# Results of the Kentucky Hybrid Corn Performance Test - 1960

By F. A. LOEFFEL and J. F. SHANE

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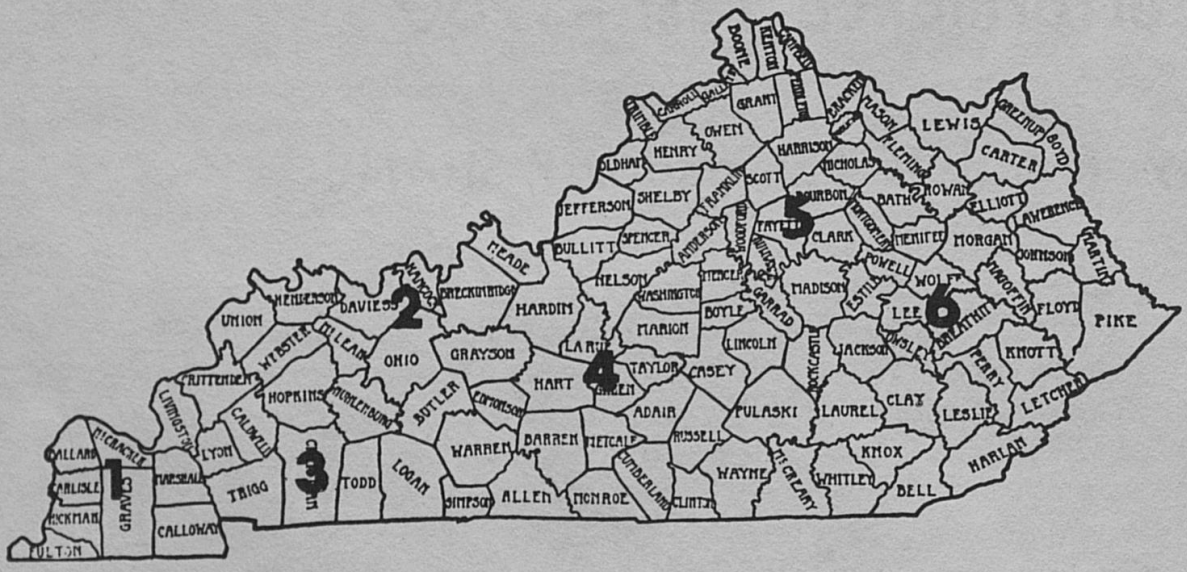
**UNIVERSITY OF KENTUCKY**

**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 | Murray Wall |
| Eastern | 4. | Campbellsville | James Noe |
| | 5. | Lexington | Ky. Agr. Exp. Sta. |
| | 6. | Quicksand | Robinson Agr. Exp. Substation<br>Charles M. Derrickson |

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# RESULTS OF THE KENTUCKY HYBRID CORN PERFORMANCE TEST IN 1960

F. A. Loeffel and J. F. Shane

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 the farmers of Kentucky. Over 97 percent of the Kentucky corn acreage was planted to hybrids in 1960.

Although some areas of the state were affected to some extent by drought, the reports on production indicate that Kentucky farmers have produced another exceptionally good crop. Total production was down almost 3 million bushels. This crop was produced on 1.7 million acres compared to 1.8 million acres in 1959. The 1960 state average was 49 bushels and equals the 49 bushels per acre produced in 1958. An average state yield exceeding 41 bushels has been produced for the sixth consecutive year.

Cold, snowy March weather and a late spring hindered the progress of farm work in 1960. About two percent of the state's corn crop was in the ground by April 26 compared to seven percent in 1959. Soil moisture was generally adequate in the western third of the state, but shortages were general in the eastern two-thirds. By May 17 about 40 percent

of the corn acreage was planted compared to 70 percent in 1959 and 25 percent in 1958. Corn in the early planted fields yellowed due to the continued cool weather. Planting was about 95 percent complete by the middle of June.

Frequent heavy rains in late June and early July caused severe crop damage in many areas of the state. Creek bottoms and low "pocket" cropland suffered the heaviest damage. Surplus soil moisture was reported by 90 percent of the crop observers. Approximately 40 percent of the corn crop had been harvested by the middle of October.

Kentucky average rainfall for the growing season, April through September, totaled 22.41 inches which is 0.50 inches below normal and 1.14 inches above 1959. July and August were about 15 percent below normal in rainfall while September had a little more than average rainfall.

Northern and southern corn leaf blight were more prevalent in the tests in 1960 than they were in 1959. Stewart's corn leaf blight was not as prevalent as in 1959.

The average yield for all hybrids grown at six locations in 1960 was 108.1 bushels. The highest test average was 126.8 bushels grown at Lexington. The lowest test average was 101.1 bushels for the Wickliffe test.

## EXPERIMENTAL METHODS

The performance test was conducted at six 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 Campbellsville, Lexington, and Quicksand were averaged for the eastern Kentucky area.

Forty-seven 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 desiganted 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. Forty-five double crosses, one three-way cross and one single cross, were evaluated this year.

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 reaction of the hybrids to Northern, Southern, and Stewarts 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 6 locations with individual plots being 2 hills wide and 5 hills long. These plots were located in different parts of the testing field to minimize cultural and soil differences. All tests were planted at the rate of 6 kernels per hill and the resulting plants thinned to 4 per hill.

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 for each hybrid by taking a 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, Southern, and Stewarts leaf blight diseases are recorded at each location when sufficient natural infection is present. A five-class rating scale is used.

## INTERPRETATION

The performance of hybrids vary 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 17 individual experiments grown in 1958, 1959, and 1960. In Table 5 are summarized the results obtained from 12 experiments grown in 1959 and 1960. Table 6 contains information obtained from 6 experiments grown in 1960 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.

## BE YOUR OWN JUDGE

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 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. A farmer often changes his entire corn acreage to a different hybrid. He then compares his old hybrid grown the previous year with the new hybrid grown the current year. Since the two hybrids were grown under different weather conditions, this comparison is not valid and often leads to incorrect decisions. Hybrids being compared should be grown in the same field using identical management practices. A good way to do this is to plant one-half bushel or one bushel of seed of the new hybrid in the center of a field being sure to mark it at planting time. At harvest, yield should be determined and other observational notes recorded. It is important to observe the hybrids frequently during the growing season as well. If this suggestion is followed, a corn grower will be able to select hybrids which most nearly fits his conditions.

Strip tests can also be used by individual farmers to determine the value of other factors contributing to production efficiency. 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.

DO YOUR PART TO CONTRIBUTE TOWARD
A 50 BUSHEL AVERAGE CORN YIELD IN
KENTUCKY IN 1961

Table 1. Hybrids tested in 1960.

| Hybrid | Color | Cross | Source of Hybrids |
|---|---|---|---|
| AES 705 | Y | 4X | Agricultural Experiment |
| 805 | Y | 4X | Station (North Central) |
| 809 | Y | 4X | |
| Broadbent 402B | Y | 4X | Broadbent Hybrids Cobb, Kentucky |
| Cardinal 107 | Y | 4X | George Street Henderson, Kentucky |
| Crib Filler 116 | Y | 4X | Mitchell Farms |
| 123 | Y | 4X | Windfall, Indiana |
| 131 | Y | 4X | |
| 138 | Y | 4X | |
| Dekalb 633 | Y | 4X | Dekalb Agricultural |
| 803 | Y | 3X | Ass'n., Dekalb, |
| 805 | Y | 2X | Illinois |
| 837 | Y | 4X | |
| 852 | Y | 4X | |
| 869 | Y | 4X | |
| 925 | W | 4X | |
| 1028 | Y | 4X | |
| Funk G-96 | Y | 4X | Columbia Seed |
| G-144 | Y | 4X | Company, Eldred, |
| G-509W | W | 4X | Illinois |
| G-711AA | Y | 4X | |
| Hagan H-2 | Y | 4X | R. M. Hagan |
| H-9 | Y | 4X | Owensboro, Kentucky |
| Ken-Bred E-20Y | Y | 4X | Ken-Bred Producers Patmor, Jackson, Thompson Marion, Danville, Hillsboro, Kentucky |

Table 1. Continued.

| Hybrid | Color | Cross | Source of Hybrids |
|---|---|---|---|
| Ky 105 | Y | 4X | University of Kentucky |
| 106A | Y | 4X | Agricultural Experiment |
| 204 | W | 4X | Station, Lexington |
| 205W | W | 4X | |
| Meacham M-5 | W | 4X | Meacham's Koreandale |
| M-33Y | Y | 4X | Farms, Morganfield, Kentucky |
| P.A.G. 434 | Y | 4X | Pfister Associated |
| 633W | W | 4X | Growers, Inc., Aurora, Illinois and Huntsville, Alabama |
| Pioneer 300H | Y | 4X | Pioneer Corn Company |
| 309A | Y | 4X | Tipton, Indiana |
| 309B | Y | 4X | |
| 312A | Y | 4X | |
| 319 | Y | 4X | |
| Stull 100Y | Y | 4X | Stull Brothers, Inc. |
| 100YA | Y | 4X | Sebree, Kentucky |
| 101Y | Y | 4X | |
| 101YA | Y | 4X | |
| 101YAA | Y | 4X | |
| 108Y | Y | 4X | |
| 400WC | W | 4X | |
| 500W | W | 4X | |
| US 13 | Y | 4X | Experiment Station |
| 523W | W | 4X | (U.S.D.A.) |

Table 2. Pedigrees of Experiment Station and U. S. hybrids tested in 1960.

| Hybrid | Pedigree |
|---|---|
| AES 705 | (WF9 x B14)(C103 x Oh 43) |
| AES 805 | (WF9 x 38-11)(C103 x Oh 45) |
| AES 809 | (WF9 x P8)(Oh 43 x C103) |
| Ky 105 | (T8 x CI21E)(38-11 x Oh 7B) |
| Ky 106A | (WF9 x 38-11)(CI21E x Oh 41) |
| Ky 204 | (K64 x 33-16)(K55 x Ky 201) |
| Ky 205W | (Ky 211 x 33-16)(Ky 209 x H21) |
| 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 1960.

| Location | Fertilizer applied | Plants per acre | Date planted | Date harvested | Experiment average Yield | Moisture |
|---|---|---|---|---|---|---|
| 1. Wickliffe | 250# 32% liquid nitrogen | 14,750 | May 16 | Oct. 10 | 101.1 | 20.0 |
| 2. Owensboro | 200# 4-16-16<br>200# Am. Nitrate | 14,700 | May 4 | Oct. 7 | 106.8 | 20.7 |
| 3. Hopkinsville | 400# 5-20-0 Aldrin<br>100# Anhydrous | 13,100 | May 3 | Oct. 12 | 101.4 | 15.8 |
| 4. Campbellsville | 300# 10-10-10<br>15T Manure | 14,900 | April 26 | Oct. 1 | 102.8 | 20.8 |
| 5. Lexington | 500# 12-12-12 | 14,200 | April 25 | Oct. 24 | 126.8 | 20.0 |
| 6. Quicksand | 200# 0-30-30<br>200# Am. Nitrate | 19,100 | May 23 | Oct. 22 | 111.7 | 20.6 |

Table 4. Three-year summary of hybrids grown in 1958, 1959 and 1960.

| Hybrid | Average Yield Bu./Acre | | | Maturity | | |
|---|---|---|---|---|---|---|
| | State | Western<br>Wickliffe<br>Owensboro<br>Hopkinsville | Eastern<br>Campbellsville<br>Lexington<br>Quicksand | Harvest Ear Moisture<br>% | Erect Plants<br>% | Ear Height<br>ft. |
| YELLOW | | | | | | |
| Pioneer 319 | 106.1 | 102.7 | 109.2 | 17.8 | 87.7 | 3.6 |
| Stull 101Y | 110.3 | 105.1 | 114.9 | 18.7 | 89.7 | 3.7 |
| Dekalb 805 | 111.4 | 110.9 | 111.8 | 18.9 | 90.1 | 3.3 |
| US 13 | 98.3 | 97.2 | 99.3 | 18.9 | 80.5 | 3.8 |
| Stull 100YA | 110.3 | 109.7 | 110.8 | 19.0 | 91.1 | 3.9 |
| Ky 106A | 94.3 | 91.1 | 97.2 | 19.1 | 80.8 | 3.6 |
| Stull 100Y | 112.4 | 109.5 | 115.0 | 19.3 | 88.8 | 4.0 |
| Hagan H-9 | 114.9 | 110.6 | 118.7 | 19.4 | 91.2 | 4.1 |
| AES 805 | 104.2 | 103.3 | 104.9 | 19.4 | 88.1 | 3.6 |
| Pioneer 312A | 106.4 | 102.7 | 109.8 | 20.4 | 90.7 | 3.7 |
| Ky 105 | 113.8 | 112.9 | 114.6 | 20.4 | 89.4 | 4.4 |
| Funk G-144 | 101.9 | 97.7 | 105.6 | 20.5 | 90.4 | 3.3 |
| Broadbent 402B | 115.3 | 112.5 | 117.9 | 20.6 | 90.9 | 4.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Pioneer 309A | 108.9 | 103.7 | 113.6 | 22.7 | 92.6 | 4.1 |
| Dekalb 1028 | 106.2 | 107.4 | 105.2 | 22.7 | 74.8 | 4.6 |
| Yellow Average | 107.6 | 105.1 | 109.9 | 19.9 | 87.8 | 3.9 |
| WHITE | | | | | | |
| Meacham M-5 | 106.2 | 106.9 | 105.5 | 20.4 | 83.4 | 3.9 |
| Ky 204 | 105.1 | 103.2 | 106.7 | 20.5 | 90.3 | 3.8 |
| Dekalb 925 | 109.6 | 111.5 | 107.9 | 20.7 | 86.3 | 4.0 |
| US 523W | 109.6 | 108.8 | 110.3 | 20.8 | 85.3 | 4.0 |
| P.A.G. 633W | 109.5 | 108.8 | 110.1 | 20.9 | 88.6 | 4.1 |
| White Average | 108.0 | 107.8 | 108.1 | 20.7 | 86.8 | 4.0 |
| Over-all average | 107.7 | 105.8 | 109.5 | 20.1 | 87.5 | 3.9 |

Table 5. Two-year summary of hybrids grown in 1959 and 1960.

| Hybrid | Average Yield Bu./Acre | | | Maturity | | |
|---|---|---|---|---|---|---|
| | State | Western<br>Wickliffe<br>Owensboro<br>Hopkinsville | Eastern<br>Campbellsville<br>Lexington<br>Quicksand | Harvest Ear Moisture % | Erect Plants % | Ear Height ft. |
| YELLOW | | | | | | |
| Pioneer 319 | 104.2 | 101.3 | 107.0 | 16.7 | 83.7 | 3.6 |
| Cardinal 107 | 111.9 | 108.2 | 115.4 | 17.2 | 87.1 | 4.0 |
| Stull 101Y | 109.3 | 103.1 | 115.5 | 17.2 | 86.3 | 3.6 |
| Dekalb 805 | 109.9 | 109.8 | 109.8 | 17.4 | 86.3 | 3.3 |
| Stull 100YA | 113.2 | 112.2 | 114.1 | 17.5 | 88.8 | 4.1 |
| Dekalb 869 | 97.6 | 96.5 | 99.6 | 17.5 | 86.2 | 3.7 |
| Ky 106A | 93.3 | 90.4 | 96.1 | 17.5 | 76.3 | 3.5 |
| AES 805 | 101.2 | 101.1 | 101.2 | 17.7 | 85.4 | 3.5 |
| Stull 100Y | 110.9 | 108.3 | 113.5 | 17.8 | 85.3 | 4.0 |
| Stull 101YA | 107.4 | 105.5 | 109.3 | 17.8 | 83.5 | 3.9 |
| US 13 | 96.9 | 95.3 | 98.5 | 17.8 | 75.6 | 3.7 |
| Hagan H-9 | 112.5 | 109.0 | 115.9 | 17.9 | 88.7 | 4.1 |
| AES 809 | 99.7 | 97.2 | 102.1 | 17.9 | 88.1 | 3.1 |
| P.A.G. 434 | 105.0 | 103.4 | 106.6 | 18.0 | 87.1 | 3.7 |
| Dekalb 837 | 98.9 | 96.2 | 101.6 | 18.2 | 85.2 | 3.3 |
| Ky 105 | 111.2 | 110.2 | 112.2 | 18.5 | 85.7 | 4.3 |
| Stull 108Y | 108.5 | 107.7 | 109.4 | 18.6 | 86.3 | 4.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Broadbent 402B | 112.4 | 109.9 | 114.9 | 18.7 | 88.0 | 4.2 |
| Pioneer 312A | 105.1 | 99.8 | 110.3 | 18.9 | 87.7 | 3.6 |
| Funk G-144 | 100.3 | 95.3 | 105.2 | 18.9 | 87.3 | 3.2 |
| Pioneer 309A | 107.3 | 100.3 | 114.1 | 20.7 | 90.0 | 4.2 |
| Dekalb 1028 | 101.5 | 102.3 | 100.7 | 20.7 | 68.4 | 4.6 |
| Pioneer 309B | 110.9 | 104.9 | 116.8 | 21.3 | 90.3 | 4.1 |
| Funk G-711AA | 110.1 | 103.0 | 117.1 | 22.8 | 85.5 | 4.6 |
| Yellow Average | 105.8 | 103.0 | 108.6 | 18.5 | 85.1 | 3.8 |
| WHITE | | | | | | |
| Ky 205W | 103.2 | 102.3 | 104.0 | 17.0 | 80.2 | 3.8 |
| Stull 400WC | 110.4 | 108.3 | 112.4 | 17.8 | 78.8 | 4.2 |
| Meacham M-5 | 103.6 | 104.4 | 102.7 | 18.5 | 77.3 | 3.9 |
| Ky 204 | 102.2 | 100.5 | 103.9 | 18.8 | 86.9 | 3.8 |
| Dekalb 925 | 106.3 | 108.1 | 104.6 | 18.9 | 81.6 | 4.0 |
| US 523W | 105.6 | 104.9 | 106.2 | 19.1 | 80.8 | 3.9 |
| P.A.G. 633W | 107.1 | 105.3 | 108.8 | 19.2 | 85.0 | 4.1 |
| Stull 500W | 107.2 | 105.7 | 108.8 | 19.8 | 81.3 | 4.0 |
| White Average | 105.7 | 104.9 | 106.4 | 18.6 | 81.5 | 4.0 |
| Over-all average | 105.8 | 103.5 | 108.1 | 18.5 | 84.2 | 3.9 |

Table 6. Annual summary of hybrids grown in 1960.

| Hybrid | Average Yield Bu./Acre | | | Maturity | | |
|---|---|---|---|---|---|---|
| | State | Western<br>Wickliffe<br>Owensboro<br>Hopkinsville | Eastern<br>Campbellsville<br>Lexington<br>Quicksand | Harvest<br>Ear Moisture<br>% | Erect<br>Plants<br>% | Ear<br>Height<br>ft. |
| YELLOW | | | | | | |
| AES 705 | 103.2 | 95.5 | 111.0 | 17.8 | 86.7 | 2.9 |
| Pioneer 319 | 107.6 | 101.0 | 114.4 | 17.9 | 79.4 | 3.4 |
| Crib Filler 116 | 106.0 | 98.8 | 113.2 | 18.0 | 87.9 | 3.3 |
| Stull 100YA | 116.4 | 115.7 | 117.3 | 18.3 | 90.2 | 4.1 |
| Crib Filler 123 | 111.9 | 103.6 | 120.3 | 18.3 | 89.4 | 3.3 |
| Cardinal 10 7 | 116.7 | 110.4 | 123.1 | 18.4 | 86.9 | 4.0 |
| AES 805 | 99.8 | 98.0 | 101.6 | 18.4 | 84.3 | 3.2 |
| Meacham M-33Y | 121.3 | 114.6 | 128.1 | 18.5 | 87.8 | 4.0 |
| Stull 100Y | 116.0 | 108.5 | 123.6 | 18.6 | 81.4 | 4.0 |
| Ken-Bred E20Y | 102.6 | 97.8 | 107.4 | 18.7 | 81.5 | 3.0 |
| Pioneer 300H | 109.9 | 106.0 | 113.8 | 18.8 | 89.0 | 3.7 |
| Stull 101Y | 116.9 | 109.7 | 124.1 | 18.8 | 86.2 | 3.3 |
| Dekalb 805 | 117.1 | 111.2 | 123.2 | 18.8 | 85.7 | 3.1 |
| Ky 106A | 101.8 | 94.5 | 109.2 | 18.8 | 74.0 | 3.4 |
| Funk G-96 | 104.9 | 96.1 | 113.7 | 18.9 | 85.2 | 3.0 |
| Dekalb 852 | 104.5 | 98.3 | 110.8 | 19.0 | 76.5 | 3.7 |
| Dekalb 633 | 105.1 | 103.0 | 107.2 | 19.1 | 88.0 | 3.2 |
| Dekalb 869 | 105.5 | 97.9 | 113.1 | 19.2 | 87.3 | 3.6 |
| P.A.G. 434 | 105.3 | 103.2 | 107.5 | 19.2 | 86.5 | 3.5 |
| AES 809 | 102.1 | 95.2 | 109.0 | 19.3 | 86.6 | 2.9 |
| Dekalb 837 | 102.9 | 97.6 | 108.4 | 19.3 | 85.4 | 3.1 |
| US 13 | 96.2 | 93.9 | 98.5 | 19.3 | 80.3 | 3.5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Stull 101YA | 106.4 | 105.7 | 107.2 | 19.5 | 84.9 | 3.7 |
| Hagan H-9 | 117.5 | 113.2 | 121.8 | 19.6 | 87.5 | 4.2 |
| Crib Filler 131 | 106.3 | 95.1 | 117.5 | 19.6 | 84.7 | 3.7 |
| Stull 108Y | 105.8 | 101.5 | 110.2 | 19.7 | 84.6 | 4.3 |
| Broadbent 402B | 115.5 | 109.5 | 121.5 | 19.8 | 87.8 | 4.0 |
| Pioneer 312A | 111.0 | 101.6 | 120.5 | 19.8 | 86.8 | 3.4 |
| Ky 105 | 115.5 | 113.5 | 117.5 | 19.8 | 86.3 | 4.3 |
| Dekalb 803 | 115.3 | 109.4 | 121.3 | 19.9 | 89.4 | 3.5 |
| Funk G-144 | 100.5 | 92.8 | 108.2 | 20.1 | 86.1 | 3.1 |
| Crib Filler 138 | 109.8 | 102.0 | 117.7 | 20.2 | 82.7 | 3.9 |
| Stull 101YAA | 112.9 | 101.7 | 124.1 | 20.5 | 88.4 | 3.7 |
| Pioneer 309A | 109.3 | 100.1 | 118.6 | 21.6 | 89.7 | 4.1 |
| Pioneer 309B | 113.0 | 106.0 | 120.0 | 21.9 | 91.4 | 4.1 |
| Dekalb 1028 | 96.0 | 93.5 | 98.6 | 22.1 | 63.5 | 4.5 |
| Funk G-711AA | 108.9 | 101.3 | 116.6 | 23.8 | 86.6 | 4.6 |
| Yellow Average | 108.6 | 102.6 | 114.6 | 19.4 | 85.0 | 3.6 |
| WHITE | | | | | | |
| Ky 205W | 104.7 | 100.6 | 108.8 | 18.5 | 85.9 | 3.6 |
| Stull 400WC | 110.2 | 104.3 | 116.3 | 18.8 | 77.3 | 4.1 |
| Meacham M-5 | 104.4 | 105.0 | 103.9 | 19.7 | 77.2 | 3.8 |
| Ky 204 | 100.7 | 99.0 | 102.5 | 19.8 | 88.3 | 3.6 |
| Dekalb 925 | 107.2 | 107.1 | 107.3 | 19.8 | 80.9 | 3.8 |
| Hagan H-2 | 104.8 | 96.9 | 112.9 | 20.3 | 86.2 | 3.7 |
| P.A.G. 633W | 108.9 | 106.6 | 111.3 | 20.6 | 85.1 | 4.2 |
| US 523W | 110.0 | 107.2 | 112.9 | 20.6 | 80.1 | 4.0 |
| Stull 500W | 108.2 | 106.5 | 109.9 | 20.8 | 82.6 | 4.0 |
| Funk G-509W | 104.9 | 104.0 | 106.0 | 22.2 | 91.3 | 4.3 |
| White Average | 106.4 | 103.7 | 109.2 | 20.1 | 83.5 | 3.9 |
| Over-all average | 108.1 | 102.9 | 113.4 | 19.6 | 84.7 | 3.7 |

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

| Hybrids | Leaf Blight Resistance-1960 | | Leaf Blight Resistance - 1958-60 | | |
|---|---|---|---|---|---|
| | Southern | Northern | Southern | Northern | Stewarts |
| YELLOW | | | | | |
| AES 705 | Good | Excellent | | | |
| AES 805 | Good | Very Good | Good | Good | Good |
| AES 809 | Good | Excellent | | | |
| Broadbent 402B | Fair | Poor | Good | Fair | Fair |
| Cardinal 107 | Fair | Very Good | | | |
| Crib Filler 116 | Fair | Good | | | |
| Crib Filler 123 | Excellent | Excellent | | | |
| Crib Filler 131 | Fair | Excellent | | | |
| Crib Filler 138 | Good | Good | | | |
| Dekalb 633 | Fair | Good | | | |
| Dekalb 803 | Good | Excellent | | | |
| Dekalb 805 | Good | Excellent | Good | Very Good | Good |
| Dekalb 837 | Fair | Good | | | |
| Dekalb 852 | Fair | Very Good | | | |
| Dekalb 869 | Fair | Good | | | |
| Dekalb 1028 | Fair | Very Good | Fair | Good | Good |
| Funk G-96 | Poor | Very Good | | | |
| Funk G-144 | Good | Good | Good | Good | Good |
| Funk G-711AA | Very Good | Excellent | | | |
| Hagan H-9 | Fair | Good | Fair | Good | Good |
| Ken-Bred E20Y | Fair | Very Good | | | |
| Ky 105 | Good | Poor | Good | Fair | Good |
| Ky 106A | Poor | Good | Fair | Good | Fair |
| Meacham M-33Y | Fair | Fair | | | |
| P.A.G. 434 | Fair | Good | | | |

| | | | | | |
|---|---|---|---|---|---|
| Pioneer 300H | Good | Very Good | Good | Very Good | Good |
| Pioneer 309A | Very Good | Very Good | | | |
| Pioneer 309B | Good | Excellent | Very Good | Very Good | Good |
| Pioneer 312A | Very Good | Excellent | Fair | Good | Fair |
| Pioneer 319 | Poor | Good | Fair | Very Good | Good |
| Stull 100Y | Poor | Excellent | Good | Good | Good |
| Stull 100YA | Good | Good | Fair | Good | Good |
| Stull 101Y | Very Good | Very Good | | | |
| Stull 101YA | Good | Excellent | | | |
| Stull 101YAA | Good | Very Good | | | |
| Stull 108Y | Good | Poor | Poor | Good | Poor |
| US 13 | Poor | Good | | | |
| | WHITE | | | | |
| Dekalb 925 | Fair | Good | Fair | Good | Good |
| Funk G-509W | Fair | Poor | | | |
| Hagan H-2 | Good | Excellent | Fair | Fair | Fair |
| Ky 204 | Fair | Good | | | |
| Ky 205W | Poor | Good | Fair | Very Good | Fair |
| Meacham M-5 | Good | Very Good | Fair | Good | Fair |
| P.A.G. 633W | Fair | Good | | | |
| Stull 400WC | Very Good | Very Good | | | |
| Stull 500W | Good | Very Good | Fair | Good | Good |
| US 523W | Good | Very Good | | | |

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

--- N O T E S ---

--- N O T E S ---

## HYBRID, DATE AND RATE OF PLANTING STUDIES OF CORN

Six hybrids, representative of three maturity groups, were planted at three different rates at four dates in replicated trials conducted at several location in Kentucky in 1957, 1959, and 1960. Yield data obtained from these trials are summarized in the following table:

| Rate of Planting Plants/Acre | Date of Planting | | | | Yield bu./A |
|---|---|---|---|---|---|
| | April 25 | May 12 | May 25 | June 8 | |
| 8,000 | 74.5 | 72.9 | 66.0 | 60.1 | 68.4 |
| 12,000 | 88.1 | 87.9 | 78.6 | 75.1 | 82.4 |
| 16,000 | 94.6 | 90.7 | 81.0 | 74.3 | 85.2 |
| Yield bu./A | 85.7 | 83.8 | 75.2 | 69.8 | |

The yield of corn decreases as planting is delayed after April 25. The rate of decrease is small until the middle of May but becomes greater as planting is delayed. Considerable thought should be given before replanting since delayed plantings will yield less on the average.

The average corn plant population at harvest in Kentucky is estimated to be 8,000 plants per acre. The trials indicate that low plant population seriously limit production. Yields were increased 14 bushels by increasing the plant population to 12,000 plants per acre. Increasing plant number to 16,000 plants per acre further increased yields. These results were obtained on fields of medium fertility. However, more fertilizer should be applied to the heavier plant populations for most efficient production, especially when the fertility of the field is known to be low.

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