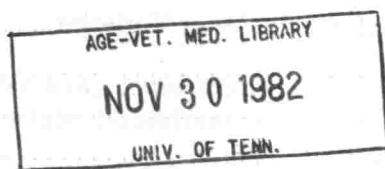


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# 1977 Performance of Field Crop Varieties

by Charles R. Graves



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# 1977

## PERFORMANCE

### OF FIELD CROP VARIETIES

DATA FOR 1977 WITH SUMMARIES OF RESULTS  
FROM PREVIOUS YEARS

Corn-Grain Sorghum-Summer Annuals-Oats  
Barley-Wheat-Alfalfa-Soybeans-Tobacco

by

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## **RECOMMENDED CROP VARIETIES**

### **Listed alphabetically**

#### **Corn Hybrids**

White—Full Season—FFR 929W, Funk G-4747W, Golden Harvest H-2660W, Princeton SX910, Tenn. 505, Zimmerman Z-11W.

Yellow—Full-Season—DeKalb XL394, Funk G-4848, Pioneer brand 3145, Pioneer brand 3147, McNair X300, Tenn. 606<sup>1 2</sup>, Tenn. 608.

White—Medium-Season—DeKalb XL390A.

Yellow—Medium-Season—DeKalb XL72B, DeKalb XL80, DeKalb XL 75, FFR 744C, Funk G-4520, P.A.G. SX17A, Pioneer brand 3369A, Pioneer brand 3184, Princeton SX840.

Yellow—Early-season—Funk G-4525, Funk G-4507, McCurdy MSX88<sup>1</sup>.

#### **Cotton<sup>3</sup>**

Auburn M., Coker 304, Coker 310, Delcot 277, Deltapine 16, Deltapine 55, Hancock, Stoneville 213, Stoneville 256, Stoneville 603.

#### **Oats**

Fall-seeded—Coker 66-22, Cumberland.

## **Wheat**

Abe, Arthur, Coker 747, Doublecrop, Oasis <sup>1</sup>, McNair 4823, Stoddard.

## **Barley**

Keowee, Volbar.

## **Rye**

Hiwassee.

## **Alfalfa**

Gladiator, Saranac AR, Team, Weevlchek, Williamsburg.

## **Red Clover**

Kenland, Kenstar, Redland.

## **Soybeans**

Bragg<sup>4</sup>, Centennial<sup>5</sup>, Coker 136, Dare, Essex, Forrest<sup>5</sup>, FFR 666, Hill <sup>1</sup>, Lee 74, Pickett 71 <sup>5</sup>, York.

## **Grain Sorghum**

Bird Resistant—Funk G-516BR, McCurdy Birds-off 81, McNair 656BR, Pioneer brand B815, RA Bird Go 68.

Non-Bird Resistant—Acco R-1090, Funk G-522, McNair 650, RA 811A.

## **Burley Tobacco**

Burley 21, Burley 37, Burley 49, Burley 64, Ky. 14, MS Bu. 21 X Ky. 10, Va. 509.

## **Dark Fire-Cured Tobacco**

Broad Leaf Madole, Black Mammoth, DF-300, DF-911.

## **Summer Annuals**

Sorghum x Sudangrass crosses—Drip O'Honey, FFR 66, Funk G-78F, Funk G-83F, Graze-n-Bale, Mor Su II, Pioneer brand 988, Sordan 70A, Sudax SX-16, Sudax SX-17, Summergrazer, Sure Graze, Sweet M, Sweet Sioux IV, and Wandergraze.

Sudagrass—Trudan 5

Millet—Gahi-1, Hygrazer, Millex 23, RA Millhy 99, Southgrazer.

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<sup>1</sup> Present plans indicate that these varieties will not be recommended after this year.

<sup>2</sup> Not recommended for grain production except under corn virus conditions.

<sup>3</sup> Cotton results will be given in a later publication.

<sup>4</sup> Recommended for southern tier of counties in Middle and West Tennessee.

<sup>5</sup> Recommended where Race 3 soybean cyst nematodes are a problem.

CHARACTERISTICS OF RECOMMENDED VARIETIES  
CORN  
Virus Rating of Corn Varieties Recommended for 1978

| Hybrid                   | Tolerance*<br>to<br>corn<br>virus<br>complex | Hybrid                     | Tolerance*<br>to<br>corn<br>virus<br>complex |
|--------------------------|----------------------------------------------|----------------------------|----------------------------------------------|
| White—Full-Season        |                                              | Yellow—Medium-Season       |                                              |
| FFR 929W                 | Med.                                         | DeKalb XL72B               | High                                         |
| Funk G-4747W             | Med.-High                                    | DeKalb XL80                | Low                                          |
| Golden Harvest H-2660W   | Med.                                         | DeKalb XL75                | Med.                                         |
| Princeton SX91           | Med.-High                                    | FFR 744C                   | Low                                          |
| Tenn. 502 <sup>2</sup>   | High                                         | Funk G-4520                | Low                                          |
| Zimmerman Z-11W          | Med.-High                                    | P.A.G. SX17A               | Med.                                         |
|                          |                                              | Pioneer brand 3369A        | Low                                          |
| Yellow—Full-Season       |                                              | Pioneer brand 3184         | Med.                                         |
| DeKalb XL394             | High                                         | Princeton SX840            | Low                                          |
| Funk G-4848              | Med.                                         |                            |                                              |
| Pioneer brand 3145       | High                                         | Yellow-Early-Season        |                                              |
| Pioneer brand 3147       | High                                         | Funk G-4525                | High                                         |
| McNair X300              | Low                                          | Funk G-4507                | Low                                          |
| Tenn. 606 <sup>1 2</sup> | Med.-High                                    | McCurdy MSX88 <sup>1</sup> | Med.                                         |
| Tenn. 608                | High                                         |                            |                                              |
| White—Medium-Season      |                                              |                            |                                              |
| DeKalb XL390A            | Med.                                         |                            |                                              |

<sup>1</sup> Present plans indicate that these hybrids will not be recommended after this year.

<sup>2</sup> Not recommended for grain production except under corn virus conditions.

\*Hybrids rated lower than medium-high are not recommended under heavy virus conditions.

## GRAIN SORGHUM

### Bird-resistant varieties

**Funk G-516BR**—A medium-tall variety of medium to late maturity with open type head.

**McCurdy Birds-off 81**—A variety of medium maturity, and short plant height with heads medium to open in compaction. This variety has yielded and stood well in the state variety trials.

**McNair 656BR**—This variety is medium-tall and medium in maturity. It stands well and has been a consistent yielder in the variety trials. This variety has an open type head.

**McNair 546**—A variety of medium maturity with an open type head. This variety has good standing ability.

**Pioneer brand B815**—A variety which is tall with medium to open type heads. This variety has been one of the later varieties heading.

**RA Bird-Go 68.** This bird-resistant variety has been evaluated in the past as Excel Bird-Go 68. RA stands for Ring Around Seed Company. This variety has yielded well for several years in the state variety trials. This variety is medium in maturity and plant height with an open type head.

### **Non-bird resistant varieties**

**Acco R-1090**—A variety which is medium-tall with medium to open type heads. This variety has been medium in maturity.

**Funk G-522**—A variety that has performed consistently for several years in the variety tests. It has been medium to late in heading and maturity. It is medium to tall in plant height with a medium to open type head.

**McNair 650**—A variety which is medium-tall with a medium type head. This variety is medium to late in maturity.

**RA 811A**—This variety has been evaluated in the past as Excel 811A. This medium-tall variety has a medium type head and is medium to early in maturity.

## **SOYBEANS**

**Bragg**—A tall-growing, late-maturing variety (Maturity group VII).<sup>1</sup> It matures about 7 days later than Lee (Maturity group VI). Bragg has white flowers and tawny pubescence. It has good seed-holding qualities. Bragg is recommended for the southern tier of counties in Middle and West Tennessee.

**Centennial**—Centennial matures (Maturity group VI) about the same time as Pickett 71 (Maturity group VI). Plants are tall with tawny pubescence and purple flowers. Seeds are medium in size with a yellow seed coat and black hila. It has resistance to Races 1 and 3 of the soybean cyst nematods, the root-knot nematode *Meloidogyne incognita*, the reniform nematode, and phytophthora rot. This variety seems to be too late for the Cumberland Plateau.

**Coker 136**—This variety matures a few days earlier than Lee 74 (Maturity group VI) and a few days later than Forrest (Maturity group V). Coker 136 has gray pubescence with purple flowers. It is similar to Forrest in plant height.

**Dare**—Dare matures (Maturity group V) about the same as York (Maturity group V). Plants have white flowers and gray pubescence. Seeds are yellow with light brown hilum. It has resistance to purple stain, bacterial pustule, wildlife, and target spot. It is also moderately resistant to phytophthora root-rot. Dare has good seed-holding characteristics but does not hold its seed as well as Lee. This variety tends to hold its leaves after maturity longer than some other varieties.

**Essex**—An early-maturing variety (Maturity group V) which is short and stands well. It has purple flowers, gray pubescence, and a tawny pod wall. Essex has a high yield potential under good moisture conditions, but it appears to be more sensitive to moisture stress than many of the other varieties evaluated. Essex has not performed well on heavy textured soils. Essex is similar to Dare in seed size, quality, and shatter resistance.

**Forrest**—Forrest (Maturity group V) is a selection from the cross Dyer X Bragg. Its growth characteristics resemble Bragg (Maturity group VII) but plants mature about 3 weeks earlier. Forrest (Maturity group V) is a few days later in maturity than Dare (Maturity group V). This variety is resistant to root-knot and soybean cyst nematode Race 3. Forrest also has good resistance to bacterial pustule, wildlife, target spot, and is moderately resistant to phytophthora rot. Forrest has white flowers and tawny pubescence. Seed are yellow with a black hilum.

**FFR 666**—FFR 666 has purple flower, tawny pubescence, and yellow seed with a black hilum similar to Lee. This variety matures about a day earlier than Lee (Maturity group VI) under most planting dates. It has performed similar to Lee 74 in the state variety tests.

**Hill**—Hill matures (Maturity group V) about 14 days earlier than Hood (Maturity group VI). This variety has resistance to shattering, but not quite so much as Lee. Hill performed well under root-knot nematode conditions.

**Lee 74**—Lee 74 has resistance to the common foliar diseases bacterial pustule, wildfire, and target spot similar to Lee 68. The variety

has purple flowers, tawny pubescence, and yellow seed with a black hilum similar to Lee 68. This variety is in Maturity group VI. Lee 74 is resistant to root-knot nematode, whereas Lee 68 is not.

**Pickett 71**—This variety resembles Pickett in plant and seed characteristics. Pickett 71 is resistant to phytophthora rot as well as being resistant to Race 3 soybean cyst nematode. It also has resistance to bacterial pustule, wildfire, and target spot. Pickett 71 has gray pubescence and purple flowers. Seeds are yellow with a black hilum. Pickett 71 has performed similarly to Pickett in the State Variety Trials. Pickett and Pickett 71 are in Maturity group VI.

**York**—York matures at about the same time as Dare (Maturity group V) and is about 10 days later than Hill. Seeds of York are slightly off-round with a buff hilum and yellow seed coat. York has purple flowers and gray pubescence. York has good seed-holding qualities but not as good as Lee. York has very good resistance to lodging and has yielded well in the State Variety Test.

## OATS

### Fall-Seeded:

**Coker 66-22**—This variety has yielded well in the tests and is a few days earlier than Blount. Coker 66-22 has weak straw and lodges more than Blount.

**Cumberland**—A short, stiff-strawed variety of medium-late maturity. It is slightly more winter hardy than Blount. It has out-yielded Blount for grain the last 5 years. Cumberland has good lodging resistance. This variety was tested in previous years as T 60-32 (Experimental).

## RYE

**Hiwassee**—A medium-tall, medium-late maturity, broadleaved variety. Hiwassee is not as uniform in plant growth in the seedling stage as Balbo, but in the mature stage is more uniform than Balbo.

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<sup>1</sup> Varieties have been divided into 10 maturity groups, 00 through VIII. Varieties recommended in Tennessee are from Groups V, VI, and VII. Group V is considered early to medium, Group VI late, and Group VII late to very late. The later these varieties of maturity, Groups V, VI, and VII are planted, the less pronounced is the difference in date of maturity among varieties.

Heads and seeds are larger than Balbo. This variety has good lodging resistance for rye. Because Hiwassee is a tetraploid, some sterility may occur when grown near common (diploid) rye varieties of the same maturity.

## BARLEY

**Keowee**—This variety was selected from the Davie X Hudson cross at Clemson University. Keowee is a six-rowed winter barley with moderate winter hardiness and semiprostrate seedling growth.

It has medium-length awns similar to Wade in appearance. Keowee is medium-late in maturity. This variety has performed well in the test for several years.

**Volbar**—A winter-hardy, six-rowed, tall, rough-awned variety with maturity similar to Harrison and Jefferson. Volbar has yielded well in the state variety test and has resisted lodging. Volbar has slight tolerance to Barley Yellow Dwarf Virus disease.

## WHEAT

**Abe**—This variety is similar in appearance to Arthur. Abe may be distinguished from Arthur 71 and Arthur by its blue-green foliage from young plants in the boot state and by its longer awnlets. Abe has the same resistance to stem rust, powdery mildew, loose smut, and soil-borne mosaic similar to Arthur. This variety has yielded slightly more than Arthur or Arthur 71 in the state trials.

**Arthur**—A very early, winter-hardy, soft red winter variety with good straw strength. Arthur has good test weight and is resistant to certain races of powdery mildew, and moderately resistant to leaf rust, stem rust, and loose smut. Arthur has been relatively free of disease for the past 2 years in the State Variety Test. Arthur is resistant to most races of Hessian Fly. However, Arthur, like Harrison barley, is sensitive to acid soil (low pH) and for best performance it should not be grown under these conditions.

**Coker 747**—An early, white chaff variety with good winter-hardiness and resistance to lodging. This variety is a few inches shorter with slightly stiffer straw than Arthur. It is resistant to soil-borne mosaic, moderately resistant to leaf rust, stem rust, and powdery mildew.

**Doublecrop**—An early, winter-hardy, white chaff variety. It is similar to Arthur in characteristics and disease resistance, except that it matures a few days earlier and has a slightly higher leaf rust resistance.

**McNair 4823**—A short, stiff-strawed variety with good winter-hardiness. It matures a few days later than Arthur. It is resistant to leaf rust and most races of Hessian fly. McNair 4823 is susceptible to mildew. It has yielded well in the state variety trials for many years.

**Oasis**—This variety was released by Purdue University in 1973. It is similar to Arthur 71 in agronomic characteristics and resistance to rusts, powdery mildew, and Hessian fly. In addition to having resistance to these diseases, Oasis has resistance to leaf blotch. This variety has produced higher yields in the State Variety Trials than Arthur 71.

**Stoddard**—This variety originated from a cross of Stadler X Redcoat and released by the Missouri Agricultural Experiment Station. Stoddard is medium-tall with beardless heads. This variety matures similar to Arthur and has yielded well for 3 years in the state variety trials. It has moderate resistance to soil-borne mosaic. It is susceptible to mildew, stem rust, and Hessian Fly. This variety has good winter-hardiness.

## ALFALFA

**Gladiator**—This variety was developed by Northrup, King & Co. and is wilt resistant and has some tolerance to alfalfa weevil and anthracnose. It has yielded well in the state variety trials for a number of years.

**Saranac AR**—This variety was developed at Cornell and is wilt- and anthracnose-resistant. The growth habit of this variety is the same as for Saranac. Seed supply may be limited in Tennessee.

**Team**—This variety has some resistance to the alfalfa weevil. This resistance is not enough to eliminate the need for weevil control measures by growers. Team also is reported to have resistance to anthracnose, stemphylium leaf spot, and common leaf spot. None of these diseases has been observed on this variety in Tennessee. This variety is available in the seed trade in Tennessee.

**Weevlchek**—This variety has some resistance to the alfalfa weevil, but this resistance is not great enough to eliminate the need for

weevil control measures by growers. Weevilchek does not grow as vigorous as most of the other varieties evaluated. Seed of this variety should be available in the seed trade in Tennessee.

**Williamsburg**—This variety was removed from the recommended list several years ago due to the lack of a seed source in Tennessee. Seed of this variety can once again be bought in Tennessee; therefore, it was placed back on the recommended list. Williamsburg has performed well all across the state in the variety trials.

## RED CLOVER

**Kenland**—Kenland is a variety resistant to southern anthracnose and tolerant to powdery mildew. It is a synthetic variety made by combining several strains from Kentucky, Tennessee, Virginia, North Carolina, and Missouri.

**Kenstar**—Related synthetics have been evaluated in Tennessee for several years. These synthetics were Ky Syn A-1, and A-2. Kenstar was carried as an experimental Ky Syn A-3. A-1 consisted of 20 clones, A-2 of 30 clones, and Kenstar contained 10 of the superior clones common to both A-1 and A-2. Kenstar is similar to Kenland in resistance to anthracnose, powdery mildew, and general morphological appearance. In forage yields, these synthetics (Kenstar) have persisted for 3 years in many tests and Kenland for only 1 or 2.

**Redland**—Redland was evaluated as Illinois No. 2 for many years in the State Variety Trials. Redland has performed better than Kenland certified, but slightly less than Kenstar.

## BURLEY TOBACCO

**Burley 21**—A very upright-leaf variety which has high resistance to wildfire and mosaic and low resistance to black root rot. Plants are more vigorous and grow off faster in plant beds than most other varieties.

**Burley 37**—An upright-leaf variety which has medium-high resistance to black shank, high resistance to wildfire, and low resistance to black root rot and medium resistance to fusarium wilt.

**Burley 49**—An upright-leaf variety which has medium-high resistance to black shank, high resistance to black root rot, wildfire, mosaic, and medium resistance to fusarium wilt. This variety is

recommended on farms where black shank and black root rot are causing problems.

**Burley 64**—A closely-spaced, upright-leaf, late-flowering variety which has medium-high resistance to black shank, high resistance to black root rot, wildfire, mosaic, and medium resistance to fusarium wilt. The variety is recommended on farms where black shank and black root rot are causing problems.

**Ky. 14**—A high-yielding variety which has medium-high resistance to black root rot, fusarium wilt, and high resistance to wildfire and mosaic. It has also shown some resistance to Tobacco Vein Virus (TVMV). Ky. 14 is similar to Va. 509 in number of days to terminate between those of Burley 21 and Burley 37.

**MS Bu. 21 X Ky. 10**—A semi-drooping leaf hybrid which has high resistance to wildfire and mosaic and low resistance to black root rot. It does not have any resistance to black shank. This hybrid yields about the same as Ky. 10, but more than Burley 21. It is better in quality than Ky. 10, but not as good as Burley 21.

**Va. 509**—An upright-leaf variety which has medium resistance to black shank, high resistance to wildfire, low resistance to black root rot, and medium resistance to fusarium wilt. It was selected from a cross of Burley 37 X Burley 21. The general characteristics are intermediate between those of Burley 21 and Burley 37.

## DARK FIRE-CURED TOBACCO

**Broad Leaf Madole**—A relatively high-yielding, high-acre-value variety. Susceptible to mosaic and wildfire.

**Black Mammoth**—Leaf is somewhat darker and broader than Madole. Usually it does not droop quite as much as Madole. Susceptible to mosaic and wildfire.

**DF-300**—A variety moderately resistant to black shank, was developed and released in 1967 by the UT Agricultural Experiment Station. It is a broad-leaved, open-growing tobacco, lighter green in color than Madole with plant growth similar to Madole. The cured tobacco is usually lighter brown in color than Madole. It is best adapted to the production of wrapping tobacco, but is capable of producing cutting or snuff tobacco.

**DF-911**—A multiple disease resistant dark fire-cured variety, was developed and released in 1976 by University of Tennessee Agriculture Experiment Station. This variety is resistant to black root rot, mosaic, and wildfire but not to blackshank. It compares very favorably with Madole in growth, yield, and quality but DF-911 is slightly darker in color. Its growth habit and appearance is perhaps a little more open than Madole—especially at maturity—and the leaf attachment is more upright.

# **1977**

## **PERFORMANCE**

### **OF FIELD CROP VARIETIES**

**Corn-Grain Sorghum—Summer Annuals-Oats  
Barley-Wheat-Alfalfa-Soybeans-Tobacco**

#### **DATA FOR 1977 WITH SUMMARIES OF RESULTS FROM PREVIOUS YEARS**

##### **INTRODUCTION**

The purpose of the project, "Field Crop Variety Evaluation," is to test field crop varieties available to farmers of this and neighboring states, as well as the best experimental varieties being developed by experiment stations and other agencies.

The tests were conducted using field plot designs, fertility levels, and experimental techniques that have been found suitable for each crop.

Committees composed of specialists from the research, resident instruction, and extension staffs of the University of Tennessee Institute of Agriculture study the performance data and determine varieties to be recommended.

In order for a variety to be recommended, it must yield well and have other characteristics suitable for Tennessee conditions.

## PRESENTATION OF DATA

The tests were conducted in each of the principal agricultural regions of the State where the specific crop is grown. Plots of each variety were replicated several times at each location. Locations of field tests are given in each table of data. An average of the performance of a variety across the area of adaption and over a period of years is the best basis for evaluation.

The tables on the following pages have been prepared with the entries listed in order of performance, the highest-yielding entry being listed first.

The least significant difference (L.S.D.) values at the 5% level for the 1977 tests are shown at the bottom of each table. The yields of any two varieties being compared must differ by at least this amount in order for the varieties to be considered different in yielding ability. Also, coefficient of variation values (C.V. %) are shown at the bottom of each table. This value is a measure of the variability found within each experiment. At each location where tests were conducted in 1977, the soil types are reported at the end of the table.

### CORN

The 1977 Full-season State Corn Hybrid Tests were conducted at four locations and the medium-season tests were conducted at seven locations. Early-maturing tests were conducted at four locations. Forty new hybrids were evaluated at Knoxville. The tests at Ames Plantation and Jackson were harvested with a picker-sheller and the test at Crossville was harvested with a picker-snapper. All other tests were harvested by hand.

All tests were overplanted and thinned to 19,000 plants per acre. The plot size for hand-harvested plots was two rows 11 feet long and the plot size for the mechanically harvested plots was two rows 25 to 30 feet long.

Yields at Knoxville, Crossville, and Spring Hill were reduced due to dry weather. Lodging occurred at most locations and was severe at Crossville and Martin. This lodging was due to insect damage and stalk rot. The Crossville data were not included in the Medium-season average because it has been shown over the years that hybrids react differently at this location. The Jackson data were included in the Full-season average with the knowledge that corn hybrids also react differently at this location. The early maturing corn hybrid test at Ames Plantation was treated with Eradicane for

the control of Johnsongrass. Several hybrids were injured but the injury was not consistent from replication to replication.

The leading hybrids in the Medium-season tests were Pioneer brand 3147, T7100 (an experimental), McCurdy 72-44A, T7300 (an experimental), DeKalb XL390A, Pioneer brand 3184, Pioneer brand 3369A, and Princeton SX840. At Crossville the leading hybrids were Pioneer brand 3184, Funk G-4636, N.K. PX91, FFR 744C, and Princeton SX840.

Using a 2-year average the leading Medium-season hybrids in yield were Pioneer brand 3147, Pioneer 3184, DeKalb XL390A, Princeton SX840, Funk G-4520, FFR 744C, Pioneer brand 3369A, P.A.G. SX17A, and DeKalb XL80. DeKalb XL72B did not perform as well in 1977 as it had in previous years.

The leading Full-season hybrids in grain yield in 1977 were Pioneer brand 3147, Funk G-4848, Paymaster UC-9792, Pioneer brand 3145, DeKalb XL394. Pioneer brand 3147 lodged more in 1977 than it had in previous years. Funk G-4848, Pioneer brand 3145, and DeKalb XL394 stood well. Using a 2-year average the leading Full-season hybrids in grain yield were Pioneer brand 3147, Funk G-4848, FFR 929W, Zimmerman Z-11W, Pioneer brand 3145, DeKalb XL394, Princeton SX910, and Golden Harvest H-2660W. All of these hybrids have stood well in the variety tests for the past 2 years. The leading Full-season hybrids for a 3-year period are Pioneer brand 3147, DeKalb XL394, Golden Harvest H-2660W, Pioneer brand 3145, Princeton SX910, and Tenn. 608. Tenn. 608 has shown better standing ability than Tenn. 606.

Forty hybrids that were not included in the regular variety trials were evaluated at Knoxville in a preliminary test (Table 16).

Twenty early maturing hybrids were evaluated at Crossville, Knoxville, Martin, and Ames Plantation. At Knoxville the leading hybrids were McCurdy 84A, Zimmerman Z-24-Y, and Golden Harvest H-2600. At Crossville McCurdy 84A did not perform well. These early maturing hybrids seem to vary more in yield from year to year and location to location than later maturing hybrids. For example, Funk G-4525 at Ames Plantation was one of the leading grain producers whereas at Martin and Crossville it was one of the poorer producers. FFR 707C relative performance was better at Ames Plantation than at Knoxville and Martin. The test at Ames Plantation was treated with Eradicane for Johnsongrass control which resulted in injury to some hybrids. This injury was not consistent from one replication to another, thus a high C.V. (coefficient of variation) resulted.

Twenty-five corn hybrids were evaluated under virus conditions in Humphreys County in 1977. The virus was not as severe in 1976 and 1977 as it had been at this location in previous years. The leading hybrids in grain yield for 1977 were Pioneer brand 3147, FFR 707C, Pioneer brand 3179, Funk G-4848, DeKalb XL394, Beck's 87MDM, and FFR 292W. One hundred and forty-four hybrids were rated for virus tolerance and these data are in Table 20.

These data were furnished by L. M. Josephson and H. C. Kincer of the Tennessee Agricultural Experiment Station at Knoxville. A scale ranging from 1 through 9 was used to rate these varieties at three locations where the virus disease occurred in previous years.

Individual plants were evaluated on the basis of the following severity grades:

- 1=no apparent symptoms.
- 2=top 2 or 3 leaves mottled; no stunting.
- 3=entire plant above the ear mottled and/or discolored; no evident stunting.
- 4=chlorosis and/or discoloration above the ear; some stunting.
- 5=plant above the ear discolored; plants stunted and ear reduced in size.
- 6=upper  $\frac{3}{4}$  of plant chlorotic and/or discolored; plants stunted and ear reduced in size.
- 7=entire plant discolored and stunted; small ear.
- 8=entire plant discolored and stunted; no ear produced.
- 9=plant completely collapsed; no ear.

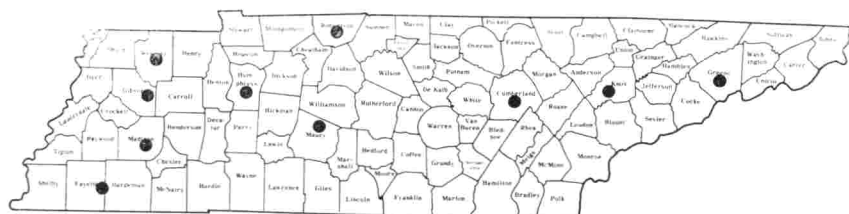
A severity index for each entry was determined by multiplying the number of plants in each rating by the rating value, and the sum of these products was divided by the total number of plants. The percentage of diseased plants and the severity index for the diseased plants are shown in the tables in addition to the mean severity index for all plants. In interpreting the reaction to virus of any particular entry, the important data are the percentage of diseased plants and their severity index.

**Table 1. Corn. Yield of 40 medium-season hybrids evaluated at six locations in 1977**

| Color  | Cross | Hybrid                  | Bushels per acre |                |              |                |               |          |         |
|--------|-------|-------------------------|------------------|----------------|--------------|----------------|---------------|----------|---------|
|        |       |                         | Avg.             | Greene-ville 1 | Knox-ville 2 | Spring-field 3 | Spring Hill 4 | Martin 5 | Milan 6 |
| Y      | 2X    | Pioneer brand 3147      | 138              | 156            | 110          | 166            | 102           | 141      | 154     |
| W      | 3X    | T7100                   | 134              | 153            | 102          | 183            | 90            | 130      | 146     |
| Y      | 2X    | McCurdy 72-44A          | 133              | 145            | 103          | 156            | 105           | 146      | 144     |
| W      | 3X    | T7300                   | 132              | 152            | 99           | 169            | 98            | 134      | 141     |
| W      | 3X    | DeKalb XL390A           | 132              | 140            | 89           | 178            | 91            | 140      | 155     |
| Y      | 2X    | Pioneer brand 3184      | 129              | 147            | 87           | 160            | 101           | 148      | 132     |
| Y      | 2X    | Pioneer brand 3369A     | 128              | 125            | 97           | 158            | 102           | 142      | 144     |
| Y      | 2X    | Princeton SX840         | 128              | 130            | 105          | 152            | 100           | 147      | 133     |
| Y      | M3X   | Pioneer brand 3368A     | 126              | 138            | 99           | 150            | 92            | 138      | 139     |
| Y      | 2X    | N.K. PX 79              | 126              | 135            | 91           | 162            | 90            | 144      | 134     |
| Y      | 3X    | Asgrow Rx114            | 125              | 146            | 88           | 170            | 93            | 133      | 122     |
| Y      | 2X    | Funk G-4574             | 125              | 129            | 101          | 143            | 98            | 148      | 133     |
| Y      | 2X    | Golden Acres T. E. 6995 | 125              | 122            | 101          | 146            | 91            | 146      | 142     |
| Y      | 2X    | Trojan TXS115A          | 124              | 128            | 98           | 147            | 94            | 148      | 113     |
| Y      | M2X   | T4021                   | 123              | 132            | 100          | 151            | 94            | 136      | 127     |
| Y      | 2X    | P.A.G. SX17A            | 123              | 143            | 96           | 143            | 80            | 132      | 146     |
| Y      | 2X    | Funk G-4507             | 123              | 121            | 97           | 142            | 95            | 151      | 134     |
| Y      | 2X    | FFR 891C                | 123              | 129            | 106          | 141            | 99            | 139      | 122     |
| Y      | 3X    | Trojan TX119A           | 122              | 121            | 95           | 152            | 103           | 137      | 125     |
| Y      | 2X    | FFR 744C                | 122              | 131            | 97           | 140            | 88            | 147      | 131     |
| Y      | 2X    | DeKalb XL75             | 122              | 144            | 82           | 150            | 89            | 132      | 135     |
| Y      | 2X    | Wilstar 9990            | 122              | 128            | 96           | 158            | 94            | 132      | 124     |
| Y      | 2X    | Funk G-4636             | 122              | 133            | 107          | 144            | 98            | 132      | 126     |
| Y      | 2X    | DeKalb XL80             | 120              | 136            | 99           | 152            | 91            | 126      | 119     |
| Y      | M2X   | Pioneer brand 3364      | 120              | 128            | 103          | 150            | 82            | 143      | 115     |
| Y      | 2X    | Golden Harvest H-2650   | 120              | 123            | 98           | 148            | 91            | 140      | 123     |
| Y      | 2X    | RA 1502                 | 120              | 129            | 96           | 135            | 95            | 143      | 125     |
| Y      | 2X    | Funk G-4520             | 120              | 124            | 102          | 154            | 103           | 137      | 136     |
| Y      | 2X    | Trojan TXS114           | 120              | 127            | 92           | 147            | 78            | 148      | 127     |
| Y      | 2X    | Golden Harvest H-2666   | 120              | 135            | 95           | 136            | 94            | 132      | 126     |
| Y      | M2X   | RA 2502                 | 119              | 115            | 102          | 147            | 80            | 138      | 132     |
| Y      | 2X    | Asgrow RX101            | 118              | 125            | 96           | 155            | 88            | 125      | 119     |
| Y      | M2X   | DeKalb XL75A            | 118              | 120            | 99           | 143            | 97            | 136      | 113     |
| Y      | 2X    | Golden Acres T. E. 6992 | 117              | 120            | 84           | 144            | 77            | 140      | 137     |
| Y      | M2X   | Funk G-4776             | 117              | 118            | 82           | 151            | 95            | 134      | 121     |
| Y      | 2X    | P.A.G. SX98             | 116              | 114            | 99           | 141            | 83            | 131      | 127     |
| Y      | 2X    | P.A.G. 357              | 115              | 123            | 96           | 139            | 89            | 128      | 116     |
| Y      | 2X    | DeKalb XL72B            | 115              | 112            | 91           | 130            | 95            | 134      | 128     |
| Y      | 2X    | N.K. PX91               | 113              | 118            | 95           | 131            | 88            | 128      | 118     |
| Y      | 2X    | SeedKem SKX86           | 111              | 123            | 90           | 129            | 78            | 135      | 110     |
| L.S.D. | (.05) |                         | 9.1              | 17.6           | 12.6         | 9.6            | N.S.          | 12.7     | 12.7    |
| C.V. % |       |                         | 13.6             | 9.6            | 9.3          | 4.6            | 14.0          | 6.6      | 7.0     |

(Footnotes to Table 1, page 18)

- <sup>1</sup> Huntington silt loam, local alluvium (2% to 5% slopes).
- <sup>2</sup> Sequatchie loam (2% to 5% slopes).
- <sup>3</sup> Huntington silt loam, local alluvium (2% to 5% slopes).
- <sup>4</sup> Maury and Huntington silt loam, local alluvium (2% to 5% slopes).
- <sup>5</sup> Collins silt loam (2% to 5% slopes).
- <sup>6</sup> Collins silt loam (2% to 5% slopes).



**Locations of field crop variety tests in Tennessee, 1977.**

**Table 2. Corn: Yield and other characteristics of 40 medium-season hybrids evaluated at six locations in 1977**

| Color        | Cross | Hybrid                 | Yield | Erect plants | Grain quality | Husk cover | Ear height | Grain moisture at harvest |
|--------------|-------|------------------------|-------|--------------|---------------|------------|------------|---------------------------|
|              |       |                        | Bu/A  |              |               |            |            |                           |
| Y            | 2X    | Pioneer brand 3147     | 138   | 84           | 4.5           | 4.0        | 54         | 19.0                      |
| W            | 3X    | T 7100                 | 134   | 78           | 3.4           | 2.5        | 56         | 19.9                      |
| Y            | 2X    | McCurdy 72-44A         | 133   | 89           | 3.0           | 2.9        | 53         | 18.2                      |
| W            | 3X    | T7300                  | 132   | 86           | 3.4           | 3.1        | 58         | 19.8                      |
| W            | 3X    | DeKalb XL390A          | 132   | 84           | 4.0           | 2.7        | 56         | 18.7                      |
| Y            | 2X    | Pioneer brand 3184     | 129   | 94           | 4.2           | 4.8        | 49         | 19.1                      |
| Y            | 2X    | Pioneer brand 3369A    | 128   | 88           | 3.0           | 5.0        | 47         | 17.6                      |
| Y            | 2X    | Princeton SX840        | 128   | 88           | 4.1           | 3.7        | 52         | 18.3                      |
| Y            | M3X   | Pioneer brand 3368A    | 126   | 87           | 2.9           | 4.0        | 48         | 18.0                      |
| Y            | 2X    | N. K. PX79             | 126   | 83           | 4.5           | 4.3        | 48         | 16.5                      |
| Y            | 3X    | Asgrow RX114           | 125   | 86           | 2.8           | 2.9        | 52         | 18.2                      |
| Y            | 2X    | Funk G-4574            | 125   | 81           | 3.9           | 3.8        | 48         | 16.7                      |
| Y            | 2X    | Golden Acre T.E. 6995  | 125   | 89           | 3.7           | 3.6        | 46         | 17.0                      |
| Y            | 2X    | Trojan TXS 115A        | 124   | 86           | 4.0           | 4.1        | 45         | 17.4                      |
| Y            | M2X   | T 4021                 | 123   | 91           | 3.2           | 3.6        | 54         | 19.3                      |
| Y            | 2X    | P.A.G. SX17A           | 123   | 77           | 4.3           | 3.7        | 46         | 17.6                      |
| Y            | 2X    | Funk G-4507            | 123   | 88           | 3.9           | 4.0        | 49         | 17.2                      |
| Y            | 2X    | FFR 891C               | 123   | 89           | 3.3           | 3.6        | 46         | 17.8                      |
| Y            | 3X    | Trojan TX119A          | 122   | 90           | 3.9           | 4.2        | 48         | 17.5                      |
| Y            | 2X    | FFR 744C               | 122   | 85           | 3.9           | 3.9        | 47         | 17.1                      |
| Y            | 2X    | DeKalb XL75            | 122   | 82           | 4.6           | 4.1        | 48         | 17.5                      |
| Y            | 2X    | Wilstar 9990           | 122   | 90           | 3.2           | 3.1        | 49         | 20.3                      |
| Y            | 2X    | Funk G-4636            | 122   | 90           | 2.8           | 4.2        | 46         | 18.9                      |
| Y            | 2X    | DeKalb XL80            | 120   | 87           | 2.8           | 2.9        | 46         | 18.6                      |
| Y            | M2X   | Pioneer brand 3364     | 120   | 92           | 3.3           | 3.3        | 47         | 17.8                      |
| Y            | 2X    | Golden Harvest H-2650  | 120   | 85           | 3.8           | 4.6        | 46         | 18.3                      |
| Y            | 2X    | RA 1502                | 120   | 92           | 3.5           | 3.4        | 47         | 18.4                      |
| Y            | 2X    | Funk G-4520            | 120   | 95           | 3.5           | 3.9        | 46         | 17.6                      |
| Y            | 2X    | Trojan TXS114          | 120   | 76           | 4.4           | 3.7        | 49         | 16.7                      |
| Y            | 2X    | Golden Harvest H-2666  | 120   | 86           | 2.6           | 3.6        | 44         | 18.2                      |
| Y            | M2X   | RA 2502                | 119   | 85           | 3.5           | 3.2        | 43         | 19.0                      |
| Y            | 2X    | Asgrow RX101           | 118   | 87           | 3.3           | 3.1        | 48         | 17.4                      |
| Y            | M2X   | DeKalb XL75A           | 118   | 90           | 3.8           | 2.9        | 55         | 19.1                      |
| Y            | 2X    | Golden Acres T.E. 6992 | 117   | 84           | 3.7           | 3.4        | 49         | 16.8                      |
| Y            | M2X   | Funk G-4776            | 117   | 95           | 3.3           | 2.7        | 57         | 18.8                      |
| Y            | 2X    | P.A.G. SX98            | 116   | 78           | 3.8           | 4.4        | 42         | 18.5                      |
| Y            | 2X    | P.A.G. 357             | 115   | 64           | 4.0           | 4.6        | 44         | 17.7                      |
| Y            | 2X    | DeKalb XL72B           | 115   | 85           | 3.9           | 4.9        | 42         | 17.4                      |
| Y            | 2X    | N.K. PX91              | 113   | 88           | 3.4           | 3.4        | 48         | 17.9                      |
| Y            | 2X    | Seed Kem SKX86         | 111   | 94           | 3.9           | 4.7        | 48         | 18.0                      |
| L.S.D. (.05) |       |                        | 9.1   | —            | —             | —          | —          | —                         |
| C.V. %       |       |                        | 13.0  | —            | —             | —          | —          | —                         |

<sup>1</sup> Rating was based on a scale of 1 through 9 with 1 being excellent and 9 poor.

**Table 3. Corn: Yield of medium-season hybrids evaluated at five locations for 2 years (1976-1977)**

| Color            | Cross | Hybrid              | Avg. | Greene-<br>ville | Knox-<br>ville | Spring-<br>field | Spring-<br>Hill | Martin |
|------------------|-------|---------------------|------|------------------|----------------|------------------|-----------------|--------|
| Bushels per acre |       |                     |      |                  |                |                  |                 |        |
| Y                | 2X    | Pioneer brand 3147  | 144  | 166              | 140            | 159              | 116             | 141    |
| Y                | 2X    | Pioneer brand 3184  | 140  | 156              | 120            | 148              | 117             | 162    |
| W                | 3X    | DeKalb XL390A       | 135  | 149              | 114            | 157              | 100             | 157    |
| Y                | 2X    | Princeton SX840     | 134  | 137              | 123            | 151              | 105             | 157    |
| Y                | 2X    | Funk G-4520         | 132  | 131              | 119            | 143              | 111             | 157    |
| Y                | 2X    | FFR744C             | 132  | 144              | 119            | 139              | 106             | 151    |
| Y                | 2X    | Pioneer brand 3369A | 131  | 143              | 122            | 146              | 105             | 140    |
| Y                | 2X    | P.A.G. SX17A        | 131  | 155              | 117            | 140              | 102             | 141    |
| Y                | 2X    | DeKalb XL80         | 131  | 149              | 122            | 143              | 101             | 138    |
| Y                | 2X    | N.K. PX79           | 130  | 142              | 115            | 149              | 99              | 146    |
| Y                | M2X   | DeKalb XL75A        | 130  | 137              | 124            | 146              | 108             | 133    |
| Y                | 2X    | Trojan TXS114       | 130  | 138              | 114            | 140              | 90              | 166    |
| Y                | 2X    | DeKalb XL75         | 129  | 144              | 109            | 139              | 102             | 151    |
| Y                | 2X    | RA 1502             | 129  | 135              | 118            | 136              | 103             | 154    |
| Y                | M2X   | Funk G-4776         | 125  | 126              | 111            | 141              | 110             | 137    |
| Y                | 2X    | FFR 891C            | 125  | 129              | 112            | 134              | 105             | 145    |
| Y                | M3X   | Pioneer brand 3368A | 125  | 141              | 119            | 132              | 97              | 142    |
| Y                | M2X   | RA2502              | 124  | 124              | 114            | 136              | 95              | 150    |
| Y                | 2X    | DeKalb XL72B        | 121  | 126              | 112            | 125              | 107             | 136    |
| Y                | 2X    | N.K. PX91           | 120  | 126              | 119            | 123              | 106             | 128    |

**Table 4. Corn: Yield and other characteristics of medium season hybrids evaluated for 2 years (1976-77)**

| Color | Cross | Hybrid              | Yield | Erect plants | Ear ht. | Quality             | Husk cover          | Grain moisture at harvest |
|-------|-------|---------------------|-------|--------------|---------|---------------------|---------------------|---------------------------|
|       |       |                     | Bu/A  | %            | In      | Rating <sup>1</sup> | Rating <sup>1</sup> | %                         |
| Y     | 2X    | Pioneer brand 3147  | 144   | 90           | 57      | 4.2                 | 3.6                 | 20.8                      |
| Y     | 2X    | Pioneer brand 3184  | 140   | 97           | 50      | 3.6                 | 4.3                 | 20.7                      |
| W     | 3X    | DeKalb XL 390 A     | 135   | 90           | 58      | 3.9                 | 2.8                 | 20.6                      |
| Y     | 2X    | Princeton SX 840    | 134   | 93           | 55      | 3.8                 | 3.4                 | 20.6                      |
| Y     | 2X    | Funk G-4520         | 132   | 97           | 48      | 3.4                 | 3.6                 | 19.0                      |
| Y     | 2X    | FFR 744C            | 132   | 92           | 50      | 3.7                 | 3.6                 | 18.5                      |
| Y     | 2X    | Pioneer brand 3369A | 131   | 94           | 49      | 2.8                 | 4.6                 | 19.3                      |
| Y     | 2X    | P.A.G. SX17A        | 131   | 88           | 50      | 4.0                 | 3.9                 | 19.0                      |
| Y     | 2X    | DeKalb XL80         | 131   | 93           | 49      | 2.6                 | 2.9                 | 20.6                      |
| Y     | 2X    | N.K. PX79           | 130   | 91           | 51      | 4.3                 | 4.0                 | 18.0                      |
| Y     | M2X   | DeKalb XL75A        | 130   | 94           | 57      | 3.7                 | 3.0                 | 20.3                      |
| Y     | 2X    | Trojan TXS114       | 130   | 87           | 52      | 3.9                 | 3.4                 | 18.4                      |
| Y     | 2X    | DeKalb XL75         | 129   | 90           | 51      | 4.2                 | 4.0                 | 19.3                      |
| Y     | 2X    | RA1502              | 129   | 95           | 50      | 3.0                 | 3.0                 | 20.2                      |
| Y     | M2X   | Funk G-4776         | 125   | 97           | 60      | 3.0                 | 2.8                 | 20.4                      |
| Y     | 2X    | FFR 891C            | 125   | 93           | 47      | 3.2                 | 3.6                 | 19.1                      |
| Y     | M3X   | Pioneer brand 3368A | 125   | 92           | 49      | 2.8                 | 3.8                 | 19.3                      |
| Y     | M2X   | RA2502              | 124   | 91           | 45      | 3.6                 | 3.2                 | 20.5                      |
| Y     | 2X    | DeKalb XL72B        | 121   | 92           | 45      | 3.8                 | 4.4                 | 19.8                      |
| Y     | 2X    | N.K. PX91           | 120   | 93           | 53      | 3.0                 | 3.4                 | 19.9                      |

<sup>1</sup> Rating was based on a scale of 1 through 9 with 1 being excellent and 9 poor.

**Table 5. Corn: Yield of medium-season hybrids evaluated at four locations for 3 years (1975-77)**

| Color            | Cross | Hybrid              | Avg. | Knox-ville | Spring-field | Spring Hill | Martin |
|------------------|-------|---------------------|------|------------|--------------|-------------|--------|
| Bushels per acre |       |                     |      |            |              |             |        |
| Y                | 2X    | Pioneer brand 3147  | 138  | 148        | 140          | 120         | 143    |
| W                | 3X    | DeKalb XL390A       | 128  | 119        | 134          | 107         | 150    |
| Y                | 2X    | Pioneer brand 3369A | 126  | 128        | 125          | 108         | 142    |
| Y                | 2X    | P.A.G. SX17A        | 122  | 124        | 118          | 106         | 138    |
| Y                | 2X    | DeKalb XL80         | 121  | 123        | 126          | 102         | 133    |
| Y                | 2X    | DeKalb XL75         | 120  | 118        | 117          | 100         | 145    |
| Y                | 2X    | DeKalb XL72B        | 119  | 120        | 114          | 110         | 134    |
| Y                | M3X   | Pioneer brand 3368A | 118  | 119        | 112          | 98          | 142    |
| Y                | 2X    | N.K. PX91           | 116  | 122        | 112          | 103         | 125    |

**Table 6. Corn: Yield and other characteristics of medium-season hybrids evaluated for 3 years (1975-77)**

|       |       |               |       |       |                 |            |                     |                     | Grain<br>moisture<br>at<br>harvest |
|-------|-------|---------------|-------|-------|-----------------|------------|---------------------|---------------------|------------------------------------|
| Color | Cross | Hybrid        |       | Yield | Erect<br>plants | Ear<br>ht. | Quality             | Husk<br>cover       |                                    |
|       |       |               |       | Bu/A  | %               | In.        | Rating <sup>1</sup> | Rating <sup>1</sup> | %                                  |
| Y     | 2X    | Pioneer brand | 3147  | 138   | 88              | 56         | 4.4                 | 3.6                 | 21.5                               |
| W     | 3X    | DeKalb XL390A | —     | 128   | 86              | 58         | 3.9                 | 2.6                 | 21.3                               |
| Y     | 2X    | Pioneer brand | 3369A | 126   | 90              | 48         | 2.8                 | 4.1                 | 19.8                               |
| Y     | 2X    | P.A.G. SX17A  |       | 122   | 87              | 50         | 4.1                 | 3.7                 | 19.9                               |
| Y     | 2X    | DeKalb XL80   |       | 121   | 87              | 49         | 2.7                 | 2.7                 | 21.3                               |
| Y     | 2X    | DeKalb XL75   |       | 120   | 91              | 52         | 4.2                 | 3.8                 | 20.0                               |
| Y     | 2X    | DeKalb XL72B  |       | 119   | 91              | 46         | 3.9                 | 4.3                 | 20.4                               |
| Y     | M3X   | Pioneer brand | 3368A | 118   | 89              | 49         | 2.7                 | 3.5                 | 20.0                               |
| Y     | 2X    | N.K. PX91     |       | 116   | 92              | 54         | 3.0                 | 3.5                 | 20.4                               |

<sup>1</sup> Rating was based on a scale of 1 through 9 with 1 being excellent and 9 poor.

**Table 7. Corn: Yield and other characteristics of 40 medium-season hybrids evaluated at Crossville in 1977<sup>1</sup>**

| Color        | Cross | Hybrid                 | Yield | Erect plants | Husk cover rating | Ear ht. | Grain moisture at harvest |
|--------------|-------|------------------------|-------|--------------|-------------------|---------|---------------------------|
|              |       |                        | Bu/A  |              | (1-9)             | In.     | %                         |
| Y            | 2X    | Pioneer brand 3184     | 110   | 97           | 5.0               | 58      | 23.1                      |
| Y            | 2X    | Funk G-4636            | 98    | 92           | 3.0               | 55      | 22.2                      |
| Y            | 2X    | N.K. PX91              | 94    | 93           | 3.0               | 64      | 21.8                      |
| Y            | 2X    | FFR 744C               | 93    | 74           | 3.0               | 56      | 19.6                      |
| Y            | 2X    | Princeton SX840        | 93    | 97           | 3.0               | 62      | 22.4                      |
| Y            | 2X    | Pioneer brand 3147     | 91    | 88           | 3.5               | 62      | 22.5                      |
| Y            | 2X    | RA 1502                | 91    | 94           | 3.0               | 55      | 22.0                      |
| Y            | 2X    | DeKalb XL75            | 90    | 88           | 3.5               | 54      | 20.9                      |
| Y            | 2X    | FFR 891C               | 89    | 81           | 3.0               | 56      | 22.3                      |
| Y            | 2X    | Golden Harvest H-2666  | 88    | 84           | 3.0               | 50      | 20.6                      |
| Y            | 2X    | Golden Harvest H-2650  | 85    | 76           | 4.0               | 56      | 20.7                      |
| Y            | 3X    | Trojan TX119A          | 84    | 84           | 3.5               | 55      | 20.4                      |
| Y            | 2X    | Golden Acres T.E. 6995 | 82    | 82           | 3.0               | 56      | 19.5                      |
| Y            | 2X    | Funk G-4507            | 82    | 75           | 3.0               | 53      | 20.0                      |
| Y            | 2X    | DeKalb XL80            | 80    | 91           | 3.0               | 53      | 21.4                      |
| Y            | 2X    | Wilstar 9990           | 80    | 80           | 3.0               | 60      | 23.3                      |
| Y            | 2X    | Funk G-4520            | 80    | 93           | 3.0               | 53      | 20.6                      |
| Y            | M2X   | T4021                  | 80    | 52           | 3.5               | 66      | 21.6                      |
| Y            | 2X    | Seedkem SX86           | 79    | 91           | 3.5               | 56      | 20.4                      |
| Y            | 2X    | N.K. PX79              | 79    | 62           | 3.0               | 52      | 20.6                      |
| Y            | 2X    | Trojan TXS115A         | 78    | 80           | 3.0               | 52      | 19.8                      |
| Y            | 2X    | DeKalb XL72B           | 76    | 99           | 4.0               | 48      | 21.0                      |
| Y            | M2X   | Funk G-4776            | 76    | 87           | 4.0               | 64      | 21.6                      |
| Y            | 2X    | McCurdy 72-44A         | 76    | 79           | 3.0               | 62      | 22.3                      |
| Y            | 2X    | Trojan TXS114          | 74    | 85           | 2.5               | 58      | 19.8                      |
| Y            | 2X    | Funk G-4574            | 74    | 78           | 3.5               | 55      | 20.2                      |
| Y            | M2X   | RA2502                 | 74    | 80           | 3.0               | 49      | 22.6                      |
| W            | 3X    | DeKalb XL390A          | 73    | 74           | 3.0               | 63      | 21.6                      |
| Y            | 2X    | Pioneer brand 3369A    | 73    | 78           | 4.5               | 57      | 20.7                      |
| Y            | 2X    | Asgrow RX101           | 70    | 64           | 3.0               | 58      | 20.8                      |
| Y            | M2X   | Pioneer brand 3364     | 68    | 86           | 2.5               | 56      | 20.8                      |
| Y            | 2X    | P.A.G. SX98            | 67    | 88           | 3.5               | 50      | 21.1                      |
| Y            | M3X   | Pioneer brand 3368A    | 67    | 83           | 2.5               | 59      | 21.4                      |
| Y            | 2X    | P.A.G. 357             | 65    | 74           | 3.0               | 55      | 20.5                      |
| Y            | M2X   | DeKalb XL75A           | 65    | 80           | 4.0               | 59      | 22.0                      |
| W            | 3X    | T 7300                 | 65    | 75           | 3.5               | 68      | 21.3                      |
| Y            | 3X    | Asgrow RX114           | 64    | 81           | 3.0               | 62      | 22.0                      |
| Y            | 2X    | P.A.G. SX17A           | 62    | 68           | 4.5               | 56      | 20.0                      |
| Y            | 2X    | Golden acres T.E. 6992 | 59    | 63           | 3.0               | 53      | 20.4                      |
| W            | 3X    | T 7100                 | 53    | 72           | 2.5               | 64      | 22.2                      |
| L.S.D. (.05) |       |                        | 24.6  | —            | —                 | —       | —                         |
| C.V. %       |       |                        | 24.1  | —            | —                 | —       | —                         |

<sup>1</sup> Hartsells loam (2% to 5% slopes).

**Table 8. Corn: Yield and other characteristics of medium-season hybrid evaluated at Crossville for 2 years (1976-77)**

| Co. or | Cross | Hybrid              | Yield | Erect  | Husk   | Ear | Grain    |
|--------|-------|---------------------|-------|--------|--------|-----|----------|
|        |       |                     |       | plants | cover  |     | moisture |
|        |       |                     | Bu/A  | %      | Rating | ln. | at       |
| Y      | 2X    | Pioneer brand 3184  | 129   | 98     | 4.0    | 58  | harvest  |
| Y      | 2X    | Princeton SX840     | 116   | 96     | 3.5    | 59  | %        |
| Y      | 2X    | N.K. PX 91          | 111   | 88     | 3.5    | 62  |          |
| Y      | 2X    | FFR 744C            | 110   | 84     | 3.0    | 58  |          |
| Y      | 2X    | RA1502              | 108   | 96     | 3.0    | 54  |          |
| Y      | 2X    | Pioneer brand 3147  | 109   | 81     | 3.8    | 62  |          |
| Y      | 2X    | DeKalb XL80         | 106   | 92     | 3.0    | 52  |          |
| Y      | 2X    | Funk G-4520         | 105   | 91     | 3.0    | 50  |          |
| Y      | 2X    | N.K. PX79           | 104   | 80     | 2.5    | 57  |          |
| Y      | M2X   | DeKalb XL75A        | 101   | 86     | 3.5    | 58  |          |
| Y      | 2X    | DeKalb XL75         | 100   | 70     | 4.2    | 57  |          |
| Y      | 2X    | FFR891C             | 100   | 78     | 3.0    | 55  |          |
| Y      | 2X    | Trojan TXS114       | 99    | 73     | 2.2    | 55  |          |
| W      | 3X    | DeKalb XL390A       | 98    | 69     | 2.5    | 66  |          |
| Y      | 2X    | DeKalb XL72B        | 97    | 95     | 4.5    | 49  |          |
| Y      | 2X    | Pioneer brand 3369A | 97    | 78     | 3.8    | 54  |          |
| Y      | M2X   | Funk G-4776         | 95    | 76     | 3.5    | 61  |          |
| Y      | M2X   | RA2502              | 93    | 75     | 2.5    | 50  |          |
| Y      | 2X    | P.A.G. SX 17A       | 91    | 78     | 3.8    | 58  |          |
| Y      | M3X   | Pioneer brand 3368A | 85    | 63     | 2.8    | 56  |          |

**Table 9. Corn: Yield and other characteristics of medium-season hybrids evaluated at Crossville for 3 years (1975-77)**

| Color | Cross | Hybrid              | Yield | Erect  | Grain    |
|-------|-------|---------------------|-------|--------|----------|
|       |       |                     |       | plants | moisture |
|       |       |                     | Bu/A  | %      | at       |
| Y     | 2X    | N.K. PX 91          | 120   | 86     | harvest  |
| Y     | 2X    | Pioneer brand 3147  | 116   | 78     | %        |
| Y     | 2X    | DeKalb XL-80        | 114   | 86     |          |
| Y     | 2X    | DeKalb XL-75        | 114   | 76     |          |
| W     | 3X    | DeKalb XL-390A      | 112   | 73     |          |
| Y     | 2X    | P.A.G. SX 17A       | 110   | 82     |          |
| Y     | 2X    | Pioneer brand 3369A | 110   | 81     |          |
| Y     | 2X    | DeKalb XL-72B       | 110   | 92     |          |
| Y     | M3X   | Pioneer brand 3368A | 101   | 69     |          |

**Table 10. Corn: Yields of 36 full-season hybrids evaluated at four locations in 1977**

| Color            | Cross | Hybrid                 | Avg. <sup>1</sup> | Knox-ville <sup>2</sup> | Spring Hill <sup>3</sup> | Ames Plantation <sup>4</sup> | Jackson <sup>5</sup> |
|------------------|-------|------------------------|-------------------|-------------------------|--------------------------|------------------------------|----------------------|
| Bushels per acre |       |                        |                   |                         |                          |                              |                      |
| Y                | 2X    | Pioneer brand 3147     | 107               | 98                      | 96                       | 127                          | 100                  |
| Y                | 2X    | Funk G-4848            | 105               | 111                     | 89                       | 107                          | 97                   |
| Y                | 2X    | Paymaster UC-9792      | 105               | 99                      | 94                       | 118                          | 105                  |
| Y                | 3X    | Pioneer brand 3145     | 101               | 94                      | 95                       | 122                          | 89                   |
| Y                | 3X    | DeKalb XL-394          | 98                | 111                     | 82                       | 117                          | 80                   |
| Y                | 3X    | Coker 22               | 98                | 92                      | 87                       | 118                          | 95                   |
| Y                | 3X    | RA 3602                | 97                | 97                      | 89                       | 110                          | 91                   |
| Y                | 3X    | N.K. PX 723            | 97                | 95                      | 87                       | 103                          | 98                   |
| W                | 2X    | Zimmerman -11W         | 97                | 104                     | 91                       | 104                          | 77                   |
| W                | 2X    | Princeton SX-910       | 96                | 119                     | 86                       | 91                           | 88                   |
| W                | 3X    | FFR 929W               | 95                | 99                      | 82                       | 110                          | 88                   |
| Y                | 4X    | Pioneer brand 3179     | 95                | 89                      | 92                       | 126                          | 74                   |
| Y                | 2X    | Paymaster UC-12052     | 95                | 100                     | 86                       | 107                          | 91                   |
| Y                | M2X   | RA 2601                | 94                | 89                      | 91                       | 102                          | 88                   |
| Y                | 2X    | Golden Harvest H-2775  | 94                | 99                      | 75                       | 103                          | 96                   |
| Y                | 2X    | DeKalb XL 80A          | 94                | 100                     | 82                       | 95                           | 98                   |
| Y                | 2X    | N.K. PX 95             | 93                | 90                      | 83                       | 121                          | 88                   |
| Y                | 4X    | Tenn. 608              | 92                | 88                      | 83                       | 91                           | 99                   |
| Y                | 2X    | Becks 87 MDM           | 92                | 89                      | 85                       | 108                          | 82                   |
| Y                | 3X    | FFR 914C               | 91                | 88                      | 91                       | 91                           | 91                   |
| Y                | 2X    | Wilstar 9997           | 89                | 89                      | 84                       | 83                           | 95                   |
| W                | 4X    | Tenn. 505              | 88                | 84                      | 85                       | 92                           | 90                   |
| W                | 2X    | McNair X233            | 88                | 101                     | 74                       | 106                          | 73                   |
| W                | M3X   | Funk G-4747W           | 88                | 94                      | 81                       | 101                          | 76                   |
| Y                | 2X    | McNair X300            | 88                | 87                      | 75                       | 97                           | 93                   |
| Y                | 2X    | Golden Acres T.E. 6947 | 88                | 86                      | 79                       | 93                           | 90                   |
| Y                | 2X    | Coker 18               | 88                | 86                      | 78                       | 82                           | 100                  |
| Y                | 3X    | N.K. PX 737            | 87                | 85                      | 78                       | 99                           | 85                   |
| W                | 4X    | Pioneer brand 511A     | 86                | 95                      | 95                       | 84                           | 73                   |
| Y                | M2X   | Paymaster UC-11982     | 86                | 94                      | 67                       | 101                          | 78                   |
| W                | M2X   | RA 2602-W              | 85                | 89                      | 77                       | 95                           | 76                   |
| W                | 2X    | Golden Harvest H-2660W | 85                | 84                      | 76                       | 113                          | 71                   |
| Y                | 4X    | Coker 56               | 80                | 87                      | 69                       | 92                           | 74                   |
| W                | 3X    | Asgrow RX403W          | 79                | 92                      | 79                       | 73                           | 68                   |
| Y                | 2X    | Seedkem SKX98MF        | 77                | 86                      | 66                       | 81                           | 81                   |
| Y                | 4X    | Tenn. 606              | 70                | 72                      | 68                       | 85                           | 55                   |
| L.S.D. (.05)     |       |                        | 13.2              | 15.7                    | 16.0                     | 21.8                         | 18.3                 |
| C.V. %           |       |                        | 20.6              | 5.4                     | 13.8                     | 15.3                         | 18.7                 |

<sup>1</sup> Jackson yields are average of six replications. When yields were analyzed across locations only four replicates were used because all other location had only four replications.

<sup>2</sup> Sequatchie silt loam (2% to 5% slopes).

<sup>3</sup> Maury silt loam (2% to 5% slope).

<sup>4</sup> Memphis silt loam (2% to 5% slope).

<sup>5</sup> Loring and Dexter silt loam (0% to 2% slopes).

**Table 11. Corn: Yield and other characteristics of 36 full-season hybrids evaluated at four locations in 1977**

| Color        | Cross | Hybrid                 | Yield | Erect plants | Grain quality | Husk cover | Ear ht. | Grain moisture at harvest |
|--------------|-------|------------------------|-------|--------------|---------------|------------|---------|---------------------------|
|              |       |                        |       | Bu/A         | %             | Rating     | Rating  | In. %                     |
| Y            | 2X    | Pioneer brand 3147     | 107   | 81           | 4.0           | 2.3        | 52      | 17.1                      |
| Y            | 2X    | Funk G-4848            | 105   | 98           | 3.2           | 2.3        | 51      | 19.4                      |
| Y            | 2X    | Paymaster UC-9792      | 105   | 84           | 2.5           | 3.1        | 50      | 17.4                      |
| Y            | 3X    | Pioneer brand 3145     | 101   | 95           | 3.0           | 2.0        | 52      | 17.8                      |
| Y            | 3X    | DeKalb XL-394          | 98    | 93           | 2.8           | 3.3        | 53      | 18.2                      |
| Y            | 3X    | Coker 22               | 98    | 86           | 3.8           | 2.0        | 50      | 17.1                      |
| Y            | 3X    | RA 3602                | 97    | 88           | 3.2           | 3.2        | 53      | 17.3                      |
| Y            | 3X    | N.K. PX 723            | 97    | 91           | 3.5           | 3.0        | 56      | 17.3                      |
| W            | 2X    | Zimmerman Z-11W        | 97    | 87           | 3.8           | 2.7        | 53      | 18.0                      |
| W            | 2X    | Princeton SX-910       | 96    | 90           | 3.2           | 2.7        | 56      | 18.2                      |
| W            | 3X    | FFR 929W               | 95    | 91           | 3.5           | 2.5        | 55      | 17.9                      |
| Y            | 4X    | Pioneer brand 3179     | 95    | 83           | 3.5           | 3.0        | 51      | 16.6                      |
| Y            | 2X    | Paymaster UC-12052     | 95    | 97           | 3.5           | 1.7        | 54      | 18.7                      |
| Y            | M2X   | RA 2601                | 94    | 91           | 3.0           | 2.8        | 48      | 19.8                      |
| Y            | 2X    | Golden Harvest H-2775  | 94    | 92           | 3.0           | 2.8        | 47      | 17.9                      |
| Y            | 2X    | DeKalb XL-80A          | 94    | 86           | 3.8           | 4.2        | 46      | 17.8                      |
| Y            | 2X    | N.K. PX 95             | 93    | 95           | 4.8           | 2.7        | 56      | 17.7                      |
| Y            | 4X    | Tenn. 608              | 92    | 79           | 2.8           | 2.5        | 55      | 17.4                      |
| Y            | 2X    | Becks 87 MDM           | 92    | 88           | 3.0           | 2.7        | 54      | 16.5                      |
| Y            | 3X    | FFR 914C               | 91    | 90           | 3.5           | 3.8        | 44      | 17.7                      |
| Y            | 2X    | Wistar 9997            | 89    | 89           | 2.8           | 2.5        | 50      | 19.5                      |
| W            | 4X    | Tenn. 505              | 88    | 76           | 3.8           | 3.3        | 54      | 16.6                      |
| W            | 2X    | McNair X233            | 88    | 86           | 3.5           | 2.0        | 57      | 18.2                      |
| W            | M3X   | Funk G-4747W           | 88    | 81           | 3.8           | 2.2        | 58      | 17.8                      |
| Y            | 2X    | McNair X300            | 88    | 90           | 3.0           | 3.7        | 44      | 17.9                      |
| Y            | 2X    | Golden acres T.E. 6947 | 88    | 86           | 3.0           | 3.0        | 51      | 17.4                      |
| Y            | 2X    | Coker 18               | 88    | 78           | 3.2           | 2.0        | 45      | 17.4                      |
| Y            | 3X    | N.K. PX 737            | 87    | 87           | 2.8           | 2.8        | 56      | 17.5                      |
| W            | 4X    | Pioneer brand 511A     | 86    | 63           | 3.8           | 2.0        | 50      | 17.5                      |
| Y            | M2X   | Paymaster UC-11982     | 86    | 96           | 4.0           | 2.8        | 51      | 20.3                      |
| W            | M2X   | RA 2602-W              | 85    | 85           | 3.8           | 2.3        | 53      | 17.7                      |
| W            | 2X    | Golden Harvest H-2660W | 85    | 88           | 3.2           | 3.0        | 54      | 18.2                      |
| Y            | 4X    | Coker 56               | 80    | 87           | 3.2           | 2.7        | 54      | 18.6                      |
| W            | 3X    | Asgrow RX 403W         | 79    | 86           | 3.2           | 2.0        | 56      | 19.3                      |
| Y            | 2X    | Seedkem SKX98MF        | 77    | 78           | 3.5           | 5.3        | 38      | 17.1                      |
| Y            | 4X    | Tenn. 606              | 70    | 66           | 4.0           | 2.5        | 56      | 17.3                      |
| L.S.D. (.05) |       |                        | 13.2  | —            | —             | —          | —       | —                         |
| C.V. %       |       |                        | 20.6  | —            | —             | —          | —       | —                         |

**Table 12. Corn: Yields of full-season hybrids evaluated at four locations for a 2-year period (1976-77)**

| Color            | Cross | Hybrid                             | Avg. | Knox-<br>ville | Spring<br>Hill | Ames<br>Plantation | Jackson |
|------------------|-------|------------------------------------|------|----------------|----------------|--------------------|---------|
| Bushels per acre |       |                                    |      |                |                |                    |         |
| Y                | 2X    | Pioneer brand 3147                 | 119  | 131            | 116            | 123                | 105     |
| Y                | 2X    | Funk G-4848                        | 115  | 139            | 113            | 107                | 100     |
| W                | 3X    | FFR929W                            | 107  | 126            | 103            | 110                | 91      |
| W                | 2X    | Zimmerman Z-11W                    | 107  | 128            | 106            | 111                | 82      |
| Y                | 3X    | Pioneer brand 3145                 | 107  | 119            | 107            | 107                | 93      |
| Y                | 3X    | DeKalb XL 394                      | 105  | 130            | 98             | 109                | 84      |
| W                | 2X    | Princeton SX 910                   | 104  | 140            | 95             | 91                 | 88      |
| W                | 2X    | Golden Harvest H-2660W             | 104  | 122            | 98             | 110                | 84      |
| Y                | 2X    | McNair X300                        | 101  | 117            | 90             | 104                | 94      |
| Y                | 2X    | DeKalb XL 80A                      | 100  | 126            | 92             | 90                 | 94      |
| W                | M2X   | RA 2602-W                          | 100  | 122            | 94             | 106                | 79      |
| Y                | 4X    | Tenn. 608                          | 100  | 112            | 100            | 95                 | 91      |
| W                | 4X    | Pioneer brand 511A                 | 98   | 118            | 103            | 92                 | 78      |
| W                | 4X    | Tenn. 505                          | 95   | 110            | 93             | 94                 | 83      |
| Y                | 4X    | Coker 56                           | 93   | 106            | 89             | 98                 | 78      |
| W                | 3X    | Asgrow RX 403W                     | 92   | 113            | 94             | 81                 | 78      |
| Y                | 4X    | Tenn. 606                          | 84   | 100            | 86             | 82                 | 67      |
| Y                | 2X    | Golden Harvest H-2775 <sup>1</sup> | 97   | 122            | 73             | 88                 | 105     |

<sup>1</sup> 1975-77 data.

**Table 13. Corn: Yield and other characteristics of full-season hybrids evaluated at four locations for a 2-year period**

| Color | Cross | Hybrid                             | Avg. | Erect plants | Grain quality | Husk cover | Ear ht. | Grain moisture at harvest |
|-------|-------|------------------------------------|------|--------------|---------------|------------|---------|---------------------------|
|       |       |                                    |      | Bu/A         | %             | Rating     | Rating  | In. %                     |
| Y     | 2X    | Pioneer brand 3147                 | 119  | 89           | 4.0           | 2.9        | 54      | 18.4                      |
| Y     | 2X    | Funk G-4848                        | 115  | 98           | 2.8           | 2.6        | 53      | 21.4                      |
| W     | 3X    | FFR929W                            | 107  | 94           | 3.2           | 2.8        | 57      | 19.6                      |
| W     | 2X    | Zimmerman Z-11W                    | 107  | 92           | 3.4           | 2.8        | 57      | 19.6                      |
| Y     | 3X    | Pioneer brand 3145                 | 107  | 97           | 3.0           | 2.4        | 54      | 19.6                      |
| Y     | 3X    | DeKalb XL-394                      | 105  | 96           | 2.9           | 3.2        | 58      | 19.9                      |
| W     | 2X    | Princeton SX 910                   | 104  | 94           | 3.1           | 2.5        | 56      | 19.8                      |
| W     | 2X    | Golden Harvest H-2660W             | 104  | 93           | 3.1           | 3.1        | 57      | 19.6                      |
| Y     | 2X    | McNair 300                         | 101  | 93           | 3.2           | 3.5        | 47      | 19.8                      |
| Y     | 2X    | DeKalb XL-80A                      | 100  | 92           | 3.6           | 4.1        | 48      | 20.0                      |
| W     | M2X   | RA 2602-W                          | 100  | 91           | 3.2           | 2.6        | 55      | 19.4                      |
| Y     | 4X    | Tenn. 608                          | 100  | 88           | 2.9           | 2.8        | 60      | 19.4                      |
| W     | 4X    | Pioneer brand 511A                 | 98   | 79           | 3.6           | 2.2        | 53      | 19.2                      |
| W     | 4X    | Tenn. 505                          | 95   | 82           | 3.4           | 3.0        | 56      | 19.2                      |
| Y     | 4X    | Coker 56                           | 93   | 91           | 2.8           | 3.2        | 55      | 20.6                      |
| W     | 3X    | Asgrow RX403W                      | 92   | 90           | 3.4           | 2.2        | 59      | 21.2                      |
| Y     | 4X    | Tenn. 606                          | 84   | 77           | 3.5           | 2.9        | 59      | 18.9                      |
| Y     | 2X    | Golden Harvest H-2775 <sup>1</sup> | 97   | 79           | 2.9           | 3.2        | 50      | 19.8                      |

<sup>1</sup> 1975 and 77 data.

**Table 14. Corn: Yields of full-season hybrids evaluated at four locations for a 3-year period (1975-77)**

| Color | Cross | Hybrid                 | Avg. | Knox-ville       | Spring Hill | Ames Plantation | Jackson |
|-------|-------|------------------------|------|------------------|-------------|-----------------|---------|
|       |       |                        |      | Bushels per acre |             |                 |         |
| Y     | 2X    | Pioneer brand 3147     | 123  | 142              | 116         | 123             | 113     |
| Y     | 3X    | DeKalb XL-394          | 112  | 137              | 99          | 111             | 100     |
| W     | 2X    | Golden Harvest H-2660W | 108  | 131              | 100         | 106             | 95      |
| Y     | 3X    | Pioneer brand 3145     | 107  | 127              | 99          | 105             | 98      |
| W     | 2X    | Princeton SX-910       | 107  | 147              | 98          | 86              | 96      |
| Y     | 4X    | Tenn. 608              | 106  | 128              | 101         | 98              | 98      |
| Y     | 2X    | McNair X 300           | 101  | 124              | 88          | 92              | 94      |
| W     | 4X    | Tenn. 505              | 100  | 119              | 92          | 94              | 94      |
| W     | 4X    | Pioneer brand 511A     | 98   | 129              | 97          | 88              | 79      |
| Y     | 4X    | Coker 56               | 98   | 118              | 88          | 94              | 90      |
| Y     | 4X    | Tenn. 606              | 93   | 119              | 90          | 82              | 80      |

**Table 15. Corn: Yield and other characteristics of full-season hybrids evaluated at four locations for a 3-year period (1975-77)**

| Color | Cross | Hybrid                 | Avg. | Erect  | Grain   | Husk   | Ear | Grain    |         |
|-------|-------|------------------------|------|--------|---------|--------|-----|----------|---------|
|       |       |                        |      | plants | quality | cover  |     | moisture | at      |
|       |       |                        | Bu/A | %      | Rating  | Rating | In. | %        | harvest |
| Y     | 2X    | Pioneer brand 3147     | 123  | 89     | 4.5     | 3.5    | 56  | 19.3     |         |
| Y     | 3X    | DeKalb XL-394          | 112  | 95     | 2.9     | 3.1    | 61  | 20.7     |         |
| W     | 2X    | Golden Harvest H-2660W | 108  | 87     | 3.0     | 2.8    | 59  | 20.2     |         |
| Y     | 3X    | Pioneer brand 3145     | 107  | 97     | 2.8     | 2.6    | 56  | 20.3     |         |
| W     | 2X    | Princeton SX-910       | 107  | 90     | 3.1     | 2.4    | 58  | 20.4     |         |
| Y     | 4X    | Tenn. 608              | 106  | 86     | 2.9     | 3.0    | 61  | 20.2     |         |
| Y     | 2X    | McNair X 300           | 101  | 85     | 3.2     | 3.6    | 49  | 20.6     |         |
| W     | 4X    | Tenn. 505              | 100  | 83     | 3.6     | 3.0    | 58  | 20.3     |         |
| W     | 4X    | Pioneer brand 511A     | 98   | 77     | 3.4     | 2.2    | 55  | 20.1     |         |
| Y     | 4X    | Coker 56               | 98   | 91     | 2.8     | 3.3    | 55  | 21.5     |         |
| Y     | 4X    | Tenn. 606              | 93   | 75     | 3.3     | 3.4    | 60  | 19.8     |         |

**Table 16. Corn: Yield and other characteristic of 40 hybrids in a preliminary test at Knoxville in 1977<sup>1</sup>**

| Color        | Cross | Hybrid               | Yield | Erect plants | Quality      | Husk cover   | Ear ht. | Grain moisture at harvest |
|--------------|-------|----------------------|-------|--------------|--------------|--------------|---------|---------------------------|
|              |       |                      |       |              |              |              |         | %                         |
|              |       |                      | Bu/A  | %            | Rating (1-9) | Rating (1-9) | In.     | %                         |
| Y            | 2X    | McCurdy 76-92        | 126   | 94           | 4.3          | 3.0          | 51      | 22.2                      |
| Y            | 3X    | McCurdy 75-210       | 125   | 96           | 2.0          | 3.5          | 60      | 23.2                      |
| Y            | 3X    | McNair S-338         | 124   | 86           | 3.0          | 3.0          | 54      | 21.9                      |
| Y            | 2X    | McCurdy 75-200       | 123   | 89           | 2.7          | 3.5          | 60      | 25.0                      |
| W            | 3X    | N.K. PX 718W         | 120   | 95           | 2.7          | 3.0          | 62      | 21.9                      |
| Y            | 2X    | Seedkem SKX68M       | 117   | 94           | 3.0          | 3.5          | 48      | 17.8                      |
| Y            | 2X    | Paymaster UC8951     | 117   | 84           | 3.7          | 3.5          | 48      | 21.4                      |
| Y            | 2X    | Premier 688          | 115   | 92           | 3.0          | 3.5          | 46      | 21.6                      |
| Y            | 2X    | Funk 6-27970         | 114   | 96           | 3.0          | 4.0          | 45      | 23.6                      |
| Y            | 3X    | RA3502               | 113   | 83           | 3.0          | 4.0          | 44      | 19.3                      |
| Y            | 2X    | McCurdy 76           | 113   | 89           | 2.7          | 3.0          | 54      | 22.2                      |
| Y            | 3X    | FFR Exp. 2487        | 113   | 95           | 4.0          | 5.0          | 45      | 21.0                      |
| Y            | 2X    | Pioneer brand 3369A  | 112   | 93           | 3.0          | 5.0          | 48      | 19.0                      |
| Y            | M2X   | Trojan TXS113        | 112   | 95           | 2.7          | 5.0          | 45      | 20.1                      |
| Y            | 2X    | Becks 88X            | 111   | 88           | 2.3          | 3.5          | 45      | 21.2                      |
| Y            | 2X    | Zimmerman Z-20-Y     | 111   | 90           | 5.0          | 5.5          | 50      | 20.8                      |
| Y            | 2X    | Wilstar 7782         | 111   | 93           | 2.7          | 4.0          | 48      | 20.0                      |
| Y            | 3X    | Wilstar 7676         | 110   | 82           | 3.3          | 5.0          | 45      | 20.8                      |
| Y            | 3X    | FFR Exp. 2306        | 109   | 84           | 4.7          | 4.0          | 44      | 19.8                      |
| Y            | 2X    | Becks 8812           | 106   | 96           | 2.7          | 3.0          | 34      | 20.6                      |
| Y            | 2X    | Becks 6527           | 105   | 70           | 4.0          | 4.5          | 44      | 21.0                      |
| Y            | 2X    | Funk G-27794         | 105   | 92           | 3.3          | 2.0          | 62      | 25.0                      |
| Y            | 2X    | Dennis 37            | 105   | 77           | 3.7          | 3.0          | 44      | 19.8                      |
| Y            | 2X    | O'S Gold SX3344      | 104   | 66           | 3.7          | 3.0          | 44      | 19.0                      |
| Y            | 2X    | O'S Gold SX5500A     | 103   | 87           | 5.0          | 4.0          | 46      | 19.5                      |
| Y            | M2X   | Super Crost 6800     | 103   | 93           | 4.0          | 2.5          | 40      | 22.0                      |
| Y            | SP3X  | Funk G-28189         | 102   | 88           | 3.0          | 2.5          | 59      | 23.8                      |
| Y            | 2X    | Asgrow RX90          | 101   | 83           | 4.7          | 4.0          | 46      | 19.9                      |
| Y            | 4X    | FFR Exp. 2344        | 101   | 75           | 4.7          | 4.5          | 40      | 19.1                      |
| Y            | 3X    | P.A.G. 644W          | 100   | 93           | 3.3          | 4.0          | 45      | 21.6                      |
| Y            | 2X    | Dennis 48            | 100   | 95           | 3.7          | 5.5          | 39      | 19.0                      |
| Y            | 2X    | Golden Acre T.E.6968 | 99    | 86           | 3.0          | 4.5          | 42      | 19.5                      |
| Y            | 2X    | Super Crost 5440     | 99    | 98           | 4.3          | 3.5          | 44      | 19.4                      |
| Y            | 3X    | FFR Exp. 2118        | 98    | 80           | 5.0          | 3.5          | 44      | 20.3                      |
| Y            | 2X    | Dennis 31            | 98    | 77           | 3.7          | 3.5          | 44      | 18.8                      |
| W            | M2X   | Funk G-28236         | 97    | 90           | 3.0          | 3.0          | 58      | 23.0                      |
| Y            | 2X    | Trojan T1120         | 97    | 90           | 3.3          | 4.0          | 46      | 20.2                      |
| Y            | M2X   | Super Crost 5440A    | 97    | 92           | 3.7          | 4.5          | 52      | 20.2                      |
| Y            | 2X    | Funk G-4321A         | 96    | 88           | 3.7          | 4.5          | 35      | 16.7                      |
| Y            | 2X    | Funk G-4628          | 89    | 96           | 3.0          | 5.0          | 42      | 22.2                      |
| L.S.D. (.05) |       |                      | 15.2  | —            | —            | —            | —       | —                         |
| C.V. %       |       |                      | 10.1  | —            | —            | —            | —       | —                         |

<sup>1</sup> Sequatchie loam (2% to 5% slopes).

**Table 17. Corn: Yield of 20 early maturing hybrids evaluated at four locations in 1977**

| Color        | Cross | Hybrid                | Avg. | Knox-<br>ville <sup>1</sup> | Cross-<br>ville <sup>2</sup> | Martin <sup>3</sup> | Ames<br>Planta-<br>tion |
|--------------|-------|-----------------------|------|-----------------------------|------------------------------|---------------------|-------------------------|
|              |       |                       | Bu/A |                             |                              |                     |                         |
| Y            | 2X    | Zimmerman Z24Y        | 120  | 129                         | 107                          | 148                 | 95                      |
| Y            | 2X    | Wilstar 6663          | 118  | 116                         | 122                          | 146                 | 88                      |
| Y            | 2X    | Golden Harvest H-2600 | 114  | 125                         | 117                          | 138                 | 76                      |
| Y            | 2X    | McCurdy 84A           | 112  | 132                         | 98                           | 138                 | 79                      |
| Y            | 2X    | DeKalb XL72AA         | 111  | 114                         | 113                          | 140                 | 78                      |
| Y            | 2X    | McCurdy MSX 70        | 111  | 115                         | 103                          | 137                 | 90                      |
| Y            | 2X    | Funk G-4507           | 109  | 103                         | 110                          | 120                 | 105                     |
| Y            | 2X    | RA1501                | 109  | 111                         | 100                          | 140                 | 83                      |
| Y            | 2X    | P.A.G. 314            | 105  | 99                          | 108                          | 138                 | 75                      |
| Y            | 2X    | Funk G-4449           | 105  | 98                          | 105                          | 124                 | 91                      |
| Y            | 2X    | Seedkem SKX76         | 104  | 112                         | 105                          | 135                 | 66                      |
| Y            | 2X    | FFR707C               | 103  | 95                          | 104                          | 126                 | 86                      |
| Y            | 2X    | Pioneer brand 3325A   | 102  | 115                         | 105                          | 120                 | 70                      |
| Y            | 2X    | Funk G-4525           | 102  | 108                         | 95                           | 114                 | 90                      |
| Y            | 2X    | McNair X-170          | 101  | 114                         | 107                          | 125                 | 58                      |
| Y            | 3X    | FFR 799C              | 100  | 108                         | 107                          | 118                 | 67                      |
| Y            | 2X    | Golden Harvest H-2500 | 98   | 109                         | 95                           | 122                 | 64                      |
| Y            | 2X    | DeKalb XL64B          | 96   | 106                         | 98                           | 108                 | 72                      |
| Y            | M2X   | DeKalb XL65B          | 93   | 101                         | 94                           | 116                 | 60                      |
| Y            | 2X    | Pioneer brand 3780    | 85   | 96                          | 98                           | 92                  | 56                      |
| L.S.D. (105) |       |                       |      | 15.4                        | N.S.                         | 12.1                | 20.4                    |
| C.V. %       |       |                       |      | 9.9                         | 12.5                         | 6.7                 | 18.7                    |

<sup>1</sup> Sequatchie loam (2% to 5% slopes).

<sup>2</sup> Hartselle loam (2% to 5% slopes).

<sup>3</sup> Collins silt loam (2% to 5% slopes).

<sup>4</sup> Memphis silt loam (2% to 5% slopes).

**Table 18. Corn: Yield and other characteristics of early maturing hybrids evaluated at four locations in 1977**

| Color | Corn | Hybrid                | Avg. | Erect<br>plants | Quality         | Husk<br>cover   | Ear<br>ht. | Grain<br>moisture<br>at<br>harvest |
|-------|------|-----------------------|------|-----------------|-----------------|-----------------|------------|------------------------------------|
|       |      |                       | Bu/A | %               | Rating<br>(1-9) | Rating<br>(1-9) | In.        | %                                  |
| Y     | 2X   | Zimmerman Z-24-Y      | 120  | 95              | 3.2             | 4.0             | 50         | 19.5                               |
| Y     | 2X   | Wilstar 6663          | 118  | 93              | 4.3             | 3.7             | 50         | 18.5                               |
| Y     | 2X   | Golden Harvest H-2600 | 114  | 97              | 3.5             | 3.9             | 48         | 18.3                               |
| Y     | 2X   | McCurdy 84A           | 112  | 94              | 4.7             | 3.8             | 51         | 20.5                               |
| Y     | 2X   | DeKalb XL72AA         | 111  | 95              | 4.2             | 4.0             | 48         | 19.0                               |
| Y     | 2X   | McCurdy MSX70         | 111  | 93              | 4.8             | 3.3             | 51         | 19.2                               |
| Y     | 2X   | Funk G-4507           | 109  | 92              | 4.8             | 4.3             | 48         | 19.0                               |
| Y     | 2X   | RA 1501               | 109  | 96              | 3.8             | 3.6             | 48         | 19.3                               |
| Y     | 2X   | P.A.G. 314            | 105  | 86              | 4.5             | 3.7             | 49         | 18.6                               |
| Y     | 2X   | Funk G-4449           | 105  | 92              | 4.3             | 4.0             | 43         | 18.6                               |
| Y     | 2X   | Seedkem SKX76         | 104  | 95              | 4.2             | 3.2             | 45         | 19.2                               |
| Y     | 2X   | FFR 707C              | 103  | 92              | 5.0             | 4.5             | 50         | 18.6                               |
| Y     | 2X   | Pioneer brand 3325A   | 102  | 96              | 4.2             | 3.5             | 44         | 20.0                               |
| Y     | 2X   | Funk G-4525           | 102  | 95              | 4.5             | 3.0             | 47         | 18.6                               |
| Y     | 2X   | McNair X-170          | 101  | 96              | 4.0             | 4.0             | 45         | 19.4                               |
|       | 3X   | FFR 799C              | 100  | 93              | 5.2             | 4.2             | 44         | 19.5                               |
| Y     | 2X   | Golden Harvest H-2500 | 98   | 94              | 4.3             | 3.5             | 50         | 19.1                               |
| Y     | 2X   | DeKalb XL64B          | 96   | 95              | 4.2             | 3.5             | 46         | 19.3                               |
| Y     | M2X  | DeKalb XL65B          | 93   | 93              | 5.0             | 4.5             | 48         | 19.4                               |
| Y     | 2X   | Pioneer brand 3780    | 85   | 86              | 5.0             | 5.3             | 39         | 17.2                               |

Table 19. Corn: Yield and other characteristics of 25 selected hybrids grown on Owens Bros. Farm, Humphreys County under virus conditions in 1977<sup>1</sup>

| rus conditions in 1977 |                        |               |                 |               |                       |                           |                 |         |       |                        |      |
|------------------------|------------------------|---------------|-----------------|---------------|-----------------------|---------------------------|-----------------|---------|-------|------------------------|------|
| Rank<br>in<br>yield    | Hybrid                 | Acre<br>yield | Virus reaction  |               |                       | Moisture<br>at<br>harvest | Erect<br>plants | Lodging |       | Ears per<br>100 plants |      |
|                        |                        |               | Diseased plants |               | Mean<br>sev.<br>index |                           |                 | Root    | Stalk | Total                  | Nubs |
|                        |                        |               | %               | Sev.<br>index |                       |                           |                 |         |       |                        |      |
|                        |                        | bu.           |                 | grade         | grade                 | %                         | %               | %       | %     | no.                    | no.  |
| 1                      | Pioneer brand 3147     | 131.1         | 12.5            | 3.5           | 1.4                   | 29.8                      | 93.0            | 0       | 7.0   | 95                     | 18   |
| 2                      | FFR 707C               | 127.6         | 2.9             | 2.0           | 1.1                   | 24.6                      | 96.2            | 0       | 3.8   | 99                     | 8    |
| 3                      | Pioneer brand 3179     | 123.2         | 40.4            | 3.0           | 1.8                   | 26.1                      | 89.2            | 2.7     | 8.1   | 96                     | 18   |
| 4                      | Funk G-4848            | 117.6         | 8.2             | 2.6           | 1.2                   | 29.7                      | 93.7            | 0.9     | 5.4   | 94                     | 25   |
| 5                      | DeKalb XL394           | 115.6         | 3.4             | 2.2           | 1.1                   | 30.6                      | 94.1            | 3.4     | 2.5   | 110                    | 39   |
| 6                      | Beck's 87MDM           | 114.7         | 21.3            | 2.9           | 1.4                   | 25.2                      | 90.7            | 0.8     | 8.5   | 107                    | 26   |
| 7                      | FFR 929W               | 113.3         | 18.9            | 4.3           | 1.7                   | 24.8                      | 86.3            | 2.6     | 11.1  | 91                     | 22   |
| 8                      | Tenn. 505              | 111.8         | 7.2             | 2.7           | 1.2                   | 29.1                      | 87.2            | 2.4     | 10.4  | 115                    | 48   |
| 9                      | RA 2601                | 111.8         | 42.8            | 4.0           | 2.3                   | 27.4                      | 77.8            | 0       | 22.2  | 91                     | 26   |
| 10                     | Funk G-4747W           | 110.7         | 16.6            | 3.2           | 1.3                   | 26.0                      | 90.1            | 0       | 9.9   | 86                     | 20   |
| 11                     | Princeton SX910        | 109.7         | 20.8            | 3.4           | 1.6                   | 25.8                      | 90.6            | 0       | 9.4   | 91                     | 21   |
| 12                     | P.A.G. SX-17A          | 108.3         | 14.2            | 3.6           | 1.4                   | 27.6                      | 85.0            | 5.0     | 10.0  | 96                     | 17   |
| 13                     | Funk G-4525            | 106.8         | 3.9             | 3.0           | 1.1                   | 20.2                      | 87.0            | 0       | 13.0  | 99                     | 15   |
| 14                     | Pioneer brand 3145     | 105.7         | 11.9            | 3.5           | 1.3                   | 28.3                      | 97.5            | 0       | 2.5   | 92                     | 25   |
| 15                     | DeKalb XL72B           | 104.8         | 4.7             | 2.0           | 1.1                   | 24.8                      | 93.3            | 1.0     | 5.7   | 105                    | 28   |
| 16                     | Pioneer brand 3364     | 103.7         | 20.7            | 3.4           | 1.6                   | 23.8                      | 87.3            | 0.8     | 11.9  | 94                     | 22   |
| 17                     | RA 2602 W              | 103.4         | 34.1            | 4.1           | 2.2                   | 24.4                      | 77.1            | 0.9     | 22.0  | 86                     | 28   |
| 18                     | RA 3602                | 99.5          | 29.1            | 3.8           | 2.2                   | 26.2                      | 85.8            | 0       | 14.2  | 98                     | 32   |
| 19                     | Tenn. 608              | 99.2          | 10.6            | 2.7           | 1.2                   | 28.5                      | 64.9            | 3.5     | 31.6  | 105                    | 31   |
| 20                     | Pioneer brand 3369A    | 98.7          | 53.3            | 3.9           | 2.8                   | 24.3                      | 73.9            | 3.5     | 22.6  | 94                     | 27   |
| 21                     | Golden Harvest H-2660W | 98.1          | 32.4            | 3.4           | 1.8                   | 27.6                      | 84.6            | 0       | 15.4  | 91                     | 23   |
| 22                     | Premier SX633A         | 87.9          | 61.8            | 4.1           | 3.0                   | 24.8                      | 85.6            | 0       | 14.4  | 85                     | 23   |
| 23                     | N.K. PX-79             | 87.5          | 48.2            | 4.2           | 2.8                   | 23.8                      | 73.1            | 0       | 26.9  | 85                     | 17   |
| 24                     | Wilstar 7676           | 84.0          | 50.0            | 4.0           | 2.6                   | 24.8                      | 73.4            | 0.9     | 25.7  | 88                     | 24   |
| 25                     | Tenn. 606              | 82.7          | 39.0            | 3.4           | 2.0                   | 28.6                      | 66.0            | 3.9     | 30.1  | 100                    | 38   |
|                        | Mean                   | 106.3         | 24.3            | 3.3           | 1.7                   | 26.3                      | 83.6            | 2.6     | 13.8  | 96                     | 25   |
|                        | L.S.D. (.05)           | 21.5          | 19.0            | 1.3           | 0.8                   |                           |                 |         |       |                        |      |
|                        | C.V. %                 | 14.4          | 55.7            | 27.4          | 32.2                  |                           |                 |         |       |                        |      |

<sup>1</sup> Data are means of four replications, except moisture from two replications.

Table 20. Mean virus reaction of corn hybrids grown in Humphreys County, Tennessee in 1977 <sup>1 2 3</sup>

| Hybrid                 | Diseased Plants |               | Mean<br>Sev.<br>index |
|------------------------|-----------------|---------------|-----------------------|
|                        | %               | Sev.<br>index |                       |
| Full-Season Hybrids    |                 |               |                       |
| Pioneer brand 511A     | 31.3            | 4.6           | 2.1                   |
| Pioneer brand 3145     | 23.7            | 3.1           | 1.5                   |
| Pioneer brand 3147     | 34.3            | 3.5           | 1.9                   |
| Pioneer brand 3179     | 54.3            | 3.3           | 2.2                   |
| DeKalb XL80A           | 94.6            | 4.7           | 4.5                   |
| DeKalb XL 394          | 36.1            | 3.5           | 1.9                   |
| Funk G-4747W           | 19.4            | 3.6           | 1.5                   |
| Funk G-4848            | 45.0            | 4.0           | 2.4                   |
| McNair X-233           | 25.0            | 3.3           | 1.6                   |
| McNair X-300           | 80.0            | 4.4           | 3.7                   |
| Coker 18               | 74.3            | 4.1           | 3.3                   |
| Coker 22               | 88.9            | 4.4           | 4.1                   |
| Coker 56               | 69.4            | 4.0           | 3.1                   |
| Golden Harvest H-2660W | 40.0            | 3.5           | 2.0                   |
| Golden Harvest H-2775  | 83.4            | 4.2           | 3.7                   |
| Golden Acres T.E. 6947 | 29.0            | 3.7           | 1.8                   |
| Princeton SX910        | 38.7            | 3.9           | 2.1                   |
| Asgrow RX403W          | 48.5            | 3.9           | 2.4                   |
| RA 2601                | 75.0            | 4.2           | 3.4                   |
| RA 2602-W              | 31.0            | 4.0           | 1.9                   |
| RA 3602                | 37.5            | 3.9           | 2.1                   |
| FFR 914C               | 55.6            | 4.3           | 2.9                   |
| FFR 929W               | 50.0            | 3.9           | 2.4                   |
| Zimmerman Z-11W        | 35.1            | 3.4           | 1.8                   |
| Wilstar 9997           | 88.9            | 4.5           | 4.1                   |
| N.K. PX95              | 56.1            | 4.8           | 3.1                   |
| N.K. PX23              | 23.1            | 3.2           | 1.5                   |
| N.K. PX737             | 32.1            | 3.7           | 1.9                   |
| Paymaster UC9792       | 57.9            | 3.7           | 2.6                   |
| Paymaster UC12052      | 90.0            | 5.0           | 4.6                   |
| Paymaster 11982        | 73.3            | 4.7           | 3.7                   |
| SeedKem 98MF           | 84.9            | 4.8           | 4.2                   |
| Becks 87MDM            | 23.7            | 3.6           | 1.6                   |
| Tenn. 505              | 14.3            | 3.4           | 1.3                   |
| Tenn. 606              | 23.3            | 4.4           | 1.7                   |
| Tenn. 608              | 14.7            | 3.4           | 1.4                   |
| Medium-Season Hybrids  |                 |               |                       |
| Pioneer brand 3147     | 19.4            | 3.4           | 1.5                   |
| Pioneer brand 3184     | 40.0            | 4.9           | 2.5                   |
| Pioneer brand 3364     | 55.3            | 3.3           | 2.3                   |
| Pioneer brand 3368A    | 88.2            | 4.6           | 4.2                   |
| Pioneer brand 3369A    | 79.3            | 4.7           | 3.9                   |

Table 20 continued

| Hybrid                        | Diseased Plants |               | Mean<br>Sev.<br>index |
|-------------------------------|-----------------|---------------|-----------------------|
|                               | %               | Sev.<br>index |                       |
| DeKalb XL72B                  | 11.5            | 3.7           | 1.3                   |
| DeKalb XL75                   | 62.5            | 4.4           | 3.1                   |
| DeKalb XL75A                  | 90.0            | 5.4           | 5.0                   |
| DeKalb XL80                   | 88.2            | 4.5           | 4.1                   |
| DeKalb XL390A                 | 59.5            | 4.0           | 2.8                   |
| Funk G-4507                   | 90.0            | 5.5           | 5.1                   |
| Funk G-4520                   | 100.0           | 5.0           | 5.0                   |
| Funk G-4574                   | 91.3            | 4.9           | 4.5                   |
| Funk G-4636                   | 100.0           | 7.0           | 7.0                   |
| Funk G-4776                   | 22.7            | 4.0           | 1.7                   |
| P.A.G. SX17A                  | 50.0            | 3.8           | 2.4                   |
| P.A.G. SX98                   | 80.0            | 4.4           | 3.7                   |
| P.A.G. 357                    | 80.0            | 4.2           | 3.5                   |
| McCurdy 72-44A                | 84.9            | 4.5           | 4.0                   |
| Princeton SX840               | 84.9            | 5.1           | 4.5                   |
| RA 1502                       | 88.0            | 5.0           | 4.5                   |
| RA 2502                       | 72.0            | 4.4           | 3.4                   |
| N.K. PX79                     | 55.9            | 3.7           | 2.5                   |
| N.K. PX91                     | 72.2            | 4.1           | 3.2                   |
| Trojan TXS114                 | 96.0            | 5.3           | 5.1                   |
| Trojan TXS115A                | 96.9            | 4.8           | 4.7                   |
| Trojan TX119A                 | 58.3            | 4.2           | 2.9                   |
| FFR 744C                      | 84.0            | 4.6           | 4.0                   |
| FFR 891C                      | 71.9            | 4.5           | 3.5                   |
| Golden Harvest H-2650         | 67.7            | 4.3           | 3.3                   |
| Golden Harvest H-2666         | 84.6            | 4.7           | 4.1                   |
| Golden Acres T.E. 6992        | 100.0           | 4.8           | 4.8                   |
| Golden Acres T.E. 6995        | 90.0            | 5.1           | 4.7                   |
| Asgrow RX101                  | 65.5            | 4.6           | 3.4                   |
| Asgrow RX114                  | 90.6            | 4.3           | 4.0                   |
| Wilstar 9990                  | 80.7            | 4.9           | 4.2                   |
| SeedKem SK X86                | 84.4            | 4.3           | 3.8                   |
| T 4021                        | 36.1            | 3.6           | 1.9                   |
| T 7100                        | 51.7            | 3.4           | 2.2                   |
| T 7300                        | 56.3            | 4.3           | 2.8                   |
| <b>Early Maturing Hybrids</b> |                 |               |                       |
| Pioneer brand 3325A           | 85.7            | 4.0           | 3.5                   |
| Pioneer brand 3780            | 84.0            | 5.2           | 4.5                   |
| DeKalb XL64B                  | 71.0            | 4.9           | 3.7                   |
| DeKalb XL65B                  | 89.3            | 5.4           | 5.0                   |
| DeKalb XL72AA                 | 96.0            | 4.7           | 4.5                   |
| Funk G-4449                   | 83.3            | 4.9           | 4.2                   |
| Funk G-4507                   | 90.0            | 5.6           | 5.1                   |
| Funk G-4525                   | 35.1            | 3.5           | 1.9                   |
| P.A.G. 314                    | 90.3            | 4.9           | 4.5                   |
| McCurdy MSX70                 | 62.2            | 4.8           | 3.4                   |

Table 20 continued

| Hybrid                                  | Diseased Plants |               | Mean<br>Sev.<br>index |
|-----------------------------------------|-----------------|---------------|-----------------------|
|                                         | %               | Sev.<br>index |                       |
| McCurdy 84A                             | 93.9            | 4.9           | 4.7                   |
| RA 1501                                 | 89.3            | 5.7           | 5.2                   |
| FFR707C                                 | 28.6            | 3.0           | 1.6                   |
| FFR 799C                                | 93.9            | 4.6           | 4.4                   |
| Golden Harvest H-2500                   | 100.0           | 6.1           | 6.1                   |
| Golden Harvest H-2600                   | 86.2            | 5.0           | 4.4                   |
| McNair X-170                            | 91.9            | 4.7           | 4.4                   |
| Zimmerman Z-24Y                         | 90.6            | 4.9           | 4.5                   |
| Wilstar 6663                            | 86.2            | 5.2           | 4.6                   |
| SeedKem SK X76                          | 80.0            | 4.9           | 4.1                   |
| <b>Preliminary Hybrids <sup>4</sup></b> |                 |               |                       |
| Pioneer brand 3369A                     | 90.9            | 5.4           | 5.0                   |
| Funk G-4321A                            | 76.3            | 4.5           | 3.7                   |
| Funk G-4628                             | 62.5            | 4.1           | 3.0                   |
| Funk G-27794                            | 20.0            | 3.2           | 1.4                   |
| Funk G-27970                            | 22.7            | 3.2           | 1.5                   |
| Funk G-28189                            | 10.5            | 3.5           | 1.3                   |
| Funk G-28236                            | 9.1             | 3.7           | 1.2                   |
| P.A.G. 644W                             | 28.6            | 4.4           | 2.0                   |
| McCurdy 75-20                           | 81.3            | 5.4           | 4.6                   |
| McMurdy 75-210                          | 84.4            | 4.4           | 3.9                   |
| McCurdy 76                              | 91.4            | 4.6           | 4.3                   |
| McCurdy 76-92                           | 83.9            | 5.7           | 4.9                   |
| RA 3502                                 | 90.3            | 5.0           | 4.6                   |
| FFR Exp. 2118                           | 96.3            | 5.3           | 5.1                   |
| FFR Exp. 2306                           | 93.3            | 4.8           | 4.5                   |
| FFR Exp. 2344                           | 83.9            | 5.4           | 4.7                   |
| FFR Exp. 2487                           | 75.0            | 5.3           | 4.2                   |
| Zimmerman Z-20Y                         | 87.9            | 5.3           | 4.8                   |
| Wilstar 7676                            | 82.9            | 5.2           | 4.5                   |
| Wilstar 7782                            | 90.6            | 6.2           | 5.7                   |
| SeedKem SK X68M                         | 21.9            | 3.0           | 1.4                   |
| McNair S-338                            | 79.0            | 4.6           | 3.9                   |
| N.K. PX718W                             | 35.9            | 3.8           | 2.0                   |
| Trojan T1120                            | 96.2            | 5.1           | 5.0                   |
| Trojan TXS113                           | 100.0           | 4.6           | 4.6                   |
| Super Crost 5440                        | 90.3            | 5.4           | 5.0                   |
| Super Crost 5440A                       | 94.6            | 5.0           | 4.8                   |
| Super Crost 6800                        | 82.8            | 4.4           | 3.8                   |
| Paymaster UC8951                        | 90.3            | 6.2           | 5.7                   |
| Asgrow RX90                             | 78.8            | 4.4           | 3.7                   |
| Golden Acres T.E. 6968                  | 74.3            | 4.9           | 3.9                   |
| O's Gold SX3344                         | 58.6            | 3.9           | 2.7                   |
| O's Gold SX5500A                        | 79.3            | 4.5           | 3.7                   |
| Becks 88X                               | 87.1            | 5.4           | 4.8                   |
| Becks 6527                              | 92.9            | 4.5           | 4.2                   |

Table 20 continued

| Hybrid                            | Diseased Plants |               | Mean<br>Sev.<br>index |
|-----------------------------------|-----------------|---------------|-----------------------|
|                                   | %               | Sev.<br>index |                       |
| Becks 8812                        | 82.9            | 4.9           | 4.2                   |
| Dennis 31                         | 55.9            | 4.2           | 2.8                   |
| Dennis 37                         | 93.6            | 5.6           | 5.3                   |
| Dennis 48                         | 96.6            | 5.6           | 5.4                   |
| Pioneer brand 688                 | 90.9            | 4.8           | 4.5                   |
| <b>Overflow test <sup>5</sup></b> |                 |               |                       |
| Premier SX64                      | 96.3            | 4.6           | 4.4                   |
| Premier SX633                     | 100.0           | 5.7           | 5.7                   |
| Premier SX633A                    | 87.0            | 4.7           | 4.2                   |
| Premier SX655                     | 81.3            | 4.1           | 3.5                   |
| Security Seed 111                 | 64.5            | 4.5           | 3.2                   |
| Security Seed 112                 | 100.0           | 5.2           | 5.2                   |
| Security Seed 120A                | 87.5            | 4.6           | 4.2                   |
| Security Seed 125                 | 93.6            | 4.3           | 4.1                   |

<sup>1</sup> Data are means of two replications.

<sup>2</sup> Data furnished by L. M. Josephson and H. C. Kincer.

<sup>3</sup> Rating based on a scale of 1 through 9 (1 being no apparent symptoms and 9 being completely collapsed with no ear).

<sup>4</sup> Preliminary hybrids are new or experimental hybrids evaluated at Knoxville only.

<sup>5</sup> Overflow test consisted of hybrids that were received late.

## WHEAT

The wheat varieties were evaluated at seven locations in 1977. No yields are reported for Crossville because of winter killing. All small-grain tests at this location were lost due to severe cold weather. The yields of wheat at the other locations were good with little or no winter killing.

In 1977 a few varieties produced high yields at Greeneville, Spring Hill, and Jackson. The leading varieties in grain yield were McNair 3001 (an experimental), Coker 747, McNair 1813, and McNair 4823. McNair 1813 performed better in 1977 than it had in previous years. McNair 4823 produced high yields at Greeneville and Spring Hill. This variety did not perform well at Knoxville, Springfield, Jackson, and Milan.

Doublecrop was the earliest maturing variety evaluated and McNair 4823 was the latest. Beau, Doublecrop, and McNair 4823 showed the best lodging resistance with the new wheat, Sullivan, lodging the most.

Using a 2-year average the five leading varieties in grain yield were Coker 747, McNair 4823, McNair 1813, Beau, and Arthur. The recommended wheat varieties for 1977-78 are Arthur, Abe, Coker 747, Doublecrop, Oasis, McNair 4823, and Stoddard. Present plans indicate that Oasis will not be recommended after this year. The two new varieties added to the recommended list were Coker 747 and Doublecrop. Coker 747 is a high yielding, early maturing variety with resistance to soil-borne mosaic, and moderate resistance to leaf rust, stem rust, and powdery mildew. It is not Hessian fly resistant. Doublecrop is similar to Arthur in characteristics and disease resistance, except that it matures a few days earlier.

The hard red winter wheat varieties were evaluated in 1977 at Springfield. DeKalb 589 and Triumph Imp. were the best grain producers. Triumph Imp. has been the best grain producer in these tests for several years.

**Table 21. Wheat: Grain yield of soft red winter wheat varieties evaluated at five locations in 1977<sup>1</sup>**

| Variety                  | Avg. | Knox-ville <sup>2</sup> | Greene-ville <sup>3</sup> | Spring field <sup>4</sup> | Spring Hill <sup>5</sup> | Jackson <sup>6</sup> |
|--------------------------|------|-------------------------|---------------------------|---------------------------|--------------------------|----------------------|
| Bushels per acre         |      |                         |                           |                           |                          |                      |
| McNair 3001 <sup>7</sup> | 63   | 48                      | 73                        | 52                        | 75                       | 70                   |
| Coker 747                | 58   | 44                      | 68                        | 47                        | 76                       | 52                   |
| McNair 1813              | 55   | 37                      | 68                        | 43                        | 63                       | 61                   |
| McNair 4823              | 50   | 25                      | 82                        | 33                        | 67                       | 43                   |
| Doublecrop               | 49   | 34                      | 65                        | 41                        | 60                       | 46                   |
| Beau                     | 49   | 29                      | 56                        | 37                        | 69                       | 53                   |
| Sullivan                 | 48   | 38                      | 44                        | 43                        | 68                       | 47                   |
| Arthur                   | 47   | 33                      | 41                        | 39                        | 71                       | 51                   |
| Abe                      | 46   | 20                      | 56                        | 36                        | 73                       | 47                   |
| Stoddard                 | 45   | 38                      | 40                        | 45                        | 59                       | 45                   |
| Oasis                    | 44   | 30                      | 46                        | 37                        | 64                       | 43                   |
| L.S.D. (.05)             | —    | 4.6                     | 10.3                      | 5.0                       | 6.0                      | 6.1                  |
| C.V. %                   | —    | 9.3                     | 12.3                      | 8.3                       | 6.3                      | 8.4                  |
| Avg.                     | —    | 34.2                    | 58.2                      | 41.3                      | 67.7                     | 50.6                 |

<sup>1</sup> No yield data reported for Crossville due to all varieties winter killing.

<sup>2</sup> Decatur silt loam (2% to 5% slopes).

<sup>3</sup> Decatur silt loam (2% to 5% slopes).

<sup>4</sup> Dickson silt loam (2% to 5% slopes).

<sup>5</sup> Maury silt loam (2% to 5% slopes).

<sup>6</sup> Grenada and Calloway silt loam (0% to 5% slopes).

<sup>7</sup> Experimental—to be released soon.

**Table 22. Yield and other characteristics of soft red winter wheat varieties evaluated at five locations in 1977**

| Variety     | Yield | Avg. date headed | Date mature |         | Lodging | Plant ht. |
|-------------|-------|------------------|-------------|---------|---------|-----------|
|             |       |                  | Knoxville   | Jackson |         |           |
|             | Bu/A  |                  |             |         | %       | In.       |
| McNair 3001 | 63    | 4-30             | 6-10        | 5-28    | 37      | 38        |
| Coker 747   | 58    | 4-29             | 6-9         | 5-28    | 33      | 34        |
| McNair 1813 | 55    | 4-27             | 6-9         | 5-24    | 41      | 38        |
| McNair 4823 | 50    | 5-6              | 6-20        | 5-30    | 13      | 36        |
| Doublecrop  | 49    | 4-22             | 6-3         | 5-23    | 26      | 39        |
| Beau        | 49    | 4-30             | 6-13        | 5-27    | 25      | 37        |
| Sullivan    | 48    | 4-26             | 6-9         | 5-25    | 66      | 38        |
| Arthur      | 47    | 4-28             | 6-9         | 5-26    | 36      | 38        |
| Abe         | 46    | 4-30             | 6-13        | 5-27    | 39      | 37        |
| Stoddard    | 45    | 4-29             | 6-9         | 5-27    | 50      | 43        |
| Oasis       | 44    | 4-29             | 6-12        | 5-26    | 53      | 39        |

**Table 23. Wheat: Yield of varieties evaluated for 2 years (1976-77) at five locations**

| Variety          | Avg. | Knox-ville | Greene-ville | Spring-field | Spring Hill | Jackson |
|------------------|------|------------|--------------|--------------|-------------|---------|
| Bushels per acre |      |            |              |              |             |         |
| Coker 747        | 56   | 52         | 70           | 54           | 65          | 40      |
| McNair 4823      | 50   | 42         | 73           | 36           | 58          | 39      |
| McNair 1813      | 47   | 46         | 45           | 46           | 52          | 48      |
| Beau             | 47   | 40         | 50           | 41           | 59          | 46      |
| Arthur           | 47   | 43         | 46           | 42           | 60          | 42      |
| Stoddard         | 45   | 47         | 41           | 46           | 54          | 38      |
| Abe              | 44   | 33         | 47           | 40           | 62          | 38      |
| Oasis            | 43   | 38         | 43           | 41           | 58          | 35      |
| Doublecrop       | 43   | 42         | 43           | 43           | 52          | 36      |

**Table 24. Wheat: Test weight of varieties evaluated at five locations in 1977**

| Variety           | Avg. | Greene-ville | Knox-ville | Spring Hill | Spring-field | Jackson |
|-------------------|------|--------------|------------|-------------|--------------|---------|
| Pounds per bushel |      |              |            |             |              |         |
| Coker 747         | 59   | 57           | 62         | 54          | 61           | 61      |
| Beau              | 59   | 58           | 59         | 54          | 61           | 61      |
| Sullivan          | 59   | 56           | 60         | 55          | 61           | 62      |
| Doublecrop        | 58   | 56           | 59         | 54          | 62           | 61      |
| Arthur            | 58   | 56           | 59         | 55          | 61           | 60      |
| Oasis             | 58   | 56           | 59         | 54          | 60           | 60      |
| Stoddard          | 58   | 55           | 58         | 53          | 60           | 62      |
| Abe               | 58   | 57           | 57         | 54          | 60           | 60      |
| McNair 1813       | 57   | 55           | 57         | 52          | 60           | 62      |
| McNair 4823       | 57   | 57           | 58         | 52          | 56           | 60      |
| McNair 3001       | 55   | 54           | 56         | 50          | 58           | 58      |

**Table 25. Wheat: Yield and other characteristics of varieties evaluated at Milan in 1977 <sup>1</sup>**

| Variety      | Yield | Stand Dec. | Stand March | Date headed | Date ready for harvest | Plant ht. |
|--------------|-------|------------|-------------|-------------|------------------------|-----------|
|              | Bu/A  | %          | %           |             |                        | In.       |
| Arthur       | 52    | 90         | 90          | 4-26        | 6-1                    | 31        |
| McNair 1813  | 50    | 90         | 80          | 5-3         | 6-4                    | 29        |
| Stoddard     | 48    | 90         | 90          | 4-29        | 6-1                    | 32        |
| Doublecrop   | 44    | 95         | 90          | 4-24        | 6-1                    | 28        |
| Coker 747    | 44    | 90         | 85          | 5-1         | 6-6                    | 28        |
| Beau         | 42    | 80         | 75          | 4-29        | 6-4                    | 26        |
| Oasis        | 40    | 80         | 75          | 4-29        | 6-4                    | 28        |
| McNair 4823  | 40    | 90         | 80          | 5-3         | 6-6                    | 26        |
| Abe          | 37    | 85         | 80          | 5-1         | 6-4                    | 26        |
| L.S.D. (.05) | N.S.  | —          | —           | —           | —                      | —         |
| C.V. %       | 14.6  | —          | —           | —           | —                      | —         |

**Table 26. Wheat: Yield and other characteristics of hard red winter wheat evaluated at Springfield in 1977**

| Variety                | Yield | Date headed | Plant height | Date mature    |
|------------------------|-------|-------------|--------------|----------------|
|                        | Bu/A  |             | In.          |                |
| DeKalb 589             | 39    | 4-29        | 38           | 6-1            |
| Triumph Imp.           | 38    | 4-29        | 39           | 6-1            |
| Exp. 4555 <sup>1</sup> | 36    | 4-25        | 30           | 6-1            |
| Satanta                | 31    | 5-5         | 36           | 6-6            |
| Danne                  | 31    | 5-1         | 40           | 6-1            |
| Century II 2148        | 23    | 5-8         | 41           | — <sup>2</sup> |

<sup>1</sup> Experimental. Obtained from Greenbush Seed & Supply, Girard, Kansas.

<sup>2</sup> Missing data.

## BARLEY

The barley varieties were evaluated at six locations in 1977. No yields are reported for Greeneville due to grain being damaged by wet weather and birds at harvest time. All barley varieties were winter killed at Crossville.

Volbar did not perform well in 1977 due to poor quality seed planted. This variety emerged slower than other varieties and was injured severely by the severe cold weather a few weeks after planting. Little or no winter injury to Volbar occurred at Springfield or Jackson, but severe injury was noted at Spring Hill and Knoxville. Barley Yellow Dwarf Virus disease was not severe on any of the small grain in 1976-77 probably due to the cold weather reducing the aphid population. The leading varieties in grain yield were Maury, Henry, and Monroe. The recommended varieties for 1977-78 are Keowee and Volbar.

**Table 27. Barley: Grain yields of varieties evaluated in 1977 at four locations** <sup>1 2</sup>

| Variety             | Avg. | Knox-<br>ville <sup>3</sup> | Spring<br>field <sup>4</sup> | Spring<br>Hill <sup>5</sup> | Jack-<br>son <sup>6</sup> |
|---------------------|------|-----------------------------|------------------------------|-----------------------------|---------------------------|
| Bushels per acre    |      |                             |                              |                             |                           |
| Maury               | 60   | 48                          | 70                           | 73                          | 48                        |
| Henry               | 58   | 41                          | 68                           | 70                          | 54                        |
| Monroe              | 57   | 38                          | 72                           | 68                          | 51                        |
| Keowee              | 51   | 48                          | 74                           | 61                          | 46                        |
| Surry               | 51   | 37                          | 64                           | 58                          | 46                        |
| Boone               | 51   | 39                          | 64                           | 56                          | 44                        |
| Pike                | 41   | 28                          | 52                           | 26                          | 57                        |
| Volbar <sup>7</sup> | 37   | 24                          | 66                           | 0                           | 59                        |
| L.S.D. (.05)        | —    | 11.4                        | 4.3                          | 10.1                        | 7.0                       |
| C.V. %              | —    | 20.4                        | 4.4                          | 11.6                        | 9.4                       |
| Avg.                | —    | 38.0                        | 66.3                         | 58.7                        | 50.4                      |

<sup>1</sup> All varieties winter killed at Crossville.

<sup>2</sup> No yields reported for Greeneville due to grain being damaged by wet weather at harvest time.

<sup>3</sup> Decatur silt loam (2% to 5% slopes).

<sup>4</sup> Dickson silt loam (2% to 5% slopes).

<sup>5</sup> Maury silt loam (2% to 5% slopes).

<sup>6</sup> Grenada silt loam (0% to 2% slopes).

<sup>7</sup> Volbar emerged several days later than other varieties due to poor quality seed thus resulting in winter killing and low yields at several locations.

**Table 28. Barley: Yield and other characteristics of varieties evaluated in 1977**

| Variety | Yield <sup>1</sup> | Date<br>headed | Date Mature    |              | Lodg-<br>ing <sup>2</sup> | Plant<br>ht. |
|---------|--------------------|----------------|----------------|--------------|---------------------------|--------------|
|         |                    |                | Knox-<br>ville | Jack-<br>son |                           |              |
|         | Bu/A               |                |                |              | %                         | In.          |
| Maury   | 60                 | 4-29           | 6-10           | 5-18         | 25                        | 36           |
| Henry   | 58                 | 4-26           | 6-9            | 5-20         | 48                        | 36           |
| Monroe  | 57                 | 5-1            | 6-11           | 5-20         | 46                        | 36           |
| Keowee  | 51                 | 4-28           | 6-13           | 5-22         | 59                        | 33           |
| Surry   | 51                 | 4-25           | 6-9            | 5-17         | 36                        | 35           |
| Boone   | 51                 | 4-27           | 6-9            | 5-21         | 42                        | 31           |
| Pike    | 41                 | 4-18           | 5-27           | 5-12         | 38                        | 28           |
| Volbar  | 37                 | 4-30           | 6-20           | 5-26         | 51                        | 41           |

<sup>1</sup> Avg. of four locations.

<sup>2</sup> Avg. of two locations.

**Table 29. Barley: Yield of varieties evaluated for 2 years (1976-77) at four locations**

| Variety          | Avg. | Knox-<br>ville | Spring-<br>field | Spring<br>Hill | Jack-<br>son |
|------------------|------|----------------|------------------|----------------|--------------|
| Bushels per acre |      |                |                  |                |              |
| Monroe           | 62   | 59             | 60               | 62             | 65           |
| Maury            | 61   | 60             | 62               | 65             | 58           |
| Henry            | 60   | 61             | 57               | 62             | 59           |
| Boone            | 60   | 62             | 60               | 63             | 55           |
| Surry            | 58   | 58             | 60               | 57             | 59           |
| Volbar           | 58   | 53             | 68               | 34             | 75           |
| Pike             | 53   | 52             | 54               | 39             | 69           |

## OATS

The fall-seeded oats were winter killed at all locations except Jackson and Springfield. Springfield produced good yields with Jackson being only fair. The varieties ranked the same in grain yield at both locations. Six spring oats were evaluated for forage and grain when planted in late February and early March at Knoxville in 1977. Dal produced the most forage at both planting dates. Clintland 60 was among the lowest spring oats in forage production. Cumberland, a winter oat, was included as a check. Forage and grain for all varieties were low. The recommended fall-seeded oats for 1977-78 are Coker 66-22 and Cumberland.

**Table 30. Oats: Yields and other characteristics of varieties evaluated at Jackson in 1977 <sup>1</sup>**

| Variety      | Yield | Stand<br>March 21 | Date<br>headed | Date<br>mature | Lodged | Plant<br>ht. |
|--------------|-------|-------------------|----------------|----------------|--------|--------------|
|              | Bu/A  | %                 |                |                | %      | In.          |
| Coker 70- 16 | 71    | 97                | 5-1            | 5-27           | 15     | 43           |
| Coker 66-22  | 58    | 100               | 4-30           | 5-25           | 64     | 42           |
| Cumberland   | 51    | 96                | 5-8            | 5-29           | 32     | 42           |
| Salem        | 36    | 62                | 5-7            | 5-26           | 15     | 40           |
| L.S.D. (.05) | 11.0  | —                 | —              | —              | —      | —            |
| C.V. %       | 12.8  | —                 | —              | —              | —      | —            |
| Avg.         | 53.8  | —                 | —              | —              | —      | —            |

<sup>1</sup> Loring silt loam (0% to 2% slopes).

**Table 31. Oats: Yield and other characteristics of varieties evaluated at Springfield in 1977**

| Variety      | Yield | Date headed | Lodged | Plant ht. | Stand March 15 |
|--------------|-------|-------------|--------|-----------|----------------|
|              | Bu/A  |             | %      | In.       | %              |
| Coker 70-16  | 94    | 5-4         | 8      | 32        | 94             |
| Coker 66-22  | 91    | 5-3         | 25     | 35        | 85             |
| Cumberland   | 82    | 5-11        | 12     | 32        | 82             |
| Salem        | 72    | 5-10        | 0      | 31        | 70             |
| L.S.D. (.05) | 7.6   | —           | —      | —         | —              |
| C.V. %       | 5.6   | —           | —      | —         | —              |
| Avg.         | 84.7  | —           | —      | —         | —              |

**Table 32. Spring Seeded Oats: Yield and other characteristics of varieties planted on February 22 and March 10, 1977 at Knoxville**

| Planted February 22     |                  |      |             |             |                       |
|-------------------------|------------------|------|-------------|-------------|-----------------------|
| Variety                 | Yield            |      | Date headed | Date mature | Plant ht. Test weight |
|                         | T/A <sup>1</sup> | Bu/A |             |             | In. Lb/Bu             |
| Dal                     | 1.39             | 32   | 5-22        | 6-7         | 33 35                 |
| Noble                   | 1.37             | 44   | 5-19        | 6-13        | 33 35                 |
| Otee                    | 1.35             | 43   | 5-17        | 6-13        | 33 37                 |
| Jaycee                  | 1.31             | 45   | 5-15        | 6-13        | 35 36                 |
| Lodi                    | 1.27             | 13   | 5-30        | 6-27        | 37 31                 |
| Clintland 60            | 1.01             | 24   | 5-20        | 6-15        | 37 36                 |
| Cumberland <sup>2</sup> | 0.99             | 40   | 5-18        | 6-14        | 30 37                 |
| L.S.D. (.05)            | 0.30             |      | —           | —           | — —                   |
| C.V. %                  | 16.5             |      | —           | —           | — —                   |

| Planted March 10 |       |      |             |             |                       |
|------------------|-------|------|-------------|-------------|-----------------------|
| Variety          | Yield |      | Date headed | Date mature | Plant ht. Test weight |
|                  | T/A   | Bu/A |             |             | In. Lb/Bu             |
| Dal              | 1.44  | 27   | 5-26        | 6-23        | 33 34                 |
| Lodi             | 1.36  | 22   | 5-31        | Late        | 36 34                 |
| Cumberland       | 1.20  | 30   | 5-20        | 6-24        | 30 35                 |
| Otee             | 1.19  | 31   | 5-18        | 6-15        | 33 36                 |
| Jaycee           | 1.17  | 36   | 5-18        | 6-15        | 34 36                 |
| Noble            | 1.06  | 34   | 5-19        | 6-17        | 32 35                 |
| Clintland 60     | 0.93  | 19   | 5-22        | 6-7         | 38 36                 |
| L.S.D. (.05)     | 0.23  |      | —           | —           | — —                   |
| C.V. %           | 10.7  |      | —           | —           | — —                   |

<sup>1</sup> Tons of oven dry forage harvested in the early head stage.

<sup>2</sup> Winter oat included as a check.

## TRITICALE

Triticale varieties were evaluated at five locations in 1977. The leading varieties in grain yield were 313A and 386A. All varieties of Triticale were winter killed at Crossville. Triticale 131 winter killed more at Knoxville and Spring Hill than any other variety evaluated. Triticale 876 and 522 lodged the most and 131 lodged the least.

**Table 33. Triticale: Average yield and other characteristics of varieties evaluated at five locations in 1977**

| Variety        | Yield | Date headed | Date <sup>1</sup> mature | Lodging | Plant ht. | Test weight |
|----------------|-------|-------------|--------------------------|---------|-----------|-------------|
|                | Bu/A  |             |                          | %       | In.       | Lb/Bu       |
| Triticale 313A | 49    | 5-3         | 6-6                      | 17      | 58        | 47          |
| Triticale 386A | 48    | 5-4         | 6-6                      | 20      | 56        | 48          |
| Triticale 876  | 43    | 5-15        | 6-10                     | 62      | 59        | 48          |
| Triticale 131  | 39    | 5-15        | 6-9                      | 8       | 55        | 47          |
| Triticale 522  | 38    | 5-16        | 6-10                     | 66      | 63        | 48          |

<sup>1</sup> Average of two locations.

## GRAIN SORGHUM

The grain sorghum tests were conducted at Knoxville, Spring Hill, Martin, and Ames Plantation.

At Martin and Ames Plantation a non-bird resistant variety test was conducted in addition to the regular bird resistant test.

The grain yields at Ames Plantation were reduced by dry weather and a few varieties received sorghum midge damage.

The highest grain producing varieties at Knoxville in 1977 were Coker XP-1590 BR, Acco BR-Y93, Pioneer brand B815, and McNair 656 BR. The leading varieties in grain yield at Spring Hill in 1977 were FFR GSA 1334, Funk G-516, McCurdy Birds-off 91, and McNair 656 BR. At Spring Hill Savanna 5 was the lowest grain producer whereas at Martin it was one of the highest in grain production. The other leading varieties at Martin in the bird resistant group were McNair 656 BR, Wilstar 1360, Pioneer brand B815, Acco BR-Y93, DeKalb BR64\*, Funk G-516, and Coker XP 1590 BR. R.A. Bird Go 68 did not perform as well at Martin in 1977 as it had in previous years. All yields were low in the bird resistant group at Ames Plantation with no significant difference among grain yields. The 3-year average yield of the bird resistant varieties are shown in Table 41.

The grain yields of the non-bird resistant varieties in 1977 were higher than the bird resistant varieties at Ames Plantation, but again there was no significant difference among grain yields at the 5% level of probability. At Martin the leading non-bird resistant varieties in 1977 were N. K. brand 2778, Wilstar 1330, DeKalb E-59+, Acco R-1029A, and McNair 654.

Using a 3-year average for Ames Plantation and Martin the highest yielding non-bird resistant varieties were Acco R-1090, Acco R-1029A, McNair 550, McNair 654, and McNair 650.

**Table 34. Grain Sorghum: Yield of bird resistant varieties evaluated at four locations in 1977**

| Variety              | Avg. | Knoxville | Spring Hill | Martin | Ames Plantation |
|----------------------|------|-----------|-------------|--------|-----------------|
| Bushels per acre     |      |           |             |        |                 |
| McNair 656BR         | 90   | 116       | 98          | 95     | 52              |
| Wilstar 1360         | 90   | 114       | 97          | 90     | 58              |
| Coker XP-1590BR      | 89   | 124       | 91          | 84     | 57              |
| Pioneer brand B 815  | 89   | 116       | 96          | 88     | 54              |
| Funk G 516           | 88   | 117       | 100         | 84     | 52              |
| FFR GSA 1334         | 87   | 109       | 102         | 81     | 84              |
| Acco BR-Y93          | 87   | 120       | 97          | 85     | 46              |
| DeKalb BR 64+        | 85   | 112       | 94          | 85     | 50              |
| DeKalb BR 65+        | 83   | 110       | 89          | 80     | 54              |
| McCurdy Birds-off 91 | 82   | 105       | 99          | 74     | 48              |
| Savanna 3            | 79   | 98        | 88          | 74     | 56              |
| Savanna 5            | 77   | 109       | 54          | 93     | 52              |
| RA Bird Go 68        | 75   | 103       | 88          | 59     | 48              |
| McCurdy Birds-off 81 | 74   | 99        | 88          | 61     | 46              |
| L.S.D (.05)          | —    | 9.0       | 11.6        | 12.2   | N.S.            |
| C.V. %               | —    | 5.7       | 8.9         | 10.5   | 17.6            |

**Table 35. Grain Sorghum: Yield and other characteristics of bird resistant varieties evaluated at Knoxville in 1977 <sup>1</sup>**

| Variety              | Yield | Plant height | Head type           |
|----------------------|-------|--------------|---------------------|
|                      | Bu/A  | In.          | Rating <sup>2</sup> |
| Coker XP-1590BR      | 124   | 50           | 3.0                 |
| Acco BR-Y93          | 120   | 51           | 2.3                 |
| Funk G-516           | 117   | 51           | 3.0                 |
| Pioneer brand B815   | 116   | 59           | 2.5                 |
| McNair 656BR         | 116   | 50           | 3.0                 |
| Wilstar 1360         | 114   | 48           | 3.0                 |
| DeKalb BR-64+        | 112   | 62           | 2.7                 |
| DeKalb BR-65+        | 110   | 51           | 1.7                 |
| Savanna 5            | 109   | 65           | 1.3                 |
| FFR GSA 1334         | 109   | 48           | 3.0                 |
| McCurdy Birds-off 91 | 105   | 48           | 3.0                 |
| RA Bird Go 68        | 103   | 49           | 3.0                 |
| McCurdy Birds-off 81 | 99    | 46           | 2.8                 |
| Savanna 3            | 98    | 48           | 3.0                 |
| L.S.D. (.05)         | 9.0   | —            | —                   |
| C.V. %               | 5.7   | —            | —                   |

<sup>1</sup> Sequatchie loam (2% to 5% slopes).

<sup>2</sup> 1=tight and 3=open type head.

**Table 36. Grain Sorghum: Yield and other characteristics of varieties evaluated at Spring Hill in 1977 <sup>1</sup>**

| Variety              | Yield | Date headed | Plant height |
|----------------------|-------|-------------|--------------|
|                      | Bu/A  |             |              |
| FFR GSA 1334         | 102   | 7-17        | 44           |
| Funk G-516           | 100   | 7-17        | 44           |
| McCurdy Birds-off 91 | 99    | 7-19        | 47           |
| McNair 656BR         | 98    | 7-17        | 41           |
| Acco BR-Y93          | 97    | 7-15        | 47           |
| Wilstar 1360         | 97    | 7-17        | 42           |
| Pioneer brand B815   | 96    | 7-19        | 50           |
| DeKalb BR-64+        | 94    | 7-18        | 56           |
| Coker XP-1590 BR     | 91    | 7-17        | 41           |
| DeKalb BR-65+        | 89    | 7-19        | 44           |
| RA Bird Go 68        | 88    | 7-22        | 43           |
| McCurdy Birds-off 81 | 88    | 7-16        | 39           |
| Savanna 3            | 88    | 7-15        | 40           |
| Savanna 5            | 54    | 7-18        | 55           |
| L.S.D. (.05)         | 11.6  | —           | —            |
| C.V. %               | 8.9   | —           | —            |

**Table 37. Grain Sorghum: Yield and other characteristics of bird resistant varieties evaluated at Martin in 1977**

| Variety                  | Yield | Date headed | Head type | Lodged | Plant height |
|--------------------------|-------|-------------|-----------|--------|--------------|
|                          | Bu/A  |             | (1-3)     | %      | In.          |
| McNair 656BR             | 95    | 7-26        | 3.0       | 0      | 64           |
| Savanna 5                | 93    | 7-24        | 1.0       | 0      | 75           |
| Wilstar 1360             | 90    | 7-26        | 3.0       | 5      | 63           |
| Pioneer brand B815       | 88    | 7-25        | 2.0       | 0      | 65           |
| Acco BR-Y93              | 85    | 7-23        | 2.0       | 25     | 63           |
| DeKalb BR64 <sup>+</sup> | 85    | 7-25        | 3.0       | 0      | 76           |
| Funk G-516               | 84    | 7-26        | 3.0       | 0      | 64           |
| Coker XP 1590BR          | 84    | 7-27        | 3.0       | 0      | 64           |
| FFR GSA 1334             | 81    | 7-26        | 3.0       | 0      | 64           |
| DeKalb BR65 <sup>+</sup> | 80    | 7-25        | 1.5       | 0      | 63           |
| McCurdy B.O. 91          | 74    | 7-28        | 2.5       | 0      | 61           |
| Savanna 3                | 74    | 7-26        | 3.0       | 0      | 63           |
| McCurdy B.O. 81          | 61    | 7-25        | 2.5       | 0      | 51           |
| R.A. Bird Go 68          | 59    | 7-28        | 2.5       | 0      | 58           |
| L.S.D. (.05)             | 12.2  | —           | —         | —      | —            |
| C.V. %                   | 10.5  | —           | —         | —      | —            |

**Table 38. Grain Sorghum: Yield and other characteristics of bird resistant varieties evaluated at Ames Plantation**

| Variety                   | Yield | Plant height | Head type           | Midge damage        |
|---------------------------|-------|--------------|---------------------|---------------------|
|                           | Bu/A  | In.          | Rating <sup>1</sup> | Rating <sup>2</sup> |
| Wilstar 1360              | 58    | 49           | 2.3                 | 2.7                 |
| Coker XP 1590 BR          | 57    | 50           | 2.7                 | 2.0                 |
| Savanna 3                 | 56    | 53           | 2.5                 | 2.3                 |
| Pioneer brand B815        | 54    | 49           | 2.3                 | 2.0                 |
| DeKalb BR-65 <sup>+</sup> | 54    | 51           | 2.2                 | 4.0                 |
| FFR GSA 1334              | 54    | 46           | 2.5                 | 2.7                 |
| Funk G-516                | 52    | 53           | 2.3                 | 2.0                 |
| Savanna 5                 | 52    | 54           | 1.7                 | 1.3                 |
| McNair 656 BR             | 52    | 50           | 2.3                 | 3.3                 |
| DeKalb BR-64              | 50    | 54           | 2.8                 | 1.7                 |
| RA Bird Go 68             | 48    | 52           | 2.2                 | 3.0                 |
| McCurdy Birds-Off 91      | 48    | 48           | 2.7                 | 2.0                 |
| McCurdy Birds-Off 81      | 46    | 46           | 2.7                 | 2.7                 |
| Acco BR-Y93               | 46    | 49           | 3.0                 | 3.7                 |
| L.S.D. (.05)              | N.S.  | —            | —                   | —                   |
| C.V. %                    | 17.6  | —            | —                   | —                   |

<sup>1</sup> 1=Tight and 3=open type head.

<sup>2</sup> 0=No damage and 10=severe damage.

**Table 39. Grain Sorghum: Yield and other characteristics of non-bird resistant varieties evaluated at Martin in 1977**

| Variety         | Yield | Date headed | Head type          | Lodging | Plant height |
|-----------------|-------|-------------|--------------------|---------|--------------|
|                 | Bu/A  |             | (1-3) <sup>2</sup> | %       | In.          |
| N.K. brand 2778 | 86    | 7-23        | 1.5                | 5       | 61           |
| Wilstar 1330    | 85    | 7-22        | 2.0                | 20      | 63           |
| DeKalb E-59+    | 81    | 7-24        | 2.0                | 0       | 57           |
| Acco R-1029A    | 80    | 7-22        | 2.5                | 0       | 58           |
| McNair 654      | 78    | 7-23        | 1.5                | 2       | 61           |
| Wilstar 1225    | 76    | 7-23        | 2.0                | 5       | 55           |
| McNair 650      | 75    | 7-24        | 2.0                | 0       | 57           |
| DeKalb E-57b+   | 75    | 7-25        | 2.5                | 2       | 59           |
| GSA ML135       | 74    | 7-22        | 2.0                | 0       | 53           |
| Funk G-522      | 74    | 7-22        | 2.0                | 5       | 56           |
| N.K. brand 2779 | 73    | 7-21        | 2.0                | 0       | 54           |
| McNair 550      | 73    | 7-24        | 2.5                | 0       | 58           |
| RA 811A GB      | 73    | 7-24        | 2.0                | 0       | 60           |
| Acco R1090      | 73    | 7-24        | 2.5                | 2       | 57           |
| Wilstar 1425    | 73    | 7-23        | 2.5                | 0       | 57           |
| DeKalb C-42a+   | 72    | 7-21        | 3.0                | 30      | 54           |
| DeKalb C-42y+   | 72    | 7-22        | 2.0                | 0       | 69           |
| Funk G-589      | 71    | 7-22        | 1.0                | 0       | 58           |
| DeKalb D-46     | 62    | 7-27        | 1.0                | 0       | 63           |
| McNair 535      | 62    | 7-21        | 2.0                | 0       | 48           |
| L.S.D. (.05)    | 11.6  | —           | —                  | —       | —            |
| C.V. %          | 11.0  | —           | —                  | —       | —            |

<sup>1</sup> Henry silt loam (2% to 5% slopes).

<sup>2</sup> 1=open; 2=medium; and 3=open head.

**Table 40. Grain Sorghum: Yield and other characteristics of non-bird resistant varieties evaluated at Ames Plantation in 1977**

| Variety         | Yield | Head <sup>1</sup><br>Type | Plant<br>Height | Sorghum<br>Midge<br>Damage |
|-----------------|-------|---------------------------|-----------------|----------------------------|
|                 | Bu/A  | (1-3)                     | In.             | (1-10)                     |
| Wilstar 1330    | 73    | 1.5                       | 52              | 1.5                        |
| DeKalb E-59+    | 70    | 2.2                       | 50              | 2.5                        |
| Funk G-HW 3862  | 70    | 2.5                       | 48              | 2.0                        |
| Acco R-1029-A   | 69    | 2.0                       | 50              | 1.0                        |
| GSA ML-135      | 69    | 2.2                       | 46              | 1.5                        |
| DeKalb E-57b+   | 67    | 2.5                       | 49              | 2.5                        |
| Wilstar 1225    | 67    | 2.2                       | 51              | 2.5                        |
| Acco R-1090     | 66    | 2.2                       | 47              | 1.0                        |
| Wilstar 1425    | 63    | 3.0                       | 51              | 2.5                        |
| Funk G-589      | 63    | 1.5                       | 50              | T                          |
| McCurdy M51YG   | 62    | 1.5                       | 52              | 2.5                        |
| N.K. brand 2779 | 61    | 2.2                       | 50              | 2.0                        |
| R.A. 811AGB     | 61    | 2.2                       | 47              | 1.0                        |
| DeKalb C-42y+   | 60    | 2.5                       | 57              | 2.0                        |
| Coker XP 10709  | 58    | 2.0                       | 52              | 1.5                        |
| DeKalb D-46     | 58    | 1.2                       | 53              | 2.5                        |
| Funk G-522      | 57    | 2.5                       | 45              | 1.5                        |
| McNair 550      | 56    | 2.5                       | 47              | 3.5                        |
| McNair 535      | 59    | 1.2                       | 42              | 1.5                        |
| N.K. brand 2778 | 55    | 2.2                       | 45              | 1.5                        |
| McNair 535      | 53    | 1.5                       | 50              | 2.5                        |
| DeKalb C-42a+   | 51    | 2.2                       | 54              | 2.5                        |
| Coker XP 7709   | 50    | 2.5                       | 51              | 3.5                        |
| McNair 650      | 49    | 1.5                       | 45              | 4.5                        |
| L.S.D. (.05)    | N.S.  | —                         | —               | —                          |
| C.V. %          | 20.1  | —                         | —               | —                          |

<sup>1</sup> 1=tight and 3=open heads.

**Table 41. Grain Sorghum: Yield of bird resistant varieties evaluated at four locations for three years 1975-77**

| Variety              | Avg.<br>(1975-77) | Knox-<br>ville | Spring<br>Hill | Martin | Ames<br>Planta-<br>tion |
|----------------------|-------------------|----------------|----------------|--------|-------------------------|
| Bushels per acre     |                   |                |                |        |                         |
| McNair 656BR         | 106               | 125            | 110            | 111    | 78                      |
| Pioneer brand B815   | 100               | 116            | 106            | 108    | 70                      |
| RA Bird Go 68        | 97                | 115            | 105            | 99     | 68                      |
| McCurdy Birds-off 81 | 95                | 113            | 96             | 102    | 68                      |
| McCurdy Birds-off 91 | 90                | 105            | 86             | 100    | 68                      |

**Table 42. Grain Sorghum: Yields of non-bird resistant varieties evaluated at Martin and Ames Plantation for 3 years 1975-77**

| Variety       | Avg.<br>1975-77 | Martin | Ames<br>Plantation |
|---------------|-----------------|--------|--------------------|
| Acco R-1090   | 85              | 87     | 84                 |
| Acco R-1029A  | 85              | 92     | 78                 |
| McNair 550    | 84              | 89     | 79                 |
| McNair 654    | 83              | 91     | 75                 |
| McNair 650    | 83              | 90     | 76                 |
| DeKalb E-59+  | 81              | 89     | 81                 |
| DeKalb C-42a+ | 81              | 88     | 74                 |
| DeKalb C-42y  | 78              | 85     | 70                 |

### ALFALFA AND RED CLOVER

Alfalfa results are from tests seeded in 1971, 1975, and 1976. At Springfield the highest producing varieties for a 6-year period were Apa'achee, Delta, Flandria, Cherokee, Europa, Buffalo, and Cody. The seed supply of Apalachee, Delta, Flandria, Cherokee, and Europa is very short, especially in Tennessee. Buffalo and Cody have performed better at this location than at the other locations across the state. In the test seeded in 1976 at Springfield the highest performing varieties were Weevlc hek, Atlas, Pioneer 522, Vanguard, and Team. However, there was no significant difference among yields in 1976 or 1977.

At Jackson the five highest producing varieties, using a 2-year average, were Vanguard, Saranac AR, Team, Apalachee, and Arc. Using a 2-year average at Spring Hill the leading varieties in yield were Saranac AR, Vanguard, Aapalachee, Gladiator, Apollo and Arc.

The alfalfa yields at Knoxville were reduced by dry weather and anthracnose disease. There was no significant difference in total yield among varieties. However, the anthracnose resistant varieties should perform better than non-resistant varieties in future production due to the damage from anthracnose in 1977.

A small test was also conducted at Knoxville which contained varieties and experimentals that were not included in the regular variety trials. The leading varieties in this test were Atlas, Olympic, and RSW A2-Anl (an experimental). N.K. Ko-3 was slow to recover after harvest and did not perform well.

The red clover variety results are shown in Table 49. Kenstar, Kenland, and Redland had the highest average yields. Kenland performed better in 1977 than it had in the last few years.

**Table 43. Alfalfa: Yields of varieties seeded in 1971 at Springfield <sup>1</sup>**

| Variety           | 1972-<br>1977<br>avg. | 1977 | 1976 | 1975 | 1974 | 1973 | 1972 |
|-------------------|-----------------------|------|------|------|------|------|------|
| Tons per acre     |                       |      |      |      |      |      |      |
| Apalachee         | 4.29                  | 3.99 | 5.26 | 2.18 | 5.60 | 5.13 | 3.56 |
| Delta             | 4.23                  | 4.37 | 5.04 | 2.26 | 5.42 | 5.14 | 3.15 |
| Flandria          | 4.18                  | 3.64 | 5.11 | 2.17 | 5.38 | 5.11 | 3.64 |
| Cherokee          | 4.12                  | 3.71 | 4.98 | 2.08 | 5.05 | 5.24 | 3.66 |
| Europa            | 4.09                  | 3.53 | 5.18 | 2.06 | 5.27 | 4.99 | 3.52 |
| Buffalo           | 4.08                  | 4.31 | 4.79 | 2.12 | 4.95 | 5.10 | 3.24 |
| Cody              | 4.06                  | 4.28 | 4.92 | 2.16 | 5.00 | 5.03 | 2.98 |
| Team              | 3.93                  | 2.91 | 4.88 | 2.21 | 4.98 | 5.10 | 3.50 |
| Saranac           | 3.88                  | 2.91 | 5.03 | 2.01 | 4.60 | 5.14 | 3.57 |
| Weevichek         | 3.88                  | 3.35 | 4.88 | 2.04 | 5.14 | 4.78 | 3.12 |
| Rancher 400       | 3.64                  | 2.57 | 4.81 | 1.98 | 4.38 | 4.81 | 3.30 |
| Warrior           | 3.64                  | 2.65 | 4.85 | 2.01 | 4.46 | 4.70 | 3.19 |
| Pioneer brand 522 | 3.62                  | 2.71 | 4.60 | 1.94 | 4.59 | 4.73 | 3.17 |
| Glacier           | 3.15                  | 1.86 | 3.95 | 1.73 | 3.67 | 4.66 | 3.04 |
| L.S.D. (.05)      | —                     | 0.71 | 0.38 | 0.20 | 0.44 | N.S  | 0.27 |
| C.V. %            | —                     | 14.6 | 4.6  | 6.7  | 6.2  | 6.0  | 5.6  |

<sup>1</sup> Dickson silt loam (2% to 5% slopes).

**Table 44. Alfalfa: Yield of varieties seeded in the spring of 1976 at Springfield**

| Variety      | Avg. | 1977 | 1976 | Variety      | Avg. | 1977 | 1976 |
|--------------|------|------|------|--------------|------|------|------|
| T/A          |      |      |      |              |      |      |      |
| Weevichek    | 5.36 | 5.06 | 5.65 | K3-10        | 4.97 | 4.66 | 5.28 |
| Atlas        | 5.33 | 5.06 | 5.60 | Gladiator    | 4.91 | 4.54 | 5.28 |
| Pioneer 522  | 5.30 | 5.07 | 5.53 | Tempo        | 4.82 | 4.34 | 5.29 |
| Vanguard     | 5.23 | 5.08 | 5.39 | Pioneer 530  | 4.78 | 4.48 | 5.09 |
| Team         | 5.08 | 4.64 | 5.53 | Williamsburg | 4.56 | 4.04 | 5.09 |
| Anchor       | 5.00 | 4.51 | 5.48 | Lancer       | 4.49 | 4.00 | 4.99 |
| Europa       | 4.96 | 4.38 | 5.55 | KO-612       | 4.45 | 4.18 | 4.72 |
| Titan        | 4.84 | 4.35 | 5.34 |              |      |      |      |
| L.S.D. (.05) | —    | N.S. | N.S. |              | —    | N.S. | N.S. |
| C.V. %       | —    | 13.2 | 9.3  |              | —    | 13.2 | 9.3  |

**Table 45. Alfalfa: Yield of varieties seeded in 1975 at Jackson <sup>1</sup>**

| Variety               | Avg. | 1977          | 1976 |
|-----------------------|------|---------------|------|
|                       |      | Tons per acre |      |
| Vanguard <sup>2</sup> | 4.55 | 4.37          | 4.73 |
| Saranac AR            | 4.54 | 4.66          | 4.43 |
| Team                  | 4.47 | 4.72          | 4.22 |
| Apalachee             | 4.44 | 4.50          | 4.39 |
| Arc                   | 4.42 | 4.34          | 4.50 |
| Apollo                | 4.35 | 4.27          | 4.43 |
| Gladiator             | 4.30 | 4.64          | 3.96 |
| Weevlchek             | 4.16 | 4.55          | 3.78 |
| Williamsburg          | 4.16 | 4.64          | 3.68 |
| Pioneer brand 520     | 4.16 | 4.71          | 3.60 |
| Cody                  | 4.14 | 4.71          | 3.58 |
| N.K. 3-10             | 4.12 | 4.44          | 3.81 |
| Lancer                | 4.12 | 4.42          | 3.81 |
| Buffalo               | 4.10 | 4.58          | 3.62 |
| Pioneer brand 521     | 4.09 | 4.21          | 3.97 |
| N.K. Ko-612           | 3.66 | 4.20          | 3.12 |
| L.S.D. (.05)          | —    | N.S.          | .46  |
| C.V. %                | —    | 7.9           | 8.2  |

<sup>1</sup> Memphis silt loam (2% to 5% slopes).<sup>2</sup> Evaluated in previous years as Victor.**Table 46. Alfalfa: Yield of varieties seeded in the spring of 1976 at Spring Hill <sup>1</sup>**

| Variety               | Avg. | 1977          | 1976 |
|-----------------------|------|---------------|------|
|                       |      | Tons per acre |      |
| Saranac AR            | 3.90 | 4.09          | 3.70 |
| Vanguard <sup>2</sup> | 3.88 | 4.26          | 3.50 |
| Apalachee             | 3.86 | 4.08          | 3.64 |
| Gladiator             | 3.62 | 3.62          | 3.61 |
| Apollo                | 3.54 | 3.79          | 3.28 |
| Arc                   | 3.52 | 3.93          | 3.10 |
| Pioneer brand 521     | 3.47 | 3.51          | 3.43 |
| Pioneer brand 520     | 3.46 | 3.24          | 3.67 |
| Williamsburg          | 3.46 | 3.45          | 3.48 |
| Team                  | 3.38 | 3.48          | 3.28 |
| Lancer                | 3.38 | 3.52          | 3.25 |
| Cody                  | 3.32 | 3.52          | 3.12 |
| N.K. 3-10             | 3.26 | 3.20          | 3.33 |
| Weevlchek             | 3.10 | 3.23          | 2.97 |
| Buffalo               | 3.08 | 3.10          | 3.07 |
| N.K. Ko-612           | 2.80 | 2.82          | 2.78 |
| L.S.D. (.05)          | —    | .64           | N.S. |
| C.V. %                | —    | 12.7          | 11.1 |

<sup>1</sup> Maury silt loam (2% to 5% slopes).<sup>2</sup> Evaluated in previous years as Victor.

**Table 47. Alfalfa: Yield of varieties seeded in 1976 at Knoxville <sup>1</sup>**

| Variety      | Yield | Variety           | Yield |
|--------------|-------|-------------------|-------|
|              | T/A   |                   | T/A   |
| Saranac AR   | 3.56  | N.K. 3-10         | 3.22  |
| N.K. Ko-612  | 3.45  | Pioneer brand 521 | 3.18  |
| Arc          | 3.37  | Apollo            | 3.12  |
| Lancer       | 3.34  | Vanguard          | 3.12  |
| Gladiator    | 3.33  | Pioneer brand 520 | 3.10  |
| Cody         | 3.31  | Williamsburg      | 3.04  |
| Apalachee    | 3.26  | Team              | 2.98  |
| Buffalo      | 3.22  | Weevlchek         | 2.88  |
| L.S.D. (.05) | N.S.  |                   | N.S.  |
| C.V. %       | 11.5  |                   | 11.5  |

<sup>1</sup> Lindside and Captina silt loam (2% to 5% slopes).

**Table 48. Alfalfa: Yield of 6 varieties seeded in 1976 at Knoxville**

| Variety      | Yield | Variety      | Yield |
|--------------|-------|--------------|-------|
|              | T/A   |              | T/A   |
| Atlas        | 3.94  | D69-An1 w1   | 3.63  |
| Olympic      | 3.91  | Resitador II | 3.20  |
| RSW A2-An1   | 3.83  | N.K. Kc-3    | 3.05  |
| L.S.D. (.05) | .23   |              | .23   |
| C.V. %       | 4.2   |              | 4.2   |

**Table 49. Red Clover: Yield of varieties evaluated at four locations in 1977**

| Variety      | Avg. | Spring-field <sup>1</sup> | Spring hill | Jack-son <sup>3</sup> | Mar-tin <sup>4</sup> |
|--------------|------|---------------------------|-------------|-----------------------|----------------------|
|              |      | Tons per acre             |             |                       |                      |
| Kenstar      | 3.48 | 2.58                      | 2.73        | 4.05                  | 4.54                 |
| Kenland      | 3.34 | 2.57                      | 2.51        | 4.10                  | 4.18                 |
| Redland      | 3.26 | 2.59                      | 2.66        | 3.78                  | 4.00                 |
| Arlington    | 3.01 | 2.58                      | 2.54        | 3.47                  | 3.45                 |
| Redman       | 2.93 | 2.60                      | 2.48        | 3.68                  | 3.96                 |
| L.S.D. (.05) | —    | N.S.                      | N.S.        | N.S.                  | .68                  |
| C.V. %       | —    | 5.5                       | 10.2        | 12.1                  | 11.0                 |

<sup>1</sup> Dickson silt loam (2% to 5% slopes).

<sup>2</sup> Maury silt loam (2% to 5% slopes).

<sup>3</sup> Memphis silt loam (0% to 2% slopes).

<sup>4</sup> Falaya silt loam (2% to 5% slopes).

## SUMMER ANNUALS

(Sorghum X Sudangrass Crosses, and Sudangrass)

Twenty summer annual cultivars were evaluated in 1977 for forage production at Knoxville. All varieties yielded well.

The leading Sorghum X Sudangrass Crosses in 1977 were Sudax S-17, Sweet Sioux IV, N.A.P.B. 77-22-01, Mor Su II, Sordan 70A, and Sudax SX-16a.

For the past 2 years Sweet Sioux IV, Sudax SX-17, Sordan 70A, Trudan 5 (Sudangrass), and Mor Su II performed well.

**Table 50. Yields of summer annual varieties and hybrids evaluated at Knoxville in 1977<sup>1</sup>**

| Variety                             | Oven dry<br>forage<br>T/A | Variety                             | Oven dry<br>forage<br>T/A |
|-------------------------------------|---------------------------|-------------------------------------|---------------------------|
| <b>Sorghum X Sudangrass Crosses</b> |                           | <b>Sorghum X Sudangrass Crosses</b> |                           |
| Sudax SX-17                         | 4.70                      | Drip-o-Honey                        | 4.30                      |
| Sweet Sioux IV                      | 4.67                      | Sudax SX-16                         | 4.27                      |
| N.A.P.B. 77-22-01                   | 4.62                      | FFR 66                              | 4.25                      |
| Mor Su II                           | 4.54                      | Sordan 77                           | 4.20                      |
| Sordan 70A                          | 4.50                      | Trudan 7 <sup>2</sup>               | 4.19                      |
| Sudax SX-16a                        | 4.50                      | Tastemaker                          | 4.19                      |
| Sudax SX-7 <sup>+</sup>             | 4.41                      | Wandergraze                         | 4.11                      |
| Trudan 5 <sup>2</sup>               | 4.40                      | McNair 711A                         | 4.04                      |
| Graze-N-Bale                        | 4.38                      | Acco S99                            | 4.01                      |
| Sweet M                             | 4.34                      | FFR 74                              | 3.91                      |
| L.S.D. (.05)                        | N.S.                      |                                     | N.S.                      |
| C.V. %                              | 9.2                       |                                     | 9.2                       |

<sup>1</sup> Sequatchie loam (2% to 5% slopes).

<sup>2</sup> Sudangrass.

**Table 51. Yields of summer annual varieties and hybrids evaluated at Knoxville for 2 years (1976-77)**

| Variety                             | Oven dry<br>forage<br>T/A | Variety                             | Oven dry<br>forage<br>T/A |
|-------------------------------------|---------------------------|-------------------------------------|---------------------------|
| <b>Sorghum X Sudangrass Crosses</b> |                           | <b>Sorghum X Sudangrass Crosses</b> |                           |
| Sweet Sioux IV                      | 3.75                      | Drip-o-Honey                        | 3.55                      |
| Sudax SX-17                         | 3.67                      | FFR-66                              | 3.52                      |
| Sordan 70A                          | 3.67                      | Graze-n-Bale                        | 3.46                      |
| Trudan 5 <sup>1</sup>               | 3.61                      | Wandergraze                         | 3.34                      |
| Mor Su II                           | 3.60                      | McNair 711A                         | 3.32                      |
| Sweet M                             | 3.58                      | Acco S-99                           | 3.24                      |
| Sudax SX-16a                        | 3.57                      | FFR-74                              | 3.16                      |
| Sudax SX-16                         | 3.56                      |                                     |                           |

<sup>1</sup> Sudangrass.

# Summer annuals tested and the seed company originating each cultivar

| Company  | Variety or hybrid                   | Company                | Variety or hybrid                   |
|----------|-------------------------------------|------------------------|-------------------------------------|
|          | <b>Sorghum X Sudangrass Crosses</b> |                        | <b>Sorghum X Sudangrass Crosses</b> |
| DeKalb   | Sudax SX-7+                         | Northrup King          | Sordan 70A                          |
| DeKalb   | Sudax SX-16                         | Northrup King          | Sordan 77                           |
| DeKalb   | Sudax SX-16a                        | Northrup King          | Wandergraze                         |
| DeKalb   | Sudax SX-17                         | McCurdy                | Sweet M                             |
| Acco     | Sweet Sioux IV                      | Farmer Forage Research | FFR-66                              |
| Acco     | S-99                                | Farmer Forage Research | FFR-74                              |
| McNair   | 711A                                | Wilstar                | Graze-N-Bale                        |
| McNair   | Drip-o-Honey                        | Wilstar                | Tastemaker                          |
| N.A.P.B. | Mor Su II                           |                        | Sudangrass                          |
| N.A.P.B. | 77-22-01                            | Northrup King          | Trudan 5                            |
|          |                                     | Northrup King          | Trudan 7                            |

## SOYBEANS

Soybean varieties were evaluated in 1977 at Greeneville, Knoxville, Crossville, Springfield, Spring Hill, Martin, Jackson, Milan, and Ames Plantation.

Three early maturing variety tests were conducted at Crossville, Springfield, and Milan. Two early maturing strains tests were conducted at Jackson and Martin. Also at Jackson a strains test consisting of varieties in Maturity groups V and VI were evaluated in addition to several commercial varieties in a Benlate test at Jackson. Tests at all other locations contained varieties in Maturity groups V or VI with a few varieties in group VII. Essex, SSF 500N, Coker 75-842, and Coker 136 performed well in 1977 at Greeneville with SSF 500N producing the highest yield. The three leading varieties at Knoxville were McNair 500, N. K. Multivar 100, and SSF 500N.

The yields at Spring Hill were low due to dry weather. Essex performed the best at this location. At Springfield the leading varieties in 1977 were Essex, Forrest, and N. K. Multivar 100. At Crossville in Maturity group V and VI tests Forrest and Essex were the highest seed producers. Coker 75-842 and Green Soy 74-64 seemed to be too late for this location because they did not mature before the first frost.

in Maturity group V and VI test Forrest and Essex were the highest SSF 500N, Essex, Bedford, and McNair 500. The varieties that resisted lodging the best at this location were Essex, McNair 500, and Green Soy 74-82 (Table 56).

At Martin under cyst nematode free conditions, Forrest and SSF

500N yields were reduced in some replications where the soil pH was 7 or above. This variation from replication to replication resulted in no significant difference among yields in this test at Martin. When the varieties were evaluated under cyst nematode conditions at Martin, the leading varieties were Centennial, Pickett 71, and Forrest (Table 58).

The soybean yields at Ames Plantation were low due to severe dry weather; also the varieties with cyst nematode resistance performed well (Table 60). Pickett 71 produced 39 bushels per acre and FFR 556 only 17.

Using an average across seven locations in 1977 the highest producing varieties were Essex, SSF 500N, Forrest, McNair 500, N. K. Multivar 100, and Coker 75-842. A 2- or 3-year average was not done because most of these varieties were evaluated for the first time in 1977.

For several years early maturing varieties (Maturity groups III and IV) have been evaluated at several locations in Tennessee. Many of these early maturing varieties have produced high yields. The 1977 data for these early varieties are presented in Tables 62 through 66. At Crossville (Table 62) Mitchell and RA(C)36 produced the highest yields. Essex, RA 135(a), and SRF 450 yielded 44 bushels per acre at this location. Essex (Maturity group V) has been used as a check variety in most of these early maturing tests (Maturity groups III and IV), and has yielded as well or better than most of the early maturing varieties. Mitchell has produced well in most of these early maturing tests.

If varieties of Maturity Groups III and IV are to be grown, they should be grown on a small acreage because if they are not harvested when they first become mature, they may shatter or deteriorate in the pod if rainy weather persists for any length of time after maturity. Also, if the very early varieties are planted late (July 15), in many cases they will not produce as much plant growth before flowering as some later-maturing varieties, such as Forrest, Essex, York, etc. These early-maturing varieties will produce good yields but their limitation should be realized before planting large acreages. Under good weather conditions there may be no problem in harvesting these early-maturing varieties; however, under adverse weather conditions, poor weed control—which may delay harvest—can cause some problem with these early-maturing varieties. In some years, these early varieties could be harvested before bad weather starts.

**Table 52. Soybeans: Yields of soybean varieties evaluated at seven locations in 1977**

| Variety           | Avg. | Knox-<br>ville <sup>1</sup> | Greene-<br>ville <sup>2</sup> | Spring<br>Hill <sup>3</sup> | Spring-<br>field <sup>4</sup> | Milan <sup>5</sup> | Martin <sup>6</sup> | Ames<br>Planta-<br>tion <sup>7</sup> |
|-------------------|------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|--------------------|---------------------|--------------------------------------|
| Bushels per acre  |      |                             |                               |                             |                               |                    |                     |                                      |
| Essex             | 45   | 54                          | 59                            | 27                          | 50                            | 61                 | 42                  | 24                                   |
| SSF 500N          | 45   | 58                          | 60                            | 19                          | 43                            | 63                 | 41                  | 29                                   |
| Forrest           | 43   | 53                          | 48                            | 19                          | 46                            | 65                 | 41                  | 32                                   |
| McNair 500        | 43   | 58                          | 53                            | 16                          | 45                            | 60                 | 49                  | 22                                   |
| N.K. Multivar 100 | 42   | 58                          | 50                            | 18                          | 48                            | 58                 | 40                  | 25                                   |
| Coker 75-842      | 42   | 47                          | 56                            | 20                          | 40                            | 58                 | 43                  | 29                                   |
| Centennial        | 41   | 46                          | 51                            | 18                          | 36                            | 54                 | 47                  | 37                                   |
| Coker 136         | 41   | 53                          | 55                            | 22                          | 33                            | 53                 | 48                  | 21                                   |
| Pickett 71        | 41   | 43                          | 46                            | 22                          | 36                            | 55                 | 42                  | 39                                   |
| R.A. 501          | 39   | 45                          | 48                            | 21                          | 42                            | 53                 | 41                  | 26                                   |
| Bedford           | 39   | 49                          | 43                            | 17                          | 43                            | 61                 | 42                  | 21                                   |
| Green Soy 74-64   | 38   | 51                          | 55                            | 20                          | 30                            | 55                 | 30                  | 24                                   |
| FFR 556           | 37   | 43                          | 52                            | 16                          | 36                            | 53                 | 44                  | 17                                   |
| R.A. 526          | 36   | 43                          | 41                            | 14                          | 39                            | 53                 | 42                  | 24                                   |
| N.K. Entry 30     | 35   | 40                          | 51                            | 11                          | 40                            | 52                 | 34                  | 20                                   |
| McNair 600        | —    | 44                          | 54                            | 12                          | —                             | 52                 | —                   | 21                                   |
| FFR 666           | —    | —                           | —                             | —                           | —                             | 55                 | —                   | —                                    |
| Lancer            | —    | —                           | —                             | —                           | —                             | 51                 | 43                  | 22                                   |
| Green Soy 74-82   | —    | —                           | —                             | —                           | —                             | 53                 | —                   | 23                                   |
| Coker 237         | —    | —                           | —                             | —                           | —                             | —                  | —                   | 21                                   |
| Agri Pro AP 70    | —    | —                           | —                             | —                           | —                             | —                  | —                   | 18                                   |
| L.S.D. (.05)      | —    | 7.4                         | 8.1                           | 6.6                         | 7.8                           | 4.6                | N.S.                | 7.0                                  |
| C.V. %            | —    | 7.8                         | 11.0                          | 25.3                        | 13.5                          | 5.7                | 17.8                | 18.5                                 |

<sup>1</sup> Sequatchie silt loam (2% to 5% slopes).

<sup>2</sup> Hermitage silt loam (2% to 5% slopes).

<sup>3</sup> Maury silt loam (2% to 5% slopes).

<sup>4</sup> Huntington silt loam, local alluvium (2% to 5% slopes).

<sup>5</sup> Collins silt loam (2% to 5% slopes).

<sup>6</sup> Collins silt loam (2% to 5% slopes).

<sup>7</sup> Memphis silt loam (2% to 5% slopes).

**Table 53. Soybeans: Yield and other characteristics of varieties evaluated at Knoxville in 1977 <sup>1</sup>**

| Variety           | Yield | Date full bloom | Date mature | Plant height | Lodging |
|-------------------|-------|-----------------|-------------|--------------|---------|
|                   | Bu/A  |                 |             | In.          | %       |
| McNair 500        | 58    | 7-24            | 10-17       | 38           | 10      |
| SSF 500 N         | 58    | 7-24            | 10-17       | 43           | 24      |
| N.K. Multivar 100 | 58    | 7-24            | 10-14       | 35           | 46      |
| Essex             | 54    | — <sup>2</sup>  | 10-4        | 36           | 41      |
| Coker 136         | 53    | — <sup>2</sup>  | 10-17       | 43           | 26      |
| Forrest           | 53    | — <sup>2</sup>  | 10-17       | 42           | 19      |
| Green Soy 74-64   | 51    | 7-26            | 11-4        | 42           | 38      |
| Bedford           | 49    | 7-25            | 10-18       | 47           | 65      |
| Coker 75-842      | 47    | 7-28            | 11-4        | 41           | 72      |
| Centennial        | 46    | 7-26            | 10-30       | 44           | 48      |
| RA 501            | 45    | 7-20            | 10-19       | 49           | 89      |
| McNair 600        | 44    | 7-26            | 10-26       | 39           | 41      |
| FFR 556           | 43    | 7-24            | 10-27       | 53           | 78      |
| Pickett 71        | 43    | 7-30            | 10-27       | 36           | 70      |
| RA 526            | 43    | 7-20            | 10-6        | 39           | 90      |
| N.K. Entry 30     | 40    | 7-24            | 10-29       | 49           | 66      |
| L.S.D. (.05)      | 5.4   | —               | —           | —            | —       |
| C.V. %            | 7.8   | —               | —           | —            | —       |

<sup>1</sup> Sequatchie loam (2% to 5% slopes).

<sup>2</sup> Missing data.

**Table 54. Soybeans: Yield and other characteristics of varieties evaluated at Crossville in 1977 <sup>1</sup>**

| Variety           | Yield | Date 1st flower | Date last flower | Flower color <sup>2</sup> | Date mature | Plant height |
|-------------------|-------|-----------------|------------------|---------------------------|-------------|--------------|
|                   | Bu/A  |                 |                  |                           |             | In.          |
| Forrest           | 43    | 7-15            | 8-4              | W                         | 10-3        | 38           |
| Essex             | 42    | 7-11            | 8-1              | P                         | 9-21        | 37           |
| SSF 500 N         | 40    | 7-13            | 8-4              | W                         | 10-3        | 36           |
| RA 501            | 39    | 7-15            | 8-16             | P                         | 9-30        | 50           |
| N.K. Multivar 100 | 38    | 7-12            | 8-4              | P                         | 9-28        | 38           |
| Coker 75-842      | 38    | 7-25            | 8-26             | W                         | Frost       | 42           |
| Bedford           | 38    | 7-24            | 8-22             | W                         | 10-1        | 47           |
| Green Soy 74-64   | 37    | 7-18            | 8-22             | W                         | Frost       | 43           |
| N.K. Entry 30     | 35    | 7-19            | 8-26             | W                         | 10-3        | 46           |
| FFR 556           | 33    | 7-16            | 8-24             | P                         | 10-8        | 53           |
| L.S.D. (.05)      | 5.4   | —               | —                | —                         | —           | —            |
| C.V. %            | 10.1  | —               | —                | —                         | —           | —            |

<sup>1</sup> Hartsells loam (2% to 5% slopes).

<sup>2</sup> W=White and P=Purple.

**Table 55. Soybeans: Yield and other characteristics of varieties evaluated at Spring Hill in 1977 <sup>1</sup>**

| Variety           | Yield | Date<br>1st<br>flower | Date<br>full<br>bloom | Date<br>mature | Plant<br>height |
|-------------------|-------|-----------------------|-----------------------|----------------|-----------------|
|                   | Bu/A  |                       |                       |                | In.             |
| Essex             | 27    | 6-26                  | 7-8                   | 9-20           | 28              |
| Coker 136         | 22    | 7-12                  | 7-19                  | 10-10          | 36              |
| Pickett 71        | 22    | 7-18                  | 7-26                  | 10-17          | 32              |
| RA 501            | 21    | 7-8                   | 7-13                  | 9-28           | 39              |
| Coker 75-842      | 20    | 7-16                  | 7-25                  | — <sup>2</sup> | 35              |
| Green Soy 74-64   | 20    | 7-13                  | 7-26                  | — <sup>2</sup> | 39              |
| Forrest           | 19    | 7-4                   | 7-14                  | 9-24           | 37              |
| SSF 500N          | 19    | 7-6                   | 7-14                  | 9-28           | 36              |
| Centennial        | 18    | 7-11                  | 7-20                  | — <sup>2</sup> | 41              |
| N.K. Multivar 100 | 18    | 7-5                   | 7-13                  | 9-28           | 33              |
| Bedford           | 17    | 7-13                  | 7-19                  | 9-28           | 44              |
| McNair 500        | 16    | 7-10                  | 7-18                  | 9-28           | 34              |
| FFR 556           | 16    | 7-6                   | 7-19                  | 10-17          | 49              |
| RA 526            | 14    | 7-9                   | 7-17                  | 9-24           | 33              |
| McNair 600        | 12    | 7-16                  | 7-22                  | 10-17          | 41              |
| N.K. Entry 30     | 11    | 7-14                  | 7-23                  | 10-17          | 39              |
| L.S.D. (.05)      | 6.6   | —                     | —                     | —              | —               |
| C.V. %            | 25.3  | —                     | —                     | —              | —               |

<sup>1</sup> Maury silt loam (2% to 5% slopes).

<sup>2</sup> Killing frost before maturity.

**Table 56. Soybeans: Yield and other characteristics of varieties evaluated at Milan in 1977 <sup>1</sup>**

| Variety              | Yield | Date<br>1st<br>flower | Flower<br>color <sup>3</sup> | Date<br>last<br>flower | Color<br>of<br>pubes-<br>cence <sup>4</sup> | Date<br>matures | Plant<br>height | Shatter-<br>Lodging ing |       |
|----------------------|-------|-----------------------|------------------------------|------------------------|---------------------------------------------|-----------------|-----------------|-------------------------|-------|
|                      | Bu/A  |                       |                              |                        |                                             |                 | In.             | %                       | (0-5) |
| Forrest              | 65    | 7-14                  | W                            | 8-22                   | T                                           | 10-8            | 48              | 60                      | 0     |
| SSF500N              | 63    | 7-12                  | W                            | 8-22                   | T                                           | 10-12           | 44              | 90                      | 0     |
| Essex                | 61    | 7-9                   | P                            | 7-16                   | G                                           | 10-2            | 40              | 20                      | 1     |
| Bedford <sup>2</sup> | 61    | 7-22                  | W                            | 8-22                   | T                                           | 10-18           | 48              | 90                      | 0     |
| McNair 500           | 60    | 7-16                  | P                            | 8-29                   | T                                           | 10-21           | 49              | 20                      | 0     |
| Coker 75-842         | 58    | 7-25                  | W                            | 8-30                   | G                                           | 10-29           | 44              | 90                      | 0     |
| N.K. Multivar 100    | 58    | 7-11                  | P                            | 8-22                   | G                                           | 10-15           | 46              | 90                      | 0     |
| Pickett 71           | 55    | 7-25                  | P                            | 9-2                    | G                                           | 10-26           | 46              | 90                      | 0     |
| FFR 666              | 55    | 7-22                  | P                            | 9-4                    | T                                           | 10-24           | 48              | 90                      | 0     |
| Green Soy 74-64      | 55    | 7-16                  | W                            | 8-25                   | G                                           | 10-29           | 43              | 80                      | 0     |
| Centennial           | 54    | 7-16                  | P                            | 9-2                    | T                                           | 10-21           | 44              | 90                      | 0     |
| FFR 556              | 53    | 7-16                  | P                            | 8-29                   | G                                           | 10-21           | 60              | 80                      | 0     |
| Coker 136            | 53    | 7-22                  | P                            | 8-22                   | G                                           | 10-12           | 53              | 40                      | 0     |
| RA 526               | 53    | 7-16                  | P                            | 8-22                   | T                                           | 10-2            | 44              | 95                      | 0     |
| RA 501               | 53    | 7-14                  | P                            | 8-22                   | T                                           | 10-12           | 41              | 100                     | 2     |
| Green Soy 74-82      | 53    | 7-11                  | W                            | 8-18                   | G                                           | 10-2            | 44              | 25                      | 0     |
| McNair 600           | 52    | 7-25                  | P                            | 9-2                    | T                                           | 10-26           | 46              | 90                      | 0     |
| N.K. Entry 30        | 52    | 7-25                  | W                            | 9-4                    | T                                           | 10-29           | 48              | 95                      | 0     |
| Lancer               | 51    | 7-25                  | P                            | 9-2                    | G                                           | 10-26           | 46              | 70                      | 0     |
| L.S.D. (.05)         | 4.6   | —                     | —                            | —                      | —                                           | —               | —               | —                       | —     |
| C.V. %               | 5.7   | —                     | —                            | —                      | —                                           | —               | —               | —                       | —     |

<sup>1</sup> Collins silt loam (2% to 5% slope).

<sup>2</sup> Evaluated in the past as J74-46.

<sup>3</sup> W=White and P=Purple.

<sup>4</sup> T=Tawny and G=Gray.

**Table 57. Soybeans: Yield and other characteristics of varieties evaluated at Martin in 1977 <sup>1</sup>**

| Variety           | Yield | Pubes-<br>cence<br>color <sup>2</sup> | Flower<br>color <sup>3</sup> | Date<br>1st<br>flower | Plant<br>height | Lod-<br>ging | Date<br>ready<br>for<br>harvest |
|-------------------|-------|---------------------------------------|------------------------------|-----------------------|-----------------|--------------|---------------------------------|
|                   | Bu/A  |                                       |                              |                       | In.             | %            |                                 |
| McNair 500        | 49    | T                                     | P                            | 7-23                  | 40              | 30           | 10-7                            |
| Coker 136         | 48    | G                                     | P                            | 7-24                  | 47              | 75           | 10-22                           |
| Centennial        | 47    | T                                     | P                            | 7-24                  | 45              | 60           | 10-28                           |
| FFR 556           | 44    | G                                     | P                            | 7-20                  | 61              | 70           | 10-22                           |
| Coker 75-842      | 43    | G                                     | W                            | 8-1                   | 46              | 60           | 10-26                           |
| Lancer            | 43    | G                                     | P                            | 7-27                  | 48              | 75           | 10-24                           |
| RA 526            | 42    | T                                     | P                            | 7-25                  | 41              | 50           | 10-3                            |
| Pickett 71        | 42    | G                                     | P                            | 8-1                   | 35              | 100          | 10-30                           |
| Essex             | 42    | G                                     | P                            | 7-13                  | 37              | 20           | 10-17                           |
| Belford           | 42    | T                                     | W                            | 7-27                  | 54              | 50           | 10-17                           |
| SSF 500 N         | 41    | T                                     | W                            | 7-18                  | 39              | 50           | 10-18                           |
| Forrest           | 41    | T                                     | W                            | 7-18                  | 44              | 40           | 10-20                           |
| RA 501            | 41    | T                                     | P                            | 7-18                  | 55              | 70           | 10-10                           |
| N.K. Multivar 100 | 40    | T&G                                   | P&W                          | 7-17                  | 35              | 40           | 10-15                           |
| N.K. Entry 30     | 34    | T                                     | W                            | 7-30                  | 47              | 60           | 10-26                           |
| Green Soy 74-64   | 30    | G                                     | W                            | 7-23                  | 48              | 20           | 10-29                           |
| L.S.D. (.05)      | N.S.  | —                                     | —                            | —                     | —               | —            | —                               |
| C.V. %            | 17.8  | —                                     | —                            | —                     | —               | —            | —                               |

<sup>1</sup> Collins silt loam (2% to 5% slopes).

<sup>2</sup> G=Grey and T=Tawny.

<sup>3</sup> P=Purple and W=White.

**Table 58. Soybeans: Yield and other characteristics of varieties evaluated under cyst nematodes condition at Martin in 1977<sup>1</sup>**

| Variety              | Yield | Date first flower | Flower color <sup>2</sup> | Pubescence color <sup>3</sup> | Plant Height | Lodging | Date ready for harvest |
|----------------------|-------|-------------------|---------------------------|-------------------------------|--------------|---------|------------------------|
|                      | Bu/A  |                   |                           |                               | In.          |         |                        |
| Centennial           | 32    | 7-23              | P                         | T                             | 35           | 75      | 10-26                  |
| Pickett 71           | 30    | 8-2               | P                         | G                             | 32           | 100     | 10-27                  |
| Forrest              | 30    | 7-19              | W                         | T                             | 34           | 20      | 10-5                   |
| Coker 75-842         | 28    | 7-31              | W                         | G                             | 34           | 10      | 10-26                  |
| RA 501               | 27    | 7-22              | P                         | T                             | 44           | 60      | 10-5                   |
| Bedford <sup>4</sup> | 26    | 7-25              | P & W                     | T & G                         | 42           | 20      | 10-7                   |
| N.K. Multivar 100    | 26    | 7-20              | W                         | T                             | 33           | 5       | 10-7                   |
| Lancer               | 25    | 7-29              | P                         | G                             | 32           | 2       | 10-28                  |
| SSF 500N             | 25    | 7-21              | W                         | T                             | 40           | 5       | 10-9                   |
| Essex                | 25    | 7-16              | P                         | G                             | 28           | 2       | 9-29                   |
| McNair 500           | 25    | 7-23              | P                         | T                             | 35           | 0       | 10-4                   |
| Coker 136            | 24    | 7-25              | P                         | G                             | 32           | 2       | 10-9                   |
| RA526                | 24    | 7-23              | P                         | T                             | 33           | 5       | 10-5                   |
| Green Soy 74-64      | 24    | 7-27              | W                         | G                             | 35           | 20      | 10-26                  |
| N.K. Entry 30        | 24    | 7-28              | W                         | T                             | 46           | 60      | 10-27                  |
| FFR556               | 23    | 7-21              | P                         | G                             | 40           | 5       | 10-9                   |
| L.S.D. (.05)         | 7.3   | —                 | —                         | —                             | —            | —       | —                      |
| C.V. %               | 19.5  | —                 | —                         | —                             | —            | —       | —                      |

<sup>1</sup> Grenada silt loam (2% to 5% slopes).

<sup>2</sup> P=Purple and W=White.

<sup>3</sup> G=Gray and T=Tawny.

<sup>4</sup> Tested in previous years as J-74-46.

**Table 59. Soybeans: Yield and other characteristics of varieties evaluated at Jackson in 1977<sup>12</sup>**

| Variety      | Yield | Date       |             | Plant height | Date mature |
|--------------|-------|------------|-------------|--------------|-------------|
|              |       | 1st flower | last flower |              |             |
|              | Bu/A  |            |             | In.          |             |
| Pickett 71   | 39    | 7-20       | 8-31        | 48           | 10-28       |
| Centennial   | 35    | 7-18       | 8-31        | 50           | 10-27       |
| Lee 74       | 34    | 7-19       | 8-29        | 48           | 10-30       |
| FFR 666      | 33    | 7-19       | 8-29        | 46           | 10-26       |
| York         | 32    | 7-6        | 8-2         | 46           | 10-4        |
| Bedford      | 31    | 7-15       | 8-10        | 52           | 10-7        |
| Forrest      | 30    | 7-8        | 8-3         | 47           | 10-6        |
| Mitchell     | 29    | 6-15       | 7-26        | 44           | 9-3         |
| Bragg        | 28    | 7-24       | 9-1         | 53           | 11-3        |
| Dare         | 25    | 7-5        | 8-3         | 47           | 10-2        |
| Essex        | 25    | 7-2        | 7-28        | 36           | 9-26        |
| Coker 136    | 24    | 7-11       | 8-5         | 51           | 10-5        |
| L.S.D. (.05) | 7.4   | —          | —           | —            | —           |
| C.V. %       | 17.0  | —          | —           | —            | —           |

<sup>1</sup> Grenada silt loam (0% to 2% slopes).

<sup>2</sup> Seeded May 12, 1977.

**Table 60. Soybeans: Yield and other characteristics of varieties evaluated at Ames Plantation in 1977 <sup>1</sup>**

| Variety           | Yield | Lodging | Date<br>mature | Plant<br>height |
|-------------------|-------|---------|----------------|-----------------|
|                   | Bu/A  | %       |                | In.             |
| Pickett 71        | 39    | 6       | 10-24          | 31              |
| Centennial        | 37    | 6       | 10-24          | 38              |
| Forrest           | 32    | 3       | 10-13          | 34              |
| Coker 75-842      | 29    | 5       | 10-24          | 38              |
| SSF 500N          | 29    | 3       | 10-11          | 34              |
| FFR 666           | 28    | 4       | 10-20          | 29              |
| RA 501            | 26    | 12      | 10-3           | 44              |
| N.K. Multivar 100 | 25    | 2       | 10-3           | 32              |
| Essex             | 24    | 1       | 9-21           | 22              |
| Green Soy 74-64   | 24    | 3       | 10-24          | 38              |
| RA 526            | 24    | 2       | 9-26           | 29              |
| Green Soy 74-82   | 23    | 1       | 9-26           | 28              |
| Lancer            | 22    | 2       | 10-11          | 30              |
| McNair 500        | 22    | 2       | 9-30           | 34              |
| Coker 73-370      | 21    | 3       | 10-24          | 34              |
| Coker 136         | 21    | 2       | 10-3           | 34              |
| McNair 600        | 21    | 6       | 10-20          | 39              |
| Bedford           | 21    | 6       | 10-11          | 41              |
| N.K. Entry 30     | 20    | 4       | 10-24          | 44              |
| Agri Pro AP 70    | 18    | 3       | 11-1           | 42              |
| FFR 556           | 17    | 6       | 10-13          | 50              |
| C.V. %            | 7.0   | —       | —              | —               |
|                   | 18.5  | —       | —              | —               |

<sup>1</sup> Memphis silt loam (2% to 5% slopes).

Table 61. Soybeans: Yield and other characteristics of new strains evaluated at Jackson in 1977 <sup>1</sup>

| Variety         | Yield | Date       |             | Flower color <sup>2</sup> | Plant height | Date mature | Seed quality <sup>3</sup> | Purple seed stain <sup>4</sup> | Shattering <sup>5</sup> | Lodging <sup>6</sup> |
|-----------------|-------|------------|-------------|---------------------------|--------------|-------------|---------------------------|--------------------------------|-------------------------|----------------------|
|                 |       | 1st flower | Last flower |                           |              |             |                           |                                |                         |                      |
|                 | Bu/A  |            |             |                           | In.          |             | Rating                    | Rating                         | Rating                  | Rating               |
| McNair 3152     | 36    | 7-21       | 8-30        | W                         | 50           | 11-2        | 2.0                       | 3.0                            | 1.0                     | 2.1                  |
| McNair 3130     | 34    | 7-14       | 8-10        | W                         | 52           | 10-16       | 2.0—                      | 2.0                            | 1.0                     | 1.0                  |
| McNair 3181     | 33    | 7-12       | 8-26        | P                         | 48           | 10-28       | 1.5                       | 2.0                            | 1.2                     | 1.0                  |
| SSF-503         | 33    | 7-3        | 7-28        | P                         | 36           | 9-24        | 3.0                       | 3.0                            | 3.8                     | 1.0                  |
| Green Soy 75-61 | 32    | 7-8        | 8-3         | P                         | 54           | 10-20       | 3.0                       | 4.0                            | 1.8                     | 1.0                  |
| Forrest         | 32    | 7-8        | 7-28        | W                         | 49           | 10-6        | 2.5                       | 4.0                            | 2.0                     | 1.0                  |
| Green Soy 75-18 | 31    | 7-8        | 8-18        | W                         | 50           | 10-29       | 2.0                       | 3.0                            | 1.0                     | 1.4                  |
| SSF-502         | 31    | 7-12       | 8-8         | W                         | 51           | 10-2        | 3.5+                      | 4.5                            | 1.5                     | 1.8                  |
| McNair 3161     | 29    | 7-15       | 8-7         | P                         | 49           | 10-14       | 2.0                       | 3.0                            | 1.0                     | 1.0                  |
| SSF-602         | 29    | 7-10       | 8-15        | P                         | 48           | 11-1        | 1.5                       | 2.0                            | 1.0                     | 1.8                  |
| Green Soy 75-72 | 29    | 7-19       | 8-20        | P                         | 50           | 10-30       | 1.5                       | 2.5                            | 1.0                     | 1.8                  |
| SSF-504         | 25    | 7-5        | 8-3         | P                         | 58           | 10-13       | 2.0                       | 4.0                            | 1.2                     | 1.0                  |
| RA-601          | 20    | 7-8        | 8-9         | P                         | 62           | 10-8        | 2.5                       | 3.5                            | 2.0                     | 1.8                  |
| L.S.D. (.05)    | 6.8   | —          | —           | —                         | —            | —           | —                         | —                              | —                       | —                    |
| C.V. %          | 15.5  | —          | —           | —                         | —            | —           | —                         | —                              | —                       | —                    |

<sup>1</sup> Memphis silt loam (0% to 2% slopes).

<sup>2</sup> W=White and P=Purple.

<sup>3</sup> 1=Very Good and 5=Very Poor.

<sup>4</sup> 1=Slight and 5=Severe Purple Stain.

<sup>5</sup> 1=No Shattering and 5=Over 20% Shattered.

<sup>6</sup> 1=Almost All Plants Erect and 5=All Plants Down Badly.

**Table 62. Soybeans: Yield and other characteristics of early maturing varieties evaluated at Crossville in 1977 <sup>1</sup>**

| Variety      | Yield | Date<br>1st<br>flower | Date<br>last<br>flower | Flower<br>color <sup>2</sup> | Matur-<br>ity | Plant<br>height | Lodg-<br>ing |
|--------------|-------|-----------------------|------------------------|------------------------------|---------------|-----------------|--------------|
|              | Bu/A  |                       |                        |                              |               | %               | In.          |
| Mitchell     | 52    | 6-27                  | 7-25                   | P                            | 9-7           | 42              | 48           |
| RA (c)36     | 49    | 6-27                  | 7-25                   | P                            | 9-13          | 56              | 52           |
| Essex        | 44    | 7-12                  | 7-29                   | P                            | 9-20          | 38              | 21           |
| RA 135(a)    | 44    | 7-3                   | 7-25                   | P                            | 9-17          | 45              | 14           |
| SRF 450      | 44    | 6-27                  | 7-25                   | P                            | 9-7           | 43              | 38           |
| SSF 403      | 42    | 6-27                  | 7-25                   | P                            | 9-7           | 42              | 22           |
| SRF 425      | 37    | 6-27                  | 7-20                   | W                            | 9-9           | 42              | 45           |
| SRF 350      | 37    | 6-25                  | 9-20                   | W                            | 8-30          | 37              | 55           |
| FFR 444      | 34    | 6-26                  | 7-25                   | P                            | 9-5           | 42              | 52           |
| SSF 402      | 31    | 6-25                  | 7-18                   | W                            | 8-26          | 38              | 21           |
| L.S.D. (.05) | 3.3   | —                     | —                      | —                            | —             | —               | —            |
| C.V. %       | 5.4   | —                     | —                      | —                            | —             | —               | —            |

<sup>1</sup> Hartsells loam (2% to 5% slopes).

<sup>2</sup> W=White and P=Purple.

**Table 63. Soybeans: Yield and other characteristics of early maturing varieties evaluated at Springfield**

| Variety      | Yield | Lodging | Plant<br>height |
|--------------|-------|---------|-----------------|
|              | Bu/A  | %       | In.             |
| RA135(a)     | 61    | 0.8     | 43              |
| Essex        | 58    | 1       | 32              |
| Mitchell     | 54    | 34      | 41              |
| SRF 350      | 51    | 48      | 36              |
| SRF 425      | 51    | 27      | 40              |
| FFR 444      | 51    | 31      | 40              |
| SRF 450      | 47    | 17      | 42              |
| RA(c)36      | 46    | 56      | 40              |
| SSF 402      | 43    | 13.     | 31              |
| SSF 403      | 37    | 23      | 40              |
| L.S.D. (.05) | 8.8   | —       | —               |
| C.V. %       | 12.3  | —       | —               |

**Table 64. Soybeans: Yield and other characteristics of early maturing soybean varieties evaluated at Milan in 1977 <sup>1</sup>**

| Variety         | Yield | Date<br>1st<br>flower | Flower<br>color <sup>2</sup> | Date<br>last<br>flower | Color<br>of<br>pubes-<br>cence <sup>3</sup> | Date<br>mature | Plant<br>height | Lodging | Shatter-<br>ing |
|-----------------|-------|-----------------------|------------------------------|------------------------|---------------------------------------------|----------------|-----------------|---------|-----------------|
|                 | Bu/A  |                       |                              |                        |                                             |                | In.             | %       | (0-5)           |
| Essex           | 67    | 7-9                   | P                            | 8-16                   | G                                           | 10-2           | 36              | 20      | 0               |
| SRF-450         | 57    | 6-22                  | P                            | 8-1                    | T                                           | 9-4            | 40              | 85      | 2               |
| Mitchell        | 57    | 6-22                  | P                            | 8-1                    | T                                           | 9-4            | 44              | 90      | 1               |
| RA 135(A)       | 57    | 6-28                  | P                            | 8-1                    | G                                           | 10-2           | 39              | 30      | 0               |
| RA (C)36        | 54    | 6-24                  | P                            | 8-1                    | T                                           | 9-10           | 38              | 90      | 0               |
| FFR 444         | 48    | 6-24                  | P                            | 8-1                    | T                                           | 9-1            | 38              | 60      | 2               |
| SSF 403         | 48    | 6-24                  | P                            | 7-28                   | T                                           | 9-10           | 38              | 80      | 1               |
| SRF 425         | 47    | 6-22                  | W                            | 7-28                   | T                                           | 9-4            | 42              | 90      | 1               |
| SRF 350         | 44    | 6-20                  | W                            | 7-28                   | T                                           | 9-4            | 39              | 90      | 2               |
| SSF 402         | 42    | 6-21                  | W                            | 7-28                   | T                                           | 9-4            | 38              | 100     | 1               |
| L.S.D.<br>(.05) | 6.2   | —                     | —                            | —                      | —                                           | —              | —               | —       | —               |
| C.V. %          | 7.0   | —                     | —                            | —                      | —                                           | —              | —               | —       | —               |

<sup>1</sup> Collins silt loam (2% to 5% slopes).

<sup>2</sup> P=Purple & W=White.

<sup>3</sup> T=Tawny & G=Gray.

**Table 65. Soybeans: Yield and other characteristics of early maturing varieties evaluated at Martin in 1977 <sup>1</sup>**

| Variety      | Yield | Date<br>1st<br>flower | Date<br>ready<br>for<br>harvest |
|--------------|-------|-----------------------|---------------------------------|
|              | Bu/A  |                       |                                 |
| RA 125(a)    | 36    | 7-5                   | 10-9                            |
| K-10-17      | 34    | 7-2                   | 10-5                            |
| Mitchell     | 34    | 7-1                   | 9-30                            |
| FFR 444      | 32    | 7-2                   | 9-28                            |
| L.S.D. (.05) | N.S.  | —                     | —                               |
| C.V. %       | 19.4  | —                     | —                               |

<sup>1</sup> Grenada silt loam (2% to 5% slopes).

**Table 66. Soybeans: Yield and other characteristics of varieties and new strains evaluated at Jackson in 1977 <sup>1</sup>**

| Variety     | Yield | Date<br>1st<br>flower | Date<br>last<br>flower | Date<br>mature | Plant<br>height |
|-------------|-------|-----------------------|------------------------|----------------|-----------------|
|             | Bu/A  |                       |                        |                |                 |
| K-1019      | 30    | 6-16                  | 7-28                   | 9-20           | 43              |
| Mitchell    | 29    | 6-16                  | 7-27                   | 9-3            | 43              |
| K-1017      | 29    | 6-15                  | 7-28                   | 9-18           | 46              |
| SSF-404     | 25    | 6-18                  | 7-26                   | 9-6            | 44              |
| L-71L-436B  | 24    | 6-18                  | 7-22                   | 9-8            | 48              |
| SSF-303     | 23    | 6-16                  | 7-20                   | 8-29           | 44              |
| FFR-444     | 21    | 6-17                  | 7-25                   | 8-30           | 46              |
| L.S.D (.05) | 5.8   | —                     | —                      | —              | —               |
| C.V. %      | 15.0  | —                     | —                      | —              | —               |

<sup>1</sup> Grenada silt loam (0% to 2% slopes).

## DARK TOBACCO

The dark fire-cured and dark air-cured tobacco varieties were evaluated at Springfield. The 1977 data are not available so the data included in this report are for 1974 through 1976. DF-911, a multiple-disease resistant, dark fire-cured variety, was developed and released in 1976 by the University of Tennessee Agricultural Experiment Station. DF-911 is resistant to black root rot, mosaic, and wildfire. It is not resistant to black shank. DF-911 is slightly darker in color and a little more open in growth habit than Madole and the leaf attachment is more upright. DF-911 has performed similar to Madole (Table 67).

In the dark air-cured test the leading varieties in 1976 were Ky 160 and OS 806, an experimental (Table 68).

**Table 67. Dark Fire-cured Tobacco: Average yield and acre value of varieties grown at Springfield in 1974, 1975, and 1976**

| Variety                 | Avg. | Acre yield      |       |      | Avg. | Acre value <sup>1</sup> |      |      |
|-------------------------|------|-----------------|-------|------|------|-------------------------|------|------|
|                         |      | 1976            | 1975  | 1974 |      | 1976                    | 1975 | 1974 |
|                         |      | Pounds per acre |       |      |      | Dollars per acre        |      |      |
| Tennex 917 <sup>2</sup> | 2307 | 1857            | 2431  | 2634 | 1200 | 955                     | 1342 | 1305 |
| DF-911                  | 2273 | 1895            | 2392  | 2533 | 1145 | 984                     | 1283 | 1168 |
| Madole                  | 2262 | 1749            | 2620  | 2416 | 1178 | 832                     | 1518 | 1184 |
| Tennex 916              | 2255 | 1845            | 2426  | 2492 | 1139 | 952                     | 1273 | 1194 |
| Ky. 171                 | 2165 | 1691            | 2316  | 2488 | 1154 | 868                     | 1305 | 1290 |
| Tennex 915              | 2130 | 1518            | 2452  | 2421 | 1084 | 748                     | 1348 | 1156 |
| Tennex 805              | —    | 1885            | —     | —    | —    | 935                     | —    | —    |
| Tennex 918              | —    | 1866            | —     | —    | —    | 970                     | —    | —    |
| Tennex 804              | —    | 1772            | 2813  | —    | —    | 871                     | 1352 | —    |
| Tennex 803              | —    | 1605            | 2371  | —    | —    | 754                     | 1284 | —    |
| Tennex 914              | —    | —               | 2441  | 2564 | —    | —                       | 1327 | 1165 |
| Tennex 912              | —    | —               | 2431  | 2457 | —    | —                       | 1288 | 1161 |
| Black Mammoth           | —    | —               | —     | 2660 | —    | —                       | —    | 1284 |
| DF-300                  | —    | —               | —     | 2411 | —    | —                       | —    | 1158 |
| L.S.D. (.05)            | —    | 197.0           | 112.6 | N.S. | —    | 106.7                   | 99.0 | N.S. |
| C.V. %                  | —    | 8.7             | 3.9   | 6.5  | —    | 9.6                     | 5.8  | 8.8  |

<sup>1</sup> These values are based on the average value for the various grades on all type 22 markets during the 5-year period, 1965-1969.

<sup>2</sup> All with Tennex numbers are experimentals.

**Table 68. Dark Air-cured Tobacco: Average yield and acre value of varieties grown at Springfield in 1974, 1975, and 1976**

| Variety             | Avg. | Acre yield      |       |      | Avg. | Acre value <sup>1</sup> |      |      |
|---------------------|------|-----------------|-------|------|------|-------------------------|------|------|
|                     |      | 1976            | 1975  | 1974 |      | 1976                    | 1975 | 1974 |
|                     |      | Pounds per acre |       |      |      | Dollars per acre        |      |      |
| Ky. 160             | 2009 | 1778            | 2199  | 2050 | 975  | 891                     | 1267 | 767  |
| OS 800 <sup>2</sup> | 1912 | 1672            | 2114  | 1951 | 908  | 790                     | 1192 | 740  |
| OS 801              | 1900 | 1494            | 2264  | 1942 | 890  | 671                     | 1272 | 726  |
| OS 802              | 1882 | 1529            | 2151  | 1964 | 885  | 724                     | 1187 | 745  |
| OS 803              | 1806 | 1544            | 2027  | 1848 | 852  | 713                     | 1122 | 721  |
| OS 806              | —    | 1862            | 2429  | —    | —    | 836                     | 1260 | —    |
| OS 804              | —    | 1634            | 2221  | —    | —    | 747                     | 1228 | —    |
| OS 805              | —    | 1471            | 2210  | —    | —    | 684                     | 1169 | —    |
| OS 906              | —    | —               | —     | 2070 | —    | —                       | —    | 813  |
| OS 905              | —    | —               | —     | 1972 | —    | —                       | —    | 748  |
| L.S.D. (.05)        | —    | 135.8           | 206.9 | 93.3 | —    | 74.2                    | N.S. | 35.3 |
| C.V. %              | —    | 6.5             | 6.4   | 3.6  | —    | 7.6                     | 7.2  | 3.6  |

<sup>1</sup> These values are based on the average value for the various grades on all type 35 markets during the 5-year period, 1965-1969.

<sup>2</sup> All with OS numbers are experimentals.

## BURLEY TOBACCO<sup>1</sup>

C. L. Gupton and T. C. Corbin<sup>2</sup>

The commercial potentials of several varieties and hybrids of burley tobacco were assessed in terms of yield, market value, grade, disease resistance, and plant characteristics. The data were taken in 1974, 1975, and 1976 at three locations.

In 1974, good growing conditions prevailed at Greeneville. There was adequate rainfall at Spring Hill until almost flowering time; then a drought occurred and the plants never recovered. At Springfield, there was excessive rainfall near transplanting time followed by drought. Then heavy rainfall in late August delayed harvesting. An early freeze damaged tobacco in the barn. The 1975 growing season was generally too dry at Greeneville but was almost ideal at Spring Hill. It was dry at Springfield early in the season, but late rains contributed to a fairly high-yielding crop. The growing season was generally hot and dry at Greeneville and Springfield in 1976. The crop at Spring Hill was discarded because of water damage in early July.

Yields of the varieties are presented in Table 1. Ky. 14, MS Ky. 14 x L8, Ky. 10, and MS Burley 21 x Ky. 10 usually produced the highest yields, followed closely by Va. 509. Burley 37 and Burley 49 were generally lowest in yield, and the other varieties were intermediate.

Varieties differed practically none in market value per hundred-weight (Table 2). All of the varieties produced about the same average percentage of tobacco usable to the trade (Table 3). These data indicate that, under current conditions, price and usability to the manufacturers are not among the primary criteria in selecting a variety.

The presence of disease on a farm is generally the most limiting factor in the choice of a variety. Race 1 of the black shank organism may present a serious problem under a continuous culture of hybrids involving L8. Burley 37, Burley 49, Va. 509, and Burley 64

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<sup>1</sup> Cooperative investigations of the Southern Region, Agricultural Research Service, U.S. Department of Agriculture and the Department of Plant and Soil Science, Tennessee Agricultural Experiment Station, Knoxville, Tennessee 37901.

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are usually resistant to both races. However, the level of resistance in Va. 509 appears to be lower than the others, especially where it was planted after an L8 hybrid that had black shank (Table 4). In 1975 all of the resistant varieties were erratic in performance, showing good resistance under some conditions and very poor resistance under others (Table 4). It appears that none of our sources of resistance is good enough under continuous tobacco culture in soil heavily infested with black shank organisms. More attention needs to be directed to rotations, liming practices, and fertilization practices which would help transplants get a better start and reduce stress during the growing season.

Although Burley 37 is resistant, MS Burley 37 x L8 is not resistant to race 1 of the black shank organism (Table 4). In fields infested with both black shank and black root rot, either Burley 49 or Burley 64 should be grown. Burley 64 is a multiple-disease-resistant variety that yields more than Burley 49. However, one should be familiar with recommended management practices for Burley 64 before growing it.

A relatively new virus disease called Tobacco Vein Mottling Virus (TVMV) has been identified in the burley belt. The most conspicuous symptoms on sensitive varieties are severe spotting and disintegration of the leaves. Close examination reveals a green mottle along the small veins of infected plants. No variety is resistant to the virus, but some are less sensitive than others. All of the commonly-grown black shank-resistant varieties except MS Burley 21 x L8 are extremely sensitive to TVMV (Table 4).

Tobacco etch (TEV) appeared early in the 1976 growing season and caused considerable damage in east Tennessee. We have no data on tolerance of varieties to TEV. Information from other stations, however, indicate that black shank-resistant varieties are generally more sensitive to the virus than others. If there is no black shank in the community, growers who have experienced problems with viruses may consider growing Ky. 14, Burley 21, or MS Burley 21 x Ky. 10. If a black shank-resistant variety is required, Va. 509 appears to be the least sensitive of the black shank resistant varieties to etch.

Very little virus damage was observed on tobacco in 1977. Future outbreaks of virus diseases depend upon availability of plants which harbor the viruses and the timing of aphid movements to transmit them. Whether or not outbreaks will occur is unpredictable at this time.

Some plant characteristics of the commercial varieties are presented in Table 5. The number and size of leaves, plant height, distance between leaves, and time from transplant to flowering may be considered when selecting a variety for ease of handling. These factors may be important in the choice of a variety depending upon the personal preference of the grower, kind of labor available, and the kind and amount of other resources such as barn space and land that are available.

Table 1. Burley Tobacco: Yield <sup>1</sup> in pounds per acre by varieties, locations, and years

| Variety               | Greeneville |       |       | Springfield |       |       | Spring Hill <sup>2</sup> |       | Variety average |
|-----------------------|-------------|-------|-------|-------------|-------|-------|--------------------------|-------|-----------------|
|                       | 1974        | 1975  | 1976  | 1974        | 1975  | 1976  | 1974                     | 1975  |                 |
| Burley 21             | 2,379       | 2,271 | 2,602 | 2,160       | 3,397 | 2,044 | 1,834                    | 2,793 | 2,435           |
| Burley 37             | 2,221       | 2,093 | 2,294 | 2,218       | 3,074 | 1,810 | 1,598                    | 2,782 | 2,261           |
| Burley 49             | 2,154       | 2,021 | 2,386 | 2,041       | 2,966 | 2,254 | 1,702                    | 2,665 | 2,274           |
| Burley 64             | 2,372       | 2,116 | 2,326 | 2,156       | 2,997 | 2,155 | 1,998                    | 3,137 | 2,407           |
| Va. 509               | 2,576       | 2,337 | 2,720 | 2,504       | 3,399 | 2,332 | 2,270                    | 3,228 | 2,671           |
| Ky. 10                | 2,546       | 2,490 | 2,957 | 2,434       | 3,794 | 2,512 | 2,214                    | 3,109 | 2,757           |
| Ky. 14                | 2,674       | 2,241 | 2,949 | 2,832       | 3,446 | 2,476 | 2,129                    | 3,396 | 2,768           |
| <b>Hybrid</b>         |             |       |       |             |       |       |                          |       |                 |
| MS Burley 21 x Ky. 10 | 2,785       | 2,556 | 2,383 | 2,726       | 3,794 | 2,672 | 2,334                    | 3,401 | 2,831           |
| MS Burley 21 x L8     | 2,366       | 2,387 | 2,341 | 2,334       | 3,455 | 2,495 | 2,170                    | 3,048 | 2,575           |
| MS Burley 37 x L8     | 2,418       | 2,296 | 2,147 | 2,399       | 3,499 | 2,249 | 1,595                    | 3,378 | 2,498           |
| MS Ky. 14 x L8        | 2,513       | 2,394 | 2,626 |             | 3,712 | 2,596 |                          | 3,495 |                 |
| L.S.D. (0.05)         | 266         | 211   | 304   | 310         | 307   | 275   | 463                      | 345   |                 |
| C.V. %                | 5.6         | 6.0   | 8.0   | 8.9         | 6.2   | 8.0   | 16.0                     | 7.0   |                 |

<sup>1</sup> Based on four replications of 100 plants per replication.<sup>2</sup> 1976 data not available.

**Table 2. Burley Tobacco: Market value in dollars per hundred weight <sup>1</sup> by varieties, locations, and years**

| Variety               | Greeneville |        |        | Springfield |        |        | Spring Hill <sup>2</sup> |        | Variety |
|-----------------------|-------------|--------|--------|-------------|--------|--------|--------------------------|--------|---------|
|                       | 1974        | 1975   | 1976   | 1974        | 1975   | 1976   | 1974                     | 1975   | average |
| Burley 21             | 116.70      | 108.07 | 112.65 | 110.13      | 111.55 | 111.02 | 116.34                   | 113.71 | 112.52  |
| Burley 37             | 116.43      | 108.15 | 111.62 | 109.55      | 111.55 | 111.72 | 116.27                   | 113.44 | 112.34  |
| Burley 49             | 116.63      | 108.06 | 111.10 | 109.70      | 110.84 | 112.22 | 116.14                   | 113.77 | 112.31  |
| Burley 64             | 116.54      | 107.77 | 112.45 | 109.50      | 111.52 | 111.22 | 116.03                   | 113.99 | 112.38  |
| Va. 509               | 116.48      | 107.35 | 112.92 | 109.47      | 111.04 | 111.35 | 116.07                   | 113.56 | 112.28  |
| Ky. 10                | 115.54      | 109.61 | 114.47 | 107.30      | 112.21 | 112.55 | 115.90                   | 113.83 | 112.68  |
| Ky. 14                | 115.59      | 110.00 | 113.42 | 108.68      | 111.60 | 110.87 | 116.19                   | 114.12 | 112.56  |
| <b>Hybrid</b>         |             |        |        |             |        |        |                          |        |         |
| MS Burley 21 x Ky. 10 | 115.83      | 109.48 | 114.60 | 108.62      | 112.26 | 111.57 | 116.50                   | 113.75 | 112.83  |
| MS Burley 21 x L8     | 116.96      | 109.27 | 112.82 | 108.73      | 112.05 | 113.35 | 116.39                   | 113.85 | 112.93  |
| MS Burley 37 x L8     | 117.10      | 108.76 | 112.60 | 108.12      | 110.39 | 113.47 | 116.23                   | 113.78 | 112.56  |
| MS Ky. 14 x L8        | 116.67      | 109.67 | 113.52 | —           | 110.92 | 112.10 | —                        | 113.43 | 112.72  |
| L.S.D. (0.05)         | 0.86        | 1.79   | 1.51   | 4.37        | 1.75   | 2.07   | 0.57                     | 0.35   |         |
| C.V. %                | 0.50        | 1.47   | 0.92   | 2.00        | 1.06   | 1.28   | 0.66                     | 0.65   |         |

<sup>1</sup> Dollars per hundredweight were calculated from the average market value of the U.S. Government grades for the given year.

<sup>2</sup> 1976 data not available.

**Table 3. Percent of tobacco fitting manufacturer's cigarette grades by varieties, locations, and years**

| Variety               | Greeneville |      |      | Springfield |      | Spring Hill <sup>2</sup> |      | Variety average |
|-----------------------|-------------|------|------|-------------|------|--------------------------|------|-----------------|
|                       | 1974        | 1975 | 1976 | 1975        | 1976 | 1974                     | 1975 |                 |
| Burley 21             | 90          | 82   | 61   | 73          | 63   | 74                       | 88   | 76              |
| Burley 37             | 91          | 77   | 50   | 71          | 52   | 75                       | 89   | 72              |
| Burley 49             | 89          | 81   | 41   | 69          | 65   | 74                       | 80   | 71              |
| Burley 64             | 90          | 82   | 56   | 73          | 43   | 76                       | 77   | 71              |
| Va. 509               | 94          | 80   | 54   | 59          | 34   | 68                       | 73   | 66              |
| Ky. 10                | 89          | 81   | 47   | 75          | 35   | 65                       | 83   | 68              |
| Ky. 14                | 80          | 82   | 74   | 73          | 25   | 73                       | 75   | 69              |
| <b>Hybrid</b>         |             |      |      |             |      |                          |      |                 |
| MS Burley 21 x Ky. 10 | 73          | 83   | 64   | 69          | 44   | 75                       | 80   | 70              |
| MS Burley 21 x L8     | 87          | 68   | 68   | 75          | 46   | 70                       | 71   | 69              |
| MS Burley 37 x L8     | 95          | 79   | 59   | 67          | 40   | 76                       | 80   | 71              |
| MS Ky. 14 x L8        | 97          | 68   | 64   | 75          | 37   | —                        | 69   | 68              |

<sup>1</sup> 1974 data not available.

<sup>2</sup> 1976 data not available.

**Table 4. Burley Tobacco: Resistance to Black Shank and Black Root Rot and Sensitivity to TVMV**

| Variety               | (Race 0) |      |      | Race 0 & 1 |      | Resistance to |        |          | Extremely sensitive<br>to TVMV |
|-----------------------|----------|------|------|------------|------|---------------|--------|----------|--------------------------------|
|                       | 1974     | 1975 | 1976 | 1974       | 1975 | 1976          | Black  | Root Rot |                                |
| Burley 21             | 0        | 1    | 2    | 0          | 2    | 0             | low    |          | no                             |
| Burley 37             | 99       | 80   | 95   | 95         | 97   | 100           | low    |          | yes                            |
| Burley 49             | 99       | 86   | 99   | 97         | 91   | 97            | high   |          | yes                            |
| Burley 64             | 94       | 76   | 98   | 95         | 99   | 92            | high   |          | yes                            |
| Va. 509               | 97       | 41   | 87   | 85         | 89   | 98            | low    |          | yes                            |
| Ky. 10                | —        | 0    | 0    | —          | —    | —             | medium |          | no                             |
| Ky. 14                | —        | 0    | 0    | —          | 0    | 4             | medium |          | no                             |
| <b>Hybrid</b>         |          |      |      |            |      |               |        |          |                                |
| MS Burley 21 x Ky. 10 | —        | 3    | 5    | —          | 0    | —             | low    |          | no                             |
| MS Burley 21 x L8     | 83       | 82   | 89   | 0          | 2    | 16            | medium | high     | no                             |
| MS Burley 37 x L8     | 97       | 84   | 97   | 53         | 67   | 76            | medium | high     | yes                            |
| MS Ky. 14 x L8        | 98       | 59   | 87   | 2          | 2    | 17            | medium | high     | no                             |

**Table 5. Burley Tobacco: Plant Characteristics—Average of 1974, 1975, and 1976 at Greeneville**

| Variety               | Days to<br>flower | Plant<br>height<br>in. | Number<br>leaves | Leaf<br>internode<br>in. | Largest leaf  |              |
|-----------------------|-------------------|------------------------|------------------|--------------------------|---------------|--------------|
|                       |                   |                        |                  |                          | Length<br>in. | Width<br>in. |
| Burley 21             | 73                | 47.6                   | 18.1             | 2.61                     | 27.0          | 12.4         |
| Burley 37             | 72                | 44.9                   | 18.3             | 2.45                     | 26.4          | 12.6         |
| Burley 49             | 75                | 42.2                   | 18.6             | 2.27                     | 25.5          | 12.0         |
| Burley 64             | 81                | 42.1                   | 19.5             | 2.16                     | 25.7          | 12.0         |
| Va. 509               | 75                | 45.2                   | 18.2             | 2.48                     | 28.1          | 13.2         |
| Ky. 10                | 75                | 42.8                   | 18.4             | 2.31                     | 27.7          | 12.9         |
| Ky. 14                | 75                | 47.1                   | 18.9             | 2.48                     | 28.0          | 12.9         |
| <b>Hybrid</b>         |                   |                        |                  |                          |               |              |
| MS Burley 21 x Ky. 10 | 73                | 49.0                   | 18.9             | 2.59                     | 28.0          | 12.9         |
| MS Burley 21 x L8     | 67                | 47.1                   | 17.2             | 2.74                     | 28.7          | 12.9         |
| MS Burley 37 x L8     | 68                | 43.9                   | 16.9             | 2.59                     | 28.3          | 13.2         |
| MS Ky. 14 x L8        | 70                | 45.7                   | 17.6             | 2.67                     | 29.4          | 13.6         |

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