1946 Illinois HYBRID CORN TESTS

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Location of 1946 test fields

CONTENTS

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ILLINOIS HYBRID CORN TESTS 1946

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Benjamin Koehler, and R. W. Jugenheimer[1]

IN THE MAJOR corn-producing counties of Illinois, all cornland was planted to hybrid seed in 1946. In the state as a whole 99[2] percent of the crop was hybrid corn. These figures show how great has been the change in the type of corn grown in the last 15 years.

In 1946 the average yield was 57 bushels an acre, an all-time high. Two things are responsible for such a high average: good distribution of rainfall in highly favorable amounts in most sections of the state, and a high percentage of cornland planted to high-producing hybrids.

PLAN OF THE TESTS

Number of hybrids and their sources. Two hundred sixty-six hybrids were grown on six regular test fields. Six single-cross and three double-cross hybrids were grown on two special test fields which differed in productivity. Forty-four companies and individuals and the Illinois Station furnished seed for the tests (see pages 368-369).

Seventy-two hybrids were grown on each of the fields except at the Dixon Springs Experiment Station, where 60 entries were planted (Table 1, page 342).

A representative of the Illinois Station took about half the seed for planting the test fields directly from the warehouses of the producers entering the corn. A number of producers delivered small quantities to the Station. Seed of Illinois and U. S. hybrids

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[2] Estimates for the acreage of hybrid corn and the average yield for the state were furnished by the Illinois Cooperative Crop Reporting Service, Illinois State Department of Agriculture cooperating with the U. S. Department of Agriculture.

Table 1. — GENERAL INFORMATION: Illinois Cooperative Hybrid Corn Tests, 1946

Field	County and location in state	Number of entries	Date planted	Date harvested	Average acre-yield		Average moisture in grain	Average erect plants
					Total	Sound		
					bu.	*bu.*	*perct.*	*perct.*
Kings	Ogle (N)	72	May 27	Nov. 14	88.9	88.3	27.5	92.9
Galesburg	Knox (WNC)	72	May 23, 24	Nov. 8	106.0	105.6	21.9	91.7
Sheldon	Iroquois (ENC)	72	May 28	Nov. 7	100.4	99.9	25.8	92.6
Sullivan	Moultrie (SC)	72	June 4	Nov. 12	89.8	89.2	24.2	94.2
Alhambra	Madison (S)	72	June 12	Oct. 24, 25	51.5	51.1	30.5	72.0
Robbs (Dixon Sp., Bennett Bottom)	Pope (Ex.S)	60	June 6	Nov. 26, 27	69.1	68.1	19.4	94.7

COOPERATORS: ELMER HAYES, *Ogle county;* EARL and WEBSTER GEHRING, *Knox county;* JOHN B. RICE, *Iroquois county;* R. B. VANDEVEER, Farm Manager, Illinois Masonic Home Farm, *Moultrie county.* The Alhambra field in Madison county is managed by the Illinois Station. The Pope county field at Robbs is part of the Dixon Springs Experiment Station, of which R. J. WEBB is superintendent and J. M. LEWIS is assistant superintendent.

in commercial production was obtained from the Illinois Crop Improvement Association.

Most of the hybrids selected for testing are extensively grown in the state. Some experimental hybrids were included because they had shown promise for commercial production in preliminary tests. A few hybrids were put in the tests mainly to meet the field-performance requirement for certification.

Soil characteristics of fields. The test fields were medium to high in productivity, and each represents a soil type common to the region where it is located. Each field was selected carefully for uniformity in soil type, productivity, and drainage. The Alhambra field contained a number of "slick spots" and was the most variable in productivity.

In 1946 the tests were conducted on the same farms as in 1945. No test on upland in extreme southern Illinois was made. The approximate locations of the test fields are shown on the map on the inside front cover. General information on soil characteristics and soil management is given in Table 2.

Method of planting. All test plots were planted by hand on land prepared in the regular way for corn. Each plot consisted of 2 rows 10 hills long, except at Dixon Springs, where the plots were only 8 hills long. Three kernels were dropped in each hill except on the field at Dixon Springs, where only 2 kernels were planted. Six plots of each entry were planted in controlled random order on each field except at Kings, where only five plots were planted.

Table 2. — TESTING FIELDS: Soil Characteristics and Management Practices

Soil type	Lime requirement	Available phosphorus	Available potassium	Previous crops and soil management
		Northern: Kings		
	tons			
Tama silt loam	1	Very high	Very high	Corn 1943; oats 1944; sweet clover 1945; rock phosphate 1943; manure 1945.
		West north-central: Galesburg		
Muscatine silt loam	2	Low to medium	Very high	Corn 1943, 1944; oats-and-rape hog pasture 1945.
		East north-central: Sheldon		
Lisbon silt loam	0	Very high	Medium to high	Corn 1943; oats 1944; mixed sweet-clover, alsike-clover, and timothy hog pasture 1945; 2 tons lime 1944; ½ ton rock phosphate 1943; manure 1945.
		South-central: Sullivan		
Flanagan silt loam	2	High	High	Corn 1943; oats 1944; sweet-clover pasture 1945; rock phosphate 1939; 2 tons lime 1946.
		Southern: Alhambra		
Putnam silt loam	0	Very high	Very low	Corn 1943; oats 1944; sweet clover 1945; limed and phosphated.
		Extreme southern: Robbs (Dixon Springs)		
Bonnie silt loam	0	Very low	Very low	Corn 1942; uncropped 1943, 1944; corn 1945; manured spring of 1946.

Data from all plots except those having more than 5 missing hills were included in the results. The tables indicate where data were omitted because of missing hills. The only correction for imperfect stand was the following adjustment for missing hills:

$$\text{Ear weight in field} \times \left(1 + \frac{\text{missing hills}}{\text{hills present}} \times .6\right) = \text{adjusted ear weight.}$$

WEATHER CONDITIONS

Wet weather delayed corn planting beyond the usual date in all but the northern and northwestern sections of the state. None of the test fields was planted as early as recommended for highest yields, and three fields — Sullivan, Alhambra, and Dixon Springs — were not planted until June. Good stands were obtained on all

fields except at Sullivan, where ground squirrels and moles reduced the stand considerably.

A plentiful supply of moisture favored plant growth and grain formation in central and southern Illinois, altho too much rain during August hurt the crop on the Alhambra field. Dry weather during parts of July and August reduced yields in northern and north-central Illinois.

Temperatures during the growing season were generally below average thruout the state. As a result, plant development was slow. Because September and October were dry, comparatively hot months, the crop in most sections of the state matured satisfactorily. Had the weather been less favorable, there would have been a great deal of soft corn.

In August there were hail storms in some areas, but none of them struck the test fields. Lodging, consisting mainly of broken stalks on all fields except Alhambra, was not severe on any test field. Most of the lodging at Alhambra was root lodging.

The yield, moisture content, and percentage of erect plants on each field are summarized in Table 1.

INSECT PESTS

European corn borer. North of Streator and west of Aurora conditions early in 1946 were favorable for the development of the European corn borer, *Pyrausta nubilalis* (Hbn.). The moths emerged and laid their eggs earlier than at any time in the history of the corn borer in Illinois. Between June 14 and 18, eggs were laid in very large numbers. A heavy rain, however, accompanied by strong winds beat most of these eggs off the plants. As a result of this storm, infestation by first-generation borers was less than one per plant.

Conditions were even more favorable for the development of second-generation borers. The average infestation in the fall of 1946 was 2 to 2½ borers per plant, approximately the same as in the fall of 1945.

The test field at Kings, in the middle of the most heavily infested area in the state, suffered material loss from borers. The percentage of plants broken below the ear and of ears dropped because of borers is shown in Table 6, page 352. The data show

that some hybrids are significantly more susceptible to breakage following borer attack than other hybrids. A few show a definite tendency to drop ears when the ear shanks are burrowed. A summary of the results on the two fields in this area for 1943 and 1946 is given in Table 7.

The test field at Galesburg was on the edge of the most heavily infested area in the state. This field showed an average of 2.9 percent of the plants broken by borers. A summary of how individual hybrids withstood borers in 1943 and 1946 is given in Table 10. In susceptibility to breakage, the hybrid ranking first is not significantly different from that ranking twenty-first. The hybrids apparently best able to withstand borer attacks are those that are already widely used.

Other insects. Examination of the fields at Kings, Galesburg, Sheldon, Urbana, and Sullivan showed that there were not enough corn-attacking insects present in 1946 to warrant detailed records.

DISEASE DAMAGE[1]

Seedling diseases and seed treatments. In the seed-treatment experiment on the Station farm at Urbana, only one hybrid, Illinois 201, was planted. Nine disinfectants were applied, some of them new and still in the experimental stage.

The field chosen for this test was wet thruout May and could not be planted until June 3. Of the disinfectants used, Arasan S. F. (slurry formulation) was the most efficient. Despite late planting, the increase in yield of corn treated with it was 13.3 bushels an acre. The standard disinfectants, Barbak-C, Semesan Jr., and Spergon, in the order named, proved to be the next most efficient. Averages of tests for the last five years showed that Arasan ranked first in efficiency, Spergon second, and Semesan Jr. and Barbak-C tied for third place. Two years' tests with the slurry formulation indicate that Arasan S. F. is just as efficient as Arasan dust, if not more so.

Stalk rot diseases. From surveys in 41 counties, damage from stalk rot was estimated at 3.8 percent. The principal cause

[1] Estimates of losses are based in part on survey data obtained by G. H. BOEWE, of the Illinois State Natural History Survey.

was *Gibberella zeae*. In previous years when enough stalk rots occurred to warrant a study of them, *Diplodia zeae* was always the chief cause. This year Gibberella appeared to be of some importance in every county. It was most damaging, however, in south-central Illinois, from Douglas and Scott counties to Jackson county. The amounts of infection from field to field varied greatly.

During the years that experiments with hybrids have been in progress, this is the first season in which Gibberella has caused

Center two rows, planted with inbred Ky27, were killed by Gibberella stalk rot in early September. At left is Illinois R30; at right is K64. This picture was taken in a corn test plot near Bluffs, Scott county, Illinois, 1946. (Fig. 1)

severe damage. Consequently, the relative resistance to or susceptibility of inbreds and single crosses to it had never been determined. Its prevalence the past season showed that inbreds K4 and Kys died or broke down early from Gibberella. These same inbreds are outstandingly resistant to Diplodia stalk rot. Inbreds L317 and Ky27 also proved very susceptible to this disease. Ky27 is shown in Fig. 1.

Ear rots. With some local exceptions in the southern half of Illinois, ear rots were of little importance in 1946. Of the six

Table 3. — ROT DAMAGE CAUSED BY FUNGI: Average of All Entries on Six Test Fields, 1946

(Figures based on laboratory tests)

Rank[1]	Fungi causing damage	Corn kernels damaged by rot					
		Kings	Galesburg	Sheldon	Sullivan	Alhambra	Dixon Springs
		perct.	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*
1	Fusarium moniliforme..	.26	.13	.06	.06	.33	.99
2	Gibberella zeae.....	.05	.08	.06	.30	.23	.12
3	Diplodia zeae.....	.04	.08	.18	.01	.01	.23
4	Alternaria spp.....	.14	.01	.04	.09	0	0
5	Hormodendrum spp....	.05	.03	.07	.06	.04	.01
6	Penicillium spp.....	.04	.01	0	.02	.04	.01
7	Nigrospora spp.....	.02	0	.04	.01	.02	.02
	Others.....	.02	.01	.05	.04	.07	.06
	Total.....	.62	.35	.50	.59	.74	1.44

[1] Based on total damage on all fields.

test fields, only Dixon Springs had entries with enough rot-damaged kernels to cause corn to grade less than No. 2 (Table 17).

A laboratory test was made of representative rot-damaged kernels from each field to determine the causes. On the average, *Fusarium moniliforme,* as commonly happens, was the fungus most frequently found (Table 3). That *Gibberella zeae* should be second in importance is unusual. Altho the percentage of infection with *Diplodia zeae* was higher at Dixon Springs than at Sheldon, only at Sheldon was it the most important fungus. The total damage in the state was low, but surveys made in farmers' fields over the state showed that on the average six ears were rot damaged by Gibberella to one by Diplodia. In one Douglas county field, 12 percent of the ears were infected with Gibberella. This percentage is probably close to that at which hogs will not eat the corn if it is shelled and they cannot sort out the sound ears. They refuse to eat oats and barley infected with Gibberella when 10 percent of the grain is infected.

MEASURING PERFORMANCE

The entries in the 1946 test are listed in the tables in the order of their total yields. Two or more entries having the same total yield are given the same rating, but the one having the higher yield of sound corn is placed first. Those having the same total yield and sound yield are placed in order by percentage of erect plants.

Erect plants. The percentage of erect plants in each plot of

each entry on each field was estimated at the time of harvest. The ratings for erect plants show how the percentage of erect plants for each hybrid compared with the percentage of erect plants on the field as a whole. (Each rating is obtained by dividing the percentage of erect plants for that hybrid by the percentage of erect plants on the field as a whole and multiplying by 100.)

Lodging may have been due to rootworm damage, weak or rotted roots, corn borer damage, stalk rots, or weak stalks. Stalks broken above the ear were not considered lodged.

Yield of grain. To determine shelling percentage, all the ears from one replicate of each entry were shelled. At Dixon Springs, however, because it was not practicable to shell all the ears in a replication, the shelling percentage of all entries was assumed to be 80 percent. A sample of shelled corn was taken from the Dixon Springs plots by gouging two rows of kernels from 12 to 15 ears of each entry.

From the shelled corn one sample was taken to determine the percentage of moisture at harvest[1] and to determine the percentage of damaged kernels. The percentage of damaged corn was determined according to the federal grain standards.

