RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS

PART I. NORTH CENTRAL STATES

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1950

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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 For this reason, citation to particular statements in the Report should not be published unless permission has been granted previously by the Laboratory or the state station concerned.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. The first superior strain to be developed through the cooperative research program was Lincoln, which is adapted to the central part of the soybean belt. A number of other strains have been developed, among them being Hawkeye, Monroe, Adams, Wabash, and Blackhawk. Blackhawk, a new strain which is being released this year, is a week earlier than Hawkeye, which was developed from the same cross, and is adapted in areas north of where Hawkeye can be grown. Blackhawk, because of its higher yield and oil content, will largely replace the Habaro acreage in northern Iowa and southern Minnesota, and should improve the oil content of commercial beans coming from this area.

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

Uniform Test, Group 0, contains the strains that will bloom and mature under the longer days encountered during summer in the Dakotas, Minnesota, and northern Wisconsin. Group I contains strains generally adapted to South Dakota, the southern parts of Minnesota, Wisconsin, and Michigan, and the northern part of Ohio. Groups II, III, and IV, respectively, include strains adapted to locations farther south in the North Central States and to other areas of similar latitude. In general, each group is arranged to include strains differing in maturity by not over 10 to 15 days. Maturity of the strains is expressed as so many days earlier or later than some well-known check or reference variety in the group.

Temperature and rainfall graphs and brief statements of weather conditions at many of the 1950 nursery locations are presented to aid in interpreting the performance of strains under local climatic conditions. The 1950 season was characterized by unusually low temperatures during the period of seed development. As a result, the average iodine number of oils is higher than usual for the Uniform Tests, Group 0 through III. Oil content averaged nearly one percent lower in 1950 than for the two previous years in all maturity groups.

Soybean disease investigations, including the search for resistant lines, is becoming more important as acreage concentration of the crop becomes greater. The 1950 report includes, for the first time, a table summarizing disease readings for one of the leaf diseases, bacterial blight, in the hope that it may stimulate critical evaluation and reporting of this type of information wherever a disease occurs severely enough to make such a study possible.

COOPERATING AGENCIES AND PERSONNEL
FOR THE
NORTH CENTRAL REGION

Division of Forage Crops and Diseases, Beltsville, Maryland

W. M. Myers, Agronomist in Charge
M. G. Weiss, Principal Agronomist,
Director and Project Leader

Laboratory Headquarters, Urbana, Illinois

J. L. Cartter, Senior Agronomist, Director
Carolyn J. Younger, Stenographer Patricia M. Peckham, Stenographer

Breeding and Genetics Project

L. F. Williams, Agronomist Ruth E. Lawrence, Statistical Clerk
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Plant Physiology Project

D. F. McAlister, Plant Physiologist
C. E. Burt, Agricultural Aid (1/2 time)
R. H. Johnson, Agent WAE (Refrigeration Mechanic)

Chemical Analysis

F. I. Collins, Chemist O. A. Krober, Chemist
Dayle P. Clark, Agent Margaret Cole, Agent

Plant Pathology[2]

D. W. Chamberlain, Pathologist
C. E. Burt, Agricultural Aid (1/2 time)
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Lafayette, Indiana

A. H. Probst, Agronomist

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C. R. Weber, Agent (Agronomist)

Columbia, Missouri

C. V. Feaster, Agronomist[3]

Columbus, Ohio

L. C. Saboe, Agronomist[4]

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[1]Retired September 1, 1950.
[2]Soybean pathology research under Project 121-3.
[3]Resigned December 15, 1950.
[4]Resigned November 17, 1950. Now Collaborator.

Collaborators in the North Central States

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

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

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

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

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

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

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

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

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

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

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

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

LOCATION OF COOPERATIVE NURSERIES

Location	Cooperator	Uniform Group Tests					Prel. Tests	
		0	I	II	III	IV	III	IV
Ottawa, Ontario	Central Exp. Farm	x						
Guelph, Ontario	Ontario Agr. College	x	x					
State College, Pa.	Pa. Agr. Exp. Sta.		x	x				
New Brunswick, N.J.	N.J. Agr. Exp. Sta.			x				
Columbia, Pa.	D. L. Shellenberger				x	x		
Newark, Del.	Del. 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		x
Blacksburg, Va.	Va. Agr. Exp. Sta.				x			
Cortland, Ohio	Trumbull Co. Exp. Farm	x						
Holgate, Ohio	N.W. Br. Ohio Agr. Exp. Sta.		x	x				
Columbus, Ohio	Ohio State University	x	x	x	x			
Deerfield, Mich.	Mich. Agr. Exp. Sta.	x	x	x				
Walkerton, Ind.	Elburt Place		x					
Bluffton, Ind.	Gerald Bayless			x				
Lafayette, Ind.	Purdue Agr. Exp. Sta.			x	x		x	
Greenfield, Ind.	Benjamin Roney			x	x			
Worthington, Ind.	Frederic Sloan			x	x	x	x	x
Evansville, Ind.	Bernard Wagner					x		x
Spooner, Wis.	Spooner Br., Wis. A.E.S.	x						
Eau Claire, Wis.	Eau Claire County Farm	x	x					
Madison, Wis.	Wis. Agr. Exp. Sta.		x	x				
Compton, Ill.	Clarence Ackland		x	x				
Dwight, Ill.	Frank Roeder			x	x			
Urbana, Ill.	Ill. Agr. Exp. Sta.			x	x	x	x	
Clayton, Ill.	Russell S. Davis				x	x		
Stonington, Ill.	Frank Garwood & Sons				x	x		
Freeburg, Ill.	Loren Wilderman				x	x		x
Eldorado, Ill.	Cyril Wagner				x			
Morris, Minn.	Branch, Minn. Agr. Exp. Sta.	x						
St. Paul, Minn.	Minn. Agr. Exp. Sta.	x	x					
Worthington, Minn.	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. Assn.		x	x				
Marcus, Iowa	John Sand			x				
Hudson, Iowa	Strayer Seed Farms			x				
Ames, Iowa	Iowa Agr. Exp. Sta.			x	x			
Ottumwa, Iowa	A. E. Newquist				x			
Norborne, Mo.	Marvin Moentmann				x	x		
Laddonia, Mo.	Carver Brown			x	x	x		
Columbia, Mo.	Mo. Agr. Exp. Sta.				x	x	x	x
Fargo, N. D.	N. D. Agr. Exp. Sta.	x						
Rosholt, S. D.	Irvin Voss	x						
Brookings, S. D.	S. D. Agr. Exp. Sta.		x					
Centerville, S. D.	Albert Paulson			x				
Wakefield, Nebr.	Gordon Nurenberger			x				
Lincoln, Nebr.	Nebr. Agr. Exp. Sta.			x	x			
Manhattan, Kans.	Kans. Agr. Exp. Sta.				x	x		x
Moses Lake, Wash.	Irrigation Exp. Sta.	x						
Corvallis, Ore.	Ore. Agr. Exp. Sta.	x						

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

METHODS

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

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

Chemical composition is determined for each strain at each location in Group 0, Group I, the Preliminary Groups, and for some locations in Groups II, III, and IV. Chemical composition is determined for the remaining locations in Groups II, III, and IV on composite samples prepared by combining equal weights of seed from each location. The location composites are prepared by combining equal weights of seed of each of the strains in a Group Test at an individual location. Percentage composition of the seed is expressed on a dry basis (moisture free). Seed 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	3 - Fair	5 - Very poor
2 - Good	4 - Poor	

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

Calculating Means. In most cases where the lodging and seed quality notes are 1, indicating no difference between strains at a location, these locations are not included in the mean.

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

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

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

UNIFORM TEST, GROUP O

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

Strain	Source or Originating Agency	Origin
Capital	Central Exp. Farm, Ottawa	Sel. from Strain 171 x A.K.(Harrow)
Flambeau	Wis. Agr. Exp. Sta.	Sel. from Intr. from Russia
Hokien	Imperial Seed Co., Clear Lake, Iowa	Sel. from Capital
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Pridesoy 57	Twin City Seed Co., Minneapolis, Minn.	Sel. from Pridesoy
M8	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
M9	Minn. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
O-17	Central Exp. Farm, Ottawa	Sel. from Pagoda
O-200	Central Exp. Farm, Ottawa	Sel. from Manchu
O-255	Central Exp. Farm, Ottawa	Sel. from Strain 171 x A.K.(Harrow)
W4-2115	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5-2260	Wis. A.E.S. & U.S.R.S.L.	Sel. from Ontario x Richland
W6S-246	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Pagoda
W6S-292	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Seneca
W6S-341	Wis. A.E.S. & U.S.R.S.L.	Sel. from Cayuga x Kabott
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

Group O results were reported from thirteen locations in 1950 (Table 2). As usually is the case, there were more failures and the coefficients of variability averaged higher than in the later groups. Due to poor stands, the yields at Rosholt are not considered very reliable and have not been included in the means. The maturity of Mandarin averaged the same as the three-year mean, 1946-48, and eleven days later than in 1949. Oil content of the three varieties in the 1946-50 mean (Table 10) averaged 1.3% lower in 1950.

The strains in Group O tend to show a bi-modal distribution for maturity (Table 1), clustered around Mandarin and Flambeau. Of the nine new strains, W6S-292, which was high in the Preliminary Group O in 1949, has the best overall record. This strain yielded four bushels more than Mandarin, was two days earlier, slightly taller, and had .9% more oil. O-200 yielded slightly more than Capital, but lodged badly and was not very high in oil content. Hokien is a selection from Capital but does not seem to be superior to Capital. W8S-1460 is between Mandarin and Flambeau in maturity and looks promising. It averaged a bushel more than Mandarin, was six days earlier, and had one percent more oil. W6S-246 and W4-2115 were several days later than Mandarin. W4-2115 had a good oil content but W6S-246 was low in oil. W8S-1200 and W8S-1019 were similar to Flambeau in yield and maturity but they stood up much better. W8S-1200 also was one percent higher in oil content. O-17 is earlier than Flambeau and lower in yield. It is difficult to evaluate material of this maturity.

Nine strains have been tested for two years in Uniform Group O. These data are summarized in Tables 8 and 9. M9 and M8 have averaged about the same, but in 1949 M8 yielded 1.5 bushels more than M9, and in 1950 M9 yielded 2 bushels more than M8. M9 was slightly higher in oil content each year. These two strains of Mandarin maturity are higher yielding, taller, and have a higher oil content than Mandarin. O-255 is somewhat taller than Mandarin but is just about equal to Mandarin in other respects. W5-2260 was of the same maturity as Mandarin in the 1948 and 1949 Tests but averaged over five days later in 1950. This strain also has been quite variable in yield. In the Preliminary test in 1948 it ranked third, one bushel less than Mandarin; in 1949 it yielded the same as Mandarin; and in 1950 it yielded four bushels less than Mandarin, and next to the lowest yield in the test. It probably should not be continued. W6S-341 is slightly earlier than Flambeau, lower yielding, but stands up better. It has been consistent in the three years it has been tested. It probably is not sufficiently earlier than Flambeau to justify continuing it.

Capital, Mandarin (Ottawa), and Flambeau have been in the Group O tests for five years. Capital has been slightly higher in yield, taller, and has had a higher oil content. Its only serious drawback is its susceptibility to lodging. Flambeau has yielded very well when it is considered that it is at least ten days earlier than Mandarin.

Table 1. Summary of agronomic and chemical data for the strains in the Uniform Test, Group O, 1950.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	11	9	9	12	12	11	11	11	11
W6S-292	30.6	-2.1	2.1	31	1.9	15.8	41.3	19.1	135.5
M9	29.5	+0.8	1.7	31	2.1	16.3	42.0	19.6	135.2
O-200	29.1	-1.6	2.5	33	1.4	17.3	42.1	18.6	136.2
Capital	28.0	-0.9	2.1	32	2.6	13.9	42.3	18.9	134.6
Hokien	28.0	-0.2	2.2	33	2.6	14.3	42.0	19.0	134.8
W8S-1460	27.6	-6.0	1.6	29	2.1	16.0	41.5	19.2	131.1
M8	27.5	+1.3	1.5	31	2.1	16.0	40.5	19.2	135.6
W6S-246	27.2	+2.9	1.5	34	2.0	16.4	42.3	18.2	136.4
W4-2115	26.7	+2.4	1.9	33	2.3	15.3	41.7	19.4	136.0
Mandarin (Ottawa)	26.5	0	1.5	29	1.9	19.3	43.6	18.2	131.4
W8S-1200	26.2	-11.8	1.4	28	2.4	15.7	40.4	19.2	132.1
W8S-1019	26.0	-12.1	1.6	30	2.0	17.1	43.7	18.1	132.9
Flambeau	25.9	-11.4	2.5	29	2.2	15.1	42.9	18.0	133.7
Pridesoy 57	25.3	-4.1	1.2	27	2.0	16.2	44.5	17.8	133.5
O-255	24.6	+0.7	1.5	30	2.4	13.9	42.1	18.2	136.2
W6S-341	23.2	-13.8	1.3	26	2.0	15.7	42.7	17.9	132.8
W5-2260	22.3	+5.4	1.8	29	2.8	18.1	40.6	18.4	132.4
O-17	22.2	-16.0	1.1	25	2.2	17.0	41.7	18.6	129.3
Mean	26.5		1.7	30	2.2	16.1	42.2	18.6	133.9

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

Table 2. Summary of yield in bushels per acre for the strains in the Uniform Test, Group 0, 1950.

Strain	Mean of 11 Tests[1]	Ottawa Ontario	Guelph Ontario	Cortland Ohio	Columbus Ohio	Deerfield Mich.	Spooner Wis.
W6S-292	30.6	41.7	30.1	21.9	28.9	35.4	25.9
M9	29.5	45.4	25.2	22.0	27.1	31.7	21.4
0-200	29.1	46.0	27.3	20.4	25.3	30.3	24.1
Capital	28.0	44.8	23.9	20.3	25.4	30.6	16.7
Hokien	28.0	40.5	23.5	19.6	24.7	29.3	16.6
W8S-1460	27.6	41.2	21.6	19.0	23.9	30.8	22.9
M8	27.5	46.4	27.4	19.1	24.7	29.6	21.6
W6S-246	27.2	40.6	25.3	20.4	28.2	32.9	18.4
W4-2115	26.7	39.5	22.9	21.1	25.6	34.0	19.7
Mandarin (Ottawa)	26.5	36.4	25.5	18.7	24.6	34.4	18.3
W8S-1200	26.2	31.6	23.4	17.8	23.5	28.3	22.6
W8S-1019	26.0	36.1	27.6	16.3	23.9	26.2	25.3
Flambeau	25.9	38.1	24.8	17.6	20.5	25.8	23.3
Pridesoy 57	25.3	33.7	24.4	17.5	21.2	27.5	18.1
0-255	24.6	34.2	20.4	16.6	25.6	22.9	18.4
W6S-341	23.2	29.8	26.1	17.8	21.5	17.8	22.0
W5-2260	22.3	31.9	13.8	17.0	20.1	26.9	10.7
0-17	22.2	33.6	20.0	15.9	18.3	23.8	21.6
Mean	26.5	38.4	24.1	18.9	24.1	28.8	20.4
Coef. of Var. (%)		10.4	11.5	--	--	9.5	--
Bu. Nec. for Sig. (5%)		5.6	3.9	--	--	3.9	--

[1]Spooner and Rosholt not included in the mean.

Table 2. (Continued)

Strain	Eau Claire Wis.	Morris Minn.	St. Paul Minn.	Fargo N. D.	Rosholt S. D.	Moses Lake Wash.	Corvallis Oregon
W6S-292	28.5	26.4	28.9	25.7	15.6	38.4	30.4
M9	31.7	24.9	31.3	16.0	14.4	38.5	31.2
O-200	24.7	28.4	25.8	28.1	15.9	34.7	29.3
Capital	24.8	28.5	29.1	20.3	18.0	30.2	30.4
Hokien	24.8	27.5	29.6	19.5	16.3	35.2	34.0
W8S-1460	24.1	28.1	28.9	24.3	17.0	38.6	22.8
M8	24.7	25.0	28.0	20.2	17.6	28.4	29.0
W6S-246	22.5	19.9	27.4	20.3	13.0	34.3	26.9
W4-2115	24.5	24.7	26.6	19.4	12.8	27.7	28.1
Mandarin (Ottawa)	19.8	21.9	24.9	24.7	14.3	32.0	28.5
W8S-1200	22.8	26.7	27.3	24.5	13.1	41.4	20.8
W8S-1019	23.1	24.9	30.8	19.3	12.4	37.9	19.9
Flambeau	23.2	27.7	24.9	20.9	15.6	35.8	25.5
Pridesoy 57	20.6	22.0	21.4	24.2	15.9	41.1	24.2
O-255	16.8	24.9	24.0	22.7	15.3	33.6	28.4
W6S-341	23.9	21.5	24.7	22.8	--	29.5	19.9
W5-2260	14.1	23.9	19.3	21.1	9.1	26.6	29.3
O-17	20.8	17.4	22.1	16.7	10.0	38.1	17.6
Mean	23.1	24.7	26.4	21.7	14.5	34.6	26.5
Coef. of Var. (%)	17.8	10.1	13.1	--	--	15.0	--
Bu. Nec. for Sig. (5%)	5.8	3.5	4.9	--	--	4.3	--

Table 3. Summary of yield rank of the strains in the Uniform Test, Group 0, 1950.

Strain	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Colum-bus Ohio	Deer-field Mich.	Spooner Wis.
W6S-292	5	1	2	1	1	1
M9	3	8	1	3	5	10
0-200	2	4	4	7	8	3
Capital	4	11	6	6	7	16
Hokien	8	12	7	8	10	17
W8S-1460	6	15	9	11	6	5
M8	1	3	8	8	9	8
W6S-246	7	7	4	2	4	12
W4-2115	9	14	3	4	3	11
Mandarin (Ottawa)	11	6	10	10	2	14
W8S-1200	17	13	12	13	11	6
W8S-1013	12	2	17	11	14	2
Flambeau	10	9	14	16	15	4
Pridesoy 57	14	10	15	15	12	15
0-255	13	16	16	4	17	12
W6S-341	18	5	12	14	18	7
W5-2260	16	18	11	17	13	18
0-17	15	17	18	18	16	8

Table 3. (Continued)

Strain	Eau Claire Wis.	Morris Minn.	St. Paul Minn.	Fargo N. D.	Rosholt S. D.	Moses Lake Wash.	Corvallis Oregon
W6S-292	2	7	5	2	7	5	3
M9	1	9	1	18	10	4	2
O-200	5	2	11	1	5	10	5
Capital	3	1	4	11	1	14	3
Hokien	3	5	3	14	4	9	1
W8S-1460	8	3	5	5	3	3	14
M8	5	8	7	13	2	16	7
W6S-246	13	17	8	11	13	11	11
W4-2115	7	12	10	15	14	17	10
Mandarin (Ottawa)	16	15	12	3	11	13	8
W8S-1200	12	6	9	4	12	1	15
W8S-1019	11	9	2	16	15	7	16
Flambeau	10	4	12	10	7	8	12
Pridesoy 57	14	14	17	6	5	2	13
O-255	17	9	15	8	9	12	9
W6S-341	9	16	14	7	--	15	16
W5-2260	18	13	18	9	17	18	5
O-17	14	18	16	17	16	6	18

Table 4. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), for the strains in the Uniform Test, Group 0, 1950.

Strain	Mean of 9 Tests[1]	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Spooner Wis.
W6S-292	- 2.1	- 3	- 3	- 4	- 7
M9	+ 0.8	- 3	+ 1	+ 3	+ 1
0-200	- 1.6	- 1	+ 1	- 1	- 2
Capital	- 0.9	- 6	0	+ 3	+ 5
Hokien	- 0.2	- 3	- 1	+ 4	+ 5
W8S-1460	- 6.0	- 7	- 3	- 7	-10
M8	+ 1.3	- 6	- 2	+ 4	+ 1
W6S-246	+ 2.9	+ 3	+ 1	+ 7	+ 5
W4-2115	+ 2.4	- 1	+ 2	+ 5	+ 1
Mandarin (Ottawa)	0	0	0	0	0
W8S-1200	-11.8	-12	-20	-13	-15
W8S-1019	-12.1	-14	-14	-13	-20
Flambeau	-11.4	-11	-17	-15	-15
Pridesoy 57	- 4.1	- 4	- 1	- 6	-11
0-255	+ 0.7	- 1	0	+ 1	0
W6S-341	-13.8	-13	-21	-15	-21
W5-2260	+ 5.4	+ 6	+ 4	+14	0
0-17	-16.0	-16	-23	-19	-23
Date planted		5/20	5/22	5/30	5/29
Mandarin (Ottawa) matured		10/5	10/14	9/20	10/3
Days to mature	125	138	145	113	127

[1]Rosholt not included in the mean.

Table 4. (Continued)

Strain	Morris Minn.	St. Paul Minn.	Fargo N. D.	Rosholt S. D.	Moses Lake Wash.	Corvallis Oregon
W6S-292	0	- 4	+ 6	+ 1	0	- 4
M9	0	- 3	+10	- 1	- 2	0
O-20C	- 5	- 2	+ 3	- 1	- 5	- 2
Capital	+ 1	- 3	+ 5	- 3	- 8	- 5
Hokien	- 2	- 2	+ 3	- 2	0	- 6
W8S-1460	- 4	- 8	- 3	0	- 5	- 7
M8	+ 3	- 3	+10	+ 2	+ 4	+ 1
W6S-246	0	0	+ 7	- 2	- 2	+ 5
W4-2115	+ 2	0	+ 6	- 2	+ 4	+ 3
Mandarin (Ottawa)	0	0	0	0	0	0
W8S-1200	- 8	-14	- 5	- 5	- 5	-14
W8S-1019	- 6	-16	- 8	- 4	- 5	-13
Flambeau	- 4	-16	- 5	- 4	- 5	-15
Pridesoy 57	- 2	0	- 2	0	- 5	- 6
C-255	+ 2	+ 1	+ 5	+ 2	0	- 2
W6S-341	- 9	-16	- 9	- 1	- 5	-15
W5-2260	+ 3	+ 5	+ 6	0	+ 4	+ 7
O-17	- 9	-22	-10	+ 2	-10	-12
Date planted	6/5	5/25	6/9	6/6	5/15	5/31
Mandarin (Ottawa) matured	9/24	9/26	9/27	9/25	9/20	10/7
Days to mature	111	124	110	111	128	129

Table 5. Summary of lodging data for the strains in the Uniform Test, Group O, 1950.

Strain	Mean of 9 Tests[1]	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Deer-field Mich.	Spooner Wis.
W6S-292	2.1	1.4	2.0	1.0	2.0	1.5
M9	1.7	1.2	1.5	1.2	2.0	1.0
O-200	2.5	2.5	1.6	1.0	3.0	1.0
Capital	2.1	1.3	1.3	2.0	3.0	1.0
Hokien	2.2	1.9	1.3	1.5	2.0	1.0
W8S-1460	1.6	1.3	1.0	1.0	1.0	1.0
M8	1.5	1.0	1.0	1.0	1.0	1.0
W6S-246	1.5	1.2	1.1	1.0	1.0	1.0
W4-2115	1.9	1.1	1.5	1.5	3.0	1.0
Mandarin (Ottawa)	1.5	1.0	1.1	1.0	1.0	1.0
W8S-1200	1.4	1.0	1.0	1.0	3.0	1.0
W8S-1019	1.6	1.7	1.0	1.0	1.0	1.0
Flambeau	2.5	1.8	2.3	1.5	2.0	1.8
Pridesoy 57	1.2	1.0	1.1	1.0	1.0	1.0
O-255	1.5	1.0	1.1	1.0	1.0	1.0
W6S-341	1.3	1.1	1.0	1.2	1.0	1.0
W5-2260	1.8	1.0	1.1	1.5	2.0	1.0
O-17	1.1	1.0	1.0	1.0	1.0	1.0
Mean	1.7	1.3	1.3	1.2	1.7	1.1

[1]Fargo and Rosholt not included in the mean.

Table 5. (Continued)

Strain	Eau Claire Wis.	Morris Minn	St. Paul Minn.	Fargo N. D.	Rosholt S. D.	Moses Lake Wash.
W6S-292	1.5	1.5	2.6	1.0	1.0	5.0
M9	2.2	1.5	2.4	1.0	1.0	2.0
O-200	2.0	1.5	4.6	1.0	1.0	5.0
Capital	2.5	1.5	2.9	1.0	1.0	3.0
Hokien	2.7	1.5	2.9	1.0	1.0	5.0
W8S-1460	1.7	1.5	2.2	1.0	1.0	4.0
M8	1.7	1.5	2.0	1.0	1.0	3.0
W6S-246	1.5	1.5	2.2	1.0	1.0	3.0
W4-2115	1.5	1.5	2.2	1.0	1.0	4.0
Mandarin (Ottawa)	1.7	1.5	1.8	1.0	1.0	3.0
W8S-1200	1.2	1.5	1.9	1.0	1.0	1.0
W8S-1019	1.2	1.5	2.0	1.0	1.0	4.0
Flambeau	2.7	1.5	4.0	1.0	1.0	5.0
Pridesoy 57	1.5	1.5	1.9	1.0	1.0	1.0
O-255	1.7	1.5	2.4	1.0	1.0	3.0
W6S-341	1.2	1.5	1.8	1.0	1.0	2.0
W5-2260	1.7	1.5	2.2	1.0	1.0	4.0
O-17	1.2	1.5	1.4	1.0	1.0	1.0
Mean	1.7	1.5	2.4	1.0	1.0	3.2

Table 6. Summary of height data for the strains in the Uniform Test, Group O, 1950.

Strain	Mean of 12 Tests[1]	Ottawa Ontario	Guelph Ontario	Cort-land Ohio	Colum-bus Ohio	Deer-field Mich.	Spooner Wis.
W6S-292	31	35	34	20	28	34	32
M9	31	37	35	22	30	33	33
O-200	33	43	36	24	29	38	33
Capital	32	38	37	22	29	36	31
Hokien	33	40	36	22	28	36	32
W8S-1460	29	32	34	18	25	30	29
M8	31	37	34	20	29	33	30
W6S-246	34	41	36	22	31	35	32
W4-2115	33	38	35	20	30	36	32
Mandarin (Ottawa)	29	34	32	21	27	33	28
W8S-1200	28	32	33	20	23	31	29
W8S-1019	30	36	34	20	27	37	32
Flambeau	29	34	31	20	24	32	30
Pridesoy 57	27	32	31	18	26	29	27
O-255	30	37	35	19	26	34	30
W6S-341	26	31	26	21	24	31	30
W5-2260	29	34	31	20	24	30	30
O-17	25	29	27	19	26	28	27
Mean	30	36	33	20	27	33	30

[1]Rosholt not included in the mean.

Table 6. (Continued)

Strain	Eau Claire Wis.	Morris Minn.	St. Paul Minn.	Fargo N. D.	Rosholt S. D.	Moses Lake Wash.	Corvallis Oregon
W6S-292	30	24	34	21	28	41	37
M9	33	25	34	21	27	42	32
0-200	32	25	35	22	29	47	35
Capital	34	26	36	19	27	44	36
Horien	33	26	38	18	28	48	40
W8S-1460	27	24	33	19	26	41	31
M8	30	25	36	21	28	40	35
W6S-246	34	26	34	24	30	49	38
W4-2115	34	24	35	21	28	47	38
Mandarin (Ottawa)	28	22	34	18	26	38	29
W8S-1200	28	24	33	19	25	37	30
W8S-1019	28	26	36	18	26	41	26
Flambeau	28	25	31	16	27	47	27
Pridesoy 57	26	22	31	17	24	38	27
0-255	31	24	36	18	24	38	34
W6S-341	27	18	30	18	20	36	24
W5-2260	28	24	32	18	25	41	32
0-17	25	16	29	17	21	37	25
Mean	30	24	34	19	26	42	32

Table 7. Summary of percentage oil for the strains in the Uniform Test, Group 0, 1950.

Strain	Mean of 11 Tests[1]	Ottawa Ontario	Guelph Ontario	Cortland Ohio	Columbus Ohio	Spooner Wis.
W6S-292	19.1	19.8	16.8	20.7	20.5	17.1
M9	19.6	20.2	18.9	21.0	20.9	17.5
0-200	18.6	18.8	18.3	20.0	19.9	17.1
Capital	18.9	20.0	16.6	19.7	20.0	16.6
Hokien	19.0	19.8	17.7	20.1	20.1	16.9
W8S-1460	19.2	19.2	18.2	19.9	20.8	17.2
M8	19.2	19.6	16.9	20.4	20.7	17.4
W6S-246	18.2	18.1	18.8	18.9	19.3	16.6
W4-2115	19.4	20.1	18.2	20.5	20.9	17.9
Mandarin (Ottawa)	18.2	18.2	17.7	19.0	18.9	16.4
W8S-1200	19.2	19.9	20.0	19.4	20.7	17.2
W8S-1019	18.1	17.9	17.9	18.2	19.1	16.4
Flambeau	18.0	18.4	17.7	18.6	19.3	16.2
Pridesoy 57	17.8	18.3	17.7	18.5	18.1	16.5
0-255	18.2	18.1	17.2	19.7	19.5	16.5
W6S-341	17.9	18.3	17.4	18.7	18.9	16.4
W5-2260	18.4	19.6	18.0	19.3	19.1	17.2
0-17	18.6	18.0	18.6	19.4	19.3	16.6
Mean	18.6	19.0	17.9	19.6	19.8	16.9

[1]Rosholt not included in the mean.

Table 7. (Continued)

Strain	Eau Claire Wis.	Morris Minn.	St. Paul Minn.	Fargo N. D.	Rosholt S. D.	Moses Lake Wash.	Corvallis Oregon
W6S-292	18.9	17.6	19.7	18.9	19.3	19.6	20.7
M9	19.4	18.5	20.7	18.3	19.6	21.2	19.4
O-200	18.7	18.2	18.6	17.3	18.5	19.2	18.6
Capital	18.7	17.7	19.9	19.0	18.5	20.7	19.5
Hokien	18.7	17.8	19.8	18.6	18.6	20.6	19.4
W8S-1460	19.2	17.9	19.6	18.6	18.5	20.2	20.0
M8	19.2	18.5	20.4	18.1	19.7	20.6	19.9
W6S-246	17.6	16.8	18.2	17.8	18.0	19.8	18.3
W4-2115	19.1	18.1	20.0	18.9	19.1	19.9	19.6
Mandarin (Ottawa)	18.1	17.8	17.4	18.6	18.1	20.6	17.8
W8S-1200	19.2	17.5	19.0	18.1	18.0	19.8	20.0
W8S-1019	17.9	17.2	18.3	19.0	18.3	18.6	18.6
Flambeau	18.3	17.1	18.0	17.0	16.7	19.2	18.6
Pridesoy 57	17.6	17.4	17.3	17.9	17.7	19.4	17.7
O-255	17.8	17.2	18.0	17.9	18.2	19.5	19.2
W6S-341	18.1	17.1	17.9	17.8	--	17.8	18.6
W5-2260	18.3	17.4	18.0	17.7	18.6	19.4	17.9
O-17	19.4	18.9	18.0	18.9	18.4	19.7	17.8
Mean	18.6	17.7	18.8	18.2	18.5	19.8	19.0

Table 8. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group 0, 1949-50.

