February, 1934 Report No. 14

IOWA
CORN YIELD TEST
RESULTS FOR 1933

By Joe L. Robinson and A. A. Bryan

IOWA CORN AND SMALL GRAIN GROWERS ASSOCIATION

AMES, IOWA

The Iowa Corn Yield Test is conducted by the Iowa Corn and Small Grain Growers' Association in co-operation with the Farm Crops Section, Iowa Agricultural Experiment Station, and the Division of Cereal Crops and Diseases, Bureau of Plant Industry, United States Department of Agriculture.

SUMMARY

1. Entries in the 1933 Iowa Corn Yield Test are divided into Regular and Experimental Divisions. *No* seed is available of those entries listed as "Experimental".

2. Certified seed of a majority of the hybrids in the Regular Division is vailable.

3. With few exceptions the regular hybrids were considerably more lodging resistant than the open-pollinated strains.

4. Hybrids yielded more than open-pollinated strains in every district. The average excess yield of hybrids was 14.7 percent. The highest as well as the lowest yielding hybrid with one exception, was an experimental entry. This gives promise of better hybrids in the future and also serves as a warning that caution should be used when purchasing hybrid seed for farm planting.

5 Yields of composite sam.ples of seed as planted by 7 to 26 farmers in each of seven localities were smaller than the average of the regular open-pollinated strains in six of the seven comparisons. Similar results were obtained in 1932. These results seem to indicate that strains entered in the Iowa Corn Yield Test are somewhat higher yielding than those planted by most farmers.

6. The Banner Trophy was awarded to Ronald M. Wilson on his Early Krug in the North Central Section. This strain yielded 11.7 percent more than the average of all open-pollinated strains entered in the three districts of that section. It has ranked relatively high in previous years.

7. The average field yields ranged from 41 to 89 bushels an acre with a state average of 65 bushels.

8. In general those strains yielding above the average in 1933 have been reltively high yielding in previous years.

9. A statistical analysis of the resul.ts indicates that the regular hybrids are fully as widely adapted, east and west, as the open-pollinated strains.

10. Seed treatment was not highly beneficial in the 1933 test.

IOWA CORN YIELD TEST

RESULTS FOR 1933

By Joe L. Robinson[1] and A. A. Bryan[2]

PURPOSE

The purpose of the Iowa Corn Yield Test is to find for each section of the state those strains of corn which will produce the largest yields of sound grain. Significant differences in yield between strains grown in test fields under as nearly as possible the same conditions may be attributed to differences inherent in the strain.

This publication is a progress report showing the comparative yields obtained in 1933, and the percentage yields for a period of years.

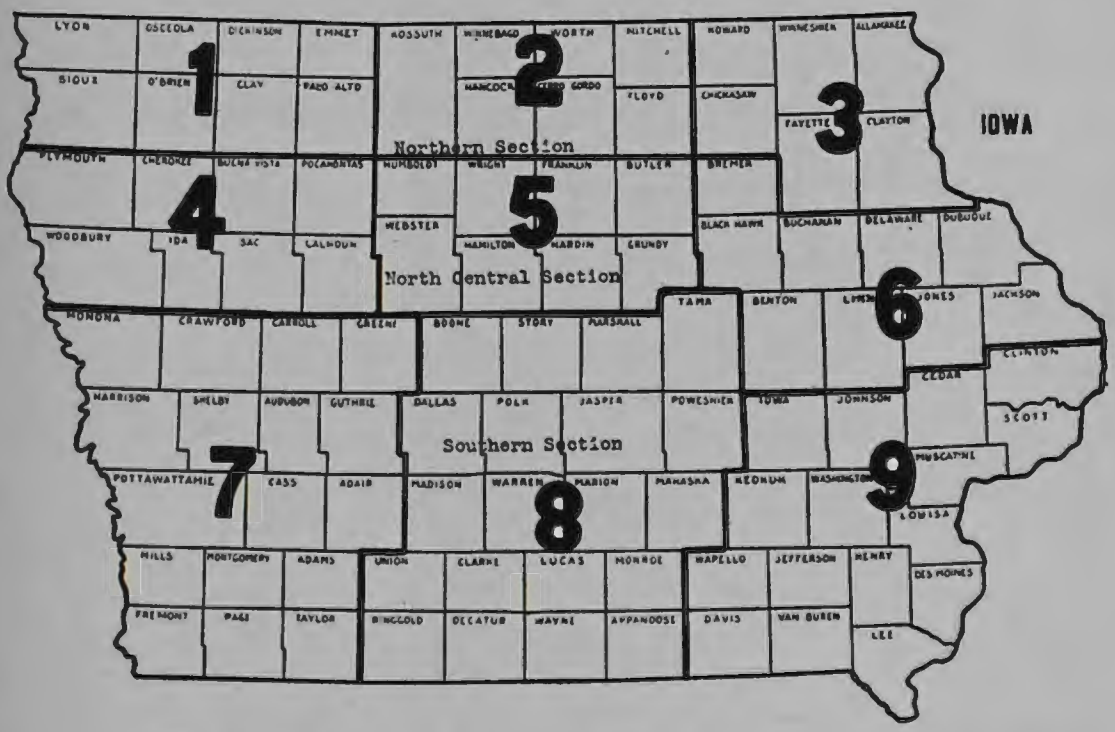

Fig. 1. The above map shows the division of the state into sections and districts for the Iowa Corn Yield Test.

---

[1]Secretary of the Iowa Corn and Small Grain Growers' Association and Assistant Research Professor of Farm Crops at the Iowa Agricultural Experiment Station.

[2]Associate Agronomist, Division of Cereal Crops and Diseases, Bureau of Plant Industry, United States Department of Agriculture, and Corn Yield Test Specialist for the Iowa Corn and Small Grain Growers' Association.

Fig. 1. A pretty ear may not produce a high yield.

PLAN

The general plan for conducting the test was similar to that of 1932 except for a reduction in the number of districts into which the state was divided. In addition a curtailment of available funds made it necessary to omit obtaining some of the data heretofore published.

CLASSES OF ENTRIES

The 1932 plan of classifying entries as *regular* or *experimental* was continued.

Any variety, strain or hybrid of which at least five acres were planted in the current season was classified in the Regular Division. First generation crosses between varieties, strains, or inbred lines were not included in the Regular Division unless at least five acres of corn of the same kind were produced in 1933 in the same manner as the seed entered. It should be possible, therefore, to purchase seed of every entry listed in the Regular Division.

Each division was further divided into an open-pollinated and a hybrid class. The open-pollinated class included those strains produced without inbreeding and the hybrid class those strains involving one or more inbred lines. The term inbreeding as used here assumes completely controlled pollination. The yields in the two classes are comparable as the entries were grown side by side in the same field. The purpose of the classification primarily is for use in awarding premiums.

DISTRIBUTION OF ENTRIES

There were 141 entries in the regular division of which 94 were open-pollinated and 47 were hybrid; 206 entries in the experimental division, of which 14 were open-pollinated and 192 were hybrid. Composite samples, each including seed from several growers, were entered in Districts 2, 3, 4, 5, 7, 8 and 9. Each entry was submitted by members of a Smith-Hughes vocational agriculture class who furnished a small quantity of seed representative of that planted on their home farms. These samples were thought to be more or less representative of the average farmer's corn and were included for comparison.

TABLE I. DISTRIBUTION OF DISTRICT AND SECTION ENTRIES IN THE 1933 IOWA CORN YIELD TEST.

Dist.	Regular			Experimental			Grand
No.	O-P	H	Total	O-P	H	Total	Total
District Entries							
1	13	6	19	0	13	13	32
2	10	6	16	1	32	33	39
3	10	6	16	1	13	14	30
4	8	5	13	2	24	26	39
5	9	6	15	3	17	20	35
6	8	5	13	1	17	18	31
7	12	4	16	2	21	23	39
8	11	4	15	2	30	32	47
9	13	5	18	2	25	27	45
Total	94	47	141	14	192	206	347
Section Entries							
Northern	8	6	14	0	13	13	27
North Central	5	5	10	1	15	16	26
Southern	9	4	13	1	21	22	35
Total	22	15	37	2	49	51	88

The total number of entries was 347, comprising 30 open-pollinated strains and 102 hybrids. No regular entries were made from outside the state. Of the 347 entries, 264 comprised 88 section entries. A strain of corn entered by one individual in each of the three districts of a section was designated as a section entry. A strain entered in one district was known as a district entry. The distribution of entries by divisions and classes in districts and sections is shown in table I.

IDENTIFICATION OF ENTRIES

Each entry was given a number by which it was known throughout the season. The records of these numbers with the corresponding names and addresses of their owners were sealed and placed in the College Savings Bank at Ames after planting time and were not opened until after the computation of results had been completed.

LOCATION OF TEST FIELDS

Results over a period of several years when the same strains were entered in both the South Central and Southern Sections indicated little difference, attributable to latitude, between these two sections. It did seem desirable, however, to shift a few counties into the next section to the north from both the old South Central and North Central Sections.

The division of the state into sections, therefore, was changed by combining the South Central and Southern Sections and designating this group as the Southern Section. Benton, Linn, Jones and Jackson Counties along the northern border toward the east end of the South Central Section were included in the North Central Section. Fayette and Clayton Counties, originally in the North Central Section, were included in the Northern Section. Each section was divided as before into a western, central and eastern district. These divisions permitted the comparison of strains under local conditions. A strain may have been entered for comparison in any district or section. The small, early maturing strains of northern Iowa, therefore, competed with one another under the conditions to which they were best suited and larger, later maturing strains grown further south were compared under the conditions to which they were adapted. The location of the test fields for 1933 is shown in table II.

TABLE II. LOCATION OF FIELDS AND DATES OF PLANTING AND HARVESTING THE 1933 IOWA CORN YIELD TEST

District	Cooperator	Post Office	County	Date planted	Date harvested
1	Paul Carstensen	Royal	Clay	May 11	Oct. 19
2	Geo. Hitzhusen	Cartersville	Cerro Gordo	" 12-13	" 23
3	W. F. A. Rabe	New Hampton	Chickasaw	" 13	" 25
4	J. N. Horlacher	Storm Lake	Buena Vista	" 10	" 17
5	Mrs. Miller S. Nelson	Goldfield	Wright	" 10	" 16
6	C. A. Swindell	Masonville	Delaware	" 15	" 26
7	C. E. Wilson	Henderson	Mills	" 10	" 18
8	Fred Randau	Ames	Story	" 16	" 24
9	H. H. McAllister	Mt. Union	Henry	" 23	" 20

ARRANGEMENT OF PLATS

Each entry in the Regular Division was planted in 10 plats and each one in the Experimental Division in 5 plats except composite samples, which had 10 plats each. A plat consisted of two rows 12 hills long. The experimental field was divided into 5 blocks extending east and west and again into 5 blocks extending north and south. Entries were then distributed over the field at random except that in each block a regular entry occurred twice and an experimental entry once only. While distribution was primarily random, division into blocks as described insured the widest possible distribution for all entries. This arrangement also permits direct comparison of the yields of entries in the two divisions. The experimental error in the yields of experimental entries is theoretically about 1.4 times as large as that for regular entries.

PLANTING AND HARVESTING

Planting was begun May 10 and completed May 23. Four kernels to the hill were planted in all fields of the Northern Section and three kernels in all other fields. The seed was planted by hand to insure a uniform rate and was not thinned. The seed bed was rather wet on some fields and stands were not wholly satisfactory. The field in District 4 was rather badly damaged by hail.

The fields were harvested between October 16 and October 26. The rates and dates of planting and dates of harvesting each field are given in table II.

Fig. 2. Harvesting the yield test plots.

COMPUTATION OF YIELDS

The yield of each district entry in the Regular Division was computed from the product of ten 24-hill plats and in the Experimental Division from the product of five 24-hill plats with the exception noted below. The yield of a section entry was computed from the product of 30 (Regular Division) or 15 (Experimental Division) 24-hill plats distributed over the three fields of a section, except in the Southern Section. In District 9 only six replications of the regular entries and three replications of the experimental entries were harvested.

Yields represent ear corn reduced to a basis of 15 percent moisture in the grain. Moisture samples were obtained by removing about two rows of kernels from each of 60 ears taken equally from three or four replications. Moisture determinations were made on the Tag-Heppenstall electrical moisture tester.

Determinations of shelling percentage, number of ears per 100 pounds and percentage of moldy corn were not made. All entries were well matured and there was very little moldy corn.

PUBLICATION OF NAMES

The names of those whose entries yielded above the average of the class in 1933 are included in this report. The number and all information on each entry not ranking above the average, however, is made known to the individual making that entry so that he may be able to make comparison with other entries.

Fig. 3. The corn from each plot is weighed.

RESULTS

The season of 1933 was the fourth successive relatively long season, and perhaps favorable to the later maturing strains. A comparison of entries ranking above the average in yield with those ranking below the average in each class reveals the entry with the highest moisture content in the group yielding above the average 17 times out of a possible 27.

Growers are advised, however, against changing to the exclusive use of a strain that is extremely late. The yield might be disappointing and the corn somewhat soft in a more nearly normal or rather short season.

The average field yields varied from 46 in District 4 (where hail damage was considerable) to 90 bushels in District 3. The maximum difference in yield between entries with comparable stands varied from 5 to 20 bushels in the regular open-pollinated class, from 2½ to 14 in the regular hybrid class, and from 12 to 27 in the experimental hybrid class. Only a small number of hybrids were entered in the regular hybrid class. These have been selected by the entrants because of their previous good records in yield tests. The range in yield, as would be expected, therefore, usually was somewhat smaller in this group than in either the regular open-pollinated or the experimental hybrid group.

The data on each entry yielding above the average of its class in 1933, together with the name of the entrant, are shown in table III. The averages of all entries in each class and the data on Smith-Hughes entries are included for comparison. Similar data for each section entry are indicated by sections in table IV.

The differences in yield between section entries were somewhat less than among district entries. The differences should be more significant, however, because of their being the average of three tests. It is believed that the relative yielding ability of a strain may be obtained more quickly by comparing it in all three districts of a section. As the climatic and soil conditions vary through the sections, a single year's result as a section entry may approach the value of the result of three years' testing in one district. The performance of most strains usually has been rather similar in the different districts of a section.

The banner trophy was awarded to Ronald M. Wilson of Sac City on Early Krug entered in the North Central Section. This strain has been entered in eight tests over a four-year period. Its yield for the eight tests was 9.4 percent above the average of those with which it was compared. It was slightly later than the average and a little more resistant to lodging. Its performance has been consistent in the eight tests in which it has been entered during a four-year period.

Osterland Yellow Dent, a strain that has been entered in the North Central Section each of the 14 years, was second.

In the South Central Section, Meyer Yellow Dent, Black Yellow Dent, Roberts Krug, Thompson Reid, and Hill Krug yielded above the average. These strains have been consistently high producers in previous years.

In the regular hybrid class E4 and E6 yielded above the average in the Northern Section, while Hi-Breds 311 and 323 made a like performance in the North Central and Southern Sections. With few exceptions each of the regular hybrids yielded higher and was more resistant to lodging than the average of the open-pollinated strains. The average yield of the regular hybrids was greater in each field than the average yield of the regular open-pollinated strains.

TABLE III. DATA FOR DISTRICT ENTRIES YIELDING ABOVE THE AVERAGE OF THE CLASS TOGETHER WITH THE AVERAGE OF THE CLASS GIVEN FOR COMPARISON

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
								District Number One			
								REGULAR DIVISION—Open-Pollinated Class			
1	N121	66.16	114.1	76.3	21.0	2.9	2.9	Albert M. Schmitz, Remsen, Plymouth			Golden Krug
2	Y144	62.17	107.2	62.7	23.2	2.4	3.1	Sioux City Seed Co., Sioux City, Jones			Ioleaming
3	T134	61.89	106.7	84.2	19.0	3.2	2.3	Frank Parcaut, Sutherland, O'Brien			Golden King
4	U136	60.11	103.7	81.7	16.4	3.0	2.1	Frank Parcaut, Sutherland, O'Brien			Early Golden King
5	128	60.02	103.5	73.3	21.3	3.1	3.0	Fred Kruse, Sheldon, Sioux			Kruse Prolific
6	130	59.94	103.4	77.7	16.9	2.9	2.2	Frank Parcaut, Sutherland, O'Brien			Smith Yel. Dent
		57.98		71.7	18.8	2.9	2.6	Average of all entries.			
								Hybrid Class			
1	V138	79.38	114.3	87.5	18.0	2.2	3.0	H. H. Turner, Grand Junction, Greene			E4
2	W140	72.22	104.0	82.3	20.5	2.2	3.0	H. H. Turner, Grand Junction, Greene			E6
		69.44		78.5	18.9	2.3	2.9	Average of all entries. 6			
								EXPERIMENTAL DIVISION—Hybrid Class			
1	E105	83.07	128.2	83.5	21.5	1.8	2.8	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 222
2	F106	74.56	115.1	75.8	20.9	2.0	2.2	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 237
3	C103	72.44	111.8	84.4	17.1	2.6	2.4	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 148
4	A101	71.04	109.7	82.1	18.5	2.8	2.2	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 130
5	P124	68.44	105.6	74.4	16.8	2.0	3.0	Genetics Section, Ames, Story			GK x OSE
6	S127	66.45	102.6	79.0	19.5	2.6	3.0	Genetics Section, Ames, Story			CLA x IDT
7	B102	65.97	101.8	82.7	17.8	2.4	2.2	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 146
		64.78		74.4	18.0	2.6	2.7	Average of all entries. 13			

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
								District Number Two			
								REGULAR DIVISION—Open-Pollinated Class			
1	Y259	72.67	112.1	70.8	22.6	2.2	3.8	Sioux City Seed Co., Sioux City, Jones			Ioleaming
2	N239	68.52	105.7	84.6	21.0	3.6	3.2	Albert M. Schmitz, Remsen, Plymouth			Golden Krug
3	265	66.54	102.7	79.5	18.9	3.2	3.2	Arthur L. Look, LuVerne, Kossuth			Kossuth Reliance
4	201	65.21	100.6	87.5	16.5	3.3	3.0	Geo. Hitzhusen, Cartersville, Cerro Gordo			Golden King
5	M237	65.17	100.5	80.1	21.3	3.2	3.8	Ronald M. Wilson, Sac City, Sac			Iodent
		64.82		77.9	19.2	3.1	3.3	Average of all entries.			
	246	62.13		81.0	16.7	3.0	3.0	Smith-Hughes Class, Charles City, Floyd			Composite
								Hybrid Class			
1	V253	76.46	107.2	88.5	18.3	2.7	3.2	H. H. Turner, Grand Junction, Greene			E4
2	W255	73.28	102.7	87.7	18.6	2.7	3.1	H. H. Turner, Grand Junction, Greene			E6
3	G209	72.17	101.2	82.8	17.9	2.5	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 355E
		71.35		85.4	18.1	2.6	3.2	Average of all entries. 6			
								EXPERIMENTAL DIVISION—Hybrid Class			
1	E207	82.61	120.3	88.7	20.9	2.8	2.8	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 222
2	S245	76.64	111.6	79.6	17.6	1.8	3.0	Genetics Section, Ames, Story			CLA x IDT
3	F208	75.16	109.4	88.7	20.6	2.6	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 237
4	216	74.54	108.5	84.4	15.1	2.8	2.8	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3227
5	K234	73.65	107.2	82.5	16.8	3.6	3.0	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3072
6	229	72.00	104.8	86.9	16.7	3.4	2.8	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3240
7	J233	71.87	104.6	83.5	19.5	3.4	3.0	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3071
8	248	71.32	103.8	76.0	19.6	3.0	3.8	O. W. Johnson, LeGrand, Marshall			5 x 24
9	226	70.23	102.3	81.5	15.6	3.0	2.2	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3237
10	219	70.19	102.2	77.5	16.4	2.8	3.0	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3230
11	D206	69.83	101.7	78.5	16.6	3.6	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 150
12	217	69.53	101.2	75.6	14.8	2.2	2.8	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3228
13	220	69.47	101.2	69.8	16.7	2.4	2.2	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3231
14	A203	69.41	101.1	84.2	19.0	3.6	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 130
15	C205	69.36	101.0	89.2	16.7	2.8	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 148
		68.68		79.8	16.8	3.2	2.8	Average of all entries. 32			

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
								District Number Three			
								REGULAR DIVISION—Open-Pollinated Class			
1	Y340	96.83	111.9	78.6	23.1	1.8	3.8	Sioux City Seed Co.,	Sioux City,	Jones	Ioleaming
2	N321	96.74	111.8	85.4	21.7	2.7	3.0	Albert M. Schmitz,	Remsen,	Plymouth	Golden Krug
3	M317	93.02	107.5	80.7	22.3	2.3	3.9	Ronald M. Wilson,	Sac City,	Sac	Iodent
4	U332	87.41	101.0	84.0	18.7	2.1	2.7	Frank Parcaut,	Sutherland,	O'Brien	Early Golden King
5	319	87.07	100.6	82.7	17.6	2.1	3.0	W. F. A. Rabe,	New Hampton,	Chickasaw	Golden King
		86.51		80.0	20.1	2.3	3.2	Average of all entries.			
	328	75.97		76.5	18.9	2.2	2.6	Smith-Hughes Class,	New Hampton,	Chickasaw	Composite
								Hybrid Class			
1	V334	98.27	105.9	91.4	18.3	1.5	2.9	H. H. Turner,	Grand Junction,	Greene	E
2	I311	96.80	104.3	85.3	19.1	1.7	4.0	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 93
3	W336	93.74	101.0	89.3	19.0	1.7	3.0	H. H. Turner,	Grand Junction,	Greene	E
		92.82		86.3	19.3	1.7	3.1	Average of all entries. 6			
								EXPERIMENTAL DIVISION—Hybrid Class			
1	E305	108.43	114.5	89.4	21.8	1.2	2.6	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 222
2	J313	102.58	108.3	79.6	20.3	1.8	3.2	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3071
3	F306	102.14	107.9	90.8	20.4	1.8	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 237
4	K314	98.49	104.0	79.0	17.9	2.0	3.0	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3072
5	S327	98.07	103.6	81.9	21.7	1.2	3.0	Genetics Section,	Ames,	Story	CLA x IDT
6	D304	96.82	102.2	84.4	17.6	2.0	2.8	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 150
7	A301	96.08	101.5	90.8	19.0	1.6	2.8	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 130
		94.70		86.3	18.9	1.7	2.9	Average of all entries. 13			

District Number Four

REGULAR DIVISION—Open-Pollinated Class

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
1	R436	45.83	114.8	68.5	18.9	3.3	3.0	Ronald M. Wilson,	Sac City,	Sac	Early Krug
2	430	44.47	111.3	68.8	18.5	3.0	3.0	J. J. Feldman,	Breda,	Carroll	Feldman Y. D.
3	X447	42.29	105.9	70.6	18.1	3.5	2.9	H. F. Osterland,	Faulkner,	Franklin	Osterland Y. D.
4	J420	41.86	104.8	66.4	17.2	3.5	2.9	Louis Quirin,	Schaller,	Sac	Golden Ideal
5	438	41.74	104.5	71.3	19.1	3.6	3.0	Albert M. Schmitz,	Remsen,	Plymouth	New Type Reid
6	445	40.33	101.0	63.1	17.8	3.1	3.1	J. N. Horlacher,	Storm Lake,	Buena Vista	No. 59
		39.94		62.8	18.0	3.3	2.9	Average of all entries.			
	449	41.61		69.4	17.4	3.2	2.9	Smith-Hughes Class,	Laurens,	Pocahontas	Composite

Hybrid Class

1	G414	56.88	115.4	72.6	16.7	2.9	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 323
2	I418	53.72	109.0	68.8	17.4	2.3	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 311E
		49.29		68.3	17.4	2.7	3.0	Average of all entries. 5			

EXPERIMENTAL DIVISION—HYBRID CLASS

1	N427	66.68	135.2	75.8	21.4	2.8	4.0	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 13
2	D411	58.64	119.0	79.7	17.5	2.8	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 182
3	A408	57.96	117.6	78.3	16.8	2.6	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred B15
4	C410	55.72	113.0	80.3	16.7	2.6	2.4	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 176
5	E412	54.12	109.8	65.8	16.1	2.8	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 203
6	433	52.89	107.3	78.1	19.3	3.0	3.0	J. J. Feldman,	Breda,	Carroll	Feldcorn Hybrid 32
7	S440	52.81	107.1	68.1	18.5	3.8	3.0	Genetics Section,	Ames,	Story	K x BLS
8	B409	51.39	104.3	74.2	19.3	2.0	2.6	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 80
9	V443	49.77	101.0	61.4	18.5	2.8	3.0	Genetics Section,	Ames,	Story	K x BAW
10	407	49.44	100.3	81.4	16.8	3.0	2.8	Geo. M. Allee,	Newell,	Buena Vista	Allee Hybrid 56
		49.29		71.7	17.5	2.9	2.8	Average of all entries. 24			

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
								District Number Five			
								REGULAR DIVISION—Open-Pollinated Class			
1	R530	72.72	114.6	72.2	21.3	2.1	3.1	Ronald M. Wilson,	Sac City,	Sac	Early Krug
2	X541	67.48	106.3	74.7	20.3	2.3	2.8	H. F. Osterland,	Faulkner,	Franklin	Osterland Y. D.
3	547	66.96	105.5	74.4	17.8	2.6	2.6	F. H. Monson,	Gowrie,	Webster	Yellow Dent
4	539	66.54	104.8	74.0	20.2	2.7	2.8	T. A. Chantland,	Badger,	Webster	C. E. Y. D.
5	543	64.31	101.3	74.4	19.9	2.3	2.5	H. F. Osterland,	Faulkner,	Franklin	Smooth Os. Y. D.
		63.48		68.9	19.3	2.3	2.7	Average of all entries.			
	518	63.04		73.3	18.7	2.7	2.8	Smith-Hughes Class,	Humboldt,	Humboldt	Composite
								Hybrid Class			
1	G510	81.08	106.2	83.5	18.5	1.7	2.8	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 323
2	I514	79.37	104.0	78.9	19.7	1.6	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 311E
3	545	78.75	103.1	75.1	19.4	2.0	2.8	O. W. Johnson,	LeGrand,	Marshall	Iowa Hybrid 942
		76.35		74.7	18.8	1.8	2.9	Average of all entries. 6			
								EXPERIMENTAL DIVISION—Hybrid Class			
1	E508	90.30	112.0	90.3	19.0	1.2	2.8	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 203
2	D507	90.10	111.7	87.2	18.9	1.6	2.8	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 182
3	T533	87.95	109.0	82.2	19.7	1.2	3.0	Genetics Section,	Ames,	Story	BAW x IDT
4	N525	86.73	107.5	78.1	21.4	1.6	3.4	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 13
5	P527	85.00	105.4	71.1	18.2	1.6	3.0	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3299
6	A504	82.89	102.8	83.1	17.9	1.6	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred B15
7	F509	81.47	101.0	80.3	19.7	1.4	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 217
		80.66		74.4	19.4	1.5	2.9	Average of all entries. 17			

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
								District Number Six			
								REGULAR DIVISION—Open-Pollinated Class			
1	643	63.70	108.6	83.3	22.2	1.5	3.3	Paul N. Smith,	Center Junction,	Jones	Ioleaming
2	J613	63.22	107.7	92.8	20.4	2.7	3.3	Louis Quirin,	Schaller,	Sac	Golden Ideal
3	R625	62.56	106.6	87.4	22.4	2.2	3.7	Ronald M. Wilson,	Sac City,	Sac	Early Krug
4	X634	59.36	101.2	87.1	21.3	2.4	3.2	H. F. Osterland,	Faulkner,	Franklin	Osterland Y. D.
5	636	59.23	100.9	88.5	23.5	2.6	4.0	Ewald Kahle,	Plainfield,	Bremer	Krug
		58.68		84.2	21.6	2.3	3.5	Average of all entries.			
								Hybrid Class			
1	K615	69.71	104.1	88.2	20.8	1.7	3.4	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 942
2	G607	68.71	102.6	93.2	20.4	1.8	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 32[illegible]
3	L617	67.63	101.0	89.0	19.4	1.4	3.7	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 931
4	I611	67.29	100.4	85.4	20.9	1.6	3.2	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 311E
		66.99		88.6	20.5	1.7	3.3	Average of all entries. 5			
								EXPERIMENTAL DIVISION—Hybrid Class			
1	W631	74.78	111.1	82.5	22.3	1.0	3.4	Genetics Section,	Ames,	Story	K x IDT
2	D604	73.29	108.9	91.7	21.4	1.6	3.6	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 182
3	A601	72.30	107.5	87.2	20.0	1.4	3.4	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred B15
4	C603	71.11	105.7	97.2	20.3	1.8	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 176
5	O621	69.32	103.0	91.1	20.0	2.0	4.0	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3268
6	E605	68.77	102.2	90.8	20.1	1.6	3.2	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 203
7	U629	67.71	100.6	86.4	22.2	1.4	3.0	Genetics Section,	Ames,	Story	K x K.R.
8	N620	67.43	100.2	87.8	22.6	1.4	4.0	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 18
		67.29		85.6	22.0	1.5	3.4	Average of all entries. 17			

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
								District Number Seven			
								REGULAR DIVISION—Open-Pollinated Class			
1	EE742	70.44	105.2	91.9	18.7	2.4	2.9	Clarence Meyer, Van Meter, Madison			Meyer Y. D.
2	746	69.44	103.7	92.4	17.9	3.0	3.1	Claude E. Wilson, Henderson, Mills			Wilson K-90
3	A701	69.35	103.6	89.9	17.5	2.4	3.1	G. V. Harkrader, Adel, Dallas			Harkrader Y. D.
4	DD740	67.94	101.5	93.5	17.5	2.7	2.9	Clarence S. Hill, Minburn, Dallas			Pfister Krug
5	B703	67.87	101.4	90.8	18.9	3.3	3.0	Thos. Thompson, Villisca, Montgomery			T. Reid
6	748	67.81	101.3	94.7	17.8	3.3	2.9	J. H. Petty, Elliott, Montgomery			Petty Imp. Reid
7	CC788	67.46	100.8	91.7	17.4	3.0	3.1	Clyde Black, Dallas Center, Dallas			Black Y. D.
8	T727	67.42	100.7	89.4	17.0	2.8	2.9	Miles T. Roberts, Villisca, Montgomery			Krug
		66.94		91.7	17.9	2.9	3.0	Average of all entries.			
	755	65.13		78.6	16.8	3.0	3.1	Smith-Hughes Class, Malvern, Mills			Composite
								Hybrid Class			
1	K715	74.83	102.1	90.7	15.6	1.6	2.9	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 311
		73.32		91.4	16.7	2.1	2.7	Average of all entries. 4			
								EXPERIMENTAL DIVISION—Hybrid Class			
1	R724	80.76	110.4	87.2	17.0	2.4	3.8	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3065
2	N720	80.23	109.7	91.4	16.0	2.0	3.4	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 13
3	O721	77.71	106.2	85.0	18.2	2.6	3.4	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3045
4	F708	77.60	106.1	94.4	19.0	2.2	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 215
5	G709	76.80	105.0	95.0	16.8	2.6	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 258
6	C705	76.15	104.1	93.6	15.6	2.6	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred B15
7	W732	73.84	100.9	87.8	17.4	3.2	2.4	Genetics Section, Ames, Story			K x LA
8	H710	73.68	100.7	93.3	17.4	2.6	3.8	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 276
9	E707	73.45	100.4	84.4	18.3	2.6	2.8	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 63
		73.16		88.6	17.1	2.5	3.0	Average of all entries. 21			

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
								District Number Eight			
								REGULAR DIVISION—Open-Pollinated Class			
1	T827	64.34	110.6	90.4	17.2	2.9	3.0	Miles T. Roberts,	Villisca,	Montgomery	Krug
2	EE849	63.81	109.7	88.8	18.6	2.8	2.9	Clarence Meyer,	Van Meter,	Madison	Meyer Y. D.
3	DD847	61.54	105.8	92.6	17.0	2.8	3.0	Clarence S. Hill,	Minburn,	Dallas	Pfister Krug
4	CC844	61.16	105.1	89.4	17.1	2.9	3.0	Clyde Black,	Dallas Center,	Dallas	Black Y. D.
5	FF851	59.54	102.4	89.2	17.9	3.1	2.9	A. Wilson,	Harlan,	Shelby	Wilson Y. D.
		58.17		88.9	17.9	2.9	3.0	Average of all entries.			
	862	56.75		83.1	17.4	2.9	3.1	Smith-Hughes Class,	Kelley,	Story	Composite
								Hybrid Class			
1	L817	66.43	105.3	87.4	16.0	2.0	2.5	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 942
2	J813	64.76	102.7	87.2	17.2	2.4	2.7	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 309
		63.09		87.8	17.2	2.4	2.8	Average of all entries. 4			
								EXPERIMENTAL DIVISION—Hybrid Class			
1	834	79.06	119.5	88.3	19.0	2.2	2.6	Genetics Section,	Ames,	Story	LA x IDT
2	P822	75.38	113.9	86.4	18.3	2.8	3.2	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3047
3	F808	73.96	111.8	93.3	21.1	2.4	3.2	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 215
4	GG857	73.27	110.8	91.9	15.5	3.0	3.0	Cereal Crops & Diseases,	Washington, D. C.,	Arlington, Va.	I.Y.T. No. 14
5	Q823	73.23	110.7	79.7	17.1	2.2	3.4	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3062
6	O821	71.88	108.7	83.3	18.1	2.6	3.0	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3045
7	E807	71.62	108.3	89.2	19.7	2.4	2.8	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 63
8	R824	70.81	107.0	77.5	16.6	3.0	3.0	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3065
9	V836	69.83	105.6	90.3	16.8	2.0	2.4	Genetics Section,	Ames,	Story	LDG x IDT
10	AA841	69.61	105.2	87.5	16.0	3.2	3.0	Genetics Section,	Ames,	Story	K x BLS
11	HH858	69.05	104.4	90.6	16.4	2.6	3.0	Cereral Crops & Diseases,	Washington, D. C.,	Arlington, Va.	I.Y.T. No. 13
12	N820	68.99	104.3	87.5	18.1	2.6	3.2	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 13
13	H810	67.64	102.2	86.7	19.9	3.0	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 276
14	831	67.56	102.1	78.3	17.0	2.4	2.8	Genetics Section,	Ames,	Story	BLS x IDT
15	Y839	66.54	100.6	88.1	17.1	2.2	2.4	Genetics Section,	Ames,	Story	K x KR
16	X838	66.28	100.2	88.6	20.4	2.4	3.0	Genetics Section,	Ames,	Story	K x PR
		66.15		85.3	17.5	2.5	2.8	Average of all entries. 30			

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety

District Number Nine

REGULAR DIVISION—Open-Pollinated Class

1	949	81.89	110.1	68.1	26.2	3.0	3.3	Ray Redfern, Yarmouth, Des Moines			R. Y. D. J. P.
2	S927	79.40	106.7	84.3	23.4	3.0	3.0	Fred McCulloch, Hartwick, Iowa			McCulloch High Yield
3	931	78.96	106.1	78.1	22.7	2.3	3.0	H. H. McAllister, Mt. Union, Henry			McAllister Dent
4	EE954	78.20	105.1	71.8	21.3	1.7	3.0	Clarence Meyer, Van Meter, Madison			Meyer Y. D.
5	CC945	77.00	103.5	76.4	21.2	2.7	3.0	Clyde Black, Dallas Center, Dallas			Black Y. D.
6	B903	76.38	102.7	78.7	23.6	2.5	3.0	Thos. Thompson, Villisca, Montgomery			T. Reid
		74.40		73.6	22.1	2.4	3.0	Average of all entries.			
	963	73.24		74.5	22.5	2.3	3.1	Smith-Hughes Class, Winfield, Henry			Composite

Hybrid Class

1	952	87.81	109.0	78.0	23.7	2.3	3.8	Ray Redfern, Yarmouth, Des Moines			Redfern 461
2	K915	83.24	103.4	77.3	19.3	1.0	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 311
3	I911	83.05	103.1	74.8	23.6	1.7	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 306
		80.54		75.5	21.5	1.6	3.0	Average of all entries. 5			

EXPERIMENTAL DIVISION—Hybrid Class

1	F908	88.90	114.0	85.2	26.6	1.0	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 215
2	G909	88.88	114.0	79.6	21.4	1.3	3.3	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 258
3	C905	87.03	111.6	74.5	21.7	1.3	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred B15
4	H910	84.37	108.2	83.3	23.5	1.7	3.3	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 276
5	E907	83.86	107.6	79.2	23.3	1.3	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 63
6	P922	83.54	107.2	77.3	22.2	1.7	3.7	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 3047
7	N920	83.31	106.9	83.3	22.7	1.3	3.3	Farm Crops Sec. & U. S. D. A., Ames, Story			Iowa Hybrid 13
8	951	83.30	106.8	78.6	23.8	2.0	3.0	Ray Redfern, Yarmouth, Des Moines			R430
9	X937	83.11	106.6	76.9	25.6	1.0	3.0	Genetics Section, Ames, Story			K x PR
10	943	81.86	105.0	73.6	24.1	1.7	3.0	Genetics Section, Ames, Story			K x B2
11	W936	81.62	104.7	76.9	22.8	1.3	2.7	Genetics Section, Ames, Story			K x LA
12	942	80.23	102.9	83.3	24.2	1.7	2.3	Genetics Section, Ames, Story			K x TR
13	AA940	79.86	102.4	75.9	18.6	1.7	3.0	Genetics Section, Ames, Story			K x BLS
14	D906	79.04	101.4	75.0	22.2	1.7	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 27
		77.96		76.9	22.4	1.5	3.0	Average of all entries. 25			

TABLE IV. AVERAGE PERFORMANCE OF STRAINS WHICH WERE ENTERED IN ALL THREE DISTRICTS OF A SECTION

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.*	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
Northern Section											
REGULAR DIVISION—Open-Pollinated Class											
1	Y	77.22	110.7	70.7	23.0	2.1	3.6	Sioux City Seed Co.,	Sioux City,	Jones	Ioleaming
2	N	77.14	110.6	82.1	21.2	3.1	3.0	Albert M. Schmitz,	Remsen,	Plymouth	Golden Krug
3	M	71.66	102.7	77.4	22.1	2.8	3.6	Ronald M. Wilson,	Sac City,	Sac	Iodent
4	U	70.54	101.1	83.1	17.4	2.8	2.6	Frank Parcaut,	Sutherland,	O'Brien	Early Golden King
5	T	69.77	100.0	85.5	18.7	2.8	2.7				
6	Z	67.27	96.4	68.1	21.2	2.7	3.2				
7	AA	65.19	93.4	79.8	15.7	2.8	2.5				
8	L	63.39	90.9	54.1	20.3	2.6	3.3				
		70.27		75.09	19.96	2.72	3.06	Average of section entries.			
Hybrid Class											
1	V	84.70	108.8	89.1	18.2	2.1	3.0	H. H. Turner,	Grand Junction,	Greene	E4
2	W	79.75	102.4	86.4	19.4	2.2	3.0	H. H. Turner,	Grand Junction,	Greene	E6
3	I	77.30	99.3	79.7	19.3	2.0	3.5				
4	G	76.62	98.4	80.1	18.7	2.2	3.0				
5	X	74.55	95.7	89.3	18.7	2.7	3.1				
6	H	74.29	95.4	75.8	18.4	2.0	2.7				
		77.87		83.43	18.78	2.20	3.07	Average of section entries.			
EXPERIMENTAL DIVISION—Hybrid Class											
1	E	91.37	120.1	87.2	21.4	1.9	2.7	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 222
2	F	83.95	110.4	85.1	20.6	2.1	2.7	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 237
3	S	80.39	105.7	80.2	19.6	1.9	3.0	Genetics Section,	Ames,	Story	CLA x IDT
4	J	79.45	104.5	76.6	20.2	2.7	3.1	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3071
5	A	78.84	103.7	85.7	18.8	2.7	2.7	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 130
6	C	78.30	103.0	88.7	17.3	2.5	2.7	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 148
7	K	78.25	102.9	75.2	17.1	2.7	3.0	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3072
8	D	76.82	101.0	76.4	16.7	2.9	2.9	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 150
9	P	75.67	99.5	79.8	17.2	2.3	3.0				
10	B	75.65	99.5	86.7	18.0	2.7	2.3				
11	Q	67.24	88.4	68.1	16.7	2.3	2.6				
12	O	66.12	86.9	82.9	17.1	2.7	3.0				
13	R	62.61	82.3	79.2	15.5	3.0	3.2				
		76.51		80.91	18.18	2.49	2.84	Average of section entries.			

*Average computed from three distinct averages with district as well as section entries included.

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.*	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
								North Central Secton			
								REGULAR DIVISION—Open-Pollinated Class			
1	R	60.37	111.7	76.0	20.9	2.5	3.3	Ronald M. Wilson,	Sac City,	Sac	Early Krug
2	X	56.38	104.3	77.5	19.9	2.7	3.0	H. F. Osterland,	Faulkner,	Franklin	Osterland Y. D.
3	J	56.12	103.9	77.1	18.8	2.8	3.0	Louis Quirin,	Schaller,	Sac	Golden Ideal
4	Q	47.21	87.4	51.7	19.0	2.5	2.9				
5	Y	45.03	83.3	64.2	19.0	2.5	3.1				
		53.02		69.31	19.51	2.62	3.03	Average of section entries.			
								Hybrid Class			
1	G	68.89	107.3	83.1	18.5	2.1	2.9	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 323
2	I	66.79	104.0	77.7	19.3	1.8	3.1	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 311E
3	K	64.04	99.7	77.1	19.4	2.1	3.1				
4	L	61.97	96.5	74.5	17.8	2.0	3.2				
5	H	58.56	91.2	73.1	19.5	2.2	3.1				
		64.05		77.11	18.91	2.07	3.09	Average of section entries.			
								EXPERIMENTAL DIVISION—Hybrid Class			
1	D	74.01	112.6	86.2	19.3	2.0	3.1	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 182
2	N	73.60	111.9	80.6	21.8	1.9	3.8	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 13
3	E	71.06	108.1	82.3	18.4	1.9	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 203
4	A	71.05	108.1	82.9	18.2	1.9	3.1	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred B15
5	C	68.41	104.1	87.4	18.5	1.9	2.5	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 176
6	P	66.12	100.6	70.0	19.6	2.1	3.2	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3299
7	V	65.39	99.5	71.3	20.5	2.1	3.1				
8	F	65.17	99.1	80.7	19.7	1.9	3.0				
9	T	64.32	97.8	72.5	20.2	1.4	3.0				
10	B	64.10	97.5	80.4	21.1	1.6	2.7				
11	S	64.03	97.4	78.0	19.5	2.9	3.2				
12	M	63.91	97.2	70.6	20.0	2.0	3.3				
13	U	63.10	96.0	75.6	19.4	1.8	2.9				
14	O	62.88	95.6	70.2	19.0	2.3	3.5				
15	W	61.86	93.3	72.6	20.4	1.7	3.1				
		66.57		77.08	19.71	1.96	3.09	Average of section entries.			

*Average computed from three district averages with district as well as section entries included.

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.*	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
								Southern Section			
								REGULAR DIVISION—Open-Pollinated Class			
1	EE	70.82	106.5	84.2	19.5	2.3	2.9	Clarence Meyer, Van Meter, Madison			Meyer Y. D.
2	CC	68.54	103.1	85.8	18.6	2.9	3.0	Clyde Black, Dallas Center, Dallas			Black Y. D.
3	T	67.97	102.2	82.8	18.5	2.6	3.0	Miles T. Roberts, Villisca, Montgomery			Krug
4	B	66.79	100.4	86.5	21.1	2.9	3.0	Thos. Thompson, Villisca, Montgomery			T. Reid
5	DD	66.69	100.3	85.4	18.7	2.6	3.0	Clarence S. Hill, Minburn, Dallas			Pfister Krug
6	FF	66.21	99.6	86.0	18.9	2.6	2.9				
7	S	65.63	98.7	88.2	20.2	3.1	3.0				
8	A	65.29	98.2	82.4	19.0	2.4	3.0				
9	U	61.10	91.9	84.9	18.7	2.8	3.0				
		66.56		85.13	19.25	2.69	2.99	Average of section entries.			
								Hybrid Class			
1	K	72.83	100.7	85.3	17.2	1.7	3.0	Hi-Bred Corn Co., Grimes, Polk			Hi-Bred 311
2	I	72.04	99.6	85.8	20.3	2.4	2.9				
3	L	71.04	98.2	83.7	17.1	1.9	2.7				
4	J	70.92	98.1	83.6	18.6	1.9	2.4				
		71.71		84.61	18.31	1.95	2.75	Average of section entries.			

*Average computed from three district averages with district as well as section entries included.

Southern Section—(Continued)

EXPERIMENTAL DIVISION—Hybrid Class

Rank	Entry No.	Acre yield Bu.	Acre yield % of Av.*	Stand %	Moist. %	Lodging grade	Ear Ht.	Name	Address	County	Variety
1	F	80.15	110.7	91.0	22.2	1.9	3.1	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 215
2	N	77.51	107.0	87.4	18.9	2.0	3.3	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 13
3	G	76.57	105.7	88.0	18.8	2.1	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 258
4	E	76.31	105.4	84.3	20.4	2.1	2.9	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 63
5	C	75.75	104.6	88.6	17.5	2.0	3.0	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred B15
6	R	75.35	104.0	77.7	17.9	2.4	3.3	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3065
7	P	75.31	104.0	82.7	19.3	2.4	3.4	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3047
8	H	75.23	103.9	87.8	20.3	2.4	3.4	Hi-Bred Corn Co.,	Grimes,	Polk	Hi-Bred 276
9	X	74.16	102.4	85.4	21.6	1.7	3.3	Genetics Section,	Ames,	Story	K x PR
10	Q	73.72	101.8	77.0	18.1	2.3	3.4	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3062
11	O	73.57	101.6	79.7	20.5	2.5	3.2	Farm Crops Sec. & U. S. D. A.,	Ames,	Story	Iowa Hybrid 3045
12	AA	73.41	101.4	83.4	16.9	2.5	2.9	Genetics Section,	Ames,	Story	K x BLS
13	W	73.23	101.1	84.0	19.7	2.2	2.4	Genetics Section,	Ames,	Story	K x LA
14	GG	72.29	99.8	85.2	17.9	2.3	3.1				
15	HH	71.97	99.4	84.6	18.0	2.3	3.1				
16	Z	71.08	98.1	87.5	19.0	2.6	2.9				
17	D	71.01	98.0	85.6	19.2	2.4	3.1				
18	V	70.01	96.7	87.5	18.4	2.0	2.5				
19	M	69.61	96.1	80.5	17.8	1.8	2.7				
20	Y	66.42	91.7	88.8	18.3	1.7	2.5				
21	BB	62.32	86.0	82.8	18.6	1.6	2.4				
		73.09		84.26	19.02	2.14	2.99	Average of section entries.			

*Average computed from three district averages with district as well as section entries included.

SECTION YIELDS OF PREVIOUS YEARS

Many strains seem to yield relatively more in some seasons than in others. It is very desirable to know how any strain performs as an average of a period of years. Rather few strains have been entered in the three districts of a section for a large number of years. A relatively high yield in one or two tests often was considered sufficient evidence of the satisfactoriness of a strain, consequently it was not entered again. A strain which yielded relatively low, perhaps was replaced without further trial by one higher yielding. The yield, moisture content, and lodging resistance as percentages of the class averages, of those strains in the 1933 tests and one or more previous years as section entries are given in table V. The percentages were averaged for the number of tests in which any strain was compared.

With respect to yield, the higher percentage is desirable. For lodging, however, the smaller the percentage the more lodging resistant is the strain. This is the result of recording the estimate of the lodging resistance as a grade of 1, 2, 3, 4, or 5, the smaller grade indicating the kind that stood up best. Likewise with moisture the higher percentages indicate the greatest moisture content at harvest. Only those strains are included which have a percentage yield of 100 or greater.

Open-pollinated and hybrid entries are grouped separately. The data on the hybrids are computed as percentages of the open-pollinated average. This makes it possible to compare the hybrids not only with each other but with the open-pollinated strains as well. The average yield of the hybrids has been greater than that of the open-pollinated class in every test beginning with 1928.

Fig. 4. A good ear on every plant is an important factor contributing to high yield.

TABLE V. RECORDS OF YIELD, MOISTURE AND LODGING COMPUTED AS PERCENTAGES OF THE OPEN-POLLINATED AVERAGES FOR SECTION ENTRIES IN THE IOWA CORN YIELD TEST OF 1933 AND ONE OR MORE PREVIOUS YEARS.

Name	Postoffice	County	Kind of Corn	No. of Years	Yield, % of Av. O.P.	Moist., % of Av. O.P.	Lodging % of Av. O.P.
NORTHERN SECTION—Open-Pollinated							
Wm. McArthur	Mason City	Cerro Gordo	Golden King	11	105.1	85.7	97.4
Fred N. Rupp	Cherokee	Cherokee	Rupp Early Yellow	4	111.2	108.3	98.7
Frank Parcaut	Sutherland	O'Brien	Golden King	4	100.8	105.2	103.4
Frank Parcaut	Sutherland	O'Brien	Early Golden King	3	100.1	95.0	104.2
Regular Hybrids							
F. C. Sec. & U. S. D. A.	Ames	Story	Iowa Hybrid 931	4	119.1	108.1	71.6
H. H. Turner	Grand Jct.	Greene	T6	4	112.1	97.7	90.7
Hi-Bred Corn Co.	Grimes	Polk	Hi-Bred 355	2	111.5	94.4	79.3
NORTH CENTRAL SECTION—Open-Pollinated							
H. F. Osterland	Faulkner	Franklin	Osterland Yel. Dent	14	103.5	102.3	103.3
Smith Bros.	Center Jct.	Jones	Ioleaming	8	101.1	91.7	95.1
Ronald M. Wilson	Sac City	Sac	Early Krug	2	108.1	108.6	94.3
Regular Hybrids							
F. C. Sec. & U. S. D. A.	Ames	Story	Iowa-Hybrid 942	4	120.0	103.5	84.9
Hi-Bred Corn Co.	Grimes	Polk	Hi-Bred 323	4	117.2	98.3	91.0
Hi-Bred Corn Co.	Grimes	Polk	Hi-Bred 311	4	113.2	106.3	74.6
F. C. Sec. & U. S. D. A.	Ames	Story	Iowa Hybrid 931	3	108.7	94.5	81.1
SOUTHERN SECTION—Open-Pollinated							
Clyde Black	Dallas Center	Dallas	Black Yel. Dent	14	102.1	101.6	99.9
Geo. Steen	West Liberty	Muscatine	Steen Yel. Dent	14	100.8	94.2	93.9
Fred McCulloch	Hartwick	Iowa	McCulloch High Yield	14	100.3	103.2	104.3
A. Wilson	Harlan	Shelby	Wilson High Yield	10	103.0	98.1	101.3
G. V. Harkrader	Adel	Dallas	Harkrader Yel. Dent	8	105.6	95.9	98.4
Clarence Meyer	Van Meter	Madison	Meyer Yel. Dent	5	107.6	101.9	96.3
Miles Roberts	Villisca	Montgomery	Krug	4	106.0	93.2	99.0
Clarence S. Hill	Minburn	Dallas	Pfister Krug	3	102.6	99.0	97.6
Regular Hybrids							
Hi-Bred Corn Co.	Grimes	Polk	Hi-Bred 309	4	112.4	101.3	77.0
Hi-Bred Corn Co.	Grimes	Polk	Hi-Bred 311	4	107.4	92.3	80.6
Hi-Bred Corn Co.	Grimes	Polk	Hi-Bred 306	3	113.6	105.8	86.0
F. C. Sec. & U. S. D. A.	Ames	Story	Iowa Hybrid 942	3	109.6	88.7	86.0

COMPARISON OF OPEN-POLLINATED AND HYBRID STRAINS

The use of hybrid seed is increasing each year. Two reasons undoubtedly account for this—higher yield and greater lodging resistance. The yield usually has been given first consideration.

The average yield of the hybrid section entries in percentage of the average yield of the open-pollinated section entries is shown for each district in table VI for the years 1926 to 1933, inclusive, together with the average percentages by years.

During the seven years, 1926 to 1933, inclusive, the hybrids, in comparison with open-pollinated strains, yielded less in eastern Iowa than in central Iowa in 25 of the 30 comparisons. Similarly, the same strains produced relatively less in eastern than in western Iowa in 25 of the 31 comparisons. The average excess yield of the hybrid over the open-pollinated section entries in 1933 was 14.7 percent and for the 8-year period 9.3 percent. As a whole, the hybrids showed greater resistance to lodging than the open-pollinated strains.

TABLE VI. AVERAGE YIELD OF HYBRID SECTION ENTRIES IN PERCENTAGE OF THE AVERAGE YIELD OF OPEN POLLINATED SECTION ENTRIES FOR THE YEARS 1926-1933 INCLUSIVE

	1926 %	1927 %	1928 %	1929 %	1930 %	1931 %	1932 %	1933 %
1	117.1	109.2	109.8	108.9	114.3	116.2	115.3	114.3
2	104.6	117.4	120.4	124.1	113.3	.....	101.6	109.5
3	97.4	102.9	109.3	114.4	110.7	105.9	102.2	107.0
4	115.5	104.6	110.0	110.1	115.5	111.8	107.2	128.8
5	106.5	111.1	107.8	108.3	114.4	113.2	108.2	127.6
6	104.5	109.7	102.8	103.4	104.5	109.0	106.0	116.0
7	105.3	102.8	113.7	109.1	112.6	107.4	112.0	109.4
8	103.9	98.1	115.3	109.1	123.5	108.4	109.6	114.1
9	104.9	102.3	113.9	114.1	105.6	106.8	105.5	105.3
10	111.4	102.2	111.0	107.7	102.3	104.8	102.2	
11	102.9	114.3	108.2	112.2	111.4	106.3	110.6	
12	110.3	107.1	104.2	106.0	103.2	102.2	99.8	
Average	107.0	106.8	110.5	110.6	110.9	108.4	106.7	114.7

A further comparison of the yields of hybrid and open-pollinated strains is presented in table VII, where the average yield of each class, the highest and lowest yield, and the difference between the two classes in each district are shown. The first half of the table shows the comparison of regular hybrids with open-pollinated strains and the second half the comparison of experimental hybrids with regular open-pollinated strains.

Both the regular and experimental hybrids produced a greater average yield than the open-pollinated class in every comparison. The highest yield in each test was made by a hybrid. The lowest yield was made by an open-pollinated strain or an experimental hybrid in each field. The lowest yielding regular hybrid produced more than the average open-pollinated in eight of the nine fields.

A comparison of regular with experimental hybrids shows that the highest yield in each test was produced by an experimental entry. This would indicate the possibilities of getting better hybrids. The lowest yielding hybrid also was an experimental entry in eight of the nine fields. And again we repeat the warning; the variation in yield of the hybrids is evidence of the fact that

TABLE VII. COMPARATIVE YIELDS, AVERAGE, HIGH AND LOW, OF OPEN-POLLINATED (O-P), REGULAR HYBRID (H) AND EXPERIMENTAL HYBRID (H) ENTRIES AND THE DIFFERENCES BETWEEN OPEN-POLLINATED AND HYBRID, A PLUS BEING IN FAVOR OF THE HYBRID AND A MINUS IN FAVOR OF THE OPEN-POLLINATED IN THE 1933 IOWA CORN YIELD TEST.

Dist.	Field	No. of entries		Av. acre yield, bu.			High acre yield, bu.			Low acre yield, bu.		
		O-P	H	O-P	H	Dif.	O-P	H	Dif.	O-P	H	Dif.
	Open-Pollinated Vs. Regular Hybrids											
1	Royal	13	6	57.98	69.44	+11.46	66.16	79.38	+13.22	52.27	64.23	+11.96
2	Cartersville	10	6	64.82	71.35	+ 6.53	72.67	76.46	+ 3.79	60.30	68.27	+ 7.97
3	New Hampton	10	6	86.51	92.82	+ 6.31	96.83	98.27	+ 1.44	76.79	89.08	+12.29
4	Storm Lake	8	5	39.94	49.29	+ 9.35	45.83	56.88	+11.05	29.89	43.20	+13.31
5	Goldfield	9	6	63.48	76.35	+12.87	72.72	81.08	+ 8.36	51.86	70.87	+19.01
6	Masonville	8	5	58.68	66.99	+ 8.31	63.70	69.71	+ 6.01	53.22	61.60	+ 8.38
7	Henderson	12	4	66.94	73.32	+ 6.38	70.44	74.83	+ 4.39	61.23	72.34	+11.11
8	Ames	11	4	58.17	63.09	+ 4.92	64.34	66.43	+ 2.09	51.41	60.42	+ 9.01
9	Mt. Union	13	5	74.40	80.54	+ 6.14	81.89	87.81	+ 5.92	65.92	73.70	+ 7.78
	Open-Pollinated Vs. Experimental Hybrids											
1	Royal	13	13	57.98	64.78	+ 6.80	66.16	83.07	+16.91	52.27	38.91	—13.36
3	Cartersville	10	32	64.82	68.68	+ 3.86	72.67	82.61	+ 9.94	60.30	59.53	— .77
3	New Hampton	10	13	86.51	94.70	+ 8.19	96.83	108.43	+11.60	76.79	82.01	+ 5.22
4	Storm Lake	8	24	39.94	49.29	+ 9.35	45.83	66.63	+20.80	29.89	34.36	+ 4.47
5	Goldfield	9	17	63.48	80.66	+17.18	72.72	90.30	+17.58	51.86	73.04	+21.18
6	Masonville	8	17	58.68	67.29	+ 8.61	63.70	74.78	+11.08	53.22	55.05	+ 1.83
7	Henderson	12	21	66.94	73.16	+ 6.22	70.44	80.76	+10.32	61.23	64.88	+ 3.65
8	Ames	11	30	58.17	66.15	+ 7.98	64.34	79.06	+14.72	51.41	52.42	+ 1.01
9	Mt. Union	13	25	74.40	77.96	+ 3.56	81.89	88.90	+ 7.01	65.92	63.08	— 2.84

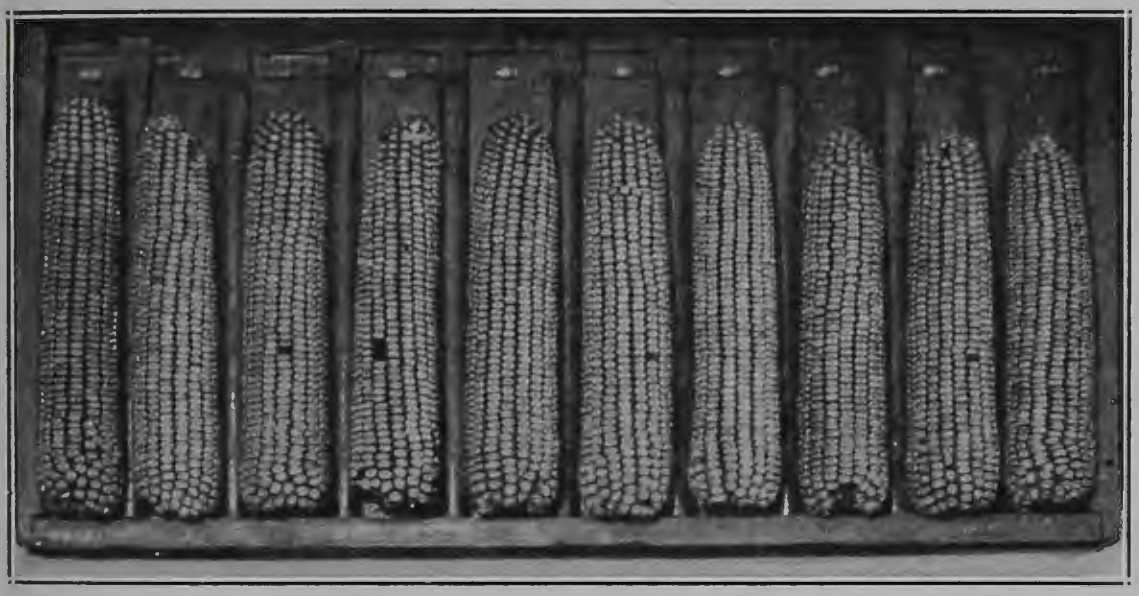

Fig. 5. Representative ears from a high yielding strain of corn.

not every hybrid is high yielding. Buyers of hybrid seed should place confidence only in those hybrids which have been thoroughly tested and are being sold under a guarantee that the corn is identical in pedigree with that in the test.

One of the best ways of locating good hybrid seed is to purchase certified hybrids. To be certified a hybrid must have yielded at least 10 percent more than the average of the open-pollinated strains for two out of the immediate past five years. In addition, it must have been equal in lodging resistance and have had a combined advantage of yield and lodging resistance of 25 percent. The crossing field is inspected at the time of detasseling to make certain that the tassels are removed and that the field has sufficient isolation to prevent serious contamination. The seed itself must be of good quality and germinate not less than 90 percent.

SEED TREATMENT

The seed of each entry in the Regular Division was divided into two lots and handled as if there were two entries. The first lot of seed was planted as received. The second lot was treated with a commercial dust. It is thus possible to make a direct comparison between untreated and treated seed of the same strain of corn. The number of entries, the average yield of the untreated and the treated lots and the differences between them are shown by districts in table VIII.

A statistical analysis of these results indicates that probably none of the differences are really significant. The difference for the open-pollinated class in District 9, 4.21 bushels, is rather large and favorable to the untreated lot. The differences in stand in this district were considerable and without a single exception the treated lot had the lower stand. No explanation for this is apparent. In the hybrid class eight of the nine differences are favorable to treatment, the average difference being 1.31 bushels.

It is believed that the season was such as to make the need for the seed treatment less than usual. Previous results have indicated the most marked advantage of seed treatment occurred in seasons with a prolonged cold, wet period following planting.

TABLE VIII. AVERAGE YIELDS OF UNTREATED AND TREATED ENTRIES OF OPEN-POLLINATED AND REGULAR HYBRIDS IN THE 1933 IOWA CORN YIELD TEST.

District	No. of entries	Acre yield, bus.		
		Untreated	Treated	Difference
		Open-pollinated strains		
1	13	57.46	58.50	+1.04
2	10	64.37	65.26	+ .89
3	10	86.59	86.42	— .17
4	8	41.03	38.84	—2.19
5	9	63.94	63.02	— .92
6	8	58.05	59.30	+1.25
7	12	66.90	66.97	+ .07
8	11	57.45	58.89	+1.44
9	13	76.50	72.29	—4.21
Average				—0.31
		Regular Hybrids		
1	6	68.52	70.36	+1.84
2	6	70.71	71.98	+1.27
3	6	91.84	93.79	+1.95
4	5	48.07	50.51	+2.44
5	6	75.33	77.37	+2.04
6	5	67.52	66.44	—1.08
7	4	72.77	73.86	+1.09
8	4	62.21	63.96	+1.75
9	5	80.31	80.76	+ .45
Average				+1.31

PREMIUMS FOR 1933 TEST

(1) The following premiums apply only to the Regular Division.

(2) The Banner Trophy is awarded annually by Raymond A. Pearson, ex-president of Iowa State College, to the Iowa grower whose entry produces the highest percentage above the average yield of the upper two-thirds of all entries in his class in the three districts of any section. Thus the highest yielding section entries of the two classes compete for the Banner Trophy. Only section entries are eligible.

(3) A gold medal will be awarded in each section to the entrant in each class whose corn produces the highest average yield for the three districts. Only section entries are eligible.

(4) In each district the Association will award a bronze medal for the highest yielding corn in each class entered by a grower residing in the district where the test was made, provided the entry ranks in the upper third.

(5) The highest yielding third of both classes in each district will receive suitable ribbons from the Association.

PLAN FOR 1934

The plan for the 1934 Iowa Corn Yield Test will be completed and mailed to those interested after the Annual Farm and Home Week.