The total acre-yield was calculated as shelled corn containing 15.5 percent moisture, the upper limit allowable in No. 2 corn. The yield of sound corn was computed by deducting the amount of damaged corn from the total yield.

The rating of any hybrid for sound yield is the ratio, expressed as percentage, of the yield of sound corn from that hybrid to the average yield of sound corn from all the hybrids on the field.

Height of ear. Notes on comparative height of ear were taken at harvest time. Each plot of each entry was placed in one of the five following categories: *low, mid-low* (midway between low and medium), *medium, mid-high* (midway between medium and high), and *high*. Beginning with *low* and continuing progressively to *high*, these terms were assigned numerical values from 1 to 5 to permit the averaging of the plots.

Significance of yield differences. Too much confidence must

[1] All moisture determinations were made with a Steinlite moisture tester except for a few samples from the Alhambra field, which were made with an electric oven.

not be placed in the particular ranking of a hybrid in the following tables, for chance has played a part in determining its position. Unaccountable variability in the soil and conditions on the field will cause differences in yield that are not inherent in the hybrids themselves.

The part played by chance in the 1946 tests has been calculated for total yield by the mathematical procedure known as "analysis of variance." At the bottom of each table is stated the approximate difference which there must be between any two entries in order for them to show a true inherent difference. Unless two hybrids differ by at least this amount, there is no assurance that one hybrid is inherently higher yielding than the other.

RESULTS OF TESTS

Detailed results of the tests on six regular test fields and the two special soil-adaptation fields are given in Tables 4 to 19 on the following pages. See also Table 3 on page 347 on ear-rot damage.

Readers are urged to note the difference necessary for significance, as shown for each test field, and to keep that difference constantly in mind in all comparisons of hybrids on that field.

Table 4. — NORTHERN ILLINOIS: Kings, 1946

(Averages based on plantings replicated five times instead of six)

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Nichols 5B	102.0	101.7	.3	25.1	95.4	102.7	115.2	Medium
2	Nichols 5A	99.0	98.6	.4	29.0	94.8	102.0	111.7	M-high
3	DeKalb 609	98.4	98.0	.4	25.4	89.0	95.8	111.0	M-high
4	Bear OK-20	95.9	95.6	.3	23.5	88.0	94.7	108.3	M-high
4	Hunt 60(W)	95.9	95.0	1.0	26.4	90.8	97.7	107.6	M-high
6	National 115A	95.7	95.1	.7	25.1	95.2	102.5	107.7	M-high
7	Sieben S-340	95.1	94.9	.2	29.9	95.6	102.9	107.5	M-high
7	Blackhawk 111	95.1	94.8	.3	24.4	94.4	101.6	107.4	Medium
9	Ainsworth X-23	95.0	94.5	.5	28.1	95.2	102.5	107.0	M-high
10	Ward 110	94.6	94.1	.6	28.3	96.8	104.2	106.6	M-high
11	Nichols N-75	94.2	93.8	.4	24.8	91.8	98.8	106.2	Medium
12	Frey 425	94.0	93.4	.6	29.9	88.0	94.7	105.8	M-high
13	DeKalb 422	93.8	93.2	.6	26.4	91.0	98.0	105.5	Medium
14	Producers 1015	93.7	92.3	1.5	25.7	96.8	104.2	104.5	Medium
15	Pioneer 341	93.5	93.0	.5	27.2	92.8	99.9	105.3	Medium
16	Farmcraft FC-40	93.3	92.1	1.2	25.9	87.2	93.9	104.3	M-high
17	Pioneer 340	92.8	92.5	.3	26.6	91.6	98.6	104.8	Medium
18	Ward 115a	92.7	92.4	.4	27.8	86.0	92.6	104.6	Medium
19	Crow 407	92.5	92.3	.3	27.7	92.4	99.5	104.5	M-high
19	Illinois 751	92.5	92.0	.6	28.3	92.6	99.7	104.2	M-high
21	Nichols 202A	92.2	91.8	.4	27.2	90.0	96.9	104.0	M-high
22	Funk G-29	91.3	90.6	.8	28.7	94.4	101.6	102.6	Medium
22	Hoosier Crost F-138	91.3	90.6	.8	26.7	87.2	93.9	102.6	M-high
24	Blackhawk 98A	91.2	90.7	.6	25.0	92.6	99.7	102.7	Medium
25	Illinois 1091A	91.1	90.2	1.0	30.9	94.2	101.4	102.2	M-high
26	Ferris F-11	91.0	90.7	.4	26.9	93.2	100.3	102.7	M-high
27	Furr 23	90.8	90.5	.4	24.8	94.4	101.6	102.5	Medium
28	Pfister 4897	90.5	89.9	.6	26.9	94.4	101.6	101.8	M-high
28	Pfister 52	90.5	89.7	.9	23.9	97.2	104.6	101.6	Medium
30	Iowealth A.F.-11	90.4	90.0	.4	25.9	96.0	103.3	101.9	M-high
31	Funk G-114	90.3	90.3	0	29.0	96.8	104.2	102.3	Medium
32	Producers 1020	90.1	89.8	.4	26.9	88.4	95.2	101.7	M-high
33	Sieben S-450	89.8	89.3	.6	28.0	94.0	101.2	101.1	Medium
34	Pfister 50A	89.5	88.8	.7	22.7	92.8	99.9	100.6	M-high
35	Pfister 366A	89.4	89.1	.4	27.3	93.2	100.3	100.9	Medium
35	Pride D-66	89.4	88.7	.7	27.2	96.0	103.3	100.5	M-high
37	Furr 67A	89.3	89.2	.1	27.7	90.8	97.7	101.0	Medium
38	National 114-1	89.1	89.0	.1	28.4	92.0	99.0	100.8	High
38	Stiegelmeier S-360	89.1	88.3	.9	28.1	95.6	102.9	100.0	M-high
40	Doubet D-1	88.9	88.4	.6	26.2	93.2	100.3	100.1	Medium
41	Farmcraft FC-42	88.6	88.0	.7	30.1	91.6	98.6	99.7	M-high
42	Pioneer 322	88.5	87.6	1.0	27.3	95.2	102.5	99.2	M-high
43	Stiegelmeier S-379	88.2	87.9	.4	29.6	96.0	103.3	99.5	M-high
44	Lowe 15	88.1	87.7	.5	28.4	91.2	98.2	99.3	Medium
45	Nichols 99	88.0	87.6	.4	28.4	94.8	102.0	99.2	Medium
46	Pfister 282	87.8	87.2	.6	25.1	92.4	99.5	98.8	Medium
47	Moews 14	87.7	86.5	1.4	29.0	91.0	98.0	98.0	Medium
48	Holmes Utility 9	87.3	86.7	.6	26.6	94.4	101.6	98.2	M-high
49	DeKalb 458	86.9	86.5	.5	27.8	89.2	96.0	98.0	M-high
50	Morgan M-105	86.5	86.2	.4	29.5	89.6	96.4	97.6	Medium
51	Hoosier Crost F-140	86.4	85.2	1.4	29.7	92.4	99.5	96.5	Medium
52	Illinois 101	86.3	85.9	.4	27.5	92.8	99.9	97.3	Medium
53	Illinois 1240	85.3	84.1	1.4	28.1	96.6	104.0	95.2	Medium
54	Producers 1010	85.2	84.7	.6	32.8	93.2	100.3	95.9	M-high
55	DeKalb 404A	84.8	84.5	.3	25.4	93.6	100.8	95.7	Medium
55	Producers 909	84.8	82.6	2.5	30.4	95.2	102.5	93.5	High
57	Crow 360	84.5	83.5	1.2	32.7	93.4	100.5	94.6	High
57	DeKalb 615	84.5	83.2	1.6	28.7	93.2	100.3	94.2	M-high
59	Doubet D-25	83.5	83.1	.5	29.4	95.8	103.1	94.1	M-high
60	Illinois 269	83.3	83.2	.2	29.0	95.4	102.7	94.2	M-high
60	Ward 115C	83.3	83.1	.3	30.1	90.8	97.7	94.1	M-high
62	Pioneer 353A	83.2	82.9	.3	25.7	93.8	101.0	93.9	M-high
63	Holmes Utility 19	82.4	81.6	1.0	32.4	93.2	100.3	92.4	M-high
64	Pioneer 330	81.7	81.1	.7	29.0	96.8	104.2	91.8	M-high
65	Illinois 1180	81.4	80.9	.6	27.3	90.0	96.9	91.6	Medium
66	Blackhawk 72A	81.0	80.2	1.0	25.7	92.4	99.5	90.8	Medium
67	Huebsch 10	80.8	80.5	.4	27.3	89.6	96.4	91.2	M-high
68	Furr 33	80.5	80.0	.6	25.1	90.0	96.9	90.6	M-high
69	Crow 514(W)	79.7	79.7	0	25.4	90.8	97.7	90.3	High
69	Furr 44A	79.7	79.1	.7	27.2	90.0	96.9	89.6	Medium
71	Huebsch 3	77.5	77.1	.5	26.9	94.6	101.8	87.3	Medium
72	Illinois 219	76.8	76.6	.3	29.2	96.4	103.8	86.7	M-high
	Average of all entries	88.9	88.3	.6	27.5	92.9	....	....	.....

A difference of less than 9.1 bushels between total yields of any two entries in this table is not significant.

Table 5. — NORTHERN ILLINOIS: Summary, Mt. Morris, 1944; Kings, 1945, 1946

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Nichols N-75	87.5	87.1	.4	25.7	87.0	99.9	108.1	Medium
2	Nichols 5A	85.9	85.5	.4	27.9	89.3	102.5	106.1	Medium
3	Pioneer 340	85.6	85.3	.4	27.1	89.0	102.2	105.8	Medium
4	Pfister 4897	85.5	85.2	.3	25.2	87.4	100.3	105.7	M-high
5	Pioneer 341	85.2	84.9	.3	26.7	88.9	102.1	105.3	Medium
5	Frey 425	85.2	84.0	1.4	29.2	86.6	99.4	104.2	Medium
7[a]	Pfister 366A	84.8	84.6	.2	26.0	83.7	96.1	105.0	Medium
8	Illinois 1091A	83.9	82.8	1.2	28.5	88.3	101.4	102.7	Medium
9	Illinois 751	83.6	83.3	.4	28.0	87.3	100.2	103.3	Medium
9	DeKalb 609	83.6	83.0	.9	27.7	83.3	95.6	103.0	Medium
11	Funk G-114	83.5	83.3	.2	27.1	91.9	105.5	103.3	Medium
12	DeKalb 458	83.3	83.1	.2	27.0	84.0	96.4	103.1	Medium
13	Blackhawk 98A	83.0	82.7	.3	26.1	83.8	96.2	102.6	Medium
14	Illinois 269	82.7	82.7	.1	27.6	87.8	100.8	102.6	M-high
15	Nichols 202A	82.6	82.4	.3	26.8	85.9	98.6	102.2	Medium
16	DeKalb 615	82.3	81.7	.8	26.8	86.9	99.8	101.4	M-high
17	Stiegelmeier S-360	82.0	81.6	.5	28.1	83.3	95.6	101.2	M-high
18	Farmcraft FC-42	81.9	81.5	.5	28.5	85.4	98.0	101.1	Medium
19	DeKalb 422	81.2	81.0	.3	27.5	85.1	97.7	100.5	Medium
19	Doubet D-1	81.2	80.9	.4	26.3	87.5	100.5	100.4	Medium
19	Funk G-29	81.2	80.6	.8	30.1	91.2	104.7	100.0	Medium
22[b]	National 114-1	81.1	80.4	.9	26.4	86.7	95.5	99.8	M-high
23	Pioneer 330	80.8	80.3	.7	27.9	94.2	108.2	99.6	Medium
24	Sieben S-450	80.4	80.2	.3	25.4	85.0	97.6	99.5	Medium
25	Producers 1010	80.3	80.0	.4	29.2	89.2	102.4	99.3	M-high
26	Ferris F-11	80.2	80.1	.2	25.7	86.3	99.1	99.4	Medium
26	Hoosier Crost F-138	80.2	79.5	.8	26.9	82.1	94.3	98.6	Medium
28	Illinois 1180	80.0	79.8	.3	25.9	86.3	99.1	99.0	Medium
28	Pioneer 322	80.0	79.0	1.1	26.2	89.7	103.0	98.0	M-high
30	Producers 1020	79.1	79.0	.2	26.2	87.0	99.9	98.0	Medium
31	Pioneer 353A	78.9	78.8	.2	24.0	85.4	98.0	97.8	M-high
32	Stiegelmeier S-379	78.4	78.2	.3	29.0	89.3	102.5	97.0	M-high
33	Producers 1015	78.3	77.6	.8	24.8	89.4	102.6	96.3	Medium
34	Morgan M-105	78.2	77.9	.4	28.2	87.9	100.9	96.7	Medium
35	Doubet D-25	78.0	77.4	.7	29.5	87.0	99.9	96.0	Medium
36	Illinois 101	77.4	77.1	.3	26.9	90.4	103.8	95.7	Medium
36	Producers 909	77.3	75.8	2.0	31.2	92.7	106.4	94.0	M-high
37	Moews 14	76.5	76.0	.7	28.2	88.6	101.7	94.3	Medium
38	DeKalb 404A	75.9	75.8	.2	26.3	87.0	99.9	94.0	Medium
39	Crow 360	75.7	75.3	.5	29.7	84.5	97.0	93.4	M-high
40	Crow 514(W)	75.2	75.1	.1	25.3	82.8	95.1	93.2	M-high
40	Lowe 15	75.2	75.0	.3	27.1	83.5	95.9	93.1	Medium
	Average of all entries	81.0	80.6	.5	27.2	87.1	....	....	.....

[a] Averaged with Pfister 366, which appeared in the 1944 tests. [b] Averaged with National 114, which appeared in the 1944 and 1945 tests.

A difference of less than 4.0 bushels between total yields of any two entries in this table is not significant.

Table 6. — CORN BORER DAMAGE: Kings, 1946

Rank	Entry	Plants broken below ear[1]	Dropped ears	Rank	Entry	Plants broken below ear[1]	Dropped ears
		perct.	*perct.*			*perct.*	*perct.*
1	Ward 110	1.4	.9	37	Furr 67A	6.3	0
2	Stiegelmeier S-379	2.6	2.4	38	Nichols 5B	6.4	1.3
3	Funk G-114	2.7	1.4	39	DeKalb 458	6.5	.4
4	Stiegelmeier S-360	2.8	.9	40	Crow 360	6.6	1.5
4	Doubet D-25	2.8	2.0	40	Pioneer 322	6.6	.4
4	Ferris F-11	2.8	.4	42	National 115A	6.7	.9
4	Ainsworth X-23	2.8	2.2	43	Blackhawk 98A	6.8	0
8	Pride D-66	2.9	.5	44	DeKalb 422	7.2	1.4
9	Iowealth AF-11	3.0	.5	44	DeKalb 615	7.2	0
9	Furr 23	3.0	0	46	Producers 1015	7.3	0
11	Illinois 101	3.4	1.4	47	Ward 115A	7.5	.5
12	Moews 14	3.6	1.4	48	Nichols N-75	7.6	.9
12	Sieben S-450	3.6	.4	48	Blackhawk 111	7.6	2.0
12	Illinois 219	3.6	1.4	50	Frey 425	7.8	.4
15	Hoosier Crost F-140	3.7	.9	51	Huebsch 10	8.0	.5
16	Doubet D-1	3.8	.5	52	DeKalb 404A	8.1	2.0
17	Holmes Utility 19	3.9	.4	52	Ward 115C	8.1	3.7
17	Illinois 1240	3.9	.4	52	DeKalb 609	8.1	.4
19	Morgan M-105	4.0	.9	55	Farmcraft FC-40	8.4	.4
19	Producers 909	4.0	.5	56	Producers 1010	8.5	1.8
21	Bear OK-20	4.3	1.4	57	Pfister 366A	8.6	1.6
22	Huebsch 3	4.7	.4	58	Producers 1020	8.8	.9
23	Illinois 1091A	4.8	1.4	58	Crow 407	8.8	.5
24	Nichols 5A	5.0	.9	60	Crow 514(W)	9.0	1.4
25	Illinois 269	5.1	.5	61	Hunt 60(W)	9.2	.9
26	Sieben S-340	5.3	1.7	62	Lowe 15	9.3	.4
26	Pfister 52	5.3	1.0	63	Pioneer 330	9.4	1.3
28	Nichols 202A	5.4	1.4	64	Blackhawk 72A	9.8	.5
29	Holmes Utility 9	5.5	0	65	Pioneer 353A	10.2	.9
30	Funk G-29	5.6	3.7	66	Pioneer 341	10.3	1.3
31	Furr 44A	5.8	.1	67	Pfister 282	10.4	1.3
31	National 114-1	5.8	.4	68	Pfister 50A	10.8	.5
33	Nichols 99	6.0	.9	69	Hoosier Crost F-138	11.4	1.8
33	Farmcraft FC-42	6.0	1.8	70	Illinois 1180	11.7	.5
35	Pfister 4897	6.1	0	71	Pioneer 340	12.2	.9
36	Illinois 751	6.2	3.0	72	Furr 33	15.6	0
					Average of all entries	6.5	.9

[1] Includes only those plants broken below the ear at point of damage by the borer, *Pyrausta nubilalis* (Hbn.).

A difference of less than 4.6 in percent of plants broken below the ear or of 1.7 in percent of dropped ears is not significant.

Table 7. — CORN BORER DAMAGE: Northern Illinois Summary, Mt. Morris, 1943; Kings, 1946

Rank	Entry	Plants broken below ear[a]	Rank	Entry	Plants broken below ear[a]
		perct.			*perct.*
1	Funk G-114	2.1	17	Pioneer 322	5.1
2	Moews 14	2.8	18	Nichols 5A	5.5
2	Iowealth AF-11	2.8	19	Crow 360	5.8
4	Hoosier Crost F-140	3.2	20	Producers 1020	6.2
5	Doubet D-1	3.4	21	DeKalb 422	6.5
5	Producers 909	3.4	22	Producers 1010	6.6
7	Illinois 219	3.5	23	DeKalb 615	6.8
8	Doubet D-25	3.6	24	DeKalb 404A	6.9
9	Illinois 751	3.8	24	Pioneer 330	6.9
10	Funk G-29	4.0	24	Lowe 15	6.9
11	Pfister 4897	4.1	27	Pioneer 341	7.0
11	Furr 44A	4.1	28	Pioneer 353A	7.2
11	Farmcraft FC-42	4.1	29	Crow 514(W)	8.1
14	Illinois 101	4.3	30	Hoosier Crost F-138	8.3
15	DeKalb 458	4.5	31	Pioneer 340	8.5
15	Nichols 202A	4.5		Average of all entries	5.2

[a] Includes only those plants broken below the ear at point of damage by the borer, *Pyrausta nubilalis* (Hbn.).

A difference of less than 3.0 in percentage figures is not significant.

Table 8. — WEST NORTH-CENTRAL ILLINOIS: Galesburg, 1946

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Pioneer 339	114.0	113.8	.2	21.4	95.0	103.6	107.7	M-high
1	Morton M-380	114.0	113.8	.2	22.5	87.8	95.8	107.7	M-high
3	National 126T	113.4	113.0	.3	20.7	90.8	99.0	107.0	M-high
4	Huey H-50	113.3	112.7	.5	21.7	96.3	105.0	106.7	M-high
5	Farmcraft FC-47	112.9	112.9	0	22.0	90.7	98.8	106.9	M-high
6	Pfister 5897	112.7	112.7	0	21.1	84.2	91.8	106.7	M-high
7	Pfister 1897	112.6	112.5	.1	22.8	94.8	103.4	106.5	M-high
8	Pioneer 304	112.0	111.9	.1	23.9	86.2	93.9	106.0	M-high
9	Pioneer 336	111.7	111.5	.2	21.7	90.2	98.3	105.6	High
10	Crow 607	111.1	110.4	.6	22.3	91.0	99.2	104.6	High
11[5]	Kelly K-374	111.0	110.8	.2	21.2	89.8	97.9	104.9	High
12[5]	Morton M-12	110.5	110.2	.3	22.7	94.0	102.5	104.3	High
12[5]	Illinois 201	110.5	110.0	.4	21.2	93.2	101.6	104.2	M-high
14	Furr 80	110.4	110.1	.2	20.3	96.7	105.4	104.3	M-high
15	Holmes Utility 29	110.2	110.1	.1	20.8	93.2	101.6	104.3	High
16	Pfister 390	110.1	110.1	0	20.4	95.0	103.6	104.3	M-high
16	Null N-54	110.1	109.9	.2	22.1	88.2	96.1	104.1	High
18	Illinois 1091A	109.9	109.4	.5	21.6	90.5	98.7	103.6	M-high
19	Ainsworth X-21	109.6	109.3	.2	22.3	95.3	103.9	103.5	High
20	U. S. 13	109.5	109.2	.3	22.4	94.7	103.2	103.4	High
21	Stiegelmeier S-1313	109.3	109.3	0	22.6	92.5	100.8	103.5	High
21	Crow 633	109.3	109.2	.1	21.7	93.8	102.3	103.4	M-high
21	Moews 550	109.3	108.8	.4	20.9	94.2	102.7	103.1	M-high
24	Funk G-37	108.8	108.3	.5	21.5	97.3	106.1	102.5	M-high
25	Funk G-74	108.4	108.3	.1	22.3	93.0	101.4	102.5	M-high
26[5]	Sieben S-440	108.3	108.1	.2	20.0	89.3	97.4	102.4	Medium
27	Doubet D-72	108.2	108.0	.1	22.7	91.2	99.4	102.3	M-high
27	Lowe 520	108.2	107.9	.3	21.4	94.8	103.4	102.2	M-high
29	Huey H-42	107.6	107.6	0	22.7	95.7	104.3	101.9	High
29	Pfister 392	107.6	107.4	.2	21.9	93.5	101.9	101.7	M-high
31	Schwenk S-24	107.5	107.3	.2	20.8	95.5	104.1	101.6	M-high
32	Funk G-169	107.2	106.8	.4	22.8	95.3	103.9	101.2	High
33	Keystone 42	106.9	106.6	.3	21.3	90.3	98.5	101.0	M-high
34	Holmes Utility 79	106.8	106.5	.3	22.3	75.8	82.8	100.8	High
35	Stewart S-11	106.7	106.4	.3	23.5	94.5	103.0	100.8	High
35	DeKalb 816	106.7	106.2	.4	23.2	93.7	102.1	100.6	High
35	DeKalb 847	106.7	106.0	.6	21.5	97.5	106.3	100.4	M-high
38	Appl A-336	106.3	106.3	0	21.1	86.7	94.5	100.7	High
39[5]	Pioneer 307	106.2	106.0	.2	21.8	81.0	88.3	100.4	High
39	Producers 1000	106.2	105.5	.7	22.4	90.7	98.8	99.9	High
41	Ohio C-92	106.0	105.7	.3	20.8	97.7	106.5	100.1	High
42	Holmes Utility 39	105.9	105.5	.4	23.0	90.5	98.7	99.9	High
43	Kelly K-99	105.8	105.7	.1	21.6	95.0	103.6	100.1	High
44	Huey H-23	105.7	105.4	.3	20.7	95.3	103.9	99.8	High
45	National 125	105.6	105.1	.4	22.7	90.2	98.3	99.6	M-high
45	Ward 115B	105.6	102.5	2.9	20.4	92.0	100.3	97.1	Medium
47	Pioneer 334	104.8	104.3	.5	23.6	89.5	97.6	98.8	M-high
48	Illinois 273-1	104.7	104.3	.4	21.3	95.7	104.3	98.8	M-high
49	Morgan M-105	104.5	104.4	.1	21.1	95.3	103.9	98.9	Medium
49	Ferris F-14	104.5	104.1	.3	22.0	90.5	98.7	98.6	M-high
49	DeKalb 628A	104.5	104.1	.4	23.1	90.8	99.0	98.6	M-high
52	DeKalb 800A	104.4	101.1	3.2	22.8	96.8	105.6	95.7	M-high
53	Appl A-13	104.3	104.3	0	22.4	94.3	102.8	98.7	High
53	U. S. 35	104.3	104.2	.1	22.3	92.7	101.0	98.7	M-high
55	Schwenk S-34	103.7	103.6	.1	21.5	92.3	100.7	98.2	High
56	Doubet D-11	103.2	103.2	0	21.5	94.2	102.7	97.7	High
56	Moews 15	103.2	102.6	.6	22.0	88.3	96.3	97.2	Medium
58	Frey 645	103.1	103.1	0	21.9	95.5	104.1	97.7	M-high
59	Ward 120A	101.8	101.4	.4	22.9	93.0	101.4	96.0	High
60	Iowealth 16	101.5	101.1	.4	21.9	93.7	102.1	95.8	M-high
61	Stiegelmeier S-379	101.3	101.1	.2	21.3	91.2	99.4	95.8	M-high
62	U. S. 44-1	101.2	101.1	.1	22.5	79.7	86.9	95.7	High
63	Doubet D-42	100.8	100.2	.6	22.0	94.0	102.5	94.9	High
64	Blackhawk 111	100.7	100.2	.5	21.1	96.0	104.7	94.9	Medium
65	Furr 67A	99.5	98.7	.8	22.3	73.6	80.2	93.4	Medium
66	Morgan M-546	98.9	98.6	.3	21.3	96.2	104.8	93.4	High
67	Bear OK-77T	98.6	98.5	.1	23.4	86.8	94.7	93.3	High
68	DeKalb 680	97.1	95.7	1.4	22.0	93.7	102.1	90.6	M-high
69	Producers 909	96.6	96.5	.1	22.0	97.0	105.7	91.4	High
70	Hoosier Crost 840	96.0	95.8	.2	22.4	94.7	103.2	90.7	High
71	Iowealth 16(W)	90.1	90.1	0	20.5	84.3	91.9	85.3	High
72	Morgan M-52	79.3	79.1	.2	23.7	80.3	87.6	74.9	M-high
	Average of all entries	106.0	105.6	.4	21.9	91.7	....	....	.....

[5] Five plots were included in the average yield instead of six.

A difference of less than 8.1 bushels between total yields of any two entries in this table is not significant.

Table 9. — WEST NORTH-CENTRAL ILLINOIS: Galesburg Summary, 1944, 1945, and 1946

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Pioneer 304	93.0	91.8	1.3	22.4	68.5	95.3	105.2	Medium
2	Farmcraft FC-47	92.2	90.5	1.8	20.3	68.6	95.4	103.8	Medium
3	Pfister 5897	92.0	91.8	.2	20.3	69.4	96.6	105.2	Medium
4	Morton M-12	91.8	89.7	2.2	21.2	74.3	103.5	102.9	M-high
5	Holmes Utility 29	91.2	90.7	.5	20.2	75.2	104.6	104.0	M-high
5	Stewart S-11	91.2	90.6	.6	21.0	75.8	105.5	103.9	M-high
7	Doubet D-72	91.0	87.7	3.2	20.8	71.3	99.2	100.5	M-high
8	Funk G-169	90.3	89.7	.7	20.8	74.3	103.5	102.8	M-high
9	DeKalb 816	90.1	89.0	1.1	21.7	74.6	103.8	102.0	M-high
10	U. S. 13	90.0	89.7	.3	21.8	75.9	105.6	102.8	M-high
10	Lowe 520	90.0	89.4	.7	21.8	70.4	97.9	102.5	M-high
10	Crow 607	90.0	89.0	1.0	21.8	69.4	96.6	102.0	M-high
13	DeKalb 628A	89.3	88.6	.8	21.6	73.2	101.9	101.6	M-high
14	Holmes Utility 39	89.2	88.4	.8	21.8	70.8	98.6	101.4	M-high
14	DeKalb 847	89.2	86.8	2.6	19.8	74.2	103.2	99.5	Medium
16	Funk G-37	88.7	88.4	.3	19.9	75.1	104.5	101.3	M-high
16	DeKalb 800A	88.7	87.3	1.4	21.8	74.4	103.5	100.1	M-high
18	Kelly K-374	88.6	86.4	2.5	19.8	69.0	96.1	99.1	M-high
19	Illinois 201	88.5	88.1	.4	20.7	68.4	95.2	101.0	M-high
19	Crow 633	88.5	86.7	2.0	20.5	75.8	105.5	99.4	Medium
19	Illinois 1091A	88.5	86.7	2.0	21.0	68.5	95.3	99.4	Medium
22	Pfister 1897	88.4	87.9	.6	21.4	75.0	104.4	100.8	M-high
22	Pioneer 339	88.4	87.6	1.1	20.3	75.0	104.4	100.4	Medium
24	Producers 1000	87.4	85.5	2.1	21.3	67.9	94.5	98.1	M-high
25	Moews 550	87.1	86.5	.7	19.7	73.1	101.8	99.1	Medium
26	U. S. 44-1	86.8	85.2	1.7	21.0	68.0	94.6	101.6	M-high
27	National 125	86.7	86.0	.6	21.7	69.1	96.1	98.6	M-high
28	Doubet D-42	86.6	84.7	2.3	21.6	71.3	99.3	97.3	M-high
29	Frey 645	86.1	85.9	.1	21.1	77.4	107.7	98.5	Medium
30	Morgan M-546	85.7	84.5	1.3	21.1	73.4	102.2	96.9	M-high
31	Pioneer 307	85.6	84.8	1.0	20.5	67.4	93.9	97.2	M-high
32	U. S. 35	85.2	85.0	.2	20.9	72.8	101.3	97.5	Medium
33	Pioneer 334	84.8	83.5	1.4	20.9	72.3	100.6	95.8	M-high
34	DeKalb 680	81.6	79.9	1.9	21.6	69.4	96.6	91.6	Medium
35	Morgan M-52	75.8	75.4	.4	22.3	65.5	91.2	86.5	M-high
	Average of all entries	88.2	87.2	1.2	21.0	71.9	....	....	.....

A difference of less than 4.5 bushels between total yields of any two entries in this table is not significant.

Table 10. — CORN BORER DAMAGE: West North-Central Summary, Galesburg, 1943, 1946

Rank	Entry	Plants broken below ear[a]	Rank	Entry	Plants broken below ear[a]
		perct.			*perct.*
1	U. S. 44-1[b]	.9	13	Moews 550	2.2
2	Morgan M-546	1.1	15	U. S. 13	2.3
3	Hoosier Crost 840	1.3	15	DeKalb 680	2.3
4	Holmes Utility 29	1.5	17	Pfister 5897	2.4
5	Lowe 520	1.6	17	Farmcraft FC-47	2.4
6	Funk G-37	1.7	19	DeKalb 800A	2.5
7	Crow 633	1.8	20	National 125	2.9
7	Pfister 1897	1.8	21	DeKalb 628A	3.1
9	Doubet D-42	1.9	22	Funk G-169	3.2
10	Illinois 201	2.0	23	Morgan 52	3.7
10	Crow 607	2.0	24	DeKalb 816	3.8
12	Pioneer 339	2.1	25	Pioneer 334	5.9
13	Producers 1000	2.2		Average of all entries	2.3

[a] Includes only those plants broken below the ear at point of damage by the borer, *Pyrausta nubilalis* (Hbn.). [b] This entry was U. S. 44 in 1943 and U. S. 44-1 in 1946.

A difference of less than 2.3 in percentage figures is not significant.

Table 11. — EAST NORTH-CENTRAL ILLINOIS: Sheldon, 1946

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Pioneer 313B	114.2	113.0	1.0	25.3	92.3	99.7	113.2	M-high
2	Holmes Utility 39	110.9	110.0	.8	27.7	93.7	101.1	110.1	High
3	Morton M-33	110.1	109.6	.5	25.0	93.8	101.3	109.7	M-high
4	Lowe 520	109.9	109.3	.6	23.3	96.2	103.8	109.4	M-high
5	Pioneer 332	109.3	108.7	.5	28.0	92.5	99.9	108.9	High
6	Morton M-380	108.7	108.6	.1	25.5	92.8	100.2	108.8	M-high
7	Illinois 21	107.6	106.2	1.3	25.9	93.2	100.6	106.4	M-high
8	Doubet D-47	106.6	105.6	1.0	26.3	92.5	99.9	105.7	High
9	Schwenk S-66	106.4	106.3	.1	23.1	91.0	98.3	106.5	M-high
10	Bear OK-88T	105.8	105.8	0	26.8	88.7	95.8	106.0	M-high
10	Ainsworth X-14A	105.8	104.7	1.0	30.6	91.8	99.2	104.9	High
12	Crow 608	105.5	105.0	.5	23.7	93.8	101.3	105.1	M-high
13	Frey 644	105.4	105.1	.2	28.3	90.8	98.1	105.3	M-high
14	Trisler T-22	105.3	105.2	.1	25.2	95.5	103.1	105.3	M-high
15	Illinois 201	105.1	104.8	.3	25.8	94.7	102.2	105.0	High
16	Pioneer 300	104.9	104.5	.4	26.6	87.0	93.9	104.6	M-high
17	Sibley 700	104.7	101.5	3.1	27.1	96.5	104.2	101.6	M-high
18	Producers 1030	104.3	104.1	.2	26.9	90.0	97.2	104.3	High
19	Funk G-94	104.1	103.9	.2	29.1	96.2	103.8	104.1	M-high
19	Producers FCXX(1045)	104.1	103.9	.2	23.1	88.7	95.8	104.1	High
19	Crow 607	104.1	103.7	.3	25.6	87.5	94.5	103.9	High
22	Funk G-37	104.0	103.5	.5	24.3	97.2	104.9	103.7	High
23	DeKalb 847	103.6	103.5	.1	22.9	96.8	104.6	103.6	M-high
24	DeKalb 800A	103.4	103.2	.2	26.6	96.5	104.2	103.3	M-high
25	Pioneer 334	103.3	103.3	0	25.2	91.5	98.8	103.5	M-high
25	Hoosier Crost 668	103.3	103.2	.1	25.8	90.0	97.2	103.4	M-high
27	Frey 692	103.1	102.4	.7	26.3	95.2	102.8	103.5	M-high
28	DeKalb 817A	102.9	101.7	1.2	25.2	93.0	100.4	101.8	M-high
29	Kelly K-374	102.8	102.7	.1	23.4	91.7	99.0	102.8	M-high
30	Holmes Utility 90	102.2	102.0	.2	26.1	98.0	105.8	102.1	M-high
31	U. S. 13 (Pfeifer)	102.1	101.7	.4	25.3	91.3	98.6	101.8	M-high
32	Illinois 246	102.0	101.8	.2	29.5	90.2	97.4	101.9	High
33	Illinois 972A-1	101.8	101.4	.4	25.6	95.5	103.1	101.5	M-high
34	Farmcraft FC-69	101.7	101.5	.2	27.5	90.2	97.4	101.6	High
34	Pioneer 304	101.7	100.8	.9	26.4	89.7	96.9	100.9	M-high
34	Kelly K-77	101.7	99.5	2.2	25.9	93.8	101.3	99.6	M-high
37	National 126T	101.6	101.2	.4	25.6	89.6	96.7	101.3	M-high
38	U. S. 13	101.5	101.2	.3	24.7	91.8	99.2	101.3	High
39	DeKalb 628A	101.4	101.0	.4	25.0	92.0	99.3	101.2	M-high
39	Moews 523	101.4	100.9	.4	25.6	93.2	100.6	101.1	High
41	Keystone 38	101.3	101.1	.2	26.9	95.5	103.1	101.2	High
41	Appl A-201	101.3	100.8	.5	26.6	91.8	99.2	101.0	M-high
43	Funk G-53	100.9	100.9	0	24.3	96.0	103.7	101.0	M-high
44	Crow 607(W)	100.8	100.5	.3	23.0	89.7	96.8	100.6	M-high
45	Pfister 390	100.5	100.2	.3	25.2	94.3	101.9	100.3	Medium
46	Funk G-169	100.2	99.9	.3	25.5	91.8	99.2	100.0	M-high
47	Producers 1040	99.9	99.8	.1	25.0	94.7	102.2	100.0	M-high
48	Sibley 753B	99.8	98.5	1.3	24.1	92.2	99.5	98.6	M-high
49	Hoosier Crost 616	99.6	99.5	.1	25.5	95.3	102.9	99.6	M-high
50	Pfister 380	98.5	97.3	2.2	26.4	92.5	99.9	97.5	Medium
51	Ward 120B	98.1	97.9	.2	26.4	92.7	100.1	98.1	High
52	Kelly K-88	97.5	96.5	1.0	25.3	85.7	92.5	97.7	M-high
53	Frey 645	97.2	97.0	.2	24.0	94.7	102.2	97.2	M-high
54	Bear OK-30	97.0	97.0	0	25.8	95.5	103.1	97.1	M-high
55	Appl A-128	96.9	96.6	.3	27.8	92.0	99.3	96.8	High
56	Lowe 560	96.6	95.7	1.0	27.2	94.8	102.4	95.8	M-high
57	Farmcraft FC-42	96.2	95.8	.4	24.3	89.7	96.8	96.0	M-high
58	Bear OK-315(W)	95.3	95.3	0	26.3	87.5	94.5	95.4	M-high
59	Crow 633	95.1	94.9	.2	28.0	97.3	105.1	95.0	M-high
60	National 118	94.7	94.1	.6	24.3	94.8	102.4	94.2	M-high
61	Hoosier Crost 840	94.1	94.1	0	24.9	95.7	103.3	94.2	M-high
62	Moews 520	94.0	93.6	.4	26.6	94.2	101.7	93.8	M-high
63	Hoosier Crost F-170	93.9	92.9	1.0	27.0	92.2	99.5	93.0	M-high
64	Stiegelmeier S-360	93.6	93.5	.1	21.5	91.3	98.6	93.6	M-high
65	Funk G-74	93.3	92.9	.4	24.0	89.3	96.5	93.0	M-high
66	U. S. 35	92.8	92.5	.3	26.3	93.0	100.4	92.6	M-high
67	Moews 14	92.5	92.0	.6	22.3	88.3	95.4	92.1	Medium
68	DeKalb 840	90.7	90.6	.2	24.8	89.2	96.3	90.7	M-high
69	Furr 67	83.7	83.3	.4	26.6	94.8	102.4	83.5	Medium
69	Frey 634(W)	83.7	82.7	1.2	26.1	89.5	96.6	82.9	High
71	Iowealth AQ	83.6	83.4	.2	28.6	94.2	101.7	83.5	High
72	Iowealth 25A	73.9	73.6	.4	28.5	91.5	98.8	73.7	High
	Average of all entries	100.4	99.9	.5	25.8	92.6	....	....	.....

A difference of less than 8.9 bushels between total yields of any two entries in this table is not significant.

Table 12. — EAST NORTH-CENTRAL ILLINOIS: Summary, Milford, 1944 and Sheldon, 1945 and 1946

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Holmes Utility 39	97.1	96.4	.7	24.6	73.3	97.9	108.1	M-high
2	Frey 692	94.2	93.5	.8	23.0	74.1	98.9	104.8	M-high
2[a]	Pioneer 313B	94.2	93.4	.7	24.2	71.2	95.1	104.7	M-high
4	Morton M-380	94.1	93.5	.8	23.4	73.4	98.0	104.8	Medium
5	Producers 1030	93.3	92.0	1.4	23.7	75.4	100.7	103.1	M-high
6	Funk G-94	93.2	92.7	.6	24.6	77.9	104.0	103.9	M-high
7	Illinois 201	92.8	92.3	.5	22.5	73.5	98.1	103.5	M-high
8	DeKalb 628A	92.7	92.1	.7	22.8	74.4	99.3	103.3	M-high
9	Frey 644	92.5	91.6	1.0	24.8	73.8	98.5	102.7	M-high
10	Pioneer 300	92.2	91.8	.5	23.8	75.8	101.2	102.9	M-high
11	DeKalb 800A	92.0	91.0	1.1	23.7	78.7	105.1	102.0	M-high
11	Pioneer 304	92.0	91.0	1.0	25.4	71.8	95.9	102.0	Medium
13	Pioneer 332	91.1	90.7	.4	25.2	74.9	100.0	101.7	M-high
13	Doubet D-47	91.1	90.4	.8	23.2	78.7	105.1	101.3	M-high
15	Crow 607	91.0	90.5	.5	23.6	70.6	94.3	101.5	M-high
15	Funk G-53	91.0	90.1	1.0	22.5	77.9	104.0	101.0	Medium
17	Pfister 380	90.9	90.3	1.0	23.2	74.6	99.6	101.2	Medium
18	DeKalb 840	90.6	90.3	.4	22.7	70.9	94.7	101.2	Medium
19	Illinois 21	90.4	88.7	1.9	23.3	77.5	103.5	99.4	M-high
20	Crow 608	89.8	88.8	1.1	23.0	77.9	104.0	99.6	M-high
21	Kelly K-374	89.6	89.0	.7	21.6	74.3	99.2	99.8	M-high
21[b]	Illinois 972A-1	89.6	88.8	.9	22.8	75.8	101.2	99.6	M-high
23	Funk G-37	89.4	88.5	1.1	22.0	79.2	105.7	99.2	M-high
24	Lowe 520	89.2	88.7	.5	26.4	68.1	90.9	99.4	M-high
25	Stiegelmeier S-360	89.1	88.7	.5	20.6	71.5	95.5	99.4	Medium
26	U. S. 13	88.9	87.5	1.6	23.9	72.6	96.9	98.1	M-high
27	Producers 1040	88.7	87.8	1.2	22.4	81.1	108.3	98.4	M-high
28	DeKalb 847	88.6	88.1	.7	22.2	74.8	99.9	98.8	Medium
29	Funk G-169	87.9	87.1	1.0	23.3	72.2	96.4	97.6	M-high
30	Frey 645	87.5	87.1	.4	22.4	77.7	103.7	97.6	Medium
31	Hoosier Crost 668	87.4	87.1	.3	23.9	75.1	100.3	97.6	M-high
32	DeKalb 817A	87.3	86.3	1.1	23.5	73.9	98.7	96.7	M-high
33[c]	Sibley 753B	85.3	84.5	1.0	22.0	74.7	99.7	94.7	M-high
34	Crow 633	85.2	84.4	1.0	24.7	78.6	104.9	94.6	Medium
35	U. S. 35	83.8	83.4	.5	22.9	81.3	108.5	93.5	Medium
36	Lowe 560	82.0	81.5	.6	23.3	77.2	103.1	91.4	M-high
37	Crow 607(W)	81.5	81.0	.7	23.0	68.0	90.8	90.8	M-high
	Average of all entries	89.9	89.2	.8	23.4	74.9	....	....	.....

[a] Averaged with Pioneer 313D, which appeared in the 1944 tests. [b] Averaged with Illinois 972-1, which appeared in the 1944 tests, and with Illinois 972-2 (Appl.), which appeared in the 1945 tests. [c] Averaged with Sibley 753B-1, which appeared in the 1944 tests.

A difference of less than 4.1 bushels between total yields of any two entries in this table is not significant.

Table 13. — SOUTH-CENTRAL ILLINOIS: Sullivan, 1946

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Bear OK-40	105.8	105.6	.1	22.0	93.8	99.7	118.4	Medium
2	Illinois 21	104.9	104.5	.4	22.4	96.3	102.4	117.1	Medium
3	Crow 607	102.4	101.9	.5	25.1	91.0	96.7	114.2	M-high
4	Farmcraft FC-81	101.9	100.0	1.8	23.7	89.2	94.8	112.1	Medium
5[4]	Kelly K-374	101.4	101.2	.2	21.5	96.7	102.7	113.4	M-high
6	Pioneer 332	100.4	99.8	.6	25.0	95.0	101.0	111.9	M-high
7	Doubet D-41	100.1	99.7	.4	23.4	94.3	100.2	111.7	M-high
8	Illinois 206 (Pfeifer)	99.9	99.1	.8	23.5	90.0	95.6	111.1	M-high
9[5]	Ainsworth X-14A	99.7	99.5	.2	24.3	96.0	102.0	111.5	M-high
10	Pioneer 300	98.8	97.0	1.8	24.0	93.5	99.4	108.7	Medium
11[4]	National 125-1	98.6	98.4	.2	22.6	94.8	100.8	110.3	M-high
12[3]	Morton M-12	98.1	97.6	.5	23.7	95.3	101.3	109.4	M-high
13[5]	Huey H-23	97.6	97.0	.7	22.4	93.8	99.7	108.7	M-high
14	Pioneer 336	97.5	96.3	1.3	23.5	92.5	98.3	107.9	M-high
15	Appl A-13	97.4	97.2	.2	23.0	95.8	101.8	109.0	M-high
16[4]	Illinois 784	97.2	97.1	.1	26.1	91.2	97.5	108.8	High
17[5]	Farmcraft FC-88	96.5	96.1	.4	22.8	95.3	101.3	107.7	Medium
18[5]	Crow 805	96.1	95.8	.3	24.1	96.5	102.6	107.4	M-high
18[5]	Producers 1000	96.1	95.7	.4	21.8	95.5	101.5	107.3	M-high
20[4]	Funk G-94	95.7	95.1	.6	23.6	95.3	101.3	106.6	M-high
21	Pioneer 313B	95.4	94.2	1.3	23.7	95.5	101.5	105.5	Medium
22[5]	Holmes Utility 46	94.7	94.6	.1	22.1	94.0	99.9	106.0	M-high
23	Trisler T-32	94.4	93.8	.6	21.5	96.2	102.2	105.1	Medium
24[4]	Producers 1050	93.9	93.5	.4	23.0	96.3	102.4	104.8	M-high
25[5]	Crow 608	93.6	93.2	.4	23.5	98.5	104.7	104.4	M-high
26	Whisnand 831	93.3	92.5	.8	23.5	94.2	100.1	103.7	M-high
27[5]	Pfister 164	93.1	92.6	.5	22.6	96.2	102.2	103.8	Medium
28[5]	Illinois 126	92.8	92.6	.2	22.8	93.0	98.8	103.8	M-high
29[5]	Whisnand 905(W)	92.7	91.0	1.8	28.8	92.8	98.7	102.0	High
30[5]	Holmes Utility 29	92.6	92.2	.4	21.9	95.0	101.0	103.4	Medium
31[5]	U. S. 13	92.5	92.4	.1	22.6	96.7	102.7	103.6	M-high
31	Illinois 201	92.5	92.2	.4	21.2	96.0	102.0	103.3	M-high
33	DeKalb 898	92.4	92.0	.4	23.8	94.8	100.8	103.1	High
34[5]	Bear OK-150	92.3	92.2	.1	22.4	94.3	100.2	103.4	Medium
34[4]	Pfister 392	92.3	92.2	.2	23.4	94.3	100.2	103.3	Medium
34[5]	Illinois 200	92.3	91.8	.5	23.8	89.5	95.1	102.9	M-high
37	Pfister 612(W)	92.0	92.0	0	22.8	94.7	100.6	103.1	High
38	Ward 120A	91.4	91.0	.4	24.1	96.8	102.9	102.0	M-high
39	Illinois 246	90.5	89.8	.8	24.1	93.2	99.0	100.6	M-high
40	Appl A128	89.4	89.1	.3	26.9	92.2	98.0	99.9	M-high
41	Funk G-515(W)	89.2	88.7	.5	23.5	83.0	88.2	99.4	High
42[4]	National 129R	89.1	88.6	.6	24.1	95.5	101.5	99.2	M-high
42	Embro 36	89.1	88.5	.7	24.0	97.0	103.1	99.2	M-high
44[5]	Pfeifer 1	88.9	88.4	.5	26.9	98.7	104.9	99.1	High
45	Producers 1040	88.8	87.3	1.7	22.7	97.5	103.6	97.8	M-high
46[5]	Stiegelmeier S-102	88.3	87.9	.4	23.5	92.8	98.7	98.5	Medium
47	Appl A-201	88.0	87.9	.1	23.7	94.7	100.6	98.5	Medium
48	Kelly K-99	87.6	87.3	.3	21.9	93.2	99.0	97.9	M-high
49[5]	DeKalb 888	87.4	84.9	2.9	22.4	92.3	98.1	95.2	M-high
50[5]	Keystone 38	86.7	86.3	.4	24.7	95.2	101.1	96.8	M-high
51	Hoosier Crost 746	86.6	86.3	.4	24.9	98.0	104.1	96.7	Medium
52	Producers 1030	86.2	85.3	1.1	29.9	95.0	101.0	95.6	M-high
52	Moews 830	86.2	84.8	1.6	23.3	94.7	100.6	95.0	M-high
54	Pfister 1897	85.8	85.7	.2	23.8	93.5	99.4	96.0	Medium
55	Huey H-73	85.6	85.1	.5	27.1	90.3	96.0	95.4	High
56[5]	DeKalb 816	85.2	84.2	1.2	22.8	96.5	102.6	94.4	Medium
57	Pioneer 505(W)	84.4	83.3	1.3	25.5	94.5	100.4	93.4	M-high
58	Illinois 247-1	82.9	82.7	.2	25.6	95.3	101.3	92.7	M-high
59	Morgan M-546	82.8	82.5	.4	23.3	96.5	102.6	92.4	M-high
59[5]	Funk G-80	82.8	82.5	.4	26.6	95.8	101.8	92.4	M-high
61[5]	Hoosier Crost 840	82.4	82.0	.4	24.4	94.5	100.4	91.9	Medium
62[5]	Lowe 855(W)	82.0	81.8	.2	23.4	92.5	98.3	91.7	High
63	DeKalb 922(W)	81.9	81.1	1.0	25.6	94.8	100.8	90.9	M-high
64	Whisnand 917(W)	79.5	78.0	1.8	27.5	95.8	101.8	87.4	High
65[5]	DeKalb 835	78.3	78.3	0	21.5	95.0	101.0	87.8	M-high
66	Bear OK-321(W)	77.5	77.4	.2	23.5	90.8	96.5	86.7	Medium
67[5]	Illinois 972A-1	74.2	73.8	.5	24.2	91.3	97.1	82.7	M-high
68[4]	Pfeifer A-243	74.1	73.5	.7	28.5	89.7	95.3	82.4	High
69[5]	Ward 120(W)	70.3	70.2	.1	23.5	97.0	103.1	78.7	M-high
70[5]	Hoosier Crost 707(W)	66.9	66.7	.3	27.1	86.7	92.1	74.7	M-high
71[4]	Iowealth 25	64.8	64.7	.2	26.8	92.5	98.3	72.5	Medium
72[5]	Iowealth 29A	60.3	59.8	.8	36.5	88.5	94.0	67.0	High
	Average of all entries	89.8	89.2	.6	24.2	94.2	....	....	.....

[3, 4, 5] These figures beside the rank numbers indicate the number of plots averaged to get the data in this table.

A difference of less than 8.9 bushels between total yields of any two entries in this table is not significant.

Table 14. — SOUTH-CENTRAL ILLINOIS: Sullivan Summary, 1944, 1945, and 1946

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Crow 607	98.2	97.4	.8	21.0	77.1	93.2	108.0	M-high
1	Pioneer 332	98.2	96.9	1.4	20.8	84.6	102.3	107.4	M-high
3	Producers 1050	97.6	97.4	.2	19.7	79.0	95.5	108.0	M-high
4	Funk G-515(W)	96.5	96.0	.5	21.0	63.1	76.3	106.4	High
5	Illinois 21	95.1	93.0	2.3	19.5	90.6	109.6	103.1	Medium
6	Illinois 201	94.9	94.4	.5	18.2	85.3	103.1	104.7	Medium
7	Farmcraft FC-81	93.7	92.8	.9	19.1	86.6	104.7	102.9	Medium
8	Whisnand 831	93.3	92.8	.5	19.3	81.8	98.9	102.9	Medium
9[a]	Pioneer 313B	93.1	92.2	1.0	20.0	79.5	96.1	102.2	Medium
10	Producers 1000	92.6	92.3	.3	18.4	81.7	98.8	102.3	Medium
11	Pioneer 300	92.5	90.6	2.1	20.0	85.5	103.4	100.4	Medium
12	Producers 1040	92.3	91.7	.7	19.0	91.3	110.4	101.7	Medium
12	Pfister 164	92.3	91.2	1.2	19.1	90.7	109.7	101.1	Medium
14	Crow 608	92.0	91.5	.6	19.1	86.3	104.4	101.4	Medium
14	Crow 805	92.0	91.4	.7	19.9	86.2	104.2	101.3	Medium
14	U. S. 13	92.0	91.3	1.0	18.9	86.3	104.4	101.2	Medium
17	Funk G-80	91.7	90.6	1.1	22.6	84.9	102.7	100.4	M-high
18	Illinois 246	91.4	90.9	.6	20.0	78.8	95.3	100.8	M-high
19	Pfister 1897	91.3	90.5	.8	19.5	89.9	108.7	100.3	Medium
20	Morgan M-546	91.1	90.5	.6	19.7	85.0	102.8	100.3	M-high
21	Stiegelmeier S-102	91.0	90.6	.4	18.9	89.1	107.7	100.4	Medium
21	Illinois 200	91.0	89.8	1.0	20.6	76.4	92.4	99.6	M-high
23	Farmcraft FC-88	90.8	90.1	.8	19.5	79.4	96.0	99.9	Medium
24	Funk G-94	90.5	90.0	.6	19.6	82.9	100.2	99.8	Medium
25	Whisnand 917(W)	90.3	89.6	.9	21.8	75.2	90.9	99.3	High
25[b]	Illinois 247-1	90.3	88.1	2.2	20.7	80.2	97.0	97.7	M-high
27	Pioneer 336	90.1	89.3	.9	18.9	86.4	104.5	99.0	Medium
28	DeKalb 816	89.5	88.2	1.4	20.0	86.3	104.4	97.8	Medium
29	DeKalb 835	88.1	87.3	.9	18.5	86.9	105.1	96.8	Medium
30	DeKalb 888	88.0	85.8	2.5	20.2	72.2	87.3	95.1	M-high
31	Illinois 126	87.4	86.1	1.5	19.3	82.1	99.3	95.5	Medium
32	Hoosier Crost 746	87.2	86.7	.6	20.0	89.6	108.3	96.1	Medium
33	Hoosier Crost 840	86.6	84.3	2.7	20.3	84.4	102.1	93.5	Medium
34	Lowe 855(W)	86.2	86.0	.3	21.3	73.6	89.0	95.3	High
35[c]	Illinois 972A-1	86.1	84.0	2.7	19.3	87.5	105.8	93.1	Medium
36	DeKalb 922(W)	85.7	85.2	.6	21.4	83.8	101.3	94.5	M-high
37	Hoosier Crost 707(W)	80.4	80.0	.5	21.8	69.3	83.8	88.7	M-high
	Average of all entries	91.1	90.2	1.0	19.9	82.7	....	....	.....

[a] This entry was Pioneer 313D in 1944 tests. [b] This entry was Illinois 247 in 1944 and 1945 tests. [c] This entry was Illinois 972-1 in 1944 tests.

A difference of less than 4.4 bushels between total yields of any two entries in this table is not significant.

(Correction for Table 13, opposite page)

Producers 1030, shown in Rank 52, should be in Rank 25. It had the following record:

Total yield..... 93.6 bushels
Sound yield..... 92.6 "
Moisture content..... 23.9 percent
Rating for sound yield 103.8 "

Table 15. — SOUTHERN ILLINOIS: Alhambra, 1946

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Hoosier Crost 840	67.9	67.5	.6	27.7	83.3	115.8	132.1	M-high
2	Pioneer 332	64.1	64.0	.2	29.4	75.0	104.2	125.3	Medium
3	National 125	62.0	61.8	.2	28.0	59.2	82.2	121.1	Medium
4	Crow 607	61.9	61.4	.7	28.9	70.0	97.3	120.3	M-high
4	DeKalb 875	61.9	61.3	.9	30.0	77.5	107.7	120.1	Medium
6	DeKalb 816	61.2	61.0	.3	28.3	71.7	99.6	119.4	Medium
7	Illinois 126	60.2	60.0	.3	27.1	65.0	90.3	117.4	Medium
8	Doubet D-42	60.0	59.7	.4	28.6	75.8	105.4	116.9	Medium
9	Illinois 972(Pfeifer)	59.8	59.4	.6	28.5	76.7	106.6	116.4	Medium
9	Keystone 40	59.8	58.7	1.8	28.9	65.8	91.5	114.9	M-high
11	Whisnand 834	59.5	59.0	.8	32.1	68.3	95.0	115.5	Medium
11	Morton M-33	59.5	58.8	1.1	29.2	71.5	99.4	115.2	M-high
13	Whisnand 917(W)	58.6	58.5	.1	33.4	65.8	91.5	114.6	M-high
14	Bear OK-332(W)	57.7	57.3	.7	32.5	77.5	107.7	112.2	M-high
15	Huey H-42	57.6	57.1	.8	28.0	80.8	112.3	111.8	Medium
16	National 126T	57.5	56.9	1.0	27.9	70.0	97.3	111.5	Medium
17	Illinois 201	56.5	56.0	1.0	29.3	73.3	101.9	109.5	M-high
18	Pioneer 313B	56.4	56.3	.1	30.0	84.2	117.0	110.3	Medium
19	Pfister 612(W)	56.1	55.2	1.5	32.8	62.5	86.9	108.1	M-high
20	DeKalb 888	55.4	55.1	.6	30.6	65.0	90.3	107.8	M-high
21	Funk G-80	55.3	55.1	.4	33.3	80.0	111.2	107.8	M-high
22	Doubet D-41	55.2	54.8	.6	28.7	55.0	76.4	106.8	M-high
23	Ward 120A	54.9	54.7	.4	30.0	70.0	97.3	107.0	Medium
24	U. S. 13	54.0	53.7	.6	28.2	76.7	106.6	105.2	M-high
25	Whisnand 905(W)	53.9	53.3	1.1	34.1	78.3	108.9	104.3	M-high
26	Morgan M-546	53.8	53.3	1.0	28.6	74.2	103.1	104.3	Medium
27	Morton M-12	53.1	52.8	.6	27.4	79.2	110.0	103.3	Medium
28	Pfister 630(W)	52.7	52.6	.2	32.5	71.7	99.6	102.9	M-high
29	Illinois 448	52.3	52.0	.5	32.7	76.7	106.6	101.8	High
29	Pioneer 300	52.3	51.9	.8	27.1	59.1	82.2	101.6	Medium
31	Iowealth 25	52.0	51.8	.4	32.8	68.3	95.0	101.4	M-high
31	Crow 608	52.0	51.2	1.6	25.2	68.3	95.0	100.2	Medium
33	Ward 125	51.8	51.3	.9	31.8	75.8	105.4	100.4	High
34	Keystone 38	51.7	51.4	.7	30.1	70.8	98.4	100.6	Medium
35	National 129R	51.6	51.2	.8	32.2	82.5	114.7	100.3	Medium
36	Illinois 784(Pfeifer)	51.5	51.0	1.0	32.9	67.5	93.8	99.8	M-high
36	Whisnand 831	51.5	50.9	1.2	29.6	65.0	90.3	99.7	Medium
38	Illinois 784	51.4	50.3	2.1	32.0	71.7	99.6	98.4	M-high
39	Lowe 840	51.1	50.7	.6	32.1	66.7	92.7	99.3	Medium
40	Ainsworth X-14A	50.1	49.9	.5	32.7	70.0	97.3	97.6	Medium
40	Illinois 200	50.1	49.9	.4	31.0	68.3	95.0	97.6	Medium
42	Hoosier Crost 746	50.0	49.4	1.2	30.0	67.5	93.8	96.8	Medium
42	Embro 36	50.0	49.2	1.6	26.6	68.3	95.0	96.4	Medium
44	Funk G-90	49.6	49.5	.2	30.1	78.3	108.9	97.0	Medium
45	Illinois 206(Pfeifer)	49.4	48.8	1.2	27.4	64.2	89.2	95.5	Medium
46	Illinois 2184A(W)	49.2	49.1	.2	33.3	72.5	100.8	96.1	High
46	Hoosier Crost 1010	49.2	49.0	.4	30.6	75.8	105.4	95.9	Medium
48	U. S. 13(Pfeifer)	49.1	48.9	.5	30.6	73.3	101.9	95.7	Medium
48	National 129	49.1	48.6	1.0	28.3	73.3	101.9	95.2	M-high
50	Hoosier Crost FD-8	48.5	47.9	1.2	27.5	70.8	98.4	93.8	M-low
51	Huey H-73	48.2	47.8	.8	33.6	76.7	106.6	93.5	Medium
52	Kelly K-374	48.0	47.1	1.8	27.2	64.2	89.2	92.2	Medium
53	Hoosier Crost 1005A	47.8	47.6	.3	30.5	65.0	90.3	93.3	Medium
54	Iowealth 25A	47.5	47.3	.5	32.1	81.7	113.5	92.6	M-high
55	Pioneer 510(W)	47.3	46.8	1.1	34.2	71.7	99.6	91.6	M-high
56	Bear OK-321(W)	46.6	46.3	.6	32.5	73.3	101.9	90.6	M-high
57	Pioneer 304	46.3	46.0	.7	32.4	85.0	118.1	90.0	Medium
58	Pfister 170	46.1	45.7	1.0	28.0	65.8	91.5	89.4	M-low
59	Embro 49	45.7	45.6	.1	30.8	68.3	95.0	89.3	Medium
60	Pioneer 336	45.5	45.1	1.0	26.9	55.0	76.4	88.2	Medium
61	Huey H-23	45.2	44.1	2.3	30.3	70.0	97.3	86.4	Medium
62	Embro 1020	44.9	44.3	1.4	30.5	56.7	78.8	86.7	M-low
63	Pfeifer 2	43.9	42.6	.8	31.2	81.7	113.5	83.3	M-high
64	DeKalb 922(W)	43.7	43.6	.3	33.3	68.3	95.0	85.3	M-high
65	Keystone 45	43.3	43.0	.6	32.4	72.5	100.8	84.2	Medium
66	Bear OK-315(W)	42.7	42.5	.4	32.2	81.7	113.5	83.3	Medium
67	Pioneer 505(W)	42.4	42.3	.2	34.3	69.2	96.1	82.9	M-high
68	Funk G-125	40.5	40.4	.3	28.7	76.7	106.6	79.1	High
69	Iowealth 29A	39.8	39.6	.5	37.7	81.7	113.5	77.5	M-high
70	DeKalb 898	39.4	39.2	.5	30.0	73.3	101.9	76.7	Medium
71	Pfister 660	36.8	36.7	.2	33.9	84.7	117.7	71.8	High
72	Embro 1001	35.4	35.3	.2	34.4	78.3	108.9	69.2	M-high
	Average of all entries	51.5	51.1	.7	30.5	72.0	....	....	.....

A difference of less than 11.0 bushels between total yields of any two entries in this table is not significant.

Table 16. — SOUTHERN ILLINOIS: Alhambra Summary, 1944 and 1946

(Data for 1945 are omitted because the 1945 crop did not mature)

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Hoosier Crost 840	49.0	48.7	.5	20.4	84.2	117.8	116.5	Medium
2	Illinois 200	48.9	48.4	1.0	22.2	65.8	92.0	115.8	Medium
3	Crow 607	48.8	47.7	2.7	21.6	71.7	100.3	114.1	Medium
4	Whisnand 917(W)	48.3	48.2	.3	25.2	62.9	88.0	115.3	M-high
5	U. S. 13	48.2	48.0	.5	20.7	78.8	110.2	114.8	Medium
6	Funk G-80	47.5	47.1	1.0	23.5	78.8	110.2	112.7	Medium
7	Pioneer 332	47.4	47.2	.6	22.1	78.3	109.5	112.9	Medium
8	DeKalb 816	46.3	45.9	.3	21.1	79.0	110.5	109.8	Medium
9	DeKalb 888	45.8	45.6	.5	22.7	70.8	99.0	109.1	Medium
10	Illinois 201	45.4	45.1	.7	21.0	81.2	113.6	107.9	Medium
11[a]	Illinois 206(Pfeifer)	43.8	43.3	1.1	20.4	67.1	93.8	103.6	Medium
12	Illinois 448	43.4	43.1	.6	24.2	64.6	90.3	103.1	M-high
13	Illinois 126	43.2	42.9	1.0	21.0	66.7	93.3	102.6	M-low
14[b]	Pioneer 313B	42.9	42.8	.5	22.1	74.6	104.3	102.4	Medium
15	Lowe 840	42.8	42.4	.7	22.5	74.6	104.3	101.4	Medium
16	Illinois 784	42.0	41.4	1.3	23.8	63.8	89.2	99.0	M-high
17[c]	Hoosier Crost 1005A	41.3	41.1	.5	23.9	48.8	68.3	98.3	Medium
18	Pioneer 304	41.2	41.1	.4	22.8	87.9	122.9	98.3	M-low
19	Pioneer 300	40.6	40.4	.5	19.2	72.5	101.4	96.7	Medium
20	Pfister 612(W)	40.1	39.6	.9	23.4	71.7	100.3	94.7	M-high
21	Pioneer 336	38.2	38.0	.7	19.9	65.4	91.5	90.9	Medium
22	Hoosier Crost 746	38.0	37.7	.7	22.2	67.9	95.0	90.2	M-low
23	DeKalb 922(W)	37.7	37.5	.6	23.5	70.0	97.9	89.7	Medium
24	Funk G-125	37.3	37.2	.4	20.8	68.4	95.7	89.0	M-high
25	Embro 1020	37.1	36.8	.8	22.5	67.5	94.4	88.0	M-low
26	Iowealth 29A	36.8	36.6	.6	25.0	79.6	111.3	87.6	Medium
27	Embro 1001	34.5	34.3	.6	25.5	68.7	96.1	82.1	M-high
	Average of all entries	42.8	41.8	.7	22.3	71.5	....	....	.....

[a] Averaged with Illinois 206, which appeared in the 1944 tests. [b] Averaged with Pioneer 313D, which appeared in the 1944 tests. [c] Averaged with Hoosier Crost 1005, which appeared in the 1944 tests.

A difference of less than 7.1 bushels between total yields of any two entries in this table is not significant.

Table 17. — EXTREME SOUTHERN ILLINOIS: Dixon Springs Bottomland, 1946

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Whisnand 917(W)	83.9	83.2	.8	18.8	98.3	103.8	122.2	M-high
2	Keystone 106(W)	83.4	82.7	.8	18.2	96.8	102.2	121.4	High
3	Ward 125	82.6	82.0	.7	18.9	80.8	85.3	120.4	M-high
4	Ward 135(W)	79.1	78.6	.6	21.8	90.8	95.9	115.4	M-high
5	Illinois 2019(W)	78.6	78.4	.2	18.6	99.5	105.1	115.1	M-high
5	Illinois 1233-1	78.6	77.9	.9	18.7	95.7	101.0	114.4	Medium
7	Whisnand 905(W)	78.2	77.7	.6	18.7	98.2	103.7	114.1	High
8	DeKalb 922(W)	77.7	75.4	2.9	19.3	98.3	103.8	110.7	M-high
9	Pfister 630(W)	76.5	75.6	1.2	21.3	95.2	100.5	111.0	M-high
10	National 129-2	75.6	73.6	2.6	18.7	97.8	103.3	108.1	Medium
11	Funk G-708	75.1	74.9	.3	23.5	96.7	102.1	110.0	High
12	Illinois 200	74.3	74.0	.4	19.5	90.1	95.1	108.7	Medium
13	Illinois 448	74.2	73.9	.4	19.6	96.7	102.1	108.5	M-high
14	Pfister 612(W)	73.8	73.5	.4	18.7	97.5	102.9	107.9	M-high
15	Lowe 840	73.4	73.0	.6	18.3	92.2	97.3	107.2	Medium
16	Doubet D-41	73.2	71.9	1.8	19.1	94.5	99.8	105.6	M-high
17	U. S. 13	72.1	70.9	1.7	17.9	92.5	97.7	104.1	Medium
17	Bear OK-343(W)	72.1	70.0	2.9	18.7	93.8	99.0	102.8	Medium
19	Funk G-711	72.0	71.7	.4	28.4	91.5	96.7	105.3	M-high
20	Embro 49	71.6	67.6	5.6	17.7	100.0	105.6	99.3	Medium
21	Lowe 855(W)	71.4	70.8	.9	19.3	97.8	103.3	104.0	High
22	Pioneer 505(W)	71.2	69.3	2.6	18.5	96.2	101.6	101.8	M-high
23	U. S. 13 (Pfeifer)	71.1	69.5	2.2	18.8	96.0	101.4	102.0	Medium
24	Hoosier Crost 707(W)	70.7	70.3	.6	20.4	95.0	100.3	103.2	M-high
25	Keystone 45	70.1	69.0	1.5	20.4	96.7	102.1	101.3	Medium
26	Pioneer 313B	69.9	69.5	.6	18.1	99.0	104.5	102.0	M-low
26	National 129R	69.9	69.5	.6	21.8	92.8	98.0	102.0	Medium
28	DeKalb 888	69.8	69.3	.7	18.5	98.2	103.7	101.8	Medium
29	Morgan M-546	69.4	68.3	1.6	18.7	99.7	105.3	100.3	Medium
30	Pioneer 332	68.9	67.7	1.7	19.7	97.8	103.3	99.4	Medium
31[5]	Bear OK-321(W)	68.8	68.4	.6	19.3	86.7	91.5	100.4	Medium
32	Illinois 126	68.1	67.5	.9	18.9	95.3	100.6	99.1	Medium
33	Illinois 1238	68.0	67.0	1.5	18.5	93.2	98.4	98.4	Medium
34	Iowealth 29A	67.7	67.2	.8	20.9	91.0	96.1	98.7	High
35	Pioneer 304	67.6	67.3	.4	19.5	95.7	101.0	98.8	M-low
36	Illinois 784	67.1	65.7	2.1	19.9	92.0	97.1	96.5	M-high
37	Illinois 2184A(W)	66.8	66.6	.3	17.9	97.7	103.2	97.8	M-high
38	Doubet D-42	66.7	65.4	2.0	18.7	98.3	103.8	96.0	Medium
39	National 129	66.6	64.6	3.0	19.6	92.8	98.0	94.9	Medium
40[5]	Illinois 2120(W)	66.5	64.5	3.0	17.9	97.2	102.6	94.7	M-high
41	Whisnand 834	66.4	66.2	.3	20.4	88.2	93.1	97.2	Medium
42	Bear OK-315(W)	66.2	65.4	1.2	19.3	93.5	98.7	96.0	Medium
42[5]	Illinois 784 (Pfeifer)	66.2	62.1	6.2	20.9	90.2	95.2	91.2	M-high
44	Illinois 1239	66.0	64.7	1.9	18.3	96.8	102.2	95.0	M-high
45	Illinois 2119(W)	65.9	65.8	.2	18.2	98.7	104.2	96.6	M-high
46	Keystone 38	65.6	64.6	1.6	18.6	93.3	98.5	94.9	Medium
47	Iowealth TX-1	65.2	65.1	.2	18.7	92.5	97.7	95.6	Medium
48	Pfister 170	65.1	64.8	.6	17.5	91.8	96.9	95.1	Medium
49	Pfeifer A-243	64.6	64.1	.7	20.9	91.3	96.4	94.1	M-high
50	Pioneer 336	64.0	62.7	2.1	17.9	93.0	98.2	92.1	Medium
51	Embro 1001	63.2	62.3	1.5	19.7	98.3	103.8	91.5	M-high
52	Hoosier Crost 840	62.7	58.3	7.0	17.9	95.3	100.6	85.6	Medium
53	Ward 120A	62.0	61.9	.2	18.7	94.0	99.2	90.9	Medium
54[5]	Whisnand 831	61.2	60.6	1.0	21.7	93.7	98.9	89.0	Medium
55	DeKalb 923(W)	60.7	59.9	1.4	19.7	97.2	102.6	88.0	Medium
56	Hoosier Crost 1010	59.7	58.6	1.8	19.5	95.2	100.5	86.0	Medium
57	Pioneer 300	58.7	58.4	.5	18.9	98.3	103.8	85.7	M-low
58	DeKalb 898	54.6	53.0	3.0	20.2	94.2	99.5	77.8	Medium
59	Embro 1020	53.2	52.6	1.2	18.5	91.5	96.6	77.2	M-low
60	Hoosier Crost 1005A	51.6	51.4	.4	19.4	90.0	95.0	75.5	Medium
	Average of all entries	69.1	68.1	1.4	19.4	94.7	....	....	.....

[5] Five plots were included in the average yield instead of six.

A difference of less than 14.3 bushels between total yields of any two entries in this table is not significant.

Table 18. — EXTREME SOUTHERN ILLINOIS: Dixon Springs Bottomland, Summary for 1944, 1945, and 1946

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		Comparative height of ear
		Total	Sound				Erect plants	Sound yield	
		bu.	*bu.*	*perct.*	*perct.*	*perct.*[a]	*perct.*	*perct.*	
1	Whisnand 905(W)	67.9	67.3	.8	21.6	86.1	106.0	118.5	M-high
2	Illinois 2120(W)	66.4	65.3	1.7	20.4	79.6	98.0	115.0	M-high
3	Funk G-711	64.7	64.1	1.0	30.0	76.8	94.7	112.9	M-high
4[b]	Illinois 2019(W)	62.8	62.0	1.2	21.1	84.3	103.8	109.2	M-high
5[c]	Illinois 1233-1	61.3	60.6	1.3	19.8	85.4	105.2	106.7	Medium
6	Lowe 855(W)	60.6	59.9	1.2	20.7	77.4	95.3	105.5	M-high
7	Illinois 2119(W)	60.3	59.8	.9	20.8	91.9	113.2	105.3	M-high
8	Whisnand 917(W)	59.9	59.1	1.4	21.2	86.2	106.2	104.0	M-high
9	DeKalb 888	57.4	56.7	1.3	20.2	82.6	101.7	99.8	Medium
10	Hoosier Crost 707(W)	57.1	56.7	.9	23.0	77.5	95.4	99.8	M-high
10	Illinois 784(Pfeifer)	57.1	54.8	3.9	22.5	66.6	82.0	96.5	M-high
12	Illinois 1239	57.0	55.6	2.5	19.9	79.9	98.4	97.9	M-high
13[d]	Illinois 448(Pfeifer)	56.6	56.1	1.1	20.7	80.9	99.6	98.8	M-high
14	Illinois 126	56.3	55.2	2.1	19.8	84.7	104.3	97.2	Medium
15	DeKalb 922(W)	56.2	55.1	1.7	20.8	86.7	106.8	97.0	Medium
16	Whisnand 834	55.4	54.4	1.8	22.1	71.6	88.2	95.8	Medium
17[e]	Illinois 1238	55.3	54.0	2.4	20.5	86.6	106.7	95.1	Medium
18	Illinois 200	53.4	52.5	2.0	21.0	71.6	88.2	92.4	Medium
19	Lowe 840	52.9	51.9	2.1	20.2	73.6	90.6	91.4	Medium
20	Funk G-708	51.5	51.0	1.2	29.7	86.9	107.0	89.8	High
20	U. S. 13	51.5	50.5	2.1	19.7	81.3	100.1	88.9	Medium
22	Hoosier Crost 840	48.8	46.3	4.8	18.9	87.7	108.0	81.5	Medium
	Average of all entries	57.7	56.8	1.8	21.6	81.2	....	....	.....

[a] Data on erect plants are averages of 1945 and 1946 only. [b] This entry was Illinois 2019B(W) in 1944. [c] This entry was Illinois 1233 in 1944 and 1945. [d] This entry was Illinois 448 in 1944. [e] This entry was 1238B in 1944.

A difference of less than 6.1 bushels between total yields of any two entries in this table is not significant.

SOIL ADAPTATION TEST

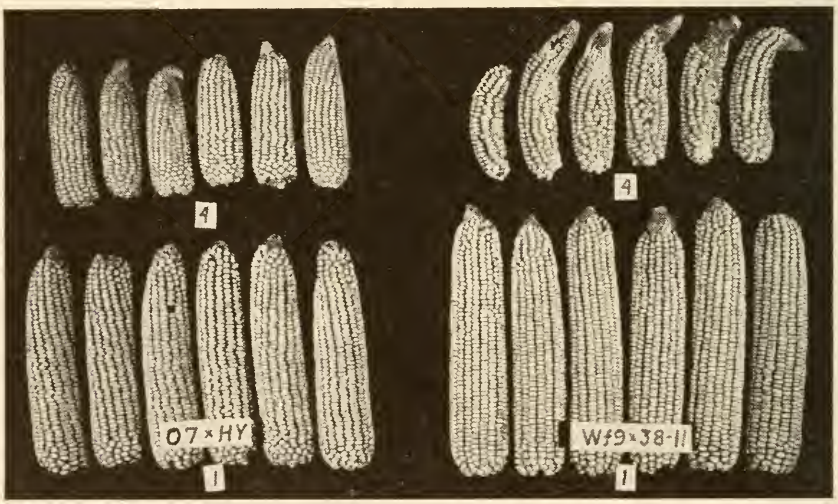
Six single-cross and three double-cross hybrids were tested at Urbana on fields of two different fertility levels. The three double-cross hybrids, Illinois 751, 972-1, and 246, were also tested in 1943, 1944, and 1945. The single-cross hybrids selected are commonly used as seed parents in producing commercial seed corn. Information on their yield and physical response to fertility is of practical value to the industry.

Soils. The two areas used for the tests are on the Agronomy south farm and differ in productivity as a result of long-continued use of different cropping systems. In the Southwest rotation a high state of productivity has been maintained by a systematic rotation of corn, oats, clover hay, and wheat with a red-clover catch crop. The South-Central area has been depleted of fertility by a rotation of corn, corn, corn, and soybeans. Both fields have received manure and phosphate. The predominating soil type on both fields is Sidell silt loam.

Season. Wet weather somewhat delayed planting. The highly productive field was planted May 22, the less productive, May 23. Growing conditions were favorable to high production thruout the season.

1946 results. The corn on the highly productive soil responded more favorably to the weather than that on the less productive (Table 19). The better field yielded 59 bushels an acre more than the less productive. The difference indicates that weather may help make the crop but that a crop cannot succeed without plenty of plant food. The 1946 results are in line with those of previous years. On the highly productive soil, Illinois 972-1 has a three-year average of 113 bushels an acre, on the less productive area a three-year average of 65 bushels an acre, a difference of 48 bushels an acre.

The average yield for all hybrids on the better land was 125 bushels an acre, the highest ever recorded in this study and 12



Hybrids behave differently under competition for nitrogen. The two hybrids shown here, WF9 × 38-11 and Hy × O7, were grown on land having a limited supply of nitrogen. When planted at the rate of one stalk per hill, both got enough nitrogen and WF9 × 38-11 proved distinctly superior to Hy × O7 in length of ear and total yield. When planted 4 stalks to the hill, Hy × O7 was superior to WF9 × 38-11 both in ear and kernel characteristics and in yield. (Fig. 2)

Table 19. — SOIL ADAPTATION TEST: Central Illinois, Urbana, 1946

Rank	Entry	Total acre-yield	Erect plants	Rating for— Erect plants	Rating for— Total yield
	HIGHLY PRODUCTIVE SOIL: Mostly Sidell silt loam, slightly rolling phase (S300, Southwest rotation)				
		bu.	*perct.*	*perct.*	*perct.*
1	Hy × 07	141.4	92	126	113.1
2	Hy × L317	134.9	57	78	107.9
3	Illinois 246	132.4	62	85	105.9
4	Illinois 972-1	130.9	79	108	104.7
5	WF9 × 38-11	126.1	79	108	100.9
6	WF9 × Hy	124.1	86	118	99.3
7	Illinois 751	117.6	66	87	94.1
8	WF9 × M-14	117.1	60	82	93.7
9	5120 × Hy	100.5	75	103	80.4
	Average	125.0	73	...	.....
	A difference of less than 5.7 bushels between total yields of any two of the above entries is not significant.				
	MEDIUM PRODUCTIVE SOIL: Mostly Sidell silt loam, slightly rolling phase (S500, South-Central rotation)				
1	Hy × 07	77.2	96	107	116.8
2	Hy × L317	71.5	82	91	108.2
3	Illinois 246	70.7	85	94	107.0
4	WF9 × Hy	69.2	98	109	104.7
5	Illinois 972-1	65.2	95	106	98.8
6	WF9 × M-14	65.1	97	108	98.5
7	Illinois 751	64.6	91	101	97.7
8	WF9 × 38-11	56.8	82	91	85.9
9	5120 × Hy	54.6	88	98	82.6
	Average	66.1	90	...	.....
	A difference of less than 5.7 bushels between total yields of any two of the above entries is not significant.				

bushels above the 1945 yield. On the less fertile soil the average yield was 66.1 bushels an acre, which was .2 bushel under the 1945 yield for the same land.

WF9 × 38-11 was the only hybrid showing striking difference in response to the different soils. On the better soil it was 1.1 bushels above the average yield of all hybrids on the field; on the poorer soil it was 9.3 bushels below the average. Ear and kernel characteristics of WF9 × 38-11 and also of WF9 × M-14 were affected by fertility. Fig. 2 illustrates these differences in physical response on the part of WF9 × 38-11.

Hy × O7 and Hy × L317 were outstanding single crosses on both soils, thus demonstrating their wide adaptability. The performance of these single crosses undoubtedly accounts for the wide adaptability of double-cross hybrids which have these single crosses as a part of their parentage.

SUMMARY

In 1946 two hundred sixty-six hybrids were grown on six fields in Illinois. In addition, six single crosses and three double crosses were tested on two special fields differing in productivity. Wet weather delayed planting on the three southern fields until June. Good stands were obtained on all the fields, except on the Sullivan field where rodents destroyed many hills.

The results of these tests were briefly as follows:

1. The Galesburg field in west north-central Illinois had the highest average yield, 106 bushels an acre. On the other test fields the average yields per acre were: Sheldon, 100.4 bushels; Sullivan, 89.8 bushels; Kings, 88.9 bushels; Dixon Springs, 69.1 bushels; and Alhambra, 51.5 bushels. The average yield of corn on all six fields was 84.3 bushels an acre. This is 27.3 bushels, or 47.9 percent, more than the 1946 state average of 57 bushels an acre. (The locations of these fields are shown in Table 1, page 342, and on the inside front cover.)

2. Lodging was not severe on any field in 1946. On the Alhambra field an average of 28 percent of the corn was lodged, but most of the lodging there was due to weak roots. Lodging on the other fields was due mainly to stalk breakage. It amounted to an average of 8.3 percent on the Galesburg field, 7.4 percent on the Sheldon, 7.1 percent on the Kings, 5.8 percent on the Sullivan, and 5.3 percent on the Dixon Springs field.

3. Hybrids in the northern Illinois testing field at Kings suffered most from corn borers. Some hybrids injured by borers were particularly susceptible to stalk breakage and others to ear dropping. The range in breakage was from 15.6 to 1.4 percent, the range in dropped ears from 3.7 to 0 percent. The average stalk breakage at Kings was 6.5 percent.

At Galesburg corn borers caused only 2.9 percent of the stalks to break.

Little or no injury from corn borers occurred on the other fields.

4. Materials used for treating seed corn ranked in effectiveness in the following order: (1) Arasan, (2) Spergon, and (3) Semesan Jr. and Barbak-C. This ranking is based on averages of five-year tests.

Two years' tests with the slurry formulation indicated that Arasan slurry is just as efficient as Arasan dust, if not more efficient.

5. Thruout the state *Gibberella zeae* was the principal cause of stalk rot. Inbreds L317, Ky27, K4, and Kys proved particularly susceptible to this disease.

6. Ear rots were of little importance in 1946. The most common cause of rotted kernels was *Fusarium moniforme*. *Gibberella zeae* was the next most common fungus on all fields, except at Sheldon where *Diplodia zeae* was the next most common.

7. The yield of the nine hybrids tested on special fields at Urbana, averaged together, was 125 bushels an acre on the highly productive soil, and on the less productive soil, 66.1 bushels an acre.

On both the highly productive and less productive soil, single-cross Hy × O7 made the largest yield and Hy × L317 the next largest.

8. Single-cross WF9 × 38-11 showed the most striking difference in response to the productivity of the soil. On the highly productive soil this cross yielded 1.1 bushels above the average; on the less productive soil, it yielded 9.3 bushels below the average. On poor soil, its ears were poorly filled at the tip; and under conditions created by thick planting, rows of kernels were missing or poorly developed thruout the length of the ears.

Readers are urged to study carefully the tables summarizing two- and three-year results of the tests. Hybrids that yield high for three years are more likely to prove dependable than those that yield high for only one year. A summary table for each test field immediately follows the 1946 table for the field.

PEDIGREES OF HYBRIDS

Following is a list of Experiment Station and U. S. hybrids whose performance is shown in this bulletin.

Ill. 21 ..... (WF9 × 38-11) (Hy × 187-2)	Ill. 1091A ..... (WF9 × M14) (Hy × 187-2)
Ill. 101 ..... (WF9 × M14) (CC7 × 187-2)	Ill. 1180 ..... (WF9 × M14) (CC10 × CC24)
Ill. 126 ..... (WF9 × 38-11) (Tr × L317)	Ill. 1233-1 ..... (WF9 × 38-11) (940 × R59)
Ill. 200 ..... (WF9 × 38-11) (K4 × L317)	Ill. 1238 ..... (WF9 × 38-11) (940 × G)
Ill. 201 ..... (WF9 × 38-11) (187-2 × L317)	Ill. 1239 ..... (K166 × L317) (G × 38-11)
Ill. 219 ..... (CC5 × CC7) (WF9 × Hy)	Ill. 1240 ..... (WF9 × M14) (R2 × 187-2)
Ill. 246 ..... (WF9 × Hy) (187-2 × L317)	Ill. 2019(W) .... (Ky27 × R30) (33-16 × CI.61)
Ill. 247-1 .... (187-2 × 38-11) (Hy × R57)	Ill. 2119(W) .... (Ky27 × CI.61) (33-16 × K64)
Ill. 269 ..... (CC10 × CC24) (WF9 × Hy)	Ill. 2120(W) .... (Ky27 × CI.61) (K6 × K64)
Ill. 273-1 .... (WF9 × 38-11) (187-2 × O7)	Ill. 2184A(W) .. (K6 × 33-16) (K64 × CI.61)
Ill. 448 ..... (38-11 × Kys) (K4 × L317)	Ohio C92 ..... (WF9 × 38-11) (Hy × O7)
Ill. 751 ..... (A × 90) (WF9 × Hy)	U. S. 13 ..... (Hy × L317) (WF9 × 38-11)
Ill. 784 ..... (Hy × 5120) (K4 × L317)	U. S. 35 ..... (WF9 × 38-11) (R4 × Hy)
Ill. 972A-1 .. (WF9 × O7) (Hy × L317)	U. S. 44-1 ..... (4-8 × 187-2) (Hy × O7)

CONTRIBUTORS OF SEED

Ainsworth Hybrids	Ainsworth Seed Co.	Mason City
Appl Hybrids	Appl's Hybrid Seed Co.	St. Joseph
Bear Hybrids	Bear Hybrid Corn Co.	Decatur, Box 628
Blackhawk Hybrids	Blackhawk Coop. Hybrid Corn Assn.	Polo
Crow Hybrids	Crow's Hybrid Corn Co.	Milford
DeKalb Hybrids	DeKalb Agricultural Assn.	DeKalb
Doubet Hybrids	E. W. Doubet	Hanna City
Doubet Hybrid D-11	John Roth	Morton
Embro Hybrids	Ed. F. Mangelsdorf & Bro., Inc.	1020 S. 4th St., St. Louis, Mo.
Farmcraft Hybrids	Farmcraft Seed Co.	Oxford, Ind.
Ferris Hybrids	Ferris Hybrids	Princeton
Frey Hybrids	Frey Hybrid Corn Co.	Gilman
Funk Hybrids	Funk Brothers Seed Co.	Bloomington
Furr Hybrids	Furr Hybrids	Genoa
Holmes Hybrids	Holmes Hybrids	Edelstein
Hoosier Crost Hybrids	Edward J. Funk & Sons	Kentland, Ind.
Huebsch Hybrids	L. A. Huebsch & Son	Mundelein
Huey Hybrids	Huey Seed Co.	Carthage
Hunt Hybrid	Chester A. Hunt	Morris
Illinois Hybrids	Ill. Agr. Exp. Sta.	Urbana
	Ill. Crop Improvement Assn.[a]	Urbana
Iowealth Hybrids	Iowealth Hybrid Corn Co.	Normal
Kelly Hybrids	Kelly Seed Co.	San Jose
Keystone Hybrids	Corneli Seed Co.	101 Chouteau Ave., St. Louis 2, Mo.
Lowe Hybrids	Lowe Seed Co.	Aroma Park
Moews Hybrids	Moews Seed Company	Granville
Morgan Hybrids	Morgan Brothers	Galva
Morton Hybrids	Roy A. Morton & Sons	Bowen
National Hybrids	National Hybrid Corn Co. of Ill.	Normal
Nichols Hybrids	Nichols Brothers	Hebron
Null Hybrid	Null Seed Farms	Colchester
Ohio Hybrid	Carl Munson	Galesburg, R. 3
Pfeifer Hybrids	George L. Pfeifer	Arcola
Pfister Hybrids	Pfister Assoc. Growers	El Paso

[a] Seed supplied by the Association was obtained from samples of the hybrids submitted in 1945 for the laboratory test required for certification.

Pioneer Hybrids	Pioneer Hi-Bred Corn Co. of Ill.	Princeton
Pride Hybrid	Pride Hybrid Co.	Glen Haven, Wis.
Producers Hybrids	Producers' Crop Imp. Assn.	Piper City
Schwenk Hybrids	W. T. Schwenk & Sons	Edwards
Sibley Hybrids	Sibley Farms	Sibley
Sieben Hybrids	Sieben Hybrids	Geneseo, R. 1
Stewart Hybrid	Frank S. Stewart	Princeville, R. 1
Stiegelmeier Hybrids	H. L. Stiegelmeier	Normal
Trisler Hybrids	J. L. Trisler	Fairmount
U. S. Hybrids	Ill. Crop Improvement Assn.[a]	Urbana
Ward Hybrids	Montgomery Ward & Co.	619 W. Chicago Ave., Chicago
Whisnand Hybrids	Myron Whisnand	Arcola

[a] Seed supplied by the Association was obtained from samples of the hybrids submitted in 1945 for the laboratory test required for certification.

INDEX TO ENTRIES

Hybrid	Table
Illinois 219	4, 6, 7
Illinois 206(Pfeifer)	13, 15, 16
Illinois 246	11, 13, 14, 19
Illinois 247-1	13, 14
Illinois 269	4, 5, 6
Illinois 273-1	8
Illinois 448	15, 16, 17, 18
Illinois 751	4, 5, 6, 7, 19
Illinois 784 (Pfeifer)	15, 17
Illinois 972 (Pfeifer)	15
Illinois 972-1	19
Illinois 972A-1	11, 12, 13, 14
Illinois 1091A	4, 5, 6, 8, 9
Illinois 1180	4, 5, 6
Illinois 1233-1, 1238, 1239	17, 18
Illinois 1240	4, 6
Illinois 2019(W), 2119(W), 2120(W)	17, 18
Illinois 2184A(W)	15, 17
Iowealth AQ	11
Iowealth TXI	17
Iowealth AF-11	4, 6, 7
Iowealth 16, 16(W)	8
Iowealth 25	13, 15
Iowealth 25A	11, 15
Iowealth 29A	13, 15, 16, 17
Kelly K-77, K-88	11
Kelly K-99	8, 13
Kelly K-374	8, 9, 11, 12, 13, 15
Keystone 38	11, 13, 15, 17
Keystone 40	15
Keystone 42	8
Keystone 45	15, 17
Keystone 106(W)	17
Lowe 15	4, 5, 6, 7
Lowe 520	8, 9, 10, 11, 12
Lowe 560	11, 12
Lowe 840	15, 16, 17, 18
Lowe 855(W)	13, 14, 17, 18
Moews 14	4, 5, 6, 7, 11
Moews 15	8
Moews 520, 523	11
Moews 550	8, 9, 10
Moews 830	13
Morgan M-52	8, 9, 10
Morgan M-105	4, 5, 6, 8
Morgan M-546	8, 9, 10, 13, 14, 15, 17
Morton M-12	8, 9, 13, 15
Morton M-33	11, 15
Morton M-380	8, 11, 12
National 114-1	4, 5, 6
National 115A	4, 6
National 118	11
National 125	8, 9, 10, 15
National 125-1	13
National 126T	8, 11, 15
National 129	15, 17
National 129-2	17
National 129R	13, 15, 17
Nichols 5A	4, 5, 6, 7
Nichols 5B, 99	4, 6
Nichols N-75	4, 5, 6
Nichols 202A	4, 5, 6, 7
Null N-54	8
Ohio C-92	8
Pfeifer A-243	13, 17
Pfeifer 1	13
Pfeifer 2	15

Hybrid	Table
Pfister 50A, 52	4, 6
Pfister 164	13, 14
Pfister 170	15, 17
Pfister 282	4, 6
Pfister 366A, 4897	4, 5, 6
Pfister 380	11, 12
Pfister 390	8, 11
Pfister 392	8, 13
Pfister 612(W)	13, 15, 16, 17
Pfister 630(W)	15, 17
Pfister 660	15
Pfister 1897	8, 9, 10, 13, 14
Pfister 5897	8, 9, 10
Pioneer 300, 313B	11-17
Pioneer 304	8, 9, 11, 12, 15, 16, 17
Pioneer 307	8, 9
Pioneer 322, 330, 340, 341, 353A	4, 5, 6, 7
Pioneer 332	11, 12, 13, 14, 15, 16, 17
Pioneer 334	8, 9, 10, 11
Pioneer 336	8, 13, 14, 15, 16, 17
Pioneer 339	8, 9, 10
Pioneer 505(W)	13, 15, 17
Pioneer 510(W)	15
Pride D-66	4, 6
Producers 909	4, 5, 6, 7, 8
Producers 1000	8, 9, 10, 13, 14
Producers 1010, 1020	4, 5, 6, 7
Producers 1015	4, 5, 6
Producers 1030	11, 12, 13
Producers 1040	11, 12, 13, 14
Producers FCXX(1045)	11
Producers 1050	13, 14
Schwenk S-24, S-34	8
Schwenk S-66	11
Sibley 700	11
Sibley 753B	11, 12
Sieben S-340	4, 6
Sieben S-440	8
Sieben S-450	4, 5, 6
Steward S-11	8, 9
Stiegelmeier S-102	13, 14
Stiegelmeier S-360	4, 5, 6, 11, 12
Stiegelmeier S-379	4, 5, 6, 8
Stiegelmeier S-1313	8
Trisler T-22	11
Trisler T-32	13
U. S. 13	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
U. S. 13(Pfeifer)	11, 15, 17
U. S. 35	8, 9, 11, 12
U. S. 44-1	8, 9, 10
Ward 110, 115A, 115C	4, 6
Ward 115B	8
Ward 120A	8, 13, 15, 17
Ward 120B	11
Ward 120(W)	13
Ward 125	15, 17
Ward 135(W)	17
Whisnand 831	13, 14, 15, 17
Whisnand 834	15, 17, 18
Whisnand 905(W)	13, 15, 17, 18
Whisnand 917(W)	13, 14, 15, 16, 17, 18
Single Crosses:	
Hy x L317	19
Hy x O7	19
WF9 x Hy	19
WF9 x M-14	19
WF9 x 38-11	19
5120 x Hy	19

12,050—1-47—34372