Strain	Mean Yield Bu/A.	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	26	19	19	24	22	26	26	26	26
M9	28.8	+ 0.9	1.7	31	2.2	16.5	40.8	20.7	133.2
Capital	28.7	+ 0.2	2.4	33	2.2	12.9	40.7	20.0	133.1
M8	28.5	+ 0.5	1.5	31	1.8	15.7	39.7	20.3	133.7
Mandarin (Ottawa)	27.5	0	1.4	29	1.8	18.2	42.3	19.3	129.9
0-255	27.0	+ 0.2	1.5	31	2.1	13.4	40.7	19.3	133.8
Pridesoy 57	26.8	- 3.5	1.3	28	1.9	15.5	43.2	18.8	131.9
W5-2260	25.4	+ 2.9	1.9	29	2.4	17.5	39.5	19.5	130.3
Flambeau	25.4	-10.2	2.4	29	2.2	15.2	41.8	19.1	131.3
W6S-341	22.9	-13.1	1.4	27	2.0	15.8	41.7	18.8	130.4
Mean	26.8		1.7	30	2.1	15.6	41.2	19.5	132.0

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

Table 9. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group 0, 1949-50.

Strain	Mean of 26 Tests	Ottawa Ontario	Guelph Ontario	Cortland Ohio	Columbus Ohio	Spooner Wis.
M9	28.8	32.3	31.6	26.5	32.5	25.6
Capital	28.7	34.3	29.7	25.0	30.7	23.9
M8	28.5	33.3	32.4	25.3	32.2	25.3
Mandarin (Ottawa)	27.5	29.8	28.8	24.2	31.0	24.8
0-255	27.0	28.9	26.9	21.1	31.6	26.0
Pridesoy 57	26.8	27.7	28.0	23.5	28.1	25.3
W5-2260	25.4	26.4	24.2	22.8	28.5	20.4
Flambeau	25.4	30.5	27.8	20.2	24.1	26.5
W6S-341	22.9	23.9	27.5	19.8	26.8	25.7
Mean	26.8	29.7	28.5	23.2	29.5	24.8
			Yield Rank			
M9		3	2	1	1	4
Capital		1	3	3	5	8
M8		2	1	2	2	5
Mandarin (Ottawa)		5	4	4	4	7
0-255		6	8	7	3	2
Pridesoy 57		7	5	5	7	5
W5-2260		8	9	6	6	9
Flambeau		4	6	8	9	1
W6S-341		9	7	9	8	3

Table 9. (Continued)

Strain	Eau Claire Wis.	Morris Minn.	St. Paul Minn.	Fargo N. D.	Rosholt S. D.	Moses Lake Wash.	Corvallis Oregon
M9	29.1	22.3	40.8	21.5	13.9	37.1	26.2
Capital	27.7	26.9	36.9	25.9	17.8	32.2	26.9
M8	27.5	23.5	39.4	23.9	15.5	34.9	24.3
Mandarin (Ottawa)	23.5	21.7	38.0	26.3	14.3	35.9	23.7
O-255	22.8	24.5	35.5	27.7	15.8	34.8	25.0
Pridesoy 57	24.7	22.5	33.4	26.6	15.9	37.8	22.9
W5-2260	20.8	22.3	36.4	25.3	13.3	30.1	25.2
Flambeau	24.4	24.6	32.7	23.1	14.2	31.5	23.8
W6S-341	22.1	19.3	29.2	20.0	--	28.0	19.5
Mean	24.7	23.1	35.8	24.5	15.1	33.6	24.2
	Yield Rank						
M9	1	6	1	8	7	2	2
Capital	2	1	4	4	1	6	1
M8	3	4	2	6	4	4	5
Mandarin (Ottawa)	6	8	3	3	5	3	7
O-255	7	3	6	1	3	5	4
Pridesoy 57	4	5	7	2	2	1	8
W5-2260	9	6	5	5	8	8	3
Flambeau	5	2	8	7	6	7	6
W6S-341	8	9	9	9	-	9	9

Table 10. Five-year summary of agronomic and chemical data for the strains in the Uniform Test, Group 0, 1946-50.

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	51	35	32	46	38	51	52	52	52
Capital	27.0	- 1.1	2.5	31	2.1	12.8	40.4	20.3	133.4
Mandarin (Ottawa)	25.9	0	1.3	27	2.1	17.9	42.2	19.5	130.7
Flambeau	23.7	-10.6	2.3	28	2.0	15.3	40.7	19.4	131.5
Mean	25.5		2.0	29	2.1	15.3	41.1	19.7	131.9

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

Table 11. Five-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group 0, 1946-50

Strain	Mean of 51 Tests	Ottawa Ont.	Guelph Ont.	Ithaca N.Y.	Cortland Ohio	Columbus Ohio	Spooner Wis.	Eau Claire Wis.
Years Tested		1946-1950	1949-1950	1946-1948	1949-1950	1949-1950	1946-1950	1947-1950
Capital	27.0	36.0	29.7	28.3	25.0	30.7	22.9	25.9
Mandarin (Ottawa)	25.9	31.0	28.8	27.1	24.2	31.0	23.7	24.2
Flambeau	23.7	30.2	27.8	21.4	20.2	24.1	22.5	23.4
Mean	25.5	32.4	28.8	25.6	23.1	28.6	23.0	24.5
		Yield Rank						
Capital		1	1	1	1	2	2	1
Mandarin (Ottawa)		2	2	2	2	1	1	2
Flambeau		3	3	3	3	3	3	3

Table 11. (Continued)

Strain	Morris Minn.	St. Paul Minn.	Park River N. D.	Fargo N. D.	Roshclt S. D.	Moses Lake Wash.	Corvallis Oregon
Years Tested	1946-1950	1946-47 1949-50	1946-47 1949	1946-1950	1947-1950	1949-1950	1946-1950
Capital	24.6	27.2	20.5	24.3	17.8	32.2	25.4
Mandarin (Ottawa)	22.3	28.3	18.8	24.8	14.4	35.9	23.6
Flambeau	24.2	23.4	20.1	22.9	14.0	31.5	21.3
Mean	23.7	26.3	19.8	24.0	15.3	33.2	23.4
	Yield Rank						
Capital	1	2	1	2	1	2	1
Mandarin (Ottawa)	3	1	3	1	2	1	2
Flambeau	2	3	2	3	3	3	3

UNIFORM TEST, GROUP I

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

Strain	Source or Originating Agency	Origin
Blackhawk	Iowa A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
Earlyana	Purdue Agr. Exp. Sta.	Sel. from a natural hybrid
Habaro	U. S. Dept. of Agriculture	Sel. from P. I. 20405
Harly	Dom. Exp. Farm, Harrow, Ont.	Sel. from Mandarin x A.K. (Harrow)
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Monroe	Ohio A.E.S. & U.S.R.S.L.	Sel. from Mukden x Mandarin
A6K-549	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
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.)
W5-3346	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W5-3633	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x Rich.)
W8S-1025	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Pagoda
W8S-1035	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Pagoda

Six new strains were entered in the 1950 Group I tests. A6K-1329, A6K-1801, M2, and W5-3346 are from the cross Lincoln x (Lincoln x Richland). W8S-1025 and W8S-1035 are from the cross Lincoln x Pagoda. It is interesting to note that all the experimental entries in this test have Lincoln parentage.

The 1950 data are summarized in Tables 12 to 18. Of the new entries, A6K-1801 has the best average record. This strain also performed well in the 1949 Preliminary Group I. This was the only one of the strains appreciably earlier than Blackhawk, which exceeded Blackhawk in yield. A6K-1329 and W5-3346 were similar to Blackhawk in yield, maturity, lodging resistance, and oil content. M2, similar to Mandarin in maturity, yielded 1.5 bushels more and was outstanding in oil content. W8S-1025 and W8S-1035 averaged about the same as Mandarin in maturity, yield, lodging resistance, and oil content.

Twelve strains have been in the Group I tests for two years (Tables 19 and 20). All of the six experimental entries are from the cross Lincoln x (Lincoln x Richland). None of these differ greatly from Blackhawk in general performance. A6K-549 is slightly higher in yield and slightly taller, but is also two days later. M10 and W5-3633 are higher in oil content. It is evident that if Blackhawk were not available, one of these strains could be used in its place. L6-8275 is almost a week earlier than Blackhawk and less than a bushel below it in yield.

Compared to Monroe, it is two bushels higher in yield, four days earlier, and .7% higher in oil content. It is only two days later than Mandarin, 2.7 bushels higher in yield, and 1% higher in oil. Harly, for an early strain, is outstanding in height and erectness but is low in oil content and yield.

Of the five strains which have been in Group I for six years, Blackhawk has the highest average yield. Blackhawk, Earlyana, and Habaro are similar in maturity. Blackhawk was increased in 1949 and 1950 in seven states. The 1950 production is as follows:

	Approximate production (Bushels)
Michigan	3,000
Indiana	900
Wisconsin	523
Illinois	4,600
Minnesota	1,550
Iowa	6,600
South Dakota	325
	17,498

This increase has averaged about 27 bushels for each bushel planted and should supply enough to plant about 30,000 acres in 1951. In general, distribution will be limited to those areas where Blackhawk is best adapted.

Monroe is three or four days earlier than Blackhawk and has averaged 1.6 bushels lower in yield. At Wooster and Eau Claire, however, Monroe has equalled Blackhawk in yield. Monroe is now in commercial production. Ohio reports 2,600 acres, Minnesota 5,171 acres inspected for certification, and Wisconsin 260 acres certified. Indiana, Illinois, and Iowa each report less than 100 acres.

Table 12. Summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1950.

Strain	Mean Yield Bu./A	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	14	9	13	14	13	14	13	13	13
M-8179	30.2	+6.1	1.6	33	1.7	15.5	40.6	19.9	134.1
ASK-1801	29.8	+4.2	1.9	33	1.7	15.8	40.9	20.0	134.2
M-3633	29.3	+9.6	2.2	33	2.0	16.7	41.1	20.4	136.1
AsK-1329	29.2	+7.6	1.6	35	1.5	16.6	41.8	19.2	136.6
AsK-549	29.1	+10.6	2.0	35	2.2	16.5	41.7	20.0	136.0
M10	29.0	+9.4	1.9	33	1.6	16.3	39.9	20.2	134.8
Blackhawk	28.9	+9.2	1.9	35	1.4	16.0	40.5	19.8	131.0
M-3346	28.6	+10.6	1.8	32	1.6	15.8	41.5	19.4	133.7
M-3190	28.3	+2.8	2.0	34	1.8	16.1	41.6	19.7	134.0
M-8275	28.0	+2.0	1.3	32	1.7	15.4	41.0	19.9	135.3
M2	27.0	+1.1	1.2	30	2.0	16.5	40.3	20.5	134.1
Monroe	27.0	+6.6	1.9	39	1.3	15.2	42.4	18.8	133.5
Harlyana	26.9	+9.9	2.6	38	1.9	16.7	42.7	19.2	134.5
Habaro	26.5	+10.0	2.1	30	1.7	19.8	44.0	17.9	133.6
WSS-1035	25.6	+0.2	1.2	31	2.4	14.7	43.8	18.6	135.2
WSS-1025	25.5	+0.6	1.2	30	1.6	14.8	43.8	18.4	136.7
Mandarin (Ottawa)	25.5	0	1.2	28	1.6	19.4	43.0	18.7	130.4
Early	24.7	+6.7	1.8	40	1.6	15.1	44.0	17.8	134.3
Mean	27.7		1.7	33	1.7	16.3	41.9	19.4	134.3

[1]Days earlier (-) or later (+) than Mandarin (Ottawa).
Mandarin (Ottawa) required 116 days to mature.

Table 13. Summary of yield in bushels per acre for the strains in the Uniform Test, Group I, 1950.

Strain	Mean of 14 Tests	Guelph Ontario	State College Pa.	Hol-gate Ohio	Colum-bus Ohio	Deer-field Mich.	Walker-ton Ind.
L6-8179	30.2	19.6	31.4	31.1	30.1	30.6	34.9
A6K-1801	29.8	22.6	30.1	34.2	29.6	32.9	31.8
W5-3633	29.3	16.9	32.4	34.5	30.0	27.9	37.3
A6K-1329	29.2	20.9	31.2	32.5	29.2	29.5	36.0
A6K-549	29.1	16.8	31.1	32.5	31.7	27.5	37.5
M10	29.0	19.5	32.2	34.6	26.8	28.4	36.6
Blackhawk	28.9	19.7	32.5	32.1	27.3	26.8	29.5
W5-3346	28.6	13.4	31.7	34.8	28.0	28.1	35.1
W4-3190	28.3	19.5	29.3	30.4	27.4	28.2	34.1
L6-8275	28.0	20.8	27.4	30.1	28.6	27.0	29.6
M2	27.0	24.6	24.1	29.0	28.0	25.9	24.4
Monroe	27.0	18.7	31.1	28.2	28.8	25.6	35.7
Earlyana	26.9	15.1	29.7	30.2	25.4	23.5	37.0
Habaro	26.5	21.2	30.1	32.0	25.7	23.5	38.8
W8S-1035	25.6	25.8	26.7	27.9	27.2	30.4	23.4
W8S-1025	25.5	22.9	24.9	26.5	27.1	25.2	24.0
Mandarin (Ottawa)	25.5	22.5	27.2	29.0	26.2	24.9	27.5
Harly	24.7	12.9	29.0	31.3	26.1	24.2	30.8
Mean	27.7	19.6	29.6	31.2	28.0	27.2	32.4
Coef. of Var. (%)		12.6	7.6	--	--	13.7	11.3
Bu. Nec. for Sig. (5%)		3.5	2.7	--	--	5.3	5.2

Table 13. (Continued)

Strain	Eau-Claire Wis.	Madi-son Wis.	Comp-ton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kana-wha Iowa	Brook-ings S. D.
L6-8179	25.9	36.7	44.3	24.5	30.9	28.3	33.9	19.9
A6K-1801	24.7	35.8	39.7	23.4	30.1	25.5	35.9	20.9
W5-3633	21.3	35.8	44.2	21.2	28.7	25.9	33.8	20.4
A6K-1329	24.8	31.6	41.1	23.4	30.1	25.2	34.0	19.3
A6K-549	22.2	33.9	41.0	20.5	31.4	26.8	35.8	19.3
M10	23.3	32.2	44.7	21.4	25.7	26.3	33.6	20.6
Blackhawk	22.1	32.6	43.4	22.6	33.1	26.3	35.0	21.7
W5-3346	23.3	33.0	44.7	18.7	32.5	26.4	33.1	18.0
W4-3190	25.5	31.1	38.3	24.7	29.2	25.2	32.0	21.0
L6-8275	26.1	28.9	39.2	21.3	32.0	24.1	36.2	20.5
M2	26.3	29.0	35.4	23.4	31.0	23.5	31.6	22.1
Monroe	22.0	31.1	37.5	21.9	25.8	22.0	30.1	19.7
Earlyana	19.2	29.0	43.4	18.7	29.8	23.0	33.3	18.6
Habaro	12.4	27.0	39.2	14.8	28.1	26.6	33.2	18.5
W8S-1035	22.3	29.4	30.5	22.6	24.7	22.2	25.9	19.4
W8S-1025	24.3	31.6	30.9	22.8	28.2	22.0	26.8	20.4
Mandarin (Ottawa)	23.1	24.7	33.6	21.2	27.8	19.1	27.9	22.6
Harly	17.1	26.3	38.5	20.4	25.7	20.4	28.2	15.3
Mean	22.6	31.1	39.4	21.5	29.2	24.4	32.2	19.9
Coef. of Var.(%)	12.6	8.2	7.0	9.2	6.6	6.6	6.0	8.9
Bu. Nec. for Sig. (5%)	3.9	3.5	3.9	2.8	2.7	2.3	2.7	2.5

Table 14. Summary of yield rank for the strains in the Uniform Test, Group I, 1950.

Strain	Guelph Ontario	State College Pa.	Holgate Ohio	Columbus Ohio	Deerfield Mich.	Walkerton Ind.	Eau Claire Wis.
I6-8179	10	5	10	2	2	9	3
A6K-1801	4	8	4	4	1	11	6
W5-3633	14	2	3	3	8	3	15
A6K-1329	7	6	5	5	4	6	5
A6K-549	15	7	5	1	9	2	12
M10	11	3	2	14	5	5	8
Blackhawk	9	1	7	11	11	14	13
W5-3346	17	4	1	8	7	8	8
W4-3190	11	10	11	10	6	10	4
I6-8275	8	12	13	7	10	13	2
M2	2	16	14	8	12	16	1
Monroe	13	7	16	6	13	7	14
Earlyana	16	9	12	13	17	4	16
Habaro	6	8	8	17	17	1	18
W8S-1035	1	14	17	12	3	18	11
W8S-1025	3	15	18	13	14	17	7
Mandarin (Ottawa)	5	13	14	15	15	15	10
Harly	18	11	9	16	16	12	17

Table 14. (Continued)

Strain	Madi-son Wis.	Comp-ton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kana-wha Iowa	Brook-ings S. D.
Ia-3178	1	3	2	6	1	6	10
AK-1801	3	2	3	7	5	2	5
W5-3333	2	4	12	11	7	7	8
AK-1329	5	7	3	7	9	5	13
AK-642	4	9	14	4	2	3	13
[illegible]	7	1	10	12	6	5	6
Blackhawk	6	5	7	1	5	4	3
W5-3148	5	1	13	2	4	11	17
[illegible]-3190	10	13	1	10	9	12	4
Ia-3275	16	11	11	3	11	1	7
[illegible]	13	15	6	5	12	13	2
Monroe	10	14	8	15	15	14	11
Earlyana	13	8	16	9	13	9	15
Habaro	16	10	15	13	3	10	16
[illegible]-1036	12	13	7	11	14	15	12
[illegible]-1026	5	17	8	12	16	17	9
Mandarin (Ottawa)	15	16	12	14	13	16	1
Early	17	12	16	16	17	15	13

Table 15. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa) for the strains in the Uniform Test, Group I, 1950.

Strain	Mean of 9 Tests	State College Pa.	Hol-gate Ohio	Walker-ton Ind.	Madi-son Wis.
L6-8179	+ 8.1	+10	+ 8	+ 5	+ 5
A6K-1801	+ 4.2	0	+ 5	+ 4	+ 4
W5-3633	+ 9.6	+10	+20	+ 7	+ 5
A6K-1329	+ 7.6	0	+ 7	+ 8	+ 6
A6K-549	+10.6	+10	+12	+12	+ 8
M10	+ 9.4	+10	+ 9	+10	+ 7
Blackhawk	+ 9.2	+10	+ 8	+ 9	+ 6
W5-3346	+10.6	+ 3	+21	+10	+ 7
W4-3190	+ 2.8	0	0	+ 4	+ 4
L6-8275	+ 2.0	0	0	+ 4	+ 2
M2	+ 1.1	- 5	0	+ 2	+ 2
Monroe	+ 6.6	+10	+ 6	+ 5	+ 4
Earlyana	+ 9.9	+10	+ 8	+ 8	+ 9
Habaro	+10.0	+10	+10	+10	+ 8
W8S-1035	+ 0.2	- 5	0	+ 4	0
W8S-1025	+ 0.8	0	0	+ 2	0
Mandarin (Ottawa)	0	0	0	0	0
Harly	+ 6.7	0	+ 6	+ 5	+ 6
Date planted		6/2	5/31	5/29	5/17
Mand. (Ott.) matured		10/1	9/21	9/24	9/16
Days to mature	118	121	113	118	122

Table 15. (Continued)

Strain	Compton Ill.	St. Paul Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
L6-5179	+11	+ 6	+ 9	+11	+ 8
A6K-1801	+ 7	+ 1	+ 1	+ 8	+ 8
W5-3633	+13	+ 6	+ 8	+12	+ 5
A6K-1329	+13	+ 7	+ 6	+13	+ 8
A6K-549	+14	+ 8	+11	+14	+ 6
M10	+16	+ 8	+ 8	+11	+ 6
Blackhawk	+16	+ 6	+ 9	+12	+ 7
W5-3346	+16	+ 8	+11	+13	+ 6
W4-3190	+ 5	- 1	+ 3	+ 7	+ 3
L6-6275	+ 5	- 2	+ 1	+ 4	+ 4
M2	+ 4	- 4	+ 1	+ 4	+ 6
Monroe	+13	0	+ 7	+10	+ 4
Earlyana	+15	+ 8	+11	+13	+ 7
Habaro	+15	+14	+ 7	+11	+ 5
W8S-1035	+ 3	- 5	+ 1	+ 1	+ 3
W8S-1025	+ 1	- 5	0	+ 1	+ 8
Mandarin (Ottawa)	0	0	0	0	0
Early	+13	+ 8	+ 7	+10	+ 5
Date planted	5/23	5/25	5/24	5/22	6/1
Mandarin (Ott.) matured	9/9	9/28	9/25	9/16	9/20
Days to mature	109	126	124	117	111

Table 16. Summary of lodging data for the strains in the Uniform Test, Group I, 1950.

Strain	Mean of 13 Tests	Guelph Ontario	State College Pa.	Holgate Ohio	Deerfield Mich.	Walkerton Ind.	Eau Claire Wis.
L6-8179	1.6	1.4	1.3	1.0	2.0	1.3	2.2
A6K-1801	1.9	1.8	1.3	1.0	4.0	1.3	1.2
W5-3633	2.2	2.0	2.3	1.0	3.0	1.4	2.2
A6K-1329	1.6	1.3	1.3	1.0	3.0	1.0	1.6
A6K-549	2.0	1.8	1.3	1.3	4.0	1.3	1.9
M10	1.9	1.9	1.5	1.2	3.0	1.0	2.0
Blackhawk	1.9	1.3	1.5	1.0	4.0	1.0	1.7
W5-3346	1.8	1.9	1.5	1.5	2.0	1.0	1.7
W4-3190	2.0	1.6	1.8	1.0	3.0	1.8	1.5
L6-8275	1.3	1.3	1.0	1.0	2.0	1.0	1.0
M2	1.2	1.0	1.0	1.0	1.0	1.0	2.0
Monroe	1.9	1.9	1.5	1.0	2.0	1.3	1.9
Earlyana	2.8	1.8	2.3	2.0	4.0	1.5	2.7
Habaro	2.1	1.4	1.5	1.0	3.0	1.4	2.5
W8S-1035	1.2	1.0	1.0	1.0	1.0	1.0	1.5
W8S-1025	1.2	1.0	1.0	1.0	1.0	1.0	1.2
Mandarin (Ottawa)	1.2	1.0	1.0	1.0	1.0	1.0	1.7
Harly	1.8	2.0	1.3	1.0	2.0	1.0	2.1
Mean	1.7	1.5	1.4	1.1	2.5	1.2	1.8

Table 16. (Continued)

Strain	Madi-son Wis.	Comp-ton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kana-wha Iowa	Brook-ings S. D.
L6-8179	1.7	1.9	1.9	1.6	1.6	2.1	1.2
A6K-1801	2.2	2.0	2.2	2.0	1.9	2.4	1.5
W5-3633	2.7	2.1	2.5	1.9	2.4	3.0	2.6
A6K-1329	1.2	1.5	1.4	1.9	1.5	2.3	1.2
A6K-549	2.1	1.9	1.9	2.2	2.1	2.6	1.2
M10	2.2	2.0	1.7	2.2	1.9	2.4	1.2
Blackhawk	1.9	1.6	1.9	1.8	1.9	2.3	2.8
W5-3346	2.2	2.0	2.0	1.9	2.1	2.6	1.5
W4-3190	2.0	2.0	1.9	2.2	2.4	2.8	2.0
L6-8275	1.0	1.5	1.8	1.5	1.5	1.5	1.2
M2	1.2	1.0	1.5	1.1	1.0	1.4	1.5
Monroe	2.1	2.0	1.6	2.2	2.5	2.9	2.0
Earlyana	3.1	2.9	3.6	3.1	2.9	3.3	3.0
Habaro	1.7	2.3	2.5	2.5	2.5	3.3	2.0
W8S-1035	1.4	1.4	1.4	1.1	1.3	1.1	1.2
W8S-1025	1.4	1.4	1.5	1.0	1.4	1.1	1.2
Mandarin (Ottawa)	1.0	1.0	2.0	1.2	1.0	1.1	1.8
Harly	1.7	1.6	2.6	1.4	2.3	2.1	2.2
Mean	1.8	1.8	2.0	1.8	1.9	2.2	1.7

Table 17. Summary of height data for the strains in the Uniform Test, Group I, 1950.

Strain	Mean of 14 Tests	Guelph Ontario	State College Pa.	Holgate Ohio	Columbus Ohio	Deerfield Mich.	Walkerton Ind.
L6-8179	33	32	29	34	33	37	28
A6K-1801	33	33	29	36	32	36	27
W5-3633	33	32	29	33	34	36	26
A6K-1329	35	35	31	36	34	38	29
A6K-549	35	33	32	37	34	39	31
M10	33	32	29	35	32	36	27
Blackhawk	35	33	32	36	33	39	27
W5-3346	32	32	28	34	33	35	26
W4-3190	34	32	31	36	34	37	28
L6-8275	32	32	27	34	33	36	26
M2	30	32	25	33	30	32	22
Monroe	39	36	37	38	37	41	37
Earlyana	38	35	34	38	37	40	34
Habaro	30	29	25	31	29	33	28
W8S-1035	31	32	25	33	32	34	24
W8S-1025	30	31	26	33	30	33	24
Mandarin (Ottawa)	28	28	26	28	29	31	24
Harly	40	40	35	40	38	44	36
Mean	33	33	29	35	33	37	28

Table 17. (Continued)

Strain	Eau Claire Wis.	Madison Wis.	Compton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
L6-8179	34	33	34	36	32	36	35	29
A6K-1801	34	33	34	35	33	36	36	30
W5-3633	32	32	33	35	34	35	37	29
A6K-1329	35	34	36	36	38	35	39	31
A6K-549	34	35	36	36	36	37	39	32
M10	31	32	35	35	32	35	36	30
Blackhawk	33	33	39	38	35	36	38	33
W5-3346	32	30	33	34	32	33	35	28
W4-3190	34	34	35	35	34	36	37	32
L6-8275	32	31	32	35	34	34	34	30
M2	32	29	29	33	30	32	32	28
Monroe	36	36	42	42	38	40	44	36
Earlyana	35	37	42	41	40	41	44	35
Habaro	29	28	32	35	29	32	35	28
W8S-1035	31	32	30	34	31	31	32	30
W8S-1025	31	30	29	35	30	31	32	28
Mandarin (Ottawa)	28	28	28	32	27	30	30	26
Harly	36	37	43	43	42	42	45	36
Mean	33	32	35	36	34	35	37	31

Table 18. Summary of percentage oil for the strains in the Uniform Test, Group I, 1950.

Strain	Mean of 13 Tests	Guelph Ontario	State College Pa.	Holgate Ohio	Columbus Ohio	Walkerton Ind.	Eau Claire Wis.
L6-8179	19.9	17.7	21.3	21.8	20.6	21.0	19.1
A6K-1801	20.0	18.4	20.7	21.8	20.9	18.8	19.2
W5-3633	20.4	18.2	21.8	22.1	20.9	20.5	20.8
A6K-1329	19.2	17.1	20.5	21.1	20.5	20.8	18.2
A6K-549	20.0	17.9	20.9	21.2	20.5	20.4	19.4
M10	20.2	17.5	21.6	22.1	21.5	21.1	19.1
Blackhawk	19.8	18.6	20.8	21.6	21.1	21.2	17.9
W5-3346	19.4	17.0	20.8	21.5	20.5	20.4	18.8
W4-3190	19.7	17.8	20.7	21.6	20.5	20.9	19.1
L6-8275	19.9	17.8	20.9	21.9	20.6	20.7	19.2
M2	20.5	18.8	21.6	22.2	21.6	21.3	19.4
Monroe	18.8	16.7	19.8	20.7	19.7	19.8	16.9
Earlyana	19.2	16.9	19.2	21.5	19.8	21.7	17.8
Habaro	17.9	16.5	18.6	20.4	19.1	19.4	15.9
W8S-1035	18.6	17.1	19.1	21.6	19.1	18.5	18.1
W8S-1025	18.4	16.9	18.8	20.2	18.9	18.6	18.2
Mandarin (Ott.)	18.7	17.6	19.5	20.5	19.0	19.9	17.7
Harly	17.8	16.3	18.8	20.0	18.1	19.1	16.9
Mean	19.4	17.5	20.3	21.3	20.2	20.2	18.4

Table 18. (Continued)

Strain	Madi-son Wis.	Comp-ton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kana-wha Iowa	Brook-ings S. D.
L6-8179	20.3	21.5	18.8	18.4	18.8	19.8	20.1
A6K-1801	20.0	21.8	19.8	18.5	18.9	20.5	20.5
W5-3633	20.3	21.7	19.5	19.1	18.9	20.6	20.2
A6K-1329	19.5	21.1	18.7	17.5	17.1	18.7	19.4
A6K-549	19.9	21.7	19.7	18.6	18.9	20.4	20.3
M10	19.6	22.0	19.6	18.7	18.6	20.5	20.3
Blackhawk	19.5	20.8	19.0	18.7	18.2	19.3	20.5
W5-3346	19.4	21.1	18.6	18.3	17.9	19.4	19.1
W4-3190	18.8	21.2	19.2	19.5	17.4	19.7	20.0
L6-8275	20.0	21.5	19.2	18.9	18.3	19.9	19.5
M2	19.7	22.0	20.2	19.3	19.2	20.4	20.6
Monroe	18.8	20.6	17.8	17.6	17.5	19.4	19.4
Earlyana	18.5	21.0	18.2	17.8	17.6	19.5	19.5
Habaro	17.5	19.2	16.6	16.3	16.2	18.6	18.4
W8S-1035	18.0	20.2	18.6	17.2	17.4	18.7	18.8
W8S-1025	18.1	20.0	18.1	17.0	17.2	18.3	18.5
Mandarin (Ott.)	17.7	19.9	17.1	18.7	17.8	19.0	18.9
Harly	18.0	19.1	16.4	17.3	16.2	17.7	17.2
Mean	19.1	20.9	18.6	18.2	17.9	19.5	19.5

Table 19. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1949-50.

