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1978 Performance of Field Crop Varieties

by Charles R. Graves

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1978 PERFORMANCE OF FIELD CROP VARIETIES

**DATA FOR 1978 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-4747W¹, Golden Harvest H-2660W, Princeton SX910, Tenn. 505², Zimmerman Z-11W.

Yellow—Full Season—DeKalb XL80A, DeKalb XL394, Funk G-4848, Pioneer brand 3145, Pioneer brand 3147, McNair X-300, Tenn. 608².

White—Medium-Season—DeKalb XL390A.

Yellow—Medium-Season—DeKalb XL72B², DeKalb XL80, DeKalb XL75¹, DeKalb XL75A, FFR 744C, FFR 891C, Funk G-4520, Funk G-4776, N.K. PX79, P.A.G. SX17A, Pioneer brand 3369A, Pioneer brand 3368A, Pioneer brand 3184, Princeton SX840, RA 1502, Trojan TXS114.

Yellow—Early-Season—DeKalb XL72AA, Funk G-4507, Funk G-4525¹, FFR 707C, FFR 799C, P.A.G. 314, Zimmerman Z-24Y.

Cotton³

Auburn, M.,¹ Coker 304, Delcot 277, Deltapine 16,¹ Deltapine 55, Deltapine 61, Hancock, McNair 220, Stoneville 213, Stoneville 256, Stoneville 603, Stoneville 731.

Oats

Fall-seeded—Coker 66-22, Coker 716, Cumberland.

Wheat

Abe, Arthur, Coker 747, Doublecrop, McNair 4823, Stoddard.

Barley

Maury, Volbar

Rye

Hiwassee.

Alfalfa

Apollo, Arc, Gladiator, Saranac AR, Team, Vanguard, Weevlchek, Williamsburg.

Red Clover

Kenland, Kenstar, Redland.

Soybeans⁴

Maturity Group V—Bedford⁶, Dare, Essex, Forrest⁵, McNair 500, York.

Maturity Group VI—Centennial⁵, Coker 136, FFR666, Lee 74, Pickett 71⁵.

Maturity Group VII—Bragg⁷.

Grain Sorghum

Bird Resistant—Paymaster BR-Y93, McNair 656BR, Pioneer brand B815, RA Bird-Go 68.

Non-Bird Resistant—GSA ML135, McNair 650, McNair 654, Paymaster R-1090, Paymaster R-1029-A, RA 811A gb, Wilstar 1225, Wilstar 1330.

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 are recommended when allowed to grow to 20-40 inches in height before cutting or grazing.

Sorghum x Sudangrass crosses—Drip O-Honey, FFR 66, Funk G-83F, Graze-n-Bale, Mor Su II, Sudax SX-17, Summergrazer, Sweet M, Sweet Sioux IV, and Wintergraze. Super Chowmaker 235 is recommended when it is allowed to grow to 3-5 feet high up a pre-boot stage of growth.

Sudangrass—Trudan 5.

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

¹ Present plans indicate that these varieties will not be recommended after this year.

² Not recommended for grain production except under corn virus conditions.

³ Cotton results will be given in a later publication.

⁴ Varieties in Maturity Groups VI & VII are not recommended for the Crossville area (Cumberland Plateau).

⁵ Recommended where Race 3 soybean cyst nematodes are a problem.

⁶ Recommended where Race 4 soybean cyst nematodes are a problem.

⁷ Recommended for southern tier of counties in Middle and West Tennessee.

CORN

Grain color	Maturity group	Variety	Tolerance* to corn virus complex	Percent erect plants	Yield *** (Bu/A)
Yellow	Early Season	Zimmerman Z-24Y	Low	95	129
		Funk G-4507	Low	92	125
		P.A.G. 314	Low	91	124
		FFR 799C	Low	94	121
		DeKalb XL72AA	Low	96	120
		FFR 707C	High	94	119
		Funk G-4525**	High	95	116
	Medium Season	Pioneer brand 3184	Medium	98	134
		Princeton SX840	Low	95	128
		Pioneer brand 3369A	Low	95	127
		Funk G-4520	Low	97	127
		DeKalb XL80	Low	94	126
		P.A.G. SX17A	Medium	91	125
		N.K. PX79	Med-Low	93	125
		RA 1502	Low	96	124
		FFR 744C	Low	94	124
		DeKalb XL75A	Low	95	124
		FFR 891C	Low	95	124
		Pioneer brand 3368A	Med-Low	93	123
		Trojan TXS114	Low	90	123
		Funk G-4776	Medium	98	122
		DeKalb XL75**	Medium	93	119
		DeKalb XL72B*	High	94	118
	Full Season	Pioneer brand 3147	High	90	140
		Funk G-4848	Medium	94	138
		DeKalb XL394	High	93	127
		DeKalb XL80A	Low	91	123
		Pioneer brand 3145	High	95	122
		McNair X-300	Low	90	121
		Tenn. 608 ****	High	85	116
White	Medium Season	DeKalb XL390A	Medium	93	131
	Full Season	Zimmerman Z-11W	Med-High	88	128
		FFR 929W	Medium	91	126
		Funk G-4747W**	Med-High	91	126
		Princeton SX910	Med-High	90	123
		Golden Harvest H-2660W	Medium	90	123
		Tenn. 505 ****	High	80	110

*Hybrids rated lower than medium-high are not recommended under heavy virus conditions (DeKalb XL72B recommended only under virus conditions.).

**Present plans indicate that this variety will not be recommended after this year.

***The medium-season hybrids are 3 year averages and the full-season yields are adjusted 3 year average yields using a variety common to both test to adjust yields. The early maturing yields should not be compared with the full or medium-season because the yields were not adjusted.

****Not recommended for grain production except under corn virus conditions.

GRAIN SORGHUM

Bird-resistant varieties

Paymaster BR-y93—A medium-tall variety with a medium to open type head. It is medium in maturity. Anthracnose resistance with a yellow endosperm.

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. Anthracnose resistant with a brown pericarp and yellow endosperm.

Pioneer brand B815—A variety which is tall with medium to open type heads. Resistant to downy mildew and anthracnose. Yellow endosperm.

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 head; moderately tolerant to anthracnose. Endosperm brown.

Non-bird resistant varieties

GSA ML135—Is medium-tall with medium type head. The maturity of this variety is medium to late.

McNair 650—A variety which is medium-tall with a medium type head. This variety is medium to late in maturity. Resistant to anthracnose. Red pericarp with a yellow endosperm.

McNair 654—A variety which is tall with a medium type head. This variety is medium to late in maturity. Resistant to anthracnose. Red pericarp with a yellow endosperm.

Paymaster R-1090—A variety which is medium-tall with medium to open type heads. This variety has been medium in maturity. Resistant to anthracnose. Red pericarp with a yellow endosperm.

Paymaster R-1029-A—An open type head variety which is medium tall. Resistant to anthracnose. Red pericarp with a yellow endosperm.

RA 811A gb—This variety has been evaluated in the past as Excel 811A. This variety is medium-tall with a medium type head and maturity. RA 811A is green bug resistant variety with a yellow endosperm.

Wilstar 1225—Is medium-tall with medium to open type head. Medium to late in maturity. Brown pericarp with a yellow endosperm.

Wilstar 1330—Is tall with medium to open type head. Medium to late in maturity. Bronze pericarp with a yellow endosperm. Reported to be resistant to anthracnose.

SOYBEANS

Bedford—The first soybean variety with resistance to race 4 soybean cyst nematode. This variety (Maturity group V)¹ was released by the USDA and several cooperating states, including Tennessee. In addition to being resistant to race 4, Bedford is resistant to races 1 and 3, and is moderately resistant to root-knot nematodes. Bedford has white flowers, tawny pubescence and yellow seed with black hila.

Bragg—A tall-growing, late-maturing variety (Maturity group VII).¹ 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 nematodes, 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.

¹ 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.

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. The ideal pH range for Forrest is 6 to 6.5. This variety has performed poorly on some soils at a pH of 7 or above.

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.

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.

McNair 500—A Maturity group V soybean which is a few inches shorter than Forrest. McNair 500 has resistance to phytophthora root-rot, bacterial pustule, and frogeye. It has purple flowers, brown pubescence, tan pod wall, and yellow seed with a light-brown hilum.

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.

Coker 716—A new release from Coker and is slightly superior to Coker 66-22 in winterhardiness, yield, test weight, and lodging resistance. However, it will not stand as well as Cumberland. Coker 716 has been evaluated in previous years as Coker 70-16. This variety is reported to have excellent resistance to soil-borne mosaic. It has yielded well in the state variety trials for several years.

Cumberland—A short, stiff-strawed variety of medium-late maturity. It is slightly more winter hardy than Blount. Cumberland has good lodging resistance.

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. 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

Maury—An awnleted variety released from Virginia Agricultural Experiment Station. This variety heads about the same time as

Volbar but matures about a week earlier. This variety stands well with a medium plant height. Maury has been one of the best grain producers in the state variety trials.

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.

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 at all locations except at Milan where it has performed poorly.

Stoddard—This variety originated from a cross of Stadler X Red-coat 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. Seed may be in short supply in Tennessee.

ALFALFA

Apollo—A winter-hardy cultivar with good recovery ability. Apollo has high resistance to phytophthora root-rot. This disease is worse on poorly drained soil and in most cases alfalfa would not be grown on these soils. However, alfalfa can be grown on poorly drained soil (such as Henry) if the surface water is controlled. Alfalfa can't tolerate flooding for any period of time. Apollo has high resistance to bacterial wilt but this disease has not been a problem in Tennessee.

ARC—A vigorous-growing alfalfa cultivar with high resistance to anthracnose and pea aphid with moderate resistance to the alfalfa weevil and bacterial wilt. Bacterial wilt has not been a problem in Tennessee. The weevil resistance is not enough to eliminate the need for weevil control measures by growers.

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.

Vanguard—Vanguard was evaluated in the past as Victor. Vanguard has high resistance to anthracnose and good resistance to bacterial wilt. This variety has some tolerance to leafhopper yellowing. This variety has performed well in the state variety trials.

Weevilchek—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 Mottling Virus (TVMV). Ky. 14 is similar to Va. 509 in number of days to flowering, plant height, and leaf number per plant.

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 the University of Tennessee Agri-

culture Experiment Station. This variety is resistant to black root rot, mosaic, and wildfire but not to black shank. 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.

1978

PERFORMANCE

OF FIELD CROP VARIETIES

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

DATA FOR 1978 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 1978 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 1978, the soil types are reported at the end of the table.

CORN

The 1978 full-season state corn hybrid tests were conducted at four locations and the medium-season tests were conducted at seven. Early-maturing tests were conducted at four locations. Forty new hybrids were evaluated at Knoxville and 18 hybrids were evaluated at Springfield in addition to the medium-season hybrids. These 18 hybrids were being sold in the Springfield area and had not been evaluated at this location. The tests at Ames Plantation, Jackson, and Milan were harvested with a picker-sheller. All other tests were harvested by hand.

All tests were over-planted and thinned to 19,000 plants per acre. The tests were fertilized with 150 pounds of nitrogen and phosphorus and potassium according to soil test. The plot size for hand-harvested plots was two rows 11 to 30 feet long and the plot size for the mechanically harvested plots was two rows 25 to 30 feet in length.

Yields at Greeneville, Knoxville, Martin, Jackson, and Spring Hill were reduced due to dry weather. No data were reported for Greeneville due to the severe dry weather. 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. Two averages are shown for the full-season hybrids with one containing the Jackson data and one without. It has been shown over

the years that hybrids react differently at this location. Most locations in 1978 had little or no lodging.

The leading hybrids in the medium-season tests were Pioneer brand 3147, T7100, T7300 (experimentals), P.A.G. SX17A, Pioneer brand 3311, Pioneer brand 3368A, DeKalb XL390A, and Pioneer brand 3184. At Crossville the leading hybrids were T7100 (an experimental), Pioneer brand 3311, T7300 (an experimental), DeKalb XL80, Funk G-4507, Funk G-4636, and Pioneer brand 3147.

Using a 2-year average, the leading medium-season hybrids in yield were Pioneer brand 3147, T7100 (an experimental), DeKalb XL390A, T7300 (an experimental), Pioneer brand 3369A, Pioneer brand 3184, Pioneer brand 3368A, P.A.G. SX17A, and Funk G-4574. The leading medium-season hybrids for a 3-year period are Pioneer brand 3147, Pioneer brand 3184, DeKalb XL390A, Princeton SX840, Pioneer brand 3369A, Funk G-4520, and DeKalb XL80.

The leading full-season hybrids in grain yield in 1978 were Funk G-4848, Pioneer brand X5505, Pioneer brand 3147, Funk G-4747W, DeKalb XL395A, DeKalb XL80A, Zimmerman Z-11W, and DeKalb XL394. Using a 2-year average, the leading full-season hybrids in grain yield were Pioneer brand 3147, Funk G-4848, DeKalb XL394, DeKalb XL80A, and Zimmerman Z-11W. The leading full-season hybrids for a 3-year period are Pioneer brand 3147, Funk G-4848, Zimmerman Z-11W, DeKalb XL394, and FFR 929W.

The leading early-maturing hybrids in grain yield for 1978 were McCurdy M SX70, McCurdy 84aa, RA 1501, Funk G-4507, Zimmerman Z-24Y, Wilstar 6663, Funk G-4430, and DeKalb XL72AA.

The leading early-maturing hybrids for a 3-year period are Zimmerman Z-24Y, Funk G-4507, P.A.G. 314, and DeKalb XL72AA. The highest yielding hybrids at Springfield in the extra test were Funk G-4848, DeKalb XL394, Pioneer brand 3145, Coker 911A, and Funk G-4776.

Twenty-five hybrids were evaluated under virus conditions for yield in Humphreys County in 1978. The leading hybrids in yield were Seed Kem SX X68m, FFR 707C, DeKalb XL72B, Funk G-4525, Pioneer brand 3179, Pioneer brand 3147, and DeKalb XL394.

One hundred and thirty-six hybrids were rated for virus tolerance and these data are in Table 22. These data were furnished by L. M. Josephson and H. C. Kincer of the Tennessee Agricultural Experi-

ment 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.



Locations of field crop variety tests in Tennessee, 1978.

Table 1. Corn: Yield of 39 medium-season hybrids evaluated at six locations in 1978

Color	Cross	Hybrid	Avg.	Knox-ville ¹	Spring-field ²	Spring Hill ³	Martin ⁴	Milan ⁵
				Bushels per acre				
y	2X	Pioneer brand 3147	149	151	178	99	135	181
w		T7100	146	163	188	97	129	154
w		T7300	138	143	172	104	112	160
y	2X	P.A.G. SX17A	138	126	167	92	116	187
y	M2X	Pioneer brand 3311	138	118	159	103	129	180
y	M3X	Pioneer brand 3368A	136	121	159	103	125	174
w	3X	DeKalb XL390A	136	134	180	99	107	161
y	2X	Pioneer brand 3184	136	122	168	108	118	164
y	2X	Pioneer brand 3369A	135	114	163	105	117	178
y	M2X	Funk G-4709	135	130	158	94	117	175
y		T4021	134	120	172	101	114	162
y	2X	Funk G-4574	133	125	144	105	122	167
y	3X	DeKalb XL72BB	132	119	153	101	126	161
y	2X	DeKalb XL80	132	125	162	95	122	154
y	2X	SS-112	131	115	142	102	119	179
y	2X	Funk G-4507	130	110	144	100	126	170
y	3X	Asgrow RX114	129	126	171	103	90	156
y	2X	McNair X-194	128	111	141	98	134	158
y	2X	S7111	128	117	146	99	112	165
y	2X	N.K PX79	128	110	156	97	114	161
y	2X	FFR891C	127	112	140	103	136	144
y	2X	Golden Harvest H-2666	127	116	151	97	113	157
y	2X	Golden Acres T.E.6995	126	104	141	98	132	155
y	2X	Trojan TXS115A	126	110	126	106	130	158
y	2X	P.A.G. SX333	126	110	135	103	125	155
y	2X	RA 1502	125	105	132	104	132	153
y	2X	P.A.G. SX346	125	117	140	101	114	152
y	2X	DeKalb XL72B	124	111	134	94	115	167
y	2X	DeKalb XL78	124	116	147	92	107	156
y	2X	Princeton SX840	123	110	146	90	123	147
y	2X	FFR 744C	123	103	136	95	127	152
y	M2X	DeKalb XL75A	122	104	138	101	123	145
y	2X	Golden Harvset H2650D	122	112	138	95	119	146
y	2X	Trojan TXS114	122	100	129	94	129	157
y	M2X	Funk G-4776	122	126	152	88	98	143
y	2X	Funk G-4520	122	112	142	90	116	148
y	2X	Funk G-4636	121	115	145	90	105	147
y	3X	Trojan TX119A	120	107	137	96	122	139
y	2X	DeKalb XL75	113	104	130	90	99	143
L.S.D. (.05)			12.8	12.7	12.6	13.1	18.1	16.2
C.V. %			15.9	7.7	6.0	9.6	10.9	7.2
Avg.			128.7	117.5	15.0	98.1	119.2	158.8

