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AGRICULTURAL EXPERIMENT STATION
DEPARTMENT OF AGRONOMY
in cooperation with
DIVISION OF CEREAL CROPS AND DISEASES
BUREAU OF PLANT INDUSTRY
U. S. Department of Agriculture
MANHATTAN, KANSAS

KANSAS CORN TESTS, 1941

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SUMMARY

1. The Kansas Corn Testing program includes open-pollinated varieties and hybrids produced and distributed by federal, state, and commercial agencies.

2. The characters given consideration in this program are resistance to lodging, drouth, diseases and insects; and yield, suckers, ear height, ear drop, ear size, maturity, shelling percentage, and test weight.

3. The names and addresses of the commercial companies entering hybrids in the tests are given in Table 1. Names of producers of certified seed of hybrid combinations with the state name as a prefix may be obtained from the various Corn-belt agricultural experiment stations. Information on seed of Kansas-developed hybrids can be obtained by writing to the Department of Agronomy, Kansas State College, Manhattan, Kansas.

4. Results obtained in at least two districts and over a two-year period are much more reliable than results obtained in only one district and season. During the past two years, the following hybrids stood up as well as the average of the better open-pollinated varieties, produced at least 15 percent more corn, and had a combined advantage in lodging resistance and grain yield of not less than 25 percent.

Districts 1 and 2: DeKalb 816, Funk G-94, Hoosier-Crost 840, Illinois 200, Kansas 1104, Kansas 2232, KK-77, Kelly 200, Kelly 374, K. I. H. 38, K. I. H. 96, Pioneer 307, Pioneer 332, Pioneer 333, Pioneer 334, Pfister 380, Pfister 5892, U. S. 13 and U. S. 35.

Districts 2 and 3: Funk G-88, Funk G-135, Illinois 200, Kansas 1104, Kansas 1466, Kansas 1501, Kansas 2232, U. S. 13 and U. S. 35.

Districts 1 and 3: Funk G-94, Illinois 200, Kansas 2232, Pioneer 307, Pioneer 332, Pioneer 333, Pioneer 334, Richbred 1002, U. S. 13 and U. S. 35.

Districts 1, 2 and 3: Funk G-94, Illinois 200, Kansas 1104, Kansas 2232, Pioneer 307, Pioneer 332, Pfister 380, U. S. 13 and U. S. 35.

All hybrids are listed alphabetically and not in order of yield and resistance to lodging.

5. The performance tests most nearly representing the location of the farm should be studied carefully. Yield should not be the only basis for selection since lodging, firing, dropped ears at harvest, ear size, etc., are also very important.

6. More satisfactory results will usually be obtained if the corn acreage is planted to three or four different tested hybrids of varying maturity instead of only one. Date of planting should be spread over several weeks or a month.

7. Corn variety and hybrid strip tests were conducted on farms in order to obtain information over a wide range of conditions. Results of these tests are summarized by districts in Tables 19 and 20.

KANSAS CORN TESTS, 1941[1]

A. L. Clapp[2], R. W. Jugenheimers[3], H. D. Hollembeak[4], and J. H. Lonnquist[5]

INTRODUCTION

The Kansas corn improvement and testing program is conducted cooperatively by the Division of Cereal Crops and Diseases, Bureau of Plant Industry, U. S. Department of Agriculture, and the Agronomy Department, Kansas Agricultural Experiment Station. The primary objective of this project is to develop and test white and yellow corn hybrids that are consistently high yielding, that possess resistance to heat, drought, lodging, insects and diseases and have other desirable characteristics. In general the work might be divided into three

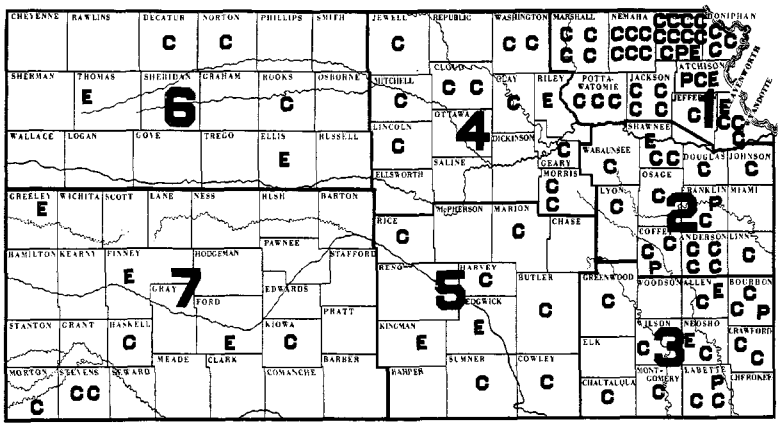

Fig. 1. Kansas Corn Testing program, 1941.
Kansas Corn Districts 1, 2, 3, 4, 5, 6, and 7.
E-Experiment Station Tests, 14 locations.
P-Kansas Corn Performance Tests, 6 locations.
C-Cooperative Corn Strip Tests, 88 locations.

phases. These are: (1) The development of desirable Kansas hybrids; (2) The testing of corn hybrids developed outside of Kansas; and (3) Fundamental research. Only about 13 percent of the corn acreage in Kansas was planted to hybrid seed corn in 1941 compared to 95 percent of Iowa's corn acreage. With seed of superior Kansas-developed hybrids and "Out-of-State" hybrids available, a considerably larger proportion of the better corn growing area in Kansas will probably be planted to hybrid seed corn this next season.

1. Department of Agronomy, Kansas Agricultural Experiment Station and the Division of Cereal Crops and Diseases, Bureau of Plant Industry, United States Department of Agriculture, cooperating. Contribution No. 331, Department of Agronomy.

2. and 4. Agronomist and assistant agronomist, respectively, Department of Agronomy, Kansas State College.

3. and 5. Associate agronomist and agent, respectively, Division of Cereal Crops and Diseases, Bureau of Plant Industry, United States Department of Agriculture.

KANSAS CORN TESTING PROGRAM

The Kansas Corn Testing program outlined in figure 1 includes open-pollinated varieties and hybrids produced and distributed by federal, state and commercial agencies. For the purpose of testing, the state has been divided into seven districts on the basis of soil, rainfall and growing season.

KANSAS CORN PERFORMANCE TESTS

PURPOSE

The Kansas Corn Performance Test was added to the Kansas corn improvement program to make possible the comparing of a larger number of corn hybrids than could be included in cooperative strip tests and to permit trials in more localities than is possible on the agricultural experiment stations.

PLAN AND LOCATION OF TESTS

The eastern half of the state was divided into three districts as shown in figure 1. Two test fields, one on upland and one on bottom land, were located in districts 1, 2, and 3. The 1941 Kansas Corn Performance Tests were made possible by the cooperation of the following men on whose farms the tests were located: Atchison County, C. W. Steinweden, Route 2, Atchison; Brown County, Homer Jacobson, Powhattan; Franklin County, Perry Dunn, Wellsville; Coffey County, E. W. Clem, LeRoy; Bourbon County, M. C. Johnston, Fort Scott; Labette County, Phil Hellwig, Oswego.

Commercial entries were included in both tests within a district, and in at least two districts. The entries in the tests are shown in Table 1. From 60 to 75 entries were planted in each field. In order to reduce the influence of soil and other differences, each kind of corn was replicated five times in each test field. Entries were distributed at random within each replication. Each entry was planted in plots two rows wide and twelve hills long.

PROCEDURE

Seed was obtained from commercial sources when possible. Each entry was given a code number by which it was known throughout the season. The code number was replaced by the original designation after the results had been computed. This procedure eliminated either conscious or unconscious discrimination.

Location of fields, procedure and climatic information are given in Table 2. Hand planters were used to insure a uniform planting rate. Two kernels were planted per hill except in Atchison County where the rate was three kernels. The hills were spaced 40 or 42 inches apart. Proper spacing was assured by cross marking.

(Continued on page 11)

TABLE 1. ENTRIES IN THE KANSAS CORN TESTS, 1941.

Trade name	Code No. in test	Color of corn	Entered by	Performance record in Table No.
			HYBRIDS	
Carlson C-33	28	Y	Carlson Hybrid Corn Co., Audubon, Iowa	3, 7, 8, 9, 10, 11
DeKalb 816	55	Y	DeKalb Agr. Assoc., DeKalb, Ill.	3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 19
827	81	Y	DeKalb Agr. Assoc., DeKalb, Ill.	3, 4, 5, 7, 8, 9, 20
Funk G-46	86	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 4, 5, 7, 8, 9, 13
G-53	6	Y	Peppard Seed Co., Kansas City, Mo.	3, 7, 8, 9
G-88	89	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 7, 8, 9, 10, 11, 13, 14, 15, 19
G-94	94	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 19
G-103	11	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 13
G-135	91	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
G-147	82	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 7, 8, 9
G-148	37	Y	Funk Bros. Seed Co., Bloomington, Ill.	7, 8, 9, 13
G-149	40	Y	Funk Bros. Seed Co., Bloomington, Ill.	7, 8, 9, 13
G-150	12	Y	Funk Bros. Seed Co., Bloomington, Ill.	7, 8, 9, 13
G-212	....	Y	Peppard Seed Co., Kansas City, Mo.	16, 20
G-244	26	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12
G-583W	5	W	Peppard Seed Co., Kansas City, Mo.	3, 7, 8, 9
Hendriks Cross L	....	Y	J. A. Hendriks, Garnett, Kansas	19
Hoosier-crost 840	32	Y	Edw. J. Funk and Sons, Kentland, Ind.	3, 4, 5, 7, 8, 9, 10, 11
Illinois 200	41	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
960	44	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 19
Iowa 939	87	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 16, 17, 18, 20
Iowealth 25B	1	Y	Michael-Leonard Seed Co., Sioux City, Iowa	3, 4, 5
28N	2	Y	Michael-Leonard Seed Co., Sioux City, Iowa	3, 7, 8, 9, 10, 11, 12, 16, 19
29A	52	Y	Michael-Leonard Seed Co., Sioux City, Iowa	7, 8, 9, 10, 11
30	....	Y	Michael-Leonard Seed Co., Sioux City, Iowa	16, 20
TX 1	88	Y	Michael-Leonard Seed Co., Sioux City, Iowa	3, 7, 8, 9, 13
Jewett 6	36	Y	Swinger Hybrid Corn Co., Marshall, Mo., and Homer Jewett, Butler, Mo.	7, 8, 9, 13, 17
11	53	Y		3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 19
12	22	Y		3, 13

TABLE 1. (Continued)

Kansas 3	83	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15, 19
5	39	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	13, 14, 15
11	46	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 17, 20
12	49	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	13
13	54	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 20
17	8	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	13, 17
20(Blend)	70	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 7, 8, 9, 13
1104	17	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 19
1356A	20	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5
1412	66	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 20
1466	21	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 19, 20
1501	58	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	7, 8, 9, 10, 11, 13, 14, 15, 17, 18
1549	76	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	13, 14, 15, 17, 20
1585	77	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 7, 8, 9, 13
1624	80	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 7, 8, 9, 13
1638	90	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 7, 8, 9, 13
2015	92	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	7, 8, 9, 10, 11, 12, 16
2086	3	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 7, 8, 9, 13
2173	10	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15
2181	71	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	7, 8, 9, 10, 11, 16
2182	50	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	13
2216	56	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 7, 8, 9, 13
2232	57	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15
2234	74	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3
Kelly 200	7	Y	Kelly Seed Co., Peoria, Ill.	3, 4, 5, 7, 8, 9, 10, 11
374	16	Y	Kelly Seed Co., Peoria, Ill.	3, 4, 5, 7, 8, 9, 10, 11
K. I. H. 26(Blend)	14	Y	Kan. Indep. Hybrid Corn Prod. Assn., Manhattan	3, 13
38	59	Y	Kan. Indep. Hybrid Corn Prod. Assn., Manhattan	3, 4, 5, 7, 8, 9, 10, 11, 13, 19, 20
41	62	Y	Kan. Indep. Hybrid Corn Prod. Assn., Manhattan	3, 13
96	65	Y	Kan. Indep. Hybrid Corn Prod. Assn., Manhattan	3, 4, 5, 7, 8, 9, 10, 11, 13
KK-77	60	Y	Kellogg-Kelly Seed Co., St. Joseph, Mo.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 19
77A	27	Y	Kellogg-Kelly Seed Co., St. Joseph, Mo.	3, 7, 8, 9
88A	29	Y	Kellogg-Kelly Seed Co., St. Joseph, Mo.	3, 7, 8, 9, 13
Mangelsdorf 1001	15	Y	Ed F. Mangelsdorf & Bro., Atchison, Kan.	3, 7, 8, 9
McCurdy 118M	23	Y	W. O. McCurdy & Sons, Fremont, Iowa	3, 4, 5, 7, 8, 9
123M	13	Y	W. O. McCurdy & Sons, Fremont, Iowa	7, 8, 9, 13
124M	85	Y	W. O. McCurdy & Sons, Fremont, Iowa	3, 7, 8, 9
Missouri 8	24	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19
47	42	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 19
Moews-Lowe 523	....	Y	B. E. Moews, Granville, Ill.	16, 19
National 132	....	Y	Reid Hybrid Corn Co., Anamosa, Iowa	16, 20
134	47	Y	Reid Hybrid Corn Co., Anamosa, Iowa	3, 4, 5, 7, 8, 9, 10, 11, 19

TABLE 1. (Concluded)

Nebraska 238	....	Y	Hamilton County Farms Co., Aurora, Neb.	16, 20
Pfister 160	64	Y	Cornhusker Hybrid Corn Co., Waterloo, Neb.	3, 4, 5, 7, 8, 9, 10, 11
380	45	Y	Cornhusker Hybrid Corn Co., Waterloo, Neb.	3, 4, 5, 7, 8, 9, 10, 11, 19
5892	78	Y	Cornhusker Hybrid Corn Co., Waterloo, Neb.	3, 4, 5, 7, 8, 9, 10, 11
Pioneer 300	30	Y	Garst & Thomas, Coon Rapids, Iowa	3, 7, 8, 9, 13
307	79	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
330	19	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15, 17, 20
332	38	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15, 17, 19, 20
333	51	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15
334	63	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15, 19
Reid-Midland	4	Y	Reid Hybrid Corn Co., Anamosa, Iowa	3, 7, 8, 9, 13
Richbred 1002	67	Y	Ed F. Mangelsdorf & Bro., Atchison, Kan.	3, 4, 5, 13, 14, 15, 19
Standard 813	25	Y	Standard Seed Co., Clarinda, Iowa	3, 13
913	43	Y	Standard Seed Co., Clarinda, Iowa	3, 13
Steckley 523	33	Y	Steckley Hybrid Corn Co., Weeping Water, Neb.	3, 7, 8, 9, 13
860	31	Y	Steckley Hybrid Corn Co., Weeping Water, Neb.	3, 7, 8, 9
100A	93	Y	Steckley Hybrid Corn Co., Weeping Water, Neb.	7, 8, 9, 13
S770	68	Y	Steckley Hybrid Corn Co., Weeping Water, Neb.	3, 4, 5, 13
U. S. 13	72	Y	Kan. Agr. Exp. Sta., U. S. D. A., and The	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
35	75	Y	Kan. Crop Improvement Assn.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
44	18	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 18, 19
			OPEN-POLLINATED VARIETIES	
Greene (YW)	34		P. E. Greene, Parsons, Kan.	13
(WY)	35		P. E. Greene, Parsons, Kan.	13
Hays Golden	9	Y	Kan. Agr. Exp. Sta., U. S. D. A., and The Kan. Crop Improvement Assn.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
Midland (A)	84	Y	Kan. Agr. Exp. Sta., U. S. D. A., and The	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16, 18, 19, 20
(C)	48	Y	Kan. Crop Improvement Assn.	7, 8, 9, 10, 11, 12, 13, 14, 15, 19
Pride of Saline	69	W	Kan. Agr. Exp. Sta., U. S. D. A., and The Kan. Crop Improvement Assn.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20
Reid Yellow Dent	73	Y	Kan. Agr. Exp. Sta., U. S. D. A., and The Kan. Crop Improvement Assn.	3, 4, 5, 6, 19
Local Variety	61		Cooperator or Local Farm Bureau	3, 8, 16

TABLE 2. LOCATION, PROCEDURE AND CLIMATIC INFORMATION ON KANSAS CORN PERFORMANCE TEST, 1941.

	District 1		District 2		District 3	
	Atchison	Brown	Franklin	Coffey	Bourbon	Labette
No. of entries	75	75	72	72	60	60
No. of replications						
Planted	5	5	5	5	5	5
Harvested	5	0	5	5	4	0
Size of plot (hills)	2 x 12	2 x 12	2 x 12	2 x 12	2 x 12	2 x 12
Hill spacing (inches)	42 x 40	40 x 40	42 x 40	40 x 40	42 x 40	42 x 42
Rate of planting (kernels per hill)	3	2	2	2	2	2
Date of planting	May 15	May 13	May 8 and 9	April 24 and 25	May 5	May 10
Date of harvest	Nov. 14 to 17		Oct. 20 to 24	Nov. 5 to 11	Oct. 26 to 28	
Seedbed preparation	List	List	Plow	Plow	Disk	Plow
Rainfall[1]						
May	6—3.50	9—3.14	4—2.25	5—4.72	2—0.20	2—0.57
June	7—8.43	10—5.59	13—4.77	7—4.98	5—6.75	7—7.13
July	4—3.07	6—4.07	3—2.93	3—2.45	5—1.34	6—2.84
Aug.	5—4.06	4—3.66	5—4.96	10—7.17	4—3.19	12—3.35
Sept.	7—4.79	10—4.04	6—6.58	8—5.53	15—10.81	9—8.50
Total 5 months	29-23.85	39-20.50	31-21.49	33-24.85	31-22.29	36-22.39

[1] First figure represents number of rains and second the total monthly rainfall in inches.

Firing notes were taken on all tests during the last week in July. Records on yield, lodging, stand, and dropped ears were obtained at harvest. Representative samples of all entries from three or more replications in all of the tests harvested were shelled to determine shelling percentage, test weight, and moisture content. The number of ears per plot was counted in order to determine ear size and number of ears per plant.

The Brown County field was discarded because of two severe hail storms. The field in Labette County was discarded because of damage caused by flooding. The test field in Bourbon County was injured considerably by drouth.

Yield and other data for 1941 are averages of five replications per field, except from the Bourbon County test where four were harvested. The acre yields of the entries in each test are reported on a comparable basis of shelled grain adjusted to a moisture content of 15.5 percent. The number of ears per plot was used to determine the number of ears per one hundred pounds of ear corn. This is an indication of relative ear size. The average number of ears per plant also was determined. The moisture determinations were made on shelled corn with a Tag-Heppenstall moisture meter by the A. A. A. Testing Laboratory, Manhattan, Kansas.

Stand of each entry was reported as percentage of perfect stand. The percentage of lodged plants was determined from plant counts for each entry. Firing is reported as percentage of leaf surface burned. The percentage of dropped ears was obtained for each entry by counting the ears on the ground at harvest time and dividing this number by the total number of ears.

The differential resistance to corn ear worm of the entries in the Atchison County tests is shown in Tables 4 and 5. These data were taken by Dr. R. H. Painter, Department of Entomology, Kansas State College. Contrasts in resistance and susceptibility to corn ear worm are shown in figure 2. A grade of "1" indicates no damage, while a grade of "6" was given to badly damaged ears.

SIGNIFICANCE OF YIELD DIFFERENCES

It is not possible to determine the relative yielding ability with absolute accuracy, as small differences do not prove that one hybrid is better than another. Experience has shown that differences in yield may be expected between any plots planted from the same seed. These differences may be due to such things as soil or stand differences, but they are reduced to a large extent by repeating or "replicating" the same corn five times in the same test. Even with replication, differences remain which are said to be due to chance. These differences are called "experimental error." Methods are available for utilizing the differences among replicated plots of a strain in calculating such

chance errors and for determining the minimum difference between strains that may be considered a real difference. These differences are called "significant differences" and are shown for each district. For example, in Table 8 the highest yielding hybrid produced 90.24 bushels per acre. In this district 9.23 bushels per acre has been calculated to be a significant difference. Subtracting 9.23 bushels from 90.24 bushels leaves 81.01 bushels per acre. Since the first four entries yielded more than 81.01 bushels per acre, they are not considered to be significantly different from the highest yielding entry. In other words, any two entries in Table 8 must differ by more than 9.23 bushels before they may be considered as differing in yielding ability.

RESULTS

The data obtained are summarized in Tables 3 to 18.

Thirty-five entries were compared in all three eastern districts of Kansas in 1941. The fields differed in fertility, topography, temperature and rainfall. Among these the following hybrids yielded above the average of all entries in all three eastern districts: Iowealth TX 1, Kansas 1585, Kansas 1624, Kansas 1638, Kansas 2232, K. I. H. 38, Reid-Midland and U. S. 13*.

Results obtained in at least two districts and over a two-year period are much more reliable than results obtained in only one district and season. During the past two years, the following hybrids stood up as well as the average of the better open-pollinated varieties, produced at least 15 percent more corn, and had a combined advantage in lodging resistance and grain yield of not less than 25 percent.

Districts 1 and 2: (Tables 5 and 11) DeKalb 816, Funk G-94, Hoosier-Crost 840, Illinois 200, Kansas 1104, Kansas 2232, KK-77, Kelly 200, Kelly 374, K. I. H. 38, K. I. H. 96, Pioneer 307, Pioneer 332, Pioneer 333, Pioneer 334, Pfister 980, Pfister 5892, U. S. 13 and U. S. 35*.

Districts 2 and 3: (Tables 11 and 15) Funk G-88, Funk G-135, Illinois 200, Kansas 1104, Kansas 1466, Kansas 1501, Kansas 2232, U. S. 13 and U. S. 35*.

Districts 1 and 3: (Tables 5 and 15) Funk G-94, Illinois 200, Kansas 2232, Pioneer 307, Pioneer 332, Pioneer 333, Pioneer 334, Richbred 1002, U. S. 13 and U. S. 35*.

Districts 1, 2 and 3: (Tables 5, 11 and 15) Funk G-94, Illinois 200, Kansas 1104, Kansas 2232, Pioneer 307, Pioneer 332, Pfister 380, U. S. 13 and U. S. 35*.

Thirteen hybrids and varieties were included in the tests in districts 1 and 2 during the past three years (Tables 6 and 12). Among these the following hybrids stood up as well as the average of the open-pollinated varieties, produced at least 15

*Hybrids are listed alphabetically and not in order of yield and resistance to lodging.

percent more corn, and had a combined advantage in lodging resistance and grain yield of not less than 25 percent: Funk G-94, Illinois 960, KK-77, Missouri 47, Pioneer 307, U. S. 13, and U. S. 36*.

There are many characteristics which are desirable in a hybrid or variety besides yield. Some of these are the ability to stand erect, retain the ears until husking, and have a desirable ear size. These and many other factors were noted, and the results are given in Tables 3 to 18. Figure 2 shows how some corn hybrids differ in various characteristics.

INTERPRETATION OF RESULTS

The results given in Tables 3 to 20 should be used to select corn hybrids for planting in 1942. The performance test most nearly representing the location of the farm should be studied carefully along with the cooperative strip tests located in the same district. For instance, corn producers in northeast Kansas will be especially interested in Tables 3 to 6 and 19; those in central eastern Kansas in Tables 7 to 12 and 19; while Tables 13 to 15 and 19 contain data from southeastern Kansas. No performance tests were planted in districts 4 or 5 because funds were not available. Data obtained in 1939 of value to north central Kansas farmers are given in Table 16. Similar data from 1940 for south central Kansas were included in Tables 17 and 18. Table 20 contains data from cooperative strip tests for central and western Kansas. Two- or three-year averages are much more reliable than results obtained in only one season. Yield should not be the only basis for selection since lodging, firing, dropped ears at harvest, ear size, etc., are also very important.

One- or two-years' results do not prove the superiority of any hybrid or variety. Seasonal conditions vary from year to year and with this variation there is a difference in response of corn hybrids and varieties. A period of early prolonged drouth and high temperature is likely to favor an early-maturing entry, whereas a later-maturing entry often is able to take advantage of a longer growing season when the drouth period does not occur until later. In general the early to midseason entries were favored in 1939 and 1940, whereas the later maturing entries tended to be most outstanding in 1938 and 1941.

In Kansas where the periods of extreme drouth and heat are frequent and variable, the most desirable varieties over a period of years have been those in which the individual plants varied considerably in date of pollination. Experimental evidence has shown that double-cross hybrids pollinate over a shorter period than do the adapted varieties. It appears, therefore, that the most desirable hybrids for use in Kansas might be those with considerable variation in date of pollination. This may be accomplished by the use of (1) top crosses of desirable

(Continued on page 33)

TABLE 3. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 1,** ATCHISON COUNTY, 1941.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Firing	Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.	Corn ear worm
		Per acre	% of O. P.'d	Total	% of O. P.'d	Root	Stalk									
		Bu.		%		%	%	%	%	%	No.	No.	%	%	Lbs.	Class
1	Jewett 12	63.44	143	53	100	21	26	20	75	1	1.0	177	81.8	17.5	56	3.19
2	Illinois 960	61.96	140	72	136	5	23	28	78	8	1.0	197	84.0	15.7	58	3.61
3	U. S. 13	61.96	140	53	100	5	42	24	77	4	1.1	217	85.3	15.9	58	3.43
4	DeKalb 827	60.51	136	80	151	4	16	20	81	4	0.9	203	84.9	15.2	58	3.43
5	U. S. 35	60.11	135	77	145	1	22	24	77	3	0.9	198	85.4	15.7	58	3.34
6	Steckley 523	60.00	135	66	125	1	33	24	81	6	1.0	210	84.8	15.7	58	3.67
7	DeKalb 816	59.49	134	71	134	3	26	24	81	7	1.0	219	84.6	15.6	58	3.36
8	Kansas 13	59.03	133	43	81	41	16	20	75	0	1.0	199	81.9	16.5	58	3.10
9	K. I. H. 38	58.86	133	67	126	4	29	24	77	6	1.0	206	84.5	16.2	58	3.53
10	Pioneer 334	58.31	131	73	138	3	24	26	81	2	1.0	216	85.1	15.2	56	3.60
11	Pioneer 307	58.07	131	70	132	13	17	22	76	1	1.0	211	86.0	16.4	58	3.44
12	K. I. H. 26	58.05	131	61	115	3	36	28	79	4	1.0	211	85.3	15.6	59	3.58
13	Funk G-94	57.87	130	75	142	6	19	26	74	6	1.0	197	84.5	16.3	59	3.53
14	Jewett 11	57.84	130	44	83	13	43	34	84	2	1.0	211	81.3	16.6	55	3.44
15	Pfister 5892	57.67	130	79	149	4	17	18	75	5	1.0	208	85.5	15.5	58	3.37
16	Reid-Midland	57.54	130	60	113	16	24	26	80	0	0.9	194	81.6	19.5	58	3.30
17	Kansas 2086	57.48	130	57	108	29	14	24	66	0	1.0	170	79.8	17.5	53	3.14
18	McCurdy 124M	57.40	129	72	136	1	27	24	81	10	0.9	205	84.6	15.7	58	3.75
19	Funk G-53	56.89	128	78	147	4	18	20	79	3	1.0	212	84.5	15.7	58	3.32
20	Iowealth TX 1	56.58	127	66	125	7	27	28	75	2	0.9	194	83.4	17.7	55	3.14
21	Kelly 374	56.44	127	67	126	2	31	28	80	7	1.0	221	84.5	15.9	57	3.59
22	Pioneer 333	56.20	127	78	147	7	15	30	78	1	1.0	218	84.4	15.7	58	3.58
23	KK-77A	56.06	126	77	145	5	18	22	71	2	1.0	197	85.7	16.7	57	3.41
24	Missouri 47	55.50	125	56	106	6	38	24	78	3	1.0	209	84.2	17.6	56	3.62
25	Kansas 1624	55.27	125	58	109	23	19	24	76	2	0.9	207	87.1	16.5	58	3.58
26	Kansas 2232	55.13	124	39	74	49	12	26	79	0	1.0	193	76.3	18.5	58	3.22
27	Kelly 200	55.09	124	72	136	3	25	24	78	7	1.0	209	82.2	16.3	56	3.52
28	KK-77	54.53	123	76	143	1	23	24	74	9	1.0	206	85.0	17.3	56	3.46
29	Kansas 1638	53.69	121	70	132	6	24	28	77	12	1.0	220	85.6	16.3	59	3.47
30	Steckley S770	53.46	120	80	151	2	18	22	71	13	0.9	198	84.6	16.1	57	3.69
31	Pfister 160	53.42	120	53	100	15	32	24	76	5	1.0	220	84.6	16.3	58	3.77
32	Pioneer 300	53.38	120	75	142	2	23	28	80	3	0.9	216	84.8	15.5	57	3.58
33	Pioneer 332	53.24	120	73	138	11	16	22	79	1	0.9	219	85.0	16.0	58	3.86
34	Funk G-103	53.19	120	58	109	6	36	26	79	5	0.9	217	82.8	16.4	59	3.54
35	Kansas 1585	51.97	117	58	109	30	12	26	76	8	0.9	203	80.9	17.5	57	3.30

TABLE 3. (Continued)

36	McCurdy 118M	51.70	116	77	145	1	22	28	77	3	0.9	227	84.8	15.6	57	3.25
37	K. I. H. 96	51.39	116	71	134	1	28	30	76	2	1.0	241	85.7	15.2	58	3.55
38	Kansas 3	51.12	115	46	87	45	9	22	78	1	0.9	197	78.5	18.5	56	3.21
39	Funk G-135	50.94	115	60	113	17	23	28	81	1	0.9	235	85.4	18.1	59	3.42
40	Steckley 860	50.82	115	66	125	8	26	30	76	2	1.0	235	84.7	16.3	57	3.49
41	Pfister 380	50.54	114	83	157	2	15	24	70	3	1.0	210	85.1	16.7	58	3.58
42	Midland (A)	50.29	113	57	108	37	6	16	80	2	0.9	206	81.0	19.4	56	3.03
43	Funk G-583W	49.99	113	54	102	15	31	20	72	2	0.8	177	79.0	18.1	57	3.16
44	Carlson C-33	49.69	112	65	123	0	35	28	77	10	1.0	231	82.6	16.6	57	3.59
45	Funk G-46	49.64	112	72	136	6	22	24	74	6	1.0	224	82.5	16.5	58	3.58
46	K. I. H. 41	49.56	112	60	113	4	36	26	79	7	0.9	230	83.2	16.1	59	3.90
47	Kansas 1356A	49.24	111	69	130	8	23	24	73	6	0.9	209	86.1	18.9	56	3.66
48	Iowealth 25B	49.21	111	59	111	8	33	26	76	1	1.0	239	85.0	15.4	57	3.60
49	Mangelsdorf 1001	49.10	111	48	91	27	25	28	75	1	0.9	220	82.5	17.6	57	2.89
50	Funk G-147	48.86	110	68	128	18	14	22	70	5	1.1	248	80.9	16.7	60	3.49
51	Standard 813	48.72	110	75	142	2	23	24	74	9	0.9	223	84.0	16.7	58	3.52
52	U. S. 44	48.51	109	78	147	5	17	32	74	2	1.0	243	84.1	15.4	59	3.27
53	Standard 913	48.50	109	77	145	3	20	28	74	10	0.9	222	82.9	17.0	56	3.31
54	Pride of Saline	48.32	109	50	94	31	19	26	83	0	0.9	220	78.8	17.9	57	3.40
55	Richbred 1002	48.07	108	50	94	18	32	32	71	1	0.9	201	80.2	16.9	58	3.32
56	Kansas 2234	47.60	107	41	77	39	20	26	80	1	0.9	219	76.3	19.1	56	3.50
57	Funk G-244	47.51	107	55	104	0	45	28	72	2	1.0	243	85.0	15.3	58	3.38
	Differences in yield of less than 16.40 bushels an acre are not significant in this test.															
58	Illinois 200	46.80	105	68	128	5	27	28	75	12	1.0	241	82.5	17.6	56	3.49
59	Hoosier-crost 840	45.24	102	80	151	3	17	24	69	4	0.9	222	84.0	15.9	57	3.55
60	Funk G-88	45.02	102	77	145	8	15	28	81	3	0.9	252	82.6	18.5	56	3.43
61	Kansas 20	44.32	100	74	140	4	22	26	76	4	0.9	256	84.9	16.1	58	3.50
62	National 134	44.06	99	46	87	11	43	34	82	0	0.9	246	81.4	18.5	52	3.51
63	Iowealth 28N	44.01	99	71	134	9	20	20	75	2	0.9	242	83.0	16.4	56	3.57
64	Hays Golden	43.93	99	49	92	30	21	20	70	0	1.0	241	83.0	16.3	56	2.90
65	Kansas 11	43.53	98	69	130	15	16	18	71	1	0.9	238	84.3	17.5	56	3.12
66	Pioneer 330	43.47	98	74	140	0	26	24	72	3	0.9	252	85.2	15.3	54	3.60
67	Kansas 1412	43.05	97	64	121	19	17	24	75	5	0.8	227	82.7	16.4	58	3.21
68	KK-88A	42.96	97	55	104	17	28	28	75	4	1.0	255	79.8	17.7	58	3.68
69	Kansas 2216	42.35	95	62	117	17	21	32	76	0	1.0	253	76.8	18.8	56	3.28
70	Reid Yellow Dent	41.45	93[1]	57	108	23	20	30	78	3	0.8	243	83.4	17.9	56	3.41
71	Iowa 939	41.25	93	64	121	2	34	34	72	11	0.9	259	85.5	15.5	56	3.42
72	Kansas 2173	41.15	93	45	85	42	13	24	76	1	0.8	206	75.7	18.1	55	3.27
73	Kansas 1104	39.22	88	64	121	22	14	30	78	3	0.9	273	82.6	17.1	56	3.38
74	Local Variety	37.92	85	54	102	33	13	28	82	2	0.8	259	82.2	17.3	55	3.73
75	Kansas 1466	36.75	83	53	100	36	11	28	79	0	0.9	288	82.1	16.6	57	3.30
Ave. of 76 entries		51.43		64		13	23	26	76	4	0.95	221	83.2	16.7	57.1	3.44
Ave. of 5 O. P. varieties		44.38		53		31	16	24	79	1	0.88	234	81.7	17.8	56.0	3.29
Ave. of 71 hybrids		51.92		65		11	24	26	76	4	0.95	220	83.3	16.7	57.2	3.45

[1] Percent of open-pollinated varieties.

TABLE 4. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 1,** TWO-YEAR AVERAGE, 1940-1941, ATCHISON COUNTY.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.	Corn ear worm
		Per acre	% of O.P.1	Total	% of O.P.1	Root	Stalk								
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.	Class
1	DeKalb 827	66.36	146	88	129	2	10	86	4	0.9	196	84.6	14.9	57	3.16
2	U. S. 35	65.71	145	87	128	1	12	85	4	0.9	198	84.2	14.6	57	3.42
3	K. I. H. 38	65.48	144	78	115	2	20	81	5	1.0	198	83.8	15.2	58	3.56
4	Illinois 960	65.30	144	69	101	3	28	80	3	1.1	222	84.2	14.8	58	3.54
5	Funk G-94	63.82	141	84	124	4	12	80	4	1.0	192	84.2	15.0	60	3.34
6	Missouri 47	63.42	140	71	104	4	25	83	2	1.0	202	83.5	16.2	56	3.34
7	McCurdy 118M	63.04	139	86	126	1	13	84	2	1.0	212	84.6	14.8	58	3.08
8	Funk G-244	63.00	139	71	104	0	29	83	1	1.0	220	84.4	14.8	58	3.22
9	Jewett 11	61.66	136	54	79	8	38	84	2	1.0	204	80.6	15.1	55	3.30
10	U. S. 13	61.42	135	83	122	4	13	82	4	1.0	248	79.2	15.1	59	3.40
11	Pfister 160	61.38	135	72	106	8	20	81	3	1.0	209	83.6	15.4	59	3.28
12	Pioneer 307	61.11	135	84	124	6	10	82	1	1.0	224	84.8	15.6	58	3.54
13	K. I. H. 96	61.02	135	80	118	1	19	84	2	1.0	232	84.6	14.9	59	3.28
14	KK-77	60.86	134	86	126	1	13	80	8	1.0	202	84.0	16.0	58	3.50
15	Kelly 200	60.25	133	84	124	2	14	80	4	1.0	207	82.4	16.0	57	3.56
16	Steckley S770	59.67	132	87	128	1	12	80	8	1.0	200	82.4	15.6	58	3.28
17	Iowealth 25B	58.91	130	72	106	4	24	82	2	1.0	222	84.2	15.1	58	3.38
18	Pioneer 334	58.84	130	84	124	2	14	84	2	1.0	220	84.6	15.0	55	3.55
19	Pioneer 333	58.66	129	87	128	4	9	82	1	1.0	219	83.5	15.4	57	3.59
20	Pfister 380	58.62	129	90	132	1	9	80	2	1.0	212	83.6	15.4	58	3.49
21	Pioneer 332	58.36	129	84	124	6	10	84	1	0.9	212	84.7	15.1	58	3.46
22	Kelly 374	58.18	128	82	121	1	17	83	6	1.0	215	82.8	16.6	57	3.40
23	Funk G-46	58.12	128	80	118	3	17	80	4	1.0	220	82.4	15.4	58	3.56
24	Illinois 200	57.94	128	82	121	2	16	82	9	1.0	222	82.0	15.6	57	3.34
25	Pfister 5892	57.88	128	88	129	2	10	78	4	1.0	213	84.8	14.6	58	3.34

TABLE 4. (Continued)

26	DeKalb 816	57.85	128	82	121	2	16	82	4	1.0	216	82.4	15.4	58	3.43
27	Kansas 2232	57.82	127	68	100	24	8	83	0	1.0	189	74.2	18.0	58	2.98
28	Hoosier-crost 840	56.52	125	88	129	2	10	78	3	1.0	210	84.6	15.2	57	3.48
29	Kansas 1356A	56.33	124	83	122	4	13	80	4	0.9	202	85.4	17.2	56	3.46
30	Richbred 1002	55.42	122	68	100	10	22	74	1	1.0	196	81.1	16.2	58	3.24
31	Pioneer 330	54.76	121	85	125	1	14	78	2	1.0	224	83.8	14.7	54	3.61
32	National 134	54.74	121	64	94	6	30	82	0	1.0	228	81.2	16.4	55	3.30
33	U. S. 44	53.85	119	84	124	2	14	78	4	1.0	232	83.0	24.9	60	3.21
34	Iowa 939	51.03	113	74	109	2	24	76	8	1.0	234	84.4	15.2	56	3.86
35	Pride of Saline	50.11	110	71	104	16	13	86	1	0.8	219	77.2	17.0	57	3.20
36	Kansas 3	49.46	109	68	100	25	7	84	1	0.8	206	75.4	18.0	56	3.08
37	Kansas 1104	48.48	107	81	119	11	8	86	2	0.9	245	81.6	16.5	57	3.24
38	Kansas 1466	48.12	106	76	112	18	6	84	0	0.9	251	81.4	15.8	58	3.08
39	Kansas 1412	47.84	105	80	118	10	10	78	4	0.9	226	80.8	16.0	58	3.13
40	Hays Golden	46.72	103	65	96	20	15	76	1	1.0	236	81.7	15.8	56	2.78
41	Midland (A)	45.32	100	75	110	20	5	82	1	0.8	219	79.6	18.2	56	2.92
42	Kansas 2173	45.14	100	70	103	23	7	78	1	0.8	204	73.4	17.5	55	3.21
43	Reid Yel. Dent	39.28	87	64	94	22	14	82	4	0.8	256	83.4	16.6	56	3.33
Ave. of 43 entries		56.93		78		7	15	81	3	0.96	217	82.4	16.0	57.3	3.34
Ave. of 4 O. P. var.		45.36		68		19	13	82	2	0.85	237	81.0	16.4	56.2	3.14
Ave. of 39 hybrids		58.11		79		6	15	81	3	0.97	215	82.5	15.9	57.4	3.36

[1] Percent of open-pollinated varieties.

TABLE 5. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 1**, TWO-YEAR AVERAGE, 1940-1941, BROWN AND ATCHISON COUNTIES, 1940, AND ATCHISON COUNTY, 1941.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.	Corn ear worm
		Per acre	% of O. P.1	Total	% of O. P.1	Root	Stalk								
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.	Class
1	Jewett 11	58.02	144	53	80	15	32	87	2	1.0	203	81.0	15.2	54	3.45
2	DeKalb 827	57.98	144	87	132	3	10	86	4	1.0	206	83.9	14.8	58	3.28
3	Illinois 960	57.30	142	69	105	4	27	82	3	1.0	228	84.1	14.9	59	3.48
4	K. I. H. 38	57.05	141	76	115	4	20	82	6	1.0	210	82.9	14.9	58	3.48
5	U. S. 35	57.03	141	86	130	2	12	85	4	1.0	213	83.6	14.8	58	3.45
6	Funk G-94	56.68	140	82	124	6	12	81	6	1.0	198	83.2	15.2	59	3.42
7	Missouri 47	55.77	138	67	102	8	25	84	2	1.0	212	83.5	16.0	56	3.46
8	U. S. 13	54.88	136	81	123	6	13	83	6	1.0	236	80.3	15.0	58	3.49
9	McCurdy 118M	54.64	135	85	129	2	13	85	4	1.0	220	84.2	15.0	58	3.12
10	Pioneer 307	54.63	135	79	120	10	11	83	2	1.0	232	84.8	15.4	58	3.63
11	Pioneer 334	53.56	133	81	123	5	14	85	2	1.0	223	84.2	14.8	56	3.55
12	Pfister 160	53.46	132	68	103	12	20	84	4	1.0	224	83.6	15.2	59	3.48
13	K. I. H. 96	53.34	132	81	123	2	17	84	2	1.0	240	84.8	14.7	59	3.27
14	Pfister 5892	52.94	131	85	129	5	10	78	4	1.0	217	84.4	14.6	58	3.44
15	Pioneer 333	52.58	130	88	133	4	8	84	2	1.0	224	83.3	15.2	57	3.72
16	Funk G-244	52.57	130	71	108	1	28	83	2	1.0	238	84.2	14.8	58	3.29
17	KK-77	52.50	130	85	129	2	13	80	8	1.0	212	82.4	15.8	57	3.51
18	Steckley S770	52.34	130	83	126	5	12	82	8	1.0	210	82.2	15.4	58	3.44
19	Pfister 380	52.32	130	88	133	4	8	81	2	1.0	214	83.8	15.4	59	3.50
20	Kelly 200	52.32	130	82	124	4	14	82	5	1.0	220	81.0	15.7	57	3.50
21	Kelly 374	52.20	129	79	120	4	17	85	6	1.0	226	82.1	15.8	57	3.54
22	DeKalb 816	51.78	128	75	114	10	15	82	5	1.0	224	81.7	15.2	58	3.44
23	Iowealth 25B	51.38	127	69	105	9	22	83	2	1.0	232	83.9	14.8	58	3.47
24	Funk G-46	50.82	126	78	118	6	16	81	4	1.0	230	82.0	15.6	58	3.60
25	Pioneer 332	50.40	125	83	126	7	10	85	2	0.8	226	84.3	15.2	58	3.68

TABLE 5. (Continued)

26	Illinois 200	50.18	124	76	115	8	16	84	8	1.0	234	81.4	16.3	57	3.52
27	Kansas 1356A	50.00	124	78	118	8	14	81	4	0.9	210	85.2	17.4	56	3.54
28	Richbred 1002	49.96	124	65	98	16	19	78	2	1.0	204	81.0	16.0	58	3.34
29	Kansas 2232	49.80	123	61	92	31	8	85	1	1.0	204	73.8	18.4	57	3.19
30	Hoosier-crost 840	49.56	123	88	133	2	10	79	4	1.0	216	83.7	15.3	58	3.58
31	National 134	47.66	118	62	94	10	28	84	1	1.0	240	80.7	17.0	54	3.49
32	U. S. 44	47.42	117	84	127	4	12	80	4	1.0	241	82.8	14.9	60	3.29
33	Pioneer 330	46.58	115	85	129	1	14	80	2	1.0	244	83.7	14.4	54	3.60
34	Pride of Saline	44.83	111	63	95	25	12	86	0	0.8	229	76.9	17.4	56	3.33
35	Iowa 939	44.59	110	72	109	6	22	78	9	1.0	241	84.4	14.8	56	3.58
36	Kansas 3	44.43	110	60	91	34	6	86	2	0.8	216	76.0	18.2	56	3.13
37	Kansas 1104	42.47	105	80	121	12	8	86	2	0.9	256	81.4	16.5	57	3.30
38	Kansas 1412	41.20	102	78	118	12	10	80	4	0.8	238	80.3	16.2	59	3.16
39	Kansas 1466	40.53	100	71	108	23	6	84	1	0.9	266	81.0	15.8	58	3.18
40	Hays Golden	40.42	100	63	95	24	13	78	1	0.9	244	81.8	15.7	57	2.79
41	Midland (A)	40.12	99	72	109	24	4	84	2	0.8	233	79.2	19.0	56	3.10
42	Kansas 2173	39.04	97	63	95	30	7	81	1	0.8	214	73.6	17.7	55	3.26
43	Reid Yel'w Dent	36.22	90	64	97	24	12	84	4	0.8	261	83.0	17.0	56	3.40
Ave. of 43 entries		50.08		76		10	14	83	3	0.96	226	82.1	16.1	57.3	3.41
Ave. of 4 O. P. var.		40.40		66		24	10	83	2	0.82	242	80.2	17.3	56.2	3.16
Ave. of 39 hybrids		51.07		76		9	15	83	4	0.97	224	82.3	16.0	57.4	3.43

[1] Percent of open-pollinated varieties.

TABLE 6. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 1**, THREE-YEAR AVERAGE, 1939-1941, ATCHISON COUNTY, 1939, BROWN AND ATCHISON COUNTIES, 1940, AND ATCHISON COUNTY, 1941.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P.[1]	Total	% of O. P.[1]	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	U. S. 35	66.09	142	86	126	1	13	88	8	0.9	202	83.5	12.9	58
2	Funk G-94	65.49	141	84	124	4	12	84	9	1.0	192	83.1	13.3	59
3	Illinois 960	64.82	139	69	101	3	28	84	4	1.1	219	84.1	13.0	59
4	Jewett 11	64.04	138	53	78	10	37	89	5	1.0	205	81.8	13.3	56
5	U. S. 13	63.88	137	83	122	4	13	86	12	1.0	221	81.3	13.3	59
6	Missouri 47	62.03	133	69	101	5	26	83	3	1.0	208	83.6	13.8	58
7	DeKalb 816	61.36	132	82	121	3	15	85	9	1.0	213	82.0	13.3	58
8	Pioneer 307	60.60	130	79	116	7	14	86	2	1.0	227	84.7	13.4	59
9	Funk G-244	60.58	130	71	104	1	28	84	3	1.0	231	84.5	12.9	59
10	U. S. 44	59.72	128	86	126	2	12	83	4	1.0	224	83.1	13.0	60
11	KK-77	59.67	128	87	128	2	11	82	10	1.0	205	82.4	13.6	58
12	Kansas 1104	54.73	118	83	122	8	9	88	6	0.9	233	81.3	14.7	58
13	Pride of Saline	51.90	112	67	99	17	16	88	2	0.9	217	78.2	15.1	58
14	Iowa 939	51.54	111	74	109	4	22	79	13	1.0	227	84.0	13.0	57
15	Kansas 1466	50.16	108	76	112	16	8	85	2	0.9	248	81.9	13.8	58
16	Midland (A)	44.91	97	76	112	17	7	84	4	0.8	225	80.1	16.7	58
17	Reid Yellow Dent	44.66	96	64	94	16	20	85	9	0.8	245	83.2	14.5	58
18	Hays Golden	44.60	96	64	94	16	20	79	1	0.9	241	80.9	13.6	58
Ave. of 18 entries		57.27		75		8	17	85	6	0.96	221	82.4	13.7	58.2
Ave. of 4 O. P. varieties		46.52		68		16	16	84	4	0.85	232	80.6	15.0	58.0
Ave. of 14 hybrids		60.34		77		5	18	85	6	0.99	218	83.0	13.4	58.3

[1] Percent of open-pollinated varieties.

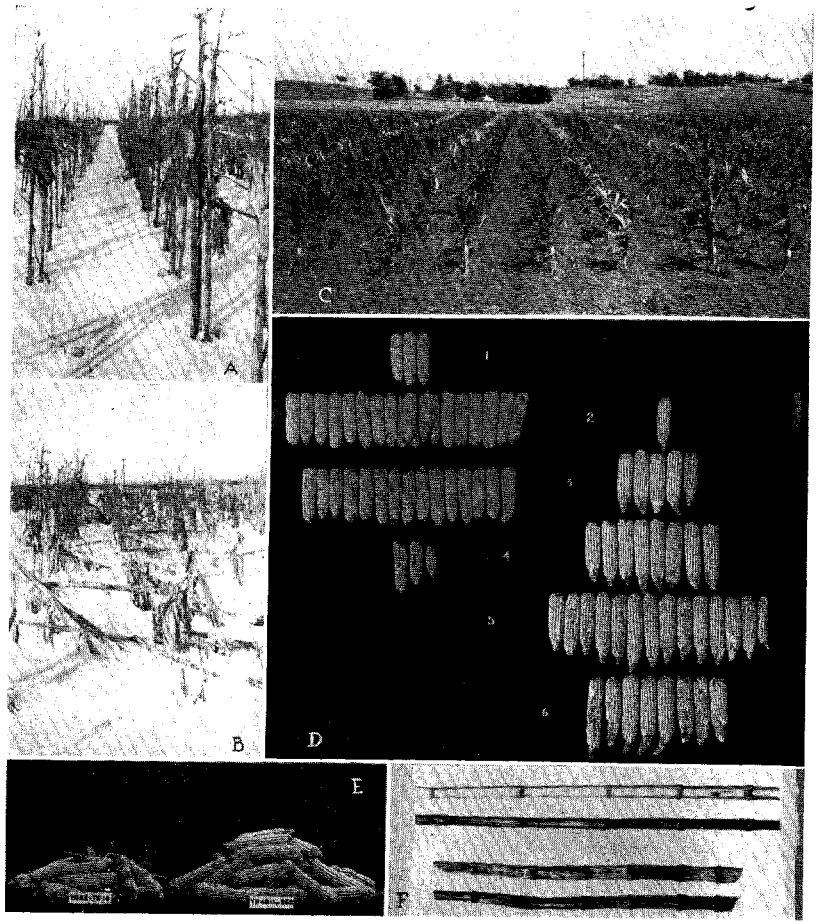

Fig. 2.—Corn hybrids differ in many characteristics, such as resistance to lodging (A and B), to drought (C), to damage by insects, such as corn earworm (D), to diseases, such as diplodia stalk rot (F), and difference in yield (E). (Photographs showing resistance to lodging by courtesy of Iowa Agricultural Experiment Station.)

TABLE 7. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 2,** FRANKLIN COUNTY, 1941.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size — Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P.[1]	Total	% of O. P.[1]	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	Jewett 11	56.5	135	41	91	16	43	90	1	1.0	155	78.7	19.0	53
2	Reid-Midland	56.3	134	61	136	16	23	89	0	1.1	176	80.3	20.3	54
3	Funk G-150	55.8	133	56	124	10	34	94	2	1.1	191	81.7	19.0	58
4	Kansas 1104	55.4	132	54	120	31	15	90	1	1.0	157	81.5	19.3	56
5	Jewett 6	53.4	127	33	73	25	42	86	0	1.0	150	77.0	20.1	51
6	Funk G-135	52.3	125	66	147	4	30	88	6	1.0	169	79.9	19.4	56
7	Missouri 8	52.0	124	49	109	9	42	92	2	1.0	165	79.6	19.7	54
8	Funk G-88	51.9	124	84	187	3	13	89	2	1.0	156	79.6	20.6	56
9	National 134	51.9	124	38	84	8	54	91	1	1.0	173	81.0	19.9	52
10	KK-88A	51.1	122	63	140	6	31	92	2	1.0	181	80.3	20.1	56
11	Kansas 3	50.8	121	58	129	23	19	88	1	1.0	165	77.3	20.7	56
12	Iowealth TX 1	50.7	121	64	142	3	33	86	0	1.0	158	81.2	19.5	54
	Differences in yield of less than 6.04 bushels an acre are not significant in this test.													
13	McCurdy 123M	50.3	120	70	156	3	27	92	3	0.9	174	82.6	17.3	56
14	Kansas 1466	49.5	118	76	169	12	12	89	1	1.0	173	81.4	18.8	57
15	Midland (A)	49.0	117	58	129	26	16	89	1	0.9	155	80.7	21.1	54
16	Kelly 374	48.9	117	54	120	3	43	89	3	1.0	191	82.8	17.2	56
17	Funk G-149	48.8	116	73	162	7	20	95	6	1.1	192	76.3	18.7	58
18	U. S. 13	48.8	116	65	144	6	29	91	6	1.0	187	82.9	17.9	54
19	Kelly 200	48.8	116	65	144	5	30	90	5	1.0	193	82.1	18.1	56
20	Funk G-147	48.7	116	54	120	14	32	89	7	1.2	214	81.1	17.7	58
21	Mangelsdorf 1001	48.7	116	39	87	18	43	81	3	1.1	173	82.2	17.6	55
22	Steckley 100A	48.5	116	65	144	3	32	91	4	1.0	190	81.8	17.5	55
23	Kansas 1412	48.3	115	62	138	8	30	90	0	1.0	182	81.0	18.2	56
24	Pioneer 300	48.3	115	65	144	10	25	88	0	1.0	190	82.8	18.1	54
25	Kansas 1638	47.7	114	74	164	5	21	84	5	1.0	177	80.2	18.1	56
26	Funk G-148	47.6	114	65	144	13	22	93	6	1.0	170	74.9	19.7	57
27	Illinois 200	47.5	113	61	136	8	31	90	6	1.0	188	80.7	17.7	55
28	McCurdy 124M	47.4	113	52	116	4	44	87	4	1.0	176	82.1	18.8	56
29	Funk G-94	47.2	113	65	144	6	29	90	3	1.0	183	81.6	18.1	55
30	Kansas 1585	46.9	112	60	133	36	4	81	4	0.9	151	79.8	20.9	54
31	K. I. H. 38	46.8	112	48	107	7	45	88	5	1.1	198	80.3	17.7	55
32	Kansas 1624	46.6	111	60	133	9	31	88	1	1.0	178	81.6	19.4	56
33	Pioneer 307	46.4	111	75	167	7	18	90	1	1.1	230	83.0	16.7	56

TABLE 7. (Continued)

34	KK-77A	46.0	110	71	158	2	27	86	0	1.0	191	83.0	16.9	56
35	KK-77	46.0	110	58	129	4	38	87	3	1.0	197	81.3	17.1	55
36	Carlson C-33	46.0	110	54	120	8	38	90	6	1.0	199	81.2	18.9	56
37	DeKalb 827	45.8	109	64	142	1	35	89	2	1.0	192	82.5	16.7	54
38	Kansas 20	45.6	109	66	147	5	29	90	1	1.0	190	81.1	17.9	56
39	Funk G-583W	45.5	109	50	111	6	44	91	1	0.9	162	74.4	19.9	54
40	Pioneer 334	45.4	108	58	129	4	38	89	0	1.1	229	80.9	16.8	50
41	Pioneer 332	45.2	108	67	149	4	29	83	2	1.0	184	80.9	18.8	54
42	U. S. 35	45.2	108	54	120	2	44	85	3	1.0	197	82.2	16.4	54
43	Iowealth 28N	45.0	107	43	96	7	50	90	5	1.1	225	82.6	18.7	55
44	DeKalb 816	44.9	107	64	142	5	31	93	3	1.0	202	81.9	17.6	54
45	Iowealth 29A	44.6	106	70	156	4	26	87	6	1.0	190	79.5	17.9	56
46	Missouri 47	44.5	106	37	82	6	57	88	1	1.1	212	81.9	17.7	53
47	Steckley 523	44.4	106	37	82	2	61	89	1	1.0	204	79.2	17.3	56
48	K. I. H. 96	44.3	106	33	73	2	65	87	1	1.1	230	82.4	16.6	55
49	Kansas 1501	44.0	105	48	107	37	15	87	1	1.0	184	78.5	19.7	55
50	Local Hybrid	43.8	105	42	93	45	13	85	1	0.9	166	78.6	21.5	53
51	Hoosier-crost 840	43.7	104	46	102	4	50	92	5	0.9	198	82.5	17.5	53
52	U. S. 44	43.7	104	39	87	3	58	89	0	1.1	228	79.8	18.1	54
53	Funk G-46	43.6	104	42	93	6	52	86	5	1.0	198	80.9	20.6	54
54	Pfister 380	43.5	104	65	144	2	33	85	1	1.0	205	82.2	17.7	54
55	Pfister 5892	43.4	104	64	142	2	34	87	2	1.0	204	82.4	17.2	57
56	Funk G-53	43.2	103	55	122	4	41	93	3	0.9	208	82.6	17.5	54
57	Kansas 2181	43.2	103	50	111	34	16	84	0	1.1	188	74.6	20.1	53
58	Kansas 2232	43.0	103	68	151	28	4	86	0	0.9	164	73.5	20.1	55
59	Pioneer 333	42.5	101	62	138	1	37	92	1	1.1	235	79.4	17.0	53
60	Kansas 2086	42.5	101	53	118	21	26	83	1	1.0	185	76.9	20.6	55
61	Kansas 2216	42.4	101	64	142	15	21	86	0	1.0	181	72.7	20.8	54
62	Midland (C)	42.2	101	44	98	44	12	85	0	0.0	168	78.2	21.5	52
63	Steckley 860	42.1	100	57	127	8	35	90	1	1.0	220	81.1	17.1	53
64	Pride of Saline	41.8	100	41	91	34	25	88	1	1.0	181	72.7	20.1	54
65	Pfister 160	41.6	99	43	96	3	54	90	0	1.0	219	81.1	17.7	54
66	Illinois 960	41.6	99	42	93	10	48	90	1	1.3	269	78.1	17.1	54
67	Pioneer 330	41.0	98	53	118	2	45	91	0	1.1	242	80.0	16.4	49
68	McCurdy 118M	40.7	97	53	118	1	46	84	3	1.0	209	82.9	17.5	54
69	Kansas 2173	39.1	93	58	129	29	13	78	0	0.9	166	75.0	19.7	55
70	Funk G-244	38.1	91	37	82	1	62	88	0	1.2	269	79.7	17.9	52
71	Kansas 2015	36.1	86	39	87	36	25	85	1	0.9	185	74.9	21.4	52
72	Hays Golden	34.7	83	36	80	21	43	82	0	1.0	223	79.5	19.7	54
Ave. of 72 entries		46.2		56		11	33	88	2	1.01	191	80.0	18.6	54.6
Ave. of 4 O. P. varieties		41.9		45		31	24	86	1	0.95	182	77.8	20.6	53.2
Ave. of 68 hybrids		46.5		56		10	34	88	2	1.02	192	80.2	18.5	54.6

[1] Percent of open-pollinated varieties.

TABLE 8. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 2,** COFFEY COUNTY, 1941.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P.1	Total	% of O. P.1	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	Funk G-150	90.24	132	38	84	17	45	95	0	1.9	187	80.5	22.5	53
2	Kansas 1585	85.15	125	72	160	16	12	93	2	1.1	161	83.7	17.1	57
3	Jewett 11	84.14	123	26	58	21	53	92	1	1.7	166	79.0	25.3	49
4	National 134	81.30	119	32	71	22	46	92	2	1.6	172	81.3	22.1	50
	Differences in yield of less than 9.23 bushels an acre are not significant in this test.													
5	Iowealth TX 1	80.54	118	50	111	8	42	95	1	1.5	170	82.6	22.8	51
6	Funk G-149	79.74	117	57	127	5	38	92	2	1.7	201	81.2	17.7	55
7	Reid-Midland	79.65	117	51	113	15	34	95	0	1.5	172	83.3	23.8	50
8	KK-88A	79.35	116	56	124	11	33	93	2	1.5	177	80.5	17.8	54
9	Funk G-88	79.21	116	64	142	9	27	94	3	1.5	178	82.5	20.8	55
10	Illinois 200	78.62	115	63	140	14	23	94	5	1.4	169	83.1	17.3	55
11	Funk G-135	78.59	115	61	136	11	28	93	2	1.5	182	81.4	18.9	55
12	Kansas 2232	78.52	115	57	127	33	10	93	0	1.5	170	76.3	18.2	57
13	Midland (C)	77.78	114	45	100	40	15	94	1	1.3	157	81.1	19.1	56
14	Missouri 8	77.76	114	55	122	15	30	92	1	1.4	166	82.2	19.9	53
15	Local Variety	77.21	113	44	98	36	20	94	1	1.4	149	76.9	21.9	53
16	Funk G-148	77.09	113	64	142	6	30	96	2	1.4	165	80.4	19.5	54
17	Missouri 47	75.77	111	39	87	14	47	91	0	1.5	183	84.0	18.2	52
18	Funk G-147	75.57	111	50	111	14	36	93	5	1.7	207	81.8	18.9	57
19	Kansas 1104	74.59	109	74	164	20	6	95	2	1.3	163	82.9	19.5	54
20	K. I. H. 38	74.16	109	48	107	11	41	93	1	1.4	175	82.4	18.5	55
21	Kansas 1466	73.53	108	61	136	36	3	94	0	1.2	160	82.9	19.2	55
22	Midland (A)	73.16	107	56	124	33	11	92	2	1.2	151	82.3	17.8	56
23	Kansas 1624	72.95	107	62	138	18	20	90	2	1.4	176	81.2	18.2	56
24	Funk G-46	71.35	104	49	109	7	44	89	1	1.6	197	82.4	18.3	55
25	Jewett 6	71.17	104	18	40	54	28	93	1	1.5	155	76.1	28.3	48
26	Carlson C-33	71.03	104	62	138	11	27	90	3	1.5	188	81.5	19.5	52
27	Kansas 3	70.88	104	47	104	41	12	86	0	1.5	169	78.7	19.6	54
28	Kansas 20	70.69	104	69	153	13	18	92	1	1.2	166	83.0	16.9	55
29	Pride of Saline	70.12	103	33	73	40	27	89	1	1.4	169	78.6	20.5	54
30	Kansas 2216	69.74	102	50	111	24	26	92	0	1.4	170	77.4	20.5	52
31	Kansas 2086	69.02	101	44	98	30	26	90	1	1.5	173	76.0	22.9	52
32	Funk G-583W	67.77	99	48	107	14	38	85	2	1.2	145	77.6	20.8	54
33	Funk G-94	67.72	99	80	178	6	14	94	1	1.2	168	82.9	16.9	57
34	Hoosier-crost 840	67.42	99	86	191	5	9	91	1	1.1	159	83.9	16.4	54
35	U. S. 13	67.11	98	75	167	1	24	92	5	1.3	175	81.7	17.2	56

TABLE 8. (Continued)

36	McCurdy 123M	67.07	98	76	169	9	15	92	4	1.2	168	84.1	18.1	54
37	Kelly 374	66.62	98	72	160	6	22	89	3	1.4	183	83.9	19.2	52
38	Kansas 1412	66.51	97	68	151	20	12	87	1	1.3	169	81.1	18.2	56
39	K. I. H. 96	66.42	97	36	80	10	54	83	1	1.8	216	81.9	20.2	52
40	Kansas 1638	66.32	97	64	142	15	21	89	2	1.3	184	82.6	16.8	57
41	McCurdy 124M	66.26	97	65	144	14	21	87	2	1.3	178	83.4	17.2	56
42	DeKalb 827	65.89	96	77	171	7	16	93	0	1.3	175	80.5	17.6	56
43	Mangelsdorf 1001	65.84	96	33	73	29	38	81	2	1.4	157	81.7	25.9	50
44	Steckley 523	65.62	96	38	84	11	51	90	1	1.5	190	81.5	22.5	49
45	Kansas 1501	65.47	96	72	160	20	8	91	0	1.2	166	79.7	17.2	56
46	Iowealth 29A	65.41	96	65	144	10	25	86	2	1.3	178	83.0	18.0	55
47	Pioneer 300	65.28	96	58	129	20	22	96	3	1.2	175	81.9	18.8	54
48	Pioneer 334	65.23	96	42	93	16	42	92	1	1.4	196	79.5	17.8	53
49	McCurdy 118M	65.19	95	65	144	8	27	90	1	1.2	174	83.3	19.0	54
50	Kelly 200	64.97	95	73	162	5	22	88	3	1.3	173	80.6	17.8	54
51	Steckley 860	63.75	93	50	111	21	29	90	1	1.3	185	83.3	18.2	52
52	Steckley 100A	63.28	93	76	169	6	18	90	4	1.2	171	83.0	17.2	56
53	Pfister 5892	62.67	92	82	182	7	11	86	2	1.3	180	83.5	17.8	56
54	KK-77	62.55	92	71	158	9	20	85	2	1.3	175	81.2	17.9	56
55	Kansas 2173	61.78	90	50	111	42	8	82	0	1.3	156	77.6	22.9	52
56	Funk G-53	61.76	90	68	151	6	26	88	1	1.3	181	82.3	17.8	54
57	Pioneer 307	61.27	90	40	89	22	38	90	1	1.6	227	83.4	21.1	52
58	Kansas 2181	61.20	90	63	140	25	12	89	0	1.3	169	76.3	20.0	55
59	Iowealth 28N	61.07	89	43	96	20	37	87	3	1.5	205	81.0	23.1	52
60	Kansas 2015	60.22	88	42	93	18	40	93	0	1.3	166	75.8	26.5	51
61	U. S. 35	59.42	87	64	142	14	22	87	0	1.3	182	82.6	21.9	54
62	Illinois 960	59.24	87	34	76	12	54	87	1	1.7	224	80.1	24.0	50
63	Pioneer 330	58.87	86	59	131	13	28	87	1	1.4	201	81.9	19.9	48
64	U. S. 44	57.96	85	47	104	18	35	85	1	1.3	187	81.0	19.9	52
65	DeKalb 816	57.31	84	53	118	13	34	87	1	1.2	175	80.7	22.9	50
66	Pioneer 332	55.97	82	42	93	21	37	87	2	1.1	170	81.7	20.5	52
67	Pfister 160	53.28	78	48	107	17	35	84	2	1.2	184	80.5	18.2	56
68	Pfister 380	52.06	76	74	164	13	13	83	2	1.2	189	81.6	18.3	53
69	KK-77A	52.04	76	75	167	15	10	78	0	1.2	176	82.2	17.8	53
70	Pioneer 333	51.78	76	48	107	16	36	85	1	1.4	205	75.5	22.1	50
71	Funk G-244	49.11	72	18	40	23	59	80	2	1.4	219	79.5	22.5	20
72	Hays Golden	43.18	63	45	100	30	25	78	0	1.3	203	78.9	25.3	52
Ave. of 72 entries		68.01		55		17	27	90	1	1.38	178	81.0	19.9	53.1
Ave. of 5 O. P. varieties		68.29		45		36	20	89	1	1.32	166	79.6	20.9	54.1
Ave. of 67 hybrids		67.99		56		16	28	90	1	1.38	179	81.2	19.8	53.1

[1] Percent of open-pollinated varieties.

TABLE 9. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 2**, FRANKLIN AND COFFEY COUNTIES, 1941.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O.P.[1]	Total	% of O.P.[1]	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	Funk G-150	73.02	135	47	84	14	39	94	1	1.5	189	81.1	20.8	56
2	Jewett 11	70.32	130	34	61	18	48	91	1	1.4	160	78.8	22.2	66
3	National 134	66.60	123	35	62	15	50	92	2	1.3	172	81.2	21.0	51
4	Kansas 1585	66.02	122	66	118	26	8	87	3	1.0	156	81.8	19.0	55
5	Iowealth TX 1	65.62	122	57	102	6	37	90	1	1.2	164	81.9	21.2	52
6	Funk G-88	65.56	121	74	132	6	20	92	2	1.2	167	81.0	20.7	56
7	Reid-Midland	65.48	121	56	100	16	28	92	0	1.3	174	81.8	22.0	52
8	Funk G-135	65.44	121	64	114	7	29	90	4	1.2	176	80.6	19.2	56
9	KK-88A	65.22	121	60	107	8	32	92	2	1.2	179	80.4	19.0	55
10	Kansas 1104	65.00	120	64	114	26	10	92	2	1.2	160	82.2	19.4	54
11	Missouri 8	64.88	120	52	93	12	36	92	2	1.2	166	80.9	19.8	54
12	Funk G-149	64.27	119	65	116	6	29	94	4	1.4	196	78.8	18.2	56
13	Illinois 200	63.06	117	62	111	11	27	92	6	1.2	178	81.9	17.5	55
14	Funk G-148	62.34	115	64	114	10	26	94	4	1.2	168	77.6	19.6	56
15	Jewett 6	62.28	115	30	54	35	35	90	1	1.2	152	76.6	24.2	50
16	Funk G-147	62.14	115	52	93	14	34	91	6	1.4	210	81.4	18.3	57
17	Kansas 1466	61.52	114	68	121	24	8	92	1	1.1	166	82.2	19.0	56
18	Midland (A)	61.08	113	57	102	30	13	90	2	1.0	153	81.5	19.4	55
19	Kansas 3	60.84	113	52	93	32	16	87	1	1.2	167	78.0	20.2	55
20	Kansas 2232	60.76	113	62	111	30	8	90	0	1.2	167	74.9	19.2	56
21	K. I. H. 38	60.48	112	48	86	9	43	90	3	1.2	186	81.4	18.1	55
22	Missouri 47	60.14	111	38	68	10	52	90	1	1.3	198	83.0	18.0	52
23	Midland (C)	59.99	111	44	79	42	14	90	1	1.1	162	79.6	20.3	54
24	Kansas 1624	59.78	111	61	109	14	25	89	2	1.2	177	81.4	18.8	56
25	McCurdy 123M	58.68	109	73	130	6	21	92	4	1.0	171	83.4	17.7	56
26	Carlson C-33	58.52	108	58	104	10	32	90	4	1.2	194	81.4	19.0	54
27	Kansas 20	58.14	108	68	121	9	23	91	1	1.1	178	82.0	17.4	55
28	U. S. 13	57.96	107	70	125	4	26	92	6	1.2	181	82.3	17.6	55
29	Kelly 374	57.76	107	63	112	4	33	89	3	1.2	187	83.4	18.2	54
30	Funk G-46	57.48	106	45	80	7	48	88	3	1.3	198	81.6	19.4	54
31	Funk G-94	57.46	106	72	129	6	22	92	2	1.1	176	82.2	17.5	56
32	Kansas 1412	57.40	106	65	116	14	21	88	1	1.2	176	81.0	18.2	56
33	Mangelsdorf 1001	57.27	106	36	64	24	40	81	2	1.2	165	82.0	22.8	53
34	Kansas 1638	57.01	106	69	123	10	21	86	4	1.2	180	81.4	17.4	52

TABLE 9. (Continued)

35	Kelly 200	56.88	105	69	123	5	26	89	4	1.2	183	81.4	18.0	55
36	McCurdy 124M	56.83	105	58	104	9	33	87	3	1.2	177	82.8	18.0	56
37	Pioneer 300	56.79	105	61	109	15	24	92	2	1.1	182	82.4	18.4	54
38	Funk G-583W	56.64	105	49	87	10	41	88	2	1.0	154	76.0	20.4	54
39	Kansas 2216	56.07	104	57	102	20	23	89	0	1.2	176	75.0	20.6	53
40	Pride of Saline	55.96	104	37	66	37	26	88	1	1.2	175	75.6	20.3	54
41	Steckley 100A	55.89	104	70	125	5	25	90	4	1.1	180	82.4	17.4	56
42	DeKalb 827	55.84	103	70	125	4	26	91	1	1.2	184	81.5	17.2	55
43	Kansas 2086	55.76	103	48	86	26	26	86	1	1.2	179	76.4	21.8	54
44	Hoosier-crost 840	55.56	103	66	118	4	30	92	3	1.0	178	83.2	17.0	54
45	K. I. H. 96	55.36	103	34	61	6	60	85	1	1.4	223	82.2	18.4	54
46	Pioneer 334	55.32	102	50	89	10	40	90	1	1.2	212	80.2	17.3	52
47	Steckley 523	55.01	102	38	68	6	56	90	1	1.2	197	80.4	19.9	52
48	Iowealth 29A	55.00	102	68	121	7	25	86	4	1.2	184	81.2	18.0	56
49	Kansas 1501	54.74	101	60	107	28	12	89	1	1.1	175	79.1	18.4	56
50	KK-77	54.28	101	64	114	7	29	86	2	1.2	186	81.2	17.5	56
51	Pioneer 307	53.84	100	58	104	14	28	90	1	1.4	228	83.2	18.9	54
52	Pfister 5892	53.04	98	73	130	4	23	86	2	1.2	192	83.0	17.5	56
53	Iowealth 28N	53.04	98	43	77	13	44	88	4	1.3	215	81.8	20.9	54
54	McCurdy 118M	52.94	98	59	105	4	37	87	2	1.1	192	83.1	18.2	54
55	Steckley 860	52.92	98	53	95	15	32	90	1	1.2	202	82.2	17.6	52
56	Funk G-53	52.48	97	62	111	5	33	90	2	1.1	195	82.4	17.6	54
57	U. S. 35	52.31	97	59	105	8	33	84	2	1.2	190	82.4	19.2	54
58	Kansas 2181	52.20	97	56	100	30	14	86	0	1.2	178	75.4	20.0	54
59	DeKalb 816	51.10	95	58	104	9	33	90	2	1.1	188	81.3	20.2	52
60	U. S. 44	50.83	94	43	77	10	47	87	1	1.2	208	80.4	19.0	53
61	Pioneer 332	50.58	94	54	96	13	33	85	2	1.0	177	81.3	19.6	53
62	Kansas 2173	50.44	93	54	96	36	10	80	0	1.1	161	76.3	21.3	54
63	Illinois 960	50.42	93	38	68	11	51	88	1	1.5	246	79.1	20.6	52
64	Pioneer 330	49.94	92	56	100	8	36	89	1	1.2	222	81.0	18.2	49
65	KK-77A	49.02	91	73	130	8	19	82	0	1.1	184	82.6	17.4	54
66	Kansas 2015	48.16	89	40	71	27	33	89	1	1.1	176	75.4	24.0	52
67	Pfister 380	47.78	88	70	125	7	23	84	2	1.1	197	81.9	18.0	54
68	Pfister 160	47.44	88	46	82	10	44	87	1	1.1	202	80.8	18.0	55
69	Pioneer 333	47.14	87	55	98	8	37	88	1	1.2	220	77.4	19.6	52
70	Funk G-244	43.60	81	28	50	12	60	84	1	1.3	244	79.6	20.2	36
71	Hays Golden	38.94	72	40	71	26	34	80	0	1.2	213	79.2	22.5	53
Ave. of 71 entries		57.04		56		14	30	89	2	1.19	185	80.6	19.3	54.0
Ave. of 4 O. P. varieties		53.99		56		34	22	87	1	1.12	176	79.0	20.6	53.8
Ave. of 67 hybrids		57.22		56		13	31	89	2	1.20	185	80.7	19.2	54.1

[1] Percent of open-pollinated varieties.

TABLE 10. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 2**, TWO-YEAR AVERAGE, 1940-1941, FRANKLIN COUNTY.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P.1	Total	% of O. P.1	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	Jewett 11	41.24	135	55	89	18	27	92	1	0.9	222	76.9	17.4	56
2	Pioneer 332	41.12	135	80	129	3	17	88	1	1.0	208	83.2	16.8	56
3	Kansas 1104	40.56	133	74	119	18	8	89	1	0.9	216	81.1	17.2	58
4	Kansas 1466	39.58	130	80	129	12	8	88	1	0.9	211	80.6	16.6	58
5	U. S. 13	39.50	130	81	131	4	15	92	4	1.0	232	82.9	16.0	56
6	Hoosier-crost 840	39.50	130	72	116	2	26	90	2	0.9	228	83.6	15.8	54
7	Illinois 200	39.46	130	80	129	4	16	92	4	1.0	230	79.4	16.0	58
8	U. S. 35	39.32	129	75	121	2	23	88	3	1.0	232	83.2	15.3	56
9	Pfister 380	39.22	129	81	131	1	18	90	1	1.0	240	82.7	15.8	56
10	KK-77	38.82	127	78	126	2	20	84	2	1.0	230	81.4	15.6	56
11	Carlson C-33	38.20	125	75	121	5	20	91	4	0.9	234	82.0	16.6	57
12	Kelly 374	38.11	125	75	121	2	23	91	2	1.0	251	81.8	15.4	56
13	Missouri 8	37.96	125	68	110	7	25	92	1	0.8	226	80.6	18.1	56
14	K. I. H. 38	37.58	123	72	116	3	25	88	3	1.0	246	81.6	15.5	58
15	Pioneer 307	37.34	123	84	135	6	10	89	1	1.0	280	82.2	15.4	56
16	Funk G-94	37.30	122	80	129	4	16	89	2	1.0	249	81.5	16.0	56
17	K. I. H. 96	37.14	122	64	103	2	34	90	1	1.0	269	82.8	15.3	56
18	Kelly 200	36.79	121	78	126	6	16	88	4	0.9	236	79.8	16.2	58
19	Pfister 5892	36.73	121	81	131	1	18	85	1	1.0	242	81.6	15.6	58
20	Pioneer 334	36.54	120	74	119	4	22	91	1	1.0	281	81.5	15.4	52
21	Kansas 1412	36.48	120	74	119	8	18	88	1	1.0	242	80.2	16.4	58
22	Pfister 160	36.44	120	62	100	8	30	91	0	1.0	256	83.5	16.1	57
23	Kansas 1501	35.98	118	68	110	23	9	88	1	1.0	229	78.3	17.8	58
24	Kansas 2181	35.80	118	67	108	24	9	87	0	1.0	232	74.6	18.6	56
25	Iowealth 28N	35.79	117	65	105	7	28	92	3	1.0	256	81.4	17.0	58

TABLE 10. (Continued)

26	Missouri 47	35.56	117	61	98	7	32	90	1	1.0	251	82.3	16.7	56
27	Kansas 3	35.46	116	67	108	22	11	88	1	0.9	236	75.2	18.1	57
28	Funk G-135	35.07	115	82	132	2	16	88	3	0.9	261	77.0	17.5	58
29	Pioneer 333	34.81	114	78	126	2	20	92	1	1.0	293	79.8	15.3	54
30	Funk G-88	34.68	114	91	147	2	7	91	1	0.8	240	79.0	18.5	58
31	Iowealth 29A	34.60	114	81	131	5	14	88	3	1.0	251	79.2	16.0	57
32	DeKalb 816	34.59	114	82	132	2	16	88	2	0.9	250	81.2	15.8	57
33	Kansas 2232	34.57	113	76	123	22	2	90	0	0.8	216	74.6	18.0	57
34	Midland (A)	34.54	113	68	110	24	8	88	1	0.8	215	79.2	19.2	56
35	National 134	34.00	112	64	103	7	29	89	1	0.8	260	75.6	17.4	54
36	Illinois 960	33.10	109	64	103	7	29	92	1	1.1	308	79.8	15.4	56
37	U. S. 44	32.86	108	66	106	2	32	89	1	1.0	280	81.5	16.4	56
38	Funk G-244	32.25	106	63	102	3	34	88	1	1.0	300	80.7	16.0	55
39	Pioneer 330	31.47	103	74	119	2	24	88	0	1.0	306	80.2	15.1	49
40	Hays Golden	30.41	100	55	89	17	28	82	0	1.0	273	80.6	17.3	56
41	Kansas 2015	30.32	100	64	103	21	15	86	1	0.8	226	75.2	18.6	56
42	Kansas 2173	29.32	96	74	119	19	7	84	1	0.8	220	74.8	18.1	56
43	Midland (C)	28.94	95	59	95	35	6	87	0	0.8	247	76.4	19.2	55
44	Pride of Saline	27.93	92	66	106	20	14	86	1	0.9	257	73.2	17.9	56
Ave. of 44 entries		35.84		72		9	19	89	1	0.94	247	79.9	16.7	56.2
Ave. of 4 O. P. varieties		30.46		62		24	14	86	1	0.88	248	77.4	18.4	55.8
Ave. of 40 hybrids		36.38		73		8	19	89	2	0.95	247	80.1	16.5	56.2

[1] Percent of open-pollinated varieties.

TABLE 11. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 2**, TWO-YEAR AVERAGE, 1940-1941, FRANKLIN COUNTY, 1940, AND FRANKLIN AND COFFEY COUNTIES, 1941.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P.[1]	Total	% of O. P.[1]	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	Jewett 11	55.54	134	45	79	19	36	92	1	1.2	203	77.6	20.0	63
2	Illinois 200	52.52	127	75	132	7	18	92	4	1.1	210	80.6	16.4	57
3	Kansas 1104	51.90	125	75	132	18	7	91	1	1.0	198	81.7	18.0	56
4	Missouri 8	51.23	124	64	112	9	27	92	1	1.0	206	81.2	18.7	55
5	Kansas 1466	50.90	123	73	128	20	7	90	0	1.0	194	81.3	17.5	57
6	K. I. H. 38	49.77	120	64	112	6	30	89	2	1.1	222	81.9	16.5	57
7	National 134	49.76	120	53	93	12	35	90	1	1.1	231	77.5	19.0	53
8	Funk G-135	49.58	120	75	132	5	20	90	3	1.1	235	78.5	18.0	57
9	Funk G-88	49.53	120	82	144	4	14	92	2	1.0	219	80.2	19.3	57
10	Kansas 2232	49.22	119	69	121	26	5	91	0	1.1	201	75.2	18.0	57
11	Carlson C-33	49.14	119	71	125	7	22	91	4	1.1	219	81.8	17.4	55
12	Missouri 47	48.97	118	54	95	9	37	90	1	1.1	228	82.9	17.2	54
13	Hoosier-crost 840	48.81	118	77	135	3	20	91	2	1.0	205	83.7	16.0	55
14	U. S. 13	48.71	118	79	139	3	18	92	5	1.1	213	82.5	16.4	56
15	Kelly 374	47.61	115	74	130	4	22	90	3	1.1	228	82.5	16.7	55
16	Funk G-94	47.44	115	80	140	5	15	91	2	1.0	222	82.0	16.3	56
17	Midland (A)	47.42	115	64	112	27	9	89	1	0.9	194	80.2	18.8	56
18	Kansas 3	47.26	114	61	107	28	11	87	0	1.1	214	76.4	18.6	56
19	K. I. H. 96	46.90	113	55	96	4	41	87	1	1.3	251	82.5	16.9	55
20	KK-77	46.73	113	76	133	4	20	84	2	1.1	211	81.4	16.3	56
21	Kansas 1412	46.49	112	72	126	12	16	87	1	1.1	218	80.5	17.0	58
22	Kelly 200	46.18	112	76	133	6	18	88	3	1.0	215	80.1	16.7	56
23	Pioneer 334	46.10	111	64	112	8	28	91	1	1.1	253	80.8	16.2	53
24	Pioneer 332	46.07	111	67	118	9	24	87	1	1.0	195	82.7	18.0	55
25	U. S. 35	46.02	111	71	125	6	23	86	2	1.1	215	83.0	17.5	55

TABLE 11. (Continued)

26	Kansas 1501	45.81	111	69	121	22	9	89	0	1.0	208	78.8	17.6	58
27	Pfister 5892	45.38	110	81	142	3	16	85	1	1.1	221	82.3	16.3	57
28	Pioneer 307	45.31	110	70	123	11	19	89	1	1.2	262	82.6	17.3	55
29	Midland (C)	45.22	109	54	95	37	9	89	0	0.9	217	77.9	19.2	55
30	Iowealth 29A	44.87	108	76	133	7	17	87	3	1.1	227	80.5	16.7	56
31	Kansas 2181	44.26	107	66	116	24	10	88	0	1.1	211	75.0	19.0	56
32	Iowealth 28N	44.22	107	58	102	11	31	90	3	1.1	239	81.2	19.0	56
33	Pfister 380	43.64	106	79	139	5	16	87	1	1.0	223	82.3	16.7	55
34	DeKalb 816	42.16	102	72	126	6	22	87	2	1.0	225	81.0	18.2	55
35	Pfister 160	42.05	102	58	102	11	31	89	1	1.0	232	82.5	16.8	57
36	Pride of Saline	41.99	102	54	95	27	19	87	1	1.0	228	75.0	18.8	55
37	Illinois 960	41.82	101	54	95	9	37	90	1	1.3	280	79.9	18.3	54
38	U. S. 44	41.23	100	60	105	7	33	88	1	1.1	249	81.3	17.5	55
39	Pioneer 330	40.60	98	70	123	5	25	88	0	1.1	271	80.8	16.7	49
40	Pioneer 333	40.47	98	68	119	6	25	89	1	1.2	264	78.4	17.6	53
41	Kansas 2015	40.29	97	56	98	20	24	89	0	1.0	206	75.4	21.2	54
42	Kansas 2173	40.14	97	66	116	27	7	84	0	0.9	198	75.8	19.7	55
43	Funk G-244	37.87	92	48	84	10	42	86	1	1.2	273	80.3	18.1	43
44	Hays Golden	34.67	84	52	91	21	27	81	0	1.1	250	80.0	20.0	54
Ave. of 44 entries		45.95		67		12	21	89	1	1.07	225	79.2	17.8	55.3
Ave. of 3 O. P. varieties		41.36		57		25	18	86	1	1.00	224	78.4	19.2	55.0
Ave. of 41 hybrids		46.29		67		11	22	89	1	1.08	225	79.3	17.7	55.3

[1] Percent of open-pollinated varieties.

TABLE 12. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 2,** THREE-YEAR AVERAGE, 1939-1941, FRANKLIN COUNTY.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O.P.[1]	Total	% of O.P.[1]	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	Jewett 11	42.73	154	69	93	12	19	92	2	0.9	253	78.5	14.5	56
2	Funk G-94	38.24	138	86	116	3	11	89	7	0.9	273	82.7	13.8	57
3	Kansas 1412	37.65	136	82	111	5	13	86	4	0.9	262	81.1	14.3	58
4	Illinois 200	37.05	133	86	116	3	11	84	8	1.0	270	79.6	13.6	58
5	Pioneer 307	37.03	133	89	120	4	7	88	4	1.0	317	82.0	14.1	57
6	Iowealth 28N	36.76	132	76	103	4	20	91	6	1.0	299	82.0	14.3	57
7	U. S. 35	36.47	131	82	111	2	16	89	6	0.9	301	83.5	13.1	56
8	Missouri 47	35.85	129	74	100	4	22	89	6	0.9	280	83.2	14.2	56
9	KK-77	35.83	129	85	115	1	14	85	6	1.0	293	80.8	13.6	57
10	U. S. 13	35.38	127	87	118	3	10	91	7	0.9	319	82.3	13.7	56
11	Kansas 2015	35.02	126	75	101	14	11	89	1	0.9	249	75.2	16.6	57
12	Illinois 960	34.75	125	75	101	5	20	90	6	1.0	325	81.6	13.2	56
13	Missouri 8	34.66	125	79	107	4	17	91	3	0.8	282	80.0	15.9	56
14	U. S. 44	32.83	118	77	104	1	22	87	7	0.9	303	82.2	13.8	57
15	Funk G-244	32.30	116	75	101	2	23	88	3	1.0	379	80.7	13.4	54
16	Midland (A)	30.58	110	78	105	16	6	87	2	0.7	273	79.6	17.1	57
17	Funk G-135	30.11	108	88	119	1	11	90	4	0.9	346	75.9	16.1	59
18	Hays Golden	28.69	103	70	95	11	19	86	1	0.9	347	80.5	14.7	56
19	Pride of Saline	26.69	96	76	103	14	10	85	3	0.8	293	75.8	14.7	57
20	Midland (C)	25.16	91	72	97	23	5	86	2	0.7	309	76.7	18.6	55
Ave. of 20 entries		34.19		79		7	14	88	4	0.90	299	80.2	14.7	56.6
Ave. of 4 O. P. varieties		27.78		74		16	10	86	2	0.78	306	78.2	16.3	56.2
Ave. of 16 hybrids		35.79		80		4	16	89	5	0.93	297	80.7	14.3	56.7

[1] Percent of open-pollinated varieties.

single crosses on adapted varieties, (2) double crosses or multiple hybrids involving early and late maturing lines, or (3) a mechanical mixture of two or more adapted hybrids differing in maturity.

Since one cannot change the parentage of the hybrids now commercially available, it appears that the Kansas farmer must utilize the third alternative. Limited evidence is available to show that more satisfactory results will be obtained if a field is planted to two or more different hybrids of varying maturity instead of only one. Since one cannot predict whether the early or late planted corn will prove to be the best, it is recommended that the date of planting be spread over several weeks.

ANNOUNCEMENT OF 1942 TESTS.

The general plan of the 1941 Kansas Corn Performance Test has proved satisfactory. The test will be continued in 1942 on practically the same basis. Those who are interested in entering hybrids or open-pollinated varieties in the 1942 tests should apply before February 15 to the Kansas Corn Performance Test Committee, Department of Agropomy, Kansas State College, Manhattan, Kansas, for further information.

TABLE 13. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 3,** BOURBON COUNTY, 1941.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Firing	Stand	Dropped ears	Ears per plant	Bar size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P.1	Total	% of O. P.1	Root	Stalk								
		Bu.		%		%	%	%	%	%	No.	No.	%	%	Lbs.
1	Jewett 6	30.04	169	14	30	47	39	22	72	4	1.0	232	80.2	20.2	50
2	Jewett 12	26.56	149	39	85	24	37	28	66	3	1.1	220	79.5	19.7	51
	Differences in yield of less than 5.02 bushels an acre are not significant in this test.														
3	McCurdy 123M	24.49	138	72	157	5	23	28	74	5	1.1	294	81.9	16.2	56
4	Kansas 2232	22.52	127	61	133	24	15	30	79	0	1.2	275	74.4	18.7	52
5	Pioneer 332	22.28	125	81	176	5	14	30	72	1	1.1	305	81.7	16.2	54
6	Midland (A)	22.11	124	58	126	36	6	30	74	2	1.2	269	80.5	18.7	53
7	KK-88A	22.02	124	57	124	18	25	28	68	1	1.1	286	80.4	18.2	54
8	Funk G-150	21.78	122	59	128	17	24	32	73	1	1.1	305	78.7	18.9	56
9	Midland (C)	21.56	121	51	111	41	8	28	72	3	1.3	252	82.2	19.4	55
10	Funk G-103	21.43	121	51	111	12	37	28	70	2	0.9	354	80.5	16.6	56
11	Kansas 1466	21.29	120	72	157	21	7	32	66	2	1.1	288	81.4	16.4	56
12	U. S. 13	21.26	120	82	178	1	17	30	77	4	1.1	336	81.1	16.2	54
13	Kansas 1624	21.19	119	47	102	25	28	32	68	1	1.0	312	81.7	17.1	55
14	Kansas 1549	21.11	119	64	139	24	12	28	70	0	1.2	291	81.6	17.3	57
15	Kansas 12	20.91	118	52	113	30	18	30	66	2	1.1	284	81.8	18.3	55
16	Kansas 1501	20.86	117	58	126	29	13	28	71	1	1.1	299	79.2	17.5	57
17	Kansas 1104	20.80	117	45	98	51	4	28	59	0	1.0	284	81.2	17.3	54
18	Iowealth TX 1	20.33	114	41	89	14	45	28	69	1	1.1	316	82.0	17.5	52
19	Kansas 2182	20.17	113	52	113	39	9	32	78	1	1.4	276	78.8	18.2	54
20	Kansas 1638	20.13	113	71	154	16	13	32	69	3	1.1	316	81.8	16.3	54
21	Pioneer 307	19.92	112	85	185	6	9	38	73	1	1.0	380	81.7	16.2	53
22	K. I. H. 41	19.89	112	64	139	12	24	28	64	5	1.0	321	78.0	16.8	56
23	Richbred 1002	19.79	111	49	107	23	28	32	61	0	1.2	266	80.5	17.3	54
24	Funk G-149	19.70	111	71	154	12	17	30	80	2	1.3	316	79.4	17.4	58
25	Funk G-135	19.62	110	61	133	9	30	30	67	2	1.1	311	81.2	18.7	54
26	K. I. H. 38	19.54	110	54	117	5	41	30	64	2	1.0	348	82.1	16.4	52
27	Kansas 1585	19.10	107	43	93	35	22	25	61	3	1.2	273	81.0	18.1	54
28	Funk G-148	19.05	107	57	124	25	18	28	68	4	1.2	286	78.4	17.4	56
29	Reid-Midland	18.94	107	49	107	18	33	28	74	2	1.2	321	78.9	18.6	52
30	Funk G-88	18.79	106	63	137	8	29	22	65	7	1.1	289	79.6	19.7	56

TABLE 13. (Continued)

31	Greene (WY)	18.62	105	30	65	61	9	22	72	0	1.5	238	79.3	23.4	50
32	Illinois 200	18.42	104	59	128	13	28	32	69	3	1.1	322	79.0	17.2	55
33	Steckley S770	18.22	102	64	139	7	29	25	56	4	1.0	326	81.0	16.4	53
34	Kansas 5	18.09	102	37	80	51	12	22	57	1	1.1	275	75.2	18.2	53
35	Kansas 2086	17.84	100	44	96	11	45	28	52	7	1.0	258	76.9	18.6	56
36	Standard 913	17.79	100	61	133	13	26	32	58	1	1.0	313	80.2	16.6	54
37	Kansas 20	17.66	99	60	130	13	27	32	60	1	1.1	313	81.0	16.1	52
38	K. I. H. 26	17.64	99	55	120	6	39	32	62	3	1.0	349	80.3	16.4	52
39	Kansas 1412	17.51	98	50	109	14	36	35	63	3	1.1	318	81.4	18.2	54
40	K. I. H. 96	17.45	98	43	93	7	50	32	64	2	1.0	365	80.0	17.0	54
41	Pioneer 333	17.26	97	78	170	2	20	38	64	2	0.9	391	77.7	17.5	48
42	Pioneer 300	17.10	96	79	172	4	17	40	70	1	1.0	375	78.9	18.5	50
43	U. S. 35	16.99	96	71	154	2	27	38	69	0	1.1	372	81.0	17.3	50
44	Kansas 2216	16.97	95	31	67	37	32	38	60	2	1.2	268	74.8	19.4	52
45	Local Hybrid	16.72	94	84	183	8	8	40	69	0	1.0	396	77.7	16.2	50
46	Pioneer 334	16.45	93	61	133	6	33	32	61	2	0.9	393	78.7	16.5	48
47	Pride of Saline	16.37	92	39	85	36	25	30	64	4	1.2	307	75.2	19.1	54
48	Funk G-46	16.31	92	45	98	17	38	28	58	4	1.0	343	80.7	17.2	54
49	DeKalb 816	16.19	91	67	146	1	32	38	68	6	1.1	386	80.7	17.8	51
50	Greene (YW)	16.01	90	35	76	59	6	22	62	2	1.4	249	76.8	19.7	50
51	Missouri 8	15.55	87	54	117	23	23	30	65	2	1.3	304	79.1	20.5	50
52	Kansas 17	15.14	85	51	111	20	29	22	66	1	1.2	347	79.8	18.3	54
53	Funk G-94	15.07	85	66	143	6	28	32	60	4	1.1	352	79.6	17.1	53
54	Steckley 100A	14.98	84	72	157	5	23	35	57	4	1.1	362	81.8	16.4	51
55	Kansas 3	14.51	82	42	91	40	18	38	61	2	1.1	337	72.8	18.4	53
56	Steckley 523	14.04	79	56	122	7	37	33	65	5	1.1	418	76.7	16.4	51
57	Pioneer 330	13.76	77	55	120	3	42	42	63	3	1.0	445	77.2	16.2	44
58	Kansas 2173	12.78	72	56	122	21	23	30	60	3	1.3	322	75.0	18.5	52
59	Standard 813	12.67	71	55	120	15	30	30	57	2	1.1	389	79.4	16.4	52
60	Hays Golden	11.07	62	37	80	25	38	38	52	4	1.3	363	81.3	17.9	54
Ave. of 60 entries		18.71		56		19	25	31	66	2	1.12	318	79.5	17.7	53.1
Ave. of 4 O. P. var.		17.78		46		34	20	32	66	3	1.25	298	79.8	18.8	54.0
Ave. of 56 hybrids		18.77		57		18	25	31	66	2	1.11	320	79.5	17.7	53.0

[1] Percent of open-pollinated varieties.

TABLE 14. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 3,** TWO-YEAR AVERAGE, 1940-1941, BOURBON COUNTY.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O.P.[1]	Total	% of O.P.[1]	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	Kansas 2232	27.59	131	78	118	12	10	84	0	1.0	309	75.2	16.1	55
2	Kansas 1501	27.21	130	77	117	16	7	78	1	1.0	324	79.8	15.2	58
3	Richbred 1002	26.00	124	70	106	12	18	75	1	1.0	315	80.0	15.2	56
4	Kansas 1466	25.72	122	85	129	10	5	74	1	1.0	338	83.2	14.8	58
5	Kansas 1104	25.32	121	70	106	27	3	70	0	1.0	314	81.7	15.4	56
6	Pioneer 332	25.00	119	88	133	4	8	78	1	1.0	330	81.0	14.7	56
7	Midland (C)	24.78	118	71	108	22	7	79	2	1.0	300	81.2	16.4	57
8	Funk G-135	24.74	118	76	115	8	16	78	2	1.0	351	80.5	16.0	56
9	U. S. 13	23.96	114	89	135	1	10	82	2	1.0	374	81.2	15.0	54
10	Funk G-88	22.91	109	80	121	4	16	78	4	1.0	350	80.8	16.4	57
11	Illinois 200	22.58	108	79	120	6	15	77	2	1.0	338	79.7	14.8	56
12	Kansas 5	21.92	104	62	94	30	8	68	1	1.0	328	76.8	16.0	54
13	Kansas 1412	21.80	104	72	109	8	20	74	2	1.0	354	81.1	16.0	56
14	Pioneer 334	21.46	102	77	117	4	19	72	1	0.9	404	79.7	14.8	51
15	Pride of Saline	21.44	102	64	97	20	16	75	2	1.0	338	76.4	16.2	56
16	Kansas 3	21.28	101	66	100	22	12	72	1	1.0	334	74.8	16.0	55
17	U. S. 35	21.22	101	83	126	1	16	76	1	1.0	396	80.7	15.4	52
18	Kansas 1549	21.16	101	79	120	13	8	78	1	1.0	406	80.3	15.2	58
19	Pioneer 333	20.40	97	88	133	1	11	76	2	0.8	424	79.3	15.6	50
20	Pioneer 307	20.02	95	90	136	4	6	80	1	0.9	424	81.2	14.9	54
21	Funk G-94	19.13	91	82	124	3	15	70	2	1.0	394	79.4	15.2	54
22	Pioneer 330	18.95	90	76	115	2	22	72	2	1.0	444	79.0	14.8	49
23	Kansas 2173	17.52	83	76	115	12	12	72	2	1.0	364	75.8	16.5	54
24	DeKalb 816	17.30	82	81	123	1	18	74	4	1.0	434	79.6	16.0	53
25	Hays Golden	16.78	80	64	97	14	22	68	2	1.0	390	81.0	15.5	55
26	Missouri 8	15.78	75	74	112	12	14	76	1	1.0	440	79.4	16.9	53
Ave. of 26 entries		22.00		77		10	13	75	2	0.98	366	79.6	15.6	54.7
Ave. of 3 O. P. varieties		21.00		66		19	15	74	2	1.00	343	79.5	16.0	56.0
Ave. of 23 hybrids		22.13		78		9	13	75	2	0.98	369	79.6	15.5	54.6

[1] Percent of open-pollinated varieties.

TABLE 15. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 3,** TWO-YEAR AVERAGE, 1940-1941, BOURBON AND NEOSHO COUNTIES, 1940, AND BOURBON COUNTY, 1941.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P.[1]	Total	% of O. P.[1]	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	Kansas 2232	32.84	128	75	117	15	10	82	1	1.1	282	75.9	16.0	55
2	Kansas 1501	31.66	123	74	116	18	8	74	1	1.0	291	80.6	15.0	58
3	U. S. 13	31.60	123	89	139	1	10	80	3	1.0	327	82.0	14.6	55
4	Richbred 1002	31.39	122	70	109	12	18	72	1	1.0	278	81.2	15.0	56
5	U. S. 35	31.12	121	82	128	2	16	78	1	1.0	344	81.8	15.0	54
6	Funk G-88	30.84	120	80	125	4	16	78	4	1.0	301	80.9	16.2	58
7	Kansas 1466	30.50	119	84	131	12	4	70	1	1.0	298	82.6	14.7	58
8	Kansas 1104	30.30	118	69	108	28	3	70	0	0.9	285	82.6	15.2	56
9	Pioneer 332	30.21	118	88	138	4	8	77	1	1.0	304	82.1	14.5	56
10	Kansas 3	29.19	114	67	105	22	11	72	1	1.0	302	75.4	15.9	56
11	Kansas 5	29.10	113	62	97	30	8	69	2	1.0	288	77.4	15.5	54
12	Illinois 200	29.04	113	77	120	8	15	72	4	1.0	307	80.2	14.8	56
13	Funk G-135	28.96	113	74	116	8	18	74	2	1.0	314	80.4	15.8	56
14	Midland (C)	28.73	112	70	109	23	7	76	2	1.0	268	82.2	16.2	56
15	Kansas 1549	28.72	112	78	122	14	8	77	1	1.0	336	81.2	15.0	58
16	Pride of Saline	27.24	106	60	94	24	16	72	3	1.0	300	74.9	16.0	56
17	Pioneer 333	26.34	103	87	136	2	11	72	2	0.9	374	79.6	15.2	51
18	Funk G-94	26.28	102	80	125	5	15	68	4	1.0	342	80.5	15.0	54
19	Kansas 1412	26.22	102	72	112	8	20	71	2	1.0	318	81.5	15.7	56
20	Pioneer 334	25.72	100	77	120	5	18	72	2	0.9	370	80.3	14.5	51
21	Pioneer 307	25.34	99	90	141	4	6	78	1	0.9	383	81.8	14.6	54
22	DeKalb 816	24.98	97	81	127	2	17	72	4	1.0	370	80.6	15.4	54
23	Pioneer 330	24.36	95	76	119	2	22	70	2	1.0	400	79.8	14.5	49
24	Kansas 2173	23.84	93	76	119	12	12	70	2	1.1	318	71.6	16.2	54
25	Missouri 8	23.52	92	71	111	15	14	74	2	1.0	355	80.2	16.7	53
26	Hays Golden	20.94	82	62	97	16	22	65	2	1.1	354	81.4	15.4	55
Ave. of 26 entries		28.04		76		11	13	73	2	1.00	323	80.0	15.3	55.0
Ave. of 3 O. P. varieties		25.64		64		21	15	71	2	1.03	307	79.5	15.9	55.7
Ave. of 23 hybrids		28.35		77		10	13	74	2	0.99	326	80.0	15.3	54.9

[1] Percent of open-pollinated varieties.

TABLE 16. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 4**, CLOUD COUNTY, 1939.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Firing	Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P.[1]	Total	% of O. P.[1]	Root	Stalk								
		Bu.		%		%	%	%	%	%	No.	No.	%	%	Lbs.
1	Kansas G	23.20	210	96	103	1	3	20	79	1	0.9	318	77.1	11.0	58
2	Nebraska 238	23.10	209	95	102	0	5	22	72	4	0.9	347	71.9	9.8	59
3	Pioneer 307	22.67	205	98	105	0	2	20	88	5	1.0	386	75.2	10.0	60
4	U. S. 35	22.03	199	97	104	1	2	16	84	4	1.0	368	72.4	10.0	60
5	Iowa 939	21.92	198	95	102	0	5	26	83	11	0.8	326	76.6	10.4	58
6	Iowealth 30	21.17	192	94	101	0	6	26	82	8	0.8	325	74.4	10.9	61
7	Pioneer 324	21.03	190	94	101	0	6	22	78	13	1.0	356	73.9	10.0	60
8	Pioneer 313	20.94	190	99	106	0	1	18	89	2	0.8	347	72.3	10.2	60
9	Funk G-212	20.78	188	96	103	1	3	26	82	9	0.8	337	77.0	10.2	61
10	National 132	20.51	186	96	103	0	4	22	80	4	0.9	347	73.2	10.5	57
11	Kansas B	20.49	185	90	97	0	10	24	81	7	0.9	348	77.4	11.0	62
	Differences in yield of less than 2.94 bushels an acre are not significant in this test.														
12	Kansas 1237	20.21	183	93	100	0	7	28	81	2	0.9	344	73.1	10.8	62
13	Kansas 1250	20.17	183	95	102	0	5	16	88	7	0.9	390	75.5	10.2	59
14	Pioneer 322	19.99	181	96	103	0	4	24	90	9	0.9	376	70.7	9.7	60
15	Kansas M	19.82	179	99	106	0	1	20	75	2	1.0	349	70.5	11.1	61
16	DeKalb 891	19.15	173	99	106	0	1	20	85	8	0.9	369	72.7	10.5	60
17	Kansas E	19.04	172	97	104	0	3	20	78	3	0.8	348	78.7	13.2	58
18	Kansas C	17.95	162	95	102	1	4	18	75	8	0.8	347	75.5	11.7	62
19	Missouri 47	17.91	162	93	100	0	7	26	82	3	0.8	365	73.3	11.3	59
20	Pioneer 315	17.73	160	90	97	0	10	36	81	2	0.9	415	74.1	10.1	59
21	Iowealth CI	17.63	160	98	105	0	2	30	88	8	0.8	412	73.0	10.3	58
22	Kansas 1513	16.85	152	99	106	0	1	32	82	1	0.8	364	71.5	12.5	62
23	Illinois 200	16.69	151	100	108	0	0	20	88	5	0.8	408	69.1	10.3	60
24	Iowa 3816	16.66	151	98	105	0	2	32	79	9	0.8	371	71.3	10.1	58
25	Iowealth 53	15.97	145	97	104	0	3	34	86	5	0.8	399	70.2	10.3	58
26	National 125E	15.82	143	98	105	0	2	28	81	9	0.8	410	73.7	9.8	61
27	Funk G-235	15.49	140	93	100	0	7	32	86	7	0.8	406	70.8	10.4	58
28	Iowa 13	15.43	140	95	102	0	5	34	92	17	1.0	524	68.3	9.8	56
29	Freed	15.42	140	92	99	1	7	28	83	2	0.8	383	69.0	10.8	58
30	Funk C-62	14.79	134	91	98	0	9	38	80	12	0.7	376	72.7	11.0	61

TABLE 16. (Continued)

31	U. S. 13	14.38	130	98	105	1	1	20	88	5	0.8	444	66.5	10.3	58
32	Funk G-32	14.31	130	98	105	0	2	30	87	7	0.9	473	65.8	9.8	59
33	Illinois 960	14.02	127	95	102	0	5	34	84	5	0.8	454	68.3	10.2	61
34	U. S. 44	14.02	127	91	98	0	9	34	83	9	0.7	407	74.1	9.8	60
35	Kansas 2181	13.82	125	96	103	1	3	34	80	1	0.7	343	69.3	15.1	60
36	Funk G-135	13.72	124	93	100	0	7	34	83	4	0.7	391	73.2	14.5	58
37	DeKalb 816	13.59	123	99	106	0	1	30	86	8	0.7	457	71.8	11.1	59
38	DeKalb 899	13.47	122	93	100	3	4	30	75	5	0.5	227	70.7	15.5	56
39	Hays Golden	13.31	120	94	101	0	6	30	76	2	0.7	421	75.0	10.0	60
40	Kansas 2107	13.22	120	100	108	0	0	34	88	1	0.7	410	66.2	11.4	62
41	Iowa 3395	12.92	117	93	100	0	7	40	83	14	0.8	519	73.8	9.8	58
42	Kansas 1296	12.47	113	93	100	2	5	36	82	4	0.8	471	67.4	10.5	61
43	DeKalb 825	12.34	112	98	105	0	2	24	82	11	0.7	414	69.5	10.0	60
44	Kansas 2174	12.16	110	94	101	0	6	36	77	0	0.8	395	62.9	13.0	52
45	Kansas 2026	12.16	110	96	103	0	4	40	83	1	0.7	399	67.5	14.1	59
46	Iowealth 28N	11.91	108	94	101	0	6	32	84	4	0.7	465	74.5	10.4	60
47	Kansas A	11.69	106	85	91	3	12	30	80	2	0.7	440	73.5	12.4	59
48	XX No. 1	11.29	102	94	101	0	6	34	70	12	0.8	464	69.6	10.7	57
49	Kansas D	11.15	101	95	102	0	5	22	74	1	0.7	433	71.7	9.7	61
50	Kansas J	10.55	95	90	97	0	10	36	78	0	0.5	370	71.4	11.0	62
51	Kansas 1510	10.46	95	97	104	0	3	22	81	0	0.5	408	73.2	10.5	61
52	Missouri 8	9.80	89	98	105	0	2	30	86	1	0.6	429	66.3	12.6	59
53	Kansas 2157	9.50	86	95	102	0	5	32	76	4	0.5	322	60.9	14.1	59
54	Pride of Saline	9.48	86	94	101	0	6	28	84	3	0.6	421	60.7	12.5	59
55	Kansas F	9.40	85	95	102	0	5	26	80	1	0.6	458	66.7	11.7	61
56	Local variety	8.87	80	92	99	2	6	32	91	8	0.5	453	64.5	10.4	55
57	Kansas 2015	8.80	80	95	102	0	5	30	92	0	0.6	473	60.7	15.8	59
58	DeKalb 919W	8.24	75	97	104	0	3	34	85	4	0.5	493	69.0	11.3	58
59	Midland (A)	8.16	74	92	99	2	6	34	85	4	0.5	397	67.8	16.4	54
60	Moews-Lowe 830	7.67	69	96	103	0	4	26	84	4	0.7	596	59.8	10.9	60
Ave. of 60 entries		15.29		95	102	0	5	28	82	5	0.76	400	71.1	11.2	59.2
Ave. of 5 O. P. var.		11.05		93		1	6	30	84	4	0.62	415	67.4	12.0	57.2
Ave. of 55 hybrids		15.68		95		0	4	28	82	5	0.78	399	71.5	11.2	59.4

[1] Percent of open-pollinated varieties.

TABLE 17. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 5**, MARION AND SUMNER COUNTIES, 1940.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P.[1]	Total	% of O. P.[1]	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	Pioneer 332	34.76	143	73	143	4	23	92	6	1.0	262	83.6	15.3	56
2	Kansas 17	33.15	136	56	110	20	24	89	1	1.2	303	79.0	15.6	56
3	Kansas 1296	32.91	135	76	149	4	20	93	8	1.0	276	79.0	15.9	58
4	Kansas 1430	32.78	135	76	149	12	12	87	6	1.0	261	82.1	15.5	56
5	DeKalb 847	32.60	134	78	153	4	18	90	7	0.9	263	82.8	15.8	56
6	Iowa 939	32.14	132	60	118	2	38	88	4	1.0	290	81.0	15.5	54
7	Pioneer 330	31.84	131	79	155	4	17	87	4	1.0	282	81.6	15.6	52
8	Kansas 1501	30.92	127	72	141	14	14	89	2	1.0	270	76.6	15.7	59
9	U. S. 35	30.46	125	84	165	0	16	92	5	1.0	296	79.8	16.5	54
10	Kansas 4	30.15	124	50	98	40	10	90	1	1.0	302	75.0	15.5	56
11	Kansas 11	30.14	124	66	129	20	14	85	2	0.9	250	80.8	15.1	56
12	Kansas 1549	29.57	122	77	151	13	10	92	4	0.8	284	80.2	15.0	56
13	Kansas 9	29.56	122	60	118	22	18	82	2	1.0	264	79.9	15.7	56
14	DeKalb Exp. 93	29.37	121	81	159	3	16	89	8	1.0	310	79.2	16.6	55
15	Pioneer 307	29.18	120	81	159	7	12	87	3	1.1	348	80.8	15.2	55
16	Illinois 200	29.00	119	84	165	4	12	90	8	1.0	304	76.8	16.4	55
17	Funk G-32	28.78	118	86	169	3	11	86	6	1.1	325	80.1	15.9	54
18	Missouri 47	28.76	118	52	102	3	45	90	4	1.0	316	78.0	15.4	54
19	Kansas 1466	28.54	117	74	145	17	9	92	2	1.0	300	75.7	14.9	56
20	U. S. 13	28.48	117	82	161	2	16	88	9	1.0	304	79.3	16.4	54
21	DeKalb Exp. 94	28.47	117	84	165	2	14	89	6	1.0	296	78.2	16.6	56
22	Kansas 1412	28.47	117	78	153	9	13	86	3	0.9	282	80.0	15.8	56
23	Jewett 6	28.45	117	54	106	14	32	91	4	1.0	319	76.6	15.6	54
24	Pioneer 324	28.21	116	56	110	7	37	84	4	1.0	308	80.0	16.2	53
25	Hays Golden	28.17	116	47	92	35	18	85	2	1.0	302	80.6	15.4	56
26	Missouri 8	27.46	113	60	118	12	28	88	4	1.0	305	79.6	16.0	54
27	KK-88	27.43	113	89	175	1	10	82	7	1.0	291	78.6	16.3	55
28	Freed	27.37	113	36	71	44	20	92	2	1.0	309	76.9	15.7	55
29	Kansas 1514	27.21	112	83	163	6	11	93	3	0.8	304	79.0	16.0	58
30	Iowealth 29A	26.78	110	79	155	9	12	83	6	1.0	306	79.4	16.0	56

TABLE 17. (Continued)

31	Kansas 7	26.70	110	59	116	20	21	87	2	1.0	308	78.9	15.7	55
32	Nebraska 238	26.60	109	64	125	10	26	81	2	1.0	297	78.8	15.5	52
33	Kansas 15	26.47	109	75	147	9	16	86	4	1.0	319	76.0	15.3	56
34	U. S. 44	26.36	108	71	139	4	25	88	2	1.0	316	79.4	16.5	55
35	Kansas 13	26.22	108	68	133	17	15	87	2	1.0	321	77.3	16.0	56
36	Funk G-94	25.95	107	80	157	1	19	87	9	1.0	314	78.8	16.8	50
37	Moews-Lowe 830	25.84	106	84	165	2	14	83	8	1.0	318	78.0	15.8	55
38	Midland (A)	25.31	104	60	118	25	15	88	2	0.8	296	78.6	15.7	56
39	DeKalb 816	24.94	103	90	176	1	9	81	11	0.9	296	75.7	16.8	56
40	Kansas 1513	24.41	100	74	145	12	14	96	4	1.0	372	74.2	14.8	56
41	Moews-Lowe 514	24.24	100	77	151	4	19	86	6	1.0	343	78.9	16.6	54
42	Funk G-46	24.22	100	72	141	4	24	90	7	1.0	351	75.7	15.5	56
43	DeKalb 899	23.70	97	80	157	4	16	86	4	1.0	343	74.2	15.9	56
44	National 129	23.34	96	81	159	3	16	84	7	1.0	334	77.6	16.4	54
45	DeKalb 888	23.32	96	86	169	3	11	83	6	1.0	349	77.6	16.2	56
46	Kansas 1104	22.68	93	80	157	9	11	92	2	0.9	362	76.7	15.8	54
47	Iowealth 30A	22.49	92	70	137	7	23	87	6	1.0	381	76.0	16.2	55
48	Local Variety	22.07	91	57	112	24	19	93	2	0.7	290	76.2	16.3	54
49	Kansas 2026	21.62	90	74	145	4	22	94	2	0.8	357	71.9	15.4	54
50	Pride of Saline	18.66	77	57	112	20	23	88	4	0.8	364	71.4	16.6	53
Ave. of 50 entries		27.53		72		10	18	88	5	0.97	309	78.2	15.9	55.0
Ave. of 5 O. P. varieties		24.32		51		30	19	89	2	0.86	312	76.7	15.9	54.8
Ave. of 45 hybrids		27.88		74		8	18	88	5	0.98	309	78.4	15.8	55.1

[1] Percent of open-pollinated varieties.

TABLE 18. RESULTS, KANSAS CORN PERFORMANCE TEST, **DISTRICT 5**, TWO-YEAR AVERAGE, 1939-1940, HARVEY AND SUMNER COUNTIES, 1939, AND MARION AND SUMNER COUNTIES, 1940.

Rank in yield	Hybrid or variety	Yield		Erect plants		Lodged plants		Stand	Dropped ears	Ears per plant	Ear size / Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P.[1]	Total	% of O. P.[1]	Root	Stalk							
		Bu.		%		%	%	%	%	No.	No.	%	%	Lbs.
1	Kansas 1296	28.74	129	83	134	3	14	88	11	0.9	325	79.0	12.8	60
2	U. S. 35	27.88	125	86	139	1	13	88	9	1.0	342	79.8	12.6	56
3	Kansas 1412	27.42	123	84	135	6	10	84	8	0.8	312	80.0	12.4	58
4	U. S. 13	26.92	121	87	140	1	12	88	18	0.9	318	79.8	13.0	56
5	Illinois 200	26.41	118	86	139	4	10	87	12	0.9	352	77.0	12.8	56
6	Iowa 939	25.78	116	68	110	4	28	80	12	0.9	388	79.4	12.4	54
7	Kansas 1501	25.69	115	80	129	8	12	84	2	0.8	369	75.7	12.2	60
8	Hays Golden	25.18	113	58	94	22	20	82	2	0.9	340	79.4	8.2	57
9	Funk G-32	24.93	112	88	142	3	9	82	12	1.0	374	78.6	12.8	55
10	Missouri 47	24.85	111	64	103	4	32	84	8	0.9	385	79.1	12.4	56
11	U. S. 44	24.44	110	73	118	3	24	87	4	0.9	380	79.9	12.9	56
12	Missouri 8	24.31	109	70	113	8	22	86	6	0.8	371	78.5	12.6	56
13	Pioneer 307	24.21	109	84	135	6	10	83	6	1.0	434	80.6	12.4	54
14	Freed	23.69	106	51	82	30	19	87	2	0.9	360	76.6	17.8	55
15	Moews-Lowe 830	23.67	106	88	142	1	11	85	14	0.9	424	77.4	14.1	56
16	Pioneer 324	22.87	103	63	102	6	31	79	8	0.9	396	79.2	13.2	53
17	Kansas 2026	22.86	103	81	131	4	15	91	2	0.8	378	74.2	12.4	56
18	Nebraska 238	22.14	99	69	111	12	19	72	7	1.0	375	78.2	12.4	52
19	DeKalb 899	22.07	99	84	135	3	13	84	7	0.9	406	75.4	13.3	57
20	Midland (A)	21.77	98	69	111	17	14	86	5	0.6	452	74.6	12.6	56
21	Pride of Saline	18.53	83	70	113	13	17	87	5	0.7	414	72.0	13.5	54
Ave. of 21 entries		24.49		25		8	17	84	8	0.88	376	77.8	12.8	55.9
Ave. of 4 O. P. varieties		22.29		38		21	17	86	4	0.78	392	75.7	13.0	55.5
Ave. of 17 hybrids		25.01		21		4	17	84	9	0.90	372	78.3	12.7	55.9

[1] Percent of open-pollinated varieties.

KANSAS COOPERATIVE CORN STRIP TESTS

Strip tests of corn varieties and hybrids were conducted by the Department of Agronomy of Kansas State College in cooperation with county agricultural agents, vocational teachers, and farmers. Seed for these tests was assembled and distributed by the Department of Agronomy through the Seed Distribution project. The tests were planted and harvested by the farmer cooperator and county agent or vocational teacher. Most of these tests were visited before harvest by a representative of the Department of Agronomy for the purpose of taking notes and observing the reliability of the test.

The entries in these tests were planted in four-row plots of sufficient length to secure reliable areas for harvest. The two inside rows, of sufficient length to make one thirty-fifth or one seventieth of an acre, were harvested for yield data. Where the corn was well dried at harvest, field weights were used for yield calculations. When the moisture content varied, moisture samples were retained and reweighed after the moisture content became uniform. Yields on a few of the tests were calculated on a shelled corn basis, using 56 pounds per bushel. In most cases the yields were calculated on an ear corn basis, using 70 pounds per bushel. Seed of standard varieties was obtained from growers of certified seed. The hybrids included in the tests were nominated by the commercial producers and experiment stations entering them. The policy is to include only those hybrids in cooperative tests which have previously shown superiority in the performance tests.

RESULTS IN 1941 AND IN 1940-1941

In the spring of 1941, 88 corn variety strip tests were located in 49 counties. The yield and rank of the varieties and hybrids from 49 of these tests are reported in Tables 19 and 20. Reports were secured from other tests that could not be included in the averages because yields of some varieties were missing. Reports were not secured on about 30 tests because of failure due to floods, inability to harvest, lack of uniformity, or other causes. Two-year average yields and ranking are given in Tables 19 and 20 for those varieties and hybrids which have been included in the same district in both 1940 and 1941. Two entries with equal yields were given the same rank. Since the plots in these tests were not replicated, yields from the tests in a district were averaged to increase the reliability of the mean. Response of different entries to climatic variations makes the average yield for two-years more reliable than yields for one year.

YIELDS IN EASTERN KANSAS

The average yield and rank of the entries in cooperative strip tests located in the three eastern districts in 1941 and for

(Continued on page 46)

TABLE 19. COOPERATIVE STRIP TESTS, EASTERN KANSAS, 1941, AND TWO-YEAR AVERAGE, 1940-1941.

Variety or hybrid	1941 results						2-year averages, 1940-1941					
	Dist. 1 28 tests		Dist. 2 7 tests		Dist. 3 5 tests		Dist. 1 51 tests		Dist. 2 13 tests		Dist. 3 11 tests	
	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank
	Bu.		Bu.		Bu.		Bu.		Bu.		Bu.	
Jewett 11	56.1	1	37.9	1	26.8	1	52.9	1	46.5	1	38.5	1
Funk G-94	51.6	2	29.4	11	24.6	4	45.5	5	38.9	7	35.1	2
DeKalb 816	51.5	3	.....	....	.....	..	45.3	3	.....	..	.....	..
Illinois 200	50.8	4	30.3	8	24.5	6	.....	..	.....	..	.....	..
K. I. H. 38	50.5	5	31.8	6	22.6	10	.....	..	.....	..	.....	..
Kansas 1104	50.3	6	32.9	4	25.2	2	.....	..	.....	..	.....	..
U. S. 13	50.0	7	33.6	3	21.6	13	45.1	4	42.3	2	33.7	6
National 134	49.8	8	.....	..	22.7	8	48.1	2	.....	..	34.4	4
Kansas 1466	49.3	9	34.0	2	21.9	12	.....	..	.....	..	.....	..
Kansas 3	49.2	10	31.4	7	20.8	15	.....	..	.....	..	.....	..
U. S. 35	49.0	11	29.7	10	21.5	14	43.1	7	41.5	3	34.2	5
KK-77	48.7	12	26.2	20	.....	..	.....	..	.....	..	.....	..
Missouri 47	48.3	13	28.7	15	19.0	18	44.3	6	40.5	4	30.4	9
Illinois 960	47.6	14	26.5	19	.....	..	.....	..	.....	..	.....	..
Pioneer 307	46.6	15	28.5	17	.....	....	42.7	8	.....	..	.....	..
U. S. 44	45.7	16	28.7	15	.....	..	.....	..	.....	..	.....	..
Reid Yellow Dent	45.3	17	.....	....	.....	....	38.0	10	.....	..	.....	..
Pride of Saline	44.8	18	32.5	5	18.6	19	41.3	9	39.5	6	28.0	10
Hays Golden	38.3	19	27.3	18	16.1	20	33.9	11	34.2	10	26.2	11
Pioneer 332	.....	....	.....	....	24.6	4	.....	....	.....	..	34.6	3
Midland (C)	.....	....	.....	....	22.7	8	.....	....	.....	..	32.7	8
Missouri 8	.....	....	29.2	13	20.6	16	.....	....	38.6	8	32.9	7
Funk G-88	.....	....	.....	....	23.8	7	.....	....	.....	..	.....	..
Moews-Lowe 523	.....	....	26.2	20	.....	..	.....	....	.....	..	.....	..
Pfister 380	.....	....	29.9	9	.....	..	.....	....	.....	..	.....	..
Pioneer 334	.....	....	.....	....	20.0	17	.....	....	.....	..	.....	..
Richbred 1002	.....	....	.....	....	22.1	11	.....	....	.....	..	.....	..
Iowealth 28N	.....	....	28.9	14	.....	....	.....	....	39.8	5	.....	..
Hendriks Cross L	.....	....	.....	....	25.2	2	.....	....	.....	..	.....	..
Midland (A)	.....	....	29.3	12	.....	....	.....	....	37.5	9	.....	..

TABLE 20. COOPERATIVE STRIP TESTS, CENTRAL AND WESTERN KANSAS, 1941, AND TWO-YEAR AVERAGE, 1940-1941.

Variety or hybrid	1941 results						2-year averages, 1940-1941					
	Dist. 4 4 tests		Dist. 5 4 tests		Dist. 6 1 test		Dist. 4 8 tests		Dist. 5 10 tests		Dist. 6 3 tests	
	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank
	Bu.		Bu.		Bu.		Bu.		Bu.		Bu.	
DeKalb 827	37.6	1	.....	..	.....	..	28.5	1	.....	..	.....	..
Kansas 1466	36.8	2	43.8	3	.....	..	.....	..	.....	..	.....	..
Funk G-212	36.8	2	.....	..	.....	..	.....	..	.....	..	.....	..
Illinois 200	36.0	4	40.2	8	54.1	1	.....	..	.....	..	.....	..
Kansas 1412	35.4	5	42.9	4	54.1	1	.....	..	.....	..	.....	..
U. S. 13	35.0	6	44.6	2	49.4	4	25.7	5	34.6	2	38.4	2
National 132	34.7	7	.....	..	40.0	10	26.8	3	.....	..	33.2	4
Kansas 11	34.6	8	41.5	6	47.1	6	.....	..	.....	..	40.7	1
Pioneer 307	33.5	9	.....	..	.....	..	27.0	2	.....	..	.....	..
U. S. 35	33.2	10	42.9	4	44.7	7	26.8	3	35.2	1	.....	..
Pride of Saline	32.9	11	38.2	12	49.4	4	24.8	7	31.8	5	37.8	3
Iowealth 30	31.1	12	.....	....	40.0	10	25.0	6	.....	..	.....	..
Hays Golden	28.5	13	36.9	13	37.6	12	22.6	8	27.6	6	30.1	5
Iowa 939	26.0	14	30.8	14	42.4	8	21.8	9	.....	..	30.1	5
Nebraska 238	17.9	15	.....	....	.....	....	19.1	10	.....	..	.....	..
Midland (A)	.....	....	41.1	7	.....	....	.....	....	32.0	4	.....	..
Pioneer 332	.....	....	49.2	1	.....	....	.....	....	.....	..	.....	..
Kansas 13	.....	....	.....	..	51.8	3	.....	....	.....	..	.....	..
Kansas 1549	.....	....	38.9	10	.....	....	.....	....	.....	..	.....	..
Pioneer 330	.....	....	38.3	11	40.0	10	.....	....	32.2	3	.....	..
K. I. H. 38	.....	....	40.2	8	.....	....	.....	....	.....	..	.....	..

the two-year period 1940-1941 are given in Table 19. This table includes the results from 40 tests conducted in eastern Kansas in 1941 and 75 tests conducted over the two-year period 1940-1941. Information on lodging, insect and disease resistance and other similar characters can be obtained from the results for the same hybrid reported in the corn performance tests. Hybrids entered in the strip tests have proved to be good in previous performance tests. This selection is probably responsible for the small range in yields. The difference in yield between the second and the eleventh highest yielding entry in district 1 was 2.6 bushels; district 2, 4.6 bushels and district 3, 3.1 bushels. It is doubtful if any of these differences are significant. Jewett 11 ranked first in yield in districts 1, 2 and 3 in 1941 and for the two-year period. Unfortunately Jewett 11 lodges considerably. Some hybrids that made a high yield in all three eastern districts in 1941 were: Funk G-94, Illinois 200, K. I. H. 38, Kansas 1104, U. S. 13 and Kansas 1466. The comparative yield of some hybrids varies in different years. The yield of U. S. 35 was comparatively low in 1941 but averaged well for the two-year period 1940-1941.

YIELDS IN CENTRAL AND WESTERN KANSAS

Districts 4 and 5 in Central Kansas, and districts 6 and 7 in western Kansas do not usually produce as high yields of corn as do the three eastern districts. Some of the hybrids that made a high average yield in 1941 for central Kansas were: Kansas 1466, U. S. 13, Kansas 1412, Kansas 11, U. S. 35, and Illinois 200.

KANSAS EXPERIMENT STATIONS TESTS

The Department of Agronomy, Kansas Agricultural Experiment Station, in cooperation with the Division of Cereal Crops and Diseases, United States Department of Agriculture, has been working for a number of years on the production of corn hybrids suitable for Kansas conditions.

Hybrid seed corn is produced by crossing selected inbred lines. These inbred lines are the "building materials" of the corn breeder. The first requisite of a hybrid corn program, therefore, is to develop inbred lines. These lines are obtained by self-pollinating the corn plant through several generations. Self-pollination is accomplished by applying pollen from a plant to its own silks. Experience has shown that a hybrid corn program requires the production of a large number of inbred lines. To accomplish this, from 10 to 20 thousand self-pollinations are made at Manhattan each year.

Inbred lines of corn are of little value in themselves, for they are inferior to open-pollinated varibties in vigor and yield. When two unrelated inbred lines are crossed, however, the vigor is restored. The better hybrid combinations among selected inbred lines give substantial increases in yield over the better varieties.

The hundreds of crosses made at the experiment station must be compared carefully before any can be recommended for general planting. In the Kansas hybrid corn program the characters given consideration are resistance to lodging, drouth, diseases, and insects: and yield, suckers, plant and ear height, ear drop, ear size, maturity, shelling percentage, and quality. About 800 different hybrids are compared each year in over 9,000 plots planted in over 100 different locations. The Kansas corn testing program is shown in figure 1 on page 5.

The Kansas corn project compares new inbred lines in top crosses with an open-pollinated variety. The top cross test is an inexpensive way of determining what lines possess the most promising heredity. The superior-performing lines are next combined and tested in single crosses. Valuable double cross combinations can be predicted from these single cross performance data.

New experimental hybrids are tested first in preliminary trials at five locations. Outstanding combinations are then compared in "advanced tests" at experiment fields and branch stations, The most promising hybrids are then entered in the Kansas Corn Performance Test and Cooperative Strip Tests in order to obtain more information on the adaption of specific hybrids to local conditions.

When a hybrid has been thoroughly tested and its desirability ascertained, the first phase in the commercial production of hybrid corn is the increasing of the inbred lines. The second phase is that of crossing the inbred lines into single crosses. These single crosses must then be combined into double cross seed for the production of hybrid corn. After the program has been started, however, all of these various phases may be carried on simultaneously.

Anyone desiring more information on hybrid corn may obtain free copies of Kansas Circular 196, entitled "Hybrid Corn in Kansas" by writing to the Department of Agronomy, Kansas State College, Manhattan, Kansas.