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	28	21	26	28	24	28	27	27	27
A6K-549	31.2	+10.7	1.9	36	1.9	16.1	41.7	20.6	133.8
L6-8179	30.9	+ 8.4	1.6	34	1.6	15.2	40.7	20.5	131.8
M10	30.6	+ 9.6	1.8	34	1.4	15.9	39.7	21.0	133.2
W5-3633	30.6	+ 8.7	2.1	34	1.8	16.5	40.9	20.9	134.1
Blackhawk	30.2	+ 8.6	1.9	35	1.5	15.5	40.8	20.4	128.8
L6-8275	29.6	+ 1.9	1.3	32	1.8	14.9	41.0	20.4	132.9
W4-3190	29.4	+ 4.0	2.0	35	1.8	15.8	41.4	20.5	132.2
Earlyana	28.6	+10.1	2.8	39	2.0	15.6	42.6	19.6	133.0
Habaro	27.9	+ 7.9	2.0	30	1.7	18.6	43.6	18.8	132.1
Monroe	27.6	+ 6.0	2.0	40	1.3	14.6	42.0	19.7	131.5
Harly	27.0	+ 5.4	1.8	41	1.3	14.5	43.2	18.8	131.8
Mandarin (Ottawa)	26.9	0	1.3	28	2.0	18.5	42.8	19.4	128.5
Mean	29.2		1.9	35	1.7	16.0	41.7	20.1	132.0

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

Table 20. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1949-50.

Strain	Mean of 28 Tests	Guelph Ontario	State College Pa.	Holgate Ohio	Columbus Ohio	Walkerton Ind.	Eau Claire Wis.
A6K-549	31.2	26.7	31.2	35.3	36.0	40.6	22.6
L6-8179	30.9	29.0	30.6	30.4	33.6	37.9	25.1
M10	30.6	27.6	33.7	32.8	33.2	38.6	23.0
W5-3633	30.6	25.3	31.8	33.9	34.1	41.2	22.5
Blackhawk	30.2	28.1	32.6	33.0	33.6	37.1	22.8
L6-8275	29.6	26.7	27.6	29.5	33.8	34.6	27.1
W4-3190	29.4	26.7	29.0	31.0	33.6	37.1	25.7
Earlyana	28.6	23.8	31.1	32.7	30.8	41.5	19.3
Habaro	27.9	27.3	29.5	31.2	30.9	39.8	17.0
Monroe	27.6	26.1	30.3	27.8	33.1	34.6	22.5
Harly	27.0	23.1	27.9	29.6	32.3	33.7	19.5
Mandarin (Ottawa)	26.9	26.8	27.3	28.1	33.0	33.1	23.6
Mean	29.2	26.4	30.2	31.3	33.2	37.5	22.6

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

Table 20. (Continued)

Strain	Madison Wis.	Compton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
A6K-549	37.0	36.2	30.8	30.4	22.0	37.6	16.1
L6-8179	37.5	37.9	35.7	27.4	22.8	34.3	16.4
M10	34.7	37.9	35.5	25.4	22.6	33.7	16.0
W5-3633	35.3	37.4	34.5	26.8	22.3	34.8	15.6
Blackhawk	34.5	35.5	29.5	29.9	23.5	35.7	16.9
L6-8275	32.3	34.5	34.2	29.0	22.1	36.5	16.3
W4-3190	31.9	34.4	30.5	28.4	22.1	33.4	17.2
Earlyana	32.2	34.6	29.3	26.2	19.6	33.5	14.5
Habaro	29.4	34.3	26.2	25.6	21.5	33.1	14.7
Monroe	32.2	32.1	30.3	23.8	19.2	29.8	15.2
Harly	29.2	34.2	31.5	24.6	19.3	31.0	13.4
Mandarin (Ottawa)	27.5	29.6	30.8	24.6	16.8	29.0	16.4
Mean	32.8	34.9	31.6	26.8	21.2	33.5	15.7

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

Table 21. Six-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1945-50.

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	71	50	65	66	56	71	70	70	70
Blackhawk	28.9	+8.9	1.7	34	1.6	15.8	41.4	20.4	128.3
Earlyana	27.4	+9.8	2.8	37	2.1	15.3	42.9	19.9	132.8
Monroe	27.3	+5.7	2.1	37	1.6	14.5	42.6	19.8	130.8
Habaro	27.0	+8.2	2.1	28	1.9	18.0	43.4	19.1	131.7
Mandarin (Ottawa)	26.7	0	1.3	26	1.8	18.1	42.8	19.7	128.7
Mean	27.5		2.0	32	1.8	16.3	42.6	19.8	130.5

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

Table 22. Six-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1945-50.

Strain	Mean of 71 Tests	Guelph Ontario	State College Pa.	Holgate Ohio	Wooster Ohio	Columbus Ohio	Walkerton Ind.
Years Tested		1949-1950	1948-1950	1948-1950	1945-1947	1945-1950	1949-1950
Blackhawk	28.9	28.1	32.9	30.3	28.9	37.3	37.1
Earlyana	27.4	23.8	31.5	29.5	27.6	33.2	41.5
Monroe	27.3	26.1	30.8	26.5	28.7	35.0	34.6
Habaro	27.0	27.3	31.4	28.3	28.3	35.5	39.8
Mandarin (Ottawa)	26.7	26.8	27.6	26.7	27.4	33.9	33.1
Mean	27.5	26.4	30.8	28.3	28.2	35.0	37.2
		Yield Rank					
Blackhawk		1	1	1	1	1	3
Earlyana		5	2	2	4	5	1
Monroe		4	4	5	2	3	4
Habaro		2	3	3	3	2	2
Mandarin (Ottawa)		3	5	4	5	4	5

Table 22. (Continued)

Strain	Eau Claire Wis.	Madison Wis.	Compton Ill.	St. Paul Minn.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
Years Tested	1945 1947-50	1945-1950	1946-1950	1945,1947 1949-50	1945-1950	1945-1950	1945-1950	1945-1950
Blackhawk	23.5	31.0	32.4	27.8	29.0	20.6	33.4	22.1
Earlyana	20.3	29.4	31.8	25.5	27.6	19.2	32.7	20.3
Monroe	23.8	29.0	30.0	27.0	26.6	18.7	30.6	19.3
Habaro	20.2	28.2	31.5	22.8	26.2	18.9	31.7	19.7
Mandarin (Ottawa)	23.7	25.6	29.2	29.8	26.2	18.1	29.6	21.8
Mean	22.3	28.6	31.0	26.6	27.1	19.1	31.6	20.6
	Yield Rank							
Blackhawk	3	1	1	2	1	1	1	1
Earlyana	4	2	2	4	2	2	2	3
Monroe	1	3	4	3	3	4	4	5
Habaro	5	4	3	5	4	3	3	4
Mandarin (Ottawa)	2	5	5	1	4	5	5	2

UNIFORM TEST, GROUP II, 1950

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
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
A7-6102	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
A7-6103	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
A7-6520	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)
C683	Purdue A.E.S. & U.S.R.S.L.	Sel. from Mukden x Richland
C739	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
C776	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
H3665	Ohio A.E.S. & U.S.R.S.L.	Sel. from Richland x Wis. Manchu 3
H6150	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
H6217	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
H6403	Ohio A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
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 (Lincoln x Richland)
W8-1028	Wis. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Manchu 606

Group II was grown at twenty-three locations in thirteen states. Worthington, Minnesota, in the southern part of the state, is a new location for Group II. Yields averaged slightly lower than in 1949 (Table 24), but Ames, Iowa, averaged almost fourteen bushels higher in 1950 and Lincoln, Nebraska, averaged fifteen bushels more. Dwight, Illinois, yielded sixteen bushels less than in 1949 and had the lowest yield in the history of the field, probably due to brown stem rot infection. A freeze September 23 stopped growth at Madison and Compton, but the beans were fairly well developed. Oil contents at these two locations were much lower than usual. Oil content at most locations (Table 23) was much lower than in 1949 and the relative rankings of strains in this respect showed more upsets than usual. For instance, Adams averaged .6% lower than Lincoln in oil percentage, whereas, the 1947-49 average shows Adams .4 higher in oil. For this reason, it probably will not be wise to eliminate very heavily on the basis of the 1950 oil analyses. Not only are the variety oil percentages unusual, but the relationship between oil and protein percentages is more irregular than usual.

In 1949, there was a correlation of .886 between maturity and yield in Group II, and in 1950 the correlation was .829 with a regression of .352 bushels for each day earlier or later than the mean maturity. This relationship necessitates care in determining which strains are to be retained. To aid in comparing strains of different maturity as to their genetic potentialities, the deviations from the yields expected on the basis of maturity have been calculated and are included in Table 23. Since the correlation was fairly high, these deviations were not expected to vary much and Richland is the only strain which has deviated much from the expected yield.

Thirteen of the fourteen experimental entries in this group have Richland parentage. Richland has been widely used in crosses due to its resistance to lodging. In addition, it has contributed to increased yield and oil content, although the strain itself is mediocre in these respects.

There were seven new selections in Group II this year. Of these, A7-6103 and A7-6629 are later than Lincoln and are, therefore, of Group III maturity. W8-1028 had a high average yield and oil content but lodges more than Lincoln and is somewhat variable in maturity. C683, from the same cross as Hawkeye, has not proven to be superior to Hawkeye. It is one of the tallest strains in the test, however. H6217 and W5-3372 have performed satisfactorily but are not in general superior to Blackhawk, which is several days earlier. The strain L8-7289 was entered because of its combination of high oil content, height, and lodging resistance. Although it is as tall as any strain in the test, it has the lowest lodging score. It also had the highest oil content in this test. Although L8-7289 is not outstanding in yield, it may be of value in the breeding program. It is probably as susceptible to stem canker as Hawkeye and Blackhawk.

Thirteen strains have been in the Group II tests for two years. The data for these strains is summarized in Tables 29 and 30. A7-6102 has the highest average yield and is otherwise very satisfactory but is later than Lincoln and probably should be transferred to Group III. At the nine locations where both Group II and Group III are grown, A7-6102 has averaged 1.3 bushels higher than Lincoln. A7-6520 and H6150 are of about the same maturity as Lincoln but have not proven to be superior to Lincoln. H3665, C776 and C739 are similar to Hawkeye in maturity but are not superior to Hawkeye in any respect. H6403 is several days later than Blackhawk but is not superior to Blackhawk.

Adams has been tested in Group II for four years. The data, together with those from four other varieties, are summarized in Tables 31 and 32. In these tests, Lincoln and Adams have averaged about the same in yield, lodging resistance, height, and oil content, but Adams has been several days earlier.

Adams has been increased for three years in Iowa and for two years in Illinois and Nebraska. In 1950, the following acreages of Adams were reported:

Indiana	100-200
Illinois	6,408
Iowa	50,000

Table 23. Summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1950.

Strain	Mean Yield Bu/A	Dev. from Expected Yield	Maturity[1]	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of oil
No. of Tests	23		19	20	21	18	23	23	23	23
A7-6103	34.0	+0.7	+7.3	1.9	38	1.5	16.6	38.5	19.8	134.8
E6150	33.5	+1.0	+4.9	2.1	36	1.5	18.1	40.1	20.3	134.1
WS-1026	33.3	+0.5	+5.9	2.5	39	1.5	16.6	39.5	20.2	136.1
A7-6529	33.0	-0.4	+7.6	1.8	37	1.1	15.3	39.2	19.9	135.7
A7-6520	32.8	+0.4	+4.6	2.0	38	1.6	13.9	39.0	20.0	136.0
Lincoln	32.6	+0.1	+4.9	2.2	37	1.4	14.3	40.4	20.6	135.9
A7-6102	32.3	-0.8	+6.8	1.8	37	1.7	16.5	38.8	20.5	133.9
Adams	32.3	+0.5	+2.9	2.0	38	1.2	15.0	40.2	20.0	134.2
E3685	32.0	+0.4	+2.4	2.4	37	1.4	17.5	39.6	20.0	134.6
Hawkeye	31.7	+1.0	C	1.6	36	1.2	18.1	40.4	20.2	130.3
C739	31.2	-0.1	+1.6	2.0	36	1.4	14.1	39.4	20.1	134.4
C683	30.9	C	+0.4	1.8	40	1.3	16.3	40.1	20.1	130.6
C776	30.8	+0.2	-0.4	1.8	34	1.4	13.9	40.5	19.6	133.9
E6217	30.7	+0.9	-2.6	1.8	32	1.8	17.5	41.3	20.1	133.6
L8-7289	29.9	-0.5	-1.1	1.5	40	2.0	16.0	38.6	20.9	128.8
Blackhawk	29.5	+0.9	-6.2	1.5	34	1.5	15.7	39.9	20.3	128.5
WS-3372	29.5	+0.2	-4.2	1.6	33	1.9	15.3	39.7	20.5	132.6
E6403	28.6	-0.5	-4.6	1.5	35	1.8	16.9	42.0	20.1	132.3
Richland	27.7	-3.8	+2.2	1.6	34	1.9	16.8	40.4	19.8	130.6
Earlyana	27.5	-0.8	-7.0	2.6	37	1.9	15.7	41.6	20.1	132.4
Mean	31.2			1.9	36	1.6	16.0	40.0	20.2	133.2

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

Table 24. Summary of yield in bushels per acre for the strains in the Uniform Test, Group II, 1950.

Strain	Mean of 23 Tests[1]	State College Pa.	New Brunswick N.J.	Newark Del.	Holgate Ohio	Columbus Ohio	Deerfield Mich.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Madison Wis.
A7-6103	34.0	32.2	29.8	42.6	36.9	37.0	25.8	45.3	45.1	33.7	34.1	32.6
H6150	33.5	32.2	31.4	42.1	33.7	32.2	26.6	46.3	44.8	36.0	29.1	32.1
W8-1028	33.3	35.1	30.8	40.4	38.6	36.3	25.2	42.8	42.5	30.6	31.9	34.3
A7-6629	33.0	29.6	28.6	41.4	33.9	35.9	17.8	46.7	45.0	34.1	31.7	31.8
A7-6520	32.8	30.0	31.5	34.7	36.6	34.7	22.8	43.6	43.8	32.9	27.6	34.1
Lincoln	32.6	33.4	31.4	36.6	37.5	33.3	22.3	41.2	44.4	34.8	31.6	38.2
A7-6102	32.3	32.8	27.6	43.6	35.7	30.8	24.6	42.1	42.8	32.2	29.6	29.7
Adams	32.3	34.1	30.7	42.1	31.2	29.2	23.6	45.9	39.9	31.8	25.9	35.8
H3665	32.0	30.6	26.7	42.0	32.2	33.1	25.8	41.5	42.5	30.0	25.1	29.9
Hawkeye	31.7	32.2	28.8	41.8	31.0	29.8	27.1	44.2	34.1	30.5	30.6	33.9
C739	31.2	34.1	29.5	35.6	33.0	30.4	22.4	43.8	39.0	32.8	26.6	33.1
C683	30.9	32.6	26.4	40.6	31.7	33.2	25.1	36.9	38.0	30.0	28.2	30.3
C776	30.8	28.6	28.5	39.0	31.3	30.3	24.1	40.4	36.6	30.7	25.6	34.3
H6217	30.7	30.7	25.3	37.8	34.6	26.5	23.7	36.0	36.1	28.3	29.0	36.4
L8-7289	29.9	30.5	26.5	38.9	28.9	23.1	24.5	40.0	36.8	26.8	26.6	29.6
Blackhawk	29.5	32.5	22.3	35.7	31.9	28.3	25.3	37.6	32.5	28.8	26.5	33.3
W5-3372	29.5	26.9	23.4	31.3	30.9	26.7	25.8	38.7	35.4	25.5	24.7	34.5
H6403	28.6	27.7	24.2	34.0	32.1	32.8	26.0	30.9	34.7	23.6	25.6	30.6
Richland	27.7	28.1	21.7	35.8	27.0	20.7	24.0	35.8	36.0	26.3	25.1	25.6
Barlyana	27.5	29.7	23.4	32.8	30.0	24.5	21.7	35.7	31.9	26.0	23.8	29.3
Mean	31.2	31.2	27.4	38.4	32.9	30.4	24.2	41.0	39.2	30.3	28.0	32.5
Coef. of Var. (%)	7.6	6.6	10.9	--	--	12.3	8.4	7.4	8.4	10.1	11.7	
Bu.Nec.for Sig(5%)	2.7	2.5	5.8	—	—	4.2	4.8	4.1	3.5	4.0	5.3	

[1]Deerfield not included in the mean.

Table 24. (Continued)

Strain	Compton Ill.	Dwight Ill.	Urbana Ill.	Worthington Minn.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Laddonia Mo.	Centerville S. D.	Wakefield Nebr.	Lincoln Nebr.
A7-6103	41.1	23.3	44.8	23.0	26.8	42.2	25.8	43.7	32.6	22.2	25.3	35.0
H3150	40.3	23.8	45.0	21.9	29.3	43.0	26.4	41.0	30.0	21.5	27.6	34.7
W3-1028	42.0	23.6	38.7	24.4	30.7	36.8	26.3	41.9	31.0	22.2	25.2	35.7
A7-6629	41.5	24.4	43.4	19.6	27.9	41.8	24.8	42.0	34.1	23.9	24.4	34.4
A7-6520	42.1	19.1	35.3	25.0	32.6	42.2	26.4	41.7	29.9	23.2	27.4	36.7
Lincoln	42.1	24.1	36.6	23.4	30.6	37.8	23.8	37.2	24.9	21.9	25.4	37.1
A7-6102	42.2	23.3	41.7	24.9	26.9	38.6	24.8	38.4	25.3	19.3	25.1	35.9
Adams	41.5	23.5	45.7	24.2	30.2	42.8	24.8	40.2	23.4	21.5	24.0	31.7
H3665	42.2	24.1	36.5	25.0	30.2	39.8	29.4	38.3	29.5	23.4	24.6	34.7
Hawkeye	41.3	23.9	36.6	25.3	32.0	40.4	27.2	39.1	20.8	22.4	24.6	32.5
0739	40.5	21.6	35.0	21.7	30.7	37.9	23.3	36.2	29.9	18.6	24.4	37.8
0383	40.4	20.3	39.3	19.8	29.9	39.0	26.1	38.7	26.9	20.7	23.6	32.7
0776	39.5	22.6	36.9	22.6	31.2	40.0	24.8	38.1	24.4	19.7	26.3	33.8
H3217	39.7	21.1	36.9	25.8	37.0	37.5	26.3	39.0	20.0	20.1	25.2	33.2
IB-7289	38.9	22.5	38.0	22.4	32.4	36.6	24.3	35.9	27.6	20.4	23.7	33.9
Blackhawk	39.8	19.8	33.2	25.7	30.8	39.2	24.8	33.4	19.9	22.6	23.2	32.1
M5-3372	38.9	20.4	36.3	25.2	33.6	36.8	24.8	36.7	20.1	20.7	26.0	35.4
H6403	37.3	22.1	34.9	22.3	30.7	32.0	24.0	34.0	21.7	20.8	25.8	30.9
Richland	35.6	19.7	35.2	22.4	29.2	35.0	23.7	34.3	22.9	19.6	21.3	32.6
Earlyana	37.9	20.0	30.5	23.2	27.8	37.4	24.7	35.6	17.4	18.1	23.9	27.1
Mean	40.2	22.2	38.0	23.4	30.5	38.8	25.3	38.3	25.6	21.1	24.8	33.9
C. V. (%)	6.5	7.7	8.2	10.1	8.4	8.1	8.0	5.1	13.2	8.9	14.1	8.4
L.S.D.(5%)	3.7	2.4	4.4	3.4	2.7	4.5	2.9	2.8	4.8	2.6	Not Sig.	4.0

Table 25. Summary of yield rank for the strains in the Uniform Test, Group II, 1950.

Strain	State College Pa.	New Brunswick N. J.	Newark Del.	Bol-gate Ohio	Colum-bus Ohio	Deer-field Mich.	Bluff-ton Ind.	Lafay-ette Ind.	Green-field Ind.	North-ington Ind.	Madi-son Wis.
A7-6103	8	6	2	3	1	4	5	1	4	1	11
H6150	8	3	3	8	9	2	3	3	1	7	12
WS-1028	1	4	9	1	2	8	9	7	10	2	5
A7-6629	16	9	7	7	3	20	2	2	3	3	13
A7-6520	14	1	17	4	4	16	8	5	5	10	7
Lincoln	4	2	15	2	5	18	11	4	2	4	1
A7-6102	5	11	1	5	10	10	1	6	7	6	17
Adams	2	5	3	15	14	15	4	9	6	14	3
H3665	11	12	5	10	7	4	10	7	13	19	16
Hawkeye	8	8	6	16	13	1	6	18	11	5	8
C739	2	7	16	9	11	17	7	10	6	11	10
C683	6	14	8	13	6	9	16	12	12	9	15
C776	17	10	10	14	12	12	12	14	9	15	5
H6217	12	15	12	6	17	14	17	11	15	8	2
L8-7289	13	13	11	19	19	11	13	13	16	11	18
Blackhawk	7	19	15	12	15	7	15	19	14	13	9
W5-3372	20	17	20	17	16	4	14	16	19	19	4
H6403	19	16	18	11	8	3	20	17	20	15	14
Richland	18	20	14	20	20	13	19	15	17	17	20
Earlyana	15	18	19	18	18	19	18	20	18	20	19

Table 25. (Continued)

Strain	Compton Ill.	Dwight Ill.	Urbana Ill.	Northington Minn.	Nashua Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Ladonia Mo.	Centerville S.D.	Wakefield Nebr.	Lincoln Nebr.
A7-6103	9	8	3	12	20	3	7	1	2	6	3	7
E6150	12	5	2	17	15	1	3	5	4	10	1	8
WS-1028	5	6	7	8	9	16	5	3	3	6	7	5
A7-6829	6	1	4	20	17	5	9	2	1	1	12	10
A7-6820	3	20	15	5	3	3	3	4	5	3	2	3
Lincoln	3	2	11	10	7	13	18	13	11	8	6	2
A7-6102	1	3	5	7	19	11	9	9	10	17	9	4
Adams	6	7	1	9	12	2	9	6	13	9	14	18
E6665	1	2	14	5	12	6	1	10	7	2	10	8
Hawkeye	8	4	11	3	5	6	2	7	18	5	10	16
C789	10	18	17	18	9	12	20	16	6	18	12	1
C883	11	16	6	19	14	10	6	8	9	12	18	14
C776	16	10	8	13	6	7	9	11	12	16	3	12
E6217	14	14	9	1	1	14	8	12	13	15	7	13
L6-7289	18	11	6	14	4	18	16	17	8	14	17	11
Blackhawk	13	19	19	2	7	9	9	20	19	4	19	17
WS-6572	15	15	13	4	2	15	9	14	17	12	5	6
E6403	19	12	18	16	9	20	17	19	15	11	16	19
Richland	20	19	16	14	16	19	19	18	14	18	20	15
Earlyana	15	17	20	11	18	15	15	15	20	20	15	20

Table 26. Summary of maturity data, days earlier (-) or later (+) than Hawkeye, for the strains in the Uniform Test, Group II, 1950.

Strain	Mean of 19 Tests	State College Pa.	New Brunswick N. J.	Newark Del.	Hol-gate Ohio	Colum-bus Ohio	Bluff-ton Ind.	Lafay-ette Ind.	Worth-ington Ind.
A7-6103	+7.3	+ 2	+ 9	+ 5	+ 8	+17	+3	+10	+5
H6150	+4.9	+ 2	+ 5	+ 3	+ 6	+12	+1	+ 8	+4
W8-1028	+5.9	+ 2	+10	+ 3	+10	+14	+3	+ 9	+3
A7-6629	+7.6	+ 2	+ 9	+ 4	+11	+15	+2	+ 9	+8
A7-6520	+4.6	+ 2	+ 9	+ 3	+ 7	+14	+1	+ 6	+1
Lincoln	+4.9	+ 2	+10	+ 5	+ 8	+ 9	+1	+ 6	+2
A7-6102	+6.8	+ 2	+ 9	+ 4	+11	+14	+1	+ 9	+6
Adams	+2.9	+ 5	+ 6	0	+ 6	+10	-4	+ 9	+1
H3665	+2.4	+ 2	+ 4	+ 1	+ 1	+ 9	-2	+ 7	+2
Hawkeye	0	0	0	0	0	0	0	0	0
C739	+1.6	+ 2	+ 4	0	+ 3	+ 5	-2	0	+2
C683	+0.4	+ 2	0	+ 3	+ 1	- 2	-2	- 2	-1
C776	-0.4	+ 2	- 2	- 2	+ 1	+ 6	-3	- 2	+1
H6217	-2.6	+ 2	- 4	- 4	- 4	- 1	-4	- 1	-1
L8-7289	-1.1	+ 2	- 4	- 2	- 2	+ 5	-2	+ 4	+2
Blackhawk	-6.2	- 2	- 9	- 7	- 4	- 3	-9	- 6	-6
W5-3372	-4.2	-10	- 4	-10	- 2	+ 1	-8	- 1	-4
H6403	-4.6	+ 2	- 4	- 9	- 4	- 3	-3	- 5	-1
Richland	+2.2	+ 2	0	+ 1	- 1	+17	+1	+ 3	+5
Earlyana	-7.0	- 2	- 9	-10	- 4	- 2	-9	- 8	-8
Date planted		6/2	6/7	6/9	6/1	5/23	5/20	5/18	6/23
Hawkeye matured		10/13	9/29	9/25	10/1	9/21	10/7	9/28	10/13
Days to mature	125	133	114	108	122	121	140	133	112

Table 26. (Continued)

Strain	Madi-son Wis.	Dwight Ill.	Ur-bana Ill.	Worth-ington Minn.	Kana-wha Iowa	Marcus Iowa	Hud-son Iowa	Ames Iowa	Lad-donia Mo.	Center-ville S. D.	Lin-coln Nebr.
A7-6103	+5	+ 4	+13	+10	+7	+6	+7	+ 7	+ 9	+7	+5
H6150	+3	+ 2	+10	+ 6	+4	+4	+4	+ 5	+ 9	+2	+3
W8-1C28	+2	+ 4	+13	+ 5	+5	+4	+4	+ 6	+12	-2	+5
A7-6629	+7	+ 3	+12	+12	+8	+7	+8	+ 7	+11	+4	+5
A7-6520	+1	+ 1	+11	+ 2	+4	+1	+2	+ 5	+10	+5	+2
Lincoln	+3	+ 1	+ 9	+ 5	+5	+3	+4	+ 4	+ 8	+6	+3
A7-6102	+5	+ 5	+11	+ 8	+6	+5	+6	+ 6	+12	+6	+4
Adams	+1	- 3	+ 8	+ 2	+3	+2	+1	+ 2	+ 3	+4	0
H3665	+2	0	+ 4	0	+2	+5	+1	+ 2	+ 3	+1	+1
Hawkeye	0	0	0	0	0	0	0	0	0	0	0
C739	+1	- 2	+ 5	- 3	+1	+1	+2	+ 3	+ 7	0	+1
C693	0	0	+ 3	+ 2	+2	+1	+1	+ 1	+ 2	0	-3
C776	0	- 2	+ 1	- 3	-1	0	0	- 2	+ 1	-2	-1
H6217	-7	- 6	- 3	- 8	-1	-1	0	- 2	- 1	-2	-2
L8-7289	0	- 5	- 4	- 4	-2	-1	-4	- 3	+ 2	+1	-3
Blackhawk	-8	-10	- 6	- 9	-8	-2	-7	- 9	- 4	-3	-5
W5-3372	-7	- 7	- 6	- 8	-6	-1	-2	- 5	+ 1	+1	-2
H6403	-9	- 8	- 8	-10	-8	-1	-3	- 6	- 2	-2	-4
Richland	+2	+ 2	+ 2	+ 2	0	+1	+1	0	+ 2	+2	0
Earlyana	-8	-13	- 6	-12	-9	-2	-6	-10	- 5	-3	-7
Date planted	5/17	5/20	5/26	5/22	5/22	5/23	5/30	5/19	5/20	6/2	6/2
Hawkeye matured	10/5	9/28	9/23	10/6	10/7	10/3	10/4	9/28	9/10	9/19	9/23
Days to mature	141	131	120	137	138	133	127	132	113	109	113

Table 27. Summary of lodging data for the strains in the Uniform Test, Group II, 1950.

Strain	Mean of 20 Tests[1]	State College Pa.	New Brunswick N. J.	Newark Del.	Holgate Ohio	Columbus Ohio	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Madison Wis.
A7-6103	1.9	2.0	1.5	4.0	1.8	1.5	2.1	1.1	1.7	2.3	3.1
H6150	2.1	2.0	2.2	4.0	1.5	1.5	2.4	1.4	1.5	3.0	3.2
W8-1028	2.5	2.3	3.0	4.0	2.0	2.0	3.0	1.5	1.5	2.9	3.2
A7-6629	1.8	2.0	1.5	4.0	1.5	1.0	2.0	1.3	1.5	2.1	2.7
A7-6520	2.0	2.3	2.0	4.0	2.0	1.8	2.1	1.4	1.7	2.9	2.7
Lincoln	2.2	2.3	2.0	4.0	2.0	1.5	2.6	1.4	1.7	2.5	3.0
A7-6102	1.8	1.5	1.0	4.0	1.2	1.2	2.5	1.0	1.3	2.5	3.5
Adams	2.0	2.0	1.7	4.0	1.8	1.8	2.4	1.1	2.3	2.6	2.7
H3665	2.4	2.0	2.5	4.0	1.8	2.0	2.9	1.9	2.0	2.6	4.0
Hawkeye	1.6	1.0	1.0	4.0	1.2	1.2	2.3	1.0	1.3	1.9	2.6
C739	2.0	2.3	2.2	4.0	1.8	1.5	2.5	1.4	1.5	2.4	3.4
C683	1.8	1.5	2.2	4.0	1.0	1.2	2.8	1.1	1.3	2.0	2.7
C776	1.8	1.3	2.2	4.0	1.0	1.5	2.6	1.1	1.5	2.3	2.7
H6217	1.8	1.8	1.7	4.0	1.0	1.2	2.1	1.0	1.5	2.5	2.1
L8-7289	1.5	1.0	1.2	4.0	1.2	1.0	1.8	1.1	1.5	2.5	2.2
Blackhawk	1.5	1.5	1.0	4.0	1.2	1.8	2.0	1.0	1.5	1.9	2.0
W5-3372	1.6	1.0	1.5	4.0	1.0	1.8	2.4	1.1	1.5	2.3	2.2
H6403	1.5	1.5	1.2	4.0	1.0	1.0	1.5	1.0	1.5	2.5	1.5
Richland	1.6	1.3	1.0	4.0	1.0	1.8	1.9	1.1	1.5	2.4	2.5
Earlyana	2.6	2.3	4.5	4.0	1.5	1.8	4.0	1.4	2.5	2.9	3.5
Mean	1.9	1.7	1.9	4.0	1.4	1.5	2.4	1.2	1.6	2.5	2.8

[1]Newark and Laddonia not included in the mean.

