U.S. REGIONAL SOYBEAN LABORATORY
URBANA, ILLINOIS

RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS, 1946
PART I. NORTH CENTRAL STATES

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH ADMINISTRATION

BUREAU OF PLANT INDUSTRY

SOILS, AND AGRICULTURAL ENGINEERING,

DIVISION OF FORAGE CROPS AND DISEASES

COOPERATING WITH

STATE AGRICULTURAL EXPERIMENT STATIONS

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RSLM 139

RESULTS OF THE COOPERATIVE UNIFORM SOYBEAN TESTS

PART I. NORTH CENTRAL STATES[1/]

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1946

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Compiled by

Staff of the U. S. Regional Soybean Laboratory

CONTENTS

INTRODUCTION

One of the main purposes of the U. S. Regional Soybean Laboratory is to develop through breeding and selection improved strains of soybeans for industrial utilization. All promising material developed through the selection program is classified into maturity groups and is grown along with check varieties at a sufficient number of locations to enable agronomists to determine the value of these strains under a wide range of environmental conditions. Nine of these uniform groups have been established. The first five include soybean strains of suitable maturity for the North Central States and the other four groups contain strains adapted to the southern part of the United States.

The Uniform Test, Group O, contains the earliest strains or those that are able to initiate blooming and reproductive development under the long summer days encountered in the northern part of the North Central States. The

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 For this reason citation to particular statements in the Report should not be published unless permission has been granted previously by the Laboratory or the state station concerned.

Uniform Test, Group I, contains strains adapted to a latitude belt which includes South Dakota, southern Minnesota, Wisconsin, and Michigan. The Uniform Test, Group II, is adapted in general to the northern half of Nebraska, most of Iowa, the northern part of Illinois, north and north central Indiana, and Ohio. Group III is adapted to the general region of southern Nebraska, northern Kansas, the northern half of Missouri, southern Iowa, Central Illinois and Indiana, and southern Ohio. Group IV contains strains that are adapted in general to the southern half of Kansas, south-central Missouri, southern Illinois, and southern Indiana.

Climatic conditions in the North Central States during the 1946 season have been quite variable, some nursery locations having excellent growing conditions, while other locations experienced summer drouths that seriously affected soybean yields. These late summer drouths favored the earlier maturing strains at some locations but at others the drouth was broken in time to permit the later strains to develop normally. At some southern and western locations the nurseries were subjected to unusually heavy rains and wind in the latter half of August. Weather graphs have been included in the report this year to aid in interpreting the performance of strains under the climatic conditions occurring in each locality. Breif statements of general growing conditions, based upon reports by collaborators, have been included for many of the nursery locations.

COOPERATING AGENCIES AND PERSONNEL FOR THE NORTH CENTRAL REGION

Bureau of Plant Industry, Soils, and Agricultural Engineering:
Division of Forage Crops and Diseases: William J. Morse, Jackson L. Cartter, Leonard F. Williams, Albert H. Probst, Charles R. Weber, David Heusinkveld, Lewis C. Saboe, Floyd I. Collins, Orland A. Krober, John M. Slatensek, Carl V. Feaster, John Weihing, and Gordon E. Geeseman.

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

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

Michigan Agricultural Experiment Station
Agronomy Department: Leyton V. Nelson

Minnesota Agricultural Experiment Station
Agronomy Department: Jean Lambert

Missouri Agricultural Experiment Station
Field Crops Department: W. C. Etheridge and B. M. King

Nebraska Agricultural Experiment Station
Agronomy Department: T. A. Kiesselbach

COOPERATING AGENCIES AND PERSONNEL (cont.)

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

Ohio Agricultural Experiment Station
Agronomy Department: R. D. Lewis

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

South Dakota Agricultural Experiment Station
Agronomy Department: E. L. Erickson

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

LOCATION OF COOPERATIVE NURSERIES

Location	Cooperator	Uniform Group Tests 0	I	II	III	IV
Ottawa, Ontario	Central Exp. Farm	x				
Ithaca, N. Y.	N. Y. Agr. Exp. Station	x	x			
New Brunswick, N. J.	N. J. Agr. Exp. Station			x		
Georgetown, Delaware	Georgetown Substation, Del. A.E.S.				x	x
Beltsville, Md.	Div. of Forage Crops & Dis., USDA				x	x
Blacksburg, Va.	Va. Agr. Exp. Station				x	x
Wooster, Ohio	Ohio Agr. Exp. Station		x			
Columbus, Ohio	Ohio State University		x	x	x	
Holgate, Ohio	N.W. Br. Ohio Agr. Exp. Station			x		
Monroe, Mich.	Mr. Platner			x		
East Lansing, Mich.	Mich. Agr. Exp. Station		x	x		
Bluffton, Ind.	Gerald Bayless			x		
Greenfield, Ind.	Benjamin Roney			x	x	
Walkerton, Ind.	Elburt Place			x		
Wanatah, Ind.	Purdue Agr. Exp. Station			x		
Lafayette, Ind.	Purdue Agr. Exp. Station			x		
Worthington, Ind.	Frederic Sloan			x	x	x
Vincennes, Ind.	Charles Schenk					x
Evansville, Ind.	Leo J. Hirsch			x	x	x
Madison, Wis.	Wis. Agr. Exp. Station		x	x		
Spooner, Wis.	Wis. Br. Agr. Exp. Station	x				
Compton, Ill.	Clarence Ackland		x	x		
Dwight, Ill.	Frank Roeder			x	x	
Urbana, Ill.	Ill. Agr. Exp. Station			x	x	x
Clayton, Ill.	Russell Davis				x	x
Stonington, Ill.	Frank Garwood				x	x
Edgewood, Ill.	John Wilson				x	x
Freeburg, Ill.	Loren Wilderman				x	x
St. Paul, Minn.	Minn. Agr. Exp. Station	x				
Morris, Minn.	Minn. Br. Agr. Exp. Station	x				
Waseca, Minn.	Minn. Br. Agr. Exp. Station		x			
Cresco, Iowa	Howard Co. Agr. Exp. Assn.		x			
Ottumwa, Iowa	Fred Parrett				x	
Hudson, Iowa	Strayer Seed Farms			x		
Ames, Iowa	Iowa Agr. Exp. Station			x	x	
Kanawha, Iowa	N. Iowa Agr. Exp. Assn.		x	x		
Marcus, Iowa	John Sand			x		
Elsberry, Mo.	Mo. Agr. Exp. Station				x	x
Sikeston, Mo.	Mo. Agr. Exp. Station					x
Shelbyville, Mo.	Ralph Van Houten and Son				x	x
Columbia, Mo.	Mo. Agr. Exp. Station				x	x
Lathrop, Mo.	Louis Van Buren				x	x
Milo, Mo.	Howard Dale					x
Fargo, N. D.	N. Dak. Agr. Exp. Station	x				
Park River, N. D.	Walsh Co. Agr. & Training School	x				
Brookings, S. D.	S. Dak. Agr. Exp. Station		x			
Vermillion, S. D.	Guy Brooks			x		
Lincoln, Nebr.	Nebr. Agr. Exp. Station			x	x	
Manhattan, Kans.	Kans. Agr. Exp. Station				x	x
Aberdeen, Idaho	Idaho Agr. Exp. Station	x				
Corvallis, Oregon	Oregon Agr. Exp. Station	x				

MAP OF THE NORTH CENTRAL STATES SHOWING LOCATION OF THE COOPERATIVE UNIFORM SOYBEAN TESTS, 1946.

WEATHER CONDITIONS AND GENERAL GROWTH RESPONSES AT MOST OF THE NURSERY LOCATIONS DURING THE 1946 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 1946 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.

Columbus, Ohio The growing conditions at Columbus were very favorable throughout the season. The Group III nursery was very late and lodged very badly. Many of the Group III strains were hit by frost before they matured.

Wooster, Ohio At Wooster the season was extremely dry. Never at any time after emergence did the soybeans at Wooster have ample rainfall. The plots were free of weeds and were well cultivated but the yields were extremely low due to drouthy conditions.

Holgate, Ohio The weather conditions at Holgate were rather adverse for soybeans throughout the season. Shortly after planting there was a rather lengthy wet spell, followed by an extremely dry spell and then another very long wet spell.

East Lansing, Michigan Group I, Group II and Preliminary Group I were planted at East Lansing during the last week of May. There was a severe drouth starting on June 18 and continuing during July and August in this area. With the drouth and frosts on September 2 and 3 it was difficult to take reliable maturity notes. The frosts at East Lansing did not completely kill the strains, but they did slow them down, making it difficult to determine typical maturity dates.

Monroe, Michigan A Group II nursery was planted near Monroe. This is in the chief soybean producing section. The season was rather normal but growth there was not so rank that lodging was a problem with any strain.

Walkerton, Indiana Precipitation was well above normal in June but was followed by an extended period of drouth through July and early August. Summer temperatures were about normal. Yields were high irrespective of the mid-summer drouth and an abundance of weeds. Alternate replications of Group II received 600 pounds of 0-12-12 per acre plowed down but the yield response was very slight. Manganese deficiency symptoms appeared in early July but were corrected within 4-6 days after applying a spray of 10 pounds of 66% manganese sulfate in 100 gallons of water per acre. Frost on October 1 caused a material decrease in yield of varieties as late as and later than Lincoln. Diseases were of minor importance.

Wanatah, Indiana Rainfall was more than double normal in June and was followed by an extended drouth through July and early August. Summer temperatures were

about normal. Yields were well below those obtained at Walkerton on the same soil type and with nearly similar conditions of rainfall. Varieties as late as or later than Lincoln were not affected by frost and were among the highest in yield. There was very little disease at this location.

Bluffton, Indiana The July, August and September rainfall was less than half of normal and occurred mostly in scattered showers. Temperatures were about normal. There was some frost injury to varieties as late as and later than Lincoln. There was a much wider range in maturity between early and late varieties than at any other location in 1946 and more than usually has been observed in other years. Lincoln, Illini, Dunfield, and Mingo averaged 15 days later than Richland, while the average difference in the past has been about 7 days. Light rains the latter part of September were probably adequate to cause continued growth in the late maturing varieties. There was little disease on any variety.

Lafayette, Indiana Precipitation was about normal throughout the growing season except for a dry period occurring in late August and extending to the middle of September. Temperatures were about normal throughout most of the summer except in early June and a short period in July when they were below normal. Emergence was poor and stands were spotted in plantings made May 23. Stands were excellent in plantings made May 15 and in early June. There was no frost damage on varieties as early as Lincoln.

Alternate replications of Group II were fertilized with 600 pounds of 0-12-12 per acre plowed down but gave no response in yield.

Pod and stem blight was much more prevalent than in previous years, especially in late maturing, sparsely planted varieties in which branches were broken away from the main stem. Bacterial blight and downy mildew were present, the former being more abundant.

Greenfield, Indiana Precipitation was adequate during the early part of the growing season but there was an extended drouth from mid-August through September which did not appear to cause any appreciable decrease in yield. A heavy rain occurred soon after planting and flooded the plot to a depth of about 18 inches but caused no reduction in stand. Bud blight was prevalent on all varieties at this location but the high yields indicate little damage from this disease. All varieties matured without frost damage.

Worthington, Indiana Precipitation was about normal up until mid-August but was followed by a two-month dry period. Temperatures were about normal. Group IV was planted May 30 and Groups II and III June 14. These planting dates were chosen as about representative to meet the maturity range of varieties contained in them. Group II matured, on the average, about one week earlier than Group III and two weeks earlier than Group IV. Lincoln was superior in yield in comparison to the earlier varieties of Richland maturity. Richland and C509 remained green and matured later than Lincoln.

Alternate replications of Group IV were fertilized with 600 pounds of 0-12-12 per acre plowed down but gaveno yield response. There was considerable lodging in Group IV with strain C508 being the most resistant.

Bacterial blight and downy mildew were among the most prevalent diseases and were especially noticeable in Group IV. Patoka, Gibson, and C508 were heavily infected with downy mildew while Chief, C461, C463, and C464 were least infected. Gibson was also heavily infected with bacterial blight.

Vincennes, Indiana Precipitation was about normal through the early part of the growing season but there was a period of dry weather in the early part of September and in the first half of October. There was a very heavy rain immediately after planting and the plots were flooded for a short period with about 18 inches of water. Stands were spotted in some areas of the plot.

Bud blight was very prevalent and indicated a possible differential varietal effect based on severely infected (dudded) plants. Patoka, C101, and C461 were least infected with 2.0% of the plants showing the "dudded" appearance. C458, C464, and Gibson ranged from 5.0% to 7.5% "dudded" plants. Gibson surrounding the test plot and planted after the flood mentioned above had very few "dudded" plants which might indicate some relationship between high soil moisture content and bud blight since the flooded plot at Greenfield likewise had considerable bud blight. Maturity was late at this location and harvest was further delayed by bad weather. Yields were fully 25% to 35% below the average of this location.

Evansville, Indiana May rainfall was double the normal and delayed planting until June 8 which is about 3 weeks later than normal for Group IV. Precipitation was double normal in August and was ample in June and July but there were extended periods with no rainfall in September and October. There were no periods of unusually high or low temperatures.

Yields were unusually high in Group IV, above average in Group III and fairly good in Group II. The latter test was not planted until July 6 which should tend to favor the early maturing varieties but Lincoln yielded significantly higher than any other variety.

Alternate replications of Group IV were fertilized with 600 pounds of 0-12-12 per acre plowed down. The fertilized plots averaged 3.0 bushels higher than the unfertilized but the difference was non-significant and there was no varieties x treatment interaction.

Diseases were not very prevalent. Bacterial blight was the predominant disease with lesser amounts of downy mildew. Gibson was most severely infected with bacterial blight.

Madison, Wisconsin At Madison there was an extreme shortage of moisture during the growing season, the rainfall being approximately two inches short of normal in April, May, and June. During July, August, and September rainfall was normal. The average yield was about 2/3 of last year. The relative yield of varieties was approximately the same as in other years, but the spread between varieties was not as large as was the case last year.

Spooner, Wisconsin The weather conditions at Spooner were generally quite adverse to very good crops of soybeans. Early season weather was very favorable and prospects pointed towards better than average yields. Very dry weather conditions during July had disastrous effects on growth and pod development. The nursery would very likely have resulted in complete failure had it not been irrigated twice during this very dry period July 15th to August 15th.

The rainfall for July and August was 2-1/2 inches below normal but temperature was only 1 to 2 degrees below normal for this period. Heavy frosts September 2 and 3 completely killed all remaining green foliage and the more immature pods were also frozen.

Compton, Illinois The temperatures at Compton were fairly normal in 1946 but during July and early August the beans were suffering somewhat from an accumulated moisture deficiency. This dry spell was broken in late August and from then on moisture was plentiful. The very early varieties in Group I suffered most from the drouth and many of these became duddy and retained green leaves and stems after the rains came. Yields of Group II strains were very high.

Dwight, Illinois At Dwight the July drouth common in many northern locations was not broken in August and this field suffered one of the driest seasons on record. Yields were undoubtedly greatly reduced and maturities much earlier than usual. The earliest ripening Lincoln beans in Illinois were in this area. No rain fell on this field from the beginning to the end of harvesting.

Urbana, Illinois The beans at Urbana suffered greatly from the drouth in July, August, and September. The light rains in late August were not sufficient to produce a normal crop. As a consequence the early strains yielded best and Group IV hit an all-time low average yield. C508 apparently was able to produce a good yield in spite of the drouth. The latest strains were somewhat damaged by an early frost on October 1.

Clayton, Illinois The season at Clayton was a rather normal one. No serious moisture deficiencies or other abnormalities were obvious.

Stonington, Illinois In common with a number of locations, Stonington suffered somewhat from the late summer drouth but this was alleviated by late August and September rains. Lodging was rather severe and probably reduced yields somewhat. Late varieties were severely damaged by early frosts, October 1-3.

Edgewood, Illinois A combination of good soil management, fertilization, and the most favorable season in the past 40 years combined in 1946 to give Edgewood the highest yield on record. This soil is very subject to drouth, but in 1946 rainfall was ample throughout the critical summer months.

Freeburg, Illinois The nursery at Freeburg, Illinois, was badly infected by bud blight early in the season. In late August, 14 inches of rain fell in two days on a soil already saturated with 7 inches of rain in the preceding week. Fortunately the plot was well drained and no serious consequences of the heavy rain were evident.

In spite of the serious bud blight, yields were fairly good, but maturity data were not very satisfactory. A late planting of Groups II, III, and IV, July 10, showed very little bud blight damage, indicating that the amount of damage is somewhat dependent on date of planting.

St. Paul, Minnesota The Group 0 and Group I tests at University Farm were very disappointing in 1946. The beans came up and grew under almost ideal conditions until about August 1 when drouth and high temperatures began to cause leaves to drop and to prevent formation of pods. Later varieties were injured most. The drouth continued until the first week of September. At that time heavy rains came, and the weather continued cloudy and wet for several weeks. Frost did not occur until well into October. Under these conditions the drouth damaged beans put forth some green leaves and failed to ripen normally. As a result harvesting was delayed and the quality as well as the yield of the beans was very low. The early varieties gave much better yield and seed quality than the later ones.

Waseca and Morris, Minnesota In contrast to the beans at University Farm, those at Waseca and Morris matured properly and gave satisfactory yields of good quality seed. Such varieties as Flambeau and Kabott were later in comparison with such varieties as Habaro and Wisconsin Manchu 606 at Morris than they were at Waseca.

Marcus, Iowa The Marcus nursery was an excellent one. The stands, growth and weather conditions all were very good. While the fertility of the soil would be considered on the high side and the growing conditions good, there appeared to be less lodging than normally would be expected. However, there is usually less lodging in this area on Marshall silt loam. The lodging susceptible varieties did not lodge nearly as much at Marcus as in other parts of the state. Pavender Special is a notable example.

Kanawha, Iowa This nursery yielded excellent data. The stands were good. Growth and weather conditions likewise were good. The nursery was planted early, May 21, and there was no frost until October 12, so late maturing strains might have had more of an advantage over earlier maturing strains than with an early or normal occurring frost. The results are believed to be very good and the strain performance comparable.

Cresco, Iowa The plots were planted as early as is normally expected on soils of the Carrington Plastic Till phase. Good growing conditions continued until September 5, with the exception of three weeks of dry weather during July which did not appreciably damage the nursery. However, on September 5 a severe rain, wind and hailstorm damaged the plots considerably. The early strains were nearly ripe while the later strains required a month or more to mature. An estimated 20 to 40 percent reduction in yield resulted from the storm.

The early strains nearing maturity (i.e. Mandarin) primarily suffered mechanical loss of seed. The later strains (i.e. Wis. Manchu 3) suffered both mechanical and physiological loss of seed. The heavy winds caused lodging to be erratic and maturity to be quite variable and delayed. The late frost of October 12 permitted late strains to mature. Yields, too, were variable as noted by the coefficient of variation, 12.3%.

No seed quality was taken because the hail and wind injury to the pods permitted some beans to mold with the result that true strain differences in regard to seed quality were not exhibited.

After a survey and an estimated appraisal of the damage to the nursery, it was deemed desirable to harvest the plots. The data from these plots for strain comparisons were considered to be fair to poor.

Hudson, Iowa The Hudson nursery was considered to be good. The strains, growing conditions and weather were good. There was an unexplainable high degree of lodging on Waukeshaw silt loam which may account for the rather high coefficient of variability of 13 percent for yield. Waukeshaw silt loam in the Hudson area has been observed on previous occasions to give excessive lodging. Early in the season the weeds were a menace but the plots were cleaned at least two weeks prior to blooming and thereafter weeds were absent. An estimate of the high degree of lodging can be obtained by noting the 3.0 lodging score of Richland.

Ames, Iowa The nursery at Ames yielded excellent data. The stands, growth and weather conditions were all conducive to very good tests.

Ottumwa, Iowa The nursery was planted June 3 but on June 16 a hailstorm damaged the plots. A fair to medium stand was noted, particularly due to the effect of the hail. The cooperator received a 20 percent yield adjustment from the insurance company. However, since the hail occurred early the recovery was remarkable. Lodging was greater than normally expected. Brown spot disease appeared in patches over the nursery and appeared to be more prevalent than has ever been noticed previously. A late frost of November 12 favored late maturing strains.

Shelbyville, Missouri The soil moisture was optimum at planting time, but no rains occurred in appreciable amounts until after stunting of the plants was evident. The drouth condition was rather local, but the conditions existed in a limited way in surrounding areas. After the early summer drouth broke, the season was ideal for the growth of the crop and apparently the early drouth only slightly reduced the yields.

Columbia, Missouri The moisture content of the soil was optimum at planting time and good stands were obtained. The crop made good progress for a few weeks but was retarded by a short drouth during early summer. The remainder of the growing season was optimum and high yields were obtained. Apparently, the early drouth did not cause a reduction in yields.

Sikeston, Missouri There was very little precipitation throughout June; however, the moisture supply in the soil was sufficient to prevent any detrimental effects upon the crop. There was also a drouth period between the middle of September and the middle of October. This may have resulted in a slight reduction in the yields of the full season varieties. The earlier maturing varieties were past their critical stage before the drouth occurred. This was one of the few seasons in which the earlier maturing varieties yielded as much or more than the full season varieties. There was plenty of moisture and no hot periods during the time the earlier maturing varieties were setting and developing seed.

Elsberry, Missouri The growing season was ideal until August. During this month, heavy precipitation resulted in the flooding of the plots. No reduction in yield was apparent but excessive lodging resulted. The yields obtained in this area were far above those for the average season.

Lathrop, Missouri With the exception of the early portion of the growing season, conditions were favorable for high production. The soil was rather dry at planting time, and no precipitation occurred for five weeks after planting. Thus poor stands resulted. The crop made good progress throughout the remainder of the season. Lodging was severe as a result of high winds and heavy rains during August.

Milo, Missouri The growing season was extremely unfavorable for soybean production. A drouth condition persisted throughout the summer and hot, dry winds from the southwest were common. The yields of all varieties were low and the plants made only limited growth.

Fargo, North Dakota Conditions for soybean production were fairly good at Fargo. While summer temperatures were not high and there was a shortage of rainfall, especially during July and early August, the early frost held off, resulting in

a longer growing season than usual. A very light frost occurred on September 2 but touched only occasional leaves. The first serious frost held off until October 7 and by that time all the varieties in Group O were mature. Varieties to be suitable for the Fargo area should reach normal maturity by about September 10. Leaf diseases were present in the Fargo nursery but seemingly not sufficient to have seriously influenced yield differences.

Park River, North Dakota At Park River in the northern part of the State, the killing frost occurred earlier and a number of the varieties failed to mature.

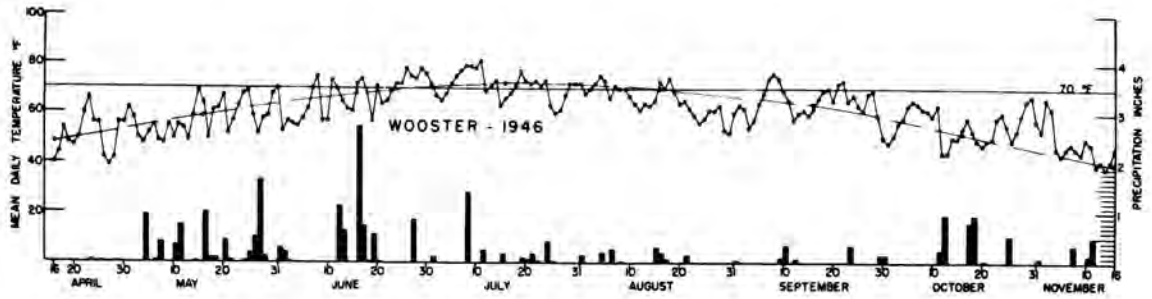
Lincoln, Nebraska After a normal rainfall in June, the weather turned dry and July had only about half the normal rainfall. Soybeans did not seem to suffer greatly, however, and the August rains brought the moisture about up to normal. Yields were decreased somewhat due to dudding, probably caused by the bud blight disease. Varieties varied from 1 to 40 percent duds.

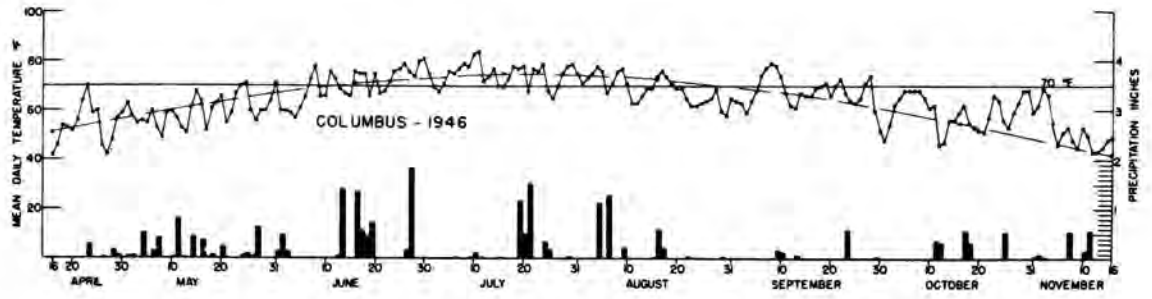
Manhattan, Kansas The varieties were planted May 28 and 29. No rain had fallen since May 15 except two light showers of .19 inch May 16 and .11 May 19. No more rain fell until June 18--a period of more than a month without any effective precipitation. The soil was in good condition at the time of planting and there was sufficient moisture for germination had it not been for rapid drying of the soil while the seed was being planted by hand and for nearly three weeks afterward. Maximum temperature of 101 was reached June 6, one week after planting and 106 and 103 June 15 and 16. Emergence of a few varieties was not complete until after 1.62 inches of rain was received June 18. During the remainder of June 2.13 inches of rain fell. This gave the crop a fair start but only .94 of an inch fell during July and .05 during the first 11 days of August. From July 4 to August 10 the mean maximum temperature for 36 days was 94.6 with not a single day below 90° and 13 days to 100 to 106.

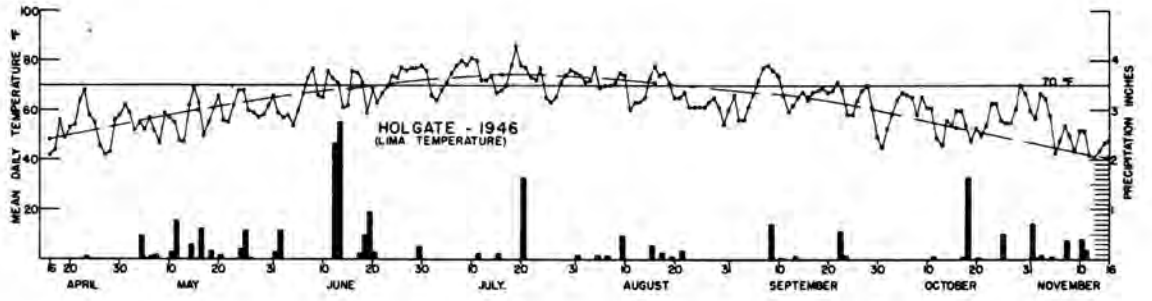
Pod setting was light on most varieties probably because of drouth and high temperatures. The maturity period of all varieties was longer than normal for several reasons, emergence was slow because of dryness of the soil, the period of bloom was delayed by drouth and ripening was delayed by cool moist weather. The protracted drouth was broken by a 6-inch rain August 12. From that date of October 7 a total of 15.61 inches of rain fell and the weather was cool and cloudy much of the time. This delayed ripening and made accurate determination of maturity impossible for most varieties.

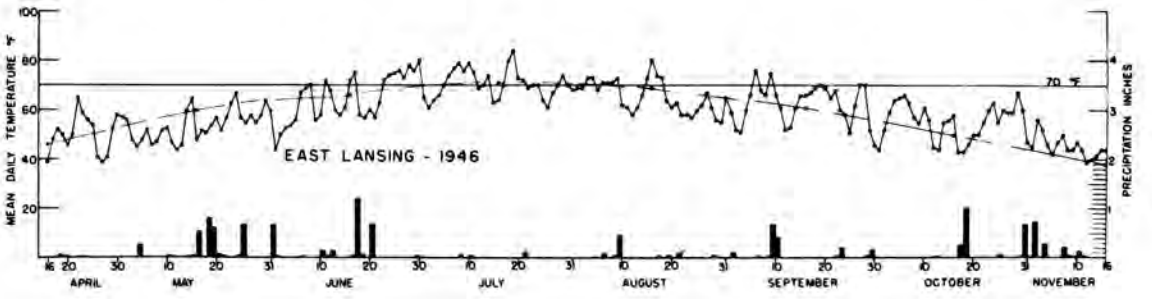
Among the varieties in Group IV, C447 was outstanding except for considerable lodging. C425 also was among the good ones. C101 yielded well but lodged more than usual which may account for the relatively poorer quality of seed.

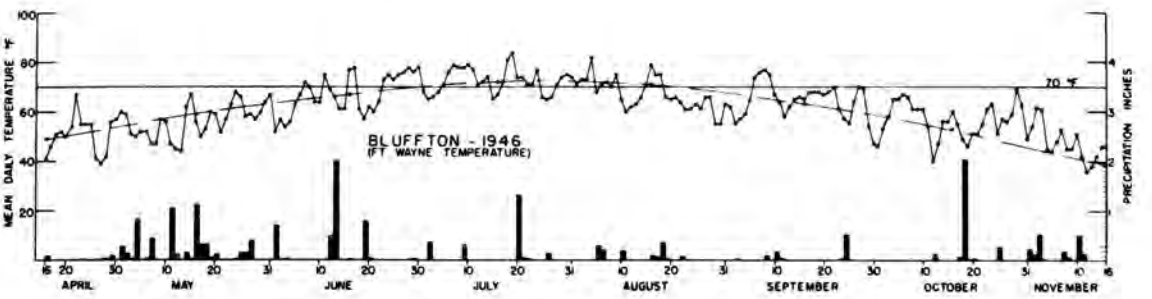
The varieties in Group III were affected more by delayed germination and damage from rabbits.

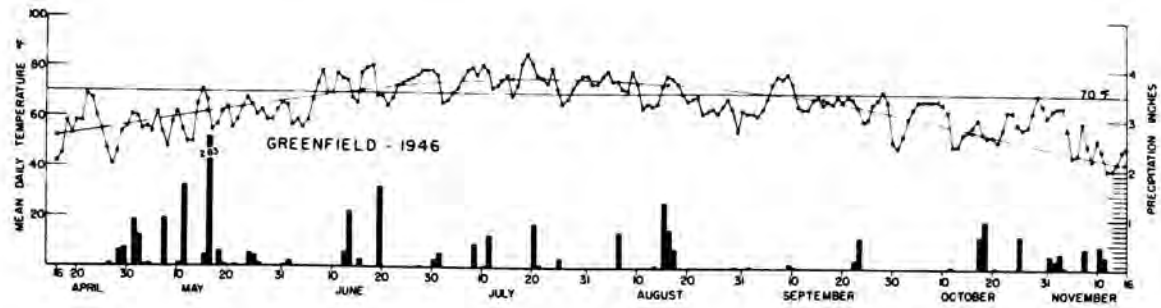

WOOSTER - 1946
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


COLUMBUS - 1946
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


HOLGATE - 1946
(LIMA TEMPERATURE)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


EAST LANSING - 1946
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


BLUFFTON - 1946
(FT WAYNE TEMPERATURE)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


GREENFIELD - 1946
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
2.03
APRIL
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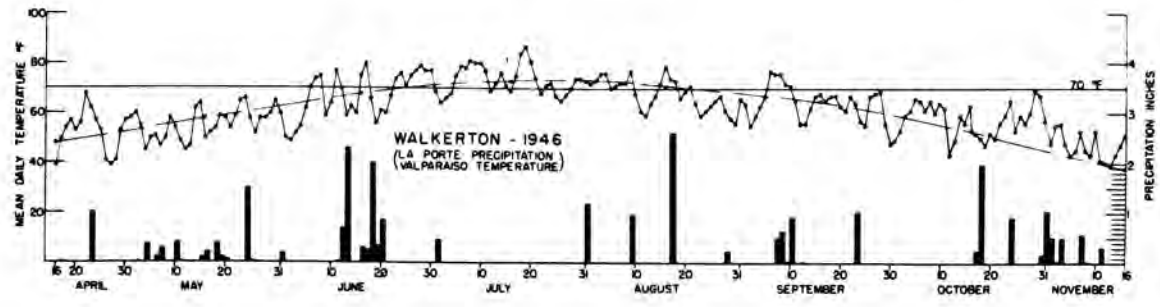
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(VALPARAISO TEMPERATURE)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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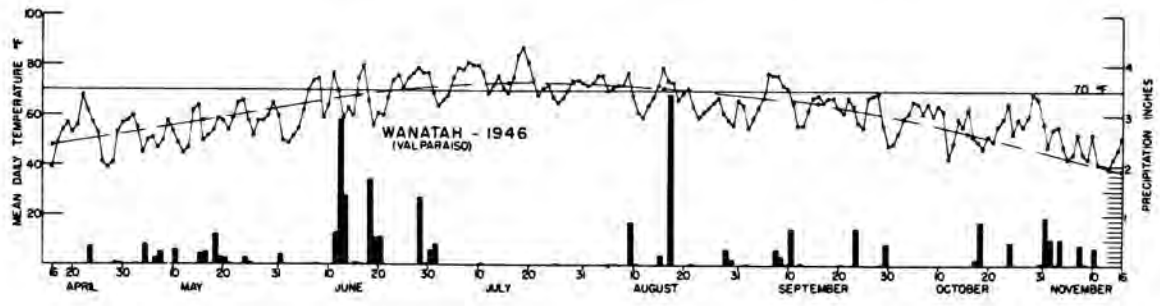
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(VALPARAISO)
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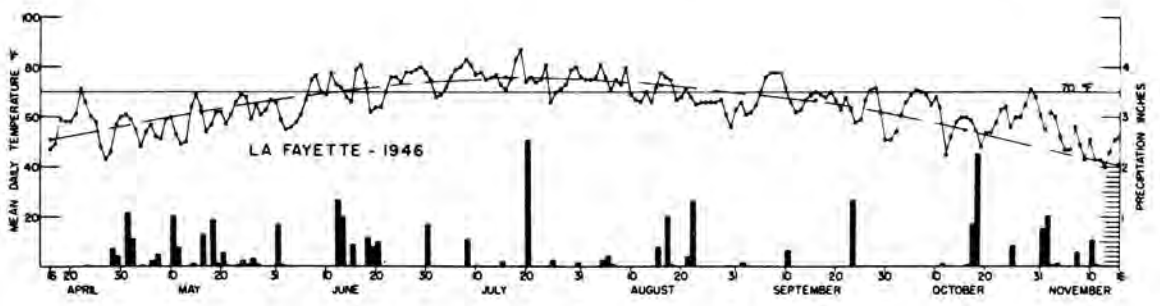
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MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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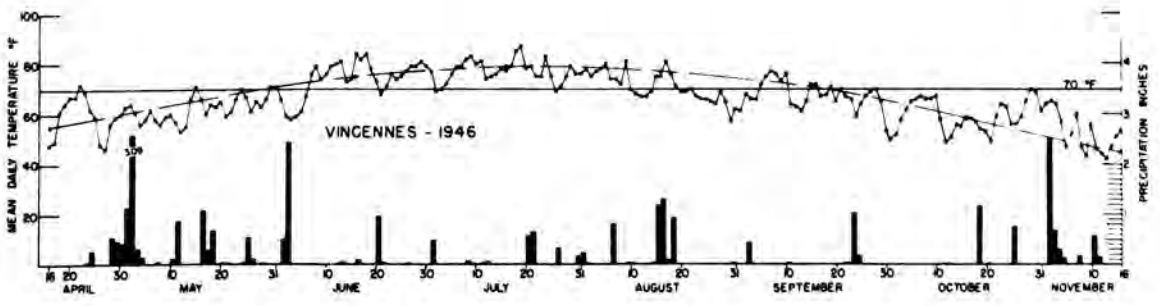
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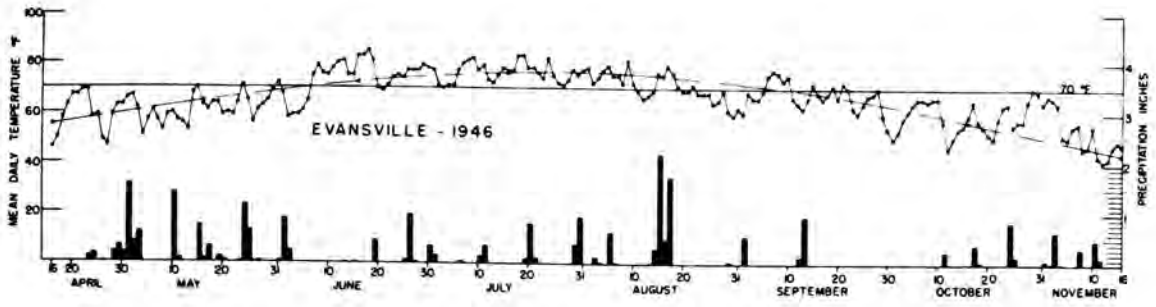
EVANSVILLE - 1946
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
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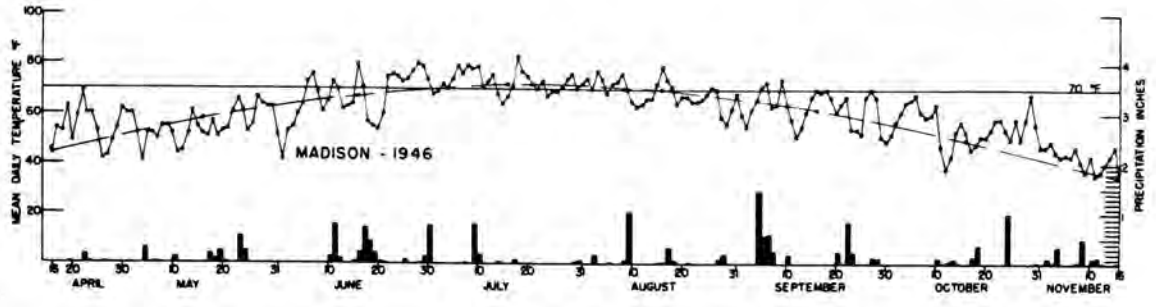
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER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MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
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AUGUST
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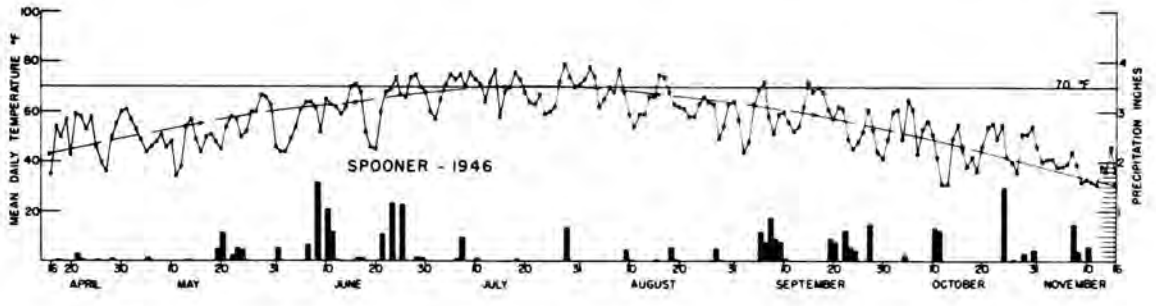
OCTOBER
NOVEMBER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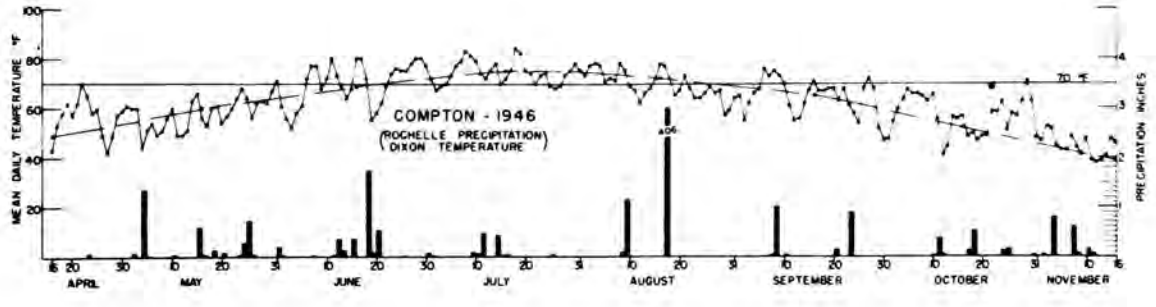
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER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(ROCHELLE PRECIPITATION)
(DIXON TEMPERATURE)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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MAY
JUNE
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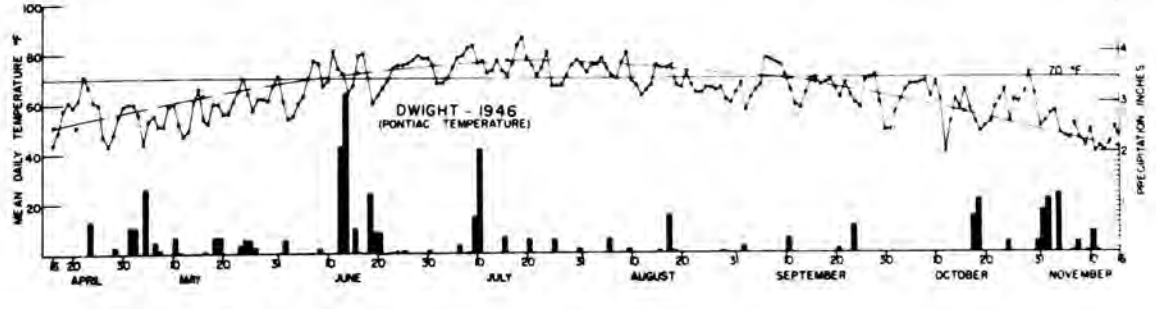
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(PONTIAC TEMPERATURE)
MEAN DAILY TEMPERATURE °F
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AUGUST
SEPTEMBER
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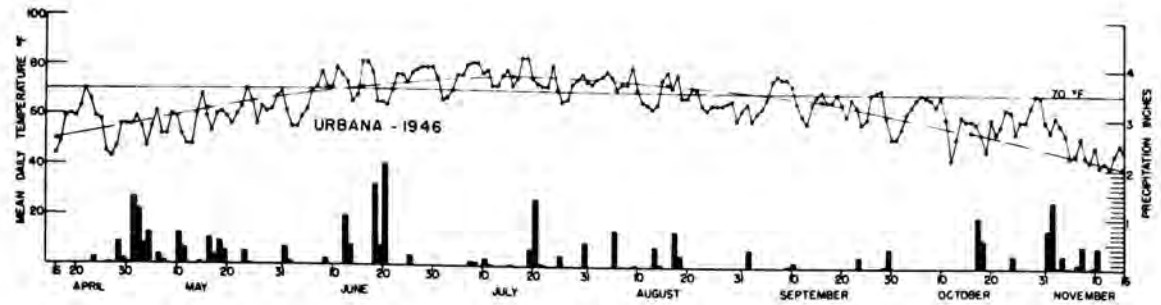
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PRECIPITATION INCHES
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MAY
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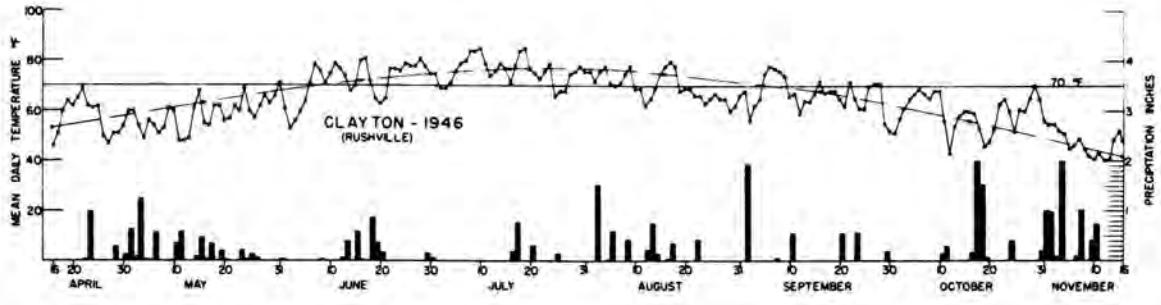
OCTOBER
NOVEMBER


CLAYTON - 1946
(RUSHVILLE)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
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AUGUST
SEPTEMBER
OCTOBER
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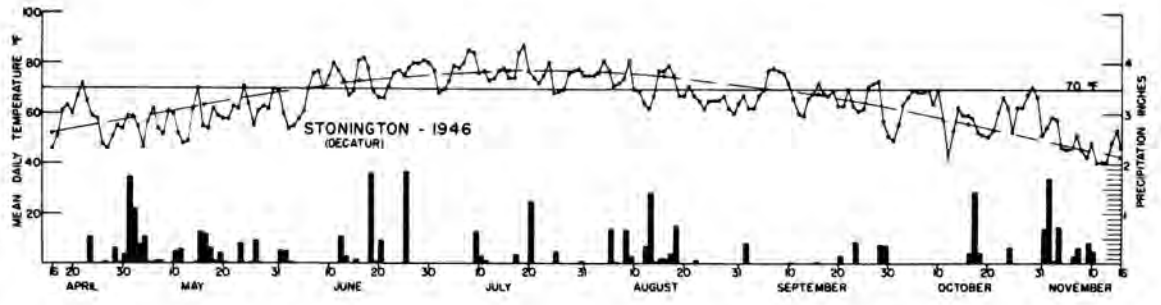
STONINGTON - 1946
(DECATUR)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
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MAY
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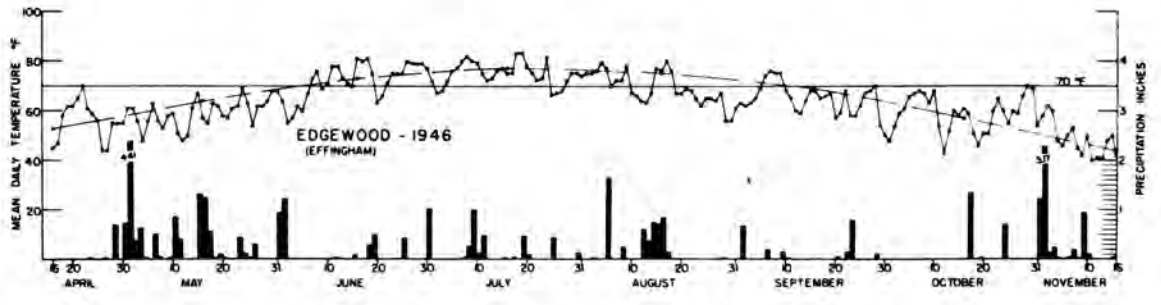
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


EDGEWOOD - 1946
(EFFINGHAM)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
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SEPTEMBER
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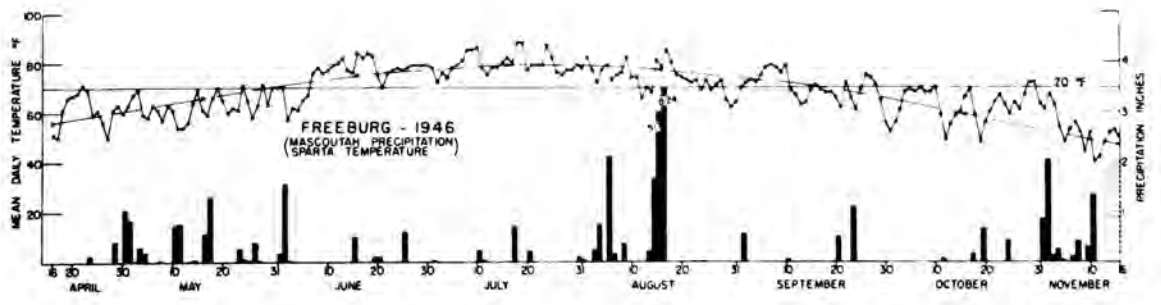
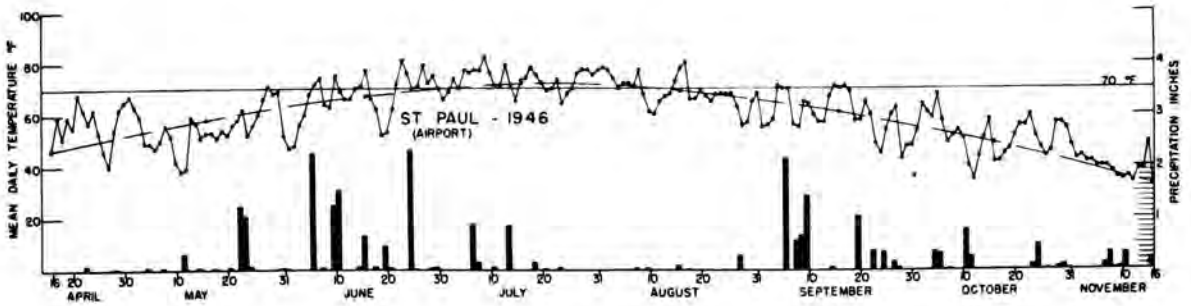
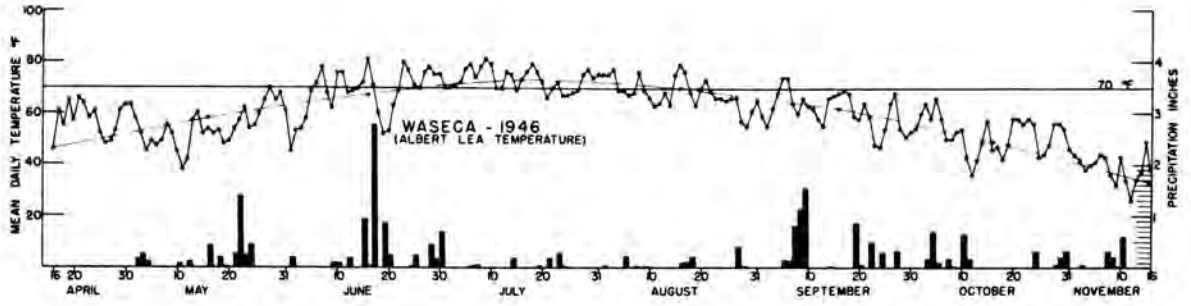

FREEBURG - 1946
(MASCOUTAH PRECIPITATION)
(SPARTA TEMPERATURE)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


ST PAUL - 1946
(AIRPORT)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


WASECA - 1946
(ALBERT LEA TEMPERATURE)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
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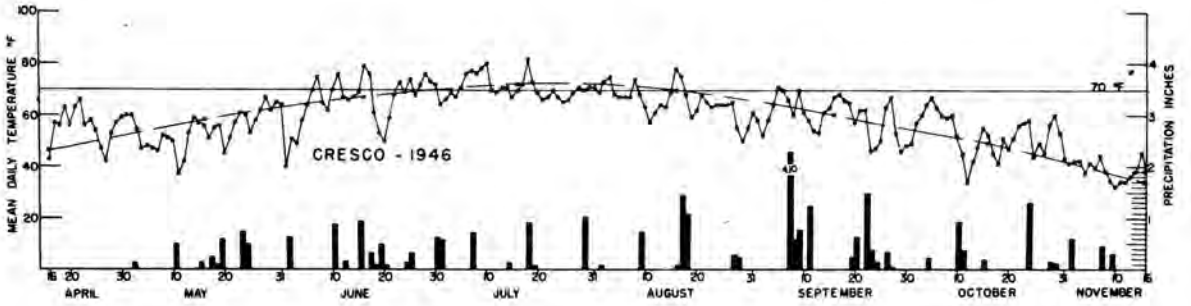
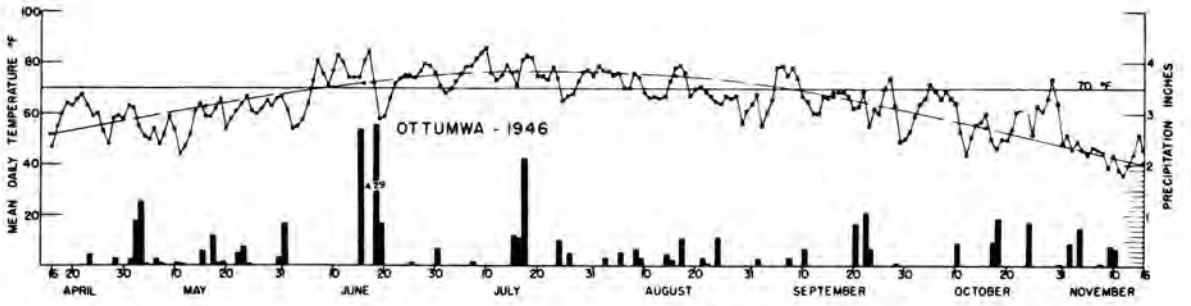

CRESCO - 1946
4.10
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


OTTUMWA - 1946
4.79
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
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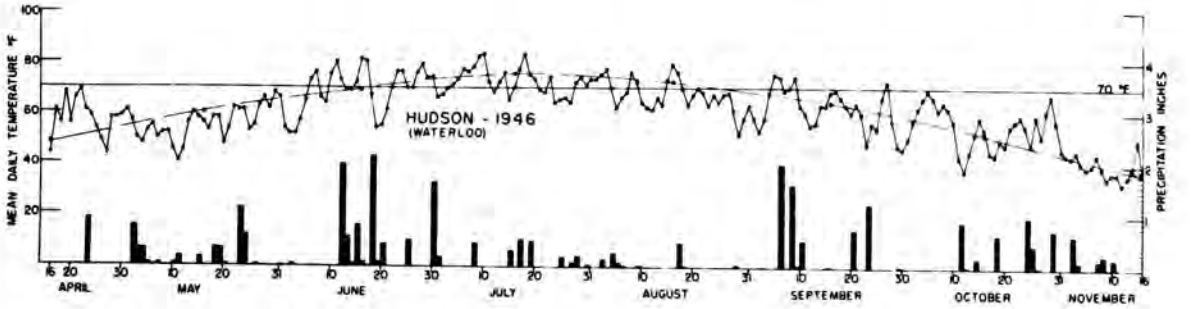
SEPTEMBER
OCTOBER
NOVEMBER


HUDSON - 1946
(WATERLOO)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
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AUGUST
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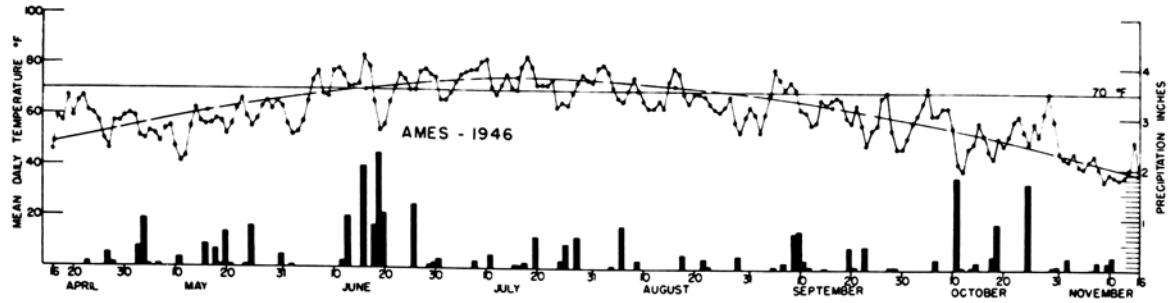
AMES - 1946
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
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AUGUST
SEPTEMBER
OCTOBER
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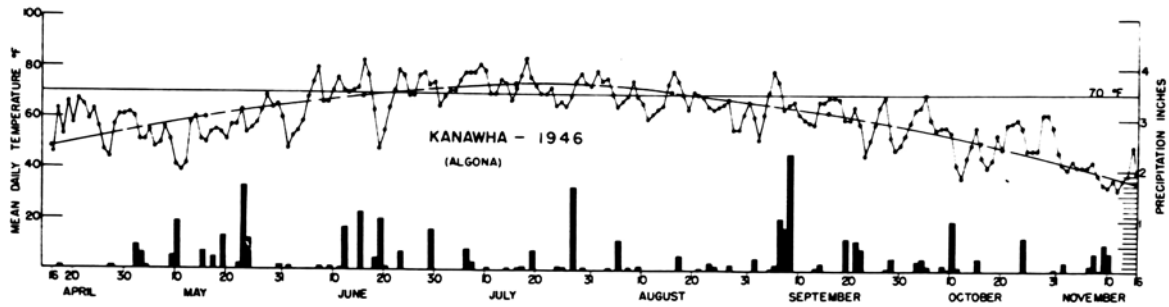
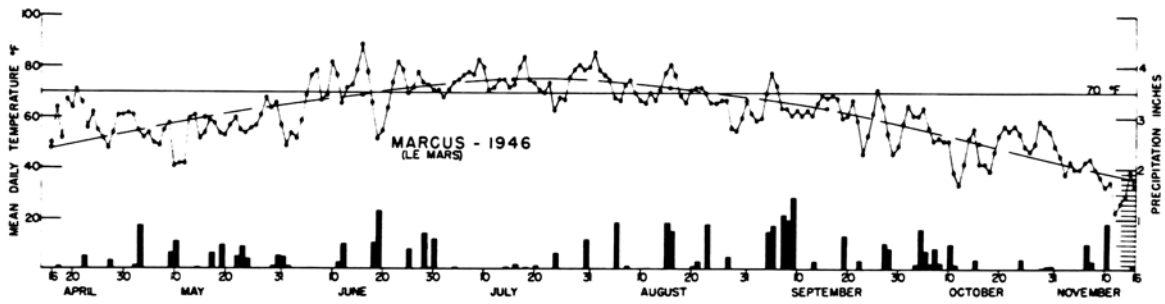
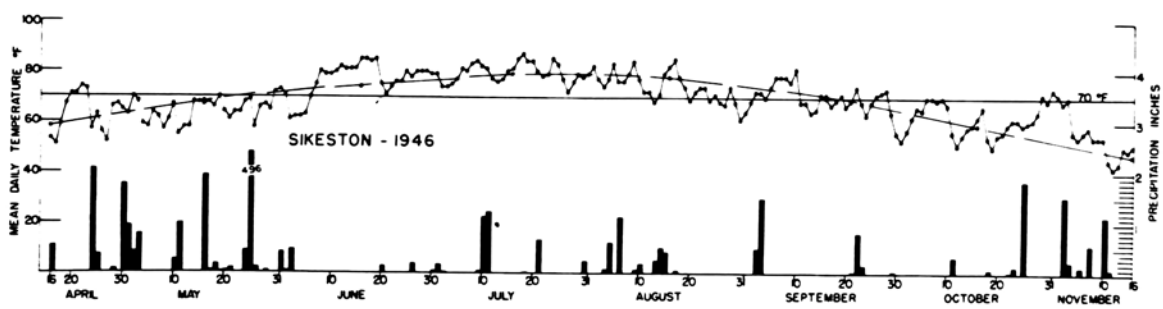

KANAWHA - 1946
(ALGONA)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


MARCUS - 1946
(LE MARS)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


SIKESTON - 1946
4.96
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
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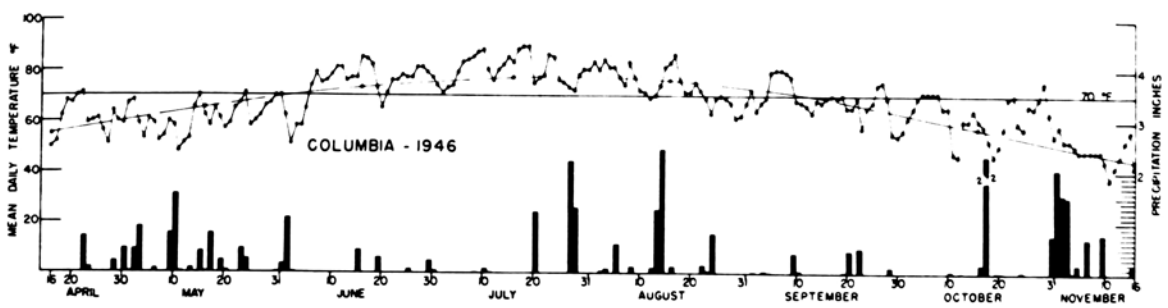
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER


COLUMBIA - 1946
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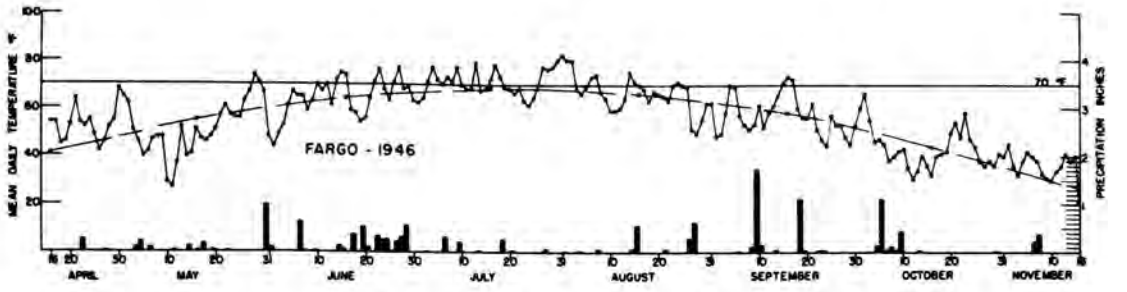
FARGO - 1946
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
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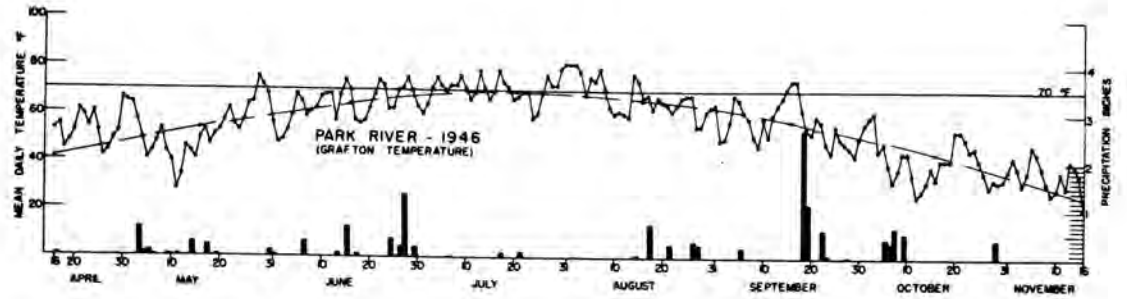
PARK RIVER - 1946
(GRAFTON TEMPERATURE)
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
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SEPTEMBER
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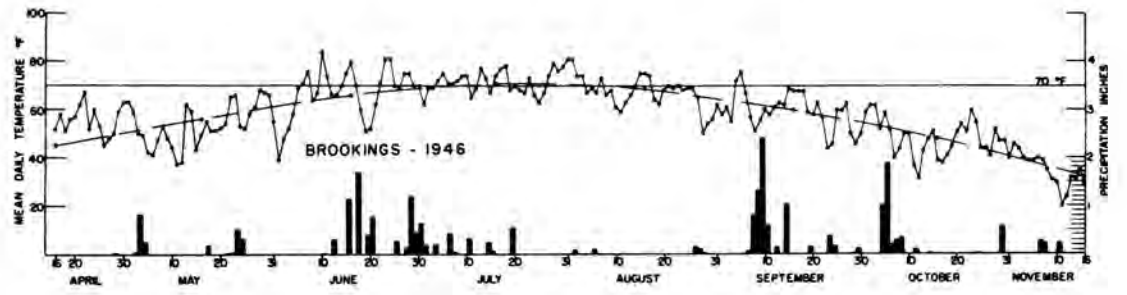
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MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
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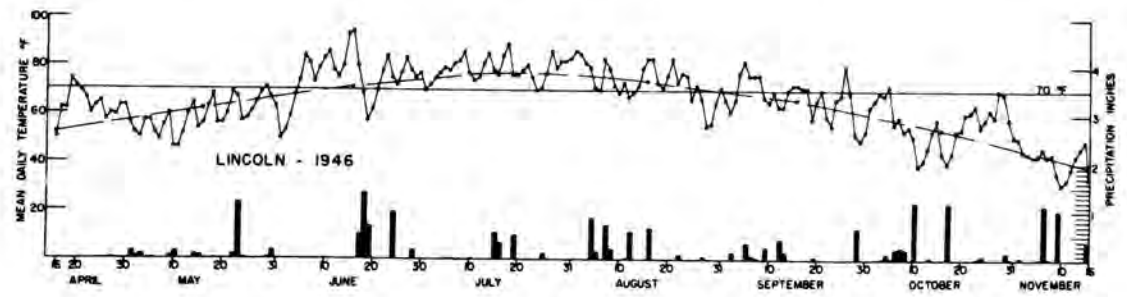
NOVEMBER


LINCOLN - 1946
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
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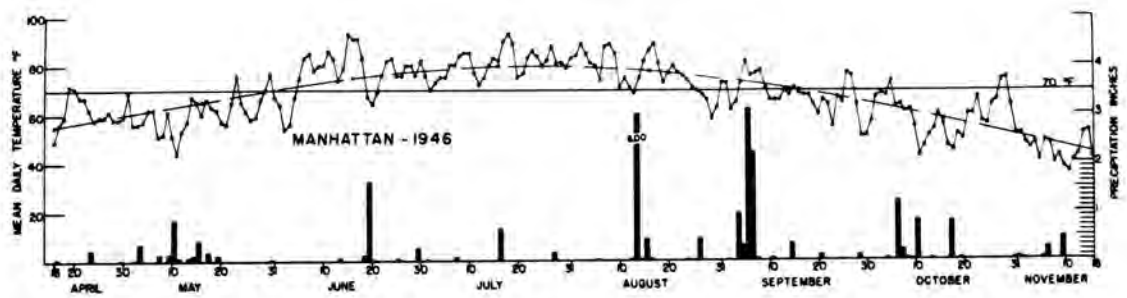
MANHATTAN - 1946
MEAN DAILY TEMPERATURE °F
PRECIPITATION INCHES
70 °F
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER

METHODS

All Uniform Tests have been 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 have varied from 18 to 42 inches depending upon the width in common use or the equipment available for handling the crop. Seeding rates have also varied with locations, the most prevalent rates being 150 to 200 viable seeds per row. Rates within this range have given satisfactory stands throughout the region under normal soil and weather conditions at planting time.

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

Chemical composition was determined for each strain at each location in Groups 0 and I, and for some locations in Groups II, III, and IV. Chemical composition was 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 were 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 was determined on the variety composite or by individual locations and was recorded as weight (in grams) per 100 seeds.

Lodging notes were 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 was determined as the average length of plants in a plot from the ground to the top extremity at time of maturity.

Maturity was taken as the date when the leaves had dropped, the pods were ripe, and the stems were 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, Richland; Group III, Illini; and Group IV, Gibson.

Seed Quality was 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 were: development of seed; wrinkling; damage; and color for the variety.

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

UNIFORM TEST, GROUP O

The Group O Test consisted of eight named varieties and nine selections from hybrids The origin of these strains and varieties is as follows:

Variety or Strain	Source or Originating Agency	Origin
Capital	Central Exp. Farm, Ottawa	Sel. from Strain 171 x A.K. (Harrow)
Flambeau	Wis. Agr. Exp. Station	Sel. from Manchu
Goldsoy	Ontario Agr. College	Sel. from O.A.C. 211
Kabott	Central Exp. Farm, Ottawa	Sel. from Intr. from Ninguta, Manchuria
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Montreal Manchu	T. B. MacCauley, Montreal	Sel. from Manchu
Pridesoy	Twin City Seed Co., Minneapolis	Unknown at present
Wis. Mandarin 507	Wis. Agr. Exp. Station	Sel. from Mandarin
F372-8	N. Dak. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Illini x Mandarin
F457-18	N. Dak. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Cayuga x Hud.Manchu
F457-28	N. Dak. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Cayuga x Hud.Manchu
H22-461	Ohio Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Illini
H38-461	Ohio Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Scioto x Mandarin
H39-461	Ohio Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Scioto x Mandarin
H50-461	Ohio Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Illini x Mandarin
H106-461	Ohio Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Mandarin
W4-623	Wis. Agr. Exp. Sta. & U.S.R.S.L.	Sel. from Richland x Kabott

Data were obtained on the Group 0 nursery at nine locations in 1946. Several of these nuseries were damaged by frosts September 1-3. The test at Spooner was so severely damaged that the yield data were not used in computing the mean. Both Spooner and St. Paul experienced severe drouth, but the plot at Spooner was saved by two irrigations. The beans at St. Paul were damaged so severely by the late summer drouth that yields are not considered very comparable since the early maturing strains were definitely favored by the drouth.

Capital was the most outstanding strain in Group 0 in 1946 (tables 1 and 2). This new strain from Ottawa yielded 2 bushels more than Montreal Manchu and Mandarin (Ottawa), the next highest yielding strains. It has a higher oil content than any other strain in this test. It is about four days earlier and four inches taller than Mandarin (Ottawa). Capital has lodged more than Montreal Manchu. Capital was first in yield at Ottawa, Ithaca, Morris, Fargo, and Park River, and fourth at Corvallis. At Spooner and Aberdeen the medium and late varieties were seriously damaged by frost and at St. Paul by drouth.

None of the new entries are as early as Flambeau and Kabott. Since this test was designed to include strains earlier than Mandarin, the three Ohio entries, H39-461, H50-461, and H22-461, being later than Mandarin, are out of place and are really of Group 1 maturity.

Maturity data were available from four locations (table 4). The average growing period varied from 108 days at Fargo to 150 days at Corvallis. This is the most extreme variation yet encountered in this group.

In the two- and four-year summaries (tables 7 to 10) Mandarin (Ottawa) is ahead in yield. It has averaged two bushels more per acre than Mandarin 507 and has had 1 percent more oil in the seed. If the Ottawa strain had the height of the Wisconsin strain, it would be fine. The new Capital promises to be such a combination with some additional advantages. Montreal Manchu has proven to be a good yielding early strain but is rather low in oil. Of the very early strains, Flambeau appears to be the best yielder. It has averaged 2 bushels more than Kabott in the four-year summary, but it is more susceptible to lodging.

Table 1. Summary of agronomic and chemical data for the strains in the Uniform Test, Group 0, 1946.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	7	3	6	4	3	7	8	8	8
Capital	25.9	2.2	28	-3.8	2.3	11.9	39.3	19.7	137.0
Montreal Manchu	23.9	1.2	28	-4.0	2.0	15.6	40.9	18.5	138.2
Mandarin (Ottawa)	23.5	1.2	34	0	2.7	16.5	41.5	19.0	135.3
Goldsoy	22.1	2.1	22	-8.0	2.0	17.4	41.8	18.9	137.1
Wis. Mandarin 507	21.9	1.5	28	-2.5	2.7	15.6	43.1	18.3	137.7
Pridesoy	21.7	1.3	24	-3.5	2.3	13.3	42.7	18.1	137.6
H39-461	21.5	2.5	32	+4.3	2.0	15.8	41.3	19.1	137.4
W4-623	21.3	1.3	24	-8.3	2.3	16.6	40.8	19.1	135.6
Flambeau	21.2	2.2	25	-14.5	2.3	14.6	40.8	18.6	135.1
H106-461	20.5	1.2	28	-1.5	2.0	13.2	42.0	18.9	134.7
Kabott	20.5	1.8	23	-14.5	1.7	18.3	42.2	18.8	134.8
H50-461	19.9	1.6	30	+4.8	2.3	14.1	41.2	18.6	139.9
F457-28	19.9	1.3	26	-7.5	2.0	13.9	40.9	18.6	135.3
F457-18	19.8	1.9	26	-6.3	2.3	13.5	42.7	18.7	134.4
H38-461	19.4	2.2	29	-2.5	2.7	14.9	40.8	19.5	138.2
H22-461	17.7	2.6	30	+5.8	2.0	13.3	39.7	18.8	139.6
F372-8	17.6	1.1	29	-5.8	1.7	14.0	41.6	19.3	136.1
Mean	21.1	1.7	27		2.2	14.8	41.4	18.8	136.7

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

Table 2. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group O, 1946.

Strain	Mean of 7 Tests[1]	Ottawa Canada	Ithaca N. Y.	Spooner Wis.	St. Paul Minn.	Morris Minn.	Fargo N. D.	Park River N. D.	Aber-deen Idaho	Corvallis Oregon
Capital	25.9	37.8	32.6	10.2	8.5	27.0	22.4	22.1	15.0	24.5
Mont.Man.	23.9	33.0	30.3	10.8	8.9	23.7	21.1	20.5	13.6	25.1
Mand.(Ott.)	23.5	29.3	29.1	9.8	8.9	24.6	20.9	19.0	15.5	26.0
Goldsoy	22.1	28.6	26.0	11.5	11.0	24.0	19.8	19.4	19.0	17.6
W.Mand.507	21.9	27.6	27.8	9.4	8.5	23.2	18.5	17.8	16.3	21.9
Pridesoy	21.7	27.6	25.9	7.1	6.9	24.3	20.3	18.6	13.4	21.9
H39-461	21.5	30.3	25.9	6.7	9.4	26.4	18.4	14.7	9.8	24.8
W4-623	21.3	30.1	24.4	11.5	11.3	20.6	21.5	18.7	15.6	18.3
Flambeau	21.2	30.4	21.5	11.0	10.8	25.8	17.2	18.5	16.4	18.5
H106-461	20.5	29.0	26.2	6.7	9.8	18.7	18.2	16.7	14.4	20.6
Kabott	20.5	29.2	23.9	14.7	11.3	19.2	15.2	17.8	16.4	21.7
H50-461	19.9	29.9	30.4	5.2	6.0	17.2	19.0	13.4	8.1	21.6
F457-28	19.9	27.7	23.5	12.0	6.4	20.6	15.7	18.3	14.9	18.6
F457-18	19.8	27.1	19.7	13.7	9.2	25.0	18.0	18.7	14.8	15.0
H38-461	19.4	30.6	23.8	6.6	6.9	17.9	16.5	16.1	14.1	16.9
H22-461	17.7	29.4	21.3	1.9	6.0	20.6	15.5	8.5	8.4	20.3
F372-8	17.6	29.1	20.3	9.6	10.7	16.6	16.2	16.7	8.5	16.0
Mean	21.1	29.8	25.4	9.3	8.9	22.1	18.5	17.4	13.8	20.5
Coef. of Var.(%)		--	--	22.4	21.2	9.1	--	--	--	--
Bu.Nec.for Sig.(5%)		2.3	--	3.0	3.1	2.9	--	--	--	--

[1]Spooner and St. Paul not included in the mean.

	Yield Rank								
Capital	1	1	8	11	1	1	1	7	4
Mont.Man.	2	3	7	9	8	3	2	12	2
Mand.(Ott.)	9	4	9	9	5	4	4	6	1
Goldsoy	13	7	4	3	7	6	3	1	14
W.Mand.507	15	5	11	11	9	8	10	4	5
Pridesoy	15	8	12	13	6	5	7	13	5
H39-461	5	8	13	7	2	9	15	14	3
W4-623	6	10	4	1	10	2	5	5	13
Flambeau	4	14	6	4	3	12	8	2	12
H106-461	12	6	13	6	14	10	12	10	9
Kabott	10	11	1	1	13	17	10	2	7
H50-461	7	2	16	16	16	7	16	17	8
F457-28	14	13	3	15	10	15	9	8	11
F457-18	17	17	2	8	4	11	5	9	17
H38-461	3	12	15	13	15	13	14	11	15
H22-461	8	15	17	16	10	16	17	16	10
F372-8	11	16	10	5	17	14	12	15	16

Table 3. Summary of lodging and height data for the strains in the Uniform Test, Group O, 1946

Strain	Mean of 3 Tests[1]	Ottawa Canada	Spooner Wis.	St. Paul Minn.	Morris Minn.	Fargo N. D.	Park River N. D.	Aber-deen Idaho	Corvallis Oregon
Capital	2.2	2.6	1	1	2	1	2.0	1	
Mont.Manchu	1.2	1.4	1	1	1	1	1.2	1	
Mand. (Ott.)	1.2	1.0	1	1	1	1	1.5	1	
Goldsoy	2.1	1.9	1	1	3	1	1.4	1	
Wis.Mand.507	1.5	1.7	1	1	1	1	1.8	1	
Pridesoy	1.3	1.6	1	1	1	1	1.2	1	
H39-461	2.5	3.1	1	1	2	1	2.5	1	
W4-623	1.3	1.5	1	1	1	1	1.3	1	
Flambeau	2.2	2.2	1	1	3	1	1.4	1	
H106-461	1.2	1.3	1	1	1	1	1.2	1	
Kabott	1.8	1.4	1	1	2	1	2.0	1	
H50-461	1.6	1.9	1	1	1	1	1.8	1	
F457-28	1.3	1.6	1	1	1	1	1.2	1	
F457-18	1.9	1.9	1	1	2	1	1.8	1	
H38-461	2.2	2.5	1	1	1	1	3.2	1	
H22-461	2.6	4.6	1	1	1	1	2.2	1	
F372-8	1.1	1.0	1	1	1	1	1.2	1	
Mean	1.7	2.0	1.0	1.0	1.5	1.0	1.7	1.0	
	Mean of 6 Tests[2]			Height					
Capital	28	37		30	23	24	31	28	23
Mont.Manchu	28	38		31	22	23	34	27	25
Mand.(Ott.)	24	31		18	21	24	24	24	22
Goldsoy	22	30		26	19	21	25	21	16
Wis.Mand.507	28	37		33	24	24	31	28	23
Pridesoy	24	30		26	21	23	23	23	22
H39-461	32	42		33	26	25	35	29	32
W4-623	24	31		28	20	24	28	23	17
Flambeau	25	31		27	22	22	30	26	19
H106-461	28	36		32	24	24	33	29	23
Kabott	23	31		28	19	21	29	22	17
H50-461	30	38		30	24	24	33	30	30
F457-28	26	36		26	22	23	30	24	19
F457-18	26	34		29	23	23	32	23	18
H38-461	29	40		30	23	25	35	29	22
H22-461	30	38		32	24	26	32	33	28
F372-8	29	40		33	24	23	33	27	27
Mean	27	35		29	22	23	30	26	23

[1]Spooner, St. Paul, Fargo, and Aberdeen not included in the mean.

[2]St. Paul not included in the mean.

Table 4. Summary of maturity data, days earlier (-) or later (+) than Mandarin (Ottawa), and seed quality for the strains in the Uniform Test, Group O, 1946

Strain	Mean of 4 Tests	Ottawa Canada	Spooner Wis.	St. Paul Minn.	Morris Minn.	Fargo N. D.	Aberdeen Idaho	Corvallis Oregon
Capital	-3.8	-4		-2		+2		-11
Mont.Manchu	-4.0	-3		-3		+1		-11
Mand.(Ott.)	0	0		0		0		0
Goldsoy	-8.0	-4		-9		-10		-9
W.Mand.507	-2.5	+2		-2		-3		-7
Pridesoy	-3.5	-1		-1		-1		-11
H39-461	+4.3	0		+10		+4		+3
W4-623	-8.3	-4		-7		-12		-10
Flambeau	-14.5	-12		-11		-14		-21
H106-461	-1.5	+1		-1		+2		-8
Kabott	-14.5	-12		-10		-19		-17
H50-461	+4.8	+3		+5		+5		+6
F457-28	-7.5	-3		-7		-13		-7
F457-18	-6.3	-4		-7		-13		-1
H38-461	-2.5	-1		+1		+2		-12
H22-461	+5.8	+7		+7		+8		+1
F372-8	-5.8	-4		-7		-11		-1
Date planted		5/22		5/27		6/3		5/8
Mand.(Ott.) matured		10/1		9/17		9/19		10/5
Days to mature	126	132		113		108		150

	Mean of 3 Tests[1]	Seed Quality					
Capital	2.3	1	2	4	3	3	1
Mont.Manchu	2.0	1	3	2	3	2	1
Mand.(Ott.)	2.7	1	2	3	2	4	2
Goldsoy	2.0	1	2	3	2	2	2
W.Mand.507	2.7	1	3	-	3	3	2
Pridesoy	2.3	1	1	3	3	2	2
H39-461	2.0	1	1	3	2	3	1
W4-623	2.3	1	2	3	3	2	2
Flambeau	2.3	1	3	3	3	1	3
H106-461	2.0	1	2	3	2	3	1
Kabott	1.7	1	2	3	2	1	2
H50-461	2.3	1	2	3	3	3	1
F457-28	2.0	1	2	3	3	2	1
F457-18	2.3	1	3	3	3	1	3
H38-461	2.7	1	1	-	3	3	2
H22-461	2.0	1	3	-	3	2	1
F372-8	1.7	1	2	3	2	2	1
Mean	2.2	1.0	2.1	3.0	2.6	2.3	1.6

[1]Ottawa, Spooner, and St. Paul not included in the mean.

Table 5. Summary of seed weight data and percentage protein for the strains in the Uniform Test, Group 0, 1946

Strain	Mean of 7 Tests[1]	Ottawa Canada	Ithaca N. Y.	Spooner Wis.	St. Paul Minn.	Morris Minn.	Fargo N. D.	Park River N. D.	Aber-deen Idaho	Corvallis Oregon
Capital	11.9	14.5	12.9	9.6	7.7	12.5	9.2	9.6	11.9	12.4
Mont.Manchu	15.6	18.0	17.2	14.5	10.2	14.0	13.9	15.6	13.8	16.7
Mand.(Utt.)	16.5	20.5	18.7	13.7	10.7	15.9	14.1	15.2	13.8	17.6
Goldsoy	17.4	21.5	19.4	18.3	10.8	16.8	15.6	16.8	14.1	17.9
W.Mand.507	15.6	18.5	16.9	14.2	10.3	15.4	13.2	14.1	13.4	17.8
Pridesoy	13.3	16.0	14.2	11.5	8.7	13.0	10.9	14.0	11.7	13.3
H39-461	15.8	18.5	17.1	12.3	12.2	15.1	14.6	14.6	13.8	16.8
W4-623	16.6	20.0	17.6	17.7	10.8	15.8	14.8	16.4	13.8	17.8
Flambeau	14.6	18.0	15.0	14.5	10.0	13.8	13.6	14.6	12.2	15.1
H106-461	13.2	15.5	13.0	11.0	9.3	13.0	12.6	12.3	12.1	13.9
Kabott	18.3	23.5	20.2	21.4	12.0	16.3	15.3	16.8	15.8	19.9
H50-461	14.1	17.0	16.2	11.8	9.7	14.8	12.4	12.0	11.8	14.5
F457-28	13.9	17.0	16.1	14.2	9.8	13.5	12.1	13.3	11.1	14.0
F457-18	13.5	16.0	14.8	13.7	9.0	12.3	11.9	13.0	12.1	14.6
H38-461	14.9	17.5	16.8	13.3	11.0	15.4	13.2	13.1	13.8	14.7
H22-461	12.3	13.5	12.8	10.4	10.1	13.8	11.5	11.1	10.5	13.1
F372-8	14.0	17.5	14.9	14.0	9.4	14.1	12.6	12.8	12.1	13.9
Mean	14.8	17.8	16.1	13.9	10.1	14.4	13.0	13.8	12.8	15.5
	Mean of 8 Tests	Protein								
Capital	39.3	39.8	41.1	44.1		38.6	39.1	37.7	36.4	37.3
Mont.Manchu	40.9	42.6	44.7	44.3		38.8	40.2	40.0	36.0	40.6
Mand.(Utt.)	41.5	44.2	44.1	46.5		39.1	40.1	42.2	35.2	40.6
Goldsoy	41.8	44.5	44.1	45.9		41.1	41.6	42.9	34.1	39.9
W.Mand.507	43.1	45.2	46.0	48.2		40.9	40.3	42.8	39.4	42.0
Pridesoy	42.7	46.1	41.5	48.3		42.3	41.3	43.3	37.0	42.0
H39-461	41.3	43.0	44.0	44.7		39.9	39.2	41.2	38.5	40.1
W4-623	40.8	42.2	46.4	45.4		38.5	40.7	40.1	34.2	38.9
Flambeau	40.8	41.3	43.1	45.0		39.7	41.3	41.6	35.4	38.9
H106-461	42.0	45.1	44.3	47.0		39.6	40.1	40.5	39.4	39.8
Kabott	42.2	44.1	44.0	47.6		40.6	40.9	42.0	36.7	41.4
H50-461	41.2	43.8	42.7	46.2		39.8	39.8	41.8	35.1	40.6
F457-28	40.9	41.9	42.7	44.2		39.5	42.0	40.5	35.9	40.4
F457-18	42.7	44.6	44.3	45.3		41.6	42.0	43.0	37.5	43.1
H38-461	40.8	42.2	44.8	45.9		37.5	39.5	41.7	37.7	37.0
H22-461	39.7	40.8	43.9	44.5		39.5	38.5	39.2	36.2	35.2
F372-8	41.6	41.6	43.9	46.5		40.9	40.8	40.9	35.9	42.3
Mean	41.4	43.1	43.9	45.9		39.9	40.4	41.3	36.5	40.0

[1] Spooner and St. Paul not included in the mean.

Table 6. Summary of percentage oil and iodine number of oil for the strains in the Uniform Test, Group 0, 1946.

Strain	Mean of 8 Tests	Ottawa Canada	Ithaca N. Y.	Spooner Wis.	Morris Minn.	Fargo N.D.	Park River N.D.	Aberdeen Idaho	Corvallis Oregon
Capital	19.7	19.4	18.2	17.6	20.6	20.6	19.8	19.9	21.1
Montreal Manchu	18.5	17.7	17.0	17.8	19.8	19.7	18.4	17.4	20.1
Mandarin (Ottawa)	19.0	17.9	17.4	17.0	20.1	20.2	18.8	20.7	20.0
Goldsoy	18.9	17.7	17.1	17.8	19.3	20.0	18.2	21.5	19.8
Wis. Mandarin 507	18.3	17.2	17.0	16.8	19.0	19.6	18.0	19.9	19.1
Pridesoy	18.1	16.4	18.5	15.9	18.4	19.1	17.7	19.6	19.1
H39-461	19.1	18.1	17.6	17.4	19.9	20.7	18.7	19.7	20.3
W4-623	19.1	18.7	15.8	17.9	20.3	19.9	18.8	20.5	20.5
Flambeau	18.6	18.3	17.1	17.5	19.4	20.1	17.7	19.0	19.8
H106-461	18.9	17.8	17.2	17.0	19.6	20.3	18.7	19.5	20.7
Kabott	18.8	18.4	17.5	17.4	19.4	19.8	18.2	19.9	19.4
H50-461	18.6	17.7	18.3	16.4	19.4	19.8	18.3	19.0	19.6
F457-28	18.6	17.8	17.0	18.2	19.4	19.6	18.0	19.4	19.4
F457-18	18.7	18.0	16.8	18.1	19.5	20.2	18.3	19.4	18.9
H38-461	19.5	19.0	17.9	17.5	21.0	20.3	18.4	20.4	21.7
H22-461	18.8	17.9	17.0	17.0	19.3	20.2	18.4	18.8	21.6
F372-8	19.3	18.8	17.4	18.0	20.1	20.8	18.8	20.4	20.3
Mean	18.8	18.0	17.3	17.4	19.7	20.1	18.4	19.7	20.1
	Iodine Number of Oil								
Capital	137.0	138.3	138.7	136.2	139.7	135.5	137.8	134.0	135.9
Montreal Manchu	138.2	141.0	140.2	134.3	138.3	136.8	139.3	138.6	137.0
Mandarin (Ottawa)	135.3	137.7	136.8	132.3	136.9	133.4	134.6	134.7	135.7
Goldsoy	137.1	141.4	138.8	134.0	138.6	134.6	137.6	137.9	133.8
Wis. Mandarin 507	137.7	140.9	140.4	133.8	139.1	136.0	137.7	137.5	136.2
Pridesoy	137.6	140.3	135.7	136.2	139.9	136.5	137.6	137.2	137.4
H39-461	137.4	137.2	136.3	134.5	140.8	137.2	138.8	135.5	138.6
W4-623	135.6	138.3	138.8	131.8	138.0	132.6	135.7	136.2	133.2
Flambeau	135.1	139.1	138.6	133.2	136.3	132.9	131.7	136.0	133.2
H106-461	134.7	136.9	135.6	132.3	135.1	132.3	136.1	134.3	134.6
Kabott	134.8	138.2	137.2	130.6	135.5	133.2	136.3	135.3	132.2
H50-461	139.9	141.1	139.4	138.3	139.9	138.3	141.9	138.6	141.4
F457-28	136.3	139.4	137.6	132.9	137.2	132.3	131.7	136.8	134.3
F457-18	134.4	138.0	134.8	131.8	136.3	132.2	134.4	135.1	132.8
H38-461	138.2	140.5	138.9	134.7	140.2	136.9	139.4	137.4	137.4
H22-461	139.6	139.4	136.6	138.1	141.5	140.5	141.6	138.6	140.5
F372-8	136.1	139.1	138.0	134.1	137.4	133.2	137.7	135.8	136.1
Mean	136.7	139.2	137.8	134.1	138.3	135.0	137.1	136.4	135.7

Table 7. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group 0, 1945-46.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	13	9	12	4	7	13	14	14	14
Mandarin (Ottawa)	25.8	1.4	26	0	2.1	16.9	41.0	19.3	132.9
Montreal Manchu	24.9	1.5	29	-4.0	1.7	15.2	40.5	18.9	136.4
Goldsoy	23.8	2.2	24	-8.0	1.8	17.7	41.3	19.3	135.7
Wis. Mandarin 507	23.7	1.5	30	-2.5	2.1	15.7	42.4	18.5	135.8
Flambeau	23.6	2.3	26	-14.5	1.9	14.8	40.7	19.1	133.7
Pridesoy	23.4	1.4	26	-3.5	1.9	13.1	42.7	18.1	136.0
Kabott	22.2	1.6	24	-14.5	1.6	18.5	41.5	19.3	133.3
H50-461	21.0	1.6	31	+4.8	2.7	13.9	40.7	18.9	138.3
H38-461	20.6	2.0	29	-2.5	2.6	14.9	40.1	19.8	136.5
Mean	23.2	1.7	27		2.0	15.6	41.2	19.0	135.4

[1] 1946 data only. Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 126 days to mature.

Table 8. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group 0, 1945-46.

	Yield						Yield Rank				
Strain	Mean of 13 Tests	Spooner Wis.	St. Paul Minn.	Fargo N.D.	Park River N.D.	Corvallis Ore.	Spooner Wis.	St. Paul Minn.	Fargo N.D.	Park River N.D.	Corvallis Ore.
Mandarin (Ottawa)	25.8	18.5	19.9	23.6	20.8	18.9	1	2	2	3	1
Montreal Manchu	24.9	17.2	18.8	22.7	22.1	17.7	5	6	3	1	2
Goldsoy	23.8	17.6	19.5	24.1	21.3	13.5	4	3	1	2	9
Wis. Mandarin 507	23.7	16.4	19.2	20.2	19.7	16.3	6	5	7	6	5
Flambeau	23.6	18.3	20.3	22.1	20.5	14.6	2	1	5	4	6
Pridesoy	23.4	15.0	15.7	22.5	19.8	16.8	7	8	4	5	3
Kabott	22.2	18.3	19.4	21.4	19.7	16.8	3	4	6	6	3
H50-461	21.0	9.5	17.6	17.2	15.6	14.6	9	7	8	9	6
H38-461	20.6	13.1	14.4	16.8	17.9	13.6	8	9	9	8	8
Mean	23.2	16.0	18.3	21.1	19.7	15.9					

Table 9. Four-year summary of agronomic and chemical data for the strains in the Uniform Test, Group O, 1943-46.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	28	23	26	16	21	28	29	29	29
Mandarin (Ottawa)	26.4	1.4	26	0	1.8	17.9	42.3	19.2	132.1
Wis. Mandarin 507	24.5	1.6	30	-1.2	2.0	16.7	43.8	18.2	134.2
Goldsoy	24.0	2.0	24	-6.5	1.8	18.8	43.1	18.8	134.8
Flambeau	23.8	2.1	26	-11.8	1.9	15.2	42.2	19.1	132.8
Kabott	21.5	1.6	23	-12.2	1.6	18.9	43.3	18.7	132.0
Mean	24.0	1.7	26		1.8	17.5	42.9	18.8	133.2

[1] 1943-1944, 1946 data only. Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 117 days to mature.

Table 10. Four-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group O, 1943-46.

	Yield				Yield Rank		
Strain	Mean of 28 Tests	Spooner Wis.	St. Paul Minn.	Fargo N. D.	Spooner Wis.	St. Paul Minn.	Fargo N. D.
Mandarin (Ottawa)	26.4	18.0	24.1	28.0	1	1	1
Wis. Mandarin 507	24.5	15.7	23.1	25.6	5	3	4
Goldsoy	24.0	16.8	23.1	27.2	4	3	3
Flambeau	23.8	17.9	23.6	27.9	2	2	2
Kabott	21.5	17.2	22.9	21.7	3	5	5
Mean	24.0	17.1	23.4	26.1			

UNIFORM TEST, GROUP I

The Group I Test consisted of four named varieties and twelve selections from hybrids. The origin of these varieties and strains is as follows:

Variety or Strain	Source or Originating Agency	Origin
Earlyana	Purdue Agr. Exp. Station	Sel. from a natural hybrid
Habaro	U. S. Dept. of Agriculture	P.I. 20405
Mandarin (Ottawa)	Central Exp. Farm, Ottawa	Sel. from Mandarin
Wis. Manchu 3	Wis. Agr. Exp. Station	Sel. from Manchu
A3K-884	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
A4-1128-7	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Linman 533
A4-1715-32	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mandarin x Richland
A4-2015-3	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Ontario x Richland
A4-2728-2	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Manchuria 13-177xL34R12
H5	Ohio Ag.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Mandarin
H16-461	Ohio Ag.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Illini
H25-461	Ohio Ag.Exp.Sta. & U.S.R.S.L.	Sel. from Scioto x Mandarin
H90-461	Ohio Ag.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Mandarin
H113-461	Ohio Ag.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Mandarin
H115-461	Ohio Ag.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Mandarin
H133-461	Ohio Ag.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Mandarin

Data are available for Group I from ten locations in 1946. Most of these tests were in very good condition. A4-2728-2 was the most outstanding strain in this test (table 11). It is slightly earlier than Earlyana, stands better, and has a higher oil content. It is not as lodging resistant as A3K-884, the next highest yielding strain. Most of the new strains entered in this test are about as late as Earlyana. Since this test is designed to include strains between Earlyana and Mandarin in maturity, it would be desirable to have more early entries.

Ten strains have been tested in both 1945 and 1946. Summaries of this data are presented in tables 18 and 19. Strain A3K-884 looks very promising in these summaries. It may be a strain to replace a part of the Earlyana acreage. It is high in yield, very erect, has good height, and a good oil content. It is also slightly earlier than Earlyana. Of the other five selections from hybrids in table 18, H5 appears to be the most promising. Its main defect is a slightly lower oil content than some of the other strains. This strain has been tested for four years and can be compared with four check varieties in the four-year summary in table 20. It has averaged about the same yield and height as Earlyana, with less lodging. It is about four days earlier than Earlyana, but it has a somewhat lower oil content. The earlier maturity and erectness of this strain may justify considering it for release.

Table 11. Summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1946.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	10	8	9	9	6	10	10	10	10
A4-2728-2	28.4	2.1	39	+8.4	2.2	18.5	41.4	20.6	134.5
A3K-884	26.8	1.6	31	+8.4	1.5	16.1	41.0	20.3	131.0
Wis. Manchu 3	26.6	2.8	33	+10.8	2.0	17.3	41.6	19.8	135.8
H113-461	26.6	1.7	33	+8.0	1.8	16.6	42.8	19.3	133.5
Earlyana	25.7	2.6	33	+9.4	2.0	15.1	42.5	19.9	135.3
A4-1128-7	25.6	1.7	30	+6.7	1.5	16.6	41.8	19.8	134.0
H5	25.6	1.9	33	+6.1	1.2	14.7	42.6	19.5	133.5
Mandarin (Ottawa)	25.2	1.4	22	0	1.7	17.8	42.4	19.7	131.3
A4-2015-3	25.2	1.6	29	+9.2	1.3	16.1	40.3	20.8	132.1
Habaro	25.2	1.9	24	+8.1	1.7	18.2	43.1	19.2	133.5
A4-1715-32	25.0	1.8	29	+7.1	1.7	15.3	41.4	20.0	133.1
H90-461	24.8	1.6	28	+6.2	1.5	16.8	43.8	19.9	133.5
H133-461	24.8	1.5	29	+7.6	2.0	16.8	44.3	19.5	131.6
H115-461	24.5	1.5	29	+4.1	1.7	15.2	41.1	19.6	131.9
H16-461	24.2	2.6	30	+9.9	1.8	15.3	41.5	19.5	134.4
H25-461	24.1	2.3	31	+8.0	1.5	14.2	41.5	20.2	134.9
Mean	25.5	1.9	30		1.7	16.3	42.1	19.8	133.4

[1] Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 109 days to mature.

Table 12. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1946.

Strain	Mean of 10 Tests	Ithaca N.Y.	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Madison Wis.	Compton Ill.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
A4-2728-2	28.4	29.5	23.2	44.8	19.8	24.5	32.2	30.4	17.0	37.1	25.3
A3K-884	26.8	25.6	21.5	43.3	17.6	23.4	30.2	27.3	14.2	36.0	29.0
Wis.Man. 3	26.6	24.7	23.5	44.8	16.0	23.1	31.2	27.9	16.2	37.6	20.8
H113-461	26.6	27.3	22.8	46.3	17.3	23.7	29.1	27.9	14.4	34.9	21.8
Earlyana	25.7	26.5	21.1	43.3	15.4	22.0	29.5	26.8	13.6	37.8	21.1
A4-1128-7	25.6	25.5	20.0	38.1	17.5	23.9	27.8	30.5	13.2	36.3	23.4
H5	25.6	26.6	21.0	45.7	16.6	23.5	26.2	26.5	15.6	34.5	19.4
Mand.(Ott.)	25.2	26.1	20.8	44.5	13.7	20.4	30.6	26.5	16.1	33.3	20.2
A4-2015-3	25.2	22.0	22.1	45.8	14.4	21.1	30.8	26.4	12.2	33.7	23.3
Habaro	25.2	28.0	19.6	43.1	14.2	20.6	30.6	25.7	13.7	34.9	21.1
A4-1715-32	25.0	22.9	22.8	40.7	15.8	21.8	27.5	27.3	12.4	35.0	24.0
H90-461	24.8	21.9	22.3	45.2	15.0	19.6	27.2	27.1	14.6	32.6	22.8
H133-461	24.8	23.0	20.5	43.7	15.7	21.1	28.5	27.6	14.1	33.1	20.8
H115-461	24.5	26.3	19.2	42.5	15.2	20.7	28.6	25.3	14.8	31.9	20.5
H16-461	24.2	21.1	21.0	31.2	15.6	23.0	28.9	28.4	14.5	36.0	22.2
H25-461	24.1	22.0	19.6	33.5	13.9	22.1	29.8	26.9	16.9	33.8	22.1
Mean	25.5	24.9	21.3	42.3	15.9	22.2	29.3	27.4	14.6	34.9	22.4
Coef. of var. (%)		--	7.3	10.5	—	10.6	5.2	6.8	12.3	5.4	--
Bu.Nec.for Sig.(5%)		--	2.2	6.3	—	2.9	2.2	2.7	2.6	2.7	--

	Yield Rank									
A4-2728-2	1	2	5	1	1	1	2	1	3	2
A3K-884	8	7	9	2	5	6	7	10	5	1
Wis.Man. 3	10	1	5	6	6	2	4	3	2	12
H113-461	3	3	1	4	3	9	4	9	8	9
Earlyana	5	8	9	10	9	8	11	13	1	10
A4-1128-7	9	13	14	3	2	13	1	14	4	4
H5	4	9	3	5	4	16	12	5	10	16
Mand.(Ott.)	7	11	7	16	15	4	12	4	13	15
A4-2015-3	13	6	2	13	11	3	14	16	12	5
Habaro	2	14	11	14	14	4	15	12	8	10
A4-1715-32	12	3	13	7	10	14	7	15	7	3
H90-461	15	5	4	12	16	15	9	7	15	6
H133-461	11	12	8	8	11	12	6	11	14	12
H115-461	6	16	12	11	13	11	16	6	16	14
H16-461	16	9	16	9	7	10	3	8	6	7
H25-461	13	14	15	15	8	7	10	2	11	8

Table 13. Summary of lodging and height data for the strains in the Uniform Test, Group I, 1946.

Strain	Mean of 8 Tests[1]	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Madison Wis.	Compton Ill.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
A4-2728-2	2.1	1	2.8	1.2	1.0	2.5	2	3.5	1.8	2
A3K-884	1.6	1	2.8	1.0	1.0	2.3	1	2.8	1.0	1
Wis.Man. 3	2.8	1	3.8	1.3	2.3	3.3	2	4.3	3.0	2
H113-461	1.7	1	2.8	1.0	1.0	2.8	1	2.8	1.5	1
Earlyana	2.6	1	3.8	1.0	2.3	3.3	2	3.5	2.8	2
A4-1128-7	1.7	1	3.0	1.2	1.0	2.3	1	3.0	1.0	1
H5	1.9	1	3.0	1.0	1.0	2.3	1	3.5	1.5	2
Mand.(Ott.)	1.4	1	1.8	1.0	1.0	2.0	1	2.0	1.0	1
A4-2015-3	1.6	1	2.5	1.0	1.0	2.0	1	2.8	1.3	1
Habaro	1.9	1	2.8	1.2	1.0	3.0	2	2.3	2.0	1
A4-1715-32	1.8	1	2.5	1.2	1.0	2.5	1	2.5	1.3	2
H90-461	1.6	1	2.0	1.0	1.0	2.5	1	3.0	1.0	1
H133-461	1.5	1	2.5	1.2	1.0	2.3	1	2.3	1.0	1
H115-461	1.5	1	2.0	1.0	1.0	2.3	1	2.8	1.0	1
H16-461	2.6	1	3.5	1.0	1.8	3.0	2	4.0	2.8	3
H25-461	2.3	1	3.3	1.2	1.5	3.0	2	3.5	2.0	2
Mean	1.9	1.0	2.8	1.1	1.2	2.6	1.4	3.0	1.6	1.5
	Mean of 9 Tests				Height					
A4-2728-2	29	23	34	28	25	35	31	28	35	24
A3K-884	31	23	36	27	30	35	32	29	37	27
Wis.Man. 3	33	27	38	26	33	39	36	30	40	26
H113-461	33	25	40	28	29	39	36	31	38	28
Earlyana	33	26	41	27	31	39	34	32	40	26
A4-1128-7	30	22	33	29	29	34	33	29	35	24
H5	33	26	41	30	32	39	36	30	41	26
Mand.(Ott.)	22	18	27	18	23	26	24	19	26	19
A4-2015-3	29	23	36	25	25	34	31	24	35	24
Habaro	24	21	29	21	22	26	26	21	28	19
A4-1715-32	29	22	33	25	29	35	32	27	35	25
H90-461	28	22	35	24	27	36	29	23	30	26
H133-461	29	23	37	25	29	37	33	24	32	24
H115-461	29	23	35	25	27	38	30	25	32	25
H16-461	30	23	35	27	29	34	32	28	36	24
H25-461	31	24	35	28	30	35	33	28	37	26
Mean	30	23	35	26	28	35	32	27	35	25

[1] Wooster not included in the mean.

Table 14. Summary of maturity, days earlier (-) or later (+) than Mandarin (Ottawa), and seed quality data for the strains in the Uniform Test, Group I, 1946.

Strain	Mean of 9 Tests	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Madison Wis.	Compton Ill.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
A4-2728-2	+8.4	+7	+8	+3	+9	+9	+9	+11	+10	+10
A3K-884	+8.4	+8	+10	+2	+5	+9	+9	+9	+9	+15
Wis.Man. 3	+10.8	+8	+12	+4	+10	+11	+10	+13	+14	+15
H113-461	+8.0	+6	+8	+3	+5	+6	+9	+10	+10	+15
Earlyana	+9.4	+8	+6	+2	+9	+11	+11	+13	+10	+15
A4-1128-7	+6.7	+6	+8	+5	+4	+8	+8	+9	+7	+5
H5	+6.1	+6	+6	+3	+4	+7	+8	+8	+8	+5
Mand.(Ott.)	0	0	0	0	0	0	0	0	0	0
A4-2015-3	+9.2	+7	+12	+3	+8	+10	+7	+11	+10	+15
Habaro	+8.1	+7	+8	0	+7	+10	+9	+7	+10	+15
A4-1715-32	+7.1	+6	+11	+1	+6	+7	+7	+9	+7	+10
H90-461	+6.2	+6	+7	-2	+6	+8	+7	+7	+7	+10
H133-461	+7.6	+6	+9	+2	+9	+8	+8	+8	+8	+10
H115-461	+4.1	+7	+3	+1	+3	+3	+6	+4	+5	+5
H16-461	+9.9	+7	+13	+3	+9	+8	+11	+12	+11	+15
H25-461	+8.0	+6	+8	+4	+7	+7	+9	+7	+9	+15
Date planted		5/31	5/23	5/29	5/13	5/27	5/28	5/30	5/21	6/6
Mand.(Ott.)mat.		9/7	9/10	9/30	9/6	9/13	9/9	9/17	9/6	9/15
Days to mat.	109	99	110	124	116	109	104	110	108	101

	Mean of 6 Tests[1]	Seed Quality							
A4-2728-2	2.2	3	2	2	2	1	2	2	1
A3K-884	1.5	1	2	1	2	1	2	1	1
Wis.Man. 3	2.0	3	3	2	2	1	1	1	1
H113-461	1.8	2	2	2	2	1	2	1	1
Earlyana	2.0	3	3	2	1	1	2	1	1
A4-1128-7	1.5	2	2	2	1	1	1	1	1
H5	1.2	1	1	1	1	1	2	1	1
Mand.(Ott.)	1.7	2	2	1	2	1	2	1	1
A4-2015-3	1.3	1	3	1	1	1	1	1	1
Habaro	1.7	2	3	1	1	1	2	1	1
A4-1715-32	1.7	2	2	1	2	1	2	1	1
H90-461	1.5	2	2	1	2	1	1	1	1
H133-461	2.0	3	3	2	1	1	2	1	1
H115-461	1.7	2	1	2	2	1	2	1	1
H16-461	1.8	2	2	2	2	1	2	1	1
H25-461	1.5	2	2	1	1	1	2	1	1
Mean	1.7	2.1	2.2	1.5	1.6	1.0	1.8	1.1	1.0

[1]Compton and Brookings not included in the mean.

Table 15. Summary of seed weight data and percentage protein for the strains in the Uniform Test, Group I, 1946.

Strain	Mean of 10 Tests	Ithaca N.Y.	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Madison Wis.	Compton Ill.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
A4-2728-2	18.5	18.0	16.2	18.1	16.0	19.6	22.0	16.8	19.1	21.0	18.0
A3K-884	16.1	14.5	14.7	16.1	14.5	17.1	18.9	15.0	15.4	17.8	16.8
Wis.Man. 3	17.3	16.4	15.6	18.1	14.9	17.4	20.5	16.2	16.6	19.2	18.0
H113-461	16.6	16.6	15.1	17.4	13.9	17.5	19.0	15.5	15.8	18.4	16.4
Earlyana	15.1	14.7	13.5	15.6	12.9	15.4	18.4	14.2	14.2	16.1	15.6
A4-1128-7	16.6	13.8	14.7	16.8	14.9	18.4	19.4	16.5	16.6	19.6	15.3
H5	14.7	12.4	13.7	15.8	14.0	16.1	17.0	13.8	14.8	15.3	14.1
Mand.(Ott.)	17.8	17.3	15.2	19.2	14.5	19.8	21.2	15.9	19.5	19.4	15.5
A4-2015-3	16.1	14.7	15.1	16.8	15.0	17.0	18.9	14.9	15.2	17.2	16.6
Habaro	18.2	16.9	16.0	19.9	15.1	17.8	21.3	17.0	18.8	20.8	18.1
A4-1715-32	15.3	13.6	13.8	15.8	13.3	16.7	17.4	14.2	15.6	17.1	15.3
H90-461	16.8	15.7	14.8	17.7	14.8	18.8	19.3	15.8	17.1	17.6	16.5
H133-461	16.8	16.0	15.0	17.7	14.6	18.6	20.4	15.4	16.1	18.5	15.7
H115-461	15.2	13.9	13.6	15.9	12.3	16.8	17.5	14.2	16.0	17.2	14.5
H16-461	15.3	13.6	14.2	17.3	13.9	16.1	18.0	14.5	15.6	14.4	15.0
H25-461	14.2	12.0	13.5	15.5	12.4	15.6	17.0	13.5	13.7	15.1	13.5
Mean	16.3	15.0	14.7	17.1	14.2	17.4	19.1	15.2	16.3	17.8	15.9

	Protein										
A4-2728-2	41.4	41.9	40.3	41.9	40.8	41.5	41.9	37.2	45.7	41.4	41.5
A3K-884	41.0	39.7	40.9	41.9	40.0	41.1	41.3	37.6	45.5	39.5	42.2
Wis.Man. 3	41.6	42.4	40.8	42.2	41.7	41.2	42.0	37.4	45.3	40.9	41.6
H113-461	42.8	42.5	42.9	43.4	42.4	43.3	42.1	38.9	47.2	42.5	42.4
Earlyana	42.5	42.4	42.0	42.0	44.1	42.2	42.4	40.2	45.9	41.6	42.2
A4-1128-7	41.8	41.6	41.6	40.2	41.5	43.0	42.1	38.6	46.6	41.8	40.6
H5	42.6	41.3	42.9	43.3	43.2	42.6	42.4	39.1	46.9	41.5	42.3
Mand.(Ott.)	42.4	42.7	42.9	42.0	41.9	43.4	42.2	40.5	45.5	40.2	42.2
A4-2015-3	40.3	41.5	40.3	39.6	39.8	40.2	40.6	36.1	45.0	38.8	41.4
Habaro	43.1	41.0	42.7	44.3	44.1	41.4	42.9	39.9	47.9	43.4	43.4
A4-1715-32	41.4	41.3	40.5	41.4	40.8	41.9	42.0	37.8	44.8	41.4	41.7
H90-461	43.8	45.5	43.2	44.1	43.4	44.3	44.1	39.6	47.3	43.5	42.8
H133-461	44.3	44.7	44.1	45.3	44.1	45.6	44.7	40.0	47.5	44.7	42.5
H115-461	41.1	41.1	42.1	40.1	40.9	41.4	40.2	37.3	46.4	41.0	41.1
H16-461	41.5	42.9	41.5	42.4	41.5	41.8	41.4	38.1	44.4	40.1	41.1
H25-461	41.5	43.5	40.8	42.2	41.1	41.5	40.7	39.3	45.1	40.2	40.3
Mean	42.1	42.3	41.8	42.3	42.0	42.3	42.1	38.6	46.0	41.4	41.8

Table 16. Summary of percentage oil for the strains in the Uniform Test, Group I, 1946.

Strain	Mean of 10 Tests	Ithaca N.Y.	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Madison Wis.	Compton Ill.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
A4-2728-2	20.6	18.7	20.7	21.1	20.8	20.8	21.3	22.7	18.8	21.2	19.9
A3K-884	20.3	19.2	20.7	21.0	20.4	20.7	20.6	21.9	18.4	20.8	19.4
Wis.Man. 3	19.8	17.7	20.6	20.0	19.5	20.5	20.3	21.9	18.0	20.8	19.0
H113-461	19.3	18.0	19.7	19.4	19.1	19.7	20.4	21.1	17.0	19.7	18.5
Earlyana	19.9	18.4	19.9	20.5	19.3	20.3	21.2	21.7	17.5	21.1	18.8
A4-1128-7	19.8	17.8	20.1	20.7	19.5	19.9	20.5	21.5	17.8	20.6	19.2
H5	19.5	18.5	19.6	19.7	19.3	19.8	20.7	21.1	17.4	20.6	18.7
Mand.(Ott.)	19.7	17.5	19.9	20.5	19.7	20.1	20.7	21.0	18.4	20.5	19.0
A4-2015-3	20.8	19.2	21.4	21.2	20.8	21.1	21.1	22.9	18.5	21.7	19.8
Habaro	19.2	18.2	20.0	19.1	18.6	19.8	20.1	21.2	17.0	19.9	18.3
A4-1715-32	20.0	19.0	20.4	20.2	19.9	20.8	20.1	22.0	18.1	20.4	19.5
H90-461	19.9	17.8	20.4	20.2	20.1	19.9	20.8	21.8	18.1	20.6	19.5
H133-461	19.5	17.8	20.0	19.5	19.6	19.3	20.2	21.3	17.9	19.8	19.1
H115-461	19.6	18.2	19.9	20.1	19.5	20.1	20.7	21.3	17.2	20.3	18.7
H16-461	19.5	16.7	19.9	19.5	19.7	20.4	20.4	21.3	17.7	20.5	18.9
H25-461	20.2	17.5	20.3	20.6	20.0	21.0	21.6	21.6	18.8	21.4	19.4
Mean	19.8	18.1	20.2	20.2	19.7	20.3	20.7	21.6	17.9	20.6	19.1

Table 17. Summary of iodine number of oil for the strains in the Uniform Test, Group I, 1946

Strain	Mean of 10 Tests	Ithaca N. Y.	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Madison Wis.	Compton Ill.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
A4-2728-2	134.5	138.0	135.0	134.4	135.1	132.1	131.5	134.6	134.0	132.8	137.7
A3K-884	131.0	133.6	130.3	130.3	130.6	129.2	129.2	132.1	131.6	130.7	132.7
Wis. Manchu 3	135.8	140.5	137.0	135.1	135.7	133.5	132.2	135.2	136.6	133.3	138.6
H113-461	133.5	136.6	134.4	132.9	133.7	130.0	130.6	132.4	134.7	132.3	137.8
Earlyana	135.3	139.3	135.8	134.6	134.8	132.6	131.7	135.3	137.2	132.8	138.6
A4-1128-7	134.0	136.6	134.5	133.7	134.1	131.0	130.5	136.8	133.7	131.7	137.4
H5	133.5	138.3	134.5	133.9	132.9	130.6	131.8	131.5	133.3	132.3	136.3
Mandarin (Ottawa)	131.3	135.3	133.4	132.6	131.7	127.2	128.5	129.5	130.4	130.6	133.7
A4-2015-3	132.1	134.6	132.2	131.5	131.5	130.3	129.6	132.2	132.6	131.6	134.8
Habaro	133.5	138.0	133.6	133.0	133.2	131.3	131.5	132.6	133.3	132.0	136.8
A4-1715-32	133.1	137.7	134.4	133.2	131.6	130.3	130.8	132.3	133.6	132.3	135.1
H90-461	133.5	138.0	133.8	133.4	133.1	130.6	130.9	131.6	133.5	132.3	137.6
H133-461	131.6	134.7	132.6	131.2	132.8	129.2	128.0	130.3	132.9	129.5	135.1
H115-461	131.9	136.3	133.1	132.1	132.9	127.7	128.5	130.6	131.7	130.4	135.3
H16-461	134.4	139.2	134.5	133.3	134.2	132.1	131.5	133.7	134.4	132.1	138.6
H25-461	134.9	137.2	135.5	134.0	136.9	132.3	132.1	133.7	134.4	133.9	139.4
Mean	133.4	137.1	134.0	133.1	133.4	130.6	130.6	132.8	133.6	131.9	136.6

Table 18. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1945-46.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	21	18	18	13	12	21	21	21	21
A3K-884	28.5	1.7	34	+8.6	1.5	15.6	41.4	19.9	130.1
H5	27.5	2.1	36	+6.6	1.5	14.4	42.7	19.3	132.7
Mandarin (Ottawa)	27.4	1.3	26	0	1.4	17.9	42.5	19.4	130.5
H113-461	27.4	1.9	35	+7.4	1.9	16.3	42.8	18.9	132.9
Wis. Manchu 3	26.6	3.0	35	+10.4	2.1	16.9	41.1	19.7	135.6
H133-461	26.3	1.6	32	+8.7	1.9	16.3	44.4	19.2	130.7
Habaro	26.2	2.3	28	+8.8	1.7	17.5	43.0	18.8	133.5
Earlyana	26.1	2.8	36	+9.6	2.0	14.7	42.4	19.6	135.0
H25-461	24.8	2.4	34	+7.7	1.7	13.8	41.3	20.0	134.4
H16-461	24.6	2.7	33	+8.9	1.8	15.0	41.1	19.3	134.1
Mean	26.5	2.2	33		1.8	15.8	42.3	19.4	133.0

[1] Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 108 days to mature.

Table 19. Two-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1945-46.

Strain	Mean of 21 Tests	Wooster Ohio	Columbus Ohio	East Lansing Mich.	Madison Wis.	Waseca Minn.	Cresco Iowa	Kanawha Iowa	Brookings S. D.
A3K-884	28.5	27.5	38.8	32.0	31.7	26.2	15.6	36.0	25.4
H5	27.5	26.5	38.2	30.5	31.4	26.8	15.6	34.7	21.3
Mand.(Utt.)	27.4	25.7	40.4	28.0	27.6	25.4	16.9	33.5	23.3
H113-461	27.4	27.3	38.3	30.0	30.0	27.1	14.8	33.4	20.9
Wis.Man. 3	26.6	27.2	34.8	26.0	30.6	26.4	14.1	34.6	20.4
H133-461	26.3	25.7	39.9	26.7	27.7	26.9	14.2	32.8	19.3
Habaro	26.2	25.6	38.0	27.3	30.5	24.8	14.8	35.1	21.3
Earlyana	26.1	25.0	35.0	27.8	29.5	26.1	13.9	34.7	21.4
H25-461	24.8	22.6	29.7	21.9	29.4	25.4	16.8	34.3	23.2
H16-461	24.6	24.4	30.3	23.6	30.2	26.5	15.8	33.3	21.0
Mean	26.5	25.8	36.3	27.4	29.9	26.2	15.3	34.2	21.8

	Yield Rank							
A3K-884	1	3	1	1	6	4	1	1
H5	4	5	2	2	3	4	3	5
Mand. (Uttawa)	5	1	4	10	8	1	7	2
H113-461	2	4	3	6	1	6	8	8
Wis. Manchu 3	3	8	8	3	5	9	5	9
H133-461	5	2	7	9	2	8	10	10
Habaro	7	6	6	4	10	6	2	5
Earlyana	8	7	5	7	7	10	3	4
H25-461	10	10	10	8	8	2	6	3
H16-461	9	9	9	5	4	3	9	7

Table 20. Four-year summary of agronomic and chemical data for the strains in the Uniform Test, Group I, 1943-46.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	39	35	36	29	25	39	39	39	39
Wis. Manchu 3	27.6	2.9	35	+11.0	1.8	17.0	41.2	19.9	135.2
Habaro	27.2	2.1	29	+8.8	1.6	18.3	43.3	18.8	133.1
Earlyana	27.2	2.8	36	+11.4	1.9	15.0	42.5	19.7	135.1
H5	27.1	2.1	36	+6.8	1.4	14.8	42.8	19.4	132.4
Mandarin (Ottawa)	26.9	1.4	26	0	1.5	18.2	42.9	19.5	129.6
Mean	27.2	2.2	32		1.6	16.7	42.5	19.5	133.1

[1] Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 109 days to mature.

Table 21. Four-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group I, 1943-46.

Strain	Yield				Yield Rank		
	Mean of 39 Tests	Madison Wis.	Waseca Minn.	Brookings S. D.	Madison Wis.	Waseca Minn.	Brookings S. D.
Wis. Manchu 3	27.6	30.3	29.4	23.2	1	3	4
Habaro	27.2	29.2	30.0	23.8	2	1	3
Earlyana	27.2	29.0	29.3	24.3	4	5	1
H5	27.1	29.2	29.5	21.1	2	2	5
Mandarin (Ottawa)	26.9	26.9	29.4	24.0	5	3	2
Mean	27.2	28.9	29.5	23.3			

UNIFORM TEST, GROUP II

The Group II Test consisted of eight named varieties and twenty-two selections from hybrids. The origin of these strains and varieties is as follows:

Variety or Strain	Source or Originating Agency	Origin
Bavender Special	Mr. Bavender, Whitten, Iowa	Farmer's Selection
Dunfield	Purdue Agr. Exp. Station	P.I. 36846
Earlyana	Purdue Agr. Exp. Station	Sel. from a natural hybrid
Illini	Illinois Agr. Exp. Station	Sel. from A.K.
Lincoln	Ill. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mandarin x Manchu
Mingo	Ohio Agr. Exp. Station	Sel. from Manchu
Mukden	Iowa Agr. Exp. Station	P.I. 50523Q
Richland	Purdue Agr. Exp. Station	P.I. 70502-2
A3-94	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Linman 533
A3-107	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
A3-108	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
A4-107-4	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
A4-107-5	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
A4-107-7	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
A4-107-8	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
A4-107-12	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
A4-108-6	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
A4-108-12	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
A45-251	Iowa Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
C509	Ind. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from L7-1355 x Richland
H24-463	Ohio Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Mandarin
H29-461	Ohio Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Scioto x Mandarin
H131-463	Ohio Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Scioto
H167-463	Ohio Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dun. x Manchuria 13-177
H257-463	Ohio Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Illini x T95
L3-1927	Ill. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Mukden x Richland
L3-7437	Ill. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Hud. Manchu
L3-7494	Ill. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Seneca x Richland
L3-8417	Ill. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Chief x Richland
L3-8642	Ill. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Richland x Scioto

Group II data were received from 22 locations in 1946. These data are summarized in tables 22 to 29. This test was rather large in 1946 due to the inclusion of a number of related strains for which it was desired to secure as accurate data as possible. The original strain, A45-251 was included for comparison. This strain, from the cross Mukden x Richland, has had an excellent yield record and it seemed desirable to determine which of the selections from it was the best. A3-107 and A3-108 are selections from A45-251 and resemble it very closely. The strains A4-107-4, A4-107-5, A4-107-6, A4-107-8 and A4-107-12 are selections from A3-107 and the strains A4-108-6 and A4-108-12 are selections from A3-108. A more detailed discussion of the history of all these strains is presented in the 1945 report.

L3-1927 is a selection from the same F2 strain as A45-251. These strains have the lodging resistance of Richland with greater height than Richland and a higher oil content and higher yield than either parent. A4-107-12 etc. were tested at only four locations in 1945 due to lack of seed. On the basis of these four tests A4-107-12 looked most promising and was selected for intensive increase in 1945. The remaining five strains, A4-107-4, A4-107-5, A4-107-7, A4-107-8, A4-108-6 and A4-108-12 were increased on a smaller acreage. The following quantities of pure seed of these strains were produced in 1946:

Strain	Total	Urbana Ill.	Lafayette Ind.	Ames Iowa	Columbus Ohio	Lincoln Nebr.	Madison Wis.
A4-107-4	118	68		50			
A4-107-5	134		74	60			
A4-107-7	91			50	41		
A4-107-8	116		76	40			
A4-107-12	250	71	40	110	16	5	8
A4-108-6	75			50			25
A4-108-12	107			60	26	21	
Total	891	139	190	420	83	26	33

In table 22 it will be noted that seven of the strains from A45-251 exceeded it in yield, but only two fell below the original strain. A4-107-5, which averaged lowest in yield in 1946, was second in rank in 1945, and A4-107-8, which was second in 1946, was mediocre in 1945, indicating that there are probably no important differences in yielding ability among these strains. Although the differences in yield among all of these strains are very small and not significant statistically, A4-107-12 does have the best record in both 1945 and 1946. It is also slightly higher in oil than some of the other strains. It is interesting to note that none of the selections exceeded the oil content of the parent strain, A45-251, but here also the differences are not very great. Strain A4-107-5 has averaged about a day later, and A3-108, A4-108-6 and A4-107-4 have been somewhat earlier, than the other strains. These are not very great differences.

Most of the new entries did not compare very successfully with the above strains in yield but several were very much earlier and compared fairly well with Earlyana.

However, one new entry, Bavender Special, outyielded everything else in the test. This strain was first or second in yield at thirteen of the 22 locations. It has a satisfactory oil content and is about 3 days earlier than Lincoln but lodged more than any other strain in the test. This susceptibility to lodging will be the main objection to this strain. As received, this strain has both purple and white flowers and both black and brown hilums.

Two year summaries for 11 strains are presented in table 30. A3-94 and H257-463 have yielded satisfactorily and have a good oil content but have lodged more than is desirable.

In the four-year summary table 31, it will be noted that the strains A3-107 and A3-108 have yielded within a bushel of Lincoln and within .1% as high in oil content. In addition they stand very much better and are almost a week earlier. In the latter respects they are very similar to Richland but average about 3 inches taller.

Seven varieties have been in this Group for the past seven years. A summary of the data from these strains (table 32) indicates that Lincoln has yielded about 4 bushels more than the strains with which it competes as well as being higher in oil content.

Table 22. Summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1946.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	22	20	21	15	14	22	20	20	20
Bavender Special	33.6	3.2	36	+3.4	1.6	17.0	41.5	20.2	136.6
Lincoln	32.4	2.1	38	+6.6	1.6	14.7	40.0	21.0	137.6
A4-107-12	31.6	1.5	35	-0.3	1.4	16.9	40.7	20.9	129.3
A4-107-8	31.5	1.5	35	-0.1	1.5	17.6	40.7	20.7	129.4
A3-107	31.4	1.6	35	+0.3	1.4	17.5	41.4	20.6	129.3
A4-107-7	31.3	1.5	35	+0.3	1.4	18.0	41.0	20.4	128.6
A3-108	31.1	1.5	35	-1.2	1.5	17.7	41.9	20.8	129.3
A4-107-4	31.1	1.4	34	-0.9	1.5	18.4	41.6	20.8	129.0
A4-108-12	31.0	1.5	36	-0.6	1.4	17.9	41.4	21.0	130.2
A45-251	30.8	1.5	35	-0.2	1.5	17.7	41.3	21.1	129.2
A3-94	30.8	2.3	32	-2.0	1.4	16.3	40.8	20.6	134.0
H257-463	30.7	2.7	39	+3.2	1.5	14.6	40.0	20.8	134.0
L3-1927	30.6	1.4	36	+2.3	1.5	16.6	40.7	20.7	127.6
A4-108-6	30.6	1.5	35	-1.2	1.6	17.7	41.9	20.7	129.7
A4-107-5	30.6	1.6	35	+0.9	1.5	18.1	41.2	20.7	129.1
L3-7494	30.4	1.9	32	+0.7	1.8	18.1	39.1	20.5	131.5
Mingo	30.2	3.1	38	+7.4	2.0	16.2	41.9	20.4	134.7
C509	29.5	1.3	32	-0.3	1.5	16.4	39.7	20.8	132.8
L3-8417	29.2	1.4	34	-3.2	1.4	13.7	40.0	21.1	132.4
H167-463	28.6	2.5	39	+5.1	1.5	14.5	39.4	20.2	135.0
Illini	28.6	3.0	41	+7.1	1.6	13.3	40.1	19.7	136.3
L3-7437	28.5	2.3	33	-5.1	1.6	19.2	39.9	21.6	132.5
Mukden	28.3	2.2	38	+2.7	1.5	15.8	42.9	19.8	132.5
Earlyana	28.1	2.6	36	-5.1	2.1	16.4	42.6	20.9	134.3
H24-463	28.0	2.4	38	-0.3	1.8	15.6	43.5	20.1	134.8
H131-463	27.9	2.6	35	+2.9	1.6	16.7	40.7	20.4	133.9
L3-8642	27.3	1.5	32	+4.1	1.9	15.7	41.0	20.8	133.1
Richland	27.0	1.4	32	0	1.6	17.5	40.2	20.7	130.9
Dunfield	26.4	3.1	38	+6.5	1.5	15.8	39.7	20.2	132.0
H29-461	24.5	2.4	37	-2.1	1.6	14.8	42.1	20.4	133.4
Mean	29.7	2.0	36		1.6	16.6	41.0	20.6	132.1

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

Table 23. Summary of yields in bushels per acre for the strains in the Uniform Test, Group II, 1946.

Strain	Mean of 22 Tests	New Brunswick N. J.	Columbus Ohio	Holgate Ohio	Bluffton Ind.	Greenfield Ind.	Walkerton Ind.	Wanatah Ind.	Lafayette Ind.	Worthington Ind.	Evansville Ind.	East Lansing Mich.
Bavender Special	33.6	35.1	39.0	21.0	30.7	39.2	36.9	32.8	35.5	39.5	27.6	20.9
Lincoln	32.4	30.0	35.0	20.9	28.2	42.4	34.1	29.6	33.7	39.2	31.9	14.6
A4-107-12	31.6	33.3	45.6	18.3	28.5	35.5	39.0	24.9	32.8	35.5	28.4	13.8
A4-107-8	31.5	32.4	46.9	17.3	28.9	37.5	37.4	24.5	34.0	33.8	28.0	14.3
A3-107	31.4	35.5	41.7	16.8	28.8	33.5	37.4	27.6	32.0	35.8	28.4	14.6
A4-107-7	31.3	35.7	39.0	17.7	30.2	35.7	37.3	25.2	35.2	37.9	27.0	13.8
A3-108	31.1	32.6	43.9	19.9	30.1	36.8	37.9	26.1	30.3	34.5	26.8	13.0
A4-107-4	31.1	32.3	45.3	17.4	31.1	33.3	38.6	26.1	31.6	38.6	26.5	15.4
A4-108-12	31.0	32.3	39.8	20.3	27.7	37.5	35.6	26.1	31.9	33.9	27.3	15.4
A45-251	30.8	28.3	41.3	18.6	28.9	36.9	27.8	26.5	32.9	36.1	26.5	15.2
A3-94	30.8	30.5	38.4	20.6	26.6	38.2	36.6	27.5	32.1	33.1	26.1	13.9
H257-463	30.7	33.6	39.6	17.1	27.8	38.2	33.1	27.9	32.1	33.0	25.9	15.9
L3-1927	30.6	29.7	44.5	19.8	27.3	33.9	34.6	25.3	34.0	32.2	29.7	12.5
A4-108-6	30.6	25.4	43.1	20.4	27.9	37.8	36.6	25.2	33.1	33.3	27.4	15.0
A4-107-5	30.6	31.1	41.0	18.0	28.7	33.5	36.7	26.0	33.2	35.2	27.0	12.8
L3-7494	30.4	27.8	38.4	16.4	27.4	29.8	33.4	26.6	34.1	30.7	26.7	15.7
Mingo	30.2	31.9	30.7	21.4	25.7	39.7	36.0	27.2	32.1	30.6	28.0	15.1
C509	29.5	29.8	40.6	20.0	25.4	34.0	31.9	23.7	34.1	31.7	26.5	15.3
L3-8417	29.2	29.9	43.0	17.3	28.0	32.9	34.6	25.4	29.1	32.8	27.0	15.6
H167-463	28.6	25.3	34.2	17.5	23.5	28.9	30.9	28.3	31.6	29.5	26.7	15.8
Illini	28.6	31.7	35.2	15.1	22.6	30.8	32.9	26.8	31.5	29.7	23.3	13.3
L3-7437	28.5	25.9	40.8	20.2	24.5	30.2	35.3	23.0	30.5	25.3	28.5	15.6
Mukden	28.3	30.8	39.4	14.7	25.8	28.6	35.7	26.9	28.8	32.3	25.8	15.3
Earlyana	28.1	26.3	40.6	18.8	25.8	30.9	35.8	24.4	29.6	31.7	24.5	14.4
H24-463	28.0	32.7	39.3	18.7	23.8	33.9	29.7	23.2	30.7	30.8	23.7	13.9
H131-463	27.9	32.1	32.3	17.2	19.7	31.6	28.6	22.7	30.0	31.4	25.3	15.6
L3-8642	27.3	27.0	41.7	16.7	24.1	29.6	29.3	21.3	29.9	30.4	25.2	17.0
Richland	27.0	27.2	36.8	16.7	23.4	31.3	31.5	22.3	31.6	27.9	24.9	14.0
Dunfield	26.4	29.6	27.7	15.4	17.7	28.2	27.0	22.0	28.8	27.9	25.2	11.0
H29-461	24.5	27.3	34.8	13.6	22.2	24.8	25.2	22.8	27.6	22.9	22.1	12.1
Mean	29.7	30.4	39.3	18.1	26.4	33.8	34.2	25.6	31.7	32.5	26.6	14.7
Coef. of Var.		2.8	12.2	12.5	6.8	8.8	11.4	11.3	8.3	8.3	5.6	- -
Bu.Nec. for Sig.(5%)		1.2	6.7	3.2	2.5	4.2	3.9	4.1	2.6	3.8	2.2	- -

Table 23. (Continued)

Strain	Monroe Mich.	Compton Ill.	Dwight Ill.	Urbana Ill.	Madison Wis.	Hudson Iowa	Ames Iowa	Kanawha Iowa	Marcus Iowa	Vermillion S. Dakota	Lincoln Nebr.
Bavender Specail	37.2	39.7	32.8	33.6	30.5	39.2	36.7	45.8	39.0	19.5	27.7
Lincoln	35.1	43.9	31.1	32.5	28.3	39.4	32.8	44.5	38.9	19.4	26.6
A4-107-12	36.7	39.7	31.0	34.5	27.9	41.5	34.2	38.2	33.0	17.5	25.3
A4-107-8	34.5	41.1	27.5	36.4	25.9	38.2	35.0	40.8	34.4	18.9	25.3
A3-107	34.7	40.1	32.0	35.1	26.0	36.5	34.8	41.1	32.9	17.4	27.0
A4-107-7	37.8	37.7	29.7	35.1	25.7	41.2	32.6	38.8	32.8	16.7	25.8
A3-108	34.2	38.7	29.8	37.1	24.8	39.6	34.0	38.9	33.1	17.1	25.4
A4-107-4	32.0	39.3	29.8	37.6	24.8	38.2	30.5	39.0	30.9	20.4	25.9
A4-108-12	33.2	38.6	31.8	35.7	25.6	42.4	33.2	37.8	34.2	18.0	24.7
A45-251	30.6	40.2	31.1	37.5	27.5	35.0	34.2	36.8	33.2	17.5	25.8
A3-94	30.3	39.7	32.1	32.8	26.9	37.2	33.6	42.0	32.8	20.1	27.1
H257-463	33.9	39.4	31.2	35.8	26.4	36.9	31.0	39.0	34.7	16.7	27.1
L3-1927	32.4	39.0	29.5	34.3	23.8	42.7	32.4	39.3	34.2	17.1	25.7
A4-108-6	36.2	38.9	29.4	35.0	24.8	38.5	34.3	38.6	32.1	16.3	23.7
A4-107-5	30.9	39.5	32.3	35.9	23.7	35.6	33.0	39.8	33.1	18.2	26.9
L3-7494	30.9	38.9	28.6	35.8	26.7	40.9	35.2	40.9	35.6	19.1	28.1
Mingo	31.5	41.7	29.6	33.2	25.1	34.7	32.8	39.5	36.1	16.5	25.5
C509	30.6	37.5	31.0	34.8	26.7	34.0	30.6	33.5	31.4	19.7	26.7
L3-8417	31.5	37.7	26.5	33.6	23.9	33.7	30.7	35.7	30.8	15.6	26.1
H167-463	29.8	38.2	28.2	34.7	26.0	34.9	31.0	37.6	32.5	15.6	27.7
Illini	31.8	36.6	28.7	32.9	26.1	34.7	32.2	40.0	35.9	16.0	20.5
L3-7437	26.1	35.3	28.6	33.9	23.6	35.1	32.1	36.7	30.8	18.9	26.9
Mukden	26.8	37.3	28.8	33.1	22.3	36.2	28.7	39.3	29.7	15.2	22.0
Earlyana	25.1	34.7	28.0	30.3	24.5	33.4	31.1	36.2	29.0	17.9	24.6
H24-463	26.6	32.8	26.8	34.1	23.0	35.5	31.6	38.4	28.2	15.4	23.5
H131-463	28.3	33.1	28.2	34.3	24.9	38.0	29.7	37.1	29.8	16.0	26.9
L3-8642	29.2	32.8	26.3	31.8	21.5	34.6	30.5	35.0	28.0	15.6	23.9
Richland	26.2	33.6	26.9	34.1	22.6	27.5	28.6	34.0	30.5	17.8	25.4
Dunfield	28.4	34.3	27.2	33.0	27.5	33.5	30.9	35.5	30.1	14.6	25.5
H29-461	27.1	33.6	25.9	30.6	21.8	31.7	26.4	30.9	26.7	8.0	21.0
Mean	31.3	37.8	29.3	34.3	25.3	36.7	32.1	38.4	32.5	17.1	25.5
Coef. of Var.	- -	6.5	8.6	8.2	10.8	13.0	6.1	6.2	6.6	- -	10.5
Bu.Nec.for Sig.(5%)	- -	3.4	3.5	3.9	3.4	6.7	2.8	3.1	3.0	- -	3.8

Table 24. Summary of yield rank for the strains in the Uniform Test, Group II, 1946

Strain	New Brunswick N.J.	Columbus Ohio	Holgate Ohio	Bluffton Ind.	Greenfield Ind.	Walkerton Ind.	Wanatah Ind.	Lafayette Ind.	Worthington Ind.	Evansville Ind.	East Lansing Mich.
Bavender Spec.	3	19	2	2	3	8	1	1	1	8	1
Lincoln	17	25	3	10	1	19	2	7	2	1	16
A4-107-12	5	2	14	9	12	1	20	11	7	4	23
A4-107-8	8	1	19	5	7	5	21	5	11	6	19
A3-107	2	8	23	7	16	5	5	15	6	4	16
A4-107-7	1	19	16	3	11	7	18	2	4	11	23
A3-108	7	5	9	4	10	3	12	23	9	14	26
A4-107-4	9	3	18	1	18	2	12	17	3	17	9
A4-108-12	9	15	6	14	7	15	12	16	10	10	9
A45-251	23	10	13	5	9	4	11	10	5	17	13
A3-94	16	21	4	17	4	10	6	12	13	20	21
H257-463	4	16	22	13	4	21	4	12	14	21	3
L3-1927	20	4	10	16	14	17	17	5	17	2	28
A4-108-6	29	6	5	12	6	10	18	9	12	9	15
A4-107-5	14	11	15	8	16	9	15	8	8	11	27
L3-7494	24	21	26	15	25	20	10	3	21	15	5
Mingo	12	29	1	20	2	12	7	12	23	6	14
C509	19	13	8	21	13	23	23	3	18	17	11
L3-8417	18	7	19	11	19	17	16	27	15	11	6
H167-463	30	27	17	25	27	25	3	19	26	15	4
Illini	13	24	28	27	23	22	9	20	25	29	25
L3-7437	28	12	7	22	24	16	25	22	29	3	6
Mukden	15	17	29	18	28	14	8	28	16	22	11
Earlyana	27	13	11	18	22	13	22	26	18	27	18
H24-463	6	18	12	24	14	26	24	21	22	28	21
H131-463	11	28	21	29	20	28	27	24	20	23	6
L3-8642	20	8	24	23	26	27	30	25	24	24	2
Richland	26	23	24	26	21	24	28	17	28	26	20
Dunfield	22	30	27	30	29	29	29	28	27	25	30
H29-461	25	26	30	28	30	30	26	30	30	30	29

Table 24. (Continued)

Strain	Monroe Mich.	Compton Ill.	Dwight Ill.	Urbana Ill.	Madison Wis.	Hudson Iowa	Ames Iowa	Kanawha Iowa	Marcus Iowa	Vermillion S. D.	Lincoln Nebr.
Bavender Spec.	2	6	1	20	1	8	1	1	1	4	2
Lincoln	5	1	7	27	2	7	12	2	2	5	10
A4-107-12	3	6	9	14	3	3	6	18	13	13	21
A4-107-8	7	3	24	4	13	10	3	6	7	7	21
A3-107	6	5	4	9	11	15	4	4	14	15	6
A4-107-7	1	18	13	9	14	4	14	15	15	18	14
A3-108	8	15	11	3	18	6	8	14	11	16	19
A4-107-4	12	11	11	1	18	11	25	12	20	1	13
A4-108-12	10	16	5	8	15	2	10	19	8	10	23
A45-251	18	4	7	2	4	20	7	22	10	13	14
A3-94	20	6	3	26	6	13	9	3	16	2	4
H257-463	9	10	6	6	9	14	20	13	6	18	4
L3-1927	11	12	15	15	23	1	15	10	9	16	16
A4-108-6	4	13	16	11	18	9	5	16	18	21	26
A4-107-5	16	9	2	5	24	17	11	8	12	9	7
L3-7494	16	13	19	6	7	5	2	5	5	6	1
Mingo	14	2	14	22	16	23	13	9	3	20	17
C509	18	20	9	12	7	25	24	29	19	3	10
L3-8417	14	18	28	20	22	26	23	25	22	24	12
H167-463	21	17	21	13	11	21	21	20	17	24	2
Illini	13	22	18	25	10	22	16	7	4	22	30
L3-7437	29	23	19	19	25	19	17	23	21	7	7
Mukden	26	21	17	23	28	16	28	11	26	28	28
Earlyana	30	24	23	30	21	28	19	24	27	11	24
H24-463	27	29	27	17	26	18	18	17	28	27	27
H131-463	24	28	21	15	17	12	27	21	25	22	7
L3-8642	22	29	29	28	30	24	26	27	29	24	25
Richland	28	26	26	17	27	30	29	28	23	12	19
Junfield	23	25	25	24	4	27	22	26	24	29	17
H29-461	25	26	30	29	29	29	30	30	30	30	29

Table 25. Summary of lodging data for the strains in the Uniform Test, Group II, 1946.

Strain	Mean of 20 Tests[1]	New Brunswick N.J.	Columbus Ohio	Bluffton Ind.	Greenfield Ind.	Walkerton Ind.	Wanatah Ind.	Lafayette Ind.	Worthington Ind.	Evansville Ind.	East Lansing Mich.
Bavender Spec.	3.2	4.0	4.8	2.5	4.0	2.9	2.8	2.9	2.2	2.0	1.0
Lincoln	2.1	2.0	2.8	2.5	2.0	2.1	1.0	2.0	2.5	1.3	1.0
A4-107-12	1.5	1.2	3.0	1.0	1.3	1.0	1.0	1.0	1.8	1.0	1.0
A4-107-8	1.5	1.2	2.5	1.0	1.7	1.0	1.0	1.2	1.8	1.0	1.0
A3-107	1.6	1.7	2.3	1.0	1.7	1.2	1.0	1.0	1.8	1.0	1.0
A4-107-7	1.5	1.2	3.0	1.0	1.3	1.0	1.0	1.3	2.0	1.0	1.0
A3-108	1.5	1.5	2.5	1.0	2.0	1.0	1.0	1.4	1.5	1.0	1.0
A4-107-4	1.4	1.2	2.3	1.0	1.3	1.0	1.0	1.0	1.5	1.0	1.0
A4-108-12	1.5	1.2	3.0	1.0	2.0	1.0	1.0	1.2	2.0	1.0	1.0
A45-251	1.5	1.5	2.0	1.0	1.3	1.0	1.0	1.0	1.8	1.0	1.0
A3-94	2.3	2.5	3.8	1.8	3.0	2.0	2.0	2.2	2.8	1.0	1.0
H257-463	2.7	4.2	3.5	2.3	3.0	2.4	2.0	2.4	3.0	2.3	1.0
L3-1927	1.4	1.0	1.8	1.0	2.0	1.3	1.0	1.0	1.2	1.0	1.0
A4-108-6	1.5	1.0	2.8	1.0	1.7	1.0	1.0	1.4	2.0	1.0	1.0
A4-107-5	1.6	1.5	3.0	1.0	1.7	1.3	1.0	1.2	1.8	1.0	1.0
L3-7494	1.9	1.2	2.8	1.0	3.0	1.6	1.0	1.5	2.0	1.0	1.0
Minn.	3.1	3.7	3.5	3.0	3.7	3.0	3.0	3.0	3.2	1.7	1.0
C509	1.3	1.0	1.8	1.0	1.7	1.0	1.0	1.0	1.5	1.0	1.0
L3-8417	1.4	1.5	2.0	1.0	1.7	1.0	1.3	1.3	1.0	1.0	1.0
H167-463	2.5	2.5	3.0	2.5	3.0	2.7	2.0	2.6	2.5	2.0	1.0
Illini	3.0	3.7	3.5	2.8	3.0	2.8	2.8	2.9	3.0	2.0	1.0
L3-7437	2.3	2.2	3.0	1.8	3.3	1.8	2.8	2.0	2.8	1.7	1.0
Mukden	2.2	3.2	2.8	1.3	3.0	1.9	2.0	2.1	1.8	1.3	1.0
Earlyana	2.6	2.7	3.8	1.8	4.0	2.3	2.8	2.8	3.0	1.3	1.0
H24-463	2.4	3.2	3.5	1.8	3.3	2.3	2.8	2.3	2.8	1.7	1.0
H131-463	2.6	3.2	4.0	2.5	3.0	2.3	2.0	2.3	2.8	1.3	1.0
L3-8642	1.5	1.5	2.0	1.0	1.7	1.0	1.3	1.4	2.0	1.0	1.0
Richland	1.4	1.0	2.3	1.0	1.3	1.0	1.0	1.0	2.0	1.0	1.0
Dunfield	3.1	4.2	4.3	3.0	3.3	2.9	3.0	3.0	3.0	2.0	1.0
H29-461	2.4	2.5	3.3	1.5	2.7	2.0	2.8	2.5	2.5	1.7	1.0
Mean	2.0	2.1	3.0	1.6	2.4	1.7	1.7	1.8	2.2	1.3	1.0

[1] East Lansing not included in the mean.

Table 25. (Continued)

Strain	Monroe Mich.	Compton Ill.	Dwight Ill.	Urbana Ill.	Madison Wis.	Hudson Ia.	Ames Iowa	Kanawha Iowa	Marcus Iowa	Vermillion S. D.	Lincoln Nebr.
Bavender Spec.	2.7	3.5	2.5	3.0	3.3	4.8	3.5	3.3	2.3	3	3.0
Lincoln	1.2	2.5	2.0	2.3	2.0	3.3	2.0	3.0	1.3	2	2.5
A4-107-12	1.5	2.0	1.5	1.6	1.8	2.5	1.0	1.7	1.0	1	1.3
A4-107-8	1.5	2.3	1.0	1.5	1.3	3.0	1.0	2.0	1.0	1	1.3
A3-107	2.0	2.3	1.7	1.8	1.3	2.8	1.3	2.5	1.0	1	1.3
A4-107-7	1.5	2.3	1.5	1.5	1.0	2.5	1.5	2.3	1.0	1	1.3
A3-108	1.7	2.0	1.5	1.3	1.0	3.0	1.0	1.5	1.0	1	1.8
A4-107-4	2.0	2.3	1.0	1.5	1.0	2.8	1.0	1.5	1.0	1	1.3
A4-108-12	1.2	2.3	2.0	1.7	1.5	2.5	1.0	1.7	1.0	1	1.5
A45-251	1.7	2.0	1.3	1.5	1.3	3.0	1.0	1.7	1.0	2	1.3
A3-94	1.0	2.5	2.3	2.7	2.0	3.8	2.0	3.0	1.0	2	2.0
H257-463	2.0	3.3	2.8	2.5	3.0	3.5	2.0	3.0	1.5	2	3.3
L3-1927	1.2	1.8	1.5	1.5	1.3	2.5	1.3	2.0	1.0	2	1.5
A4-108-6	2.0	2.5	1.0	1.3	1.0	2.5	1.0	1.7	1.0	1	1.8
A4-107-5	2.0	2.5	1.3	2.0	1.3	2.5	1.3	2.3	1.0	1	1.3
L3-7494	1.0	2.8	2.0	2.0	1.3	3.5	1.8	2.3	1.0	3	1.8
Mingo	2.0	4.0	2.3	3.0	3.0	4.5	3.0	3.5	2.5	4	3.3
C509	1.5	2.0	1.3	1.8	1.3	3.0	1.0	1.0	1.0	1	1.0
L3-8417	1.0	2.3	1.8	1.8	1.3	2.3	1.0	1.0	1.0	1	1.5
H167-463	1.7	2.8	2.3	3.0	2.5	3.5	2.3	3.0	1.8	2	2.3
Illini	3.0	3.5	2.7	2.8	3.0	4.0	3.0	3.3	2.8	3	3.3
L3-7437	1,2	3.0	2.5	2.3	2.0	3.0	1.3	1.7	1.3	4	2.0
Mukden	1.0	2.5	2.0	2.2	2.3	3.3	1.8	3.0	1.3	2	2.3
Earlyana	2.2	3.0	3.0	2.8	2.0	3.5	2.0	3.3	2.0	1	2.3
H24-463	1.5	3.0	2.2	3.0	2.0	3.5	2.8	3.0	1.3	1	1.3
H131-463	2.0	3.0	2.2	2.8	2.8	3.8	2.3	3.0	1.5	2	2.8
L3-8642	1.7	2.3	1.5	1.5	1.0	2.8	1.0	1.5	1.0	1	1.8
Richland	1.2	2.0	2.0	1.8	1.0	3.0	1.0	2.0	1.0	1	1.3
Dunfield	2.0	3.8	3.0	3.3	2.8	4.0	2.8	3.0	2.3	3	3.0
H29-461	1.2	3.3	2.5	2.5	2.3	3.8	2.5	2.5	1.3	2	2.3
Mean	1.6	2.6	1.9	2.1	1.8	3.2	1.7	2.3	1.3	1.8	2.0

Table 26. Summary of height data for the strains in the Uniform Test, Group II, 1946.

Strain	Mean of 21 Tests	New Brunswick N.J.	Columbus Ohio	Bluffton Ind.	Greenfield Ind.	Walkerton Ind.	Wanatah Ind.	Lafayette Ind.	Worthington Ind.	Evansville Ind.	East Lansing Mich.
Bur. Spec.	36	33	39	36	36	39	32	33	36	29	29
Lincoln	38	33	40	39	39	43	33	37	37	32	28
A4-107-12	35	32	39	36	35	40	28	33	36	29	25
A4-107-8	35	29	39	35	35	40	27	33	37	29	26
A3-107	35	34	40	37	35	39	29	33	36	31	26
A4-107-7	35	34	38	36	35	40	27	34	37	29	27
A3-108	35	33	38	36	35	38	28	33	36	30	29
A4-107-4	34	30	38	37	34	33	30	32	35	29	23
A4-108-12	36	32	40	37	37	40	30	33	37	30	28
A45-251	35	30	38	37	36	39	29	32	38	30	25
A3-94	32	29	35	34	34	36	27	29	33	24	27
H257-463	39	38	40	42	42	39	32	35	42	32	36
L3-1927	36	32	38	38	35	41	30	34	37	30	25
A4-108-6	35	29	40	36	37	39	29	35	37	29	26
A4-107-5	35	34	38	36	36	41	28	34	35	29	25
L3-7494	32	28	35	32	31	36	26	28	33	25	27
Mingo	38	38	41	39	41	43	34	37	39	31	22
C509	32	30	36	34	32	33	28	32	35	25	30
L3-8417	34	33	35	37	33	35	28	31	37	30	29
H167-463	39	37	39	38	40	39	32	36	44	31	33
Illini	41	42	40	42	42	46	33	41	44	30	29
L3-7437	33	29	36	34	36	35	26	29	35	27	30
Mukden	38	37	40	38	37	42	32	35	38	30	30
Earlyana	36	31	38	37	35	42	32	34	36	27	30
H24-463	38	37	39	39	42	37	31	35	41	32	29
H131-463	35	33	37	34	39	38	30	31	36	27	27
L3-8642	32	33	35	33	34	33	29	29	35	26	29
Richland	32	28	34	32	32	35	27	29	32	27	27
Dunfield	38	36	39	41	40	43	31	35	41	30	30
H29-461	37	35	39	37	40	39	33	35	39	30	30
Mean	36	33	38	37	37	39	30	33	37	29	28

Table 26. (Continued)

Strain	Monroe Mich.	Compton Ill.	Dwight Ill.	Urbana Ill.	Madi- son Wis.	Hud- son Iowa	Ames Iowa	Kana- wha Iowa	Marcus Iowa	Vermil- lion S. D.	Lin- coln Nebr.
Bav. Spec.	37	40	43	37	34	41	41	42	37	26	31
Lincoln	39	42	41	40	33	44	43	45	41	30	38
A4-107-12	33	39	44	36	32	45	41	41	35	30	31
A4-107-8	33	39	43	36	30	42	41	41	34	28	32
A3-107	32	39	44	38	31	44	41	42	35	28	30
A4-107-7	32	39	43	37	30	45	40	41	33	31	32
A3-108	34	40	44	37	31	43	39	42	35	24	30
A4-107-4	35	39	42	36	28	44	37	41	34	28	31
A4-108-12	35	39	44	38	31	44	40	43	36	30	31
A45-251	31	38	44	36	31	44	39	43	35	30	30
A3-94	31	34	40	33	30	41	38	39	33	26	28
H257-463	42	40	46	41	35	46	44	45	39	29	34
L3-1927	35	40	44	38	32	43	40	40	37	30	32
A4-108-6	34	40	45	37	30	45	38	43	36	29	31
A4-107-5	34	40	44	38	30	43	41	41	35	30	31
L3-7494	30	34	36	34	30	39	37	39	34	24	31
Mingo	35	44	42	42	35	43	42	43	40	30	34
C509	31	37	37	35	29	39	37	39	34	27	29
L3-8417	34	36	37	37	30	42	36	38	34	27	28
H167-463	38	46	47	42	35	44	44	47	39	33	43
Illini	42	45	46	46	37	46	45	48	41	30	40
L3-7437	34	37	39	34	31	41	36	37	33	24	32
Mukden	35	41	43	41	33	45	42	46	36	32	34
Earlyana	39	40	42	38	31	44	41	42	36	30	30
H24-463	36	42	46	41	31	46	42	46	37	28	30
H131-463	35	41	41	37	31	43	40	43	37	27	33
L3-8642	31	35	35	34	27	39	34	36	31	24	26
Richland	32	36	35	32	30	38	34	37	33	27	30
Dunfield	38	43	48	41	35	43	43	44	38	30	37
H29-461	35	40	47	41	32	45	41	43	36	30	33
Mean	35	39	42	38	31	43	40	42	36	28	32

Table 27. Summary of maturity data, days earlier (-) or later (+) than Richland, for the strains in the Uniform Test, Group II, 1946.

Strain	Mean of 15 Tests[1]	New Brunswick N. J.	Bluff-ton Ind.	Green-field Ind.	Walker-ton Ind.	Wanatah Ind.	Lafay-ette Ind.	Worth-ington Ind.	East Lansing Mich.
Bavender Spec.	+3.4	0	+6	0	+7	+3	-2	-6	-1
Lincoln	+6.6	0	+14	+2	+12	+4	+2	-6	+1
A4-107-12	-0.3	-1	0	-2	+1	-2	-3	-7	0
A4-107-8	-0.1	0	+1	-2	+1	0	-2	-7	-1
A3-107	+0.3	+1	+1	-2	+2	-1	-3	-8	-2
A4-107-7	+0.3	-1	0	-3	+3	0	-1	-7	-2
A3-108	-1.2	-2	+2	-2	+1	-1	-2	-10	-1
A4-107-4	-0.9	-2	+1	-2	+2	-2	-3	-9	0
A4-108-12	-0.6	-2	+2	-3	+1	+1	-3	-7	-2
A4-251	-0.2	-1	+1	-1	0	-2	-2	-8	-1
A3-94	-2.0	-3	+2	-1	-3	-2	-10	-9	-1
H257-463	+3.2	0	+7	0	+6	+3	-2	-4	0
L3-1927	+2.3	-1	+5	+1	+5	+1	0	-2	-1
A4-108-6	-1.2	-3	+1	-2	+1	+1	-2	-7	-2
A4-107-5	+0.9	+1	+2	-1	+2	+1	-2	-5	-1
L3-7494	+0.7	0	+3	-1	+2	+2	-1	0	-2
Mingo	+7.4	0	+16	+4	+10	+7	+4	+1	+2
C509	-0.3	+1	0	-1	+1	+1	-1	0	+1
L3-8417	-3.2	-2	-2	-2	-3	-4	-5	-5	-2
H167-463	+5.1	+1	+9	+1	+7	+2	0	-4	+2
Illini	+7.1	+3	+15	+3	+11	+6	+1	-1	+1
L3-7437	-5.1	-3	-1	-2	-7	-4	-10	0	-2
Mukden	+2.7	+2	+4	+1	+5	+2	0	-6	0
Earlyana	-5.1	-3	-1	-5	-5	-4	-9	-11	-1
H24-463	-0.3	0	+4	0	-3	-1	-2	-3	-1
H131-463	+2.9	-1	+7	0	+6	+1	-1	-6	0
L3-8642	+4.1	-1	+1	-2	-6	-4	-7	-3	-1
Richland	0	0	0	0	0	0	0	0	0
Dunfield	+6.5	0	+17	+3	+9	+5	+3	-2	0
H29-461	-2.1	-3	+1	-2	-3	0	-4	-8	-2
Date Planted		6/7	5/29	5/29	5/28	5/27	6/4	6/14	5/29
Richland Matured		9/26	9/25	10/1	10/7	10/5	10/1	10/10	10/16
Days to Mature	124	111	119	125	132	131	119	118	140

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

Table 27. (Continued)

Strain	Compton Ill.	Dwight Ill.	Urbana Ill.	Madison Wis.	Hudson Iowa	Ames Iowa	Kanawha Iowa	Marcus Iowa	Lincoln Nebr.
Bavender Spec.	+4	+2	+2	+4	+3	+12	+9	+2	-1
Lincoln	+6	+6	+6	+8	+5	+12	+12	+8	+2
A4-107-12	+1	+1	-1	0	-2	+3	+2	0	-1
A4-107-8	0	0	-1	0	-1	+3	+1	0	-2
A3-107	0	+2	0	+1	0	+3	+3	-1	-2
A4-107-7	+2	0	0	+1	-1	+3	+2	0	-1
A3-108	-1	-3	-2	-1	-2	0	-1	-2	-2
A4-107-4	+1	-2	-2	0	-2	0	0	-2	-1
A4-108-12	-1	+1	-2	0	-2	+1	0	-1	-1
A45-251	-1	0	0	+1	-1	+2	+1	+1	-1
A3-94	-1	-5	-2	-2	-2	+2	+2	-3	-3
H257-463	+3	+5	+3	+2	+2	+7	+9	+3	0
L3-1927	+2	+4	+2	+3	+2	+5	+4	+1	0
A4-108-6	+1	-4	-3	0	-2	0	0	-2	-4
A4-107-5	+1	+1	0	+2	0	+4	+2	+1	-1
L3-7494	+2	0	0	-1	+2	+2	+1	+1	-1
Mingo	+8	+6	+6	+7	+8	+15	+13	+6	+1
C509	-1	-1	+1	+1	-4	-1	0	0	0
L3-8417	-4	-8	0	-2	-8	-3	-2	-2	-1
H167-463	+6	+3	+7	+6	+5	+9	+11	+8	+2
Illini	+6	+5	+7	+7	+5	+12	+14	+7	+4
L3-7437	-5	-8	-5	-4	-11	-4	-4	-6	-2
Mukden	+2	+1	+4	+3	+3	+6	+6	+1	0
Earlyana	-3	-7	-6	-8	-9	-2	-3	-7	-5
H24-463	+1	0	0	-2	-2	+4	+2	-5	-1
H131-463	+5	+3	+1	+3	+3	+8	+7	+2	0
L3-8642	-3	-9	-4	-7	-7	-5	-3	-4	-1
Richland	0	0	0	0	0	0	0	0	0
Dunfield	+5	+6	+6	+7	+5	+11	+12	+8	0
L29-461	-3	-2	-2	-5	-5	+1	0	-3	-2
Date Planted	5/27	5/22	5/30	5/13	5/16	5/14	5/21	5/17	5/28
Richland Matured	9/30	9/23	9/18	9/20	10/1	9/17	9/23	9/24	9/22
Days to Mature	126	124	111	130	138	126	125	130	117

Table 28. Summary of seed quality data for the strains in the Uniform Test, Group II, 1946.

Strain	Mean of 14 Tests[1]	New Brunswick N. J.	Columbus Ohio	Holgate Ohio	Bluffton Ind.	Greenfield Ind.	Walkerton Ind.	Wanatah Ind.	Lafayette Ind.	Worthington Ind.	Evansville Ind.	East Lansing Mich.
Bavender Special	1.6	1.7	3	3	1	2	1	2	1	2	1	2
Lincoln	1.6	1.0	2	3	1	2	1	2	1	2	2	2
A4-107-12	1.4	1.0	2	1	1	2	1	2	1	2	1	2
A4-107-8	1.5	1.0	2	2	1	2	1	2	1	2	1	2
A3-107	1.4	1.0	2	3	1	2	1	2	1	2	1	1
A4-107-7	1.4	1.2	1	1	1	2	1	2	1	2	1	3
A3-108	1.5	1.0	2	2	1	2	1	2	1	2	2	1
A3-107-4	1.5	1.5	2	2	1	2	1	2	1	2	1	2
A4-108-12	1.4	1.5	2	1	1	2	1	2	1	2	1	2
A45-251	1.5	1.0	2	2	1	2	1	2	1	2	1	2
A3-94	1.4	1.0	2	2	1	2	1	2	1	2	2	1
H257-463	1.5	1.2	3	1	1	2	1	2	1	2	2	1
L3-1927	1.5	1.2	2	2	1	2	1	2	1	2	1	2
A4-108-6	1.6	1.2	1	2	1	2	1	2	1	2	2	2
A4-107-5	1.5	1.0	2	2	1	2	1	2	1	2	1	2
L3-7494	1.8	1.2	2	2	1	2	2	2	1	3	2	3
Mingo	2.0	1.5	3	3	1	3	2	2	1	2	2	2
C509	1.5	1.2	2	1	2	2	2	2	1	2	2	1
L3-8417	1.4	1.2	2	1	1	2	1	2	1	2	1	1
H167-463	1.5	1.5	2	2	1	2	1	2	1	2	1	2
Illini	1.6	1.7	1	3	1	1	1	2	1	1	2	2
L3-7437	1.6	1.0	2	2	2	2	2	2	1	2	2	2
Mukden	1.5	1.0	3	2	1	2	1	2	1	2	1	1
Earlyana	2.1	1.5	3	3	2	3	2	2	2	2	2	2
H24-463	1.8	1.5	2	2	2	2	2	2	1	2	1	2
H131-463	1.6	1.5	2	2	2	2	2	2	1	2	2	1
L3-8642	1.9	1.5	3	2	1	2	2	3	1	3	1	2
Richland	1.6	1.0	3	1	1	2	2	2	1	2	2	1
Dunfield	1.5	2.0	2	3	1	2	1	2	1	2	1	1
H29-461	1.6	1.2	3	2	1	3	1	2	1	2	2	1
Mean	1.6	1.3	2.2	2.0	1.2	2.1	1.3	2.0	1.0	2.0	1.5	1.7

[1]Compton, Dwight, Urban, Hudson, Ames, Kanawha, Marcus and Vermillion not included in the mean.

Table 28. (Continued)

Strain	Monroe Mich.	Compton Ill.	Dwight Ill.	Urbana Ill.	Madison Wis.	Hudson Iowa	Ames Iowa	Kanawha Iowa	Marcus Iowa	Vermillion S. Dakota	Lincoln Nebr.
Bavender Special	1	1	1	1	1	1	1	1	1	1	1.3
Lincoln	1	1	1	1	1	1	1	1	1	1	1.3
A4-107-12	1	1	1	1	1	1	1	1	1	1	1.5
A4-107-8	2	1	1	1	1	1	1	1	1	1	1.0
A3-107	1	1	1	1	1	1	1	1	1	1	1.0
A4-107-7	1	1	1	1	1	1	1	1	1	1	1.0
A3-108	2	1	1	1	1	1	1	1	1	1	1.5
A3-107-4	2	1	1	1	1	1	1	1	1	1	1.0
A4-108-12	1	1	1	1	1	1	1	1	1	1	1.0
A45-251	1	1	1	1	1	1	1	1	1	1	1.3
A3-94	1	1	1	1	1	1	1	1	1	1	1.0
H257-463	1	1	1	1	1	1	1	1	1	1	1.3
L3-1927	2	1	1	1	1	1	1	1	1	1	1.0
A4-108-6	2	1	1	1	1	1	1	1	1	1	2.0
A4-107-5	2	1	1	1	1	1	1	1	1	1	1.0
L3-7494	2	1	1	1	1	1	1	1	1	1	1.5
Mingo	3	1	1	1	1	1	1	1	1	1	1.0
C509	1	1	1	1	1	1	1	1	1	1	1.0
L3-8417	2	1	1	1	1	1	1	1	1	1	1.5
H167-463	1	1	1	1	1	1	1	1	1	1	1.8
Illini	2	1	1	1	1	1	1	1	1	1	2.0
L3-7437	1	1	1	1	1	1	1	1	1	1	1.0
Mukden	1	1	1	1	1	1	1	1	1	1	1.3
Earlyana	2	1	1	1	2	1	1	1	1	1	1.5
H24-463	1	1	1	1	2	1	1	1	1	1	2.3
H131-463	1	1	1	1	1	1	1	1	1	1	1.0
L3-8642	2	1	1	1	1	1	1	1	1	1	2.3
Richland	1	1	1	1	1	1	1	1	1	1	1.8
Dunfield	1	1	1	1	1	1	1	1	1	1	1.0
H29-461	1	1	1	1	1	1	1	1	1	1	1.3
Mean	1.4	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.4

Table 29. Summary of seed weight data in grams per 100 seeds for the strains in the Uniform Test, Group II, 1946.

Strain	Mean of 22 Tests	Comp. of 18 Tests[1]	Columbus Ohio[2]	Holgate Ohio[2]	Bluffton Ind.[2]	Greenfield Ind.[2]	Walkerton Ind.[2]	Wanatah Ind.[2]	Lafayette Ind.[2]	Worthington Ind.	Evansville Ind.	East Lansing Mich.[2]	Monroe Mich.[2]	Vermillion S. D.	Lincoln Nebr.
Bav. Spec.	17.0	17.0	15.1	13.1	18.5	20.1	18.5	21.3	17.9	19.1	15.6	15.1	16.4	17.0	16.8
Lincoln	14.7	14.6	11.9	11.9	15.6	18.6	15.9	18.7	15.2	16.0	15.2	12.0	14.2	15.2	14.2
A4-107-12	16.9	16.7	16.8	13.8	17.9	19.4	20.1	21.8	19.2	18.9	17.1	14.6	18.3	18.5	17.7
A4-107-8	17.6	17.5	16.8	13.3	18.0	19.5	20.3	22.1	19.4	18.6	16.3	15.1	16.6	19.2	18.1
A3-107	17.5	17.4	16.3	13.7	17.9	18.9	19.5	22.2	19.5	18.0	17.4	13.9	16.3	18.9	17.8
A4-107-7	18,0	17.9	16.8	12.9	17.8	19.5	20.1	21.9	19.4	19.6	16.8	15.0	16.6	19.7	18.3
A3-108	17.7	17.6	17.0	14.3	18.6	19.3	19.5	22.2	19.8	19.0	17.5	15.5	16.4	19.4	17.3
A3-107-4	18.4	18.3	17.8	14.3	19.3	20.3	20.2	21.7	20.0	19.5	17.9	15.3	17.5	19.9	18.0
A4-108-12	17.9	17.8	16.9	13.8	18.6	20.0	19.9	22.7	19.7	18.8	17.3	15.4	18.0	19.1	17.8
A45-251	17.7	17.7	16.6	13.4	18.3	18.7	19.0	20.9	19.3	18.9	17.5	14.9	16.6	18.3	16.8
A3-94	16.3	16.3	15.7	12.6	18.1	18.8	18.0	20.5	17.3	16.8	16.0	12.6	14.7	16.7	17.0
H257-463	14.6	14.5	14.0	9.9	15.0	16.8	15.6	18.0	15.6	15.6	14.3	11.5	15.1	14.7	15.5
L3-1927	16.6	16.5	14.9	12.7	16.6	17.5	18.7	19.9	18.8	17.2	16.7	13.4	16.6	17.5	16.3
A4-108-6	17.7	17.6	17.1	14.3	19.0	19.6	20.4	22.2	19.2	19.3	17.3	14.7	17.0	19.0	17.0
A4-107-5	18.1	18.0	16.8	13.2	18.2	19.2	19.8	21.6	19.4	19.0	17.7	14.8	16.6	18.9	17.6
L3-7494	18.1	17.9	17.1	13.1	18.9	18.9	19.7	22.1	19.4	19.3	18.7	13.8	17.3	17.9	19.2
Mingo	16.2	16.2	13.5	12.4	16.7	18.5	17.3	19.5	16.3	18.2	15.8	13.6	15.5	15.7	16.0
C509	16.4	16.2	15.3	12.7	16.9	17.5	18.2	19.2	17.7	18.1	16.9	14.6	15.4	17.7	16.4
I3-8417	13.7	13.6	14.0	10.3	15.9	14.9	14.9	15.5	14.9	15.4	13.9	10.4	13.3	13.5	14.2
H167-463	14.5	14.5	13.0	11.3	15.8	16.4	15.3	17.7	15.9	15.3	13.0	12.3	14.0	15.5	15.2
Illini	13.3	13.2	12.0	10.4	14.2	15.3	15.0	16.5	14.3	13.6	13.9	11.1	13.4	14.0	14.3
L3-7437	19.2	19.1	19.3	14.4	20.4	21.4	20.3	21.2	19.5	22.0	17.4	15.4	17.3	19.4	20.2
Mukden	15.8	15.7	14.4	11.6	15.6	16.7	17.6	17.8	17.1	15.9	14.9	13.6	16.4	16.7	16.4
Earlyana	16.4	16.5	16.1	11.9	16.7	17.5	17.3	19.0	16.7	18.3	14.3	12.3	15.2	15.6	16.2
H24-463	15.6	15.5	14.5	12.0	16.9	17.9	16.8	17.7	16.8	17.2	15.7	11.5	14.4	15.7	15.8
H131-463	16.7	16.6	14.6	13.2	17.2	19.3	17.7	20.3	17.7	17.7	15.8	13.8	15.0	17.0	17.1
L3-8642	15.7	15.4	15.8	11.7	16.7	16.1	17.3	18.3	16.5	19.0	15.8	12.4	14.7	16.1	16.4
Richland	17.5	17.3	17.3	13.1	16.8	19.4	19.1	20.7	19.0	19.0	19.7	14.3	16.1	17.5	17.0
Dunfield	15.8	15.8	13.4	12.6	16.3	17.4	16.0	19.4	16.8	15.8	15.1	12.2	14.1	17.6	15.6
H29-461	14.8	14.8	14.7	11.4	15.8	16.3	15.3	16.8	15.5	15.3	14.3	11.3	14.0	15.0	15.3
Mean	16.6	16.5	15.5	12.6	17.3	18.3	18.1	20.0	17.8	17.8	16.2	13.5	15.8	17.2	16.7

[1]Composite from New Brunswick, Columbus, Holgate, Bluffton, Greenfield, Walkerton, Wanatah, Lafayette, E. Lansing, Monroe, Compton, Dwight, Urbana, Madison, Hudson, Ames, Kanawha, and Marcus.
[2]Individual seed weights taken at these locations but not included in the mean.

Table 30. Two-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1945-46.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	40	38	39	28	29	40	38	38	38
A3-107	32.6	1.7	36	+0.2	1.4	17.3	41.6	20.5	128.8
Lincoln	32.6	2.3	39	+5.9	1.5	14.5	40.4	20.8	136.6
A3-108	32.5	1.7	36	-1.1	1.4	17.4	42.3	20.4	128.8
A3-94	31.8	2.5	34	-0.8	1.4	15.9	41.1	20.4	133.2
H257-463	31.6	2.9	40	+3.0	1.5	14.4	40.2	20.6	134.0
Mingo	29.9	3.1	39	+6.6	2.0	15.8	41.8	20.1	134.6
Illini	29.7	3.1	43	+7.8	1.6	13.2	40.6	19.5	136.0
Mukden	29.7	2.4	39	+3.7	1.4	15.2	42.8	19.5	131.7
Earlyana	29.1	2.8	37	-6.0	1.9	16.0	42.9	20.4	132.6
Richland	28.4	1.5	33	0	1.7	17.1	40.5	20.3	129.6
Dunfield	27.9	3.1	40	+6.7	1.5	15.2	39.7	20.2	132.1
Mean	30.5	2.5	38		1.6	15.6	41.3	20.2	132.5

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

Table 31. Four-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1943-46.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	74	71	72	59	55	69	72	72	72
Lincoln	33.2	2.2	39	+7.0	1.4	14.5	40.1	20.7	137.0
A3-107	32.1	1.6	36	+0.3	1.4	17.2	41.2	20.6	129.6
A3-108	32.0	1.6	36	-0.6	1.4	17.2	41.6	20.6	129.9
Illini	30.3	3.1	43	+8.1	1.6	13.2	40.1	19.5	136.2
Mingo	30.2	3.0	39	+7.1	1.8	15.5	41.9	19.9	135.4
Mukden	29.5	2.3	39	+4.1	1.3	15.1	42.8	19.4	131.8
Earlyana	28.4	2.8	37	-5.5	1.9	15.4	42.7	20.3	132.8
Richland	28.3	1.6	33	0	1.6	16.6	40.4	20.2	130.3
Durfield	28.2	3.0	39	+7.3	1.4	15.1	39.2	20.2	132.2
Mean	30.2	2.4	38		1.5	15.5	41.1	20.2	132.8

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

Table 32. Seven-year summary of agronomic and chemical data for the strains in the Uniform Test, Group II, 1940-46.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	105	98	94	86	83	101	107	107	107
Lincoln	33.7	2.3	37	+6.3	1.4	14.9	40.6	21.0	136.2
Mingo	30.0	2.9	37	+6.0	2.0	15.7	42.6	20.0	134.1
Illini	29.9	3.0	41	+7.4	1.5	13.7	40.7	19.9	134.3
Mukden	28.1	2.3	38	+3.0	1.5	14.9	43.6	19.5	130.4
Durfield	28.1	2.9	37	+6.6	1.5	15.7	40.0	20.5	130.3
Richland	27.4	1.5	32	0	1.7	16.6	41.0	20.3	128.4
Earlyana	27.0	2.6	36	-4.8	2.0	15.1	43.4	20.2	132.3
Mean	29.2	2.5	37		1.7	15.2	41.7	20.2	132.3

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

Table 33. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group II, during the seven-year period, 1940-46.

Strain	Mean of 105 Tests	Holgate Ohio	East Lansing Mich.	Bluffton Ind.	LaFayette Ind.	Wanatah Ind.	Greenfield Ind.	Compton Ill.	Dwight Ill.	Urbana Ill.	Madison Wis.	Hudson Iowa	Ames Iowa	Kanawha Iowa	Marcus Iowa	Wayne Nebr.
Years Tested		1940-1946	1943-1946	1940-43 1945-46	1940-1946	1940-1946	1944-1946	1942-1946	1940-1946	1940-1946	1943-1946	1942-1946	1942-1946	1940-1946	1942, 1944-46	1943-1945
Lincoln	33.7	25.4	22.9	38.0	42.7	27.1	37.5	26.8	32.5	39.9	35.4	40.8	41.7	32.5	40.5	29.9
Mingo	30.0	23.3	19.6	33.3	37.8	24.5	34.4	24.9	27.3	35.9	32.9	34.1	38.7	30.7	36.5	25.7
Illini	29.9	21.3	19.8	32.6	37.7	25.2	32.7	24.0	28.6	33.8	31.2	36.9	38.2	30.4	41.5	26.3
Mukden	28.1	19.2	23.1	31.8	37.0	23.2	26.9	23.6	26.7	32.9	32.3	35.4	37.9	28.9	33.5	25.7
Dunfield	28.1	20.3	17.3	30.0	34.1	23.2	27.2	23.2	26.8	35.0	31.0	34.3	38.7	28.3	35.1	24.4
Richland	27.4	20.0	18.7	30.2	32.9	21.6	29.8	22.6	26.1	33.7	28.7	31.0	36.1	29.5	33.9	27.9
Earlyana	27.0	20.9	23.6	29.7	31.4	22.9	28.8	24.3	25.0	28.4	30.2	32.8	35.8	31.6	34.3	27.7
Mean	29.2	21.5	20.7	32.2	36.2	24.0	31.0	24.2	27.6	34.2	31.7	35.0	38.2	30.3	36.5	26.8

Yield Rank

Lincoln	1	3	1	1	1	1	1	1	1	1	1	1	1	2	1
Mingo	2	5	2	2	3	2	2	3	2	2	5	2	3	3	5
Illini	3	4	3	3	2	3	4	2	4	4	2	4	4	1	4
Mukden	7	2	4	4	4	7	5	5	6	3	3	5	6	7	5
Dunfield	5	7	6	5	4	6	6	4	3	5	4	2	7	4	7
Richland	6	6	5	6	7	4	7	6	5	7	7	6	5	6	2
Earlyana	4	1	7	7	6	5	3	7	7	6	6	7	2	5	3

UNIFORM TEST, GROUP III

The Group III Test consisted of five named varieties and five selections from hybrids. The origin of these strains and varieties is as follows:

Variety or Strain	Source or Originating Agency	Origin
Chief	Illinois Agr. Exp. Station	Sel. from Illini x Manchu
Dunfield	Purdue Agr. Exp. Station	P.I. 36846
Illini	Illinois Agr. Exp. Station	Sel. from A.K.
Lincoln	Ill. A.E.S. & U.S.R.S.L.	L6-685 (Mandarin x Manchu)
Pennsoy	Penn. Agr. Exp. Station	Natural cross from Manchuria 13-177
A3-176	Iowa A.E.S. & U.S.R.S.L.	Sel. from Illini x Dunfield
C461	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
L3-2010	Ill. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from C167 x L7-1355
L3-2692	Ill. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x (Dun. x T117)
L3-3392	Ill. Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dun. x Manchuria 13-177

Four new strains, L3-2010, L3-3692, L3-3392, and Pennsoy, were added to Group III in 1946; and Patoka, Viking, A3-117, A3-163, A3-128, and A3-1411-20 were dropped from the list grown in 1945. Of the new strains, L3-2010 appears to be the most promising (table 34). This strain, of the same maturity as Chief, has stood up better than Chief, and has averaged slightly higher in oil content than Lincoln, and has yielded about as well as Lincoln. It is apparently better adapted to the more southern part of Group III territory. Pennsoy, a new variety from the Pennsylvania Agricultural Experiment Station, yielded well at Georgetown, Beltsville, and Dwight, but was not outstanding elsewhere. The most surprising development in this test was the behavior of A3-176. This strain yielded very well in 1944 and 1945 but did very poorly at many locations in 1946 (table 35). It was first in yield at Columbus and Dwight, second at Ames and third at Ottumwa, Stonington and Urbana, but did poorly at most of the other locations. Evidently it is not as widely adapted nor as dependable as Lincoln.

In the three-year summaries (tables 39 and 40), A3-176 has averaged 0.3 percent higher in oil than Lincoln. It is somewhat more erect and slightly earlier than Lincoln. It has yielded 1.6 bushels less than Lincoln as an average of all locations; but at Dwight, Urbana, Ames, Ottumwa, and Manhattan it has exceeded Lincoln in yield for the three-year period. Since this strain is being considered for increase and release in the near future, its performance will be carefully watched.

Lincoln has been tested in Group III for five years and a study of the data for this period (table 41) indicates that this variety is as well adapted to Group III territory as it has proved to be in Group II. Lincoln has averaged 2 bushels more than Chief and 4-1/2 bushels more than Dunfield and Illini. For the nine locations for which we have five-year data in this test Lincoln has exceeded Chief in yield at all places except Columbia, Missouri. Lincoln has averaged a week earlier than Chief and has been more erect.

Table 34. Summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1946.

Strain	Mean Yield Bu/A	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Test	21	20	20	17	17	21	21	21	21
Lincoln	30.4	2.3	38	-1.2	1.9	14.8	41.1	21.0	136.0
L3-2010	30.3	2.5	43	+5.7	2.0	13.3	37.8	21.3	135.5
L3-3392	29.3	3.0	42	+6.2	1.8	13.5	40.2	20.9	128.4
Chief	28.8	3.0	46	+6.3	1.8	13.1	40.6	20.4	134.9
C461	28.5	2.4	38	+5.7	1.6	13.9	40.6	20.3	132.5
Pennsoy	28.3	2.8	38	+1.2	2.3	15.9	43.0	19.8	129.9
L3-2692	27.9	2.9	38	+5.8	2.0	15.8	40.1	20.6	129.6
A3-176	26.9	2.3	35	-3.7	2.2	15.2	41.4	21.0	132.1
Illini	25.0	3.1	40	0	1.8	15.8	41.2	19.9	134.4
Dunfield	24.6	2.9	37	-1.0	2.2	15.7	40.5	20.7	130.2
Mean	28.0	2.7	40		2.0	14.7	40.7	20.6	132.4

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

Table 35. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1946.

Strain	Mean of 21 Tests	George-town Del.	Belts-ville Md.	Blacks-burg Va.	Colum-bus Ohio	Green-field Ind.	Worth-ington Ind.	Evans-ville Ind.	Dwight Ill.	Ur-bana Ill.	Clay-ton Ill.
Lincoln	30.4	30.8	32.9	22.8	38.1	33.1	36.9	39.5	28.1	34.1	33.1
L3-2010	30.3	32.6	29.3	25.4	28.8	29.4	32.3	39.2	25.2	33.4	37.0
L3-3392	29.3	30.7	30.2	19.7	33.1	32.7	34.4	36.7	26.1	27.3	36.4
Chief	28.8	31.9	31.0	24.4	34.9	24.3	36.5	40.2	24.7	26.8	35.4
C461	28.5	26.5	29.6	22.6	25.1	27.4	37.1	36.7	23.8	29.4	38.5
Pennsoy	28.3	32.2	35.1	17.9	34.9	29.8	34.6	33.0	28.4	30.2	32.0
L3-2692	27.9	27.1	28.6	20.7	24.8	25.0	32.3	29.6	27.7	27.1	37.8
A3-176	26.9	27.2	28.6	16.5	40.3	26.9	30.1	36.2	28.4	31.8	32.4
Illini	25.0	25.4	25.6	17.4	36.8	24.5	25.8	32.0	26.6	28.4	25.2
Dunfield	24.6	24.7	21.1	15.8	27.2	22.9	28.5	27.7	24.0	24.8	30.3
Mean	28.0	28.9	29.2	20.3	32.4	27.6	32.9	35.1	26.3	29.3	33.8
Coef. of Var. (%)	--	--	--	--	16.9	13.2	9.9	8.1	5.8	16.5	15.3
Bu. Nec. for Sig. (5%)	2.8	--	--	--	8.0	5.3	4.7	4.1	2.2	N.S.	7.5

	Yield Rank									
Lincoln	4	2	3	2	1	2	2	3	1	6
L3-2010	1	6	1	7	4	6	3	7	2	3
L3-3392	5	4	6	6	2	5	4	6	7	4
Chief	3	3	2	4	9	3	1	8	9	5
C461	8	5	4	9	5	1	4	10	5	1
Pennsoy	2	1	7	4	3	4	7	1	4	8
L3-2692	7	7	5	10	7	6	9	4	8	2
A3-176	6	7	9	1	6	8	6	1	3	7
Illini	9	9	8	3	8	10	8	5	6	10
Dunfield	10	10	10	8	10	9	10	9	10	9

Table 35. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Ames Ia.	Ottumwa Iowa	Shelbyville Mo.	Columbia Mo.	Lathrop Mo.	Elsberry Mo.	Lincoln Nebr.	Manhattan Kans.
Lincoln	31.5	30.4	30.3	38.1	31.4	24.2	22.2	23.9	27.2	29.7	20.3
L3-2010	25.8	27.1	28.1	33.9	32.5	24.6	36.3	29.4	34.3	29.9	21.6
L3-3392	27.4	29.8	28.2	33.2	30.7	22.9	32.0	28.7	33.3	25.5	16.7
Chief	25.1	30.0	27.6	37.5	27.9	23.1	31.5	21.7	34.1	21.2	15.8
C461	27.0	32.3	24.4	33.6	28.2	21.9	28.6	25.3	35.1	26.6	18.6
Pennsoy	25.4	27.9	25.4	35.6	28.5	21.5	27.3	22.8	27.6	27.8	15.4
L3-2692	26.3	31.4	24.9	37.6	29.7	22.3	30.9	23.0	28.4	29.8	21.2
A3-176	27.1	25.1	21.9	38.0	30.8	19.7	27.1	9.0	22.5	27.0	18.5
Illini	24.5	24.6	19.8	32.4	29.4	19.2	21.4	17.2	28.3	24.0	16.2
Dunfield	22.2	27.7	24.3	33.8	30.6	20.4	25.7	16.5	24.7	25.7	17.0
Mean	26.2	28.6	25.5	35.4	30.0	22.0	28.3	21.8	29.6	26.7	18.1
C.V.(%)	11.4	9.2	14.6	11.9	6.9	9.3	19.5	15.8	9.5	8.9	--
Bu.Nec.for Sig.(5%)	4.3	3.8	5.4	6.1	3.0	3.0	8.0	5.0	4.1	3.4	--

	Yield Rank										
Lincoln	1	3	1	1	2	2	9	4	8	3	3
L3-2010	6	8	3	6	1	1	1	1	2	1	1
L3-3392	2	5	2	9	4	4	2	2	4	8	7
Chief	8	4	4	4	10	3	3	7	3	10	9
C461	4	1	7	8	9	6	5	3	1	6	4
Pennsoy	7	6	5	5	8	7	6	6	7	4	10
L3-2692	5	2	6	3	6	5	4	5	5	2	2
A3-176	3	9	9	2	3	9	7	10	10	5	5
Illini	9	10	10	10	7	10	10	8	6	9	8
Dunfield	10	7	8	7	5	8	8	9	9	7	6

Table 36. Summary of lodging and height data for the strains in the Uniform Test, Group III, 1946.

Strain	Mean of 20 Tests	George-town Del.	Belts-ville Md.	Blacks-burg Va.	Colum-bus Ohio	Green-field Ind.	Worth-ington Ind.	Evans-ville Ind.	Dwight Ill.	Ur-bana Ill.	Clay-ton Ill.
Lincoln	2.3		4.0	2.5	4.0	1.0	2.5	1.0	2.0	2.1	3.0
L3-2010	2.5		4.0	2.0	3.0	2.0	2.3	1.8	2.5	2.8	2.0
L3-3392	3.0		4.0	2.5	3.3	2.7	2.5	2.3	2.1	2.8	3.0
Chief	3.0		5.0	2.7	3.8	1.7	2.3	2.0	3.0	3.0	4.0
C461	2.4		4.5	4.0	3.3	1.3	1.8	1.0	2.2	2.9	2.5
Pennsoy	2.8		4.0	2.0	4.0	2.3	3.0	1.5	3.0	2.8	2.0
L3-2692	2.9		4.5	2.0	4.3	1.3	2.8	1.5	3.0	3.5	4.0
A3-176	2.3		4.0	2.5	3.3	1.3	2.5	1.5	2.3	2.3	3.0
Illini	3.1		5.0	2.0	4.3	2.7	2.5	2.0	2.5	2.8	3.5
Dunfield	2.9		5.0	3.0	3.8	2.3	2.8	2.0	2.8	3.0	3.5
Mean	2.7		4.4	2.5	3.7	1.9	2.5	1.7	2.5	2.8	3.1
	Height										
Lincoln	38	34	42	36	41	36	38	39	43	43	
L3-2010	43	42	43	42	43	42	47	45	54	53	
L3-3392	42	40	43	38	40	42	49	44	50	48	
Chief	46	43	44	50	43	44	50	49	52	53	
C461	38	32	40	38	41	37	42	40	42	42	
Pennsoy	38	34	42	32	40	37	39	39	44	44	
L3-2692	38	32	40	40	40	40	40	38	43	46	
A3-176	35	28	38	36	39	32	36	39	40	42	
Illini	40	32	42	33	41	39	41	43	47	48	
Dunfield	37	30	40	37	39	37	41	37	43	41	
Mean	40	35	41	38	41	39	42	41	46	46	

Table 36. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Ames Iowa	Ottumwa Iowa	Shelbyville Mo.	Columbia Mo.	Lathrop Mo.	Elsberry Mo.	Lincoln Nebr.	Manhattan Kans.
Lincoln	2.0	2.0	3.0	2.3	3.0	1.0	2.0	2.0	4.0	2.3	1.2
L3-2010	3.0	2.3	3.0	2.5	3.0	1.3	2.0	3.0	3.0	3.0	1.1
L3-3392	3.5	3.0	3.0	3.3	4.8	2.0	3.0	3.0	3.5	3.8	1.8
Chief	3.5	2.8	3.0	3.5	3.5	1.3	3.0	3.5	3.5	3.8	1.4
C461	2.5	2.0	3.0	2.8	2.3	1.0	2.0	2.5	3.0	2.0	1.1
Pennsoy	2.5	2.5	3.0	3.3	3.8	1.0	3.0	3.0	4.0	3.3	2.3
L3-2692	2.5	2.2	3.5	3.8	3.5	1.0	2.5	3.5	4.0	3.0	1.5
A3-176	2.5	2.2	2.5	1.5	2.5	1.0	2.0	2.0	4.0	2.0	1.1
Illini	3.0	3.3	3.0	3.3	3.8	1.8	3.0	4.0	4.0	3.3	1.8
Dunfield	3.0	2.3	3.0	3.5	3.5	1.0	2.0	3.0	4.0	2.3	2.0
Mean	2.8	2.5	3.0	3.0	3.4	1.2	2.5	3.0	3.7	2.9	1.5
						Height					
Lincoln	45	38	36	42	37	25	36	46	37	39	23
L3-2010	53	41	42	50	43	30	44	42	40	44	24
L3-3392	46	43	42	48	42	30	43	42	40	42	23
Chief	51	42	46	53	46	28	43	50	54	49	27
C461	46	37	34	43	38	24	35	45	40	37	21
Pennsoy	43	35	37	43	37	26	36	44	42	36	21
L3-2692	41	34	38	45	38	25	35	46	38	36	23
A3-176	40	32	33	43	37	23	31	41	38	32	19
Illini	49	39	36	44	40	25	39	48	46	41	21
Dunfield	43	35	33	42	37	25	34	42	40	36	19
Mean	46	38	38	45	40	26	38	45	42	39	22

Table 37. Summary of maturity, days earlier (-) or later (+) than Illini, and seed quality data for the strains in the Uniform Test, Group III, 1946.

Strain	Mean of 17 Tests	George-town Del.	Belts-ville Md.	Blacks-burg Va.	Colum-bus Ohio	Green-field Ind.	Worth-ington Ind.	Evans-ville Ind.	Dwight Ill.	Ur-bana Ill.	Clay-ton Ill.
Lincoln	-1.2	0	+3	-1		0	-6	-11	0	-2	
L3-2010	+5.7	+5	+6	+4		+6	+2	+5	+6	+8	
L3-3392	+6.2	+5	+8	0		+6	+6	+5	+7	+5	
Chief	+6.3	+4	+10	+4		+4	+4	+5	+6	+7	
C461	+5.7	+4	+8	+4		+6	+4	-4	+8	+6	
Pennsoy	+1.2	+2	+6	+3		+1	+1	-5	+2	+1	
L3-2692	+5.8	+7	+10	+3		+8	+3	+4	+7	+6	
A3-176	-3.7	-5	+3	+1		-5	-10	-13	-3	-6	
Illini	0	0	0	0		0	0	0	0	0	
Dunfield	-1.0	-5	-2	+6		+1	-3	0	0	-2	
Date planted		6/4	6/7	5/29		5/29	6/14	6/8	5/22	5/30	
Illini Mat.		9/23	9/28	10/2		10/3	10/10	10/9	9/28	9/27	
Days to Mat.	121	111	113	126		127	118	123	129	120	

	Seed Quality[1]										
Lincoln	1.9	3	2.0	2	2	1	1	2	1	1	1
L3-2010	2.0	3	3.0	2	2	2	2	2	1	1	1
L3-3392	1.8	3	2.5	1	3	2	2	2	1	1	1
Chief	1.8	3	2.5	2	2	2	1	2	1	1	1
C461	1.6	4	2.0	2	3	1	1	1	1	1	1
Pennsoy	2.3	4	2.5	3	2	2	2	2	1	1	1
L3-2692	2.0	3	2.5	1	3	2	2	2	1	1	1
A3-176	2.2	3	2.5	2	2	2	2	1	1	1	1
Illini	1.8	3	2.5	1	2	1	1	1	1	1	1
Dunfield	2.2	3	3.0	1	2	2	2	2	1	1	1
Mean	2.0	3.2	2.5	1.7	2.3	1.7	1.6	1.7	1.0	1.0	1.0

[1]Dwight, Urbana, Compton, and Ames not included in the seed quality mean.

Table 37. (Continued)

Strain	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Ames Iowa	Ottumwa Iowa	Shelbyville Ill.	Columbia Mo.	Lathrop Mo.	Elsberry Mo.	Lincoln Nebr.	Manhattan Kans.
Lincoln		+4		0	-1	+1.8	+0.8	+0.5	0	-4	-6
L3-2010		+13		+10	+10	+4.8	+5.3	+9.0	+10.3	-2	-5
L3-3392		+12		+9	+8	+5.8	+8.3	+9.8	+11.3	0	0
Chief		+13		+8	+8	+4.3	+6.5	+8.5	+10.8	+2	+2
C461		+12		+8	+8	+6.5	+7.3	+10.0	+12.0	-1	-2
Pennsoy		+6		0	+7	0	+1.0	+1.0	+2.8	-2	-6
L3-2692		+6		+10	+10	+5.0	+6.3	+7.0	+7.8	-1	-1
A3-176		-3		-3	-2	-2.3	-5.3	-1.8	-3.3	-2	-3
Illini		0		0	0	0	0	0	0	0	0
Dunfield		-2		+2	+1	-1.0	-1.5	-1.5	-1.5	-2	-6
Date planted		6/11		5/14	6/3	5/28	6/7	5/25	6/3	5/28	5/29
Illini mat.		9/24		9/28	10/4	9/20	9/24	9/25	9/20	10/2	10/15
Days to mat.		105		137	123	115	109	123	109	127	139
						Seed Quality[1]					
Lincoln	2	2	3	1	1	1.0	2.5	3.0	2.3	1.0	2
L3-2010	2	2	2	1	1	1.0	1.8	1.8	1.5	1.3	3
L3-3392	2	1	2	1	1	1.5	2.0	1.3	1.5	1.5	2
Chief	2	1	2	1	1	1.0	1.3	2.0	1.8	2.0	2
C461	2	1	1	1	1	1.0	1.3	1.5	1.0	1.3	2
Pennsoy	2	2	3	1	2	1.8	2.0	2.8	2.3	1.5	3
L3-2692	3	2	2	1	1	2.3	1.5	1.8	1.5	1.0	3
A3-176	3	3	4	1	1	1.3	1.5	3.5	2.0	1.0	3
Illini	2	2	3	1	1	1.3	1.5	2.8	2.3	1.5	2
Dunfield	3	2	3	1	2	1.8	1.3	2.8	1.8	1.3	3
Mean	2.3	1.8	2.5	1.0	1.2	1.4	1.7	2.3	1.8	1.3	2.5

Table 38. Summary of seed weight data in grams per 100 seeds for the strains in the Uniform Test, Group III, 1946.

Strain	Mean of 21 Tests	Composite of 17 Tests[1]	George-town Del.	Belts-ville Md.	Blacks-burg Va.	Colum-bus Ohio[2]	Green-field Ind.[2]	Worth-ington Ind.[2]	Evans-ville Ind.[2]	Shelby-ville Mo.[2]	Colum-bia Mo.[2]	Luth-rop Mo.[2]	Els-berry Mo.[2]	Lin-coln Nebr.[2]	Man-hattan Kans.
Lincoln	14.8	14.9	13.6	13.2	14.2	12.5	16.0	16.2	18.6	15.4	15.8	19.5	13.9	14.7	15.6
L3-2010 -	13.3	13.2	12.0	12.3	13.7	10.2	13.2	13.1	17.1	14.1	13.5	17.5	13.0	14.1	15.9
L3-3392	13.5	13.5	12.3	12.8	13.6	11.3	13.8	14.2	16.4	14.8	13.6	18.3	14.1	15.1	15.7
Chief	13.1	13.2	11.8	12.7	12.3	10.7	13.1	13.5	16.1	13.6	12.7	15.6	13.3	13.4	14.4
C461	13.9	13.9	11.8	13.5	14.1	11.1	13.4	14.5	16.6	13.7	13.9	16.7	13.4	13.8	15.6
Pennsoy	15.9	16.0	15.8	16.1	14.6	14.8	16.7	17.4	17.8	15.9	15.3	18.1	16.4	15.2	16.4
L3-2692	15.8	15.6	15.9	15.7	16.7	13.1	16.1	16.9	18.8	17.4	16.5	19.3	14.7	17.1	18.2
A3-176	15.2	15.3	15.1	15.0	12.4	14.9	15.7	15.5	18.2	17.8	16.2	17.0	14.7	14.9	15.7
Illini	15.8	16.4	13.0	13.0	11.7	12.2	13.7	13.4	16.3	15.7	14.0	17.0	13.8	14.2	14.5
Dunfield	15.7	15.9	15.1	13.6	15.5	13.3	16.1	15.6	19.1	17.6	15.6	18.7	13.3	15.5	16.1
Mean	14.7	14.8	13.6	13.8	13.9	12.4	14.8	15.0	17.5	15.6	14.7	17.8	14.1	14.8	15.8

[1]Composite from Columbia, Greenfield, Worthington, Evansville, Dwight, Urbana, Clayton, Stonington, Edgewood, Freeburg, Ames, Ottumwa, Shelbyville, Columbia, Lathrop, Elsberry and Lincoln.

[2]Individual seed weights also taken at these locations but not included in the mean.

Table 39. Three-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1944-46.

Strain	Mean Yield Bu./A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	54	49	47	42	45	53	53	53	53
Lincoln	29.4	2.3	36	-1.4	1.6	14.1	40.4	21.2	135.3
Chief	27.8	2.9	44	+6.4	1.8	12.6	40.2	20.3	134.0
A3-176	27.8	2.2	34	-3.0	1.7	14.5	40.5	21.5	131.6
Illini	25.8	3.0	39	0	1.6	14.0	40.5	20.2	133.8
Dunfield	25.1	2.9	36	-2.0	1.9	15.0	39.5	21.2	129.5
Mean	27.2	2.7	38		1.7	14.0	40.2	20.9	132.8

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

Table 40. Three-year summary of yield in bushels per acre and rank for the strains in the Uniform Test, Group III, 1944-46.

Strain	Mean of 54 Tests	Greenfield Ind.	Dwight Ill.	Urbana Ill.	Clayton Ill.	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Ames Iowa	Ottumwa Iowa	Columbia Mo.	Lincoln Nebr.	Manhattan Kansas
Lincoln	29.4	34.5	25.2	33.0	28.9	31.1	24.5	27.7	40.2	31.9	20.2	24.8	24.6
Chief	27.8	28.8	19.8	30.0	27.3	26.9	21.5	25.6	36.6	28.2	25.2	21.2	23.3
A3-176	27.8	30.4	25.5	33.2	27.2	30.7	18.3	24.2	41.4	32.1	22.2	24.3	25.2
Illini	25.8	29.8	24.3	28.5	23.1	28.0	19.0	20.3	36.7	29.0	17.6	22.5	21.3
Dunfield	25.1	25.1	20.5	27.9	27.2	25.5	21.8	23.8	35.0	28.6	21.2	22.8	22.7
Mean	27.2	29.7	23.1	30.5	26.7	28.4	21.0	24.3	38.0	30.0	21.3	23.1	23.4
		Rank											
Lincoln		1	2	2	1	1	1	1	2	2	4	1	2
Chief		4	5	3	2	4	3	2	4	5	1	5	3
A3-176		2	1	1	3	2	5	3	1	1	2	2	1
Illini		3	3	4	5	3	4	5	3	3	5	4	5
Dunfield		5	4	5	3	5	2	4	5	4	3	3	4

Table 41. Five-year summary of agronomic and chemical data for the strains in the Uniform Test, Group III, 1942-46.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of oil
No. of Tests	83	78	76	64	70	81	84	84	84
Lincoln	30.5	2.3	36	-1.1	1.7	14.1	40.3	21.5	135.0
Chief	28.5	2.8	45	+6.1	1.8	12.3	40.1	20.6	133.4
Illini	26.0	3.1	40	0	1.7	13.5	40.6	20.4	134.1
Dunfield	25.9	2.9	37	-1.8	1.9	14.6	39.1	21.4	130.0
Mean	27.7	2.8	40		1.8	13.6	40.0	21.0	133.1

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

Table 42. Five-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group III, 1942-46.

Strain	Mean of 83 Tests	Greenfield Ind.	Dwight Ill.	Urbana Ill.	Clayton Ill.	Stonington Ill.	Freeburg Ill.	Ames Iowa	Columbia Mo.	Lincoln Nebr.
Lincoln	30.5	33.3	29.0	37.3	28.1	31.5	30.4	40.3	20.5	25.1
Chief	28.5	29.4	23.2	35.3	26.2	28.2	29.5	34.9	23.7	21.9
Illini	26.0	27.5	26.8	30.6	23.2	29.3	22.8	35.7	17.3	24.2
Dunfield	25.9	24.7	24.9	32.6	26.9	27.9	25.3	36.1	19.7	23.7
Mean	27.7	28.7	26.0	34.0	25.9	29.2	27.0	36.8	20.3	23.7
					Yield Rank					
Lincoln		1	1	1	1	1	1	1	2	1
Chief		2	4	2	3	3	2	4	1	4
Illini		3	2	4	4	2	4	3	4	2
Dunfield		4	3	3	2	4	3	2	3	3

UNIFORM TEST, GROUP IV

The Group IV test consisted of three named varieties, eleven selections from hybrids, and two selections obtained as rogues. The origin of these strains and varieties is as follows:

Variety or Strain	Source or Originating Agency	Origin
Chief	Ill. Agr. Exp. Station	Sel. from Illini x Manchu
Gibson	Purdue Agr. Exp. Station	Sel. from Midwest x Dunfield
Patoka	Purdue Agr. Exp. Station	Sel. from P.I. 70218-2
C101	Purdue Agr. Exp. Station	Sel. from Dunfield x Manchu
C425	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from T117 x Mansoy
C439	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C447	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C453	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C458	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C461	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C463	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C464	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Dunfield x Mansoy
C470	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Rogue in P.I. 54592
C508	Purdue Agr.Exp.Sta. & U.S.R.S.L.	Sel. from Patoka x L7-1355
S55-19	Missouri Agr. Exp. Station	Sel. from Virginia x P.I. 37062
S100	Missouri Agr. Exp. Station	Sel. from Rogue in Illini

The 16 strains included in the Uniform Test, Group IV, were grown at 15 locations in four states of the North Central Region and at Georgetown, Delaware; Beltsville, Maryland; and Blacksburg, Virginia.

C508 was the only new entry in this test in 1946. It ranked first in yield, oil content, and lodging resistance for the average of all locations. The growth habit and appearance of this strain is very similar to Patoka, except that it is slightly taller. The performance data for 1946 are presented in tables 43 to 47.

The three-year summary (tables 48 and 49) gives a comparison of C101 with several varieties grown during the same period. C101 has an excellent yield record but would be of little commercial value because of its lodging susceptibility, and thus does not appear to warrant further testing.

A four-year summary of nine entries from Indiana, Chief, Patoka, and Gibson is presented in tables 50 and 51. These strains were grown in Group IV in 1945 and 1946 and at a limited number of locations in Preliminary Group IV in 1943 and 1944. Eight of the above strains yielded above the check varieties for the four-year period. All strains, except C470, were above the check varieties in oil content. C470 ranked first in yield in the test, but because of its lower oil content and greater lodging susceptibility seems less desirable for release as a variety than C463 or C464 which are rather outstanding in most agronomic characters and are high in oil content. C463 and C464 are sister selections and are very similar in most respects. They differ mainly in maturity and oil content. C463 is the earlier of the two strains by an average of 4 days and is 0.5 percent higher in oil content, averaging 21.0 percent, the highest in the test. Both of the above strains equal Patoka in lodging resistance and average 6 inches taller.

S100 has been tested five years and is summarized with three commercial varieties in tables 52 and 53. This strain ranks with Chief and Patoka in average yield but is 1.5 percent lower than these varieties in oil content. Although S100 has yielded especially well in southwestern Indiana, its usefulness as a variety in this area is somewhat questionable because of its late maturity. It is about eight days later than Gibson. S100 is probably best adapted to extreme southern Illinois, southern parts of Missouri and Kansas, and some of the southern states.

Table 43. Summary of agronomic and chemical data for the strains in the Uniform Test, Group IV, 1946.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	17	15	16	14	15	17	17	17	17
C508	31.6	2.2	36	+1.1	2.0	17.6	42.4	21.3	129.5
C101	29.6	3.1	40	+3.1	2.1	17.2	41.0	20.3	134.0
C470	29.0	2.8	42	+0.7	1.9	14.1	41.4	20.1	133.5
C463	28.7	2.4	41	-0.4	1.7	14.7	40.8	20.9	130.2
C464	28.5	2.5	41	+3.5	1.7	14.6	41.5	20.3	130.7
C461	28.5	2.4	37	-3.6	1.5	13.8	40.9	20.2	130.8
C425	28.4	2.9	40	-0.2	1.7	13.9	40.6	20.6	131.5
C447	28.3	3.1	42	+2.7	1.9	13.8	39.2	20.6	132.1
Chief	28.1	3.1	46	-2.4	2.0	13.6	41.0	20.1	133.1
C458	28.1	2.8	40	+4.1	2.1	15.5	39.6	20.5	131.1
S100	28.1	2.7	45	+8.5	1.8	13.9	43.1	19.1	133.8
Patoka	28.0	2.6	34	-1.1	2.2	19.0	44.9	19.7	131.7
C439	27.9	2.4	39	+0.7	1.6	14.1	41.4	20.5	130.5
C453	27.9	3.0	41	+2.1	1.8	14.0	39.3	20.5	132.5
S55-19	25.6	3.0	41	-0.4	2.2	15.8	43.4	20.1	133.4
Gibson	24.9	2.9	39	0	2.0	13.8	40.7	20.1	133.5
Mean	28.2	2.7	40		1.9	15.0	41.3	20.3	132.0

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

Table 44. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1946.

Strain	Mean of 17 Tests[1]	George-town Del.	Belts-ville Md.	Blacks-burg Va.	Worth-ington Ind.	Vin-cennes Ind.	Evans-ville Ind.	Urbana Ill.	Edge-wood Ill.	Stoning-ton Ill.
C508	31.6	32.2	25.4	25.5	36.0	33.4	41.5	33.7	36.9	30.5
C101	29.6	31.1	27.1	26.0	37.6	30.7	43.0	16.4	37.1	25.8
C470	29.0	31.1	25.3	27.4	32.6	28.4	39.4	23.6	33.5	26.3
C463	28.7	31.6	24.5	--	35.3	23.5	40.8	26.2	35.7	25.8
C464	28.5	28.6	23.0	26.1	35.6	23.5	45.4	23.1	35.8	21.3
C461	28.5	31.2	24.1	24.2	33.4	27.8	37.7	30.2	32.0	27.1
C425	28.4	32.0	28.9	26.2	34.8	25.2	37.4	24.5	32.7	22.8
C447	28.3	30.8	24.6	25.4	30.4	21.6	37.0	24.0	35.4	24.5
Chief	28.1	30.2	29.3	19.3	38.9	23.5	42.1	26.9	35.9	28.0
C458	28.1	29.4	29.8	26.6	33.7	24.1	40.1	22.9	32.7	23.5
S100	28.1	27.7	27.9	24.0	35.0	31.2	42.6	18.3	32.6	15.3
Patoka	28.0	29.4	23.2	26.1	33.3	31.4	35.0	29.0	32.8	27.6
C439	27.9	30.1	24.7	24.2	35.5	26.5	40.5	24.7	37.0	22.1
C453	27.9	28.1	23.8	25.3	32.2	25.2	38.9	25.4	36.3	19.9
S55-19	25.6	22.9	27.6	26.3	33.3	21.8	37.5	21.3	28.7	23.7
Gibson	24.9	26.9	24.8	21.9	33.1	17.2	38.0	19.4	29.5	22.0
Mean	28.2	29.6	25.9	23.4	34.4	25.9	39.8	24.3	34.0	24.1
Coef. of Var. (%)		--	--	--	11.5	16.3	9.0	26.5	11.3	13.1
Bu.Nec.for Sig.(5%)		6.8	--	--	3.9	6.0	3.6	not sig.		4.4
					Yield Rank					
C508		1	7	8	3	1	5	1	3	1
C101		5	6	7	2	4	2	16	1	6
C470		5	8	1	14	5	9	10	9	5
C463		3	12	--	6	11	6	5	7	6
C464		12	16	5	4	11	1	11	6	14
C461		4	13	11	10	6	12	2	14	4
C425		2	3	4	8	8	14	8	11	11
C447		7	11	9	16	15	15	9	8	8
Chief		8	2	15	1	11	4	4	5	2
C458		10	1	2	9	10	8	12	11	10
S100		14	4	13	7	3	3	15	13	16
Patoka		10	15	5	11	2	16	3	10	3
C439		9	10	11	5	7	7	7	2	12
C453		13	14	10	15	8	10	6	4	15
S55-19		16	5	3	11	14	13	13	16	9
Gibson		15	9	14	13	16	11	14	15	13

[1] Blacksburg not included in the mean.

Table 44. (Continued)

Strain	Free-burg Ill.	Clayton Ill.	Els-berry Mo.	Sikes-ton Mo.	Shelby-ville Mo.	Colum-bia Mo.	Lath-rop Mo.	Milo Mo.	Man-hattan Kans.
C508	31.6	46.7	34.3	41.4	24.4	32.4	25.7	11.1	19.8
C101	27.6	33.1	36.9	43.3	22.7	31.0	27.5	10.7	21.2
C470	27.3	30.6	33.8	39.3	25.0	33.5	28.6	14.0	20.2
C463	23.9	36.2	35.1	39.8	23.9	28.7	27.0	11.1	19.5
C464	24.7	32.3	38.7	44.5	27.1	26.2	25.8	11.0	18.6
C461	26.5	37.5	32.2	38.2	23.4	27.7	23.7	11.8	20.2
C425	25.0	38.2	28.6	40.8	26.0	28.7	25.0	10.4	21.8
C447	26.3	38.2	34.4	40.3	25.6	28.0	21.6	11.9	26.0
Chief	24.0	29.2	30.4	38.0	26.4	30.3	19.9	10.4	14.7
C458	26.8	29.6	34.8	42.6	22.2	29.2	25.7	12.3	18.6
S100	26.8	29.9	33.3	41.3	25.4	31.3	28.8	12.9	17.1
Patoka	28.4	30.3	35.6	39.0	23.9	31.8	17.2	11.4	16.8
C439	26.3	30.5	35.3	40.5	22.9	28.3	22.4	11.0	15.8
C453	26.9	30.3	33.1	39.0	25.0	28.1	28.2	12.7	20.7
S55-19	20.0	30.1	27.9	37.1	22.4	31.5	19.7	9.7	19.2
Gibson	20.5	27.5	27.4	38.1	23.5	22.8	21.9	11.3	20.0
Mean	25.8	33.1	33.2	40.2	24.4	29.3	24.3	11.5	19.4
Coef.of Var.(%)	10.9	13.3	10.9	6.9	7.9	9.1	--	--	--
B.N.f.S.(5%)	3.9	6.1	5.1	3.9	2.7	3.8	--	--	--
	Yield Rank								
C508	1	1	8	4	8	2	7	9	8
C101	3	6	2	2	14	6	4	13	3
C470	4	8	9	10	6	1	2	1	5
C463	14	5	5	9	9	9	5	9	9
C464	12	7	1	1	1	15	6	11	11
C461	8	4	12	13	12	14	10	6	5
C425	11	2	14	6	3	9	9	14	2
C447	9	2	7	8	4	13	13	5	1
Chief	13	15	13	15	2	7	14	14	16
C458	6	14	6	3	16	8	7	4	11
S100	6	13	10	5	5	5	1	2	13
Patoka	2	10	3	11	9	3	16	7	14
C439	9	9	4	7	13	11	11	11	15
C453	5	10	11	11	6	12	3	3	4
S55-19	16	12	15	16	15	4	15	16	10
Gibson	15	16	16	14	11	16	12	8	7

Table 45. Summary of lodging and height data for the strains in the Uniform Test, Group IV, 1946.

Strain	Mean of 15 Tests[1]	George-town Del.	Belts-ville Md.	Blacks-burg Va.	Worth-ington Ind.	Vin cennes Ind.	Evans-ville Ind.	Urbana Ill.	Edge-wood Ill.	Ston-ington Ill.
C508	2.2		3.5	2.5	2.3	2.0	1.2	2.3	3.0	2.0
C101	3.1		4.0	3.5	3.3	3.3	2.8	3.3	2.5	2.5
C470	2.8		4.5	1.0	2.9	2.5	2.3	2.8	3.5	3.0
C463	2.4		4.0	-	2.7	2.0	1.5	2.8	2.5	2.0
C464	2.5		3.5	3.5	2.8	2.0	2.2	2.6	3.0	3.0
C461	2.4		4.0	3.5	2.7	2.0	1.7	2.3	2.5	2.5
C425	2.9		4.0	4.0	3.5	3.0	2.3	3.3	3.0	3.0
C447	3.1		3.5	4.0	3.8	3.0	2.5	3.5	3.0	3.0
Chief	3.1		4.0	2.5	3.0	3.0	2.2	2.8	3.0	3.0
C458	2.8		4.0	3.0	3.2	2.5	2.1	3.0	2.5	3.0
S100	2.7		3.5	3.5	3.0	2.3	1.7	3.0	4.0	3.0
Patoka	2.6		4.0	1.5	3.0	3.0	1.7	3.0	2.0	3.0
C439	2.4		3.5	3.0	2.8	2.5	1.5	3.0	2.5	2.5
C453	3.0		4.5	4.5	3.4	3.0	3.0	3.0	2.5	3.0
S55-19	3.0		3.5	3.5	3.0	3.0	2.4	3.3	4.0	3.0
Gibson	2.9		4.0	2.0	3.3	3.0	2.3	3.3	3.0	3.0
Mean	2.7		3.9	3.0	3.0	2.6	2.1	3.0	2.9	2.8
	Mean of 16 Tests[2]				Height					
C508	36	34	42	43	43	39	39	44	36	41
C101	40	37	42	43	49	44	44	41	42	45
C470	42	40	43	47	51	44	48	44	41	48
C463	41	37	44	--	51	47	46	45	42	48
C464	41	37	45	43	51	46	47	47	39	45
C461	37	33	39	39	48	39	42	44	37	43
C425	40	38	43	42	51	47	46	45	43	43
C447	42	42	43	41	56	46	48	45	43	49
Chief	46	43	48	50	55	57	52	52	48	52
C458	40	38	45	45	51	44	44	43	39	46
S100	45	40	49	45	53	50	51	47	44	50
Patoka	34	32	40	41	42	35	37	39	34	41
C439	39	37	43	41	49	44	46	43	40	47
C453	41	38	46	45	55	43	46	45	41	47
S55-19	41	37	45	47	51	45	48	53	43	48
Gibson	39	37	43	41	49	43	43	45	44	48
Mean	40	38	44	44	50	45	45	45	41	46

[1] Blacksburg and Milo not included in the mean.

[2] Blacksburg not included in the mean.

Table 45. (Continued)

Strain	Free-burg Ill.	Clayton Ill.	Els-berry Mo.	Sikes-ton Mo.	Shelby-ville Mo.	Colum-bia Mo.	Lath-rop Mo.	Milo Mo.	Man-hattan Kans.
C508	2.0	2.0	3.5	3.0	1.0	1.0	3.0	1.0	1.0
C101	3.5	3.5	4.0	3.0	1.0	2.8	3.5	1.0	3.0
C470	3.0	3.3	3.5	2.5	1.0	3.0	3.0	1.0	1.6
C463	2.0	2.5	3.0	2.5	1.0	2.5	3.0	1.0	1.7
C464	2.5	2.8	2.5	2.3	1.3	2.5	3.0	1.0	1.0
C461	3.0	2.5	2.5	3.0	1.0	2.0	3.0	1.0	1.1
C425	3.0	3.0	3.0	3.0	1.3	3.0	3.0	1.0	2.0
C447	3.0	3.0	4.0	2.5	1.8	3.0	4.0	1.0	2.9
Chief	3.0	3.8	4.0	3.8	1.8	3.0	4.0	1.0	2.1
C458	3.5	3.3	3.5	3.0	1.0	2.8	3.0	1.0	1.3
S100	3.0	3.0	3.0	2.8	1.0	2.8	3.0	1.0	1.4
Patoka	3.0	3.0	3.5	3.0	1.0	2.0	3.0	1.0	1.1
C439	2.5	2.5	3.0	2.5	1.0	2.3	2.5	1.0	1.3
C453	3.0	3.0	4.0	3.0	1.0	3.0	3.0	1.0	2.1
S55-19	3.0	3.3	4.0	2.3	1.0	3.0	3.0	1.0	2.5
Gibson	2.5	3.0	4.0	2.5	2.0	2.5	3.5	1.0	1.1
Mean	2.8	3.0	3.4	2.9	1.2	2.6	3.2	1.0	1.7

	Height							
C508	37	38	40	26	34	41	19	22
C101	40	40	41	31	40	48	24	24
C470	41	47	47	31	39	48	26	27
C463	38	45	47	29	38	47	23	26
C464	40	44	45	30	38	48	23	25
C461	40	42	41	26	35	42	20	22
C425	41	42	45	29	39	46	22	25
C447	43	40	47	34	40	44	24	31
Chief	45	60	54	30	46	53	22	24
C458	41	45	46	29	38	47	35	25
S100	46	44	50	35	44	51	28	31
Patoka	35	35	35	30	34	40	19	20
C439	40	40	44	28	38	43	22	23
C453	38	40	44	32	37	45	26	26
S55-19	40	38	45	31	40	45	25	27
Gibson	38	37	41	31	36	42	24	23
Mean	40	42	44	30	39	46	23	25

Table 46. Summary of maturity data, days earlier (-) or later (+) than Gibson, and seed quality data for the strains in the Uniform Test, Group IV, 1946

Strain	Mean of 14 Tests[1]	George-town Del.	Belts-ville Md.	Blacks-burg Va.	Worth-ington Ind.	Vin-cennes Ind.	Evans-ville Ind.	Urbana Ill.	Edge-wood Ill.	Ston-ington Ill.
C508	+1.1	0	+8	+2	0	-2	0	0	-1	
C101	+3.1	+4	+5	+5	+4	-1	0	+3	-1	
C470	+0.7	0	+4	-1	+1	-2	-2	+1	-1	
C463	-0.4	0	+5	--	-3	-2	-5	+1	-2	
C464	+3.5	+2	+5	+2	+4	0	-2	+4	+1	
C461	-3.6	0	-2	-3	-6	-4	-9	-1	-4	
C425	-0.2	-1	+2	-2	+2	-1	0	+1	-1	
C447	+2.7	+2	+3	-1	+4	-2	-3	+3	+1	
Chief	-2.4	0	0	-4	-2	-2	-5	-1	-4	
C458	+4.1	+2	+10	+2	+2	-1	+1	+3	+2	
S100	+8.5	+9	+10	+7	+8	+3	+6	+7	+4	
Patoka	-1.1	-2	+6	-8	-2	-3	-2	-1	-5	
C439	+0.7	+2	+2	-1	0	-1	-3	+2	0	
C453	+2.1	+5	+5	+3	+3	-3	-2	+1	-1	
S55-19	-0.4	+1	+4	0	0	-1	-3	0	-2	
Gibson	0	0	0	0	0	0	0	0	0	
Date planted		6/4	6/7	5/29	5/30	5/31	6/8	5/30	6/11	
Gibson matured		9/28	10/10	10/10	10/13	10/19	10/18	10/7	10/12	
Days to mat.	127	116	125	134	136	141	132	130	123	

	Mean of 15 Tests[2]	Seed Quality								
C508	2.0	3	2.0	2.0	2	3	2	1	1	2
C101	2.1	3	2.5	2.5	2	2	2	1	1	2
C470	1.9	4	2.5	2.0	2	3	2	1	1	2
C463	1.7	4	2.0	--	1	2	1	1	1	2
C464	1.7	4	2.0	1.0	1	2	1	1	1	2
C461	1.5	3	2.5	1.0	1	2	1	1	1	2
C425	1.7	3	2.5	2.0	2	2	1	1	1	2
C447	1.9	3	2.5	1.0	2	3	1	1	1	2
Chief	2.0	4	2.0	2.0	2	3	2	1	1	2
C458	2.1	3	2.0	2.0	2	3	2	1	1	3
S100	1.8	3	2.0	1.0	2	2	1	1	1	3
Patoka	2.2	3	3.5	1.0	2	2	2	1	2	2
C439	1.6	4	2.0	1.5	1	2	1	1	1	2
C453	1.8	4	2.5	1.5	2	3	1	1	1	2
S55-19	2.2	4	3.0	2.5	3	3	2	1	2	3
Gibson	2.0	4	2.5	1.5	2	3	2	1	1	2
Mean	1.9	3.5	2.4	1.6	1.8	2.5	1.5	1.0	1.1	2.2

[1] Blacksburg not included in the mean.

[2] Blacksburg, Urbana, and Clayton not included in the mean.

Table 46. (Continued)

Strain	Freeburg Ill.	Clayton Ill.	Elsberry Mo.	Sikeston Mo.	Shelbyville Mo.	Columbia Mo.	Lathrop Mo.	Milo Mo.	Manhattan Kans.
C508			+4	-1	0	+2	+4	-1	+2
C101			+8	+2	+1	+7	+7	+3	+2
C470			+4	0	-1	+3	+4	-1	0
C463			+4	-3	-3	+1	+2	-3	+2
C464			+10	+2	+2	+8	+8	+2	+3
C461			-1	-6	-5	-2	-3	-6	-1
C425			+2	-2	-3	-1	+1	-2	0
C447			+9	+2	+4	+5	+6	+2	+2
Chief			-2	-2	-6	-4	-4	-7	+5
C458			+9	+2	+4	+9	+10	0	+5
S100			+11	+9	+11	+10	+11	+11	+9
Patoka			-1	-2	-1	-1	-2	-1	+1
C439			+4	+1	-1	+2	+2	-3	+3
C453			+6	+2	+1	+5	+5	+1	+1
S55-19			0	0	-4	-1	-2	-2	+4
Gibson			0	0	0	0	0	0	0
Date planted			6/3	6/5	5/28	6/7	5/25	5/23	5/28
Gibson matured			10/2	9/24	9/30	10/4	10/7	9/21	10/16
Days to mature			121	111	125	119	135	121	141
					Seed Quality				
C508	2	1	1.0	1.5	1.0	1.3	2.0	3.0	3
C101	2	1	1.3	1.5	1.3	2.8	1.5	3.0	3
C470	2	1	1.0	1.3	1.0	1.3	1.0	2.3	2
C463	1	1	1.0	1.0	1.0	1.3	1.0	2.7	3
C464	1	1	1.0	1.0	1.0	1.8	1.0	2.7	3
C461	1	1	1.0	1.0	1.0	1.5	1.0	2.0	2
C425	2	1	1.0	1.3	1.0	1.5	1.0	2.3	2
C447	2	1	1.0	1.3	1.0	2.0	1.5	2.7	2
Chief	2	1	1.0	1.5	1.0	1.3	2.0	2.7	3
C458	2	1	1.0	2.0	1.0	2.8	2.0	2.3	3
S100	2	1	1.0	1.3	1.0	1.3	1.0	2.7	3
Patoka	2	1	1.0	2.0	1.0	1.3	2.0	2.7	4
C439	1	1	1.0	1.0	1.0	1.3	1.5	1.7	2
C453	1	1	1.0	1.5	1.0	1.5	1.0	2.7	2
S55-19	3	1	1.0	1.5	1.0	1.3	1.5	2.3	2
Gibson	2	1	1.0	1.3	1.0	2.3	1.5	3.0	2
Mean	1.8	1.0	1.0	1.4	1.0	1.7	1.4	2.5	2.5

Table 47. Summary of seed weight data for the strains in the Uniform Test, Group IV, 1946.

Strain	Mean of 17 Tests	Composite of 12 locations[1]	George-town Del.	Belts-ville Md.	Blacks-burg Va.[2]	Worth-ington Ind.[3]	Vin-cennes Ind.[3]	Evans-ville Ind.[3]	Els-berry Mo.[3]	Sikes-ton Mo.	Shelby-ville Mo.[3]	Colum-bia Mo.[3]	Lath-rop Mo.[3]	Milo Mo.	Man-hattan Kans.
C508	17.6	17.8	15.0	16.6	17.4	17.9	19.3	19.8	17.4	18.8	18.4	17.3	20.5	16.2	18.2
C101	17.2	17.3	15.0	16.0	17.5	17.7	18.5	20.5	16.6	18.2	15.6	14.1	20.5	16.3	19.4
C470	14.1	13.9	13.5	13.0	16.0	14.0	15.7	16.2	13.6	14.9	14.1	14.1	17.4	14.6	16.5
C463	14.7	14.7	13.0	13.6	--	14.5	15.3	17.5	14.0	16.3	14.6	14.0	19.3	14.2	16.4
C464	14.6	14.5	13.1	14.5	13.9	14.3	14.5	17.0	14.1	16.0	15.4	14.9	18.7	13.5	16.9
C461	13.8	13.8	12.7	11.9	13.2	14.6	14.9	17.1	12.9	14.8	13.5	13.7	17.7	13.6	15.8
C425	13.9	13.7	13.0	13.0	14.3	14.2	14.1	16.7	13.8	15.3	14.2	13.8	17.4	15.7	14.9
C447	13.8	13.5	12.8	12.2	13.8	13.5	13.6	15.7	13.5	15.3	13.3	14.0	18.4	15.5	17.1
Chief	13.6	13.6	12.5	12.8	12.0	13.2	13.9	15.6	14.0	15.2	13.3	13.0	16.2	11.9	14.8
C458	15.5	15.3	15.1	14.9	15.9	14.7	15.9	17.8	14.3	16.9	13.7	15.2	19.2	14.8	17.9
S100	13.9	13.7	12.8	13.7	13.5	14.6	14.8	17.5	13.1	15.7	15.7	14.2	16.4	14.3	15.3
Patoka	19.0	19.3	16.8	16.7	17.5	20.4	19.9	22.5	17.3	19.4	18.9	19.0	21.8	18.2	20.0
C439	14.1	14.1	13.0	12.8	14.1	14.3	14.6	16.8	13.6	15.8	13.9	13.9	16.0	13.2	15.9
C453	14.0	13.7	13.9	13.6	14.3	13.9	14.4	15.6	14.0	16.2	13.9	16.1	17.4	13.4	16.6
S55-19	15.8	15.9	13.9	14.6	16.5	16.6	16.3	18.2	15.0	16.3	14.9	16.1	19.6	14.5	16.8
Gibson	13.8	13.6	12.6	12.8	14.1	13.8	13.0	16.6	13.3	15.5	14.2	13.2	16.7	15.0	16.3
Mean	15.0	14.9	13.7	13.9	14.9	15.2	15.5	17.6	14.4	16.3	14.9	14.8	18.3	14.7	16.9

[1]Composite from Worthington, Vincennes, Evansville, Urbana, Edgewood, Stonington, Freeburg, Clayton, Elsberry, Shelbyville, Columbia, and Lathrop.

[2]Blacksburg not included in the mean.

[3]Individual seed weights taken at these locations but not included in the mean.

Table 48. Three-year summary of mean agronomic and chemical data for the strains in the Uniform Test, Group IV, 1944-46.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	45	35	36	32	38	41	44	44	44
S100	27.2	2.7	42	+7.8	1.8	14.0	43.0	18.8	133.7
C101	27.1	3.0	37	+2.0	2.2	16.6	40.9	20.2	133.8
Chief	25.8	2.9	42	-2.4	2.1	13.0	41.1	20.2	132.6
Patoka	25.4	2.2	31	-2.3	2.1	17.6	43.8	20.0	132.4
Gibson	24.0	2.7	36	0	1.9	13.8	40.8	19.7	134.1
Mean	25.9	2.7	38		2.0	15.0	41.9	19.8	133.3

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

Table 49. Three-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1944-46.

Strain	Mean of 45 Tests	Evansville Ind.	Urbana Ill.	Stonington Ill.	Edgewood Ill.	Freeburg Ill.	Clayton Ill.	Sikeston Mo.	Columbia Mo.	Manhattan Kans.
S100	27.2	40.2	27.8	20.6	23.2	25.5	22.6	31.2	24.1	23.9
C101	27.1	38.4	28.1	25.2	25.8	24.5	26.3	28.9	23.3	25.8
Chief	25.8	36.3	32.0	26.9	23.8	24.3	24.3	24.2	22.7	22.9
Patoka	25.4	34.5	32.3	27.3	20.9	24.7	24.8	25.3	23.6	22.9
Gibson	24.0	33.7	27.3	23.2	21.3	21.4	22.9	25.1	21.7	24.6
Mean	25.9	36.6	29.5	24.6	23.0	24.1	24.2	26.9	23.1	24.0
		Yield Rank								
S100		1	4	5	3	1	5	1	1	3
C101		2	3	3	1	3	1	2	3	1
Chief		3	2	2	2	4	3	5	4	4
Patoka		4	1	1	5	2	2	3	2	4
Gibson		5	5	4	4	5	4	4	5	2

Table 50. Summary of yield in bushels per acre and yield rank for the strains in Uniform Test, Group IV, during the four-year period, 1943-1946.

Strain	Mean of 41 Tests	George-town Del.	Belts-ville Md.	North Vernon Ind.	Wheat-land Ind.	Worth-ington Ind.	Vin-cennes Ind.	Evans-ville Ind.	Urbana Ill.	Edge-wood Ill.
Years Tested		1945 1946	1945 1946	1943	1944	1945 1946	1945 1946	1943- 1946	1944- 1946	1944- 1946
C470	27.5	32.3	30.4	19.9	9.9	36.2	33.7	37.0	29.1	24.1
C463	27.2	31.0	29.0	18.1	7.6	36.5	33.1	35.4	33.4	25.9
C464	27.1	29.6	30.4	18.4	5.6	38.4	33.3	37.4	30.4	24.8
C458	27.0	31.9	30.2	20.9	8.6	34.8	31.8	36.9	30.2	23.8
C461	26.7	29.1	29.1	17.4	8.4	33.0	32.7	34.2	34.0	25.2
C453	26.7	31.8	27.9	19.4	9.0	33.5	31.1	35.6	30.9	25.3
C447	26.7	33.1	29.1	20.2	7.8	31.8	29.3	34.3	30.0	24.7
C425	26.6	33.2	28.2	19.8	6.6	34.3	30.7	33.4	31.1	24.5
C439	26.3	29.5	30.3	16.3	8.4	36.5	32.8	35.1	30.5	24.4
Chief	26.3	31.5	31.1	17.1	5.4	38.4	31.8	34.0	32.7	23.7
Patoka	25.6	28.7	28.1	15.5	11.0	33.9	32.8	32.8	32.3	20.9
Gibson	23.5	27.9	26.1	16.4	4.6	30.4	25.2	31.3	28.0	21.4
Mean	26.4	30.8	29.2	18.3	7.7	34.8	31.5	34.8	31.1	24.1

	Yield Rank								
C470	3	2	3	2	5	1	2	12	8
C463	7	8	7	8	3	3	5	2	1
C464	8	2	6	10	1	2	1	8	4
C458	4	5	1	4	6	7	3	9	9
C461	10	6	8	5	10	6	8	1	3
C453	5	11	5	3	9	9	4	6	2
C447	2	6	2	7	11	11	7	10	5
C425	1	9	4	9	7	10	10	5	6
C439	9	4	11	5	3	4	6	7	7
Chief	6	1	9	11	1	7	9	3	10
Patoka	11	10	12	1	8	4	11	4	12
Gibson	12	12	10	12	12	12	12	12	11

Table 50. (Continued)

Strain	Stoning-ton Ill.	Free-burg Ill.	Clay-ton Ill.	Els-berry Mo.	Sikes-ton Mo.	Shelby-ville Mo.	Colum-bia Mo.	Lath-rop Mo.	Milo Mo.	Thayer Kans.	Man-hattan Kans.
Years Tested	1945 1946	1945 1946	1945 1946	1946	1945 1946	1945 1946	1944 1946	1945 1946	1946	1945	1945 1946
C470	27.5	22.7	25.2	33.8	33.3	20.3	26.7	24.3	14.0	13.7	20.9
C463	27.6	19.5	26.2	35.1	32.6	20.9	23.9	23.5	11.1	13.1	21.2
C464	24.7	19.9	23.6	38.7	35.6	23.2	23.5	21.8	11.0	13.8	19.8
C458	26.3	21.7	23.7	34.8	34.9	20.5	25.0	22.6	12.3	13.0	19.8
C461	30.3	23.4	28.3	32.2	30.6	19.5	22.1	22.2	11.8	13.9	21.3
C453	22.7	22.5	24.7	33.1	33.9	22.1	23.4	24.3	12.7	12.7	21.5
C447	24.6	21.8	28.8	34.4	34.1	22.2	24.6	20.8	11.9	13.2	23.5
C425	27.2	20.6	29.8	28.6	33.1	22.1	23.4	22.9	10.4	13.7	22.3
C439	25.2	22.0	24.3	35.3	34.7	19.7	22.9	20.0	11.0	13.6	18.2
Chief	28.4	22.3	23.2	30.4	30.8	21.6	22.5	19.5	10.4	13.4	18.4
Patoka	29.9	23.4	23.7	35.6	31.8	19.3	22.3	17.0	11.4	13.3	18.3
Gibson	21.4	17.7	23.1	27.4	30.0	20.3	20.6	19.1	11.3	16.3	19.8
Mean	26.3	21.5	25.4	33.3	33.0	21.0	23.4	21.5	11.6	13.6	20.4

	Yield Rank										
C470	5	3	5	7	6	8	1	1	1	4	6
C463	4	11	4	4	8	6	4	3	8	10	5
C464	9	10	10	1	1	1	5	7	9	3	7
C458	7	8	8	5	2	7	2	5	3	11	7
C461	1	1	3	9	11	11	11	6	5	2	4
C453	11	4	6	8	5	3	6	1	2	12	3
C447	10	7	2	6	4	2	3	8	4	9	1
C425	6	9	1	11	7	3	6	4	11	4	2
C439	8	6	7	3	3	10	8	9	9	6	12
Chief	3	5	11	10	10	5	9	10	11	7	10
Patoka	2	1	8	2	9	12	10	12	6	8	11
Gibson	12	12	12	12	12	8	12	11	7	1	7

Table 51. Summary of mean agronomic and chemical data for the strains in the Uniform Test, Group IV, during the four-year period, 1943-46.

Strain	Mean Yield Bu./A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Proetin	Percentage of Oil	Iodine Number of Oil
No. of Tests	41	33	34	29	35	33	40	40	40
C470	27.5	2.7	39	-0.8	1.8	13.6	41.1	20.0	134.0
C463	27.2	2.3	38	-1.7	1.7	14.2	40.3	21.0	130.0
C464	27.1	2.4	38	+2.2	1.8	14.4	41.2	20.5	130.8
C458	27.0	2.7	37	+2.5	2.1	15.2	39.1	20.8	130.5
C461	26.7	2.2	35	-5.2	1.6	13.3	40.7	20.5	130.7
C453	26.7	2.9	38	+1.1	1.9	14.0	39.5	20.6	132.7
C447	26.7	3.0	40	+1.5	2.0	13.6	38.7	20.8	132.6
C425	26.6	2.7	38	-1.1	1.9	13.5	40.1	20.7	131.7
C439	26.3	2.3	37	-0.3	1.6	13.8	40.8	20.6	130.8
Chief	26.3	2.8	43	-2.8	2.1	13.1	40.7	20.3	132.8
Patoka	25.6	2.3	32	-2.1	2.0	17.9	43.6	20.1	132.3
Gibson	23.5	2.8	37	0	1.9	13.7	40.4	19.9	134.5
Mean	26.4	2.6	38		1.9	14.2	40.5	20.5	132.0

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

Table 52. Five-year summary of mean agronomic and chemical data for the strains in the Uniform Test, Group IV, 1942-46.

Strain	Mean Yield Bu./A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Seed Weight	Percentage of Protein	Percentage of Oil	Iodine Number of Oil
No. of Tests	66	56	56	47	56	63	63	63	63
Chief	26.3	2.8	44	-2.8	2.1	12.6	40.5	20.7	132.2
Patoka	26.2	2.1	33	-2.3	2.0	17.0	43.5	20.4	131.9
S100	26.1	2.6	43	+7.8	2.0	13.2	42.2	19.0	134.0
Gibson	24.6	2.7	37	0	1.8	13.4	40.4	20.2	133.9
Mean	25.8	2.6	39		2.0	14.1	41.7	20.1	133.0

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

Table 53. Five-year summary of yield in bushels per acre and yield rank for the strains in the Uniform Test, Group IV, 1942-46.

Strain	Mean of 66 Tests	Evansville Ind.	Urbana Ill.	Stonington Ill.	Freeburg Ill.	Clayton Ill.	Sikeston Mo.	Columbia Mo.
Chief	26.3	35.7	34.3	26.8	28.2	24.2	22.2	20.6
Patoka	26.2	34.3	35.6	26.1	29.6	24.6	22.1	22.3
S100	26.1	39.6	29.7	21.8	28.6	21.4	26.6	21.8
Gibson	24.6	34.9	32.0	22.6	25.4	22.3	22.3	20.6
Mean	25.8	36.1	32.9	24.3	28.0	23.1	23.3	21.3
		Yield Rank						
Chief		2	2	1	3	2	3	3
Patoka		4	1	2	1	1	4	1
S100		1	4	4	2	4	1	2
Gibson		3	3	3	4	3	2	3

UNIFORM HYBRID LINE TESTS I AND IIE

Table 54 to 59 include data on two groups of selections from the cross Lincoln x Richland and the backcross Lincoln x (Lincoln x Richland). These strains were in the F6 generation or the F5 generation from the backcross. All the strains in these tests are from this cross except the check varieties, A3K884, A4-107-12, Wis. Manchu 3, Earlyana, Richland and Mandarin (Ottawa).

The earlier strains, tables 54 and 55, were grown at Madison, Walkerton, and St. Paul. The test at St. Paul was discarded due to extreme drouth. Many of the selections in this test are rather late for Group I and should be in Group II.

The later strains, tables 56 to 59, were grown at East Lansing, Walkerton, Compton, and Madison, but early frosts at East Lansing damaged the plot so badly that the data were not used in computing means. Most of the entries in this group are earlier than A4-107-12 and have not yielded as well. Several are high in oil, but it is difficult to find a strain high in all desirable characteristics.

Table 54. Summary of mean agronomic and chemical data at Madison, Wisconsin, and Walkerton, Indiana, for the strains in the Uniform Hybrid Line Test I, 1946.

Strain	Mean Yield Bu/A.	Lodging	Height Inches	Maturity[1]	Seed Quality	Percentage of Oil	Iodine Number of Oil
LX938-522-3	31.9	1.5	30	+10.5	1.0	21.9	137.1
LX938-55-31	30.7	1.7	32	+8.0	1.0	20.8	135.7
LX938-71-4	30.7	1.9	33	+9.5	1.0	21.0	135.5
LX938-102-37	30.4	1.5	32	+9.5	1.0	20.9	134.2
M420-33	30.2	1.7	29	+10.0	1.0	20.8	135.8
LX938-408-34	29.9	1.4	31	+9.0	1.0	20.8	136.1
A3K133-1	28.6	1.7	29	+12.0	1.5	20.5	133.3
A3K458-1	28.5	1.0	33	+7.5	1.0	20.2	133.1
A3K170-4	28.4	1.7	30	+8.0	1.0	20.4	134.2
W4-3754	28.0	1.5	26	+4.0	1.0	20.6	135.7
W4-3190	28.0	1.3	30	+3.5	1.5	20.9	134.8
W4-4018	27.9	1.4	30	+7.0	1.0	20.9	133.7
LX938-37-3	27.8	1.5	29	+7.5	1.0	20.9	135.5
M303-1	27.6	1.3	29	+10.0	1.0	21.1	135.3
LX938-582-33	27.4	1.4	30	+9.5	1.0	20.6	135.9
W4-2378	27.4	1.3	29	+5.5	1.0	20.7	134.5
A3K273-6	27.4	1.4	30	+8.0	1.0	20.6	132.8
A3K287-2	27.2	1.0	29	+4.0	2.0	21.5	135.0
W4-2175	27.2	1.3	30	+6.5	1.0	20.7	134.4
W4-3284	27.0	1.7	32	+6.0	2.0	20.5	136.6
W4-3723	27.0	1.0	27	+1.5	1.0	20.6	135.4
W4-4026	26.9	1.2	28	+6.5	1.0	21.1	135.7
LX938-7-11	26.9	1.2	29	+10.0	1.0	20.0	134.1
LX938-511-29	26.8	1.2	26	+9.5	1.0	20.6	134.7
W4-3752	26.6	1.3	30	+9.0	2.0	20.0	134.0
W4-2129	26.5	1.0	26	+3.0	1.5	20.1	135.0
LX938-420-32	26.3	1.5	28	+9.0	1.0	21.1	135.5
W4-3673	26.1	1.0	29	+3.5	1.5	21.0	134.6
M125-35	25.9	1.2	26	+6.0	2.0	21.2	134.3
M278-9	25.7	1.7	29	+5.0	1.0	20.7	134.8
W4-2115	25.6	1.2	26	+3.5	1.5	20.6	134.0
W4-2373	25.4	1.0	26	+3.5	1.5	20.9	134.3
A3K884	25.3	1.2	28	+5.5	1.0	20.7	131.7
W4-2371	25.0	1.0	26	+5.0	1.0	20.1	135.2
M135-31	23.4	1.0	26	+6.0	1.5	21.6	134.2
Mandarin (Ottawa)	21.8	1.0	25	0	1.5	20.4	131.9
Mean	27.3	1.3	29	+6.7	1.2	20.8	134.7

[1] Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 109 days to mature.

Table 55. Summary of agronomic and chemical data at Madison, Wisconsin, and Walkerton, Indiana, for the strains in the Uniform Hybrid Line Test I,1946.

Strain	Yield(Bu/A)		Yield Rank		Maturity[1]		Lodging		Oil	
	Madison Wis.	Walkerton Ind.	Madison Wis.	Walkerton Ind.	Madison Wis.	Walkerton Ind.	Madison Wis.	Walkerton Ind.	Madison Wis.	Walkerton Ind.
LX938-522-3	29.2	34.5	1	2	+9	+12	2.0	1.0	22.4	21.4
LX938-55-31	27.8	33.6	4	4	+5	+11	2.0	1.3	21.2	20.4
LX938-71-4	26.5	34.9	10	1	+7	+12	2.0	1.7	21.5	20.5
LX938-102-37	28.2	32.5	3	5	+9	+10	2.0	1.0	21.4	20.3
M420-33	26.3	34.0	12	3	+6	+14	1.7	1.7	21.0	20.6
LX938-408-34	28.3	31.4	2	6	+8	+10	1.7	1.0	21.2	20.3
A3K133-1	26.8	30.4	8	10	+11	+13	2.0	1.3	21.0	19.9
A3K458-1	26.3	30.7	12	8	+4	+11	1.0	1.0	21.1	19.3
A3K170-4	27.3	29.5	5	18	+5	+11	2.0	1.3	21.0	19.7
W4-3754	25.0	31.0	21	7	+3	+5	1.7	1.3	20.9	20.2
W4-3190	26.0	29.9	14	13	+1	+6	1.3	1.3	21.5	20.2
W4-4018	25.6	30.1	17	12	+5	+9	1.7	1.0	21.3	20.4
LX938-37-3	25.9	29.7	15	15	+6	+9	2.0	1.0	21.4	20.4
M203-1	26.5	28.7	10	21	+9	+11	1.3	1.3	21.9	20.2
LX938-582-33	26.9	27.9	6	27	+9	+10	1.7	1.0	21.2	20.0
W4-2378	25.6	29.2	17	19	+3	+8	1.3	1.3	21.4	20.0
A3K273-6	26.9	27.8	6	28	+6	+10	1.7	1.0	21.1	20.1
A3K287-2	26.7	27.6	9	29	+2	+6	1.0	1.0	21.9	21.1
W4-2175	25.7	28.6	16	22	+4	+9	1.3	1.3	21.3	20.0
W4-3284	23.6	30.3	27	11	+4	+8	1.3	2.0	21.1	19.9
W4-3723	24.7	29.2	22	19	+2	+1	1.0	1.0	21.2	19.9
W4-4026	23.3	30.5	30	9	+4	+9	1.3	1.0	21.7	20.4
LX938-7-11	25.6	28.1	17	25	+8	+12	1.3	1.0	20.6	19.4
LX938-511-29	23.8	29.8	26	14	+8	+11	1.0	1.3	21.1	20.1
W4-3752	23.5	29.7	29	15	+5	+13	1.3	1.3	20.8	19.2
W4-2129	23.2	29.7	31	15	0	+6	1.0	1.0	21.0	19.2
LX938-420-32	25.1	27.4	20	31	+9	+9	1.7	1.3	21.4	20.7
W4-3673	24.7	27.5	22	30	+1	+6	1.0	1.0	21.4	20.5
M125-35	23.2	28.6	31	22	+3	+9	1.0	1.3	21.9	20.4
M278-9	23.1	28.2	34	24	+4	+6	1.7	1.7	21.1	20.3
W4-2115	24.0	27.1	28	32	+1	+6	1.0	1.3	21.2	19.9
W4-2373	24.5	26.3	24	34	+1	+6	1.0	1.0	21.3	20.4
A3K884	22.4	28.1	35	25	+4	+7	1.3	1.0	21.1	20.2
W4-2371	23.2	26.7	31	33	+3	+7	1.0	1.0	20.8	19.4
M135-31	23.6	23.2	27	35	+5	+7	1.0	1.0	22.3	20.9
Mandarin (Ottawa)	22.4	21.1	35	36	0	0	1.0	1.0	20.6	20.1
Mean	25.3	29.3			+4.8	+8.6	1.4	1.2	21.3	20.2

[1] Days earlier (-) or later (+) than Mandarin (Ottawa). Mandarin (Ottawa) required 104 days to mature at Madison and 114 days to mature at Walkerton.

Table 56. Summary of mean agronomic and chemical data for the strains in the Uniform Hybrid Line Test IIE, 1946

Strain	Mean Yield Bu./A.	Lodging	Height	Maturity[1]	Seed Quality	Seed Weight[2]	Percentage of Protein[2]	Percentage of Oil[2]	Iodine Number of Oil[2]
A4-107-12	34.8	1.9	37	+0.3	1.0	16.7	40.7	20.5	129.8
LX938-282-32	32.8	2.3	36	-2.3	1.0	15.4	40.3	20.1	133.7
LX938-459-4	32.1	2.2	33	-3.0	1.0	13.7	40.0	20.6	135.0
W4-1223	32.1	3.1	34	-2.0	1.5	15.1	40.8	20.0	134.4
LX938-430-2	31.3	2.9	35	-1.7	1.0	14.0	41.2	20.3	134.3
LX938-128-31	31.2	2.2	34	-1.3	1.5	15.5	40.1	20.4	134.7
W4-2183	31.1	1.9	35	-5.0	1.5	14.6	40.6	19.9	132.9
LX938-43-4	31.1	2.6	35	-1.3	1.0	15.8	40.4	20.4	134.4
L4-1437	30.9	2.3	34	-0.7	1.5	15.5	41.9	20.4	134.5
LX938-136-31	30.7	2.1	35	-1.0	1.0	16.2	41.2	20.9	135.4
A3K273-5	30.6	1.8	34	-3.3	2.0	15.0	41.6	20.3	133.8
LX938-405-3	30.6	2.4	34	-2.3	1.0	16.3	41.6	20.4	134.5
W4-3958	30.4	2.2	32	-4.3	1.0	15.4	40.9	19.9	134.2
L4-275	30.3	2.1	37	-0.3	1.0	17.2	40.2	20.5	134.5
L4-401	30.3	2.3	34	-0.7	1.0	16.4	41.1	20.4	133.5
Wis. Manchu 3	30.3	3.0	38	-2.3	1.5	17.3	41.6	20.2	133.7
A3K490-1	30.3	2.0	33	-5.0	1.0	16.7	40.6	20.4	133.4
LX938-137-31	30.1	2.0	34	-2.0	1.0	14.9	41.6	20.0	134.8
W4-4056	30.0	2.5	33	-3.3	1.0	15.7	40.1	21.3	133.8
L4-501	29.9	2.6	36	+2.0	1.5	15.5	39.5	20.8	135.8
L4-2302	29.7	2.0	35	+1.3	2.0	16.5	40.4	20.8	134.0
LX938-185-32	29.6	2.2	36	-1.7	1.0	15.3	41.2	20.3	135.5
A3K570-3	29.6	2.3	36	-4.0	1.5	16.1	41.9	20.9	133.5
L4-1845	29.5	2.0	35	+2.0	1.5	16.9	39.0	21.1	134.7
Earlyana	29.5	2.9	37	-3.0	1.5	15.1	42.5	19.7	133.2
L4-3129	29.5	2.0	36	-1.3	1.0	16.0	40.7	20.6	136.0
LX938-181-35	29.4	2.0	35	-3.3	1.5	16.5	40.0	19.9	133.4
LX938-570-34	29.3	2.3	35	-2.3	1.0	16.0	40.8	20.6	134.5
LX938-579-38	28.6	2.4	35	-1.7	1.0	17.6	40.9	20.3	132.5
A3K233-1	28.6	2.1	34	-4.7	1.0	15.6	40.0	19.9	134.5
W4-2113	28.5	2.1	35	-5.0	1.0	14.5	41.6	19.7	134.7
LX938-80-38	28.4	2.9	33	-1.7	1.0	16.4	39.6	20.6	135.6
L4-3180	28.0	1.7	34	-2.0	1.0	18.2	40.5	20.7	134.6
A3K70-8	27.8	2.2	34	-2.3	1.0	15.0	41.0	20.2	132.4
Richland	27.7	2.2	33	0	1.0	16.8	40.4	20.3	129.9
A3K884	27.2	1.7	32	-8.0	1.0	16.4	41.3	20.4	130.0
Mean	30.0	2.3	35		1.2	15.9	40.8	20.4	133.9

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

[2]Composite of Walkerton, Madison, and Compton.

Table 57. Summary of yield in bushels per acre and yield rank for the strains in the Uniform Hybrid Line Test IIE, 1946.

Strain	Yield					Yield Rank			
	Mean of 3 Tests[1]	East Lansing Mich.	Walk-erton Ind.	Madi-son Wis.	Comp-ton Ill.	East Lansing Mich.	Walk-erton Ind.	Madi-son Wis.	Comp-ton Ill.
A4-107-12	34.8	9.7	36.0	32.7	35.7	33	2	1	3
LX938-282-32	32.8	12.5	33.0	32.5	33.8	19	7	2	12
LX938-459-4	32.1	13.6	35.4	27.7	33.2	9	3	13	8
W4-1223	32.1	13.0	33.6	26.8	35.8	14	4	21	2
LX938-430-2	31.3	16.0	28.7	30.6	34.5	3	26	3	4
LX938-128-31	31.2	12.0	32.8	28.3	32.4	22	10	11	17
W4-2183	31.1	9.7	36.6	23.7	33.1	33	1	36	11
LX938-43-4	31.1	18.1	31.3	28.6	33.4	2	16	9	7
L4-1437	30.9	14.8	32.9	26.9	32.8	4	8	16	12
LX938-136-31	30.7	12.2	31.5	28.5	32.0	21	12	10	19
A3K273-5	30.6	13.0	29.1	30.3	32.5	14	25	5	15
LX938-405-3	30.6	10.4	31.5	27.1	33.2	32	12	16	8
W4-3958	30.4	12.6	31.4	26.5	33.2	18	14	25	8
L4-275	30.3	11.0	27.4	29.4	34.2	30	31	6	6
L4-401	30.3	12.8	28.4	26.5	36.1	17	27	23	1
Wis. Manchu 3	30.3	13.1	33.6	26.9	30.5	12	4	18	31
A3K490-1	30.3	20.9	32.2	27.4	31.2	1	11	14	25
LX938-137-31	30.1	14.5	32.9	25.7	31.6	7	8	30	23
W4-4056	30.0	12.5	33.2	27.2	29.7	19	6	15	34
L4-501	29.9	11.8	27.2	30.6	31.9	26	32	3	21
L4-2302	29.7	13.1	30.7	26.0	32.5	12	18	29	15
LX938-185-32	29.6	13.5	30.7	26.6	31.5	10	18	22	24
A3K570-3	29.6	12.0	29.8	27.8	31.2	22	22	12	25
L4-1845	29.5	11.6	29.9	24.1	34.5	27	21	34	4
Earlyana	29.5	11.5	31.3	24.4	32.7	28	15	33	14
L4-3129	29.5	10.8	30.7	25.7	32.0	31	18	30	19
LX938-181-35	29.4	14.7	31.2	24.9	32.2	5	17	32	18
LX938-570-34	29.3	13.8	28.3	28.8	30.9	8	29	8	27
LX938-579-38	28.6	11.9	27.8	26.4	31.7	25	30	25	22
A3K233-1	28.6	8.8	26.6	28.9	30.4	35	34	7	32
W4-2113	28.5	13.0	29.3	26.1	30.0	14	24	28	33
LX938-80-38	28.4	13.5	28.4	26.2	30.7	10	27	27	29
L4-3180	28.0	12.0	26.8	26.4	30.9	22	33	25	27
A3K70-8	27.8	14.7	25.8	27.0	30.6	5	35	17	30
Richland	27.7	11.1	29.5	23.9	29.7	29	23	35	34
A3K884	27.2	7.5	25.7	26.9	29.0	36	36	18	36
Mean	30.0	12.7	30.4	27.3	32.2				
Coef. of Var. (%)		--	9.6	8.1	5.9				
Bu.Nec.for Sig.(5%)		--	4.1	3.6	2.7				

[1]East Lansing not included in the mean.

Table 58. Summary of lodging and height data for the strains in the Uniform Hybrid Line Test IIE, 1946.

Strain	Lodging					Height			
	Mean of 3 Tests[1]	East Lansing Mich.	Walker-ton Ind.	Madi-son Wis.	Comp-ton Ill.	Mean	Walker-ton Ind.	Madi-son Wis.	Comp-ton Ill.
A4-107-12	1.9	1	1.3	2.3	2.0	37	36	38	38
LX938-282-32	2.3	1	2.0	2.7	2.3	36	34	37	37
LX938-459-4	2.2	1	2.0	2.0	2.5	33	31	34	34
W4-1223	3.1	1	3.0	3.3	3.0	34	30	36	37
LX938-430-2	2.9	1	2.3	3.3	3.0	35	30	36	38
LX938-128-31	2.2	1	2.0	2.3	2.3	34	32	35	35
W4-2183	1.9	1	1.3	2.3	2.0	35	36	33	36
LX938-43-4	2.6	1	2.3	2.7	2.8	35	34	37	35
L4-1437	2.3	1	2.0	2.7	2.3	34	33	34	36
LX938-136-31	2.1	1	2.3	2.0	2.0	35	35	35	35
A3K273-5	1.8	1	1.0	2.0	2.3	34	34	33	36
LX938-405-3	2.4	1	2.3	2.0	2.8	34	34	37	42
W4-3958	2.2	1	1.7	2.0	2.8	32	30	33	34
L4-275	2.1	1	2.0	2.3	2.0	37	37	37	38
L4-401	2.3	1	2.0	2.3	2.5	34	32	35	36
Wis. Manchu 3	3.0	1	3.0	3.0	3.0	38	38	36	41
A3K490-1	2.0	1	1.3	2.3	2.3	33	30	34	34
LX938-137-31	2.0	1	2.0	2.0	2.0	34	35	33	35
W4-4056	2.5	1	2.3	2.7	2.5	33	32	33	35
L4-501	2.6	1	2.3	2.7	2.8	36	35	37	36
L4-2302	2.0	1	1.7	2.3	2.0	35	34	34	36
LX938-185-32	2.2	1	2.0	2.0	2.6	36	33	37	38
A3K570-3	2.3	1	1.7	2.3	2.8	36	36	35	38
L4-1845	2.0	1	1.7	2.3	2.0	35	33	34	37
Earlyana	2.9	1	2.7	3.3	2.8	37	35	38	39
L4-3129	2.0	1	2.0	2.0	2.0	36	34	35	39
LX938-181-35	2.0	1	2.0	2.0	2.0	35	35	35	36
LX938-570-34	2.3	1	2.7	2.0	2.3	35	35	35	36
LX938-579-38	2.4	1	1.3	3.0	3.0	35	32	36	36
A3K233-1	2.1	1	1.7	2.3	2.3	34	33	35	33
W4-2113	2.1	1	1.7	2.3	2.3	35	36	34	34
LX938-80-38	2.9	1	3.0	3.0	2.7	33	32	34	34
L4-3180	1.7	1	1.0	2.0	2.0	34	32	36	34
A3K70-8	2.2	1	1.7	2.7	2.3	34	31	34	37
Richland	2.2	1	2.0	2.0	2.5	33	33	34	33
A3K884	1.7	1	1.0	2.0	2.2	32	28	34	34
Mean	2.3	1.0	2.0	2.4	2.4	35	33	35	36

[1] East Lansing not included in the mean.

Table 59. Summary of maturity data, days earlier (-) or later (+) than Richland, and seed quality data for the strains in the Uniform Hybrid Line Test IIE, 1946.

	Maturity				Seed Quality				
Strain	Mean	Walker-ton Ind.	Madi-son Wis.	Comp-ton Ill.	Mean of 2 Tests[1]	East Lansing Mich.	Walker-ton Ind.	Madi-son Wis.	Comp-ton Ill.
A4-107-12	+0.3	-1	+1	+1	1.0	1	1	1	1
LX938-282-32	-2.3	-5	-1	-1	1.0	2	1	1	1
LX938-459-4	-3.0	-5	-3	-1	1.0	1	1	1	1
W4-1223	-2.0	-4	0	-2	1.5	2	2	1	1
LX938-430-2	-1.7	-2	-1	-2	1.0	1	1	1	1
LX938-128-31	-1.3	-2	-1	-1	1.5	1	2	1	1
W4-2183	-5.0	-8	-4	-3	1.5	2	2	1	1
LX938-43-4	-1.3	-1	-2	-1	1.0	1	1	1	1
L4-1437	-0.7	-1	-1	0	1.5	1	2	1	1
LX938-136-31	-1.0	-1	-2	0	1.0	2	1	1	1
A3K273-5	-3.3	-3	-4	-3	2.0	1	2	2	1
LX938-405-3	-2.3	-2	-3	-2	1.0	1	1	1	1
W4-3958	-4.3	-6	-5	-2	1.0	1	1	1	1
L4-275	-0.3	0	-1	0	1.0	2	1	1	1
L4-401	-0.7	-1	-1	0	1.0	1	1	1	1
Wis. Manchu 3	-2.3	-3	-4	0	1.5	1	2	1	1
A3K490-1	-5.0	-9	-4	-2	1.0	1	1	1	1
LX938-137-31	-2.0	-1	-4	-1	1.0	1	1	1	1
W4-4056	-3.3	-5	-3	-2	1.0	2	1	1	1
L4-501	+2.0	+3	+2	+1	1.5	2	1	2	1
L4-2302	+1.3	+2	+2	0	2.0	2	2	2	1
LX938-185-32	-1.7	-3	-2	0	1.0	1	1	1	1
A3K570-3	-4.0	-3	-5	-4	1.5	1	1	2	1
L4-1845	+2.0	+5	+1	0	1.5	2	2	1	1
Earlyana	-3.0	-4	-4	-1	1.5	2	2	1	1
L4-3129	-1.3	-2	-2	0	1.0	1	1	1	1
LX938-181-35	-3.3	-2	-4	-4	1.5	2	1	2	1
LX938-570-34	-2.3	-2	-4	-1	1.0	1	1	1	1
LX938-579-38	-1.7	-3	-1	-1	1.0	1	1	1	1
A3K233-1	-4.7	-8	-5	-1	1.0	1	1	1	1
W4-2113	-5.0	-4	-7	-4	1.0	1	1	1	1
LX938-80-38	-1.7	-3	-2	0	1.0	1	1	1	1
L4-3180	-2.0	-2	-2	-2	1.0	2	1	1	1
A3K70-8	-2.3	-4	-3	0	1.0	2	1	1	1
Richland	0	0	0	0	1.0	2	1	1	1
A3K884	-8.0	-12	-7	-5	1.0	1	1	1	1
Mean					1.2	1.4	1.3	1.1	1.0
Date planted		5/28	5/13	5/27					
Richland Matured		10/8	9/21	9/27					
Days to Mature	129	133	131	123					

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

EFFECT OF LOCATION ON COMPOSITION

Average chemical composition of soybean varieties and strains at each selection nursery location would be of importance in evaluating individual strains. The most desirable way of obtaining this information for the uniform nurseries would be to analyze each strain at each location in the area where the nursery is grown. Since this would entail the analysis of many samples it appears more feasible to analyze composites. The strain composites were prepared by including equal weights of seed from each location where that group was grown. These composition data have been presented in the preceding sections and give a satisfactory estimate of the performance of the strains in the area of their adaptation.

Group composites were prepared for each location by taking equal weights of seed from each strain in the test. These composites furnish information on the effect of location on chemical composition of soybean seed. Table 60 gives the chemical analysis of the location composites for the 1946 season and for the two-year and four-year means. As the same strains within each group are grown at each location, the chemical analyses give comparable information between locations. Previous studies have shown varieties x locations interaction to be low for percent protein, percent oil, and iodine number of oil, within the area of adaptation of the strains.

Table 60. Chemical composition of soybean seed grown at each of the Uniform Test locations for 1946, the two-year means for 1945-46, and the four-year means for 1943-46 (composite sample or mean of all strains grown in each respective Group Test).

Location	1946			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 17 strains in 1946, 16 in 1945, 12 in 1944, and 25 in 1943)									
Ottawa, Can.	43.1	18.0	139.2	--	--	--	--	--	--
Ithaca, N.Y.	43.9	17.3	137.8	--	--	--	--	--	--
Spooner, Wis.	45.9	17.4	134.1	44.0	18.0	135.6	45.4	17.8	134.3
Morris, Minn.	39.9	19.7	138.3	--	--	--	--	--	--
Fargo, N. D.	40.4	20.1	135.0	37.2	20.6	134.5	38.5	19.3	137.8
Park River, N.D.	41.3	18.4	137.1	41.0	18.8	135.6	--	--	--
Aberdeen, Idaho	36.5	19.7	136.4	--	--	--	--	--	--
Corvallis, Ore.	40.0	20.1	135.7	41.1	18.6	135.4	--	--	--
Group I (Mean of 16 strains in 1946, 1945, and 1944, and 25 in 1943)									
Ithaca, N.Y.	42.3	18.1	137.1	--	--	--	--	--	--
Wooster, Ohio	41.8	20.2	134.0	42.0	20.0	131.5	--	--	--
Columbus, Ohio	42.3	20.2	133.1	42.1	20.0	130.6	--	--	--
E.Lansing, Mich.	42.0	19.7	133.4	43.2	18.8	135.2	42.8	19.1	134.6
Madison, Wis.	42.3	20.3	130.6	41.4	20.3	131.3	41.9	20.4	130.2
Compton, Ill.	42.1	20.7	130.6	--	--	--	--	--	--
Waseca, Minn.	38.6	21.6	132.8	39.6	20.6	132.9	41.9	19.5	133.7
Cresco, Iowa	46.0	17.9	133.6	44.5	18.8	132.3	--	--	--
Kanawha, Iowa	41.4	20.6	131.9	41.4	19.7	135.0	--	--	--
Brookings, S.D.	41.8	19.1	136.6	41.3	19.0	136.8	41.1	19.2	136.2
Group II (Composite of 30 strains in 1946, 18 in 1945, 25 in 1944, and 16 in 1943)									
New Brunswick, N.J.	41.5	20.7	134.2	--	--	--	--	--	--
Columbus, Ohio	41.6	19.8	132.8	42.5	19.5	131.4	--	--	--
Holgate, Ohio	36.5	20.6	134.7	38.4	20.7	131.9	39.9	20.4	131.9
Bluffton, Ind.	41.1	20.7	131.5	41.4	20.5	130.8	--	--	--
Greenfield, Ind.	42.4	19.9	132.7	42.0	20.0	131.9	--	--	--
Walkerton, Ind.	41.9	20.0	134.0	42.4	19.7	133.5	--	--	--
Wanatah, Ind.	44.0	19.4	129.8	43.3	19.6	130.4	44.5	19.1	131.5
Lafayette, Ind.	42.2	20.8	132.9	42.5	20.5	131.5	41.8	20.5	131.5
E.Lansing, Mich.	41.1	20.0	132.9	42.3	18.6	136.5	41.0	19.2	136.7
Monroe, Mich.	40.4	20.6	133.1	40.2	20.4	132.0	--	--	--
Compton, Ill.	42.0	20.1	132.7	41.2	20.3	132.9	38.8	21.0	133.7
Dwight, Ill.	40.2	21.3	132.0	40.0	21.2	132.0	40.6	20.9	132.0
Urbana, Ill.	39.5	21.7	133.3	40.2	21.3	131.7	39.6	21.6	130.1
Madison, Wis.	39.1	21.4	134.3	39.5	20.5	135.2	39.5	20.7	134.8
Hudson, Iowa	42.0	20.3	132.5	42.6	19.9	132.3	41.9	19.9	132.9
Ames, Iowa	41.2	20.7	132.1	41.8	20.5	132.1	41.6	20.2	132.8
Kanawha, Iowa	39.6	20.7	133.3	40.5	20.2	134.2	39.8	20.1	135.3
Marcus, Iowa	39.2	21.5	133.0	41.2	20.5	133.0	--	--	--
Vermillion, S.D.	41.8	20.7	130.3	--	--	--	--	--	--
Lincoln, Nebr.	39.9	21.9	130.5	--	--	--	--	--	--

Table 60. (Continued)

Location	1946			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 III (Composite of 10 strains in 1946, 13 in 1945, 20 in 1944, and 25 in 1943)									
Georgetown, Del.	40.7	21.4	132.0	41.3	21.3	131.0	--	--	--
Beltsville, Md.	40.5	20.9	131.8	40.9	20.9	130.9	--	--	--
Blacksburg, Va.	39.6	20.9	132.5	39.6	21.0	131.3	41.3	21.0	130.3
Columbus, Ohio	40.6	19.2	132.3	41.3	19.5	132.2	--	--	--
Greenfield, Ind.	40.5	19.3	130.9	40.9	19.8	132.0	40.6	20.4	132.5
Worthington, Ind.	41.4	19.4	131.3	42.2	19.9	129.7	--	--	--
Evansville, Ind.	40.9	20.4	128.0	--	--	--	--	--	--
Dwight, Ill.	39.6	21.3	132.9	39.5	21.3	133.0	40.1	20.6	133.7
Urbana, Ill.	38.4	21.4	131.7	39.0	21.4	131.4	38.6	21.6	131.
Clayton, Ill.	43.0	19.7	133.6	42.2	19.8	133.8	42.6	19.6	134.
Stonington, Ill.	41.7	19.7	132.3	41.1	20.3	132.7	40.7	20.8	132.8
Edgewood, Ill.	42.0	20.9	133.7	--	--	--	--	--	--
Freeburg, Ill.	40.7	21.0	132.2	41.7	20.0	134.1	41.5	20.4	134.3
Ames, Iowa	39.5	20.2	132.2	40.0	20.1	133.6	40.9	20.0	135.1
Ottumwa, Iowa	40.4	19.8	133.3	39.2	20.8	133.2	38.7	20.3	135.3
Shelbyville, Mo.	41.6	20.5	130.3	41.3	20.7	129.7	--	--	--
Columbia, Mo.	42.2	20.0	130.1	40.6	20.4	132.6	41.5	20.6	130.0
Lathrop, Mo.	40.7	20.0	129.4	39.3	21.4	128.2	--	--	--
Elsberry, Mo.	39.9	21.1	130.9	--	--	--	--	--	--
Lincoln, Nebr.	38.5	21.5	130.3	38.6	21.4	128.7	38.3	21.5	129.3
Manhattan, Kans.	41.8	20.7	130.2	39.7	21.9	128.1	40.8	21.1	127.8
Group IV (Composite of 16 strains in 1946, 18 in 1945, and 9 in 1944 and 1943)									
Georgetown, Del.	42.4	20.6	132.1	41.5	21.4	130.1	--	--	--
Beltsville, Md.	41.0	20.3	134.3	41.5	20.3	133.7	--	--	--
Blacksburg, Va.	39.2	20.3	132.4	40.2	20.2	132.2	41.2	20.1	132.4
Worthington, Ind.	41.5	19.4	132.3	41.8	19.7	132.7	--	--	--
Vincennes, Ind.	41.5	20.0	132.2	40.9	20.0	132.1	--	--	--
Evansville, Ind.	41.1	20.2	131.6	41.2	20.6	130.8	41.6	20.7	131.2
Urbana, Ill.	39.1	21.0	132.1	39.2	20.5	134.6	38.7	20.4	135.0
Edgewood, Ill.	41.5	20.2	133.4	--	--	--	--	--	--
Stonington, Ill.	42.1	20.3	134.0	41.0	20.2	135.0	41.1	19.9	134.8
Freeburg, Ill.	41.1	20.3	134.3	42.2	19.2	136.2	41.6	19.6	135.6
Clayton, Ill.	42.7	19.5	134.4	41.8	19.1	135.7	42.2	18.9	136.4
Elsberry, Mo.	40.2	20.3	132.5	--	--	--	--	--	--
Sikeston, Mo.	40.6	21.5	131.9	41.1	21.4	129.5	43.3	20.1	129.
Shelbyville, Mo.	40.2	21.2	130.1	40.3	20.8	131.6	--	--	--
Columbia, Mo.	42.3	20.0	131.6	40.3	19.9	134.8	40.4	20.2	133.4
Lathrop, Mo.	41.2	20.4	131.7	39.3	21.3	131.9	--	--	--
Milo, Mo.	42.4	20.9	127.8	--	--	--	--	--	--
Manhattan, Kans	42.3	20.1	132.2	40.0	21.1	131.1	40.9	20.6	131.3

SOYBEAN DISEASE INVESTIGATIONS IN 1946[1/]

The disease picture in the Midwest became somewhat serious early in the fall of 1946, but unusually favorable weather for the maturing crop greatly alleviated the situation. Brown stem rot was present in at least 50 percent of the fields in Illinois and Indiana. It was present to a lesser extent in eastern Iowa and Missouri and central Ohio. In the heaviest-producing areas in Illinois many fields were 100 percent infected. Brown stem rot was unknown until the fall of 1944. It unquestionably assumed the position of soybean enemy number one in 1946. This disease affords an excellent example of how difficult it is for the plant breeders and pathologists to look far into the future and predict which diseases will present the main production problems. Based upon our present knowledge of the disease, we expect it to continue in importance, and it may become even more serious before a general control measure can be put into practice.

Brown stem rot is caused by a fungus (Cephalosporium nov. sp.) which apparently exists saprophytically in most of the soils of the Midwest. There are several species of this genus which have been recognized for many years, most of which are saprophytic or very weakly parasitic. The species found on soybeans is the most virulent parasite known to this genus. One species, C. acremonium, is thought by many to be the cause of the black bundle disease of corn. The soybean isolations are not parasitic on corn, but they bear many resemblances to the corn organism. None of our common crop plants of the Midwest other than soybeans are known to be susceptible.

The striking gross appearance of fields infected with brown stem rot made it possible to conduct an aerial survey of this disease in the fall of 1946. The most useful information came from the fact that crop rotation effects on the disease were easily detected from an airplane. Many fields clearly exhibited a sharp line of demarkation between healthy and diseased areas. The line of separation invariably extended the entire length or width of a field and usually coincided with the boundary of an adjoining field, clearly indicating that sometime in the past the fields under observation were not divided up as at present. Such fields were located on a township map, and later were inspected from the ground and the cropping history obtained. The field histories always indicated that diseased sections of the field were cropped to soybeans within the last three years, while on the healthy portions the farmer usually had practiced a four-year rotation such as corn-soybeans-oats-clover. On the basis of this survey we are tentatively recommending such rotations as a control measure for brown stem rot. The important point in the rotation, as far as brown stem rot is concerned, is to allow at least three years to pass between soybean crops. The kinds of intervening crops do not seem important.

All attempts to detect the carryover of the brown stem rot organism in seed or old plant refuse have met with failure. However, the persistence in the soil has been repeatedly observed. The behavior of this organism in the soil will merit considerable study in the near future. Fertility of the soil had no noticeable effect on the disease in 1946. Certain combinations of fertilizer increased the yield but showed no effect on the incidence or severity of the disease. No resistance in our common varieties is known though an exhaustive search for resistance will be undertaken in 1947.

1/ Project 123, Division of Forage Crops and Diseases.

The sudden appearance and destructiveness of brown stem rot of soybeans appears to be a direct result of war-time agricultural practices. The common practice during the war, in the Midwest, was to alternate the corn and soybean crops with no pasture or small grain intervening. This practice probably has been adopted by some farmers as a regular policy. In general, however, it is believed that when farmers return to a good rotation brown stem rot will probably decrease in importance.

The other major soybean disease is bud blight, the result of a virus infection of unknown origin. An exhaustive search is underway to find "alternate" or wild hosts which may serve as reservoirs for the primary infection each year and to discover an insect vector. No positive results on these phases of this problem have been obtained. The experience of 1946 impressed us further that this disease may present a variety of symptoms, depending upon the growth stage of the plant at the time of infection. In southern Illinois in 1946, infection took place very early in the season--perhaps in June--and the symptoms in August were similar to mosaic. It became apparent in 1946 that most of the trouble heretofore termed "dudding," which in some years in the past has been particularly severe, was merely another symptom of the bud blight disease. By virtue of the varied effects of infection which range from killing to no symptoms at all--depending upon the growth stage of the plant at infection time--great caution must be exercised in searching for resistance under natural conditions. With this in mind, no reliable evidence of resistance has been observed. Likewise, there is danger at present in depending upon artificial inoculation for testing varieties for resistance. The experience to date has been that all plants inoculated become infected and show the severe type of symptom if inoculated at the right stage. There is a possibility, however, that should an insect vector be found for this disease, certain varieties which are quite susceptible when artificially inoculated, might be found to be avoided by the insect and that insect transmission would not take place. For all practical purposes this situation could be looked upon as resistance. Heretofore, uniform, natural field infection has not been consistent enough to make advisable a varietal nursery for detection of resistance. It is now believed, however, that certain fields located in southern Illinois offer the desired conditions for such tests. Beginning in 1947 a survey of germ plasm will be attempted under conditions fairly certain of producing an early, heavy, natural epidemic. All the varieties and introductions obtainable will be planted in this test.

Bacterial leaf spots continue unabated to infect the soybean crop. Initially, they were the major diseases with which we had to contend. The brown stem rot and bud blight diseases now have far out-distanced them in importance. Tests for resistance to bacterial pustule were run on approximately 1500 introductions in 1946. Although this disease is favored by high temperatures and plenty of moisture, neither of which occurred in the usual amounts at Urbana in the summer of 1946, it was possible to get, by improved techniques, reliable tests on most of the 1500 introductions. The methods used have been described in the literature. A portable power sprayer was used, and the plants were inoculated during periods of bright sunshine when they are particularly vulnerable. Excellent infection was obtained on most of the material. Where inoculation failed, it was noted, and these lines will be tested again in 1947. It is believed at present that none of the material tested had resistance of sufficient magnitude to compare with that of certain southern varieties (CNS, Cherokee and Ogden). A comparable test will be made in 1947 with the bacterial blight disease. The only other bacterial leaf spot of significance is wildfire. This disease assumed

severe epidemic proportions in the southern states in 1946 but was extremely rare in occurrence in the Midwest. Varietal resistance work on wildfire will soon be underway in the South and resistant material may be found.

One of the most interesting and fundamental pieces of work on soybean diseases in the past year is that of Dr. A. Welch of the Division of Forage Crops and Diseases and the Iowa Experiment Station. In a careful study of the pod and stem blight disease he has found at least two types of the organism heretofore connected with the disease (Diaporthe phaseolarum var. sojae). These types are distinguised primarily by their fruiting habits. One type (caespitose perithecial) is a very virulent parastie and is consistently isolated from the girdling lesions found at the base of dying plants in the field. The other type (single perithecial), which may be another species, is weakly parasitic or possibly not parasitic at all. The commonest occurrence of what has been called pod and stem blight organism is on the dead soybean stems. Here we find fruiting bodies (pycnidia) of the fungus in great profusion. It is now believed that this phase of the fungus is saprophytic and quite distinct from the one which kills the plants by girdling the stems at the base. The perithecial, or sexual, stage of this organism was found in the field for the first time in 1946. This discovery is of interest since we now must take into consideration more seriously the possibility of new combinations of genes in this parasite resulting in strains of the organism which may behave differently on different varieties.

The work of the past year will make possible a start in field testing of varieties for resistance by artificial inoculation. Using the caespitose perithecial type of organism and inoculating after blossoming time will possibly give sufficient infection for disease resistance ratings.

Downy mildew, caused by Peronospora manshurica, is under study at Wisconsin by Dr. F. R. Jones. He has discovered the systemic nature of infection of soybean seedlings from the oospore inoculum carried externally on the seed. In cooperation with Dr. James Torrie an attempt is being made to study resistance to downy mildew in both field and greenhouse experiments.

After four years of extensive seed treatment tests, the results may be summarized as follows:

1. All the leading seed treatment chemicals commonly used on cereal seeds can be used safely on soybeans if one is not depending upon seed inoculation for establishing nodule-forming legume bacteria in the soil.

2. An increase of approximately ten percent in stand may be expected if good seed is used as is the general practice in the Midwest. Damaged or old seed will show greater benefits from seed treatment. When good seed is used, the benefits probably do not justify the seed treatment unless the planting rate is greatly reduced below that of present practice.

3. The only disease, other than Rhizoctonia and Pythium root rots, for which seed treatment offers any hope of control is downy mildew. The control of mildew is not 100 percent, however, and probably enough systemic infection still occurs to furnish ample primary inoculum for epidemics under ideal weather conditions for the disease.

4. In general seed treatment may be beneficial when seed is scarce or of poor quality and maximum emergence is urgent. Such cases may arise in breeding work or increase of seed lots. A general recommendation to the farmer for seed treatment is inadvisable at present in the Midwest.