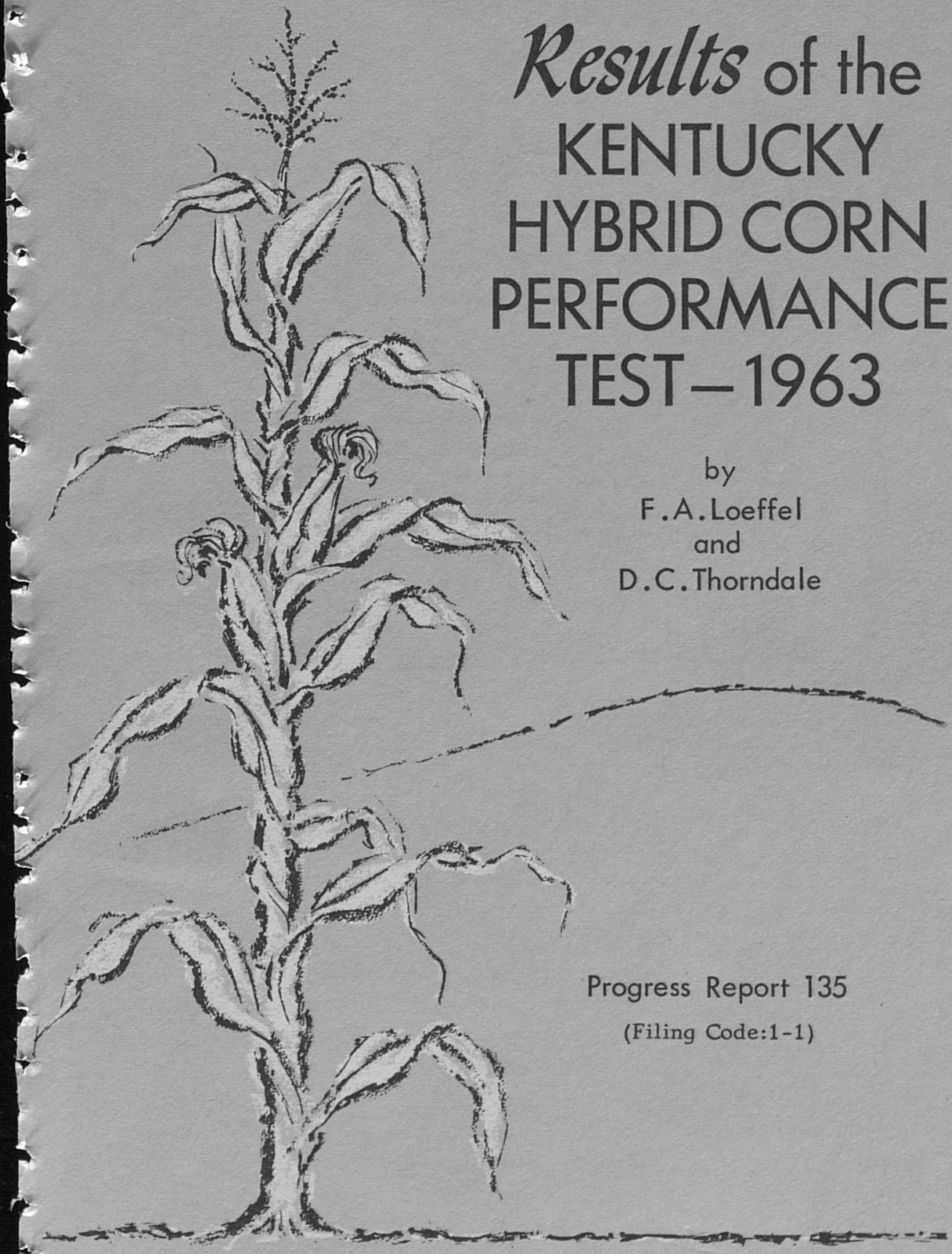

Results of the KENTUCKY HYBRID CORN PERFORMANCE TEST—1963

by
F. A. Loeffel
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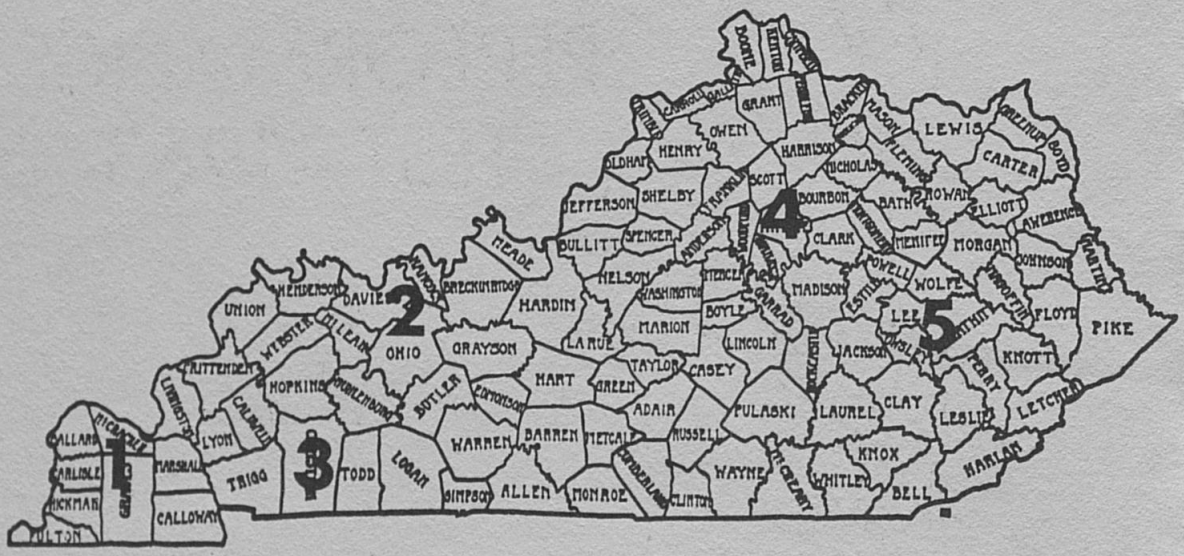
UNIVERSITY OF KENTUCKY
AGRICULTURAL EXPERIMENT STATION
LEXINGTON

TESTING LOCATIONS OF

THE KENTUCKY HYBRID CORN PERFORMANCE TEST



Area		Location	Cooperator
Western	1.	Wickliffe	James Wilson
	2.	Owensboro	Beverly Gregory
	3.	Hopkinsville	Graham Duncan
Eastern	4.	Lexington	Ky. Agr. Exp. Sta.
	5.	Quicksand	Robinson Agr. Exp. Substation, James E. Dalton

Acknowledgment is made to the University of Kentucky Computing Center for assistance in summarizing the results reported in this progress report.

RESULTS OF THE KENTUCKY HYBRID CORN PERFORMANCE TEST IN 1963

F. A. Loeffel and D. E. Thorndale

The objective of the Kentucky Hybrid Corn Performance Test is to provide an unbiased estimate of the relative performance of corn hybrids being sold in Kentucky. This information may then be used by farmers, seedsmen, and research and extension personnel in determining which hybrid most nearly possesses the characteristics which are desired or required for a specific situation. The need for the University of Kentucky Agricultural Experiment Station to obtain this information is indicated by the continuing shift to hybrids by Kentucky farmers. In recent years, much more seed of single cross hybrids is being planted in Kentucky. This is a part of a continuing search by corn producers in the state to improve their efficiency of production.

Kentucky established a new production record for the third consecutive year. This year a record 66 bushels per acre was produced. This exceeds the previous record yields of 58 bushels per acre established in 1962 and 55 bushels per acre established in 1961. Kentucky ranked 7 among the principal corn producing states in average yield per acre in 1963. The yield of corn has more than doubled since 1942 as the first 30 bushel corn crop was produced in Kentucky in 1942. This progress toward efficient production is encouraging but much remains to be done.

The estimated corn production for Kentucky in 1963 is 74.4 million bushels. This is an increase

of 9.7 million bushels, or 15 percent, over the 1962 production. The 1963 production is 10.2 percent above the 1957-1961 production level although produced on 21.9 percent smaller acreage. A marked increase supply of corn for livestock feeding would be available in Kentucky if the acreage devoted to corn would return to the 1950-1955 level. The total production of corn has remained quite stable in Kentucky in recent years. This has resulted by a counterbalancing of increased per acre yield with reduced acreage.

The record breaking corn crop was produced in a crop season that can be described as unusual. Extremely dry weather during April and May permitted earlier planting than normal. However, cool nights and light frosts in late May slowed vegetative growth and hurt stands in some fields. Frequent rains during the last week in May and the first week in June replenished soil moisture supplies in most areas. The crop made rapid growth during June and July when favorable weather conditions existed. A drouth started in western Kentucky in mid-August and spread eastward until it covered the entire state by late September. However, the damage to the corn crop was light as most of the corn crop was made by this time. An unusually dry September and October permitted farmers to harvest corn at the fastest pace on record.

Corn planting was about 15 percent completed by April 23. On this date 96 percent of the Crop-Weather Reporters indicated a shortage of soil moisture. Spraying and cultivation of early corn kept farmers busy the week ending May 27. By this date 85 percent of the corn acreage had been planted. Much corn could be considered made with existing moisture on July 29 with 20 percent of the crop in dough or dent stage. Over 50 percent of the crop was in the milk stage or more advanced stages of

development. The first harvesting operation for grain was reported in Fulton County on August 16. Over 88 percent of the crop was dented or mature on September 7. The crop ripened normally at a moderate rate due to frequent showers. Nearly 40 percent of the corn crop was harvested by October 14 and 83 percent by November 4.

The average yield for all hybrids grown at 5 locations in 1963 was 124.5 bushels. The highest test average was 149.8 bushels at Lexington. The lowest test average was 108.9 bushels for the Owensboro test.

EXPERIMENTAL METHODS

The performance test was conducted at five locations which represent corn-producing areas typical of the state. These locations together with the name of the cooperator are listed on the inside of the front cover. These testing sites were grouped by geographical location into a western and eastern area for convenience in presenting the results. Yields from Wickliffe, Owensboro, and Hopkinsville were averaged for the western area. Similarly the yields from Lexington and Quicksand were averaged for the eastern Kentucky area.

Sixty-four hybrids which are available to the farmers of Kentucky through commercial trade channels were compared. These hybrids, developed by state and federal research agencies and by private seed companies, are listed in Table 1. Information concerning the seed source of the hybrid, the kernel color and the type of cross are presented. The type of hybrid is designated as follows: double cross, 4X; three-way crosses, 3X; and a single cross as 2X. Seed of a single cross hybrid sells at a premium due to increased costs of producing seed. The following material was evaluated in 1963, 53 double crosses, 1 three-way cross and 10 single crosses.

The pedigrees of hybrids developed by state and federal agencies are listed in Table 2. Agronomic information pertaining to the testing locations is presented in Table 3. Results of the Kentucky Hybrid Corn Performance Test are summarized for periods of 3 years, 2 years and 1 year and are presented in Tables 4-6 respectively. The hybrids are grouped in the tables on the basis of kernel color. Within groups the hybrids are listed in order of increasing moisture content. The reactions of the hybrids to Northern and Southern leaf blight are summarized in Table 7. The hybrids in Table 7 are listed in alphabetical order.

Field Design.

Each hybrid was planted in 4 plots at each of the 5 locations with individual plots being 2 hills wide and the equivalent of 5 hills long. Corn was hand planted simulating hill dropping. These plots were located in different parts of the testing field to minimize cultural and soil differences. All tests were planted at an increased rate and the resulting plants thinned to comparable stands at each location.

Yield.

The corn from each plot was harvested and weighed individually. The yield of the hybrids was determined and is reported on the basis of bushels of shelled corn per acre with a moisture content of 15.5 percent. Adjustments were made for missing hills but not for other variation in stand. Therefore, the yields at each location reported in this progress report constitute an average yield of the 4 plots after all adjustments were made.

Moisture.

The moisture content at harvest is the best measure of relative maturity of hybrids which is available. A hybrid may be considered to be earlier than a second hybrid if its moisture content

at harvest is consistently lower. Maturity thus determined is not absolute but is relative to the hybrids being compared.

Two moisture samples were taken at each location for each hybrid by taking a composite sample from replication 1 and 2, and from replication 3 and 4. The moisture content in the grain was determined at harvest by removing 2 rows of kernels from each of 10 ears selected at random from each of two replications. The grain from the 20 ears was thoroughly mixed and the moisture content of a 100-gram sample was determined with a Steinlite moisture meter.

Erect Plants.

The percent erect plants is considered to be an estimate of the resistance of a hybrid to the total insect and disease complex affecting standing ability. This value is obtained by counting plants with stalks broken between the ear-bearing node and ground level and those which lean from the base at an angle of more than 30 degrees from the vertical. This sum is subtracted from the plants present and the difference divided by the total plants present to give the percent erect plants.

Ear Height.

Ear height, distance from the base of the plant to the point of attachment of the upper ear, was measured visually using a scale with one-foot intervals. Visual ratings were taken on four plots of each hybrid at each location.

Disease

Visual ratings of hybrid reaction to Northern and Southern corn leaf blight disease were taken on an artifically inoculated planting of the hybrids at Lexington. Each hybrid was planted in a 1 x 5 hill plot replicated three times. A five class rating scale was used: excellent, very good, good, fair and poor.

INTERPRETATION

The performance of hybrids varies with weather conditions which change from season to season and from testing location to testing location in the same season. Since the weather conditions cannot be predicted at the time of planting, a farmer should plant a hybrid which has a good performance in an "average" season. The best estimate of hybrid performance for an "average" season is obtained by combining the results obtained from a large number of experiments grown in different years at a number of locations.

The information presented in Table 4 is the average of 15 individual experiments conducted in 1961, 1962 and 1963. In Table 5 are summarized the results obtained from 10 experiments in 1962 and 1963. Table 6 contains information obtained from five experiments in 1963 at different locations in the state. For this reason, the information contained in Table 4 is the best estimate available for comparing the performance of corn hybrids for average growing conditions in Kentucky.

MAKE YOUR CHOICE BASED ON YOUR OWN NEEDS

Improvements in corn hybrids are constantly being made. An efficient corn producer will want to keep informed on these improvements and to determine if they will produce well on his farm. For this reason, it is suggested that new hybrids be grown frequently on a trial basis in comparison with the hybrid or hybrids presently grown. If this suggestion is followed, a commonly made error can be avoided. Frequently a farmer changes his entire corn acreage to a different hybrid and then compares the performance of the new hybrid with the old hybrid. This is not a valid comparison since the hybrids were not grown under similar conditions.

Hybrids being compared should be grown in the same field, using identical management practices. A good way to do this is to plant seed of the new hybrid beside currently used hybrids in a field being sure to mark them at planting time. It is important to observe the hybrids frequently during the growing season. At harvest, yield should be determined and other observational notes recorded. Consult your county agent for procedure. If this suggestion is followed, a corn grower will be able to select hybrids which more nearly fit his production practices and personal preferences.

Strip tests can also be used by individual farmers to determine the value of other factors contributing to production efficiency, such as fertilizer and number of plants per acre. It is important for a farmer to have an unfertilized check strip and a strip receiving twice the quantity of fertilizer that the remainder of the field received. This enables him to determine if his investment in fertilizer was profitable and whether he used too little or too much fertilizer. The number of corn plants per acre in Kentucky is generally too low for top production. It would be well worth the time and effort to change the setting on the drill and compare yields at different rates of planting. It should be kept in mind, however, that plant population and fertility level must be kept in balance for efficient production. Consideration should also be given to the use of chemical weed killers, soil insecticides andsome method of minimum tillage for preparation of land.

DO YOUR PART TO CONTRIBUTE TOWARD
A 70-BUSHEL AVERAGE CORN YIELD IN
KENTUCKY IN 1964

Table 1. Hybrids tested in 1963.

Hybrid	Color	Cross	Source of Hybrids
AES 809	Y	4X	Agricultural Experiment Station (North Central)
Crib Filler 66	Y	2X	Mitchell Farms
78	Y	3X	Windfall, Indiana
116	Y	4X	
123	Y	4X	
134	Y	4X	
183W	W	4X	
Dekalb 624	Y	4X	Dekalb Agricultural
640	Y	4X	Association, Dekalb,
805	Y	2X	Illinois
824	Y	4X	
925A	W	4X	
1003	Y	4X	
1004	Y	4X	
1006	Y	4X	
Dixie's 99Y	Y	4X	Dixie Stock Farm Sonora, Kentucky
Hagan H-2	W	4X	R. M. Hagan, Route 4
H-9	Y	4X	Owensboro, Kentucky
Hilligoss 84M	Y	4X	Hilligoss Corp., Route 1 McCordsville, Indiana
Kamp 910B	W	4X	Kamp's Farm Seed, Route 2,
913BRK	W	4X	Evansville, Indiana
Ken-Bred E-20Y	Y	4X	George Patmor, Marion;
E-20YA	Y	4X	Clyde Jackson, Danville;
M-20W	W	4X	Louisville Seed Co., Louisville, Ky. - Distributors
Ky 105	Y	4X	University of Kentucky
204	W	4X	Agricultural Experiment
5901W	W	4X	Station, Lexington
5921W	W	4X	
6001	Y	4X	
6013W	W	4X	
Meacham M-5	W	4X	Meacham's Hybrids
M-33YB	Y	4X	Route 3, Morganfield, Ky.

Table 1. Continued.

Hybrid	Color	Cross	Source of Hybrids
McNair 304A	Y	4X	McNair Seed Co., Box 706 Laurinburg, N. C.
P.A.G. SX19	Y	2X	Pfister Associated Growers,
SX29	Y	2X	Inc., Aurora, Illinois
SX59	Y	2X	and Huntsville, Alabama
SX63	Y	2X	
Pioneer 310	Y	4X	Pioneer Corn Company, Inc.
309A	Y	4X	Tipton, Indiana
509	W	4X	
3304	Y	2X	
Princeton 8-A	Y	4X	Princeton Farms
840-A	Y	4X	Princeton, Indiana
890-AA	Y	4X	
990	W	4X	
990-A	W	4X	
Schenk S-73	Y	4X	Charles H. Schenk
S-96W	W	4X	and Son, Inc., Route 4
S-99AW	W	4X	Vincennes, Indiana
Southern States			Southern States Coop.,
909E	Y	4X	Inc., Division of Seed
Catawba	Y	4X	and Farm Supply, Richmond
Matoaka	Y	4X	20, Virginia
Munsee	Y	4X	
Pocahontas	Y	4X	
Stull 100YB	Y	4X	Stull Brothers, Inc.
101YA	Y	4X	Sebree, Kentucky
107Y	Y	2X	
108Y	Y	4X	
400W	W	4X	
444W	W	2X	
500W	W	4X	
807Y	Y	2X	
US 13	Y	4X	Experiment Station
US 523W	W	4X	(U.S.D.A.)

Table 2. Pedigrees of Experiment Station and U.S. hybrids tested in 1963

Hybrid	Pedigree
AES 809	(WF9 x P8)(Oh 43 x C103)
Ky 105	(T8 x CI21E)(38-11 x Oh 7B)
Ky 204	(K64 x 33-16)(K55 x Ky 201)
Ky 5901W	(Ky 211 tms x 33-16)(K55 x CI64)
Ky 5921W	(CI64 x 33-16)(CI66 x Ky 201)
Ky 6001	(WF9 x Ky 36-11)(C103 x B14)
Ky 6013W	(K55 x CI64)(Ky 216 x Ky 217)
US 13	(WF9 x 38-11)(Hy x L317)
US 523W	(K55 x K64)(Ky 27 x Ky 49)

Table 3. Agronomic information pertaining to testing locations in 1963

Location	Fertilizer applied	Plants per acre	Date planted	Date harvested	Experiment average Yield	Experiment average Moisture
1. Wickliffe	300# 14-14-14 300# 32% Liquid Nitrogen	13,460	May 9	Oct. 11	121.9	14.9
2. Owensboro	150# NH_4NO_3 350# 4-16-16	13,320	May 6	Oct. 2	108.9	19.0
3. Hopkinsville	200# 5-20-2 broadcast 140# Anyhdrous NH_3 pre-plant 150# 18-46-0 in row	13,700	April 18	Oct. 7	118.2	12.9
4. Lexington	200# Murate of Potash/A 400# NH_4NO_3	15,370	May 3	Oct. 16	149.8	14.3
5. Quicksand	300# 0-30-30 100# Am. Nitrate 125# Am. Nitrate (side dressed)	17,350	April 27	Oct. 10	123.5	19.7

Table 4. Three-year summary of hybrids grown in 1961, 1962 and 1963

Hybrid	Average Yield Bu./Acre			Maturity		
	State	Western Wickliffe Owensboro Hopkinsville	Eastern Lexington Quicksand	Harvest Ear Moisture %	Erect Plants %	Ear Height ft.
YELLOW						
S.S. Pocahontas	105.1	95.5	119.3	16.0	77.5	3.3
Crib Filler 116	115.8	103.2	134.9	17.1	84.3	3.5
P.A.G. SX19	123.7	114.3	137.8	17.3	85.2	3.8
Dekalb 805	117.1	104.6	135.8	17.3	80.5	3.3
Ken-Bred E-20Y	108.2	95.4	127.3	17.6	84.5	3.3
Princeton 840-A	107.6	94.0	127.9	17.7	84.1	3.2
Stull 107Y	115.4	103.6	133.3	17.7	80.7	3.4
Crib Filler 123	114.0	99.7	135.6	18.2	84.0	3.6
Princeton 8-A	105.5	93.9	123.1	18.4	88.9	3.3
US 13	106.8	94.8	124.7	18.4	76.4	4.0
Ken-Bred E-20YA	117.9	103.6	139.3	18.4	85.7	3.9
S.S. Matoaka	108.3	95.9	127.1	18.4	79.9	3.4
Hagan H-9	115.9	105.3	131.8	18.5	79.3	4.0
AES 809	108.2	94.9	128.3	18.5	85.4	3.2
Crib Filler 66	117.1	106.4	133.0	18.5	79.3	3.6
Meacham M-33YB	118.2	106.4	135.9	18.7	83.2	4.0
S.S. Munsee	108.5	96.7	126.2	18.8	83.9	3.3
Ky 105	119.7	105.8	140.6	19.0	88.2	4.4

Stull 101YA	117.4	102.1	140.5	19.1	78.0	3.8
S.S. Catawba	113.3	99.1	134.7	19.2	77.6	3.5
Pioneer 309A	119.6	105.3	141.2	21.4	91.7	4.1
Yellow Average	113.5	101.0	132.3	18.3	82.8	3.6
WHITE						
Ky 5901W	113.7	101.8	131.7	18.6	78.0	3.6
Princeton 990	119.8	105.0	141.9	18.8	75.0	4.0
Ken-Bred M-20W	113.1	101.3	130.8	19.2	81.5	3.7
US 523W	111.1	99.3	128.9	19.4	78.1	3.7
Meacham M-5	116.1	103.4	135.2	19.4	79.0	3.8
Ky 204	109.9	97.2	128.7	19.8	81.7	3.5
Ky 5921W	114.9	102.1	134.3	19.8	81.9	3.7
Stull 500W	115.6	101.0	137.5	20.0	81.3	3.9
Hagan H-2	110.1	99.2	126.7	20.1	85.8	3.7
Princeton 990-A	115.3	100.9	137.0	20.3	85.7	3.7
White Average	114.0	101.1	133.3	19.5	80.7	3.7
GRAND AVERAGE	113.6	101.0	132.6	18.7	82.2	3.7

Make Your Choice Based On Your Own Needs. See Page 8

Table 5. Two-year summary of hybrids grown in 1962 and 1963

Hybrid	Average Yield Bu./Acre			Maturity		
	State	Western	Eastern	Harvest Ear Moisture %	Erect Plants %	Ear Height Ft.
YELLOW						
S.S. Pocahontas	103.7	93.5	119.1	14.8	72.9	3.5
P.A.G. SX19	121.0	111.9	134.5	15.4	84.4	4.0
Crib Filler 116	113.4	100.5	132.8	15.6	80.9	3.6
Dekalb 805	116.4	102.3	137.6	15.8	73.6	3.4
Princeton 840-A	105.5	89.9	129.0	15.8	81.5	3.3
Ken-Bred E-20Y	106.8	91.4	129.9	15.9	79.4	3.4
Stull 107Y	120.7	106.7	141.6	16.0	75.6	3.6
Crib Filler 123	114.5	99.7	136.5	16.2	79.0	3.8
US 13	105.5	93.4	123.6	16.2	73.7	4.2
Princeton 8-A	106.5	92.8	127.0	16.3	86.6	3.5
AES 809	106.7	93.3	126.9	16.5	82.7	3.4
Crib Filler 134	114.8	99.0	138.4	16.5	76.9	3.9
Hagan H-9	110.5	101.8	123.5	16.6	76.3	4.1
Meacham M-33YB	114.3	104.7	128.8	16.6	80.8	4.1
S.S. Matoaka	104.2	92.6	121.5	16.6	74.1	3.6
Ken-Bred E-20YA	119.1	104.6	140.7	16.7	83.9	3.9
Stull 108Y	116.9	106.0	133.2	16.8	83.4	4.5
Ky 105	116.0	104.5	133.2	16.8	87.8	4.5
S.S. 909E	119.8	107.7	137.9	16.8	71.3	4.4
S.S. Catawba	110.7	97.2	131.0	16.9	72.2	3.8

S.S. Munsee	106.7	94.7	124.8	17.0	81.5	3.4
Stull 101YA	115.4	100.8	137.2	17.1	76.7	3.7
Crib Filler 66	121.7	108.8	140.9	17.2	75.0	3.7
Dekalb 1003	107.4	100.2	118.2	17.3	76.3	4.1
Pioneer 309A	120.9	107.8	140.4	18.8	90.2	4.2
Dekalb 1006	120.5	108.9	137.9	18.8	80.7	4.6
Yellow Average	113.1	100.6	131.8	16.6	79.1	3.9
WHITE						
Princeton 990	120.1	104.4	143.7	16.6	70.8	4.1
Ky 5901W	112.9	102.2	128.8	17.0	71.9	3.7
US 523W	109.7	98.9	126.0	17.1	71.4	3.7
Ken-Bred M-20W	114.6	103.8	130.9	17.1	77.1	3.9
Ky 204	107.6	96.2	124.7	17.3	76.4	3.7
Crib Filler 183W	118.6	106.8	136.3	17.5	80.9	3.9
Meacham M-5	114.8	102.7	133.0	17.6	75.4	4.0
Ky 5921W	117.8	105.0	137.0	17.6	79.9	3.9
Dekalb 925A	113.9	105.2	126.9	17.7	66.9	4.1
Princeton 990-A	114.9	102.3	133.9	17.7	82.1	3.8
Pioneer 509	121.3	108.7	140.2	17.7	78.4	4.1
Schenk S-99AW	119.7	107.1	138.7	17.9	78.7	3.9
Stull 500W	115.5	99.7	139.1	18.0	79.6	4.0
Kamp 913BRK	114.2	105.6	126.9	18.1	79.5	4.1
Hagan H-2	108.9	98.7	124.1	18.1	80.9	3.9
White Average	115.0	103.2	132.7	17.5	76.7	3.9
GRAND AVERAGE	113.8	101.5	132.1	16.9	78.2	3.9

Table 6. Annual summary of hybrids grown in 1963

Hybrid	Average Yield Bu./Acre			Maturity		
	State	Western	Eastern	Harvest Ear Moisture %	Erect Plants %	Ear Height Ft.
YELLOW						
S.S. Pocahontas	114.2	108.0	123.4	13.4	74.5	3.6
P.A.G. SX 19	130.7	126.4	137.1	13.9	87.4	4.0
Crib Filler 116	122.5	114.6	134.4	14.5	82.7	3.7
Dekalb 805	126.4	114.7	143.9	14.7	74.6	3.4
P.A.G. SX 63	137.2	128.4	150.5	14.8	86.3	3.9
Hilligoss 84M	128.4	119.6	141.6	14.9	88.0	4.0
Dekalb 640	121.2	107.0	142.6	14.9	90.3	4.0
Princeton 840-A	113.9	103.1	130.1	15.0	81.9	3.4
Dekalb 624	121.8	109.5	140.4	15.1	87.0	3.5
Ky 6001	124.8	119.6	132.5	15.1	92.6	3.9
Princeton 8-A	113.4	102.8	129.4	15.1	89.2	3.6
Hagan H-9	117.1	115.1	120.1	15.3	78.8	4.1
Ken-Bred E-20Y	116.1	104.6	133.4	15.3	79.7	3.6
P.A.G. SX29	130.5	123.9	140.4	15.3	84.9	3.9
Meacham M-33YB	122.8	117.9	130.2	15.4	80.6	4.3
Crib Filler 123	126.4	114.8	143.7	15.5	78.7	4.0
Schenk S-73	124.6	111.5	144.2	15.5	83.5	4.1
US 13	118.0	107.7	133.4	15.5	72.5	4.3
Stull 108Y	121.9	115.3	131.7	15.6	82.3	4.3
Ky 105	128.0	122.7	135.9	15.7	87.0	4.5

AES 809	114.9	104.6	130.5	15.7	85.7	3.4
Dixie's 99Y	130.3	123.4	140.8	15.7	83.5	4.3
Ken-Bred E-20YA	127.2	117.3	142.0	15.8	86.7	3.7
Pioneer 3304	118.5	111.8	128.6	15.8	84.5	3.6
Stull 107Y	133.7	126.5	144.6	15.8	77.3	3.8
S.S. Matoaka	116.2	106.8	130.3	15.9	79.3	3.6
Stull 101YA	122.5	112.5	137.5	15.9	82.6	3.7
Crib Filler 134	126.3	114.4	144.1	15.9	83.5	4.2
Stull 100YB	123.5	114.5	136.9	16.0	84.2	3.8
S.S. Catawba	119.2	111.0	131.6	16.0	71.8	4.0
Pioneer 310	130.9	124.1	141.1	16.1	92.8	4.0
S.S. 909E	129.8	119.1	145.8	16.2	72.0	4.4
Stull 807Y	131.5	120.3	148.4	16.4	79.5	3.9
S.S. Munsee	115.7	109.9	124.5	16.4	83.4	3.5
Dekalb 1003	117.4	113.0	124.0	16.4	79.1	4.2
Crib Filler 78	126.6	119.6	137.2	16.5	76.3	3.9
Crib Filler 66	133.6	124.8	146.7	16.5	76.1	3.9
Princeton 890-AA	120.9	112.0	134.3	16.6	75.9	3.9
Dekalb 824	127.9	117.5	143.5	16.7	84.8	3.7
P.A.G. SX59	136.7	127.8	150.1	17.5	85.1	4.1
Pioneer 309A	130.7	116.8	151.5	17.9	90.1	4.3
Dekalb 1006	125.2	119.3	134.0	18.0	77.8	4.5
Dekalb 1004	122.1	112.7	136.2	18.1	72.4	4.5
McNair 304A	120.8	112.4	133.4	19.7	86.4	4.0
Yellow Average	124.1	115.4	137.2	15.9	82.1	3.9

Continued on next page.

Table 6. Continued.

Hybrid	Average Yield Bu./Acre State	Western	Eastern	Moisture Harvest Ear Moisture %	Erect Plants %	Ear Height Ft.
WHITE						
Princeton 990	129.0	118.1	145.4	15.4	69.5	4.1
Ky 5901W	129.0	121.5	140.2	15.9	76.6	3.9
US 523W	122.6	119.0	128.0	16.0	73.3	4.0
Schenk S-96W	122.6	114.5	134.8	16.0	81.2	4.0
Schenk S-99AW	126.1	119.4	136.3	16.2	82.4	4.1
Ken-Bred M-20W	120.3	114.0	129.8	16.4	79.7	4.0
Dekalb 925A	121.4	113.2	133.6	16.4	74.3	4.1
Crib Filler 183W	124.1	115.2	137.4	16.5	82.4	4.0
Ky 204	123.4	117.6	132.0	16.5	75.1	4.0
Stull 400W	126.8	116.1	142.9	16.6	81.5	4.0
Meacham M-5	121.1	116.8	127.7	16.8	81.6	4.2
Princeton 990-A	126.3	118.1	138.7	16.8	83.9	3.9
Ky 5921W	126.6	118.8	138.4	17.0	79.4	3.9
Stull 500W	123.2	115.5	134.7	17.0	84.1	4.1
Kamp 910B	122.0	119.2	126.2	17.1	78.9	4.2
Pioneer 509	132.8	123.0	147.4	17.2	81.9	4.2
Ky 6013W	125.4	124.4	127.0	17.3	88.6	3.9
Kamp 913BRK	123.9	118.8	131.5	17.5	82.7	4.0
Hagan H-2	114.8	109.3	123.1	17.6	82.9	4.0
Stull 444W	134.8	128.0	145.0	18.9	81.4	4.1
White Average	124.8	118.0	135.0	16.8	80.1	4.0
GRAND AVERAGE	124.5	116.3	136.7	16.2	81.5	3.9

Table 7. Reaction of hybrids to leaf blight diseases [1/]

Hybrids	Leaf Blight Resistance-1963 Southern	Leaf Blight Resistance 1961-63 Southern	Leaf Blight Resistance 1961-63 Northern[2/]
WHITE			
Crib Filler 183W	Good		
Dekalb 925A	Fair		
Hagan H-2	Good	Good	Good
Kamp 910B	Very Good		
Kamp 913BRK	Good		
Ken-Bred M-20W	Poor	Fair	Fair
Ky 204	Poor	Poor	Poor
Ky 5901W	Good	Fair	Good
Ky 5921W	Fair	Fair	Good
Ky 6013W	Good		
Meacham M-5	Good	Good	Good
Pioneer 509	Good		
Princeton 990	Good	Very Good	Fair
Princeton 990-A	Good	Good	Very Good
Schenk S-96W	Good		
Schenk S-99AW	Good		
Stull 400W	Fair		
Stull 444W	Excellent		
Stull 500W	Good	Good	Good
US 523W	Fair	Poor	Fair

Continued on next page.

Table 7. Continued.

Hybrids	Leaf Blight Resistance-1963 Southern	Leaf Blight Resistance 1961-63 Southern	Leaf Blight Resistance 1961-63 Northern[2/]
YELLOW			
AES 809	Very Good	Very Good	Good
Crib Filler 66	Good	Good	Excellent
Crib Filler 78	Good		
Crib Filler 116	Fair	Fair	Good
Crib Filler 123	Good	Very Good	Very Good
Crib Filler 134	Good		
Dekalb 624	Good		
Dekalb 640	Very Good		
Dekalb 805	Good	Good	Excellent
Dekalb 824	Poor		
Dekalb 1003	Good		
Dekalb 1004	Very Good		
Dekalb 1006	Good		
Dixie's 99Y	Good		
Hagan H-9	Good	Good	Fair
Hilligoss 84M	Poor		
Ken-Bred E-20Y	Good	Good	Good
Ken-Bred E-20YA	Good	Good	Excellent
Ky 105	Very Good	Very Good	Poor
Ky 6001	Fair		

Meacham M-33YB	Good	Good	Poor
McNair 304A	Poor		
P.A.G. SX19	Very Good	Very Good	Good
P.A.G. SX29	Good		
P.A.G. SX59	Excellent		
P.A.G. SX63	Good		
Pioneer 310	Fair		
Pioneer 309A	Good	Very Good	Good
Pioneer 3304	Good		
Princeton 8-A	Poor	Fair	Very Good
Princeton 840-A	Poor	Fair	Fair
Princeton 890-AA	Very Good		
Schenk S-73	Very Good		
S.S. 909E	Good		
S.S. Catawba	Good	Very Good	Poor
S.S. Matoaka	Good	Good	Fair
S.S. Munsee	Good	Good	Poor
S.S. Pocahontas	Poor	Poor	Poor
Stull 100YB	Very Good		
Stull 101YA	Excellent	Very Good	Very Good
Stull 107Y	Good	Very Good	Excellent
Stull 108Y	Good		
Stull 807Y	Good		
US 13	Poor	Poor	Fair

1/ Resistance rating scale, excellent, very good, good, fair, and poor.

2/ 1961 and 1962 data only.

WHAT ABOUT SINGLE CROSSES?

The use and interest in single crosses is one of the most popular subjects in corn production today. A single-cross hybrid is made by crossing two uniform inbred lines rather than 4 inbred lines in the case of a double cross. Single-cross seed is generally smaller and higher in price than that of double-cross hybrids since the seed is produced on low yielding inbred plants.

Yielding ability of single crosses as compared to double-cross hybrids tends to be similar under average yield and management conditions. Superiority of the better performing single crosses will be noticeable at the higher management and yield levels. Tested double-cross hybrids will continue to be used extensively in the state.

The results of eight replicated experiments comparing a double cross and its component single-cross hybrids at four locations in each of two years are summarized in the following table:

Hybrid	Yield bu./A	Moist %	Erect Plants %	Ear ht. ft.
DC* (T8xCI21E)(K4xOh7B)	107	23.8	87	4.1
SC* CI21E x K4	122	25.5	86	4.4
CI21E x Oh7B	119	18.7	91	3.6
T8 x Oh7B	112	22.7	91	3.0
T8 x CI21E	111	27.4	91	3.9
K4 x Oh7B	111	19.8	82	4.0
T8 x K4	93	26.9	84	4.4

*DC refers to double cross and SC to single-cross hybrids.

Single crosses vary in performance. Some may be better than double crosses while others may be poorer. Single crosses, CI21E x Oh7B and T8 x Oh7B, are superior to the double cross in each reported characteristic while the single cross T8 x K4 is inferior to it in each reported characteristic.

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