Table 27. (Continued)

Strain	Compton Ill.	Dwight Ill.	Urbana Ill.	Worthington Minn.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Laddonia Mo.	Centerville S. D.	Wakefield Nebr.	Lincoln Nebr.
A7-6103	2.0	1.8	2.4	2.2	2.9	3.0	1.9	1.3	1.0	1.0	1.0	1.8
H6150	2.0	1.9	2.0	2.0	3.0	2.8	2.3	1.5	1.0	1.8	1.0	2.0
W8-1028	2.1	2.0	3.3	3.3	3.6	3.6	2.0	1.8	1.0	1.8	2.0	3.5
A7-6629	2.0	1.6	2.0	2.1	2.6	2.9	1.8	1.5	1.0	1.0	1.0	1.2
A7-6520	2.0	1.8	2.3	2.4	3.0	3.0	2.0	1.1	1.0	1.2	1.0	1.5
Lincoln	2.3	2.0	2.4	2.7	3.4	3.3	2.0	1.5	1.0	1.8	2.0	2.2
A7-6102	1.9	1.6	2.0	2.2	2.8	3.0	2.0	1.0	1.0	1.0	1.0	1.8
Adams	1.9	1.9	2.5	2.1	3.1	3.0	1.5	1.1	1.0	1.5	1.0	1.8
H3665	2.3	1.9	2.9	2.3	3.9	3.3	2.3	1.8	1.0	1.8	1.0	2.5
Hawkeye	1.0	1.6	2.3	1.7	2.4	2.6	1.8	1.0	1.0	1.0	1.0	1.2
C739	2.1	1.4	2.4	1.8	3.3	3.1	1.8	1.0	1.0	1.5	1.0	2.5
C683	1.5	1.1	2.5	2.0	3.3	3.0	2.0	1.0	1.0	1.0	1.0	1.5
C776	1.9	1.4	2.3	2.0	2.8	3.0	2.0	1.0	1.0	1.0	1.0	2.2
H6217	1.6	1.1	2.0	2.0	3.3	2.8	1.5	1.0	1.0	1.2	2.0	2.5
L8-7289	1.0	1.0	1.9	1.3	2.4	2.6	1.3	1.0	1.0	1.0	1.0	1.0
Blackhawk	1.0	1.4	2.1	1.4	2.3	2.9	1.3	1.0	1.0	1.0	1.0	1.6
W5-3372	1.6	1.0	2.0	1.5	2.5	3.1	1.4	1.0	1.0	1.0	1.0	1.2
H6403	1.0	1.1	1.8	1.1	2.3	2.8	1.3	1.0	1.0	1.2	1.0	1.8
Richland	1.1	1.3	2.1	1.6	2.6	2.8	1.8	1.0	1.0	1.0	1.0	1.5
Earlyana	1.9	2.0	3.0	2.5	3.4	4.0	1.8	2.0	1.0	1.2	2.0	4.5
Mean	1.7	1.5	2.3	2.0	2.9	3.0	1.8	1.2	1.0	1.2	1.2	2.0

Table 28. Summary of height data for the strains in the Uniform Test, Group II, 1950.

Strain	Mean of 21 Tests	State College Pa.	New Brunswick N. J.	Holgate Ohio	Columbus Ohio	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Madison Wis.	Compton Ill.
A7-6103	38	34	31	42	41	44	38	33	33	36	39
H6150	36	32	31	40	40	41	37	31	32	37	38
W8-1028	39	35	33	42	44	47	37	34	36	37	40
A7-6629	37	33	30	39	40	42	36	33	33	39	40
A7-6520	38	34	31	40	44	45	36	33	32	39	40
Lincoln	37	35	31	38	40	44	35	32	33	36	36
A7-6102	37	34	30	39	40	43	35	30	32	36	38
Adams	38	33	30	42	45	45	30	30	33	37	42
H3665	37	34	28	38	40	39	36	31	31	37	40
Hawkeye	36	34	28	37	42	41	33	30	33	38	38
C739	36	33	30	40	37	40	34	30	30	36	42
C683	40	38	34	41	41	45	37	33	33	39	48
C776	34	29	28	37	37	41	32	28	30	34	38
H6217	32	26	26	36	36	40	32	26	29	34	33
L8-7289	40	36	31	39	42	48	36	34	37	41	45
Blackhawk	34	32	25	38	36	39	30	27	28	35	34
W5-3372	33	28	26	38	37	38	31	26	27	34	32
H6403	35	31	29	39	39	42	32	31	31	36	36
Richland	34	32	26	39	38	37	31	29	28	35	33
Earlyana	37	34	29	40	39	43	33	29	30	38	36
Mean	36	33	29	39	40	42	34	31	32	37	38

Table 28. (Continued)

Strain	Dwight Ill.	Urbana Ill.	Worthington Minn.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Laddonia Mo.	Centerville S. D.	Wakefield Nebr.	Lincoln Nebr.
A7-6103	34	46	37	41	46	34	40	28	36	37	42
H6150	33	43	35	40	43	33	38	27	35	36	39
W8-1028	37	48	38	44	45	37	41	29	37	38	40
A7-6629	34	45	36	41	45	34	39	28	36	37	41
A7-6520	34	47	39	42	46	34	40	28	38	38	41
Lincoln	34	45	36	41	46	33	38	27	35	36	40
A7-6102	34	44	38	41	44	34	38	26	35	36	41
Adams	35	47	39	46	46	34	40	26	38	40	40
H3665	37	43	39	45	44	37	41	27	39	39	39
Hawkeye	35	41	39	42	44	34	37	24	38	36	40
C739	34	41	36	40	43	33	38	26	37	36	39
C683	37	45	43	47	50	37	41	29	41	40	44
C776	33	42	36	39	43	32	35	24	34	34	38
H6217	31	37	35	37	41	30	33	20	31	34	34
L8-7289	38	48	42	46	49	35	43	27	42	38	43
Blackhawk	32	40	38	41	42	31	33	23	36	34	35
W5-3372	30	39	35	37	41	29	33	22	35	34	35
H6403	33	40	37	39	45	31	34	23	35	34	37
Richland	31	38	36	39	42	32	35	23	34	34	38
Earlyana	37	44	41	45	47	34	38	23	38	36	38
Mean	34	43	38	42	45	33	38	26	37	36	39

Table 29. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1949-50.

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	37	39	41	31	44	44	44	44
A7-6102	35.2	+8.0	1.8	39	1.7	16.3	39.0	20.9	133.7
A7-6520	34.9	+5.7	2.0	40	1.5	13.6	38.9	20.5	135.0
H3150	34.8	+6.0	2.1	38	1.6	17.9	39.9	21.0	133.4
Lincoln	34.3	+6.7	2.2	39	1.4	14.2	40.0	21.0	135.5
Adams	33.7	+3.1	2.1	39	1.4	14.5	39.8	20.9	132.4
Hawkeye	33.2	0	1.6	37	1.5	17.6	40.4	20.9	129.0
H3665	32.9	+1.9	2.3	38	1.5	17.2	40.1	20.6	133.2
C776	32.4	+0.3	1.8	36	1.5	13.9	40.7	20.3	132.9
C739	32.4	+2.0	1.9	37	1.4	13.9	39.3	20.7	133.9
Blackhawk	29.8	-6.2	1.5	35	1.7	15.6	40.7	20.8	127.3
H6403	29.1	-3.9	1.5	36	1.9	16.3	41.8	20.6	131.6
Richland	29.1	+0.7	1.6	34	1.9	16.1	40.3	20.2	129.7
Earlyana	28.8	-5.6	2.6	39	2.0	15.9	41.9	20.5	131.6
Mean	32.4		1.9	37	1.6	15.6	40.2	20.7	132.2

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

Table 30. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1949-50.

Strain	Mean of 44 Tests	State College Pa.	Newark Del.	Holgate Ohio	Columbus Ohio	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Madison Wis.
A7-6102	35.2	35.0	43.0	41.0	34.7	45.7	40.6	40.5	34.2	36.2
A7-6520	34.9	33.1	37.9	40.9	35.4	43.3	39.7	39.3	32.3	36.2
H6150	34.8	33.5	40.9	37.4	36.6	42.7	40.7	38.7	30.6	36.5
Lincoln	34.3	34.9	36.7	39.5	36.5	39.9	40.5	38.9	31.8	40.1
Adams	33.7	34.9	41.0	36.1	34.9	41.1	35.1	34.6	28.1	37.1
Hawkeye	33.2	33.2	38.5	32.7	33.7	41.5	33.7	36.4	29.6	37.6
H3665	32.9	32.3	39.0	36.2	35.4	38.9	38.0	32.4	26.0	34.0
C776	32.4	31.8	35.7	36.1	34.0	39.6	34.0	34.2	27.6	37.9
C739	32.4	34.2	35.8	36.0	33.6	40.2	36.2	32.9	30.5	35.4
Blackhawk	29.8	32.6	32.6	30.9	33.1	34.9	29.8	29.4	24.7	33.0
H6403	29.1	28.1	33.5	34.0	35.0	31.1	30.5	25.6	24.6	33.3
Richland	29.1	28.6	34.5	30.8	29.2	32.8	33.6	29.3	27.4	29.7
Earlyana	28.8	30.1	33.3	31.4	29.8	32.5	31.4	27.8	25.1	31.1
Mean	32.4	32.5	37.1	35.6	34.0	38.8	35.7	33.8	28.7	35.2

	Yield Rank								
A7-6102	1	1	1	7	1	2	1	1	6
A7-6520	7	6	2	3	2	4	2	2	6
H6150	5	3	4	1	3	1	4	4	5
Lincoln	2	7	3	2	7	3	3	3	1
Adams	2	2	6	6	5	7	6	7	4
Hawkeye	6	5	10	9	4	9	5	6	3
H3665	9	4	5	3	9	5	9	10	9
C776	10	9	6	8	8	8	7	8	2
C739	4	8	8	10	6	6	8	5	8
Blackhawk	8	13	12	11	10	13	10	12	11
H6403	13	11	9	5	13	12	13	13	10
Richland	12	10	13	13	11	10	11	9	13
Earlyana	11	12	11	12	12	11	12	11	12

Table 30. (Continued)

Strain	Compton Ill.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Centerville S. D.	Wakefield Nebr.	Lincoln Nebr.
A7-6102	40.2	32.7	43.3	30.8	40.6	26.1	32.1	19.7	28.4	26.7
A7-6520	41.9	31.1	40.9	31.6	42.8	24.6	34.2	25.0	27.4	27.7
H6150	40.0	33.4	44.7	27.6	42.1	24.6	33.6	21.6	29.0	26.9
Lincoln	40.9	34.0	38.3	29.1	41.5	24.1	32.0	23.5	24.8	27.7
Adams	42.0	31.5	46.4	29.9	41.5	25.2	32.6	23.1	26.4	25.2
Hawkeye	38.5	30.9	40.2	33.5	41.0	26.4	32.5	24.9	26.6	25.5
H3665	39.8	29.7	38.0	29.8	41.1	29.0	31.2	24.6	27.3	28.2
C776	38.3	31.3	41.3	31.0	39.2	23.5	31.7	22.1	26.7	27.1
C739	39.0	30.1	38.5	29.2	37.9	23.3	30.9	20.3	24.0	27.9
Blackhawk	37.2	26.0	35.5	33.5	37.7	25.0	27.2	22.6	25.1	23.7
H6403	36.4	26.9	37.8	30.2	33.5	24.5	27.7	20.0	20.9	23.6
Richland	33.6	25.3	35.4	29.5	36.6	22.7	28.5	20.4	23.7	25.1
Earlyana	35.5	27.2	33.6	28.5	37.4	23.9	30.1	18.6	23.3	21.5
Mean	38.7	30.0	39.5	30.3	39.5	24.8	31.1	22.0	25.7	25.9

	Yield Rank									
A7-6102	4	3	3	5	7	3	5	12	2	7
A7-6520	2	6	5	3	1	6	1	1	3	3
H6150	5	2	2	13	2	6	2	8	1	6
Lincoln	3	1	8	11	3	9	6	4	9	3
Adams	1	4	1	7	3	4	3	5	7	9
Hawkeye	8	7	6	1	6	2	4	2	6	8
H3665	6	9	9	8	5	1	8	3	4	1
C776	9	5	4	4	8	11	7	7	5	5
C739	7	8	7	10	9	12	9	10	10	2
Blackhawk	10	12	11	1	10	5	13	6	8	11
H6403	11	11	10	6	13	8	12	11	13	12
Richland	13	13	12	9	12	13	11	9	11	10
Earlyana	12	10	13	12	11	10	10	13	12	13

Table 31. Four-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1947-50.

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	81	64	75	77	65	81	81	81	81
Lincoln	33.1	+6.5	2.1	38	1.5	14.0	40.5	21.3	134.2
Adams	33.0	+4.0	2.0	39	1.3	14.4	40.3	21.4	130.7
Hawkeye	32.2	0	1.5	36	1.4	17.4	40.9	21.3	127.2
Earlyana	28.3	-5.8	2.5	37	2.2	15.3	42.4	20.6	130.3
Richland	28.3	-0.1	1.6	33	1.7	16.2	40.6	20.7	127.3
Mean	31.0		1.9	37	1.6	15.5	40.9	21.1	129.9

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

Table 32. Four-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, 1947-50.

Strain	Mean of 81 Tests	State College Pa.	Newark Del.	Holgate Ohio	Columbus Ohio	Walkerton Ind.	Bluffton Ind.	Lafayette Ind.	Greenfield Ind.	Worthington Ind.
Years Tested		1948-1950	1949-1950	1947-1950	1947-1950	1947-1949	1947-1950	1947-1950	1947-1950	1947-1950
Lincoln	33.1	34.5	36.7	31.2	39.8	39.3	38.1	44.3	39.7	34.5
Adams	33.0	34.0	41.0	29.5	39.5	38.6	39.2	40.7	37.9	32.4
Hawkeye	32.2	33.7	38.5	28.0	36.7	38.5	38.9	39.6	37.5	33.8
Earlyana	28.3	30.8	33.3	27.2	29.7	31.4	32.3	33.3	31.2	28.2
Richland	28.3	28.6	34.5	26.1	31.7	31.6	32.7	36.1	31.9	30.3
Mean	31.0	32.3	36.8	28.4	35.5	35.9	36.2	38.8	35.6	31.8
		Yield Rank								
Lincoln		1	3	1	1	1	3	1	1	1
Adams		2	1	2	2	2	1	2	2	3
Hawkeye		3	2	3	3	3	2	3	3	2
Earlyana		4	5	4	5	5	5	5	5	5
Richland		5	4	5	4	4	4	4	4	4

Table 32. (Continued)

Strain	Madison Wis.	Compton Ill.	Dwight Ill.	Urbana Ill.	Kanawha Iowa	Marcus Iowa	Hudson Iowa	Ames Iowa	Centerville S. D.	Wakefield Nebr.	Lincoln Nebr.
Years Tested	1947-1950	1947-1950	1947 1949-50	1947-1950	1947-1950	1947-1950	1947-1950	1947-1950	1947-1950	1947-1950	1947-1950
Lincoln	34.5	35.1	29.8	36.9	29.8	36.8	26.1	36.0	19.7	21.4	27.1
Adams	32.5	36.9	29.2	41.6	31.3	36.8	28.2	36.2	20.3	21.7	25.3
Hawkeye	33.2	34.9	27.8	35.7	31.9	36.1	27.6	34.8	20.8	23.1	24.6
Earlyana	28.7	32.8	23.5	32.2	29.1	32.1	26.9	31.3	17.1	20.3	20.7
Richland	27.3	30.2	23.2	33.0	28.5	31.9	23.3	30.4	18.5	21.2	24.4
Mean	31.2	34.0	26.7	35.9	30.1	34.7	26.4	33.7	19.3	21.5	24.4
	Yield Rank										
Lincoln	1	2	1	2	3	1	4	2	3	3	1
Adams	3	1	2	1	2	1	1	1	2	2	2
Hawkeye	2	3	3	3	1	3	2	3	1	1	3
Earlyana	4	4	4	5	4	4	3	4	5	5	5
Richland	5	5	5	4	5	5	5	5	4	4	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
Dunfield	Purdue Agr. Exp. Sta.	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
A7-1953	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x (Linc. x Rich.))
C764	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
L6-1152	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
L6-1503	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
L6-2132	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)

Group III was grown at twenty-two locations in eleven states. Yields, in general, were good but did not average as high as in 1949. There was less variation between stations in 1950, however (Table 34). Yields at Clayton and Eldorado, Illinois, and Norborne, Missouri, were slightly higher in 1949, and at Ames, Iowa; Columbia, Missouri; Lincoln, Nebraska; and Manhattan, Kansas, yields were much higher than in 1949. Oil content averaged one percent lower than in 1949. The low yields at Dwight were probably a consequence of brown stem rot infection.

C764, the only new entry in this test in 1950, was not outstanding in any respect (Table 33). The other nine strains have all been tested for two years. These data are summarized in Tables 37 and 38. L6-2132 has been outstanding in yield. It averaged 5.7 bushels higher than Lincoln in 1949 and 5.2 bushels higher in 1950. It appears to be widely adapted. In addition to the tests reported here, it was also outstanding in two tests in Texas in 1950. This strain is about a week later than Lincoln and this would limit its area of usefulness in Indiana and Illinois to the southern half of these states. The later maturity probably would not be so important in Missouri and Kansas. L6-2132 is just about the equal of Lincoln in other respects. L6-1503 has a very satisfactory yield record, but is definitely not as good as L6-2132 in this respect. L6-1503 has averaged .3 percent more oil than Adams. L6-1152 and A7-1953 are slightly later than Lincoln and somewhat higher in yield.

Five strains have been in Group III for seven years. Data from these experiments is summarized in Tables 39 and 40. During this period, Lincoln has averaged 13.8% more beans per acre than the average of Illini and Dunfield. Lincoln has proven to be widely adapted and consistent in yield. It has performed poorest at Columbia, Missouri. Chief has done best in southeast Pennsylvania, at Georgetown, Delaware; Beltsville, Maryland; Worthington, Indiana; and Norborne and Columbia, Missouri. Adams, three days earlier than Lincoln, has averaged 1.3 bushels less than Lincoln. In the Group III tests, Adams has yielded slightly more than Lincoln at five of the twenty-one locations, from 1.1 bushels at Columbus to .2 bushels at Ottumwa. At a number of other locations, Adams has averaged from 2 to 4 bushels less than Lincoln. Adams is evidently not as widely adapted as Lincoln and its chief advantage is its earliness.

Table 33. Summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1950.

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	20	17	21	12	22	22	22	22
L6-2132	37.9	+7.2	1.9	38	1.9	16.6	40.6	21.0	134.5
L6-1152	35.9	+5.4	2.0	36	2.7	18.4	39.1	21.3	132.4
L6-1503	34.9	+8.1	1.8	37	2.5	18.5	40.0	21.6	134.0
A7-1953	32.8	+4.8	1.8	38	2.0	15.3	39.8	21.5	134.6
C764	32.7	+4.6	1.9	35	2.1	15.2	40.2	20.9	134.6
Lincoln	32.7	0	1.9	37	2.3	15.6	40.4	21.0	134.7
Chief	32.4	+9.2	2.7	47	1.9	13.5	40.4	19.8	134.3
Adams	31.4	-2.7	1.9	36	2.1	15.0	40.9	21.3	131.4
Illini	29.0	+2.0	2.6	42	2.2	14.5	40.8	19.7	132.8
Dunfield	28.5	+1.2	2.0	38	2.3	15.3	39.3	20.9	128.7
Mean	32.8		2.1	38	2.2	15.8	40.2	20.9	133.2

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

Table 34. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1950.

Strain	Mean of 22 Tests	Colum-bia Pa.	New-ark Del.	George-town Del.	Belts-ville Md.	Blacks-burg Va.	Colum-bus Ohio	Lafay-ette Ind.	Green-field Ind.	Worth-ington Ind.	Dwight Ill.
L6-2132	37.9	39.1	45.3	25.7	32.4	31.9	31.0	37.2	34.6	49.3	24.2
L6-1152	35.9	34.1	41.1	25.8	25.9	30.5	36.7	38.8	37.4	45.4	24.2
L6-1503	34.9	32.5	38.6	26.7	28.7	36.3	30.8	33.6	32.6	43.7	22.3
A7-1953	32.8	32.9	35.7	22.9	26.6	30.5	33.7	33.5	32.1	39.4	18.8
C764	32.7	30.5	45.6	23.9	27.4	26.1	27.6	33.1	32.8	40.8	25.2
Lincoln	32.7	29.9	37.3	23.4	26.8	24.7	28.9	35.3	32.0	36.3	22.7
Chief	32.4	32.4	36.0	22.1	30.0	27.6	29.5	37.9	34.2	40.7	18.7
Adams	31.4	27.8	39.5	26.9	26.4	27.6	34.6	34.1	30.1	34.5	20.8
Illini	29.0	28.4	38.8	24.5	29.1	24.7	21.5	32.6	29.9	31.5	20.4
Dunfield	28.5	28.3	31.2	24.4	23.7	24.7	26.9	33.0	30.3	31.0	19.7
Mean	32.8	31.6	38.9	24.6	27.7	28.5	30.1	34.9	32.6	39.3	21.7
Coef.of Var.(%)		11.1	7.1	11.6	9.7	--	--	6.6	6.8	7.8	8.1
Bu.Nec.for Sig.(5%)		4.8	3.8	4.0	3.9	--	--	3.4	3.2	4.4	2.5
		Yield Rank									
L6-2132		1	2	4	1	2	4	3	2	1	2
L6-1152		2	3	3	9	3	1	1	1	2	2
L6-1503		4	6	2	4	1	5	6	5	3	5
A7-1953		3	9	9	7	3	3	7	6	6	9
C764		6	1	7	5	7	8	8	4	4	1
Lincoln		7	7	8	6	8	7	4	7	7	4
Chief		5	8	10	2	5	6	2	3	5	10
Adams		10	4	1	8	5	2	5	9	8	6
Illini		8	5	5	3	8	10	10	10	9	7
Dunfield		9	10	6	10	8	9	9	8	10	8

Table 34. (Continued)

Strain	Urbana Ill.	Clay-ton Ill.	Ston-ington Ill.	Free-burg Ill.	Eldor-ado Ill.	Ames Iowa	Ottum-wa Iowa	Nor-borne Mo.	Lad-donia Mo.	Colum-bia Mo.	Lin-coln Nebr.	Man-hattan Kans.
L6-2132	40.4	39.3	40.3	43.3	41.4	39.2	38.9	45.8	36.5	33.4	40.5	43.2
L6-1152	44.1	32.6	38.5	37.1	30.6	36.9	36.6	43.3	35.4	33.2	39.1	41.7
L6-1503	37.0	38.0	33.8	38.9	31.9	36.7	32.3	41.2	38.0	34.8	39.5	40.8
A7-1953	36.7	36.4	31.3	40.1	33.9	33.6	33.2	35.9	32.0	30.0	33.6	38.8
C764	31.8	32.8	35.2	33.7	31.2	35.5	34.0	35.3	32.8	31.9	34.3	38.3
Lincoln	36.6	37.3	36.4	33.1	28.9	35.8	36.8	40.6	32.9	27.2	36.7	39.5
Chief	26.9	35.3	32.2	32.1	30.5	32.5	30.7	39.7	36.0	34.2	33.8	40.8
Adams	33.5	36.9	33.2	26.5	27.3	33.2	37.8	38.4	24.0	25.1	34.7	37.6
Illini	24.1	32.4	30.7	27.4	26.9	34.2	31.5	32.0	26.0	27.4	29.3	35.4
Dunfield	26.6	32.8	34.0	26.6	25.6	29.4	30.4	27.2	27.0	30.9	29.0	34.7
Mean	33.8	35.4	34.6	33.9	31.1	34.4	34.2	37.9	32.0	30.6	35.0	39.1
C. V. (%)	11.7	11.5	8.1	6.5	—	6.3	6.2	11.2	7.6	8.4	7.2	5.7
B.N.F.S.(5%)	5.7	Not Sig.	4.1	3.2	—	3.1	3.1	6.2	3.5	3.8	3.6	3.3
	Yield Rank											
L6-2132	2	1	1	1	1	1	1	1	2	3	1	1
L6-1152	1	9	2	4	5	2	4	2	4	4	3	2
L6-1503	3	3	6	3	3	3	7	3	1	1	2	3
A7-1953	4	5	9	2	2	7	6	7	7	7	8	6
C764	7	7	4	5	4	5	5	8	6	5	6	7
Lincoln	5	3	3	6	7	4	3	4	5	9	4	5
Chief	8	6	8	7	6	9	9	5	3	2	7	3
Adams	6	4	7	10	8	8	2	6	10	10	5	8
Illini	10	10	10	8	9	6	8	10	9	8	9	9
Dunfield	9	7	5	9	10	10	10	9	8	6	10	10

Table 35. Summary of maturity data, days earlier (-) or later (+) than Lincoln, for the strains in the Uniform Test, Group III, 1950.

Strain	Mean of 20 Tests	Columbia Pa.	Newark Del.	Beltsville Md.	Blacksburg Va.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Dwight Ill.
L6-2132	+7.2	0	+3	+7	-2	+10	+6	+ 5	+10	+ 9
L6-1152	+5.4	0	+2	+5	-4	+ 8	+6	+ 7	+ 7	+ 9
L6-1503	+8.1	-2	+2	+6	-2	+10	+7	+ 6	+12	+11
A7-1953	+4.8	0	+3	+3	+3	+ 8	+5	+ 4	+ 6	+ 6
C764	+4.6	0	+2	+5	-2	+ 6	+5	+ 3	+ 6	+ 4
Lincoln	0	0	0	0	0	0	0	0	0	0
Chief	+9.2	+7	+4	+7	+7	+10	+9	+11	+11	+ 9
Adams	-2.7	-10	+3	-9	-3	-10	+1	0	+ 1	- 5
Illini	+2.0	0	+3	-2	+2	+ 3	+2	+ 4	+ 4	0
Dunfield	+1.2	0	-2	-2	-2	- 1	-1	+ 6	+ 4	+ 4
Date planted		6/3	6/9	5/23	5/19	5/23	5/18	6/24	5/26	5/20
Lincoln matured		10/10	9/28	10/10	10/3	9/30	10/6	10/24	9/22	9/28
Days to mature 125		129	111	140	137	130	141	122	119	131

Table 35. (Continued)

Strain	Urbana Ill.	Stonington Ill.	Freeburg Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.
L6-2132	+ 6	+11	+14	+10	+6	+7	+ 9	+10	+ 9	+ 7	+7
L6-1152	+ 7	+10	+ 8	+ 5	+5	+5	+ 8	+ 5	+ 5	+ 4	+5
L6-1503	+ 9	+13	+12	+13	+9	+8	+10	+11	+10	+ 9	+8
A7-1953	+ 3	+ 5	+ 7	+ 5	+3	+3	+ 7	+ 5	+ 7	+ 7	+5
C764	+ 5	+ 7	+ 9	+ 6	+2	+3	+ 7	+ 5	+ 6	+ 6	+7
Lincoln	0	0	0	0	0	0	0	0	0	0	0
Chief	+11	+11	+12	+12	+8	+8	+ 8	+ 9	+12	+10	+7
Adams	0	- 2	- 3	- 1	-3	-2	- 2	- 5	0	- 3	-1
Illini	+ 1	+ 4	+ 2	+ 2	0	+2	+ 2	- 2	+ 3	+ 4	+5
Dunfield	0	+ 6	- 2	+ 1	+4	+2	+ 1	- 1	+ 2	+ 2	+2
Date planted	5/26	6/5	5/17	5/25	5/19	6/1	5/25	5/20	5/16	6/2	6/5
Lincoln matured	10/1	10/2	9/20	9/21	10/1	10/3	9/25	9/18	9/14	9/28	9/21
Days to mature	128	119	126	119	135	124	123	121	121	118	108

Table 36. Summary of lodging and height data for the strains in the Uniform Test, Group III, 1950.

Strain	Mean of 17 Tests[1]	Columbia Pa.	Newark Del.	Georgetown Del.	Beltsville Md.	Blacksburg Va.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Dwight Ill.
L6-2132	1.9	1.8	4.0	1.0	2.3		2.2	1.0	1.5	2.5	1.5
L6-1152	2.0	2.0	4.0	1.0	3.8		1.2	1.0	2.3	2.6	1.9
L6-1503	1.8	1.5	4.0	1.0	2.5		2.0	1.0	1.8	2.3	1.3
A7-1953	1.8	2.0	4.0	1.0	3.0		2.0	1.0	1.5	2.4	1.3
C764	1.9	1.5	4.0	1.0	2.5		1.8	1.0	1.5	2.5	1.3
Lincoln	1.9	1.5	4.0	1.0	2.3		1.5	1.0	2.0	3.5	2.0
Chief	2.7	2.8	4.0	1.0	3.0		2.5	1.5	2.5	2.9	2.1
Adams	1.9	1.8	4.0	1.0	2.8		1.5	1.1	2.3	2.8	2.1
Illini	2.6	2.5	4.0	1.0	2.5		2.2	1.5	2.8	3.1	2.8
Dunfield	2.9	3.5	4.0	1.0	4.0		2.8	1.5	3.5	3.5	2.3
Mean	2.1	2.1	4.0	1.0	2.9		2.0	1.2	2.2	2.8	1.9
	Mean of 21 Tests						Height				
L6-2132	38	35		28	42	30	43	30	34	42	35
L6-1152	36	33		27	39	29	41	29	33	39	33
L6-1503	37	35		26	39	30	43	29	33	40	34
A7-1953	38	35		30	42	32	41	30	35	42	33
C764	35	31		28	39	28	44	27	32	38	32
Lincoln	37	31		28	40	29	46	30	34	40	36
Chief	47	44		37	53	42	51	40	43	52	45
Adams	36	35		26	39	30	42	30	34	39	38
Illini	42	37		33	45	34	46	35	38	43	42
Dunfield	38	34		27	40	30	41	32	35	39	37
Mean	38	35		29	42	31	44	31	35	41	37

[1]Newark, Delaware; Georgetown, Delaware; and Columbia, Missouri not included in the mean.

Table 36. (Continued)

Strain	Urbana Ill.	Clayton Ill.	Stonington Ill.	Freeburg Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.
L6-2132	2.1		1.6	1.5	2.1	1.0	2.4	3.0	1.0	1.0	3.0	2.5
L6-1152	2.1		1.5	2.0	2.3	1.4	2.4	2.8	1.0	1.0	1.8	1.2
L6-1503	2.4		1.6	1.6	2.4	1.0	2.0	3.0	1.0	1.0	2.5	1.2
A7-1953	2.0		1.0	1.0	2.3	1.0	2.0	2.8	1.0	1.0	3.2	1.3
C764	2.5		1.4	1.6	2.3	1.3	2.1	3.0	1.0	1.0	3.0	2.2
Lincoln	2.1		1.3	1.8	2.3	1.3	2.4	2.3	1.0	1.0	3.0	1.5
Chief	3.0		2.6	2.6	3.0	2.1	3.1	3.3	1.0	1.0	4.8	2.7
Adams	2.6		1.9	1.1	2.4	1.0	2.1	2.3	1.0	1.0	2.8	1.1
Illini	3.0		2.4	2.8	3.0	1.9	3.1	3.5	1.3	1.0	4.0	1.9
Dunfield	3.0		2.6	2.4	2.9	2.3	3.6	4.0	1.0	1.0	4.2	2.6
Mean	2.5		1.8	1.8	2.5	1.4	2.5	3.0	1.0	1.0	3.2	1.8
						Height						
L6-2132	46	44	35	38	41	39	42	45	28	34	42	37
L6-1152	44	40	32	35	39	37	40	45	29	33	42	38
L6-1503	45	44	34	37	41	39	42	46	27	33	42	38
A7-1953	46	47	34	37	42	40	41	47	28	34	44	40
C764	42	42	32	34	40	36	38	46	26	32	40	36
Lincoln	46	44	33	38	40	36	42	45	28	32	42	37
Chief	57	56	46	45	48	52	51	62	28	38	53	44
Adams	48	44	33	31	36	36	43	45	25	22	42	36
Illini	50	50	39	39	43	42	47	60	31	36	46	40
Dunfield	45	43	36	34	38	40	43	50	30	34	43	38
Mean	47	45	35	37	41	40	43	49	28	33	44	38

Table 37. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1949-50.

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	43	37	38	41	28	43	43	43	43
L6-2132	38.7	+6.7	1.9	40	1.6	15.9	40.3	21.4	134.1
L6-1503	35.9	+7.4	1.9	39	2.0	17.0	39.8	22.2	133.4
L6-1152	35.9	+4.3	2.0	38	2.2	17.1	38.9	21.8	131.9
A7-1953	34.3	+3.6	1.8	41	1.8	14.9	39.6	21.8	134.0
Chief	33.5	+8.4	2.7	50	1.7	13.1	40.1	20.3	133.4
Lincoln	33.3	0	2.0	40	1.9	14.7	40.2	21.6	134.0
Adams	31.5	-3.8	2.0	38	1.9	14.6	40.5	21.9	130.1
Illini	29.4	+0.6	2.8	44	2.0	13.9	40.7	20.4	131.9
Dunfield	28.3	-2.0	2.8	39	2.2	14.9	39.5	21.5	127.9
Mean	33.4		2.2	41	1.9	15.1	40.0	21.4	132.3

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

Table 38. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1949-50.

Strain	Mean of 43 Tests	Newark Del.	Beltsville Md.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Dwight Ill	Urbana Ill.	Clayton Ill.
L6-2132	38.7	45.9	36.9	32.9	38.2	43.1	50.7	32.8	43.1	38.9
L6-1503	35.9	41.8	32.7	30.6	37.0	41.7	46.7	32.2	38.5	37.5
L6-1152	35.9	43.8	32.8	34.7	37.9	40.8	43.5	32.9	41.3	32.3
A7-1953	34.3	38.5	33.3	32.4	35.1	40.0	41.8	28.2	36.8	36.7
Chief	33.5	37.5	35.3	31.0	37.2	38.3	41.5	29.4	29.7	33.9
Lincoln	33.3	39.2	30.2	31.9	34.8	35.1	38.5	32.3	36.0	34.5
Adams	31.5	38.0	30.7	35.8	34.2	30.6	33.6	30.1	35.5	32.0
Illini	29.4	36.7	32.1	26.0	31.2	30.5	33.9	29.6	25.8	30.0
Dunfield	28.3	31.0	27.6	29.9	32.2	27.6	29.9	25.5	26.7	29.9
Mean	33.4	39.2	32.4	31.7	35.3	36.4	40.0	30.3	34.8	34.0
					Yield Rank					
L6-2132		1	1	3	1	1	1	2	1	1
L6-1503		3	5	7	4	2	2	4	3	2
L6-1152		2	4	2	2	3	3	1	2	6
A7-1953		5	3	4	5	4	4	8	4	3
Chief		7	2	6	3	5	5	7	7	5
Lincoln		4	8	5	6	6	6	3	5	4
Adams		6	7	1	7	7	8	5	6	7
Illini		8	6	9	9	8	7	6	9	8
Dunfield		9	9	8	8	9	9	9	8	9

Table 38. (Continued)

Strain	Stonington Ill.	Freeburg Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.
L6-2132	42.6	41.2	39.1	33.2	42.1	44.4	39.1	32.5	31.1	36.8
L6-1503	37.2	38.2	31.9	30.9	36.7	37.6	39.7	30.1	31.5	34.5
L6-1152	38.6	37.3	29.9	33.4	40.3	40.1	37.1	28.7	30.2	35.1
A7-1953	34.5	37.5	33.5	30.3	37.5	37.8	35.0	29.0	27.3	33.1
Chief	33.6	35.1	31.2	27.5	37.2	36.5	35.4	34.3	27.7	34.6
Lincoln	36.9	34.9	31.7	30.7	38.0	38.5	35.4	24.6	28.1	32.8
Adams	30.4	29.7	27.1	30.1	38.7	33.9	30.3	24.7	26.8	30.5
Illini	30.0	28.5	26.9	29.2	33.5	31.2	29.8	24.3	23.0	29.3
Dunfield	29.0	29.7	24.9	27.8	33.5	26.9	29.2	26.0	24.3	28.3
Mean	34.8	34.7	30.7	30.3	37.5	36.3	34.6	28.2	27.8	32.8
	Yield Rank									
L6-2132	1	1	1	2	1	1	2	2	2	1
L6-1503	3	2	3	3	7	5	1	3	1	4
L6-1152	2	4	6	1	2	2	3	5	3	2
A7-1953	5	3	2	5	5	4	6	4	6	5
Chief	6	5	5	9	6	6	4	1	5	3
Lincoln	4	6	4	4	4	3	4	8	4	6
Adams	7	7	7	6	3	7	7	7	7	7
Illini	8	9	8	7	8	8	8	9	9	8
Dunfield	9	7	9	8	8	9	9	6	8	9

Table 39. Seven-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1944-50.

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	137	114	122	126	108	135	135	135	135
Lincoln	30.9	0	2.2	37	1.7	14.1	40.3	21.7	134.2
Chief	30.5	+7.8	2.8	46	1.6	12.7	40.2	20.7	132.8
Adams	29.6	-2.9	2.1	35	1.7	14.4	40.5	22.0	130.7
Illini	27.6	+1.0	2.9	40	1.7	13.7	40.9	20.5	132.4
Dunfield	26.7	-1.0	2.9	37	2.0	15.0	39.6	21.7	127.6
Mean	29.1		2.6	39	1.7	14.0	40.3	21.3	131.5

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

Table 40. Seven-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1944-50.

Strain	Mean of 137 Tests	Columbia Pa.	Georgetown Del.	Beltsville Md.	Blacksburg Va.	Columbus Ohio	Lafayette Ind.	Greenfield Ind.	Worthington Ind.	Dwight Ill.
Years Tested		1948 1950	1945-48 1950	1945- 1950	1946-48 1950	1945- 1950	1944-45 1947-50	1944- 1950	1945- 1950	1944-47 1949-50
Lincoln	30.9	27.2	21.8	30.8	28.9	35.7	40.1	36.5	37.9	27.0
Chief	30.5	33.5	23.0	34.3	28.7	35.4	40.6	34.2	42.0	22.6
Adams	29.6	26.2	21.6	30.7	25.4	36.8	40.4	32.7	34.4	26.0
Illini	27.6	27.1	19.9	29.9	26.4	32.0	37.9	31.7	32.4	25.6
Dunfield	26.7	27.4	20.6	26.0	23.3	31.0	36.3	29.2	32.3	21.5
Mean	29.1	28.3	21.4	30.3	26.5	34.2	39.1	32.9	35.8	24.5
		Yield Rank								
Lincoln		3	2	2	1	2	3	1	2	1
Chief		1	1	1	2	3	1	2	1	4
Adams		5	3	3	4	1	2	3	3	2
Illini		4	5	4	3	4	4	4	4	3
Dunfield		2	4	5	5	5	5	5	5	5

Table 40. (Continued)

Strain	Urbana Ill.	Clayton Ill.	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Eldorado Ill.	Ames Iowa	Ottumwa Iowa	Norborne Mo.	Columbia Mo.	Lincoln Nebr.	Manhattan Kans.
Years Tested	1944-1950	1944-1950	1944-1950	1944-1949	1944-1950	1947 1950	1944-1950	1944-1950	1948-1950	1944-1950	1944-1950	1944-1950
Lincoln	35.2	28.3	33.4	29.7	29.8	31.4	36.5	33.4	40.4	21.6	25.6	26.9
Chief	31.2	27.5	30.7	28.3	28.9	31.5	34.0	32.2	41.8	26.8	22.7	26.1
Adams	34.4	26.4	31.1	27.1	25.8	28.1	37.1	33.6	35.6	22.4	25.5	26.5
Illini	28.6	24.1	28.8	25.2	23.5	27.7	34.5	30.9	35.5	20.0	22.4	24.0
Dunfield	29.1	25.3	27.4	27.0	24.8	25.2	32.0	30.0	30.1	22.1	23.8	23.9
Mean	31.7	26.3	30.3	27.5	26.6	28.8	34.8	32.0	36.7	22.6	24.0	25.5
	Yield Rank											
Lincoln	1	1	1	1	1	2	2	2	2	4	1	1
Chief	3	2	3	2	2	1	4	3	1	1	4	3
Adams	2	3	2	3	3	3	1	1	3	2	2	2
Illini	5	5	4	5	5	4	3	4	4	5	5	4
Dunfield	4	4	5	4	4	5	5	5	5	3	3	5

PRELIMINARY TEST, GROUP III

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

Strain	Source or Originating Agency	Origin
Chief	Ill. Agr. Exp. Sta.	Sel. from Illini x Manchu
Lincoln	Ill. A.E.S. & U.S.R.S.L.	Sel. from Mandarin x Manchu
A7-2002	Iowa A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Linc. x (Linc. x Rich.))
C974	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x Earlyana)
C976	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x Earlyana)
C977	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x Earlyana)
C978	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x Earlyana)
C980	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x Earlyana)
C981	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x Earlyana)
C983	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x Earlyana)
L8-10904	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Macoupin)
L8-10934	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Macoupin)
L8-10946	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Macoupin)
L8-10970	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Macoupin)

This group was planted at four locations. Yields were good at all locations. One of the new entries is from the second backcross Lincoln x (Lincoln x (Lincoln x Richland)). It is the only entry comparable to Lincoln in maturity, but does not appear to be superior to Lincoln. Seven of the entries are advanced F_4 lines from the three-way cross Lincoln x (Richland x Earlyana). This cross was designed to combine the yield and oil content of Lincoln with the lodging resistance of Richland and the height and early maturity of Earlyana. C976 averaged highest in yield but is probably too late for Group III. C983 is probably the best of these strains for Group III. C981 proved to be superior in yield to its sister strain, C980, in these tests and in the Indiana Preliminary test in 1949, but both are rather low in oil content.

Four of the strains are BC_1S_3 lines advanced to BC_1S_5 from the cross Lincoln x (Lincoln x Macoupin). These had been tested at Freeburg, Illinois, in 1949 in a Preliminary Group IV test and appeared to be of Group III maturity. The cross had been made to secure strains similar to Lincoln, but of Group IV maturity. The best of these is probably L8-10946, which is relatively high in yield, erect, and high in oil content. L8-10934 and L8-10904 are probably too late for Group III.

C976 probably should be entered in Group IV and C983, L8-10946, C978, C977, and perhaps C981, in Group III.

Table 41. Summary of agronomic and chemical data for the strains in the Preliminary Test, Group III, 1950.

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	4	4	4	4	2	4	4	4	4
C976	38.8	+14.8	1.5	40	1.0	16.3	41.6	21.0	132.4
C983	38.3	+ 5.0	2.0	39	1.0	16.9	40.0	21.1	135.2
L8-10946	37.0	+ 9.8	1.6	42	1.5	14.7	40.8	21.7	134.4
C981	36.5	+ 5.0	1.6	37	1.0	16.7	41.2	20.8	132.9
L8-10934	35.8	+15.0	2.1	40	1.0	16.4	40.9	21.3	136.4
C978	35.4	+ 3.8	1.9	39	1.7	15.6	40.3	21.9	135.7
C977	35.3	+ 9.0	2.0	42	1.2	17.1	41.0	21.3	134.3
C980	33.8	+ 4.0	1.6	38	1.8	15.6	40.9	20.7	133.0
Chief	33.8	+12.3	2.3	48	1.0	13.4	40.4	20.2	135.6
Lincoln	33.7	0	1.9	35	1.5	15.2	40.1	21.6	135.8
L8-10904	33.5	+13.8	2.3	42	1.0	14.0	39.5	21.1	137.6
C974	33.4	+ 5.8	1.8	37	1.5	18.3	43.6	20.8	132.7
A7-2002	32.9	+ 1.5	2.0	37	2.0	15.5	40.1	21.7	135.7
L8-10970	31.6	+10.3	2.0	42	2.0	15.2	40.8	21.4	134.5
Mean	35.0		1.9	40	1.4	15.8	40.8	21.2	134.7

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

Table 42. Summary of yield in bushels per acre and yield rank for the strains in the Preliminary Test, Group III, 1950.

Strain	Mean of 4 Tests	Lafayette Ind.	Worthington Ind.	Urbana Ill.	Columbia Mo.
C976	38.8	37.4	42.8	36.3	38.5
C983	38.3	36.6	42.5	36.8	37.3
L8-10946	37.0	37.4	41.0	37.4	32.0
C981	36.5	35.2	38.4	40.9	31.6
L8-10934	35.8	33.7	38.9	33.7	36.9
C978	35.4	33.8	38.2	38.4	31.1
C977	35.3	35.0	41.8	31.0	33.4
C980	33.8	35.5	36.2	34.2	29.2
Chief	33.8	37.1	37.1	28.9	31.9
Lincoln	33.7	35.7	36.6	33.6	28.9
L8-10904	33.5	34.1	35.1	29.9	34.8
C974	33.4	30.3	36.4	36.5	30.3
A7-2002	32.9	33.4	37.3	31.3	29.6
L8-10970	31.6	34.2	33.7	27.5	31.0
Mean	35.0	35.0	38.3	34.0	32.6
Coef. of Var. (%)		7.9	8.5	10.0	5.4
Bu. Nec. for Sig. (5%)		3.9	4.6	4.9	2.5
		Yield Rank			
C976		1	1	6	1
C983		4	2	4	2
L8-10946		1	4	3	6
C981		7	6	1	8
L8-10934		12	5	8	3
C978		11	7	2	9
C977		8	3	11	5
C980		6	12	7	13
Chief		3	9	13	7
Lincoln		5	10	9	14
L8-10904		10	13	12	4
C974		14	11	5	11
A7-2002		13	8	10	12
L8-10970		9	14	14	10

Table 43. Summary of maturity data, days earlier (-) or later (+) than Lincoln, and percentage oil for the strains in the Preliminary Test, Group III, 1950.

Strain	Mean of 4 Tests	Lafayette Ind.	Worthington Ind.	Urbana Ill.	Columbia Mo.
C976	+14.8	+ 9	+21	+14	+15
C983	+ 5.0	+ 4	+ 3	+ 8	+ 5
L8-10946	+ 9.8	+ 9	+10	+12	+ 8
C981	+ 5.0	+ 5	+ 7	+ 5	+ 3
L8-10934	+15.0	+11	+15	+16	+18
C978	+ 3.8	+ 3	+ 1	+ 9	+ 2
C977	+ 9.0	+ 6	+11	+13	+ 6
C980	+ 4.0	+ 4	+ 7	+ 3	+ 2
Chief	+12.3	+10	+13	+15	+11
Lincoln	0	0	0	0	0
L8-10904	+13.8	+11	+12	+15	+17
C974	+ 5.8	+ 7	+ 7	+ 5	+ 4
A7-2002	+ 1.5	+ 2	0	+ 2	+ 2
L8-10970	+10.3	+ 8	+11	+13	+ 9
Date planted		5/18	5/26	5/26	5/16
Lincoln matured		10/4	9/22	9/30	9/15
Days to mature	127	139	119	127	122
	Mean of 4 Tests		Percentage Oil		
C976	21.0	20.4	21.1	21.1	21.3
C983	21.1	20.5	20.4	21.3	22.1
L8-10946	21.7	20.7	21.7	22.0	22.2
C981	20.8	20.2	20.5	20.7	21.8
L8-10934	21.3	20.0	21.1	21.9	22.3
C978	21.9	21.4	21.4	22.3	22.3
C977	21.3	20.6	21.1	21.3	22.0
C980	20.7	19.6	20.8	20.7	21.5
Chief	20.2	19.8	19.1	20.6	21.1
Lincoln	21.6	21.4	21.5	21.5	21.9
L8-10904	21.1	19.8	21.2	21.4	22.1
C974	20.8	20.1	20.3	21.2	21.5
A7-2002	21.7	21.4	21.2	21.8	22.2
L8-10970	21.4	20.7	20.8	21.9	22.3
Mean	21.2	20.5	20.9	21.4	21.9

UNIFORM TEST, GROUP IV

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

Strain	Source or Originating Agency	Origin
Anderson	Farmer's Selection	Rogue in Lincoln
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
C612	Purdue A.E.S. & U.S.R.S.L.	Sel. from C508 (Patoka x L7-1355)
L6-1656	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Richland)
L6-5679	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Richland
S7-270	Mo. A.E.S. & U.S.R.S.L.	Sel. from Chief x (Macoupin x Chief)

For the six strains which were grown in this test in 1949, yields averaged about the same in 1950, but oil content averaged almost .9% lower than in 1949. C612, however, yielded two bushels more and was 1.4% lower in oil content than in 1949.

Only two new strains were entered in Group IV in 1950. S7-270, from a Chief backcross, averaged about the same as Chief in oil content, height, and lodging resistance, but was seven days later and yielded about a bushel more. S7-270 showed up best at Freeburg where the early generations of the strain had been selected.

Anderson was in Group III in 1949 but proved to be rather late for that group and was moved to Group IV. Anderson averaged about the same as Wabash in yield, but had .7% more oil. This strain is not outstanding in yield but apparently is high in oil content.

L6-2132 probably should be tested in Group IV. It was included as an extra variety at six locations in 1950. As an average of Evansville, Worthington, and Freeburg, L6-2132 yielded five bushels more than Wabash and was six days earlier. It averaged only one bushel less than C612 and was 13 days earlier. At Clayton, Stonington, and Urbana, it yielded 8.7 bushels more than Wabash and 4 bushels more than C612.

Six strains have been in Group IV for two years (Tables 48 and 49). L6-5679 and C612 have the same average yield, but in 1949, L6-5679 was 2.5 bushels ahead of C612 and in 1950 the reverse was true. C612 is two days earlier and .8% higher in oil content. L6-1656 has averaged 2.7 bushels higher than Wabash and about the same in other respects. L6-5679 and L6-1656 probably should be continued for another year.

C612 and Wabash have been compared for five years in Group IV (Tables 50 and 51). Wabash is now in commercial production and has been very well received by the producers. Indiana reports about 250,000 acres, Illinois at least 300,000 acres and Kansas 2,500 acres. C612 has the highest average yield and has outyielded

Wabash at all locations at which they have been tested for three years or more. These data indicate that C612 is high in yield, lodging resistance, and oil content. It has averaged three days later than Wabash, but at several locations in 1950, C612 was very slow to dry down and would have been a week or ten days later in combining. It would appear that where maturity is not a problem, as it is when wheat follows in the rotation, the increased yield of C612 should make it a popular variety in southern Indiana, southern Illinois, southern Missouri, Kansas, and other areas with a similar growing season.

Strain C612 was approved for increase by the Work Planning Conference of the North Central States Collaborators of the U. S. Regional Soybean Laboratory at Urbana, Illinois, March 8, 1950. The recommendations submitted by the reviewing committee of strain C612 and passed by the conference follow:

"The committee recommends to the Soybean Conference that (1) seed of soybean strain C612 be increased, (2) the details for distribution of the seed stock now on hand (150 pounds) are to be worked out with the interested states of Indiana, Illinois, Kansas and Missouri, (3) procedures outlined by the Regional Seed Practices Committee are to be followed."

The available foundation seed was distributed on the basis of the estimated acreage that the new variety will occupy in each state. The 1950 distribution and production is as follows:

	Pounds allotted	Bushels produced
Indiana	22	37
Illinois	74	134
Missouri	24	70
Kansas	15	not known

This variety will be named and released to pure seed growers in the spring of 1952. Dr. A. H. Probst has prepared the following history of this strain.

1939 - The cross, Patoka x L7-1355, was made by L. F. Williams at Urbana, Illinois. This cross was designated as LX590.

1940 - F_1. Grown by L. F. Williams at Urbana, Illinois.

1941 - F_2. Grown by L. F. Williams at Urbana, Illinois.

1942 - F_3. Bulked F_3 seed was received by A. H. Probst at Lafayette, Indiana, and grown in spaced nursery. Single plants were selected.

1943 - F_4. Plant rows grown at Lafayette, Indiana.

1944 - F_5. Selection LX590-13 was grown in an early generation yield test at Evansville, Indiana.

1945 - F_6. Selection LX590-13 was grown in an early generation yield test at Evansville, Indiana. Six plant selections were made from LX590-13 and designated LX590-13-1,-2,-3,-4,-5, and -6.

1946 - F_7. Selection LX590-13 was entered in Uniform Test, Group IV, and designated C508. The six selections were grown in plant rows at Evansville, Indiana. Selections LX590-13-1,-2, and -4 were saved. They were designated as C611, C612, and C613, respectively.

1947 - F_8. C508, C611, C612, and C613 were entered in Uniform Test, Group IV. C508 was also entered in Uniform Preliminary Tests, Groups LIV and CIV. C508 and the selections were all very similar in agronomic and chemical characteristics. C612 was retained.

1948 - F_9. C508 and C612 were grown in Uniform Test, Group IV. C508 was grown in Uniform Preliminary Test, Group IV. About 70 spaced plants were saved from C612 for the production of elite seed. These were threshed individually.

1949 - F_{10}. C612 was grown in Uniform Test, Group IV. Sixty-six plant rows were grown from the selected plants to produce elite seed. These were carefully observed for any mixtures during the growing season. Each row was harvested separately and the seed carefully observed for mixtures. The seed from 59 rows was composited to give 150 pounds of elite seed.

Table 44. Summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1950.

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	12	13	9	13	13	13	13
C612	37.5	+4.3	1.7	40	1.6	17.8	41.4	20.1	130.4
L6-1656	36.3	-2.0	1.9	42	1.7	15.5	40.2	20.6	135.7
L6-5679	35.1	+4.7	2.1	45	1.7	14.3	39.7	19.7	131.6
S7-270	34.6	+4.9	2.5	50	1.5	13.8	40.9	19.5	132.6
Chief	33.4	-2.2	2.5	49	2.1	13.4	40.9	19.6	133.6
Patoka	33.0	-0.1	2.2	37	1.6	18.6	43.2	19.5	132.6
Wabash	33.0	0	2.1	43	1.4	14.4	40.2	20.5	131.0
Anderson	32.8	-1.6	2.4	39	1.6	16.4	40.2	21.2	131.2
Mean	34.5		2.2	43	1.7	15.5	40.8	20.1	132.3

[1]Days earlier (-) or later (+) than Wabash. Wabash required 137 days to mature.

Table 45. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1950.

Strain	Mean of 13 Tests	Columbia Pa.	Georgetown Del.	Beltsville Md.	Worthington Ind.	Evansville Ind.	Urbana Ill.
C612	37.5	30.0	19.9	42.7	43.9	48.0	35.0
L6-1656	36.3	32.2	20.0	31.8	40.2	44.0	35.6
L6-5679	35.1	30.3	21.6	28.2	39.1	43.9	34.2
S7-270	34.6	32.5	19.5	36.2	36.5	39.9	28.0
Chief	33.4	32.4	21.1	35.4	32.1	45.5	24.1
Patoka	33.0	35.0	18.6	32.6	33.0	39.7	31.1
Wabash	33.0	32.4	17.8	28.6	36.4	42.4	31.2
Anderson	32.8	31.7	19.0	30.0	35.0	42.6	31.9
Mean	34.5	32.1	19.7	33.2	37.0	43.3	31.4
Coef. of Var. (%)		11.1	9.7	6.5	9.1	8.0	10.0
Bu. Nec. for Sig.(5%)		4.8	2.6	2.7	4.8	5.0	4.8

	Yield Rank					
C612	8	4	1	1	1	2
L6-1656	5	3	5	2	3	1
L6-5679	7	1	8	3	4	3
S7-270	2	5	2	4	7	7
Chief	3	2	3	8	2	8
Patoka	1	7	4	7	8	6
Wabash	3	8	7	5	6	5
Anderson	6	6	6	6	5	4

Table 45. (Continued)

Strain	Clayton Ill.	Stonington Ill.	Freeburg Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.
C612	35.7	33.3	39.8	40.0	38.5	39.5	40.6
L6-1656	33.6	35.8	37.9	43.9	39.8	37.7	39.5
L6-5679	29.2	30.9	40.0	33.1	43.0	43.2	39.5
S7-270	31.9	22.4	42.2	41.9	40.7	38.7	39.3
Chief	34.5	32.4	29.7	37.3	37.8	33.9	37.6
Patoka	33.1	33.1	35.1	29.8	36.1	35.2	37.1
Wabash	29.6	29.4	34.7	36.6	37.9	34.7	37.3
Anderson	26.9	30.6	34.2	35.3	36.1	34.2	38.8
Mean	31.8	31.0	36.7	37.2	38.7	37.1	38.7
Coef. of Var. (%)	12.4	8.9	7.5	15.7	12.4	5.6	6.8
Bu. Nec. for Sig.(5%)	5.9	4.3	4.0	8.5	7.1	3.0	Not sig.
	Yield Rank						
C612	1	2	3	3	4	2	1
L6-1656	3	1	4	1	3	4	2
L6-5679	7	5	2	7	1	1	2
S7-270	5	8	1	2	2	3	4
Chief	2	4	8	4	6	8	6
Patoka	4	3	5	8	7	5	8
Wabash	6	7	6	5	5	6	7
Anderson	8	6	7	6	7	7	5

Table 46. Summary of maturity data, days earlier (-) or later (+) than Wabash, for the strains in the Uniform Test, Group IV, 1950.

Strain	Mean of 10 Tests	Columbia Pa.	Beltsville Md.	Worthington Ind.	Evansville Ind.
C612	+4.3	+3	+3	+4	+11
L6-1656	-2.0	-5	-2	-5	- 2
L6-5679	+4.7	0	+3	+6	+14
S7-270	+4.9	0	+5	+3	+ 9
Chief	-2.2	-3	-1	-6	+ 3
Patoka	-0.1	0	-1	0	0
Wabash	0	0	0	0	0
Anderson	-1.6	-5	-3	-4	+ 1
Date planted		6/3	5/23	5/26	5/24
Wabash matured		10/20	10/13	10/12	10/8
Days to mature	137	139	143	139	137

Table 46. (Continued)

Strain	Urbana Ill.	Free-burg Ill.	Nor-borne Mo.	Lad-donia Mo.	Colum-bia Mo.	Man-hattan Kans.
C612	+1	+6	+4	+5	+3	+3
L6-1656	-4	0	-2	+1	0	-1
L6-5679	0	+6	+5	+5	+4	+4
S7-270	+4	+6	+6	+6	+5	+5
Chief	-1	-3	-4	0	-4	-3
Patoka	-1	-1	+1	+1	0	0
Wabash	0	0	0	0	0	0
Anderson	-3	-2	+1	+2	-1	-2
Date planted	5/26	5/17	5/25	5/20	5/16	6/5
Wabash matured	10/17	10/5	10/10	9/29	10/2	10/4
Days to mature	144	141	138	132	139	121

Table 47. Summary of lodging and height data for the strains in the Uniform Test, Group IV, 1950.

Strain	Mean of 12 Tests[1]	Columbia Pa.	Georgetown Del.	Beltsville Md.	Worthington Ind.	Evansville Ind.	Urbana Ill.
C612	1.7	2.3	1.0	2.5	1.8	1.5	2.4
L6-1656	1.9	1.5	1.0	2.8	2.3	2.5	2.5
L6-5679	2.1	2.3	1.0	3.5	2.5	2.3	2.5
S7-270	2.5	3.3	1.0	4.3	2.9	2.8	2.6
Chief	2.5	2.8	1.0	3.3	3.1	2.5	2.8
Patoka	2.2	2.3	1.0	3.0	2.8	2.3	2.6
Wabash	2.1	2.8	1.0	3.5	2.4	2.5	2.4
Anderson	2.4	2.3	1.0	3.0	3.3	3.0	2.6
Mean	2.2	2.5	1.0	3.2	2.6	2.4	2.6
	Mean of 13 Tests			Height			
C612	40	35	30	42	44	40	48
L6-1656	42	35	33	45	46	43	48
L6-5679	45	37	36	53	50	45	49
S7-270	50	40	39	60	54	50	57
Chief	49	44	38	53	53	52	58
Patoka	37	34	28	39	40	38	44
Wabash	43	35	32	46	49	45	50
Anderson	39	34	31	43	43	40	47
Mean	43	37	33	48	47	44	50

[1]Georgetown not included in the mean.

Table 47. (Continued)

Strain	Clayton Ill.	Stonington Ill.	Freeburg Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.
C612	1.5	1.0	1.6	2.5	1.0	1.0	1.7
L6-1656	1.8	1.4	1.8	3.0	1.0	1.0	1.4
L6-5679	2.0	1.8	1.5	3.0	1.0	1.0	1.6
S7-270	2.3	2.5	2.4	3.0	1.0	1.0	2.3
Chief	1.9	2.8	2.8	3.0	1.0	1.5	3.0
Patoka	1.8	2.1	1.8	3.0	1.0	1.0	2.2
Wabash	1.6	2.1	2.1	2.0	1.0	1.0	1.7
Anderson	2.4	2.4	2.3	3.5	1.5	1.5	1.5
Mean	1.9	2.0	2.0	2.9	1.1	1.1	1.9
				Height			
C612	48	37	40	48	30	34	40
L6-1656	49	39	41	47	34	39	42
L6-5679	52	43	43	52	40	43	46
S7-270	58	46	45	60	43	48	47
Chief	58	47	43	60	37	42	46
Patoka	43	35	36	43	29	32	37
Wabash	50	44	39	50	36	40	42
Anderson	45	36	38	48	31	36	39
Mean	50	41	41	51	35	39	42

Table 48. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1949-50.

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	28	23	26	27	20	27	27	27	27
L6-5679	36.4	+5.7	2.0	47	1.6	14.4	39.9	20.0	132.1
C612	36.4	+3.9	1.8	41	1.6	17.2	40.9	20.8	129.9
L6-1656	35.8	-0.1	2.0	44	1.7	14.7	39.9	21.0	135.8
Chief	33.3	-2.0	2.6	51	1.9	13.0	40.5	20.2	133.0
Wabash	33.1	0	2.1	44	1.3	14.3	40.1	20.8	130.3
Patoka	31.4	+0.4	2.3	38	1.7	18.2	43.1	19.9	132.4
Mean	34.4		2.1	44	1.6	15.3	40.7	20.5	132.3

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

Table 49. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1949-50.

Strain	Mean of 28 Tests	Beltsville Md.	Worthington Ind.	Evansville Ind.	Urbana Ill.	Clayton Ill.
L6-5679	36.4	36.9	43.7	47.2	38.0	33.8
C612	36.4	41.3	41.8	44.2	39.6	36.8
L6-1656	35.8	36.3	44.9	42.1	40.8	34.5
Chief	33.3	37.1	41.3	38.5	27.4	33.7
Wabash	33.1	33.2	40.5	42.5	34.4	32.2
Patoka	31.4	31.8	34.3	37.5	32.5	31.3
Mean	34.4	36.1	41.1	42.0	35.5	33.7
		Yield Rank				
L6-5679		3	2	1	3	3
C612		1	3	2	2	1
L6-1656		4	1	4	1	2
Chief		2	4	5	6	4
Wabash		5	5	3	4	5
Patoka		6	6	6	5	6

Table 49. (Continued)

Strain	Stonington Ill.	Freeburg Ill.	Norborne Mo.	Laddonia Mo.	Columbia Mo.	Manhattan Kans.
L6-5679	34.0	41.2	36.3	41.6	36.9	33.7
C612	35.2	39.3	37.5	37.8	35.4	33.8
L6-1656	36.8	37.8	40.0	40.9	31.2	33.9
Chief	33.7	34.3	36.2	37.5	32.6	32.3
Wabash	31.5	34.3	36.7	37.8	28.6	32.4
Patoka	29.7	35.9	28.5	34.5	31.5	31.3
Mean	33.5	37.1	35.9	38.4	32.7	32.9
	Yield Rank					
L6-5679	3	1	4	1	1	3
C612	2	2	2	3	2	2
L6-1656	1	3	1	2	5	1
Chief	4	5	5	5	3	5
Wabash	5	5	3	3	6	4
Patoka	6	4	6	6	4	6

Table 50. Five-year summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1946-50.

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	77	66	68	73	59	74	74	74	74
C612	33.8	+2.9	1.9	38	1.8	17.1	41.4	21.5	129.1
Wabash	31.0	0	2.1	42	1.5	14.5	40.5	21.4	128.8
Chief	30.3	-1.8	2.6	48	2.0	13.0	41.0	20.6	131.8
Patoka	29.4	+0.3	2.2	36	1.9	17.9	43.7	20.2	131.9
Mean	31.1		2.2	41	1.8	15.6	41.7	20.9	130.4

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

Table 51. Five-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1946-50.

Strain	Mean of 77 Tests	Columbia Pa.	Georgetown Del.	Beltsville Md.	Blacksburg Va.	Worthington Ind.	Vincennes Ind.	Evansville Ind.	Urbana Ill.	Clayton Ill.
Years Tested		1948, 1950	1946-48 1950	1946-1950	1947-1948	1946-1950	1946-1948	1946-1950	1946-1950	1946-1950
C612	33.8	32.5	25.5	34.1	30.0	42.9	29.1	44.2	37.9	34.1
Wabash	31.0	33.9	24.1	30.6	31.8	41.6	22.0	41.3	33.2	28.4
Chief	30.3	33.5	23.2	33.2	28.0	40.3	24.0	40.3	29.1	27.1
Patoka	29.4	34.2	23.0	28.0	25.8	36.1	28.1	36.0	31.6	27.7
Mean	31.1	33.5	24.0	31.5	28.9	40.2	25.8	40.5	33.0	29.3
		Yield Rank								
C612		4	1	1	2	1	1	1	1	1
Wabash		2	2	3	1	2	4	2	2	2
Chief		3	3	2	3	3	3	3	4	4
Patoka		1	4	4	4	4	2	4	3	3

Table 51. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Eldorado Ill.	Shelbyville Mo.	Norborne Mo.	Laddonia Mo.	Elsberry Mo.	Columbia Mo.	Manhattan Kans.	Thayer Kans.
Years Tested	1946-1950	1946-1949	1946-1950	1947-1949	1946-1948	1948-1950	1949-1950	1946, 1949	1946-1950	1946-1950	1947, 1949
C612	34.8	37.9	34.2	33.8	22.3	40.2	39.6	32.6	30.7	27.6	13.7
Wabash	31.8	35.2	30.5	29.4	20.0	38.6	37.8	34.2	27.1	24.8	14.3
Chief	31.3	34.4	29.4	29.9	21.5	39.6	37.5	30.4	28.4	24.1	14.9
Patoka	29.9	33.2	31.8	30.0	19.8	32.6	34.5	32.1	28.7	24.1	13.2
Mean	32.0	35.2	31.5	30.8	20.9	37.8	37.4	32.3	28.7	25.2	14.0
	Yield Rank										
C612	1	1	1	1	1	1	1	2	1	1	3
Wabash	2	2	3	4	3	3	2	1	4	2	2
Chief	3	3	4	3	2	2	3	4	3	3	1
Patoka	4	4	2	2	4	4	4	3	2	3	4

PRELIMINARY TEST, GROUP IV

Strain	Source or Originating Agency	Origin
Chief	Ill. Agr. Exp. Sta.	Sel. from Illini x Manchu
Cypress #1	Cypress Land Farms Co., St. Louis, Mo.	Sel. from Korean
Wabash	Purdue A.E.S. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C612	Purdue A.E.S. & U.S.R.S.L.	Sel. from C508 (Patoka x L7-1355)
C794	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Patoka
C799	Purdue A.E.S. & U.S.R.S.L.	Sel. from C143 x Lincoln
C801	Purdue A.E.S. & U.S.R.S.L.	Sel. from C143 x Lincoln
C805	Purdue A.E.S. & U.S.R.S.L.	Sel. from C143 x Lincoln
C975	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)
C982	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Richland x Earlyana)
C984	Purdue A.E.S. & U.S.R.S.L.	Sel. from Lincoln x Ogden
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
L8-10755	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x C171)
L8-10778	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)
L8-10879	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Chief)
L8-10952	Ill. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Macoupin)
S8-96	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x C171)
S8-101	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x C171)
S8-139	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x C171)
S8-160	Mo. A.E.S. & U.S.R.S.L.	Sel. from Lincoln x (Lincoln x Chief)

This test was grown at six locations. Aside from the check strains, seven different crosses were represented in this material. All of these had Lincoln as one parent. Lincoln has shown wide adaptation and has performed very well in Group IV territory. Most of these crosses have been made in an attempt to produce strains of Group IV maturity having the desirable characteristics of Lincoln, with the thought that the later maturity would increase yields. The three-way cross, Lincoln x (Richland x Earlyana), was made to secure early strains of Group II maturity, but transgressive segregation produced a number of late strains also. There was a correlation of .756 between maturity and yield in this test, with a regression of .589 bushels for each day earlier or later than the mean maturity. Since the maturity range was so great, deviations from the expected yeild on the basis of actual maturity were calculated and are included in the summary (Table 53). The three strains from the cross, Lincoln x Ogden, are of interest since this is the first time that strains with Ogden parentage have been entered in the Northern tests. These selections are F4 lines advanced to F6. They have all yielded well for their maturity. C985 was high in yield and unusually high in oil content but is rather late for Group IV. It probably should be entered in Group IVS and perhaps

in Group IV, also. C986 and C984 also should be entered in Group IV. Of the three selections from the three-way cross, C979 seems to be the best. It probably should be entered in Group IV, although it is relatively early for this group. C805 seems to be the best of the C143 x Lincoln selections, but C799 had a very high oil content.

There were six BC_1S_3 selections from the backcross Lincoln x (Lincoln x C171). C171 is from the same cross as Gibson but has always looked better than Gibson in Illinois. The best of these selections is evidently L8-10780. L8-10778 is a sister selection of L8-10780 and is generally inferior to it. L8-10755 yielded very well for its maturity but is really early enough for Group III. S8-96 is probably the best of the three selections from Missouri. The two BC_1S_3 strains from the cross Lincoln x (Lincoln x Chief), L8-10879 and S8-160, were disappointing in yield, as was also L8-10952, the BC_1S_3 line from Lincoln x (Lincoln x Macoupin).

Cypress #1 proved to be of Group III maturity. It yielded about as well as might be expected for its early maturity. It has a low oil content, however, and lodges excessively. It is unusual to find such a short strain which lodges so badly. Several cooperators estimated that half of its beans would be lost by a combine due to its short growth and peculiar type of lodging. In addition, reports indicate that Cypress #1 seems to be more susceptible to leaf diseases such as frog-eye, bacterial pustule, mildew, and wildfire than the other strains in the test.

Table 52. Summary of agronomic and chemical data for the strains in the Preliminary Test, Group IV, 1950.

Strain	Mean Yield Bu/A	Dev. from Expected Yield	Maturity	Lodging	Height Inches	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	6		6	6	6	6	5	6	6	6
C985	41.5	+1.7	+6.3	2.0	42	1.0	18.2	41.1	21.6	137.6
L8-10780	40.4	+2.6	+3.0	1.9	43	1.3	18.7	42.0	20.9	132.9
C986	39.8	+1.8	+3.3	2.2	41	1.4	17.4	42.4	20.9	135.7
L8-10778	38.8	+0.7	+3.5	2.0	44	1.6	17.6	43.0	20.7	135.5
C612	38.3	-0.5	+4.7	1.6	40	1.2	18.2	42.5	20.7	131.2
C794	37.9	+0.8	+1.8	2.4	43	1.6	18.0	42.8	20.3	136.2
S8-96	37.4	-0.2	+2.7	2.1	43	1.6	17.9	42.7	20.8	133.5
L8-10952	37.3	-1.5	+4.7	2.2	43	1.6	16.5	42.6	20.9	134.7
C979	37.1	+3.2	-3.7	1.7	41	2.0	16.0	41.8	20.5	134.6
C805	36.9	+0.7	+0.3	2.0	43	1.1	16.6	43.1	20.5	133.3
S8-101	36.5	-1.5	+3.3	2.1	44	1.1	17.6	42.6	20.7	133.9
C984	36.2	+1.9	-3.0	2.3	43	1.3	18.7	42.5	20.4	134.8
C982	36.0	+0.4	-0.8	1.6	39	1.8	16.1	42.5	20.3	134.6
C801	35.9	+0.3	-0.8	1.9	43	1.4	16.5	42.3	20.4	134.0
L8-10755	35.6	+2.8	-5.5	2.2	41	1.6	17.1	42.0	20.8	135.6
Wabash	34.9	-1.1	0	2.2	42	1.3	14.6	41.6	20.6	131.1
S8-139	34.8	-0.8	-0.7	2.3	42	1.5	15.4	42.4	20.2	134.4
C975	34.8	+0.1	-2.2	2.2	39	2.3	18.8	41.9	20.6	132.7
S8-160	34.7	-2.2	+1.5	2.1	40	1.7	14.5	41.9	20.1	135.9
C799	33.7	-1.6	-1.2	1.8	40	1.6	17.2	41.9	21.4	133.8
Chief	33.4	-1.6	-1.8	2.5	47	2.0	13.8	42.1	19.8	134.5
Cypress #1	30.1	-0.5	-9.2	3.5	31	1.6	19.2	43.6	19.4	133.0
L8-10879	29.6	-4.8	-2.8	2.4	45	1.4	13.6	42.3	20.6	136.7
Mean	36.1			2.1	42	1.5	16.9	42.3	20.6	134.4

[1] Days earlier (-) or later (+) than Wabash. Wabash required 137 days to mature.

Table 53. Summary of yield in bushels per acre for the strains in the Preliminary Test, Group IV, 1950.

Strain	Mean of 6 Tests	Belts-ville Md.	Worth-ington Ind.	Evans-ville Ind.	Free-burg Ill.	Colum-bia Mo.	Man-hattan Kans.
C985	41.5	37.6	41.5	51.2	36.4	41.9	40.3
L8-10780	40.4	33.9	39.2	48.5	40.9	40.7	39.4
C986	39.8	31.9	47.1	45.2	34.3	40.7	39.7
L8-10778	38.8	26.2	41.5	47.5	37.5	39.6	40.2
C612	38.3	35.5	36.9	47.3	35.2	36.1	38.7
C794	37.9	32.1	32.2	46.3	38.9	42.5	35.1
S8-96	37.4	30.8	39.1	43.4	38.2	34.9	37.7
L8-10952	37.3	27.3	43.5	45.4	36.9	34.7	36.1
C979	37.1	30.5	38.6	43.8	34.0	38.8	36.6
C805	36.9	30.8	34.2	44.6	38.2	37.0	36.6
S8-101	36.5	29.0	36.8	43.1	37.6	35.9	36.3
C984	36.2	32.2	35.0	37.5	33.9	38.5	39.9
C982	36.0	31.3	34.1	42.3	33.6	35.5	38.9
C801	35.9	28.9	37.0	42.4	34.0	36.8	36.1
L8-10755	35.6	28.4	35.1	41.1	34.6	34.4	39.9
Wabash	34.9	26.3	37.0	42.4	33.7	33.8	36.1
S8-139	34.8	24.6	31.4	44.2	32.9	35.3	40.6
C975	34.8	27.6	32.5	43.0	31.3	37.2	37.1
S8-160	34.7	27.6	32.5	43.1	34.0	33.7	37.4
C799	33.7	31.1	33.1	39.0	29.2	34.1	35.9
Chief	33.4	29.3	31.6	42.4	29.1	30.9	36.8
Cypress #1	30.1	26.1	27.9	33.5	29.6	31.2	32.4
L8-10879	29.6	25.8	22.0	35.0	32.6	30.3	32.0
Mean	36.1	29.8	35.6	43.1	34.6	36.3	37.4
Coef. of Var. (%)		12.3	11.5	9.7	9.1	--	5.9
Bu. Nec. for Sig. (5%)		6.0	5.8	5.6	4.6	—	3.1

Table 54. Summary of yield rank for the strains in the Preliminary Test, Group IV, 1950.

Strain	Beltsville Md.	Worthington Ind.	Evansville Ind.	Freeburg Ill.	Columbia Mo.	Manhattan Kans.
C985	1	3	1	8	2	2
L8-10780	3	5	2	1	3	7
C986	6	1	7	11	3	6
L8-10778	20	3	3	6	5	3
C612	2	10	4	9	11	9
C794	5	19	5	2	1	21
S8-96	9	6	11	3	15	10
L8-10952	18	2	6	7	16	17
C979	11	7	10	12	6	14
C805	9	14	8	3	9	14
S8-101	13	11	12	5	12	16
C984	4	13	21	15	7	4
C982	7	15	18	17	13	8
C801	14	8	15	12	10	17
L8-10755	15	12	19	10	17	4
Wabash	19	8	15	16	19	17
S8-139	23	21	9	18	14	1
C975	16	17	14	20	8	12
S8-160	16	17	12	12	20	11
C799	8	16	20	22	18	20
Chief	12	20	15	23	22	13
Cypress #1	21	22	23	21	21	22
L8-10879	22	23	22	19	23	23

Table 55. Summary of maturity data, days earlier (-) or later (+) than Wabash, for the strains in the Preliminary Test, Group IV, 1950.

Strain	Mean of 6 Tests	Belts-ville Md.	Worth-ington Ind.	Evans-ville Ind.	Free-burg Ill.	Colum-bia Mo.	Man-hattan Kans.
C985	+6.3	+6	+ 5	+ 9	+ 8	+ 4	+6
L8-10780	+3.0	+2	+ 1	+ 9	+ 4	- 1	+3
C986	+3.3	+2	+ 2	+ 6	+ 4	0	+6
L8-10778	+3.5	+2	+ 4	+ 9	+ 4	0	+2
C612	+4.7	+4	+ 6	+10	+ 6	+ 1	+1
C794	+1.8	+2	+ 3	+ 1	+ 5	0	0
S8-96	+2.7	+3	+ 1	+ 8	+ 4	- 2	+2
L8-10952	+4.7	+4	+ 2	+ 4	+ 6	+ 4	+8
C979	-3.7	-3	- 5	- 4	- 3	- 3	-4
C805	+0.3	0	- 1	+ 3	0	- 2	+2
S8-101	+3.3	+3	+ 1	+ 9	+ 5	0	+2
C984	-3.0	-2	- 8	- 3	- 2	- 3	0
C982	-0.8	-2	+ 5	- 1	+ 1	- 2	-6
C801	-0.8	+2	- 2	- 1	0	- 2	-2
L8-10755	-5.5	-2	-10	- 7	- 5	- 5	-4
Wabash	0	0	0	0	0	0	0
S8-139	-0.7	+1	- 3	- 1	+ 5	- 3	-3
C975	-2.2	+6	- 6	- 6	- 2	- 4	-1
S8-160	+1.5	-1	- 2	+ 9	+ 2	+ 1	0
C799	-1.2	+2	- 3	- 2	+ 1	- 2	-3
Chief	-1.8	-3	- 4	+ 3	- 2	- 3	-2
Cypress #1	-9.2	-4	-15	-11	-11	-10	-4
L8-10879	-2.8	-3	- 6	- 1	- 2	- 2	-3
Date planted		5/23	5/26	5/24	5/17	5/16	6/6
Wabash matured		10/14	10/11	10/8	10/8	10/3	10/5
Days to mature	137	144	138	137	144	140	121

Table 56. Summary of percentage oil for the strains in the Preliminary Test, Group IV, 1950.

Strain	Mean of 6 Tests	Belts-ville Md.	Worth-ington Ind.	Evans ville Ind.	Free-burg Ill.	Colum-bia Mo.	Man hattan Kans.
C985	21.6	21.6	21.5	21.4	20.9	22.4	21.7
L8-10780	20.9	21.7	21.0	20.7	19.8	21.3	21.0
C986	20.9	20.8	21.2	20.6	20.1	21.7	21.1
L8-10778	20.7	20.6	21.3	19.7	19.9	21.6	20.8
C612	20.7	20.8	20.7	20.7	19.9	21.6	20.5
C794	20.3	19.9	20.2	19.7	19.6	21.6	20.6
S8-96	20.8	21.2	20.8	20.1	19.8	21.8	20.9
L8-10952	20.9	21.5	20.8	20.8	20.5	21.7	20.3
C979	20.5	19.8	20.6	20.1	20.6	21.2	20.8
C805	20.5	19.9	20.6	20.5	19.7	21.4	20.6
S8-101	20.7	20.6	21.2	20.0	19.7	22.0	20.5
C984	20.4	21.3	19.4	20.5	19.7	20.9	20.5
C982	20.3	21.3	20.0	19.7	19.5	20.9	20.6
C801	20.4	20.1	20.1	19.6	20.0	21.5	21.2
L8-10755	20.8	21.8	20.2	20.3	20.2	21.5	20.6
Wabash	20.6	20.8	20.4	20.6	20.1	21.3	20.6
S8-139	20.2	20.5	20.2	19.9	19.2	21.3	19.9
C975	20.6	20.7	20.3	20.4	20.1	21.1	21.2
S8-160	20.1	20.8	18.7	19.7	19.4	21.6	20.4
C799	21.4	21.4	21.0	21.0	20.8	22.2	22.0
Chief	19.8	20.4	19.3	19.9	18.7	20.7	19.9
Cypress #1	19.4	19.8	18.8	18.6	19.3	20.5	19.4
L8-10879	20.6	20.8	19.8	20.7	20.1	21.4	20.6
Mean	20.6	20.8	20.4	20.2	19.9	21.4	20.7

Table 57. Chemical composition of soybean seed grown at each of the Uniform Test locations in 1950, the two-year means for 1949-50, and the four-year means for 1947-50 (composite sample or mean of all strains grown in each respective Group Test).

Location	1950			Two-Year Mean			Four-Year Mean		
	Percentage of Protein	Percentage of Oil	Iodine Number of Oil	Percentage of Protein	Percentage of Oil	Iodine Number of Oil	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
Group 0 (Mean of 18 strains in 1950, 13 in 1949, 12 in 1948, and 11 in 1947)									
Ottawa, Ontario	41.2	19.0	138.3	41.7	19.1	133.5	41.2	19.8	132.3
Guelph, Ontario	41.2	17.9	139.2	42.3	18.6	133.8	--	--	--
Cortland, Ohio	42.3	19.6	130.7	42.2	19.7	130.5	--	--	--
Columbus, Ohio	43.6	19.8	127.0	42.3	20.3	128.8	--	--	--
Spooner, Wis.	44.6	16.9	137.3	44.1	18.0	134.7	44.0	18.7	132.3
Eau Claire, Wis.	43.1	18.6	134.2	43.1	19.2	130.7	43.3	19.7	128.7
Morris, Minn.	42.6	17.7	133.1	42.1	18.7	131.6	42.4	19.2	130.0
St. Paul, Minn.	41.1	18.8	133.1	41.5	19.7	131.5	--	--	--
Fargo, N. D.	43.9	18.2	134.2	41.3	19.5	132.5	39.9	20.2	132.0
Rosholt, S. D.	41.7	18.5	136.6	40.3	20.1	132.2	41.2	20.3	130.2
Moses Lake, Wash.	40.1	19.8	131.7	39.2	19.9	132.6	--	--	--
Corvallis, Ore.	40.6	19.0	133.9	40.2	19.4	134.1	40.5	19.4	134.4
Group I (Mean of 18 strains in 1950, 15 in 1949, 14 in 1948, and 13 in 1947)									
Guelph, Ontario	42.7	17.5	142.2	42.4	18.4	136.9	--	--	--
State College, Pa.	41.3	20.3	133.1	40.0	21.2	131.8	--	--	--
Holgate, Ohio	37.9	21.3	134.9	37.8	21.9	133.6	--	--	--
Columbus, Ohio	43.2	20.2	128.2	41.5	21.1	129.3	41.9	21.1	129.4
Walkerton, Ind.	41.2	20.2	133.9	41.6	20.5	132.3	--	--	--
Eau Claire, Wis.	43.0	18.4	137.2	43.7	18.4	133.9	43.5	19.2	130.7
Madison, Wis.	42.7	19.1	133.6	42.7	19.6	131.5	42.0	20.3	129.0
Compton, Ill.	41.0	20.9	131.5	41.6	21.2	128.8	41.7	21.1	128.0
St. Paul, Minn.	41.9	18.6	135.4	41.3	19.6	134.6	--	--	--
Waseca, Minn.	43.7	18.2	135.5	42.9	19.1	132.5	42.9	19.8	131.5
Cresco, Iowa	42.6	17.9	137.0	43.3	19.0	132.8	44.0	19.6	130.2
Kanawha, Iowa	42.0	19.5	132.8	41.5	20.5	131.3	41.6	21.1	129.3
Brookings, S. D.	41.8	19.5	131.2	41.4	20.1	130.3	41.5	20.3	130.0
Group II (Composite of 20 strains in 1950, 20 in 1949, 18 in 1948, and 14 in 1947)									
State College, Pa.	39.3	20.2	136.3	38.5	21.0	134.3	--	--	--
New Brunswick, N. J.	40.1	21.0	133.3	--	--	--	--	--	--
Newark, Del.	41.4	21.4	131.0	40.8	21.5	130.9	--	--	--
Holgate, Ohio	37.1	20.9	136.6	37.0	21.4	135.3	39.2	20.7	133.1
Columbus, Ohio	41.5	20.4	130.1	40.5	21.0	130.6	41.4	21.1	130.4
Deerfield, Mich.	40.7	19.7	136.2	--	--	--	--	--	--
Bluffton, Ind.	41.6	20.1	129.9	40.5	20.7	131.3	40.9	21.0	130.6
Lafayette, Ind.	40.9	20.8	131.8	41.0	20.9	131.8	41.7	21.1	130.0
Greenfield, Ind.	44.[illegible]	18.7	133.5	43.6	19.9	131.7	43.3	20.4	130.5
Worthington, Ind.	43.3	19.6	132.2	42.9	20.2	132.3	43.3	20.5	130.1

Table 57. (Continued)

Location	1950			Two-Year Mean			Four-Year Mean		
	Percentage of Protein	Percentage of Oil	Iodine Number of Oil	Percentage of Protein	Percentage of Oil	Iodine Number of Oil	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
				(Group II Continued)					
Madison, Wis.	40.6	18.7	137.1	40.3	19.5	135.7	40.3	20.5	132.3
Compton, Ill.	40.2	20.3	133.3	40.2	21.0	132.0	41.3	21.1	131.1
Dwight, Ill.	40.5	21.1	130.6	41.1	21.1	130.8	--	--	--
Urbana, Ill.	39.7	21.2	132.2	39.6	21.6	130.9	40.1	21.6	129.5
Worthington, Minn.	37.3	20.6	134.7	--	--	--	--	--	--
Kanawha, Iowa	39.9	19.5	135.9	39.6	20.1	135.2	40.3	20.8	131.7
Marcus, Iowa	41.2	18.8	135.0	40.4	20.1	134.2	39.6	21.2	131.3
Hudson, Iowa	41.2	19.6	132.2	41.6	20.0	131.4	41.4	20.9	130.0
Ames, Iowa	40.1	20.2	131.2	40.4	20.5	132.5	40.8	21.1	130.9
Laddonia, Mo.	37.5	22.1	132.4	--	--	--	--	--	--
Centerville, S.D.	39.3	20.1	131.3	38.8	20.4	132.6	40.4	20.6	130.9
Wakefield, Nebr.	34.1	21.0	133.1	35.6	21.3	133.9	--	--	--
Lincoln, Nebr.	38.6	20.4	132.0	35.1	22.0	131.8	37.4	22.1	127.7
Group III (Composite of 10 strains in 1950, 11 in 1949, 8 in 1948, and 11 in 1947)									
Columbia, Pa.	42.0	21.0	134.1	--	--	--	--	--	--
Newark, Del.	41.1	21.4	133.6	40.5	21.5	133.1	--	--	--
Georgetown, Del.	43.1	21.3	129.3	--	--	--	--	--	--
Beltsville, Md.	41.9	21.6	134.3	42.1	21.3	133.3	42.1	21.4	132.2
Blacksburg, Va.	31.9	23.5	133.4	--	--	--	--	--	--
Columbus, Ohio	41.6	20.4	133.3	40.8	20.6	133.0	41.2	20.9	132.6
Lafayette, Ind.	41.2	20.4	135.9	40.9	20.6	135.0	41.1	21.2	132.2
Greenfield, Ind.	42.1	18.5	136.2	42.0	19.7	134.7	42.1	20.4	132.9
Worthington, Ind.	41.6	21.0	131.6	41.6	21.3	130.7	42.1	21.2	130.1
Dwight, Ill.	41.1	20.2	133.6	40.6	20.7	133.4	--	--	--
Urbana, Ill.	39.9	20.7	134.1	39.1	21.4	132.8	39.5	21.8	131.4
Clayton, Ill.	41.2	20.6	133.6	41.3	21.1	132.9	41.7	21.1	132.0
Stonington, Ill.	39.7	21.0	132.6	40.1	21.3	131.8	39.9	21.8	131.3
Freeburg, Ill.	44.2	20.0	130.6	42.6	21.1	130.0	41.7	21.9	128.7
Eldorado, Ill.	40.7	21.3	131.4	41.0	22.1	130.1	40.9	22.6	128.8
Ames, Iowa	39.9	20.7	133.3	39.9	20.8	134.0	39.9	21.5	132.0
Ottumwa, Iowa	39.0	20.8	133.4	38.9	21.0	134.0	39.8	21.3	132.8
Norborne, Mo.	40.4	20.9	132.7	38.8	21.8	132.2	--	--	--
Laddonia, Mo.	37.1	22.1	133.3	38.0	21.7	133.3	--	--	--
Columbia, Mo.	38.5	21.6	134.0	38.1	22.3	133.3	39.0	22.9	130.0
Lincoln, Nebr.	37.5	20.6	133.2	34.5	22.0	132.5	36.4	22.6	129.5
Manhattan, Kans.	40.9	20.5	130.1	40.6	21.2	129.3	40.7	21.6	126.9

Table 57. (Continued)

Location	1950			Two-Year Mean			Four-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 8 strains in 1950, 11 in 1949, 13 in 1948, and 11 in 1947)									
Columbia, Pa.	43.6	19.6	135.4	--	--	--	--	--	--
Georgetown, Del.	43.3	20.4	127.2	--	--	--	--	--	--
Beltsville, Md.	41.8	20.3	135.0	42.6	20.2	133.9	42.3	20.5	133.1
Worthington, Ind.	42.1	20.4	131.0	41.9	20.5	131.9	42.1	20.7	130.6
Evansville, Ind.	42.7	20.2	131.3	42.4	20.4	131.5	41.9	21.2	130.9
Urbana, Ill.	37.8	20.9	134.1	38.9	20.7	133.5	39.9	20.9	131.6
Clayton, Ill.	40.5	20.1	132.7	40.6	20.2	133.4	41.4	20.6	132.1
Stonington, Ill.	40.2	19.8	132.5	40.2	20.1	132.3	40.1	20.9	131.2
Freeburg, Ill.	43.0	19.5	132.2	41.8	20.3	131.7	41.7	21.2	130.2
Norborne, Mo.	39.9	20.4	132.2	39.1	20.9	132.5	--	--	--
Laddonia, Mo.	37.4	21.4	133.0	38.5	20.8	133.8	--	--	--
Columbia, Mo.	38.4	21.4	133.1	38.4	21.4	133.3	39.4	22.0	129.7
Manhattan, Kans.	40.3	20.1	129.1	40.5	20.4	129.6	41.4	20.8	127.5

SOYBEAN DISEASE INVESTIGATIONS IN 1950[1]

The soybean disease picture in 1950 did not vary greatly from that of the previous year. The excessive amount of rain favored the spread of bacterial diseases, which were predominant in the Midwest. For reasons not easily discernible, the prevalence of the individual diseases varied somewhat from state to state.

Bacterial blight (Pseudomonas glycinea) was the most prevalent leaf disease in Illinois and Ohio, while bacterial pustule (Xanthomonas phaseoli var. sojensis) dominated the picture in Indiana. This marks the continuation of a trend apparent in 1949 for Indiana but reverses the trend in Illinois. Severe bacterial blight infection was noted in Illinois through July, with pustule infection coming in moderately through August.

Wildfire (Pseudomonas tabaci) was more abundant in the Midwest in 1950 than it has been for several years. Severe infection, however, was usually confined to small areas. This disease was more generally distributed in Missouri than in any of the North Central States.

Brown stem rot (Cephalosporium gregatum) was prevalent throughout Illinois, Indiana, and parts of Iowa. Severe internal stem browning occurred but leaf symptoms did not develop to any extent. Severe lodging occurred in a few areas in Illinois but was not general, there or in Indiana.

Diaporthe stem canker (Diaporthe phaseolorum var. batatatis) was one of the most damaging diseases of the past season through the central and northern region of Illinois and Indiana. This has been a prominent disease in Indiana and Iowa for some time, but a marked increase was noted in Illinois in 1950. Hawkeye has sustained the most damage from stem canker, showing as high as 40% of the plants killed in Indiana and 15% in Illinois in some fields, whereas Lincoln and some other varieties have no apparent immunity but show a lower percentage of diseased plants.

Frogeye (Cercospora sojina), an important leaf spot in Indiana and southern Illinois in 1949, was not as plentiful or severe in 1950 but was quite prevalent in southern Missouri. It appears to advance farther north each year, extending as far as Lafayette, Indiana, and Urbana, Illinois. The northward progress may possibly have been stimulated by extensive plantings of the susceptible Hawkeye in the north. The resistant Lincoln may explain in part why the disease has been less of a factor in central Illinois than in the southern part of the state. A decrease of the disease in Indiana coincided with the replacement of the susceptible Gibson, Patoka and Chief by extensive plantings of the resistant Wabash variety.

Rhizoctonia root rot was more prevalent this year than at any time in the past five years. Probably because of the extremely cool, wet weather through July, the disease affected older plants than usual. Many plants in the field noted to be wilting or dead showed more or less reduction of the root system, including destruction of the lower part of the tap root. In the most extreme cases noted, reduction in stand amounted to an estimated 5%. The majority of affected fields showed up to 1% damage. In past seasons, this disease has been confined to young plants when cool, wet weather prevails.

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[1]Project 121-3, Division of Forage Crops & Diseases.

Downy mildew (Peronospora manshurica) was prevalent in Illinois but less general in distribution in Indiana. Brown spot (Septoria glycines) was prevalent in both states, and in Ohio. In general, the damage from either disease was not serious.

Pathological investigations on Diaporthe stem canker are being continued at Lafayette, Indiana, and at Ames, Iowa. Evidence of resistance to the disease has been found among some of the breeding lines at Iowa. Work on the inheritance of resistance to frogeye in crosses involving Lincoln and Wabash as the resistant parents is under way at Indiana. At St. Paul, Minnesota, selections showing resistance to Rhizoctonia have been isolated. This station is also carrying on tests of the effect of seed treatment on seed internally damaged by combining. At Urbana, Illinois, we have as yet found nothing resistant to brown stem rot. Of the lines from the backcross Lincoln x(Lincoln x CNS) tested for two years, nine strains show a high type of resistance to both bacterial pustule and bacterial blight. Also under study are the nature of resistance to bacterial blight and pustule, and some pathological and physiological phases of the brown stem rot problem.

One replicate of the Uniform Test strains for Groups 0, I, II, III, and IV was tested for susceptibility to bacterial blight. The strains were artificially inoculated on June 21 and July 11, and notes were taken approximately 2 weeks after each inoculation. Disease rating was estimated on the basis of 0 to 5, with 5 representing the most susceptible reaction. Table 58 gives the strains tested and the most severe disease reaction of each strain after two inoculations.

Table 58. Reaction of soybean strains in the Uniform Tests to Bacterial Blight Disease, 1950.

Strain	Bact. Blight Reading[1] Madison Wis.	Urbana Ill.	Strain	Bact. Blight Reading[1] Madison Wis.	Urbana Ill.
		UNIFORM TEST, GROUP 0			
Capital	--	1	0-255	--	1-2
Flambeau	--	1	W4-2115	--	2
Hokien	--	1	W5-2260	--	1-2
Mandarin (Ottawa)	--	2	W6S-246	--	3
Pridesoy 57	--	1-2	W6S-292	--	2-3
M8	--	2	W6S-341	--	3
M9	--	2-3	W8S-1019	--	2
0-17	--	3	W8S-1200	--	2
0-200	--	1	W8S-1460	--	2

Table 58. (Continued)

Strain	Bact. Blight Reading[1] Madison Wis.	Urbana Ill.	Strain	Bact. Blight Reading[1] Madison Wis.	Urbana Ill.
		UNIFORM TEST, GROUP I			
Blackhawk	2.3	2-3	L6-8179	1.5	1
Earlyana	1.3	2-3	L6-8275	1.3	2
Habaro	2.0	1	M2	4.0	2
Harly	1.6	4	M10	4.1	2-3
Mandarin (Ottawa)	2.1	2	W4-3190	2.0	1-2
Monroe	2.5	3	W5-3346	2.0	2
A6K-549	1.3	2	W5-3633	1.5	1
A6K-1329	2.8	2	W8S-1025	3.0	2
A6K-1801	2.0	2	W8S-1035	3.4	2-3
		UNIFORM TEST, GROUP II			
Adams	3.0	2-3	C683	2.5	1-2
Blackhawk	2.3	2-3	C739	2.2	1-2
Earlyana	2.0	2-3	C776	2.0	1-2
Hawkeye	2.5	2	H3665	1.5	1
Lincoln	3.5	2	H6150	3.3	3
Richland	2.4	1	H6217	3.0	2
A7-6102	3.5	1-2	H6403	3.0	2-3
A7-6103	3.0	2	L8-7289	2.3	1
A7-6520	2.3	2	W5-3372	2.5	2-3
A7-6629	3.0	2	W8-1028	2.5	2
		UNIFORM TEST, GROUP III			
Adams	--	2-3	A7-1953	--	2
Chief	--	2-3	C764	--	2
Dunfield	--	2	L6-1152	--	2
Illini	--	2-3	L6-1503	--	2
Lincoln	--	2	L6-2132	--	1-2
		UNIFORM TEST, GROUP IV			
Anderson	--	2-3	C612	--	1
Chief	--	2-3	L6-1656	--	3-4
Patoka	--	1	L6-5679	--	1-2
Wabash	--	1-2	S7-270	--	2

[1] 0 = No disease; 5 = Very severe disease.

WEATHER CONDITIONS AND GENERAL GROWTH RESPONSES AT MOST OF THE NURSERY LOCATIONS DURING THE 1950 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 1950 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 growing season was rather cool and slow with abundant moisture in July and August and a lack of sunshine throughout the entire period from May to the end of September. Temperatures, likewise, were generally below average. All in all, it was a rather good season for production (or yields) but poorer than average for maturity.

Month	Temp. Monthly Mean		Rainfall Monthly		Sunshine Monthly Hours	
	1950	60 yrs.	1950	60 yrs.	1950	60 yrs.
May	55.1	54.8	2.65	2.83	216.6	228.1
June	64.1	64.5	2.36	3.41	242.9	250.8
July	68.3	68.9	5.74	3.60	249.6	275.3
August	64.2	66.5	3.99	3.11	223.6	246.6
September	54.9	58.5	1.38	3.00	167.7	177.4
Season Ave.	61.3	62.6	3.22	3.19	220.1	235.6

New Brunswick, New Jersey. Temperature during June was above average but was below average during July, August, and September. Rainfall was above normal in July but below normal in June, August, and September.

The crop response was good for the most part because of the excellent distribution of rainfall, and the beans were of good quality as a result of the low rainfall which prevailed in September when they were ripening.

Newark, Delaware. May was cloudy and cool with a slight deficiency of rainfall. The soybeans were planted on June 9. There was ample moisture at the beginning of the month, but it ended rather dry. Abundant sunshine helped to carry them through into July, a very good growing month. There was ample rain, although temperatures proved to be below normal. The nursery grew well in spite of above-normal temperatures, cloudiness, and slightly deficient moisture in August. September and October were cloudy with abundant rainfall and below normal temperatures. The soybeans matured and were harvested well before the first killing frost on October 28.

Georgetown, Delaware. There were many cool damp days in May which provided ample moisture for starting the nursery on June 5. The moisture reserve dwindled toward the end of June and retarded the growth somewhat. Good rainfall distribution throughout July revived the soybeans and they grew well until mid-August. Rainfall was deficient by 2 inches. This again arrested the growth of the nursery. However, above-normal moisture revived the crop again in September and the nursery matured evenly in the latter part of the month and the first part of October. The first killing frost occurred on November 5.

Beltsville, Maryland. Climatic conditions for the growth of soybeans were very favorable at Beltsville during the season of 1950. Rainfall was not only slightly in excess of normal, but was well distributed throughout the growing season. An excess of rainfall during the first half of September contributed to poor quality of beans of early maturing varieties. As early maturing varieties were particularly heavily infected with purple stain, it was thought that the extremely humid conditions stimulated spread of this disease. However, late maturing varieties also showed considerable purple stain infection.

Walkerton, Indiana. Nurseries were planted under ideal conditions on both muck and mineral soil May 29. They were fertilized with 125 pounds of 0-9-27 plus 35 pounds of $MnSO_4$ per acre. Torrential rains occurred June 2, 9, and 13 followed by much additional rainfall and drowned out all tests on muck soil and about half the tests on mineral soil, including Uniform Group II, but not Uniform Group I. Group 0 was replanted July 12 on muck soil but was drowned out again. The tests remaining on mineral soil were considered fairly good. Stands were a little spotty in some areas, and weeds were problematic in the early stages of growth but were hoed out prior to blooming. Most varieties were physiologically mature by September 24, when a 26° F. frost occurred. The yields of some varieties maturing later than Earlyana may have been decreased somewhat due to frost. Harvest conditions were ideal. Downy mildew, pustule, and brown spot infection was only slight, but general throughout the tests. Temperatures were unusually low during the growing season and reached 90° F. on only one day each in June and July and 3 days in August. Precipitation was about three times the normal of 4.04 inches in June, twice the normal in July, slight below normal in August and September, and very dry in October.

Bluffton, Indiana. This was an excellent nursery. It was planted under rather ideal conditions on Ladino clover sod. Emergence and growth were rapid. Lodging was somewhat more severe than usually obtained at this location. Yields were good. Downy mildew was the most prevalent disease but was not serious. Brown spot, pustule, and stem canker were present to a small extent. There were no periods of drouth or unusually high temperatures. Precipitation was well above normal in August and twice normal in September. Temperatures averaged somewhat below normal during most of the growing season. A light frost occurred September 24. Maturity and harvest conditions were excellent.

Lafayette, Indiana. This nursery was planted May 18-20 under good conditions on land not previously in soybeans. Inoculation was mixed with sand and drilled in the row with a corn planter prior to planting. Nodulation was good. Emergence and stands were excellent, but growth in some tests was very uneven mainly because of excessive moisture due to considerable precipitation and lack of tile drainage.

Average yields were generally fairly good. Stem canker was the most serious disease and was especially bad on Hawkeye, but was not entirely absent on other varieties. Pustule and brown spot were prevalent but not serious. There was little downy mildew. Frogeye was more abundant in 1950 than in 1949 when it was first observed as far north as Lafayette. Infection of frogeye was very slight but its continued presence indicates the possibility of it developing into a major disease as it now exists in southern Indiana. There was little brown stem rot and no bud blight was observed.

Greenfield, Indiana. Aside from being planted very late, June 24, this was a good nursery. Growth and yields were both good, considering the late planting. The plot was fertilized with 150 pounds of 2-12-6 plus 40 pounds of $MnSO_4$ per acre in the row. There was no manganese deficiency in the plot, as existed in some areas near the plot where no $MnSO_4$ was applied. Maturity was late, but ahead of frost, and harvest was under ideal conditions. Bud blight was the only disease that occurred in noticeable amounts in this plot. H6403 and W5-3372 were observed to be without bud blight. Usually 1 to 5 bud blight plants per row were observed among the other varieties. The growing season was unusually cool with only an occasional day with temperatures above 90° F. Frequent rains in late May and much of June delayed planting. Although precipitation was over twice normal in July and also 1.86 inches above normal in August, there was little precipitation for a four-week period beginning the latter part of July and extending into August. October was warm and dry with precipitation less than half of normal.

Worthington, Indiana. Group III and IV nurseries were planted May 26 under ideal conditions on soil fertilized with 200 pounds of 3-12-12 plus 30 pounds $MnSO_4$ per acre. Emergence was rapid and growth was excellent on most tests. Poor stands were encountered in Uniform Preliminary Group IV and were poorest with strains C794, C982, C985, L8-10778, and L8-10879, but were considered good enough to harvest for yield. Group II was planted June 23 which was about 10 days later than the desired date. Growth was short and yields were just fair in this test. Only slight amounts of pustule, brown spot, mildew, frogeye, and brown stem rot were present. Precipitation was well above normal in June and August and twice normal in September. July was somewhat below normal and October about one-half of normal. Temperatures were somewhat below normal in the growing season but were generally higher than at other nursery locations. A light frost occurred September 25.

Evansville, Indiana. In general, this was an excellent nursery. Planting followed a period of considerable precipitation and was in turn followed by frequent rains which limited cultivation to a single time. Weeds were controlled by hand hoeing. Growth was exceptionally good and yields were somewhat above average. This plot was on good soil and was fertilized with 125 pounds of 0-15-15 plus 30 pounds per acre of $MnSO_4$. The $MnSO_4$ was somewhat insufficient to completely prevent manganese deficiency, which was evident to a small extent. Disease infection was only slight in the nursery. Pustule was the most common disease, but was not serious. There was some frogeye, downy mildew, brown spot, brown stem rot, and wildfire. This is the first time wildfire has been observed in several years. Cypress #1 had the most frogeye, mildew, and pustule of any variety in the plot. The growing season was unusually cool with very few days in which temperatures reached 90° F. or above. There was an abundance of rain and no dry periods, except the month of October with only 1.05 inches of rainfall, which is 1.77 inches below normal. October temperatures were well above average, making maturing and harvesting conditions ideal.

Spooner, Wisconsin. The growing season at this station was generally below average in both rainfall and temperature. With subnormal rainfall throughout the summer, we were forced to irrigate the nursery four times with 2 inches of water applied at each irrigation. Irrigation was applied July 28, August 6 and 23, and September 5. With below normal night temperature, growth was very slow so that the later strains were killed by frost before the beans and pods were fully formed.

Eau Claire, Wisconsin. The plots at Eau Claire were planted May 19. The precipitation was slightly below normal for the growing season. Late varieties of Group I were not fully mature on September 23 when a killing frost occurred. Yields were about average.

Madison, Wisconsin. The Madison plots were planted May 17 and emerged June 1. Heavy rains occurred after planting which packed the soil and resulted in uneven germination. However, due to frequent showers, almost all rows eventually had a good stand. Very heavy rains during June and early July caused considerable erosion and lodging. From mid-July to harvest, the season was dry. An early frost occurred September 23, but it was not severe enough to prevent the later maturing varieties from ripening. Considerable bacterial blight occurred during June and early July. Yields were slightly lower than the average of previous years.

Compton, Illinois. The tests at Compton were planted May 23 in a good seedbed following pasture. Rainfall was well distributed and growth was good. Temperatures were below normal during July, August, and the early part of September, and maturity was at least 10 days later than in 1949. A freeze September 23 stopped growth but most strains were fairly well developed. Maturity notes were not taken on Group II, however, since most of the strains were still green when frozen. Soil tests showed an average pH of 6.3 and P and K were high. Diseases were not serious, but Hawkeye, Blackhawk, L8-7289, and crosses involving Hawkeye showed considerable stem canker.

Dwight, Illinois. The tests at Dwight were planted May 20 in a dry, cloddy seedbed resulting in delayed germination but final stands were satisfactory. Rain was heavy in July and light in August and temperatures during July and August were generally below normal. pH averaged 6.1, P medium to high, and K, high. The plot followed soybeans and brown stem rot was prevalent. However, stem rot was also severe in other parts of the field which had not been in beans for four years. Yields were only slightly over half of those in 1949.

Urbana, Illinois. The tests at Urbana were planted May 26. Temperatures during July, August, and early September were generally below normal but rainfall was adequate and growth normal. Mildew was generally prevalent and so was bacterial pustule, although the latter was not as heavy as in 1949. Some frogeye and wildfire were observed. Stem canker was serious on some fields and Hawkeye, Blackhawk, L8-7289, and hybrid material with Hawkeye parentage was severely hit.

Clayton, Illinois. The plot at Clayton was planted May 24 on a field which had been in corn in 1949. 400# of 3-12-12 was applied. Rainfall was generally adequate, growth was excellent, and yields far above normal. No diseases were serious although some mildew and pustule were present. pH averaged 6.4 and P and K were high.

Stonington, Illinois. The tests at Stonington were planted June 2 but growth was slow and height much less than normal. Temperatures during July, August, and early September were below normal and maturity ten days later than normal. Rainfall during July was very heavy. No diseases were serious. The soil is naturally high in lime and the pH averaged 6.6. The phosphorus and potassium were both high.

Edgewood, Illinois. The tests at Edgewood were planted in a field which had grown a normal crop in 1949 but growth was so irregular that the results were not considered reliable. The affected parts of the plot showed chlorosis suggesting potash deficiency, but soil tests showed potash to be high and 120# of 0-12-12 had been applied prior to planting.

Freeburg, Illinois. This plot was planted May 17 in an excellent seedbed. Temperatures during July, August, and early September were below normal. Rainfall was light during June and July and very heavy during August and early September. Maturity was two weeks later than normal. Growth was good and yields were high. Some bacterial pustule, wildfire, and mildew were present but not serious. 150# of 0-12-12 was applied prior to planting but potash deficiency symptoms were widespread. Considerable dudding was noted, particularly on Earlyana, Blackhawk, Chief, C612, C975, and S8-160. pH averaged 6.8 and potash and phosphorus were high.

Eldorado, Illinois. This plot was planted May 25 in a dry seedbed. Heavy rains after planting crusted the soil and emergence was only fair. No outstanding disease damage was noted but a number of plants appeared to have had the growing point killed when half grown. This resulted in short, determinate-appearing plants with normal branches. The damage may have been caused by pigeons. Chief seemed to be damaged most. pH averaged 6.0 and potash and phosphorus were high.

Morris, St. Paul, Worthington, and Waseca, Minnesota. The 1950 growing season in Minnesota was marked by generally low temperatures. Planting of soybeans was accomplished almost on time, but development was rather slow, flowering occurring later than usual. Soil moisture supplies were somewhat limited at St. Paul, Morris, and Worthington, although this apparently did not cause as much damage as in years when temperatures averaged much higher. At Waseca, moisture was adequate all during the growing season. The frost which damaged many fields of soybeans on August 20, did not affect any of the experimental plots. Light frosts in late September had little effect on the beans. Low temperatures on October 3 killed most of the leaves of the later varieties, but the warm, dry weather that followed ripened many of these late beans about normally. Yields and seed quality were above expectation; that is, they were about average for all locations.

Cresco, Iowa. This nursery is located in northeast Iowa on Carrington Plastic Till Phase. This soil is described as tight, cold, wet, slowly drained, and low in fertility. In the spring, manure was topdressed on this nursery at the rate of six tons per acre. Planting was completed on May 24. The stands were good. There was sufficient rainfall from May through July to permit excellent growth. Consequently, the strains reached a good height, and lodging was appreciable though not excessive. Normally there has been little or no lodging at this location. Some of the strains were injured by a killing frost on October 3. It is not believed that the frost injury was sufficiently severe to cause concern. This is one of the best tests that has been grown at Cresco from the standpoint of strain comparisons.

Kanawha, Iowa. This nursery was located in north central Iowa on level, fertile Webster silty clay loam. Planting was completed May 22. Stands were excellent. Climatic conditions were conducive to good growth. This permitted somewhat more lodging than is normally expected. A killing frost occurred October 3. The Uniform Group I Test was mature at this time, but late strains in the Uniform Group II Test were injured somewhat. Maturities on the frosted strains were estimated and are believed to be satisfactory. The yields undoubtedly were reduced on the late strains. These factors make the data from Group II less reliable than that from Group I.

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 in soil where alfalfa had been plowed under. Stands were excellent and climatic conditions permitted a lush, rank growth. By the latter part of July, the strains lodged badly and it became worse as the season progressed. Bacterial blight and stem canker were present in considerable quantities. Notes were made on these diseases. A killing frost occurred October 3 and many of the strains were not ripe. Their maturities were estimated and are believed to be reasonably good. Harvesting was a difficult task under these conditions. This nursery was considered good.

Hudson, Iowa. This nursery is located in northeast central Iowa on Carrington silt loam soil, medium high in fertility. Planting was completed May 30. Stands were excellent. Droughty conditions during part of August and September did not permit the strains to grow as tall as they normally do. There was not as much lodging as is normally expected at this location. A light frost occurred on September 24 and a killing frost occurred on October 4. No severe yield injury resulted from this killing frost as most strains were sufficiently advanced to escape injury.

Ames, Iowa. This nursery is located in the central part of Iowa on level, medium fertile Webster silty clay loam. The Group Tests were planted May 19. Stands were excellent and growth was good. Some drought occurred during late July, August, and September. A light frost occurred on September 24 and a killing frost on October 4. All strains were sufficiently advanced at the time of the killing frost so that no serious injury resulted.

Ottumwa, Iowa. The nursery was located in southeastern Iowa on flat, fertile Haig silt loam. The nursery was planted June 1. Emergence and stands were excellent. Growth was good and lodging was excessive. Normally there is considerable lodging at this location. A light frost occurred October 4 but no damage to yields was noted. This was considered an excellent test for strain comparisons.

Norborne, Missouri. The tests at Norborne were planted May 25 on a field planted to corn in 1949. Rainfall was ample but not excessive throughout the season. Growth was abundant and lodging was severe. The yields were good but not as good as the growth would indicate. The cool temperatures throughout the season delayed maturity.

Laddonia, Missouri. The tests at Laddonia were planted May 20 following red top sod. Planting conditions were ideal and emergence was rapid. Rainfall was excessive soon after emergence until the latter part of June, but not to the extent of causing a weed problem. Yields were good, but maturity was somewhat delayed because of cool temperatures during the season.

Columbia, Missouri. The tests at Columbia were planted May 16 on a plot planted to corn in 1949. The soil was in excellent condition and germination was rapid. Rainfall was rather heavy soon after planting until the latter part of June. There was a brief dry period during July, but the reserve moisture supply carried the crop through in good condition. Yields were good but maturity was delayed because of lower than normal temperatures throughout the season.

Fargo, North Dakota. Rainfall during the growing season, after seeding operations began (about May 20) until August 31, totaled only 3.29 inches, a deficiency of 11.04 inches. Despite this low rainfall, a remarkably good crop was produced. Up to September 30, which would include the growing season for soybeans and corn, the season's total was 4.83 inches, a deficiency of 11.72 inches. Moderate temperatures throughout most of the growing season, low evaporation, and a soil with a high water holding capacity, made it possible to produce a very successful crop despite the very low rainfall. Freezing temperatures held off well into the fall, allowing crops such as corn and soybeans to ripen and cure quite satisfactorily. The soybean acreage in North Dakota was considerably larger than usual in 1950, due in part to the very late sowing for small grains. Many fields of soybeans were planted very late. There was little or no serious disease problem to contend with.

Rosholt, South Dakota. Despite adequate early moisture, this nursery was seeded in dry soil on June 6; the entire month following seeding was unusually dry. Very spotty stands and retarded development of plants resulted. July was very wet and cool and the plants were not able to utilize the moisture which fell. August and September again were quite dry. In an effort to salvage some yield data from this nursery we decided to harvest a ten-foot interval in each 18 foot row. This practice was very unsuccessful, resulting in great discrepancies between replicates of the same entry. The yield data reported were not treated by analysis of variance and are subject to the errors mentioned. All other data, unless we except maturity, would appear to be satisfactory.

Brookings, South Dakota. The season was not favorable for soybeans this year, being too cool and variable in moisture supply, but satisfactory performance was believed obtained. Blackhawk showed a tendency in each replication to lean rather sharply and uniformly to leeward. Most other entries were not so affected. In one increase field, Blackhawk also lodged more than we expected. Some other plantings, however, stood up very well. From the growers' standpoint this variety appears to have unusually good handling qualities from seeding through storage.

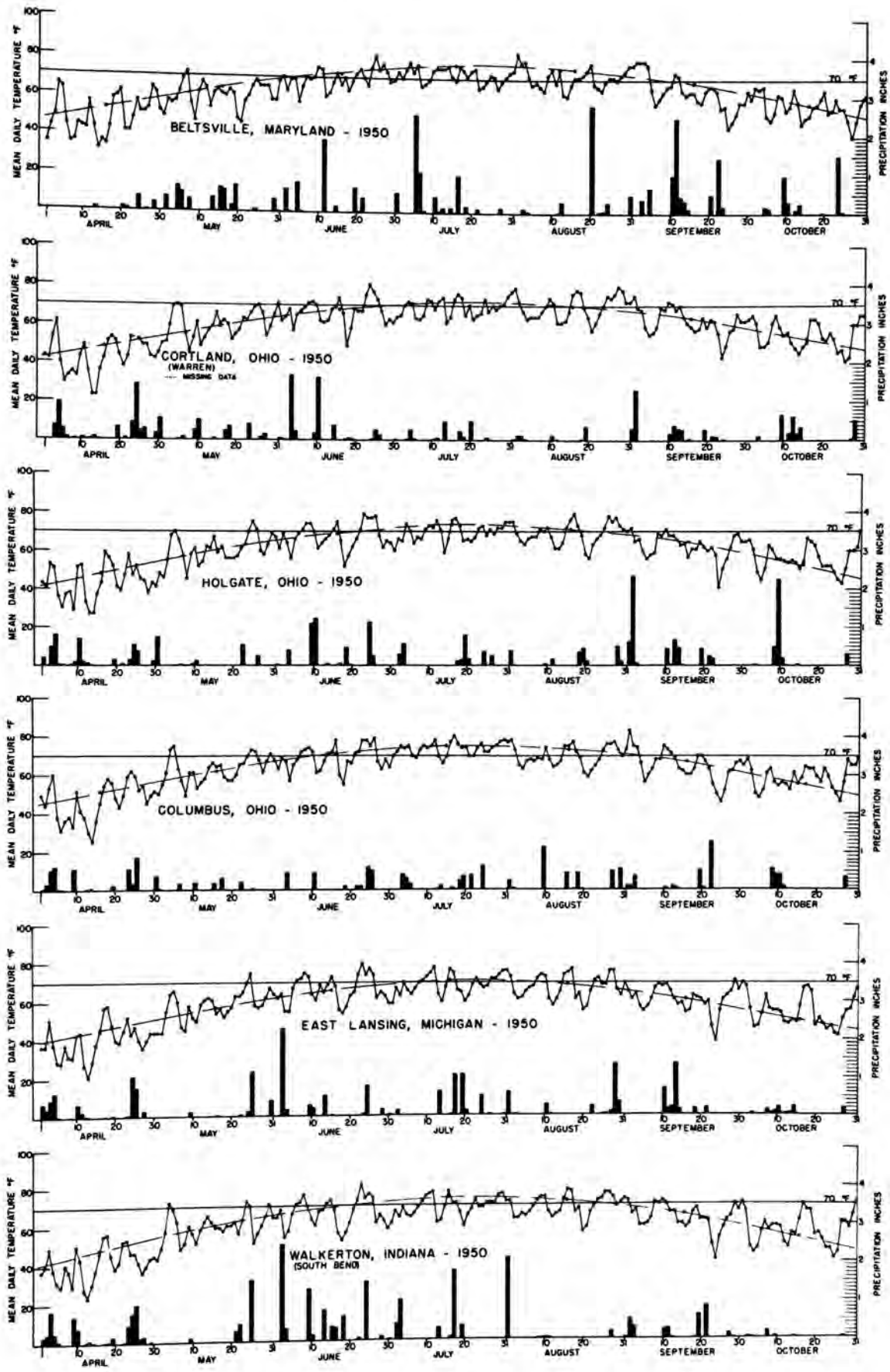
Centerville, South Dakota. The season was characterized by sub-normal temperatures and variable moisture supply; plant development was retarded most of the season. The yield differential here was not great. It is significant that not one of the named varieties ranked higher than fourth in yield, Richland ranking near the bottom. Data on maturity are not too good because the nursery was visited at harvest time and not at the time of frosting.

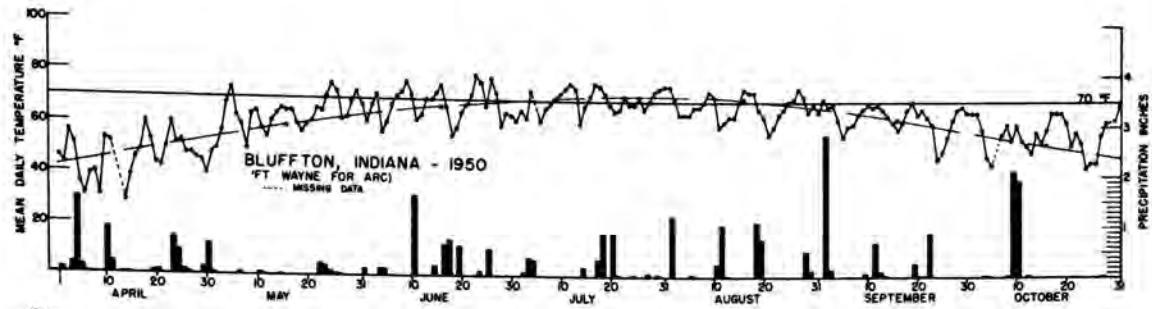
Wakefield, Nebraska. This test was planted May 27 on Moody silt loam soil of medium fertility. The summer was cool and, in general, favorable for growth. Seed size is quite small as a result of a relatively dry period beginning about the middle of August and lasting through September. The failure to get significant differences in yield is attributed to soil heterogeneity that was unrecognized in locating the test.

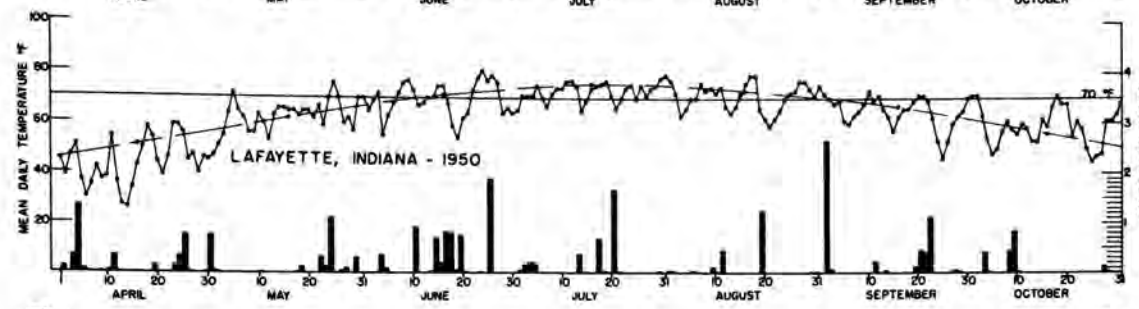
Lincoln, Nebraska. The nursery was planted June 2. In general, conditions were very favorable throughout the season, as indicated by the high average yields. Bacterial blight infection was heavy on the young plants and persisted for a fairly long time because of the abnormally cool temperatures of June and July. Though some bud blight was observed early in July and some later infection occurred, yields were probably affected very little. The earliest Group II strains matured ahead of a cold, wet period in September which delayed the others and resulted in a wider spread than normal. The amount of lodging was moderate. No shattering occurred.

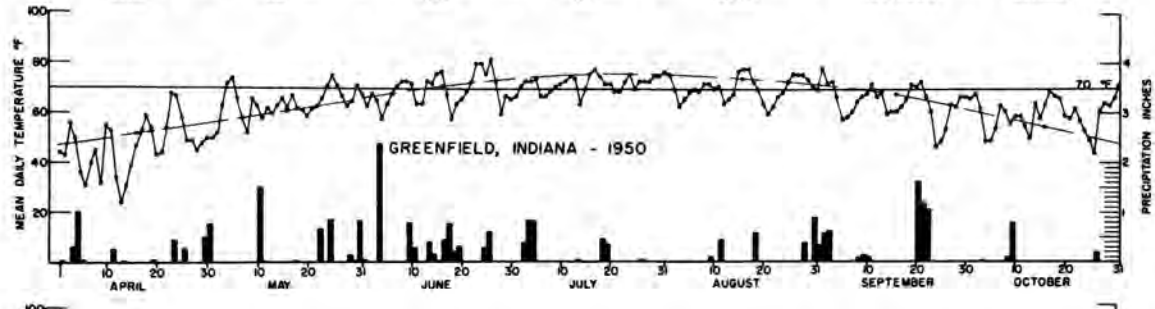
Manhattan, Kansas. Weather conditions were exceptionally favorable for soybeans in 1950. Precipitation for the five months, May to September, was 26.62 inches. Nearly 8 inches well distributed during May and June gave the crop a good start. This was followed by 13.58 inches in July and 4 inches in August, which resulted in a vigorous vegetative growth and a heavy set of pods. The excessive rainfall to mid-August and relatively low temperatures appeared to delay maturity, but September and October were warm and dry, providing ideal conditions for ripening the crop and for harvesting. Yields were the highest that have been obtained at Manhattan with no yield below 32 bushels, and eight of the forty-one varieties tested producing 40 bushels or more per acre. There was no observable damage by either diseases or insects.

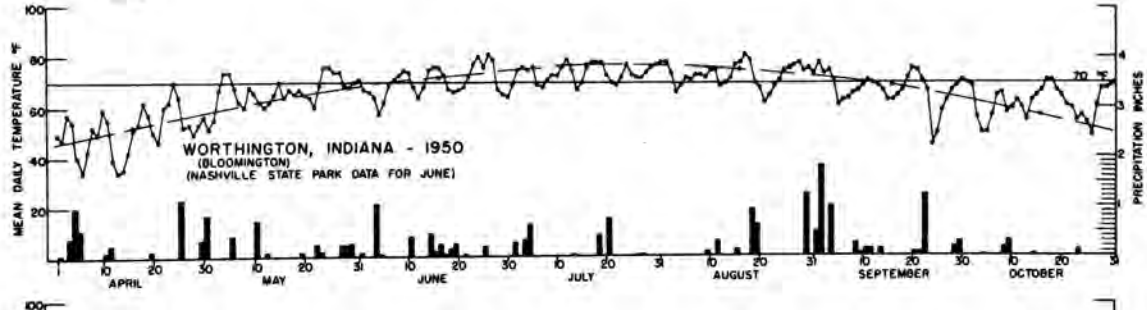
Moses Lake, Washington. The 1950 season was very favorable for soybeans up to the time of harvesting. The unusually wet fall made it necessary to pull the soybeans, store them under cover, and thresh later than normal. The soybean stand was damaged slightly by the seed-corn maggot.

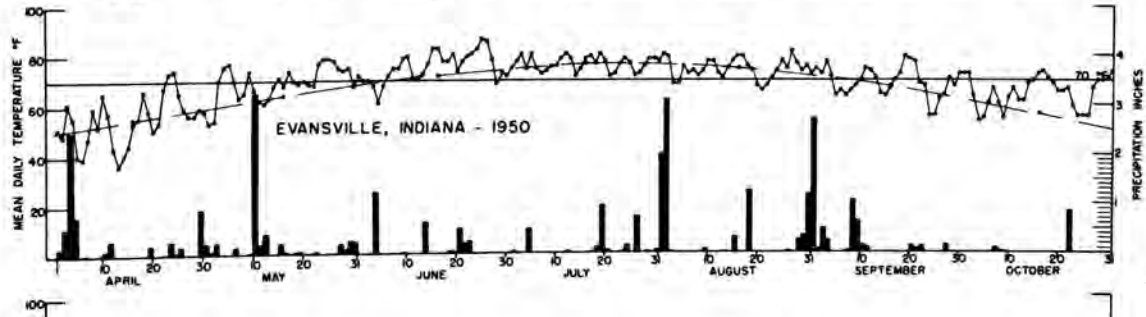

BELTSVILLE, MARYLAND - 1950
CORTLAND, OHIO - 1950
(WARREN)
--- MISSING DATA
HOLGATE, OHIO - 1950
COLUMBUS, OHIO - 1950
EAST LANSING, MICHIGAN - 1950
WALKERTON, INDIANA - 1950
(SOUTH BEND)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

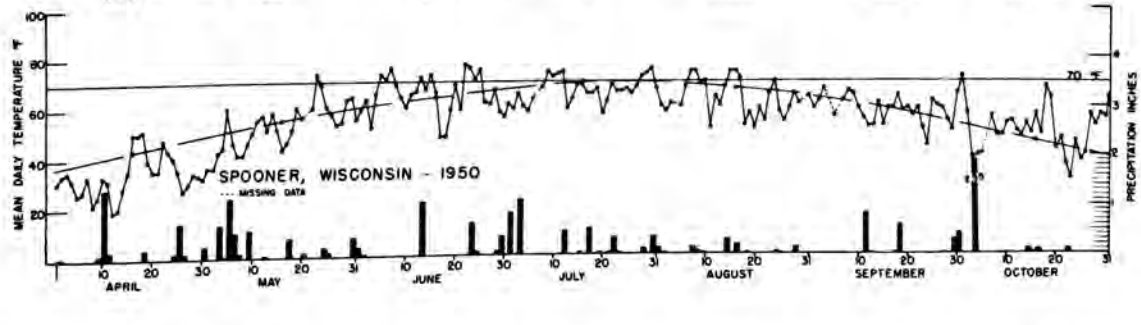

BLUFFTON, INDIANA - 1950
(FT WAYNE FOR ARC)
---- MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

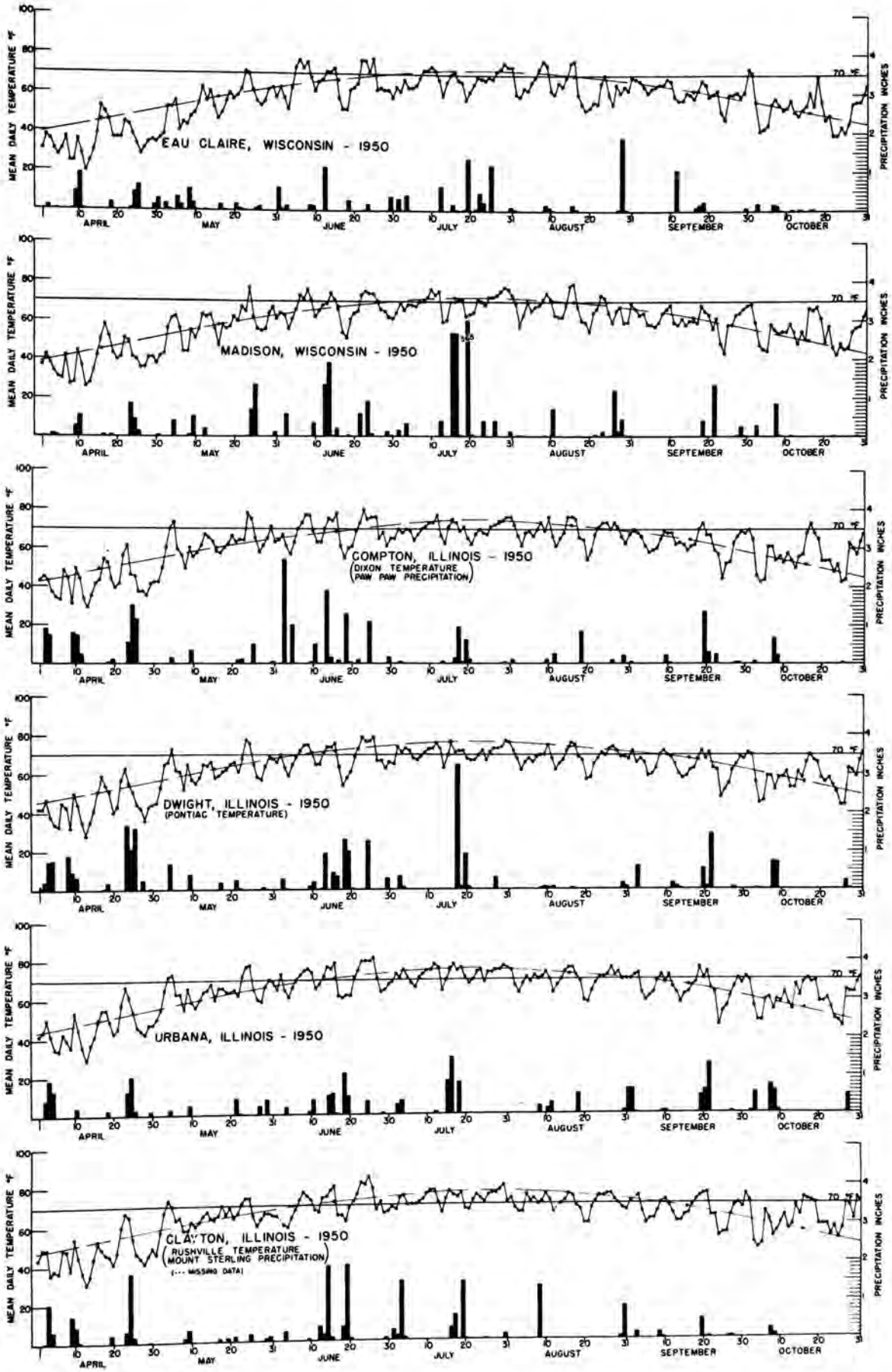

LAFAYETTE, INDIANA - 1950
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

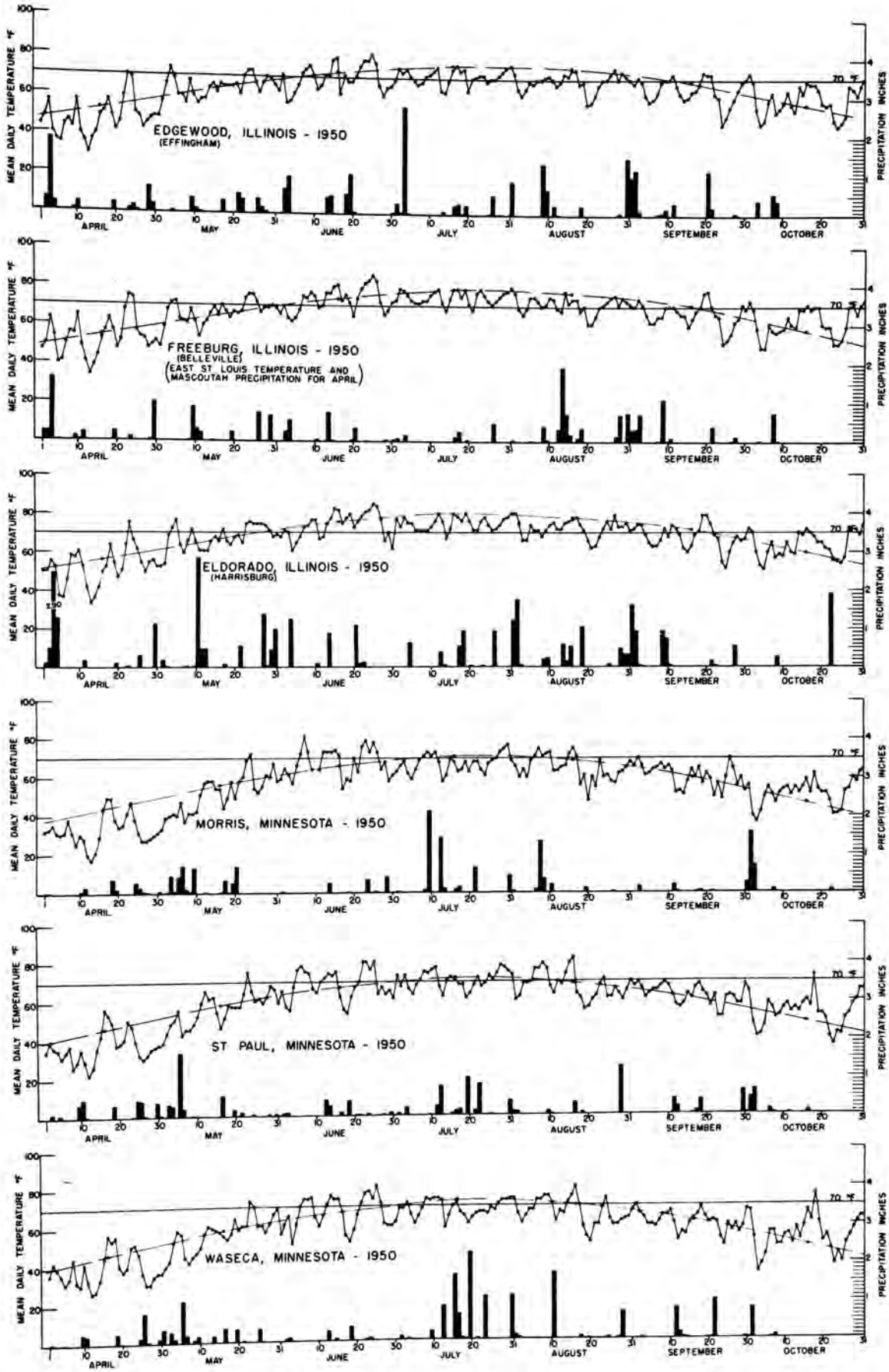

GREENFIELD, INDIANA - 1950
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

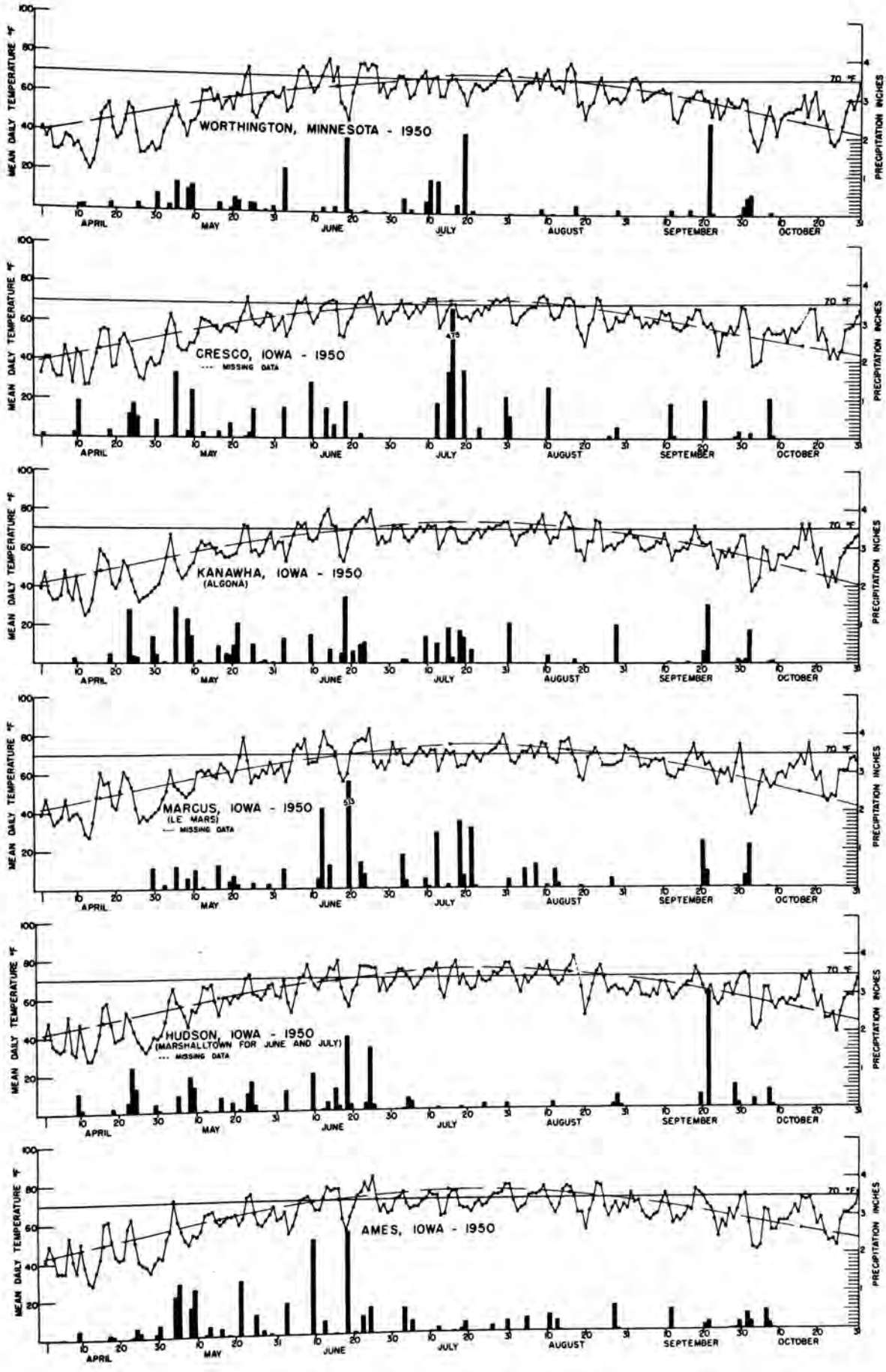

WORTHINGTON, INDIANA - 1950
(BLOOMINGTON)
(NASHVILLE STATE PARK DATA FOR JUNE)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

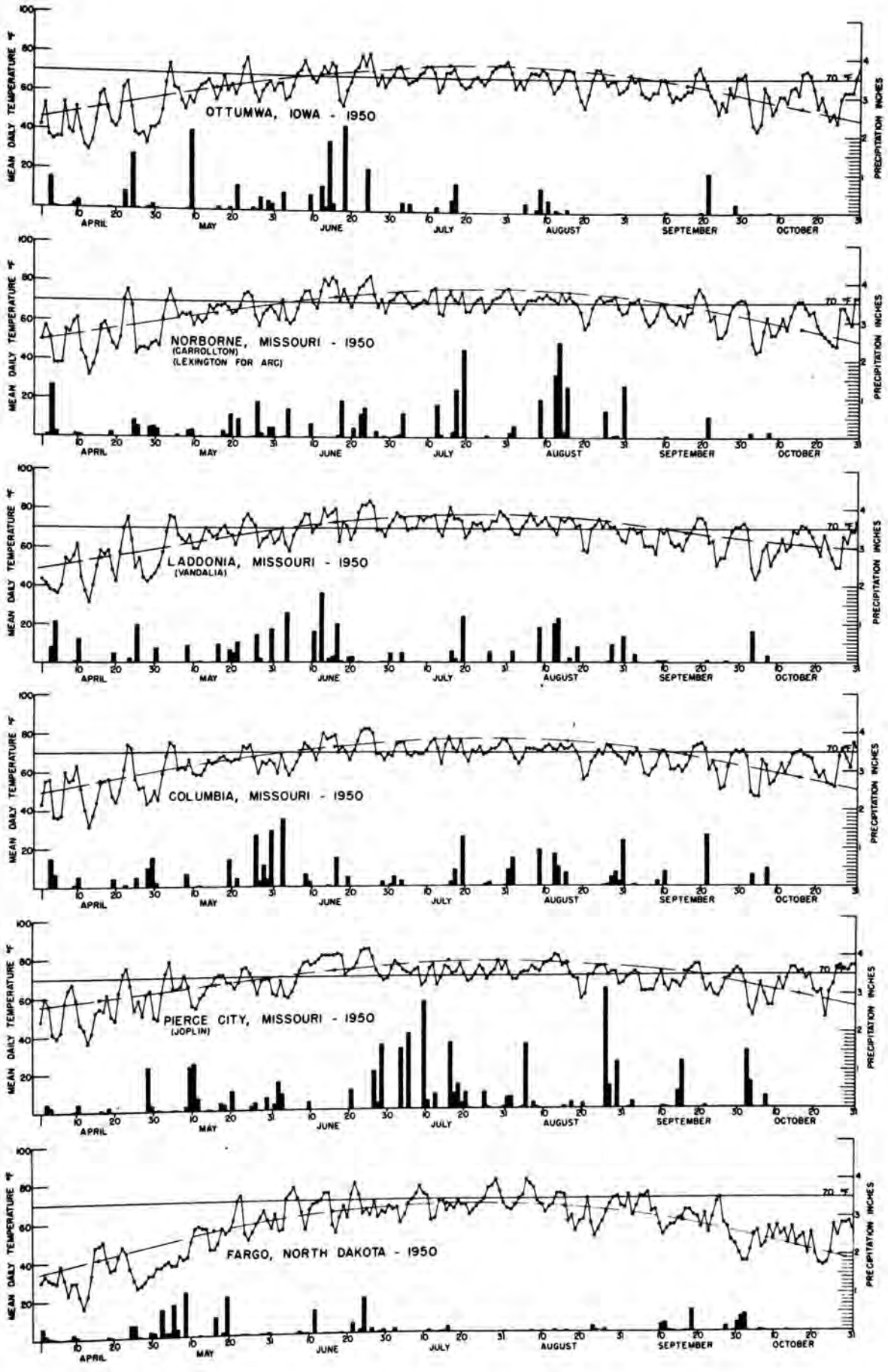

EVANSVILLE, INDIANA - 1950
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER

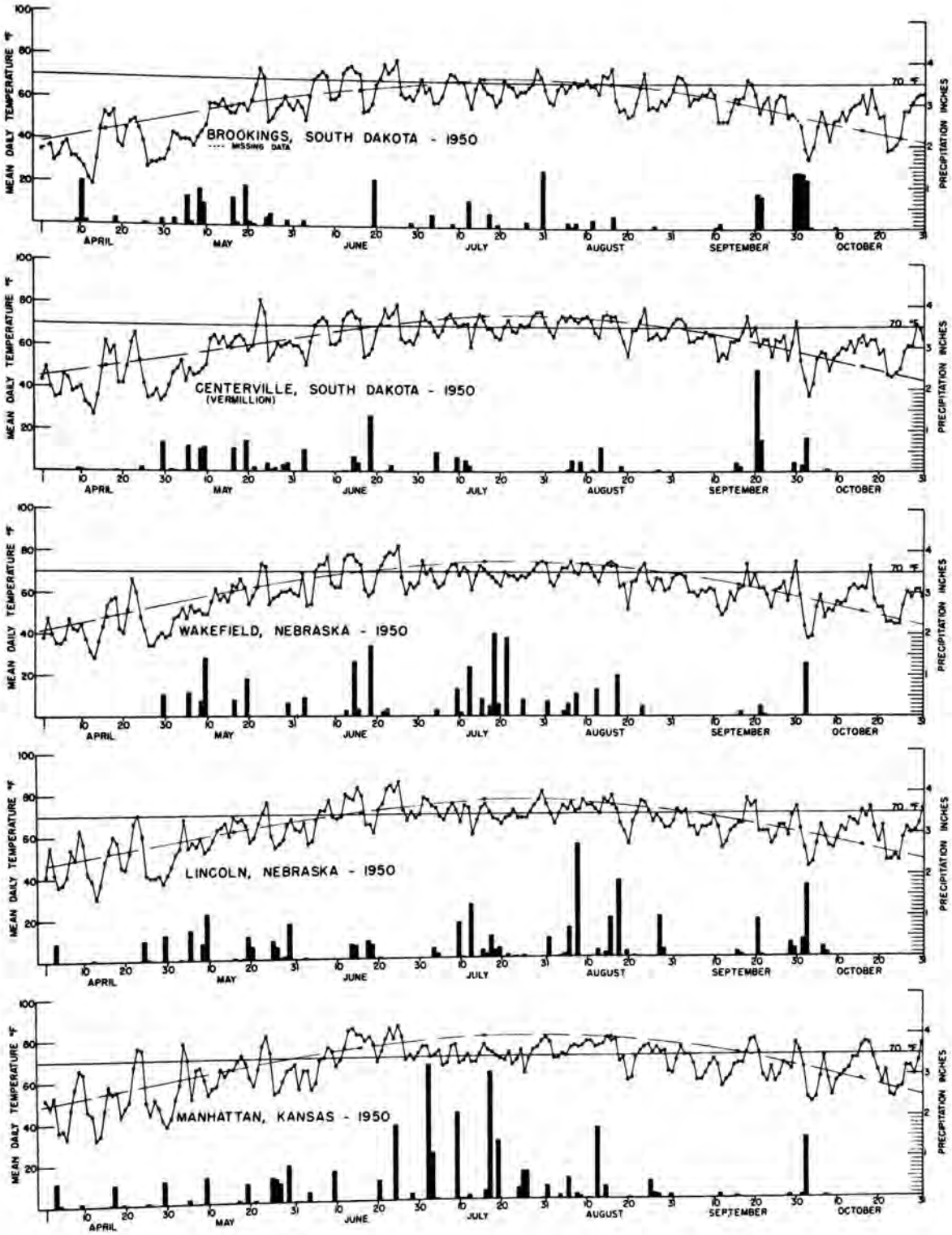

SPOONER, WISCONSIN - 1950
---- MISSING DATA
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


EAU CLAIRE, WISCONSIN - 1950
MADISON, WISCONSIN - 1950
COMPTON, ILLINOIS - 1950
(DIXON TEMPERATURE
PAW PAW PRECIPITATION)
DWIGHT, ILLINOIS - 1950
(PONTIAC TEMPERATURE)
URBANA, ILLINOIS - 1950
CLAYTON, ILLINOIS - 1950
(RUSHVILLE TEMPERATURE
MOUNT STERLING PRECIPITATION)
(--- MISSING DATA)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


EDGEWOOD, ILLINOIS - 1950
(EFFINGHAM)
FREEBURG, ILLINOIS - 1950
(BELLEVILLE)
(EAST ST. LOUIS TEMPERATURE AND MASCOUTAH PRECIPITATION FOR APRIL)
ELDORADO, ILLINOIS - 1950
(HARRISBURG)
MORRIS, MINNESOTA - 1950
ST PAUL, MINNESOTA - 1950
WASECA, MINNESOTA - 1950
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


WORTHINGTON, MINNESOTA - 1950
CRESCO, IOWA - 1950
--- MISSING DATA
4.75
KANAWHA, IOWA - 1950
(ALGONA)
MARCUS, IOWA - 1950
(LE MARS)
— MISSING DATA
5.13
HUDSON, IOWA - 1950
(MARSHALLTOWN FOR JUNE AND JULY)
... MISSING DATA
AMES, IOWA - 1950
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


OTTUMWA, IOWA - 1950
NORBORNE, MISSOURI - 1950
(CARROLLTON)
(LEXINGTON FOR ARC)
LADDONIA, MISSOURI - 1950
(VANDALIA)
COLUMBIA, MISSOURI - 1950
PIERCE CITY, MISSOURI - 1950
(JOPLIN)
FARGO, NORTH DAKOTA - 1950
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER


MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
BROOKINGS, SOUTH DAKOTA - 1950
---- MISSING DATA
CENTERVILLE, SOUTH DAKOTA - 1950
(VERMILLION)
WAKEFIELD, NEBRASKA - 1950
LINCOLN, NEBRASKA - 1950
MANHATTAN, KANSAS - 1950
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER