RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS

PART I. NORTH CENTRAL STATES

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1951

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[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. The disease report was prepared by D. W. Chamberlain, Pathologist.

This annual report of activity at the U. S. Regional 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 For this reason, citation to particular statements in the Report should not be published unless permission has been granted previously by the Laboratory or the state station concerned.

INTRODUCTION

The U. S. Regional Soybean Laboratory was organized in 1936 under the Bankhead-Jones Act, as a cooperative project by the U. S. Department of Agriculture and the twelve Agricultural Experiment Stations of the North Central Region. In 1942, the work of the Soybean Laboratory was expanded to include cooperation with twelve Agricultural Experiment Stations of the Southeastern Region.

The research program of the Laboratory has been directed toward the development of improved varieties and strains of soybeans for industrial use, and the obtaining of fundamental information necessary to the efficient breeding of strains to meet specific needs. Many high yielding, high oil content strains have been developed and released through the cooperative breeding program. Blackhawk, which was released last year, has been increased to over 276,000 bushels of seed for 1952 planting. Within the next two years, Blackhawk should produce a noticeable effect on the oil yield of beans coming from the northern Iowa and southern Minnesota area. Perry (C612), a new strain of Group IV maturity, is being simultaneously released this spring by the four states of Indiana, Illinois, Missouri, and Kansas. Perry is four days later than Wabash, similar in oil content, and three bushels higher in yield. Seed stocks of Perry, estimated at 9,000 bushels, for planting in 1952 should produce enough to meet much of the 1953 seed requirements.

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 ten to fifteen days. Maturity of the strains is expressed as so many days earlier or later than some well-known check or reference variety in the group.

Weather information is presented as an aid in interpreting the performance of strains under local climatic conditions. Row spacing at each nursery has been added to the yield tables this season. This information may be helpful when comparing strains at different locations. The 1951 season was cooler than 1950 or 1949 in the northern part of the North Central States. This cooler temperature is reflected in the higher mean iodine number of oil in Groups 0 and I. The mean iodine number values for Group 0 were 130, 134 and 137 for 1949, 1950, and 1951, respectively. Corresponding values for Group I were 130, 134, and 136. These differences were not apparent at the locations where Group II and later strains were grown. Another effect of the cool summer in the North was the very heavy bacterial blight infection late in the season. Leaf damage in 1951 was the most severe on record.

COOPERATING AGENCIES AND PERSONNEL FOR THE NORTH CENTRAL REGION

Division of Forage Crops and Diseases, Beltsville, Maryland

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[1]Soybean pathology research under Project 12-4010.

Collaborators in the North Central States

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Agronomy Department: J. W. Zahnley

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

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Agronomy and Plant Genetics Department: J. W. Lambert

Missouri Agricultural Experiment Station
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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				
		0	I	II	III	IV
Ottawa, Ontario	Central Exp. Farm	x				
Guelph, Ontario	Ontario Agr. College	x	x			
State College, Pa.	Pa. Agr. Exp. Sta.		x	x		
Palmyra, Pa.	Jacob Smith				x	x
New Brunswick, N. J.	N. J. Agr. Exp. Sta.			x		
Columbus, N. J.	Wilbur Lippincott			x		
Newark, Del.	Delaware Agr. Exp. Sta.			x	x	
Georgetown, Del.	Georgetown Substa., Del. A.E.S.				x	x
Beltsville, Md.	Forage Crops & Diseases U.S.D.A.				x	x
Cortland, Ohio	Trumbull Co. Exp. Farm	x				
Wooster, Ohio	Ohio Agr. Exp. Sta.		x	x		
Columbus, Ohio	Ohio State University	x	x	x	x	
Mt. Healthy, Ohio	Hamilton Co. Exp. Farm		x	x	x	
East Lansing, Mich.	Mich. Agr. Exp. Sta.	x	x	x		
Deerfield, Mich.	Mich. Agr. Exp. Sta.	x	x	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 and Louis Marx			x	x	
Worthington, Ind.	Frederic Sloan			x	x	x
Evansville, Ind.	Bernard Wagner					x
Spooner, Wis.	Spooner Br., Wis. Agr. Exp. Sta.	x				
Fall City, Wis.	Wis. Agr. Exp. Sta.	x	x			
Madison, Wis.	Wis. Agr. Exp. Sta.		x	x		
Shabbona, Ill.	N. Ill. Exp. Fields		x	x		
Dwight, Ill.	Frank Roeder			x	x	
Urbana, Ill.	Ill. Agr. Exp. Sta.			x	x	x
Clayton, Ill.	Russell Davis				x	x
Stonington, Ill.	Frank Garwood & Sons				x	x
Edgewood, Ill.	John Wilson				x	x
Trenton, Ill.	Fred Bergman				x	x
Eldorado, Ill.	Cyril Wagner				x	x
Morris, Minn.	Branch, Minn. Agr. Exp. Sta.	x				
Waseca, Minn.	S.E. Br., Minn. Agr. Exp. Sta.		x			
Cresco, Iowa	Howard Co. Agr. Exp. Assn.		x			
Kanawha, Iowa	N. Iowa Agr. Exp. Sta.		x	x		
Marcus, Iowa	John Sand			x		
Independence, Iowa	Carrington-Clyde Exp. Assn.			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
Columbia, Mo.	Mo. Agr. Exp. Sta.				x	x
Fargo, N. D.	N. D. Agr. Exp. Sta.	x				
Rosholt, S. D.	Irvin Voss	x				
Centerville, S. D.	Olaf Paulson			x		
Dakota City, Nebr.	Jack Orr			x		
Lincoln, Nebr.	Nebr. Agr. Exp. Sta.			x	x	
Manhattan, Kans.	Kansas Agr. Exp. Sta.				x	x
Mound Valley, Kans.	Lloyd C. Jones					x
Moses Lake, Wash.	Irrigation 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 Groups 0 and I. Chemical composition is determined for the 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 weight 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 tip of the stem at time of maturity.

Maturity is taken as the date when the pods are ripe, the leaves have dropped, 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
2 - Good
3 - Fair
4 - Poor
5 - Very 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
Hokien	Imperial Seed Co., Clear Lake, Iowa	Sel. from Capital
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
M2	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
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.)
0-48-36	Central Exp. Farm, Ottawa	Sel. from Pagoda x Mandarin
0-50-11	Central Exp. Farm, Ottawa	Sel. from A.K. x Pagoda
0-200	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.)
W6S-292	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Seneca
W8S-1019	Wis. A.E.S. & U.S.R.S.L.	Sel. from Kabott x Chief
W8S-1200	Wis. A.E.S. & U.S.R.S.L.	Sel. from Richland x Flambeau
W8S-1460	Wis. A.E.S. & U.S.R.S.L.	Sel. from Hawkeye x Flambeau

Data from Uniform Test, Group O, were reported from twelve locations in 1951 (Table 2). Due to an early frost and poor stands in some cases, the yields at Fargo, North Dakota were not considered reliable and were not included in the means. The average yield of Group O was approximately one bushel lower in 1951 than in 1950, while Flambeau was four bushels lower. Poor stands of Flambeau at many nursery locations may have affected yields of Flambeau adversely in the 1951 season. Average oil content of the strains was very nearly the same in 1951 as it was in 1950.

Only three new entries were tested in the 1951 Group O test, 0-48-36, 0-50-11, and M2. M2 was tested in Group I in 1950 and Groups O and I in 1951. None of these three new Group O entries was outstanding in yield or lodging. M2 did rank high in oil content and was equaled in this respect by only one other Group O strain, M9. However, M9 was almost two days earlier in maturity and averaged one bushel more in yield than did M2.

Twelve of the 1951 Group O entries have been tested for two years, and these data are summarized in Tables 5 and 6. Of the unnamed strains, W6S-292 has had the best record. This strain has outyielded the second ranking strain, 0-200, by an average of two bushels and has outyielded Mandarin (Ottawa) by 2.7 bushels during this period. W6S-292 has ranked first in yield at Guelph, Ontario; Cortland and Columbus, Ohio; and Spooner, Wisconsin. W6S-292 has been slightly earlier than either 0-200 or Mandarin (Ottawa) and has exceeded both 0-200 and Mandarin (Ottawa) by approximately .5 percent in oil content. M9, the third highest yielding entry during this two-year period, has been outstanding in oil content. W6S-292 and

0-200 have had a poorer lodging score than has Mandarin (Ottawa). Hokien, a selection from Capital, has averaged approximately one bushel more in yield than Capital and has had a slightly better lodging score. W8S-1200 and W8S-1019 were similar to Flambeau in maturity and were slightly higher in yield but had a much better lodging score than did Flambeau. W8S-1019 is similar to Flambeau in oil content while W8S-1200 averages approximately one percent higher in oil than either W8S-1019 or Flambeau.

Five of the 1951 Group O entries have been tested for three years, and these data are summarized in Tables 7 and 8. On the basis of these three-year averages, M9, Mandarin (Ottawa), Capital, and M8 have been approximately the same in yield. M9, Capital, and M8 have been slightly later in maturity than Mandarin (Ottawa), and Capital has had a relatively poor lodging score. M9 has averaged .4 percent higher in oil content than M8, the second ranking three-year entry in this respect. Of the five 1951 entries which have been tested three years, Flambeau has ranked lowest in yield and oil content. However, Flambeau has yielded very well considering that it is at least nine days earlier in maturity than Mandarin (Ottawa).

Table 1. Summary of agronomic and chemical data for the strains in the Uniform Test, Group O, 1951.

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	8	6	10	9	12	12	12	12
W6S-292	29.1	-0.8	2.2	29	1.9	16.2	41.2	18.9	137.6
Mandarin (Ottawa)	27.9	0	1.1	28	1.7	19.2	42.5	18.5	136.4
W4-2115	26.9	+1.8	2.1	31	2.0	15.5	40.9	19.2	137.3
Hokien	26.9	+2.8	2.2	30	2.2	14.0	40.8	18.8	138.5
O-200	26.6	+0.1	2.1	30	1.3	17.5	42.4	18.4	137.7
W8S-1460	26.5	-5.1	1.6	27	2.1	16.6	41.9	19.0	135.7
M9	25.4	+3.0	1.7	29	2.1	16.9	41.5	19.4	137.1
M8	25.2	+2.5	1.7	29	2.3	16.4	40.8	19.1	138.2
Capital	25.2	+2.0	2.8	30	2.0	13.8	41.5	18.9	138.4
O-48-36	25.1	-0.1	1.5	30	2.4	16.8	41.4	18.7	135.1
W8S-1200	25.0	-7.3	1.2	27	2.2	16.1	40.8	19.0	135.9
M2	24.4	+4.9	1.7	29	2.5	16.2	40.4	19.4	137.3
W8S-1019	23.7	-9.0	1.5	27	1.8	17.0	42.9	17.8	136.9
O-50-11	22.7	-7.8	2.1	29	2.1	14.0	43.2	17.6	136.5
Flambeau	21.7	-7.5	2.2	26	2.3	16.0	42.2	17.8	137.8
Mean	25.5		1.8	29	2.1	16.1	41.6	18.7	137.1

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

Table 2. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group 0, 1951.

Strain	Mean of 11 Tests[1]	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Colum-bus Ohio	East Lansing Mich.
W6S-292	29.1	34.6	31.5	24.5	23.3	30.5
Mandarin (Ottawa)	27.9	32.8	26.7	21.9	22.2	25.8
W4-2115	26.9	33.5	31.2	20.3	23.4	28.4
Hokien	26.9	34.2	28.1	19.4	22.6	26.6
0-200	26.6	33.2	32.2	19.4	19.2	25.8
W8S-1460	26.5	31.6	27.7	17.1	16.4	25.1
M9	25.4	34.2	27.8	19.2	19.7	27.0
M8	25.2	32.9	27.4	19.1	23.5	28.7
Capital	25.2	33.8	25.9	21.3	22.7	27.6
0-48-36	25.1	31.6	26.1	19.6	18.8	23.0
W8S-1200	25.0	28.7	28.8	16.4	17.6	21.1
M2	24.4	31.8	28.5	19.4	25.6	27.1
W8S-1019	23.7	30.3	27.2	17.4	19.2	21.3
0-50-11	22.7	31.1	20.8	17.7	16.9	21.7
Flambeau	21.7	28.8	26.6	13.5	14.1	22.6
Mean	25.5	32.2	27.8	19.1	20.3	25.5
Coef. of Var. (%)		9.2	6.6	--	--	--
Bu. Nec. for Sig. (5%)		N.S.	2.6	--	--	--
Row Spacing (In.)		30	24	42	28	--

	Yield Rank				
W6S-292	1	2	1	4	1
Mandarin (Ottawa)	8	11	2	7	8
W4-2115	5	3	4	3	3
Hokien	2	6	6	6	7
0-200	6	1	6	9	8
W8S-1460	10	8	13	14	10
M9	2	7	9	8	6
M8	7	9	10	2	2
Capital	4	14	3	5	4
0-48-36	10	13	5	11	11
W8S-1200	15	4	14	12	15
M2	9	5	6	1	5
W8S-1019	13	10	12	9	14
0-50-11	12	15	11	13	13
Flambeau	14	12	15	15	12

[1]Fargo not included in the mean.

Table 2. (Continued)

Strain	Deer-field Mich.	Spooner Wis.	Fall City Wis.	Morris Minn.	Fargo N.D.	Rosholt S.D.	Moses Lake Wash.
W6S-292	36.0	26.7	25.6	31.1	15.1	17.2	38.6
Mandarin (Ottawa)	39.3	21.2	25.7	29.7	14.4	16.6	44.6
W4-2115	32.8	22.5	25.8	27.9	10.3	13.2	36.8
Hokien	31.5	19.6	23.4	29.8	13.0	13.8	46.6
0-200	35.6	24.6	21.9	29.3	19.6	17.1	34.0
W8S-1460	35.4	27.7	27.6	30.1	19.3	14.6	38.2
M9	32.6	20.4	23.5	30.3	9.0	13.8	30.7
M8	29.2	16.4	20.7	28.1	11.7	13.0	38.2
Capital	32.7	18.8	23.9	30.6	11.3	11.6	28.1
0-48-36	27.6	20.2	24.6	26.2	14.7	14.1	44.1
W8S-1200	31.9	24.1	23.2	27.9	21.6	15.3	39.7
M2	36.4	11.3	17.6	29.7	7.1	12.4	28.1
W8S-1019	27.7	25.3	24.5	23.6	16.6	12.7	31.9
0-50-11	21.6	23.8	20.4	23.6	16.5	11.4	40.5
Flambeau	19.0	25.9	24.4	29.4	10.5	10.0	24.6
Mean	31.3	21.9	23.5	28.5	14.0	13.8	36.3
Coef. of Var. (%)	--	10.8	15.2	--	--	13.6	12.7
Bu. Nec. for Sig. (5%)	--	3.4	5.8	4.0	--	2.7	9.9
Row Spacing (In.)	--	36	36	24	24	36	24

	Yield Rank						
W6S-292	3	2	4	1	6	1	6
Mandarin (Ottawa)	1	9	3	6	8	3	2
W4-2115	6	8	2	11	13	9	9
Hokien	10	12	10	5	9	7	1
0-200	4	5	12	9	2	2	10
W8S-1460	5	1	1	4	3	5	7
M9	8	10	9	3	14	7	12
M8	11	14	13	10	10	10	7
Capital	7	13	8	2	11	13	13
0-48-36	13	11	5	13	7	6	3
W8S-1200	9	6	11	11	1	4	5
M2	2	15	15	6	15	12	13
W8S-1019	12	4	6	14	4	11	11
0-50-11	14	7	14	14	5	14	4
Flambeau	15	3	7	8	12	15	15

Table 3. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and lodging data for the strains in the Uniform Test, Group 0, 1951.

Strain	Mean of 8 Tests	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Colum-bus Ohio	East Lansing Mich.
W6S-292	-0.8	0	- 2	- 4		
Mandarin (Ottawa)	0	0	0	0		
W4-2115	+1.8	+ 1	+ 2	+ 1		
Hokien	+2.8	+ 1	+ 1	+ 2		
0-200	+0.1	0	+ 2	0		
W8S-1460	-5.1	- 4	- 9	- 4		
M9	+3.0	+ 2	+ 1	+ 1		
M8	+2.5	+ 4	0	+ 2		
Capital	+2.0	0	- 2	0		
0-48-36	-0.1	- 5	- 1	- 4		
W8S-1200	-7.3	- 9	-13	- 8		
M2	+4.9	+ 5	+ 3	0		
W8S-1019	-9.0	- 8	-16	- 9		
0-50-11	-7.8	- 9	-12	- 9		
Flambeau	-7.5	- 9	-10	- 8		
Date planted		5/18	5/24	6/12		
Mand. (Ott.) matured		10/1	9/30	9/19		
Days to mature	122	136	129	99		
	Mean of 6 Tests[1]	Lodging				
W6S-292	2.2	1.0	1.8	2.0	1.0	1.0
Mandarin (Ottawa)	1.1	1.0	1.0	2.3	1.0	1.0
W4-2115	2.1	1.0	2.9	2.0	1.0	1.0
Hokien	2.2	1.0	2.5	2.0	1.0	1.0
0-200	2.1	1.0	2.7	2.0	1.0	1.0
W8S-1460	1.6	1.0	2.0	--	1.0	1.0
M9	1.7	1.0	2.3	2.0	1.0	1.0
M8	1.7	1.0	1.8	2.0	1.0	1.0
Capital	2.8	1.0	2.8	2.5	1.0	1.0
0-48-36	1.5	1.0	1.3	--	1.0	1.0
W8S-1200	1.2	1.0	1.2	1.7	1.0	1.0
M2	1.7	1.0	1.8	2.0	1.0	1.0
W8S-1019	1.5	1.0	1.1	1.5	1.0	1.0
0-50-11	2.1	1.0	2.1	1.8	1.0	1.0
Flambeau	2.2	1.0	2.5	1.8	1.0	1.0
Mean	1.8	1.0	2.0	2.0	1.0	1.0

[1]Ottawa, Cortland, Columbus, East Lansing, Deerfield, and Rosholt not included in the mean.

Table 3. (Continued)

Strain	Deer-field Mich.	Spooner Wis.	Fall City Wis.	Morris Minn.	Fargo N.D.	Rosholt S.D.	Moses Lake Wash.
W6S-292		- 2	- 2	+ 1		+ 2	+ 1
Mandarin (Ottawa)		0	0	0		0	0
W4-2115		0	0	+ 1		+ 2	+ 7
Hokien		+ 5	0	+ 1		+ 3	+ 9
0-200		+ 3	- 2	+ 1		+ 1	- 4
W8S-1460		-12	- 3	- 4		- 2	- 3
M9		+ 3	0	+ 1		+ 2	+14
M8		+ 5	+ 2	+ 3		+ 4	0
Capital		+ 5	0	+ 2		+ 3	+ 8
0-48-36		+ 3	+ 4	- 2		- 1	+ 5
W8S-1200		-15	- 2	- 6		- 3	- 2
M2		+ 5	+ 2	+ 4		+ 6	+14
W8S-1019		-20	-14	- 7		- 5	+ 7
0-50-11		-10	-12	- 5		- 1	- 4
Flambeau		-15	-10	- 5		- 3	0
Date planted		5/31	5/18	5/25		6/5	5/14
Mand. (Ott.) matured		10/10	9/22	9/17		9/30	10/1
Days to mature		132	127	115		117	140
				Lodging			
W6S-292	1.0	2.5	1.7	1.0	1.9	1.0	4.0
Mandarin (Ottawa)	1.0	1.0	1.3	1.0	1.4	1.0	1.0
W4-2115	1.0	2.0	1.0	1.0	1.8	1.0	4.0
Hokien	1.0	2.0	2.0	1.6	2.1	1.0	3.0
0-200	1.0	1.5	2.0	1.0	2.2	1.0	3.0
W8S-1460	1.0	1.5	1.3	1.0	2.0	1.0	2.0
M9	1.0	2.0	1.0	1.2	1.6	1.0	2.0
M8	1.0	2.0	1.0	1.0	1.5	1.0	3.0
Capital	1.0	3.0	2.0	1.9	2.0	1.0	5.0
0-48-36	1.0	1.0	1.0	1.0	1.8	1.0	3.0
W8S-1200	1.0	1.0	1.3	1.0	1.7	1.0	1.0
M2	1.0	1.0	1.0	1.0	1.4	1.0	4.0
W8S-1019	1.0	2.0	1.3	1.0	1.8	1.0	2.0
0-50-11	1.0	2.5	1.0	1.6	2.1	1.0	3.0
Flambeau	1.0	2.0	1.3	1.2	2.1	1.0	4.0
Mean	1.0	1.8	1.3	1.2	1.8	1.0	2.9

Table 4. Summary of height data and percentage of oil for the strains in the Uniform Test, Group O, 1951.

Strain	Mean of 10 Tests	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Colum-bus Ohio	East Lansing Mich.
W6S-292	29	38	29	27	20	
Mandarin (Ottawa)	28	32	29	26	20	
W4-2115	31	40	31	28	22	
Hokien	30	36	30	28	24	
O-200	30	38	31	28	20	
W8S-1460	27	34	29	23	17	
M9	29	34	30	26	22	
M8	29	36	30	27	21	
Capital	30	37	30	29	24	
O-48-36	30	35	32	28	20	
W8S-1200	27	35	29	20	18	
M2	29	36	30	24	22	
W8S-1019	27	38	30	22	20	
O-50-11	29	35	22	25	21	
Flambeau	26	32	29	22	19	
Mean	29	36	29	26	21	
	Mean of 12 Tests	Percentage of Oil				
W6S-292	18.9	20.8	18.2	19.7	20.2	19.2
Mandarin (Ottawa)	18.5	19.4	17.3	19.5	20.0	18.8
W4-2115	19.2	21.4	18.5	20.5	20.6	19.4
Hokien	18.8	21.2	16.9	20.4	20.3	19.3
O-200	18.4	20.0	17.6	19.6	20.2	18.1
W8S-1460	19.0	19.5	17.1	20.7	21.0	19.0
M9	19.4	21.4	19.0	20.5	21.6	19.4
M8	19.1	20.7	18.2	20.6	21.5	19.3
Capital	18.9	20.9	17.1	20.2	20.5	19.3
O-48-36	18.7	19.1	17.4	19.8	20.1	18.4
W8S-1200	19.0	20.6	20.4	20.6	20.9	18.4
M2	19.4	21.0	18.8	21.1	21.9	19.7
W8S-1019	17.8	19.1	16.6	19.5	19.9	17.7
O-50-11	17.6	19.3	16.4	19.0	20.0	18.3
Flambeau	17.8	19.3	16.5	18.9	20.2	17.8
Mean	18.7	20.2	17.7	20.0	20.6	18.8

Table 4. (Continued)

Strain	Deer-field Mich.	Spooner Wis.	Fall City Wis.	Morris Minn.	Fargo N.D.	Rosholt S.D.	Moses Lake Wash.
W6S-292		25	31	28	29	22	42
Mandarin (Ottawa)		23	29	28	29	23	38
W4-2115		27	33	30	31	24	42
Hokien		25	32	30	29	23	46
0-200		26	32	30	29	23	46
W8S-1460		23	29	28	28	20	40
M9		26	32	29	28	22	43
M8		24	29	28	30	21	40
Capital		24	31	28	29	20	48
0-48-36		26	33	30	30	23	42
W8S-1200		23	29	28	28	21	38
M2		26	33	29	31	23	40
W8S-1019		22	27	28	29	21	37
0-50-11		24	29	31	29	23	46
Flambeau		22	27	29	25	19	37
Mean		24	30	29	29	22	42

	Percentage of Oil						
W6S-292	19.2	18.0	18.1	19.8	17.6	18.6	17.3
Mandarin (Ottawa)	18.5	16.9	17.6	19.3	18.7	18.0	17.7
W4-2115	19.1	17.5	18.7	19.2	18.4	18.7	18.3
Hokien	19.2	17.4	17.4	18.2	17.9	19.7	17.6
0-200	18.7	17.2	17.8	18.7	17.3	18.0	17.1
W8S-1460	19.7	17.4	18.5	19.9	18.1	18.8	17.7
M9	19.8	17.4	18.7	20.2	17.8	18.7	18.3
M8	19.1	16.8	18.5	19.8	17.9	19.0	18.0
Capital	19.5	17.3	17.9	19.4	17.9	19.1	17.7
0-48-36	19.5	18.1	18.0	19.3	18.8	18.6	17.0
W8S-1200	18.9	16.5	17.7	19.8	17.5	18.4	18.1
M2	19.5	17.4	18.6	20.2	17.9	18.5	18.0
W8S-1019	17.7	16.1	17.2	18.4	17.5	17.8	16.6
0-50-11	17.6	16.2	16.8	18.2	17.0	16.1	16.4
Flambeau	17.6	16.2	17.2	19.2	17.3	16.4	16.6
Mean	18.9	17.1	17.9	19.3	17.8	18.3	17.5

Table 5. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group O, 1950-51.

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	22	17	15	22	21	23	23	23	23
W6S-292	29.9	- 1.5	2.2	30	1.9	16.0	41.3	19.0	136.6
O-200	27.9	- 0.8	2.3	32	1.4	17.4	42.3	18.5	137.0
M9	27.5	+ 1.9	1.7	30	2.1	16.6	41.8	19.5	136.2
Hokien	27.5	+ 1.3	2.2	32	2.4	14.2	41.4	18.9	136.7
Mandarin (Ottawa)	27.2	0	1.3	29	1.8	19.3	43.1	18.4	133.9
W8S-1460	27.1	- 5.6	1.6	28	2.1	16.3	41.7	19.1	133.4
W4-2115	26.8	+ 2.1	2.0	32	2.2	15.4	41.3	19.3	136.7
Capital	26.6	+ 0.6	2.5	31	2.3	13.9	41.9	18.9	136.5
M8	26.4	+ 1.9	1.6	30	2.2	16.2	40.7	19.2	136.9
W8S-1200	25.6	- 9.6	1.3	28	2.3	15.9	40.6	19.1	134.0
W8S-1019	24.9	-10.6	1.6	29	1.9	17.1	43.3	18.0	134.9
Flambeau	23.8	- 9.5	2.4	28	2.3	15.6	42.6	17.9	135.8
Mean	26.8		1.9	30	2.1	16.2	41.8	18.8	135.7

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

Table 6. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group O, 1950-51.

Strain	Mean of 22 Tests	Ottawa Ont.	Guelph Ont.	Cortland Ohio	Columbus Ohio	Deerfield Mich.	Spooner Wis.	Fall City Wis.[1]	Morris Minn.	Rosholt S.D.	Moses Lake Wash.
W6S-292	29.9	38.2	30.8	23.2	26.1	35.7	26.3	27.1	28.8	16.4	38.5
O-200	27.9	39.6	29.8	19.9	22.3	33.0	24.4	23.3	28.9	16.5	34.4
M9	27.5	39.8	26.5	20.6	23.4	32.2	20.9	27.6	27.6	14.1	34.6
Hokien	27.5	37.4	25.8	19.5	23.7	30.4	18.1	24.1	28.7	15.1	40.9
Mandarin (Ott.)	27.2	34.6	26.1	20.3	23.4	36.9	19.8	22.8	25.8	15.5	38.3
W8S-1460	27.1	36.4	24.7	18.1	20.2	33.1	25.3	25.9	29.1	15.8	38.4
W4-2115	26.8	36.5	27.1	20.7	24.5	33.4	21.1	25.2	26.3	13.0	32.3
Capital	26.6	39.3	24.9	20.8	24.1	31.7	17.8	24.4	29.6	14.8	29.2
M8	26.4	39.7	27.4	19.1	24.1	29.4	19.0	22.7	26.6	15.3	33.3
W8S-1200	25.6	30.2	26.1	17.1	20.6	30.1	23.4	23.0	27.3	14.2	40.6
W8S-1019	24.9	33.2	27.4	16.9	21.6	27.0	25.3	23.8	24.3	12.6	34.9
Flambeau	23.8	33.5	25.7	15.6	17.3	22.4	24.6	23.8	28.6	12.8	30.2
Mean	26.8	36.5	26.9	19.3	22.6	31.3	22.2	24.5	27.6	14.7	35.5

	Yield Rank									
W6S-292	5	1	1	1	2	1	2	4	2	3
O-200	3	2	6	8	5	5	9	3	1	8
M9	1	6	4	6	6	8	1	7	9	7
Hokien	6	9	7	5	8	11	6	5	6	1
Mandarin (Ott.)	9	7	5	6	1	9	11	11	4	5
W8S-1460	8	12	9	11	4	2	3	2	3	4
W4-2115	7	5	3	2	3	7	4	10	10	10
Capital	4	11	2	3	7	12	5	1	7	12
M8	2	3	8	3	10	10	12	9	5	9
W8S-1200	12	7	10	10	9	6	10	8	8	2
W8S-1019	11	3	11	9	11	2	7	12	12	6
Flambeau	10	10	12	12	12	4	7	6	11	11

[1] Eau Claire, 1950.

