.9	17.9	23.6
L6-8182	29.2	37.6	40.9	39.1	42.6	28.3	38.5	25.7	22.7	24.4	17.5	24.3
Richland	29.4	33.8	31.5	30.8	35.6	29.7	38.2	21.6	22.6	22.2	17.6	26.1
Blackhawk	22.8	32.7	34.5	32.1	37.7	36.1	36.2	25.2	20.9	22.5	15.3	27.0
Earlyana	26.4	32.8	33.0	34.3	36.7	29.2	37.3	23.0	23.5	19.1	15.9	22.6
H2804	22.9	31.5	34.3	33.6	35.4	28.2	32.9	24.9	21.3	21.8	18.5	23.9
H6403	23.5	36.0	35.5	31.7	40.6	29.6	34.9	25.0	21.4	19.1	16.3	18.0
Mean	30.4	38.1	37.1	38.4	41.8	29.6	39.8	25.1	24.6	22.8	18.3	26.7
C. V. (%)	7.9	6.4	9.9	8.0	9.7	9.6	4.7	11.0	9.0	14.1	8.0	11.3
B.N.F.S.(5%)	3.4	3.5	5.3	4.3	6.7	4.0	2.6	3.9	3.1	4.5	2.8	4.3

Table 25. Summary of yield rank for the strains in the Uniform Test, Group II, 1949.

Strain	State College Pa	New-ark Del.	Hol-gate Ohio	Colum-bus Ohio	German-town Ohio	Walker-ton Ind.	Bluff-ton Ind.	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.
A7-6102	1	1	1	6	4	1	2	2	1	1
A7-6520	4	2	2	16	7	4	3	8	4	2
Bavender Spec.	2	8	6	18	8	11	5	1	13	5
H6150	7	7	8	1	1	2	6	5	8	7
Lincoln	3	11	7	3	3	3	9	5	5	8
A7-6323	10	3	4	4	2	14	14	3	3	6
A7-6905	13	5	3	10	6	6	1	7	2	3
L7-1287	7	4	5	5	5	8	4	4	9	9
Adams	5	5	9	2	12	7	11	16	12	10
Hawkeye	10	14	17	13	11	12	7	12	6	15
C776	6	19	10	9	15	13	8	13	11	12
L6-8477	15	9	13	7	10	4	15	11	10	11
H3665	12	12	11	10	13	15	11	9	14	16
C739	9	12	12	15	9	10	10	10	15	4
L6-8182	16	10	18	17	18	9	13	17	7	14
Richland	19	17	16	10	17	18	19	14	16	13
Blackhawk	14	20	20	8	20	16	16	19	17	20
Earlyana	18	16	19	19	14	19	20	15	18	17
H2804	17	15	15	20	16	17	18	18	19	19
H6403	20	18	14	14	19	20	17	20	20	18

Table 25. (Continued)

Strain	Madi-son Wis.	Comp-ton Ill.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Center-ville S. D.	Lin-coln Nebr.	Wake-field Nebr.
A7-6102	2	8	6	4	3	4	3	6	18	15	1
A7-6520	8	2	2	2	6	3	17	3	2	6	10
Bav. Spec.	11	14	4	13	4	1	1	1	4	2	9
H6150	7	4	3	5	20	7	17	4	14	5	3
Lincoln	3	5	1	15	16	2	14	2	5	11	15
A7-6323	1	7	7	11	17	9	8	8	11	8	7
A7-6905	11	18	9	5	19	11	12	12	17	17	2
L7-1287	16	6	5	15	18	8	4	11	16	13	5
Adams	8	1	10	1	8	9	6	10	6	6	6
Hawkeye	6	13	14	7	2	6	6	5	1	10	7
C776	5	12	8	3	5	14	19	8	7	3	11
L6-8477	4	11	12	7	10	12	10	12	15	4	18
H3665	10	10	15	13	11	5	2	14	3	1	4
C739	13	9	13	10	15	16	15	7	11	12	17
L6-8182	14	3	11	9	13	13	5	16	7	15	14
Richland	17	20	20	19	7	15	20	17	10	13	13
Blackhawk	19	16	18	17	1	18	8	20	9	20	11
Earlyana	18	19	16	18	12	17	16	15	19	19	19
H2804	20	17	17	20	14	20	12	19	13	9	16
H6403	15	15	19	12	8	19	10	18	19	18	20

Table 26. Summary of maturity data, days earlier (-) or later (+) than Hawkeye, for the strains in the Uniform Test, Group II, 1949.

Strain	Mean of 18 Tests	State College Pa.	New-ark Del.	Hol-gate Ohio	Colum-bus Ohio	Walker-ton Ind.	Bluff-ton Ind.	Lafay-ette Ind.	Worth-ington Ind.	Madi-son Wis.
A7-6102	+ 9.1	+11	+ 6	+ 9	+10	+ 8	+ 6	+ 9	+ 9	+10
A7-6520	+ 6.8	+11	+ 3	+ 7	+ 7	+ 5	+ 6	+ 8	+ 8	+ 6
Bavender Spec.	+ 7.1	+11	+ 2	+ 7	+ 9	+ 4	+ 6	+ 9	+ 5	+ 9
H6150	+ 7.1	+11	+ 5	+ 5	+ 5	+ 5	+ 6	+ 9	+ 4	+ 8
Lincoln	+ 8.5	+11	+13	+ 8	+ 8	+ 5	+ 6	+ 8	+ 6	+ 8
A7-6323	+ 9.5	+13	+ 5	+ 9	+10	+ 6	+ 6	+12	+ 8	+10
A7-6905	+10.0	+15	+10	+ 9	+10	+ 7	+ 8	+11	+ 9	+10
L7-1287	+ 9.5	+13	+ 8	+ 9	+10	+ 8	+ 6	+11	+ 9	+ 9
Adams	+ 3.2	+11	- 1	+ 5	+ 4	+ 2	+ 3	+ 8	+ 3	+ 1
Hawkeye	0	0	0	0	0	0	0	0	0	0
C776	+ 1.0	0	- 2	0	+ 1	+ 1	+ 1	+ 2	+ 1	+ 1
L6-8477	+ 5.6	+12	+ 2	+ 5	+ 6	+ 3	+ 6	0	+ 4	+ 5
H3665	+ 1.3	+ 2	- 1	- 1	+ 2	+ 2	+ 4	+ 2	+ 1	+ 1
C739	+ 2.4	0	0	+ 2	+ 2	+ 2	+ 4	+ 4	+ 2	+ 4
L6-8182	+ 0.7	0	+ 2	+ 1	- 1	- 1	+ 5	+ 2	0	+ 1
Richland	- 0.9	0	- 4	- 5	- 1	0	0	0	+ 1	- 1
Blackhawk	- 6.2	- 4	- 7	- 6	- 5	- 8	- 4	- 8	- 6	- 7
Earlyana	- 4.2	- 7	- 1	- 5	- 3	- 4	- 2	- 4	- 4	- 4
H2804	- 1.6	- 3	- 2	- 7	- 2	- 2	+ 1	0	- 3	- 3
H6403	- 3.2	0	- 3	- 6	- 3	- 8	- 2	- 4	- 1	- 5
Date planted		5/31	6/10	6/7	5/28	5/31	5/19	6/1	6/21	5/18
Hawkeye matured		9/27	9/23	9/22	9/9	10/1	9/18	9/16	9/23	9/22
Days to mature	117*	119	105	107	104	123	122	107	94	127

* Worthington not included in the mean.

Table 26. (Continued).

Strain	Compton Ill.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Centerville S. D.	Lincoln Nebr.
A7-6102	+ 9	+10	+12	+ 7	+11	+ 9	+ 9	+11	+ 7
A7-6520	+ 8	+ 7	+11	+ 5	+ 6	+ 7	+ 7	+ 7	+ 3
Bavender Spec.	+ 8	+ 5	+11	+ 5	+ 7	+10	+ 6	+ 9	+ 4
H6150	+ 9	+ 9	+12	+ 5	+ 9	+ 7	+ 7	+ 5	+ 6
Lincoln	+ 9	+10	+11	+ 5	+ 9	+10	+ 9	+11	+ 6
A7-6323	+11	+12	+13	+ 7	+12	+10	+ 9	+11	+ 7
A7-6905	+10	+12	+15	+ 7	+12	+11	+ 9	+ 9	+ 6
L7-1287	+12	+12	+15	+ 6	+10	+10	+ 8	+ 9	+ 6
Adams	+ 1	+ 1	+ 5	+ 3	+ 6	+ 2	+ 3	+ 1	0
Hawkeye	0	0	0	0	0	0	0	0	0
C776	+ 3	+ 1	+ 2	0	+ 3	+ 4	+ 2	- 1	0
L6-8477	+ 8	+ 9	+ 8	+ 5	+ 6	+ 8	+ 6	+ 3	+ 4
H3665	+ 3	+ 3	+ 5	+ 1	+ 2	+ 2	+ 1	- 1	- 2
C739	+ 3	+ 2	+ 4	+ 1	+ 5	+ 2	+ 3	+ 3	0
L6-8182	- 1	- 3	+ 4	0	+ 3	0	+ 3	- 2	- 1
Richland	- 1	- 3	+ 3	0	0	0	- 1	+ 1	- 4
Blackhawk	- 9	-12	- 4	- 7	- 5	- 5	- 6	- 3	- 5
Earlyana	- 7	- 9	- 1	- 4	- 3	- 4	- 4	- 5	- 5
H2804	0	- 6	0	+ 2	- 1	+ 1	0	0	- 4
H6403	- 4	- 7	- 2	- 2	- 1	- 3	- 1	- 3	- 4
Date planted	5/13	5/12	5/18	5/24	5/19	5/25	5/27	5/31	5/28
Hawkeye matured	9/17	9/17	9/5	9/21	9/20	9/17	9/20	9/29	9/14
Days to mature	127	128	110	120	124	115	116	121	109

Table 27. Summary of lodging data for the strains in the Uniform Test, Group II, 1949.

Strain	Mean of 19 Tests[1]	State College Pa.	Newark Del.	Holgate Ohio	Columbus Ohio	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.
A7-6102	1.8	1.5	2.0	1.0	1.8	2.3	1.3	1.2	3.3	1.4
A7-6520	2.0	1.8	2.0	2.0	2.0	1.4	1.8	1.5	3.1	1.9
Bavender Spec.	3.4	4.0	3.0	2.5	3.5	3.3	2.5	2.7	4.9	4.4
H6150	2.0	2.3	2.0	1.5	2.0	1.9	1.2	1.7	3.4	1.9
Lincoln	2.2	2.3	3.0	1.8	2.0	1.5	1.5	1.6	3.4	2.4
A7-6323	1.7	1.8	1.0	1.2	1.8	1.4	1.5	1.2	3.0	2.1
A7-6905	1.6	1.5	1.0	1.5	1.8	1.3	1.4	1.0	2.5	1.5
L7-1287	2.0	1.8	2.0	2.0	2.0	1.9	1.4	2.0	3.3	1.8
Adams	2.1	2.8	3.0	1.8	2.0	1.6	1.1	1.9	3.4	3.3
Hawkeye	1.5	2.0	2.0	1.0	1.8	1.5	1.3	1.1	2.1	1.1
C776	1.8	2.3	2.0	1.2	2.0	1.6	1.1	1.2	3.3	2.0
L6-8477	1.5	1.8	1.0	1.0	1.5	1.3	1.1	1.4	2.8	1.6
H3665	2.2	1.8	3.0	1.8	2.0	2.1	1.7	1.7	3.4	2.9
C739	1.8	2.0	2.0	1.2	2.0	1.8	1.4	1.5	3.5	2.0
L6-8182	1.4	1.3	1.0	1.0	1.2	1.4	1.0	1.1	2.1	1.6
Richland	1.6	1.5	2.0	1.2	1.8	1.4	1.0	1.2	2.9	1.1
Blackhawk	1.5	1.8	2.0	1.0	2.0	1.5	1.0	1.0	2.0	1.1
Earlyana	2.6	2.5	3.0	2.0	2.2	2.4	1.8	2.2	4.3	3.3
H2804	1.7	1.5	2.0	1.0	1.8	1.8	1.1	1.7	2.9	1.1
H6403	1.4	1.8	2.0	1.0	1.0	1.3	1.0	1.4	2.4	1.6
Mean	1.9	2.0	2.1	1.4	1.9	1.7	1.4	1.5	3.1	2.0

[1] Lincoln, Nebraska not included in the mean.

Table 27. (Continued).

Strain	Madison Wis.	Compton Ill.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Centerville S. D.	Lincoln Nebr.	Wakefield Nebr.
A7-6102	1.8	2.0	2.1	1.6	1.9	1.4	2.5	1.0	3.5	1.0	1.0
A7-6520	2.3	2.6	2.5	1.9	1.5	1.5	2.0	1.6	3.0	1.0	1.0
Bav. Spec.	3.8	5.0	3.1	4.0	2.9	2.3	3.3	2.1	5.0	1.0	2.0
H6150	1.8	2.6	2.4	2.3	1.9	1.4	2.0	1.1	3.5	1.0	1.0
Lincoln	2.0	2.5	2.5	1.9	2.1	1.6	2.6	1.5	3.9	1.0	1.0
A7-6323	1.8	2.0	2.3	1.5	1.6	1.3	2.3	1.0	3.1	1.0	1.0
A7-6905	1.5	1.8	1.9	2.0	1.9	1.1	2.3	1.0	3.0	1.0	1.0
L7-1287	2.0	2.3	2.1	1.9	1.9	1.4	2.6	1.1	3.2	1.0	1.0
Adams	2.3	2.4	2.9	2.3	1.9	1.1	2.0	1.0	3.0	1.0	1.0
Hawkeye	1.5	2.1	2.3	1.6	1.0	1.1	1.4	1.0	2.0	1.0	1.0
C776	2.0	2.1	2.3	1.8	1.6	1.3	1.5	1.1	2.1	1.0	1.0
L6-8477	1.0	2.0	2.1	1.4	1.9	1.4	1.8	1.0	2.2	1.0	1.0
H3665	2.8	2.9	2.6	2.8	1.6	1.8	2.0	1.3	2.5	1.0	1.0
C739	2.0	2.3	2.4	1.9	1.5	1.1	1.9	1.0	2.0	1.0	1.0
L6-8182	1.0	1.6	1.8	1.6	1.3	1.3	1.4	1.0	2.0	1.0	1.0
Richland	2.0	2.4	2.4	1.8	1.3	1.1	1.6	1.0	2.0	1.0	1.0
Blackhawk	1.5	2.2	2.3	1.6	1.1	1.1	1.3	1.0	1.9	1.0	1.0
Earlyana	3.8	3.6	3.0	2.9	2.3	2.0	2.4	1.9	2.9	1.0	1.0
H2804	2.3	2.5	2.5	2.4	1.6	1.0	2.0	1.0	2.0	1.0	1.0
H6403	1.0	1.8	1.9	1.3	1.1	1.0	1.1	1.0	1.1	1.0	1.0
Mean	2.0	2.4	2.4	2.0	1.7	1.4	2.0	1.2	2.7	1.0	1.1

Table 28. Summary of height data for the strains in the Uniform Test, Group II, 1949.

Strain	Mean of 20 Tests	State College Pa.	New-ark Del.	Hol-gate Ohio	Colum-bus Ohio	German-town Ohio	Walker-ton Ind.	Bluff-ton Ind.	Lafay-ette Ind.	Worth-ington Ind.	Madi-son Wis.
A7-6102	40	31	39	36	42	37	50	36	39	35	43
A7-6520	41	31	41	38	43	38	50	39	39	37	43
Bavender Spec.	39	30	38	34	38	36	46	37	38	32	42
H6150	39	32	37	34	40	36	46	36	34	32	43
Lincoln	41	35	40	37	41	39	50	39	40	36	45
A7-6323	42	33	42	38	42	40	51	41	41	36	44
A7-6905	41	31	41	38	42	38	51	38	39	39	43
L7-1287	41	33	39	36	40	39	48	38	38	32	44
Adams	40	33	41	36	40	34	50	37	39	34	44
Hawkeye	38	30	37	32	37	35	45	34	35	32	41
C776	37	31	37	33	36	33	47	34	35	32	40
L6-8477	39	33	38	36	41	38	47	34	35	33	42
H3665	38	32	38	34	38	33	47	33	35	31	42
C739	37	31	37	35	38	33	45	33	34	32	41
L6-8182	36	30	36	32	37	32	45	33	35	31	39
Richland	33	29	33	30	32	30	40	29	29	29	34
Blackhawk	35	31	34	30	38	30	41	30	31	26	38
Earlyana	40	35	40	36	38	35	49	36	36	34	43
H2804	35	29	36	31	36	32	47	30	32	26	39
H6403	36	30	36	32	36	32	46	33	33	30	39
Mean	38	32	38	34	39	35	47	35	36	32	41

Table 28. (Continued).

Strain	Compton Ill.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Centerville S. D.	Lincoln Nebr.	Wakefield Nebr.
A7-6102	50	47	49	46	40	45	39	38	31	34
A7-6520	52	49	50	47	40	46	40	40	32	33
Bavender Spec.	47	46	48	44	37	43	39	40	31	33
H6150	48	46	47	43	38	42	38	37	31	33
Lincoln	52	47	50	45	41	46	39	38	31	33
A7-6323	52	50	51	47	43	47	40	39	32	34
A7-6905	50	50	51	46	42	47	39	36	31	34
L7-1287	49	48	50	47	40	46	40	37	33	33
Adams	50	50	48	47	39	45	38	35	32	34
Hawkeye	47	48	46	44	38	42	36	36	30	28
C776	45	43	45	41	37	41	35	31	29	30
L6-8477	48	49	48	43	39	44	37	36	32	31
H3665	48	47	48	45	37	46	38	34	34	29
C739	46	44	44	43	38	43	37	34	31	30
L6-8182	46	44	45	41	35	40	34	36	30	28
Richland	41	39	39	39	33	38	32	29	28	27
Blackhawk	43	43	43	41	36	41	32	33	30	27
Earlyana	48	49	46	43	38	45	39	36	33	32
H2804	43	42	43	41	34	40	33	31	29	30
H6403	47	43	43	40	35	41	34	30	30	27
Mean	48	46	47	44	38	43	37	35	31	31

Table 29. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1948-49.

Strain	Mean of 39 Tests	State College Pa.	Hol-gate Ohio	Colum-bus Ohio	Walker-ton Ind.	Bluff-ton Ind.	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.
H6150	35.2	33.4	36.0	38.3	43.5	37.4	45.4	40.8	37.2
Bavender Spec.	35.2	37.8	35.0	30.4	40.5	39.0	52.1	35.9	36.5
Lincoln	34.9	35.0	36.7	37.2	41.6	36.6	45.3	41.0	34.3
Adams	34.6	34.0	35.9	38.0	40.5	37.1	41.1	38.1	33.7
Hawkeye	33.7	34.4	30.0	35.2	41.0	37.7	41.2	38.6	33.8
L6-8182	32.8	33.1	31.8	35.0	40.2	34.8	36.9	37.5	32.9
Richland	29.8	28.8	31.1	33.2	35.2	31.2	37.0	30.8	31.7
Blackhawk	29.7	33.1	27.0	32.2	34.7	32.4	31.5	29.8	28.6
Earlyana	29.5	31.4	28.4	29.2	35.1	30.1	34.8	30.8	30.0
Mean	32.8	33.4	32.4	34.3	39.1	35.1	40.6	35.9	33.2
		Yield Rank							
H6150		5	2	1	1	3	2	2	1
Bavender Spec.		1	4	8	4	1	1	6	2
Lincoln		2	1	3	2	5	3	1	3
Adams		4	3	2	4	4	5	4	5
Hawkeye		3	7	4	3	2	4	3	4
L6-8182		6	5	5	6	6	7	5	6
Richland		9	6	6	7	8	6	7	7
Blackhawk		6	9	7	9	7	9	9	9
Earlyana		8	8	9	8	9	8	7	8

Table 30. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1948-49.

Strain	Mean Yield Bu/A.	Matu-rity[1]	Lodg-ing	Height Inches	Seed Qual-ity	Seed Weight	Percent-age of Protein	Percent-age of Oil	Iodine Number of Oil
No. of Tests	39	32	37	38	31	39	39	39	39
H6150	35.2	+5.9	2.0	39	1.8	17.5	39.9	21.7	131.4
Bavender Spec.	35.2	+5.2	3.3	38	1.8	16.2	40.9	20.3	135.5
Lincoln	34.9	+7.3	2.2	40	1.5	14.3	40.3	21.3	133.7
Adams	34.6	+3.6	2.1	40	1.4	14.5	40.1	21.8	130.1
Hawkeye	33.7	0	1.5	38	1.5	17.4	40.8	21.5	126.4
L6-8182	32.8	-0.5	1.4	36	1.8	14.0	40.5	20.9	133.3
Richland	29.8	-0.6	1.6	34	1.8	16.1	40.4	20.8	127.1
Blackhawk	29.7	-5.7	1.5	35	1.9	15.5	41.7	21.2	124.8
Earlyana	29.5	-4.7	2.7	39	2.1	15.5	42.6	20.6	129.8
Mean	32.8		2.0	38	1.7	15.7	40.8	21.1	130.2

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

Table 29. (Continued)

Strain	Madison Wis.	Compton Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Centerville S.D.	Lincoln Nebr.
H6150	34.8	30.9	37.4	32.5	40.6	23.1	36.1	18.6	24.7
Bavender Spec.	32.0	29.9	37.2	35.4	42.5	30.4	35.7	20.3	26.5
Lincoln	35.2	31.8	37.8	33.0	42.0	24.1	36.7	19.5	25.8
Adams	32.0	34.0	42.1	33.8	39.7	24.7	34.3	20.6	26.8
Hawkeye	34.8	29.8	36.2	35.2	40.1	25.1	33.5	20.5	24.7
L6-8182	34.4	31.6	36.9	32.4	37.1	25.4	33.4	20.6	24.5
Richland	28.6	27.1	32.0	31.1	35.4	21.8	29.2	18.0	23.6
Blackhawk	29.0	30.2	33.7	35.1	36.2	24.6	28.9	18.5	21.2
Earlyana	29.3	27.6	33.7	32.0	34.8	23.1	31.0	16.2	21.7
Mean	32.2	30.3	36.3	33.3	38.7	24.7	33.2	19.2	24.5
	Yield Rank								
H6150	2	4	3	5	3	7	2	6	4
Bavender Spec.	5	6	4	1	1	1	3	4	3
Lincoln	1	2	2	7	2	6	1	5	1
Adams	5	1	1	8	5	4	4	1	1
Hawkeye	2	7	6	2	4	3	5	3	4
L6-8182	4	3	5	6	6	2	6	1	6
Richland	9	9	9	9	8	9	8	8	7
Blackhawk	8	5	7	3	7	5	9	7	9
Earlyana	7	8	7	7	9	7	7	9	8

Table 31. Three-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1947-49.

Strain	Mean of 58 Tests	State College Pa.	Holgate Ohio	Columbus Ohio	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Madison Wis.
Years Tested		1948 1949	1947-1949	1947-1949	1947-1949	1947-1949	1947-1949	1947-1949	1947-1949	1947-1949
Bavender Spec.	33.9	37.8	30.1	37.2	36.1	39.6	49.3	39.0	37.1	32.0
Adams	33.2	34.0	28.9	42.9	38.6	37.0	40.9	39.9	34.6	31.4
Lincoln	33.2	35.0	29.1	41.9	39.3	37.1	44.2	41.3	35.4	33.3
Hawkeye	32.4	34.4	27.0	39.0	38.5	37.1	41.4	39.8	34.8	32.9
Earlyana	28.5	31.4	26.3	31.4	31.4	31.1	33.7	32.9	29.7	28.5
Richland	28.5	28.8	25.8	35.3	31.6	31.8	36.1	33.8	31.9	27.9
Mean	31.6	33.6	27.9	38.0	35.9	35.6	40.9	37.8	33.9	31.0
		Yield Rank								
Bavender Spec.		1	1	4	4	1	1	4	1	3
Adams		4	3	1	2	4	4	2	4	4
Lincoln		2	2	2	1	2	2	1	2	1
Hawkeye		3	4	3	3	2	3	3	3	2
Earlyana		5	5	6	6	6	6	6	6	5
Richland		6	6	5	5	5	5	5	5	6

Table 32. Three-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1947-49.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	58	45	55	56	47	58	58	58	58
Bavender Spec.	33.9	+5.0	3.1	36	1.9	15.9	41.4	20.2	135.2
Adams	33.2	+4.4	2.0	39	1.3	14.2	40.3	21.9	129.5
Lincoln	33.2	+7.0	2.1	38	1.5	13.9	40.5	21.5	133.6
Hawkeye	32.4	0	1.5	36	1.4	17.1	41.0	21.7	126.1
Earlyana	28.5	-5.4	2.5	37	2.3	15.2	42.7	20.8	129.6
Richland	28.5	-0.8	1.6	32	1.6	16.0	40.6	21.0	126.2
Mean	31.6		2.1	36	1.7	15.4	41.1	21.2	130.0

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

Table 31. (Continued)

Strain	Compton Ill.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Centerville S.D.	Lincoln Nebr.	Wakefield Nebr.
Years Tested	1947-1949	1947 1949	1947-1949	1947-1949	1947-1949	1947-1949	1947-1949	1947-1949	1947-1949	1947 1949
Bavender Spec.	31.1	33.1	36.5	32.9	37.3	33.8	35.7	20.6	23.5	21.9
Adams	35.3	32.0	40.2	31.7	34.8	29.3	34.9	19.9	23.2	20.9
Lincoln	32.8	32.7	37.0	29.4	36.5	26.8	35.6	18.9	23.7	20.0
Hawkeye	32.7	29.7	35.4	31.9	34.7	27.7	33.3	20.2	21.9	22.6
Earlyana	31.1	25.2	32.8	29.5	30.3	27.6	29.5	16.8	18.6	19.1
Richland	28.4	24.9	32.3	28.2	30.9	23.2	29.1	18.4	21.6	21.1
Mean	31.9	29.6	35.7	30.6	34.1	28.1	33.0	19.1	22.1	20.9
	Yield Rank									
Bavender Spec.	4	1	3	1	1	1	1	1	2	2
Adams	1	3	1	3	3	2	3	3	3	4
Lincoln	2	2	2	5	2	5	2	4	1	5
Hawkeye	3	4	4	2	4	3	4	2	4	1
Earlyana	4	5	5	4	6	4	5	6	6	6
Richland	6	6	6	6	5	6	6	5	5	3

Table 33. Seven-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1943-49.

Strain	Mean of 132 Tests	New Brunswick N.J.	Holgate Ohio	Columbus Ohio	East Lansing Mich.	Monroe Mich.	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.
Years Tested		1944 1946	1943-1949	1943 1945-49	1943-1947	1943 1945-46	1943-1949	1943 1945-49	1943-1949	1944-1949	1946-1949
Lincoln	33.2	24.4	25.5	40.7	21.2	31.0	35.7	37.8	42.5	39.4	36.4
Hawkeye	32.2	25.5	24.1	40.2	21.7	29.3	35.1	37.1	39.8	36.0	34.9
Earlyana	28.5	21.9	23.3	33.3	22.9	23.0	30.1	32.3	32.7	30.9	30.2
Richland	28.3	21.9	22.5	37.4	17.4	25.1	29.8	32.8	35.1	31.8	30.9
Mean	30.6	23.4	23.9	37.9	20.8	27.1	32.7	35.0	37.5	34.5	33.1
		Yield Rank									
Lincoln		2	1	1	3	1	1	1	1	1	1
Hawkeye		1	2	2	2	2	2	2	2	2	2
Earlyana		3	3	4	1	4	3	4	4	4	4
Richland		3	4	3	4	3	4	3	3	3	3

Table 34. Seven-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1943-49.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	132	104	126	128	102	127	130	130	130
Lincoln	33.2	+7.1	2.2	38	1.4	14.3	40.3	21.0	135.5
Hawkeye	32.2	0	1.6	35	1.4	17.1	41.3	21.1	128.2
Earlyana	28.5	-5.3	2.7	37	2.0	15.3	42.7	20.6	131.5
Richland	28.3	-0.2	1.6	32	1.6	16.3	40.4	20.5	128.5
Mean	30.6		2.0	36	1.6	15.8	41.2	20.8	130.9

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

Table 33. (Continued)

Strain	Madison Wis.	Compton Ill.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Centerville S.D.	Lincoln Nebr.	Wakefield Nebr.
Years Tested	1943-1949	1943-1949	1943-47 1949	1943-1949	1943-1949	1944-1949	1943-1949	1943-1949	1946-1949	1946-1949	1943-45 1947,1949
Lincoln	34.5	31.3	29.4	35.3	33.4	39.0	36.0	37.6	19.1	24.5	26.0
Hawkeye	33.8	29.9	27.0	34.5	35.1	36.6	35.6	37.2	19.4	23.0	27.2
Earlyana	29.5	28.3	23.6	29.8	32.5	31.2	31.7	32.2	17.0	20.1	24.3
Richland	28.4	26.4	23.8	32.4	30.6	32.8	28.1	31.9	18.3	22.6	25.1
Mean	31.6	29.0	26.0	33.0	32.9	34.9	32.9	34.7	18.5	22.6	25.7
	Yield Rank										
Lincoln	1	1	1	1	2	1	1	1	2	1	2
Hawkeye	2	2	2	2	1	2	2	2	1	2	1
Earlyana	3	3	4	4	3	4	3	3	4	4	4
Richland	4	4	3	3	4	3	4	4	3	3	3

UNIFORM TEST, GROUP III

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

Strain	Source or Originating Agency	Origin
Adams	Iowa A.E.S. & U.S.R.S.L.	Sel. from A3-176 (Illini x Dunfield)
Anderson	Farmer's selection	Rogue in Lincoln
Chief	Ill. Agr. Exp. Sta.	Sel. from Illini x Manchu
Dunfield	Purdue Agr. Exp. Sta.	P. I. 38846
Illini	Ill. Agr. Exp. Sta.	Sel. from A. K.
Lincoln	Ill. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x Manchu
A7-1953	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Linc. x (Linc. x Rich.)
A7-6831	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
L6-1152	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
L6-1503	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
L6-2132	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)

Five new strains were included in the 1949 Group III tests. One of these, "Anderson", is a farmer's selection found as a rogue plant in Lincoln. A7-1953 is from the second backcross of Lincoln x Richland to Lincoln. The other three, A7-6831, L6-1503, and L6-2132 are from the first backcross of Lincoln x Richland to Lincoln. L6-1152, first grown in Group III in 1948, is also from the first backcross. These entries have all yielded more than any of the named varieties in Group III in 1949 (Tables 35 to 38). L6-2132 and L6-1503 were grown in the Uniform Preliminary Group III test in 1948. In this test L6-2132 was outstanding in yield and L6-1503 was outstanding in oil content. This performance was repeated in the 1949 Uniform Group III tests although L6-1503 was not quite as high in oil content as it had been in 1948. L6-2132, A7-6831, and L6-1503 are about as late as Chief and would have to compete with Chief. L6-1152 and A7-1953 are only a few days later than Lincoln and might compete with Lincoln in the southern part of the Lincoln territory. These are all good strains and have no serious faults. Undoubtedly their maturity in relation to their yield will have to be considered in deciding which one is best. When maturity is considered, Adams, Lincoln, A7-1953, L6-1152, A7-6831, and L6-1503 have all yielded about the same and Dunfield, Illini, Chief, and Anderson are distinctly inferior in yield in this test. L6-2132 has a distinctly higher yield, maturity considered, than any of these other strains.

The 1949 season favored early maturity in general, the average growing period for Lincoln being only 114 days compared to 122 days for the average of the previous five years. Adams and Dunfield were affected more than the other strains, however. Dunfield in particular was five days earlier than Lincoln, whereas it has averaged only .6 of a day earlier in the period 1944-1948. This relationship was quite pronounced at many locations (Table 37).

The strain designated "Anderson" is a rogue found by Mr. Anderson in a field of Lincoln but bears no resemblance to Lincoln except for its white flowers. It is much later than Lincoln and has gray pubescence and a colorless hilum. It is

slightly later than Chief and has yielded slightly more. It stands up better and has a higher oil content than Chief. Its maturity in the 1949 tests would place it in Group IV.

Six strains have been carried over from the 1948 tests. Data from these two years is summarized in tables 39 and 40. Yields in 1949 averaged slightly less than in 1948, but L6-1152, Chief, and Lincoln were not affected quite as much as the other three strains. On the other hand, L6-1152 was 1% lower and Chief .7% lower in oil content than in 1948 while the other strains were about the same as in 1948. In the two-year data, L6-1152 is superior to Lincoln in yield, lodging resistance, and oil content and three days later in maturity.

Five varieties have been in Group III tests for five years. These data are summarized in tables 41 and 42. Perhaps the most interesting comparisons are those between Lincoln and Adams. In the period 1944 to 1948, Adams has averaged only 1.3 bushels less than Lincoln and has been about three days earlier. Adams has averaged 1.2 bushels more than Illini at Ames and 1.3 bushels more at Columbia and has yielded about the same as Lincoln at Georgetown, Delaware; Beltsville, Md.; Columbus, Ohio; Lafayette, Ind.; Dwight and Urbana, Ill.; Ottumwa, Ia.; Shelbyville, Mo.; Lincoln, Nebr.; and Manhattan, Kans. At the other eight locations, Adams has yielded from two to four bushels less than Lincoln. Adams has averaged .3% more oil than Lincoln.

Table 35. Summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1949

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	21	17	21	20	16	21	21	21	21
L6-2132	39.5	+6.1	1.8	42	1.2	15.2	39.9	21.8	133.7
A7-6831	37.1	+6.6	2.0	44	1.6	14.8	40.6	22.1	132.8
L6-1503	36.8	+6.7	1.9	41	1.5	15.4	39.5	22.8	132.7
L6-1152	35.8	+3.2	2.0	40	1.7	15.8	38.7	22.3	131.3
Anderson	35.7	+9.1	2.2	43	1.4	14.0	38.1	22.1	131.7
A7-1953	35.7	+2.3	1.7	43	1.5	14.4	39.4	22.0	133.3
Chief	34.6	+7.6	2.7	52	1.5	12.6	39.7	20.7	132.4
Lincoln	33.8	0	2.1	42	1.4	13.8	40.0	22.1	133.3
Adams	31.5	-4.9	2.1	40	1.7	14.2	40.0	22.4	128.8
Illini	29.8	-0.8	3.0	46	1.7	13.3	40.6	21.0	131.0
Dunfield	28.1	-5.1	2.6	39	2.0	14.5	39.6	22.1	127.0
Mean	34.4		2.2	43	1.6	14.4	39.6	21.9	131.6

[1]Days earlier (-) or later (+) than Lincoln. Lincoln required 114 days to mature.

Table 36. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1949.

Strain	Mean of 21 Tests	Newark Del.	Beltsville Md.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Dwight Ill.	Urbana Ill.	Clayton Ill.	Stonington Ill.
L6-2132	39.5	46.4	41.3	34.8	39.1	51.5	52.0	41.4	45.8	38.4	44.9
A7-6831	37.1	41.9	40.2	36.0	36.2	50.3	48.2	42.0	41.9	33.7	41.8
L6-1503	36.8	44.9	36.7	30.3	40.3	50.7	49.6	42.1	39.9	36.9	40.6
L6-1152	35.8	46.5	39.7	32.6	37.0	44.1	41.6	41.6	38.4	31.9	38.7
Anderson	35.7	39.4	43.6	32.6	37.2	45.9	50.1	41.6	34.2	34.9	39.4
A7-1953	35.7	41.2	40.0	31.1	36.6	47.9	44.1	37.5	36.8	36.9	37.6
Chief	34.6	39.0	40.5	32.5	36.4	42.4	42.2	40.0	32.5	32.4	35.0
Lincoln	33.8	41.0	33.6	34.9	34.3	38.1	40.7	41.9	35.4	31.6	37.4
Adams	31.5	36.5	34.9	37.0	34.2	31.1	32.7	39.4	37.4	27.1	27.6
Illini	29.8	34.6	35.0	30.4	29.7	31.0	36.2	38.8	27.5	27.6	29.2
Dunfield	28.1	30.8	31.5	32.8	31.3	24.9	28.7	31.3	26.8	27.0	24.0
Mean	34.4	40.2	37.9	33.2	35.7	41.6	42.4	39.8	36.1	32.6	36.0
Coef.of Var.(%)		7.7	--	7.9	5.4	10.3	9.0	8.4	8.8	8.2	13.2
Bu.Nec.for Sig(5%)		4.3	--	3.8	2.8	6.2	5.5	4.8	5.4	3.9	6.8

	Yield Rank									
L6-2132	2	2	4	2	1	1	6	1	1	1
A7-6831	4	4	2	7	3	4	2	2	5	2
L6-1503	3	7	11	1	2	3	1	3	2	3
L6-1152	1	6	6	4	6	7	4	4	7	5
Anderson	7	1	6	3	5	2	4	8	4	4
A7-1953	5	5	9	5	4	5	10	6	2	6
Chief	8	3	8	6	7	6	7	9	6	8
Lincoln	6	10	3	8	8	8	3	7	8	7
Adams	9	9	1	9	9	10	8	5	10	10
Illini	10	8	10	11	10	9	9	10	9	9
Dunfield	11	11	5	10	11	11	11	11	11	11

Table 36. (Continued)

Strain	Edge-wood Ill.	Free-burg Ill.	Eldor-ado Ill.	Ames Iowa	Ottum-wa Iowa	Nor-borne Mo.	Lad-donia Mo.	Els-berry Mo.	Colum-bia Mo.	Lin-coln Nebr.	Man-hattan Kans.
L6-2132	45.5	39.0	36.8	27.1	45.2	42.9	41.7	33.0	31.5	21.7	30.3
A7-6831	41.4	41.7	32.9	24.9	45.1	38.1	36.1	31.2	26.9	21.3	27.1
L6-1503	41.7	37.4	31.8	25.1	41.0	33.9	41.3	31.0	25.4	23.4	28.2
L6-1152	40.3	37.4	29.2	29.9	43.9	36.8	38.8	30.1	24.2	21.2	28.5
Anderson	42.0	37.6	29.3	22.7	38.4	39.0	35.7	31.8	26.4	21.2	27.1
A7-1953	42.2	34.8	33.0	27.0	41.8	39.7	38.0	26.3	27.9	21.0	27.3
Chief	36.8	38.1	31.8	22.5	43.7	33.2	34.8	29.5	34.4	21.5	28.4
Lincoln	38.1	36.6	34.5	25.6	39.1	36.3	37.8	26.2	22.0	19.4	26.0
Adams	38.0	32.9	26.9	27.0	39.6	29.4	36.5	26.8	24.2	18.8	23.4
Illini	36.3	29.6	26.8	24.2	35.4	30.4	33.6	27.7	21.1	16.7	23.2
Dunfield	37.0	32.7	24.2	26.1	36.5	26.5	31.3	25.1	21.1	19.5	21.8
Mean	39.9	36.2	30.6	25.6	40.9	35.1	36.9	29.0	25.9	20.5	26.5
Coef.of Var.(%)	9.6	7.5	10.8	6.0	7.5	8.8	7.4	8.2	9.2	12.0	7.3
Bu/Sig. (5%)	5.6	4.6	4.8	2.2	4.4	4.5	4.0	3.4	3.4	3.7	2.8

	Yield Rank										
L6-2132	1	2	1	2	1	1	1	1	2	2	1
A7-6831	5	1	4	8	2	4	7	3	4	4	6
L6-1503	4	5	5	7	6	7	2	4	6	1	4
L6-1152	6	5	8	1	3	5	3	5	7	5	2
Anderson	3	4	7	10	9	3	8	2	5	5	6
A7-1953	2	8	3	3	5	2	4	9	3	7	5
Chief	10	3	5	11	4	8	9	6	1	3	3
Lincoln	7	7	2	6	8	6	5	10	9	9	8
Adams	8	9	9	3	7	10	6	8	7	10	9
Illini	11	11	10	9	11	9	10	7	10	11	10
Dunfield	9	10	11	5	10	11	11	11	10	8	11

Table 37. Summary of maturity, days earlier (-) or later (+) than Lincoln, for the strains in the Uniform Test, Group III, 1949.

Strain	Mean of 17 Tests[1]	Newark Del.	Beltsville Md.	Columbus Ohio	Lafayette Ind.	Worthington Ind.	Urbana Ill.	Stonington Ill.	Edgewood Ill.
L6-2132	+6.1	-2	+2	+ 5	+ 7	+ 5	+ 8	+ 9	+ 9
A7-6831	+6.6	+1	0	+ 6	+10	+ 5	+ 7	+ 8	+10
L6-1503	+6.7	+1	0	+ 6	+ 8	+ 5	+ 9	+ 9	+11
L6-1152	+3.2	-3	-2	+ 3	+ 2	+ 4	+ 4	+ 9	+ 6
Anderson	+9.1	+5	+8	+ 6	+13	+10	+11	+11	+12
A7-1953	+2.3	-2	0	+ 2	+ 4	+ 4	+ 3	+ 2	+ 6
Chief	+7.6	+3	+8	+12	+ 9	+ 8	+10	+10	+11
Lincoln	0	0	0	0	0	0	0	0	0
Adams	-4.9	-8	-2	-10	- 3	- 1	- 6	- 2	- 5
Illini	-0.8	-3	-4	- 1	0	+ 1	+ 1	+ 2	- 1
Dunfield	-5.1	-9	-4	-10	- 2	- 2	- 9	- 4	- 8
Date planted		6/10	6/2	5/28	6/1	5/16	5/18	6/1	5/21
Lincoln matured		10/5	9/27	9/17	9/24	9/20	9/16	9/17	9/8
Days to mat.	114	117	117	112	115	127	121	108	110

[1] Manhattan not included in the mean.

Table 37. (Continued)

Strain	Free-burg Ill.	Eldor-ado Ill.	Ames Iowa	Ottum-wa Iowa	Nor-borne Mo.	Lad-donia Mo.	Els-berry Mo.	Colum-bia Mo.	Lin-coln Nebr.	Man-hattan Kans.
L6-2132	+10	+13	+ 5	+ 8	+ 3	+ 3	+ 9	+ 6	+ 4	+11
A7-6831	+13	+14	+ 5	+ 8	+ 4	+ 5	+ 6	+ 6	+ 5	+ 9
L6-1503	+10	+13	+ 5	+ 7	+ 3	+ 5	+ 9	+ 7	+ 6	+ 7
L6-1152	+ 5	+ 8	+ 4	+ 2	+ 2	+ 3	+ 4	+ 2	+ 1	+ 6
Anderson	+10	+15	+ 5	+10	+ 6	+ 9	+ 9	+ 8	+ 7	+12
A7-1953	+ 2	+ 4	0	+ 2	+ 2	+ 3	+ 5	+ 2	0	+ 8
Chief	+ 9	+11	+ 3	+ 8	+ 5	+10	+ 5	+ 5	+ 2	+ 8
Lincoln	0	0	0	0	0	0	0	0	0	0
Adams	- 4	- 5	- 6	- 2	- 8	- 2	- 6	- 7	- 6	+ 4
Illini	- 1	- 4	- 2	+ 1	0	+ 2	- 2	- 1	- 1	+12
Dunfield	- 3	- 7	- 4	- 1	- 5	0	- 6	- 7	- 6	+ 4
Date planted	5/30	5/27	5/27	5/26	5/26	6/18	6/7	5/17	5/28	6/1
Lincoln matured	9/11	9/8	9/29	9/21	9/20	9/27	9/22	9/11	9/20	9/18
Days to mat.	104	104	125	118	117	101	107	117	115	109

Table 38. Summary of lodging and height data for the strains in the Uniform Test, Group III, 1949.

Strain	Mean of 21 Tests	Newark Del.	Beltsville Md.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Dwight Ill.	Urbana Ill.	Clayton Ill.	Stonington Ill.
L6-2132	1.8	2.0	2.0	1.8	2.1	2.6	2.0	2.0	1.6	2.3	2.1
A7-6831	2.0	3.0	1.5	1.2	1.6	2.5	2.1	2.4	2.0	2.9	2.4
L6-1503	1.9	2.0	3.0	1.8	1.6	2.3	2.0	1.9	1.8	2.4	2.3
L6-1152	2.0	2.0	3.0	2.0	1.7	2.9	2.4	2.0	1.8	2.5	2.3
Anderson	2.2	4.0	3.0	1.2	2.5	3.4	2.9	2.5	2.4	2.7	2.5
A7-1953	1.7	2.0	1.5	1.2	1.6	2.5	2.0	1.9	1.9	2.6	2.0
Chief	2.7	4.0	3.0	2.8	2.5	3.5	2.5	2.6	2.8	3.0	2.9
Lincoln	2.1	2.0	1.5	1.5	1.7	3.4	2.1	2.5	2.5	2.9	2.4
Adams	2.1	4.0	3.5	1.8	1.4	2.9	2.4	2.6	2.6	3.4	2.6
Illini	3.0	5.0	2.5	3.0	2.6	3.8	3.4	2.9	3.9	4.0	3.0
Dunfield	2.6	4.0	4.0	3.0	2.1	4.1	3.4	3.1	2.8	3.0	3.3
Mean	2.2	3.1	2.6	1.9	1.9	3.1	2.5	2.4	2.4	2.9	2.5
	Mean of 20 Tests					Height					
L6-2132	42	48	42	38	38		50	48	49	45	47
A7-6831	44	43	48	42	43		51	51	54	46	46
L6-1503	41	47	40	36	39		49	49	49	43	46
L6-1152	40	39	44	36	40		45	48	48	41	44
Anderson	43	41	48	40	43		48	49	51	45	47
A7-1953	43	42	50	40	41		49	50	52	44	49
Chief	52	53	54	46	48		62	57	62	54	57
Lincoln	42	40	48	38	41		49	48	50	45	48
Adams	40	40	40	37	39		49	49	49	43	45
Illini	46	49	48	46	43		53	53	57	50	48
Dunfield	39	38	42	40	38		44	46	46	41	42
Mean	43	44	46	40	41		50	50	52	45	47

Table 38. (Continued)

Strain	Edge-wood Ill.	Free-burg Ill.	Eldor-ado Ill.	Ames Iowa	Ottum-wa Iowa	Nor-borne Mo.	Iad-donia Mo.	Els-berry Mo.	Colum-bia Mo.	Lin-coln Nebr.	Man-hattan Kan.
L6-2132	1.5	2.0	2.0	1.6	2.3	2.5	1.8	1.0	1.0	1.0	1.1
A7-6831	2.0	2.4	2.1	1.8	2.8	2.8	1.8	1.0	1.0	1.5	1.3
L6-1503	1.5	1.8	1.8	1.5	2.3	2.5	1.8	1.0	1.0	1.5	1.2
L6-1152	2.0	1.5	2.0	1.8	2.6	3.0	1.5	1.0	1.0	1.0	1.2
Anderson	2.0	2.0	2.4	1.6	3.1	2.8	2.0	1.0	1.0	1.0	1.1
A7-1953	2.0	1.0	2.0	1.4	2.5	2.5	1.5	1.0	1.0	1.0	1.1
Chief	3.0	2.5	2.6	2.6	3.3	2.8	2.5	2.5	1.8	1.5	3.0
Lincoln	3.3	1.3	2.1	1.5	2.8	2.8	1.8	1.0	1.0	1.5	1.5
Adams	1.8	1.3	1.9	1.1	2.5	3.3	1.8	1.0	1.0	1.0	1.1
Illini	2.3	2.1	2.5	2.3	3.5	3.0	3.0	2.5	1.8	1.2	2.5
Dunfield	2,3	1.5	2.1	2.1	3.5	4.0	2.0	1.0	1.0	1.0	1.4
Mean	2.2	1.8	2.1	1.8	2.8	2.9	2.0	1.3	1.1	1.2	1.5

	Height										
L6-2132	44	43	38	41	49	50	41	34	35	31	32
A7-6831	43	45	40	43	49	50	42	38	37	32	35
L6-1503	42	44	36	40	48	47	39	32	32	31	33
L6-1152	42	41	36	39	46	48	38	31	32	31	32
Anderson	47	45	38	40	49	51	41	35	35	33	34
A7-1953	44	45	38	41	49	50	41	34	37	32	34
Chief	55	54	47	44	55	62	46	44	49	41	42
Lincoln	42	44	38	40	50	50	40	32	36	32	35
Adams	39	39	34	37	48	48	38	31	33	33	33
Illini	47	42	39	42	52	53	43	38	42	35	37
Dunfield	39	40	33	39	45	44	37	32	33	33	32
Mean	44	44	38	41	49	50	41	35	36	33	34

Table 39. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1948-49.

Strain	Mean of 42 Tests	Beltsville Md.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Urbana Ill.	Clayton Ill.	Stonington Ill.
L6-1152	36.3	40.9	35.4	44.9	39.8	42.3	39.0	33.5	42.3
Chief	34.9	42.3	36.6	40.7	39.7	41.8	33.3	30.4	37.4
Lincoln	34.0	36.1	35.4	39.5	39.1	40.1	38.0	29.5	39.0
Adams	32.4	37.4	36.1	40.8	34.6	34.9	37.7	25.0	32.8
Illini	30.9	35.7	35.0	35.7	34.0	35.2	30.6	26.8	30.1
Dunfield	29.4	33.7	32.6	36.2	30.7	32.6	31.0	25.2	30.5
Mean	33.0	37.7	35.2	39.6	36.3	37.8	34.9	28.4	35.4
		Yield Rank							
L6-1152		2	3	1	1	1	1	1	1
Chief		1	1	3	2	2	4	2	3
Lincoln		4	3	4	3	3	2	3	2
Adams		3	2	2	4	5	3	6	4
Illini		5	5	6	5	4	6	4	6
Dunfield		6	6	5	6	6	5	5	5

Table 40. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1948-49.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	42	37	40	41	34	42	42	42	42
L6-1152	36.3	+3.1	1.9	39	1.8	16.6	38.7	22.8	130.0
Chief	34.9	+7.7	2.8	50	1.5	12.8	40.0	21.1	131.2
Lincoln	34.0	0	2.3	41	1.6	13.7	40.2	22.1	132.7
Adams	32.4	-3.9	2.2	39	1.6	14.3	40.1	22.5	128.5
Illini	30.9	-0.1	3.0	44	1.6	13.6	40.9	21.0	130.4
Dunfield	29.4	-3.1	2.9	39	1.9	14.9	39.5	22.3	126.0
Mean	33.0		2.5	42	1.7	14.3	39.9	22.0	129.8

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

Table 39. (Continued)

Strain	Edge-wood Ill.	Free-burg Ill.	Eldor-ado Ill.	Ames Iowa	Ottumwa Iowa	Nor-borne Mo.	Colum-bia Mo.	Lincoln Nebr.	Man-hattan Kans.
L6-1152	41.2	37.0	33.2	36.9	44.8	44.1	23.9	26.2	29.9
Chief	39.0	34.8	33.0	33.8	43.2	42.9	27.7	22.1	28.0
Lincoln	38.0	32.1	35.3	34.8	39.5	40.3	21.1	25.1	28.6
Adams	39.0	29.8	28.9	35.2	39.3	34.2	22.2	27.0	27.7
Illini	36.0	26.3	28.5	35.0	37.5	37.2	19.6	21.3	25.7
Dunfield	35.6	27.3	26.0	30.8	36.3	31.6	20.5	26.6	23.9
Mean	38.1	31.2	30.7	34.4	40.1	38.4	22.5	24.7	27.3
	Yield Rank								
L6-1152	1	1	3	1	1	1	2	3	1
Chief	2	2	2	5	2	2	1	5	3
Lincoln	4	3	1	4	3	3	4	4	2
Adams	2	4	4	2	4	5	3	1	4
Illini	5	6	5	3	5	4	6	6	5
Dunfield	6	5	6	6	6	6	5	2	6

Table 41. Six-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1944-49.

Strain	Mean of 115 Tests	George-town Del.	Belts-ville Md.	Blacks-burg Va.	Colum-bus Ohio	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.	Dwight Ill.	Urbana Ill.
Years Tested		1945-1948	1945-1949	1946-1948	1945-1949	1944-45 1947-49	1944-1949	1945-1949	1944-47 1949	1944-1949
Lincoln	30.6	21.4	31.6	30.3	37.1	41.1	37.2	38.2	27.8	35.0
Chief	30.2	23.2	35.1	29.0	36.6	41.1	34.2	42.2	23.4	31.9
Adams	29.3	20.3	31.5	24.6	37.2	41.6	33.1	34.4	27.0	34.6
Illini	27.4	18.8	30.0	26.9	34.1	38.9	32.0	32.6	26.6	29.4
Dunfield	26.4	19.7	26.5	22.8	31.8	36.9	29.0	32.5	21.9	29.5
Mean	28.8	20.7	30.9	26.7	35.4	39.9	33.1	36.0	25.3	32.1
		Yield Rank								
Lincoln		2	2	1	2	2	1	2	1	1
Chief		1	1	2	3	2	2	1	4	3
Adams		3	3	4	1	1	3	3	2	2
Illini		5	4	3	4	4	4	4	3	5
Dunfield		4	5	5	5	5	5	5	5	4

Table 42. Six-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1944-49.

Strain	Mean Yield Bu/A.	Matu-rity[1]	Lodg-ing	Height Inches	Seed Qual-ity	Seed Weight	Percent-age of Protein	Percent-age of Oil	Iodine Number of Oil
No. of Tests	115	94	105	105	96	113	113	113	113
Lincoln	30.6	0	2.2	37	1.6	13.9	40.3	21.8	134.1
Chief	30.2	+7.6	2.8	46	1.6	12.6	40.2	20.8	132.5
Adams	29.3	-2.9	2.1	35	1.6	14.3	40.4	22.1	130.6
Illini	27.4	+0.8	3.0	40	1.6	13.6	40.9	20.6	132.3
Dunfield	26.4	-1.4	2.9	37	2.0	15.0	39.7	21.8	127.4
Mean	28.8		2.6	39	1.7	13.9	40.3	21.4	131.4

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

Table 41. (Continued)

Strain	Clayton Ill.	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Shelbyville Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.
Years Tested	1944-1949	1944-1949	1944-1949	1944-1949	1947-1949	1944-1949	1944-1949	1945-1948	1944-1949	1944-1949	1944-1949
Lincoln	26.8	32.9	29.7	29.3	32.2	36.6	32.8	19.8	20.7	23.7	24.8
Chief	26.2	30.4	28.3	28.4	31.8	34.3	32.4	19.9	25.6	20.8	23.7
Adams	24.7	30.7	27.1	25.7	28.4	37.8	32.9	19.7	22.0	24.0	24.7
Illini	22.7	28.5	25.2	22.9	27.9	34.5	30.8	18.2	18.8	21.3	22.1
Dunfield	24.1	26.3	27.0	24.5	25.1	32.4	29.9	18.3	20.6	22.9	22.1
Mean	24.9	29.8	27.5	26.2	29.1	35.1	31.8	19.2	21.5	22.5	23.5
	Yield Rank										
Lincoln	1	1	1	1	1	2	2	2	3	2	1
Chief	2	3	2	2	2	4	3	1	1	5	3
Adams	3	2	3	3	3	1	1	3	2	1	2
Illini	5	4	5	5	4	3	4	5	5	4	4
Dunfield	4	5	4	4	5	5	5	4	4	3	4

UNIFORM TEST, GROUP IV

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

Strain	Source or Originating Agency	Origin
Carlin	Farmer's selection	Rogue in Dunfield
Chief	Ill. Agr. Exp. Sta.	Sel. from Illini x Manchu
Gibson	Purdue Agr. Exp. Sta.	Sel. from Midwest x Dunfield
Patoka	Purdue Agr. Exp. Sta.	Sel. from P. I. 70218-2
Wabash	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C490	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from Patoka x CX531-468-3-3-2
C501	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from C143 x CX531-468-3-3-2-3
C502	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from C143 x CX531-468-3-3-2-3
C612	Purdue Agr. Exp. Sta. & U.S.R.S.L.	Sel. from C508 (Patoka x L7-1355)
L6-1656	Ill. Agr. Exp. Sta. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L6-5679	Ill. Agr. Exp. Sta. & U.S.R.S.L.	Sel. from Lincoln x Richland

The Uniform Test, Group IV was planted at seventeen locations in the northern states in 1949, but due to drought, the plantings at Georgetown, Delaware, were a failure. The test at Lancaster, Pennsylvania had to be discarded because pheasants damaged the stands. Group IV was planted at one new location, Laddonia, Missouri. This is typical Putnam silt loam, characteristic of much of Missouri but has been brought to a high level of fertility by good farming practices. Yields were generally good, the average of all locations being equal to the record high of 1948.

Three new strains were added to Group IV in 1949. L6-5679, from the cross Lincoln x Richland, was highest in yield in the Preliminary Group IV in 1948, and L6-1656, from the cross Lincoln x (Lincoln x Richland), was high in yield and in oil content in Preliminary III in 1948. Carlin was transferred from Group III because of its late maturity.

The most outstanding strain in the 1949 tests was L6-5679 (Tables 43 to 46). This strain yielded 2.4 bushels above the next highest strain and had the least lodging of any strain in the test. It was next to the tallest strain and had better than average seed quality. Reports from Oklahoma, Arkansas, and Mississippi also place it very high in yield. It is a week later than Wabash and this would somewhat limit its usefulness. The one weakness of this strain is its oil content. In 1948 it was .8% lower than Wabash and in 1949, .9% lower. Although it is not as high as Wabash in percentage of oil, it produced 9% more oil per acre.

L6-1656 was second in yield but due to its higher oil content, it produced almost as much oil per acre as L6-5679. This strain is comparable to Wabash in most respects but has averaged two bushels higher in yield in 1949.

Carlin yielded very poorly at most locations, but was high at Elsberry and Manhattan. It has performed best where lodging is least severe and its pronounced tendency to lodge is least expressed.

The 1949 season favored Chief more than did the 1948 season. Chief equalled Wabash in 1949 but was almost two bushels below Wabash in 1948.

Most of the tests were planted in May or early June. Laddonia, Missouri and Thayer, Kansas were planted late and this has resulted in a very short growing period (Table 43). Due to this late planting, Thayer has been omitted from certain of the means.

In addition to the named varieties, four selections have been in the Group IV test for two years. Data for the two years are summarized in tables 47 and 48. C612 is high in yield, lodging resistance, and oil content and has equalled or exceeded Wabash in all respects but height. C502 is somewhat earlier and lower in yield than C612 but is equal to it in lodging resistance and oil content. C490 and C501 are late in maturity and relatively low in yield, lodging resistance, and oil content. They have been quite erratic in yield, being high at some locations and low at most.

In the three year summaries, tables 49 and 50, the 1947 data for C508, the parent line of C612, were used for C612. The relative performance of C612 and C502 is about the same for the three-year period as for the two-year period. These strains are definitely superior germ plasm and are being used in the breeding program.

Wabash was first tested at Evansville and N. Vernon in 1943. Since then it has been grown in over eighty tests in the northern states (Tables 51 and 52). It has averaged about a bushel more in yield than Chief, about a day later in maturity, and is more resistant to lodging. Wabash seed also has a higher oil content, better quality, and less damage from purple spot disease.

Wabash was increased in 1949 in Indiana, Illinois, Missouri, and Kansas. Approximately 145,000 bushels were produced in Indiana; 175,000 in Illinois; 30,000 in Missouri; and 2,000 in Kansas. Ample supplies of seed should be available for planting in 1950.

Table 43. Summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1949.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	15	13	14	14	11	14	14	14	14
L6-5679	37.7	+6.7	1.8	49	1.4	14.5	40.1	20.2	132.6
L6-1656	35.3	+1.9	2.0	46	1.6	13.9	39.6	21.3	135.9
C612	35.2	+3.5	1.9	42	1.6	16.6	40.3	21.5	129.4
Chief	33.2	-1.8	2.7	53	1.6	12.6	40.1	20.8	132.3
C502	33.2	+2.0	2.1	42	1.6	14.9	39.4	21.4	131.0
Wabash	33.2	0	2.1	45	1.2	14.2	39.9	21.1	129.6
C490	32.1	+9.8	2.4	43	1.6	17.1	42.7	19.9	131.6
C501	31.5	+8.8	2.5	47	1.7	14.1	41.2	20.2	133.4
Carlin	31.1	+1.0	3.0	39	1.4	14.0	40.8	20.9	131.7
Patoka	29.8	+0.8	2.4	39	1.8	17.7	43.0	20.3	132.2
Gibson	28.3	+2.9	2.8	43	1.5	13.4	39.4	20.5	134.6
Mean	32.8		2.3	44	1.5	14.8	40.6	20.7	132.2

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

Table 44. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1949.

Strain	Mean of 15 Tests	Belts-ville Md.	Worth-ington Ind.	Evans-ville Ind.	Urbana Ill.	Clayton Ill.	Ston-ington Ill.
L6-5679	37.7	45.6	48.3	50.5	41.8	38.3	37.1
L6-1656	35.3	40.8	49.5	40.1	45.9	35.4	37.7
C612	35.2	39.8	39.6	40.4	44.1	37.9	37.0
Chief	33.2	38.7	50.5	31.5	30.7	32.9	34.9
C502	33.2	38.0	42.1	39.3	37.6	31.6	36.4
Wabash	33.2	37.8	44.6	42.6	37.6	34.8	33.6
C490	32.1	35.8	40.0	35.6	31.1	29.6	24.8
C501	31.5	31.3	32.0	34.8	34.4	35.7	29.1
Carlin	31.1	33.3	38.1	32.0	35.3	28.2	26.3
Patoka	29.8	30.9	35.6	35.3	33.9	29.4	26.2
Gibson	28.3	27.8	24.7	29.5	33.2	31.9	30.9
Mean	32.8	36.3	40.5	37.4	36.8	33.2	32.2
Coef. of Var. (%)		--	11.1	12.8	12.4	8.3	8.4
Bu. Nec. for Sig. (5%)		--	6.5	6.9	6.4	4.0	4.4

	Yield Rank					
L6-5679	1	3	1	3	1	2
L6-1656	2	2	4	1	4	1
C612	3	7	3	2	2	3
Chief	4	1	10	11	6	5
C502	5	5	5	4	8	4
Wabash	6	4	2	4	5	6
C490	7	6	6	10	9	11
C501	9	10	8	7	3	8
Carlin	8	8	9	6	11	9
Patoka	10	9	7	8	10	10
Gibson	11	11	11	9	7	7

Table 44. (Continued)

Strain	Edge-wood Ill.	Free-burg Ill.	Eldor-ado Ill.	Nor-borne Mo.	Lad-donia Mo.	Els-berry Mo.	Colum-bia Mo.	Man-hattan Kans.	Thayer Kans.
L6-5679	39.5	42.3	33.2	39.5	40.2	36.6	30.5	27.9	14.3
L6-1656	35.6	37.7	30.0	36.0	42.0	32.2	24.6	28.3	13.7
C612	39.8	36.5	32.2	35.8	40.7	30.9	34.1	27.9	12.0
Chief	36.9	38.8	31.0	35.0	37.1	30.4	31.2	27.0	12.1
C502	34.9	33.6	28.4	34.3	37.3	32.7	29.0	29.1	13.3
Wabash	35.3	33.8	26.6	36.7	37.7	33.3	22.4	27.4	13.1
C490	38.6	34.3	29.6	37.5	37.2	34.3	30.6	30.4	12.7
C501	39.7	35.9	32.3	32.9	32.5	34.0	26.7	27.5	13.5
Carlin	31.9	33.8	27.2	33.4	36.4	35.7	29.1	32.0	13.1
Patoka	40.0	36.7	26.5	27.2	32.8	28.5	27.8	25.5	11.0
Gibson	30.6	33.0	27.7	31.1	35.7	29.1	21.3	25.5	12.5
Mean	36.7	36.0	29.5	34.5	37.2	32.5	27.9	28.0	12.8
C.V. (%)	--	5.2	10.8	7.0	8.3	8.4	6.2	7.6	--
Bu/Sig.(5%)	--	2.7	4.6	3.5	4.4	3.9	2.5	3.1	--
					Yield Rank				
L6-5679	4	1	1	1	3	1	4	5	1
L6-1656	7	3	5	4	1	7	9	4	2
C612	2	5	3	5	2	8	1	5	10
Chief	6	2	4	6	7	9	2	9	9
C502	9	10	7	7	5	6	6	3	4
Wabash	8	8	10	3	4	5	10	8	5
C490	5	7	6	2	6	3	3	2	7
C501	3	6	2	9	11	4	8	7	3
Carlin	10	8	9	8	8	2	5	1	5
Patoka	1	4	11	11	10	11	7	10	11
Gibson	11	11	8	10	9	10	11	10	8

Table 45. Summary of maturity data, days earlier (-) or later (+) than Wabash, for the strains in the Uniform Test, Group IV, 1949.

Strain	Mean of 13 Tests[1]	Belts-ville Md.	Worth-ington Ind.	Evans-ville Ind.	Urbana Ill.	Ston-ington Ill.	Edge-wood Ill.
L6-5679	+6.7	+14	+15	+11	+1	+1	+3
L6-1656	+1.9	0	0	+ 2	-1	-6	-3
C612	+3.5	+ 6	+10	+10	0	0	-3
Chief	-1.8	+ 2	+ 2	+ 5	-5	-5	-4
C502	+2.0	+ 3	+ 3	+ 3	-1	-3	-2
Wabash	0	0	0	0	0	0	0
C490	+9.8	+ 6	+16	+10	+9	+4	+5
C501	+8.8	+ 3	+12	+10	+9	+3	+5
Carlin	+1.0	0	+ 2	+ 4	-2	-3	-2
Patoka	+0.8	+ 3	+ 4	+ 4	-2	-2	-2
Gibson	+2.9	+ 3	+ 7	+ 6	+1	-1	+3
Date planted		6/2	5/16	5/17	5/18	6/1	5/21
Wabash matured		10/7	9/26	9/26	10/1	10/2	9/23
Days to mature	124	127	133	132	136	123	125

[1] Thayer not included in the mean.

Table 45. (Continued)

Strain	Free-burg Ill.	Eldor-ado Ill.	Nor-borne Mo.	Lad-donia Mo.	Els-berry Mo.	Colum-bia Mo.	Man-hattan Kans.	Thayer Kans.
L6-5679	+ 6	+ 7	+ 5	+ 6	+4	+ 6	+8	+8
L6-1656	- 1	0	+ 9	+ 5	-2	+14	+8	+8
C612	+ 5	+ 4	+ 2	+ 2	-3	+ 5	+7	+8
Chief	- 2	- 2	- 1	- 3	-7	- 3	0	-7
C502	+ 1	0	+ 7	+ 8	+1	+ 6	0	0
Wabash	0	0	0	0	0	0	0	0
C490	+14	+ 7	+13	+15	+9	+15	+5	+5
C501	+13	+10	+11	+12	+7	+12	+7	0
Carlin	- 4	- 3	+ 7	+ 5	+4	+ 5	+2	-1
Patoka	+ 2	+ 1	+ 1	+ 1	-1	+ 2	0	-3
Gibson	+ 5	+ 2	+ 2	+ 4	-2	+ 5	+3	-3
Date planted	5/30	5/27	5/26	6/18	6/7	5/17	6/1	7/4
Wabash matured	9/23	9/22	10/2	10/5	10/3	9/22	10/1	10/15
Days to mature	116	118	129	109	118	128	122	103

Table 46. Summary of lodging and height data for the strains in the Uniform Test, Group IV, 1949.

Strain	Mean of 14 Tests	Belts-ville Md.	Worth-ington Ind.	Evans-ville Ind.	Urbana Ill.	Clayton Ill.	Ston-ington Ill.
L6-5679	1.8	2.5	1.6	1.8	2.1	2.1	2.4
L6-1656	2.0	2.5	2.1	2.4	2.1	2.5	2.0
C612	1.9	2.5	1.6	1.9	2.3	2.3	2.3
Chief	2.7	3.5	2.4	2.9	2.8	3.1	2.8
C502	2.1	3.0	2.1	2.5	2.3	2.5	2.3
Wabash	2.1	3.0	1.9	2.4	2.0	2.5	2.4
C490	2.4	3.0	2.4	2.5	3.0	2.6	2.9
C501	2.5	4.0	2.3	2.3	2.5	2.9	2.8
Carlin	3.0	4.5	3.3	3.6	2.9	3.1	3.0
Patoka	2.4	3.5	2.1	3.4	2.6	3.1	2.9
Gibson	2.8	4.0	2.5	3.1	2.8	3.8	3.0
Mean	2.3	3.3	2.2	2.6	2.5	2.8	2.6
	Mean of 14 Tests[1]			Height			
L6-5679	49	54	53	53	57	53	55
L6-1656	46	50	51	53	55	50	51
C612	42	43	46	46	50	45	47
Chief	53	60	59	56	60	55	59
C502	42	44	47	45	59	44	46
Wabash	45	46	52	49	55	47	52
C490	43	44	48	45	49	44	47
C501	47	48	49	50	56	47	50
Carlin	39	36	43	40	45	41	43
Patoka	39	43	42	42	46	41	46
Gibson	43	44	46	44	52	46	49
Mean	44	47	49	48	53	47	50

[1]Thayer not included in the mean.

Table 46. (Continued)

Strain	Edge-wood Ill.	Free-burg Ill.	Eldor-ado Ill.	Nor-borne Mo.	Lad-donia Mo.	Els-berry Mo.	Colum-bia Mo.	Man-hattan Kans.	Thayer Kans.
L6-5679	1.7	2.0	1.1	3.3	1.8	1.0	1.0	1.0	
L6-1656	2.0	2.0	1.8	2.5	1.8	1.5	1.0	1.1	
C612	1.8	2.0	2.3	2.8	2.0	1.0	1.0	1.1	
Chief	2.3	2.5	2.5	3.3	3.0	2.5	1.8	2.8	
C502	1.1	2.0	2.0	3.5	1.8	1.5	1.3	1.1	
Wabash	2.0	2.0	3.9	3.0	2.3	1.0	1.0	1.1	
C490	2.0	2.5	2.3	3.8	2.8	1.0	1.0	1.7	
C501	2.3	2.8	2.8	3.3	2.8	1.0	1.8	1.6	
Carlin	2.5	2.6	2.8	4.0	2.8	2.0	2.3	2.2	
Patoka	2.1	2.0	2.3	3.5	2.5	1.0	1.0	1.0	
Gibson	2.7	2.8	2.8	3.3	2.8	1.5	1.8	1.7	
Mean	2.0	2.3	2.3	3.3	2.4	1.4	1.4	1.5	
	Height								
L6-5679	51	49	40	55	47	39	40	38	17
L6-1656	46	47	40	52	45	36	38	36	18
C612	45	39	34	50	41	28	37	31	16
Chief	56	53	44	58	50	41	47	43	17
C502	42	42	35	47	38	30	40	33	19
Wabash	49	47	36	53	42	33	37	37	16
C490	45	43	38	49	40	33	41	36	18
C501	48	47	42	55	44	39	45	37	20
Carlin	42	39	33	44	36	33	36	34	17
Patoka	44	39	32	47	37	26	35	29	16
Gibson	44	43	36	50	42	37	38	36	18
Mean	47	44	37	51	42	34	39	35	17

Table 47. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1948-49.

Strain	Mean of 32 Tests	Belts-ville Md.	Worth-ington Ind.	Evans-ville Ind.	Urbana Ill.	Clayton Ill.
C612	35.4	39.3	45.8	43.5	42.0	34.7
Wabash	33.7	38.6	49.1	43.6	37.9	31.4
C502	33.5	40.9	46.5	44.3	34.3	31.5
Chief	32.8	38.7	44.4	40.8	31.5	28.8
C501	32.2	34.3	35.4	39.1	31.8	34.6
C490	31.8	36.5	42.3	38.8	31.3	27.8
Patoka	30.3	33.3	37.5	35.5	33.6	28.1
Gibson	28.6	30.3	29.2	33.2	35.6	28.9
Mean	32.3	36.5	41.3	39.9	34.8	30.7
			Yield Rank			
C612		2	3	3	1	1
Wabash		4	1	2	2	4
C502		1	2	1	4	3
Chief		3	4	4	7	6
C501		6	7	5	6	2
C490		5	5	6	8	8
Patoka		7	6	7	5	7
Gibson		8	8	8	3	5

Table 48. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1948-49.

Strain	Mean Yield Bu/A.	Matu-rity[1]	Lodg-ing	Height Inches	Seed Qual-ity	Seed Weight	Percent-age of Protein	Percent-age of Oil	Iodine Number of Oil
No. of Tests	32	29	29	31	23	30	30	30	30
C612	35.4	+3.6	2.0	41	1.6	16.6	40.6	21.9	129.2
Wabash	33.7	0	2.0	44	1.4	14.4	40.0	21.7	129.1
C502	33.5	+1.8	2.0	41	1.6	15.0	39.8	21.9	130.8
Chief	32.8	-2.1	2.6	51	1.8	13.0	40.8	21.0	131.3
C501	32.2	+7.7	2.5	45	1.6	14.5	41.2	20.8	131.8
C490	31.8	+8.6	2.3	41	1.6	17.2	42.6	20.6	130.9
Patoka	30.3	+0.4	2.3	38	2.1	17.4	43.2	20.7	132.2
Gibson	28.6	+2.7	2.7	42	1.5	14.0	40.0	20.6	132.9
Mean	32.3		2.3	43	1.7	15.3	41.0	21.2	131.0

[1]Days earlier (-) or later (+) than Wabash. Wabash required 126 days to mature.

Table 47. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Eldorado Ill.	Norborne Mo.	Columbia Mo.	Manhattan Kans.
C612	39.8	42.2	36.4	34.0	40.3	28.7	30.2
Wabash	38.7	38.0	33.4	31.2	39.6	25.6	25.4
C502	38.4	40.1	31.8	33.7	39.8	27.9	26.3
Chief	35.3	37.8	34.8	31.9	40.8	28.4	26.6
C501	34.1	40.2	36.5	34.5	37.4	27.6	27.3
C490	30.4	38.9	32.7	32.5	41.2	29.4	28.6
Patoka	31.4	37.7	34.1	31.1	34.0	26.7	26.1
Gibson	33.2	34.3	32.6	30.5	35.5	23.0	25.3
Mean	35.2	38.7	34.0	32.4	38.6	27.2	27.1
	Yield Rank						
C612	1	1	2	2	3	2	1
Wabash	2	5	5	6	5	7	8
C502	3	3	8	3	4	4	5
Chief	4	6	3	5	2	3	4
C501	5	2	1	1	6	5	3
C490	8	4	6	4	1	1	2
Patoka	7	7	4	7	8	6	7
Gibson	6	8	7	8	7	8	5

Table 49. Three-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1947-49.

Strain	Mean of 47 Tests	Lancaster Pa.	Georgetown Del.	Beltsville Md.	Blacksburg Va.	Worthington Ind.	Vincennes Ind.	Evansville Ind.	Urbana Ill.	Clayton Ill.
Years Tested		1948	1947-1948	1947-1949	1947-1948	1947-1949	1947-1948	1947-1949	1947-1949	1947-1949
C612[1]	33.2	35.0	24.9	34.2	30.0	44.8	26.9	43.8	40.3	29.3
C502	31.3	31.5	21.6	32.4	25.7	44.9	28.1	42.5	33.7	27.3
Wabash	31.1	35.3	23.5	33.2	31.8	45.4	21.3	41.1	36.3	25.5
Chief	30.1	34.5	20.6	33.8	28.0	43.5	24.3	37.9	31.4	24.0
Patoka	28.7	33.3	21.9	28.1	25.8	38.1	26.5	35.1	32.6	25.0
Gibson	27.5	23.7	21.4	24.5	18.9	32.1	22.1	34.2	34.5	24.1
Mean	30.3	32.2	22.3	31.0	26.7	41.5	24.9	39.1	34.8	25.9
		Yield Rank								
C612		2	1	1	2	3	2	1	1	1
C502		5	4	4	5	2	1	2	4	2
Wabash		1	2	3	1	1	6	3	2	3
Chief		3	6	2	3	4	4	4	6	6
Patoka		4	3	5	4	5	3	5	5	4
Gibson		6	5	6	6	6	5	6	3	5

[1]C508 data used for 1947.

Table 50. Three-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1947-49.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	47	42	41	44	35	44	44	44	44
C612[2]	33.2	+2.8	1.8	39	1.7	16.7	41.0	22.0	128.5
C502	31.3	+2.2	1.8	39	1.6	15.1	40.0	22.1	129.9
Wabash	31.1	0	1.9	42	1.5	14.4	40.5	21.8	127.5
Chief	30.1	-1.6	2.5	48	1.9	12.7	41.0	21.1	130.8
Patoka	28.7	+0.7	2.1	36	1.9	17.2	43.4	20.6	131.7
Gibson	27.5	+3.2	2.7	40	1.6	14.0	40.3	20.6	132.4
Mean	30.3		2.1	41.	1.7	15.0	41.0	21.4	130.1

[1]Days earlier (-) or later (+) than Wabash. Wabash required 126 days to mature.
[2]C508 data used for 1947.

Table 49. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Eldorado Ill.	Shelbyville Mo.	Norborne Mo.	Laddonia Mo.	Elsberry Mo.	Columbia Mo.	Manhattan Kans.	Thayer Kans.
Years Tested	1947-1949	1947-1949	1947-1949	1947-1949	1947-1948	1948-1949	1949	1949	1947-1949	1947-1949	1947 1949
C612[1]	36.7	38.2	33.2	33.8	21.3	40.3	40.7	30.9	27.2	25.8	13.7
C502	35.0	37.5	30.1	31.4	19.7	39.8	37.3	32.7	26.3	22.4	15.6
Wabash	34.6	35.0	31.4	29.4	18.0	39.6	37.7	33.3	24.0	22.4	14.3
Chief	32.0	33.9	31.1	29.9	19.0	40.8	37.1	30.4	25.9	22.8	14.9
Patoka	29.6	33.3	31.7	30.0	17.8	34.0	32.8	28.5	25.4	22.1	13.2
Gibson	32.4	33.2	30.6	29.7	16.3	35.5	35.7	29.1	23.1	23.3	15.6
Mean	33.4	35.2	31.4	30.7	18.7	38.3	36.9	30.8	25.3	23.1	14.6
	Yield Rank										
C612	1	1	1	1	1	2	1	3	1	1	5
C502	2	2	6	2	2	3	3	2	2	4	1
Wabash	3	3	3	6	4	4	2	1	5	4	4
Chief	5	4	4	4	3	1	4	4	3	3	3
Patoka	6	5	2	3	5	6	6	6	4	6	6
Gibson	4	6	5	5	6	5	5	5	6	2	1

Table 51. Seven-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1943-49.

Strain	Mean of 88 Tests	Lancaster Pa.	Georgetown Del.	Beltsville Md.	Blacksburg Va.	Worthington Ind.	Vincennes Ind.	Evansville Ind.	Urbana Ill.	Clayton Ill.
Years Tested		1948	1945-1948	1945-1949	1947-1948	1945-1949	1945-1948	1943-1949	1944-1949	1945-1949
Wabash	29.4	35.3	27.2	31.5	31.8	41.9	27.2	37.8	34.9	25.8
Chief	28.5	34.5	26.0	32.7	28.0	41.5	28.1	35.7	32.0	23.7
Patoka	27.4	33.3	25.3	28.2	25.8	36.4	29.6	33.8	32.5	24.5
Gibson	25.8	23.7	24.6	25.2	18.9	31.4	23.6	32.6	31.3	23.7
Mean	27.8	31.7	25.8	29.4	26.1	37.8	27.1	35.0	32.7	24.4
		Yield Rank								
Wabash		1	1	2	1	1	3	1	1	1
Chief		2	2	1	2	2	2	2	3	3
Patoka		3	3	3	3	3	1	3	2	2
Gibson		4	4	4	4	4	4	4	4	3

Table 52. Seven-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1943-49.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	88	71	74	78	70	77	84	84	84
Wabash	29.4	0	2.1	40	1.6	14.3	40.3	21.4	128.9
Chief	28.5	-1.4	2.7	45	2.0	12.9	40.9	20.6	131.9
Patoka	27.4	+0.1	2.2	34	2.0	17.6	43.5	20.3	132.0
Gibson	25.8	+2.3	2.7	39	1.7	13.8	40.3	20.2	133.6
Mean	27.8		2.4	40	1.8	14.7	41.3	20.6	131.6

[1]Days earlier (-) or later (+) than Wabash. Wabash required 127 days to mature.

Table 51. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Eldorado Ill.	Shelbyville Mo.	Norborne Mo.	Laddonia Mo.	Elsberry Mo.	Columbia Mo.	Manhattan Kans.	Thayer Kans.
Years Tested	1945-1949	1944-1949	1945-1949	1947-1949	1945-1948	1948-1949	1949	1946 1949	1944 1946-49	1945-1949	1945-47 1949
Wabash	31.8	30.5	26.7	30.0	19.4	39.6	37.7	34.2	24.0	21.9	14.0
Chief	30.6	28.8	27.6	29.7	20.3	40.8	37.1	30.4	24.6	21.1	14.7
Patoka	29.7	27.1	28.4	30.7	18.5	34.0	32.8	32.1	24.2	20.6	13.6
Gibson	27.9	27.3	25.5	30.2	18.3	35.5	35.7	28.3	22.1	21.9	16.3
Mean	30.0	28.4	27.1	30.2	19.1	37.5	35.8	31.3	23.7	21.4	14.7
	Yield Rank										
Wabash	1	1	3	3	2	2	1	1	3	1	3
Chief	2	2	2	4	1	1	2	3	1	3	2
Patoka	3	4	1	1	3	4	4	2	2	4	4
Gibson	4	3	4	2	4	3	3	4	4	1	1

PRELIMINARY TEST, GROUP IV

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

Strain	Source or Originating Agency	Origin
Chief	Ill. Agr. Exp. Sta.	Sel. from Illini x Manchu
Wabash	Purdue A.E.S. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
S100	Mo. Agr. Exp. Sta.	Rogue in Illini
L4-6032	Ill. A.E.S. & U.S.R.S.L.	Sel. from Chief x (Macoupin x Chief)
L4-6271	Ill. A.E.S. & U.S.R.S.L.	Sel. from L7-1355 x (Macoupin x L7-1355)
L6-1503	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
L6-1744	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
L6-5698	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland
S7-63	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Patoka
S7-86	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x L7-1355
S7-270	Mo. A.E.S. & U.S.R.S.L.	Sel. from Chief x (Macoupin x Chief)
S7-353	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x S100
S7-369	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x S100
S7-412	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x S100
S7-434	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x S100
S7-5236	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x S100

Thirteen selections and three varieties were entered in Preliminary Group IV in 1949. Yields were good at all six locations and a good set of data was secured. Average maturities (Table 53) varied from one day earlier than Wabash to nine days later. This is the correct maturity range for Group IV.

S7-270 and L6-5698 (tables 53 to 55) are the most promising entries in this group. S7-270 from the cross Chief x (Macoupin x Chief) is from the same cross as L4-6032 but is definitely superior to L4-6032 in yield, lodging resistance and seed quality. L6-5698 from the cross Lincoln x Richland is somewhat more erect than S7-270 but is also slightly lower in yield. S7-353 is high in yield but low in oil content, reflecting its S100 parent. L6-1503, the earliest of the selections, was in the Preliminary Group III last year and in the Group III tests in 1949. L6-1503 averaged 2.2% more oil in the seed than Wabash in the 1949 Preliminary Group IV, and 2.1% more in Group III. This strain is high in yield, high in resistance to lodging, and is the most outstanding strain we have in percentage of oil. Probably S7-270, L6-5698, and L6-1503 should be entered in the Uniform Group IV test in 1950.

Table 53. Summary of agronomic and chemical data for the strains in the Preliminary Test, Group IV, 1949.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	6	6	6	6	4	6	6	6	6
S7-270	36.9	+5.5	2.3	51	1.3	13.8	40.9	20.4	132.2
L6-5698	35.9	+7.5	1.9	47	2.0	14.9	41.2	20.5	132.5
S7-353	34.9	+6.8	2.2	46	2.1	13.7	42.9	19.3	136.3
S7-5236	34.7	+4.5	2.1	42	2.3	14.9	41.1	20.3	136.3
L6-1503	34.3	-0.7	1.6	38	2.8	15.7	41.1	22.8	131.9
S100	34.3	+14.7	2.3	49	2.1	14.3	43.2	18.8	132.5
S7-369	33.5	+8.2	2.4	48	2.3	14.3	42.7	19.7	134.7
S7-412	33.4	+6.0	2.1	47	2.1	15.1	42.4	20.0	134.4
L6-1744	32.7	+0.2	1.7	40	2.0	14.7	40.8	21.2	133.4
Chief	31.8	-1.0	2.6	50	2.4	13.0	41.5	20.6	131.7
S7-63	31.7	+5.2	2.0	41	1.8	15.7	43.9	20.5	130.8
Wabash	31.3	0	2.0	42	1.9	14.5	40.9	21.3	128.2
S7-434	31.1	+2.3	2.2	44	2.3	14.7	43.3	20.4	132.1
L4-6032	29.9	+9.3	2.8	54	2.3	14.0	39.3	20.8	131.8
S7-86	29.6	-0.5	2.3	42	2.3	13.7	42.1	20.8	131.2
L4-6271	29.5	+3.2	2.5	51	2.4	14.8	41.2	20.8	128.6
Mean	32.8		2.2	46	2.2	14.5	41.8	20.5	132.4

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

Table 54. Summary of yield in bushels per acre and yield rank for the strains in the Preliminary Test, Group IV, 1949.

Strain	Mean of 6 Tests	Belts-ville Md.	Evans-ville Ind.	Free-burg Ill.	Eldor-ado Ill.	Colum-bia Mo.	Man-hattan Kans.
S7-270	36.9	39.7	46.9	41.6	35.4	33.0	24.5
L6-5698	35.9	36.7	47.6	37.5	30.9	34.7	27.9
S7-353	34.9	37.4	45.3	35.8	37.0	27.8	26.2
S7-5236	34.7	38.5	42.8	36.6	34.2	25.1	30.9
L6-1503	34.3	38.8	44.0	35.2	32.7	26.6	28.7
S100	34.3	37.9	48.7	34.1	34.4	27.7	23.2
S7-369	33.5	34.7	41.0	37.9	27.8	33.9	25.8
S7-412	33.4	40.8	43.8	32.4	30.9	26.6	25.6
L6-1744	32.7	37.0	38.2	36.0	29.1	27.5	28.3
Chief	31.8	35.7	31.3	36.1	30.3	32.6	24.5
S7-63	31.7	39.6	39.3	33.1	24.8	29.1	24.0
Wabash	31.3	38.4	38.2	32.4	27.7	25.5	25.3
S7-434	31.1	34.7	35.7	35.7	28.3	27.9	24.5
L4-6032	29.9	37.6	31.5	32.0	24.4	32.6	21.4
S7-86	29.6	38.3	33.3	34.1	18.3	26.6	26.9
L4-6271	29.5	36.7	29.2	32.5	24.6	29.0	24.8
Mean	32.8	37.7	39.8	35.2	29.4	29.1	25.8
Coef. of Var. (%)		--	11.2	7.6	11.1	9.5	--
Bu. Nec. for Sig. (5%)		--	6.4	3.8	4.6	3.9	--

	Yield Rank					
S7-270	2	3	1	2	3	11
L6-5698	12	2	3	6	1	4
S7-353	10	4	7	1	9	6
S7-5236	5	7	4	4	16	1
L6-1503	4	5	9	5	12	2
S100	8	1	10	3	10	15
S7-369	15	8	2	11	2	7
S7-412	1	6	14	6	12	8
L6-1744	11	10	6	9	11	3
Chief	14	15	5	8	4	11
S7-63	3	9	12	13	6	14
Wabash	6	10	14	12	15	9
S7-434	15	12	8	10	8	11
L4-6032	9	14	16	15	4	16
S7-86	7	13	10	16	12	5
L4-6271	12	16	13	14	7	10

Table 55. Summary of maturity data, days earlier (-) or later (+) than Wabash, and percentage oil for the strains in the Preliminary Test, Group IV, 1949.

Strain	Mean of 6 Tests	Beltsville Md.	Evansville Ind.	Freeburg Ill.	Eldorado Ill.	Columbia Mo.	Manhattan Kans.
S7-270	+5.5	+ 3	+ 6	+ 8	+ 4	+ 5	+ 7
L6-5698	+7.5	+ 3	+12	+10	+ 7	+ 5	+ 8
S7-353	+6.8	+ 3	+ 9	+10	+ 6	+ 4	+ 9
S7-5236	+4.5	0	+ 5	+ 8	+ 6	0	+ 8
L6-1503	-0.7	- 2	- 1	- 3	- 1	- 1	+ 4
S100	+14.7	+ 8	+19	+17	+11	+18	+15
S7-369	+8.2	+10	+ 7	+11	+ 7	+ 4	+10
S7-412	+6.0	+ 3	+ 8	+ 7	+ 5	+ 5	+ 8
L6-1744	+0.2	- 2	+ 3	- 2	0	- 3	+ 5
Chief	-1.0	+ 2	+ 3	- 2	- 2	- 7	0
S7-63	+5.2	+11	+ 3	+ 6	+ 3	+ 1	+ 7
Wabash	0	0	0	0	0	0	0
S7-434	+2.3	0	+ 3	+ 2	+ 1	+ 2	+ 6
L4-6032	+9.3	+ 3	+15	+11	+ 7	+ 9	+11
S7-86	-0.5	0	0	0	- 3	- 3	+ 3
L4-6271	+3.2	+ 3	+ 3	+ 3	0	+ 3	+ 7
Date planted		6/2	5/17	5/30	5/27	5/17	6/1
Wabash matured		10/7	9/28	9/22	9/22	9/24	10/1
Days to mature	124	127	134	115	118	130	122
	Mean of 6 Tests	Percentage Oil					
S7-270	20.4	19.6	20.4	20.8	21.6	20.8	19.4
L6-5698	20.5	20.0	20.2	21.2	20.8	20.5	20.5
S7-353	19.3	18.5	19.0	19.4	19.6	20.0	19.5
S7-5236	20.3	19.9	20.1	20.3	20.4	20.5	20.3
L6-1503	22.8	21.7	23.2	22.9	23.7	23.6	21.6
S100	18.8	18.2	18.9	19.2	19.0	18.5	18.8
S7-369	19.7	19.1	19.3	20.0	20.0	20.3	19.6
S7-412	20.0	19.9	20.5	20.5	18.3	20.3	20.6
L6-1744	21.2	19.6	21.1	21.8	21.6	22.2	20.6
Chief	20.6	19.4	20.4	20.4	21.0	22.1	20.5
S7-63	20.5	19.4	20.5	20.5	20.8	21.1	20.9
Wabash	21.3	20.5	21.9	21.2	22.0	21.6	20.7
S7-434	20.4	20.5	19.9	19.9	20.7	21.2	20.0
L4-6032	20.8	20.8	21.0	21.0	20.8	21.2	20.1
S7-86	20.8	20.1	20.8	20.4	21.5	21.4	20.6
L4-6271	20.8	20.8	20.7	20.8	21.8	20.9	19.9
Mean	20.5	19.9	20.5	20.6	20.8	21.0	20.2

Table 56. Chemical composition of soybean seed grown at each of the Uniform Test locations for 1949, the two-year means for 1948-49, and the three-year means for 1947-49 (composite sample or mean of all strains grown in each respective Group Test).

Location	1949			Two-Year Mean			Three-Year Mean		
	Percentage of Protein	Percentage of Oil	Iodine Number of Oil	Percentage of Protein	Percentage of Oil	Iodine Number of Oil	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
Group 0 (Mean of 13 strains in 1949, 12 in 1948, and 11 in 1947)									
Ottawa, Ontario	42.2	19.2	128.6	40.7	19.8	130.5	41.3	20.0	130.3
Guelph, Ontario	43.3	19.2	128.3	--	--	--	--	--	--
Cortland, Ohio	42.0	19.8	130.3	--	--	--	--	--	--
Columbus, Ohio	40.9	20.7	130.5	--	--	--	--	--	--
Spooner, Wis.	43.5	19.0	132.0	43.3	19.1	131.2	43.8	19.3	130.6
Eau Claire, Wis.	43.1	19.8	127.1	42.4	20.0	126.3	43.4	20.0	126.8
Morris, Minn.	41.6	19.7	130.0	42.4	19.4	129.4	42.3	19.7	128.9
St. Paul, Minn.	41.8	20.5	129.8	--	--	--	--	--	--
Park River, N.D.	33.9	22.2	132.2	--	--	--	--	--	--
Fargo, N.D.	38.6	20.8	130.7	38.9	20.6	131.6	38.5	20.9	131.2
Rosholt, S.D.	38.9	21.7	127.7	41.1	20.3	128.1	41.0	20.9	128.1
Prosser, Wash.	34.7	21.7	130.1	--	--	--	--	--	--
Moses Lake, Wash.	38.3	19.9	133.5	--	--	--	--	--	--
Corvallis, Ore.	39.7	19.8	134.2	39.9	19.5	134.8	40.5	19.5	134.6
Hermiston, Ore.	39.5	20.9	128.1	--	--	--	--	--	--
Group I (Mean of 15 strains in 1949, 14 in 1948, and 13 in 1947)									
Guelph, Ontario	42.1	19.3	131.6	--	--	--	--	--	--
State Col., Pa.	38.6	22.0	130.5	39.8	21.2	129.9	--	--	--
Holgate, Ohio	37.6	22.4	132.2	39.7	21.4	130.4	--	--	--
Troy, Ohio	41.4	21.4	129.0	--	--	--	--	--	--
Columbus, Ohio	39.7	21.9	130.3	40.7	21.3	130.1	41.4	21.4	129.8
Walkerton, Ind.	41.9	20.8	130.7	--	--	--	--	--	--
Eau Claire, Wis.	44.4	18.4	130.5	43.1	19.2	129.9	43.6	19.5	129.8
Madison, Wis.	42.7	20.0	129.4	42.3	20.4	128.0	41.7	20.7	127.4
Compton, Ill.	42.1	21.5	126.0	41.3	21.3	127.9	41.9	21.2	126.8
St. Paul, Minn.	40.7	20.6	133.7	--	--	--	--	--	--
Waseca, Minn.	42.1	19.9	129.5	42.1	20.4	130.1	42.6	20.3	130.2
Cresco, Iowa	43.9	20.1	128.5	43.6	20.5	128.8	44.4	20.1	127.9
Kanawha, Iowa	40.9	21.5	129.8	41.0	21.5	129.1	41.4	21.6	128.1
Brookings, S.D.	41.0	20.6	129.3	41.7	20.3	129.6	41.4	20.5	129.6
Group II (Composite of 20 strains in 1949, 18 in 1948, and 14 in 1947)									
State Col., Pa.	37.6	21.8	132.2	38.7	21.4	131.9	--	--	--
Newark, Del.	40.2	21.5	130.7	--	--	--	--	--	--
Holgate, Ohio	36.8	21.8	134.0	38.9	21.2	131.3	39.9	20.6	131.9
Columbus, Ohio	39.5	21.5	131.1	40.5	21.0	130.6	41.4	21.3	130.5
Germantown, Ohio	43.2	20.3	131.2	--	--	--	--	--	--
Walkerton, Ind.	39.9	20.3	133.7	40.4	20.8	132.6	42.0	20.6	130.7

Table 56. (Continued)

Location	1949			Two-Year Mean			Three-Year Mean		
	Percentage of Protein	Percentage of Oil	Iodine Number of Oil	Percentage of Protein	Percentage of Oil	Iodine Number of Oil	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
(Group II Continued)									
Bluffton, Ind.	39.3	21.2	132.6	40.3	21.1	131.5	40.6	21.3	130.8
Lafayette, Ind.	41.1	20.9	131.7	41.3	21.2	130.6	42.0	21.2	129.4
Greenfield, Ind.	42.3	21.0	129.8	42.5	20.9	129.6	42.7	20.9	129.5
Worthington, Ind.	42.5	20.7	132.3	42.6	20.7	130.5	43.3	20.8	129.4
Madison, Wis.	39.9	20.2	134.2	40.3	20.8	131.5	40.2	21.1	130.7
Compton, Ill.	40.1	21.6	130.7	41.0	21.3	130.8	41.6	21.3	130.3
Dwight, Ill.	41.7	21.0	130.9	--	--	--	--	--	--
Urbana, Ill.	39.5	21.9	129.5	40.0	21.5	129.5	40.2	21.7	128.6
Kanawha, Iowa	39.2	20.6	134.5	40.2	20.8	131.6	40.4	21.2	130.3
Marcus, Iowa	39.5	21.3	133.4	40.0	21.2	131.9	39.1	22.0	130.1
Hudson, Iowa	41.9	20.4	130.6	41.1	21.2	129.7	41.5	21.3	129.2
Ames, Iowa	40.6	20.7	133.7	40.7	21.1	131.7	41.0	21.4	130.8
Centerville, S.D.	38.2	20.6	133.8	40.4	20.3	131.6	40.7	20.7	130.8
Wakefield, Nebr.	37.1	21.6	134.6	--	--	--	--	--	--
Lincoln, Nebr.	31.5	23.5	131.5	35.7	22.7	128.2	37.0	22.6	126.3
Group III (Composite of 11 strains in 1949, 8 in 1948, and 11 in 1947)									
Newark, Del.	39.8	21.6	132.6	--	--	--	--	--	--
Beltsville, Md.	42.2	20.9	132.3	41.6	21.2	131.6	42.1	21.3	131.5
Columbus, Ohio	40.0	20.8	132.6	40.1	20.9	132.1	41.0	21.0	132.3
Lafayette, Ind.	40.6	20.8	134.0	40.5	21.3	131.3	41.1	21.5	131.0
Greenfield, Ind.	41.8	20.9	133.1	41.9	20.8	132.0	42.1	21.0	131.8
Worthington, Ind.	41.6	21.5	129.8	41.9	21.2	129.5	42.3	21.3	129.6
Dwight, Ill.	40.1	21.2	133.2	--	--	--	--	--	--
Urbana, Ill.	38.3	22.1	131.5	39.2	21.9	130.5	39.4	22.2	130.5
Clayton, Ill.	41.4	21.5	132.1	41.8	21.6	130.2	41.9	21.3	131.4
Stonington, Ill.	40.5	21.5	131.0	39.3	22.3	129.8	40.0	22.0	130.9
Edgewood, Ill.	40.4	22.2	130.3	40.4	22.0	129.0	41.2	22.1	129.8
Freeburg, Ill.	40.9	22.2	129.3	41.5	21.9	127.9	40.8	22.5	128.0
Eldorado, Ill.	41.2	22.8	128.8	41.4	22.5	128.0	40.9	23.0	127.9
Ames, Iowa	39.9	20.8	134.7	39.8	21.2	132.1	39.9	21.7	131.6
Ottumwa, Iowa	38.8	21.1	134.5	39.3	21.7	132.2	40.1	21.5	132.6
Norborne, Mo.	37.2	22.7	131.6	38.0	22.7	130.5	--	--	--
Laddonia, Mo.	38.9	21.2	133.3	--	--	--	--	--	--
Elsberry, Mo.	39.6	21.6	131.8	--	--	--	--	--	--
Columbia, Mo.	37.6	23.0	132.6	38.6	23.0	130.6	39.1	23.3	128.6
Lincoln, Nebr.	31.5	23.4	131.7	35.2	23.1	128.4	36.0	23.2	128.2
Manhattan, Kans.	40.3	21.8	128.5	39.7	22.3	126.3	40.6	21.9	125.8

Table 56. (Continued)

Location	1949			Two-Year Mean			Three-Year Mean		
	Percentage of Protein	Percentage of Oil	Iodine Number of Oil	Percentage of Protein	Percentage of Oil	Iodine Number of Oil	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
Group IV (Composite of 11 strains in 1949, 13 in 1948, and 11 in 1947)									
Beltsville, Md.	43.3	20.0	132.8	42.4	20.6	132.5	42.4	20.5	132.4
Worthington, Ind.	41.6	20.5	132.7	41.6	20.9	131.1	42.1	20.8	130.4
Evansville, Ind.	42.1	20.6	131.7	41.6	21.4	131.7	41.6	21.5	130.7
Urbana, Ill.	39.9	20.4	132.9	40.6	20.8	132.0	40.6	20.9	130.7
Clayton, Ill.	40.6	20.3	134.0	41.3	21.0	132.0	41.7	20.7	131.9
Stonington, Ill.	40.1	20.4	132.1	39.3	21.7	130.8	40.0	21.2	130.7
Edgewood, Ill.	42.1	20.3	130.8	41.7	20.9	129.6	42.2	20.9	129.3
Freeburg, Ill.	39.6	21.0	131.2	40.8	21.4	130.6	40.9	21.8	129.5
Eldorado, Ill.	41.8	21.4	130.8	42.4	21.4	130.2	42.0	22.0	129.3
Norborne, Mo.	38.3	21.3	132.8	38.7	21.8	130.9	--	--	--
Laddonia, Mo.	39.5	20.2	134.5	--	--	--	--	--	--
Elsberry, Mo.	39.9	20.5	133.3	--	--	--	--	--	--
Columbia, Mo.	38.3	21.4	133.5	39.2	22.0	132.0	39.7	22.2	128.6
Manhattan, Kans.	40.7	20.7	130.0	40.5	21.6	128.9	41.8	21.0	126.9
Thayer, Kans.	42.3	20.1	131.7	--	--	--	--	--	--

SOYBEAN DISEASE INVESTIGATIONS IN 1949 [1/]

In general, soybean diseases in 1949 were less damaging than in 1948. This fact, combined with an ideal growing season, resulted in generally high yields. The usual number of diseases were present in varying degrees of severity.

Brown stem rot (Cephalosporium gregatum) was prevalent through the heavy-producing areas of Illinois, Indiana, and Iowa. However, the leaf symptoms did not develop until September in 1949 and were much less severe than in the previous year.

Pod and stem blight (stem canker) (Diaporthe phaseolorum var. batatatis) was general throughout the central Midwest. For some unknown reason this disease appears to be more severe in Iowa and Indiana than in Illinois. Severe infection occurred in some fields in northeastern Iowa and central Indiana. In Illinois the disease was found in trace to light amounts and caused no serious damage.

Frogeye (Cercospora sojina)(C. daizu) was unusually prevalent in Illinois and Indiana in 1949. Severe infection occurred in a few fields in southern Illinois and some fields with light to moderate infection were found in the central part of the state. In Indiana frogeye was the most prevalent disease of soybeans in the southern part of the state, extending as far north as Lafayette.

Brown spot (Septoria glycines) was general throughout Indiana and Illinois but was less severe than in 1948. Downy mildew (Peronospora manshurica) was common in occurrence but did little or no damage.

Bud blight (tobacco ring spot virus) was generally mild in incidence in 1949. No commercial fields showing serious losses from this disease were reported in 1949.

The bacterial leaf spot diseases continued to show their unpredictable behavior. For the past several years bacterial blight (Pseudomonas glycinea) has been the most common disease of soybeans over the Midwest. In 1949 an abrupt change was noted in the relative prevalence and severity of bacterial blight and bacterial pustule. Bacterial blight was of light incidence through Illinois and Iowa, while bacterial pustule became the predominant leaf spot. In Indiana the two diseases appeared in about equal proportions. Bacterial pustule, becoming established early in the season, reached maximum infection July 15-30. In severely infected fields some defoliation was noted but severe damage of this nature was not prolonged.

Wildfire (Pseudomonas tabaci) again appeared this year in late July and August in Illinois and sparingly in Iowa. It was not widespread but confined to relatively small areas in some fields in central and southern Illinois. The overall damage was negligible but in a few fields severe leaf damage was found in localized areas.

1/ Project 121-3, Division of Forage Crops & Diseases

Nurseries for the evaluation of disease resistance were maintained at several locations in 1949. At Ames, Iowa, tests conducted with 50 commercial varieties showed no evidence of resistance to stem canker (pod and stem blight). However, 33 out of 155 selections showed sufficient evidence of resistance to warrant further testing. At Lafayette, Indiana, greenhouse inoculations confirmed observational evidence that Wabash and Lincoln were resistant to frogeye, while Gibson, Patoka, Hawkeye, and Chief were very susceptible. A study of the inheritance of resistance to this disease is planned at Lafayette. At Urbana, Illinois, 220 lines from a Lincoln x Lincoln x CNS cross were tested for resistance to bacterial pustule. Over 50% of these lines showed evidence of a high degree of resistance, many approaching that of CNS.

Approximately 200 introductions, varieties, and strains were tested for resistance to brown stem rot. Four strains and five plant introductions showed light infection and will be carried for further evaluation. Single plant selections of disease-free plants were made among the varieties Lincoln, Hawkeye, Wabash, Blackhawk, and Adams. These selections will be tested in the greenhouse and in the field next season. Seventy-five plant introductions, varieties, and strains were tested for resistance to bud blight. Ten of these showed no evidence of the disease and will be carried through further trials.

Other phases of pathological investigation are under way at the various locations. At Lafayette, Indiana, three years' work relative to the effect of seed treatment on good quality seed (germination 94-95%) at various rates of planting are being terminated. The findings are in substantial agreement with the results at other stations, namely, that under good conditions for emergence good quality seed shows no increase in yield as a result of seed treatment. Diaporthe phaseolorum var. batatatis and var. sojae are being studied with respect to comparative morphology, pathogenicity, means of overwintering, sources and means of infection, and the development of a reliable and convenient technique for field inoculation. Related studies on the same organisms are in progress at Ames, Iowa. Studies on the nature of resistance to bacterial pustule and bacterial blight, and the effect of temperature and age of plant on the development of brown stem rot, are being continued at Urbana, Illinois.

WEATHER CONDITIONS AND GENERAL GROWTH RESPONSES AT MOST OF THE NURSERY LOCATIONS DURING THE 1949 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 1949 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. The past season was not a particularly good one for soybean production at Ottawa, and our tests suffered as a result of extremely dry hot weather which was experienced during almost the entire period of July and August. No doubt the accuracy of the yield data suffered to some extent for the same reason. In spite of the dry weather the yields were reasonably good. The past season was probably the worst experienced from the standpoint of drought in this particular area.

Newark, Delaware. The nursery was planted on June 9 and the season proved to be very good for soybeans. During May there was abundant rainfall, which was enough to carry the nursery very well through an unusually hot and dry June. July was characterized by above normal temperatures and rainfall; the total precipitation for the month was 6.16 inches. In August, September, and October, precipitation was normal and temperatures were slightly above normal. The nursery was harvested on October 13, well before the first killing frost on October 28.

Beltsville, Maryland. Except for dry periods during the first half of June and the first and last weeks in July, the season was favorable for soybeans. Growth and yields were very good. Considerably lodging was caused by storms August 3-4 and August 18-19. Temperatures were above normal throughout the season. Mean temperature for July, 81.4°, was the highest on record for any month. Killing frosts occurred October 27 and 28, a little later than the usual date. Total rainfall for the season was about average. Distribution of rain was erratic. No rain fell between May 28 and June 15. The soil was dry and cloddy when the uniform test plots were planted June 2. Emergence was slow and irregular, though final stands were satisfactory except in four plots in Preliminary Group IV which had to be discarded.

Walkerton, Indiana. Nurseries were grown on both muck and mineral soil. The data in this report are for the plot on mineral soil. Both were planted May 31 and each was fertilized with 135 pounds of 0-10 20 plus 70 pounds of commercial grade Mn SO_4 per acre. Planting conditions were ideal and emergence was fairly rapid, but for some unexplainable cause stands were thin in some tests, irrespective of variety, on mineral soil. All varieties were planted on a comparable germination basis. Growth was very good and yields on both muck and mineral soil were the highest obtained in the five years of testing at this location. There was not much lodging considering the abundant plant growth. Harvest was timely and under ideal conditions. There was a relatively small spread in maturity of the same varieties grown on muck and mineral soils. This is unusual in that varieties planted on the same dates on these soil types will generally be considerably later maturing on the high nitrogen muck soil.

The same varieties matured about two weeks later at Walkerton than at Lafayette although planted May 31 and June 1 at the respective locations. Walkerton is 75 miles north and 20 miles east of Lafayette in the Kankakee valley drainage area.

With the exception of mildew, which was very prevalent, diseases were of little importance. Blackhawk had more mildew than the other named varieties. Brown stem rot was found on an occasional plant in a number of varieties.

Precipitation was excessive in May and September but near normal in June, July, and August. There were no unusual periods of high or low temperatures through the growing season. Soybeans on mineral soil were lightly frosted, and on muck soil were killed by frost on September 29. The usual killing frost date on muck is about September 13. This 121 day frost-free period from time of planting was very advantageous for late-maturing varieties.

Bluffton, Indiana. This was a good nursery. It was planted May 19. Stands were thin in a few areas of the plot. Earlyana had a thin stand in all replications. Emergence was retarded somewhat because of heavy rains and low temperatures for a week following planting. Growth was good, maturity was early, and harvest was under ideal conditions about 10 days after the latest varieties matured. Only slight to moderate brown spot disease, and a little bacterial blight and mildew were observed. A small area of Hawkeye planted by the cooperator surrounded the plot. This area had a considerable number of plants killed by pod and stem blight, but no pod and stem blight was evident in Hawkeye in the plot. The Hawkeye seed used in the two plantings was from different sources.

Precipitation was normal in May, June, July, and slightly below normal in September. August was very dry with only occasional light showers. Temperatures were neither unduly high nor low throughout the season.

Lafayette, Indiana. This nursery was planted June 1 and 2 under ideal conditions on land not previously in soybeans. Inoculation was mixed with sand and applied by drilling in the row with a corn planter just prior to planting. Nodulation was good. Yields were below expectation as growth appeared good. The limiting factors were, no doubt, poor soil aeration due to faulty drainage in June and July and limited rainfall in August and September.

Bacterial blight and downy mildew were the most prevalent diseases, but frogeye infection was found for the first time at Lafayette and was most prevalent on Dunfield, Patoka, Chief, Gibson, and C612. Some frogeye was found on Hawkeye and very little on Lincoln, Richland, and Earlyana. Blackhawk, Patoka, and C612 were heavily infected with downy mildew; Lincoln and Richland were moderately infected, and Gibson, Hawkeye, Dunfield, and Earlyana were only lightly infected. Approximately 50% of the Hawkeye plants in a seed multiplication plot were dead or had pod and stem blight lesions on the stems. Other varieties showed no infection or had only an occasional dead plant. Since soybeans had not been grown previously on this farm, it appears that the disease may be perpetuated by multiplication of infected seed, and that the incidence of disease could be lessened by the elimination of infected plants from seed plots.

Precipitation was about normal in May, but 1.35 inches above normal in both June and July, and 4.87 inches above normal, or more than twice the normal in October. August was very dry with only 0.64 inches and September rainfall was less than half of normal with 1.57 inches. There were no unusual periods of high or low temperatures during the growing season. A light frost occurred September 30.

Greenfield, Indiana. This nursery was only fair. Planting conditions were excellent, emergence was rapid, and stands were good, but lodging was excessive in all tests. There was marked manganese deficiency through areas of the test and the surrounding field of Hawkeye soybeans. The plot was sprayed August 9 with 10 pounds of Mn SO_4/A. but this did not appear to give much corrective value.

Most varieties had been ripe 10 to 15 days before harvest. The bundles of beans were rained on after cutting. Seed quality was generally poor.

A light infection of bacterial blight and downy mildew, and a little frogeye were observed but none were considered of importance. This is the first time that frogeye has been observed in this area of the state.

There were no unusually warm nor cool periods during the growing season. A light frost occurred September 30. Precipitation was near normal or above during the growing season except from August 1 to August 26 during which time only 0.23 inches of rain fell in several light showers.

Worthington, Indiana. This was an excellent nursery. Planting was under ideal conditions, emergence was fairly rapid, and stands were generally good. Lincoln had poor stands in almost all tests, and this may have been a factor in the comparatively low yields of this variety in 1949. Excessive precipitation following planting delayed cultivation and the plots became weedy early in the season but were made weed-free by hand. Yields were especially good at this location. Harvest was somewhat late on early-maturing varieties and there was considerable weathering of the seed due to rain following maturity. Harvest on most tests was under ideal conditions. Blackhawk only, exhibited a mosaic-like wartiness of the leaves in Group II at this location. This was not observed elsewhere in Indiana. Brown stem rot was abundant in this plot but did not advance to the extent of doing serious damage. Bacterial blight, mildew, and frogeye were present in varying amounts in the nursery. Wabash and Lincoln had only a trace of frogeye whereas other named varieties had light to heavy infection. C501 and C502 were heavily infected and C612 moderately infected with frogeye. The main stems of Adams remained green for an extended period after the leaves dropped and the pods were matured.

Precipitation was somewhat below normal in May, July, and September but the distribution was excellent. It was 1.00 inch above normal in June, 7.85 inches above in August, and 2.62 above in October. Over 10 inches of water fell in a single rain in mid-August. There were no periods of unusually high or low temperatures thoughout the growing season. A light frost occurred September 30.

Evansville, Indiana. This was a very good nursery. It was planted May 17 under rather ideal conditions and emergence was rapid with good stands. Growth was exceptionally good, and yields in general were considerably above average. This plot was on good soil which was well fertilized with 200 pounds of 50% K_2O and 200 pounds of 8-8-8 per acre plowed under and 150 pounds of 0-15-15 plus 50 pounds of commercial Mn SO_4 in the row.

The soybean nursery was, in general, freer of disease than surrounding fields in the area. Only a few plants were found with a mild infection of brown stem rot. Frogeye leaf spot was by far the most serious disease. Varieties varied in their susceptibility to this disease. Among the named varieties, Patoka, Gibson and Chief were the most severely infected. Infection appeared to be more severe on

Patoka than on Gibson and Chief. No frogeye spots were found on Wabash or Lincoln. S100 had a moderate infection and C501 and C502 had a heavy infection of frogeye. L6-1656, C501 and C502 had a heavy infection of bacterial blight but were not nearly as bad as Gibson in this respect. Harvest was about three weeks after most varieties had matured, and most varieties were badly weathered from excessive rains after maturity. Seed quality was generally fair to poor. The unusually low yield of Gibson and lower than usual yields of Chief and Patoka are attributed primarily to diseases.

There were no unusually warm or cool periods during the growing season except a three-day cool period in late September and early October with light frost on September 30. Precipitation was near normal from May through September, but excessive rain in early October delayed harvest.

Spooner, Wisconsin. The 1949 season was generally very favorable for soybean production. Temperatures were normal in June, about two degrees above normal in July and August, but about three degrees below normal in September when late strains in both trials were maturing.

Rainfall was below normal in June, August, and September, but considerably above normal in July, with the bulk of the rainfall occurring the first four days and last four days of the month. The nursery was irrigated June 8, July 14, and August 25. Time and facilities did not permit irrigation about September 5 when the later strains needed it. At this time the earliest strains were mature. However, undue shrinking due to drought did not occur in later strains, and yields, in general, were very high.

Madison and Eau Claire, Wisconsin. Weather conditions at both Madison and Eau Claire were favorable for soybeans during 1949. Group I and Group II nurseries averaged 35 and 37 bushels per acre at Madison, while Group 0 and Group I averaged 27 and 23 bushels per acre at Eau Claire. The average temperature during the period May through August was two to three degrees above normal. September was four to five degrees below normal. Rainfall was several inches above normal during June and July and below normal in May and September. Killing frost occurred September 28 at both Madison and Eau Claire. Only the very latest varieties were damaged slightly.

Compton, Illinois. The plot at Compton was planted May 14 on the same area as the 1948 test. The soil was in excellent condition and germination was good. The rainfall was heavy in June, and ample in July and August, resulting in good yields. The heavy growth resulted in severe lodging in such strains as Bavender Special, H3665, and Earlyana. Bavender was flat on the ground and considerably delayed in maturity. An early frost, September 20, killed varieties of Lincoln maturity. Stem rot was prevalent, especially in the later varieties, but did not seem to have done a great deal of damage. Pod and stem blight was present generally and some rows had as many as 10% of the plants affected.

Dwight, Illinois. The plot at Dwight was planted May 13 on a field which had been in second year sweet clover in 1948. It had been fall plowed but was rather cloddy at planting time. Stands were good, however, and the ample rainfall during the growing season resulted in high yields. Lodging was severe on such varieties as Bavender, but not as bad as at Compton. Adams lodged more than Dunfield and almost as much as Earlyana and Bavender.

Urbana, Illinois. The tests at Urbana were planted May 18 in a good seedbed following corn. Heavy rains on May 19 and 24 caked the ground, and additional rains prevented field work until May 31. At this time the ground was rather wet to work but the beans were just beginning to emerge. A very poor stand was in prospect so the field was rotary hoed twice. This allowed a fair stand to emerge, but some portions of rows had to be replanted. Rainfall during the growing season was generally adequate, resulting in very tall growth and good yields. Lodging was not excessive. Bacterial pustule disease and downy mildew were widespread but not serious.

Clayton, Illinois. The nursery at Clayton was planted May 16. Emergence and stands were good and strain evaluations should be accurate.

Rainfall was below normal in June and August but was normal in July and September. Growth was good and lodging rather heavy. Bacterial pustule disease and downy mildew were generally prevalent.

Stonington, Illinois. The tests at Stonington were planted June 1 following corn. Rainfall was below normal in June and July but was heavy in August. Growth was heavy and lodging was pronounced, especially in Group IV. Yields were good, but not especially high. Some stem rot was present, but the percentage infection was not high. Adams showed a duddy condition and gave relatively low yields.

Edgewood, Illinois. The plot at Edgewood was planted May 21 on Putnam Silt Loam soil, poorly drained and basically low in fertility. Due to good farming practices and fertilization, the fertility level was high and good growth and yields resulted. Rainfall was generally adequate and well distributed. Bacterial pustule disease was rather heavy, especially on Adams and Dunfield, and downy mildew was heavy on Blackhawk.

Freeburg, Illinois. The tests at Freeburg, planted May 30, were in excellent condition. Growth and yield were good and lodging moderate. Rainfall was below normal in June and July but was especially heavy in August. Bacterial pustule disease and downy mildew were prevalent, and some frogeye was observed on several late strains.

Eldorado, Illinois. The plot at Eldorado was planted May 27 following fall plowed sweet clover. Stands were generally good. Rainfall was below normal during June and July and fair in August, but particularly heavy in early September. For some unknown reason, the growth was much shorter than usual and yields were much below normal. Bacterial pustule and downy mildew were generally prevalent but not severe. Some frogeye was found.

Morris, Minnesota. At Morris dry weather conditions prevailed through late spring and early summer. Good stands of beans were obtained, however. A period of heavy rainfall in early July was sufficient to produce almost normal growth and yields were about average at Morris. Some of the earliest varieties shattered a great deal before harvesting.

The very late date for the first killing frost permitted even the latest varieties in almost all of the trials in the state to mature. In the principal soybean-growing region of Minnesota this date was about October 24, which is several weeks later than the average date of the first killing frost.

St. Paul, Minnesota. Growing conditions were almost ideal at University Farm this season as indicated by the high level of yields, particularly in the Uniform Trials which were all harvested before the "big wind" on October 10. Wind velocities on this date reached 90 miles per hour at times. Tests which had not been harvested on this date suffered some loss of pods.

Waseca, Minnesota. At Waseca development was normal until late summer when severe drought conditions apparently reduced yields, especially in the later-maturing varieties. The beans at Waseca matured very early, and as a result some of the early varieties shattered considerably before they were harvested.

Cresco, Iowa. This nursery, located in the northeast section of Iowa on Carrington Plastic Till Phase, has soils characterized as tight, cold, wet, slowly drained, and low in fertility. These soils require strains of soybeans approximately one week earlier than those planted on well-drained soils in the same latitude. The nursery was planted May 25. The strains emerged satisfactorily and were off to a good start through June. A rather severe drought occurred in July, August, and September which seriously hampered growth. In addition, the nursery was underlain with gravel pockets, which, coupled with drought, caused uneven, short growth and low yields. The first killing frost occurred September 29, about four days ahead of the normal frost date (October 3). The 1949 results were considered to be poor to fair in making strain comparisons.

Kanawha, Iowa. This nursery is located in north central Iowa on level, very fertile Webster silty clay loam. This nursery was planted May 24. Stands were excellent and moisture conditions were never severely limiting during the growing period, although during August and part of September there was a moisture deficit. The nursery was weed-free and disease-free and consequently the growth response and data were considered very good. Strains grew to a height of 36 to 50 inches. Only part of the Uniform Group II Test was depodded by the severe windstorm of October 10. The strains in this test harvested prior to the windstorm were adjusted to a calculated eight percent loss in yield. All other tests were harvested under optimum conditions. Although frost occurred September 29, almost a week ahead of normal, the strains likewise were advanced in maturity and escaped injury. Strain comparisons were considered medium good.

Marcus, Iowa. This location represents the northwest section of Iowa with soils of the Galva Silt Loam series, medium high in fertility and slightly undulating in topography. In spite of some hazards experienced in the 1949 nursery, the trials were considered good. Drought in July and August probably reduced yields somewhat, but it was neither prolonged nor severe enough to detract greatly from the generally good growing conditions and growth responses throughout the season. This nursery was free of weeds and diseases. A severe windstorm on October 10 depodded the nursery to an estimated seven to eight percent loss in yield. It was estimated that all strains responded similarly. Although frost occurred September 29, almost a week ahead of normal, the strains were sufficiently advanced to escape injury.

Hudson, Iowa. This nursery represents northeast central Iowa with soils of the Carrington Silt Loam type medium high in fertility. The nursery, planted May 25, grew very satisfactorily in spite of a moisture deficit in July, August, and September. However, a severe epiphytotic of stem canker in September caused pod dropping and this coupled with the severe windstorm of October 10 decreased yields

appreciably. Bavender Special yielded considerably above the other strains but it lodged the most. Its high yield might be attributed, in part, to the fact that it was least affected by stem canker and that it lodged severely enough that the windstorm did not depod it as severely as the other strains which stood up. Strain comparisons appear fair to good.

Ames, Iowa. This nursery is located in central Iowa on light to medium fertile Clarion Silt Loam. The tests were planted May 27 and grew satisfactorily until the drought in July, August, and September, which curtailed height and yield to a considerable extent. However, there was a moderate amount of bacterial pustule disease prevalent in the plots. The windstorm of October 10 depodded the nursery an estimated eight percent of total yield. Frost occurred September 29, which was just a week in advance of normal. All strains were sufficiently advanced in maturity so that no injury resulted from frost. Strain comparisons appear medium to good.

Ottumwa, Iowa. This nursery, located in southwest Iowa, represents the level, medium high fertility soils of the Haig Silt Loam series. The planting was made on May 26, which is considered early from past experience. Emergence was excellent and growth response was considerably above average. Since moisture was near normal or only slightly on the deficient side through the entire growing season, the strains were tall, yields were high, and lodging was excessive. Some wildfire disease occurred in the nursery. The nursery was considered very satisfactory.

Norborne, Missouri. The nursery was planted May 26. The stands and growing conditions were excellent. There was an ample supply of moisture during the entire growing season. All strains were extremely tall and lodged badly. Yields were high and the seed was of good quality.

Laddonia, Missouri. Planting was delayed until June 18 because of wet weather. The seedbed was prepared while too wet but light rains following planting resulted in rapid emergence. Moisture was ample throughout the growing season. Growth and yields were excellent in spite of the late planting. A rain and windstorm on September 12 resulted in considerable lodging. The soil type at this location is the same as at Columbia but it is more fertile as a result of the application of fertilizers and use of legumes over a period of years.

Elsberry, Missouri. The nursery was planted June 7. Precipitation was excessive through June and early July with a flood occurring July 20. After the flood, very little precipitation occurred until the latter part of August. Plant growth was short, lodging was nil, but yields were high. This short, non-lodging growth is unusual for soybeans grown on Wabash clay.

Columbia, Missouri. The Uniform Tests III and IV were planted May 17. The seedbed was in excellent condition and emergence was rapid. Precipitation was abundant during this period. From late June through August, precipitation was ample but not excessive. Plant growth throughout the season was good and yields were above average. Bacterial pustule was abundant on all strains in both tests.

Fargo, North Dakota. April was relatively warm and dry. Light to moderate rains came in May, continuing into June, although June rainfall was more than one inch below normal. Temperatures during May and June were generally favorable. Rains and some excessive temperatures in early July were followed by more moderate

temperatures again for about two weeks. Moisture from mid- to late-July was generally light and was coupled with some days of excessive temperatures following July 22. A good rain in late July was followed by another low rainfall period and high temperatures through much of August. These high temperatures were generally favorable for soybeans, but scarcity of rainfall did tend to curtail the development of the crop. On the other hand, it resulted in pushing the crop to a more rapid maturity and earlier harvest. There was little frost damage before maturity.

Wakefield, Nebraska. This test in northeastern Nebraska was planted May 28 on a Moody Silt Loam soil of good fertility. Soil moisture conditions were good throughout the season. No lodging occurred and the seed was of uniformly high quality. Maturity was earlier than normal so that a killing frost on September 28 resulted in no damage. The yields attest to a very favorable growing season.

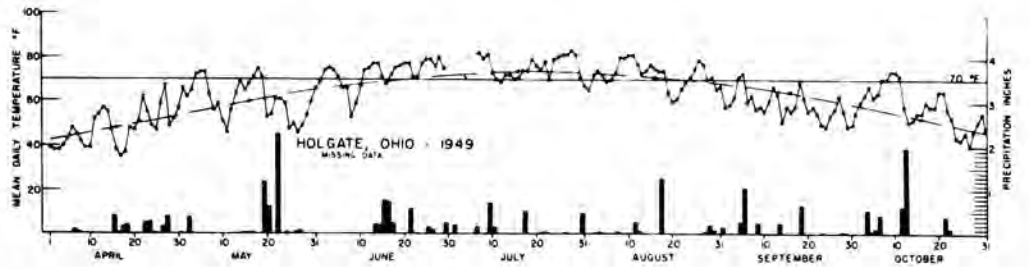
Lincoln, Nebraska. The tests were planted in an excellent seedbed on May 28. Soil moisture conditions were very favorable until the latter part of August. Maturity was well ahead of the normal date. No lodging or shattering occurred. The average yield is below that of 1948, apparently because the dry period late in the growing season resulted in seeds about 1/3 smaller on the average than in 1948. Seed quality was very good. Killing frosts did not occur until October 26, about three weeks later than normal.

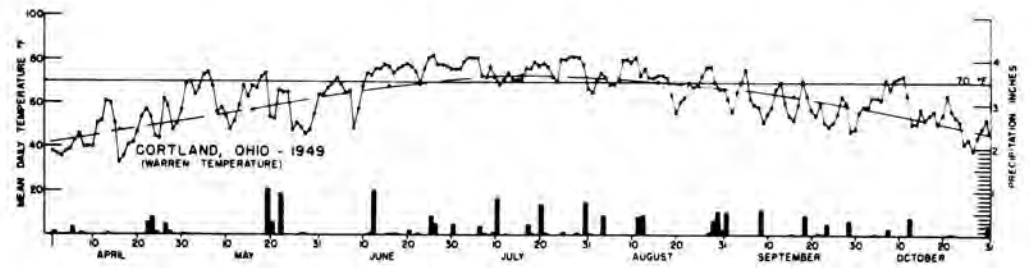
Manhattan, Kansas. The season of 1949 was favorable for soybeans. Precipitation during the five months, May to September, was 20.5 inches, of which 13.65 inches came during May and June. This resulted in a heavy vegetative growth which suffered somewhat during July and the first half of August when the showers became light and ineffective. The damage was not severe, however, because the summer was relatively cool, the temperature during the season reaching 100 degrees or slightly above on only three days. Conditions for harvesting during September and October were exceptionally favorable.

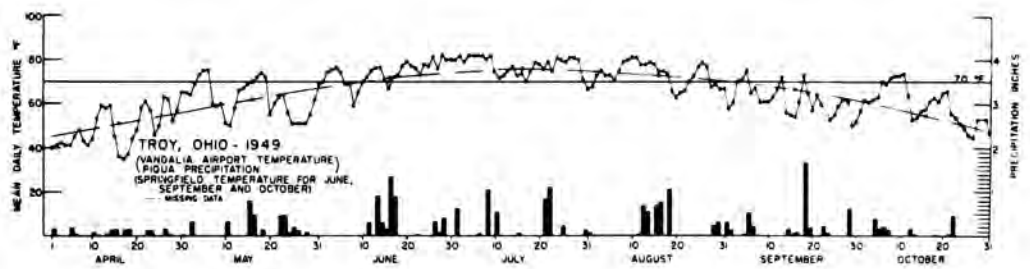
Thayer, Kansas. Due to excessive rainfall planting was delayed until July 4. Moisture conditions were inadequate during August, but September and early October were ideal months for soybean growth since precipitation was adequate and well distributed. The period of drought was a determining factor in the harvesting of only an average yield of soybeans. The stands were good and the plots were free of weeds, disease, and insects. All varieties had matured before the killing frost during the early part of November.

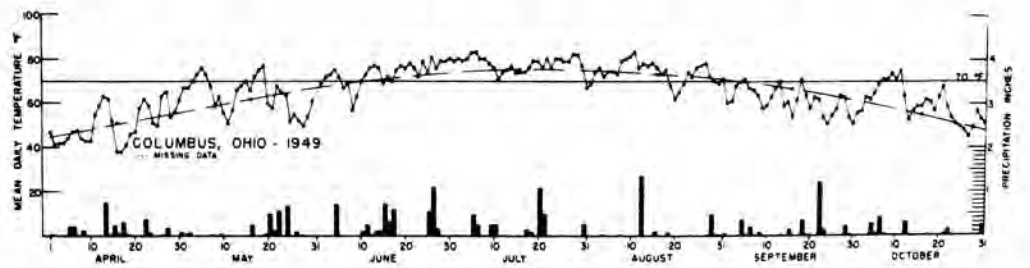
Prosser, Washington. The 1949 frost-free period was 152 days with temperatures about normal during the growing season. The crop was irrigated when necessary. The normal annual precipitation in this semi-arid region is 7.33 inches and seldom interferes with cultural practices or harvesting. The crop was seeded May 4.

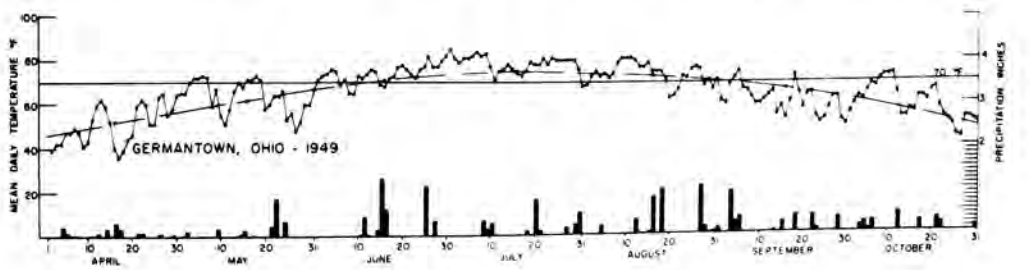
Moses Lake, Washington. The 1949 season was warmer and more favorable for maturing soybeans than the 1948 season. Precipitation is not important in this semi-arid region where the crop is irrigated. The frost-free period was 150 days. The soybeans were seeded May 10. The stands were excellent, and the growth was rapid and abundant. There was no trouble from lodging or pests in the nursery.

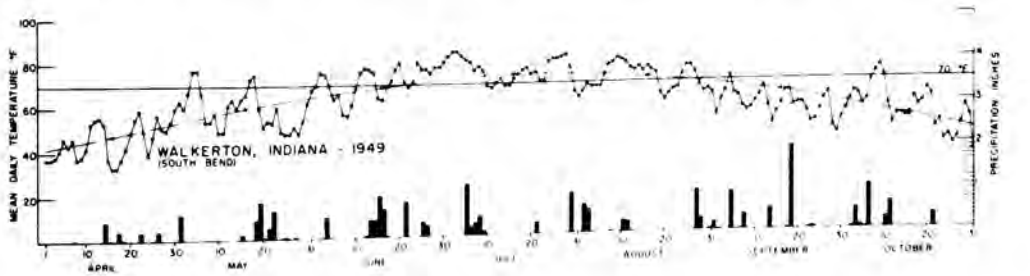

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
HOLGATE, OHIO - 1949
MISSING DATA
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

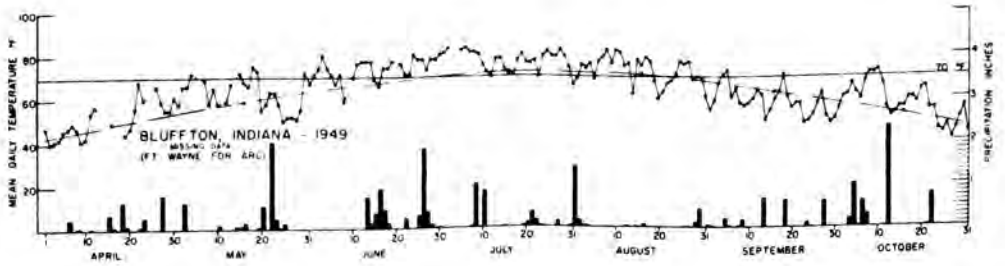

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
CORTLAND, OHIO - 1949
(WARREN TEMPERATURE)
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

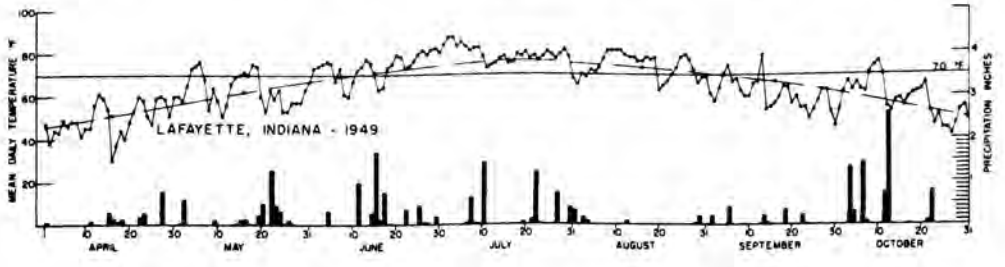

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
TROY, OHIO - 1949
(VANDALIA AIRPORT TEMPERATURE)
(PIQUA PRECIPITATION
(SPRINGFIELD TEMPERATURE FOR JUNE, SEPTEMBER AND OCTOBER)
MISSING DATA
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

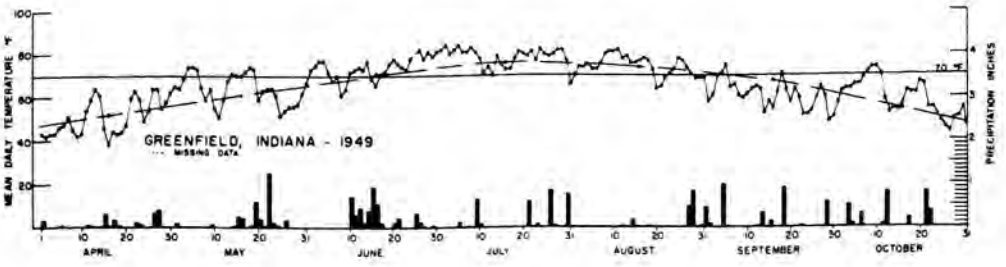

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
COLUMBUS, OHIO - 1949
MISSING DATA
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

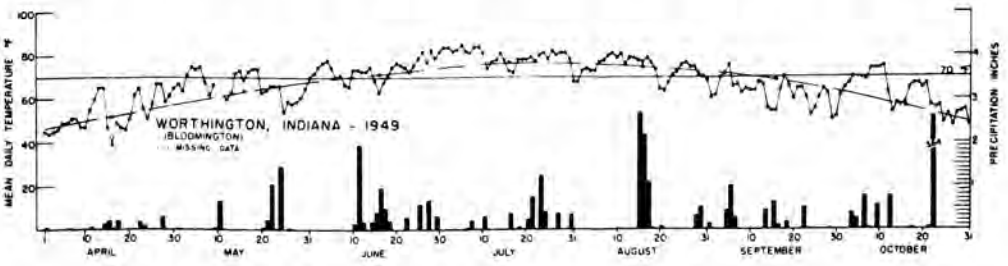

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
GERMANTOWN, OHIO - 1949
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

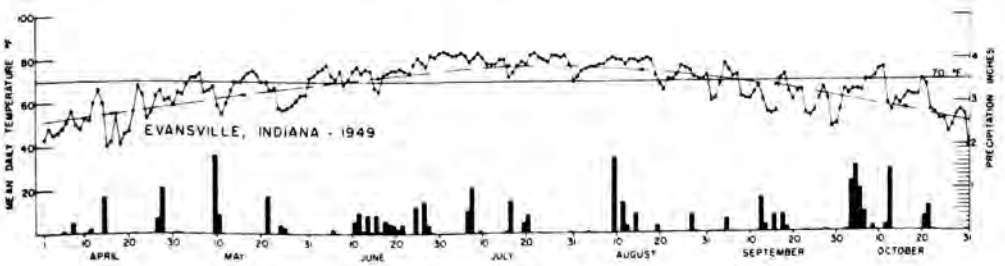

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
WALKERTON, INDIANA - 1949
(SOUTH BEND)
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

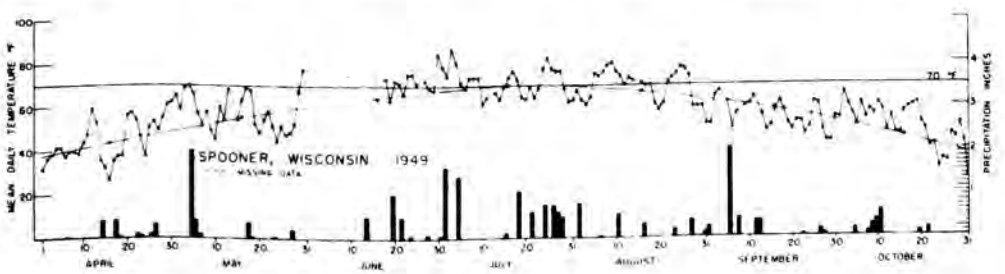

BLUFFTON, INDIANA - 1949
MISSING DATA
(FT. WAYNE FOR ARC)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

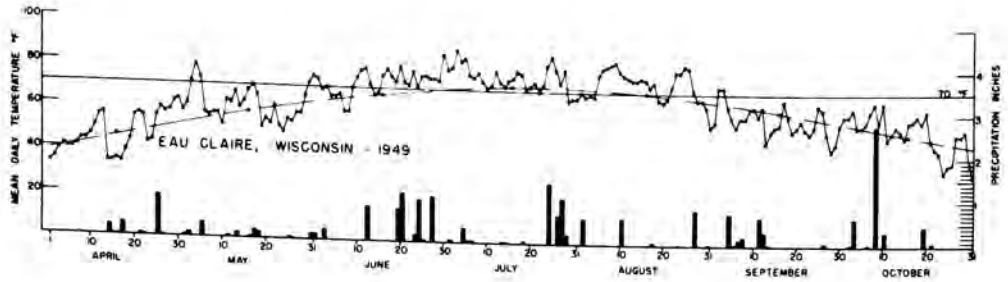

LAFAYETTE, INDIANA - 1949
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

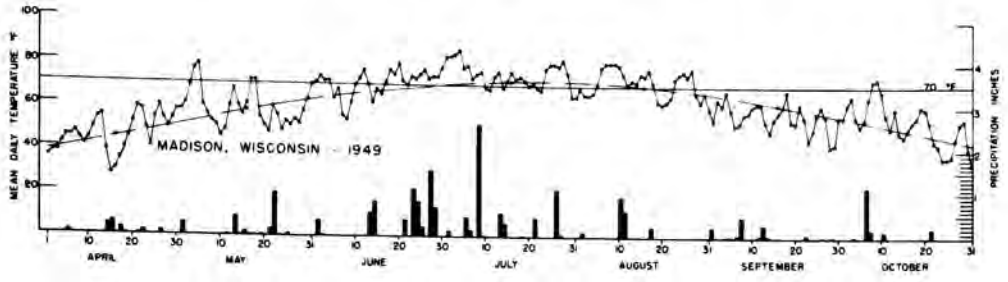

GREENFIELD, INDIANA - 1949
MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

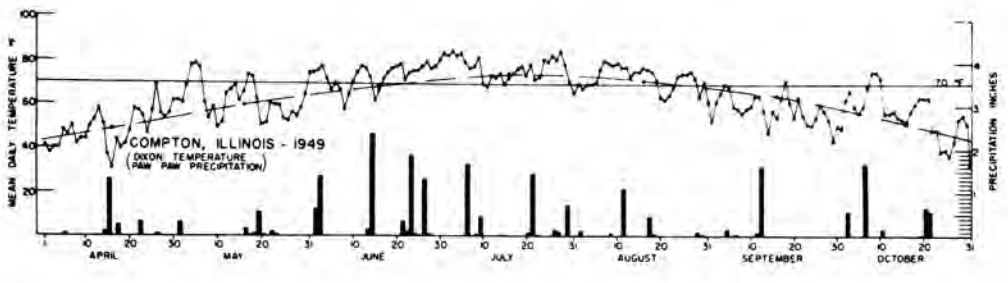

WORTHINGTON, INDIANA - 1949
(BLOOMINGTON)
MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

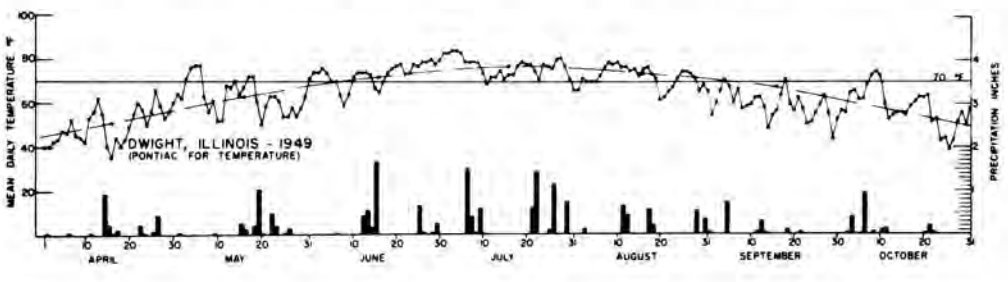

EVANSVILLE, INDIANA - 1949
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

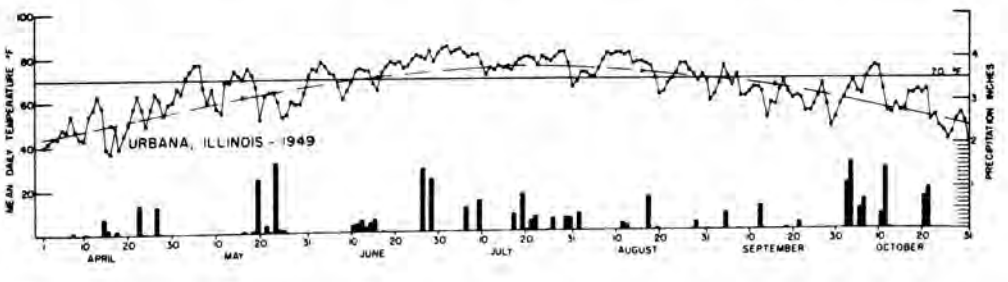

SPOONER, WISCONSIN 1949
MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
MAY
JUNE
SEPTEMBER
OCTOBER

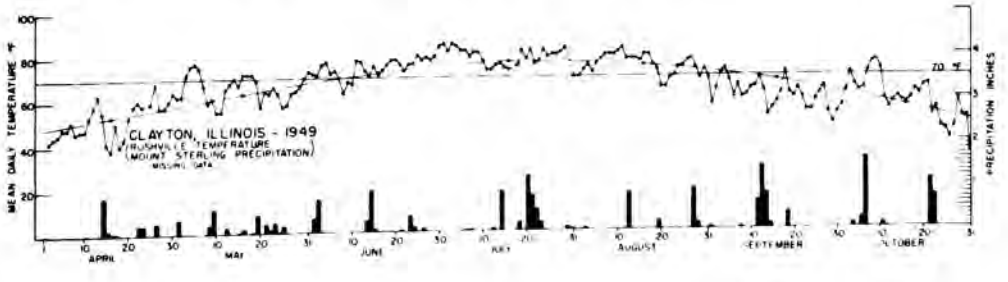

EAU CLAIRE, WISCONSIN - 1949
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

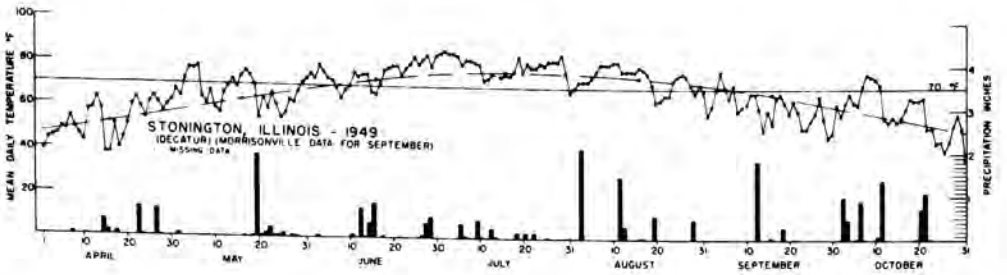

MADISON, WISCONSIN - 1949
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

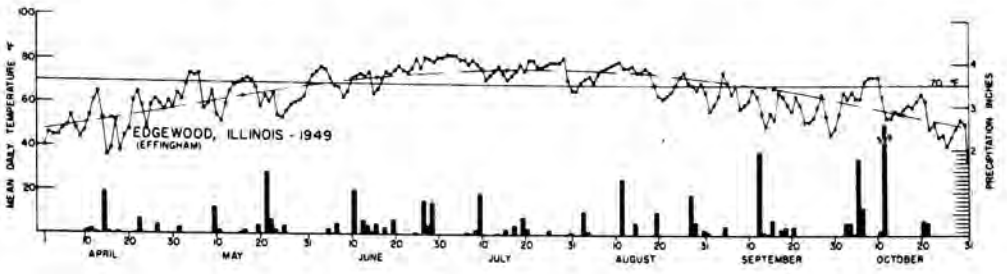

COMPTON, ILLINOIS - 1949
(DIXON TEMPERATURE
PAW PAW PRECIPITATION)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

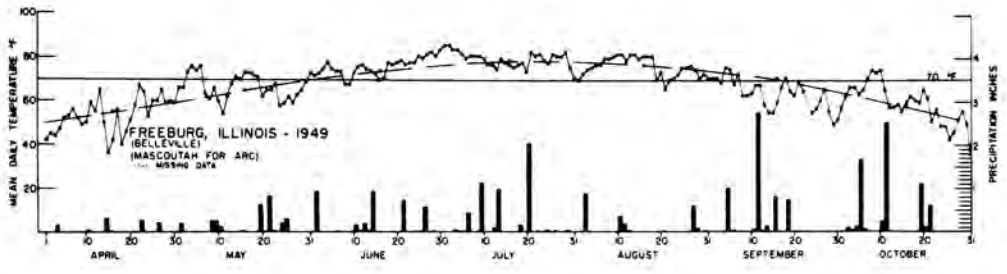

DWIGHT, ILLINOIS - 1949
(PONTIAC FOR TEMPERATURE)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

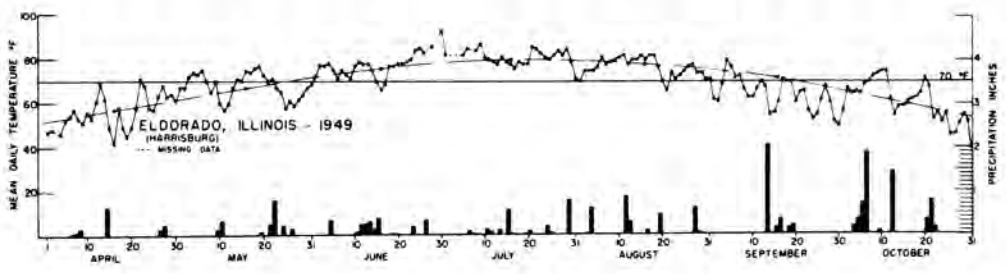

URBANA, ILLINOIS - 1949
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

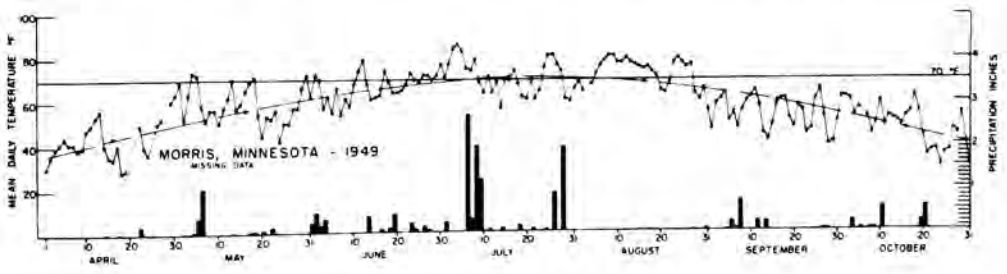

CLAYTON, ILLINOIS - 1949
(RUSHVILLE TEMPERATURE
MOUNT STERLING PRECIPITATION)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

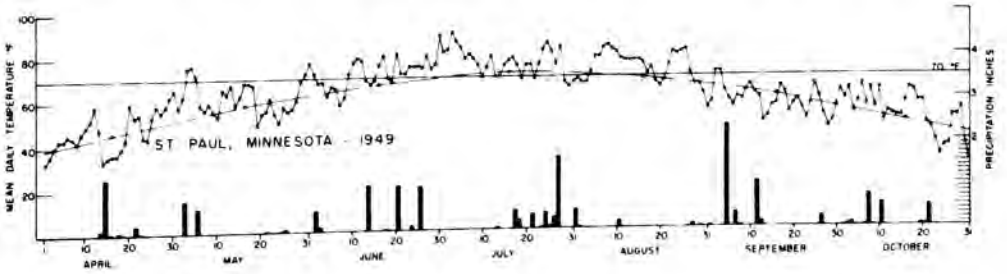

STONINGTON, ILLINOIS - 1949
(DECATUR) (MORRISONVILLE DATA FOR SEPTEMBER)
MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

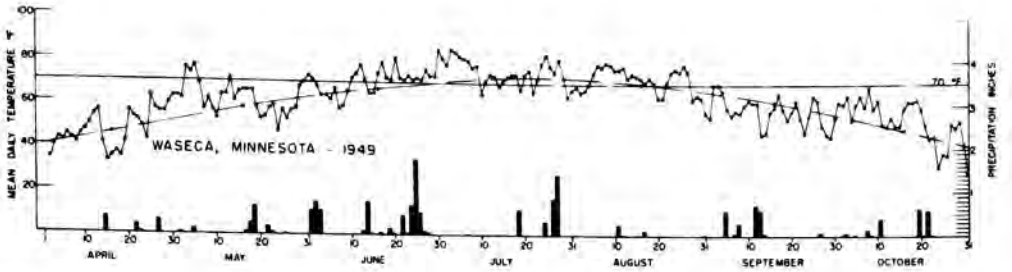

EDGEWOOD, ILLINOIS - 1949
(EFFINGHAM)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

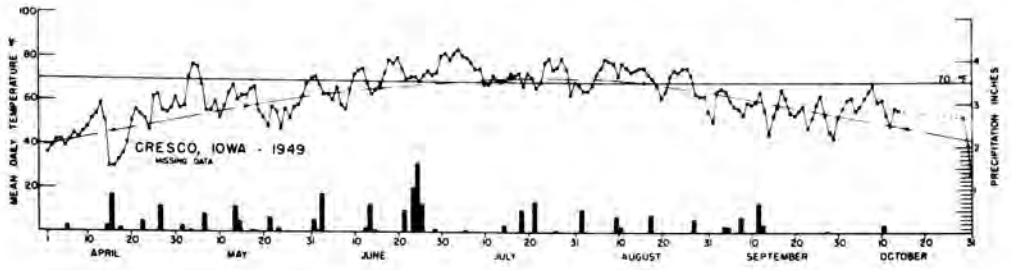

FREEBURG, ILLINOIS - 1949
(BELLEVILLE)
(MASCOUTAH FOR ARC)
MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

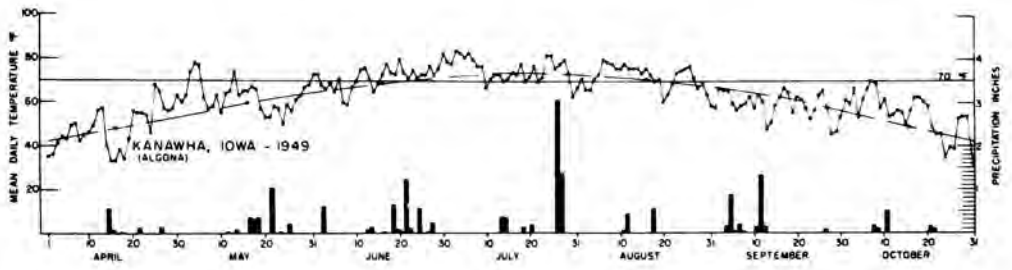

ELDORADO, ILLINOIS - 1949
(HARRISBURG)
MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

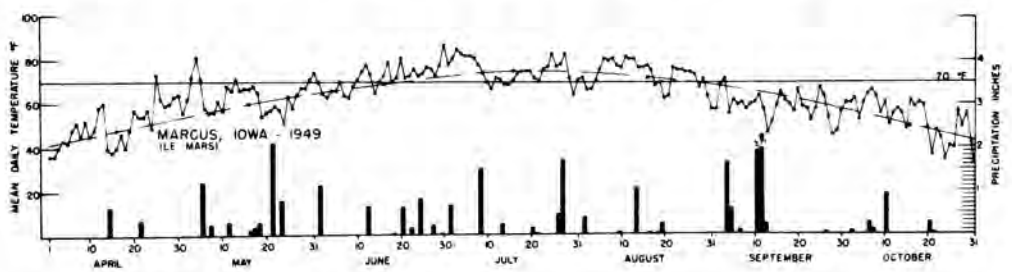

MORRIS, MINNESOTA - 1949
MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

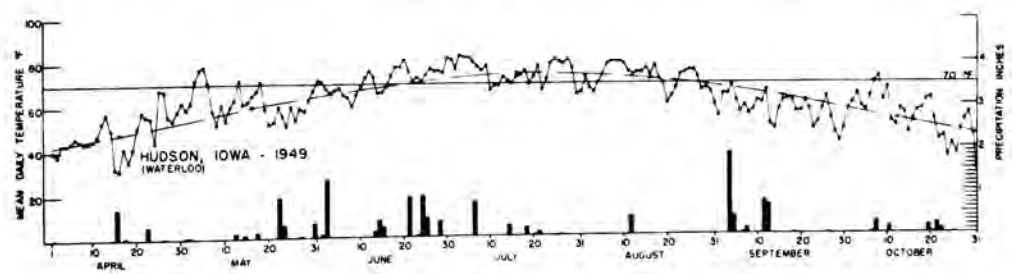

ST PAUL, MINNESOTA - 1949
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

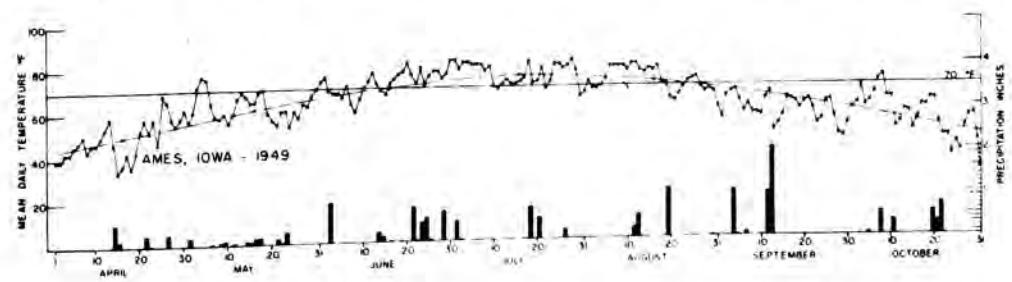

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
WASECA, MINNESOTA - 1949
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

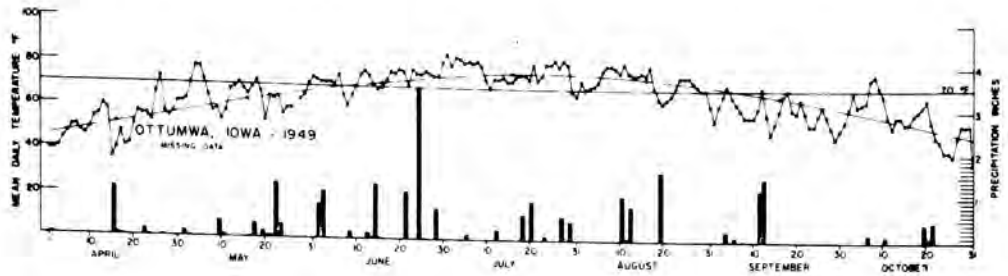

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
CRESCO, IOWA - 1949
MISSING DATA
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

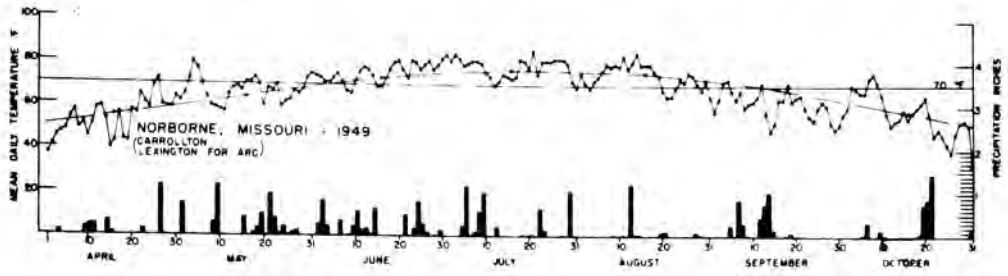

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
KANAWHA, IOWA - 1949
(ALGONA)
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

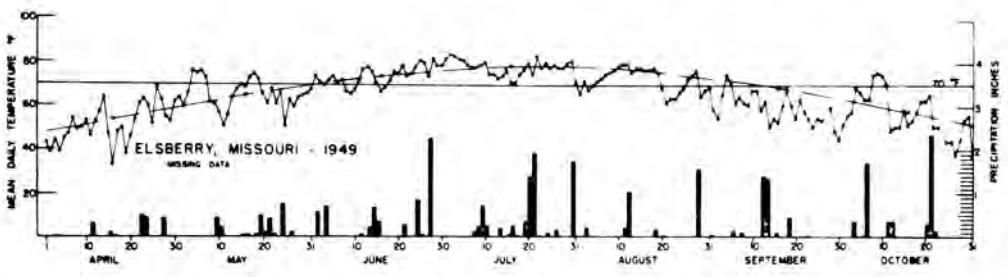

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
MARCUS, IOWA - 1949
(LE MARS)
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

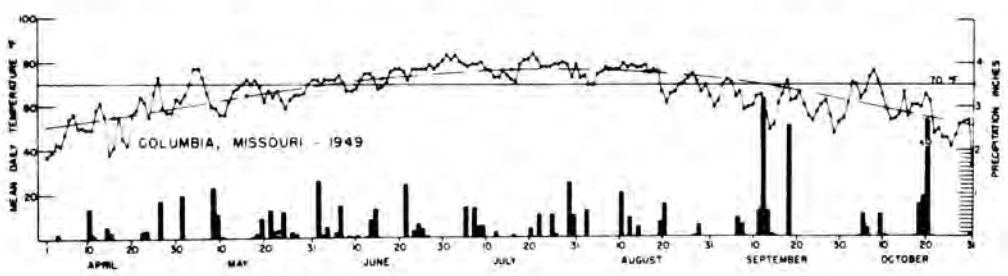

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
HUDSON, IOWA - 1949
(WATERLOO)
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

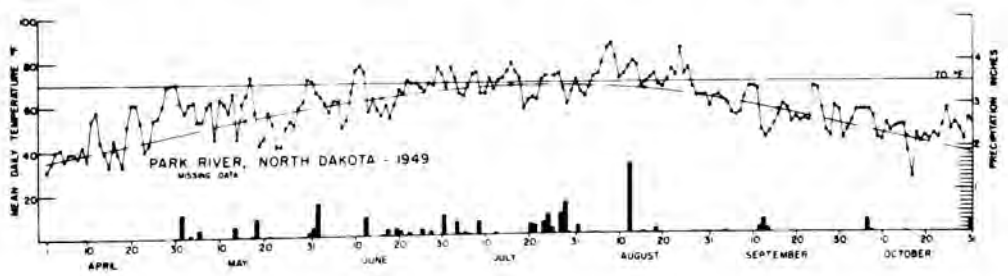

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
AMES, IOWA - 1949
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

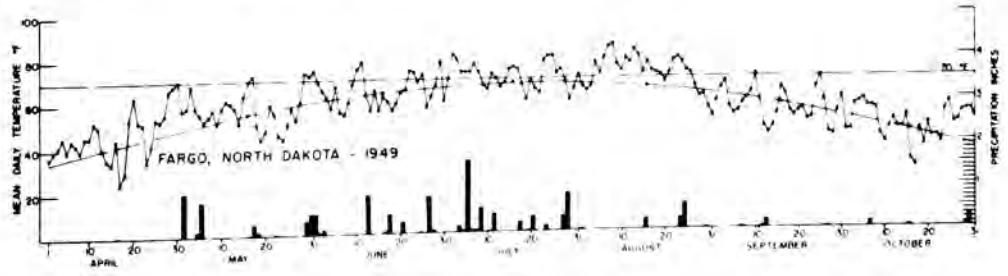

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
OTTUMWA, IOWA - 1949
MISSING DATA
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

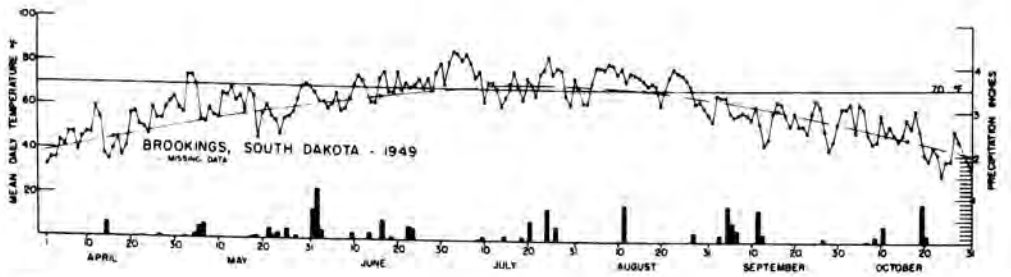

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
NORBORNE, MISSOURI - 1949
(CARROLLTON
LEXINGTON FOR ARC)
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

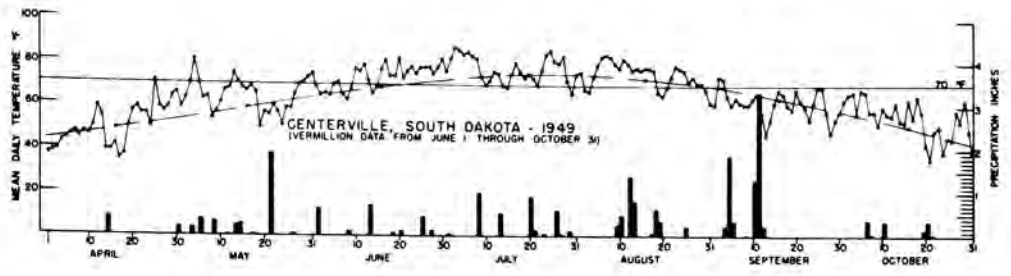

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
ELSBERRY, MISSOURI - 1949
MISSING DATA
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

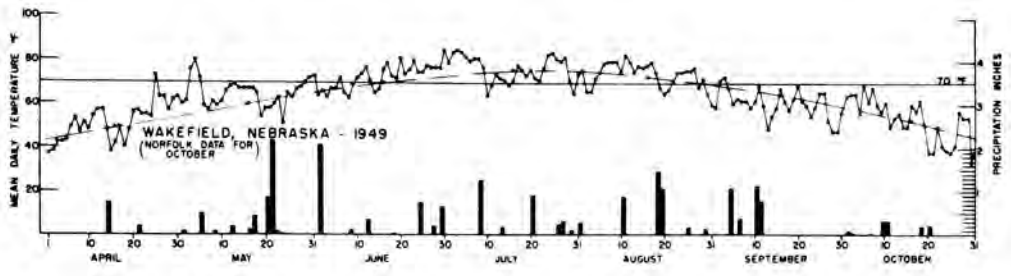

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
COLUMBIA, MISSOURI - 1949
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

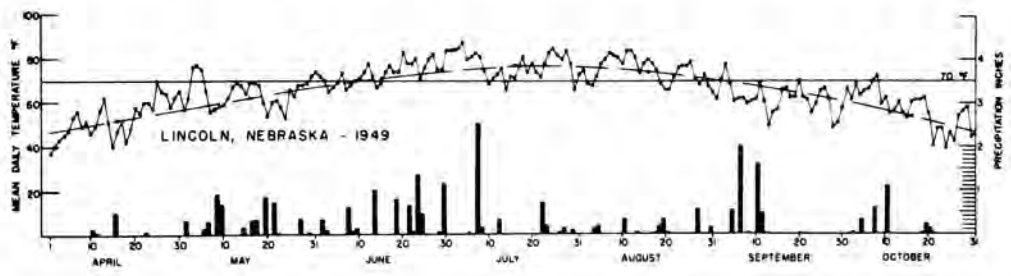

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
PARK RIVER, NORTH DAKOTA - 1949
MISSING DATA
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

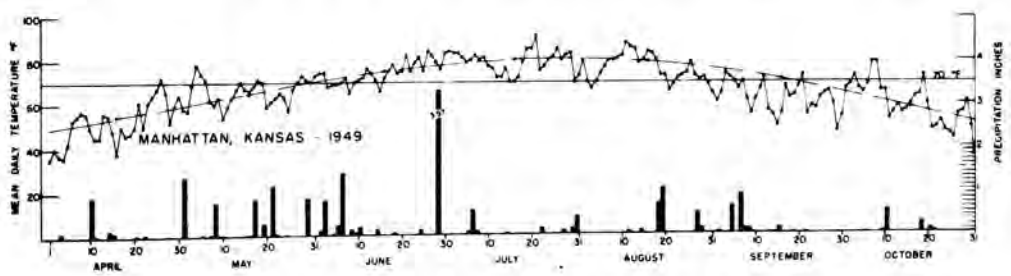

MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
FARGO, NORTH DAKOTA - 1949
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

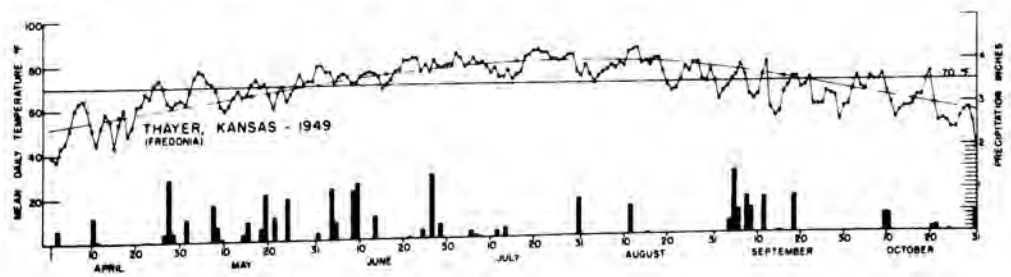

BROOKINGS, SOUTH DAKOTA - 1949
MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


CENTERVILLE, SOUTH DAKOTA - 1949
(VERMILLION DATA FROM JUNE 1 THROUGH OCTOBER 31)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


WAKEFIELD, NEBRASKA - 1949
(NORFOLK DATA FOR OCTOBER)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


LINCOLN, NEBRASKA - 1949
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


MANHATTAN, KANSAS - 1949
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


THAYER, KANSAS - 1949
(FREDONIA)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER