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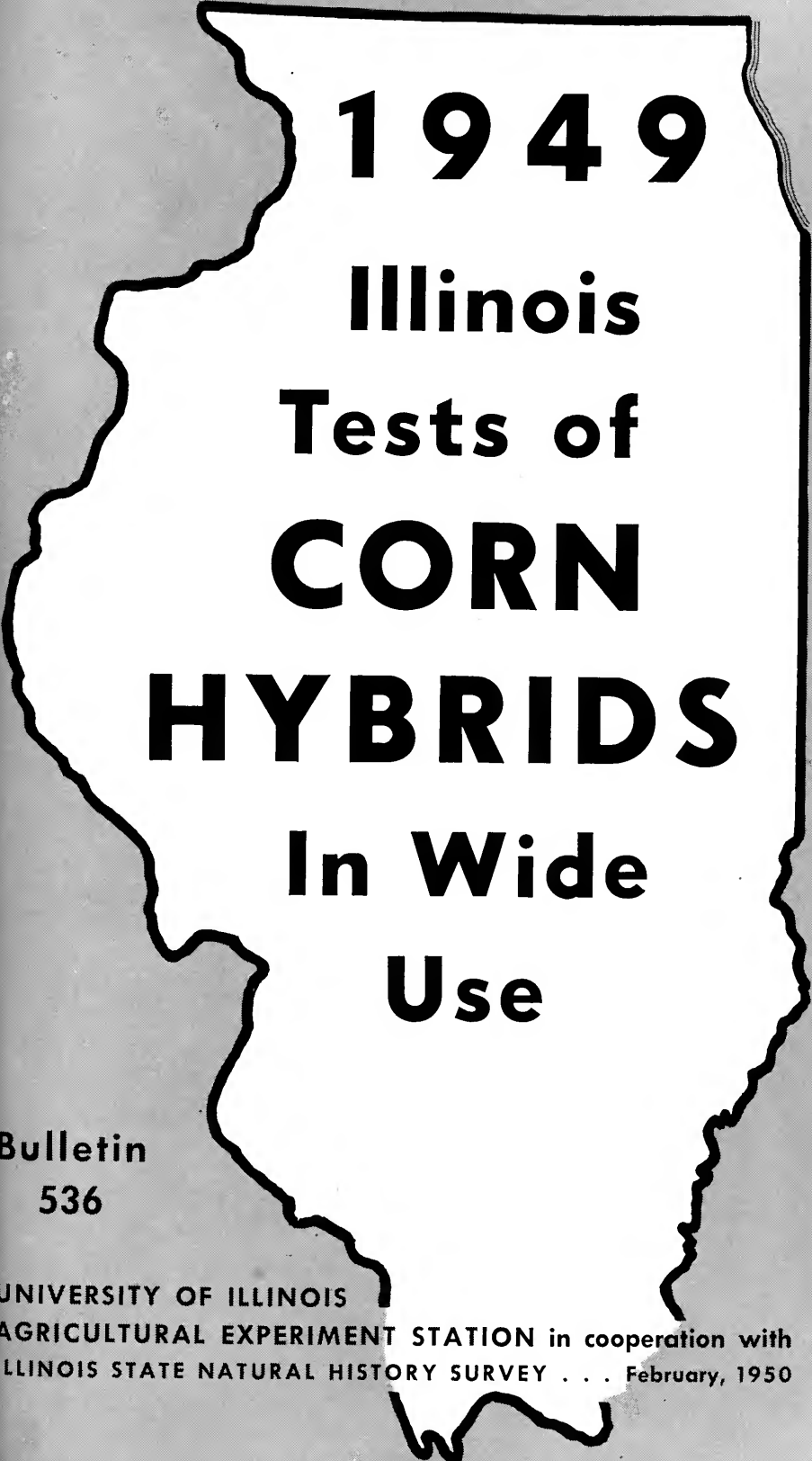
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1949
Illinois
Tests of
CORN
HYBRIDS
In Wide
Use

Bulletin
536

UNIVERSITY OF ILLINOIS
AGRICULTURAL EXPERIMENT STATION in cooperation with
ILLINOIS STATE NATURAL HISTORY SURVEY . . . February, 1950

Location of
1949 test
fields



CONTENTS

	PAGE
PLAN OF TESTS, GROWING CONDITIONS, PEDIGREES, CORN BORER LOSSES, DISEASE DAMAGE.....	467-480
MEASURING PERFORMANCE.....	480-482
RESULTS OF TESTS.....	483-495
Northeastern Illinois: Mundelein.....	483
Northern Illinois: Woodstock and DeKalb.....	484-485
West North-Central: Galesburg.....	486-487
East North-Central: Sheldon.....	488-489
South-Central: Sullivan.....	490-491
Southern: Alhambra.....	492-493
Extreme Southern: Dixon Springs.....	494-495
Soil Adaptation Test: Urbana.....	496-497
SUMMARY.....	498-499
CONTRIBUTORS AND INDEX.....	500-503

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ILLINOIS TESTS OF CORN HYBRIDS IN WIDE USE IN 1949

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R. W. JUGENHEIMER, and G. E. MCKIBBEN¹

THE SECOND LARGEST CORN CROP in history was grown in Illinois in 1949. Total production was estimated at 514 million bushels and average yield at 56 bushels an acre.² This is 36 million bushels below the total production of the record-breaking year 1948 and 4 bushels below the average acre-yield. Comparison of yields in the 1948 and 1949 hybrid-corn tests conducted on the four fields in northern and central Illinois showed a 19-bushel, or 24-per-cent, reduction in yield per acre.

PLAN OF THE TESTS

Number of hybrids and their sources. Three hundred sixteen hybrids were grown on seven regular test fields. Six single-cross and three double-cross hybrids were grown on two special test fields which differed in productivity. Sixty-one companies and individuals and the Illinois Station furnished seed for the tests (see pages 500-501).

Eighty-one hybrids were grown at Galesburg, Sheldon, Sullivan, and Alhambra. At the Dixon Springs Experiment Station 60 entries were planted on the bottomland field and 11 entries on the upland field. Seventy-five entries were tested at DeKalb and 40 at Mundelein (Table 1, page 468).

A representative of the Illinois Station took almost all the seed for planting the test fields directly from the warehouses of the producers entering the corn. A few producers delivered small quantities to the Station. Seed of Illinois and U. S. hybrids in commercial production was obtained from the producers of these hybrids and also from the Illinois Seed Producers Association.³

¹ J. W. PENDLETON, Assistant in Crop Production; G. H. DUNGAN, Professor of Crop Production; BENJAMIN KOEHLER, Professor of Crop Pathology; A. L. LANG, Professor of Soil Fertility; R. W. JUGENHEIMER, Professor of Plant Genetics; G. E. MCKIBBEN, First Assistant in Agricultural Research; J. H. BIGGER, Entomologist, Illinois State Natural History Survey. ² Estimates for 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. ³ The seed supplied by the Illinois Seed Producers Association was single crosses used in the Soil Adaptation test.

Table 1. — GENERAL INFORMATION: Illinois Cooperative Hybrid Corn Tests, 1949

Field, county, location, and number of entries	Date planted	Date harvested	Average	Moisture	Damaged	Erect	Stand	Protein	Oil
			acre- yield	in grain	corn	plants			
			<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>
Mundelein: Lake NE 40...	May 20	Oct. 25	85.1	22.2	1.4	74	82	11.0	5.0
DeKalb: DeKalb N 75...	May 23	Nov. 15-16	58.5	18.1	1.5	91	82	9.1	4.3
Galesburg: Knox WNC 81	May 16	Oct. 27	88.6	18.9	2.8	76	82	10.0	4.7
Sheldon: Iroquois ENC 81	May 28	Oct. 31	82.8	20.4	2.9	69	83	10.3	4.5
Sullivan: Moultrie SC 81...	May 17	Nov. 1	85.1	18.4	2.9	73	92	9.2	4.5
Alhambra: Madision S 81...	June 2	Nov. 21	59.8	17.0	1.4	71	84	9.7	4.3
Dixon Springs: Pope Ex.S									
Bottomland 60.....	May 26	Nov. 3	67.6	18.4	2.0	69	85	10.5	4.7-
Upland 11.....	May 25	Nov. 3	63.5	20.1	2.7	82	84	10.0	4.5

COOPERATORS: JAY and PARK ALLANSON, *Lake county*; R. HAWTHORNE, *Knox county*; JOHN B. RICE, *Iroquois county*; R. B. VANDEVEER, Farm Manager, Illinois Masonic Home Farm, *Moultrie county*. The DeKalb field in DeKalb county and the Alhambra field in Madison county are managed by the Illinois Station; FRANCIS HART and ERVIN ISENBERG are overseers. The Pope county fields at Robbs are part of the Dixon Springs Experiment Station of which R. J. WEBB is superintendent.

Selection of entries. Each year seed corn producers are given an opportunity to nominate hybrids for testing on the various fields. For some fields the number of hybrids nominated is so great that they cannot all be tested. Most of the hybrids selected are extensively grown in this state. A number of experimental hybrids that have shown promise for commercial production were included. Other hybrids were grown to meet the field-performance requirement for certification. Generally six Station-produced, open-pedigree hybrids were included to serve as standards or checks.

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. Approximate locations of test fields are shown in map on inside front cover. Information on soil characteristics and management is given in Table 2.

Field-plot design. A 9 x 9 randomized, lattice-square field-plot design with 5 replications was used on the Galesburg, Sheldon, Alhambra, and Sullivan fields. Controlled, randomized block designs were used at all other locations.

Method of planting. All test fields were planted by hand on land prepared in the regular way for corn. Each plot consisted of 2 rows 10 hills long, except at Alhambra where the plots were only 9 hills long. Three kernels were dropped in each hill except on the fields at Dixon Springs, where only 2 kernels were planted.

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

Soil type	Lime require- ment	Available phosphorus	Available potassium	Previous crops and soil management
NORTHEASTERN: Mundelein				
	<i>tons</i>			
Saybrook silt loam.....	3	Medium	High	Corn 1946; oats 1947; red clover-alfalfa pasture 1948; rock phosphate added in 1947; manured in 1949.
NORTHERN: DeKalb				
Lisbon silt loam (northeast corner, Harpster clay loam)...	0	Slight	High	Soybeans 1945; corn 1946; oats and mixed clovers 1947; lime has been applied.
WEST NORTH-CENTRAL: Galesburg				
Muscatine silt loam.....	4	Medium	Very high	Soybeans 1946; oats 1947; red clover-timothy hog pasture 1948; manured 1948.
EAST NORTH-CENTRAL: Sheldon				
Lisbon silt loam.....	1	Very high	High	Corn 1945; oats 1946; alfalfa pasture 1947-48; 2 tons lime 1947; rock phosphate and potash applied in past.
SOUTH-CENTRAL: Sullivan				
Flanagan silt loam.....	4	Medium	High	Corn 1943; oats 1944; sweet-clover pasture 1945; corn 1946; oats, sweet clover 1947; corn 1948; 2 tons lime 1947.
SOUTHWESTERN: Alhambra				
Cowden silt loam.....	0	High	High	Oats 1943; red clover 1944; corn 1945; soybeans 1946; oats 1947; red clover 1948.
EXTREME SOUTHERN: Robbs (Dixon Springs)				
Upland field: Ava silt loam....	0	Very low	Medium	Oats 1946; red clover 1947; wheat, sweet clover 1948.
Bottomland field: Bonnie silt loam.....	1	Very low	Very high	Corn, rye 1946; rye, sweet clover, lespedeza 1947; sweet clover-lespedeza 1948.

The soil-type designations, uniformity, and physical characteristics of the above fields have been approved by HERMAN WASCHER, Assistant Professor of Soil Survey Research.

GROWING CONDITIONS

Generally speaking the growing season of 1949 was another excellent one for corn in Illinois. An extended period of warm, fair weather during late April and early May allowed the best seedbed preparation in many years. Fairly well distributed early rainfall and hot humid days during July favored excellent growth. In fact, the response of the crop to these early growing conditions led to predictions for the highest yield in history.

At harvest time, however, the predicted yields did not materialize.

Their failure was primarily due to two factors: the heaviest corn borer infestation on record and the most severe stalk rot damage observed for many years.

Stands were variable at four test fields. At DeKalb and Galesburg stands suffered from dry periods following planting. The plots at Sheldon and Mundelein were of necessity planted in cold, wet seedbeds, and stands were correspondingly impaired.

A severe windstorm in late July at Sheldon caused almost uniform lodging among all varieties. Lodging at Galesburg, Sullivan, and Mundelein was largely due to corn borers and stalk rots.

A warm, late fall allowed the crop to mature throughout the state, and moisture in the grain at harvest was well below normal. Despite favorable weather, however, the quality of the corn was generally disappointing. A series of factors was responsible for the poor quality — corn borers, stalk rot diseases, leaf blight, lodged plants, dropped ears, and ear rot diseases.

CORN BORER LOSSES

Financial. The European corn borer, *Pyrausta nubilalis* (Hbn.), did greater damage to the Illinois corn crop during 1949 than in any other year since it came into the state. During the fall infestation was about three and one-half times as great as in 1948. Losses increased from about 25 million dollars in 1948 to about 65 million in 1949. (These losses do not, however, take into account the reduction in yield caused by ears that are dropped after borers tunnel into the ear shanks.) The increase in borer numbers can be attributed to two things: extensive early planting, and weather that was practically ideal for maturing the first generation of borers and establishing the second generation. In 1949 the insect moved southward, and for the first time borer damage is reported at Sullivan, in Moultrie county.

Dropped ears and picker losses. "Percent dropped ears" and "Estimated picker loss" have been included for the first time in the record of borer damage (Tables 4 to 7). "Percent dropped ears" is the record of the ears that were already on the ground when picking started, because of borer damage in the ear shank.

"Estimated picker loss" is the number of ears it was estimated

would not be recovered from the plot by a mechanical picker because of borer injury to the ear shanks. To arrive at this figure, the recorder tapped each standing plant with the side of his hand and raised each lodged plant to a horizontal position, then allowed it to drop by its own weight. The ears knocked off by this treatment it is believed would have been knocked off by a mechanical picker and not recovered. Estimates arrived at in this way are probably conservative.

The total corn borer loss for any entry would be the sum of the percentages shown for dropped ears and picker loss.

An actual count in 30 farm fields infested with borers showed an average of 3 percent of the ears dropped before picking and 11 percent dropped after the picker had gone through the field. Assuming an average of 10,000 ears per acre, this 11-percent loss means that because of corn borer damage 1,100 ears per acre remained in the fields after picker harvest. This count was made in an area between McHenry and Champaign counties.

PEDIGREES OF 31 HYBRIDS

Following is a list of open-pedigree hybrids whose performance is shown in this bulletin.

Ill. 21. (Hy×187-2)(WF9×38-11)	Ill. 1246. (R61×187-2)(WF9×38-11)
Ill. 101. (M14×WF9)(187-2×W26)	Ill. 1248. (R61×O7)(WF9×38-11)
Ill. 200. (WF9×38-11)(L317×K4)	Ill. 1277. (M14×WF9)(I.205×187-2)
Ill. 201. (WF9×38-11)(L317×187-2)	Ill. 1279. (M14×WF9)(A375×187-2)
Ill. 206. (5120×L317)(WF9×38-11)	Ill. 1337. (Hy2×R61)(WF9×38-11)
Ill. 246. (Hy×WF9)(L317×187-2)	Ill. 1459. (38-11×K4)(K201×CI.21E)
Ill. 269. (Hy×WF9)(W8×W32)	Ill. 1508. (L7×L17)(L12×Oh28)
Ill. 273-1. (WF9×38-11)(O7×187-2)	Ill. 1515. (Hy×B10)(WF9×38-11)
Ill. 751. (A×90)(Hy×WF9)	Ill. 1521B. (38-11×CI.21E)(K201×T8)
Ill. 784. (Hy×5120)(L317×K4)	Ill. 1540A. (38-11×K201)(K155×CI.21E)
Ill. 972-1. (Hy×WF9)(L317×O7)	Ill. 1540B. (38-11×K155)(K201×CI.21E)
Ill. 972A-1. (Hy×L317)(WF9×O7)	Ill. 1570. (Hy2×Oh41)(WF9×38-11)
Ill. 1091. (Hy2×WF9)(M14×187-2)	Ill. 2214(W).. (R30×Ky27)(H21×K64)
Ill. 1091A. (Hy2×187-2)(M14×WF9)	Ill. 2216(W).. (H21×CI.61)(K64×Ky27)
Ill. 1180. (M14×WF9)(W8×W32)	U. S. 13. (Hy×L317)(WF9×38-11)
Ohio C-92. (Hy×O7)(WF9×38-11)	

Table 3. — CORN BORER DAMAGE: Three-Year Summary
at Three Locations

Rank	Entry	Plants broken below ear ^a	Resistance rating compared with average	Rank	Entry	Plants broken below ear ^a	Resistance rating compared with average
NORTHERN ILLINOIS: Kings 1946, Woodstock 1947, and DeKalb 1949							
		<i>perct.</i>				<i>perct.</i>	
1	Funk G-29.....	4.1	198	8	Illinois 751 (Station).....	8.5	95
2	Pride D-66.....	5.7	142	10	Frey 425.....	9.0	90
2	Sieben S-450.....	5.7	142	11	Crow 407.....	9.3	87
4	Sieben S-340.....	6.1	133	12	Pioneer 340.....	10.8	75
5	Illinois 101 (Station).....	6.5	125	13	Super-Crost F-138.....	11.5	70
6	Illinois 1091 A (Station).....	7.5	108	14	Crow 360.....	12.3	66
7	Ferris F-11.....	7.9	103		Average of all entries... ..	8.1	..
8	National 114-1.....	8.5	95				

In Column 3 (plants broken below the ear) differences are not significant.

WEST NORTH-CENTRAL ILLINOIS: Galesburg 1943, 1946, and 1949

1	Pioneer 339.....	6.5	189	6	Crow 633.....	12.9	95
2	Holmes Utility 29.....	8.4	146	6	Low 520.....	13.0	95
2	Moews 550.....	8.4	146	8	U. S. 13 ^b	21.9	56
4	Funk G-37.....	10.7	115		Average of all entries... ..	12.3	..
5	Top Yield M-546.....	12.5	98				

In Column 3 (plants broken below the ear) differences are not significant.

EAST NORTH-CENTRAL ILLINOIS: Sheldon 1945, 1947, and 1949

1	Low 520.....	17.2	149	11	Pioneer 304.....	27.3	94
2	Producers 940.....	20.7	124	12	Pioneer 332.....	27.5	93
3	Illinois 21 ^c	21.5	120	13	Low 523.....	28.2	91
4	Frey 644.....	22.5	114	14	Crow 608.....	28.8	89
4	Keystone 38.....	22.5	114	15	Kelly K-374.....	29.5	87
6	U. S. 13.....	23.4	110	16	Crow 633.....	30.8	83
7	Pioneer 300.....	23.6	109	17	Frey 645.....	32.0	80
8	Frey 692.....	24.1	107	18	Kelly K-77.....	32.8	78
9	Producers 730.....	25.6	100		Average of all entries... ..	25.7	..
10	Pioneer 313B.....	27.1	95				

In Column 3 (plants broken below the ear) differences are not significant.

^a Only those plants broken below the ear at the point of borer damage were included. ^b Average of two entries submitted by Lepper and Station in 1949. ^c Average of two entries submitted by Pfeifer and Station in 1949.

Table 4. — CORN BORER DAMAGE: Northern Illinois, DeKalb, 1949

Rank	Entry	Plants broken below ear ^a	Resistance rating compared with average ^b	Dropped ears	Estimated picker loss	Rank	Entry	Plants broken below ear ^a	Resistance rating compared with average ^b	Dropped ears	Estimated picker loss
		perct.		perct.	perct.			perct.		perct.	perct.
1	Doubt D-1E.....	3.3	457	5.3	0	37	Pioneer 349.....	9.9	106	.7	.7
2	Ainsworth X-12.....	3.3	318	2.0	.7	40	Frey 425.....	10.1	104	1.3	2.0
3	Illinois 1279 (Station).....	3.4	309	0	.7	41	Ainsworth X-21.....	10.3	104	1.3	2.5
4	Illinois 1277 (Station).....	4.2	250	2.1	0	42	Super-Crost FD-3A.....	10.3	102	.6	1.9
5	Pioneer 4040.....	4.3	244	5.0	0	44	Keystone 33.....	10.3	102	7.7	.6
6	Funk G-29.....	4.4	239	0	.7	44	Sieben S-450.....	10.4	101	.6	1.2
7	Bear OK-411.....	4.8	219	1.4	0	45	Sieben S-340.....	10.5	100	3.3	1.3
8	Illinois 101 (Station).....	5.6	188	0	0	46	Ponder P-205.....	10.7	98	1.3	1.3
9	Low 38.....	6.0	175	2.1	0	47	Appl A-202.....	10.7	98	2.7	.6
10	Moews 14.....	6.4	185	1.3	.7	48	Producers E102B.....	10.8	97	2.4	.6
11	Moews 85.....	6.4	164	1.7	.7	49	Appl A-136.....	11.2	94	1.4	1.4
12	Holmes Utility 11.....	6.4	164	1.4	.7	50	National 114-1.....	11.3	93	.6	1.3
13	P.A.G. 253.....	6.5	162	1.6	.8	52	Bear OK-212.....	11.3	89	1.2	.7
14	Keystone 44.....	6.7	157	1.3	.8	53	Illinois 1508 (Station).....	11.8	88	3.0	.7
15	Funk G-50.....	6.9	152	2.8	0	53	Stiegelmeier S-360.....	11.9	88	4.8	1.6
16	Chaff 250.....	7.0	150	2.5	1.3	55	Producers E114B.....	12.3	85	1.0	1.9
17	P.A.G. 282.....	7.3	144	1.2	1.2	55	Munson 83.....	12.3	85	2.6	2.9
18	Pioneer 352.....	7.6	138	1.0	.6	56	Keystone 32.....	12.8	82	1.4	1.4
19	Lowwealth M-11.....	7.9	133	2.6	.7	56	Illinois 751 (Station).....	12.9	81	1.5	3.0
20	Holmes Utility 11A.....	8.1	130	2.7	.9	58	Lowwealth 16.....	13.1	80	3.4	4.8
21	P.A.G. 61.....	8.2	125	2.7	1.9	59	Pister 187 Hybrid LF 123.....	13.6	77	2.9	2.9
22	Pride D-66.....	8.3	127	4.7	1.3	60	Pister 187 Hybrid LF 789.....	14.0	75	3.3	2.0
23	Pioneer 340.....	8.3	127	4.5	1.3	62	Producers 315.....	14.5	72	.6	2.5
24	P.A.G. 299.....	8.4	125	1.3	1.3	63	Ferris F-14.....	14.7	71	1.2	1.2
25	Pister 187 Hybrid LF 456.....	8.5	124	2.6	.7	63	Top Yield M-105.....	14.7	71	1.4	3.5
26	Crow 407.....	8.7	121	6.7	.7	65	Nichols 75.....	15.5	66	.6	1.2
27	Hulting J-41.....	8.7	121	6.7	.7	65	United U-41.....	15.9	66	2.0	1.3
28	Nichols 5A.....	8.8	119	1.3	1.9	66	Loewe 32.....	16.0	66	8.7	2.0
29	Hulting 240.....	8.9	118	3.2	.6	66	Super-Crost 213.....	16.2	65	1.4	.7
30	Sieben S-440E.....	9.0	117	0	.7	69	Super-Crost F-138.....	16.3	64	2.1	2.8
31	Producers 305.....	9.0	117	1.6	0	70	Ponder P-180.....	16.6	63	1.2	.6
32	Moews 15.....	9.1	115	3.5	2.1	71	Loewe MME.....	17.0	62	10.1	1.9
33	Loewe 52.....	9.3	113	0	.6	72	Ferris F-12.....	17.7	59	3.0	0
34	Crow 432.....	9.3	113	.7	.7	73	Munson MX.....	19.2	55	0	1.8
35	Pride D-56.....	9.4	112	2.2	.7	73	Huey H-75.....	19.2	55	0	2.1
36	Frey 410.....	9.4	112	2.2	.7	75	Crow 360.....	23.2	45	5.2	1.3
37	Nichols 5B.....	9.9	106	2.5	.6		Average of all entries.....	10.5	100	2.1	1.1
37	Illinois 1091A (Station).....	9.9	106	0	.7						

The following differences between entries are not significant: in columns showing plants broken below the ear, less than 8.5 points; in columns showing dropped ears, less than 4.1. Differences in estimated picker losses not significant.

^a Includes only those plants broken below the ear at point of damage by the borer. ^b For broken plants only.

Table 5. — CORN BORER DAMAGE: West North-Central Illinois, Galesburg, 1949

Rank	Entry	Plants broken below ear ^a	Resistance rating compared with average ^b	Dropped ears	Estimated picker loss	Rank	Entry	Plants broken ear ^a	Resistance rating compared with average ^b	Dropped ears	Estimated picker loss
		perct.		perct.	perct.			perct.		perct.	perct.
1	Crow "Deep Root"	11.9	240	3.3	1.7	41	Kelly K-374	29.5	97	6.9	5.7
2	Pfister 187 Hybrid LF 456	14.4	189	7.9	1.7	41	Holmes Utility 391H	29.6	97	6.9	5.7
3	Producers E1025	14.6	186	3.8	1.9	44	Hucy H-42	29.7	96	5.2	3.5
4	Pioneer 359	15.4	180	5.3	2.6	44	Bo-Jac 68	29.7	96	10.0	2.7
5	P.A.G. 230	17.9	160	6.2	2.7	46	Producers F114B	30.4	94	9.3	3.5
6	Ferris F-11	18.1	158	4.9	2.4	47	Pfister 187 Hybrid LF 789	30.8	93	4.0	2.2
7	Loweth A.Q.	18.2	157	5.9	1.2	47	Illinois 972A-1 (Station)	30.9	93	5.0	4.2
8	Morton M-30	18.3	156	2.0	2.0	47	Hulking 101	30.9	93	9.6	3.0
9	P.A.G. 347	18.5	155	8.5	1.5	50	Bear OK-55	31.5	91	3.0	3.9
10	Holmes Utility 19A	19.7	145	3.1	2.8	50	Moews 520	31.5	91	5.5	3.9
11	Moews 14	19.9	144	1.9	2.3	52	Pioneer 356	31.9	90	5.5	8.0
12	Crow 660	20.3	141	2.8	2.0	53	Stiegelmeier S-340	32.0	89	4.6	1.8
13	Null N-32	20.3	141	4.1	2.4	53	Funk G-93	32.1	89	5.7	4.1
14	Moews 550	20.4	140	7.1	1.7	53	Loweth 16	32.2	89	5.1	3.0
15	Stewart S-11	20.9	137	3.4	1.5	56	Stiegelmeier S-370	32.5	88	9.0	3.0
16	Pringle P-100	21.2	135	4.9	1.6	57	Low 520	32.8	87	8.1	7.3
16	Holmes Utility 29	21.2	135	5.2	1.6	57	Baird 380	33.0	87	5.2	1.7
18	P.A.G. 170	22.9	125	4.7	2.8	59	Doubet D-11	33.2	86	4.3	3.9
19	Kelly K-77	23.0	124	2.9	3.7	59	Illinois 273-1 (Tiemann)	33.2	86	5.1	4.7
19	National 125-1	23.0	124	5.2	3.2	59	Cargill 339	33.3	86	6.2	3.3
21	Morton M-12	23.8	120	2.5	2.5	59	Appl A-136	33.3	86	4.0	4.0
22	United U-47	24.8	115	2.5	2.9	63	Crow 633	34.0	84	4.1	3.7
22	Sieben S-340	24.9	115	5.3	3.9	63	Schwenk S-24	34.5	83	8.1	2.7
24	National 115A	25.3	113	3.2	2.4	64	Super-Cross FD-7	34.6	83	2.6	2.6
24	National 115A	25.3	113	5.5	2.4	66	Top Yield M-546	34.8	82	7.3	2.1
25	P.A.G. 392	25.8	111	4.7	2.0	66	Bear OK-50	34.9	82	2.1	2.5
26	P.A.G. 392	25.9	110	5.2	2.6	66	Pioneer 304	34.9	82	8.2	3.5
28	Keystone 41	26.5	108	9.0	3.7	69	Low 514	35.1	81	9.2	5.6
28	Pfister 187 Hybrid LF 123	26.5	108	12.0	4.7	69	Low 562	35.1	81	9.3	3.9
30	Hulking 380	27.2	105	1.7	2.5	69	Funk G-95	35.4	81	10.7	4.5
30	Ferris F-12	27.3	105	3.5	2.0	72	U. S. 13 (Jepper)	36.1	79	7.8	3.5
32	Munson M-H	27.8	103	2.9	5.3	72	Ainsworth N-13-3	36.2	79	8.6	5.6
33	Illinois 21 (Station)	28.0	102	3.8	2.4	72	Hucy H-23	36.4	79	10.0	4.1
33	Producers 900	28.1	102	4.5	3.7	75	Super-Cross F-169	37.0	77	8.9	3.6
35	Funk G-37	28.2	101	4.0	4.8	76	Schwenk S-34	37.0	77	8.3	4.7
35	Illinois 1515 (Station)	28.2	101	5.8	3.7	77	Illinois 1337 (Station)	38.4	74	8.0	7.6
38	Producers 940	28.5	100	3.3	3.3	78	Munson M-13	39.9	72	7.4	6.6
38	Sieben S-440	28.6	100	5.2	2.4	79	U. S. 13 (Station)	41.4	69	8.3	4.9
40	Illinois 1570 (Station)	29.3	98	2.0	2.4	80	Ainsworth V-201	44.6	64	5.8	6.2
41	Doubet D-3W	29.4	97	8.8	3.3	81	Pioneer 131B	46.7	61	5.4	6.5
				2.8	2.0		Average of all entries	28.6	100	5.7	3.3

The following differences between entries are not significant: in columns showing plants broken below the ear, less than 10.3; in columns showing dropped ears, less than 4.5; in columns showing estimated picker loss, less than 3.3.

^a Includes only those plants broken below the ear at point of damage by the borer. ^b For broken plants only.

Table 6. — CORN BORER DAMAGE: East North-Central Illinois, Sheldon, 1949

Rank	Entry	Plants broken below ear ^a	Resistance rating compared with average ^b	Dropped ears	Estimated picker loss	Rank	Entry	Plants broken ear ^a	Resistance rating compared with average ^b	Dropped ears	Estimated picker loss
		perct.		perct.	perct.			perct.		perct.	perct.
1	Crow "Deep Root"	4.6	854	.7	0	40	Keystone 88	16.0	102	1.6	0
2	Morton M-30	6.5	251	0	6	43	P.A.G. 392	16.1	101	2.1	2.1
3	Illinois 1515 (Station)	7.9	206	5.3	3.3	44	Sibley 777	16.4	99	2.5	2.5
4	Super-Crost S-12	8.1	201	7.7	7.7	44	Funk G-93	16.4	99	3.4	3.4
5	DeKalb 627	8.9	183	1.3	0	44	Funk G-93	16.4	99	5.0	1.3
6	Pfister 187 Hybrid LF 456	9.1	179	1.9	1.3	44	Illinois 972 (App)	16.5	99	3.5	4.6
7	Frey 425	9.9	165	3.7	1.9	48	Illinois 1246 (Holder)	16.8	97	4.3	2.3
8	Seben S-440E	10.4	157	2.8	0.6	48	Pfister 187 Hybrid LF 789	17.2	95	4.0	1.3
9	Frey 692	10.6	154	2.8	1.4	50	P.A.G. 164	17.3	94	9.6	1.3
10	Funk G-211	11.0	148	0	1.7	50	Moews 14	17.5	93	6	3.2
10	DeKalb 800A	11.0	148	1.4	1.4	50	Funk G-95	17.6	93	1.2	2.4
10	Farmcraft PC-03	11.0	148	2.8	1.4	50	Pike 520	17.6	93	2.0	2.2
10	Lowwealth A.Q.	11.0	148	3.0	1.2	50	Super-Crost 746	17.6	93	4.2	2.1
10	Crow 660	11.0	148	3.2	0.6	55	Frey 644	17.6	93	5.9	2.6
15	Illinois 21 (Pfeifer)	11.2	146	7	1.4	55	P.A.G. 175	17.7	92	4.8	3.4
17	Moews 18	11.3	144	1.3	2.6	56	Super-Crost FC-6	17.9	91	1.4	1.4
18	National 115A	11.5	142	2.3	8	56	Pioneer 300	18.0	91	2.0	7
19	Bear OK-50	11.8	138	2.7	0	58	Ainsworth X-13-3	18.1	90	3.4	4.5
20	Seben S-440	12.1	135	3.9	7	60	Low 514	18.2	90	2.3	5.4
21	Moews 520	12.7	128	4.5	0	61	Appl A-1766	18.8	87	2.0	7
22	Pioneer 304	12.9	126	0	1.3	61	Corn Belt 60A	18.8	84	7	7
23	Crow 633	13.1	124	3.7	2.5	61	Illinois 1508 (Station)	19.3	84	5.6	1.9
24	Bear OK-31	13.5	121	4.9	4.1	61	Illinois 21 (Station)	19.5	84	6	1.9
25	Morton M-12	13.6	120	1.9	1.9	64	Illinois 1570 (Station)	19.6	83	5.5	3.1
26	Holmes Utility 39H	13.8	119	3.9	3.3	64	Illinois 273-1 (Tiemann)	19.7	83	2.0	2.6
27	Stiegelmeier S-340	14.1	116	3.6	2.2	66	Pioneer 332	19.9	82	3.2	3.2
28	Pfister 187 Hybrid LF 123	14.1	116	2.7	3.4	66	Crow 608	20.0	82	1.8	1.6
30	Doubter D-3W	14.5	112	8.1	2.7	68	Kelly K-77	21.0	78	1.6	1.6
30	Doubter D-11	14.5	112	2.4	5.1	68	Kelly K-77 X-201	21.0	78	1.9	1.9
32	Null N-49	14.9	109	4.7	2.7	70	Ainsworth FC-69	22.1	76	1.3	1.2
32	Low 320	14.9	109	2.7	3.0	70	Farmcraft FC-69	22.7	74	1.3	2.7
34	Producers 730	15.1	108	4.8	2.7	71	Low 580	23.7	69	4.5	4.5
34	Stiegelmeier S-370	15.1	108	4.8	3.0	72	Keystone 41	23.9	68	5.8	4.5
36	Illinois 1248 (Seber)	15.2	107	8	2.6	73	Bear OK-88T	24.3	67	1.4	4.2
36	Ainsworth X-21	15.2	107	5.3	2.6	73	Producers 900	24.8	66	5.0	2.8
38	Illinois 1091 (Mountjoy)	15.7	104	1.2	1.2	75	Schwens S-34	25.0	65	3.9	3.9
39	Hulting 101	15.8	103	3.6	1.4	75	Low 523	25.2	65	3.1	4.9
40	P.A.G. 173	16.0	102	1.3	1.7	77	Kelly K-374	25.3	64	1.2	1.9
40	Bear Tapicorn 4	16.0	102	1.5	3.1	78	Illinois 1337 (Station)	26.1	62	3.1	4.3
				1.8	2.5	79	Pioneer 313B	26.6	61	5.1	5.7
						81	Frey 645	28.0	58	3.6	2.4
							U. S. 13 (Station)	30.7	53	3.3	3.3
							Average of all entries	16.3	100	2.8	2.2

The following differences between entries are not significant: in columns showing plants broken below the ear, less than 9.9 points; in columns showing dropped ears, less than 4.2; in columns showing estimated picker loss, less than 3.4.

^a Includes only those plants broken below the ear at point of damage by the borer. ^b For broken plants only.

Table 7. — CORN BORER DAMAGE: South-Central Illinois, Sullivan, 1949

Rank	Entry	Plants broken below ear ^a	Resistance rating compared with average ^b	Dropped ears	Estimated picker loss	Rank	Entry	Plants broken below ear ^a	Resistance rating compared with average ^b	Dropped ears	Estimated picker loss
		perct.		perct.	perct.			perct.		perct.	perct.
1	Crow "Deep Root"	5	920	.5	0	41	U. S. 13 (Station)	4.7	98	1.7	.4
2	Crow 660	.9	511	1.8	0	43	National 125	4.8	96	2.2	.4
3	Castle Ohio C-92	1.3	534	.9	0	43	Pioneer 300	4.8	96	3.1	.4
4	Moevs 18	1.4	329	.9	.5	44	Illinois 201 (Mountjoy)	4.9	94	1.8	.4
5	Morton M-30	1.8	256	.4	.5	45	Illinois 13 (Stone)	4.9	94	3.1	.4
6	DeKalb 875	1.9	242	.5	.5	47	Low 514	5.0	92	4.1	.5
6	Kelly K-88	1.9	242	.5	.5	48	DeKalb 847	5.0	90	3.4	.9
8	Illinois 1570 (Station)	2.2	209	2.2	.4	49	P. A. G. 170	5.3	87	1.8	0
8	Doubet D-41	2.2	209	4.4	.4	50	Funk G-79	5.4	85	.9	.4
10	Whisnand 804	2.3	200	.9	1.4	51	Producers 900	5.5	84	.9	.4
11	P. A. G. 164	2.6	177	1.4	.9	51	Illinois 1515 (Station)	5.5	84	2.5	.9
12	Re-Jac 28	2.7	170	1.4	.5	53	Funk G-98	5.6	82	0	2.6
12	Illinois 1337 (Station)	2.7	170	2.7	.4	53	Lowalth 25A	5.6	82	.9	1.9
14	Pfister 187 Hybrid LF 123	3.0	159	1.4	.5	55	Illinois 972-1 (Pfeifer)	5.7	81	.9	1.7
15	Keystone 45	3.0	153	0	.9	55	Illinois 972A-1 (Stone)	5.7	81	1.0	.5
16	Illinois 21 (Powers)	3.1	148	.4	.5	55	Embro 36	5.7	81	1.3	1.8
16	Morton M-12	3.2	144	.5	.5	58	Low 640	5.8	79	.4	1.3
17	Appl A-130	3.2	144	.9	0	58	Ainsworth X-13-3	5.8	79	.9	.9
17	Canterbury 404	3.2	144	.9	.9	58	Illinois 206 (Pfeifer)	5.8	79	1.3	1.3
17	Kelly K-77	3.2	144	1.4	.4	62	Canterbury 420	5.9	78	1.4	.5
17	National 125-1	3.2	144	1.4	.4	62	Crow 608	5.9	78	1.4	.5
22	Moevs 830	3.3	139	.5	.5	62	Producers 1050	5.9	78	1.8	1.4
23	P. A. G. 392	3.4	135	1.3	2.1	62	Bear OK-72	5.9	77	0	1.3
24	Funk G-512(W)	3.5	131	1.8	.9	65	Pioneer 313A	6.0	77	.9	.4
25	Illinois 2216(W) (Station)	3.6	128	1.3	.4	67	Whisnand 804D	6.1	75	.5	1.9
25	Kelly K-44	3.6	128	1.8	.8	68	U. S. 13 (Pfeifer)	6.2	74	1.8	.9
25	Ainsworth X-21	3.6	128	1.8	.9	69	DeKalb 821	6.3	73	0	1.9
28	Crow 805	3.7	124	3.7	1.4	69	U. S. 13 (Wilson)	6.3	73	.9	.9
28	DeKalb 825	3.7	124	3.7	1.4	71	Pioneer 313B	6.6	70	.4	.9
30	Bear OK-66	3.9	118	.9	.9	72	Low 523	6.7	69	2.9	1.9
30	Producers 940	3.9	118	.9	.5	73	Holmes Utility 39C	6.8	68	2.9	1.0
33	Pfister 187 Hybrid LF 456	3.9	115	1.8	.9	74	P. A. G. 173	7.0	66	2.6	1.7
33	Steinmeier S-370	4.0	115	2.0	1.0	75	Pioneer 332	7.1	65	1.4	1.9
33	Super-Crest 708(W)	4.0	115	1.4	.5	76	Pfister 187 Hybrid LF 789	7.3	63	2.0	2.4
35	Beal Theob 4	4.1	112	2.3	.9	77	Funk G-99	7.6	61	1.9	1.4
37	Doubet D-11	4.1	112	1.6	.9	78	Illinois 200 (Butzow)	8.0	58	.9	1.9
37	Producers 730	4.3	107	1.6	.9	79	Null N-77	9.0	51	.9	1.9
38	Illinois 23 (Stone)	4.5	102	.9	0	80	Ponder F-814	9.3	49	1.5	.9
38	Illinois 1337 (Pfeifer)	4.5	102	.9	1.3	81	Ainsworth X-14A	10.6	43	.9	1.3
41	Keystone 41	4.0	100	.9	.5		Average of all entries	4.6	100	1.4	.9
41	Lowalth 25	4.7	98	0	.5						

In columns showing plants broken below the ear, a difference of less than 4.3 points is not significant. Differences in dropped ears and estimated picker losses are not significant.

^a Includes only those plants broken below the ear at point of damage by the borer. ^b For broken plants only.

DISEASE DAMAGE¹

Stewart's disease. Stewart's disease, or bacterial blight, is caused by a bacterium that lives over winter in the body of the corn flea beetle. In 1949 corn was infected with it in all but the northern quarter of the state, the worst damage occurring in south-central Illinois. In the area from Macon and Christian counties westward, the leaves of all the plants had been completely killed in many fields by early September. In the spring of 1949 damage from this disease was forecast. Next March a prediction for 1950 can be made. These forecasts are based on winter temperatures.

Helminthosporium leaf blight. This blight was more prevalent than usual throughout the state. It was especially damaging, however, in the area from Watseka southward and east of highway U.S. 45. In this area all the leaves in some fields were completely killed by the end of August. In such fields the damage was the worst ever noted in Illinois from this disease. The cause of the disease is a fungus, *Helminthosporium turcicum*, whose development depends largely on a protracted period of warm, humid weather.

Stalk rots. Several different fungi and a bacterium cause corn stalk rots in Illinois. The first to develop were bacterial and pythium stalk rots, which appeared in early July. These rots developed primarily in the Wabash, Ohio, and Mississippi river bottoms but also appeared in some other locations. These diseases cause the stalk to rot off, usually within a foot of the ground, and the plants to topple over while they are still green. Hot, humid weather is necessary to the development of these types of stalk rot. Because of its local nature, the damage for the state was slight.

The stalk rots that were responsible for the real damage this year were caused by the fungi *Diplodia zae* and *Gibberella zae*. On the whole, *Diplodia* was the more damaging, but in many fields *Gibberella* was the main trouble. The two often occurred in nearly equal prevalence, frequently on the same stalk. In general appearance these stalk rots are very much alike. The surface of the lower part of the stalk becomes darkly discolored in localized areas, then the leaves die unless they have already been killed by leaf blight, then the stalks die

¹ Data on disease prevalence and estimates of losses are based in part on surveys made by G. H. Boewe, Assistant Plant Pathologist, Illinois State Natural History Survey.

Table 8. — ROT DAMAGE CAUSED BY FUNGI: Average of All Entries in Eight Test Fields, 1949

(Figures are based on laboratory tests)

Rank*	Fungi causing damage	Corn kernels damaged by rot at—							
		Munde- lein	DeKalb	Gales- burg	Sheldon	Sullivan	Alham- bra	Dixon Springs	
		<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>
1	<i>Fusarium moniliforme</i>	.66	.38	1.18	1.50	.67	.79	1.76	2.07
2	<i>Diplodia zeae</i>.....	.09	.73	.79	.66	1.74	.13	.13	0
3	<i>Gibberella zeae</i>.....	.21	.16	.09	.27	.27	.30	.05	.20
4	<i>Penicillium spp.</i>.....	.22	.15	.51	.27	.12	.10	.03	.20
5	<i>Nigrospora oryzae</i>.....	.05	.03	.04	0	.02	.04	.01	.12
6	<i>Hormodendrum sp.</i>...	.12	.05	.06	.02	.02	.01	0	.02
	Miscellaneous.....	.08	.03	.09	.13	.04	.08	.03	.08
	Total.....	1.43	1.53	2.76	2.85	2.88	1.45	2.01	2.69

* Based on total damage.

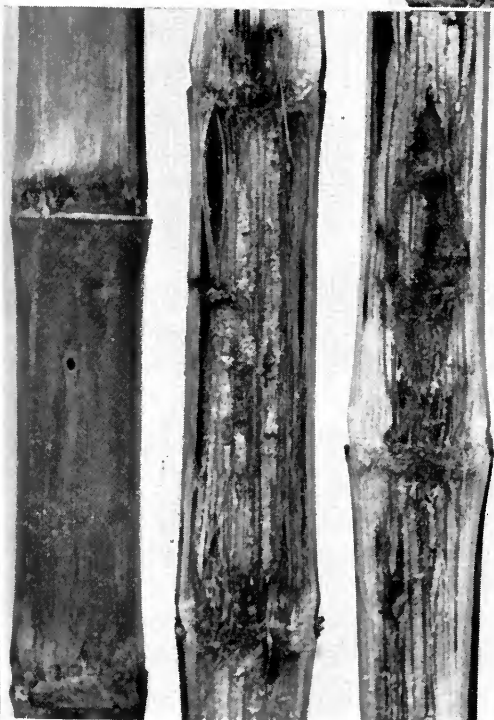
and finally break down. Breaking occurs most severely after *Gibberella* damage, but *Diplodia* has also sometimes caused 90 percent of the stalks in a field to go down.

When leaf blights from bacterial wilt and *Helminthosporium* occurred severely in August and were widespread, it could be predicted that *Diplodia* stalk rot would be bad. *Gibberella* followed for good measure.

Stalk rots became most severe in the southern half of the state, where leaf blights had been most severe, as disease studies in 59 counties representing all parts of Illinois showed. The combined damage from leaf blights and stalk rots in this area was estimated at 20 percent. In the northern half of the state, and especially in the northern quarter, there was much less leaf blight, but in the northern half the prevalence of corn borers was higher. Corn borers increase stalk-rot damage by making the interior tissues of the stalks more accessible to the fungus spores (page 479). Leaf blight, however, appeared to be more important than the corn borers as a forerunner of stalk rot. Combined damage for leaf blight and stalk rots was assessed at 13 percent in the northern half of the state. For the state as a whole the estimated damage was 16.5 percent. This estimate does not include damage ascribed directly to corn borers (for borer damage, see pages 470-476). The past season marked the worst occurrence of stalk rot since 1938.

Smut. Of 4,300 corn plants examined in 37 scattered counties,

Cornstalks inoculated with *Diplodia zeae*. Note hole made by injector (left). Stalks cut open show a moderately resistant reaction to this rot (middle) and a susceptible reaction (right). Breeders often inoculate plants with *Diplodia* to determine their resistance to this stalk rot. (Fig. 1)



Cornstalks entered by European corn borer. Stalk (left) shows entrance hole. Stalks cut open show extensive *Diplodia* rot. The borer had probably become polluted with spores of the disease and thus may have served as an inoculator. Stalk rot is often associated with borer damage and may cause even more damage than the borers. (Fig. 2)

5.3 percent had prominent smut infections. The loss for the state from these infections was estimated at 1.6 percent. This is the highest since 1940.

Ear rots. Samples of shelled corn are taken each year from each entry on each field and the percent of rot-damaged corn is determined. The different entries vary considerably in rot damage (see Tables 9 to 15, noting especially the three-year averages, which are more reliable than the results of any one year). The rot-damaged kernels are next tested in the laboratory to determine the cause of the rot. The results of the tests for 1949 are summarized in Table 8. The rot percentages averaged a little higher than they did in 1948 and are the highest since 1945. While the different test fields did not vary greatly in total rot damage, they varied considerably in kind of rot damage. In a few farmers' fields that were examined the total rot was much higher than on the test fields.

On the average, kernels rotted by *Fusarium* were much more plentiful than those rotted by *Diplodia*, although the reverse was true at DeKalb and Sullivan. In 1948 *Diplodia* was most prevalent in most fields. Significant amounts of *Hormodendrum* are usually a sign of premature frost damage. Its prevalence diminished from Mundelein southward.

MEASURING PERFORMANCE

The entries in the 1949 test are listed in the tables in the order of their *total* yields.

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 hand-shelling 8 ears of each entry in one replication.

From the shelled corn one sample was taken to determine the percentage of moisture at harvest¹ 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 total yield thus

¹ All moisture determinations were made with a Steinlite moisture tester.

obtained for four fields (Sullivan, Galesburg, Sheldon, and Alhambra) was adjusted according to the procedure outlined by Cochran for randomized lattice-square designs.¹

Erect plants. The percentage of erect plants in each plot of each entry on each field was estimated at the time of harvest. 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.

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.

Stand. A count was made in late summer, at all fields, of the number of missing hills and total number of missing plants in each plot of each variety. Yields were corrected for missing hills by the following adjustment:

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

adjusted ear weight.

The percent stand is based on the total number of missing plants in relation to the number that would have been present if all the kernels had produced plants. Stand differences may be due to poor germination, to disease, insect, or rodent destruction, or in some cases to destruction in cultivation. It is believed that because of the conditions under which these tests are run missing hills are generally the result of accidents in cultivation.

Oil and protein analysis. For the second time, a sample of each entry on each field was sent to the Northern Regional Research Laboratory at Peoria for an analysis of the oil and the protein content of the grain. These analyses were made on a moisture-free basis.

Significance of yield differences. Too much confidence must 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 1949 tests has been calculated for total

¹ Cochran, W. G. "Some Additional Lattice-Square Designs." *Iowa Agr. Exp. Sta. Res. Bul. 318*. May, 1943.

yield by the mathematical procedure known as "analysis of variance." In each table is shown the approximate difference 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 9 to 16 on the following pages. See also Table 8 on page 478 on ear-rot damage.

Readers are urged to keep in mind these two things when comparing the performance of hybrids on any one field:

1. Small differences in yield do not necessarily indicate the superiority of one hybrid over another. See each table for the amount one hybrid must exceed another before it can be considered better.

2. The summary section of each table is more reliable for evaluating those hybrids that have been tested for three years than is the single record for the current year. The fact that a hybrid does not appear in the summary is, however, nothing against it — its absence merely means that 1949 was the first year it was tested or that it missed one year of the series.

Table 9. — NORTHEASTERN ILLINOIS: Mundelein, 1949

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
1	Illinois 1180 (Huebsch)	100.4	1.0	22.4	83	79	Medium	11.1	5.0
2	Nichols 99	97.0	.7	22.9	80	86	High	11.1	5.1
3	Pioneer 349	94.6	2.1	22.0	76	80	Medium	10.9	4.9
4	Nichols 5B	94.1	.6	23.1	83	89	Medium	10.6	5.1
5	Pioneer 352	93.7	2.9	19.9	78	89	M-low	11.0	5.0
6	Pioneer 300	93.3	2.8	25.7	75	86	High	10.8	4.7
7	Nichols 75	92.3	2.7	24.1	83	87	High	10.4	4.9
8	Ainsworth X-21	92.1	3.9	24.8	80	86	High	11.0	4.4
9	Funk G-27	90.9	4.6	21.9	78	87	M-low	11.3	5.0
10	Appl A-202	88.8	1.9	23.1	79	84	M-high	11.3	5.1
11	Moevs 87	88.3	2.2	20.7	79	84	High	10.2	5.1
12	Huebsch 44	87.7	1.5	22.1	74	80	High	11.6	5.0
13	Pioneer 377A	87.6	.5	18.6	64	87	Medium	10.6	4.9
14	DeKalb 410	87.5	.7	21.8	76	77	M-low	10.2	5.1
15	Frey 410	87.2	2.2	23.5	78	84	Medium	11.0	5.0
16	Nichols 202	85.4	1.8	22.7	80	78	M-high	10.9	5.1
16	DeKalb 239	85.4	1.0	21.2	70	71	Medium	10.1	4.8
18	Ainsworth X-12	84.2	1.1	23.8	78	87	M-low	9.9	4.3
18	Producers 305	84.2	.7	22.9	71	82	M-high	11.6	5.0
20	DeKalb 422	83.6	.5	23.0	66	87	M-high	10.4	4.9
21	Illinois 101 (Huebsch)	83.3	2.2	22.6	83	86	M-low	11.1	5.1
22	Funk G-68	82.9	.6	20.5	66	82	M-low	10.5	5.3
22	DeKalb 404A	82.9	.5	22.7	69	77	Medium	12.3	5.3
24	DeKalb 241	82.8	1.4	21.9	80	82	Medium	11.1	5.0
24	Super-Crost 85A	82.8	.6	20.2	51	82	Low	11.2	5.0
26	Illinois 269 (Huebsch)	82.6	1.6	23.6	74	76	Medium	11.6	4.8
27	P. A. G. 56	82.3	.7	21.4	68	82	M-low	11.3	5.0
28	Ferris F-11	82.2	.3	21.6	80	78	M-high	11.1	5.1
29	Nichols 202A	81.9	.9	22.4	79	81	Medium	11.3	5.0
30	Producers 311	81.6	.3	22.6	73	82	Low	11.2	5.0
31	Super-Crost F-138	81.4	1.2	22.1	73	83	High	10.7	4.6
32	Producers 315	80.8	2.8	23.1	75	72	Medium	10.9	5.1
33	Pride D-45A	80.1	1.4	20.4	69	84	Low	10.7	5.2
34	P. A. G. 61	79.5	.6	20.7	80	77	Medium	11.1	4.7
35	Super-Crost 213	79.1	.7	20.5	66	82	M-low	11.1	5.1
36	Producers 320	78.0	.4	23.9	81	82	Medium	10.9	4.9
37	Moevs 85	77.8	1.0	22.7	80	77	M-low	11.8	4.8
38	DeKalb 406	75.1	2.6	21.8	71	75	Medium	12.3	5.0
39	Bear OK-111	74.6	.6	22.1	68	89	M-low	11.1	5.1
40	DeKalb 240	72.3	1.2	20.5	60	75	Medium	11.3	4.9
	Average of all entries	85.1	1.4	22.2	74	81	.....	11.0	5.0

There are no significant differences between yields of any two entries.

Table 10. — NORTHERN ILLINOIS: Woodstock and DeKalb
(Woodstock 1947, DeKalb, 1948, 1949)

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
SUMMARY 1947-1949: Less than 4.3 bushels difference between total yields of any two entries is not significant.									
		bu.	perct.	perct.	perct.	perct.		perct.	perct.
1	Pioneer 349	60.5	.8	24.0	88	..	Medium	....	....
2	P.A.G. 299	60.4	3.1	22.4	94	..	M-low	....	....
3	Keystone 44	60.1	.9	25.9	95	..	M-low	....	....
4	Illinois 101	59.5	1.0	24.4	92	..	Medium	....	....
5	Lowe 52	59.3	3.5	25.1	91	..	Medium	....	....
6	Illinois 1091A (Station)	58.9	2.9	26.8	89	..	Medium	....	....
7	Sieben S-340	58.5	1.0	28.3	90	..	M-high	....	....
8	Crow 407	58.1	3.2	25.2	91	..	Medium	....	....
9	Super-Crost F-138	57.4	1.7	25.3	89	..	Medium	....	....
9	Illinois 751 (Station)	57.4	1.7	25.0	87	..	Medium	....	....
11	Pride D-66	56.6	.4	26.3	94	..	Medium	....	....
12	Ferris F-11	56.0	.8	24.2	91	..	Medium	....	....
12	Munson M-X	56.0	1.2	25.8	91	..	M-low	....	....
14	Pioneer 4040	55.6	2.9	26.8	91	..	Medium	....	....
15	National 114-1	55.3	.6	24.5	93	..	Medium	....	....
16	Crow 360	54.6	.3	28.3	78	..	M-high	....	....
17	Moews 14	54.3	1.0	25.0	93	..	M-low	....	....
18	Producers 315	53.9	3.6	24.8	87	..	M-low	....	....
19	Producers 305	53.7	.4	22.5	95	..	M-low	....	....
20	Lowe 32	52.5	.6	23.3	92	..	Medium	....	....
	Average of all entries	56.9	1.6	25.2	91	..	.....	.....	.....
1949 RESULTS: Less than 8.3 bushels difference between total yields of any two entries is not significant.									
1	Lowe 52	70.1	3.0	18.4	94	90	Low	8.2	4.7
2	Bear OK-411	69.8	1.2	18.1	91	85	Medium	9.1	4.7
3	Keystone 32	68.7	.1	18.4	92	84	M-low	8.2	4.2
4	Ferris F-12	68.2	1.5	18.3	87	89	High	8.5	4.2
5	Ainsworth X-21	67.5	1.4	18.8	91	86	High	8.9	4.4
6	Bear OK-212	66.1	2.1	18.2	91	85	Medium	9.1	4.9
7	Ainsworth X-12	65.7	7.2	19.1	93	86	M-low	9.1	3.6
8	P.A.G. 253	65.6	2.9	17.5	91	74	M-low	8.4	4.5
9	P.A.G. 299	64.3	1.3	18.4	91	88	M-low	8.2	4.4
10	Ferris F-14	63.8	1.5	18.0	91	86	Medium	9.9	3.9
11	Producers E102B	63.6	1.3	18.8	91	93	Medium	8.8	4.3
12	Sieben S-340	63.1	1.3	18.3	93	84	High	8.2	4.3
13	Illinois 1279 (Station)	63.0	.8	17.8	95	87	M-low	8.4	4.3
14	Nichols 75	62.6	1.0	18.5	93	90	M-low	8.4	4.5
15	Illinois 1091A (Station)	62.5	1.5	17.9	93	83	M-low	8.4	4.2
16	National 114-1	62.4	.9	18.3	94	88	M-low	8.6	4.5
17	Frey 410	61.8	1.0	17.4	91	78	M-low	10.2	4.5
18	Nichols 5B	61.6	.4	17.4	91	87	Medium	9.9	4.3
18	Producers E114B	61.6	1.8	18.8	89	88	M-low	8.2	4.7
20	Keystone 44	61.5	1.1	18.1	93	86	M-low	9.3	3.5
21	Holmes Utility 11	61.4	1.0	16.9	90	81	Medium	8.9	4.6
21	Hulding 240	61.4	.9	16.6	95	81	M-low	....	....
21	Pride D-56	61.4	.5	16.6	92	82	Medium	9.8	4.5
24	Crow 432	61.3	.6	17.9	88	76	Medium	9.0	4.6
25	Cargill 250	61.0	1.0	18.0	92	87	M-high	9.9	4.1
25	Frey 425	61.0	2.8	18.3	91	82	Medium	8.9	4.4
27	Lowe 38	60.7	2.7	17.8	92	84	M-low	....	....
28	Nichols 5AA	60.6	.6	17.8	93	81	Medium	8.8	4.5
29	Sieben S-450	60.3	.8	17.9	92	87	Medium	9.5	4.4
29	Top Yield M-105	60.3	1.0	18.1	94	85	M-low	9.4	4.7
31	Ponder P-180	60.1	5.5	17.9	90	87	M-low	8.6	4.6
32	Illinois 1277 (Station)	59.9	.5	17.9	95	85	Medium	8.6	4.4
33	Super-Crost FD-3A	59.8	1.0	17.1	90	83	Low	8.8	4.4
34	Illinois 101 (Station)	59.3	1.1	18.1	92	75	M-low	8.6	4.5
35	Keystone 33	58.8	1.8	18.7	94	88	Medium	8.6	3.9
36	Moews 85	58.7	.9	17.0	96	81	Medium	9.5	4.8
37	Appl A-202	58.4	1.1	18.3	88	84	Medium	9.6	4.4
38	Sieben S-440E	58.3	.5	18.2	92	76	M-low	8.2	4.2
39	Ponder P-205	58.1	1.7	18.1	91	86	Medium	8.2	4.6

(Table is concluded on next page)

Table 10. — NORTHERN ILLINOIS: Woodstock and DeKalb — concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
1949 RESULTS — concluded									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
40	Moews 15.....	58.0	3.1	18.6	89	82	M-low	8.1	4.1
41	United U-41.....	57.9	1.1	17.5	90	82	M-high	10.2	4.7
42	Pfister 187 Hybrid LF 456.....	57.7	1.0	17.1	92	86	M-high	8.4	4.0
43	Funk G-50.....	57.6	.9	18.8	89	79	High	8.8	4.3
43	Iowalth AF-11.....	57.6	1.1	17.9	93	84	Medium	8.9	4.4
43	P.A.G. 61.....	57.6	3.0	17.5	90	86	Medium	9.0	4.2
46	Lowe MME.....	57.5	1.0	19.2	89	88	High	8.8	4.0
47	Hulting J-41.....	57.3	.6	18.0	92	85	Medium	8.5	4.5
48	Pfister 187 Hybrid LF 789.....	57.2	.7	18.0	91	79	M-high	9.3	4.3
49	Holmes Utility 11A.....	57.0	1.1	16.9	90	87	Medium	9.4	4.4
50	Huey H-75.....	56.5	1.0	19.3	89	76	Medium	9.4	4.5
50	Iowalth 16.....	56.5	1.5	18.0	90	75	Medium	9.8	4.3
52	Lowe 32.....	56.4	.8	17.9	90	82	M-high	9.1	3.7
53	Pioneer 352.....	56.2	5.2	16.2	94	82	Low	8.7	4.3
54	Funk G-29.....	56.1	5.7	18.1	95	77	M-low	9.0	3.7
55	Pioneer 4040.....	55.5	1.2	17.4	96	78	M-high	8.5	3.8
56	Illinois 751 (Station).....	55.4	1.2	18.7	88	73	M-low	10.6	3.8
56	Pioneer 340.....	55.4	2.4	17.9	92	89	Medium	10.4	4.1
56	Super-Crost 213.....	55.4	1.1	16.9	89	82	Low	9.2	4.4
59	Crow 407.....	55.3	.6	18.8	93	85	M-low	8.6	4.8
60	Munson M-X.....	54.6	1.0	18.9	87	82	Low	9.5	4.4
61	Illinois 1508 (Station).....	54.3	1.5	19.2	91	87	M-low	8.3	3.7
62	Producers 315.....	54.2	4.9	18.1	84	83	Low	8.6	4.8
62	Super-Crost F-138.....	54.2	2.3	18.8	91	73	M-low	10.1	3.8
64	Pioneer 349.....	54.0	1.2	17.5	92	81	Low	8.8	4.3
65	Munson M-3.....	53.9	1.2	17.8	91	81	Medium	9.2	4.5
66	Pride D-66.....	52.9	.7	18.9	94	76	Medium	10.4	3.9
67	Moews 14.....	52.8	1.5	18.3	91	83	M-low	9.4	4.1
68	Crow 360.....	52.5	.5	18.8	86	85	M-high	8.6	4.0
68	P.A.G. 282.....	52.5	1.1	18.3	94	72	M-low	9.3	4.4
70	Stiegelmeier S-360.....	52.1	1.0	19.1	87	92	M-high	8.1	4.3
71	Ferris F-11.....	51.3	.7	18.4	91	72	M-low	10.2	4.5
72	Appl A-136.....	46.3	1.1	18.7	92	75	M-high	9.7	3.8
73	Producers 305.....	46.0	.8	17.9	93	71	Low	9.8	4.3
74	Pfister 187 Hybrid LF 123.....	43.6	.6	18.4	89	74	Medium	9.5	3.7
75	Doubet D-1E.....	42.5	1.3	17.3	93	73	M-low	9.6	4.0
	Average of all entries.....	58.5	1.5	18.1	91	82	.....	9.1	4.3

* Average of Illinois 101 (Producers) 1947; Illinois 101 (Station) 1948 and 1949.

Table 11.—WEST NORTH-CENTRAL ILLINOIS: Galesburg

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
SUMMARY 1947-1949: Less than 4.8 bushels difference between total yields of any two entries is not significant.									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
1	Pioneer 313B.....	103.3	4.8	23.8	60	..	M-high	.....	.....
2	Schwenk S-24.....	102.7	2.0	22.2	71	..	High	.....	.....
3	Ainsworth X-21.....	96.9	2.7	22.3	79	..	M-high	.....	.....
4	Pioneer 336.....	95.8	2.1	21.0	71	..	High	.....	.....
5*	U. S. 13.....	93.4	2.4	23.1	72	..	High	.....	.....
6	P.A.G. 170.....	92.8	.8	21.1	76	..	M-high	.....	.....
7	Low 514.....	92.5	1.8	20.9	67	..	M-high	.....	.....
8	Producers 940.....	92.2	3.5	21.0	78	..	High	.....	.....
9	National 125-1.....	92.1	2.9	21.2	72	..	Medium	.....	.....
10	Morton M-12.....	91.6	3.5	21.1	74	..	M-high	.....	.....
11	Sieben S-440.....	91.1	1.3	20.0	69	..	Medium	.....	.....
12	P.A.G. 392.....	90.7	1.8	20.8	75	..	Medium	.....	.....
13	Hulting 380.....	89.9	1.1	21.8	63	..	Medium	.....	.....
14	Hulting 101.....	89.8	2.3	21.1	65	..	Medium	.....	.....
15	Funk G-37.....	88.0	1.9	20.5	73	..	M-high	.....	.....
16	Low 520.....	86.2	2.1	21.4	75	..	M-high	.....	.....
17	Super-Crost F-169.....	86.0	2.1	21.7	68	..	M-high	.....	.....
	Average of all entries.....	92.6	2.3	21.4	71	..	.....	.....	.....
1949 RESULTS: Less than 10.6 bushels difference between total yields of any two entries is not significant.									
1	Crow "Deep Root".....	105.6	.9	18.9	92	90	High	10.0	5.5
2	Huey H-23.....	103.0	3.9	18.6	76	90	High	9.9	4.7
3	Illinois 1570 (Station).....	101.9	1.7	18.8	82	91	High	10.9	4.6
4	Low 520.....	101.0	3.4	18.6	70	86	M-high	9.2	4.8
4	P.A.G. 170.....	101.0	1.3	18.4	82	84	M-high	9.3	4.3
6	Schwenk S-24.....	100.6	2.4	19.4	78	86	High	9.3	4.6
7	Crow 660.....	98.9	3.0	19.2	85	82	Medium	9.7	5.3
8	Schwenk S-34.....	98.7	5.3	19.1	77	85	High	9.5	4.5
9	Illinois 972A-1 (Station).....	98.6	4.6	19.8	80	86	High	9.6	4.2
10	Munson M-13.....	98.5	1.7	19.2	76	86	M-high	9.8	4.7
11	Top Yield M-546.....	97.1	2.3	18.5	74	78	High	9.9	4.9
12	Bo-Jac 68.....	96.2	2.2	17.3	76	85	Medium	8.9	4.1
13	Bear OK-35.....	96.1	1.2	18.3	77	78	Medium	10.6	5.2
14	Pioneer 313B.....	95.6	7.3	20.2	58	87	M-high	9.4	4.7
14	Producers E102B.....	95.6	2.7	19.2	83	87	M-low	9.8	5.0
16	National 115A.....	94.6	3.7	18.4	86	84	High	10.9	5.1
16	P.A.G. 347.....	94.6	1.8	18.1	77	87	Medium	10.5	4.8
18	Ainsworth X-21.....	94.4	2.9	19.7	80	85	High	9.7	4.9
19	Illinois 273-1 (Tiemann).....	93.8	6.8	19.2	66	84	Medium	10.5	4.8
19	Munson M-H.....	93.8	2.0	18.8	80	82	M-high	10.4	5.2
21	U. S. 13 (Station).....	93.2	1.8	19.7	73	88	High	9.6	4.6
22	Ainsworth X-13-3.....	92.9	3.3	19.1	61	94	Medium	10.5	4.7
23	Morton M-12.....	92.5	6.3	18.1	82	80	M-high	10.3	4.6
24	Kelly K-374.....	92.0	3.5	19.1	79	87	Medium	10.1	4.8
25	Illinois 21 (Station).....	91.8	4.3	20.1	84	81	High	9.3	4.5
25	U. S. 13 (Lepper).....	91.8	2.3	19.2	76	85	High	9.6	4.3
27	Illinois 1337 (Station).....	91.4	3.2	20.5	74	83	High	10.1	4.6
27	Pioneer 304.....	91.4	2.5	20.7	80	85	M-high	8.7	4.8
29	P.A.G. 270.....	91.3	2.2	18.3	82	86	Medium	10.1	4.5
29	Sieben S-440E.....	91.3	3.1	16.3	72	83	M-low	9.5	4.8
31	Low 562.....	91.0	4.4	17.8	73	86	Medium	10.1	4.7
32	Funk G-95.....	90.7	5.6	19.5	79	81	M-high	9.8	4.9
33	Stiegelmeier S-370.....	90.6	1.2	18.9	72	78	Medium	9.3	4.1
34	Hulting 101.....	90.2	4.6	18.8	71	81	Medium	9.4	4.7
35	Iowalth A.Q.....	89.6	3.1	16.7	79	84	Medium	9.6	4.4
35	Low 514.....	89.6	1.0	18.7	72	84	M-high	10.0	4.6
37	National 125-1.....	89.1	4.4	18.9	80	84	Medium	11.0	5.1
38	Ainsworth X-201.....	88.9	3.1	19.2	66	81	M-high	10.6	4.8
39	Ferris F-12.....	88.8	4.5	19.8	77	85	M-high	10.4	4.6
40	Cargill 339.....	88.6	.9	19.0	69	80	M-high	10.4	4.8

(Table is concluded on next page)

Table 11.—WEST NORTH-CENTRAL ILLINOIS—concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
1949 RESULTS—concluded									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
41	Morton M-30	88.3	2.5	19.4	81	82	Medium	8.6	4.5
42	United U-47	88.2	5.9	16.6	76	81	Medium	9.9	4.8
43	Pfister 187 Hybrid LF 456	88.1	1.5	18.8	83	76	Medium	9.5	4.4
43	Producers 900	88.1	1.3	19.2	73	83	Medium	9.6	5.1
43	Stewart S-11	88.1	3.0	16.6	83	69	High	10.9	4.9
46	Pioneer 339	87.6	1.9	19.5	85	76	Medium	10.6	4.6
47	Appl A-136	87.4	1.8	20.2	67	75	M-high	9.3	4.4
47	Doubet D-11	87.4	3.6	18.5	78	85	Medium	10.3	4.6
47	Illinois 1515 (Station)	87.4	2.1	19.8	79	82	High	10.1	4.8
50	Bear OK-50	87.3	3.1	18.1	70	80	M-high	10.0	4.3
51	Funk G-93	86.8	1.0	18.4	75	82	Medium	10.6	4.7
52	Kelly K-42	86.7	1.3	18.1	71	70	Medium	11.0	5.3
52	Moews 520	86.7	1.9	18.5	73	85	M-high	9.8	4.9
54	Producers 940	86.5	2.4	19.9	81	83	High	9.8	4.6
55	Ferris F-11	86.2	6.0	17.9	79	83	Low	9.8	5.0
56	Holmes Utility 19A	85.2	3.7	18.8	78	85	M-low	10.1	4.7
57	Funk G-37	85.0	.7	17.4	85	80	M-high	9.5	4.8
58	Baird 380	84.5	2.1	18.9	73	77	Medium	9.7	4.5
59	Crow 633	84.3	3.4	20.7	72	80	M-high	10.9	4.9
59	Doubet D-3W	84.3	4.0	18.6	74	84	Medium	9.9	4.9
61	Sieben S-440	84.1	1.1	18.0	69	83	M-low	9.6	4.6
62	Iowearth 16	83.9	1.9	18.5	70	79	M-low	10.4	4.2
63	Sieben S-340	83.4	2.2	19.3	72	75	Medium	10.4	4.6
64	Huey H-42	83.2	1.2	19.2	81	85	High	10.5	4.8
65	Kelly K-77	83.1	3.2	18.8	81	81	M-high	10.1	4.8
66	Stiegelmeier S-340	82.7	1.1	19.1	79	73	M-high	10.1	4.6
67	Pfister 187 Hybrid LF 789	81.8	2.1	18.3	75	76	Medium	10.4	4.7
68	Null N-32	81.0	1.9	18.5	84	82	Medium	10.1	4.3
68	P.A.G. 392	81.0	2.9	19.0	78	90	Medium	9.9	4.6
70	Hulting 380	80.8	.3	20.1	72	80	Medium	9.8	4.5
71	Super-Crost F-169	80.7	.7	18.8	68	75	M-high	10.3	5.0
72	Pioneer 336	80.5	.5	19.2	78	79	High	11.3	4.9
73	Holmes Utility 29	80.3	4.1	19.0	85	83	M-high	10.1	4.6
74	Producers Ell14B	79.7	6.3	20.8	75	86	Low	10.4	5.1
75	Moews 550	77.4	.7	18.7	79	80	M-high	9.9	4.7
76	Keystone 41	74.7	4.1	18.5	78	82	Medium	10.9	4.5
77	Holmes Utility 39H	74.4	3.0	20.2	80	77	High	9.9	4.7
78	Super-Crost FD-7	74.3	1.1	18.4	69	64	Medium	10.8	5.1
79	Moews 14	74.1	.8	18.7	72	72	M-low	9.2	4.6
80	Pringle P-100	72.1	.7	18.8	69	82	M-low	10.8	5.2
81	Pfister 187 Hybrid LF 123	70.2	3.7	19.1	79	78	Medium	9.8	4.6
	Average of all entries	88.6	2.8	18.9	76	82	.....	10.0	4.7

* Average of U. S. 13 (Morton, Lepper, Morgan) 1947; U. S. 13 (Lepper and Morton) 1948; U. S. 13 (Lepper) 1949.

Table 12. — EAST NORTH-CENTRAL ILLINOIS: Sheldon

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
SUMMARY 1947-1949: Less than 4.8 bushels difference between total yields of any two entries is not significant.									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
1	Keystone 38.....	96.2	2.0	22.7	86	..	Medium	..	..
2	Producers 940.....	94.3	1.5	22.2	84	..	M-high	..	..
3 ^a	Illinois 21.....	94.0	3.0	23.0	80	..	M-high	..	..
4	P.A.G. 164.....	93.9	2.7	22.9	85	..	Medium	..	..
5 ^b	U.S. 13.....	93.0	2.2	23.7	83	..	M-high	..	..
6	Bear OK-88T.....	92.9	1.1	25.6	80	..	Medium	..	..
7	P.A.G. 392.....	90.4	1.5	22.4	83	..	Medium	..	..
8	Morton M-12.....	88.5	3.9	22.3	83	..	M-high	..	..
9	Lowe 523.....	88.3	2.8	23.4	79	..	Medium	..	..
10	Farmcraft FC-69.....	88.1	1.9	24.1	78	..	Medium	..	..
11	Crow 608.....	87.8	1.1	23.9	78	..	Medium	..	..
12	Frey 645.....	87.1	2.3	23.7	82	..	Medium	..	..
13	Lowe 580.....	85.6	2.0	24.5	81	..	Medium	..	..
14	Lowe 514.....	84.8	2.2	23.7	83	..	Medium	..	..
15	Crow 633.....	84.2	1.9	22.7	81	..	Medium	..	..
16	Kelly K-77.....	83.2	2.0	22.8	81	..	Medium	..	..
17	Moews 520.....	79.8	1.2	23.6	85	..	Medium	..	..
18	Funk G-211.....	78.9	2.0	22.9	80	..	Medium	..	..
19	Lowe 520.....	78.2	2.8	25.7	81	..	M-high	..	..
	Average of all entries.....	87.8	2.1	23.5	82	..	.....	.....	.....

1949 RESULTS: Less than 9.0 bushels difference between total yields of any two entries is not significant.

1	Crow "Deep root".....	98.3	1.9	20.3	75	89	Medium	9.7	5.1
2	Schwenk S-34.....	98.2	2.6	20.7	72	87	High	10.3	4.4
3	Corn Belt 60A.....	97.2	3.1	20.8	63	79	M-high	9.9	4.6
4	Illinois 1246 (Holder).....	96.1	5.1	19.0	72	88	Medium	10.5	4.9
5	Illinois 21 (Station).....	95.0	.8	20.4	71	90	M-high	10.0	4.5
6	Stiegelmeier S-370.....	94.3	2.7	18.8	66	84	Medium	10.1	4.3
7	Lowe 520.....	94.1	5.0	20.0	64	90	M-high	10.4	4.5
8	Ainsworth X-21.....	92.4	4.3	20.6	74	91	High	10.2	4.8
8	Frey 645.....	92.4	3.0	18.9	64	87	Medium	10.6	4.7
8	National 115A.....	92.4	1.7	20.5	74	87	M-high	11.9	4.6
11	Illinois 1570 (Station).....	92.2	2.5	23.0	76	85	High	10.6	4.4
12	Doubet D-11.....	92.1	7.3	19.9	74	92	Medium	11.3	4.9
12	Illinois 1515 (Station).....	91.7	1.8	20.6	77	82	M-high	10.7	4.6
14	P.A.G. 392.....	90.6	1.2	19.6	75	88	Medium	10.1	4.5
15	Ainsworth X-13-3.....	90.2	4.3	20.9	72	87	M-high	10.6	4.3
16	Kelly K-374.....	89.0	2.4	19.6	68	91	Medium	10.3	4.9
17	Pioneer 304.....	88.9	2.4	22.8	67	87	M-high	10.0	4.9
18	Bear OK-31.....	88.6	2.0	20.0	74	90	Medium	11.1	4.9
18	Funk G-93.....	88.6	1.2	20.1	72	88	M-high	10.9	4.8
20	P.A.G. 164.....	88.2	2.2	20.7	73	84	Medium	9.8	4.5
20	U.S. 13 (Station).....	88.2	2.7	21.1	71	83	High	10.1	4.7
22	Illinois 1508 (Station).....	88.0	3.8	19.1	69	85	Medium	9.8	4.4
23	Illinois 1091 (Mountjoy).....	86.5	1.3	19.7	67	79	Medium	9.7	4.4
24	Pioneer 313B.....	86.2	2.4	21.7	69	88	Medium	10.3	4.5
25	Null N-49.....	85.9	2.0	19.7	69	85	M-high	10.3	4.4
26	Bear OK-50.....	85.7	4.3	20.8	69	85	Medium	10.2	4.1
27	Keystone-38.....	85.1	2.2	20.8	74	85	Medium	10.6	4.3
28	Frey 692.....	84.9	1.5	20.1	70	78	Medium	9.6	4.7
29	Crow 608.....	84.6	2.5	20.4	54	72	Low	10.2	4.6
30	Frey 645.....	84.4	4.3	20.3	70	86	Medium	10.1	4.8
30	Illinois 1248 (Seeber).....	84.4	4.8	19.9	68	83	Medium	10.5	4.7
32	Funk G-95.....	84.3	4.9	20.7	73	88	Medium	10.3	4.7
33	Stiegelmeier S-340.....	84.2	2.2	20.8	70	78	Medium	9.9	4.4
34	Kelly K-77.....	84.1	2.4	20.4	67	83	Medium	10.3	4.4
35	Bear OK-88T.....	83.8	1.3	20.7	63	83	Medium	11.0	4.8
35	Pfister 187 Hybrid LF 789.....	83.8	1.3	19.3	70	84	Medium	9.9	4.4
37	Morton M-30.....	83.6	2.1	20.2	70	86	Medium	9.6	4.6
38	Iowhealth AQ.....	83.5	1.8	19.0	69	92	M-low	10.3	4.5
39	Lowe 514.....	83.1	5.0	19.1	68	78	Medium	10.3	4.8
40	Morton M-12.....	82.8	5.6	20.5	72	85	M-high	10.3	4.6
41	Ainsworth X-201.....	82.7	1.7	21.1	65	82	High	10.9	4.6

(Table is concluded on next page)

Table 12.—EAST NORTH-CENTRAL ILLINOIS: Sheldon—concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
1949 RESULTS—concluded									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
41	Appl A-1766.....	82.7	1.4	21.6	71	80	High	10.3	4.7
41	Bear Tapicorn 4.....	82.7	1.1	20.1	70	84	Medium	9.8	4.8
41	Producers 940.....	82.7	1.0	21.0	74	82	High	10.3	5.0
45	Pfister 187 Hybrid LF 456.....	82.4	1.5	19.8	65	82	Medium	9.8	4.1
46	Lowe 580.....	82.2	1.4	20.6	67	84	Medium	10.4	4.3
47	Illinois 21 (Pfeifer).....	82.1	3.2	18.8	69	82	Medium	10.1	4.5
48	DeKalb 800A.....	82.0	1.2	20.8	72	80	M-high	10.6	4.7
49	Sibley 777.....	81.8	3.1	20.6	69	81	Medium	9.7	4.1
49	P.A.G. 173.....	81.8	2.5	20.1	74	75	Medium	10.5	4.6
51	Super-Crost S-12.....	81.1	1.3	18.5	70	82	M-low	10.1	4.5
52	DeKalb 627.....	79.9	1.5	20.5	59	89	Low	10.4	4.4
52	P.A.G. 175.....	79.9	4.0	21.0	72	86	M-high	10.7	4.3
52	Sieben S-440.....	79.9	2.1	18.3	67	83	M-low	10.0	4.2
55	Pioneer 332.....	79.7	5.3	23.1	67	87	M-high	10.1	4.1
56	Producers 900.....	79.6	7.5	19.4	73	82	M-low	10.8	4.8
57	Illinois 1337 (Station).....	79.5	1.2	20.4	65	82	Medium	10.5	4.5
58	Lowe 523.....	79.2	7.0	21.1	66	88	Medium	10.2	4.6
59	Frey 425.....	78.6	3.8	21.7	64	84	Low	9.9	4.6
60	Doubet D-3W.....	77.4	4.1	20.7	72	81	Low	9.7	4.6
61	Farmercraft FC-69.....	77.1	4.3	21.7	59	72	Medium	10.2	4.5
62	Super-Crost FD-6.....	76.6	1.3	18.8	69	79	Medium	10.3	4.4
63	Hulting 101.....	76.2	1.3	19.2	68	82	Medium	10.6	4.6
64	Moews 520.....	76.1	2.1	20.1	76	80	Medium	10.5	4.6
65	Crow 633.....	75.8	4.6	20.0	69	73	Medium	10.2	4.7
66	Crow 660.....	75.7	2.1	19.6	69	76	Medium	10.2	4.4
66	Farmercraft PC-63.....	75.7	2.0	20.3	60	80	M-low	10.2	4.2
68	Sieben S-440E.....	75.2	4.2	19.4	65	88	Low	9.9	4.8
69	Holmes Utility 39H.....	75.1	2.5	22.5	70	77	M-high	9.3	4.2
69	Super-Crost 746.....	75.1	3.0	21.7	66	81	Medium	10.7	4.3
71	Pioneer 300.....	74.7	2.6	21.5	61	81	M-high	10.4	4.4
72	Pfister 187 Hybrid LF 123.....	74.4	2.6	21.7	72	85	Medium	10.8	4.2
73	Illinois 972 (Appl).....	73.4	1.1	20.4	62	66	Medium	9.7	4.1
74	Pike 520.....	72.6	1.0	23.2	67	76	Medium	10.3	4.2
75	Illinois 273-1 (Tiemann).....	72.4	4.4	19.4	68	83	Medium	11.0	4.9
76	Hulting 380.....	71.9	4.1	20.0	70	83	Medium	9.3	4.4
77	Keystone 41.....	71.5	3.5	20.5	70	84	Low	10.7	4.7
78	Producers 730.....	71.3	3.5	20.2	69	68	M-high	10.4	4.4
79	Moews 14.....	69.6	3.6	18.4	63	84	Low	9.9	4.3
80	Moews 18.....	69.0	1.0	19.9	73	74	Medium	9.8	4.5
81	Funk G-211.....	63.3	4.2	19.9	59	85	Low	10.1	4.4
	Average of all entries.....	82.8	2.9	20.4	69	83	.....	10.3	4.5

^a Average of Illinois 21 (Mountjoy) 1947; Illinois 21 (Holder, Mountjoy, Station) 1948; Illinois 21 (Station) 1949. ^b Average of U.S. 13 (Morton, Kelly, Pfeifer) 1947; U.S. 13 (Morton, Appl, Sibley, Station) 1948; U.S. 13 (Station) 1949.

Table 13. — SOUTH-CENTRAL ILLINOIS: Sullivan

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
SUMMARY 1947-1949: Less than 3.9 bushels difference between total yields of any two entries is not significant.									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
1	Producers 900	91.5	2.7	18.8	83	..	Medium	..	..
2	P.A.G. 173	90.6	4.5	19.2	78	..	M-high	..	..
3	P.A.G. 392	90.4	2.2	18.6	90	..	Medium	..	..
3 ^a	U.S. 13	90.4	2.1	19.0	83	..	M-high	..	..
5	Ainsworth X-13-3	90.2	2.9	19.5	86	..	Medium	..	..
5 ^b	Illinois 201	88.9	2.1	18.7	82	..	Medium	..	..
7 ^c	Illinois 21	88.7	2.7	19.2	86	..	Medium	..	..
8	Keystone 45	88.2	2.6	21.4	79	..	High	..	..
9	Low 523	87.0	1.0	18.9	85	..	Medium	..	..
10	DeKalb 875	86.1	2.2	20.8	84	..	Medium	..	..
11	Canterbury 404	86.0	1.8	19.5	85	..	Medium	..	..
12	Whisnand 804	85.4	2.2	18.6	83	..	Medium	..	..
13	P.A.G. 170	85.2	3.1	20.0	84	..	M-high	..	..
14	Kelly K-88	84.9	1.5	18.5	84	..	Medium	..	..
15	National 125-1	84.8	3.3	18.4	88	..	Medium	..	..
16	Embro 36	84.2	3.6	19.1	85	..	Medium	..	..
17	Ainsworth X-14A	83.6	2.2	22.2	80	..	M-high	..	..
18	Crow 608	82.6	1.8	18.6	81	..	Medium	..	..
19	Crow 805	82.5	1.3	19.4	81	..	Medium	..	..
	Average of all entries	86.9	2.3	19.4	84	..	..	..	..

1949 RESULTS: Less than 6.5 bushels difference between total yields of any two entries is not significant.

1	Illinois 2216(W) (Station)	99.8	2.5	20.5	60	94	High	9.1	4.0
2	Doubet D-41	99.3	2.8	18.9	82	94	M-high	8.5	4.8
3	Whisnand 804D	96.4	4.1	17.1	63	97	Medium	8.9	4.7
4	U.S. 13 (Stone)	93.6	2.7	18.8	73	95	M-high	8.7	4.4
5	U.S. 13 (Wilson)	93.4	3.8	18.4	57	92	M-high	8.8	4.5
6	Funk G-98	93.1	1.2	19.8	59	97	M-high	9.0	4.6
7	U.S. 13 (Station)	93.0	4.7	16.8	76	98	M-high	8.6	4.1
8	Funk G-79	92.5	2.3	19.0	73	93	M-high	9.1	4.6
8	Illinois 1570 (Station)	92.5	2.9	19.1	71	96	M-high	9.2	4.6
10	P.A.G. 392	92.1	4.8	17.7	82	96	Medium	8.9	4.5
11	Bear OK-72	91.3	.9	18.2	67	90	Medium	9.7	4.8
12	P.A.G. 170	91.1	4.8	18.4	78	93	M-high	8.5	4.1
13	Castle Ohio C-92	90.8	3.7	18.3	71	94	Medium	9.1	4.8
14	Illinois 21 (Stone)	90.7	3.7	18.2	72	93	Medium	9.1	4.7
15	Stiegelmeier S-370	90.6	3.4	17.9	92	91	M-high	9.5	4.1
16	Illinois 201 (Mountjoy)	90.2	3.7	17.8	61	94	Medium	8.9	4.7
17	Funk G-512(W)	90.1	.6	21.4	57	94	High	9.1	4.0
18	Null N-77	90.0	1.0	17.5	68	89	M-high	9.1	4.4
19	Crow "Deep Root"	89.5	2.9	17.9	89	93	Medium	8.9	5.0
20	Bear OK-66	89.4	4.3	18.6	73	94	Medium	8.9	4.6
21	Illinois 21 (Powers)	89.2	5.6	19.0	72	93	Medium	9.4	4.7
21	Keystone 45	89.2	5.6	19.9	67	95	High	9.4	5.3
23	Illinois 1337 (Pfeifer)	89.1	4.0	17.8	76	93	Medium	9.6	4.6
24	P.A.G. 173	88.4	4.7	18.4	68	95	Medium	9.1	4.3
25	Pioneer 313A	88.2	4.5	18.8	74	96	Medium	8.8	5.0
26	Crow 805	88.1	2.0	18.9	68	90	Medium	9.5	4.7
27	Bear Tapiocorn 4	87.6	2.7	16.7	71	92	M-low	9.2	4.5
28	Low 640	87.4	2.6	17.0	64	93	M-low	9.6	4.6
28	P.A.G. 164	87.4	3.5	19.0	86	95	Medium	8.5	4.7
30	Canterbury 420	87.1	2.8	18.5	74	93	Medium	8.9	4.8
30	Kelly K-88	87.1	3.7	17.1	75	89	M-high	8.9	4.8
30	Pioneer 332	87.1	1.1	19.6	75	89	M-high	8.8	4.4
33	Ainsworth X-13-3	86.8	5.1	18.8	79	94	Medium	9.1	4.3
33	Illinois 972A-1 (Stone)	86.8	3.1	17.5	59	88	Medium	9.1	4.5
35	Ainsworth X-14A	86.6	2.7	19.5	63	94	High	9.8	5.1
35	Pioneer 313B	86.6	1.4	18.8	68	94	M-low	8.9	4.7
37	Morton M-12	86.3	6.8	17.9	74	92	Medium	9.1	4.5
38	Illinois 1337 (Station)	86.1	3.4	17.2	70	94	Low	8.7	4.5
38	Appl A-130	86.1	1.5	17.3	80	90	Medium	9.6	4.6
40	Ainsworth X-21	85.9	2.6	18.7	74	92	Medium	9.1	4.6
41	Embro 36	85.6	2.9	19.5	78	95	Medium	9.4	4.7

(Table is concluded on next page)

Table 13.—SOUTH-CENTRAL ILLINOIS: Sullivan—concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
1949 RESULTS—concluded									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
42	Pfister 187 Hybrid LF 456.	85.3	1.1	17.0	71	87	M-high	8.8	4.0
43	Whisnand 804.	85.0	.3	18.0	71	91	Medium	9.4	4.6
44	DeKalb 875.	84.7	1.9	18.9	80	88	Medium	10.1	4.3
44	Moews 830.	84.7	2.0	18.0	50	90	M-high	9.4	4.4
44	U.S. 13 (Pfeifer).	84.7	3.0	18.3	75	93	M-high	8.9	4.2
47	Crow 660.	84.6	.4	18.7	72	95	Medium	8.9	4.8
47	Morton M-30.	84.6	4.4	18.2	76	93	M-low	8.7	4.0
49	Canterbury 404.	84.5	1.7	18.6	75	91	Medium	9.4	4.7
49	National 125-1.	84.5	3.4	16.7	83	92	Medium	8.9	4.5
51	Illinois 1515 (Station).	84.3	3.2	20.1	81	98	M-high	9.1	4.7
52	National 125.	84.1	1.0	19.4	81	95	Medium	8.4	4.6
53	Crow 608.	83.9	3.1	17.4	71	90	Medium	8.9	4.6
53	Producers 940.	83.9	.7	18.3	84	96	Medium	8.9	4.4
55	Illinois 201 (Station).	83.6	.8	17.9	83	91	Low	9.1	4.2
56	Illinois 206 (Pfeifer).	83.2	2.0	19.3	72	92	M-high	9.4	4.5
56	Producers 1050.	83.2	3.0	19.4	54	93	M-high	9.9	4.4
58	DeKalb 847.	82.7	3.5	17.8	85	97	Medium	9.9	4.6
58	Producers 900.	82.7	3.8	17.4	69	93	Medium	9.1	4.7
60	Lowe 523.	82.4	1.1	18.8	71	88	Medium	9.6	4.5
61	Iowearth 25.	82.2	2.3	17.0	60	88	M-high	9.3	4.6
62	Funk G-99.	82.0	2.9	19.6	65	86	M-high	9.8	4.5
62	Kelly K-77.	82.0	1.2	18.3	77	90	M-high	8.6	4.7
62	Super-Crost 708(W).	82.0	2.7	20.9	54	83	High	10.1	3.8
65	Illinois 972-1 (Pfeifer).	81.6	2.1	18.9	70	95	M-high	8.4	4.4
66	Producers 730.	81.3	1.9	19.0	62	78	High	9.2	4.4
67	Holmes Utility 39C.	80.4	4.3	20.1	84	87	M-high	8.9	4.4
68	DeKalb 82.	80.1	2.1	16.5	81	88	Low	9.5	4.7
69	Doubet D-11.	79.1	1.3	17.1	84	91	Low	9.1	4.8
69	Pioneer 300.	79.1	2.7	19.3	78	95	M-high	9.0	4.3
71	Bo-Jac 28.	78.8	3.2	18.2	86	88	Medium	9.4	4.9
72	DeKalb 825.	77.2	2.4	18.3	72	92	M-low	9.4	4.2
73	Iowearth 25A.	77.0	.4	18.5	87	90	Medium	9.8	4.7
74	Kelly K-44.	76.4	3.6	17.9	83	93	Low	9.4	4.7
75	Pfister 187 Hybrid LF 789.	74.8	4.3	19.1	78	85	Medium	9.4	4.5
76	Moews 18.	74.6	4.1	17.9	75	93	M-low	9.2	4.2
77	Ponder P-814.	73.9	1.5	18.7	58	79	High	9.9	5.1
78	Keystone 41.	73.8	4.9	18.0	79	92	Low	10.1	4.6
79	Pfister 187 Hybrid LF 123.	73.0	3.1	16.9	73	87	M-low	9.8	4.1
80	Illinois 200 (Butzow).	64.6	4.2	19.4	74	94	Low	9.9	4.9
81	Lowe 514.	57.3	4.3	16.7	73	92	Low	9.5	4.6
	Average of all entries.	85.1	2.9	18.4	73	92	.....	9.2	4.5

^a Average of U.S. 13 (Canterbury, Stone, Mountjoy, Daily, Morton, Pfeifer) 1947; U.S. 13 (Stone, Morton, Daily, Appl, Kelly, Mountjoy, Pfeifer, Canterbury) 1948; U.S. 13 (Pfeifer, Stone, Wilson, Station) 1949. ^b Average of Illinois 201 (Burrus) 1947; Illinois 201 (Mountjoy, Station) 1948; Illinois 201 (Mountjoy, Station) 1949. ^c Average of Illinois 21 (Stone, Daily) 1947; Illinois 21 (Powers, Daily, Station) 1948; Illinois 21 (Powers, Stone) 1949.

Table 14.—SOUTHERN ILLINOIS: Alhambra

Rank	Entry	Total aere yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
SUMMARY 1946, 1947,^a 1949: Less than 6.5 bushels difference between total yields of any two entries is not significant.									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
1	Whisnand 917(W)	63.4	1.0	24.9	73	..	M-high	..	..
2	Doubet D-41	61.9	1.6	23.9	67	..	M-high	..	..
3	Whisnand 905(W)	58.7	1.1	25.7	64	..	M-high	..	..
4 ^b	Illinois 784	57.4	1.4	25.8	59	..	M-high	..	..
5	Funk G-80	57.1	4.1	25.9	74	..	M-high	..	..
6	Ainsworth X-14A	55.7	1.4	25.0	71	..	Medium	..	..
7 ^c	Illinois 200	55.6	.9	22.4	64	..	Medium	..	..
8	Pioneer 505(W)	54.7	.9	26.5	66	..	M-high	..	..
9	Keystone 38	54.6	1.0	22.6	68	..	Medium	..	..
10 ^d	U. S. 13	54.1	1.7	23.0	71	..	Medium	..	..
11	Keystone 45	53.8	1.0	25.0	72	..	Medium	..	..
12	Pioneer 332	52.7	1.2	23.4	64	..	Medium	..	..
13	Super-Crost 840	52.0	1.3	22.8	72	..	Medium	..	..
14	Pioneer 313B	51.9	1.2	23.2	69	..	Medium	..	..
15	Crow 607	51.1	2.3	23.8	65	..	Medium	..	..
16	Pioneer 300	50.6	1.1	21.4	66	..	Medium	..	..
17	Low 840	49.6	3.3	26.0	64	..	Medium	..	..
18	National 125	49.4	4.9	22.3	59	..	Medium	..	..
19	Embro 49	48.3	1.6	24.3	62	..	Medium	..	..
20	National 129	47.8	1.0	21.8	68	..	M-low	..	..
	Average of all entries	54.0	1.7	24.0	67	..	.....	.....	.....
1949 RESULTS: Less than 7.4 bushels difference between total yields of any two entries is not significant.									
1	Illinois 2214(W) (Station)	81.5	.7	17.5	72	93	High	8.7	4.4
2	Illinois 784 (Station)	77.2	1.3	19.8	46	91	High	9.4	4.2
3	Illinois 1459 (Station)	75.9	1.0	19.0	54	90	High	10.2	5.5
4	Illinois 1521B (Station)	73.2	1.7	20.2	59	90	High	10.3	4.5
5	Pioneer 302	73.0	2.0	17.4	76	88	Medium	9.9	4.8
6	Whisnand 917(W)	72.3	1.1	17.1	82	85	High	9.2	3.7
7	Illinois 200 (Pfeifer)	69.6	1.0	17.4	62	88	M-high	9.7	4.7
8	Keystone 45	68.9	1.2	17.8	82	86	M-high	9.6	4.9
9	P. A. G. 620(W)	68.3	1.5	17.3	72	86	High	8.9	3.9
9	Pioneer 505(W)	68.3	1.6	17.8	69	85	High	9.4	4.0
11	Illinois 1540A (Station)	68.2	2.0	20.6	36	89	High	10.7	5.0
12	Funk G-80	67.9	.8	18.7	75	83	M-high	9.9	4.9
13	Illinois 200 (Station)	67.3	1.3	16.9	76	84	M-high	9.5	4.8
14	Producers E441	67.0	1.0	19.5	73	86	High	8.8	4.3
15	Funk G-512(W)	66.8	1.6	17.9	61	79	High	8.1	4.2
16	Keystone 106(W)	66.3	1.0	17.9	56	88	High	8.8	4.1
17	Doubet D-41	65.9	1.0	16.7	80	80	Medium	9.7	4.6
18	Ainsworth X-14A	65.7	.6	17.1	68	87	Medium	9.5	4.8
19	P. A. G. 631(W)	65.6	.7	18.8	45	84	High	8.7	4.6
20	Super-Crost 1010S	65.1	1.7	18.5	47	86	High	10.4	4.8
21	Funk G-98	64.6	2.1	17.3	80	87	M-high	9.3	4.3
22	Producers E445	64.6	1.5	18.7	56	79	M-high	10.1	4.1
23	Low 855(W)	64.5	1.9	18.8	81	88	M-high	8.9	4.3
24	P. A. G. 617(W)	64.4	1.0	17.3	62	78	High	9.4	4.1
25	Bear OK-76	63.9	.7	17.0	68	77	M-high	9.4	4.4
26	Keystone 111(W)	63.8	1.6	19.0	69	76	Medium	10.1	4.3
27	Illinois 784 (Haudrich)	63.5	1.4	19.3	53	88	High	8.9	4.4
28	Morton M-30	63.3	.7	15.2	91	92	Medium	9.6	4.0
28	Bear OK-77	63.3	1.0	15.8	68	86	M-low	9.4	4.8
30	Producers 1050	63.2	.9	17.9	57	82	Medium	9.2	4.3
31	Super-Crost 1005B	62.8	1.6	16.6	71	84	Medium	10.7	4.7
32	Producers E409	62.3	1.3	16.5	90	92	M-high	8.9	4.6
33	Appl A-1766	61.9	1.3	15.7	77	80	M-high	10.1	4.6
34	Low 820	61.8	1.7	18.4	61	85	Medium	9.9	4.5
35	Corn Belt 60A	61.6	1.7	17.4	57	84	M-low	9.6	4.2
36	Keystone 38	61.5	1.0	15.4	86	87	M-low	9.8	4.1
36	Super-Crost 708(W)	61.5	2.0	17.6	65	79	High	9.4	3.8
38	Embro 155(W)	61.4	1.4	18.4	70	81	High	9.2	3.8
39	U. S. 13 (Lepper)	61.3	1.6	17.3	78	85	Medium	9.8	4.3
40	Corn Belt 70A	60.6	1.1	14.8	87	81	Medium	9.8	4.3

(Table is concluded on next page)

Table 14.—SOUTHERN ILLINOIS: Alhambra—concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
1949 RESULTS—concluded									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
41	Whisnand 834D.....	60.2	1.4	18.4	68	81	Medium	9.8	4.3
42	Embro 49.....	59.7	1.4	18.3	70	79	High	9.9	4.9
43	National 125.....	59.0	.7	16.0	76	89	Medium	10.3	4.3
44	U.S. 13 (Haudrich).....	58.9	1.7	15.8	77	79	Medium	9.9	4.3
45	Canterbury 420.....	58.7	1.0	15.2	87	85	Medium	9.9	4.4
45	U.S. 13 (Morton).....	58.7	1.5	16.6	78	87	M-low	9.4	3.8
47	Whisnand 905(W).....	58.2	.7	17.5	72	76	High	8.8	4.1
48	Illinois 200 (Haudrich).....	57.9	1.4	16.1	64	83	Medium	10.2	4.6
49	Ainsworth X-201.....	57.6	1.5	14.5	77	82	Medium	10.4	4.5
50	Lowe 840.....	57.3	3.2	18.4	70	80	Medium	10.9	4.2
51	Ainsworth X-13-3.....	57.2	1.6	16.3	77	84	Medium	9.7	4.4
52	Canterbury 412.....	56.9	2.6	16.9	71	83	Medium	9.0	4.0
53	National 129.....	56.6	1.5	16.6	82	82	M-low	10.4	4.6
54	U.S. 13 (Kelly).....	56.2	1.8	17.5	66	83	M-high	9.1	4.2
55	DeKalb 875.....	56.0	1.1	17.3	62	84	Low	10.9	4.2
56	Illinois 1337 (Wilson).....	55.8	2.1	16.9	80	87	Medium	9.4	4.2
57	Lowe 523.....	55.7	1.5	16.3	74	87	Low	8.8	4.1
58	Whisnand 804D.....	55.3	2.4	15.6	70	85	Medium	10.0	4.6
59	P.A.G. 173.....	54.8	1.4	15.6	66	79	Medium	9.7	4.3
60	P.A.G. 175.....	54.7	2.7	15.7	75	85	Medium	9.7	4.0
61	Ainsworth X-21.....	54.4	1.1	16.5	90	81	Medium	9.2	4.4
62	U.S. 13 (Appl).....	54.2	1.8	16.6	88	83	Medium	9.8	4.1
63	Illinois 21 (Haudrich).....	53.9	.9	15.3	81	90	M-low	9.7	4.3
64	P.A.G. 3202.....	53.7	1.6	16.2	72	70	M-low	9.8	4.8
65	Iowearth 29A.....	53.4	1.3	15.6	80	82	Medium	10.2	4.1
66	Crow 607.....	53.0	1.3	17.0	80	87	Low	9.1	4.5
67	Huey H-48.....	52.9	1.6	17.3	82	89	Medium	9.2	4.4
68	Pioneer 304.....	52.4	.8	16.7	70	83	Low	9.9	4.5
69	Canterbury 404.....	51.8	2.6	15.4	82	82	Medium	10.4	4.3
70	Carlson C-33.....	51.7	1.5	15.0	67	87	Low	9.8	4.1
71	Pioneer 300.....	51.6	1.8	15.0	89	85	Medium	10.4	3.6
72	Morton M-12.....	50.5	3.8	15.8	81	78	Low	10.6	4.0
73	Pioneer 313B.....	50.1	1.2	17.5	74	82	M-low	10.0	4.3
74	Super-Crost 840.....	48.7	1.4	16.7	65	80	Medium	9.5	3.8
75	Canterbury 456.....	48.0	1.0	15.3	72	80	M-low	9.6	4.1
76	Pioneer 332.....	47.0	1.5	17.5	83	76	Medium	10.0	3.8
77	Lowe 830.....	46.3	2.3	14.7	50	81	Low	10.1	4.0
78	Stiegelmeier S-13.....	46.0	.7	15.2	61	85	Low	9.1	4.0
79	Doubet D-11.....	43.6	1.1	16.1	82	86	Low	10.6	4.3
80	Iowearth 25.....	43.5	1.8	16.7	74	76	Medium	10.4	4.0
81	Pioneer 313A.....	43.4	.8	16.2	58	78	M-low	10.6	4.7
	Average of all entries.....	59.8	1.4	17.0	71	84	.....	9.7	4.3

^a 1948 data omitted because of crop failure. ^b Average of Illinois 784 (Pfeifer, Station) 1946; Illinois 784 (Haudrich) 1947; Illinois 784 (Haudrich, Station) 1949. ^c Average of Illinois 200 (Station) 1946; Illinois 200 (Haudrich, Burrus) 1947; Illinois 200 (Haudrich, Pfeifer, Station) 1949. ^d Average of U.S. 13 (Pfeifer, Station) 1946; U.S. 13 (Canterbury, Haudrich, Kelly, Morgan) 1947; U.S. 13 (Appl, Haudrich, Kelly, Lepper, Morgan) 1949.

Table 15. — EXTREME SOUTHERN ILLINOIS: Dixon Springs
Bottomland and Upland

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
SUMMARY, Bottomland, 1947-1949: Less than 4.0 bushels difference between total yields of any two entries is not significant.									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
1	Illinois 1459 (Station)	68.1	1.8	27.0	87	..	M-high	....	....
2	Whisnand 917(W)	66.4	1.1	23.3	87	..	M-high	....	....
3	P.A.G. 620(W)	66.0	1.2	24.8	82	..	M-high	....	....
4	Doubet D-41	65.9	1.3	23.7	82	..	Medium	....	....
5	Illinois 2214(W) (Station)	65.0	1.2	23.7	84	..	Medium	....	....
6	P.A.G. 612(W)	64.0	1.0	26.1	86	..	M-high	....	....
7	Illinois 2216(W) (Station)	61.4	1.4	24.4	91	..	Medium	....	....
8	Super-Crost 708(W)	60.9	1.0	25.3	87	..	M-high	....	....
9	Ainsworth X-14A	60.8	2.2	22.6	81	..	Medium	....	....
10	Pioneer 505(W)	60.5	1.2	23.7	90	..	Medium	....	....
11	P.A.G. 173	59.4	1.4	19.0	85	..	Medium	....	....
12	Lowe 820	58.4	1.9	21.9	86	..	Medium	....	....
13*	Illinois 784	58.1	1.2	25.5	65	..	Medium	....	....
14	Keystone 38	56.4	1.0	22.2	84	..	M-low	....	....
15	Pioneer 304	55.9	1.2	23.8	83	..	Low	....	....
16	Pioneer 332	55.8	3.1	25.9	82	..	Medium	....	....
17	Embro 49	55.8	1.2	23.9	82	..	Medium	....	....
18	Lowe 840	55.3	.7	22.1	87	..	Medium	....	....
19	Pioneer 313B	53.7	2.0	22.0	74	..	M-low	....	....
20	Lowe 830	51.7	1.1	20.8	76	..	M-low	....	....
21	National 129	48.4	1.8	27.5	87	..	M-low	....	....
	Average of all entries	59.4	1.4	23.8	83	..	....	....	....

1949 RESULTS: Less than 6.2 bushels difference between total yields of any two entries is not significant.

1	Funk G-711A	92.5	3.0	20.7	67	90	High	10.1	4.5
2	Illinois 1459 (Station)	86.1	2.3	20.3	76	86	High	11.4	5.2
3	Doubet D-41	79.7	1.8	20.0	62	91	M-high	9.6	4.5
4	Illinois 2214(W) (Station)	79.4	1.6	18.8	73	87	M-high	8.6	4.3
5	Keystone 106(W)	79.0	1.3	19.6	66	90	High	10.8	4.9
6	P.A.G. 620(W)	78.7	1.5	18.9	78	85	High	10.2	4.9
7	Lowe 855(W)	77.2	1.4	19.7	74	88	Medium	10.8	4.5
7	P.A.G. 612(W)	77.2	1.5	17.1	81	89	High	10.6	3.8
9	Lowe 865(W)	76.8	1.5	19.4	73	90	Medium	10.2	4.5
10	Whisnand 917(W)	75.9	2.3	19.3	83	84	High	10.8	4.7
11	Corn Belt 70A	75.3	2.4	17.3	76	93	Medium	11.2	5.0
12	Funk G-705	74.9	1.5	17.3	69	90	High	9.3	4.4
13	Illinois 1540B (Station)	74.0	1.5	17.2	85	90	M-high	10.8	5.2
14	Funk G-779(W)	72.4	4.0	18.5	48	86	Medium	11.4	5.1
15	Bear OK-90	71.9	2.1	16.9	79	84	Medium	10.6	5.2
16	Producers E409	71.7	1.0	18.0	82	94	M-low	11.2	4.4
17	P.A.G. 617(W)	71.3	2.9	18.0	76	80	High	9.9	4.9
18	Keystone 111(W)	71.2	1.5	19.3	58	82	Medium	10.2	4.6
19	Lowe 820	70.9	2.2	18.7	81	86	High	9.8	5.5
19	Super-Crost 708(W)	70.9	1.4	18.7	78	81	High	10.8	4.6
21	U.S. 13 (Station)	70.9	1.0	18.2	72	90	Medium	9.8	4.2
22	Funk G-145	70.4	2.4	18.7	48	78	Medium	10.2	4.9
23	Illinois 1521B (Station)	70.0	1.5	20.7	89	90	M-high	10.6	4.5
23	Super-Crost 1005B	70.0	3.4	18.5	67	84	M-high	11.4	5.0
25	Whisnand 905(W)	69.9	1.0	19.2	74	77	M-high	10.1	4.4
26	Iowearth TX	69.2	1.4	21.0	54	84	High	9.6	4.7
27	Ainsworth X-14A	69.1	1.8	17.2	67	88	Medium	9.7	4.8
27	Super-Crost 1010S	69.1	1.7	20.6	71	85	Medium	10.1	5.1
29	Pioneer 505(W)	68.9	2.2	18.5	88	83	High	8.6	4.3
30	Illinois 2216(W) (Station)	68.7	1.8	18.5	85	77	M-high	10.9	4.7
31	Illinois 200 (Station)	68.4	3.3	17.6	63	89	M-low	10.4	4.5
32	Ainsworth X-21	68.3	2.3	17.2	74	90	M-low	10.9	4.9
33	Pioneer 302	68.1	1.7	18.7	73	85	Medium	11.0	4.5
34	Illinois 784 (Station)	67.8	1.4	18.8	35	84	High	12.2	4.8
35	Lowe 840	66.4	1.6	18.1	80	84	Medium	11.9	4.4
36	P.A.G. 173	65.9	1.9	14.7	71	82	Medium	11.6	4.6
37	Embro 49	65.8	2.4	18.7	68	89	M-high	10.2	5.1
38	Whisnand 834D	64.9	2.1	16.5	58	77	Medium	11.1	4.5
39	Keystone 38	63.5	1.8	18.3	67	90	M-low	10.5	4.6

(Table is concluded on next page)

Table 15. — EXTREME SOUTHERN ILLINOIS:
Dixon Springs — concluded

Rank	Entry	Total acre yield	Damaged corn in shelled sample	Mois- ture in grain at harvest	Erect plants	Stand	Height of ear	Protein	Oil
1949 RESULTS — concluded									
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>		<i>perct.</i>	<i>perct.</i>
40	Iowalth 29A.....	63.3	2.1	16.9	81	78	M-low	10.7	5.1
41	Producers 1050.....	63.1	2.9	19.0	68	88	Medium	10.7	4.8
42	Pfeifer A-243.....	62.6	2.3	19.0	43	87	High	10.2	4.7
43	Bear OK-40B.....	62.3	1.3	16.4	80	88	Low	11.4	4.5
43	Pioneer 352.....	62.3	2.5	20.0	63	80	Medium	10.6	4.5
43	Producers E445.....	62.3	1.1	19.7	73	85	M-low	10.5	5.3
46	Illinois 200 (Haudrich).....	62.2	2.6	16.8	69	85	Medium	10.2	4.9
46	Lowe 640.....	62.2	2.4	16.3	56	90	Low	11.9	5.1
48	Producers E441.....	61.8	2.2	20.7	52	84	M-high	10.2	4.3
49	Ainsworth X-201.....	61.3	1.9	17.2	79	85	Medium	11.8	5.1
50	Iowalth 25.....	60.2	1.5	17.2	63	84	M-low	10.5	4.8
51	Pioneer 304.....	58.2	2.9	19.0	64	85	Low	9.9	4.8
52	P.A.G. 3202.....	58.1	1.9	17.6	67	64	Low	10.9	5.3
53	National 129.....	57.8	2.0	18.6	78	87	M-low	11.7	5.2
54	Stiegelmeier S-13.....	57.5	1.5	16.3	49	83	Low	9.4	4.5
55	Ainsworth X-13-3.....	57.4	1.4	18.7	80	83	Low	9.9	4.2
56	Lowe 830.....	57.2	1.5	16.2	50	86	M-low	10.6	4.6
57	Pioneer 313A.....	56.3	2.2	16.3	70	88	Low	10.2	4.3
58	Super-Crost FD-8.....	52.1	3.2	18.1	77	76	Low	10.8	4.9
59	Pioneer 313B.....	51.9	3.6	18.8	43	87	M-low	10.0	4.2
60	Funk G-783(W).....	45.7	2.4	20.3	72	94	Low	10.1	4.4
	Average of all entries.....	67.6	2.0	18.4	69	85	.....	10.5	4.7

SUMMARY, Upland, 1947-1949: Less than 5.0 bushels difference between total yields of any two entries is not significant.

1	Keystone 106(W).....	55.4	1.2	20.4	86	..	Medium	.....	.....
2	Illinois 2216(W) (Station).....	51.7	2.5	21.9	91	..	M-high	.....	.....
3	Lowe 855(W).....	50.7	1.3	21.3	85	..	Medium	.....	.....
4	Illinois 2214(W) (Station).....	49.6	1.1	22.6	81	..	M-high	.....	.....
5	Whisnand 905(W).....	49.0	4.6	20.9	80	..	Medium	.....	.....
6	P.A.G. 612(W).....	48.9	1.4	19.0	81	..	M-high	.....	.....
	Average of all entries.....	50.9	2.0	21.0	84	..	.....	.....	.....

1949 RESULTS: Less than 7.0 bushels difference between total yields of any two entries is not significant.

1	Keystone 106(W).....	77.9	1.6	16.9	88	86	Medium	10.3	4.4
2	Lowe 855(W).....	68.0	2.6	21.7	86	88	Medium	9.2	4.6
3	Illinois 2214(W) (Station).....	67.6	1.6	20.3	84	85	High	9.8	4.3
4	Funk G-711A.....	67.0	8.1	24.7	69	83	High	10.1	5.3
5	P.A.G. 612(W).....	66.1	2.5	19.9	79	85	High	10.0	4.7
6	Illinois 2216(W) (Station).....	62.3	4.3	21.6	92	78	High	9.8	4.2
7	Illinois 200 (Station).....	60.5	1.3	19.5	76	86	M-low	10.6	4.9
8	Super-Crost 707(W)-1.....	60.2	1.5	20.8	71	81	High	9.9	3.6
9	Whisnand 905(W).....	57.8	1.8	20.8	82	75	Medium	9.6	4.3
10	P.A.G. 173.....	56.1	3.0	17.7	90	90	M-low	10.4	4.7
11	Iowalth 29A.....	55.2	1.3	16.9	86	83	High	10.6	4.6
	Average of all entries.....	63.5	2.7	20.1	82	84	.....	10.0	4.5

* Average of Illinois 784 (Station) 1947, Illinois 784 (Station) and (Haudrich) 1948, and Illinois 784 (Station) 1949.

SOIL ADAPTATION TEST

For the past four years six single-cross and three double-cross hybrids have been tested at Urbana for their adaptation to soils differing in fertility level. The four-year average and the 1949 yields are given in Table 16.

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. The 1949 growing season at Urbana was very favorable. Planting and harvesting were carried out at the normal times. Rainfall was well distributed and temperatures were neither excessively high nor low. The corn-growing seasons of 1946, 1948, and 1949 were very favorable. The 1947 season was not favorable for maximum production.

1949 results. The average yield of all hybrids tested in 1949 was about the same as the average yield in 1946. It was lower than 1948 but much higher than 1947. The three single-cross hybrids Hy \times L317, Hy \times O7, and WF9 \times Hy and the two double crosses Illinois 972-1 and Illinois 246 maintained their top rank in yields on both fertility levels, as in previous years. As in the past, early-maturing hybrids were low-yielding. This points to the desirability of growing full-season adapted hybrids.

Four-year averages. The rank of the hybrids in the four-year summary does not differ significantly from their rank in each of the four years. The single crosses Hy \times L317 and Hy \times O7 and the double crosses 972-1 and 246 stand at the top on both levels of fertility.

Table 16.—SOIL ADAPTATION TEST: Central Illinois, Urbana

Rank	Entry	Total acre yield	Erect plants	Rating for—	
				Erect plants	Total yield
Highly productive soil ^a 1946-1949 (rotation: corn, oats, clover, wheat and red clover): Less than 3.0 bushels difference between total yields of any two entries is not significant.					
		<i>bu.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>
1	Hy × L317.....	126.0	79	94	110
2	Hy × O7.....	122.4	86	102	107
3	Illinois 246.....	121.3	76	90	106
4	Illinois 972-1.....	119.8	85	101	105
5	WF9 × Hy.....	118.7	91	108	104
6	WF9 × 38-11.....	112.9	93	111	99
7	Illinois 751.....	106.8	80	95	94
8	WF9 × M-14.....	106.1	87	104	93
9	5120 × Hy.....	94.2	82	98	82
	Average.....	114.2	84	...	...

Medium productive soil^b 1946-1949 (rotation: corn, corn, corn, soybeans): Less than 2.6 bushels difference between total yields of any two entries is not significant.

1	Hy × O7.....	71.9	92	106	115
2	Hy × L317.....	66.6	80	92	107
3	Illinois 972-1.....	66.2	86	99	106
4	Illinois 246.....	66.0	77	89	106
5	WF9 × Hy.....	65.5	94	108	105
6	WF9 × M-14.....	61.9	90	103	99
7	Illinois 751.....	60.1	87	100	96
8	WF9 × 38-11.....	56.3	88	101	90
9	5120 × Hy.....	47.0	85	98	75
	Average.....	62.4	87	...	...

Highly productive soil^a 1949 (rotation: corn, oats, clover, wheat and red clover): Less than 8.2 bushels difference between total yields of any two entries is not significant.

1	Hy × L317.....	141.5	77	95	117
2	Illinois 246.....	135.0	75	93	112
3	WF9 × Hy.....	131.4	88	109	109
4	Hy × O7.....	120.1	69	85	100
5	Illinois 972-1.....	117.5	81	100	97
6	WF9 × 38-11.....	115.2	88	109	95
7	WF9 × M-14.....	113.0	92	114	94
8	Illinois 751.....	112.9	84	104	94
9	5120 × Hy.....	99.3	74	91	82
	Average.....	120.7	81	...	...

Medium productive soil^b 1949 (rotation: corn, corn, corn, soybeans): Less than 5.8 bushels difference between total yields of any two entries is not significant.

1	Hy × O7.....	73.8	90	105	116
2	Hy × L317.....	73.3	74	86	115
3	Illinois 246.....	71.4	76	88	112
4	Illinois 972-1.....	70.3	92	107	110
5	WF9 × M-14.....	65.9	94	109	103
6	WF9 × Hy.....	65.6	88	102	103
7	Illinois 751.....	63.0	88	102	99
8	WF9 × 38-11.....	51.8	88	102	81
9	5120 × Hy.....	37.8	80	93	59
	Average.....	63.7	86	...	...

^a Highly productive soil: mostly Sidell silt loam, slightly rolling phase; 1946-1949 (Southwest rotation); 1949 (S100, Southwest rotation). ^b Medium productive soil: mostly Sidell silt loam, slightly rolling phase; 1946-1949 (South-Central rotation); 1949 (S700, South-Central rotation).

SUMMARY

In 1949 three hundred and sixteen hybrids were grown on seven fields in Illinois. For the fourth year six single-cross and three double-cross hybrids were grown at Urbana on two fields differing in productivity. Planting dates ranged from May 16 to June 2. Growing conditions were generally good at all locations. Results of the tests were briefly as follows:

1949 yields. The Galesburg field in west north-central Illinois had the highest yield, 88.6 bushels an acre. Average yields per acre on the other test fields were: Sullivan, 85.1 bushels; Mundelein, 85.1 bushels; Sheldon, 82.8 bushels; Dixon Springs bottomland, 67.6 bushels; Dixon Springs upland, 63.5 bushels; Alhambra, 59.8 bushels; and DeKalb, 58.5 bushels.

The average yield of all hybrids tested was 74.8 bushels. The average yield at four locations in central and northern Illinois (DeKalb, Galesburg, Sheldon, and Sullivan) was 19 bushels, or 24 percent less than the average yields at the same locations in 1948.

Three-year summaries, 1947-1949. The highest-yielding hybrids in the three-year summaries are as follows: **Northern Illinois** — Pioneer 349, P.A.G. 299, Keystone 44, Illinois 101, Lowe 52; **West North-Central** — Pioneer 313B, Schwenk S-24, Ainsworth X-21, Pioneer 336, U.S. 13; **East North-Central** — Keystone 38, Producers 940, Illinois 21, P.A.G. 164, U.S. 13; **South Central** — Producers 900, P.A.G. 173, P.A.G. 392, U.S. 13, Ainsworth X-13-3; **Southern** — Whisnand 917(W), Doubet D-41, Whisnand 905(W), Illinois 784, Funk G-80; **Extreme Southern, bottomland** — Illinois 1459 (Station), Whisnand 917(W), P.A.G. 620(W), Doubet D-41, Illinois 2214(W); **Extreme Southern, upland** — Keystone 106(W), Illinois 2216(W), Lowe 855(W).

Certain hybrids which were top performers in the 1947 three-year summaries do not appear in the present summary tables. These hybrids are listed in Bulletin 531 (1948 report) as *Proven Hybrids*.

Lodging. Lodging was extensive in all fields except DeKalb. Wind storms occurring at Sheldon in late summer and at Galesburg just prior to harvest did great damage. Corn borers and stalk rots were the cause of large numbers of broken plants at Mundelein, Galesburg, Sheldon, and Sullivan.

Corn borer damage. The European corn borer was responsible for greater damage in these tests and over the state than at any time since this insect became established in Illinois. Estimated loss due to this insect was 65 million dollars in 1949.

Corn borer damage was of importance on four test fields — Galesburg, Sheldon, DeKalb, and Sullivan. The average percent of plants broken below the ear because of corn borer damage was: Galesburg 28.6; Sheldon 16.3; DeKalb 10.5; and Sullivan 4.6. The estimated percent of ears left in the field after harvest because of borer damage was: Galesburg 9.0; Sheldon 5.0; DeKalb 3.2; and Sullivan 2.3.

Disease damage. Stewart's disease, Helminthosporium blight, and several kinds of stalk rot were unusually prevalent this year. The worst damage occurred in south-central Illinois. The combined damage from these diseases for the state as a whole was estimated at 16.5 percent. Yields, however, were not too bad because, except for corn borers, growing conditions in most parts of the state were excellent.

Protein and oil content. For the second year a sample of each entry from each field was analyzed for protein and oil. On a moisture-free basis, the average protein content for all entries was 9.9 percent, and the average oil content was 4.5.

There was no correlation between total yield and protein content nor between total yield and oil content. The average difference between the average percentages of protein and oil for the entries on each field was 2.4 points in protein and 1.4 points in oil.

Effect of soil-productivity level. For the fourth year six single- and three double-cross hybrids were tested at Urbana on two fields differing in productivity. The yield of the lowest-yielding hybrid in 1949 on the medium-productive soil was 37.8 bushels an acre. The yield of the highest-yielding hybrid on the highly-productive soil was 141.5 bushels an acre, an increase of 103.7 bushels or 274 percent.

The first field, with a long-time rotation of corn, corn, corn, and soybeans, produced an average of 62.4 bushels an acre over the four-year period. On the second field, where a rotation of corn, oats, red clover, and wheat (with a clover catch crop) is used, an average yield of 114.2 bushels an acre was obtained. Both fields have received the same soil treatment. *Thus the more desirable long-time rotation for this soil type increased the yield 51.8 bushels an acre.*

CONTRIBUTORS OF SEED

Ainsworth Hybrids.....	Ainsworth Seed Co.....	Mason City
Appl Hybrids.....	Appl's Hybrid Seed Co.....	St. Joseph
Baird Hybrids.....	James O. Baird.....	Williamsfield
Bear Hybrids.....	Bear Hybrid Corn Co.....	Decatur, Box 628
Bo-Jac Hybrids.....	Bo-Jac Hybrids.....	Mt. Pulaski
Canterbury Hybrids.....	C. E. Canterbury Seed Co.....	Cantrall
Cargill Hybrids.....	Cargill, Inc.....	St. Peter, Minn.
Carlson Hybrids.....	Carlson Hybrid Corn Co.....	Audubon, Iowa
Castle Ohio Hybrids.....	Leroy Castle.....	Bluffs
Corn Belt Hybrids.....	Corn Belt Hybrid Seed Co., Inc.....	Boswell, Ind.
Crow Hybrids.....	Crow's Hybrid Corn Co.....	Milford
DeKalb Hybrids.....	DeKalb Agricultural Assn.....	DeKalb
Doubet Hybrids.....	E. W. Doubet.....	Hanna City
Embro Hybrids.....	Ed. F. Manglesdorf & Bro., Inc.....	1020 S. 4th St., St. Louis, Mo.
Farmercraft Hybrids.....	Farmercraft Seed Co.....	Oxford, Ind.
Ferris Hybrids.....	Ferris Hybrids.....	Princeton
Frey Hybrids.....	Frey Hybrid Corn Co.....	Gilman
Funk Hybrids.....	Funk Brothers Seed Co.....	Bloomington
Holmes Hybrids.....	Holmes Hybrids.....	Edelstein
Huebsch Hybrids.....	L. A. Huebsch & Son.....	Mundelein
Huey Hybrids.....	Huey Seed Co.....	Carthage
Hulting Hybrids.....	G. E. Hulting & Son.....	Geneseo
Illinois Hybrids.....	Ill. 21 (Haudrich Hybrid Corn Co., Belleville; Geo. L. Pfeifer & Son, Arcola; Powers Seed House, Brocton; Ill. Agr. Exp. Sta.; P. A. Stone & Son, Pleasant Plains)	
	Ill. 101 (L. A. Huebsch & Son; Ill. Agr. Exp. Sta.)	
	Ill. 200 (Marshall Butzow, St. Joseph; Haudrich Hybrid Corn Co.; Geo. L. Pfeifer & Son; Ill. Agr. Exp. Sta.)	
	Ill. 201 (Ill. Agr. Exp. Sta.; Mountjoy Hybrid Seed Co., Atlanta)	
	Ill. 206 (Geo. L. Pfeifer & Son)	
	Ill. 246 (Ill. Agr. Exp. Sta.)	
	Ill. 269 (L. A. Huebsch & Son)	
	Ill. 273-1 (O. P. Tiemann, Bloomington)	
	Ill. 751 (Ill. Agr. Exp. Sta.)	
	Ill. 784 (Haudrich Hybrid Corn Co.; Ill. Agr. Exp. Sta.)	
	Ill. 972 (Appl's Hybrid Seed Co.)	
	Ill. 972-1 (Ill. Agr. Exp. Sta.; Geo. L. Pfeifer & Son)	
	Ill. 972A-1 (Ill. Agr. Exp. Sta.; P. A. Stone & Son)	
	Ill. 1091 (Montjoy Hybrid Seed Co.)	
	Ill. 1091A (Ill. Agr. Exp. Sta.)	
	Ill. 1180 (L. A. Huebsch & Son)	
	Ill. 1246 (Geo. Holder, Bloomington, Box 801)	
	Ill. 1248 (Seeber Bros. Seed Co., Champaign)	
	Ill. 1277, 1279 (Ill. Agr. Exp. Sta.)	
	Ill. 1337 (Ill. Agr. Exp. Sta.; Geo. L. Pfeifer & Son; Edward Wilson, Winchester)	
	Ill. 1459, 1508, 1515, 1521B, 1540A, 1540B, 1570, 2214(W), 2216(W) (Ill. Agr. Exp. Sta.)	
Iowealth Hybrids.....	The Iowealth Co.....	Lexington
Kelly Hybrids.....	Kelly Seed Co.....	San Jose
Keystone Hybrids.....	Corneli Seed Co.....	101 Chateau Ave., St. Louis, Mo.
Lowe Hybrids.....	Lowe Seed Co.....	Aroma Park
Moews Hybrids.....	Moews Seed Co.....	Granville
Morton Hybrids.....	Roy A. Morton & Sons.....	Bowen
Munson Hybrids.....	Carl Munson.....	Galesburg
National Hybrids.....	National Hybrid Corn Co.....	Normal
Nichols Hybrids.....	Nichols Bros.....	Hebron

Null Hybrids.....	Null Seed Farms.....	Colchester
P. A. G. Hybrids.....	Pfister Assoc. Growers Inc.....	Aurora
Pfeifer Hybrids.....	Geo. L. Pfeifer & Son.....	Arcola
Pfister 187 Hybrids.....	Lester Pfister.....	El Paso
Pike Hybrids.....	Pike Hybrid Corn Co.....	Pontiac
Pioneer Hybrids.....	Pioneer Hi-Bred Corn Co. of Ill.....	Princeton
Ponder Hybrids.....	Ponder Seed Co.....	Hammond
Pride Hybrids.....	Pride Hybrid Co. (Keith McGuire).....	Forreston
Pringle Hybrids.....	Pringle Seed Co.....	Sparland
Producers Hybrids.....	Producers' Seed Co.....	Piper City
Schwenk Hybrids.....	W. T. Schwenk & Sons.....	Edwards
Sibley Hybrids.....	Sibley Farms Service Corp.....	Sibley
Sieben Hybrids.....	Sieben Hybrids.....	Geneseo, R. 1
Stewart Hybrids.....	Frank S. Stewart.....	Princeville
Stiegelmeier Hybrids.....	H. L. Stiegelmeier.....	Normal
Super-Crost Hybrids.....	E. J. Funk & Sons.....	Kentland, Ind.
Top Yield Hybrids.....	Top Yield Cooperative Co.....	Galva
United Hybrids.....	United Hybrid Growers Assn.....	Shenandoah, Ia.
U. S. Hybrids.....	U. S. 13 (Appl's Hybrid Seed Co.; Haudrich Hybrid Corn Co.; Ill. Agr. Exp. Sta.; Kelly Seed Co.; Dale Lepper, Quincy; Roy A. Morton & Sons; Geo. L. Pfeifer & Son; P. A. Stone & Son; Edward Wilson)	
Whisnand Hybrids.....	Myron Whisnand.....	Arcola

INDEX TO ENTRIES

When a hybrid appears in the *summary* portion of a table, the table number in this index is printed in **blacker type**. At Dixon Springs the bottomland field is indicated in this index as 13(B), the upland field as 13(U).

A	Table	C	Table
Hybrid		Hybrid	
Ainsworth X-12.....	4, 9, 10	Canterbury 404.....	7, 13, 13, 14
Ainsworth X-13-3.....	5, 6, 7, 11, 12, 13, 13, 14, 15B	Canterbury 412.....	14
Ainsworth X-14A.....	7, 13, 13, 14, 14, 15B, 15B	Canterbury 420.....	7, 13, 14
Ainsworth X-21.....	4, 5, 6, 7, 9, 10, 11, 11, 12, 13, 14, 15B	Canterbury 456.....	14
Ainsworth X-201.....	5, 6, 11, 12, 14, 15B	Cargill 250.....	4, 10
Appl A-130.....	7, 13	Cargill 339.....	5, 11
Appl A-136.....	4, 5, 10, 11	Carlson C-33.....	14
Appl A-202.....	4, 9, 10	Castle Ohio C-92.....	7, 13
Appl A-1766.....	6, 12, 14	Corn Belt 60A.....	6, 12, 14
		Corn Belt 70A.....	14, 15B
B		Crow 360.....	3, 4, 10, 10
Baird 380.....	5, 11	Crow 407.....	3, 4, 10, 10
Bear OK-31.....	6, 12	Crow 432.....	4, 10
Bear OK-35.....	5, 11	Crow 607.....	14, 14
Bear OK-40B.....	15B	Crow 608.....	3, 6, 7, 12, 12, 13, 13
Bear OK-50.....	5, 6, 11, 12	Crow 635.....	3, 5, 6, 11, 12, 12
Bear OK-66.....	7, 13	Crow 660.....	5, 6, 7, 11, 12, 13
Bear OK-72.....	7, 13	Crow 805.....	7, 13, 13
Bear OK-76.....	14	Crow "Deep Root".....	5, 6, 7, 11, 12, 13
Bear OK-77.....	14		
Bear OK-88T.....	6, 12, 12	D	
Bear OK-90.....	15B	DeKalb 82.....	7, 13
Bear OK-111.....	9	DeKalb 239.....	9
Bear OK-212.....	4, 10	DeKalb 240.....	9
Bear OK-411.....	4, 10	DeKalb 241.....	9
Bear Tapicorn 4.....	6, 7, 12, 13	DeKalb 404A.....	9
BO-Jac 28.....	7, 13	DeKalb 406.....	9
BO-Jac 68.....	5, 11	DeKalb 410.....	9
		DeKalb 422.....	9

Hybrid	Table
DeKalb 627	6, 12
DeKalb 800A	6, 12
DeKalb 825	7, 13
DeKalb 847	7, 13
DeKalb 875	7, 13, 14, 14, 15
Doubet D-1E	4, 10
Doubet D-3W	5, 6, 11, 12
Doubet D-11	5, 6, 7, 11, 12, 13, 14
Doubet D-41	7, 13, 14, 14, 15B, 15B

E

Embro 36	7, 13, 13
Embro 49	14, 14, 15B, 15B
Embro 155(W)	14

F

Farmercraft PC-63	6, 12
Farmercraft FC-69	6, 12, 12
Ferris F-11	3, 4, 5, 9, 10, 10, 11
Ferris F-12	4, 5, 10, 11
Ferris F-14	4, 10
Frey 410	4, 9, 10
Frey 425	3, 4, 6, 10, 12
Frey 644	3, 6, 12
Frey 645	3, 6, 12, 12
Frey 692	3, 6, 12
Funk G-27	9
Funk G-29	3, 4, 10
Funk G-37	3, 5, 11, 11
Funk G-50	4, 10
Funk G-68	9
Funk G-79	7, 13
Funk G-80	14, 14
Funk G-93	5, 6, 11, 12
Funk G-95	5, 6, 11, 12
Funk G-98	7, 13, 14
Funk G-99	7, 13
Funk G-145	15B
Funk G-211	6, 12, 12
Funk G-512(W)	7, 13, 14
Funk G-705	15B
Funk G-711A	15B, 15U
Funk G-779(W)	15B
Funk G-783(W)	15B

H

Holmes Utility 11	4, 10
Holmes Utility 11A	4, 10
Holmes Utility 19A	5, 11
Holmes Utility 29	3, 5, 11
Holmes Utility 39C	7, 13
Holmes Utility 39H	5, 6, 11, 12
Huebsch H-44	9
Huey H-48	14
Huey H-23	5, 11
Huey H-42	5, 11, 11
Huey H-75	4, 10
Hulting J-41	4, 10
Hulting 101	5, 6, 11, 11, 12
Hulting 240	4, 10
Hulting 380	5, 6, 11, 11, 12

I

Illinois 21 (Haudrich)	14
Illinois 21 (Pfeifer)	6, 12
Illinois 21 (Powers)	7, 13
Illinois 21 (Station)	3, 5, 6, 11, 12
Illinois 21 (Stone)	7, 13
Illinois 101 (Huebsch)	9
Illinois 101 (Station)	3, 4, 10, 10
Illinois 200 (Butzow)	7, 13
Illinois 200 (Haudrich)	14, 15B
Illinois 200 (Pfeifer)	14
Illinois 200 (Station)	14, 15B, 15U
Illinois 201 (Mountjoy)	7, 13
Illinois 201 (Station)	7, 13
Illinois 206 (Pfeifer)	7, 13

Hybrid	Table
Illinois 246 (Station)	16
Illinois 269 (Huebsch)	9
Illinois 273-1 (Tiemann)	5, 6, 11, 12
Illinois 751 (Station)	3, 4, 10, 10, 16
Illinois 784 (Haudrich)	14
Illinois 784 (Station)	14, 15B
Illinois 972 (Appl)	6, 12
Illinois 972-1 (Pfeifer)	7, 13
Illinois 972-1 (Station)	16
Illinois 972A-1 (Station)	5, 11
Illinois 972A-1 (Stone)	7, 13
Illinois 1091 (Mountjoy)	6, 12
Illinois 1091A (Station)	3, 4, 10, 10
Illinois 1180 (Huebsch)	9
Illinois 1246 (Holder)	6, 12
Illinois 1248 (Seeber)	6, 12
Illinois 1277 (Station)	4, 10
Illinois 1279 (Station)	4, 10
Illinois 1337 (Pfeifer)	7, 13
Illinois 1337 (Station)	5, 6, 7, 11, 12, 13
Illinois 1337 (Wilson)	14
Illinois 1459 (Station)	14, 15B, 15B
Illinois 1508 (Station)	4, 6, 10, 12
Illinois 1515 (Station)	5, 6, 7, 11, 12, 13
Illinois 1521B (Station)	14, 15B
Illinois 1540A (Station)	14
Illinois 1540B (Station)	15B
Illinois 1570 (Station)	5, 6, 7, 11, 12, 13
Illinois 2214(W) (Station)	14, 15B, 15B, 15U, 15U
Illinois 2216(W) (Station)	7, 13, 15B, 15B, 15U, 15U

Iowearth AF-11	4, 10
Iowearth AQ	5, 6, 11, 12
Iowearth 16	4, 5, 10, 11
Iowearth 25	7, 13, 14, 15B
Iowearth 25A	7, 13
Iowearth 29A	14, 15B, 15U
Iowearth TX	15B

K

Kelly K-42	5, 11
Kelly K-44	7, 13
Kelly K-77	3, 5, 6, 7, 11, 12, 12, 13
Kelly K-88	7, 13, 13
Kelly K-374	3, 5, 6, 11, 12
Keystone 32	4, 10
Keystone 33	4, 10
Keystone 38	3, 6, 12, 12, 14, 14, 15B, 15B
Keystone 41	5, 6, 7, 11, 12, 13
Keystone 44	4, 10, 10
Keystone 45	7, 13, 13, 14, 14
Keystone 106(W)	14, 15B, 15U, 15U
Keystone 111(W)	14, 15B

L

Lowe MME	4, 10
Lowe 32	4, 10, 10
Lowe 38	4, 10
Lowe 52	4, 10, 10
Lowe 514	5, 6, 7, 11, 11, 12, 12, 13
Lowe 520	3, 5, 6, 11, 11, 12, 12
Lowe 523	3, 6, 7, 12, 12, 13, 13, 14
Lowe 562	5, 11
Lowe 580	6, 12, 12
Lowe 640	7, 13, 15B
Lowe 820	14, 15B, 15B
Lowe 830	14, 15B, 15B
Lowe 840	14, 14, 15B, 15B
Lowe 855(W)	14, 15U, 15U, 15B
Lowe 865(W)	15B

M

Moews 14	4, 5, 6, 10, 10, 11, 12
Moews 15	4, 10
Moews 18	6, 7, 12, 13
Moews 85	4, 9, 10
Moews 87	9
Moews 520	5, 6, 11, 12, 12

Hybrid	Table
Moews 550	3, 5, 11
Moews 830	7, 13
Morton M-12	5, 6, 7, 11, 11, 12, 12, 13, 14
Morton M-30	5, 6, 7, 11, 12, 13, 14
Munson MH	5, 11
Munson MX	4, 10, 10
Munson M-3	4, 10
Munson M-13	5, 11

N

National 114-1	3, 4, 10, 10
National 115A	5, 6, 11, 12
National 125	7, 13, 14, 14
National 125-1	5, 7, 11, 11, 13, 13
National 129	14, 14, 15B, 15B
Nichols 5AA	4, 10
Nichols 5B	4, 9, 10
Nichols 75	4, 9, 10
Nichols 99	9
Nichols 202	9
Nichols 202A	9
Null N-32	5, 11
Null N-49	6, 12
Null N-77	7, 13

P

P.A.G. 56	9
P.A.G. 61	4, 9, 10
P.A.G. 164	6, 7, 12, 12, 13
P.A.G. 170	5, 7, 11, 11, 13, 13
P.A.G. 173	6, 7, 12, 13, 13, 14, 15B, 15B, 15U
P.A.G. 175	6, 12, 14
P.A.G. 253	4, 10
P.A.G. 270	5, 11
P.A.G. 282	4, 10
P.A.G. 299	4, 10, 10
P.A.G. 347	5, 11
P.A.G. 392	5, 6, 7, 11, 11, 12, 12, 13, 13
P.A.G. 612(W)	15B, 15B, 15U, 15U
P.A.G. 617(W)	14, 15B
P.A.G. 620(W)	14, 15B, 15B
P.A.G. 631(W)	14
P.A.G. 3202	14, 15B
Pfeifer A-243	15B
Pfister 187 Hybrid LF 123	4, 5, 6, 7, 10, 11, 12, 13
Pfister 187 Hybrid LF 456	4, 5, 6, 7, 10, 11, 12, 13
Pfister 187 Hybrid LF 789	4, 5, 6, 7, 10, 11, 12, 13
Pike 520	6, 12
Pioneer 300	3, 6, 7, 9, 12, 13, 14, 14
Pioneer 302	14, 15B
Pioneer 304	3, 5, 6, 11, 12, 14, 15B, 15B
Pioneer 313A	7, 13, 14, 15B
Pioneer 313B	3, 5, 6, 7, 11, 11, 12, 13, 14, 14, 15B, 15B
Pioneer 332	3, 6, 7, 12, 13, 14, 14, 15B, 15B
Pioneer 336	5, 11, 11
Pioneer 339	3, 5, 11
Pioneer 340	3, 4, 10
Pioneer 349	4, 9, 10, 10
Pioneer 352	4, 9, 10
Pioneer 377A	9
Pioneer 505(W)	14, 14, 15B, 15B
Pioneer 4040	4, 10, 10
Ponder P-180	4, 10
Ponder P-205	4, 10
Ponder P-814	7, 13
Pride D-45A	9
Pride D-56	4, 10
Pride D-66	3, 4, 10, 10
Pringle P-100	5, 11
Producers E102B	4, 5, 10, 11
Producers E114B	4, 5, 10, 11
Producers 305	4, 9, 10, 10
Producers 311	9

Hybrid	Table
Producers 315	4, 9, 10, 10
Producers 320	9
Producers E409	14, 15B
Producers E441	14, 15B
Producers E445	14, 15B
Producers 730	3, 6, 7, 12, 13
Producers 900	5, 6, 7, 11, 12, 13, 13
Producers 940	3, 5, 6, 7, 11, 11, 12, 12, 13
Producers 1050	7, 13, 14, 15B

S

Schwenk S-24	5, 11
Schwenk S-34	5, 6, 11, 12
Sibley 777	6, 12
Sieben S-340	3, 4, 5, 10, 10, 11
Sieben S-440	5, 6, 11, 11, 12
Sieben S-440E	4, 5, 6, 10, 11, 12
Sieben S-450	3, 4, 10
Stewart S-11	5, 11
Stiegelmeier S-13	14, 15B
Stiegelmeier S-340	5, 6, 11, 12
Stiegelmeier S-360	4, 10
Stiegelmeier S-370	5, 6, 7, 11, 12, 13
Super-Crost FD-3A	4, 10
Super-Crost FD-6	6, 12
Super-Crost FD-7	5, 11
Super-Crost FD-8	15B
Super-Crost F-138	3, 4, 9, 10, 10
Super-Crost F-169	5, 11, 11
Super-Crost S-12	6, 12
Super-Crost 85A	9
Super-Crost 213	4, 9, 10
Super-Crost 707(W)-1	15U
Super-Crost 708(W)	7, 13, 14, 15B, 15B
Super-Crost 746	6, 12
Super-Crost 840	14, 14
Super-Crost 1005B	14, 15B
Super-Crost 1010S	14, 15B

T

Top Yield M-105	4, 10
Top Yield M-546	3, 5, 11

U

United U-41	4, 10
United U-47	5, 11
U. S. 13 (Appl)	14
U. S. 13 (Haudrich)	14
U. S. 13 (Kelly)	14
U. S. 13 (Lepper)	5, 11, 14
U. S. 13 (Morton)	14
U. S. 13 (Pfeifer)	7, 13
U. S. 13 (Station)	3, 5, 6, 7, 11, 12, 13, 15B
U. S. 13 (Stone)	7, 13
U. S. 13 (Wilson)	7, 13

W

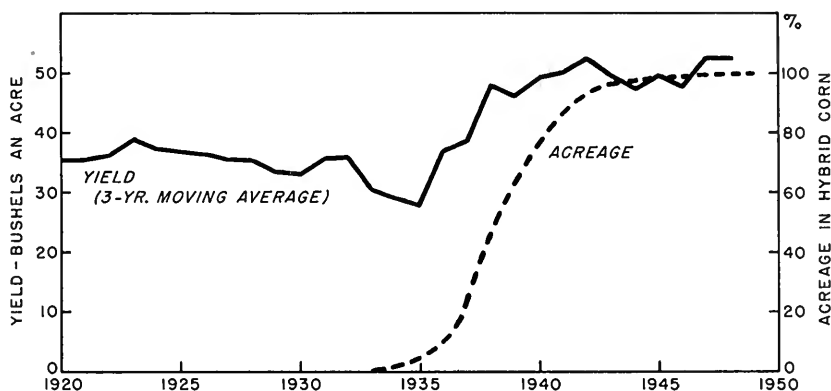
Whisnand 804	7, 13, 13
Whisnand 804D	7, 13, 14
Whisnand 834D	14, 15B
Whisnand 905(W)	14, 14, 15B, 15U, 15U
Whisnand 917(W)	14, 14, 15B

Single Crosses

Hy x L317	16
Hy x O7	16
WF9 x Hy	16
WF9 x M-14	16
WF9 x 38-11	16
5120 x Hy	16

INCREASE IN CORN YIELDS 1920-1949

YIELDS OF CORN in recent years have increased directly with the percent of acreage planted with hybrid seed. Open-pollinated corn grown in Illinois during the 16 years 1920-1935 failed to produce a state average-yield of 40 bushels for any three-year period. For the entire period it was only 34.5 bushels an acre. Since 1939, when the acreage seeded to hybrids surpassed that seeded to open-pollinated varieties, the state average-yield for any three-year period has never been below 46 bushels and for the entire period it has been 50.7 bushels. This is an increase of 16.2 bushels, or 47 percent, over the average for 1920-1935.



A number of factors may have contributed to the increase in yields during this period. Among them were: generally favorable growing seasons, mechanization of cultural practices, greater use of fertilizer, and the use of chemicals in combating disease, insects, and weeds. There remains little doubt, however, that hybrids have taken far more advantage of the newer, faster present-day farming methods and techniques than open-pollinated varieties could have.

If the state average yield is to continue to climb, better cultural and fertility practices must be followed, and plant breeders must develop hybrids that are more tolerant or more resistant to the hazards of corn production. Two such hazards of prime importance in 1949 were corn borers and stalk rots.

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