RESULTS OF THE

KENTUCKY HYBRID CORN PERFORMANCE TEST - 1967

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UNIVERSITY OF KENTUCKY
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DEPARTMENT OF AGRONOMY
Lexington

TESTING LOCATIONS OF

THE KENTUCKY HYBRID CORN PERFORMANCE TEST

Area	Location	Cooperator
Non-Virus	1. Princeton	West. Ky. Substation
"	2. Hartford	Walter & Earl Campbell John M. Kavanaugh, Area Extension Agent
"	3. Lexington	Ky. Agr. Exp. Sta.
Virus	4. Frankfort	Mason & Ralph Bates

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RESULTS OF THE KENTUCKY HYBRID CORN PERFORMANCE TEST IN 1967

Charles R. Tutt and Charles R. Chaplin [1/]

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 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.

Kentucky farmers established a record yield of 80 bushels per acre in 1967. The previous record yield was 69 bushels established in 1965. The 1967 yield was 21 bushels above that in 1966 and 19 bushels above the five-year average 1961-65. The total corn production in 1967 was 95,200,000 bushels and was up 46 percent above 1966. This is second only to the record production of 95,240,000 bushels produced in 1948. In 1948, however, the crop was harvested from 2,381,000 acres and yielded only 40 bushels per acre.

The 1967 growing season was unusually cool and wet. Corn planting began in mid-April, but owing to the abundant rainfall during May, planting was 7-10 days behind normal by June 1. Growth of early planted corn was slowed by cool, wet weather and some replanting was necessary because of poor stands and flooding of river bottoms. Excessive water damaged late-planted corn in low areas.

Soil moisture throughout the growing season ranged from ample to excessive for most parts of the state resulting in the development of an excellent corn crop. A cool, wet autumn delayed maturity of the crop and by November 1 corn harvest was only 51 percent complete as compared with 75 percent normally.

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EXPERIMENTAL METHODS

The performance test was conducted at four locations in the state. 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 Frankfort, but was not present at Princeton, Hartford or Lexington.

Forty-two 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 1967, 18 double crosses, 2 three-way crosses, 21 single crosses, and one special cross.

Rainfall and temperature data for the testing locations are presented in Tables 3 and 4 respectively. Agronomic information pertaining to the testing locations is shown in Table 5. Table 6 presents the treatment average of all hybrids for various groups. 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 7-9, respectively. Results of the 3-year, 2-year and one-year test under virus conditions are presented in Tables 10-12. The hybrids in Tables 7-9 are grouped on the basis of kernel color. Within groups, the hybrids are listed in order of increasing moisture content. The hybrids in Tables 10-12 are arranged in order of decreasing M.D.M. virus resistance. The 2-year and one-year combinations are presented in Tables 13 and 14.

Field Design

Each hybrid was planted in eight plots at Princeton, Hartford and Lexington, and on four plots at Frankfort. Corn was hand planted, simulating hill dropping. All

tests were planted at an increased rate, and the resulting plants were thinned to the desired stand at each location. Each hybrid was planted at two levels of nitrogen fertility (100 pounds and 200 pounds of actual nitrogen per acre) at Princeton, Hartford and Lexington. Two plant populations, 17,424 and 23,232, were used at each nitrogen level.

Yield

The corn from each plot was harvested and weighed individually. The yields 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 present measure of relative maturity of hybrids. 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 was determined on each hybrid 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 differences 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, at Vanceburg in 1966 and at Frankfort in 1967. Present indications are that the only virus present in Kentucky is maize dwarf mosaic. All plants of each hybrid were rated shortly after silking on a 1-9 scale, with 1 being resistant and 9 being extremely susceptible.

INTERPRETATIONS

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 plots were picked by hand which reduced harvest loss.

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 are the average 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, such as 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 13 and 14 since data are from only two and one year of testing respectively. The low two-year average of the high nitrogen-plant population combination was caused by the low yield of the Hartford plots in 1966. This may have been caused by drought conditions and lack

of uniformity of soil conditions within plots. Care should be taken in making comparisons between nitrogen-plant population combinations since the tests were not designed for making such comparisons. Comparisons between the combinations would be similar to test strips a farmer might plant for himself. Several additional 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 need.

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 1967

Hybrid	Color	Cross	Source of Hybrids
Crib Filler 40	Y	2X	Mitchell Farms
60	Y	2X	Windfall, Ind.
66	Y	2X	
105	Y	2X	
123	Y	4X	
128	Y	4X	
183W	W	4X	
Ken-Bred E20YA	Y	4X	Golden Acre Hybrids
M20W	W	4X	Taylor Evans Seed Co.
Sx20Y	Y	2X	Tulia, Texas
VR20Y	Y	4X	
T-E Bonusmaker-S	Y	2X	
Ky 105	Y	4X	University of Kentucky
5921W	W	4X	Agricultural Experiment Station, Lexington, Ky.
Meacham's M-7	W	4X	Meacham's Hybrids
MX75W	W	2X	Route 3, Morganfield, Ky.
Pioneer 3196	Y	2X	Pioneer Corn Co., Inc.
3306	Y	2X	Tipton, Ind.
3369	Y	2X	
Princeton 920A	W	4X	Princeton Farms
990A	W	4X	Princeton, Ind.
SX 606	Y	2X	
SX 803	Y	2X	
SX 804	Y	2X	
SX809	Y	2X	
Schenk S-96W	W	4X	Charles H. Schenk and
SS-X75	Y	3X	Son, Inc. Route 4
SS-77A	Y	3X	Vincennes, Ind.
Southern States			
SS 820S	Y	2X	Southern States Coop.,Inc.
SS 860	Y	4X	Division of Seed and Farm
SS 866	Y	4X	Supply, Richmond, Va.
SS 909E	Y	4X	
SS 935W	W	4X	
SS 720SP	Y	Special Cross	
SS Matoaka	Y	4X	
Stewart Cardinal			Stewart Hybrids, Inc.
SX 47	Y	2X	Route 1, Princeville, Ind.
SX 77	Y	2X	

Table 1 (continued)

Hybrid	Color	Cross	Source of Hybrids
Stulls 707	Y	2X	Stull Brothers, Inc.
800 W	W	2X	Sebree, Ky.
807 A	Y	2X	
807	Y	2X	
US 523W	W	4X	Experiment Station(USDA)

Table 2. Pedigrees of Experiment Station and U. S. Hybrids Tested in 1967

Hybrid	Color	Cross	Pedigree
Ky 105	Y	4X	(T8 X CI21E)(38-11 X Oh 7B)
Ky 5921W	W	4X	(CI64 X 33-16)(Ky 201 X CI66)
US 523W	W	4X	(K55 X K64)(Ky 27 X Ky 49)

Table 3. 1967 Rainfall Departure from Normal

	May	June	July	Aug	Sept	Total
Princeton	+2.59	+0.08	+1.93	-1.07	-0.52	+3.01
Lexington	+3.09	-2.07	+1.89	+0.42	+0.17	+3.30
Frankfort	+1.67	-1.58	-0.14	-1.05	-0.98	-2.08

Table 4. 1967 Temperature Departure from Normal

	May	June	July	Aug	Sept	Average
Princeton	-2.3	-1.5	-5.1	-6.6	-4.4	-4.0
Lexington	-2.5	-1.5	-4.9	-5.4	-4.4	-3.7
Frankfort	-4.3	-2.4	-4.8	-5.4	-5.4	-4.5

Table 5. Agronomic Information Pertaining to Testing Locations in 1967

Location	Fertilizer Applied	Plants Per Acre	Date Planted	Date Harvested	Experiment Average Yield Bushel	Moisture
1. Princeton	300# NH_4NO_3	17,424	May 12	Oct.17	105.3	24.1
	300# Muriate	23,232			115.5	22.9
	600#NH_4NO_3	17,424	May 12	Oct. 17	108.8	24.1
	300# Muriate	23,232			131.7	23.4
2. Hartford	120#Anhydrous Ammonia					
	100#Superphosphate	17,424	May 25	Oct.30	98.7	22.5
	260# Muriate	23,232			90.7	22.9
	240#Anhydrous Ammonia	17,424	May 25	Oct.30	122.3	22.7
	100#Superphosphate	23,232			111.8	22.8
	260# Muriate					
3. Lexington	400# NH_4NO_3	17,424	May 10	Oct. 20	114.4	23.3
	166# Muriate	23,232			109.8	22.6
	600# NH_4NO_3	17,424	May 23	Oct. 16	110.9	21.7
	166# Muriate	23,232			117.2	21.3
4. Frankfort	400# NH_4NO_3	17,424	May 25	Oct. 28	60.3	21.7
	100# Muriate					

Table 6. Treatment Summary of Hybrid Groups in 1967

Hybrid Combinations	Average Acre Yield in Bushels								
						100# N/A		200# N/A	
	Overall Average	100# 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 Hybrids	111.4	105.7	117.0	110.0	112.7	106.1	105.3	114.0	120.2
Yellow Hybrids	112.6	107.6	117.7	111.1	114.2	108.2	107.9	113.9	121.4
White Hybrids	108.0	100.4	115.6	107.3	108.8	100.1	100.7	114.3	116.9
All Single Crosses	113.6	109.0	118.1	111.1	116.0	108.1	109.8	114.1	122.1
All Three-Way Crosses	112.8	108.4	117.3	111.7	114.0	113.9	102.8	109.5	125.1
All Four-Way Crosses	108.7	101.6	115.8	108.5	108.9	102.7	100.3	114.2	117.4
19 Yellow Single Crosses	115.2	111.0	119.4	112.8	117.6	110.3	111.7	115.3	123.4
2 Yellow Three-Way Crosses	112.8	108.4	117.3	111.7	114.0	113.9	102.8	109.5	125.1
9 Yellow Four-Way Crosses	107.3	100.5	114.0	107.1	107.4	102.6	98.3	111.6	116.5
1 Yellow Special Cross	111.9	105.4	118.3	112.7	111.0	107.7	103.0	117.7	118.8
2 White Single Crosses	97.9	89.8	105.9	94.5	101.1	86.8	92.7	102.3	109.5
9 White Four-Way Crosses	110.3	102.8	117.8	110.1	110.5	103.1	102.5	117.0	118.5

Table 7. Three-Year Summary of Hybrids Compared in 1965, 1966 and 1967

Hybrid	Average Acre Yield, Bu. State	Western	Eastern	Maturity Harvest Ear Moisture, %	Erect Plants %	Ear Height Ft.
YELLOW						
Pioneer 3369	99.6	101.1	97.2	18.1	85.0	3.2
S.S. 820S	99.0	103.6	91.3	19.2	78.1	3.3
Ken-Bred SX20Y	95.2	100.7	85.9	19.4	80.5	3.3
S.S. 860	91.1	91.5	90.5	19.8	80.1	3.4
S.S. Matoaka	93.2	93.6	92.5	19.8	73.1	3.4
Ken-Bred E20YA	96.6	99.4	91.8	20.1	75.5	3.4
Princeton SX804	100.7	102.5	97.8	20.3	78.8	3.6
S.S. 909E	97.7	100.5	93.0	20.3	84.4	4.1
Crib Filler 66	101.3	102.3	99.6	20.7	74.6	3.3
Ky 105	88.5	91.8	82.9	20.8	79.8	3.9
Yellow Average	96.3	98.7	92.3	19.9	79.0	3.5
WHITE						
US523W	86.7	88.7	83.3	19.9	75.6	3.6
Ken-Bred M20W	100.1	102.0	97.0	20.6	74.8	3.5
Schenk S-96W	92.4	94.8	88.5	20.8	78.0	3.5
Ky 5921W	95.6	99.9	88.3	21.0	77.4	3.5
Princeton 990-A	91.6	96.3	83.8	21.2	83.9	3.5
Crib Filler 183W	95.4	96.7	93.2	21.5	74.6	3.4
Princeton 920-A	93.3	96.0	88.8	21.6	82.4	3.4
Stull 800W	86.3	90.4	79.5	23.5	77.3	3.7
White Average	92.7	95.6	87.8	21.3	78.0	3.5
GRAND AVERAGE	94.7	97.3	90.3	20.5	78.6	3.5

Table 8. Two-Year Summary of Hybrids Compared in 1966 and 1967

Hybrid	Average Acre Yield, Bu.			Maturity Ear Harvest Moisture, %	Erect Plants %	Ear Height Ft.
	State	Western	Eastern			
YELLOW						
Pioneer 3369	102.7	103.2	101.6	20.3	89.0	3.4
S.S. 820S	97.2	97.1	97.5	21.4	86.0	3.4
Crib Filler 128	92.6	86.6	104.7	21.8	85.8	3.8
Ken-Bred SX20Y	92.6	94.3	89.3	21.8	82.8	3.5
S.S. 860	93.6	89.7	101.3	22.1	85.9	3.6
S.S. Matoaka	96.0	93.3	101.4	22.3	82.0	3.5
Ken-Bred E20YA	99.1	99.4	98.6	22.5	86.4	3.5
Pioneer 3196	114.6	116.6	110.6	22.5	90.9	3.6
Ken-Bred VR20Y	97.1	96.0	99.3	22.6	84.2	3.7
Princeton SX 803	93.5	88.9	102.6	22.7	89.9	3.3
Crib Filler 66	98.4	93.6	108.1	23.1	86.8	3.4
Princeton SX 804	105.4	104.5	107.3	23.1	84.9	3.8
S.S. 909E	101.5	101.4	101.7	23.2	85.7	4.1
S.S.866	102.2	102.8	100.9	23.5	88.8	3.7
Ky 105	93.1	92.7	93.9	23.9	85.5	4.1
Yellow Average	98.6	97.3	101.3	22.5	86.3	3.6
WHITE						
US 523W	90.4	89.7	91.7	22.9	80.8	3.7
Ken-Bred M20W	106.4	105.1	109.4	23.6	82.6	3.6
Schenk S-96W	98.1	95.9	102.5	23.6	86.0	3.8
Ky 5921W	102.3	104.4	98.2	23.8	87.5	3.7
Meacham M-7	95.2	96.2	93.1	24.1	81.8	3.6
Crib Filler 183W	103.4	101.2	107.8	24.3	83.2	3.6
Princeton 990A	93.5	94.0	92.6	24.3	88.7	3.7
Princeton 920A	98.4	96.7	101.8	24.9	86.4	3.6
Stull 800W	94.1	95.3	91.7	26.6	87.6	3.8
White Average	98.0	97.6	98.8	24.2	85.0	3.7
GRAND AVERAGE	98.4	97.4	100.3	23.1	85.8	3.6

Table 9. Annual Summary of Hybrids Evaluated Under Non-Virus Conditions in 1967

Hybrid	Average Acre Yield, Bu.			Harvest Moisture, %	Erect Plants %	Ear Ht., Ft.
	State	Western	Eastern			
YELLOW						
Pioneer 3369	117.0	115.7	119.7	19.6	82.2	3.7
Stewart Card. SX77	112.2	111.2	115.7	20.2	83.0	3.7
S.S. 720SP	111.9	110.4	114.8	20.5	81.1	3.7
TE Bonusmaker-S	110.0	109.7	110.6	20.6	82.4	3.5
Princeton SX 606	110.1	106.3	117.7	20.7	86.3	3.5
Stewart Card.SX47	114.8	106.5	131.3	21.2	86.6	3.7
Princeton SX 809	117.3	115.5	121.0	21.3	81.3	3.5
Stull 807	113.9	113.0	115.8	21.6	83.3	3.7
Crib Filler 40	98.4	97.5	100.1	21.7	80.9	3.6
S.S. 860	106.2	102.5	113.6	21.7	82.5	3.9
Schenk SS-77A	115.0	104.5	135.9	21.8	85.7	3.6
S.S. 820S	112.3	111.2	114.6	21.8	81.9	3.6
Ken-Bred SX 20Y	107.1	108.3	104.8	22.0	77.4	3.8
Pioneer 3306	117.5	112.6	127.4	22.0	86.6	3.9
Crib Filler 105	131.6	128.1	138.6	22.2	83.7	3.9
Crib Filler 128	103.2	94.7	120.2	22.2	81.5	4.0
Ken-Bred VR20Y	110.5	113.3	105.0	22.2	82.6	3.8
Pioneer 3196	127.8	131.0	121.5	22.2	92.1	3.8
Stull 807A	132.2	132.3	132.0	22.3	90.2	3.7
Ken-Bred E20YA	109.6	110.3	108.1	22.6	82.9	3.7
S.S. Matoaka	103.8	98.6	114.1	22.6	79.4	3.7
Stull 707	119.3	117.0	124.0	22.6	84.4	3.3

Princeton SX803	103.6	96.2	118.5	22.8	85.2	3.5
S.S. 909E	114.0	114.4	113.3	23.0	83.0	4.3
Crib Filler 60	110.5	107.1	117.4	23.2	87.3	3.7
Crib Filler 66	112.2	106.4	123.9	23.1	81.9	3.7
Crib Filler 123	115.5	108.7	129.1	23.2	85.0	4.0
S.S. 866	108.6	110.3	105.1	23.2	86.6	4.0
Schenk SS-X75	110.7	106.7	118.7	23.3	81.8	3.6
Princeton SX 804	120.2	119.2	122.3	23.4	80.1	4.0
Ky 105	94.1	95.1	92.2	23.7	84.5	4.3
Yellow Average	112.6	110.1	117.7	22.0	83.6	3.8
WHITE						
US523W	99.3	102.9	92.1	22.5	81.0	4.1
Schenk S-96W	106.9	105.4	110.0	23.5	84.1	4.1
Ken-Bred M20W	122.2	123.8	119.0	23.8	78.9	3.8
Meacham M-7	103.7	107.6	96.0	23.9	83.1	4.0
S.S. 935W	118.6	120.7	114.3	23.9	79.5	4.0
Princeton 990A	103.4	108.2	93.9	24.1	86.2	4.0
Ky 5921W	114.5	121.6	100.2	24.3	86.9	4.0
Crib Filler 183W	114.1	116.6	109.1	24.6	78.9	4.0
Meacham MX75W	106.5	116.1	87.3	24.9	87.1	4.0
Princeton 920A	110.0	110.2	109.5	25.2	85.5	4.1
Stull 800W	89.1	98.0	71.4	26.9	86.6	4.0
White Average	108.0	111.9	100.3	24.3	83.5	4.0
GRAND AVERAGE	111.4	110.6	113.1	22.7	83.6	3.8

Table 10. Three-Year Summary of Hybrids Evaluated Under Virus Conditions in 1965, 1966, and 1967

Hybrid	Yield Bu/A	Virus Rating Grade	Maturity Harvest Ear Moisture,%	Erect Plants %	Ear Height Ft.
YELLOW					
Ky 105	92.0	1.9	25.5	89.2	3.4
Pioneer 3369	77.5	4.3	20.4	79.8	2.6
Princeton SX304	51.7	4.4	22.8	52.2	2.8
S.S. 909E	60.7	4.8	23.6	68.3	2.9
S.S. Matoaka	52.0	5.3	22.0	69.3	2.7
S.S. 860	54.3	5.4	23.2	81.6	2.7
Ken-Bred E20YA	29.0	6.4	22.8	48.0	2.5
S.S. 820S	27.3	6.6	21.1	36.2	2.6
Crib Filler 66	21.9	6.9	22.6	38.2	2.4
Ken-Bred SX20Y	26.2	7.1	20.8	42.8	2.5
Yellow Average	49.3	5.3	22.5	60.6	2.7
WHITE					
Princeton 920A	84.7	3.3	24.9	86.2	3.1
Ky 5921W	77.1	3.5	24.1	82.4	2.9
Schenk S-96W	84.9	3.8	24.4	78.2	3.1
Stull 800W	69.1	3.9	25.7	89.7	3.0
Crib Filler 183W	70.3	4.1	24.3	79.3	2.8
Princeton 990A	69.6	4.2	23.9	87.2	2.9
Ken-Bred M20W	78.1	4.2	24.2	78.8	2.9
US 523W	16.9	7.6	21.4	42.8	2.5
White Average	68.8	4.3	24.1	78.1	2.9
GRAND AVERAGE	58.0	4.8	23.3	69.4	2.8

Table 11. Two-Year Summary of Hybrids Evaluated Under Virus Conditions in 1966 and 1967

Hybrid	Yield Bu/A	Virus Rating Grade	Maturity Harvest Ear Moisture,%	Erect Plants %	Ear Height Ft
YELLOW					
Ky 105	95.4	2.1	26.8	94.3	3.2
S.S. 866	93.7	2.5	25.4	93.7	2.9
Pioneer 3369	85.4	3.7	21.1	92.7	2.8
Ken-Bred VR 20Y	76.6	3.7	24.7	74.3	2.9
Princeton SX804	54.4	4.4	23.8	61.8	2.8
S. S. 909E	63.2	4.5	24.8	77.8	2.9
Crib Filler 128	62.2	4.6	22.2	81.8	2.9
S.S. 860	59.2	4.9	24.2	84.7	2.8
S.S. Matoaka	52.6	5.0	23.8	74.5	2.8
Pioneer 3196	46.0	5.2	23.5	50.5	2.7
Princeton SX 803	34.2	5.8	24.6	59.0	2.7
Ken-Bred E20YA	29.8	5.9	23.2	58.2	2.6
S.S. 820S	27.6	6.0	21.5	39.1	2.6
Crib Filler 66	20.9	6.5	23.6	46.0	2.5
Ken-Bred SX20Y	25.1	6.6	21.9	48.0	2.6
Yellow Average	55.1	4.8	23.7	69.1	2.8
WHITE					
Meacham M-7	76.9	3.4	26.3	90.2	2.9
Princeton 920A	86.6	3.5	25.7	91.4	2.9
Schenk S-96W	91.4	3.7	25.7	86.3	3.2
Ky 5921W	79.3	3.8	25.3	90.3	2.9
Crib Filler 183W	73.4	4.3	25.6	86.6	2.8
Princeton 990A	71.3	4.3	25.8	88.8	3.1
Ken-Bred M20W	83.4	4.3	26.1	88.1	2.8
Stull 800W	63.9	4.9	27.2	92.7	2.8
US523W	16.4	7.1	21.6	43.1	2.7
White Average	71.4	4.4	25.5	84.2	2.9
GRAND AVERAGE	61.2	4.6	24.6	74.8	2.9

Table 12. Annual Summary of Hybrids Evaluated Under Virus Conditions in 1967

Hybrid	Yield Bu/A	Virus Rating Grade	Maturity Harvest Ear Moisture, %	Erect Plants %	Ear Height Ft.
YELLOW					
Ky 105	98.5	1.3	24.1	90.9	3.3
S.S. 866	108.1	1.7	23.5	91.2	3.1
Stewart Card.SX77	95.5	2.3	22.7	86.1	3.1
S.S. 909E	77.8	2.5	22.5	76.6	3.3
Pioneer 3369	102.3	2.8	20.1	89.1	3.3
Ken-Bred VR20Y	71.7	3.0	22.5	69.3	3.1
Crib Filler 128	69.7	3.3	21.3	77.3	3.4
Princeton SX804	60.3	3.3	22.2	60.5	3.1
Stull 807	55.5	3.8	18.2	77.4	3.0
Stewart Card.SX47	51.8	3.8	21.2	64.8	3.1
Pioneer 3306	56.7	3.8	21.3	59.6	3.1
Crib Filler 105	68.3	3.8	21.4	61.7	3.4
S.S. 720SP	52.9	4.0	19.8	66.5	3.0
Pioneer 3196	53.7	4.0	20.0	47.6	3.0
Princeton SX809	55.5	4.0	20.6	53.0	3.0
S.S. Matoaka	53.3	4.0	20.7	63.8	3.1
S.S. 860	60.6	4.2	22.5	85.4	3.1
Stull 807A	46.2	4.5	20.2	72.8	3.4
T-E Bonusmaker-S	24.5	4.5	20.9	66.7	3.0
Schenk SS-77A	40.9	4.8	21.2	54.3	3.0
Princeton SX803	34.3	4.8	22.2	49.6	3.0

S.S. 820S	30.5	5.0	19.6	31.1	3.0
Ken-Bred E20YA	30.4	5.0	20.9	45.9	3.0
Crib Filler 66	30.2	5.0	21.9	43.7	3.0
Princeton SX606	16.2	5.3	19.6	45.0	3.0
Stull 707	31.7	5.3	21.0	69.2	3.0
Ken-Bred SX20Y	30.5	5.3	21.1	46.3	3.0
Crib Filler 123	21.1	5.5	20.6	45.8	3.0
Schenk SS-X75	25.5	5.5	21.7	45.5	3.0
Crib Filler 60	14.8	6.2	19.2	41.5	3.0
Crib Filler 40	4.6	7.2	17.0	4.2	3.0
Yellow Average	50.7	4.2	20.9	60.8	3.0
WHITE					
Meacham M-7	92.7	2.3	24.3	84.7	3.4
S.S. 935W	101.4	2.5	23.0	91.1	3.1
Schenk S-96W	105.5	2.5	23.4	83.1	3.4
Princeton 920A	100.6	2.5	24.0	87.1	3.3
Ken-Bred M20W	106.9	2.5	24.3	88.3	3.1
Meacham MX75W	111.0	2.8	23.8	88.2	3.0
Ky 5921W	85.4	3.0	23.6	85.5	3.3
Princeton 990A	84.9	3.5	23.8	88.6	3.5
Crib Filler 183W	81.5	3.8	24.4	85.0	3.1
Stull 800W	65.8	4.3	25.4	89.0	3.1
US 523W	21.3	6.2	19.4	35.5	3.0
White Average	87.0	3.3	23.6	82.4	3.2
GRAND AVERAGE	60.3	3.9	21.7	68.0	3.1

Table 13. Two-Year Summary of Hybrids Evaluated Under Nitrogen and Plant Populations Treatments Separately and in Combination in 1966 and 1967

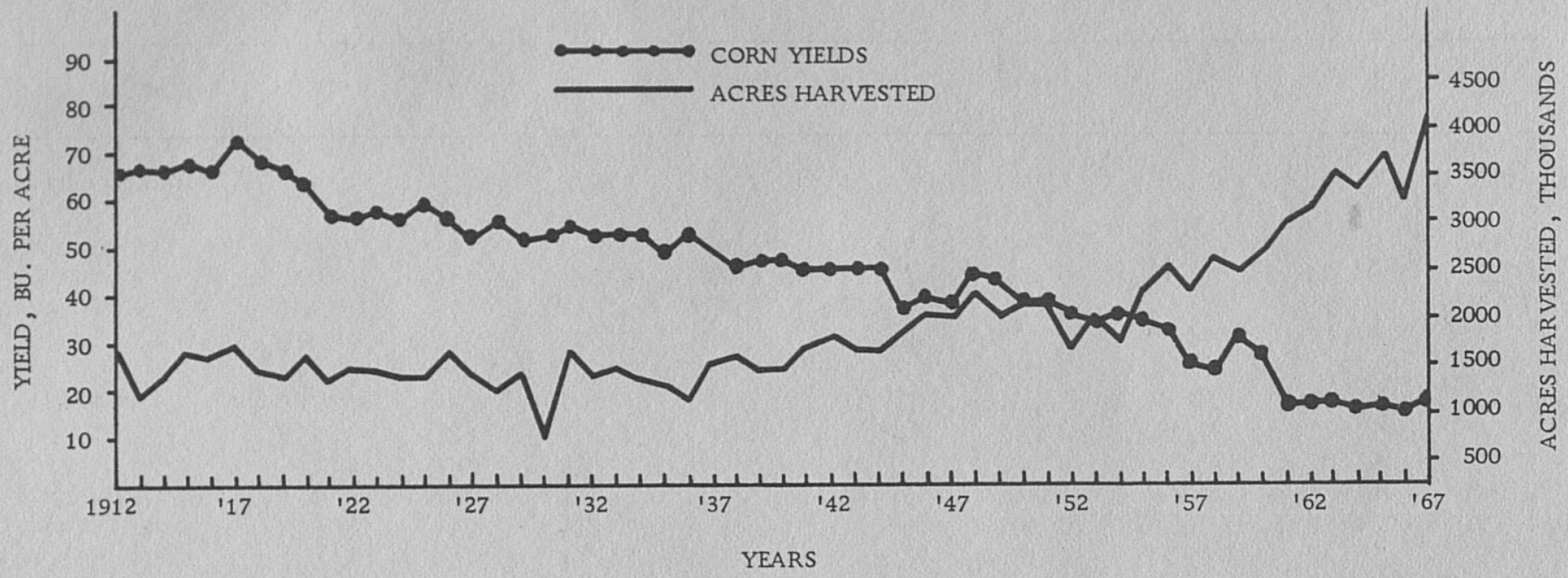
Hybrid	Average Acre Yield in Bushels								
						100# N/A		200# N/A	
	Overall Average	100# N/A	200# N/A	17,424 P1/A	23,232 P1/A	17,424 P1/A	23,232 P1/A	17,424 P1/A	23,232 P1/A
YELLOW									
Pioneer 3369	103.9	99.1	108.8	106.5	101.3	96.9	101.2	116.1	101.4
S.S. 820S	97.7	95.2	100.2	96.4	99.0	85.5	104.9	107.3	92.9
Crib Filler 128	90.8	86.1	95.6	94.6	87.1	88.4	83.8	100.8	90.3
Ken-Bred SX20Y	93.7	90.3	97.1	97.3	90.1	89.0	91.5	105.5	88.6
S.S. 860	91.5	85.3	97.7	90.9	92.1	84.1	86.5	97.7	97.7
S.S. Matoaka	95.9	90.1	101.6	96.6	95.1	87.7	92.5	105.0	97.7
Ken-Bred E20YA	99.0	96.8	101.3	99.3	98.7	93.5	100.0	105.1	97.4
Pioneer 3196	115.0	111.0	118.9	118.8	111.2	111.9	110.1	125.7	112.1
Ken-Bred VR20Y	94.6	91.3	98.0	95.6	93.6	88.8	93.7	102.5	93.4
Princeton SX803	92.6	88.3	97.0	94.6	90.7	90.4	86.1	98.7	95.2
Crib Filler 66	96.6	93.4	99.7	101.3	91.8	95.5	91.3	107.1	92.3
Princeton SX804	105.0	100.0	110.1	104.6	105.5	95.6	104.4	113.6	106.6
S.S. 909E	101.2	95.7	106.8	106.5	96.0	100.4	91.0	112.6	101.0
S.S. 866	102.0	94.5	109.4	104.8	99.2	95.0	93.9	114.5	104.4
Ky 105	92.2	87.7	96.8	92.4	92.0	84.7	90.6	100.1	93.5
Yellow Average	98.1	93.7	102.6	100.0	96.2	92.4	94.8	107.5	97.6

WHITE									
US523W	87.9	79.7	96.1	96.6	79.1	85.4	74.1	108.1	84.0
Ken-Bred M20W	104.3	96.9	111.8	106.0	102.8	86.6	107.1	125.2	98.4
Schenk S-96W	96.7	90.8	102.6	102.6	90.7	98.9	82.5	106.3	98.9
Ky 5921W	100.8	94.7	106.9	100.6	101.7	92.5	96.9	108.7	105.1
Meacham M-7	94.3	90.4	98.1	96.1	92.5	92.1	88.7	99.9	96.3
Crib Filler 183W	100.0	102.5	97.3	101.2	98.8	98.2	106.8	104.0	90.6
Princeton 990-A	91.6	83.4	99.8	100.3	82.9	90.6	76.3	110.1	89.5
Princeton 920-A	96.6	92.9	100.4	97.3	96.0	91.0	94.7	103.5	97.2
Stull 800W	90.9	87.8	93.9	93.4	88.3	87.8	87.8	98.9	88.0
White Average	95.9	91.0	100.8	99.3	92.5	91.4	90.5	107.2	94.2
GRAND AVERAGE	97.3	92.7	101.9	99.7	94.8	92.0	93.2	107.4	96.3

Table 14. Annual Summary of Hybrids Evaluated Under Nitrogen and Plant Population Treatments Separately and in Combination in 1967

Hybrid	Average Acre Yield in Bushels								
						100# N/A		200# N/A	
	Overall Average	100# 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									
Pioneer 3369	117.2	109.4	125.0	119.0	115.3	110.9	107.8	127.1	122.8
Stewart Card.SX77	112.7	107.8	117.6	110.2	115.1	108.1	107.5	112.3	122.8
S.S. 720SP	111.9	105.4	118.3	112.7	111.0	107.7	103.0	117.7	118.8
T-E Bonusmaker-S	110.0	103.2	116.8	107.2	112.7	102.3	104.0	112.0	121.5
Princeton SX606	110.1	105.4	114.8	105.6	114.6	104.2	106.7	107.0	122.6
Stewart Card.SX47	114.7	114.6	114.9	109.6	119.8	112.4	116.8	106.9	122.9
Princeton SX809	117.3	108.7	126.0	122.6	112.0	117.8	99.5	127.5	124.5
Stull 807	113.9	114.7	113.2	111.1	116.7	117.8	111.6	104.5	121.8
Crib Filler 40	98.3	92.0	104.7	98.3	98.3	94.1	89.9	102.5	106.8
S.S. 860	106.2	98.1	114.3	104.0	108.3	96.0	100.1	112.2	116.5
Schenk SS-77A	114.9	112.8	117.1	112.4	117.4	113.8	111.7	111.2	123.1
S.S. 820S	112.3	108.9	115.7	109.9	114.7	98.7	118.9	121.0	110.3
Ken-Bred SX20Y	107.1	103.5	110.7	104.2	110.0	100.4	106.6	107.9	113.4
Pioneer 3306	117.6	113.5	121.6	115.7	119.4	113.8	113.1	117.5	125.7
Crib Filler 105	131.6	129.1	134.2	123.3	139.9	124.8	133.4	121.9	146.4
Crib Filler 128	103.2	93.1	113.3	106.3	100.1	100.5	85.7	112.2	114.4
Ken-Bred VR20Y	110.5	107.8	113.2	109.2	111.7	106.9	108.6	111.5	114.8
Pioneer 3196	127.8	124.5	131.1	126.2	129.4	122.2	126.7	130.2	132.0
Stull 807A	132.2	128.7	135.6	127.6	136.7	129.8	127.7	125.4	145.8
Ken-Bred E20YA	109.6	103.6	115.6	107.9	111.3	104.3	102.8	111.4	119.7
S.S. Matoaka	103.8	94.6	112.9	101.8	105.7	92.4	96.7	111.0	114.7
Stull 707	119.3	118.4	120.3	117.6	121.0	117.9	118.8	117.3	123.2
Princeton SX803	103.6	99.9	107.3	101.1	106.2	103.2	96.7	98.9	115.6
S.S. 909E	114.1	105.9	122.3	118.5	109.6	114.9	96.8	122.1	122.5

Crib Filler 60	110.6	107.4	113.7	105.5	115.6	102.2	112.6	108.6	118.7
Crib Filler 66	112.3	107.0	117.5	113.2	111.3	110.3	103.7	116.1	118.9
Crib Filler 123	115.5	112.2	118.8	115.0	115.9	115.4	108.8	114.6	122.9
S.S. 866	108.6	103.6	113.5	106.8	110.3	105.6	101.5	108.0	119.0
Schenk SS-X75	110.7	103.9	117.4	110.9	110.5	114.0	93.8	107.7	127.1
Princeton SX804	120.2	112.7	127.8	115.5	124.9	105.4	119.9	125.7	129.8
Ky 105	94.1	85.6	102.6	94.2	94.0	87.1	84.0	101.2	104.0
Yellow Average	112.6	107.6	117.7	111.1	114.2	108.2	107.0	113.9	121.4
WHITE									
US 523W	99.3	86.9	111.7	105.6	93.0	97.8	76.0	113.5	110.0
Schenk S-96W	106.9	98.0	115.9	110.9	102.9	105.7	90.2	116.2	115.6
Ken-Bred M20W	122.2	108.4	135.9	121.3	123.0	103.9	112.8	138.5	133.3
Meacham M-7	103.8	100.1	107.4	101.6	105.9	100.6	99.5	102.5	112.3
S.S.935W	118.6	111.2	126.0	116.7	120.4	103.9	118.4	129.6	122.4
Princeton 990A	103.4	97.5	109.4	106.5	100.3	103.3	91.7	109.7	109.0
Ky 5921W	114.5	103.3	125.6	109.5	119.5	100.0	106.5	118.9	132.3
Crib Filler 183W	114.1	116.1	112.0	110.2	118.0	110.4	121.8	109.9	114.1
Meacham MX 75W	106.5	93.5	119.5	100.1	112.8	87.2	99.7	113.0	126.0
Princeton 920A	110.0	104.0	115.9	108.3	111.7	102.6	105.4	113.9	117.9
Stull 800W	89.2	86.0	92.3	88.9	89.4	86.3	85.7	91.5	93.0
White Average	108.0	100.4	115.6	107.3	108.8	100.1	100.7	114.3	116.9
GRAND AVERAGE	111.4	105.7	117.0	110.0	112.7	106.1	105.3	114.0	120.2



Since 1917 there has been a rather consistent decline in the number of acres devoted to corn production in Kentucky. However, since 1940 the total corn production has remained fairly constant owing to the increased per-acre yields.

Although production has remained at the same level, the decrease in corn acreage is not conducive to a well balanced agricultural economy. This has been pointed out by the Governor's Commission on Agriculture which suggested if the long-time potential for corn was realized, corn acreage would double. Efficient land use is the key to increasing the agricultural income.

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