Table 7. Three-year summary of agronomic and chemical data for the strains in the Uniform Test, Group O, 1949-51.

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	37	27	25	34	31	38	38	38	38
M9	27.7	+1.6	1.7	30	2.2	16.6	41.0	20.3	134.5
Mandarin (Ottawa)	27.6	0	1.3	29	1.8	18.5	42.4	19.0	132.1
Capital	27.5	+0.8	2.5	32	2.1	13.2	41.0	19.6	134.9
M8	27.4	+1.2	1.6	30	2.0	15.9	40.1	19.9	135.2
Flambeau	24.2	-9.3	2.3	28	2.2	15.5	41.9	18.7	133.5
Mean	26.9		1.7	30	2.1	15.9	41.3	19.5	134.0

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

Table 8. Three-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group O, 1949-51.

Strain	Mean of 37 Tests	Ottawa Ontario	Guelph Ontario	Cortland Ohio	Columbus Ohio	Spooner Wis.
Years Tested		1949-1951	1949-1951	1949-1951	1949-1951	1949-1951
M9	27.7	32.9	30.3	24.1	28.2	23.9
Mandarin (Ottawa)	27.6	30.8	28.1	23.4	28.1	23.6
Capital	27.5	34.1	28.4	23.8	28.0	22.2
M8	27.4	33.2	30.7	23.2	29.3	22.3
Flambeau	24.2	29.9	27.4	18.0	20.8	26.3
Mean	26.9	32.2	29.0	22.5	26.9	23.7
		Yield Rank				
M9		3	2	1	2	2
Mandarin (Ottawa)		4	4	3	3	3
Capital		1	3	2	4	5
M8		2	1	4	1	4
Flambeau		5	5	5	5	1

[1]Eau Claire, 1949-50.

Table 8. (Continued)

Strain	Fall City Wis.[1]	Morris Minn.	St. Paul Minn.	Fargo N.D.	Rosholt S.D.	Moses Lake Wash.	Corvallis Oregon
Years Tested	1949-1951	1949-1951	1949-1950	1949-1950	1949-1951	1949-1951	1949-1950
M9	27.2	25.0	40.8	21.5	13.9	35.0	26.2
Mandarin (Ottawa)	24.2	24.4	38.0	26.3	15.1	38.8	23.7
Capital	26.4	28.1	36.9	25.9	15.7	30.8	26.9
M8	25.2	25.0	39.4	23.9	14.7	36.0	24.3
Flambeau	24.4	26.2	32.7	26.2	12.8	29.2	23.8
Mean	25.5	25.7	37.6	24.8	14.4	34.0	25.0
	Yield Rank						
M9	1	3	1	5	4	3	2
Mandarin (Ottawa)	5	5	3	1	2	1	5
Capital	2	1	4	3	1	4	1
M8	3	3	2	4	3	2	3
Flambeau	4	2	5	2	5	5	4

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 Agr.	Sel. from P. I. 20405
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-1011	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
A6K-1329	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.)
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.)
M2	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.)

Uniform Test, Group I, was grown at fourteen locations in 1951. As an average of all tests, 1951 yields were only slightly lower than were 1950 yields, and the two years' data are very similar in average lodging, seed quality, and oil percentage. Yields at State College, Pennsylvania; Columbus, Ohio; and Cresco, Iowa, were considerably lower in 1951 than they were in 1950.

Only one new strain, A6K-1011 from the cross Lincoln x (Lincoln x Richland), was entered in the Group I tests in 1951. As an average of thirteen tests (Tables 9 to 12), this new strain ranked second in yield to L6-8179 and was approximately equal to Blackhawk in lodging and maturity as well as yield, but was slightly lower than Blackhawk in oil content. A6K-1011 ranked first in yield at East Lansing, Michigan, and at Madison, Wisconsin.

Twelve of the 1950 Group I entries have been tested for two years. These data are summarized in Tables 13 and 14. The three strains, A6K-1801, A6K-1329, and M2, which have been tested in Group I in 1950 and 1951, yielded in the same relative order both seasons. When all twelve Group I entries which have been tested for two years are considered, A6K-1801 has ranked second in yield and has been slightly better than Blackhawk in lodging and oil percent and has averaged four days earlier in maturity. During this two-year period, A6K-1801 has ranked first in yield at Columbus, Ohio, and Deerfield, Michigan. Of the three strains tested in 1950 and 1951 only, M2 is the earliest, averaging almost a week earlier than Blackhawk but yielding 2.3 bushels less. M2 has been outstanding in oil content and has been equal to Mandarin (Ottawa) in lodging.

Nine entries have been tested in Group I for the three-year period, 1949 to 1951. These data are summarized in Tables 15 and 16. During this three-year period, L6-8179 has ranked first in yield, exceeding Blackhawk by an average of .6 bushels.

L6-8179 has been similar to Blackhawk in maturity and slightly better in lodging and percentage of oil. L6-8179 has ranked first in yield at Guelph, Ontario; Deerfield, Michigan; Madison, Wisconsin; Shabbona, Illinois; St. Paul, Minnesota; and Cresco, Iowa. L6-8275 is also of interest because, while it has averaged .6 bushels less yield than Blackhawk, it is approximately a week earlier in maturity and is better in lodging resistance.

Blackhawk has been increased each season since 1949, and the 1951 production is approximately 276,000 bushels, distributed as follows:

	Approximate Production (Bushels)
Illinois	60,000
Indiana	25,000
Iowa	120,000
Minnesota	60,000
South Dakota	6,000
Wisconsin	5,000

Table 9. Summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1951.

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	13	10	9	11	10	13	13	13	13
L6-8179	28.2	+8.1	1.4	32	1.8	16.1	41.7	19.8	135.7
A6K-1011	27.7	+8.1	1.8	32	1.8	15.3	42.3	19.3	137.5
Blackhawk	27.7	+9.1	1.8	34	1.8	15.7	41.8	19.6	133.4
A6K-1801	27.5	+5.8	1.5	32	1.9	16.5	42.1	19.8	136.3
L6-8275	27.2	+3.3	1.4	31	1.7	15.3	42.3	19.5	137.2
W4-3190	27.1	+5.1	2.0	34	2.1	16.7	42.7	19.5	136.5
Monroe	26.4	+6.1	2.2	37	1.9	15.4	43.6	18.8	135.8
Earlyana	26.4	+8.7	2.5	36	2.3	16.2	43.4	19.1	136.3
Habaro	26.3	+8.2	2.0	28	1.8	20.0	44.3	17.9	135.6
A6K-1329	26.2	+8.9	1.4	33	1.8	16.3	42.2	19.1	138.9
M10	26.0	+8.8	1.6	32	1.9	16.4	40.7	19.9	136.4
Mandarin (Ottawa)	25.5	0	1.2	27	1.9	19.3	43.9	18.6	133.5
M2	24.9	+3.9	1.2	28	2.3	17.5	41.5	19.9	135.5
Mean	26.7		1.7	32	1.9	16.7	42.5	19.3	136.0

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

Table 10. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1951.

Strain	Mean of 13 Tests[1]	Guelph Ontario	State College Pa.	Wooster Ohio	Columbus Ohio	Mt. Healthy Ohio	East Lansing Mich.
L6-8179	28.2	25.9	24.6	26.1	18.0	31.6	25.5
A6K-1011	27.7	25.6	25.0	26.8	17.7	31.4	26.8
Blackhawk	27.7	22.9	22.5	28.1	17.1	28.4	25.4
A6K-1801	27.5	25.6	--	22.6	21.2	34.2	26.1
L6-8275	27.2	26.2	24.1	24.7	18.0	31.8	24.7
W4-3190	27.1	25.6	24.3	27.0	20.4	31.0	24.9
Monroe	26.4	21.1	22.3	28.8	18.6	30.1	23.6
Earlyana	26.4	23.2	22.8	27.2	18.0	26.2	25.5
Habaro	26.3	20.3	20.9	25.8	16.5	25.6	26.6
A6K-1329	26.2	24.7	21.3	29.5	20.5	32.7	24.7
M10	26.0	20.3	25.3	25.5	19.5	32.4	26.2
Mandarin (Ottawa)	25.5	22.8	20.9	23.6	15.0	30.2	22.8
M2	24.9	24.0	20.0	24.8	19.1	30.2	23.3
Mean	26.7	23.7	22.8	26.2	18.4	30.4	25.1
Coef. of Var. (%)		7.1	9.3	--	--	--	--
Bu. Nec. for Sig. (5%)		2.4	3.0	--	--	--	--
Row Spacing (In.)		24	30	21	28	28	--

	Yield Rank					
L6-8179	2	3	7	7	5	5
A6K-1011	3	2	6	10	6	1
Blackhawk	9	7	3	11	11	7
A6K-1801	3	--	13	1	1	4
L6-8275	1	5	11	7	4	9
W4-3190	3	4	5	3	7	8
Monroe	11	8	2	6	10	11
Earlyana	8	6	4	7	12	5
Habaro	12	10	8	12	13	2
A6K-1329	6	9	1	2	2	9
M10	12	1	9	4	3	3
Mandarin (Ottawa)	10	10	12	13	8	13
M2	7	12	10	5	8	12

[1]State College not included in the mean.

Table 10. (Continued)

Strain	Deer-field Mich.	Walker-ton Ind.	Fall City Wis.	Madi-son Wis.	Shab-bona Ill.	Waseca Minn.	Cresco Iowa	Kana-wha Iowa
L6-8179	29.2	42.5	20.7	33.3	27.7	33.1	21.7	31.4
A6K-1011	25.8	39.7	14.4	34.1	29.6	33.5	21.3	33.5
Blackhawk	32.0	36.1	23.4	33.0	28.7	31.3	19.2	33.9
A6K-1801	32.6	35.9	18.0	31.2	27.8	34.8	17.7	30.3
L6-8275	24.8	32.4	27.6	29.5	28.8	35.1	18.8	31.4
W4-3190	29.7	33.4	20.5	28.0	30.5	32.9	17.8	31.2
Monroe	34.0	35.5	16.9	30.2	29.0	29.1	19.2	26.8
Earlyana	31.8	40.7	16.7	30.6	27.5	27.2	19.5	28.6
Habaro	31.4	39.8	17.4	25.0	30.8	31.4	19.0	32.5
A6K-1329	30.8	34.5	15.5	29.7	25.3	29.7	15.5	26.9
M10	31.3	38.6	17.1	27.8	26.2	31.9	15.1	26.3
Mandarin (Ottawa)	33.5	35.0	23.1	24.1	29.0	30.4	14.5	27.5
M2	33.9	28.1	19.2	26.9	27.1	29.2	13.6	24.3
Mean	30.8	36.3	19.3	29.5	28.3	31.5	17.9	29.6
Coef. of Var. (%)	--	10.4	20.7	9.4	7.8	--	10.5	9.8
Bu. Nec. for Sig. (5%)	--	5.4	5.5	4.0	3.2	4.3	2.7	4.2
Row Spacing (In.)	--	38	36	36	40	24	40	40
	Yield Rank							
L6-8179	11	1	4	2	9	4	1	4
A6K-1011	12	4	13	1	3	3	2	2
Blackhawk	5	6	2	3	7	8	4	1
A6K-1801	4	7	7	4	8	2	9	7
L6-8275	13	12	1	8	6	1	7	4
W4-3190	10	11	5	9	2	5	8	6
Monroe	1	8	10	6	4	12	4	11
Earlyana	6	2	11	5	10	13	3	8
Habaro	7	3	8	12	1	7	6	3
A6K-1329	9	10	12	7	13	10	10	10
M10	8	5	9	10	12	6	11	12
Mandarin (Ottawa)	3	9	3	13	4	9	12	9
M2	2	13	6	11	11	11	13	13

Table 11. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and lodging data for the strains in the Uniform Test, Group I, 1951.

Strain	Mean of 10 Tests[1]	Guelph Ontario	State College Pa.	Wooster Ohio	Columbus Ohio	Mt. Healthy Ohio	East Lansing Mich.
L6-8179	+8.1	+ 5	0	+14	+ 5		
A6K-1011	+8.1	+ 7	0	+14	+ 4		
Blackhawk	+9.1	+10	+ 7	+12	+ 3		
A6K-1801	+5.8	+ 8	--	+12	+ 4		
L6-8275	+3.3	+ 1	0	+ 8	0		
W4-3190	+5.1	+ 9	+ 7	+ 6	+ 1		
Monroe	+6.1	+ 6	+ 7	+ 5	0		
Earlyana	+8.7	+12	+ 7	+11	+ 3		
Habaro	+8.2	+ 5	+27	+14	+ 1		
A6K-1329	+8.9	+ 7	+22	+16	+ 5		
M10	+8.8	+11	+22	+13	+ 7		
Mandarin (Ottawa)	0	0	0	0	0		
M2	+3.9	+ 4	+22	+ 9	0		
Date planted		5/24	5/25	5/25	5/24		
Mand. (Ott.) matured		10/1	9/28	9/5	8/31		
Days to mature	118	130	126	103	99		
	Mean of 9 Tests[2]	Lodging					
L6-8179	1.4	1.5	1.0	1.0	1.0	1.0	1.0
A6K-1011	1.8	2.3	1.0	1.0	1.0	1.3	3.0
Blackhawk	1.8	3.3	1.0	1.0	1.0	1.0	3.0
A6K-1801	1.5	1.8	--	1.0	1.0	1.3	4.0
L6-8275	1.4	1.5	1.0	1.0	1.0	1.5	2.0
W4-3190	2.0	1.6	1.0	1.0	1.0	1.8	4.0
Monroe	2.2	2.8	1.0	1.0	1.0	2.0	3.0
Earlyana	2.5	3.2	1.0	1.0	1.0	1.8	4.0
Habaro	2.0	2.3	1.0	1.0	1.0	1.0	4.0
A6K-1329	1.4	1.4	1.0	1.0	1.0	1.3	2.0
M10	1.6	1.9	1.0	1.0	1.0	1.3	4.0
Mandarin (Ottawa)	1.2	1.0	1.0	1.0	1.0	1.0	1.0
M2	1.2	1.1	1.0	1.0	1.0	1.0	2.0
Mean	1.7	2.0	1.0	1.0	1.0	1.3	2.8

[1]State College not included in the mean.
[2]State College, Wooster, Columbus, East Lansing, and Deerfield not included in the mean.

Table 11. (Continued)

Strain	Deer-field Mich.	Walker-ton Ind.	Fall City Wis.	Madi-son Wis.	Shab-bona Ill.	Waseca Minn.	Cresco Iowa	Kana-wha Iowa
L6-8179		+ 6	+ 9	+ 5	+ 9	+12	+ 7	+ 9
A6K-1011		+ 7	+ 5	+ 7	+ 7	+13	+ 8	+ 9
Blackhawk		+ 9	+ 9	+ 7	+ 8	+14	+ 9	+10
A6K-1801		+ 3	+ 5	+ 5	+ 4	+10	+ 3	+ 4
L6-8275		+ 2	+ 4	+ 1	+ 3	+ 7	+ 2	+ 5
W4-3190		+ 3	+ 5	+ 4	+ 3	+10	+ 3	+ 7
Monroe		+ 8	+ 4	+ 3	+ 8	+12	+ 7	+ 8
Earlyana		+ 6	+12	+ 9	+ 5	+13	+ 7	+ 9
Habaro		+ 7	+11	+10	+ 5	+12	+ 7	+10
A6K-1329		+ 8	+ 8	+ 5	+ 9	+14	+ 7	+10
M10		+ 9	+ 9	+ 4	+ 7	+13	+ 7	+ 8
Mandarin (Ottawa)		0	0	0	0	0	0	0
M2		+ 5	+ 4	+ 6	+ 4	+ 6	+ 2	- 1
Date planted		5/31	5/18	5/16	5/29	5/25	5/25	5/22
Mand. (Ott.) matured		9/19	9/20	9/18	9/19	9/23	10/1	9/24
Days to mature		111	125	125	113	121	129	125
					Lodging			
L6-8179	1.0	1.0	1.0	2.0	1.0	1.0	1.8	2.1
A6K-1011	2.0	1.3	1.5	2.3	1.8	1.0	2.1	2.3
Blackhawk	1.0	1.0	2.0	2.5	1.8	1.2	1.4	1.6
A6K-1801	1.0	1.0	1.3	2.0	1.5	1.2	1.6	2.0
L6-8275	1.0	1.0	1.0	1.5	1.3	1.5	1.4	1.8
W4-3190	1.0	1.5	2.0	2.5	2.0	1.8	2.0	2.6
Monroe	1.0	1.5	2.0	2.0	2.5	1.8	2.5	2.9
Earlyana	2.0	2.0	2.8	2.8	2.3	2.0	2.6	3.1
Habaro	1.0	1.5	2.0	2.5	2.3	2.5	1.9	2.3
A6K-1329	1.0	1.0	1.5	1.8	1.3	1.0	1.3	1.8
M10	1.0	1.3	1.5	2.0	1.8	1.0	1.6	2.4
Mandarin (Ottawa)	1.0	1.0	1.0	1.3	1.3	1.0	1.1	1.8
M2	1.0	1.0	1.5	1.3	1.0	1.0	1.3	1.6
Mean	1.2	1.2	1.6	2.0	1.7	1.4	1.7	2.2

Table 12. Summary of height data and percentage of oil for the strains in the Uniform Test, Group I, 1951.

Strain	Mean of 11 Tests[1]	Guelph Ontario	State College Pa.	Wooster Ohio	Columbus Ohio	Mt. Healthy Ohio	East Lansing Mich.
L6-8179	32	31	22	29	24	32	
A6K-1011	32	31	22	29	23	33	
Blackhawk	34	33	26	34	22	36	
A6K-1801	32	31	--	29	24	33	
L6-8275	31	31	22	28	22	30	
W4-3190	34	32	23	31	26	36	
Monroe	37	36	23	36	25	37	
Earlyana	36	35	27	34	27	35	
Habaro	28	28	22	22	19	28	
A6K-1329	33	32	24	31	22	33	
M10	32	30	22	28	24	33	
Mandarin (Ottawa)	27	28	22	25	18	27	
M2	28	29	23	25	20	28	
Mean	32	31	23	29	23	32	
	Mean of 13 Tests[1]	Percentage of Oil					
L6-8179	19.8	18.8	20.5	21.2	21.4	21.9	19.4
A6K-1011	19.3	17.6	20.5	20.5	20.3	21.8	19.2
Blackhawk	19.6	17.8	20.6	20.6	19.8	22.7	19.6
A6K-1801	19.8	17.8	--	21.0	21.8	22.7	19.3
L6-8275	19.5	17.9	20.5	20.1	20.9	22.0	19.1
W4-3190	19.5	18.2	20.9	20.1	21.2	22.2	19.2
Monroe	18.8	16.8	20.6	19.8	21.0	21.7	18.4
Earlyana	19.1	17.6	20.0	19.6	20.4	21.7	18.9
Habaro	17.9	16.1	18.8	19.6	19.0	20.1	17.7
A6K-1329	19.1	17.5	20.7	20.6	21.7	22.2	18.5
M10	19.9	18.3	21.5	20.7	22.2	22.6	19.6
Mandarin (Ottawa)	18.6	16.1	20.4	19.4	20.2	21.1	18.7
M2	19.9	18.3	20.5	20.8	22.4	23.8	19.6
Mean	19.3	17.6	20.5	20.3	20.9	22.0	19.0

[1] State College not included in the mean.

Table 12. (Continued)

Strain	Deer-field Mich.	Walker-ton Ind.	Fall City Wis.	Madi-son Wis.	Shab-bona Ill.	Waseca Minn.	Cresco Iowa	Kana-wha Iowa
L6-8179		34	36	33	39	35	33	30
A6K-1011		32	36	36	37	35	33	31
Blackhawk		34	38	36	40	38	34	34
A6K-1801		32	36	35	36	35	34	29
L6-8275		30	36	33	36	33	33	31
W4-3190		32	35	36	40	37	34	33
Monroe		38	40	39	47	41	40	32
Earlyana		38	40	37	40	38	39	36
Habaro		28	32	29	31	31	29	28
A6K-1329		32	36	35	40	37	34	30
M10		31	34	33	37	36	32	29
Mandarin (Ottawa)		27	30	29	30	28	27	25
M2		24	32	31	31	30	27	26
Mean		32	35	34	37	35	33	30

	Percentage of Oil							
L6-8179	19.5	20.1	18.5	19.4	21.0	18.9	18.1	19.6
A6K-1011	19.2	19.9	17.9	19.4	20.6	18.3	17.1	19.0
Blackhawk	19.8	20.6	17.9	20.1	20.5	18.8	18.2	18.9
A6K-1801	19.4	20.1	18.6	19.4	20.6	19.0	18.3	19.5
L6-8275	19.6	19.6	18.3	19.2	21.2	18.7	17.8	19.2
W4-3190	19.2	19.9	18.2	19.5	21.1	17.6	17.9	19.0
Monroe	18.5	19.3	17.1	18.1	19.5	18.2	17.5	18.3
Earlyana	19.3	19.6	18.2	19.0	19.7	18.3	17.7	18.5
Habaro	18.1	18.4	16.2	17.4	19.0	17.1	16.5	17.3
A6K-1329	18.9	19.5	17.2	19.0	19.8	17.8	17.3	18.6
M10	20.1	20.2	18.3	19.0	20.6	18.8	17.7	20.0
Mandarin (Ottawa)	17.8	18.7	17.0	18.7	19.8	18.4	17.2	18.1
M2	19.7	19.8	18.4	18.7	21.3	19.0	17.5	19.5
Mean	19.2	19.7	17.8	19.0	20.4	18.4	17.6	18.9

Table 13. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1950-51.

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	27	19	22	25	23	27	26	26	26
L6-8179	29.2	+8.1	1.5	33	1.8	15.8	41.2	19.9	134.9
A6K-1801	28.7	+5.0	1.7	33	1.8	16.2	41.5	19.9	135.3
Blackhawk	28.3	+9.2	1.9	35	1.6	15.9	41.2	19.7	132.2
A6K-1329	27.7	+8.3	1.5	34	1.7	16.5	42.0	19.2	137.8
W4-3190	27.7	+4.0	2.0	34	2.0	16.4	42.2	19.6	135.3
L6-8275	27.6	+2.7	1.4	32	1.7	15.4	41.7	19.7	136.3
M10	27.5	+9.1	1.8	33	1.7	16.4	40.3	20.1	135.6
Monroe	26.7	+6.4	2.1	38	1.6	15.3	43.0	18.8	134.7
Earlyana	26.7	+9.3	2.7	37	2.1	16.5	43.1	19.2	135.4
Habaro	26.4	+9.1	2.1	29	1.8	19.9	44.2	17.9	134.6
M2	26.0	+2.5	1.2	29	2.2	17.0	40.9	20.2	134.8
Mandarin (Ottawa)	25.5	0	1.2	28	1.9	19.4	43.5	18.7	132.0
Mean	27.3		1.8	33	1.8	16.7	42.1	19.4	134.9

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

Table 14. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1950-51.

Strain	Mean of 27 Tests	Guelph Ontario	State College Pa.	Columbus Ohio	Deerfield Mich.	Walkerton Ind.
L6-8179	29.2	22.8	28.0	24.1	29.9	38.7
A6K-1801	28.7	24.1	--	25.4	32.8	33.9
Blackhawk	28.3	21.3	27.5	22.2	29.4	32.8
A6K-1329	27.7	22.8	26.3	24.9	30.2	35.3
W4-3190	27.7	22.6	26.8	23.9	29.0	33.8
L6-8275	27.6	23.5	25.8	23.3	25.9	31.0
M10	27.5	19.9	28.8	23.2	29.9	37.6
Monroe	26.7	19.9	26.7	23.7	29.8	35.6
Earlyana	26.7	19.2	26.3	21.7	27.7	38.9
Habaro	26.4	20.8	25.5	21.1	27.5	39.3
M2	26.0	24.3	22.1	23.6	29.9	26.3
Mandarin (Ottawa)	25.5	22.7	24.1	20.6	29.2	31.3
Mean	27.3	22.0	26.2	23.1	29.3	34.5

	Yield Rank				
L6-8179	4	2	3	3	3
A6K-1801	2	--	1	1	7
Blackhawk	8	3	9	7	9
A6K-1329	4	6	2	2	6
W4-3190	7	4	4	9	8
L6-8275	3	8	7	12	11
M10	10	1	8	3	4
Monroe	10	5	5	6	5
Earlyana	12	6	10	10	2
Habaro	9	9	11	11	1
M2	1	11	6	3	12
Mandarin (Ottawa)	6	10	12	8	10

[1]Eau Claire, 1950.
[2]Compton, 1950.

Table 14. (Continued)

Strain	Fall City Wis.[1]	Madison Wis.	Shabbona Ill.[2]	Waseca Minn.	Cresco Iowa	Kanawha Iowa
L6-8179	23.3	35.0	36.0	32.0	25.0	32.7
A6K-1801	21.4	33.5	33.8	32.5	21.6	33.1
Blackhawk	22.8	32.8	36.1	32.2	22.8	34.5
A6K-1329	20.2	30.7	33.2	29.9	20.4	30.5
W4-3190	23.0	29.6	34.4	31.1	21.5	31.6
L6-8275	26.9	29.2	34.0	33.6	21.5	33.8
M10	20.2	30.0	35.5	28.8	20.7	30.0
Monroe	19.5	30.7	33.3	27.5	20.6	28.5
Earlyana	18.0	29.8	35.5	28.5	21.3	31.0
Habaro	14.9	26.0	35.0	29.8	22.8	32.9
M2	22.8	28.0	31.3	30.1	18.6	28.0
Mandarin (Ottawa)	23.1	24.4	31.3	29.1	16.8	27.7
Mean	21.3	30.0	34.1	30.4	21.1	31.2

	Yield Rank					
L6-8179	2	1	2	4	1	5
A6K-1801	7	2	8	2	4	3
Blackhawk	5	3	1	3	2	1
A6K-1329	8	4	10	7	10	8
W4-3190	4	8	6	5	5	6
L6-8275	1	9	7	1	5	2
M10	8	6	3	10	8	9
Monroe	10	4	9	12	9	10
Earlyana	11	7	3	11	7	7
Habaro	12	11	5	8	2	4
M2	5	10	11	6	11	11
Mandarin (Ottawa)	3	12	11	9	12	12

Table 15. Three-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1949-51.

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	41	31	35	39	34	41	40	40	40
L6-8179	30.0	+8.3	1.5	33	1.7	15.5	41.0	20.3	133.1
Blackhawk	29.4	+8.8	1.9	35	1.6	15.6	41.1	20.1	130.3
M10	29.1	+9.3	1.7	33	1.6	16.1	40.0	20.6	134.3
L6-8275	28.8	+2.4	1.3	32	1.8	15.0	41.4	20.1	134.3
W4-3190	28.6	+4.4	2.0	35	1.9	16.1	41.8	20.2	133.6
Earlyana	27.9	+9.6	2.7	38	2.1	15.8	42.9	19.4	134.1
Habaro	27.4	+8.0	2.0	29	1.7	19.1	43.8	18.5	133.3
Monroe	27.2	+6.0	2.1	39	1.5	14.9	42.5	19.4	132.9
Mandarin (Ottawa)	26.4	0	1.3	28	2.0	18.8	43.2	19.1	130.2
Mean	28.3		1.8	34	1.8	16.3	42.0	19.7	132.9

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

Table 16. Three-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1949-51.

Strain	Mean of 41 Tests	Guelph Ontario	State College Pa.	Holgate Ohio	Columbus Ohio	Deerfield Mich.	Walkerton Ind.
Years Tested		1949-1951	1949-1951	1949-1950	1949-1951	1950-1951	1949-1951
L6-8179	30.0	28.0	28.6	30.4	28.4	29.9	39.4
Blackhawk	29.4	26.4	29.2	33.0	28.1	29.4	36.8
M10	29.1	25.2	30.9	32.8	28.6	29.9	38.6
L6-8275	28.8	26.5	26.4	29.5	28.5	25.9	33.9
W4-3190	28.6	26.3	27.4	31.0	29.2	29.0	35.9
Earlyana	27.9	23.6	28.3	32.7	26.5	27.7	41.2
Habaro	27.4	25.0	26.6	31.2	26.1	27.5	39.8
Monroe	27.2	24.4	27.6	27.8	28.3	29.8	34.9
Mandarin (Ottawa)	26.4	25.5	25.2	28.1	27.0	29.2	33.7
Mean	28.3	25.7	27.8	30.7	27.9	28.7	37.1
		Yield Rank					
L6-8179		1	3	6	4	1	3
Blackhawk		3	2	1	6	4	5
M10		6	1	2	2	1	4
L6-8275		2	8	7	3	9	8
W4-3190		4	6	5	1	6	6
Earlyana		9	4	3	8	7	1
Habaro		7	7	4	9	8	2
Monroe		8	5	9	5	3	7
Mandarin (Ottawa)		5	9	8	7	5	9

[1]Eau Claire, 1949-50.
[2]Compton, 1949-50.

Table 16. (Continued)

Strain	Fall City Wis.[1]	Madison Wis.	Shabbona Ill.[2]	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S.D.
Years Tested	1949-1951	1949-1951	1949-1951	1949-1950	1949-1951	1949-1951	1949-1951	1949-1950
I6-8179	23.6	36.1	34.5	35.7	29.3	22.4	33.3	16.4
Blackhawk	23.0	34.0	33.2	29.5	30.4	22.1	35.1	16.9
MIC	21.0	32.4	34.0	35.5	27.6	20.1	31.2	16.0
I6-8275	27.3	31.4	32.6	34.2	31.0	21.0	34.8	16.3
W4-3190	24.0	30.6	33.1	30.5	29.9	20.7	32.7	17.2
Earlyana	18.4	31.7	32.2	29.3	26.5	19.6	31.9	14.5
Habaro	17.1	27.9	33.1	26.2	27.5	20.7	32.9	14.7
Monroe	20.6	31.5	31.1	30.3	25.6	19.2	28.8	15.2
Mandarin (Ottawa)	23.4	26.4	29.4	30.8	26.5	16.0	28.5	16.4
Mean	22.0	31.3	32.6	31.3	28.3	20.2	32.1	16.0
	Yield Rank							
I6-8179	3	1	1	1	4	1	3	3
Blackhawk	5	2	3	7	2	2	1	2
MIC	6	3	2	2	5	6	7	6
I6-8275	1	6	6	3	1	3	2	5
W4-3190	2	7	4	5	3	4	5	1
Earlyana	8	4	7	8	7	7	6	9
Habaro	9	8	4	9	6	4	4	8
Monroe	7	5	8	6	9	8	8	7
Mandarin (Ottawa)	4	9	9	4	7	9	9	3

UNIFORM TEST, GROUP II

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

Strain	Source or Originating Agency	Origin
Adams	Iowa A.E.S. & U.S.R.S.L.	Sel. from Illini x Dunfield
Blackhawk	Iowa A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
Earlyana	Purdue Agr. Exp. Sta.	Sel. from a natural hybrid
Harosoy	Harrow Exp. Sta., Harrow, Ontario	Sel. from Mandarin x (Mandarin x A.K.)
Hawkeye	Iowa A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
Lincoln	Ill. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x Manchu
Richland	Purdue Agr. Exp. Sta.	Sel. from P. I. 70502-2
A6K-549	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
C683	Purdue A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
H6217	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
L8-7289	Ill. A.E.S. & U.S.R.S.L.	Sel. from Seneca x Richland
W5-3372	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W8-1028	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Manchu 606

Group II was grown at twenty-five locations in eleven states. As an average of all tests, yields for the named varieties were slightly higher in 1951 than in 1950. Yields for 1951 were somewhat higher than 1950 at New Brunswick, New Jersey; Deerfield, Michigan; Worthington, Indiana; and Urbana, Illinois, and were considerably higher at Greenfield, Indiana, and Dwight, Illinois. The Dwight yield in 1951 was approximately equal to the 1949 yield and exceeded by sixteen bushels the 1950 average yield. The low yield in 1950 was attributed to a severe infection of brown stem rot. The low average yield at Columbus, Ohio, thirteen bushels lower than in 1950, is attributable to an extremely dry period extending from July 24 to September 5. Oil contents obtained in 1951 were very similar to the results obtained in 1950.

There were only two new strains in the 1951 Group II tests, Harosoy and A6K-549. It is interesting to note (Table 17) that, as an average of twenty-three tests, these two entries ranked first and second in yield, respectively, and were six to seven days earlier in maturity than Lincoln, the third highest yielding strain. Harosoy and A6K-549 also had a lower lodging score than Lincoln and were equal to Lincoln in regard to oil percent but were not as desirable in these two respects as was L8-7289. L8-7289, however, is not outstanding in yield and ranked twelfth out of the thirteen Group II entries. Harosoy ranked first in yield at New Brunswick, New Jersey; Madison, Wisconsin; and Dwight, Illinois. A6K-549 ranked first in yield at Columbus, New Jersey; and Kanawha and Marcus, Iowa.

Eleven of the 1951 Group II entries were also grown in 1950 and data for these entries during this period are summarized in Tables 21 and 22. Lincoln ranked first in yield as an average of forty-six tests. W8-1028, the second ranking entry for this two-year period, is only slightly lower than Lincoln in yield but has a higher lodging score and a lower oil content. The other four strains which have

been in Group II tests during this two-year period, C683, H6217, W5-3372, and L8-7289, have not been outstanding in yield but have had low lodging scores and good oil contents. During this two-year period, L8-7289 has had the lowest lodging score and the highest percentage of oil of all Group II entries.

Six varieties have been tested in Group II for four years and data for these strains during this period are presented in Tables 23 and 24. For this four-year period, Lincoln has ranked first in yield as an average of eighty-five tests. Adams has averaged only .5 of a bushel less than Lincoln during this four-year period and has been very similar to Lincoln in respect to lodging, height, and percentage of oil. Hawkeye, the third highest yielding strain for this four-year period, has averaged only one bushel less than Lincoln. However, Hawkeye has averaged almost six days earlier in maturity than Lincoln and has had a better lodging score than either Lincoln or Adams.

Table 17. Summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1951.

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	23	18	21	21	17	25	25	25	25
Harosoy	33.7	-2.4	1.7	38	1.8	17.2	39.3	20.2	133.3
A6K-549	33.2	-3.1	1.7	35	2.0	16.7	42.2	20.4	135.4
Lincoln	33.1	+3.7	2.1	37	1.9	13.8	40.9	20.4	138.9
W5-3372	33.1	-2.8	1.6	33	1.8	15.0	40.5	20.4	134.6
Hawkeye	32.5	0	1.5	37	1.6	16.9	41.9	20.3	131.5
C683	32.5	+0.6	1.7	40	1.6	14.8	40.8	20.2	130.6
H6217	32.2	-2.8	1.9	33	1.9	17.3	42.2	20.1	135.1
W8-1028	32.1	+5.9	2.5	40	2.1	15.9	40.8	19.9	137.7
Adams	32.1	+2.1	1.9	38	1.7	13.4	40.9	20.3	135.4
Earlyana	31.7	-6.2	2.7	37	2.0	15.4	43.1	19.8	134.3
Blackhawk	31.5	-5.0	1.6	34	1.6	15.2	41.1	20.5	130.0
L8-7289	30.7	-1.2	1.4	40	2.2	15.3	39.4	21.0	131.0
Richland	28.6	+0.7	1.6	33	2.0	16.3	40.7	19.8	131.5
Mean	32.1		1.8	36	1.9	15.6	41.1	20.3	133.8

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

Table 18. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1951.

Strain	Mean of 23 Tests[1]	State College Pa.	New Brunswick N.J.	Columbus N.J.	Newark Del.	Wooster Ohio	Columbus Ohio	Mt. Healthy Ohio	East Lansing Mich.	Deerfield Mich.	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.
Harosoy	33.7	24.5	35.6	22.6	31.6	24.6	18.5	33.1	20.6	27.3	48.0	38.4	38.1
A6K-549	33.2	23.4	33.2	24.9	30.6	24.2	16.1	31.0	17.8	28.2	44.8	36.5	36.4
Lincoln	33.1	26.5	35.0	23.9	33.8	27.7	13.0	29.1	23.6	28.3	41.4	37.8	43.6
W5-3372	33.1	23.6	33.8	21.8	29.4	24.7	15.6	31.9	20.3	25.8	44.5	38.7	37.8
Hawkeye	32.5	26.7	34.2	22.5	30.8	25.4	18.1	33.4	18.1	21.9	43.3	35.8	39.1
C683	32.5	23.2	32.9	20.0	31.7	26.8	16.5	30.7	22.3	34.8	49.7	38.0	38.2
H6217	32.2	23.8	32.9	23.3	30.3	26.2	20.4	32.6	21.0	35.3	42.0	36.0	36.6
W8-1028	32.1	26.7	30.8	23.2	31.7	28.3	16.2	29.5	23.0	27.8	40.3	37.3	38.0
Adams	32.1	25.9	34.4	23.1	32.3	25.1	19.9	31.1	24.0	24.1	42.2	36.5	36.5
Earlyana	31.7	21.2	32.1	21.9	30.9	25.9	17.7	29.0	21.4	32.3	42.5	39.3	36.5
Blackhawk	31.5	22.5	31.1	21.3	28.8	23.2	19.0	31.8	22.2	30.3	39.5	36.1	32.3
L8-7289	30.7	23.4	27.9	21.6	28.4	21.8	15.3	30.5	20.1	32.7	41.5	33.8	39.8
Richland	28.6	17.5	31.0	21.2	29.5	23.2	16.5	27.1	24.1	33.2	37.5	32.5	35.5
Mean	32.1	23.8	32.7	22.4	30.8	25.2	17.2	30.8	21.4	29.4	42.9	36.7	37.6
C.V. (%)		9.3	--	--	8.7	--	--	--	14.0	16.0	8.8	5.8	8.6
B.N.F.S.(5%)		3.0	3.6	--	3.7	--	--	--	2.9	6.7	5.4	3.0	4.6
R.Sp.(In.)		30	30	20	36	21	28	28	--	--	38	40	40
							Yield Rank						
Harosoy		5	1	6	5	9	4	2	9	10	2	3	5
A6K-549		8	6	1	8	10	10	7	13	8	3	7	11
Lincoln		3	2	2	1	2	13	11	3	7	10	5	1
W5-3372		7	5	9	11	8	11	4	10	11	4	2	7
Hawkeye		1	4	7	7	6	5	1	12	13	5	11	3
C683		10	7	13	3	3	7	8	5	2	1	4	4
H6217		6	7	3	9	4	1	3	8	1	8	10	8
W8-1028		1	12	4	3	1	9	10	4	9	11	6	6
Adams		4	3	5	2	7	2	6	2	12	7	7	9
Earlyana		12	9	8	6	5	6	12	7	5	6	1	9
Blackhawk		11	10	11	12	11	3	5	6	6	12	9	13
L8-7289		8	13	10	13	13	12	9	11	4	9	12	2
Richland		13	11	12	10	11	7	13	1	3	13	13	12

[1]East Lansing and Deerfield not included in the mean.

Table 18. (Continued)

Strain	Green-field Ind.	Worth-ington Ind.	Madi-son Wis.	Shab-bona Ill.	Dwight Ill.	Ur-bana Ill.	Kana-wha Ia.	Mar-cus Ia.	Inde-pen-dence Ia.	Ames Ia.	Center-ville S.D.	Da-kota City Nebr.	Lin-coln Nebr.
Harosoy	44.8	38.0	38.8	29.7	40.6	50.4	27.6	26.4	32.0	40.7	20.8	40.8	28.8
A6K-549	41.1	36.2	35.4	29.7	38.7	45.8	34.4	35.0	32.9	40.1	24.6	37.9	29.7
Lincoln	46.9	43.3	34.0	23.9	37.4	48.2	29.2	28.6	29.8	41.4	17.3	39.4	30.8
W5-3372	41.9	37.3	34.0	31.2	39.5	45.9	30.7	33.1	33.6	40.9	21.0	39.6	30.8
Hawkeye	43.8	38.2	31.3	26.0	40.5	44.6	29.4	28.0	30.1	38.4	17.4	40.9	30.2
C683	43.8	39.7	32.4	29.9	39.4	47.3	27.9	29.5	30.1	35.9	20.0	35.9	27.0
H6217	41.7	33.8	35.1	26.4	36.7	44.0	30.0	31.1	30.2	38.5	20.4	37.9	31.0
W8-1028	47.7	39.7	30.6	26.5	38.9	48.9	27.3	26.4	28.5	40.4	17.6	37.8	27.0
Adams	46.8	38.7	30.1	22.7	39.7	51.7	26.6	28.3	30.1	36.6	16.7	34.6	27.6
Earlyana	45.6	34.4	33.6	27.6	36.1	41.0	30.5	31.6	27.5	35.3	24.8	39.7	24.2
Blackhawk	38.8	31.5	34.8	28.6	37.4	43.1	32.6	34.3	31.1	35.6	24.7	40.1	27.4
L8-7289	38.1	33.4	30.6	27.1	37.1	45.6	28.0	29.2	31.5	37.4	17.6	39.1	27.2
Richland	36.8	35.3	23.7	23.7	35.0	42.8	24.0	23.6	27.3	33.6	16.5	35.4	28.0
Mean	42.9	36.9	32.6	27.2	38.2	46.1	29.1	29.6	30.4	38.1	20.0	38.4	28.4
C.V. (%)	5.1	5.8	11.9	11.2	4.8	7.8	6.9	10.9	8.7	6.3	13.0	8.2	8.7
BNFS (5%)	3.1	3.1	5.5	4.3	2.6	5.0	2.9	4.3	3.8	3.4	3.7	N.S.	3.6
R.Sp.(In.)	38	38	36	40	40	40	40	40	40	40	40	40	38
	Yield Rank												
Harosoy	5	6	1	3	1	2	10	11	3	3	5	2	6
A6K-549	10	8	2	3	7	7	1	1	2	5	3	8	5
Lincoln	2	1	5	11	8	4	7	8	10	1	11	6	2
W5-3372	8	7	5	1	4	6	3	3	1	2	4	5	2
Hawkeye	6	5	9	10	2	9	6	10	7	7	10	1	4
C683	6	2	8	2	5	5	9	6	7	10	7	11	11
H6217	9	11	3	9	11	10	5	5	6	6	6	8	1
W8-1028	1	2	10	8	6	3	11	11	11	4	9	10	11
Adams	3	4	12	13	3	1	12	9	7	9	12	13	8
Earlyana	4	10	7	6	12	13	4	4	12	12	1	4	13
Blackhawk	11	13	4	5	8	11	2	2	5	11	2	3	9
L8-7289	12	12	10	7	10	8	8	7	4	8	8	7	10
Richland	13	9	13	12	13	12	13	13	13	13	13	12	7

Table 19. Summary of maturity data, days earlier (-) or later (+) than Hawkeye, for the strains in the Uniform Test, Group II, 1951.

Strain	Mean of 18 Tests[1]	State College Pa.	New-Brunswick N.J.	Columbus N.J.	Newark Del.	Wooster Ohio	Columbus Ohio	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.
Harosoy	-2.4	+ 8	- 3	- 2	- 3	- 9	- 5	- 2	- 4	- 5
A6K-549	-3.1	+ 8	- 2	0	- 4	- 7	- 7	- 3	- 4	- 4
Lincoln	+3.7	+ 1	+ 5	+ 2	+ 3	+ 4	+ 5	+ 6	+ 4	+ 4
W5-3372	-2.8	+ 8	- 3	0	- 4	- 8	- 7	- 4	- 1	- 3
Hawkeye	0	0	0	0	0	0	0	0	0	0
C683	+0.6	+ 8	- 2	0	- 3	0	- 7	+ 1	+ 3	- 1
H6217	-2.8	+ 8	- 3	0	- 4	- 6	- 6	- 3	- 1	- 1
W8-1028	+5.9	+ 5	+ 8	+ 2	+ 5	+ 3	+11	+ 6	+ 8	+ 8
Adams	+2.1	- 1	+ 3	0	- 2	0	+ 1	+ 2	+ 1	+ 3
Earlyana	-6.2	- 2	- 5	- 2	- 5	-14	- 9	- 5	- 3	- 7
Blackhawk	-5.0	- 2	- 4	- 1	- 4	- 9	- 9	- 5	- 5	- 7
L8-7289	-1.2	+13	- 2	0	- 4	- 7	- 7	- 2	0	- 2
Richland	+0.7	+ 5	- 1	0	- 2	+ 1	- 5	0	+ 1	0
Date planted		5/25	6/9	6/21	6/7	5/25	5/24	5/31	5/21	5/16
Hawkeye matured		10/7	9/20	9/22	9/15	9/26	9/13	10/3	9/17	9/21
Days to mature	122	135	103	93	100	124	112	125	119	128

[1]Columbus, N. J., not included in the mean.

Table 19. (Continued)

Strain	Green-field Ind.	Worth-ington Ind.	Madi-son Wis.	Dwight Ill.	Ur-bana Ill.	Kana-wha Iowa	Inde-pen-dence Iowa	Ames Iowa	Center-ville S.D.	Lin-coln Nebr.
Harosoy	0	0	- 6	- 4	- 1	- 1	- 5	- 3	+ 2	- 2
A6K-549	- 5	+ 2	- 5	- 3	- 2	- 5	- 5	- 3	- 4	- 2
Lincoln	+ 2	+ 4	+ 5	+ 5	+ 4	+ 3	+ 3	+ 3	+ 2	+ 4
W5-3372	- 2	- 2	- 4	- 1	- 1	- 6	- 6	- 3	- 3	- 1
Hawkeye	0	0	0	0	0	0	0	0	0	0
C683	+ 1	- 1	+ 6	0	+ 1	0	+ 2	+ 1	+ 1	+ 1
H6217	+ 1	+ 1	- 5	0	- 1	- 4	- 5	- 3	- 3	- 2
W8-1028	+ 6	+ 5	+ 9	+ 6	+ 6	+ 4	+ 3	+ 7	+ 2	+ 4
Adams	+ 1	+ 2	+ 7	+ 2	+ 3	+ 2	+ 2	+ 2	+ 4	+ 5
Earlyana	- 6	- 4	- 6	- 6	- 3	- 8	-11	- 7	- 5	- 6
Blackhawk	- 4	- 4	- 4	- 5	- 1	- 6	- 8	- 6	- 5	- 2
L8-7289	+ 1	- 1	0	- 2	0	- 3	- 2	- 2	- 1	- 1
Richland	+ 4	+ 3	+ 3	+ 1	+ 1	0	+ 1	0	+ 2	- 1
Date planted	5/24	6/19	5/16	5/23	5/22	5/22	5/24	5/18	6/14	6/13
Hawkeye matured	9/22	9/27	10/6	9/29	9/20	10/10	10/10	10/2	10/7	10/1
Days to mature	121	100	143	129	121	141	139	137	115	110

Table 20. Summary of the lodging and height data for the strains in the Uniform Test, Group II, 1951.

Strain	Mean of 21 Tests[1]	State College Pa.	New-Brunswick N.J.	Columbus N.J.	Newark Del.	Wooster Ohio	Columbus Ohio	Mt. Healthy Ohio	East Lansing Mich.	Deerfield Mich.	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.
Harosoy	1.7	1.0	2.7	1.2	3.0		1.0	2.3	3.0	2.0	1.5	1.0	1.0
A6K-549	1.7	1.0	3.5	1.5	1.0		1.0	1.3	3.0	2.0	1.3	1.0	1.0
Lincoln	2.1	1.0	2.2	1.0	4.0		--	2.3	3.0	3.0	2.0	1.0	1.0
W5-3372	1.6	1.3	3.2	1.0	3.0		1.0	1.3	2.0	1.0	1.0	1.0	1.0
Hawkeye	1.5	1.0	2.5	1.0	2.0		1.0	1.8	2.0	2.0	1.3	1.0	1.0
C683	1.7	1.0	3.2	1.5	2.0		1.0	1.3	4.0	3.0	1.5	1.0	1.0
H6217	1.9	1.3	3.2	1.5	4.0		1.0	1.3	2.0	2.0	1.3	1.0	1.0
W8-1028	2.5	1.5	3.7	1.2	4.0		--	2.3	3.0	4.0	2.3	1.5	1.8
Adams	1.9	1.0	3.7	1.0	2.0		1.0	1.8	4.0	2.0	1.8	1.0	1.0
Earlyana	2.7	1.3	5.0	2.0	4.0		1.0	2.0	4.0	3.0	2.3	1.8	1.8
Blackhawk	1.6	1.0	4.0	1.2	3.0		1.0	1.5	3.0	3.0	1.0	1.0	1.0
L8-7289	1.4	1.0	2.7	1.0	2.0		1.0	1.3	2.0	2.0	1.0	1.0	1.0
Richland	1.6	1.0	2.2	1.0	3.0		1.0	1.5	4.0	3.0	1.0	1.0	1.0
Mean	1.8	1.1	3.2	1.2	2.8		1.0	1.7	3.0	2.5	1.5	1.1	1.1
	Mean of 21 Tests	Height											
Harosoy	38	29			39	34	28	38			41	44	36
A6K-549	35	25			34	32	24	35			38	38	34
Lincoln	37	25			41	34	30	39			41	41	37
W5-3372	33	24			33	30	26	35			37	38	31
Hawkeye	37	25			36	35	30	37			39	42	34
C683	40	30			39	37	32	42			45	47	38
H6217	33	24			34	29	26	34			35	36	31
W8-1028	40	29			40	35	31	42			42	46	39
Adams	38	25			39	33	31	43			41	43	35
Earlyana	37	26			37	34	29	39			42	41	35
Blackhawk	34	26			33	34	27	36			34	38	31
L8-7289	40	27			40	36	29	41			44	46	37
Richland	33	26			33	30	27	37			38	36	30
Mean	36	26			37	33	28	38			40	41	34

[1] Columbus, Ohio; East Lansing, Mich.; and Deerfield, Mich.; not included in the mean.

Table 20. (Continued)

Strain	Green-field Ind.	Worth-ington Ind.	Madi-son Wis.	Shab-bona Ill.	Dwight Ill.	Ur-bana Ill.	Kana-wha Ia.	Mar-cus Ia.	Inde-pen-dence Ia.	Ames Ia.	Center-ville S.D.	Da-kota City Nebr.	Lin-coln Nebr.
Harosoy	1.0	1.0	2.8	2.0	1.0	2.3	2.3	2.0	2.1	1.3	1.7	2.0	1.2
A6K-549	1.5	1.0	3.3	1.8	1.5	1.5	1.6	2.8	2.1	1.1	1.9	1.5	2.0
Lincoln	1.3	1.8	3.3	2.0	1.5	2.0	3.0	3.1	2.5	2.0	1.9	2.8	2.8
W5-3372	1.5	1.0	2.0	1.8	1.3	1.5	2.3	2.9	2.0	1.3	2.0	1.0	1.0
Hawkeye	1.0	1.0	2.5	1.3	1.3	1.8	1.8	2.4	2.1	1.0	1.0	2.0	1.0
C683	1.0	1.3	3.3	1.8	1.5	2.8	1.9	1.8	2.4	1.3	1.4	1.8	1.5
H6217	1.0	1.8	3.0	1.8	1.5	1.8	2.5	2.9	1.8	1.5	1.6	2.0	2.0
W8-1028	2.0	2.0	3.3	2.3	2.5	2.3	2.9	3.1	2.8	2.1	1.8	3.8	3.2
Adams	1.0	1.8	2.5	2.3	1.0	2.5	2.3	2.8	2.0	1.3	1.5	2.8	2.5
Earlyana	2.5	3.0	3.8	2.5	3.0	2.8	2.8	3.3	3.0	2.0	2.2	2.8	3.5
Blackhawk	1.0	1.0	3.5	1.3	1.3	2.0	1.4	1.6	1.9	1.0	1.1	1.0	1.0
L8-7289	1.0	1.0	2.5	1.5	1.0	1.8	2.0	1.8	1.5	1.0	1.0	1.2	1.0
Richland	1.3	1.0	3.0	1.5	1.5	2.0	2.1	2.0	2.4	1.4	1.2	2.0	1.0
Mean	1.3	1.4	3.0	1.8	1.5	2.1	2.2	2.5	2.2	1.4	1.6	2.1	1.8
						Height							
Harosoy	47	36	42	44	47	46	34	35	37	39	30	39	30
A6K-549	40	31	39	39	41	42	36	35	34	36	31	32	29
Lincoln	42	35	40	42	44	45	35	36	37	40	31	38	31
W5-3372	40	30	38	37	39	39	33	32	33	34	29	34	26
Hawkeye	43	34	40	40	47	44	37	36	35	39	34	37	30
C683	46	37	44	47	49	47	39	40	39	44	32	43	30
H6217	37	31	35	35	39	39	32	33	32	34	28	34	26
W8-1028	44	39	44	46	47	47	37	37	38	42	34	42	30
Adams	45	34	45	42	44	45	38	38	36	40	32	40	30
Earlyana	44	34	41	42	43	45	35	36	36	37	32	37	27
Blackhawk	39	30	37	40	42	43	36	34	34	36	30	37	26
L8-7289	47	37	43	45	50	48	41	38	38	42	34	42	29
Richland	37	30	35	37	39	39	34	32	31	35	29	36	26
Mean	42	34	40	41	44	44	36	36	35	38	31	38	28

Table 21. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1950-51.

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	46	37	41	42	35	48	48	48	48
Lincoln	32.9	+4.3	2.2	37	1.7	14.1	40.7	20.5	137.4
W8-1028	32.7	+5.9	2.5	40	1.8	16.3	40.2	20.1	136.9
Adams	32.2	+2.5	2.0	38	1.5	14.2	40.6	20.2	134.8
Hawkeye	32.1	0	1.6	37	1.4	17.5	41.2	20.3	130.9
C683	31.7	+0.5	1.8	40	1.5	15.6	40.5	20.2	130.6
H6217	31.5	-2.7	1.9	33	1.9	17.4	41.8	20.1	134.4
W5-3372	31.3	-3.5	1.6	33	1.9	15.2	40.1	20.5	133.6
Blackhawk	30.5	-5.6	1.6	34	1.6	15.5	40.5	20.4	129.3
L8-7289	30.3	-1.2	1.5	40	2.1	15.7	39.0	21.0	129.9
Earlyana	29.6	-6.6	2.7	37	2.0	15.6	42.4	20.0	133.4
Richland	28.2	+1.5	1.6	34	2.0	16.6	40.6	19.8	131.1
Mean	31.2		1.9	37	1.8	15.8	40.7	20.3	132.9

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

Table 22. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1950-51.

Strain	Mean of 46 Tests	State College Pa.	New Brunswick N.J.	Newark Del.	Columbus Ohio	Deerfield Mich.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.
Lincoln	32.9	30.0	33.2	35.2	23.2	25.3	39.5	44.0	40.9	37.5
W8-1028	32.7	30.9	30.8	36.1	26.3	26.5	40.1	40.3	39.2	35.8
Adams	32.2	30.0	32.6	37.2	24.6	23.9	41.2	38.2	39.3	32.3
Hawkeye	32.1	29.5	31.5	36.3	24.0	24.5	40.0	36.6	37.2	34.4
C683	31.7	27.9	29.7	36.2	24.9	30.0	37.5	38.1	36.9	34.0
H6217	31.5	27.3	29.1	34.1	23.5	29.5	36.0	37.4	35.0	31.4
W5-3372	31.3	25.3	28.6	30.4	21.2	25.8	38.7	36.6	33.7	31.0
Blackhawk	30.5	27.5	26.7	32.3	23.7	27.8	36.9	32.4	33.8	29.0
L8-7289	30.3	27.0	27.2	33.7	19.2	28.6	36.9	38.3	32.5	30.0
Earlyana	29.6	25.5	27.8	31.9	21.1	27.0	37.5	34.2	35.8	29.1
Richland	28.2	22.8	26.4	32.7	18.6	28.6	33.9	35.8	31.6	30.4
Mean	31.2	27.6	29.4	34.2	22.8	27.0	38.0	37.4	36.0	32.3

	Yield Rank								
Lincoln	2	1	5	7	9	4	1	1	1
W8-1028	1	4	4	1	7	2	2	3	2
Adams	2	2	1	3	11	1	4	2	5
Hawkeye	4	3	2	4	10	3	7	4	3
C683	5	5	3	2	1	6	5	5	4
H6217	7	6	6	6	2	10	6	7	6
W5-3372	10	7	11	8	8	5	7	9	8
Blackhawk	6	10	9	5	5	8	11	8	11
L8-7289	8	9	7	10	3	8	3	10	9
Earlyana	9	8	10	9	6	6	10	6	10
Richland	11	11	8	11	3	11	9	11	7

[1]Compton, Ill., 1950.
[2]Hudson, Iowa, 1950.

Table 22. (Continued)

Strain	Madison Wis.	Shabbona Ill.[1]	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Independence Iowa[2]	Ames Iowa	Centerville S.D.	Lincoln Nebr.
Lincoln	36.1	33.0	30.8	42.4	30.0	33.2	26.8	39.3	19.6	34.0
W8-1028	32.5	34.3	31.3	43.8	29.0	31.6	27.4	41.2	19.9	31.4
Adams	33.0	32.1	31.6	48.7	28.4	35.6	27.5	38.4	19.2	29.7
Hawkeye	32.6	33.7	32.2	40.6	30.7	34.2	28.7	38.8	19.9	31.4
C683	31.4	35.2	29.9	43.3	28.9	34.3	28.1	37.3	20.4	29.9
H6217	35.8	33.1	28.9	40.5	33.5	34.3	27.8	38.3	20.3	32.1
W5-3372	34.3	35.1	30.0	41.1	32.2	35.0	29.2	38.8	20.9	33.1
Blackhawk	34.1	34.2	28.6	38.2	31.7	36.8	28.0	34.5	23.7	29.8
L8-7289	30.1	33.0	29.8	41.8	30.2	32.4	27.9	36.7	19.0	30.6
Earlyana	31.5	32.8	28.1	35.8	29.2	34.5	26.1	36.0	21.5	25.7
Richland	24.7	29.7	27.4	39.0	26.6	29.3	25.5	34.0	17.6	30.3
Mean	32.4	33.3	29.9	41.4	30.0	33.7	27.5	37.6	20.2	30.7
	Yield Rank									
Lincoln	1	7	4	4	6	8	9	2	8	1
W8-1028	7	3	3	2	8	10	8	1	6	4
Adams	5	10	2	1	10	2	7	5	9	10
Hawkeye	6	5	1	7	4	7	2	3	6	4
C683	9	1	6	3	9	5	3	7	4	8
H6217	2	6	8	8	1	5	6	6	5	3
W5-3372	3	2	5	6	2	3	1	3	3	2
Blackhawk	4	4	9	10	3	1	4	10	1	9
L8-7289	10	7	7	5	5	9	5	8	10	6
Earlyana	8	9	10	11	7	4	10	9	2	11
Richland	11	11	11	9	11	11	11	11	11	7

Table 23. Four-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1948-51.

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	85	69	78	80	66	87	87	87	87
Lincoln	33.9	+5.8	2.2	39	1.6	14.2	40.5	20.9	135.6
Adams	33.4	+3.1	2.1	39	1.5	14.4	40.4	21.0	132.5
Hawkeye	32.9	0	1.6	38	1.5	17.5	41.0	20.9	128.7
Blackhawk	30.1	-5.7	1.6	35	1.8	15.5	41.1	20.8	127.1
Earlyana	29.6	-5.7	2.7	38	2.1	15.6	42.5	20.3	131.6
Richland	29.0	+0.5	1.6	34	1.9	16.4	40.5	20.3	129.1
Mean	31.5		2.0	37	1.7	15.6	41.0	20.7	130.8

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

Table 24. Four-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1948-51.

Strain	Mean of 85 Tests	State College Pa.	Newark Del.	Holgate Ohio	Columbus Ohio	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.
Years Tested		1948-1951	1949-1951	1948-1950	1948-1951	1948-49 1951	1948-1951	1948-1951	1948-1951	1948-1951
Lincoln	33.9	32.5	36.2	36.9	30.2	41.5	38.1	44.7	41.0	35.9
Adams	33.4	32.0	39.7	34.3	31.3	41.1	39.2	39.7	38.7	33.0
Hawkeye	32.9	32.0	37.8	30.3	29.6	41.8	38.9	38.9	37.9	34.1
Blackhawk	30.1	30.3	32.5	28.6	28.0	36.3	34.7	32.0	31.8	28.8
Earlyana	29.6	28.5	32.8	28.9	25.2	37.6	33.8	34.5	33.3	29.6
Richland	29.0	25.8	33.9	29.7	25.9	36.0	32.6	36.4	31.2	31.1
Mean	31.5	30.2	35.5	31.5	28.4	39.1	36.2	37.7	35.7	31.1
		Yield Rank								
Lincoln		1	3	1	2	2	3	1	1	1
Adams		2	1	2	1	3	1	2	2	3
Hawkeye		2	2	3	3	1	2	3	3	2
Blackhawk		4	6	6	4	5	4	6	5	6
Earlyana		5	5	5	6	4	5	5	4	5
Richland		6	4	4	5	6	6	4	6	4

[1]Compton, Ill., 1948-50.
[2]Hudson, Iowa, 1948-50.

Table 24. (Continued)

Strain	Madison Wis.	Shabbona Ill.[1]	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Independence Iowa[2]	Ames Iowa	Centerville S.D.	Wakefield Nebr.	Lincoln Nebr.
Years Tested	1948-1951	1948-1951	1949-1951	1948-1951	1948-1951	1948-1951	1948-1951	1948-1951	1948-1951	1949-1950	1948-1951
Lincoln	35.7	32.4	32.9	40.1	31.0	37.6	25.5	38.0	19.6	24.8	30.4
Adams	32.5	33.1	31.5	45.4	31.1	37.7	26.1	36.4	19.9	26.4	28.3
Hawkeye	33.7	31.8	31.3	38.4	33.0	37.2	26.9	36.2	20.2	26.6	28.1
Blackhawk	31.6	32.2	26.9	36.0	33.4	36.5	26.3	31.7	21.1	25.1	25.5
Earlyana	30.4	30.2	27.5	34.8	30.6	34.7	24.6	33.5	18.9	23.3	23.7
Richland	26.7	28.4	26.0	35.5	28.9	32.4	23.7	31.6	17.8	23.7	27.0
Mean	31.8	31.4	29.4	38.4	31.3	36.0	25.5	34.6	19.6	25.0	27.2
	Yield Rank										
Lincoln	1	2	1	2	4	2	4	1	4	4	1
Adams	3	1	2	1	3	1	3	2	3	2	2
Hawkeye	2	4	3	3	2	3	1	3	2	1	3
Blackhawk	4	3	5	4	1	4	2	5	1	3	5
Earlyana	5	5	4	6	5	5	5	4	5	6	6
Richland	6	6	6	5	6	6	6	6	6	5	4

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 Illini x Dunfield
Chief	Ill. Agr. Exp. Sta.	Sel. from Illini x Manchu
Cypress #1	Cypress Land Farms Co., St. Louis, Missouri	Sel. from Korean
Dunfield	Purdue Agr. Exp. Sta.	Sel. from P. I. 36846
Illini	Ill. Agr. Exp. Sta.	Sel. from A.K.
Lincoln	Ill. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x Manchu
A7-6103	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
A7-6402	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
A7-6629	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
C977	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Rich. x Earlyana)
C978	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Rich. x Earlyana)
C981	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Rich. x Earlyana)
C983	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Rich. x Earlyana)
L6-2132	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
L8-10946	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Macoupin)
L9-4197	Ill. A.E.S. & U.S.R.S.L.	Sel. from (L x (L x R)) x (L x CNS)

Group III was grown at twenty-three locations in ten states in 1951. Average yield for all entries at all locations was slightly higher than in 1950 although the range of yield was considerably greater in 1951 than in 1950. Yields at Beltsville, Maryland; Lafayette, Indiana; and Clayton, Illinois, were slightly higher than in 1950. The low yields at Columbus, Ohio, were due to a lack of adequate moisture. Seed quality was slightly higher in 1951 than in 1950.

Strain L6-2132 was again outstanding in yield, ranking highest of all entries at Palmyra, Pennsylvania; Lafayette and Greenfield, Indiana; Clayton, Stonington, Edgewood, and Eldorado, Illinois; and Laddonia, Missouri.

Of the ten new entries tested in 1951, six of them, A7-6402, C983, A7-6103, A7-6629, L8-10946, and C978 in that order, yielded more than the named varieties but less than L6-2132 as an average of the twenty-three locations. Of these new entries, A7-6103 and A7-6629 were tested in Group II in 1950. In respect to yield rank, the following strains were high, first or second, at the enumerated locations: A7-6402 at Mount Healthy, Ohio; Dwight, Clayton, and Stonington, Illinois; Ames and Ottumwa, Iowa; and Norborne, Missouri; C983 at Newark, Delaware; Columbus and Mount Healthy, Ohio; and Greenfield, Indiana; A7-6103 at Worthington, Indiana; Urbana, Illinois; Ottumwa, Iowa; and Columbia, Missouri; L8-10946 at Palmyra, Pennsylvania; and Urbana, Edgewood, Trenton, and Eldorado, Illinois. Cypress #1, which was tested in Preliminary Group IV in 1950, ranked fairly low in yield at almost all locations and had the highest average lodging score of all Group III

entries. Strain L9-4197, another of the new Group III entries, ranked lowest in yield at all stations. L9-4197 is of particular interest because of its resistance to bacterial blight.

Six of the 1951 entries have been in Group III for three years. Three-year summaries of data for these entries are presented in Tables 29 and 30. During this three-year period, L6-2132 has had the highest yield at nineteen of the twenty-two locations. L6-2132 is about a week later in maturity but is similar to Lincoln in lodging, height, seed quality, percentage of protein and oil, and iodine number.

Five varieties, Lincoln, Chief, Adams, Illini, and Dunfield, have been tested in Group III for a period of eight years. The eight-year summaries of the data for these varieties are presented in Tables 31 and 32. During this period, Lincoln has averaged .3 bushels higher in yield than has Chief, the second ranking variety, even though Chief has averaged eight days later in maturity. Lincoln has ranked first at eleven of the twenty-one locations, Chief, first at eight of the twenty-one locations, and Adams, first at the remaining two locations, while Illini and Dunfield have been rather consistently low.

Table 25. Summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1951.

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	23	16	21	22	19	22	22	22	22
L6-2132	38.6	+7.6	2.0	40	1.9	15.7	40.2	21.3	136.5
A7-6402	36.2	+1.3	2.0	39	2.0	15.8	39.6	21.0	131.7
C983	35.7	+5.1	2.1	41	1.7	15.4	40.1	21.1	137.1
A7-6103	35.6	+2.5	1.9	40	1.8	15.7	39.5	21.4	134.5
A7-6629	35.4	+3.1	1.9	39	1.9	14.5	40.1	21.2	135.3
L8-10946	35.4	+7.0	1.8	43	1.6	14.4	40.8	21.8	135.9
C978	34.7	+3.9	2.0	43	2.1	15.3	40.7	21.8	135.9
Chief	34.2	+9.2	2.8	51	2.2	13.2	40.4	20.3	135.4
Adams	33.7	-0.9	2.2	38	1.8	14.3	40.0	21.7	132.9
Lincoln	33.7	0	2.0	39	1.8	14.2	40.5	21.4	136.0
C977	33.5	+7.0	2.1	43	1.9	15.6	42.0	21.0	134.5
C981	33.4	+3.3	1.7	39	1.8	15.5	40.6	21.0	134.0
Illini	31.1	+2.4	2.7	43	1.8	13.2	40.2	20.4	134.5
Dunfield	30.1	+0.1	2.9	38	2.0	15.2	40.1	21.6	129.7
Cypress #1	29.7	+7.9	3.6	35	1.7	18.8	42.5	19.8	133.7
L9-4197	29.3	-1.8	2.3	34	1.8	11.7	40.7	21.3	136.2
Mean	33.8		2.3	40	1.9	14.9	40.5	21.1	134.6

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

Table 26. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1951.

Strain	Mean of 23 Tests	Palmyra Pa.	New-ark Del.	George-town Del.	Belts-ville Md.	Colum-bus Ohio	Mt. Healthy Ohio	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.	Dwight Ill.
L6-2132	38.6	42.7	34.3	17.5	30.7	11.0	34.3	42.6	50.4	52.1	34.9
A7-6402	36.2	37.1	33.6	13.4	31.6	13.0	36.1	39.6	48.3	50.4	38.4
C983	35.7	38.5	34.8	13.0	29.9	11.8	36.1	41.5	49.1	51.7	35.9
A7-6103	35.6	35.1	32.4	14.6	29.8	12.1	35.7	40.4	45.4	52.9	33.9
A7-6629	35.4	36.9	33.9	14.6	28.5	9.3	33.7	38.9	49.0	50.4	37.3
L8-10946	35.4	40.9	30.6	13.5	30.1	9.4	31.6	36.1	46.8	51.0	31.0
C978	34.7	38.1	35.2	14.0	33.1	12.3	32.8	37.3	47.3	51.6	32.7
Chief	34.2	38.1	29.0	18.0	30.7	10.1	29.8	37.9	47.4	49.3	31.7
Adams	33.7	31.3	31.4	19.4	26.9	15.6	31.6	36.3	43.1	44.8	41.1
Lincoln	33.7	34.4	32.5	13.9	27.0	12.8	34.5	36.2	41.9	44.4	36.7
C977	33.5	35.4	32.9	16.7	32.0	10.1	30.9	37.4	42.9	47.5	29.8
C981	33.4	36.6	34.8	15.4	26.8	11.2	30.2	37.1	44.3	44.0	34.9
Illini	31.1	29.5	30.3	16.0	27.6	13.3	32.6	35.1	43.5	39.8	33.9
Dunfield	30.1	29.5	27.0	14.9	26.2	14.1	26.0	32.6	44.0	40.7	32.8
Cypress #1	29.7	37.8	28.4	15.6	29.0	11.6	25.6	38.9	42.2	41.4	31.5
L9-4197	29.3	28.2	26.3	13.7	24.5	12.9	25.9	35.2	38.5	36.8	36.4
Mean	33.8	35.6	31.7	15.3	29.0	11.9	31.7	37.7	45.3	46.8	34.6
C.V. (%)		8.4	16.5	14.1	11.8	--	--	7.1	5.6	8.0	--
B.N.F.S. (5%)		4.3	7.3	3.0	4.9	--	--	3.8	3.6	5.3	--
Row Sp. (In.)		38	36	36	40	28	28	40	38	38	40
		Yield Rank									
L6-2132		1	4	3	4	12	5	1	1	2	7
A7-6402		7	6	15	3	4	1	4	4	6	2
C983		3	2	16	7	9	1	2	2	3	6
A7-6103		11	9	9	8	8	3	3	8	1	9
A7-6629		8	5	9	10	16	6	5	3	6	3
L8-10946		2	11	14	6	15	9	13	7	5	15
C978		4	1	11	1	7	7	9	6	4	12
Chief		4	13	2	4	13	13	7	5	8	13
Adams		13	10	1	13	1	9	11	12	10	1
Lincoln		12	8	12	12	6	4	12	15	11	4
C977		10	7	4	2	13	11	8	13	9	16
C981		9	2	7	14	11	12	10	9	12	7
Illini		14	12	5	11	3	8	15	11	15	9
Dunfield		14	15	8	15	2	14	16	10	14	11
Cypress #1		6	14	6	9	10	16	5	14	13	14
L9-4197		16	16	13	16	5	15	14	16	16	5

Table 26. (Continued)

Strain	Urbana Ill.	Clayton Ill.	Stonington Ill.	Edgewood Ill.	Trenton Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.
L6-2132	51.9	39.2	37.9	47.0	47.9	52.1	42.7	38.8	37.0	44.0	27.8	34.0	36.1
A7-6402	47.9	38.5	37.6	41.3	41.3	41.0	39.6	40.1	38.0	32.8	26.9	33.6	31.5
C983	50.4	36.4	33.2	40.4	44.5	42.9	39.0	37.7	33.5	33.9	26.2	33.1	28.2
A7-6103	52.2	35.6	35.7	38.9	43.2	40.0	38.5	40.9	32.7	35.8	28.7	32.2	32.8
A7-6629	48.1	33.5	37.1	40.7	48.1	41.4	34.4	39.0	31.3	35.8	28.4	33.4	30.2
L8-10946	52.2	37.4	32.8	43.0	49.4	48.3	36.3	34.6	32.8	35.1	25.3	31.7	33.3
C978	47.0	34.5	34.5	41.2	44.6	41.3	35.9	39.2	32.5	33.4	23.6	28.0	29.1
Chief	48.3	30.6	28.7	40.5	45.7	41.2	31.9	35.5	32.4	40.6	22.9	29.3	38.0
Adams	47.7	31.7	35.2	35.8	43.7	37.3	33.2	37.9	29.6	31.3	25.8	29.3	36.2
Lincoln	46.7	32.5	35.7	34.6	41.3	39.2	38.2	37.3	30.9	35.5	25.7	34.5	29.6
C977	45.6	32.0	30.6	42.2	46.7	39.2	31.8	32.7	33.4	35.0	25.8	30.8	28.2
C981	47.4	34.3	31.3	38.3	40.1	40.1	34.7	38.4	29.8	37.2	23.8	29.7	28.9
Illini	40.6	25.5	28.3	32.0	37.2	36.5	33.8	35.8	31.5	30.0	22.0	27.8	33.4
Dunfield	42.9	31.7	29.1	37.0	34.1	30.6	30.4	33.3	25.2	28.7	22.2	29.0	29.5
Cypress #1	36.9	23.9	31.3	31.5	36.9	21.4	30.9	32.2	26.4	21.0	23.9	27.5	36.3
L9-4197	42.7	28.3	27.3	31.9	29.2	33.9	30.5	35.2	28.8	27.1	17.2	30.7	31.6
Mean	46.8	32.9	32.9	38.5	42.1	39.2	35.1	36.8	31.6	33.6	24.8	30.9	32.1
C.V. (%)	8.2	11.9	8.1	9.7	8.6	7.9	8.6	8.4	14.2	11.7	12.0	7.7	7.5
B.N.F.S.(5%)	5.4	5.6	3.9	5.4	5.1	4.4	3.2	4.4	N.S.	5.6	N.S.	3.4	3.4
Row Sp.(In.)	40	40	28	32	40	40	40	38	40	35	36	38	42
	Yield Rank												
L6-2132	3	1	1	1	3	1	1	5	2	1	3	2	4
A7-6402	7	2	2	4	10	7	2	2	1	11	4	3	9
C983	4	4	8	8	7	3	3	8	3	9	5	5	15
A7-6103	1	5	4	9	9	9	4	1	6	4	1	6	7
A7-6629	6	8	3	6	2	4	9	4	10	4	2	4	10
L8-10946	1	3	9	2	1	2	6	13	5	7	9	7	6
C978	10	6	7	5	6	5	7	3	7	10	12	14	13
Chief	5	13	14	7	5	6	12	11	8	2	13	11	1
Adams	8	11	6	12	8	12	11	7	13	12	6	11	3
Lincoln	11	9	4	13	10	10	5	9	11	6	8	1	11
C977	12	10	12	3	4	10	13	15	4	8	6	8	15
C981	9	7	10	10	12	8	8	6	12	3	11	10	14
Illini	15	15	15	14	13	13	10	10	9	13	15	15	5
Dunfield	13	11	13	11	15	15	16	14	16	14	14	13	12
Cypress #1	16	16	10	16	14	16	14	16	15	16	10	16	2
L9-4197	14	14	16	15	16	14	15	12	14	15	16	9	8

Table 27. Summary of maturity data, days earlier (-) or later (+) than Lincoln, for the strains in the Uniform Test, Group III, 1951.

Strain	Mean of 16 Tests[1]	Palmyra Pa.	Newark Del.	Beltsville Md.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Urbana Ill.
L6-2132	+7.6	+ 8	+ 7	+10	+ 8	+ 7	+ 9	+ 5	+ 7
A7-6402	+1.3	- 5	+ 2	+ 2	+ 2	+ 1	+ 5	+ 2	+ 2
C983	+5.1	+10	+ 6	+ 5	+ 6	+ 3	+ 6	+ 2	+ 3
A7-6103	+2.5	+ 1	+ 3	+ 4	+ 6	+ 2	+ 4	+ 2	+ 2
A7-6629	+3.1	- 2	+ 3	+ 4	+ 3	+ 3	+ 5	+ 2	+ 2
L8-10946	+7.0	+ 9	+ 6	+ 7	+ 8	+11	+ 9	+ 5	+ 6
C978	+3.9	+10	+ 6	+ 5	+ 4	+ 5	+ 7	+ 3	+ 2
Chief	+9.2	+ 8	+ 9	+ 7	+ 6	+11	+12	+ 9	+ 9
Adams	-0.9	- 2	+ 1	- 1	- 8	- 2	- 1	- 1	- 1
Lincoln	0	0	0	0	0	0	0	0	0
C977	+7.0	+11	+ 3	+ 7	+ 6	+ 6	+10	+ 5	+ 6
C981	+3.3	+12	+ 3	+ 5	+ 5	+ 1	+ 3	+ 2	+ 2
Illini	+2.4	+ 5	+ 3	- 1	- 5	0	+ 2	+ 1	+ 5
Dunfield	+0.1	+ 1	+ 2	- 1	- 4	- 1	+ 1	+ 1	+ 1
Cypress #1	+7.3	+11	+ 8	+ 8	--	+ 8	+11	+ 6	+ 8
L9-4197	-1.8	0	- 1	0	- 5	- 2	- 4	- 4	0
Date planted		5/23	6/7	5/17	5/24	5/16	5/24	5/29	5/22
Lincoln matured		10/7	9/18	9/14	9/18	9/24	9/24	9/25	9/24
Days to mature	123	137	103	120	117	131	123	119	125

[1]Columbus not included in the mean.

Table 27. (Continued)

Strain	Stonington Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.
L6-2132	+ 9	+ 6	+ 7	+ 7	+ 8	+11	+10	+ 4	+ 6
A7-6402	+ 3	+ 2	+ 1	+ 1	0	+ 3	+ 2	+ 1	- 1
C983	+10	+ 4	+ 3	+ 3	+ 7	+ 9	+ 6	+ 2	+ 2
A7-6103	+ 4	+ 1	+ 1	+ 1	+ 3	+ 8	+ 4	0	0
A7-6629	+ 7	+ 4	+ 1	+ 2	+ 5	+ 7	+ 3	+ 2	+ 1
L8-10946	+ 3	+ 6	+ 8	+ 6	+ 7	+11	+10	+ 2	+ 6
C978	+ 2	+ 5	+ 1	+ 1	+ 4	+ 7	+ 3	0	+ 2
Chief	+10	+ 5	+11	+ 8	+10	+14	+ 7	+ 6	+11
Adams	+ 1	0	- 1	- 2	+ 1	0	- 5	- 2	0
Lincoln	0	0	0	0	0	0	0	0	0
C977	+ 9	+ 5	+10	+ 6	+ 7	+10	+12	+ 2	+ 3
C981	+ 6	+ 3	0	0	+ 5	+ 5	+ 3	+ 2	0
Illini	+ 5	+ 1	+ 2	+ 3	+ 3	+ 2	- 3	+ 1	+ 9
Dunfield	+ 4	0	+ 2	- 1	- 2	0	- 3	- 1	- 1
Cypress #1	+ 9	+ 2	+10	+ 7	+ 9	+15	+ 8	+ 3	+ 5
L9-4197	+ 1	0	- 2	- 3	- 3	- 2	- 4	- 2	- 3
Date planted	6/2	5/15	5/18	5/28	5/21	5/20	5/17	6/13	6/1
Lincoln matured	9/19	9/11	10/5	10/3	9/26	9/20	9/15	10/8	10/1
Days to mature	109	119	140	128	128	123	121	117	122

Table 28. Summary of lodging and height data for the strains in the Uniform Test, Group III, 1951.

Strain	Mean of 21 Tests[1]	Pal-myra Pa.	New-ark Del.	George-town Del.	Belts-ville Md.	Colum-bus Ohio	Mt. Healthy Ohio	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.	Dwight Ill.
L6-2132	2.0	2.3	2.0	1.0	1.0		2.8	1.0	1.8	1.0	1.5
A7-6402	2.0	2.3	2.0	1.0	1.3		1.8	1.0	1.3	1.5	2.0
C983	2.1	2.3	3.0	1.0	1.8		2.0	1.0	1.0	1.0	1.3
A7-6103	1.9	2.5	3.0	1.0	1.0		2.0	1.0	1.0	1.0	1.5
A7-6629	1.9	2.0	2.0	1.0	1.3		1.3	1.0	1.3	1.3	1.5
L8-10946	1.8	2.5	2.0	1.0	1.5		2.3	1.0	1.0	1.0	1.3
C978	2.0	2.0	3.0	1.0	1.0		2.0	1.0	1.8	1.3	1.8
Chief	2.8	3.0	4.0	1.0	2.8		3.8	1.5	2.0	1.8	2.8
Adams	2.2	2.0	4.0	1.0	1.0		2.0	1.0	1.0	1.3	1.0
Lincoln	2.0	2.3	2.0	1.0	1.3		1.8	1.0	1.0	1.3	1.8
C977	2.1	2.3	3.0	1.0	2.0		2.3	1.0	1.5	1.0	1.3
C981	1.7	2.3	2.0	1.0	1.0		1.3	1.0	1.0	1.0	1.0
Illini	2.7	3.3	5.0	1.0	2.0		2.3	1.3	1.8	2.3	2.0
Dunfield	2.9	3.3	4.0	1.0	1.8		3.0	1.0	2.0	2.0	2.5
Cypress #1	3.6	4.3	3.0	1.0	2.0		4.3	2.0	4.0	4.0	3.5
L9-4197	2.3	2.5	2.0	1.0	1.0		2.0	1.3	1.0	2.0	2.0
Mean	2.3	2.6	2.9	1.0	1.5		2.3	1.1	1.5	1.6	1.8
	Mean of 22 Tests[2]	Height									
L6-2132	40	39	40	34	35	28	42	39	45	45	46
A7-6402	39	34	39	34	35	31	39	40	43	42	45
C983	41	39	38	32	37	29	43	39	50	47	47
A7-6103	40	36	40	34	37	29	39	40	43	42	46
A7-6629	39	34	39	34	34	28	40	38	45	45	44
L8-10946	43	39	42	37	39	30	45	42	48	47	49
C978	43	38	43	37	39	31	43	43	46	48	49
Chief	51	47	45	38	49	24	51	51	57	57	57
Adams	38	32	36	30	33	28	44	38	45	42	44
Lincoln	39	36	40	32	34	30	40	38	41	41	44
C977	43	37	40	35	42	30	45	44	48	49	49
C981	39	37	37	30	34	30	41	38	43	43	46
Illini	43	38	41	31	38	32	46	42	49	48	47
Dunfield	38	34	35	29	33	29	39	40	44	42	45
Cypress #1	35	33	38	28	31	--	40	35	38	38	39
L9-4197	34	31	35	29	30	28	39	33	38	38	38
Mean	40	37	39	33	36	29	42	40	45	45	46

[1]Georgetown not included in the mean.
[2]Columbus not included in the mean.

Table 28. (Continued)

Strain	Urbana Ill.	Clayton Ill.	Stonington Ill.	Edgewood Ill.	Trenton Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.
L6-2132	2.0	2.8	2.0	1.5	3.3	3.0	2.1	2.1	2.4	2.6	1.3	2.0	1.1
A7-6402	2.8	2.3	2.5	2.3	3.3	3.0	1.6	2.4	2.1	2.6	1.0	2.8	1.0
C983	2.3	2.5	3.3	2.5	3.5	2.8	2.1	2.3	2.5	2.6	1.3	2.5	1.1
A7-6103	2.0	2.5	1.8	2.3	3.3	2.8	1.4	2.0	2.4	2.6	1.1	2.5	1.0
A7-6629	2.0	2.8	2.3	1.8	3.3	3.0	1.6	1.8	2.4	2.6	1.1	2.0	1.0
L8-10946	1.3	2.0	2.0	1.8	2.3	2.3	1.9	1.9	2.2	2.4	1.0	2.2	1.1
C978	2.5	2.3	2.5	2.0	3.3	2.8	1.9	2.1	2.2	2.6	1.1	2.5	1.1
Chief	3.3	2.8	3.3	2.8	3.3	3.5	2.6	2.6	2.7	2.6	1.6	3.8	2.2
Adams	2.5	2.5	3.5	3.3	3.8	3.5	1.5	2.1	2.3	2.6	1.0	2.5	1.1
Lincoln	2.5	2.0	2.5	2.0	3.3	2.8	1.8	2.3	2.5	2.4	1.1	3.0	1.4
C977	2.0	2.5	2.0	1.5	3.3	3.0	2.4	2.5	2.3	2.5	1.3	2.5	1.0
C981	1.8	2.3	1.8	1.0	3.0	2.8	1.3	1.9	2.1	2.4	1.0	2.5	1.0
Illini	3.3	3.3	3.5	3.0	4.0	3.3	2.4	2.5	2.7	2.7	2.0	3.2	1.5
Dunfield	3.3	3.3	4.0	3.3	4.3	4.0	2.5	2.8	2.6	2.8	1.5	3.2	2.9
Cypress #1	4.8	3.5	4.5	4.5	5.0	5.0	3.3	3.1	2.9	4.5	2.1	3.0	2.9
L9-4197	3.3	2.8	3.8	3.3	4.3	3.5	1.8	2.9	2.2	2.3	1.0	1.8	1.9
Mean	2.6	2.6	2.8	2.4	3.5	3.2	2.0	2.3	2.4	2.7	1.3	2.6	1.5
							Height						
L6-2132	43	40	39	39	44	44	42	41	43	42	35	30	34
A7-6402	44	42	37	37	45	43	39	42	39	39	36	30	30
C983	45	45	41	43	47	42	42	42	43	44	35	32	31
A7-6103	44	43	39	39	43	43	39	40	40	42	38	31	32
A7-6629	44	41	38	40	46	42	40	40	41	42	36	30	30
L8-10946	47	47	41	45	49	48	45	44	46	45	40	34	37
C978	47	44	42	40	46	47	44	44	47	44	39	33	34
Chief	54	56	49	54	61	56	53	51	56	54	42	42	44
Adams	41	41	38	39	44	41	38	41	41	39	32	30	30
Lincoln	41	40	38	39	44	43	39	40	42	41	35	34	31
C977	49	45	42	44	50	44	44	45	46	45	39	33	34
C981	44	42	37	37	43	44	39	39	43	40	36	32	31
Illini	48	44	43	45	52	48	43	43	47	45	40	35	39
Dunfield	44	41	39	37	40	42	40	42	42	40	32	33	32
Cypress #1	38	36	34	36	39	36	35	34	37	35	30	27	28
L9-4197	38	38	33	33	39	36	35	35	36	35	30	28	27
Mean	44	43	39	40	46	44	41	41	43	42	37	32	33

Table 29. Three-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1949-51.

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	66	53	59	63	47	65	65	65	65
L6-2132	38.7	+7.0	1.9	40	1.7	15.8	40.3	21.4	134.9
Chief	33.7	+8.7	2.7	50	1.9	13.1	40.2	20.3	134.1
Lincoln	33.4	0	2.0	40	1.9	14.5	40.3	21.5	134.7
Adams	32.2	-2.8	2.1	38	1.9	14.5	40.3	21.8	131.0
Illini	30.0	+1.2	2.8	44	1.9	13.7	40.5	20.4	132.8
Dunfield	28.9	-1.3	2.8	39	2.1	15.0	39.7	21.5	128.5
Mean	32.8		2.4	42	1.9	14.4	40.2	21.2	132.7

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

Table 30. Three-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1949-51.

Strain	Mean of 66 Tests	Palmyra Pa.[1]	Newark Del.	Georgetown Del.	Beltsville Md.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Dwight Ill.	Urbana Ill.
Years Tested		1950-1951	1949-1951	1950-1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951
L6-2132	38.7	40.3	42.0	21.6	34.8	25.6	39.7	45.5	51.2	33.5	46.0
Chief	33.7	35.3	34.7	20.1	33.8	24.0	37.4	41.3	44.1	30.2	35.9
Lincoln	33.4	33.6	37.0	18.7	29.1	25.5	35.3	37.4	40.5	33.8	39.6
Adams	32.2	31.4	35.8	23.2	29.4	29.1	34.9	34.8	37.3	33.8	39.6
Illini	30.0	29.3	34.6	20.3	30.6	21.8	32.5	34.8	35.9	31.0	30.7
Dunfield	28.9	29.0	29.7	19.7	27.1	24.6	32.3	33.1	33.5	27.9	32.1
Mean	32.8	33.2	35.6	20.6	30.8	25.1	35.4	37.8	40.4	31.7	37.3
		Yield Rank									
L6-2132		1	1	2	1	2	1	1	1	3	1
Chief		2	4	4	2	5	2	2	2	5	4
Lincoln		3	2	6	5	3	3	3	3	1	2
Adams		4	3	1	4	1	4	4	4	1	2
Illini		5	5	3	3	6	5	4	5	4	6
Dunfield		6	6	5	6	4	6	6	6	6	5

[1]Columbia, Pa., 1950.
[2]Freeburg, Ill., 1949-50.

Table 30. (Continued)

Strain	Clayton Ill.	Stonington Ill.	Edgewood Ill.	Trenton Ill.[2]	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.
Years Tested	1949-1951	1949-1951	1949, 1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951
L6-2132	39.0	41.0	46.3	43.4	43.4	36.4	41.0	41.9	40.7	30.9	32.1	36.6
Chief	32.8	32.0	38.7	38.6	34.5	29.0	36.6	35.1	37.1	30.5	28.2	35.7
Lincoln	33.8	36.5	36.4	37.0	34.2	33.2	37.8	36.0	35.4	25.0	30.2	31.7
Adams	31.9	32.0	36.9	34.4	30.5	31.1	38.4	32.5	30.6	25.1	27.6	32.4
Illini	28.5	29.4	34.2	31.4	30.1	30.7	34.3	31.3	29.9	23.5	24.6	30.7
Dunfield	30.5	29.0	37.0	31.2	26.8	28.7	33.4	26.3	29.0	24.7	25.9	28.7
Mean	32.8	33.3	38.3	36.0	33.3	31.5	36.9	33.9	33.8	26.6	28.1	32.6
	Yield Rank											
L6-2132	1	1	1	1	1	1	1	1	1	1	1	1
Chief	3	3	2	2	2	5	4	3	2	2	3	2
Lincoln	2	2	5	3	3	2	3	2	3	4	2	4
Adams	4	3	4	4	4	3	2	4	4	3	4	3
Illini	6	5	6	5	5	4	5	5	5	6	6	5
Dunfield	5	6	3	6	6	6	6	6	6	5	5	6

Table 31. Eight-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1944-51.

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	160	130	143	148	127	157	157	157	157
Lincoln	31.3	0	2.2	37	1.7	14.1	40.3	21.7	134.4
Chief	31.0	+8.0	2.8	47	1.7	12.8	40.2	20.6	133.1
Adams	30.1	-2.6	2.1	35	1.7	14.4	40.4	22.0	131.0
Illini	28.0	+1.2	2.9	40	1.7	13.6	40.8	20.5	132.7
Dunfield	27.1	-0.9	2.9	37	2.0	15.0	39.7	21.7	127.9
Mean	29.5		2.6	39	1.8	14.0	40.3	21.3	131.8

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

Table 32. Eight-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1944-51.

Strain	Mean of 160 Tests	Palmyra Pa.[1]	Georgetown Del.	Beltsville Md.	Blacksburg Va.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Dwight Ill.
Years Tested		1948 1950-51	1945-48 1950-51	1945-1951	1946-48 1950	1945-1951	1944-45 1947-51	1944-1951	1945-1951	1944-47 1949-51
Lincoln	31.3	29.6	20.5	30.3	28.9	32.4	39.5	37.2	38.8	28.4
Chief	31.0	35.0	22.2	33.8	28.7	31.8	40.2	35.9	43.0	23.9
Adams	30.1	27.9	21.2	30.2	25.4	33.8	39.8	34.0	35.9	28.2
Illini	28.0	27.9	19.2	29.6	26.4	29.3	37.5	33.2	33.5	26.8
Dunfield	27.1	28.1	19.6	26.0	23.3	28.6	35.8	31.1	33.5	23.1
Mean	29.5	29.7	20.5	30.0	26.5	31.2	38.6	34.3	36.9	26.1
						Yield Rank				
Lincoln		2	3	2	1	2	3	1	2	1
Chief		1	1	1	2	3	1	2	1	4
Adams		4	2	3	4	1	2	3	3	2
Illini		4	5	4	3	4	4	4	4	3
Dunfield		3	4	5	5	5	5	5	4	5

[1]Columbia, Pa., 1948 and 1950.
[2]Freeburg, Ill., 1944-50.

Table 32. (Continued)

Strain	Urbana Ill.	Clayton Ill.	Stonington Ill.	Edgewood Ill.	Trenton Ill.[2]	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.
Years Tested	1944-1951	1944-1951	1944-1951	1944-49 1951	1944-1951	1947-1951	1944-1951	1944-1951	1948-1951	1944-1951	1944-1951	1944-1951
Lincoln	36.6	28.8	33.7	30.4	31.2	33.0	36.7	33.9	38.0	22.1	26.7	27.2
Chief	33.3	27.9	30.4	30.0	31.0	33.4	33.7	32.6	39.4	26.3	23.5	27.6
Adams	36.1	27.1	31.6	28.3	28.0	29.9	36.6	34.1	34.1	22.8	26.0	27.7
Illini	30.1	24.3	28.7	26.2	25.2	29.5	34.4	31.5	34.5	20.3	23.1	25.2
Dunfield	30.8	26.1	27.6	28.4	26.0	26.3	31.8	30.4	28.9	22.1	24.5	24.6
Mean	33.4	26.8	30.4	28.7	28.3	30.4	34.6	32.5	35.0	22.7	24.8	26.5
	Yield Rank											
Lincoln	1	1	1	1	1	2	1	2	2	3	1	3
Chief	3	2	3	2	2	1	4	3	1	1	4	2
Adams	2	3	2	4	3	3	2	1	4	2	2	1
Illini	5	5	4	5	5	4	3	4	3	4	5	4
Dunfield	4	4	5	3	4	5	5	5	5	3	3	5

UNIFORM TEST, GROUP IV

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

Strain	Source or Originating Agency	Origin
Chief	Ill. Agr. Exp. Sta.	Sel. from Illini x Manchu
Patoka	Purdue Agr. Exp. Sta.	Sel. from P. I. 70218-2
Wabash	Purdue A.E.S. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
Perry (C612)	Purdue A.E.S. & U.S.R.S.L.	Sel. from C508 (Patoka x L7-1355)
C805	Purdue A.E.S. & U.S.R.S.L.	Sel. from C143 x Lincoln
C976	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x Earlyana)
C979	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x Earlyana)
C985	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
C986	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
L6-1656	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)
L8-10755	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x C171)
L8-10780	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x C171)
L8-10934	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Macoupin)
L9-4091	Ill. A.E.S. & U.S.R.S.L.	Sel. from ((L x (L x R)) x (L x CNS)
L9-4196	Ill. A.E.S. & U.S.R.S.L.	Sel. from ((L x (L x R)) x (L x CNS)
L9-5138	Ill. A.E.S. & U.S.R.S.L.	Sel. from L6-2132
L9-5142	Ill. A.E.S. & U.S.R.S.L.	Sel. from L6-2132

Of the eighteen 1951 Group IV entries, only five were grown in 1950. Average yields for these five varieties were slightly lower in 1951 than in 1950, while oil percentage was slightly higher in 1951. Group IV was grown at sixteen locations in seven states in 1951.

Of the thirteen strains tested for the first time in Group IV, six of them, C985, L8-10780, L9-5138, L6-2132, C986, and L9-5142, yielded more than did Perry (C612), the highest yielding Group IV strain in 1950. The data for 1951 are presented in Tables 33 to 38. C985 ranked first in respect to yield at Palmyra, Pennsylvania; Georgetown, Delaware; Columbia, Missouri; and Manhattan and Mound Valley, Kansas. L8-10780 ranked highest in respect to yield at Beltsville, Maryland; Trenton and Eldorado, Illinois; and Norborne, Missouri. L9-5138, the third ranking strain in all sixteen tests, is a selection from L6-2132, as is L9-5142. L9-5138 ranked first in respect to yield at Worthington and Evansville, Indiana; and Clayton and Edgewood, Illinois. L6-2132, the fourth highest yielding strain, was grown in Group IV for the first time in 1951. It is interesting to note that L6-2132 was intermediate in respect to yield between the two strains selected from it, L9-5138 and L9-5142. The relatively high yield rank of L9-5138, L6-2132, and L9-5142 is of special interest when considered from the standpoint of relative maturities. These three entries averaged from six to eight days earlier in maturity than did any of the other four strains ranking among the top seven in yield. It is also of interest that Perry, being increased for release in 1952, ranked seventh as an

MAP SHOWING AREA OF ADAPTATION OF PERRY (C-612) IN THE NORTH CENTRAL REGION

average of all tests. It ranked second in respect to yield at Beltsville, Maryland and Trenton, Illinois, and third at Columbia, Missouri.

Five entries have been grown in Group IV for three years and summaries for these are presented in Tables 39 and 40. During this three-year period Perry has had the highest yield but averaged approximately four days later than Wabash in maturity. Perry has ranked first in respect to yield during this period at Georgetown, Delaware; Beltsville, Maryland; Evansville, Indiana; Clayton, Stonington, Edgewood, Trenton, and Eldorado, Illinois; Norborne and Columbia, Missouri; and Manhattan, Kansas. Perry and L6-1656 have been about equal in respect to lodging and somewhat better than Chief, the third ranking strain in respect to yield. Perry and L6-1656 have approximately the same oil percentage for this three-year period, and both strains have exceeded Chief in this respect.

Four of the 1951 Group IV entries have been tested for six years. The data for these entries during this period are presented in Tables 41 and 42. During this six-year period, Perry has ranked first in respect to yield at fourteen out of the sixteen locations from which data have been summarized, and has also been high in lodging resistance and oil content.

Table 33. Summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1951.

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	16	11	15	16	12	15	15	15	15
C985	40.0	+6.1	2.1	42	1.8	16.5	40.1	21.9	138.6
L8-10780	39.7	+4.1	2.1	44	1.8	17.7	40.3	22.0	135.1
L9-5138	39.0	-1.6	1.8	39	1.7	16.1	40.1	21.8	136.3
L6-2132	38.5	-2.5	2.2	40	1.9	15.8	40.7	21.5	136.7
C986	38.2	+4.8	2.5	43	1.8	15.7	40.7	21.6	137.0
L9-5142	37.1	-2.8	1.9	38	1.7	16.4	39.9	21.8	136.1
Perry (C612)	36.9	+5.3	2.1	41	1.9	16.9	40.4	21.5	132.6
L8-10755	36.4	-2.5	2.3	43	1.9	15.9	40.7	21.4	136.2
C979	35.4	-0.1	2.0	43	2.0	15.4	40.6	21.3	134.1
L9-4091	35.2	-6.3	2.7	41	2.0	14.9	41.4	21.0	133.6
C976	34.6	-0.1	2.0	43	1.6	14.6	41.3	21.0	133.3
C805	34.0	+1.9	2.3	43	1.5	15.2	41.3	21.2	134.5
Chief	33.9	-0.5	2.7	50	2.2	12.6	41.3	20.2	134.6
Wabash	33.9	0	2.5	43	1.6	14.3	40.0	20.8	131.5
L8-10934	33.7	-0.8	2.4	39	1.7	16.2	39.9	22.1	136.8
L6-1656	33.5	-0.9	2.1	42	2.1	14.7	39.4	21.4	138.0
Patoka	31.6	+2.0	2.7	38	1.9	17.9	42.6	20.1	134.0
L9-4196	29.4	-2.9	3.1	33	1.9	14.1	41.5	20.5	136.3
Mean	35.6		2.3	41	1.8	15.6	40.7	21.3	135.3

[1]Days earlier (-) or later (+) than Wabash. Wabash required 132 days to mature.

Table 34. Summary of yield in bushels per acre for the strains in the Uniform Test, Group IV, 1951.

Strain	Mean of 16 Tests	Palmyra Pa.	George-town Del.	Belts-ville Md.	Worth-ington Ind.	Evans-ville Ind.	Urbana Ill.	Clayton Ill.
C985	40.0	47.6	18.8	35.4	53.8	52.5	46.0	39.3
L8-10780	39.7	41.9	15.5	38.6	52.4	47.0	50.1	40.8
L9-5138	39.0	41.9	16.4	28.1	54.8	53.2	52.2	41.6
L6-2132	38.5	42.7	16.8	32.2	50.1	51.2	48.7	37.6
C986	38.2	44.6	17.9	36.1	54.7	48.1	44.1	36.9
L9-5142	37.1	39.5	11.7	34.0	47.9	49.2	53.6	39.4
Perry (C612)	36.9	37.6	16.1	38.2	47.3	45.7	47.0	34.4
L8-10755	36.4	38.7	13.3	28.0	48.1	48.6	49.3	38.8
C979	35.4	35.9	14.1	30.6	50.6	45.6	48.5	31.7
L9-4091	35.2	32.8	10.2	29.4	49.1	44.1	46.1	38.5
C976	34.6	35.5	15.7	37.7	46.7	46.7	42.7	30.2
C805	34.0	39.5	14.6	28.6	44.6	37.4	36.9	33.0
Chief	33.9	38.1	11.8	32.0	45.6	47.4	47.5	33.8
Wabash	33.9	39.3	15.1	28.9	46.9	49.2	47.2	31.0
L8-10934	33.7	39.2	10.3	30.6	43.5	40.2	49.1	29.1
L6-1656	33.5	37.0	11.9	28.7	49.2	43.8	47.0	31.8
Patoka	31.6	34.2	13.0	29.4	38.7	39.1	44.8	31.1
L9-4196	29.4	33.2	12.5	25.5	36.5	35.9	36.5	28.9
Mean	35.6	38.8	14.2	31.8	47.8	45.8	46.5	34.9
Coef. of Var. (%)		8.4	13.1	18.1	7.4	10.4	9.5	10.2
Bu. Nec. for Sig. (5%)		4.3	2.6	8.1	5.1	6.8	6.2	5.1
Row Spacing (In.)		38	36	40	38	40	40	40

Table 34. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Trenton Ill.	Eldorado Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.	Mound Valley Kans.
C985	32.1	42.0	43.8	51.8	38.3	35.0	32.6	40.4	31.0
L8-10780	34.8	41.1	48.4	52.3	39.3	39.5	31.7	34.5	27.8
L9-5138	34.2	43.9	42.8	47.6	37.4	37.7	28.7	36.8	26.3
L6-2132	35.6	41.1	44.0	47.0	37.7	41.2	24.1	36.4	29.8
C986	32.9	41.0	42.0	48.5	35.8	34.3	29.4	38.8	25.7
L9-5142	35.4	37.8	42.1	44.4	36.1	36.3	24.1	33.5	29.0
Perry (C612)	31.5	40.7	44.5	43.3	36.2	37.3	29.7	36.6	24.8
L8-10755	31.8	39.0	41.9	44.1	32.3	40.0	26.0	35.5	27.5
C979	28.2	37.1	40.2	43.7	35.2	39.2	28.5	32.4	25.4
L9-4091	36.0	38.2	40.0	40.8	36.7	37.5	23.1	35.5	25.8
C976	28.9	40.4	43.3	39.9	33.6	32.8	25.1	31.1	23.6
C805	28.7	37.9	42.1	44.1	33.4	33.6	28.4	36.2	24.6
Chief	24.3	32.4	42.9	39.4	32.5	33.0	20.3	37.1	24.9
Wabash	24.7	36.5	40.1	41.4	30.7	31.5	22.5	32.3	24.4
L8-10934	28.8	36.2	43.9	37.2	32.1	40.8	22.8	30.8	24.3
L6-1656	28.1	34.5	40.8	41.2	29.5	33.6	20.8	30.6	27.3
Patoka	23.6	34.0	34.9	35.8	33.6	32.1	26.7	32.7	22.6
L9-4196	27.2	30.8	36.5	32.3	30.9	29.8	17.3	33.7	23.1
Mean	30.4	38.0	41.9	43.0	34.5	35.8	25.7	34.7	26.0
Coef. of Var. (%)	9.5	9.3	8.7	9.2	11.8	14.9	11.3	7.4	14.6
Bu. Nec. for Sig. (5%)	4.1	5.0	5.2	5.6	N.S.	N.S.	4.1	3.6	6.9
Row Spacing (In.)	28	32	40	40	40	35	36	42	16

Table 35. Summary of yield rank for the strains in the Uniform Test, Group IV, 1951.

Strain	Palmyra Pa.	Georgetown Del.	Beltsville Md.	Worthington Ind.	Evansville Ind.	Urbana Ill.	Clayton Ill.	Stonington Ill.
C985	1	1	5	3	2	13	4	7
L8-10780	4	7	1	4	9	3	2	4
L9-5138	4	4	16	1	1	2	1	5
L6-2132	3	3	7	6	3	6	7	2
C986	2	2	4	2	7	15	8	6
L9-5142	6	16	6	10	4	1	3	3
Perry (C612)	12	5	2	11	11	10	9	9
L8-10755	10	11	17	9	6	4	5	8
C979	14	10	9	5	12	7	13	13
L9-4091	18	18	11	8	13	12	6	1
C976	15	6	3	13	10	16	16	10
C805	6	9	15	15	17	17	11	12
Chief	11	15	8	14	8	8	10	17
Wabash	8	8	13	12	4	9	15	16
L8-10934	9	17	9	16	15	5	17	11
L6-1656	13	14	14	7	14	10	12	14
Patoka	16	12	11	17	16	14	14	18
L9-4196	17	13	18	18	18	18	18	15

Table 35. (Continued)

Strain	Edgewood Ill.	Trenton Ill.	Eldorado Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.	Mound Valley Kans.
C985	2	5	2	2	10	1	1	1
L8-10780	3	1	1	1	4	2	10	4
L9-5138	1	8	4	4	6	5	4	7
L6-2132	3	3	5	3	1	11	6	2
C986	5	11	3	8	11	4	2	9
L9-5142	11	9	6	7	9	11	12	3
Perry (C612)	6	2	10	6	8	3	5	12
L8-10755	8	12	7	14	3	9	8	5
C979	12	14	9	9	5	6	14	10
L9-4091	9	16	13	5	7	13	8	8
C976	7	6	14	11	15	10	16	16
C805	10	9	7	12	12	7	7	13
Chief	17	7	15	13	14	17	3	11
Wabash	13	15	11	17	17	15	15	14
L8-10934	14	4	16	15	2	14	17	15
L6-1656	15	13	12	18	12	16	18	6
Patoka	16	18	17	10	16	8	13	18
L9-4196	18	17	18	16	18	18	11	17

Table 36. Summary of maturity data, days earlier (-) or later (+) than Wabash, for the strains in the Uniform Test, Group IV, 1951.

Strain	Mean of 11 Tests	Palmyra Pa.	Belts-ville Md.	Worth-ington Ind.	Evans-ville Ind.	Urbana Ill.
C985	+6.1	+11	+ 8	+ 2	+ 4	0
L8-10780	+4.1	+13	+ 6	+ 6	+ 2	- 2
L9-5138	-1.6	- 1	- 2	+ 2	- 2	- 5
L6-2132	-2.5	- 1	- 2	- 8	- 3	- 5
C986	+4.8	+11	+ 6	+ 2	+ 3	0
L9-5142	-2.8	- 3	- 5	+ 1	- 3	- 6
Perry (C612)	+5.3	+14	+ 6	+ 6	+ 4	- 1
L8-10755	-2.5	- 3	0	- 8	- 2	0
C979	-0.1	+11	- 1	- 5	+ 1	- 3
L9-4091	-6.3	+ 1	- 8	- 5	- 4	- 5
C976	-0.1	+ 2	0	+ 1	- 1	- 3
C805	+1.9	+11	+ 4	- 4	+ 1	0
Chief	-0.5	+ 9	- 3	- 2	+ 2	- 2
Wabash	0	0	0	0	0	0
L8-10934	-0.8	+11	+ 1	+ 1	- 3	- 3
L6-1656	-0.9	0	+ 2	- 6	- 2	- 3
Patoka	+2.0	+11	+ 2	+ 3	- 1	- 2
L9-4196	-2.9	- 3	- 6	+ 1	- 3	- 5
Date planted		5/23	5/17	5/29	5/8	5/22
Wabash matured		10/18	9/22	10/7	9/22	10/7
Days to mature	132	148	128	131	137	138

Table 36. (Continued)

Strain	Stonington Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.	Mound Valley Kans.
C985	0	+ 8	+11	+ 5	+ 8	+10
L8-10780	- 2	+ 4	+ 1	+ 2	+ 5	+10
L9-5138	- 6	0	- 5	- 5	+ 1	+ 5
L6-2132	- 6	+ 1	- 4	- 4	- 2	+ 6
C986	- 1	+ 6	+ 9	+ 4	+ 4	+ 9
L9-5142	- 6	- 1	- 7	- 4	- 1	+ 4
Perry (C612)	- 1	+ 7	+ 7	+ 1	+ 6	+ 9
L8-10755	- 7	0	- 8	- 4	- 1	+ 6
C979	- 5	+ 1	- 5	- 3	+ 4	+ 4
L9-4091	- 9	- 7	-11	-10	- 7	- 4
C976	- 5	+ 2	- 2	0	0	+ 5
C805	- 4	+ 4	0	+ 1	+ 3	+ 5
Chief	- 3	+ 3	- 2	- 7	+ 4	- 4
Wabash	0	0	0	0	0	0
L8-10934	- 7	0	- 8	- 5	+ 1	+ 3
L6-1656	- 5	+ 1	- 3	+ 1	0	+ 5
Patoka	- 3	+ 3	0	0	+ 3	+ 6
L9-4196	- 7	- 1	- 5	- 7	- 2	+ 6
Date planted	6/2	5/21	5/20	5/17	6/1	6/15
Wabash matured	10/4	10/3	10/6	9/30	10/9	9/24
Days to mature	124	135	139	136	130	101

Table 37. Summary of lodging data for the strains in the Uniform Test, Group IV, 1951.

Strain	Mean of 15 Tests[1]	Palmyra Pa.	Georgetown Del.	Beltsville Md.	Worthington Ind.	Evansville Ind.	Urbana Ill.	Clayton Ill.
C985	2.1	3.3	1.0	1.3	1.0	1.0	3.0	2.8
L8-10780	2.1	3.3	1.0	1.5	1.3	1.0	2.8	2.3
L9-5138	1.8	2.5	1.0	1.0	1.0	1.0	1.8	2.0
L6-2132	2.2	2.3	1.0	1.5	1.8	1.8	2.8	3.0
C986	2.5	3.5	1.0	1.8	1.5	1.0	3.5	3.0
L9-5142	1.9	2.3	1.0	1.0	1.0	1.8	2.3	2.0
Perry (C612)	2.1	3.3	1.0	1.5	1.0	1.0	3.0	2.3
L8-10755	2.3	3.3	1.0	1.3	1.8	1.8	2.3	2.3
C979	2.0	2.5	1.0	1.3	1.0	1.0	2.5	2.0
L9-4091	2.7	3.3	1.0	2.5	2.8	2.0	3.0	2.3
C976	2.0	2.5	1.0	2.0	1.0	1.0	2.8	2.5
C805	2.3	3.0	1.0	1.3	1.8	1.0	3.5	2.5
Chief	2.7	3.0	1.0	2.5	1.0	1.8	3.0	2.8
Wabash	2.5	3.5	1.0	1.5	1.8	1.3	3.3	3.3
L8-10934	2.4	3.0	1.0	2.0	2.3	1.0	2.8	2.8
L6-1656	2.1	2.3	1.0	1.0	1.3	1.0	2.3	2.5
Patoka	2.7	3.8	1.0	1.5	2.0	1.8	3.5	2.8
L9-4196	3.1	3.0	1.0	2.0	4.0	2.8	4.0	3.0
Mean	2.3	3.0	1.0	1.6	1.6	1.4	2.9	2.6

[1]Georgetown not included in the mean.

Table 37. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Trenton Ill.	Eldorado Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.	Mound Valley Kans.
C985	1.5	2.3	3.3	3.3	2.2	2.5	1.4	1.4	1.7
L8-10780	1.3	2.0	2.8	2.8	2.3	2.5	1.4	1.4	2.7
L9-5138	1.5	1.3	3.3	3.0	2.4	2.4	1.0	1.3	1.7
L6-2132	2.0	1.5	3.8	2.8	2.4	2.5	1.1	1.4	2.7
C986	2.3	1.8	3.5	3.8	2.4	2.6	1.8	2.1	2.7
L9-5142	1.8	1.3	3.5	3.0	2.5	2.4	1.1	1.2	2.0
Perry (C612)	2.0	2.0	3.3	3.0	2.2	2.6	1.3	1.0	1.7
L8-10755	2.3	2.3	3.5	3.0	2.7	2.6	1.4	1.3	2.7
C979	2.3	2.5	3.0	3.0	2.6	2.5	1.3	1.2	1.3
L9-4091	3.3	2.3	3.8	2.8	2.6	2.7	1.8	2.3	2.3
C976	1.8	2.0	3.0	2.8	2.2	2.6	1.1	1.1	1.7
C805	2.3	2.8	3.3	3.0	2.6	2.6	1.4	1.5	2.3
Chief	3.0	3.3	3.3	3.3	2.8	2.7	1.8	2.9	2.7
Wabash	2.5	3.0	3.5	3.3	2.5	2.5	1.5	1.2	2.3
L8-10934	2.8	2.5	3.8	3.3	2.5	2.6	1.4	1.6	2.0
L6-1656	2.3	2.0	3.0	2.8	2.5	2.7	1.3	1.2	3.0
Patoka	3.3	3.5	4.3	3.5	2.6	2.7	1.6	1.1	2.3
L9-4196	3.8	3.5	4.8	4.0	3.0	2.9	1.6	2.3	1.3
Mean	2.3	2.3	3.5	3.1	2.5	2.6	1.4	1.5	2.2

Table 38. Summary of height data for the strains in the Uniform Test, Group IV, 1951.

Strain	Mean of 16 Tests	Palmyra Pa.	Georgetown Del.	Beltsville Md.	Worthington Ind.	Evansville Ind.	Urbana Ill.	Clayton Ill.
C985	42	41	29	39	48	46	48	45
L8-10780	44	42	35	44	51	51	52	46
L9-5138	39	36	31	33	47	44	46	42
L6-2132	40	35	34	37	45	46	46	42
C986	43	40	32	46	48	48	49	45
L9-5142	38	33	32	32	43	42	44	41
Perry (C612)	41	38	29	41	46	45	51	45
L8-10755	43	40	33	36	52	51	49	45
C979	43	37	37	32	49	48	52	49
L9-4091	41	42	28	40	47	49	48	45
C976	43	38	31	44	51	47	51	45
C805	43	42	29	37	51	49	52	47
Chief	50	47	28	43	58	61	61	53
Wabash	43	39	32	33	52	49	51	51
L8-10934	39	37	26	37	45	45	48	41
L6-1656	42	39	28	35	52	48	52	47
Patoka	38	38	27	38	44	42	47	43
L9-4196	33	30	30	28	39	36	38	34
Mean	41	39	31	38	48	47	49	45

Table 38. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Trenton Ill.	Eldorado Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.	Mound Valley Kans.
C985	42	40	50	45	42	45	40	40	35
L8-10780	44	41	48	49	44	43	41	39	38
L9-5138	39	36	46	44	42	42	37	34	31
L6-2132	38	36	45	44	40	43	39	35	30
C986	39	41	48	46	45	45	38	37	34
L9-5142	39	33	43	42	39	41	38	31	30
Perry (C612)	40	38	46	45	42	44	37	34	32
L8-10755	41	42	48	50	43	44	40	41	33
C979	42	42	50	48	43	46	40	36	32
L9-4091	42	41	47	45	42	43	39	35	30
C976	42	42	50	43	44	45	39	38	32
C805	44	41	50	50	46	46	40	38	33
Chief	50	51	61	56	54	56	42	42	34
Wabash	44	44	50	49	44	47	38	37	34
L8-10934	36	37	44	44	41	43	35	35	31
L6-1656	41	42	51	45	42	44	39	37	35
Patoka	36	36	42	41	39	40	36	30	30
L9-4196	29	30	37	34	34	38	34	27	26
Mean	40	40	48	46	43	44	38	36	32

Table 39. Three-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1949-51.

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	44	34	41	43	32	42	42	42	42
Perry (C612)	36.6	+4.4	1.9	41	1.7	17.1	40.7	21.0	130.8
L6-1656	35.0	-0.4	2.0	43	1.8	14.7	39.7	21.1	136.5
Chief	33.5	-1.5	2.6	51	2.0	12.9	40.8	20.2	133.5
Wabash	33.4	0	2.2	44	1.4	14.3	40.1	20.8	130.7
Patoka	31.5	+0.9	2.4	38	1.8	18.1	42.9	20.0	132.9
Mean	34.0		2.2	43	1.7	15.4	40.8	20.6	132.9

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

Table 40. Three-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1949-51.

Strain	Mean of 44 Tests	Palmyra Pa.[1]	Georgetown Del.	Beltsville Md.	Worthington Ind.	Evansville Ind.	Urbana Ill.	Clayton Ill.
Years Tested		1950-1951	1950-1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951
Perry (C612)	36.6	33.8	18.0	40.3	43.6	44.7	42.1	36.0
L6-1656	35.0	34.6	16.0	33.8	46.3	42.7	42.9	33.6
Chief	33.5	35.3	16.5	35.4	42.7	41.5	34.1	33.7
Wabash	33.4	35.9	16.5	31.8	42.6	44.7	38.7	31.8
Patoka	31.5	34.6	15.8	31.0	35.8	38.0	36.6	31.2
Mean	34.0	34.8	16.6	34.5	42.2	42.3	38.9	33.3
		Yield Rank						
Perry (C612)		5	1	1	2	1	2	1
L6-1656		3	4	3	1	3	1	3
Chief		2	2	2	3	4	5	2
Wabash		1	2	4	4	1	3	4
Patoka		3	5	5	5	5	4	5

[1]Columbia, Pa., 1950.
[2]Freeburg, Ill., 1949-50.
[3]Thayer, Kans., 1949.

Table 40. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Trenton Ill.[2]	Eldorado Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.	Mound Valley Kans.[3]
Years Tested	1949-1951	1949, 1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951	1949-1951	1949, 1951
Perry (C612)	34.0	40.3	41.0	34.7	37.1	37.6	33.5	34.7	18.4
L6-1656	33.9	35.1	38.8	32.2	36.5	38.5	27.7	32.8	20.5
Chief	30.6	34.7	37.2	31.2	35.0	36.0	28.5	33.9	18.5
Wabash	29.2	35.9	36.2	30.3	34.7	35.7	26.6	32.4	18.8
Patoka	27.7	37.0	35.6	28.1	30.2	33.7	29.9	31.8	16.8
Mean	31.1	36.6	37.8	31.3	34.7	36.3	29.2	33.1	18.6
					Yield Rank				
Perry (C612)	1	1	1	1	1	2	1	1	4
L6-1656	2	4	2	2	2	1	4	3	1
Chief	3	5	3	3	3	3	3	2	3
Wabash	4	3	4	4	4	4	5	4	2
Patoka	5	2	5	5	5	5	2	5	5

Table 41. Six-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1946-1951.

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	93	77	83	89	71	89	89	89	89
Perry (C612)	34.3	+3.3	1.9	39	1.8	17.1	41.2	21.5	129.7
Wabash	31.5	0	2.2	42	1.5	14.5	40.4	21.3	129.3
Chief	30.9	-1.6	2.6	48	2.0	12.9	41.1	20.5	132.3
Patoka	29.8	+0.6	2.3	36	1.9	17.9	43.5	20.2	132.3
Mean	31.6		2.3	41	1.8	15.6	41.6	20.9	130.9

[1]Days earlier (-) or later (+) than Wabash. Wabash required 129 days to mature.

Table 42. Six-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1946-51.

Strain	Mean of 93 Tests	Palmyra Pa.[1]	Georgetown Del.	Beltsville Md.	Worthington Ind.	Evansville Ind.	Urbana Ill.	Clayton Ill.	Stonington Ill.
Years Tested		1948 1950-51	1946-48 1950-51	1946-1951	1946-1951	1946-1951	1946-1951	1946-1951	1946-1951
Perry (C612)	34.3	34.2	23.6	34.8	43.6	44.5	39.4	34.2	34.3
Wabash	31.5	35.7	22.3	30.3	42.5	42.6	35.5	28.8	30.6
Chief	30.9	35.0	20.9	33.0	41.2	41.5	32.2	28.2	30.1
Patoka	29.8	34.2	21.0	28.2	36.5	36.5	33.8	28.3	28.9
Mean	31.6	34.8	22.0	31.6	41.0	41.3	35.2	29.9	31.0
		Yield Rank							
Perry (C612)		3	1	1	1	1	1	1	1
Wabash		1	2	3	2	2	2	2	2
Chief		2	4	2	3	3	4	4	3
Patoka		3	3	4	4	4	3	3	4

[1]Columbia, Pa., 1948 and 1950.
[2]Freeburg, Ill., 1946-1950.
[3]Thayer, Kans., 1947 and 1949.

Table 42. (Continued)

Strain	Edge-wood Ill.	Trenton Ill.[2]	Eldor-ado Ill.	Nor-borne Mo.	Lad-donia Mo.	Colum-bia Mo.	Man-hattan Kans.	Mound Valley Kans.[3]
Years Tested	1946-49 1951	1946-1951	1947-1951	1948-1951	1949-1951	1946-1951	1946-1951	1947,1949 1951
Perry (C612)	38.5	35.9	34.7	39.2	38.8	30.5	29.1	17.4
Wabash	35.5	32.1	30.5	36.6	35.7	26.3	26.1	17.7
Chief	34.0	31.7	30.4	37.8	36.0	27.1	26.3	18.2
Patoka	33.4	32.3	29.6	32.9	33.7	28.4	25.5	16.3
Mean	35.4	33.0	31.3	36.6	36.1	28.1	26.8	17.4
	Yield Rank							
Perry (C612)	1	1	1	1	1	1	1	3
Wabash	2	3	2	3	3	4	3	2
Chief	3	4	3	2	2	3	2	1
Patoka	4	2	4	4	4	2	4	4

Table 43. Chemical composition of soybean seed grown at each of the Uniform Test locations in 1951, the two-year means for 1950-51, and the three-year means for 1949-51 (composite sample or mean of all strains grown in each respective Group Test).

Strain	1951			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 O (Mean of 15 strains in 1951, 18 in 1950, and 13 in 1949)									
Ottawa, Ontario	35.8	20.2	138.6	38.5	19.6	138.5	38.7	19.5	135.2
Guelph, Ontario	44.2	17.7	137.0	42.7	17.8	138.1	42.9	18.3	134.9
Cortland, Ohio	39.8	20.0	134.9	41.1	19.8	132.8	41.4	19.8	132.0
Columbus, Ohio	41.7	20.6	131.8	42.7	20.2	129.4	42.1	20.4	129.8
East Lansing, Mich.	41.4	18.8	136.7	--	--	--	--	--	--
Deerfield, Mich.	44.5	18.9	133.9	--	--	--	--	--	--
Spooner, Wis.	43.5	17.1	137.5	44.1	17.0	137.4	43.9	17.7	135.6
Fall City, Wis.[1]	43.1	17.9	134.9	43.1	18.3	134.6	43.1	18.8	132.1
Morris, Minn.	39.1	19.3	139.8	40.9	18.5	136.5	41.1	18.9	134.3
Fargo, N. D.	41.5	17.8	144.3	42.7	18.0	139.3	41.4	18.9	136.4
Rosholt, S. D.	42.1	18.3	138.6	41.9	18.4	137.6	40.9	19.5	134.3
Moses Lake, Wash.	42.7	17.5	137.1	41.4	18.7	134.4	40.4	19.1	134.1
Group I (Mean of 13 strains in 1951, 18 in 1950, and 15 in 1949)									
Guelph, Ontario	44.0	17.6	137.5	43.4	17.6	139.9	42.9	18.1	137.1
State College, Pa.	42.1	20.5	129.8	41.7	20.4	131.5	40.7	21.0	131.1
Wooster, Ohio	42.2	20.3	133.8	--	--	--	--	--	--
Columbus, Ohio	42.1	20.9	133.0	42.7	20.6	130.6	41.7	21.0	130.5
Mt. Healthy, Ohio	39.1	22.0	131.3	--	--	--	--	--	--
East Lansing, Mich.	40.9	19.0	138.1	--	--	--	--	--	--
Deerfield, Mich.	43.9	19.2	134.9	--	--	--	--	--	--
Walkerton, Ind.	42.5	19.7	134.5	41.9	20.0	134.2	41.9	20.2	133.0
Fall City, Wis.[1]	44.4	17.8	139.8	43.7	18.1	138.5	43.9	18.2	135.9
Madison, Wis.	42.3	19.0	136.3	42.5	19.1	135.0	42.6	19.4	133.1
Shabbona, Ill.[2]	40.5	20.4	135.6	40.8	20.7	133.6	41.2	20.9	131.1
Waseca, Minn.	43.1	18.4	138.4	43.4	18.3	137.0	43.0	18.9	134.5
Cresco, Iowa	44.3	17.6	138.5	43.5	17.8	137.8	43.6	18.5	134.7
Kanawha, Iowa	43.0	18.9	136.6	42.5	19.2	134.7	42.0	20.0	133.1
Group II (Composite of 13 strains in 1951, 20 in 1950, and 20 in 1949)									
State College, Pa.	41.6	20.4	130.8	40.5	20.3	133.6	39.5	20.8	133.1
New Brunswick, N.J.	42.6	19.8	133.6	41.4	20.4	133.5	--	--	--
Columbus, N. J.	40.3	21.2	132.2	--	--	--	--	--	--
Newark, Del.	37.6	22.8	129.9	39.5	22.1	130.5	39.7	21.9	130.6
Wooster, Ohio	42.1	20.0	132.8	--	--	--	--	--	--
Columbus, Ohio	42.7	20.2	130.1	42.1	20.3	130.1	41.2	20.7	130.4
Mt. Healthy, Ohio	38.1	22.5	130.1	--	--	--	--	--	--
East Lansing, Mich.	41.0	18.5	140.1	--	--	--	--	--	--
Deerfield, Mich.	44.0	19.3	134.5	42.4	19.5	135.4	--	--	--
Walkerton, Ind.	41.9	19.9	134.3	--	--	--	--	--	--
Bluffton, Ind.	42.1	20.5	128.9	41.9	20.3	129.4	41.0	20.6	130.5
Lafayette, Ind.	41.0	20.9	132.3	41.0	20.9	132.1	41.0	20.9	132.0

Table 43. (Continued)

Strain	1951			Two-Year Mean			Three-Year Mean		
	Percent-age of Protein	Percent-age of Oil	Iodine Number of Oil	Percent-age of Protein	Percent-age of Oil	Iodine Number of Oil	Percent-age of Protein	Percent-age of Oil	Iodine Number of Oil
(Group II Continued)									
Greenfield, Ind.	42.4	20.7	129.9	43.7	19.7	131.7	43.2	20.2	131.1
Worthington, Ind.	40.9	21.0	133.5	42.1	20.3	132.9	42.2	20.5	132.7
Madison, Wis.	43.4	18.9	136.1	42.0	18.8	136.6	41.3	19.3	135.8
Shabbona, Ill.[2]	41.0	19.7	136.6	40.6	20.0	135.0	40.5	20.6	133.5
Dwight, Ill.	41.5	20.6	133.7	41.0	20.9	132.2	41.2	20.9	131.8
Urbana, Ill.	39.2	21.4	134.2	39.5	21.3	133.2	39.5	21.5	132.0
Kanawha, Iowa	43.5	18.9	136.0	41.7	19.2	136.0	40.9	19.7	135.5
Marcus, Iowa	42.0	19.6	136.7	41.6	19.2	135.9	40.9	19.9	135.0
Independence, Ia.[3]	41.5	19.2	135.9	41.4	19.4	134.1	41.6	19.7	132.9
Ames, Iowa	39.3	20.2	135.6	39.7	20.2	133.4	40.0	20.4	133.5
Centerville, S.D.	40.0	19.7	138.3	39.7	19.9	134.8	39.2	20.2	134.5
Dakota City, Nebr.	38.7	20.7	137.2	--	--	--	--	--	--
Lincoln, Nebr.	40.4	21.3	135.8	39.5	20.9	133.9	36.9	21.8	133.1
Group III (Composite of 16 strains in 1951, 10 in 1950, and 11 in 1949)									
Palmyra, Pa.	40.3	21.1	135.8	41.2	21.1	135.0	--	--	--
Newark, Del.	38.7	21.9	133.3	39.9	21.7	133.5	39.9	21.6	133.2
Beltsville, Md.	37.3	23.6	133.3	39.6	22.6	133.8	40.5	22.1	133.3
Columbus, Ohio	43.3	18.3	134.8	42.5	19.4	134.1	41.6	19.8	133.6
Mt. Healthy, Ohio	38.2	22.0	132.7	--	--	--	--	--	--
Lafayette, Ind.	41.2	21.2	134.5	41.2	20.8	135.2	41.0	20.8	134.8
Greenfield, Ind.	41.6	20.8	133.1	41.9	19.7	134.7	41.9	20.1	134.2
Worthington, Ind.	41.2	21.5	133.9	41.4	21.3	132.8	41.5	21.4	131.8
Dwight, Ill.	40.9	20.7	135.5	41.0	20.5	134.6	40.7	20.7	134.1
Urbana, Ill.	38.5	21.3	136.3	39.2	21.0	135.2	38.9	21.4	134.0
Clayton, Ill.	43.8	20.4	135.1	42.5	20.5	134.4	42.1	20.9	133.6
Stonington, Ill.	36.8	22.6	134.4	38.3	21.8	133.5	39.0	21.7	132.7
Edgewood, Ill.	40.2	21.5	133.4	--	--	--	--	--	--
Trenton, Ill.[4]	41.6	21.1	132.9	42.9	20.6	131.8	42.3	21.1	131.0
Eldorado, Ill.	43.6	21.2	130.0	42.2	21.3	130.7	41.9	21.8	130.1
Ames, Iowa	41.4	20.2	138.0	40.7	20.5	135.7	40.4	20.6	135.3
Ottumwa, Iowa	40.9	20.8	136.0	40.0	20.8	134.7	39.6	20.9	134.7
Norborne, Mo.	39.5	21.5	136.0	40.0	21.2	134.4	39.0	21.7	133.5
Laddonia, Mo.	42.0	20.8	135.1	39.6	21.5	134.2	39.3	21.4	133.9
Columbia, Mo.	41.8	21.2	134.5	40.2	21.4	134.3	39.3	21.9	133.7
Lincoln, Nebr.	38.8	21.3	138.0	38.2	21.0	135.6	35.9	21.8	134.3
Manhattan, Kans.	41.0	21.3	135.7	41.0	20.9	132.9	40.7	21.3	131.4

Table 43. (Continued)

Strain	1951			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 18 strains in 1951, 8 in 1950, and 11 in 1949)									
Palmyra, Pa.	40.5	21.1	136.6	42.1	20.4	136.0	--	--	--
Beltsville, Md.	39.4	21.9	134.7	40.6	21.1	134.9	41.5	20.8	134.2
Worthington, Ind.	41.4	20.6	136.1	41.8	20.5	133.6	41.7	20.5	133.3
Evansville, Ind.	40.7	22.3	132.9	41.7	21.3	132.1	41.8	21.0	132.0
Urbana, Ill.	40.2	20.7	136.9	39.0	20.8	135.5	39.3	20.7	134.6
Clayton, Ill.	43.0	20.0	136.7	41.8	20.1	134.7	41.4	20.1	134.5
Stonington, Ill.	37.7	22.3	134.6	39.0	21.1	133.6	39.4	20.8	133.1
Edgewood, Ill.	41.1	21.4	134.7	--	--	--	--	--	--
Trenton, Ill.[4]	41.5	21.1	136.2	42.7	20.3	134.2	41.7	20.6	133.2
Eldorado, Ill.	43.2	21.4	132.4	--	--	--	--	--	--
Norborne, Mo.	40.1	21.6	135.7	40.0	21.0	134.0	39.4	21.1	133.6
Laddonia, Mo.	40.7	21.3	136.0	39.1	21.4	134.5	39.2	21.0	134.5
Columbia, Mo.	41.3	21.0	135.7	39.9	21.2	134.4	39.4	21.3	134.1
Manhattan, Kans.	41.4	21.0	137.3	40.9	20.6	133.2	40.8	20.6	132.2
Mound Valley, Kans.	39.1	22.7	131.5	--	--	--	--	--	--

[1]Eau Claire, Wis., 1949-50.
[2]Compton, Ill., 1949-50.
[3]Hudson, Iowa, 1949-50.
[4]Freeburg, Ill., 1949-50.

SOYBEAN DISEASE INVESTIGATIONS IN 1951[1]

The 1951 growing season did not produce any seriously damaging epiphytotic, and disease losses to the soybean crop were localized to comparatively small areas. This was generally reflected in the high yields reported over most of the midwest wherever soybeans matured before frost. Again, as in 1950, the diseases most in evidence were those peculiar to cool seasons.

Downy mildew (Peronospora manshurica) was widespread in occurrence, but infection was generally light. Perhaps the only exception to this in Illinois was a few cases of severe infection on late-planted Blackhawk.

Brown stem rot did not cause appreciable damage this season. It was prevalent through Illinois, Indiana, and Iowa, but leaf symptoms did not develop generally, which probably accounts for the minimum damage. A fact of considerable interest in regard to brown stem rot is the continued extension of its distribution in Iowa and the discovery of the disease in Minnesota for the first time.

Stem canker (Diaporthe phaseolorum var. batatatis) was again an important disease in Iowa, Indiana, and Illinois. As in the past two seasons, the disease has been most severe on the variety Hawkeye.

For the second consecutive year, Rhizoctonia root rot was a major disease in Illinois and Iowa, persisting well through July. A few fields showed approximately 5% loss in stand, while losses of 1-2% were common. It was a factor in killing plants in late July due to wet soil through the first half of the growing season. Previous to 1950, Rhizoctonia root rot damage was usually confined to young plants early in the season.

Of the bacterial diseases, bacterial blight (Pseudomonas glycinea) was the most common in the midwest. In central and northern Illinois, northern Indiana, and throughout Wisconsin and Minnesota, bacterial blight was prevalent. Central Illinois experienced the most severe epiphytotic in six years, attaining a peak about July 1 and declining rapidly thereafter.

Bacterial pustule (Xanthomonas phaseoli var. Sojensis) was more common than blight in Indiana. It appeared in central Illinois in mid-July and attained moderate severity by August 1. Pustule infection was sparse in the more northerly soybean growing regions of the midwest.

Brown spot (Septoria glycines) caused little damage in 1951. In Indiana and Illinois it was present on the young leaves but generally did not progress beyond the second or third trifoliates.

Diseases of minor importance were wildfire (Pseudomonas tabaci), and frogeye (Cercospora sojina) which reversed its northward trend of the past two seasons. In Indiana, this reversal is attributed to the expanded use of the resistant varieties Wabash and Lincoln. Bud blight (tobacco ring spot virus) was also a minor disease through the midwest. In connection with this disease, an interesting observation was made at Rosholt, South Dakota. In a soybean nursery adjacent to two small fields of red clover and alfalfa, "dudding" was apparent in plants along

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[1]Project 12-4010, Division of Forage Crops and Diseases.

the border rows. A short distance away, still contiguous to the soybean nursery, was a wheat field, adjacent to the forage legumes. Plants in the border rows opposite the wheat field showed no "dudding". This suggested an insect vector from the legumes and probably one of limited motility, such as larvae or early instars.

Studies on disease resistance are being continued at Iowa, Indiana, Illinois, and Minnesota. At Iowa, stem canker infection in fifteen resistant lines was only half that in Lincoln after the plants were individually inoculated with the stem canker organism. Considerable variation in pathogenicity was noted among isolates of Diaporthe from various sources. Seed transmission does not seem to be the most important mode of dissemination for stem canker under field conditions in Iowa. Rhizoctonia root rot and seed treatment research continues at Minnesota.

At Indiana, tests for resistance to frog-eye (Cercospora sojina) have shown that Adams, Lincoln, Anderson and Wabash are resistant to the disease. Also found to be resistant are about twenty-five of the strains in the Uniform Group I-IV Tests. Capital, Flambeau, Hokien, Mandarin (Ottawa), Blackhawk, Earlyana, Habaro, Monroe, Hawkeye, Richland, Harosoy, Cypress #1, Dunfield, Illini, Gibson, Chief, and Patoka are susceptible.

At Illinois, the Uniform Test strains, Groups 0-IV, were tested for resistance to bacterial blight and bacterial pustule. One hundred and eighty-nine selections were tested for resistance to brown stem rot. Only one selection showed less infection than the susceptible control, and this will be retested in 1952. The strains most resistant to the bacterial leaf spots are listed below. F_2 lines from four crosses involving resistant parents were tested for resistance to bacterial blight. One hundred and fifty selections were made for further evaluation.

Bacterial blight and bacterial pustule reaction of soybean strains that show resistance to bacterial blight, 1949-51.

Strain	Bact. Blight Reaction[1]	Bact. Pustule Reaction[1]
Flambeau	1 *	2
0-200	1-2*	3
0-255	1-2*	4
Habaro	1-2*	2-3
L6-8179	1-2*	3
H3665	1 *	3-4
L8-7289	1 *	3
C739	2 *	1-2
L6-2132	1-2*	3
L9-4197	2 *	1 *
Patoka	1 *	3-4
Wabash	1-2*	4
Perry	1-2*	3
L9-4196	1-2*	0 *
L9-4091	2-3*	0-1*

[1]1 = Resistant; 1-2 = Moderate Resistance; above 2 = Susceptible.
*Tested for 2 years.

WEATHER CONDITIONS AND GENERAL GROWTH RESPONSES AT MOST OF THE NURSERY LOCATIONS DURING THE 1951 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 1951 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 season seemed to be somewhat cooler in comparison with the average than the data show. Temperatures during June and August were somewhat below the average. Sunshine in both these months was low, and because of this the season seemed to be considerably cooler than most years. It certainly was not a good year for maturity as the dates obtained were from ten to twelve days later than usual.

Hours of Bright Sunshine	
1951	Long Time Av.
262.6	227.9
167.9	250.8
263.6	274.8
202.9	246.1
179.0	177.2
1076.0	1176.8

Guelph, Ontario. The 1951 season was characterized by temperatures which were 1-3° lower than normal every month during the growing season. The rainfall was about normal, but the distribution was abnormal in that the July amount was 2-7 inches above normal. Good stands were obtained on all plots, but growth was adversely affected by a heavy infection of bacterial blight which appeared early in the season.

New Brunswick and Columbus, New Jersey. At Columbus, New Jersey, the rainfall averaged about two inches below normal per month for the three months of June, July and August. The temperature averaged about 1.5 degrees below normal in June and in July and three degrees below normal in August. The New Brunswick rainfall was normal for all three months and the temperature was normal for June and July but two degrees below normal for August. The rainfall distribution was excellent at New Brunswick, and the crop response correspondingly good. The rainfall came in such small amounts at Columbus that it was very ineffective. The soil was good and the supply of sub-surface soil moisture adequate so that fair yields were obtained.

Newark, Delaware. As much as one inch of rainfall above normal for May carried well into June for starting the nursery on June 7. The soybeans sprouted and grew well in the even temperatures of June and the heavy rains of July. August rainfall fell short of the normal by two inches, and the soybeans matured rapidly before the first killing frost occurred on November 4. Taken as a whole, the nursery looked very good throughout the season.

Georgetown, Delaware. The nursery sprouted and grew rather well in the heavy June rainfall (5.32"). July temperatures were variable although again there was abundant precipitation with frequent thunderstorms. In August, a deficiency of rainfall (-2") caused the soybeans to mature very rapidly, and the Group III varieties shattered badly before harvest. The first killing frost occurred on November 4. The nursery looked good throughout the season.

Beltsville, Maryland. The climate during 1951 was characterized by a rainy period giving approximately ten inches of precipitation well distributed over the first half of June. Thereafter, with the exception of one light rainfall, little precipitation occurred until September. Because of excellent reserve moisture, soybeans made a fairly good crop. However, those areas of the terrace soils which extend throughout part of the experimental area, which are underlain with gravel, showed less growth and contributed to experimental error of the test. Several of such areas existed in the Group IV test. Temperatures were normal throughout the season. Because of the dry autumn, relatively little development of purple stain developed on the seed. Excellent seed quality resulted even from Group II and Group III maturities. Slight shrivelling of seed was noted from those areas underlain with gravel.

Cortland, Wooster, Columbus, and Mt. Healthy, Ohio. Generally speaking, the drouthy conditions in Ohio this year reduced the yields in all sections of the state. The spring was rather cold and wet, and soybean seeding was delayed somewhat. There was very little or no rain over the state during the months of July and August. The region around Cincinnati, which includes the Hamilton County Experiment Farm at Mt. Healthy, and Columbus were perhaps affected more severely than the region around Wooster and Trumbull County Experiment Farm at Cortland in the northeastern part of the state. With the extreme drouthy conditions in general, the vegetative growth of the soybeans was greatly reduced and this resulted in very little lodging and also very little disease. There was little insect damage except in local communities. In view of the drouthy conditions, the state average yield dropped several bushels per acre from the 1950 production.

Walkerton, Indiana. Nurseries were planted on both muck and mineral soil at this location. Stands were good but growth only fair on the muck soil, due mainly to temporary flooding after emergence and wet condition of the subsoil for some time following the disappearance of the surface water. The plot was kept fairly free of weeds. A killing frost on September 29 caused considerable injury to Richland and Hawkeye and some injury to varieties only slightly earlier than these. On mineral soil, stands were spotty, especially in the Uniform Group I and II tests. Frost injury was marked on varieties of Lincoln or later maturity and somewhat noticeable on varieties of Hawkeye maturity. Both the muck and mineral soil plots were very free of disease except for downy mildew which was most noticeable on Blackhawk. Precipitation was 2.72, 1.10, 3.26, and 1.09 inches above normal in May, July, September, and October, respectively, and 1.60 and 0.28 inches below normal in June and August, respectively. Temperatures during the growing season were normal. Harvest was under ideal conditions.

Bluffton, Indiana. This was an excellent nursery planted under ideal conditions. Growth conditions were generally good, and yields were somewhat below those anticipated, considering the excellent growth and high yield of corn obtained in the same field. Precipitation was below normal from May through September, being a little less than half of normal in August. Except for successive days with 95°

and 101° F. temperatures the last of August, there were no unusually high or low temperatures. Mildew and brown spot were present in only moderate amounts. Harvest conditions were ideal. No varieties were frosted.

Lafayette, Indiana. Stands were excellent, but growth was somewhat poor and yields were lower generally than usually obtained at this location. Harvest was under ideal conditions. There was no frost damage. Brown spot was the most serious disease and was rather abundant throughout the nursery. Bacterial pustule, downy mildew, and some stem canker were observed in slight to moderate amounts. There was very little stem canker compared to some previous years. Brown stem rot was observed in some areas of the plant-row nursery. Rainfall was two inches above normal in July. Although precipitation ranged from 0.30 to 1.57 inches below normal in May, June, August, and September, the distribution was very uniform in each of these months and there were no extended drouthy periods. There were no periods of unusually high nor low temperatures.

Greenfield, Indiana. Growth was excellent and yields were high. Conditions were very ideal at planting and harvesting. There was no frost damage. Bacterial blight, bacterial pustule, brown spot, and mildew were observed in the nursery but infection was only slight to moderate. Some manganese deficiency was observed, although 30 pounds per acre of $MnSO_4$ were applied along with 125 pounds of 3-12-12 fertilizer in the row. Precipitation was well above normal in May and June, slightly below normal in July, only one-third of normal in August, and about one half of normal in September. There were only 0.6 inches of rainfall in the first twenty-five days of August. Temperatures were not unusual during any part of the growing season.

Worthington, Indiana. Stands were somewhat spotty in some tests, but growth was unusually good and yields were very high. There was a very marked amount of wildfire and a moderate amount of frogeye leaf spot and downy mildew. The wildfire appeared to be rather damaging. Precipitation was 1.67, 1.13, and 0.73 inches below normal in August, September, and October, respectively; and 0.67 and 0.96 inches above normal in June and July, respectively. There were no periods of unusually high nor low temperatures during the growing season. Harvest conditions were ideal.

Evansville, Indiana. This was a good nursery. It was planted earlier than usual, May 8, and maturity was also early. Harvest was completed on September 28 under good conditions. Stands were somewhat spotty, but considered sufficiently good for yield trials. Frog-eye leaf spot was general but not severe throughout the plot on susceptible varieties and permitted rating varieties in the yield trials for this disease as well as discarding plant rows that were susceptible. Bacterial pustule and downy mildew infection were slight to moderate. Precipitation was less than half of normal in May but well distributed, frequent in June, slightly below normal in July, and about one-half of normal in August, with a period of sixteen days in mid-August without rain. Temperatures were normal during the growing season.

Spooner, Wisconsin. The weather in general was not very favorable for good yields of the later varieties in Group O and none of the Group I varieties reached maturity. In fact, most of the strains in Group O barely reached maturity before first frost. The average temperatures for every month of growing season were below normal as follows: June, 3.9°; July, 1.7°; August, 3.7°; and September, 5.3°.

Rainfall averaged from 1.29 to 3.32 inches above normal. Excessive rainy and cloudy weather in late September and all of October made harvesting of soybeans very difficult. None of the Group O varieties had dried out sufficiently to thresh prior to October 10. Many commercial fields of Flambeau were not combined until November due to the cool wet weather. This season again demonstrated that the only varieties that should be grown in this area are those of approximately Flambeau maturity. The cool, cloudy, and wet weather also resulted in considerably more lodging than in past season.

Fall City, Wisconsin. This nursery was planted May 18. Stands were good on all plots. The average temperature during the growing season was several degrees below normal. The distribution of the rainfall, which was about 25 percent above average, was good. The growth was very heavy and maturity was later than average. All strains in Group I, with the exception of the earliest, were damaged by a frost which occurred September 25. Replication 1 of Group O, which was adjacent to a field of alfalfa, was discarded due to an almost 100 percent incidence of "duds". The incidence of "duds" in the rest of the trial was low.

Madison, Wisconsin. These plots were planted May 16 and emerged May 26. All plots had good stands. The 1951 growing season was characterized by below average temperatures, excessive cloudy weather, and average rainfall. The effective rainfall was considerably above average, and the distribution of the rainfall was excellent. Heavy vegetation occurred during 1951, lodging was moderate to severe, and maturity later than average. Diseases were a minor factor. The first killing frost occurred October 8. At this date, all but a few of the later Group II strains were mature.

Shabbona, Illinois. The tests at Shabbona were planted May 29, 1951, in a very moist seedbed. Even though the seedbed was too firm for good seeding, stands were excellent. Growth was good and rainfall was well distributed over the growing season except for the period from August 20 to September 12 when precipitation amounted to only .34 of an inch. Although the first fall frost occurred September 28, the later strains were not hurt and matured normally. Soil tests indicated that (1) lime should be applied at the rate of about two tons per acre; (2) the phosphorus level was moderate, and (3) the potassium level was high. Diseases were not serious although considerable stem canker and brown stem rot were observed.

Dwight, Illinois. The tests at Dwight were planted May 23, 1951, in a good seedbed. The stands were good and growth was excellent. Rainfall was well distributed throughout the growing season. One-half of the Group III test was damaged by hail, causing approximately 30% shattering. Data reported for this test include only the yieldsobtained from the plots which were not hailed. A heavy frost September 28 killed some of the later-maturing strains. Soils tests indicated that lime and phosphorus were low, and the potassium level was high.

Urbana, Illinois. The tests at Urbana were planted May 22, 1951, in a good seedbed. Rainfall was fairly well distributed except for the period from September 14 to October 6 when five periods of precipitation were recorded which averaged .06 of an inch. Soil tests indicated that lime was needed and that phosphorus and potassium were high. Stem canker, pod and stem blight, and brown stem rot were observed. Stem canker was again most prevalent in Hawkeye and strains having Hawkeye in their parentage.

Clayton, Illinois. The tests at Clayton were planted May 28, 1951. Stands were good and rainfall was fairly well distributed except for a very heavy local rain (reported by Russell Davis, the cooperator, to be about eight inches) which was not reported in the weather graph for the location, and for a dry period extending from July 29 through August 14. Soil tests indicated that the pH was satisfactory, the phosphorus level was moderately low, and the potassium level was high.

Stonington, Illinois. The tests at Stonington were planted June 2, 1951. Stands were excellent and growth was good. Soil tests indicated that phosphorus and potassium were high but that lime was needed at the rate of approximately three tons per acre.

Edgewood, Illinois. The tests at Edgewood were planted June 1, 1951. Stands were good and rainfall was fairly well distributed throughout the growing season except for June, when the long time average of 4.47 inches was exceeded by 3.60 inches of precipitation. Soil tests indicated lime was needed and that phosphorus and potassium were both high.

Trenton, Illinois. The tests at Trenton were planted May 24, 1951. Stands were good and rainfall was fairly well distributed throughout the growing season. Monthly rainfall approximated the several year average except for June, when the 1950 rainfall exceeded the long time average of 3.90 inches by 3.34 inches. A severe wind during the early part of September caused considerable lodging. Soil tests indicated a lime amendment was needed at a rate of approximately two tons per acre, the phosphorus level was medium, and the potassium level was high.

Eldorado, Illinois. The tests at Eldorado were planted May 15, 1951, in a very good seedbed following red clover plowed under as a green manure crop. Stands were excellent and growth was good. Rainfall was fairly well distributed over the growing season except that the rainfall for June was more than twice the average. Soil tests indicated that the pH was satisfactory, the phosphorus level was moderate, and the potassium level was high. Very little disease was evident.

Morris, St. Paul and Waseca, Minnesota. Rainfall in Minnesota during the 1951 crop season was considerably above normal, temperatures and percentage of sunshine much below normal. This was particularly true for the months June through September. May was almost an ideal month. The soybeans were planted on time and under good soil and moisture conditions. From then on, however, the low temperatures and cloudy weather retarded development, particularly through August and September. In spite of these conditions, yields of the Group I nursery at Waseca and the Group O nursery at Morris were above average for the adapted varieties. The Group O and Group I trials at University Farm were damaged so much by several local windstorms that they were not suitable for harvesting.

Cresco, Iowa. This nursery is located in northeast Iowa on Carrington Plastic Till Phase. This soil is always tight, cold, wet, slowly drained, and rather low in fertility. Planting was completed May 25. Stands were poor, due to seed corn maggot which caused many dead plants and "bullheads". However, after transplanting from alleyways into the row, a good stand resulted. A cooler than normal growing season, together with almost a 6-inch excess of rain coupled with the soil conditions, delayed maturity a full two weeks. Frost occurred several times but the most damage occurred September 28. Phosphate, potash, and manure were applied before planting. This permitted a fairly good growth. Strain comparisons are only fair for this test.

Kanawha, Iowa. This nursery is located in north central Iowa on level, fertile Webster silty clay loam. Planting was completed on May 22. During the growing season temperatures averaged 2.5° F. below normal and rainfall totalled 5.67 above normal. Stands were excellent. A hail occurred on July 8 which defoliated 25 to 30 percent of the plants and broke 10-15 percent of the stems. This resulted in some yield reduction. In addition, several light frosts occurred September 28 and later, with the killing freeze October 24. Lodging was excessive and harvesting completed under poor conditions. The cool temperatures and high moisture caused a 10-day delay in maturity. Some of the strains were injured and their yield reduced. These factors make the Group II data less reliable than Group I data.

Marcus, Iowa. This nursery represents the northwest section of Iowa with Galva silt loam soil, medium high in fertility, and generally slightly undulating in topography. The nursery was planted May 23 on corn land. Stands were excellent and plots were kept weed-free. Growth was rather rank. On July 17, light hail injury occurred which gave the appearance of lodging with some broken stems. Bacterial blight was prevalent late in the season. Temperatures during the growing season averaged 2.6° F. below normal and precipitation totalled 6.17 inches above normal. These conditions delayed maturity a full two weeks. Frost occurred several times, but a killing freeze did not occur until October 24. Some reduction in yield occurred on the late maturing strains as a result of the frosts. Harvesting was completed under adverse conditions. This test was considered fair for making strain comparisons.

Independence, Iowa. Independence, a new location in 1951, is in northeast central Iowa on Carrington silt loam, medium low in fertility. Planting was completed May 24. Stands were excellent after transplanting. A reasonably good growth occurred, but due to cooler than normal temperatures and about a 4-inch surplus of moisture during the growing season, maturity was delayed approximately seven to ten days. Frost injury on September 28 decreased yields somewhat on the later maturing Group II Test.

Ames, Iowa. This nursery is centrally located on level, medium-fertile Webster silty clay loam. Planting was completed on May 18. Stands were excellent. Some brown stem rot was present in the nursery but readings could not be obtained. A cooler than normal growing season coupled with an excess of moisture delayed maturity about ten days. Growth was good and no serious frost damage occurred. Strain comparisons are believed to be very good at this location.

Ottumwa, Iowa. This nursery was located in southeastern Iowa on fertile Haig silt loam. The nursery was planted May 28. Stands were excellent until the first cultivation, which killed many plants. By transplanting and a little replanting the nursery was restored to near normal conditions. Excellent growth occurred, even though therewere lower than normal temperatures during the growing season. Only a slight excess of rain occurred during the season. No serious frost injury occurred and harvesting was completed under excellent conditions. Strain comparisons in this nursery should be very good.

Norborne, Missouri. The plots at Norborne were planted in an excellent seedbed with plenty of moisture for germination. Emergence was rapid and stands were good. The rows were listed and normal rainfall permitted good cultivation and grass control but did not control a heavy morning-glory population. These weeds were responsible for considerable variability because they made some rows lodge. For

this reason lodging scores cannot be considered very reliable. This would have been an excellent test had it not been for the morning-glories. Weather during the growing season was excellent, and yield and seed quality were good.

Laddonia, Missouri. The weather was dry at planting time and the field was quite cloddy. Stands in Groups III and IV were satisfactory but groundhogs destroyed one replication of Group IV. The beans were rotary hoed at the proper time, but heavy and frequent rains prevented further cultivation until late July. By this time there was a heavy stand of pigweeds between the rows. The beans were cultivated once and the weeds mostly killed, but several rows were badly damaged by the cultivator, due to the shovels clogging with the heavy weed growth. Growth of the beans was good and yields were good. Group III was harvested under good conditions but fall rains and snows prevented harvesting Group IV until late November.

Columbia, Missouri. The weather at planting time was ideal and the seedbed was good. Rainfall during the growing season was excessive, preventing proper cultivation. There was a great deal of crabgrass in the plots in spite of the fact that they were hoed, but the ample rainfall during August probably prevented the grass from doing serious damage. Yields were relatively good and seed quality was also good.

Fargo, North Dakota. Only a few of the strains were actually fully mature when killing frost (25°) occurred on September 23, which is about the average frost date for this area. However, the crop was late due to low or moderately low temperatures throughout much of the season. There were very few days this year when temperatures went over 90° - two in July and only one in August. In addition, there were only five days in August when temperatures went over 80° and only two in September. Stand differences were a factor this year, Flambeau having a stand of only 40 to 50%. Storms in late July and early August caused considerable lodging and actual breaking over of the plants. Light hail resulted in some injury although it was not particularly serious.

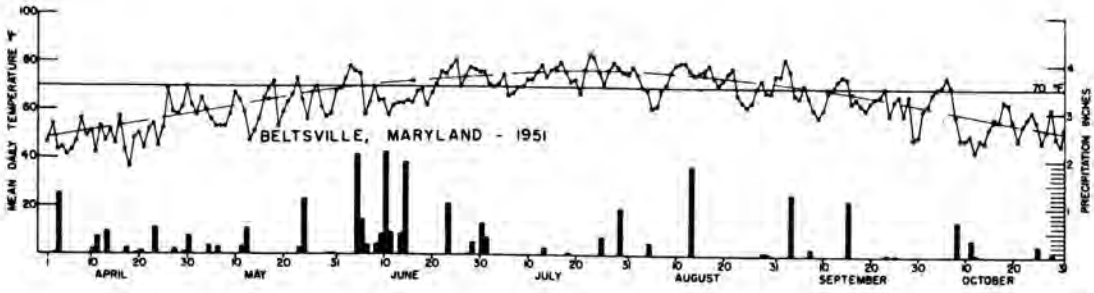
Rosholt, South Dakota. The weather effect at this location was rather variable but, on the whole, it would appear that plant development did not suffer for lack of moisture. The principal effect was a consequence of sub-normal temperatures throughout the seed setting and maturity period, with rather low night temperatures. The average yield was 13.8 bushels per acre, whereas with favorable moisture and temperatures an average yield of 18 bushels should have resulted. This nursery was also subject to "dudding" along the border rows which were adjacent to two small fields of forage legumes (red clover in one case and alfalfa in the other). The plants produced an abundance of flowers from the terminal portion of the stem from which arose small undeveloped pods in a rosette cluster. These remained undeveloped and green until killed by frost regardless of the normal maturity of the strain. The entire plant remained in a dormant vegetative state long after uninfected plants matured. This effect, however, invariably was confined to the two or three rows immediately adjacent to the clover and alfalfa sod. A little distance away but contiguous to the nursery the forage legume fields gave way to a wheat field. At the junction of these fields the "dudding" of the soybeans ceased and throughout the area adjacent to the grain field the bean plants were normally developed.

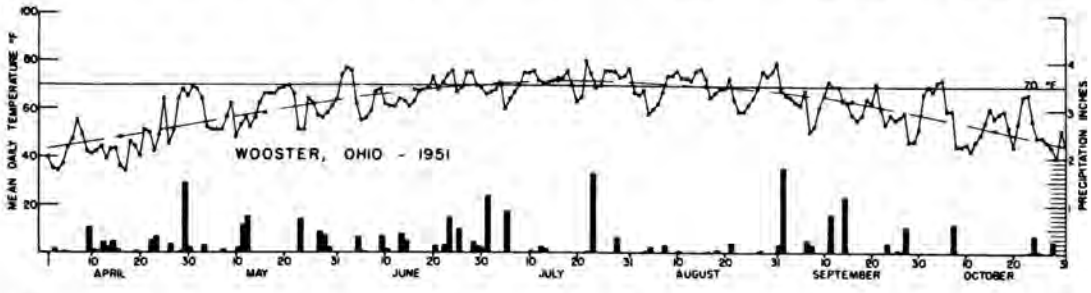
These observations strongly suggest that an infective insect vector from the legume sod fields was present. Because of the peculiar limitations of spread of the effect, a vector of reduced motility (as larvae or early instars) is inferred.

Centerville, South Dakota. The same weather pattern was experienced at this location as at Rosholt except that temperatures were somewhat higher. The principal factor contributing to low mean yields was the date of planting. June 14 was at least two weeks later than recommended for that area. The frequent showers in May and June prevented us from getting the nursery seeded at the proper time. The cooperator at this location found opportunity to get his field planted on June 1 and harvested 29 bushels of well-matured beans per acre (Hawkeye variety).

Manhattan, Kansas. The year 1951 was the wettest on record for this locality. Precipitation for the five months, May to September, was 43.36 inches, 23.87 inches of which occurred during June and July. Rainfall occurred during seventy-four of the 153 days of the five-month period, and the longest period without rain during that time was five days. In the three days, July 10 to 12, a fall of 10.02 inches resulted in the most disastrous flood since 1844 at Manhattan and at most points along the Kansas River. Most crops suffered from excessive moisture and weed control was almost impossible. The soybean test was planted June 1 on well drained upland and except for some erosion there was no material damage. The crop was delayed somewhat by low temperatures and wet weather, but there was no noticeable injury from diseases. Although yields were not as high as in 1950, they were well above average. Of the 34 varieties, 28 produced more than 30 bushels per acre. The yield of thirteen of these ranged from 35.5 to 40.4 bushels. October, with only 2.54 inches of rain, was very favorable for harvesting and the beans were of good quality. All varieties were well matured when the first killing frost occurred on October 24.

Moses Lake, Washington. The 1951 season was very favorable for soybean production under irrigation. The beans followed alfalfa and received 160 lbs. N/A. as ammonium nitrate fertilizer. This delayed maturity. A fertilizer experiment in the same field with Pridesoy-57 indicated that a much lower rate of fertilizer application would have given maximum yields as well as early maturity.


BELTSVILLE, MARYLAND - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


WOOSTER, OHIO - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
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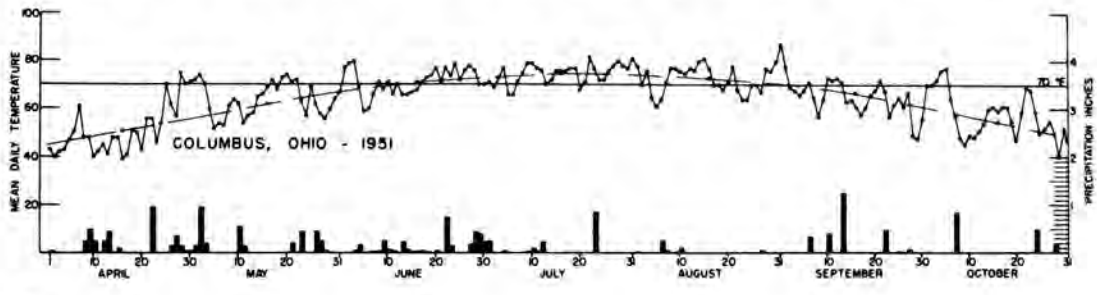
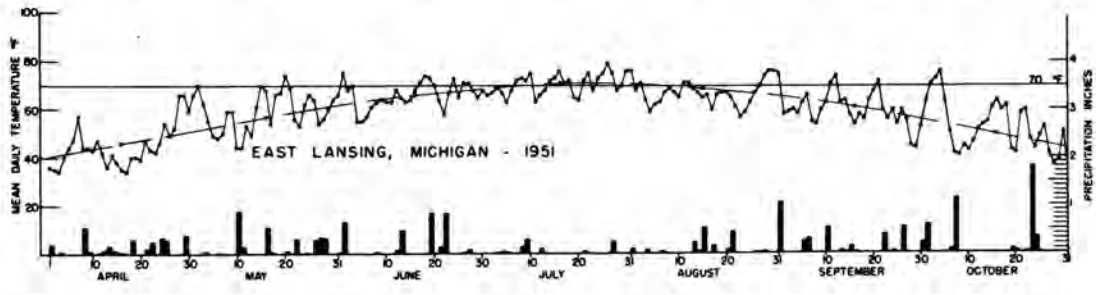
SEPTEMBER
OCTOBER


COLUMBUS, OHIO - 1951
MEAN DAILY TEMPERATURE
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


EAST LANSING, MICHIGAN - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
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SEPTEMBER
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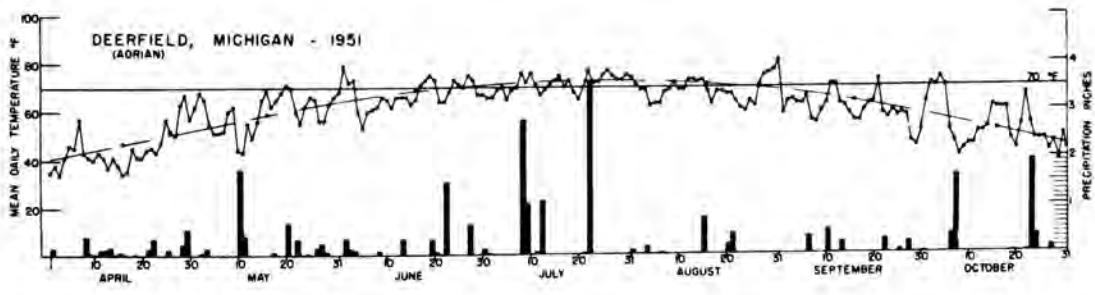
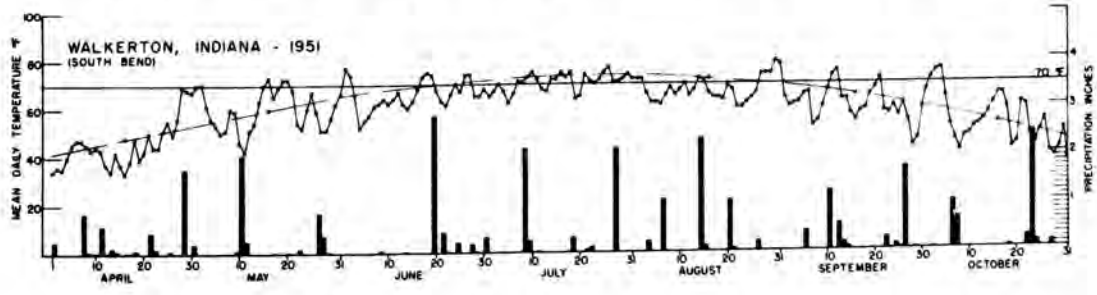

DEERFIELD, MICHIGAN - 1951
(ADRIAN)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


WALKERTON, INDIANA - 1951
(SOUTH BEND)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
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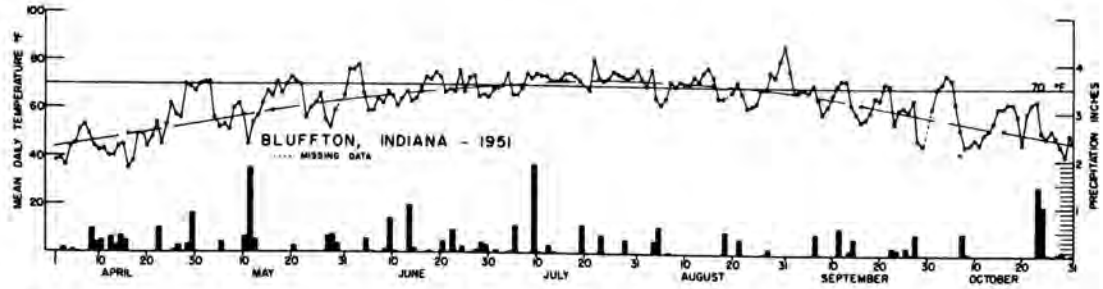
SEPTEMBER
OCTOBER


BLUFFTON, INDIANA - 1951
..... MISSING DATA
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PRECIPITATION INCHES
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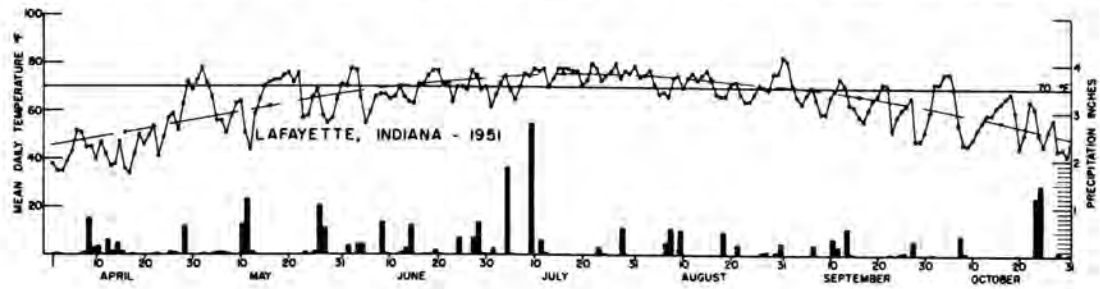
OCTOBER


LAFAYETTE, INDIANA - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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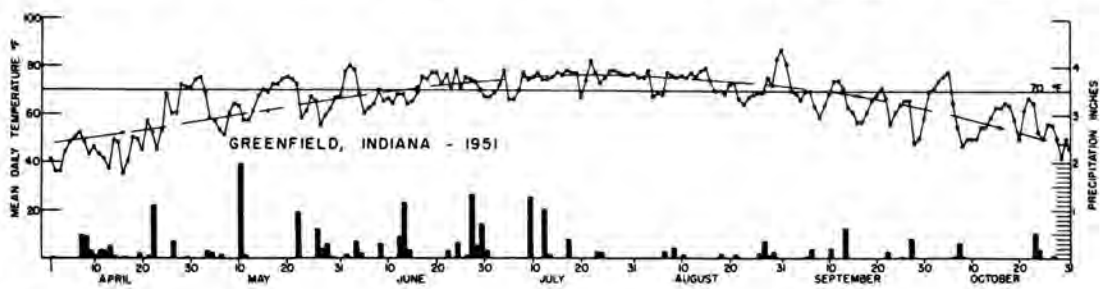
GREENFIELD, INDIANA - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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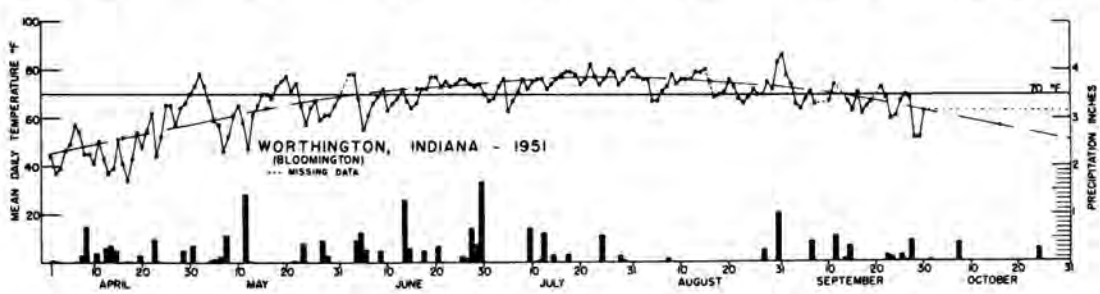
WORTHINGTON, INDIANA - 1951
(BLOOMINGTON)
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PRECIPITATION INCHES
APRIL
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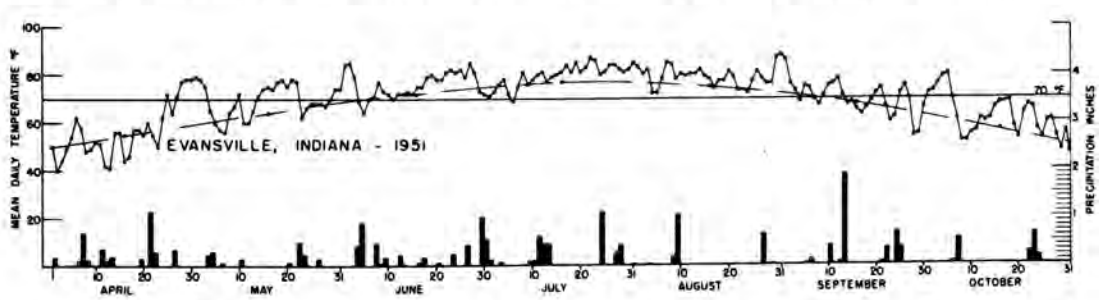
SEPTEMBER
OCTOBER


EVANSVILLE, INDIANA - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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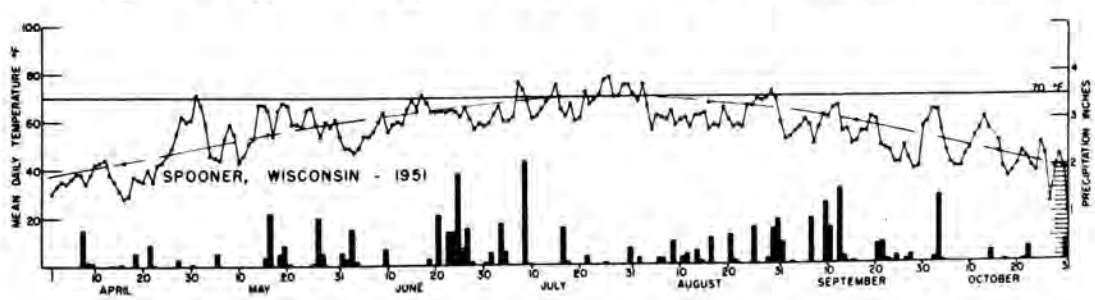
OCTOBER


SPOONER, WISCONSIN - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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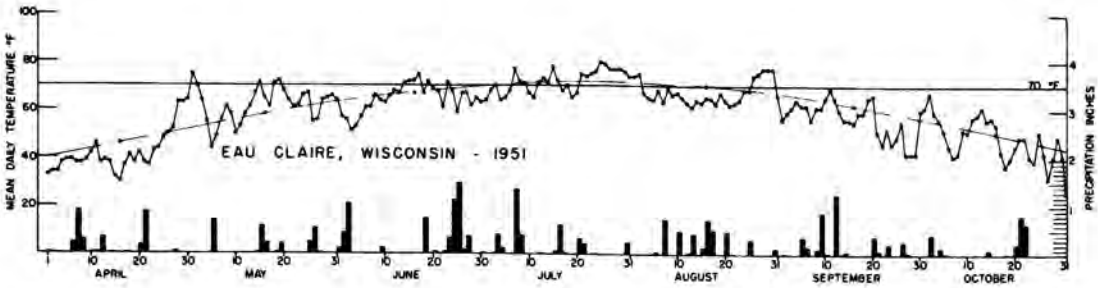
EAU CLAIRE, WISCONSIN - 1951
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PRECIPITATION INCHES
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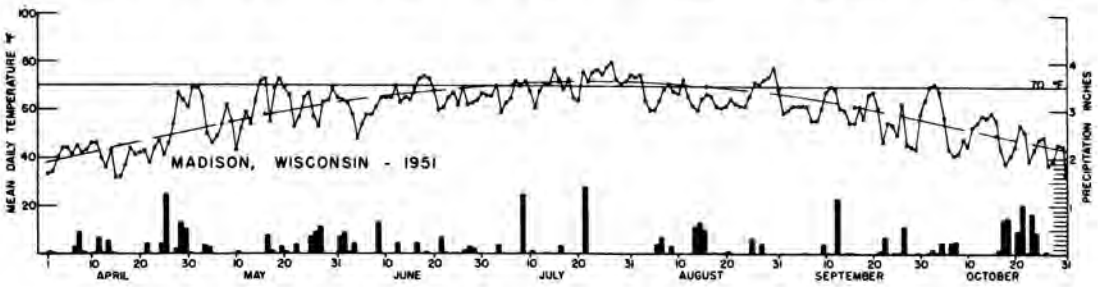
MADISON, WISCONSIN - 1951
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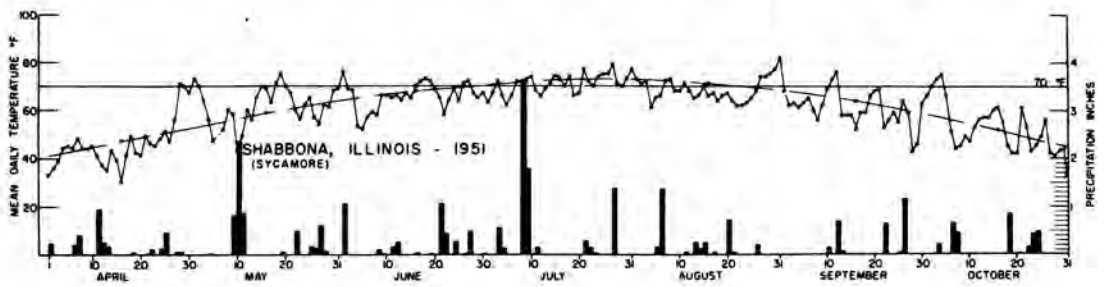
SHABBONA, ILLINOIS - 1951
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PRECIPITATION INCHES
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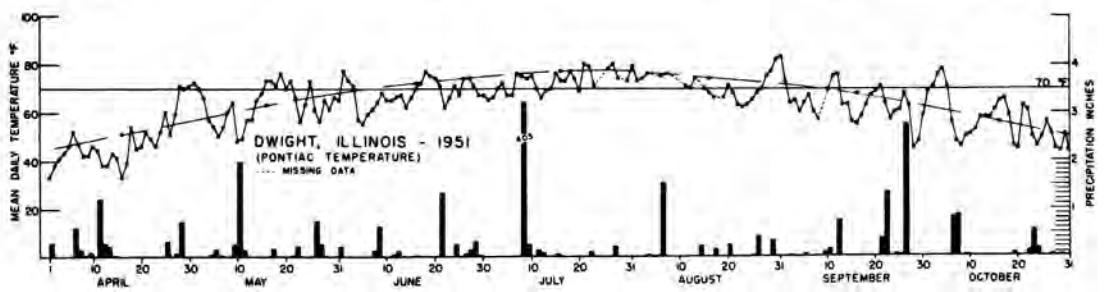
DWIGHT, ILLINOIS - 1951
(PONTIAC TEMPERATURE)
---- MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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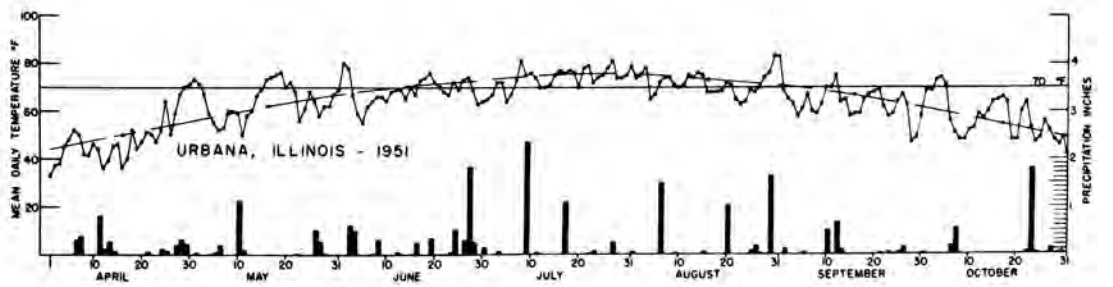
URBANA, ILLINOIS - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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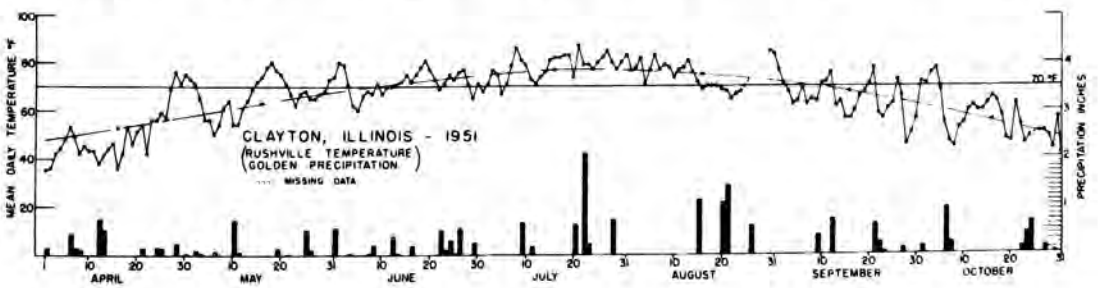
CLAYTON, ILLINOIS - 1951
(RUSHVILLE TEMPERATURE)
(GOLDEN PRECIPITATION)
---- MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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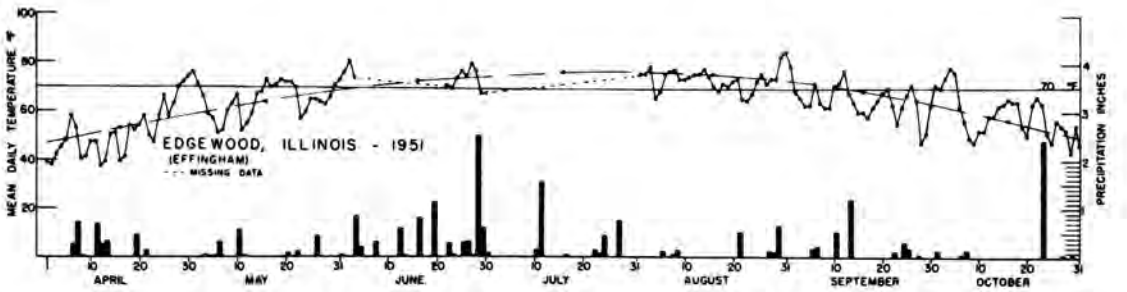
EDGEWOOD, ILLINOIS - 1951
(EFFINGHAM)
--- MISSING DATA
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PRECIPITATION INCHES
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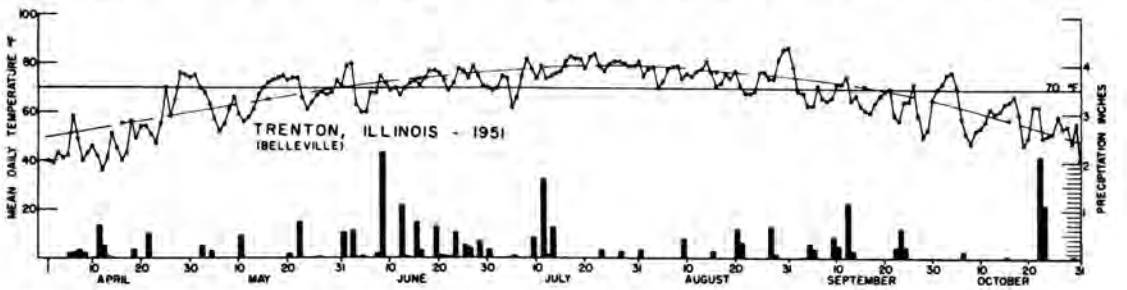
TRENTON, ILLINOIS - 1951
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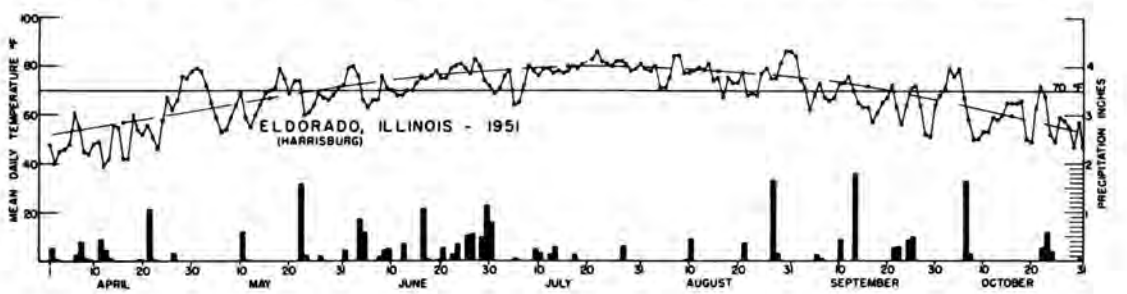
ELDORADO, ILLINOIS - 1951
(HARRISBURG)
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PRECIPITATION INCHES
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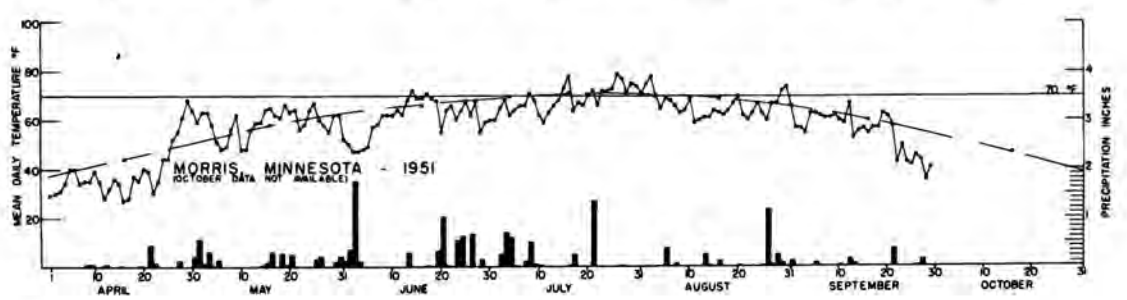
MORRIS, MINNESOTA - 1951
(OCTOBER DATA NOT AVAILABLE)
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PRECIPITATION INCHES
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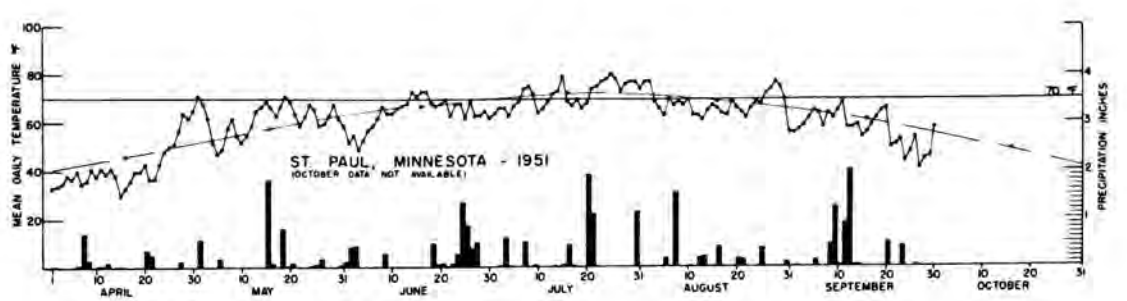
ST. PAUL, MINNESOTA - 1951
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PRECIPITATION INCHES
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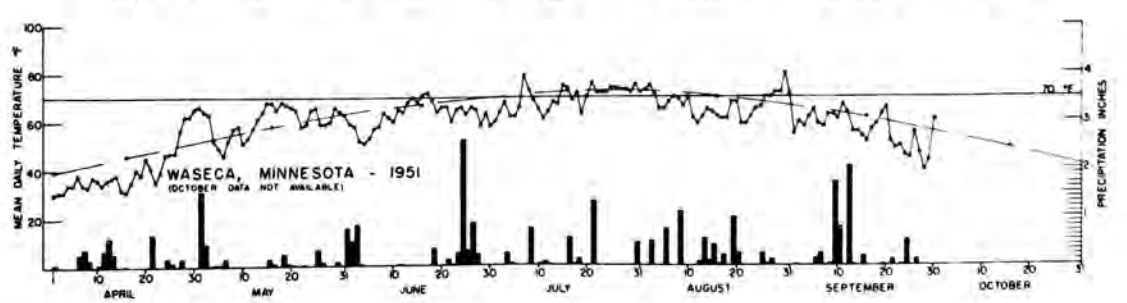
WASECA, MINNESOTA - 1951
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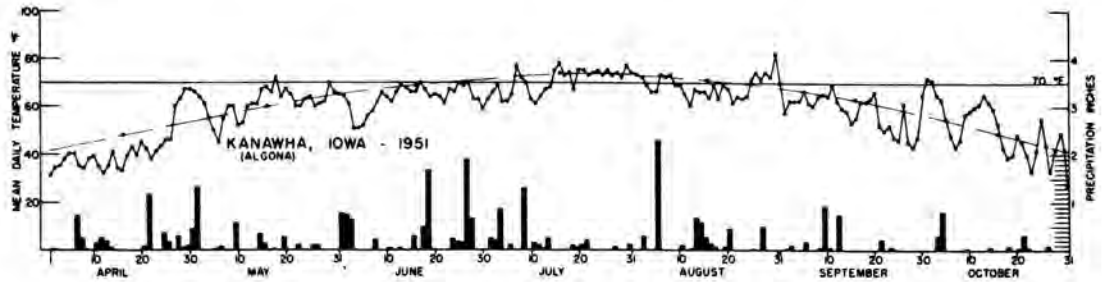
KANAWHA, IOWA - 1951
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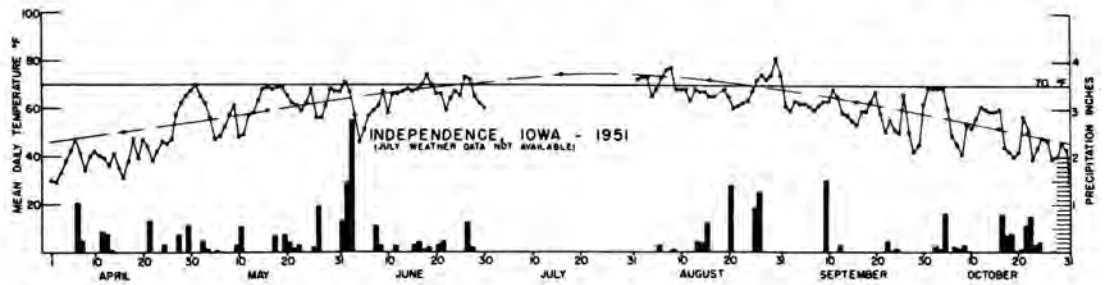
INDEPENDENCE, IOWA - 1951
(JULY WEATHER DATA NOT AVAILABLE)
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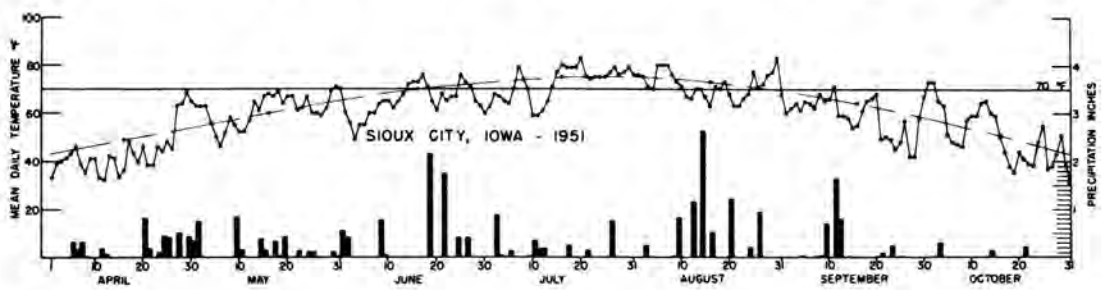
SIOUX CITY, IOWA - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
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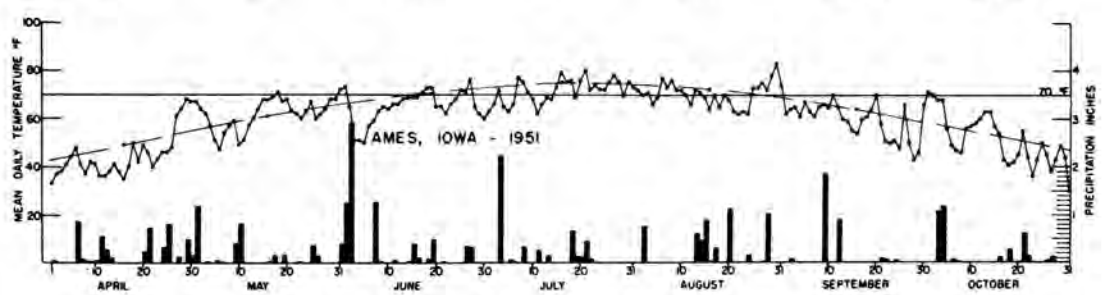
OCTOBER


AMES, IOWA - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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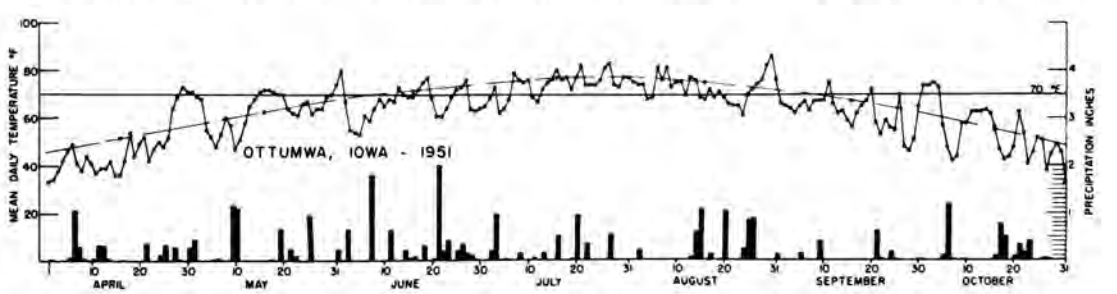
OCTOBER


OTTUMWA, IOWA - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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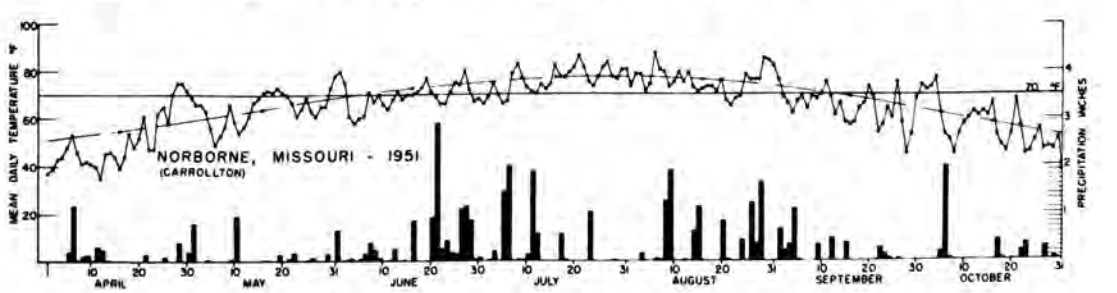
NORBORNE, MISSOURI - 1951
(CARROLLTON)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
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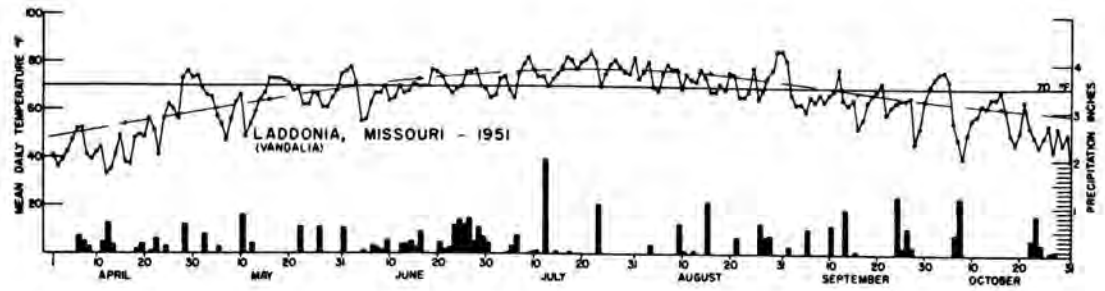
LADDONIA, MISSOURI - 1951
(VANDALIA)
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PRECIPITATION INCHES
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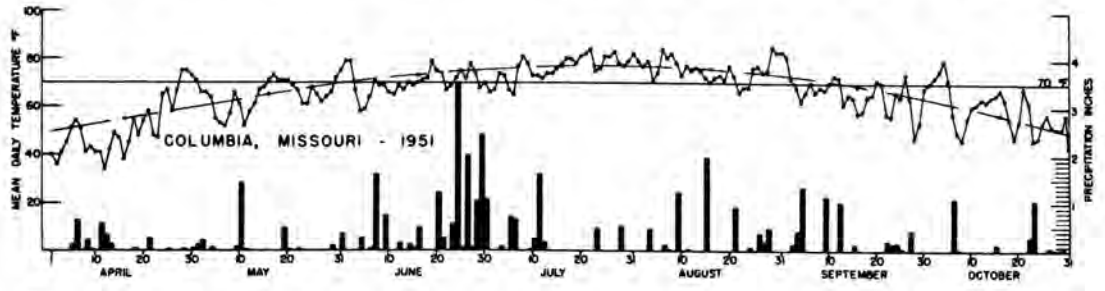
OCTOBER


COLUMBIA, MISSOURI - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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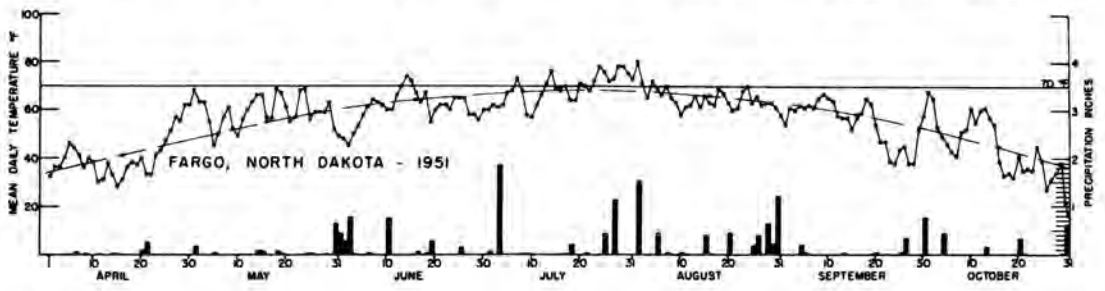
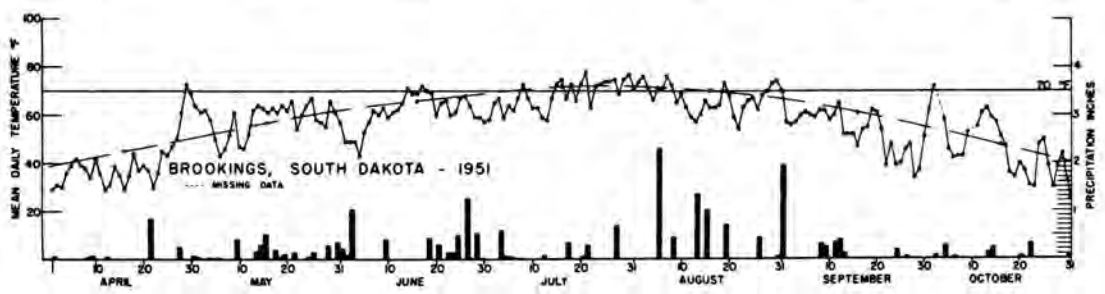
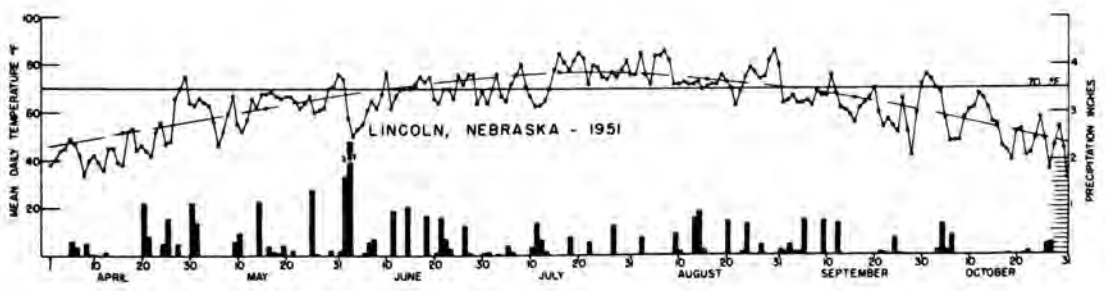
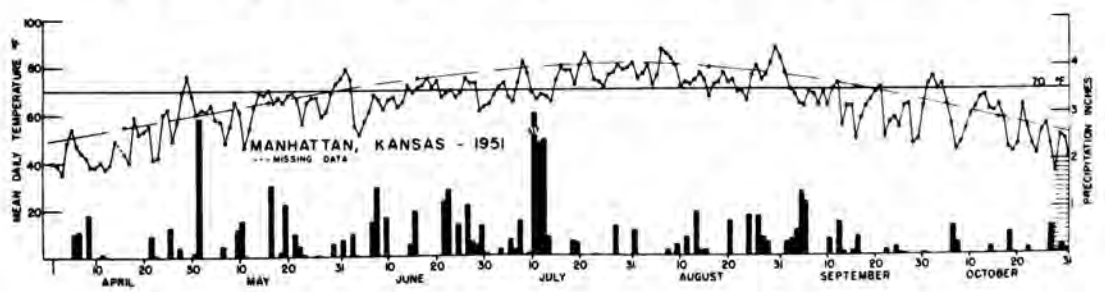

FARGO, NORTH DAKOTA - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


BROOKINGS, SOUTH DAKOTA - 1951
---- MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


LINCOLN, NEBRASKA - 1951
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


MANHATTAN, KANSAS - 1951
--- MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER