Results of the KENTUCKY HYBRID CORN PERFORMANCE TEST—1966

By C.R.Tutt and F.A. Loeffel

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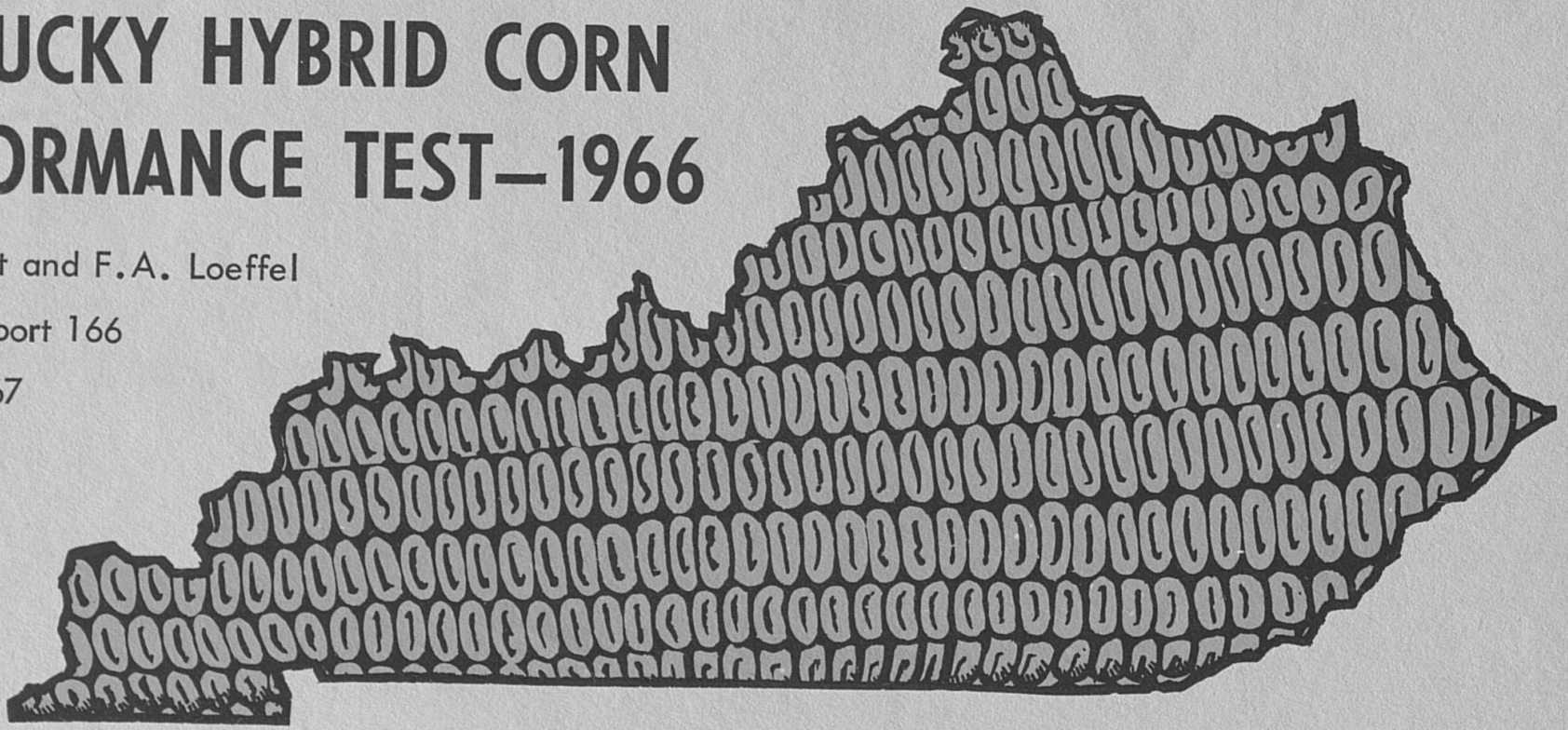

UNIVERSITY OF KENTUCKY
AGRICULTURAL EXPERIMENT STATION

DEPARTMENT OF AGRONOMY
Lexington

TESTING LOCATIONS OF

THE KENTUCKY HYBRID CORN PERFORMANCE TEST

Area	Location	Cooperator
Non-Virus	1. Princeton	West Ky. Sub. Sta.
	2. Hartford	J. C. Pirtle-Owner Walter & Earl Campbell-operators John M. Kavanaugh-Area Extension Agent
	3. Lexington	Ky. Agr. Exp. Sta.
Virus	4. Vanceburg	Alex Walters, Jr. Edward Strong-Area Extension Agent

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RESULTS OF THE KENTUCKY HYBRID CORN PERFORMANCE TEST IN 1966

C. R. Tutt and F. A. Loeffel

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 be used by farmers, seedsmen, and research and extension personnel to determine 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 change in hybrids being purchased by Kentucky farmers, the large number of hybrids which are available, and the economic importance of corn to Kentucky agriculture.

The average yield of corn in Kentucky in 1966 was 59 bushels per acre. This is 10 bushels below the record yield which was recorded in 1965. This yield should provide a production of 70.3 million bushels of corn for 1966 possessing an approximate value of 100 million dollars.

The 1966 corn crop in Kentucky was one of the latest on record. Corn planting was 2-3 weeks behind normal due to wet weather during April and May. Planting was delayed more in the major corn producing areas of the west than in other areas of the state. Statewide, only 10-12 percent of the corn crop was planted by the end of May. Corn that was planted early was seriously injured by poor stands and continued cool weather.

Early corn in the southern and western parts of the state also suffered considerably from the hot, dry weather during July which reduced pollination. Yield prospects rose sharply for late-planted corn as August rains relieved drought conditions existing in most parts of western Kentucky.

Because of the drought in July and the rains in August, late corn produced better than early corn this year. A cool wet autumn delayed maturity of the crop and by October 1 the crop was 4 weeks behind normal. By the first week of November, corn harvest was 60 percent complete.

EXPERIMENTAL METHODS

The performance test was conducted at four locations in the state this year. The locations together with the names of the cooperators are listed on page 2. The testing sites are grouped according to the presence or absence of the corn virus, Maize Dwarf Mosaic. The virus was present at Vanceburg but was not present at Princeton, Hartford or Lexington.

Fifty-six 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 Tables 1 and 2. Information is presented concerning the seed source of the hybrid, the kernel color and the type of cross. The type of hybrid is designated as follows: double cross, 4X; three-way cross, 3X; and a single cross, 2X. The following material was evaluated in 1966: 35 double crosses, 3 three-way crosses and 18 single crosses.

Rainfall data for the testing locations are presented in Table 3. Agronomic information pertaining to the testing locations is presented in Table 4. Results of the Kentucky Hybrid Corn Performance Test are summarized for periods of 3 years, 2 years, and one year under non-virus conditions and are presented in Tables 5-7 respectively. Results of the 2 years and one year test under virus conditions are presented in Tables 8 and 9. The hybrids in Tables 5-7 are grouped on the basis of kernel color. Within groups, the hybrids are listed in order of increasing moisture content. The hybrids in Tables 8 and 9 are arranged in order of decreasing M.D.M. virus

resistance. Yield results of the four different nitrogen-plant population combinations are present in Table 10. Table 11 presents the treatment average of all hybrids for various attributes under different conditions.

Field Design.

Each hybrid was planted in eight plots at Princeton, Hartford and Lexington and in four plots at Vanceburg. Corn was hand planted, simulating hill dropping. All tests were planted at an increased rate, and the resulting plants thinned to the desired stand at each location. Each hybrid was planted at two levels of nitrogen fertility, 133 pounds and 200 pounds of actual nitrogen per acre, at Princeton and Hartford. Two plant populations, 17,424 and 23,232 plants per acre, were used at each nitrogen level.

Yield.

The corn from each plot was harvested and weighed individually. The yields of the hybrids were determined and are reported as bushels of shelled corn per acre with a moisture content of 15.5 percent.

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 hybrid being compared.

Moisture samples were taken on an individual plot basis and moisture individually determined at each location.

Erect Plants.

The percentage of 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 the 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 to give the percentage of erect plants.

Ear Height.

Ear height, the 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 each plot of each hybrid at each location.

Disease.

Visual ratings of hybrid reaction to corn virus were taken at Augusta and Vanceburg in 1965 and at Vanceburg in 1966. Present indications are that the only virus present in Kentucky is Maize Dwarf Mosaic. All plots of each hybrid were rated shortly after silking on a 1-9 scale, with 1 being resistant and 9 being extremely susceptible.

INTERPRETATION

It should be kept in mind that test plot yields will tend to exceed those of commercial plantings because test plots usually receive more careful culture than do commercial fields. Also desired stands were obtained by over-planting and thinning, and plots were picked by hand which reduced harvest losses.

The performance of a hybrid may vary considerably from year to year and between locations for a given year. Because of this variability, test results for a single year or for a single location are not as valuable in choosing a hybrid as the results for several years and for several locations.

Small differences in yield are usually of little importance. However, when a hybrid is consistently superior over several years of testing the chances are good that the differences are real and should be considered in choosing a hybrid. Factors other than yield should be considered in selecting a hybrid. Moisture

content, plant lodging and ear height should also be considered. The reader must form his own opinion as to how much weight to give each character other than yield, because it is seldom that one hybrid is distinctly superior to all others for each of the characteristics studied.

Only tentative conclusions can be drawn from the plant population-nitrogen combinations presented in Tables 10 and 11 since data are from only one year of testing. Because of drought conditions this year and a lack of uniformity of soil conditions within the plots, the high nitrogen-high plant population combination may have been at a disadvantage. Two or three years of data on these various combinations should prove quite useful in selecting hybrids to grow under specific management conditions.

The best hybrid to grow is the one which best suits the individual farm and farming operation. For this reason it is suggested that a new hybrid be grown frequently on a trial basis in comparison with the hybrid presently grown. New hybrids should be grown on a limited acreage for evaluation before being grown on large acreage. It is important to keep in mind that two hybrids should be compared only when they are grown in the same field in the same year 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. By doing this, a grower can come to a sound decision as to which hybrid best fulfills his needs.

MAIZE DWARF MOSAIC

Corn growers in areas where Maize Dwarf Mosaic (M.D.M.) virus has been identified should take special precautions in selecting hybrids. This disease severely reduced yield and stalk strength. It appears to be associated with Johnsongrass in which it is believed to overwinter. It is then transferred back to the corn plant in the spring by an insect vector, possibly an aphid. Where the disease is known or suspected to be present, only M.D.M. resistant hybrids should be planted.

Table 1. Hybrids Tested in 1966

Hybrid	Color	Cross	Source of Hybrids
AES 809	Y	4X	Agricultural Experiment Station (North Central)
Crib Filler 66	Y	2X	Mitchell Farms Windfall, Ind.
88	Y	2X	
128	Y	4X	
183W	W	4X	
Dekalb 805A	Y	2X	Dekalb Agricultural Association, Dekalb, Ill.
872	Y	4X	
999	W	4X	
1006	Y	4X	
XL-65A	Y	2X	
XL-342	Y	3X	
XL-362	Y	3X	
XL-385	Y	3X	
Ken-Bred E20YA	Y	4X	Golden Acre Hybrids Taylor-Evans Seed Co. Tulia, Texas
E20YB	Y	4X	
M20W	W	4X	
SX20Y	Y	2X	
T-E Cropmaster	Y	3X	
Ky 105	Y	4X	University of Kentucky Agricultural Experiment Station, Lexington, Ky.
5921W	W	4X	
6132W	W	4X	
6504	Y	3X	
6507	Y	3X	
Meacham M-7	W	4X	Meacham's Hybrids Route 3, Morganfield, Ky.
P.A.G. SX17	Y	2X	Pfister Associated Growers, Inc., Aurora, Ill. and Franklin, Ky.
SX29	Y	2X	
SX59	Y	2X	
399	Y	3X	

Table 1. Continued.

Hybrid	Color	Cross	Source of Hybrids
Pioneer 509	W	4X	Pioneer Corn Company, Inc.
511	W	4X	Tipton, Ind.
3327	Y	2X	
3369	Y	2X	
3376	Y	2X	
X2786	Y	2X	
Princeton 8-A	Y	4X	Princeton Farms
81-A	Y	4X	Princeton, Ind.
790-AA	W	4X	
890-AA	Y	4X	
920-A	W	4X	
990-A	W	4X	
SX-803	Y	2X	
SX-804	Y	2X	
Schenk S-96W	W	4X	Charles H. Schenk
SX-75	Y	2X	and Son, Inc., Route 4 Vincennes, Ind.
Southern States			
820S	Y	2X	Southern States Coop.,
860	Y	4X	Inc., Division of Seed
866	Y	4X	and Farm Supply, Richmond,
909E	Y	4X	Va.
960W	W	4X	
979	Y	4X	
Matoaka	Y	4X	
Stull 101YS	Y	4X	Stull Brothers, Inc.
500WC	W	4X	Sebree, Ky.
800W	W	2X	
807YAA	Y	2X	
US 523W	W	4X	Experiment Station (U.S.D.A.)

Table 2. Pedigrees of Experiment Station and U. S. Hybrids Tested in 1966

Hybrid	Color	Cross	Pedigree
AES 809	Y	4X	(WF9 x P8) (Oh 43 x C103)
Ky 105	Y	4X	(T8 x CI21E) (38-11 x Oh7B)
Ky 5921W	W	4X	(CI64 x 33-16) (Ky201 x CI66)
*Ky 6132W	W	4X	(CI64 x 33-16) (Ky216 x Ky219)
*Ky 6504	Y	3X	H49 (Oh7A x Oh7B)
*Ky 6507	Y	3X	CI21E (Oh7A x Oh7B)
US 523W	W	4X	(K55 x K64) (Ky27 x Ky49)

* Seed not available for commercial planting

Table 3. Growing Season Rainfall

Test Location	Inches of Rainfall					
	May	June	July	Aug.	Sept.	Total
Princeton	5.89	2.29	1.46	3.87	2.53	16.04
Hartford	7.37	0.78	2.18	4.36	2.68	17.37
Lexington	3.46	0.66	4.97	4.92	3.44	17.45
Vanceburg	2.74	2.03	4.81	3.58	3.66	16.82

Table 4. Agronomic Information Pertaining to Testing Locations in 1966

Location	Fertilizer Applied	Plants Per Acre	Date Planted	Date Harvested	Experiment Average Yield Bushel	Moisture
1. Princeton	170# K_2O 315# NH_4NO_3	17,424 23,232	May 30	Oct. 25	72.2 79.3	24.8 26.5
	170# K_2O 570# NH_4NO_3	17,424 23,232	May 27	Oct. 25	67.5 79.1	26.2 26.2
2. Hartford	200# K_2O 280#Superphosphate 345# NH_4NO_3	17,424 23,232	June 1	Oct. 31	87.7 103.0	22.3 22.4
	200# K_2O 280#Superphosphate 690# NH_4NO_3	17,424 23,232	June 1	Oct. 31	119.1 74.3	22.2 22.2
3. Lexington	600# NH_4NO_3	17,424 & 23,232	May 6	Oct. 14	91.9	20.7
4. Vanceburg	100# K_2O 400# NH_4NO_3 3 Ton Lime	14,119	May 21	Oct. 22	50.9	35.7

Table 5. Three-Year Summary of Hybrids Compared in 1964, 1965 and 1966

Hybrid	Average Acre Yield, Bu.			Maturity		Ear Height Ft.
	State	Western	Eastern	Harvest Ear Moisture,%	Erect Plants,%	
YELLOW						
Pioneer 3369	83.7	76.7	92.4	16.7	91.9	3.2
P.A.G. SX29	91.8	82.9	104.2	16.9	83.0	3.3
S.S. 820S	81.2	71.5	93.9	17.0	82.0	3.3
Ken-Bred SX20Y	79.3	71.3	89.7	17.4	83.5	3.3
Princeton 8-A	78.9	69.7	91.7	17.9	90.9	3.2
AES 809	74.9	65.0	88.4	18.0	79.8	3.1
S.S. Matoaka	81.8	71.2	96.0	18.0	75.5	3.5
Ken-Bred E20YA	80.3	71.9	91.4	18.3	80.3	3.4
S.S. 860	77.1	69.5	88.1	18.5	84.7	3.5
Crib Filler 66	83.5	75.3	95.3	18.7	80.1	3.4
S.S. 909E	80.9	76.4	87.0	18.7	86.0	4.2
Princeton 890-AA	80.5	70.8	93.1	18.9	77.9	3.3
Ky 105	82.3	77.0	89.9	19.1	82.1	3.9
Dekalb XL-385	88.7	80.2	100.9	19.2	89.8	3.5
P.A.G. SX59	89.6	79.3	105.0	19.4	81.3	3.4
S.S. 979	83.2	77.1	91.8	19.9	82.6	3.9
Dekalb 1006	83.4	74.8	95.6	21.4	84.0	4.0
Yellow Average	82.4	74.2	93.8	18.5	83.3	3.5

WHITE						
Princeton 790-AA	69.4	60.7	82.0	18.0	84.1	3.4
US523W	73.0	67.8	81.1	18.5	75.9	3.4
Schenk S-96W	83.8	77.1	93.3	19.1	81.5	3.5
Ky 5921W	80.3	73.9	89.5	19.2	82.2	3.4
Crib Filler 183W	83.4	75.7	95.1	19.4	81.4	3.4
Pioneer 509	77.5	72.8	83.8	19.5	78.9	3.5
Princeton 990-A	77.8	74.0	83.8	20.1	88.1	3.5
Pioneer 511	82.4	78.5	86.8	20.6	77.5	3.6
Stull 800W	81.6	73.6	93.6	21.6	77.7	3.7
White Average	78.8	72.7	87.7	19.6	80.8	3.5
GRAND AVERAGE	81.2	73.6	91.7	18.9	82.4	3.5

Table 6. Two-Year Summary of Hybrids Compared in 1965 and 1966

Hybrid	Average Acre Yield, Bu.			Maturity		Ear Height Ft.
	State	Western	Eastern	Harvest Ear Moisture, %	Erect Plants,%	
YELLOW						
Pioneer 3369	89.2	91.4	85.9	17.4	86.4	2.9
P.A.G. SX29	94.6	100.4	89.7	17.5	73.4	3.1
Dekalb XL-362	90.3	96.9	82.5	17.8	88.4	2.7
S.S. 820S	89.4	98.6	79.7	17.9	76.2	3.2
Ken-Bred SX20Y	86.5	95.6	76.4	18.1	82.1	3.1
Princeton 8-A	79.5	83.9	76.0	18.2	90.2	3.1
Princeton 81-A	81.8	85.2	78.1	18.4	87.8	2.9
S.S. Matoaka	85.9	90.2	81.7	18.4	70.0	3.3
AES 809	82.4	83.8	81.5	18.6	71.7	2.9
T-E Cropmaster	79.9	84.8	74.8	18.6	69.1	3.4
Ken-Bred E20YA	87.8	92.2	83.6	18.8	71.8	3.2
Princeton SX804	88.2	91.3	85.6	18.8	78.2	3.4
S.S. 860	80.6	84.1	79.0	18.8	78.9	3.2
S.S. 909E	86.8	91.2	82.8	19.0	85.1	4.0
Ky 105	83.5	89.6	78.3	19.4	77.4	3.7
Crib Filler 66	92.5	99.6	87.4	19.5	71.0	3.1
Princeton 890-AA	86.0	89.1	82.6	19.5	70.8	3.2
Dekalb XL385	89.1	90.7	89.7	19.6	86.1	3.5
P.A.G. SX59	93.2	95.1	95.3	19.8	73.8	3.1
S.S. 979	88.2	96.3	81.2	20.3	78.5	3.8
Dekalb 1006	83.2	86.5	81.5	22.1	79.7	3.8
Yellow Average	86.6	91.3	82.5	18.9	78.4	3.3

WHITE						
Princeton 790-AA	73.4	75.5	73.4	18.4	80.9	3.3
US523W	77.8	79.2	78.9	18.6	72.9	3.3
Ken-Bred M20W	85.6	87.4	86.0	19.0	72.7	3.4
Ky 5921W	83.1	85.4	82.3	19.3	72.6	3.2
Schenk S-96W	82.1	87.8	77.7	19.4	74.9	3.2
Princeton 990-A	82.6	88.4	78.7	19.7	82.7	3.3
Princeton 920-A	81.7	86.6	78.5	19.8	80.9	3.1
Crib Filler 183W	82.6	83.4	85.2	19.9	72.5	3.1
Pioneer 509	81.8	88.9	74.9	20.0	76.7	3.3
Dekalb 999	78.8	82.8	76.3	20.4	71.9	3.3
Pioneer 511	80.3	89.0	69.7	20.7	69.0	3.4
Stull 800W	82.9	85.4	83.6	21.8	72.6	3.5
White Average	81.1	85.0	78.8	19.8	75.0	3.3
GRAND AVERAGE	84.6	89.0	81.2	19.2	77.2	3.3

Table 7. Annual Summary of Hybrids Evaluated Under Non-Virus Conditions in 1966

Hybrid	Average Acre Yield, Bu.			Maturity		Ear
	State	Western	Eastern	Harvest Ear Moisture, %	Erect Plants,%	Height Ft.
YELLOW						
Crib Filler 88	88.1	91.0	82.2	20.5	88.7	3.2
Dekalb 805-A	76.7	79.3	71.6	20.5	90.4	3.2
P.A.G. 399	83.8	85.4	80.7	20.5	89.3	3.1
P.A.G. SX29	95.1	93.3	98.7	20.8	90.1	3.2
Pioneer 3369	88.2	90.6	83.4	20.9	95.7	3.0
S.S. 820S	82.1	83.0	80.3	21.0	90.0	3.2
Dekalb XL-342	79.0	77.8	81.4	21.3	92.6	3.1
Crib Filler 128	82.0	78.4	89.2	21.4	90.0	3.5
Stull 807YAA	93.3	93.6	92.6	21.4	89.3	3.3
Ken-Bred SX20Y	78.0	80.2	73.7	21.5	88.2	3.1
P.A.G. SX17	106.0	106.1	105.7	21.5	78.8	3.5
Dekalb XL-362	84.8	87.1	80.2	21.9	89.5	3.0
S.S. Matoaka	88.2	87.9	88.7	21.9	84.6	3.3
T-E Cropmaster	73.9	74.1	73.5	21.9	89.7	3.4
AES 809	79.6	78.5	81.9	22.0	88.2	3.1
Princeton 8-A	76.8	74.8	80.9	22.0	94.0	3.1
Pioneer 3376	83.1	81.9	85.4	22.1	93.5	3.0
Dekalb XL-65A	88.4	88.6	88.1	22.2	89.0	3.3
Princeton 81-A	78.4	79.2	76.9	22.2	93.7	3.0
Pioneer 3327	95.1	92.1	101.2	22.3	85.1	3.0
Ken-Bred E20YA	88.6	88.4	89.1	22.4	89.9	3.3
S.S. 860	80.9	76.8	89.0	22.5	89.2	3.3
Princeton SX803	83.3	81.6	86.6	22.6	94.5	3.0
Pioneer X2786	101.3	102.1	99.6	22.7	89.7	3.3
Princeton SX804	90.6	89.8	92.3	22.8	89.7	3.5
Ky 6504	89.2	84.2	99.2	22.9	92.3	3.4
Ken-Bred VR20Y	83.7	78.7	93.6	22.9	85.8	3.5
Crib Filler 66	84.6	80.8	92.2	23.0	91.6	3.1

Dekalb 872	77.3	74.4	83.2	23.1	90.4	3.0
Dekalb XL-385	96.5	92.1	105.4	23.2	88.7	3.6
S.S. 909E	88.9	88.3	90.1	23.4	88.4	3.9
Princeton 890-AA	84.8	85.6	83.1	23.5	84.8	3.2
Ky 6507	94.3	89.7	103.6	23.7	81.8	3.3
S.S. 866	95.8	95.3	96.7	23.7	90.9	3.3
Ky 105	92.0	90.3	95.5	24.0	86.4	3.8
P.A.G. SX59	93.6	85.7	109.3	24.0	89.5	3.2
Schenk SX-75	93.2	88.2	103.1	24.2	86.7	3.5
S.S. 979	91.8	89.7	95.9	24.3	88.1	3.5
Stull 101YS	91.8	85.9	103.7	24.3	87.3	3.3
Dekalb 1006	94.2	90.9	100.7	26.2	86.5	3.8
Yellow Average	87.4	86.0	90.2	22.5	89.1	3.3
WHITE						
Princeton 790-AA	71.7	67.7	79.8	22.4	85.6	3.3
Ky 5921W	90.1	87.1	96.2	23.3	88.0	3.4
Stull 500WC	84.3	79.4	94.2	23.3	88.0	3.3
US523W	81.4	76.4	91.3	23.3	80.6	3.3
Ken-Bred M20W	90.8	86.3	99.8	23.4	86.3	3.3
Schenk S-96W	89.3	86.4	95.0	23.6	87.8	3.4
Crib Filler 183W	92.7	85.8	106.5	24.0	87.4	3.2
Pioneer 509	86.0	85.7	86.7	24.2	81.6	3.3
S.S. 960W	83.4	77.2	95.9	24.2	90.3	3.5
Meacham M-7	86.6	84.8	90.1	24.3	80.4	3.2
Princeton 920-A	86.8	83.2	94.0	24.5	87.2	3.1
Princeton 990-A	83.5	79.7	91.2	24.5	91.2	3.3
Dekalb 999	81.8	78.8	87.8	24.8	85.0	3.2
Ky 6132W	90.2	90.3	89.9	24.8	85.1	3.5
Pioneer 511	90.9	94.6	83.5	25.2	76.9	3.4
Stull 800W	99.0	92.5	111.9	26.2	88.5	3.6
White Average	86.8	83.5	93.4	24.1	85.6	3.3
GRAND AVERAGE	87.2	85.3	91.1	22.9	88.1	3.3

Table 8. Two-Year Summary of Hybrids Evaluated Under Virus Conditions in 1965 and 1966

Hybrid	Yield Bu/A	Virus Rating Grade	Maturity Harvest Ear Moisture, %	Erect Plants %	Ear Height Ft.
YELLOW					
Ky 105	88.8	2.2	26.2	88.3	3.5
Dekalb 1006	62.4	3.7	26.1	71.8	3.3
S.S. 979	68.0	4.9	25.3	80.3	3.4
Princeton SX-804	47.4	5.0	23.1	48.1	2.6
Pioneer 3369	65.1	5.1	20.5	75.2	2.3
P.A.G. SX59	51.4	5.3	22.8	78.5	2.6
P.A.G. SX29	46.7	5.4	21.2	86.2	2.5
S.S. Matoaka	51.4	5.9	22.7	72.0	2.5
Princeton 890-AA	37.9	6.0	22.3	58.9	2.4
S.S. 860	51.1	6.0	23.5	79.7	2.5
S.S. 909E	52.2	6.0	24.2	64.1	2.7
Dekalb XL-385	45.9	6.4	21.5	73.8	2.5
AES 809	32.2	6.5	22.0	64.4	2.4
Princeton 8-A	35.2	6.8	23.7	49.4	2.7
T-E Cropmaster	27.0	7.0	22.7	45.5	2.7
Ken-Bred E20YA	28.3	7.1	23.7	49.1	2.3
Princeton 81-A	27.3	7.3	21.9	58.5	2.3
S.S. 820S	25.7	7.4	21.8	38.8	2.4
Crib Filler 66	17.7	7.9	22.9	35.4	2.1
Ken-Bred SX20Y	24.0	8.0	20.7	41.0	2.3
Dekalb XL-362	20.2	8.1	22.1	32.5	2.0
Yellow Average	43.1	6.1	22.9	61.5	2.6

WHITE					
Pioneer 511	78.6	3.1	26.8	88.5	3.5
Ky 5921W	73.0	3.7	24.4	80.9	2.7
Princeton 920-A	76.7	3.7	25.4	85.7	3.0
Dekalb 999	71.5	3.8	25.5	90.1	2.7
Stull 800W	70.7	3.8	25.8	90.1	3.0
Princeton 790-AA	60.3	4.1	23.0	86.5	2.5
Crib Filler 183W	64.7	4.3	24.3	76.4	2.7
Princeton 990-A	61.9	4.5	23.9	86.5	2.7
Schenk S-96W	74.6	4.5	24.9	75.8	2.9
Pioneer 509	55.9	4.7	23.0	85.6	2.9
Ken-Bred M20W	63.7	5.1	24.2	74.0	2.8
US523W	14.7	8.3	22.4	46.4	2.3
White Average	63.9	4.5	24.5	80.5	2.8
GRAND AVERAGE	50.7	5.5	23.5	68.4	2.7

Table 9. Annual Summary of Hybrids Evaluated Under Virus Conditions in 1966

Hybrid	Yield Bu/A	Virus Rating Grade	Maturity Harvest Ear Moisture, %	Erect Plants %	Ear Height Ft.
YELLOW					
Ky 6507	99.9	2.0	30.2	96.5	2.8
Ky 6504	91.8	2.8	26.9	96.6	2.8
P.A.G. SX17	94.0	2.8	28.6	97.8	2.8
Ky 105	92.2	2.8	29.5	97.7	3.0
S.S. 866	79.3	3.2	27.2	96.2	2.9
Dekalb 1006	60.2	4.2	28.3	84.7	2.9
Ken-Bred VR20Y	81.4	4.3	26.8	79.3	2.6
Pioneer 3369	68.6	4.5	22.0	96.3	2.3
Dekalb 872	51.4	4.8	25.7	79.5	2.4
P.A.G. SX29	50.9	5.0	23.4	94.9	2.6
Dekalb XL-342	47.6	5.0	23.8	75.0	2.3
Stull 807YAA	44.8	5.2	23.1	89.1	2.2
Pioneer 3376	51.3	5.3	23.9	94.9	2.0
Pioneer 3327	51.8	5.3	24.3	92.9	2.1
P.A.G. SX59	49.3	5.3	24.5	92.6	2.3
S.S. 979	69.0	5.3	27.3	94.6	2.9
Princeton SX804	48.4	5.5	25.3	63.0	2.4
S.S. 860	57.7	5.5	25.8	83.9	2.4
Crib Filler 128	54.8	5.8	23.1	86.3	2.4
S.S. Matoaka	52.0	6.0	25.0	85.1	2.4
Princeton 8-A	36.3	6.0	25.5	71.6	2.3
P.A.G. 399	35.8	6.3	22.4	77.1	2.0
Pioneer X2786	38.4	6.3	26.1	53.4	2.4
Dekalb XL-385	41.5	6.5	23.5	87.4	2.5
S.S. 909E	48.6	6.5	27.0	79.0	2.6
Princeton 890-AA	35.0	6.5	24.7	70.1	2.4
AES 809	26.2	6.8	23.9	73.7	2.3

Stull 101YS	29.5	6.8	24.3	68.5	2.3
Ken-Bred E20YA	29.2	6.8	25.5	70.5	2.1
Crib Filler 88	26.2	6.8	25.8	60.0	2.4
S.S. 820S	24.6	7.0	23.4	47.1	2.1
Princeton 81-A	27.0	7.0	23.7	76.2	2.3
Schenk SX-75	24.2	7.0	24.5	71.8	2.1
T-E Cropmaster	24.1	7.0	24.5	56.9	2.5
Princeton SX803	34.0	7.0	26.9	68.4	2.3
Dekalb XL-65A	26.7	7.5	23.7	69.1	2.2
Ken-Bred SX20Y	19.7	7.8	22.7	49.6	2.1
Crib Filler 66	11.6	8.0	25.2	48.2	2.0
Dekalb XL-362	21.1	8.0	25.2	47.4	2.0
Dekalb 805-A	11.8	8.2	22.0	26.7	2.1
Yellow Average	46.7	5.7	25.1	76.2	2.4
WHITE					
Ky 6132W	74.8	4.3	29.3	97.0	2.8
Pioneer 511	72.0	4.3	29.4	97.1	3.0
Ky 5921W	73.2	4.5	27.0	95.0	2.6
Princeton 920-A	72.7	4.5	27.4	95.6	2.6
Meacham M-7	61.1	4.5	28.3	95.6	2.5
Crib Filler 183W	65.4	4.8	26.7	88.1	2.5
Schenk S-96W	77.4	4.8	28.0	89.4	2.9
Princeton 990-A	57.7	5.0	27.7	88.9	2.6
Pioneer 509	52.2	5.2	24.9	94.3	2.5
S.S. 960W	64.2	5.3	25.8	91.6	2.8
Stull 500WC	57.2	5.3	27.0	87.8	2.6
Dekalb 999	66.1	5.3	28.5	97.8	2.4
Princeton 790-AA	56.6	5.5	24.7	94.5	2.5
Stull 800W	62.0	5.5	29.0	96.4	2.5
Ken-Bred M20W	60.0	6.0	27.8	87.9	2.5
US523W	11.4	8.0	23.7	50.6	2.3
White Average	61.5	5.2	27.2	90.5	2.6
GRAND AVERAGE	50.9	5.6	25.7	80.3	2.4

Table 10. Annual Summary of Hybrids Evaluated Under Nitrogen and Plant Population Treatments Separately and in Combination

Hybrid	Average Acre Yield in Bushels								
						133# N/A		200# N/A	
	Overall Average	133# N/A	200# N/A	17,424 P1/A	23,232 P1/A	17,424 P1/A	23,232 P1/A	17,424 P1/A	23,232 P1/A
YELLOW									
Crib Filler 88	91.0	86.6	95.5	92.8	89.3	85.7	87.5	99.8	91.1
Dekalb 805-A	79.3	81.6	77.0	84.6	74.0	79.8	83.4	89.4	64.5
P.A.G. 399	85.4	87.6	83.2	79.4	91.4	77.5	97.7	81.3	85.0
P.A.G. SX29	93.3	88.9	97.8	97.4	89.3	87.7	90.0	107.1	88.5
Pioneer 3369	90.6	88.7	92.5	94.0	87.3	82.8	94.6	105.1	79.9
S.S. 820S	83.0	81.5	84.6	82.9	83.2	72.2	90.8	93.6	75.5
Dekalb XL-342	77.8	77.7	77.9	83.0	72.7	79.2	76.2	86.7	69.1
Crib Filler 128	78.4	79.1	77.8	82.9	74.0	76.3	81.8	89.4	66.2
Stull 807YAA	93.6	92.7	94.5	97.5	89.6	90.9	94.4	104.1	84.8
Ken-Bred SX20Y	80.2	77.0	83.4	90.3	70.1	77.6	76.4	103.0	63.7
P.A.G. SX17	106.1	105.9	106.3	107.7	104.5	102.9	108.9	112.5	100.1
Dekalb XL-362	87.1	87.1	87.2	93.5	80.8	91.9	82.2	95.0	79.4
S.S. Matoaka	87.9	85.6	90.2	91.4	84.4	83.0	88.2	99.0	80.6
T-E Cropmaster	74.1	70.0	78.3	81.6	66.7	74.0	65.9	89.1	67.5
AES 809	78.5	76.5	80.4	84.7	72.2	75.8	77.2	93.6	67.2
Princeton 8-A	74.8	69.0	80.7	83.7	66.0	77.4	60.5	90.0	71.4
Pioneer 3376	81.9	77.0	86.8	85.9	77.9	75.5	78.5	96.2	77.3
Dekalb XL-65A	88.6	84.4	92.9	87.8	89.5	77.3	91.4	98.3	87.5
Princeton 81-A	79.2	77.7	80.7	88.8	69.6	80.1	75.2	97.4	64.0
Pioneer 3327	92.1	89.3	94.4	94.2	90.0	79.0	99.5	109.4	80.4
Ken-Bred E20YA	88.4	89.9	86.9	90.7	86.1	82.7	97.1	98.7	75.0
S.S. 860	76.8	72.5	81.1	77.7	75.9	72.1	72.9	83.2	78.9
Princeton SX803	81.6	76.6	86.6	88.0	75.2	77.6	75.5	98.4	74.8
Pioneer X2786	102.1	97.5	106.7	111.3	92.9	101.5	93.5	121.1	92.2
Princeton SX804	89.8	87.3	92.4	93.6	86.1	85.7	88.8	101.4	83.3
Ky 6504	84.2	79.8	88.7	87.5	81.0	74.0	85.5	101.0	76.4
Ken-Bred VR20Y	78.7	74.7	82.7	82.0	75.4	70.6	78.8	93.4	72.0
Crib Filler 66	80.8	79.8	81.9	89.4	72.3	80.7	78.8	98.1	65.7

Dekalb 872	74.4	69.6	79.1	78.4	70.3	65.3	73.9	91.5	66.7
Dekalb XL-385	92.1	85.2	99.1	97.2	87.1	84.7	85.6	109.7	88.5
S.S. 909E	88.3	85.5	91.2	94.4	82.3	85.8	85.1	103.0	79.4
Princeton 890-AA	85.6	83.9	87.2	88.8	82.3	76.0	91.8	101.6	72.8
Ky 6507	89.7	82.9	96.6	95.6	83.9	81.5	84.2	109.7	83.5
S.S. 866	95.3	85.4	105.3	102.7	88.0	84.4	86.3	120.9	89.7
Ky 105	90.3	89.7	91.0	90.6	90.0	82.2	97.1	99.0	82.9
P.A.G. SX59	85.7	85.1	86.4	91.2	80.2	77.4	92.7	105.0	67.7
Schenk SX-75	88.3	85.9	90.4	92.5	83.9	83.1	88.7	101.8	79.0
S.S. 979	89.7	87.0	92.5	97.4	82.1	83.9	90.1	110.8	74.1
Stull 101YS	85.9	86.0	85.8	88.8	83.0	80.1	91.8	97.5	74.1
Dekalb 1006	90.9	89.6	92.3	90.9	91.0	79.4	99.7	102.3	82.4
Yellow Average	86.0	83.4	88.7	90.3	81.8	80.9	86.0	99.7	77.6
WHITE									
Princeton 790-AA	67.7	63.4	72.0	65.7	69.6	48.7	78.0	82.7	61.2
Ky 5921W	87.1	86.1	88.1	91.7	82.6	84.9	87.3	98.4	77.8
Stull 500WC	79.4	78.3	80.5	82.2	76.6	69.9	86.7	94.4	66.5
US523W	76.4	72.5	80.4	87.5	65.1	72.9	72.1	102.7	58.0
Ken-Bred M20W	86.3	85.4	87.7	90.6	82.5	69.3	101.4	111.8	63.5
Schenk S-96W	86.4	83.5	89.3	94.3	78.5	92.1	74.8	96.4	82.1
Crib Filler 183W	85.8	88.9	82.6	92.1	79.5	86.0	91.8	98.1	67.1
Pioneer 509	85.7	80.8	90.6	86.2	85.1	73.7	87.8	98.7	82.4
S.S. 960W	77.2	77.3	77.1	80.2	74.2	70.2	84.3	90.1	64.0
Meacham M-7	84.8	80.7	88.8	90.5	79.1	83.6	77.8	97.3	80.3
Princeton 920-A	83.2	81.7	84.8	86.3	80.2	79.4	84.0	93.1	76.4
Princeton 990-A	79.7	69.3	90.2	94.1	65.4	77.8	60.8	110.4	69.9
Dekalb 999	78.8	74.3	83.3	81.7	75.9	74.3	74.3	89.1	77.5
Ky 6132W	90.3	91.2	89.4	95.3	85.3	97.5	84.9	93.1	85.6
Pioneer 511	94.6	91.3	98.0	93.0	96.2	84.5	98.0	101.5	94.4
Stull 800W	92.5	89.6	95.5	97.8	87.2	89.3	89.8	106.3	84.6
White Average	83.5	80.9	86.1	88.1	78.9	78.4	83.4	97.8	74.5
GRAND AVERAGE	85.3	82.7	87.9	89.7	81.0	80.2	85.2	99.2	76.7

Table 11. Treatment Summary of Hybrid Groups

Hybrid Combination Averages	Average Acre Yield in Bushels								
						133# N/A		200# N/A	
	Overall Average	133# N/A	200# N/A	17,424 P1/A	23,232 P1/A	17,424 P1/A	23,232 P1/A	17,424 P1/A	23,232 P1/A
All Hybrid	85.3	82.7	87.9	89.7	81.0	80.2	85.2	99.2	76.7
Yellow Hybrids	86.0	83.4	88.7	90.3	81.8	80.9	86.0	99.7	77.6
White Hybrids	83.5	80.9	86.1	88.1	78.9	78.4	83.4	97.8	74.5
All Single Crosses	87.4	85.2	89.6	92.4	82.4	83.2	87.1	101.6	77.7
All Three-Way Crosses	88.3	83.9	92.9	92.3	84.5	81.8	85.8	102.7	83.1
All Four-Way Crosses	83.7	81.2	86.3	87.8	79.7	78.3	84.2	97.3	75.2
17 Yellow Single Crosses	87.1	84.9	89.3	92.1	82.1	82.8	86.9	101.3	77.3
5 Yellow Three-Way Crosses	88.3	83.9	92.9	92.3	84.5	81.8	85.8	102.7	83.1
18 Yellow Four-Way Crosses	84.4	82.0	86.9	88.1	80.7	78.8	85.2	97.4	76.3
1 White Single Cross	92.5	89.6	95.5	97.8	87.2	89.3	89.8	106.3	84.6
15 White Four-Way Crosses	82.9	80.3	85.5	87.4	78.4	77.7	82.9	97.2	73.8

10M--1--67