

# 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

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## KANSAS CORN TESTS, 1940



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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, maturity, shelling percentage, and test weight.

3. The Kansas Corn Performance test was added to the Kansas Corn Testing program in order to increase hybrid corn testing facilities. Two test fields were located in each of the five districts; one on bottom land and one on upland in the three eastern districts and both on bottom land in each central Kansas district. Each field contained 50 to 80 entries, replicated five times. The yield of the entries in these tests is reported on a shelled corn basis, corrected to 15.6 percent moisture. Significant differences in yield calculated by standard methods are shown in the tables.

4. The test fields differed greatly in fertility, topography,

heat, and rainfall. Twenty-four entries were compared in all four districts in 1940. The following hybrids yielded above the average of all entries in these eight fields containing 40 replications: U.S. 35, Mo. 47, Ill. 200, U. S. 13, Funk G-94, Pioneer 332, DeKalb Exp. 94, Pioneer 307, Kans. 1466, Pioneer 330, and Kans. 1501. Hays Golden variety ranked fifteenth and Pride of Saline twenty-second. The yield of both of these varieties was below that of the average of all entries.

5. Records made over a two-year period are much more reliable than results obtained in only one season. Two-year averages (1939 and 1940) on 21 to 25 different entries were obtained only in districts 1, 2, and 5. The following hybrids ranked first and second in yield: District 1, Funk G-94 and U. S. 35; District 2, Jewett 11 and Kans. 2015; District 5, Kans. 1296 and U. S. 35. Two-year results are available on only ten entries compared in all three districts. The following five hybrids were outstanding in performance: U. S. 35, U. S. 13, Mo. 47, Pioneer 307, and U. S. 44.

6. The results given in Tables 3 to 20 should be used to select corn hybrids for planting in 1941. 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.

7. Seasonal conditions vary from year to year resulting in differences in response of corn hybrids and varieties. Limited evidence is available to show that 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.

8. 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.

9. The names and addresses of the commercial companies 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.

10. The Kansas Hybrid Corn breeding program has developed many promising inbred lines and hybrids. Some of these hybrids appear to be superior to the varieties and hybrids now available for farm planting. No hybrids developed by the Kansas Agricultural Experiment Station are available for commercial distribution, but seed of some of the most promising combinations was produced for testing in 1941. This seed will be sold in peck or half-bushel lots to anyone interested in comparing them with their own local corn in adjacent plantings.

# KANSAS CORN TESTS, 1940

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 H. D. Hollebeak<sup>2</sup>

## INTRODUCTION

Corn, one of the principal grain crops, has been studied by the Kansas Agricultural Experiment Station since 1888. These studies have determined the open-pollinated varieties best adapted to the various sections of the state. The possibility of improving corn production through the use of hybrids has been given considerable attention during the last few years. The development of hybrids from Kansas inbred lines has been in progress since 1923. Hybrids produced at the Kansas Station and hybrids from out-of-state have been tested by the Kansas

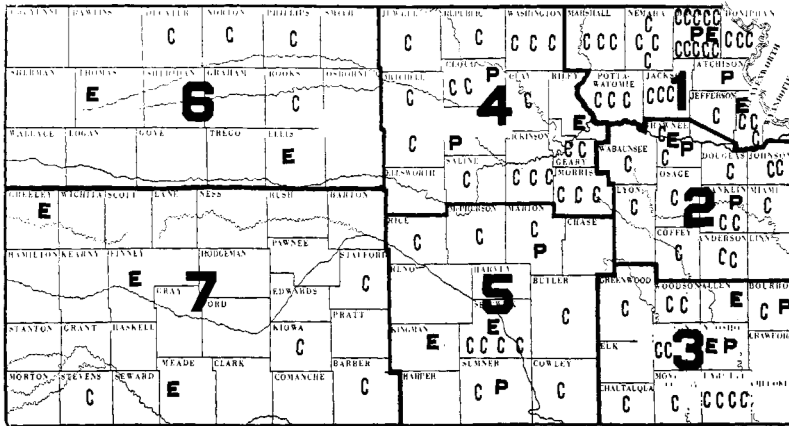


Fig. 1. Kansas Corn Testing program, 1940.  
 Kansas Corn Districts 1, 2, 3, 4, 5, 6, and 7.  
 E - Experiment Station Tests, 13 locations.  
 P - Kansas Corn Performance Tests, 10 locations.  
 C - Cooperative Corn Strip Tests, 95 locations.

Station since 1926, and in cooperative strip tests since 1928. The continued improvement of corn hybrids has made it desirable to increase constantly the hybrids and variety testing program in the state.

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

### 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. The program also permits trials in more localities than is possible on the agricultural experiment stations. The more promising corn hybrids released by federal, state, and commercial agencies were compared with the best locally adapted varieties in these tests.

#### PLAN AND LOCATION OF TESTS

For the purpose of the tests, the eastern half of the state was divided into five 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. In districts 4 and 5, both tests were on bottom land. The 1940 Kansas Corn Performance Tests were made possible by the cooperation of the following men on whose farms the tests were conducted: Atchison County, C. W. Steinweden, Route 2, Atchison; Brown County, Homer Jacobson, Hiawatha; Franklin County, E. L. Baumann, Wellsville; Shawnee County, Clyde Rogers, Rossville; Bourbon County, Charles Schlagel, Route 3, Fort Scott; Neosho County, R. A. Butler, Erie; Cloud County, Merle Magaw, Ames; Ottawa County, E. G. Maholland, Minneapolis; Marion County, W. R. Smith, Peabody, and Sumner County, S. M. Barner, Belle Plaine.

Each entry was included in both tests within the district, and in at least two districts. The entries in the tests are shown in Table 1. From 50 to 80 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

Each entry was given a code number by which it was known throughout the season. The original designation was not given to the entries until all of the results had been computed. This procedure eliminated either conscious or unconscious discrimination.

TABLE I. ENTRIES IN THE KANSAS CORN TEST, 1940.

Trade name	Code No. in test	Color of corn	Entered by	Performance record in Table No.
HYBRIDS				
Carlson C-33	112	Y	Carlson Hybrid Corn Co., Audubon, Ia.	8, 9, 10
Crow 701W	41	W	Crow Hybrid Corn Co., Milford, Ind.	3, 4, 5, 8, 9, 10
DeKalb Exp. 93	42	Y	DeKalb Agr. Assoc., DeKalb, Ill.	12, 13, 14, 15, 16, 17
94	43	Y	DeKalb Agr. Assoc., DeKalb, Ill.	3, 4, 5, 8, 9, 10, 12, 13, 14, 15, 16, 17
816	44	Y	DeKalb Agr. Assoc., DeKalb, Ill.	3, 4, 5, 6, 8, 9, 10, 12, 13, 14, 15, 16, 17, 19
817	45	Y	DeKalb Agr. Assoc., DeKalb, Ill.	3, 4, 5, 8, 9, 10
827	46	Y	DeKalb Agr. Assoc., DeKalb, Ill.	3, 4, 5, 19
847	47	Y	DeKalb Agr. Assoc., DeKalb, Ill.	8, 9, 10, 12, 13, 14, 15, 16, 17
888	48	Y	DeKalb Agr. Assoc., DeKalb, Ill.	3, 4, 5, 8, 9, 10, 12, 13, 14, 15, 16, 17, 19
891	....	....	DeKalb Agr. Assoc., DeKalb, Ill.	19, 20
899	49	Y	DeKalb Agr. Assoc., DeKalb, Ill.	3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
922W	50	W	DeKalb Agr. Assoc., DeKalb, Ill.	3, 4, 5, 8, 9, 10
Funk G-32	51	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 4, 5, 15, 16, 17, 18
G-46	52	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 4, 5, 15, 16, 17
G-56	53	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 4, 5, 8, 9, 10, 11
G-88	54	Y	Funk Bros. Seed Co., Bloomington, Ill.	8, 9, 10, 12, 13, 14
G-94	55	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19
G-135	56	Y	Funk Bros. Seed Co., Bloomington, Ill.	8, 9, 10, 11, 12, 13, 14
G-143	57	Y	Funk Bros. Seed Co., Bloomington, Ill.	8, 9, 10, 12, 13, 14
G-212	58	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 4, 5, 6
G-244	59	Y	Funk Bros. Seed Co., Bloomington, Ill.	3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14
Hoosier-crost 840	60	Y	Edw. J. Funk & Sons, Kentland, Ind.	3, 4, 5, 8, 9, 10
1005	61	Y	Edw. J. Funk & Sons, Kentland, Ind.	3, 4, 5, 8, 9, 10
Illinois 200	62	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
960	63	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 7, 8, 9, 10, 11
Iowa 939	64	Y	Hamilton Co. Farms Co., Aurora, Neb.	3, 4, 5, 6, 7, 15, 16, 17, 18, 19, 20
Iowearth C. I.	....	Y	Michael-Leonard Seed Co., Sioux City, Iowa	19
25B	66	Y	Michael-Leonard Seed Co., Sioux City, Iowa	3, 4, 5
28N	67	Y	Michael-Leonard Seed Co., Sioux City, Iowa	8, 9, 10, 11, 12, 13, 14, 19
29A	68	Y	Michael-Leonard Seed Co., Sioux City, Iowa	8, 9, 10, 15, 16, 17, 19
30	69	Y	Michael-Leonard Seed Co., Sioux City, Iowa	3, 4, 5, 6, 19, 20
30A	70	Y	Michael-Leonard Seed Co., Sioux City, Iowa	12, 13, 14, 15, 16, 17
Jewett 6	71	Y	Swinger Hybrid Corn Co., Marshall Mo., and Homer Jewett, Butler, Mo.	15, 16, 17
11	72	Y	Swinger Hybrid Corn Co., Marshall Mo., and Homer Jewett, Butler, Mo.	3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 19

KANSAS CORN TESTS, 1940

TABLE 1. (Continued)

Kansas	1104	1	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 8, 9, 10, 12, 13, 14, 15, 16, 17
	1220	2	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 12, 13, 14
	1296	3	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17, 18
	1335	4	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	8, 9, 10, 12, 13, 14
	1356A	5	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5
	1412	6	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
	1430	7	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17
	1466	8	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 8, 9, 10, 12, 13, 14, 15, 16, 17
	1501	9	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18
	1513	10	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
	1514	11	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
	1515	12	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	12, 13, 14
	1522	21	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 12, 13, 14
	1538	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	19	
	1549	13	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 12, 13, 14, 15, 16, 17
	1557	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	19	
	2015	14	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	8, 9, 10, 11
	2026	15	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17, 18
	2113	16	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 12, 13, 14
	2173	17	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 12, 13, 14
	2181	18	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 12, 13, 14
	2199	....	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	19
	2212	....	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	19
	2231	19	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 12, 13, 14
	2232	20	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 8, 9, 10, 12, 13, 14
	3	23	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17
	4	24	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	8, 9, 10, 12, 13, 14
	5	25	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17
	7	26	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17
	9	27	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	12, 13, 14
	10	28	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17, 19
	11	29	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17
	13	30	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17
	15	31	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17
	17	32	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	15, 16, 17
K. I. H.	38	79	Y	Kan. Indep. Hybrid Corn Prod. Assn., Manhattan	3, 4, 5, 8, 9, 10
	96	80	Y	Kan. Indep. Hybrid Corn Prod. Assn., Manhattan	3, 4, 5, 8, 9, 10
K. K.	66	73	Y	Kellogg-Kelly Seed Co., St. Joseph, Mo.	3, 4, 5
	77	74	Y	Kellogg-Kelly Seed Co., St. Joseph, Mo.	3, 4, 5, 6, 8, 9, 10, 11
	88	75	Y	Kellogg-Kelly Seed Co., St. Joseph, Mo.	12, 13, 14, 15, 16, 17
	99	76	Y	Kellogg-Kelly Seed Co., St. Joseph, Mo.	3, 4, 5, 8, 9, 10
Kelly	200	77	Y	Kelly Seed Co., Peoria, Ill.	3, 4, 5, 8, 9, 10
	374	78	Y	Kelly Seed Co., Peoria, Ill.	3, 4, 5, 8, 9, 10
McCurdy	118M	81	Y	W. O. McCurdy & Sons, Fremont, Iowa	3, 4, 5
Midland T. C.	116	Y	J. A. Hendricks, Garnett, Kan.	8, 9, 10	
Missouri	8	82	Y	Mo. Corn Growers Assoc., Columbia, Mo.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
	47	83	Y	Mo. Corn Growers Assoc., Columbia, Mo.	3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

TABLE 1. (Continued)

Moews-Lowe 13	84	Y	B. E. Moews, Granville, Ill.	3, 4, 5
14	85	Y	B. E. Moews, Granville, Ill.	3, 4, 5
120	86	Y	B. E. Moews, Granville, Ill.	3, 4, 5, 8, 9, 10
514	87	Y	B. E. Moews, Granville, Ill.	12, 13, 14, 15, 16, 17
523	88	Y	B. E. Moews, Granville, Ill.	3, 4, 5, 8, 9, 10, 11, 12, 13, 14
830	89	Y	B. E. Moews, Granville, Ill.	12, 13, 14, 15, 16, 17, 18
National 128	90	Y	National Hybrid Corn Co., Anamosa, Iowa	3, 4, 5, 12, 13, 14
129	91	Y	National Hybrid Corn Co., Anamosa, Iowa	8, 9, 10, 15, 16, 17
132	92	Y	National Hybrid Corn Co., Anamosa, Iowa	3, 4, 5, 6, 19, 20
132-1	93	Y	National Hybrid Corn Co., Anamosa, Iowa	19, 20
134	93	Y	National Hybrid Corn Co., Anamosa, Iowa	3, 4, 5, 8, 9, 10, 12, 13, 14, 19
135	....	W	National Hybrid Corn Co., Anamosa, Iowa	19
Nebraska 110	94	Y	Hamilton Co., Farms Co., Aurora, Neb.	3, 4, 5, 6, 8, 9, 10
238	95	Y	Hamilton Co., Farms Co., Aurora, Neb.	3, 4, 5, 6, 15, 16, 17, 18, 19, 20
252	96	Y	Hamilton Co., Farms Co., Aurora, Neb.	3, 4, 5, 12, 13, 14
Pfister 160	97	Y	Cornhusker Hybrid Co., Waterloo, Neb.	3, 4, 5, 8, 9, 10
380	98	Y	Cornhusker Hybrid Co., Waterloo, Neb.	3, 4, 5, 8, 9, 10
5892	99	Y	Cornhusker Hybrid Co., Waterloo, Neb.	3, 4, 5, 8, 9, 10, 19
Pioneer 302A	100	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 8, 9, 10, 12, 13, 14
307	101	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
313A	102	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 8, 9, 10, 12, 13, 14
319	103	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 8, 9, 10, 12, 13, 14
324	104	Y	Garst & Thomas, Coon Rapids, Iowa	15, 16, 17, 18
330	105	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 8, 9, 10, 12, 13, 14, 15, 16, 17, 19
332	106	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 8, 9, 10, 12, 13, 14, 15, 16, 17, 19
333	107	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 8, 9, 10, 12, 13, 14
334	108	Y	Garst & Thomas, Coon Rapids, Iowa	3, 4, 5, 8, 9, 10, 12, 13, 14
Richbred 1002	109	Y	E. F. Mangelsdorf & Bro., Atchison, Kan.	3, 4, 5, 8, 9, 10, 12, 13, 14
Steckley S100	110	Y	Steckley Hybrid Corn Co., Weeping Water, Neb.	3, 4, 5, 8, 9, 10
S170	111	Y	Steckley Hybrid Corn Co., Weeping Water, Neb.	3, 4, 5, 8, 9, 10
U. S. 13	113	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
35	114	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
44	115	Y	Hamilton Co. Farms Co., Aurora, Neb.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
VARIETIES				
Commercial White (Works)	33	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	12, 13, 14, 19, 20
Freed	34	W	Kan. Crop Improvement Assoc., Manhattan, Kan.	15, 16, 17, 18
Hays Golden	35	Y	Kan. Crop Improvement Assoc., Manhattan, Kan.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
Midland (A)	36	Y	Kan. Crop Improvement Assoc., Manhattan, Kan.	3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, 20
Midland (C)	37	Y	Kan. Crop Improvement Assoc., Manhattan, Kan.	8, 9, 10, 11, 12, 13, 14, 19, 20
Pride of Saline	38	W	Kan. Crop Improvement Assoc., Manhattan, Kan.	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
Reid Yellow Dent	39	Y	Kan. Crop Improvement Assoc., Manhattan, Kan.	3, 4, 5, 6, 7, 19, 20
Local Variety	40	Y	Cooperator	3, 4, 5, 8, 9, 10, 12, 13, 14, 15, 16, 17
Cassel	....	W	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	19, 20
Colby Yellow Cap	....	Y	Kan. Agr. Exp. Sta. & U. S. D. A., Manhattan, Kan.	19, 20



Seed was obtained from commercial sources when possible and was planted by hand in order to insure a uniform planting rate. The bottom land fields in districts 1 and 2 and both fields in district 3 were planted at the rate of three kernels per hill. The upland fields in districts 1 and 2 and all fields in districts 4 and 5 were planted at the rate of two kernels per hill. The hills were spaced three and one-half feet apart each way. Proper spacing was assured by cross-marking with a planter on the test fields where the seedbed had been plowed and by the use of a rope marker where the seedbed had been listed.

The Cloud and Ottawa County tests were discarded because of drouth. The test fields in Shawnee and Sumner Counties were injured considerably by drouth but the data are included in the report.

Firing notes were taken on all tests during the last week in July. Records on yield, lodging, ear height, 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 plot.

#### COMPUTATION OF RESULTS

Yield and other data are averages of five replications per field. 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. The shelling percentage and test weight were determined for each entry.

Stand of each entry was reported as percentage of perfect stand. Rate of planting and other information are given in Table 2. 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 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 Brown, Atchison, and Marion County tests is shown in Tables 3, 4, 5, and 15. 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.

TABLE 2. LOCATION, PROCEDURE, AGRONOMIC AND CLIMATIC INFORMATION ON KANSAS CORN PERFORMANCE TEST, 1940.

	District 1		District 2		District 3		District 4		District 5	
	Atchison	Brown	Shawnee	Franklin	Bourbon	Neosho	Cloud	Ottawa	Summer	Marion
No. of entries	80	80	74	74	60	60	50	50	50	50
No. of replications										
Planted	5	5	5	5	5	5	5	5	5	5
Harvested	5	5	5	5	5	5	0	0	5	5
Size of plot (hills)	2 x 12	2 x 12	2 x 12	2 x 12	2 x 12	2 x 12	2 x 12	2 x 12	2 x 12	2 x 12
Rate of planting (kernels per hill)	3	2	3	2	3	3	2	2	2	2
Date of planting	May 10	May 9	May 11	May 5	May 4	Apr. 22-25	May 9	Apr. 30	Apr. 12	May 7
Date of harvest	Nov. 22	Nov. 18	Nov. 5	Nov. 15	Nov. 12	Nov. 7			Dec. 2	Nov. 29
Seedbed preparation	List	List	List	Plow	Plow	Plow	List	List	List	Plow
Rainfall <sup>1</sup>										
May	5-3.37	4-1.74	3-2.80	7-3.84	5-2.62	5-3.36	6-1.42	6-2.47	6-4.24	4-2.30
June	7-3.36	5-4.35	5-3.19	7-3.58	9-5.47	7-4.90	6-1.57	3-1.14	6-2.73	3-2.43
July	2-3.26	3-0.47	Trace	1-0.39	4-1.32	4-1.92	4-1.75	1-0.25	4-4.80	3-1.83
Aug.	11-8.56	12-6.78	8-5.61	11-7.44	8-6.41	10-7.80	7-5.63	7-6.13	7-2.17	8-6.07
Sept.	2-1.60	4-1.41	1-0.74	2-2.49	8-2.40	2-2.45	3-0.70	3-0.95	4-4.46	4-3.45
Oct.	3-1.24	7-1.26	4-1.21	4-1.92	3-1.20	2-0.92	3-0.48	2-1.50	2-1.09	3-1.20
Total 6 months	30-21.39	35-16.01	21-13.55	32-19.66	37-19.42	30-21.35	29-11.55	22-12.44	29-19.49	25-17.28

<sup>1</sup> First figure represents number of rains and second the total monthly rainfall in inches.

KANSAS CORN TESTS, 1940

**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 within a strain in calculating such chance errors and for determining the minimum size of a 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 37.03 bushels per acre. In this district, 6.80 bushels an acre has been calculated to be a significant difference. Subtracting 6.80 bushels an acre from 37.03 bushels an acre leaves 30.23 bushels per acre. Since the first eleven entries yielded more than 30.23 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 6.80 bushels or more before they may be considered as differing in yielding ability.

**RESULTS**

The data obtained are summarized in Tables 3 to 18.

Twenty-four entries were compared in all four districts in 1940. The fields differed greatly in fertility, topography, temperature and rainfall. The following hybrids yielded above the average of all entries in these eight fields, containing a total of 40 replications: U. S. 35, Mo. 47, Ill. 200, U. S. 13, Funk G-94, Pioneer 332, DeKalb Exp. 94, Pioneer 307, Kans. 1466, Pioneer 330 and Kans. 1501. Hays Golden variety ranked fifteenth and Pride of Saline twenty-second. Both of these varieties yielded below the average of all entries.

Records made over a two-year period are much more reliable than results obtained in only one season. From 21 to 25 different varieties and hybrids were compared both in 1939 and 1940. Two-year averages were obtained only for districts 1, 2, and 5. The following entries ranked first and second respectively in yield: District 1, Funk G-94 and U. S. 35; District 2, Jewett 11 and Kans. 2015; District 5, Kans. 1296 and U. S. 35.

Unfortunately two-year results are available on only ten entries compared in all three districts. The following five hybrids were outstanding in performance: U. S. 35, U. S. 13, Mo. 47, Pioneer 307 and U. S. 44.

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 hybrids differ in various characteristics other than yield.

#### INTERPRETATION OF RESULTS

The results given in Tables 3 to 20 should be used to select corn hybrids for planting in 1941. The performance test most nearly representing the location of the farm should be studied carefully. Two-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.

In Kansas where the periods of extreme drouth and heat are frequent, 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 single crosses on adapted varieties, (2) double crosses of 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 the more satisfactory results will be obtained if the corn acreage is planted to three or four 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 or a month.

#### ANNOUNCEMENT OF 1941 TESTS

The general plan of the 1940 Kansas Corn Performance Test  
(Continued on page 21)

TABLE 3. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 1, BROWN COUNTY, 1940.

Rank in yield	Hybrid or variety	Yield		Lodged plants				Firing	Ear ht.	Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.	Corn ear worm	Class
		Per acre	% of O. P. 1	Total	% of O. P. 1	Root	Stalk											
1	Jewett 11	50.91	186	42	140	31	11	20	Ins. 41	% 94	% 3	No. 1.0	No. 193	% 81.5	% 14.0	Lbs. 53	Class 3.76	
Differences in yield of less than 4.18 bushels an acre are not significant in this test.																		
2	Pioneer 313A	42.70	156	50	167	48	2	10	36	87	4	1.0	215	82.5	13.9	59	3.68	
3	Pfister 380	41.52	152	12	40	11	1	10	33	94	3	0.9	224	83.1	14.2	60	3.47	
4	Funk G-94	41.19	151	11	37	9	2	20	41	92	7	0.9	210	79.5	14.7	58	3.44	
5	Richbred 1002	40.93	150	27	90	25	2	20	40	91	5	1.0	223	81.7	14.9	59	3.56	
6	McCurdy 118M	40.78	149	7	23	3	4	30	36	94	9	1.0	225	82.8	14.5	59	3.06	
7	Missouri 47	40.75	149	31	103	18	13	20	36	90	1	1.0	236	82.9	14.2	57	3.56	
8	Funk G-32	39.96	146	20	67	15	5	20	33	90	6	1.0	231	81.8	13.8	58	2.99	
9	K. I. H. 96	39.95	146	6	20	3	3	30	37	92	4	1.0	254	84.1	13.8	60	2.98	
10	H-C 840	39.93	146	6	20	5	1	20	34	91	7	0.9	223	81.8	14.8	58	3.79	
11	DeKalb 899	38.85	142	17	57	12	5	20	38	93	2	1.1	260	79.6	16.2	57	3.62	
12	DeKalb 827	38.67	141	7	23	5	2	20	34	87	6	1.0	228	81.5	13.9	58	3.39	
13	Moews-Lowe 523	38.59	141	10	33	9	1	10	38	90	5	1.0	234	80.6	13.6	58	3.31	
14	Iowearth 25B	38.47	141	25	83	19	6	20	39	91	3	1.0	245	82.2	13.6	58	3.54	
15	K. I. H. 38	38.38	140	18	60	9	9	30	39	89	7	1.0	238	79.7	13.1	59	3.29	
16	Pfister 5892	38.34	140	11	37	10	1	10	36	84	6	1.0	235	82.4	13.6	59	3.71	
17	Pioneer 334	38.26	140	20	67	14	6	20	36	92	5	0.9	235	82.6	14.0	56	3.49	
18	Pioneer 307	38.22	140	20	67	14	6	20	34	92	2	1.0	272	83.5	14.0	58	3.98	
19	Kansas 1356A	38.12	139	26	87	18	8	30	39	92	3	0.9	226	83.7	16.4	58	3.62	
20	Illinois 200	38.05	139	23	77	21	2	20	39	94	4	1.0	251	79.0	16.4	58	3.90	
21	Funk G-212	37.93	139	18	60	13	5	30	39	94	3	0.9	244	81.9	14.5	59	3.62	
22	Pioneer 302A	37.82	138	10	33	8	2	20	38	94	2	1.0	256	84.2	14.6	60	3.38	
23	DeKalb Exp. 94	37.68	138	8	27	6	2	20	32	90	7	1.0	243	80.7	13.8	59	3.93	
24	Pfister 160	37.63	138	27	90	20	7	10	38	95	5	1.0	255	82.5	13.8	59	3.60	
25	Funk G-46	37.38	137	15	50	10	5	20	39	90	1	1.0	254	81.0	15.3	60	3.66	
26	Moews-Lowe 13	37.21	136	17	57	17	0	10	32	94	3	1.0	262	81.9	13.1	58	2.60	
27	Local Variety	37.16	136	29	97	18	11	30	34	96	1	0.9	250	80.9	14.2	57	3.92	
28	National 134	37.13	136	21	70	13	8	20	40	92	4	1.0	258	79.0	16.6	56	3.84	
29	K-K 66	37.00	135	12	40	10	2	20	36	95	16	0.9	251	81.6	14.8	57	3.81	
30	DeKalb 817	36.84	135	15	50	11	4	20	36	93	6	1.0	254	80.2	14.2	58	3.47	
31	Pioneer 333	36.83	135	6	20	3	3	30	33	92	6	0.9	240	82.1	14.2	57	4.10	
32	Funk G244	36.79	135	14	47	3	11	30	38	95	3	1.0	266	82.9	14.1	59	3.36	
33	Illinois 960	36.61	134	14	47	5	9	20	42	93	1	0.9	254	82.5	14.1	60	3.38	
34	U. S. 35	36.59	134	8	27	6	2	20	35	93	9	1.0	259	80.6	14.2	57	3.61	
35	Steckley S770	36.57	134	21	70	17	4	20	36	95	4	0.9	242	79.6	14.2	58	3.52	

<sup>1</sup> Percent of open-pollinated varieties.

TABLE 3. (Continued)

36	Iowearth 30	36.43	133	26	87	24	2	30	42	95	3	1.0	263	79.7	16.1	58	3.58
37	Steckley S100	36.02	132	5	17	4	1	20	37	87	4	0.9	242	82.9	13.8	59	3.21
38	Kelly 374	36.02	132	18	60	14	4	20	40	93	7	1.0	250	78.5	14.3	57	3.75
39	Pioneer 319	35.96	132	17	57	9	8	20	44	92	3	0.9	251	81.9	14.5	59	3.58
40	K-K 99	35.28	129	15	50	5	5	20	37	91	9	1.0	250	77.7	14.7	58	3.49
41	Moews-Lowe 120	35.24	129	14	47	13	1	20	34	91	7	0.9	252	81.2	13.9	59	3.59
42	Iowa 939	35.05	128	24	80	18	6	30	30	88	9	0.9	237	83.6	13.6	56	3.20
43	DeKalb 888	34.92	128	20	67	17	3	20	40	91	2	0.9	243	78.1	15.5	57	3.45
44	National 132	34.83	127	26	87	22	4	20	36	84	1	1.0	248	81.9	15.1	57	3.97
45	U. S. 13	34.71	127	13	43	10	3	20	40	90	8	0.9	251	78.7	14.1	58	3.54
46	K-K 77	33.78	124	10	33	8	2	20	38	86	5	1.0	240	76.5	14.0	58	3.58
47	Kelly 200	33.71	123	11	37	7	4	20	37	89	5	1.0	259	76.7	14.4	57	3.34
48	Kansas 1104	33.70	123	5	17	5	0	20	38	93	0	0.9	259	80.0	15.9	58	3.32
49	Moews-Lowe 14	33.61	123	13	43	12	1	10	32	94	5	0.9	275	81.8	13.1	57	3.26
50	U. S. 44	33.45	122	6	20	4	2	20	38	87	4	1.0	258	81.3	14.1	59	3.48
51	Pioneer 330	33.36	122	2	7	1	1	20	29	90	4	0.9	275	82.1	12.9	56	3.59
52	National 128	33.29	122	26	87	20	6	20	39	91	3	0.9	270	82.4	15.1	59	3.40
53	Kansas 1513	33.22	122	32	107	27	5	30	36	91	1	1.0	275	82.9	17.1	58	3.88
54	Kansas 1501	32.85	120	22	73	21	1	10	34	89	2	0.9	254	81.0	17.5	59	3.36
55	DeKalb 816	31.95	117	14	47	13	1	20	37	83	4	0.9	248	77.5	14.5	59	3.56
56	Funk G-56	31.87	117	15	50	9	6	30	41	94	1	0.9	282	79.9	16.2	58	3.74
57	Pioneer 332	31.66	116	7	23	4	3	20	39	93	2	0.8	261	82.7	14.5	58	3.94
58	Pride of Saline	30.79	113	41	137	38	2	40	41	91	1	0.9	257	74.6	17.6	56	3.53
59	Nebraska 252	29.84	109	23	77	16	7	20	34	85	3	0.9	271	81.9	13.8	57	3.52
60	Nebraska 238	29.82	109	29	97	24	5	20	31	83	4	0.8	253	81.8	13.1	58	2.95
61	H-C 1005	29.69	109	14	47	12	2	20	40	92	4	0.9	278	77.3	14.8	58	3.56
62	Kansas 1466	29.12	107	22	73	20	2	20	35	91	1	0.9	276	78.8	15.1	59	3.26
63	Nebraska 110	28.49	104	22	73	15	7	20	34	88	2	0.8	273	83.3	14.0	58	3.13
64	Kansas 2232	28.45	104	29	97	26	3	30	38	97	2	0.8	244	70.1	19.0	55	3.57
65	Kansas 3	27.68	101	43	143	43	0	30	41	96	2	0.8	251	74.8	18.5	57	3.15
66	Kansas 2113	27.12	99	29	97	26	3	20	34	95	0	0.9	297	76.6	15.6	60	3.04
67	Kansas 1412	26.09	95	10	33	8	2	20	40	88	2	0.8	272	77.0	16.1	60	3.18
68	Missouri 8	25.96	95	32	107	27	5	10	41	91	3	0.9	285	77.3	17.5	56	3.81
69	Crow 701W	25.68	94	16	53	14	2	10	41	89	5	0.8	270	76.7	15.8	57	2.92
70	Reid Yellow Dent	24.87	91	29	97	27	2	20	39	93	5	0.8	290	82.0	16.5	58	3.55
71	Kansas 2173	24.71	90	36	120	35	1	30	37	91	1	0.7	244	72.1	17.7	56	3.76
72	Hays Golden	24.27	89	29	97	28	1	30	34	88	1	0.7	260	80.7	15.0	59	2.71
73	DeKalb 922W	23.14	85	17	57	15	2	20	37	85	2	0.8	266	70.8	17.8	56	3.26
74	Kansas 2181	21.60	79	43	143	43	0	20	33	90	3	0.8	286	71.6	19.7	58	3.40
75	Kansas 1220	19.77	72	5	17	5	0	20	39	95	0	0.6	291	79.5	16.4	58	3.32
76	Midland (A)	19.55	72	20	67	20	0	30	37	91	2	0.7	289	76.6	20.1	55	3.51
77	Kansas 1514	19.37	71	14	47	13	1	20	39	93	1	0.8	355	73.9	17.1	59	3.64
78	Kansas 2231	18.70	68	30	100	28	2	30	38	85	2	0.6	278	74.6	16.6	58	3.38
79	Kansas 1522	17.89	65	8	27	7	1	20	40	91	2	0.8	386	75.0	18.1	57	3.64
80	Kansas 1549	16.93	62	19	63	15	4	20	36	94	2	1.0	461	70.1	18.8	56	3.40
Av. of 80 entries		33.50		19	15	4	21	37	91	4	0.91	259	79.8	15.2	57.9	3.48	
Av. of 5 O. P. var.		27.33		30	26	4	30	37	92	2	0.80	269	79.0	16.7	57.0	3.44	
Av. of 75 hybrids		33.91		18	15	3	21	37	91	4	0.92	258	79.9	15.1	57.9	3.48	

KANSAS CORN TESTS, 1940

TABLE 4. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 1, ATCHISON COUNTY, 1940.

Rank in yield	Hybrid or variety	Yield		Lodged plants				Ear ht.	Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.	
		Per acre	% of P <sub>1</sub>	Total	% of P <sub>1</sub>	Root	Stalk								Lbs.	Class
1	Funk G-244	78.48	169	13	87	0	13	49	94	0	1.0	197	83.8	14.3	59	3.05
2	Moews-Lowe 120	75.69	163	1	7	0	1	43	91	2	1.0	187	84.3	14.4	57	3.40
3	McCurdy 118M	74.37	160	4	27	0	4	44	92	2	1.0	198	84.3	14.1	58	2.90
4	Steckley S100	74.35	160	3	20	0	3	46	90	0	1.0	204	84.2	14.8	58	2.95
5	Moews-Lowe 523	73.29	158	5	33	0	5	42	89	6	1.0	189	82.1	13.6	60	2.70
6	DeKalb 827	72.22	156	3	20	0	3	42	92	4	0.9	189	84.4	14.6	57	2.90
7	K. I. H. 38	72.10	155	10	67	0	10	48	85	4	1.0	189	83.0	14.1	59	3.60
8	Missouri 47	71.34	154	14	93	2	12	44	88	2	1.0	196	82.8	14.8	57	3.05
9	U. S. 35	71.31	154	3	20	0	3	39	93	4	0.9	198	82.9	13.6	58	3.50
10	K. I. H. 96	70.64	152	10	67	0	10	49	93	1	1.1	224	83.6	14.6	59	3.00
11	Moews-Lowe 13	70.58	152	3	20	0	3	38	91	1	1.0	211	85.2	14.1	58	2.75
12	Funk G-32	70.31	151	3	53	0	3	43	89	3	1.0	198	83.7	15.1	58	3.35
13	Funk G-94	69.76	150	3	53	2	6	43	85	3	0.9	188	84.0	13.6	60	3.15
14	Pfister 160	69.35	149	3	53	0	3	46	86	1	1.0	198	82.5	14.5	60	2.80
15	Illinois 200	69.09	149	6	40	0	6	48	90	6	1.0	202	81.6	13.6	58	3.20
16	Illinois 960	68.65	148	16	107	1	15	47	84	2	1.1	227	83.2	13.6	59	3.65
17	Iowalth 25B	68.61	148	16	107	1	15	41	88	2	1.0	204	83.5	14.8	58	3.15
18	H-C 840	67.81	146	3	20	0	3	38	86	2	1.0	197	85.1	14.6	57	3.40
19	K-K 99	67.49	145	3	20	0	3	45	87	2	1.0	190	79.1	14.3	58	2.85
20	DeKalb Exp. 94	67.45	145	2	13	0	2	41	92	4	1.0	209	82.6	15.6	57	3.25
21	DeKalb 817	67.24	145	3	20	0	3	43	81	2	1.0	197	81.6	15.1	58	3.45
22	K-K 77	67.18	145	4	27	1	3	49	86	8	1.0	198	83.0	14.4	59	3.55
23	Pfister 380	66.69	144	3	20	0	3	43	90	0	1.0	214	82.2	14.2	59	3.40
Differences in yield of less than 11.80 bushels an acre are not significant in this test.																
24	Funk G-46	66.61	143	12	80	0	12	46	86	3	1.1	215	82.3	14.4	57	3.55
25	H-C 1005	66.11	142	12	80	0	12	47	83	6	1.0	197	81.2	15.3	58	3.60
26	Pioneer 330	66.04	142	4	27	2	2	37	84	1	1.0	196	82.4	14.1	54	3.62
27	Steckley S770	65.88	142	7	47	0	7	46	89	4	1.0	202	80.2	15.1	60	2.87
28	Jewett 11	65.49	141	35	233	3	32	43	85	2	1.0	196	79.9	13.6	55	3.15
29	National 134	65.42	141	18	120	2	16	49	83	0	1.1	211	81.0	14.3	58	3.10
30	Kelly 200	65.41	141	4	27	0	4	44	83	2	1.0	205	82.7	15.8	58	3.60
31	Moews-Lowe 14	65.29	141	6	40	0	6	37	86	3	1.0	208	82.0	13.5	57	2.62
32	Pioneer 313A	65.05	140	14	93	6	8	49	87	2	1.0	208	83.5	14.5	59	3.00
33	DeKalb 888	64.75	139	4	27	0	4	50	86	5	1.0	200	80.7	15.7	58	3.50
34	K-K 66	64.44	139	4	27	2	2	40	88	2	1.0	211	83.1	14.0	57	3.30
35	Pioneer 319	64.41	139	14	93	1	13	49	87	1	1.0	217	81.5	15.3	60	3.40
36	Pioneer 307	64.15	138	4	27	0	4	38	87	1	1.1	236	83.6	14.9	57	3.65
37	National 128	63.94	138	11	73	0	11	48	85	3	1.1	225	81.6	13.4	59	3.15

<sup>1</sup> Percent of open pollinated varieties.

TABLE 4. (Continued)

38	Pioneer 332	63.48	137	5	33	2	3	44	89	1	0.9	204	84.4	14.2	58	3.05
39	Kansas 1356A	63.42	137	3	20	0	3	45	86	2	0.9	195	84.8	15.6	56	3.25
40	Richbred 1002	62.77	135	13	87	2	11	48	77	1	1.0	190	82.0	15.4	59	3.15
41	Pioneer 333	61.11	132	3	20	0	3	43	87	1	1.0	220	82.6	15.0	57	3.60
42	U. S. 13	60.88	131	5	33	2	3	41	85	1	1.0	299	74.4	14.5	60	3.20
43	Iowa 939	60.81	131	16	107	3	13	36	81	5	1.0	209	83.2	14.8	55	4.30
44	Kansas 2232	60.50	130	3	20	0	3	46	87	0	1.0	185	72.2	17.4	57	2.75
45	Kelly 374	59.91	129	3	20	0	3	44	86	5	1.0	209	81.0	17.4	57	3.20
46	Pioneer 302A	59.87	129	7	47	3	4	42	89	1	1.0	228	82.8	15.1	58	3.10
47	Funk G-212	59.66	129	10	67	1	9	45	89	1	1.0	233	82.6	13.6	58	4.05
48	Kansas 1466	59.50	128	0	0	0	0	41	88	0	0.9	214	80.8	15.1	58	2.85
49	Pioneer 334	59.37	128	4	27	1	3	45	86	1	1.0	225	84.2	14.7	55	3.50
50	U. S. 44	59.19	128	12	80	0	12	46	83	7	1.0	220	81.8	14.4	60	3.15
51	Kansas 1513	59.18	127	5	33	2	3	47	89	1	1.0	217	76.8	16.0	60	3.85
52	Nebraska 110	59.17	127	8	53	1	7	44	84	1	0.9	217	83.6	14.7	58	3.30
53	Pfister 5892	58.08	125	5	33	1	4	33	81	2	1.0	218	84.2	13.6	59	3.30
54	Kansas 1104	57.73	124	3	20	0	3	45	93	2	0.9	217	80.6	15.9	58	3.10
55	DeKalb 816	56.21	121	8	53	1	7	46	83	2	0.9	213	80.1	15.1	58	3.50
56	Funk G-56	56.15	121	16	107	1	15	47	84	2	1.0	244	82.9	15.5	57	3.05
57	Missouri 8	56.11	121	6	40	0	6	48	88	0	0.9	215	79.0	16.6	56	3.25
58	Nebraska 252	55.88	120	19	127	7	12	35	75	1	1.0	209	81.6	14.9	57	3.75
59	National 132	54.45	117	11	73	6	5	43	78	1	1.0	224	81.8	15.3	57	3.50
60	Iowhealth 30	53.38	115	4	27	0	4	53	90	0	1.0	263	79.5	14.9	58	3.00
61	Local Variety	53.21	115	13	87	2	11	49	85	3	0.8	213	81.0	15.4	57	2.80
62	Kansas 1412	52.62	113	3	20	0	3	46	81	2	1.0	226	78.8	15.7	59	3.05
63	Kansas 1501	52.59	113	7	47	4	3	46	90	2	0.9	234	79.6	16.6	58	3.30
64	Pride of Saline	51.90	112	7	47	0	7	53	90	1	0.7	218	75.5	16.2	57	3.00
65	Kansas 2113	50.61	108	7	47	6	1	38	81	0	1.0	229	77.8	16.2	59	2.90
66	Kansas 2231	49.63	107	1	7	1	0	46	78	0	0.9	206	75.7	15.9	56	3.10
67	Hays Golden	49.52	107	18	120	9	9	39	83	1	0.9	231	80.4	15.2	57	2.65
68	Kansas 2173	49.14	106	5	33	4	1	46	81	0	0.9	203	71.0	16.9	55	3.15
69	DeKalb 899	48.69	105	8	53	1	7	51	88	1	0.9	252	78.6	13.6	58	3.25
70	Kansas 3	47.79	103	10	67	5	5	45	90	1	0.8	216	72.2	17.1	56	2.95
71	Nebraska 238	47.22	102	28	187	10	18	32	70	3	0.9	220	83.8	14.3	55	2.95
72	Kansas 2181	45.38	98	5	33	3	2	38	87	1	1.0	246	74.0	19.4	56	3.15
73	Crow 701W	42.30	91	8	53	3	5	43	77	0	0.8	235	78.0	15.5	58	3.25
74	Midland (A)	40.34	87	6	40	2	4	51	85	0	0.7	232	78.3	16.9	57	2.80
75	Kansas 1549	38.64	83	5	33	2	3	41	85	1	1.0	299	74.4	14.5	60	3.40
76	Kansas 1522	37.52	81	2	13	0	2	44	90	0	0.8	302	79.7	16.0	57	3.40
77	Reid Yellow Dent	37.11	80	29	193	21	8	47	86	4	0.7	268	83.4	15.4	56	3.25
78	DeKalb 922W	36.40	78	4	27	1	3	48	80	1	0.8	238	73.6	17.3	57	3.35
79	Kansas 1514	35.97	77	4	27	2	2	50	92	0	0.9	323	78.3	17.1	58	3.35
80	Kansas 1220	26.85	58	6	40	1	5	46	88	1	0.6	317	78.8	16.3	59	2.90
Ave. of 80 entries		59.83		8		2	6	44	86	2	0.96	219	81.0	15.1	57.7	3.22
Ave. of 5 O. P. var.		46.42		15		7	8	48	86	2	0.76	232	79.7	15.8	56.8	2.90
Ave. of 75 hybrids		60.73		7		1	6	44	86	2	0.97	218	81.1	15.0	57.8	3.24

KANSAS CORN TESTS, 1940



TABLE 5. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 1, ATCHISON AND BROWN COUNTIES, 1940.

Rank in yield	Hybrid or variety	Yield		Lodged plants				Ear ht.	Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.	Corn ear worm	Lbs. Class
		Per acre	% of O. P. 1	Total	% of O. P. 1	Root	Stalk										
1	Jewett 11	58.20	158	38	173	17	21	42	90	2	1.0	195	80.7	13.8	54	3.46	
2	Funk G-244	57.63	156	14	64	2	12	44	94	2	1.0	232	83.4	14.2	59	3.20	
3	McCurdy 118M	57.58	156	8	27	2	4	40	93	6	1.0	212	83.6	14.3	58	2.98	
4	Missouri 47	56.04	152	22	100	10	12	40	89	2	1.0	216	82.8	14.5	57	3.30	
5	Moews-Lowe 523	55.94	152	2	36	5	3	40	90	6	1.0	212	81.4	13.6	59	3.00	
6	Funk G-94	55.48	150	10	45	7	6	42	88	5	0.9	199	81.8	14.2	59	3.30	
7	Moews-Lowe 120	55.46	150	3	36	3	4	38	91	4	1.0	220	82.8	14.2	58	3.50	
8	DeKalb 827	55.44	150	5	36	2	3	38	90	5	1.0	208	82.9	14.3	58	3.14	
9	K. I. H. 96	55.30	150	3	36	2	6	43	92	3	1.0	239	83.8	14.2	60	2.99	
10	Steckley S100	55.18	150	4	18	2	2	41	88	2	1.0	223	83.5	14.3	58	3.08	
11	K. I. H. 38	55.24	150	14	64	4	10	43	87	6	1.0	213	81.3	13.6	59	3.44	
12	Funk G-32	55.13	150	14	64	8	6	38	90	4	1.0	214	82.8	14.4	58	3.17	
13	Pfister 380	54.10	147	8	36	6	2	38	92	2	1.0	219	82.6	14.2	60	3.43	
14	U. S. 35	53.95	146	6	27	3	3	37	93	6	1.0	228	81.8	13.9	58	3.56	
15	Moews-Lowe 13	53.90	146	10	45	3	2	35	93	2	1.0	236	83.6	13.6	58	2.68	
16	Pioneer 313A	53.88	146	32	145	27	5	43	87	3	1.0	212	83.0	14.2	59	3.34	
17	H-C 840	53.87	146	4	18	2	2	36	89	4	1.0	210	83.4	14.7	58	3.60	
18	Illinois 200	53.57	145	14	64	10	4	43	92	5	1.0	226	80.3	15.0	58	3.55	
19	Iowaleth 25B	53.54	145	20	91	10	10	40	90	2	1.0	224	82.8	14.2	58	3.34	
20	Pfister 160	53.49	145	18	82	10	8	42	91	3	1.0	227	82.5	14.2	60	3.20	
21	Illinois 960	52.63	143	15	68	3	12	45	88	2	1.0	240	82.9	13.9	60	3.52	
22	DeKalb Exp. 94	52.56	143	5	23	3	2	37	91	6	1.0	226	81.6	14.7	58	3.59	
23	DeKalb 817	52.04	141	9	41	6	3	40	87	4	1.0	226	80.9	14.6	58	3.46	
24	Funk G-46	52.00	141	14	64	5	9	43	88	2	1.0	235	81.6	14.8	58	3.61	
25	Richbred 1002	51.85	141	20	91	14	6	44	84	3	1.0	206	81.8	15.2	59	3.35	
26	K-K 99	51.38	139	9	41	5	4	41	89	5	1.0	220	78.4	14.5	58	3.17	
27	National 134	51.27	139	20	91	8	12	44	87	2	1.0	234	80.0	15.5	57	3.47	
28	Steckley S770	51.22	139	14	64	8	6	41	92	4	1.0	222	79.9	14.6	59	3.20	
29	Pioneer 307	51.19	139	12	55	7	5	36	90	2	1.0	254	83.6	14.5	58	3.82	
30	Kansas 1356A	50.77	138	14	64	9	5	42	89	2	0.9	210	84.2	16.0	57	3.43	
31	K-K 66	50.72	138	8	36	6	2	38	91	9	1.0	231	82.4	14.4	57	3.56	
32	K-K 77	50.48	137	7	32	4	3	44	86	6	1.0	219	79.8	14.2	58	3.56	
33	Pioneer 319	50.18	136	16	73	5	11	46	90	2	1.0	234	81.7	14.9	60	3.49	
34	DeKalb 888	49.84	135	12	55	8	4	45	88	4	1.0	222	79.4	15.6	58	3.48	
35	Pioneer 330	49.70	135	3	14	2	1	33	87	2	1.0	236	82.2	13.5	55	3.60	
36	Kelly 200	49.56	134	8	36	4	4	41	86	4	1.0	232	79.7	15.1	58	3.47	
37	Moews-Lowe 14	49.45	134	10	45	6	4	35	90	4	1.0	242	81.9	13.3	57	2.94	

\* Percent of open pollinated varieties.

TABLE 5. (Continued)

38	Pioneer 333	48.97	133	4	18	2	2	38	90	3	1.0	230	82.3	14.6	57	3.85
39	Pioneer 302A	48.84	132	8	36	5	3	40	92	2	1.0	242	83.5	14.8	59	3.24
40	Pioneer 334	48.82	132	12	55	8	4	40	89	3	1.0	230	83.4	14.3	56	3.50
41	Funk G-212	48.80	132	14	64	7	7	42	92	2	1.0	238	82.2	14.0	58	3.83
42	National 128	48.62	132	18	82	10	8	44	88	3	1.0	248	82.0	14.2	59	3.28
43	Pfister 5892	48.21	131	8	36	6	2	34	82	4	1.0	226	83.3	13.6	59	3.50
44	Kelly 374	47.97	130	10	45	7	3	42	90	6	1.0	230	79.7	15.8	57	3.48
45	Iowa 939	47.93	130	20	91	10	10	33	84	7	1.0	223	83.4	14.2	56	3.75
46	H-C 1005	47.90	130	13	59	6	7	43	88	5	1.0	238	79.2	15.0	58	3.58
47	U. S. 13	47.80	130	9	40	6	3	41	88	4	1.0	275	76.6	14.3	59	3.37
48	Pioneer 332	47.57	129	6	27	3	3	41	91	2	0.8	232	83.6	14.3	58	3.50
49	U. S. 44	46.32	126	9	40	2	7	42	85	6	1.0	239	81.5	14.3	60	3.31
50	Kansas 1513	46.20	125	18	82	14	4	42	90	1	1.0	246	79.8	16.6	59	3.86
51	Kansas 1104	45.72	124	4	18	2	2	42	93	1	0.9	238	80.3	15.9	58	3.21
52	Local Variety	45.19	123	21	95	10	11	42	90	2	0.8	232	80.9	14.8	57	3.36
53	Iowealth 30	44.90	122	15	68	12	3	48	92	2	1.0	263	79.6	15.5	58	3.29
54	National 132	44.64	121	18	82	14	4	39	81	1	1.0	236	81.8	15.2	57	3.74
55	Kansas 2232	44.48	121	16	73	13	3	42	92	1	0.9	214	71.2	18.2	56	3.16
56	Kansas 1466	44.31	120	11	50	10	1	38	90	1	0.9	245	79.8	15.1	58	3.06
57	DeKalb 816	44.08	120	11	50	7	4	42	83	3	0.9	230	78.8	14.8	58	3.53
58	Funk G-56	44.01	119	16	73	5	11	44	89	2	1.0	263	81.4	15.9	58	3.40
59	Nebraska 110	43.33	119	15	68	8	7	39	86	2	0.8	245	83.4	14.4	58	3.22
60	DeKalb 899	43.77	119	12	55	6	6	44	90	2	1.0	256	79.1	14.9	57	3.44
61	Nebraska 252	42.86	116	21	95	12	9	34	80	2	1.0	240	81.8	14.4	57	3.63
62	Kansas 1501	42.72	116	14	64	12	2	40	89	2	0.9	244	80.3	17.0	59	3.33
63	Pride of Saline	41.34	112	24	109	19	5	47	90	0	0.8	238	75.0	16.9	56	3.26
64	Missouri 8	41.04	111	19	86	14	5	45	90	2	0.9	250	78.2	17.0	56	3.53
65	Kansas 1412	39.35	107	6	27	4	2	43	84	2	0.9	249	77.9	15.9	60	3.12
66	Kansas 2113	38.56	105	18	82	16	2	36	88	0	1.0	263	77.2	15.9	60	2.97
67	Nebraska 238	38.52	104	28	127	17	11	31	76	3	0.8	236	82.8	13.7	56	2.95
68	Kansas 3	37.74	102	26	118	24	2	43	93	2	0.8	234	73.5	17.8	56	3.05
69	Kansas 2173	36.93	100	20	91	19	1	41	86	1	0.8	223	71.6	17.3	55	3.26
70	Hays Golden	36.90	100	24	109	19	5	36	86	1	0.8	246	80.6	15.1	58	2.68
71	Kansas 2231	34.16	93	16	73	15	1	42	82	1	0.8	242	75.2	16.3	57	3.24
72	Crow 701W	33.99	92	12	55	8	4	45	83	2	0.8	252	77.4	15.6	58	3.08
73	Kansas 2181	33.49	91	24	109	23	1	36	88	2	0.9	266	72.8	19.6	57	3.27
74	Reid Yellow Dent	30.99	84	29	132	24	5	43	90	4	0.8	279	82.7	16.0	57	3.40
75	Midland (A)	29.94	81	13	59	11	2	44	88	1	0.7	260	77.4	18.5	56	3.16
76	DeKalb 922W	29.77	81	10	45	8	2	43	82	2	0.8	252	72.2	17.6	56	3.30
77	Kansas 1549	27.78	75	12	55	8	4	39	90	2	1.0	380	72.2	16.6	58	3.40
78	Kansas 1522	27.70	75	5	23	4	1	42	90	1	0.8	344	77.3	17.0	57	3.52
79	Kansas 1514	27.67	75	9	41	8	1	44	92	1	0.8	339	76.1	17.1	58	3.50
80	Kansas 1220	23.31	63	6	27	3	3	43	92	1	0.6	304	79.2	16.3	58	3.11
Ave. of 80 entries		46.67		14		9	5	40.7	89	3	0.94	239	80.4	15.1	57.8	3.35
Ave. of 5 O. P. var.		36.87		22		16	6	42.4	89	2	0.78	251	79.3	16.3	56.8	3.17
Ave. of 75 hybrids		47.32		13		8	5	40.6	89	3	0.95	238	80.5	15.0	57.9	3.36

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

Rank in yield	Hybrid or variety	Yield		Lodged plants				Ear ht.	Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P. <sup>1</sup>	Total	% of O. P. <sup>1</sup>	Root	Stalk								
		Bu.	%	%	%	%	%	%	%	No.	No.	%	%		
1	Funk G-94	69.29	148	11	44	3	8	46	88	11	1.0	190	82.4	11.8	60
2	U. S. 35	69.08	148	10	40	1	9	42	94	10	1.0	204	82.5	11.5	59
3	Jewett 11	67.14	144	43	172	9	34	47	92	7	1.0	202	82.0	11.6	56
4	Funk G-244	67.12	144	20	80	1	19	48	90	4	1.0	226	84.2	11.7	60
5	Illinois 960	66.24	142	23	92	1	22	48	87	4	1.0	220	83.5	11.5	60
6	U. S. 44	65.33	140	10	40	1	9	46	88	6	1.0	214	82.6	11.7	60
7	Missouri 47	65.29	140	26	104	5	21	44	86	4	1.0	207	83.3	11.9	58
8	U. S. 13	64.34	139	11	44	3	8	47	90	14	1.0	232	79.9	12.0	60
9	Kansas 1104	62.49	134	7	28	1	6	48	94	8	1.0	214	80.6	12.5	60
10	DeKalb 816	62.29	133	12	48	3	9	48	87	10	1.0	210	80.6	12.1	59
11	K-K 77	62.24	133	6	24	2	4	46	86	11	1.0	205	81.1	11.8	60
12	Pioneer 307	61.87	132	16	64	3	13	40	90	2	1.0	235	84.0	11.8	60
13	Funk G-212	60.84	130	16	64	4	12	45	87	3	1.0	215	83.5	11.7	59
14	DeKalb 899	58.52	125	26	104	3	23	52	89	6	1.0	230	80.9	12.3	60
15	National 132	57.33	124	26	104	9	17	44	84	4	1.0	222	82.4	12.6	58
16	Missouri 8	57.74	123	27	108	7	20	48	90	7	1.0	226	80.8	13.4	58
17	Kansas 1466	56.86	122	12	48	5	7	42	88	3	1.0	228	81.8	12.4	60
18	Iowa 939	56.68	121	22	88	5	17	38	82	14	1.0	210	83.2	11.7	58
19	Iowa 30	56.52	121	26	104	7	19	48	88	6	1.0	237	81.7	12.5	58
20	Nebraska 110	53.93	115	18	72	4	14	40	84	4	0.9	229	83.6	11.9	59
21	Pride of Saline	53.69	115	24	96	10	14	52	90	4	0.8	216	77.9	13.8	58
22	Nebraska 238	48.98	105	24	96	10	14	36	73	4	1.0	224	83.1	11.4	57
23	Reids Yel. Dent	46.26	99	32	128	13	19	48	88	12	0.8	246	83.0	12.8	59
24	Hays Golden	44.93	96	29	116	10	19	41	84	1	0.8	240	79.9	12.3	60
25	Midland (A)	42.22	90	15	60	7	8	46	86	4	0.8	235	79.7	15.4	58
	Ave. of 25 entries	59.13		20		5	15	45	87	7	0.96	221	81.9	12.3	59.0
	Ave. of 4 O. P. var.	46.77		25		10	15	47	87	5	0.8	234	80.1	13.6	58.8
	Ave. of 21 hybrids	61.48		19		4	15	45	87	7	1.0	218	82.3	12.0	59.0

<sup>1</sup> Percent of open pollinated varieties.

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

**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

TABLE 7. RESULTS, KANSAS CORN TEST, DISTRICT 1, ATCHISON COUNTY, THREE-YEAR AVERAGE, 1938-1940, BOTTOM LAND.

Rank in yield	Hybrid or variety	Acre yield	Lodged plants	Ear size	Shelling
		Bu.	Percent	No. ears per cwt.	Percent
1	Illinois 960	68.08	16.7	236	83.3
2	U. S. 44	67.06	8.1	212	82.8
3	Missouri 8	65.16	14.9	206	81.7
4	Pioneer 307	64.38	9.2	234	84.4
5	Iowa 939	60.13	15.1	213	82.7
6	Pride of Saline	59.76	12.1	207	79.0
7	Reids Yellow Dent	51.56	24.1	231	83.1
8	Hays Golden	50.90	18.7	246	80.0
9	Midland (A)	50.77	9.2	216	80.8
Ave. of 9 entries		59.75	14.2	222	82.0
Ave. of 4 O. P. var.		53.25	16.0	225	80.7
Ave. of 5 hybrids		64.96	12.8	220	83.0

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 the 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.

TABLE 8. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 2, FRANKLIN COUNTY, 1940.

Rank in yield	Hybrid or variety	Yield		Lodged plants				Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O.P. <sup>1</sup>	Total	% of O.P. <sup>1</sup>	Root	Stalk							
1	Pioneer 332	37.03	205	7	33	2	5	92	0	0.9	231	85.6	14.7	58
2	H-C 840	35.31	196	2	10	0	2	89	0	0.9	259	84.8	14.2	56
3	Pfister 380	34.95	194	2	10	0	2	94	0	0.9	274	83.2	14.0	58
4	U. S. 35	33.44	185	5	24	3	2	92	3	0.9	267	84.1	14.2	58
5	K-K 77	31.64	175	2	10	0	2	81	1	1.0	262	81.6	14.0	58
6	Illinois 200	31.43	174	1	5	0	1	93	1	0.9	273	78.1	14.3	60
7	Steckley S-100	31.27	173	7	33	1	6	88	1	1.0	294	81.6	13.8	56
8	Pfister 160	31.27	173	18	86	13	5	92	0	0.9	292	85.9	14.5	60
9	DeKalb 847	30.48	169	3	14	2	1	87	0	0.9	273	81.9	14.5	58
10	Carlson C-33	30.40	169	4	19	2	2	92	3	0.8	270	82.3	14.4	58
11	U. S. 13	30.21	168	3	14	2	1	92	3	0.9	277	82.9	14.0	57
Differences in yield of less than 6.80 bushels an acre are not significant in this test.														
12	Pfister 5892	30.06	167	2	10	0	2	83	0	1.0	280	80.9	14.0	58
13	K. I. H. 96	29.98	166	5	24	1	4	92	0	0.9	308	83.1	14.0	58
14	Kansas 1466	29.66	164	17	81	12	5	86	0	0.8	249	79.7	14.5	60
15	Steckley S770	29.26	162	8	38	7	1	90	1	0.8	267	81.6	13.9	58
16	Moevs-Lowe 523	29.18	162	2	10	0	0	87	1	0.9	281	80.1	13.8	58
17	K-K 99	29.15	162	5	24	3	2	90	1	0.9	276	79.8	14.3	59
18	Pioneer 302A	28.73	159	9	43	1	3	97	0	0.9	334	84.7	14.7	59
19	DeKalb 817	28.70	159	7	33	4	3	86	1	1.0	303	81.7	13.7	57
20	Kansas 2181	28.39	157	16	76	14	2	90	0	0.8	275	74.7	17.0	59
21	K. I. H. 38	28.35	157	5	24	0	5	87	1	0.9	293	82.9	13.3	60
22	Pioneer 319	28.30	157	15	71	10	5	89	0	0.9	308	82.7	14.6	58
23	Pioneer 807	28.27	157	6	28	4	2	88	0	1.0	330	81.4	14.0	57
24	Kansas 1501	27.97	155	13	62	10	3	88	0	0.9	274	78.1	15.9	61
25	National 129	27.80	154	3	14	1	1	85	2	0.9	274	80.3	13.6	58
26	Pioneer 334	27.67	153	8	38	3	3	93	1	0.9	333	82.1	13.9	55
27	Funk G-94	27.40	152	6	28	3	3	89	2	0.9	316	81.4	14.0	57
28	Kelly 374	27.32	152	4	19	2	2	93	2	0.9	311	80.8	13.6	57
29	DeKalb Exp. 94	27.26	151	1	5	0	1	90	2	1.0	345	82.5	14.2	58
30	Pioneer 333	27.12	150	5	24	2	3	91	0	1.0	351	80.2	13.6	56
31	Missouri 47	26.63	148	14	67	7	7	91	1	0.8	290	82.7	15.7	58
32	Iowalth 28N	26.58	147	13	62	6	7	93	1	0.8	286	80.1	15.2	60

<sup>1</sup> Percent of open pollinated varieties.

TABLE 8. (Continued)

33	Pioneer 313A	26.47	147	4	19	3	1	91	0	0.9	316	79.0	13.0	57
34	H-C 1005	26.44	147	7	33	6	1	86	2	0.9	291	79.2	14.0	58
35	Funk G-244	26.40	146	11	52	5	6	89	1	0.9	331	81.7	14.0	58
36	Kansas 2232	26.14	145	17	81	16	1	93	0	0.8	269	75.7	15.8	59
37	Hays Golden	26.12	145	26	124	13	13	83	0	1.0	323	81.7	14.9	57
38	Jewett 11	25.97	144	31	148	20	11	93	0	0.8	289	75.1	15.7	58
39	Kansas 1335	25.94	144	1	5	0	1	94	1	0.8	305	79.8	14.2	59
40	Kansas 1104	25.71	143	5	24	4	1	88	1	0.8	275	80.7	15.2	59
41	Moews-Lowe 120	24.78	137	6	28	2	4	86	0	0.8	300	83.2	14.3	59
42	Kelly 200	24.78	137	9	43	8	1	85	2	0.8	280	77.5	14.2	59
43	Kansas 1412	24.66	137	14	67	8	6	85	1	0.9	302	79.4	14.5	60
44	Illinois 960	24.61	136	14	67	4	10	93	0	0.9	348	81.4	13.8	59
45	Lowearth 29A	24.59	136	7	33	6	1	88	0	0.9	312	78.9	14.2	58
46	Kansas 2015	24.54	136	12	57	6	6	88	0	0.8	266	75.6	15.7	59
47	DeKalb 816	24.28	135	1	5	0	1	82	1	0.8	299	80.5	14.0	60
48	Missouri 8	23.92	133	12	57	4	8	91	0	0.7	286	81.7	16.5	57
49	Funk G-143	23.85	132	7	33	5	2	91	1	0.7	285	79.4	15.1	60
50	DeKalb 888	23.55	131	7	33	6	1	87	1	0.8	298	75.1	14.4	58
51	Kansas 1522	22.09	123	7	33	6	1	89	1	0.7	295	81.5	14.3	58
52	U. S. 44	22.02	122	6	28	0	6	89	1	0.8	332	83.2	14.6	59
53	Pioneer 330	21.94	122	3	14	1	2	85	0	0.9	370	80.5	13.8	49
54	Kansas 1513	21.42	119	18	86	15	3	91	1	0.8	343	78.4	15.3	59
55	Kansas 2231	21.19	118	15	71	13	2	79	0	0.7	251	77.2	14.9	59
56	Nebraska 110	20.93	116	18	86	5	13	85	1	0.8	353	82.9	14.2	57
57	Kansas 1549	20.41	113	13	62	9	4	89	1	0.7	313	76.2	15.3	60
58	Crow 701W	20.37	113	10	48	8	2	91	0	0.6	285	77.3	15.0	57
59	Kansas 3	20.11	112	24	114	21	3	87	0	0.8	307	73.1	15.5	58
60	Midland (A)	20.09	111	22	105	21	1	88	0	0.6	275	77.7	17.4	58
61	Funk G-56	20.00	111	16	76	11	5	93	0	0.7	349	80.8	15.0	58
62	Kansas 1514	19.98	111	8	38	7	1	93	0	0.6	293	77.8	16.3	59
63	Kansas 2173	19.53	108	10	48	9	1	91	1	0.6	273	74.7	16.5	58
64	Midland T. C.	19.06	106	16	76	14	2	88	0	0.6	272	75.2	15.9	58
65	Funk G-135	17.84	99	2	10	0	2	89	0	0.8	354	74.2	15.6	61
66	DeKalb 899	17.72	98	2	10	1	1	93	1	0.7	340	75.0	15.2	59
67	Funk G-88	17.47	97	2	10	0	2	93	0	0.6	324	78.5	16.4	60
68	Kansas 5	17.03	94	10	48	9	1	85	0	0.7	310	70.2	16.7	57
69	National 134	16.09	89	10	48	6	4	87	0	0.7	347	70.2	14.9	57
70	Midland (C)	15.68	87	27	129	26	1	89	0	0.6	326	74.5	17.0	58
71	Richbred 1002	14.85	82	3	14	0	3	90	0	0.6	333	78.4	14.8	59
72	Local Variety	14.20	79	18	86	15	3	83	0	0.7	347	71.3	15.2	57
73	Pride of Saline	14.06	78	11	52	7	4	83	0	0.7	333	73.7	15.7	58
74	DeKalb 922W	13.89	77	3	14	1	2	84	0	0.6	336	70.1	15.6	57
Ave. of 74 entries		25.03	9		6		3	89	1	0.82	301	79.4	14.8	58.1
Ave. of 5 O. P. var.		18.03	21		16		5	85	0	0.72	321	75.8	16.0	57.6
Ave. of 69 hybrids		25.53	8		5		3	89	1	0.82	300	79.6	14.7	58.2

TABLE 9. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 2, SHAWNEE COUNTY, 1940.

Rank in yield	Hybrid or variety	Yield		Lodged plants				Firing	Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture
		Per acre	% of O. P. I.	Total	% of O. P. I.	Root	Stalk							
1	Steckley S 100	24.89	587	4	31	0	4	20	88	4	0.6	354	81.3	11.9
Differences in yield of less than 7.90 bushels an acre are not significant in this test.														
2	H-C 840	16.10	380	6	46	0	6	36	86	5	0.4	385	81.6	12.5
3	Pfister 5892	15.52	366	5	23	0	3	34	79	8	0.5	429	79.6	12.3
4	Pfister 380	15.12	357	5	38	0	5	36	88	9	0.4	412	80.7	12.0
5	Hays Golden	13.65	322	11	85	0	11	40	85	0	0.4	361	81.0	13.2
6	K. I. H. 38	13.13	310	2	15	0	2	34	91	1	0.4	442	79.4	12.0
7	K. K. 77	13.06	308	2	23	0	3	30	86	3	0.5	457	75.4	12.2
8	Jewett 11	12.16	287	15	115	0	15	34	90	0	0.5	498	67.1	12.3
9	U. S. 13	11.24	265	4	31	0	4	42	90	6	0.4	447	77.3	12.4
10	Illinois 960	10.67	252	9	69	0	9	38	84	0	0.4	470	75.9	12.0
11	K. I. H. 96	10.36	244	5	38	0	5	36	91	5	0.4	471	64.1	12.5
12	Pioneer 307	10.13	239	6	46	0	6	52	85	0	0.4	562	.....	12.5
13	Funk G-88	10.06	237	7	54	0	7	28	88	1	0.5	462	55.6	15.6
14	Pioneer 333	9.90	234	6	46	0	6	60	87	2	0.3	440	81.2	11.5
15	Pioneer 334	9.83	232	5	38	0	5	54	87	9	0.3	364	81.4	12.3
16	Carlson C-33	9.32	220	3	23	0	3	32	92	2	0.4	544	75.2	12.0
17	Pioneer 330	9.00	212	2	15	0	2	32	85	9	0.4	541	79.7	12.0
18	Nebraska 110	8.93	211	13	100	0	13	40	84	1	0.3	462	80.9	11.9
19	Iowa 29A	8.81	208	7	54	0	7	32	77	0	0.4	462	71.6	12.7
20	Missouri 47	8.68	205	7	54	0	7	34	89	1	0.3	514	74.3	13.2
21	Funk G-135	8.49	200	10	77	0	10	38	83	0	0.4	528	67.0	13.9
22	Moews-Lowe 523	8.48	200	3	23	0	3	38	90	2	0.4	581	71.6	12.0
23	Pfister 160	8.24	194	4	31	0	4	38	80	6	0.4	532	75.2	12.5
24	Steckley S770	8.15	192	7	54	0	7	32	86	7	0.3	486	69.0	12.3
25	Moews-Lowe 120	8.10	191	6	46	0	6	38	90	3	0.3	516	77.4	12.0
26	U. S. 44	8.00	189	11	85	0	11	48	85	2	0.3	546	75.0	12.7
27	Pioneer 319	7.79	184	10	77	0	10	44	85	5	0.3	579	.....	12.3
28	National 134	7.53	178	13	100	0	13	32	86	0	0.4	513	62.9	15.0
29	Richbred 1002	7.47	176	10	77	0	10	46	83	1	0.5	681	61.1	15.1
30	Funk G-94	7.05	166	3	23	0	3	42	84	1	0.3	532	73.4	12.4
31	DeKalb Exp. 94	6.98	165	8	62	0	8	46	84	0	0.3	540	68.1	11.5
32	Kansas 2231	6.89	163	3	23	0	3	44	81	1	0.3	428	70.6	13.4
33	Kansas 1466	6.59	156	1	8	0	1	42	92	0	0.3	574	75.3	12.7

Percent of open pollinated varieties.

TABLE 9. (Continued)

34	Kansas 5	6.51	154	3	23	0	3	34	80	1	0.5	632	58.0	14.7
35	DeKalb 888	6.50	153	6	46	0	6	22	89	1	0.5	616	59.5	12.6
36	Kansas 2232	6.46	152	2	15	0	2	44	95	0	0.4	586	57.2	14.1
37	DeKalb 847	6.20	146	2	15	0	2	28	88	0	0.3	573	70.8	12.6
38	Kelly 374	6.00	142	3	23	0	3	46	89	3	0.3	533	66.1	12.2
39	Iowaleath 28N	5.86	138	8	62	0	8	32	83	5	0.3	583	69.2	12.7
40	Kelly 200	5.78	136	7	54	0	7	28	81	0	0.4	616	59.9	12.0
41	Funk G-143	5.62	133	5	38	0	5	28	85	1	0.3	574	69.6	14.1
42	DeKalb 817	5.26	124	2	15	0	2	48	88	0	0.3	696	70.4	11.7
43	Kansas 2181	5.09	120	2	15	0	2	50	91	0	0.2	493	68.8	15.6
44	Kansas 1513	5.07	120	5	38	0	5	52	89	0	0.3	646	64.6	13.6
45	Kansas 1104	5.06	119	2	15	0	2	40	87	0	0.2	582	69.4	13.7
46	U. S. 35	5.05	119	14	108	0	14	56	90	4	0.2	479	76.5	12.2
47	National 129	4.85	114	6	46	0	6	46	87	0	0.2	464	56.8	12.0
48	Funk G-244	4.76	112	8	62	0	8	44	92	2	0.3	680	72.1	12.2
49	K. K. 99	4.48	106	8	62	0	8	46	93	5	0.2	672	68.1	12.4
50	Kansas 2015	4.43	105	16	123	0	16	52	94	2	0.2	518	71.1	13.5
51	H-C 1005	4.33	102	7	54	0	7	36	89	4	0.3	661	63.7	13.1
52	Pioneer 332	4.13	97	12	92	0	12	52	90	2	0.1	433	79.4	12.5
53	DeKalb 816	4.07	96	8	62	0	8	38	80	0	0.3	717	64.6	12.5
54	Midland (C)	3.94	93	5	38	0	5	46	86	0	0.2	505	70.5	14.9
55	Kansas 3	3.82	90	3	23	0	3	36	86	1	0.2	590	61.5	13.7
56	Kansas 1501	3.72	88	0	0	0	0	32	88	0	0.2	696	62.5	13.6
57	Kansas 2173	3.52	83	8	62	0	8	56	91	0	0.2	598	72.8	14.1
58	Kansas 1335	3.28	78	6	46	0	6	48	95	0	0.2	629	66.3	12.3
59	DeKalb 922W	3.21	76	3	23	0	3	32	81	6	0.2	670	57.5	15.1
60	Kansas 1549	2.99	71	5	38	0	5	42	87	2	0.2	602	69.2	13.8
61	Pioneer 313A	2.74	65	3	23	0	3	58	88	0	0.1	628	71.4	12.4
62	Funk G-56	2.68	63	11	85	0	11	58	91	0	0.2	815	61.7	13.0
63	DeKalb 899	2.67	63	13	100	0	13	56	86	0	0.2	804	54.3	12.5
64	Kansas 1412	2.61	62	6	46	0	6	54	84	0	0.2	662	69.0	13.7
65	Kansas 1514	2.26	53	6	46	0	6	52	89	0	0.2	847	61.1	15.6
66	Crow 701W	2.19	52	6	46	0	6	40	86	4	0.2	704	57.7	13.6
67	Illinois 200	1.95	46	9	69	0	9	48	86	8	0.1	666	64.9	12.7
68	Local Variety	1.68	40	14	108	0	14	54	85	0	0.1	755	61.2	12.3
69	Kansas 1522	1.55	37	6	46	0	6	30	91	0	0.1	717	65.2	15.8
70	Missouri 8	1.53	36	19	146	0	19	44	89	0	0.1	651	62.8	13.6
71	Midland (A)	1.34	32	13	100	0	13	50	86	0	0.1	686	71.4	14.4
72	Pride of Saline	0.59	14	22	169	0	22	68	89	0	0.1	1167	36.6	13.6
73	Midland T. C.	0.43	10	16	123	0	16	52	85	0	0.3	867	53.3	13.8
74	Pioneer 302A	0.05	1	19	146	0	19	78	97	0	0.1	909	.....	12.3
Ave. of 74 entries		6.68		7		0	7	43	87	2	0.297	582	68.4	13.0
Ave. of 5 O. P. varieties		4.24		13		0	13	52	86	0	0.180	695	64.1	13.7
Ave. of 69 hybrids		6.86		7		0	7	42	87	2	0.306	573	68.8	13.0



TABLE 10. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 2, FRANKLIN AND SHAWNEE COUNTIES, 1940.

Rank in yield	Hybrid or variety	Yield		Lodged plants			Stand	Dropped ears	Ears per plant	Ears per cwt.	Bar size Ears per cwt.	Shelling	Moisture
		Per acre	% of O. P. I	Total	% of O. P. I	Root							
		Bu.	%	%	%	%	%	%	No.	No.	%	%	
1	Steckley S100	28.08	252	6	35	1	5	88	2	0.8	324	81.4	12.8
2	H.C 840	25.70	231	4	24	0	4	88	2	0.6	322	83.2	13.4
3	Pfister 380	25.03	225	4	24	0	4	91	4	0.6	343	82.0	13.0
4	Pfister 5892	22.79	205	2	12	0	2	81	4	0.8	355	80.2	13.2
5	K-K 77	22.35	201	2	12	0	2	83	2	0.8	360	78.5	13.1
6	K. I. H. 96	21.55	193	4	24	1	3	92	1	0.6	375	81.3	13.0
7	U. S. 13	20.72	186	4	24	1	3	91	4	0.6	362	80.1	13.2
8	Pioneer 332	20.58	185	9	53	1	8	91	1	0.5	332	82.5	13.6
9	Hays Golden	19.89	179	18	106	6	12	84	0	0.7	342	81.4	14.0
10	Carlson C-33	19.86	178	4	24	1	3	92	2	0.6	407	79.0	13.2
11	Pfister 160	19.76	177	11	65	6	5	86	3	0.6	412	80.5	13.5
12	K. I. H. 38	19.36	174	5	29	0	5	89	3	0.6	382	73.5	12.9
13	U. S. 35	19.25	173	10	59	2	8	91	3	0.6	373	80.3	13.2
14	Pioneer 307	19.20	172	6	35	2	4	86	0	0.7	446	88.1	13.2
15	Jewett 11	19.06	171	23	135	10	13	92	0	0.6	393	71.1	14.0
16	Moews-Lowe 523	18.83	169	2	12	1	1	88	2	0.6	431	75.9	12.9
17	Pioneer 334	18.75	168	6	35	3	5	90	5	0.6	348	81.8	13.1
18	Steckley S770	18.70	168	8	47	4	4	88	4	0.6	376	75.3	13.1
19	Pioneer 333	18.51	166	6	35	5	5	89	1	0.6	396	80.7	12.6
20	DeKalb 847	18.34	165	2	12	1	1	88	0	0.6	426	76.4	13.6
21	Kansas 1466	18.13	163	9	53	6	3	89	0	0.6	412	77.5	13.6
22	Pioneer 319	18.05	162	12	71	5	7	87	2	0.6	443	85.7	13.4
23	Missouri 47	17.66	159	11	65	4	7	90	1	0.6	402	78.5	14.5
24	Illinois 960	17.64	158	12	71	2	10	88	0	0.6	409	78.6	12.9
25	Funk G-94	17.23	155	4	24	1	3	87	2	0.6	424	77.4	13.2
26	DeKalb Exp. 94	17.12	154	4	24	0	4	87	1	0.6	442	75.3	12.8
27	DeKalb 817	16.98	152	4	24	2	2	87	1	0.6	500	76.0	12.7
28	K-K 99	16.82	151	6	35	1	5	92	3	0.5	474	74.0	13.4
29	Kansas 2181	16.74	150	9	53	7	2	90	0	0.5	384	71.7	16.3
30	Iowearth 29A	16.70	150	7	41	3	4	82	0	0.6	388	75.2	13.4
31	Illinois 200	16.69	150	5	29	0	5	90	4	0.5	470	71.5	13.5
32	Kelly 374	16.66	150	4	24	1	3	91	2	0.6	422	73.4	12.9
33	Moews-Lowe 120	16.44	148	6	35	1	5	88	2	0.6	408	80.3	13.2
34	National 129	16.32	147	4	24	0	4	86	1	0.6	369	68.6	12.8
35	Kansas 2232	16.30	146	10	59	8	2	94	0	0.6	428	66.4	15.0

\* Percent of open pollinated varieties.

TABLE 10. (Continued)

36	Iowearth 28N	16.22	146	11	65	3	8	88	3	0.6	434	74.7	14.0
37	Kansas 1501	15.84	142	6	35	5	1	88	0	0.6	485	70.3	14.7
38	Funk G-244	15.58	140	10	59	3	7	90	2	0.6	505	76.9	13.1
39	Pioneer 330	15.47	139	3	18	1	2	85	4	0.6	456	80.1	12.9
40	H-C 1005	15.38	138	7	41	3	4	88	3	0.6	476	71.4	13.5
41	Kansas 1104	15.38	138	4	24	2	2	88	1	0.5	428	75.0	14.4
42	Kelly 200	15.28	137	8	47	4	4	83	1	0.6	448	68.7	13.1
43	DeKalb 888	15.02	135	6	35	3	3	88	1	0.6	457	67.3	13.5
44	U. S. 44	15.01	135	8	47	0	8	87	2	0.6	439	79.1	13.6
45	Nebraska 110	14.93	134	16	94	3	13	84	1	0.6	408	81.9	13.0
46	Funk G-143	14.74	132	6	35	2	4	88	1	0.5	430	74.5	14.6
47	Kansas 1335	14.61	131	4	24	0	4	94	0	0.5	467	73.1	13.3
48	Pioneer 313A	14.60	131	4	24	2	2	90	0	0.5	472	75.2	12.7
49	Kansas 2015	14.48	130	14	82	3	11	91	1	0.5	392	73.4	14.6
50	Pioneer 302A	14.39	129	14	82	0	14	97	0	0.5	622	44.6	13.5
51	DeKalb 816	14.18	127	4	24	0	4	81	1	0.6	508	72.6	13.3
52	Kansas 2231	14.04	126	9	53	6	3	80	1	0.5	339	73.9	14.2
53	Funk G-88	13.76	124	4	24	0	4	90	1	0.6	393	67.1	15.7
54	Kansas 1412	13.64	122	10	58	4	6	84	1	0.6	482	74.2	14.1
55	Kansas 1513	13.25	119	12	71	8	4	90	1	0.6	495	71.5	14.4
56	Funk G-135	13.16	118	6	35	0	6	86	0	0.6	441	70.6	14.8
57	Missouri 8	12.72	114	16	94	2	14	90	0	0.4	468	72.2	15.0
58	Kansas 3	11.96	107	14	82	11	3	86	1	0.5	448	67.3	14.6
59	Kansas 1522	11.82	106	6	35	3	3	90	1	0.4	506	73.3	15.0
60	National 134	11.81	106	12	71	3	9	86	0	0.6	430	66.6	15.0
61	Kansas 5	11.77	106	6	35	4	2	83	1	0.6	471	64.1	15.7
62	Kansas 1549	11.70	105	9	53	5	4	88	2	0.4	458	72.7	14.6
63	Kansas 2173	11.53	104	9	53	5	4	91	1	0.4	436	73.8	15.3
64	Funk G-56	11.34	102	14	82	6	8	92	0	0.4	582	71.2	14.0
65	Crow 701W	11.28	101	8	47	4	4	88	2	0.4	494	67.5	14.3
66	Richbred 1002	11.16	100	6	35	0	6	86	1	0.6	507	69.8	15.0
67	Kansas 1514	11.12	100	7	41	4	3	91	0	0.4	570	69.4	16.0
68	Midland (A)	10.72	96	18	106	11	7	87	0	0.4	480	74.5	15.9
69	DeKalb 899	10.20	92	8	47	1	7	90	1	0.4	572	64.6	13.8
70	Midland (C)	9.81	88	16	94	13	3	88	0	0.4	416	72.5	16.0
71	Mid. T. C.	9.74	87	16	94	7	9	86	0	0.4	570	64.2	14.9
72	DeKalb 922W	8.55	77	3	18	1	2	82	3	0.4	503	63.8	15.4
73	Local Variety	7.94	71	16	94	8	8	84	0	0.4	551	66.2	13.8
74	Pride of Saline	7.32	66	18	94	3	13	86	0	0.4	750	55.2	14.6
Ave. of 74 entries		15.85		8		3	5	88	1	0.56	441	73.9	13.9
Ave. of 5 O. P. var.		11.14		17		8	9	86	0	0.46	508	70.0	14.9
Ave. of 69 hybrids		16.19		8		3	5	88	1	0.56	437	74.2	13.8

TABLE 11. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 2, TWO-YEAR AVERAGE, FRANKLIN COUNTY, 1939-1940.

Rank in yield	Hybrid or variety	Yield		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	35.85	173	17	142	10	7	92	3	0.8	303	78.4	12.2	58
2	Kansas 2015	34.49	167	7	58	3	4	91	1	0.8	280	75.3	14.2	59
3	Moews-Lowe 523	34.44	166	2	17	1	1	85	10	1.0	325	83.5	11.3	58
4	Funk G-94	33.75	163	4	33	2	2	88	3	0.8	318	83.2	11.6	58
5	Iowhealth 28N	32.64	158	8	67	3	3	92	7	0.9	337	81.8	12.2	58
6	Pioneer 307	32.34	156	4	33	2	2	88	5	1.0	360	81.6	12.8	57
7	Kansas 1412	32.33	156	8	67	4	4	84	6	0.9	302	81.1	12.4	60
8	U. S. 35	32.10	155	3	25	2	1	90	8	0.9	353	84.2	11.5	58
9	Illinois 200	31.82	154	1	8	0	1	82	9	1.0	311	79.0	11.5	60
10	Missouri 47	31.52	152	8	67	4	4	90	8	0.8	314	83.8	12.5	58
11	Illinois 960	31.32	151	8	67	2	6	90	8	0.9	353	83.3	11.2	58
12	K-K 77	30.75	148	2	17	0	2	84	7	1.0	342	80.6	11.9	58
13	Funk G-244	29.40	142	6	50	2	4	88	5	1.0	433	81.2	11.2	56
14	U. S. 13	28.68	138	2	17	1	1	91	8	0.9	384	81.9	11.6	58
15	U. S. 44	27.40	132	4	33	0	4	87	10	0.8	341	83.4	11.6	58
16	Funk G-56	27.29	132	9	75	6	3	90	7	0.8	360	81.9	12.6	58
17	Missouri 8	25.99	126	7	58	2	5	90	3	0.8	340	80.1	14.0	58
18	Hays Golden	25.69	124	14	117	6	8	88	2	0.9	409	81.0	12.3	57
19	Kansas 1514	24.10	116	5	42	3	2	90	4	0.6	316	77.8	15.5	59
20	Kansas 1513	23.87	115	10	83	8	2	90	4	0.8	423	79.7	12.6	60
21	DeKalb 899	21.60	104	2	17	1	1	90	2	0.8	424	75.2	13.3	60
22	Midland (A)	21.36	103	12	100	11	1	86	3	0.6	332	79.1	15.1	58
23	Pride of Saline	19.14	92	6	50	4	2	84	4	0.6	349	77.4	12.0	58
24	Funk G-135	19.02	92	2	17	0	2	90	3	0.8	434	73.9	14.4	60
25	Midland (C)	16.65	80	14	117	13	1	86	2	0.6	379	75.9	17.2	57
Ave. of 25 entries		28.14		7		4	3	88	5	0.83	353	80.2	12.7	58.2
Ave. of 4 O. P. var.		20.71		12		9	3	86	3	0.68	367	78.4	14.2	57.5
Ave. of 21 hybrids		29.56		6		3	3	89	6	0.86	350	80.5	12.5	58.4

<sup>1</sup> Percent of open pollinated varieties.

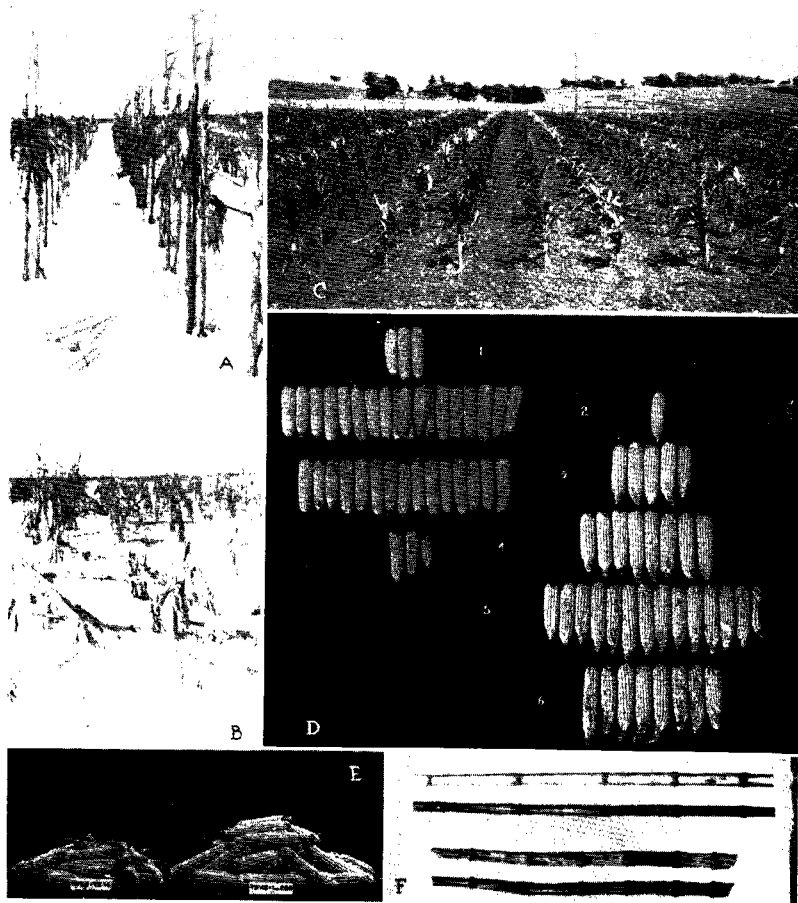


Fig. 2.—Corn hybrids differ in many characteristics, such as resistance to lodging (A and B), to drought (C), to damage by insects, such as corn earworm (D), to diseases, such as diplodia stalk rot (F), and difference in yield (E). (Photographs showing resistance to lodging by courtesy of Iowa Agricultural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

TABLE 12. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 3, NEOSHO COUNTY, 1940.

Rank in yield	Hybrid or variety	Yield		Lodged plants				Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O.P. <sup>1</sup>	Total	% of O.P. <sup>1</sup>	Root	Stalk							
		Bu.	%	%	%	%	%	%	No.	No.	%	%	Lbs.	
1	U. S. 35	65.04	150	4	19	1	3	88	2	0.6	213	84.7	12.1	58
2	Kansas 3	59.70	137	7	33	5	2	86	0	0.7	204	79.3	13.2	59
3	Funk G-88	58.78	135	6	28	1	5	93	0	0.7	215	82.2	12.5	60
4	U. S. 13	57.21	132	6	28	1	5	78	0	1.0	226	84.7	12.3	58
5	Jewett 11	56.78	131	18	86	3	13	76	5	1.0	222	82.1	12.0	57
6	Kansas 1335	56.59	130	4	19	0	4	77	5	0.9	200	83.1	12.3	59
7	Pioneer 313A	56.21	129	3	14	2	1	73	1	0.8	223	85.3	12.3	58
8	Funk G-244	55.99	129	13	62	9	4	78	4	1.2	282	83.1	11.8	57
Differences in yield of less than 9.84 bushels an acre are not significant in this test.														
9	National 134	55.19	127	12	57	7	5	80	4	0.8	244	83.4	12.3	58
10	Kansas 5	54.45	125	10	48	7	3	83	1	0.9	218	80.8	12.5	58
11	Kansas 1220	54.20	125	6	28	2	4	81	0	0.7	214	83.8	12.1	57
12	DeKalb 899	54.17	125	7	33	1	6	75	2	1.1	238	80.2	12.3	59
13	Richbred 1002	53.78	124	8	38	2	6	79	1	0.7	214	84.5	12.0	58
14	Kansas 2232	53.64	123	15	71	10	5	82	1	1.0	233	78.9	12.8	59
15	Funk G-143	53.59	123	8	38	4	4	80	4	0.9	230	84.2	12.0	58
16	Illinois 200	52.59	121	6	28	3	3	66	6	1.1	228	82.2	12.3	58
17	Kansas 1513	52.40	121	17	81	10	7	81	1	1.0	252	82.5	11.8	60
18	Funk G-94	51.76	119	10	48	8	2	72	6	1.0	228	83.4	12.3	57
19	Pioneer 319	51.42	118	26	124	23	3	75	11	1.0	248	81.6	12.5	59
20	Kansas 1549	51.41	118	9	43	5	4	82	1	0.7	239	82.3	12.1	60
21	DeKalb 888	51.39	118	8	38	4	4	71	1	0.8	224	84.2	11.8	58
22	Kansas 1501	51.36	118	16	76	13	3	69	1	1.0	217	83.5	12.3	60
23	DeKalb Exp. 93	51.34	118	8	38	3	5	77	0	0.9	229	84.7	12.4	59
24	Pioneer 302A	50.46	116	10	48	8	2	79	2	1.0	267	84.1	12.1	58
25	Kansas 1104	49.77	114	11	52	9	2	80	0	0.7	227	85.7	12.5	58
26	Missouri 47	49.74	114	12	57	6	6	76	2	0.8	252	83.0	11.8	57
27	Pride of Saline	49.69	114	24	114	19	5	73	3	0.9	214	81.7	12.5	57
28	Kansas 2113	49.31	113	5	24	2	3	74	1	1.0	245	82.0	12.3	60
29	Kansas 2231	49.27	113	6	28	5	1	69	0	0.9	193	78.7	12.3	58
30	Kansas 1466	49.23	113	3	14	3	0	67	0	1.0	225	82.5	12.7	60

<sup>1</sup> Percent of open-pollinated varieties.

TABLE 12. (Continued)

31	DeKalb 816	49.09	113	6	28	5	1	71	2	0.8	227	82.2	12.5	58
32	U. S. 44	49.01	113	4	19	3	1	75	5	0.8	243	83.8	12.3	59
33	National 128	48.94	113	10	48	5	5	78	3	1.0	255	84.8	11.8	57
34	Pioneer 332	48.55	112	5	24	3	2	78	2	0.9	252	84.6	12.3	58
35	Kansas 10	48.03	110	12	57	5	7	82	7	0.8	231	82.1	13.1	59
36	Kansas 2173	47.57	109	3	14	1	2	76	2	0.9	224	80.1	13.0	58
37	Pioneer 333	47.29	109	4	19	3	1	73	2	1.0	258	82.1	12.4	55
38	Moews-Lowe 514	47.17	109	6	28	4	2	74	6	0.8	262	84.2	12.3	57
39	Moews-Lowe 523	46.95	108	5	24	3	2	76	4	0.8	279	84.0	12.5	57
40	Missouri 8	46.95	108	20	95	14	6	78	4	0.9	238	83.2	12.5	56
41	Funk G-135	46.72	107	14	67	6	8	73	2	1.0	242	79.5	12.3	58
42	DeKalb Exp. 94	46.56	107	7	33	5	2	73	4	1.0	252	82.1	12.4	59
43	Kansas 1515	46.45	107	5	24	0	5	70	2	0.9	214	85.0	13.6	59
44	Ioweaith 28N	45.98	106	12	57	8	4	74	5	0.9	253	84.1	11.8	57
45	Moews-Lowe 830	45.82	105	11	52	8	3	63	3	1.0	218	82.7	12.4	59
46	Pioneer 330	45.77	105	5	24	4	1	71	2	0.8	265	83.9	12.0	54
47	Kansas 2181	45.72	105	7	33	5	2	85	2	0.9	249	80.0	13.5	58
48	K. K. 88	44.52	102	12	57	10	2	65	7	1.0	244	84.0	12.3	58
49	Ioweaith 30A	44.42	102	9	43	5	4	74	3	1.0	258	81.7	12.3	58
50	Local Variety	43.83	101	21	100	16	5	76	4	0.9	247	81.2	13.8	56
51	Midland (C)	43.80	101	14	67	8	6	74	2	0.8	221	84.0	12.8	57
52	Kansas 1412	43.74	101	6	28	2	4	73	0	0.9	247	82.3	12.5	59
53	Pioneer 334	43.50	100	6	28	5	1	80	4	0.7	275	83.1	12.0	55
54	DeKalb 847	42.07	97	7	33	6	1	75	0	0.8	271	83.0	12.5	59
55	Pioneer 307	41.40	95	7	33	4	3	79	0	0.8	304	83.2	12.2	55
56	Kansas 1522	41.11	95	6	28	3	3	80	1	0.9	287	83.1	12.7	58
57	Comm. White	40.89	94	27	128	24	3	76	2	0.8	217	78.9	13.8	58
58	Kansas 1514	40.41	93	8	38	5	3	73	3	0.9	274	83.8	12.5	60
59	Hays Golden	39.14	90	20	95	13	7	71	2	0.9	276	82.1	12.5	57
60	Nebraska 252	34.98	80	17	81	9	8	68	7	0.7	234	81.9	12.0	56
Ave. of 60 entries		49.21		10		6	4	76	3	0.89	240	82.7	12.4	57.9
Ave. of 5 O. P. varieties		43.47		21		16	5	74	3	0.86	235	81.6	13.1	57.0
Ave. of 55 hybrids		49.73		9		5	4	76	3	0.89	240	82.8	12.4	58.0

KANSAS CORN TESTS, 1940

TABLE 13. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 3, BOURBON COUNTY, 1940.

Rank in yield	Hybrid or variety	Yield		Lodged plants				Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O.P. <sup>1</sup>	Total	% of O.P. <sup>1</sup>	Root	Stalk							
1	Jewett 11	38.08	175	23	115	3	20	93	1	0.9	318	79.5	13.2	57
2	Kansas 1501	33.56	154	3	15	2	1	85	0	1.0	348	80.4	13.0	58
3	Kansas 2232	32.66	150	5	25	1	4	88	0	0.9	343	75.9	13.5	58
4	Richbred 1002	32.20	148	9	45	0	9	89	2	0.9	364	79.5	13.1	58
5	Pioneer 319	31.52	145	6	30	3	3	87	1	0.9	356	81.7	13.5	57
Differences in yield of less than 6.77 bushels an acre are not significant in this test.														
6	Kansas 1466	30.16	138	3	15	0	3	82	0	0.9	389	85.0	13.2	59
7	Funk G-135	29.87	137	9	45	6	3	90	3	0.9	391	79.8	13.3	58
8	Kansas 1104	29.85	137	5	25	3	2	82	0	0.9	345	82.2	13.6	57
9	Pioneer 302A	29.39	135	2	10	0	2	86	0	0.9	381	83.1	13.5	56
10	Funk G-143	28.51	131	5	25	0	5	83	1	0.9	372	81.3	13.0	58
11	Kansas 3	28.04	129	10	50	5	5	83	0	0.8	330	76.7	13.6	57
12	Midland (C)	28.00	129	8	40	2	6	86	1	0.8	348	80.2	13.4	59
13	Pioneer 332	27.73	127	4	20	2	2	85	0	0.8	354	80.4	13.2	58
14	Missouri 47	27.54	126	7	35	0	7	89	0	0.9	414	82.1	13.1	56
15	Kansas 1515	27.24	125	9	45	4	5	84	0	0.8	364	82.4	13.7	59
16	Funk G-88	27.03	124	2	10	0	2	92	1	0.8	411	82.1	13.1	58
17	Illinois 200	26.75	123	2	10	0	2	85	1	0.8	355	80.4	12.5	57
18	DeKalb Exp. 93	26.69	123	5	25	1	4	89	1	0.9	426	80.4	14.0	56
19	U. S. 13	26.65	122	4	20	0	4	87	1	0.9	411	81.2	13.7	55
20	Pride of Saline	26.51	122	9	45	3	6	86	0	0.8	369	77.6	13.4	58
21	Pioneer 334	26.47	122	7	35	2	5	84	0	0.9	416	80.7	13.1	54
22	Kansas 1412	26.09	120	6	30	1	5	85	1	0.8	389	80.8	13.8	59
23	Kansas 5	25.74	118	13	65	9	4	79	0	0.9	381	78.4	13.0	55
24	Funk G-244	25.46	117	10	50	0	10	88	0	0.9	446	80.5	12.9	56
25	U. S. 35	25.45	117	4	20	0	4	83	2	0.9	421	80.4	13.5	55
26	National 134	25.43	117	8	40	1	7	87	0	0.8	398	80.4	12.9	57
27	K. K. 88	25.38	117	3	15	0	3	80	0	0.9	385	80.1	13.4	55
28	Moews-Lowe 830	25.06	115	4	20	0	4	91	1	0.9	439	78.8	13.1	56
29	Iowearth 30A	24.81	114	10	50	4	6	81	1	0.9	417	80.8	12.7	57
30	Pioneer 330	24.14	111	3	15	0	3	82	0	0.9	444	80.7	13.5	53

<sup>1</sup> Percent of open pollinated varieties.

TABLE 13. (Continued)

31	DeKalb Exp. 94	24.12	111	2	10	0	2	87	3	0.9	467	78.2	13.7	55
32	Moews-Lowe 514	24.12	111	5	25	0	5	86	0	0.9	450	80.7	13.6	56
33	Kansas 2113	24.11	111	3	15	1	2	88	0	0.9	447	77.2	13.3	60
34	DeKalb 899	23.92	110	6	30	0	6	93	0	0.8	417	77.9	13.4	59
35	Kansas 2181	23.86	110	5	25	2	3	88	0	0.8	418	76.4	13.3	56
36	National 128	23.83	109	12	60	3	9	88	2	0.8	406	81.9	13.0	57
37	DeKalb 847	23.62	108	1	5	0	1	83	1	0.8	412	80.9	14.2	56
38	Pioneer 333	23.55	108	2	10	0	2	89	1	0.8	458	80.9	13.7	53
39	Funk G-94	23.19	106	2	10	0	2	80	1	0.9	437	79.3	13.3	56
40	U. S. 44	23.01	106	2	10	0	2	78	0	0.9	440	81.0	13.6	57
41	Hays Golden	22.48	103	9	45	2	7	85	0	0.8	417	80.8	13.1	56
42	DeKalb 888	22.40	103	3	15	1	2	84	1	0.8	432	79.0	13.0	58
43	Kansas 2173	22.25	102	4	20	3	1	85	0	0.8	405	76.5	14.5	55
44	Kansas 1335	22.16	102	6	30	2	4	89	2	0.8	488	81.3	14.1	57
45	Pioneer 313A	21.45	98	4	20	3	1	85	1	0.8	497	82.9	13.8	54
46	Nebraska 252	21.41	98	9	45	3	6	83	0	0.8	417	79.9	13.2	55
47	Iowearth 28N	21.24	98	10	50	1	9	86	3	0.8	461	82.2	13.1	56
48	Kansas 1549	21.22	97	5	25	2	3	87	1	0.9	521	79.0	13.0	59
49	Kansas 10	20.89	96	9	45	5	4	82	2	0.8	451	81.3	13.6	59
50	Moews-Lowe 523	20.56	94	3	15	0	3	83	4	0.9	497	80.5	14.1	55
51	Kansas 1522	20.38	94	5	25	0	5	89	0	0.8	498	80.6	13.3	59
52	Pioneer 307	20.13	92	3	15	1	2	86	0	0.8	469	80.7	13.6	54
53	Kansas 1220	19.77	91	9	45	2	7	86	0	0.7	459	83.0	13.2	57
54	Kansas 2231	19.73	91	4	20	2	2	76	0	0.8	419	75.6	13.9	58
55	Kansas 1513	19.72	91	7	35	2	5	86	1	0.8	470	76.4	13.2	58
56	Kansas 1514	19.31	89	2	10	1	1	87	0	0.8	495	78.6	13.2	58
57	DeKalb 816	18.42	85	4	20	0	4	79	3	0.8	482	78.5	13.6	55
58	Local Variety	18.08	83	8	40	5	3	83	0	0.7	453	77.6	13.3	56
59	Missouri 8	16.00	73	5	25	0	5	87	0	0.7	575	79.7	13.3	56
60	Comm. White	13.85	64	13	65	4	9	84	1	0.6	469	73.6	14.5	56
Ave. of 60 entries		24.68		6		2	4	85	1	0.84	421	82.9	13.4	56.7
Ave. of 5 O. P. varieties		21.78		10		4	6	85	0	0.74	411	78.0	13.5	57.0
Ave. of 55 hybrids		24.94		6		2	4	85	1	0.85	422	83.4	13.4	56.7



TABLE 14. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 3, NEOSHO AND BOURBON COUNTIES, 1940.

Rank in yield	Hybrid or variety	Yield		Lodged plants				Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P. <sup>1</sup>	Total	% of O. P. <sup>1</sup>	Root	Stalk							
		Bu.	%	%	%	%	%	%	No.	No.	%	%	Lbs.	
1	Jewett 11	47.43	149	20	133	4	16	84	3	1.0	270	80.8	12.6	57
2	U. S. 35	45.24	139	5	33	1	4	86	2	0.8	317	82.5	12.8	57
3	Kansas 3	43.87	134	9	60	5	4	84	0	0.8	267	78.0	13.4	58
4	Kansas 2232	43.15	132	10	67	6	4	85	2	1.0	288	77.4	13.2	58
5	Richbred 1002	42.99	132	9	60	1	8	84	2	0.8	289	82.0	12.6	58
6	Funk G-88	42.90	131	5	33	1	4	92	2	0.8	313	82.2	12.8	59
7	Kansas 1501	42.46	130	10	67	8	2	77	1	1.0	283	82.0	12.6	59
8	U. S. 13	41.93	129	5	33	1	4	82	2	1.0	318	83.0	13.0	58
9	Pioneer 319	41.47	127	16	107	13	3	81	6	1.0	302	81.6	13.0	58
10	Funk G-143	41.05	126	6	40	2	4	82	2	0.9	301	82.8	12.5	58
11	Funk G-244	40.72	125	11	73	4	7	83	2	1.0	364	81.8	12.4	56
12	National 134	40.31	124	10	67	4	6	84	2	0.8	321	81.9	12.6	58
13	Kansas 5	40.10	123	12	80	8	4	81	2	0.9	300	79.6	12.8	56
14	Pioneer 302A	39.92	122	6	40	4	2	82	1	1.0	324	83.6	12.8	57
15	Kansas 1104	39.81	122	8	53	6	2	81	0	0.8	286	84.0	13.1	58
16	Kansas 1466	39.70	122	4	27	2	2	74	0	1.0	307	83.8	13.0	60
17	Illinois 200	39.67	122	4	27	2	2	76	4	1.0	292	81.3	12.4	58
18	Kansas 1335	39.38	121	5	33	1	4	83	4	0.9	344	82.2	13.2	58
19	DeKalb 899	39.04	120	7	47	1	6	84	1	1.0	328	79.0	12.8	59
20	DeKalb Exp. 93	39.02	120	6	40	2	4	83	1	0.9	328	82.6	13.2	58
21	Pioneer 313A	38.83	119	3	20	2	1	79	1	0.8	360	84.1	13.0	56
22	Missouri 47	38.64	118	9	60	3	6	82	1	0.9	333	82.6	12.4	56
23	Funk G-135	38.30	117	12	80	6	6	82	2	1.0	316	79.6	12.8	58
24	Pioneer 332	38.14	117	4	27	2	2	82	1	0.9	303	82.5	12.8	58
25	Pride of Saline	38.10	117	17	113	11	6	80	2	0.9	292	79.6	13.0	58
26	Funk G-94	37.48	115	6	40	4	2	76	4	1.0	332	81.4	12.8	56
27	Kansas 1220	36.99	113	8	53	2	6	84	0	0.7	336	83.4	12.6	57
28	DeKalb 888	36.90	113	6	40	3	3	78	1	0.8	328	81.6	12.4	58
29	Kansas 1515	36.84	113	7	47	2	5	77	1	0.9	289	83.7	13.6	59
30	Kansas 2113	36.71	113	4	27	2	2	81	1	1.0	346	79.6	12.8	60

<sup>1</sup> Percent of open pollinated varieties.

TABLE 14. (Continued)

31	National 128	36.38	112	11	73	4	7	83	2	0.8	330	83.4	12.4	57
32	Kansas 1549	36.32	111	8	53	4	4	84	1	0.8	380	80.7	12.6	60
33	Kansas 1513	36.01	110	12	80	6	6	84	1	0.9	361	79.4	12.5	59
34	U. S. 44	36.01	110	4	27	2	2	76	2	0.9	342	82.4	13.0	58
35	Midland (C)	35.90	110	11	73	5	6	80	2	0.8	284	82.1	13.1	58
36	Moews-Lowe 514	35.64	109	6	40	2	4	80	3	0.9	356	82.4	12.9	56
37	Moews-Lowe 830	35.44	109	8	53	4	4	77	2	1.0	328	80.8	12.8	58
38	Pioneer 333	35.42	109	4	27	2	2	81	2	0.9	358	81.5	13.0	54
39	DeKalb Exp. 94	35.34	108	4	27	2	2	80	4	1.0	360	80.5	13.1	57
40	Pioneer 334	34.98	107	7	47	4	3	82	2	0.9	346	81.9	12.5	54
41	Pioneer 330	34.96	107	4	27	2	2	76	1	0.9	354	82.3	12.8	54
42	K. K. 88	34.95	107	7	47	5	2	73	4	1.0	314	82.0	12.8	56
43	Kansas 1412	34.92	107	6	40	2	4	79	1	0.9	318	81.6	13.2	59
44	Kansas 2173	34.91	107	4	27	2	2	81	1	0.9	314	68.3	13.8	56
45	Kansas 2181	34.79	107	6	40	4	2	87	1	0.8	334	78.2	13.4	57
46	Iowealth 30A	34.62	106	9	60	4	5	78	2	1.0	338	81.2	12.5	58
47	Kansas 2231	34.50	106	6	40	4	2	72	0	0.9	306	77.2	13.1	58
48	Kansas 10	34.46	106	11	73	5	6	82	4	0.8	341	81.7	13.4	58
49	DeKalb 816	33.76	103	4	27	2	2	75	3	0.8	354	80.4	13.0	56
50	Moews-Lowe 523	33.76	103	4	27	2	2	80	4	0.9	388	82.3	13.3	56
51	Iowealth 28N	33.61	103	10	67	4	6	80	4	0.9	357	83.2	12.4	56
52	DeKalb 847	32.84	101	5	33	3	2	79	1	0.8	342	82.0	13.4	58
53	Missouri 8	31.48	96	13	87	7	6	82	2	0.8	406	81.4	12.9	56
54	Local Variety	30.96	95	14	93	10	4	80	2	0.8	350	79.4	13.6	56
55	Hays-Golden	30.81	94	15	100	8	7	78	1	0.9	346	81.4	12.8	56
56	Pioneer 307	30.77	94	4	27	2	2	83	0	0.8	386	82.0	12.9	54
57	Kansas 1522	30.75	94	6	40	2	4	84	2	0.8	392	81.8	13.0	58
58	Kansas 1514	29.86	91	5	33	3	2	80	2	0.9	384	81.2	12.9	59
59	Nebraska 252	28.20	86	13	87	6	7	76	4	0.8	326	80.9	12.6	56
60	Comm. White	27.37	84	20	133	14	6	80	2	0.7	343	76.2	14.1	57
Ave. of 60 entries		36.95		8	5	4	4	81	2	0.89	330	81.2	12.9	57.3
Ave. of 5 O. P. var.		32.63		15	10	10	5	80	2	0.82	323	79.7	13.3	57.0
Ave. of 55 hybrids		37.34		7	5	3	4	81	2	0.89	331	81.3	12.9	57.3

KANSAS CORN TESTS, 1940

TABLE 15. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 5, MARION COUNTY, 1940.

Rank in yield	Hybrid or variety	Yield		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. <sup>1</sup>	Total	% of O.P. <sup>1</sup>	Root	Stalk								
		Bu.	%	%	%	%	%	%	No.	No.	%	%	lbs.	class	
1	Kansas 1430	36.71	176	29	48	23	6	90	11	1.0	251	82.4	15.8	58	3.62
2	DeKalb 847	36.13	173	13	22	8	5	93	12	0.9	264	86.8	16.4	59	4.17
3	Pioneer 330	33.82	162	24	40	4	20	88	7	1.0	262	83.8	16.3	54	3.79
4	Iowa 939	32.43	155	44	73	3	41	94	3	1.0	288	82.2	16.0	55	3.98
5	Pioneer 332	32.37	155	33	55	7	26	94	9	1.0	285	84.0	15.7	59	4.07
Differences in yield of less than 4.73 bushels an acre are not significant in this test.															
6	Kansas 17	31.60	151	54	90	38	16	93	1	1.0	293	80.3	16.2	59	3.51
7	U. S. 13	31.02	149	12	20	4	8	89	16	1.0	288	81.1	16.9	57	3.78
8	Pioneer 307	30.48	146	22	37	11	11	93	5	0.9	307	83.3	15.3	58	4.35
9	Kansas 1296	29.81	143	21	35	7	14	92	13	0.9	284	78.5	17.5	59	3.75
10	U. S. 35	29.54	141	13	22	1	12	95	9	0.9	296	81.3	17.7	57	3.73
11	Missouri 8	29.47	141	41	68	23	18	95	7	0.9	291	81.6	17.6	55	3.57
12	DeKalb Exp. 93	28.79	138	14	23	5	9	95	15	1.1	339	78.1	17.1	57	4.08
13	Punk G-94	28.58	137	18	30	3	3	92	15	0.9	288	79.5	18.0	50	4.09
14	Moews-Lowe 830	28.57	137	11	18	2	9	93	13	1.0	315	78.9	16.2	57	3.75
15	Missouri 47	28.43	136	49	82	6	43	93	8	1.0	307	77.5	15.7	58	3.83
16	Moews-Lowe 514	28.31	136	23	38	7	16	91	9	1.0	317	81.7	16.8	57	3.77
17	Kansas 1412	28.06	134	23	38	17	6	89	5	0.9	286	80.3	16.1	59	3.46
18	Kansas 4	28.06	134	77	128	76	1	94	1	0.9	294	75.5	16.4	59	3.42
19	Kansas 11	27.92	134	51	85	37	14	90	4	0.8	261	81.6	15.3	59	3.39
20	Pioneer 324	27.71	133	59	98	11	48	88	6	1.0	313	82.1	17.7	54	3.93
21	DeKalb Exp. 94	27.67	133	10	17	3	7	93	9	1.0	314	78.2	16.9	58	4.15
22	Kansas 9	27.57	132	49	82	42	7	86	4	0.9	269	79.0	16.2	59	3.13
23	Kansas 1466	27.54	132	36	60	33	3	97	3	0.9	292	73.4	15.0	59	3.26
24	Kansas 1501	27.42	131	32	53	28	4	93	4	0.9	294	74.4	16.5	61	3.37
25	Hays Golden	27.19	130	67	112	59	8	89	3	0.9	290	82.6	15.9	57	3.41

<sup>1</sup> Percent of open pollinated varieties.

TABLE 15. (Continued)

26	Funk G-32	27.08	130	13	22	6	7	90	11	1.1	355	81.2	16.8	57	3.81
27	Nebraska 238	26.91	129	54	90	17	37	89	3	0.8	282	79.5	16.2	55	3.47
28	U. S. 44	26.67	128	31	52	8	23	91	4	0.9	317	81.1	17.3	59	3.66
29	Kansas 13	26.34	126	38	63	30	8	90	4	0.9	309	77.1	16.7	58	3.42
30	Illinois 200	26.27	126	16	27	9	7	95	12	1.0	327	74.8	16.3	58	3.80
31	Kansas 7	25.44	122	49	82	41	8	89	2	0.9	301	78.3	16.3	58	3.27
32	Iowa 29A	25.01	120	27	45	15	12	90	11	1.0	331	77.1	17.1	57	3.71
33	Kansas 1549	24.98	120	34	57	26	8	94	7	0.8	312	80.6	16.1	58	3.31
34	K-K 88	24.88	119	8	13	2	6	87	12	1.0	321	77.5	17.3	55	3.85
35	Jewett 6	24.00	115	36	60	29	7	95	5	0.9	342	73.5	15.9	56	3.86
36	Funk G-46	23.74	114	24	40	7	17	96	10	1.0	357	72.7	15.9	60	3.48
37	National 129	23.25	111	18	30	4	14	88	10	0.9	338	77.4	17.3	57	3.88
38	DeKalb 888	22.72	109	16	27	5	11	92	11	1.0	376	76.5	17.5	57	3.57
39	Kansas 1514	22.21	106	19	32	12	7	97	5	0.8	349	78.3	16.9	60	3.71
40	Kansas 15	22.03	106	27	45	19	8	88	6	0.9	338	74.6	15.8	59	3.52
41	Kansas 1513	21.81	104	27	45	23	4	99	7	1.0	409	70.9	15.3	58	3.88
42	Freed	21.73	104	81	135	77	4	96	2	0.8	329	76.0	16.2	57	3.25
43	Kansas 1104	21.59	103	20	33	17	3	98	3	0.9	382	75.3	16.0	57	3.65
44	Midland (A)	20.36	98	53	88	48	5	91	2	0.8	327	75.5	16.4	58	3.36
45	DeKalb 899	20.06	96	17	28	7	10	92	6	1.0	388	68.6	16.6	60	3.55
46	Local Variety	18.93	91	54	90	43	11	98	2	0.7	328	73.0	17.2	55	3.57
47	Kansas 2026	18.50	89	18	30	7	11	98	3	0.8	381	68.8	15.8	59	3.29
48	DeKalb 816	18.49	89	7	12	1	6	84	21	0.9	354	70.6	18.0	58	3.91
49	Iowa 30A	16.41	79	22	37	13	9	90	10	0.9	420	70.0	16.8	58	3.61
50	Pride of Saline	16.21	78	44	73	38	6	94	6	0.8	387	65.2	17.3	57	3.90
Ave. of 50 entries		26.22	32		19		13	92	7	0.92	319	77.6	16.5	57.5	3.67
Ave. of 5 O. P. var.		20.88	60		53		7	94	3	0.80	332	74.5	16.6	56.8	3.50
Ave. of 45 hybrids		26.81	28		15		13	92	8	0.94	317	78.0	16.5	57.6	3.69

KANSAS CORN TESTS, 1940

TABLE 16. RESULTS, KANSAS CORN PERFORMANCE TEST, DISTRICT 5, BARNER, SUMNER COUNTY, 1940.

Rank in yield	Hybrid or variety	Yield		Lodged plants				Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shelling	Moisture	Test wt.
		Per acre	% of O. P. I	Total	% of O. P. I	Root	Stalk							
		Bu.	%	%	%	%	%	%	No.	No.	%	%	Lbs.	
1	Pioneer 332	37.15	134	21	62	0	21	90	2	0.9	238	83.1	15.0	54
2	Kansas 1296	36.01	130	26	76	0	26	94	2	1.0	268	79.4	14.3	56
3	Kansas 17	34.70	125	34	100	1	33	85	1	1.3	313	77.6	15.0	52
4	Kansas 1501	34.43	124	24	71	1	23	85	1	1.0	248	78.8	14.9	57
5	Kansas 1549	34.16	123	12	35	0	12	89	2	0.9	255	79.8	14.0	55
6	Freed	33.01	119	47	138	12	35	87	1	1.1	289	77.8	15.3	53
7	Jewett 6	32.89	118	56	165	0	56	88	4	1.1	297	79.6	15.4	52
8	Kansas 11	32.36	117	16	47	3	13	80	1	1.0	240	79.9	14.9	54
9	Kansas 4	32.23	116	23	68	3	20	85	0	1.2	311	74.4	14.6	52
10	Kansas 1514	32.20	116	15	44	0	15	89	2	0.9	258	79.6	15.0	55
11	Iowa 939	31.86	115	35	103	1	34	81	5	1.1	291	79.8	15.0	52
12	Illinois 200	31.73	114	17	50	0	17	85	3	1.1	280	78.8	16.5	52
13	Kansas 9	31.54	114	30	88	2	28	78	1	1.0	260	80.8	15.2	54
14	DeKalb 816	31.39	113	12	35	1	11	78	1	0.9	239	80.8	15.6	54
15	U. S. 35	31.39	113	20	59	0	20	89	1	1.0	297	78.4	15.3	50
16	Kansas 15	30.92	111	23	68	0	23	84	1	1.1	299	77.3	14.8	53
17	Funk G-32	30.49	110	16	47	1	15	82	2	1.1	295	79.0	15.0	51
18	Midland (A)	30.26	109	26	76	1	25	86	2	0.9	266	81.8	15.0	55
19	K-K 88	29.98	108	14	41	1	13	76	2	1.0	261	79.6	15.3	55
20	DeKalb Exp. 93	29.95	108	24	71	1	23	82	2	1.0	281	80.3	16.1	53
21	Pioneer 330	29.86	107	18	53	4	14	86	1	1.0	301	79.4	14.8	49
22	Kansas 1466	29.55	106	15	44	0	15	88	1	1.0	307	78.0	14.8	54
23	DeKalb Exp. 94	29.27	105	21	62	1	20	85	2	1.0	278	78.1	16.3	54
24	Hays Golden	29.15	105	39	115	11	28	81	1	1.1	314	78.7	14.9	54
25	DeKalb 847	29.08	105	30	88	0	30	86	2	0.9	262	78.9	15.3	54

<sup>1</sup> Percent of open pollinated varieties.

TABLE 16. (Continued)

26	Missouri 47	29.08	105	48	141	0	48	87	0	1.0	326	78.6	15.0	50
27	Kansas 1412	28.89	104	20	59	0	20	83	1	0.9	277	79.6	15.4	54
28	Kansas 1430	28.85	104	19	56	0	19	84	1	0.9	271	81.8	15.3	54
29	Pioneer 324	28.71	103	28	82	2	26	80	2	1.1	304	77.9	14.7	52
30	Iowealth 30A	28.57	103	37	109	0	37	84	3	1.1	342	81.9	15.6	52
31	Iowealth 29A	28.55	103	15	44	3	12	76	1	1.0	280	81.8	14.9	54
Differences in yield of less than 8.76 bushels an acre are not significant in this test.														
32	Kansas 7	27.96	101	33	97	0	33	85	1	1.0	315	79.6	15.0	52
33	Pioneer 307	27.89	100	16	47	2	14	81	1	1.3	390	78.2	15.0	51
34	DeKalb 899	27.33	98	23	68	1	22	80	2	1.0	298	79.7	15.1	53
35	Kansas 1513	27.00	97	25	74	1	24	92	1	1.0	334	77.5	14.4	54
36	Nebraska 238	26.28	95	19	56	4	15	73	2	1.1	313	78.2	14.8	50
37	Kansas 13	26.10	94	25	74	3	22	84	0	1.0	332	77.6	15.4	53
38	U. S. 44	26.05	94	27	79	0	27	85	1	1.0	314	77.7	15.7	51
39	U. S. 13	25.95	93	25	74	1	24	86	2	1.0	321	77.6	15.9	51
40	Missouri 8	25.46	92	38	112	1	37	81	2	1.0	319	77.6	14.5	52
41	Local Variety	25.21	91	32	94	4	28	88	1	0.7	253	79.3	15.4	53
42	Kansas 2026	24.75	89	33	97	1	32	91	2	0.9	333	75.0	15.0	48
43	Funk G-46	24.69	89	31	91	1	30	83	4	1.0	345	78.7	15.1	51
44	DeKalb 888	23.91	86	11	32	0	11	74	2	1.0	321	78.8	15.0	54
45	Kansas 1104	23.76	86	19	56	0	19	87	2	0.9	343	78.1	15.5	50
46	National 129	23.44	84	20	59	1	19	80	4	1.0	329	77.8	15.6	51
47	Funk G-94	23.32	84	23	68	0	23	82	3	1.0	341	78.0	15.5	50
48	Moews-Lowe 830	23.11	83	20	59	1	19	74	3	1.1	320	77.2	15.4	53
49	Pride of Saline	21.10	76	42	123	3	39	83	2	0.9	341	77.7	15.8	49
50	Moews-Lowe 514	20.16	73	22	65	1	21	81	2	0.9	369	76.1	16.4	51
Ave. of 50 entries		28.83		25		1	24	84	2	1.01	300	78.8	15.2	52.5
Ave. of 5 O. P. var.		27.77		34		4	30	86	2	0.92	285	78.9	15.6	52.8
Ave. of 45 hybrids		28.95		24		1	23	83	2	1.02	301	78.8	15.2	52.5

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

Rank in yield	Hybrid or variety	Yield		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							
1	Pioneer 332	Bu. 34.76	143	27	55	4	23	92	6	1.0	262	83.6	15.3	56
2	Kansas 17	33.15	136	44	90	20	24	89	1	1.2	303	79.0	15.6	56
3	Kansas 1296	32.91	135	24	49	4	20	93	8	1.0	276	79.0	15.9	58
4	Kansas 1430	32.78	135	24	49	12	12	87	6	1.0	261	82.1	15.5	56
5	DeKalb 847	32.60	134	22	45	4	18	90	7	0.9	263	82.8	15.8	56
6	Iowa 939	32.14	132	40	82	2	38	88	4	1.0	290	81.0	15.5	54
7	Pioneer 330	31.84	131	21	43	4	17	87	4	1.0	282	81.6	15.6	52
8	Kansas 1501	30.92	127	28	57	14	14	89	2	1.0	270	76.6	15.7	59
9	U. S. 35	30.46	125	16	33	0	16	92	5	1.0	296	79.8	16.5	54
10	Kansas 4	30.15	124	50	102	40	10	90	1	1.0	302	75.0	15.5	56
11	Kansas 11	30.14	124	34	69	20	14	85	2	0.9	250	80.8	15.1	56
12	Kansas 1549	29.57	122	23	47	13	10	92	4	0.8	284	80.2	15.0	56
13	Kansas 9	29.56	122	40	82	22	18	82	2	1.0	264	79.9	15.7	56
14	DeKalb Exp. 93	29.37	121	19	39	3	16	89	8	1.0	310	79.2	16.6	55
15	Pioneer 307	29.18	120	19	39	7	12	87	3	1.1	348	80.8	15.2	55
16	Illinois 200	29.00	119	16	33	4	12	90	8	1.0	304	76.8	16.4	55
17	Punk G-32	28.78	118	14	29	3	11	86	6	1.1	325	80.1	15.9	54
18	Missouri 47	28.76	118	48	98	3	45	90	4	1.0	316	78.0	15.4	54
19	Kansas 1466	28.54	117	26	53	17	9	92	2	1.0	300	75.7	14.9	56
20	U. S. 13	28.48	117	18	37	2	16	88	9	1.0	304	79.3	16.4	54
21	DeKalb Exp. 94	28.47	117	16	33	2	14	89	6	1.0	296	78.2	16.6	56
22	Kansas 1412	28.47	117	22	45	9	13	86	3	0.9	282	80.0	15.8	56
23	Jewett 6	28.45	117	46	94	14	32	91	4	1.0	319	76.6	15.6	54
24	Pioneer 324	28.21	116	44	90	7	37	84	4	1.0	308	80.0	16.2	53
25	Hays Golden	28.17	116	53	108	35	18	85	2	1.0	302	80.6	15.4	56

<sup>1</sup> Percent of open pollinated varieties.

TABLE 17. (Continued)

26	Missouri 8	27.46	113	40	82	12	28	88	4	1.0	305	79.6	16.0	54
27	K-K 88	27.43	113	11	22	1	10	82	7	1.0	291	78.6	16.3	55
28	Freed	27.37	113	64	131	44	20	92	2	1.0	309	76.9	15.7	55
29	Kansas 1514	27.21	112	17	35	6	11	93	3	0.8	304	79.0	16.0	58
30	Iowearth 29A	26.78	110	21	43	9	12	83	6	1.0	306	79.4	16.0	56
31	Kansas 7	26.70	110	41	84	20	21	87	2	1.0	308	78.9	15.7	55
32	Nebraska 238	26.60	109	36	73	10	26	81	2	1.0	297	78.8	15.5	52
33	Kansas 15	26.47	109	25	51	9	16	86	4	1.0	319	76.0	15.3	56
34	U. S. 44	26.36	108	29	59	4	25	88	2	1.0	316	79.4	16.5	55
35	Kansas 13	26.22	108	32	65	17	15	87	2	1.0	321	77.3	16.0	56
36	Funk G-94	25.95	107	20	41	1	19	87	9	1.0	314	78.8	16.8	50
37	Moews-Lowe 830	25.84	106	16	33	2	14	83	8	1.0	318	78.0	15.8	55
38	Midland (A)	25.31	104	40	82	25	15	88	2	0.8	296	78.6	15.7	56
39	DeKalb 816	24.94	103	10	20	1	9	81	11	0.9	296	75.7	16.8	56
40	Kansas 1513	24.41	100	26	53	12	14	96	4	1.0	372	74.2	14.8	56
41	Moews-Lowe 514	24.24	100	23	47	4	19	86	6	1.0	343	78.9	16.6	54
42	Funk G-46	24.22	100	28	57	4	24	90	7	1.0	351	75.7	15.5	56
43	DeKalb 899	23.70	97	20	41	4	16	86	4	1.0	343	74.2	15.9	56
44	National 129	23.34	96	19	39	3	16	84	7	1.0	334	77.6	16.4	54
45	DeKalb 888	23.32	96	14	29	3	11	83	6	1.0	349	77.6	16.2	56
46	Kansas 1104	22.68	93	20	41	9	11	92	2	0.9	362	76.7	15.8	54
47	Iowearth 30A	22.49	92	30	61	7	23	87	6	1.0	381	76.0	16.2	55
48	Local Variety	22.07	91	43	88	24	19	93	2	0.7	290	76.2	16.3	54
49	Kansas 2026	21.62	90	26	53	4	22	94	2	0.8	357	71.9	15.4	54
50	Pride of Saline	18.66	77	43	88	20	23	88	4	0.8	364	71.4	16.6	53
Ave. of 50 entries		27.53		28		10	18	88	5	0.97	309	78.2	15.9	55.0
Ave. of 5 O. P. var.		24.32		49		30	19	89	2	0.86	312	76.7	15.9	54.8
Ave. of 45 hybrids		27.88		26		8	18	88	5	0.98	309	78.4	15.8	55.1



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

Rank in yield	Hybrid or variety	Yield		Lodged plants				Stand	Dropped ears	Ears per plant	Ear size Ears per cwt.	Shells	Moisture	Test wt.
		Per acre	% of O. P. <sup>1</sup>	Total	% of O. P. <sup>1</sup>	Root	Stalk							
1	Kansas 1296	28.74	129	17	45	3	14	88	11	0.9	325	79.0	12.8	60
2	U. S. 35	27.88	125	14	37	1	13	88	9	1.0	342	79.8	12.6	56
3	Kansas 1412	27.42	123	16	42	6	10	84	8	0.8	312	80.0	12.4	58
4	U. S. 13	26.92	121	13	34	1	12	88	18	0.9	315	79.8	13.0	56
5	Illinois 200	26.41	118	14	37	4	10	87	12	0.9	352	77.0	12.8	56
6	Iowa 939	25.78	116	32	84	4	28	80	12	0.9	388	79.4	12.4	54
7	Kansas 1501	25.69	115	20	53	8	12	84	2	0.8	369	75.7	12.2	60
8	Hays Golden	25.18	113	42	111	22	20	82	2	0.9	340	79.4	8.2	57
9	Punk G-32	24.93	112	12	32	3	9	82	12	1.0	374	78.6	12.8	55
10	Missouri 47	24.85	111	36	95	4	32	84	8	0.9	385	79.1	12.4	56
11	U. S. 44	24.44	110	27	71	3	24	87	4	0.9	380	79.9	12.9	56
12	Missouri 8	24.31	109	30	79	8	22	86	6	0.8	371	78.5	12.6	56
13	Pioneer 307	24.21	109	16	42	6	10	83	6	1.0	434	80.6	12.4	54
14	Freed	23.69	106	49	129	30	19	87	2	0.9	360	76.6	17.8	55
15	Moews-Lowe 830	23.67	106	12	32	1	11	85	14	0.9	424	77.4	14.1	56
16	Pioneer 324	22.87	103	37	97	6	31	79	8	0.9	396	79.2	13.2	53
17	Kansas 2026	22.86	103	19	50	4	15	91	2	0.8	378	74.2	12.4	56
18	Nebraska 238	22.14	99	31	82	12	19	72	7	1.0	375	78.2	12.4	52
19	DeKalb 899	22.07	99	16	42	3	13	84	7	0.9	406	75.4	13.3	57
20	Midland (A)	21.77	98	31	82	17	14	86	5	0.6	452	74.6	12.6	56
21	Pride of Saline	18.53	83	30	79	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. var.		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

<sup>1</sup> Percent of open pollinated varieties.

#### YIELDS IN 1940, AND IN 1939-1940

In the spring of 1940, 94 corn strip tests were located in 52 counties. The yield and rank of the varieties and hybrids from 49 of these tests are reported in Tables 19 and 20. No yields are reported for 45 tests because of failure due to drouth, lack of uniformity, failure to harvest, or other cause. Two-year average yields are given for those hybrids and varieties which were included in the same district in both 1939 and 1940. The results for two years are assembled from yield data obtained from a total of 92 tests. Tables 19 and 20 give the two-year average yield and rank for 1939-1940. Two entries with equal yields were given the same rank. As the plots in these tests were not replicated, yields from several tests in one 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.

#### RESULTS IN EASTERN KANSAS

The average yield of the entries in the cooperative strip tests located in the three eastern districts in 1940 and for the two-year period 1939-1940 are given in Table 19. This table includes the results for 35 tests conducted in eastern Kansas in 1940, and 65 tests conducted over the two-year period, 1939-1940. 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. Jewett 11 ranked first in districts 1, 2, and 3. Results in the performance tests indicate that Jewett 11 has yielding ability but lodges badly. Other hybrids which have made high yields in the strip tests in eastern Kansas are National 134, Mo. 47, U. S. 13, U. S. 35, Pioneer 332, and Funk G-94.

#### RESULTS FOR CENTRAL AND WESTERN KANSAS

Because of unfavorable corn-growing conditions throughout this area generally, results were obtained from only 14 tests in 1940, and 27 tests over the two-year period, 1939-1940. These yields will, however, give some definite information as to the probable yield response of various hybrids in these sections. In general, the hybrids have outyielded the open-pollinated varieties. This difference, however, has not been as pronounced as in eastern Kansas.

#### KANSAS EXPERIMENT STATION 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

TABLE 19. COOPERATIVE STRIP TESTS, 1940, AND TWO-YEAR AVERAGES, 1939-1940, EASTERN KANSAS.

Variety or hybrid	1940 results						2-year averages, 1939-1940					
	Dist. 1 23 tests		Dist. 2 6 tests		Dist. 3 6 tests		Dist. 1 33 tests		Dist. 2 15 tests		Dist. 3 17 tests	
	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank
	bu.		bu.		bu.		bu.		bu.		bu.	
Jewett 11	49.1	1	56.6	1	48.3	1						
National 134	45.9	2			44.1	5						
Missouri 47	39.4	3	54.2	3	40.0	13½	38.6	1	35.5	1		
U. S. 13	39.2	4	52.3	6	43.9	6						
Pioneer 332	38.9	5	53.1	4	43.0	10						
Funk G-94	38.0	6½	49.9	8	43.8	7						
Pioneer 307	38.0	6½					37.0	2				
DeKalb 816	37.8	8	51.5	7								
Iowalth CI	37.5	9										
Pride of Saline	37.0	10	47.7	10	35.9	15	35.8	3	29.4	4	35.2	4
U. S. 35	35.9	11	55.2	2	44.9	3						
Pfister 5892	35.4	12	43.3	12								
Missouri 8	35.1	13	49.6	9	43.2	9	34.8	4	30.4	3	39.1	1½
Midland (A)	30.0	14	47.1	11			30.8	5				
Reid Yellow Dent	29.1	15					30.5	6				
Hays Golden	28.4	16	42.3	14	34.5	17	29.9	7	31.7	2	33.8	5
Iowalth 28N			52.5	5	40.0	13½						
Midland (C)			42.4	13	41.0	12					36.6	3
National 135			38.9	15								
Kansas 2212					45.6	2						
DeKalb 899					43.5	8					39.1	1½
Kansas 1538					44.2	4						
Commercial White					35.1	16					32.9	6

TABLE 20. COOPERATIVE STRIP TESTS, 1940, AND TWO-YEAR AVERAGES, 1939-1940, CENTRAL AND WESTERN KANSAS.

Variety or hybrid	1940 results								2-year averages, 1939-1940					
	Dist. 4 4 tests		Dist. 5 6 tests		Dist. 6 2 tests		Dist. 7 2 tests		Dist. 4 9 tests		Dist. 5 14 tests		Dist. 6 4 tests	
	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank	Yield	Rank
	bu.		bu.		bu.		bu.		bu.		bu.		bu.	
U. S. 13	16.4	11	28.0	6	33.0	2	19.6	8	24.7	4				
Funk G-94	18.0	7	28.2	4½	29.2	6	21.0	5						
Pioneer 307	20.5	1							25.6	3				
Pride of Saline	16.6	10	27.5	8	32.1	3	18.9	9	21.2	8	25.3	1	40.9	2
U. S. 35	20.4	2	30.0	2			21.7	4						
Missouri 8			19.8	13			20.5	6			23.3	3		
Midland (A)			25.9	10			18.5	10			23.6	2		
Hays Golden	16.7	9	21.4	12	26.4	7	15.3	13	22.5	5	21.4	4	35.2	4
Neb. 238	20.3	3							22.1	7				4
DeKalb 827	19.3	4												
Iowealth 30	19.0	5½							26.1	1½				
National 132	19.0	5½			29.9	4			26.1	1½			40.3	3
Iowa 939	17.6	8			24.0	8			22.4	6			34.6	5
Kansas 11					37.5	1								
Colby Yellow Cap					19.8	10							25.4	7
Kansas 2217			30.4	1										
DeKalb 888			29.7	3			28.1	1						
Pioneer 330			28.2	4½			16.2	12						
Iowealth 29A			27.7	7			20.2	7						
Kansas 2199			26.8	9			17.6	11						
National 132 type 1			24.5	11			27.9	2			20.4	5		
Kansas 2232							23.7	3						
DeKalb 891					29.6	5							41.1	1
Cassel					21.1	9							31.8	6

KANSAS CORN TESTS, 1940

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 varieties 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. Nearly 2,000 hybrids were compared in 8,000 plots during the past season. The Kansas corn testing program is shown in figure 1 on page 6.

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 in single crosses. Valuable double cross combinations can be predicted from these single cross performance data.

New experimental double crosses are tested first in preliminary trials. 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 adaptation 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.

**AVAILABLE SEED FOR TESTING IN 1941**

Preliminary results indicate that some of the hybrids developed in the Kansas hybrid corn program are superior to the varieties and hybrids now available for farm planting. These include white and yellow dent hybrids and popcorn hybrids, none of which are in commercial production. Seed of some of the more promising combinations was produced for testing in 1941. In order to obtain more information as to the adaptation and value of these hybrids, this seed will be sold in peck or half-bushel lots to anyone interested in comparing them with their own local corn in adjacent plantings.