¹ Sequatchie loam (2% to 5% slopes).

² Huntington silt loam, local alluvium (2% to 5% slopes).

³ Huntington silt loam, local alluvium (2% to 5% slopes).

⁴ Collins silt loam (2% to 5% slopes).

⁵ Collins silt loam (2% to 5% slopes).

Table 2. Corn: Yields and other characteristics of 39 medium season hybrids evaluated at five locations in 1978

Color	Cross	Hybrid	Yield	Erect plants	Grain quality	Husk cover	Ear Ht.	Grain moisture at harvest
			Bu/A	%	Rating ¹	Rating ¹	In.	%
y	2X	Pioneer brand 3147	149	97	4.5	4.5	55	20.6
w		T7100	146	95	2.9	2.7	60	21.5
w		T7300	138	95	3.1	3.0	62	20.7
y	2X	P.A.G. SX17A	138	97	4.4	4.7	54	16.4
y	M2X	Pioneer brand 3311	138	98	3.5	4.0	56	18.9
y	M3X	Pioneer brand 3368A	136	96	2.4	3.7	52	17.7
w	3X	DeKalb XL390A	136	94	4.0	3.0	58	20.1
y	2X	Pioneer brand 3184	136	100	3.1	4.2	50	19.6
y	2X	Pioneer brand 3369A	135	98	2.9	4.2	52	16.8
y	M2X	Funk G-4709	135	99	3.2	4.8	54	18.9
y		T4021	134	95	2.4	2.8	63	18.6
y	2X	Funk G-4574	133	99	3.4	3.8	53	16.0
y	3X	DeKalb XL72BB	132	99	3.1	4.0	57	18.4
y	2X	DeKalb XL80	132	96	2.8	2.7	49	19.6
y	2X	SS-112	131	98	3.6	3.7	54	16.4
y	2X	Funk G-4507	130	99	3.5	3.7	54	16.7
y	3X	Asgrow RX114	129	99	2.4	3.0	57	18.5
y	2X	McNair X-194	128	99	3.2	4.0	53	17.3
y	2X	S 7111	128	98	4.2	4.7	53	15.5
y	2X	N.K. PX79	128	97	3.6	4.0	53	16.8
y	2X	FFR 891C	127	98	2.6	4.2	50	18.1
y	2X	Golden Harvest H-2666	127	98	2.8	3.7	48	18.3
y	2X	Golden Acres T.E.6995	126	96	3.1	3.5	54	17.3
y	2X	Trojan TXS115A	126	99	3.4	3.7	51	16.8
y	2X	P.A.G. SX333	126	95	3.4	3.5	53	16.9
y	2X	RA 1502	125	98	2.8	3.7	50	19.4
y	2X	P.A.G. SX346	125	99	3.8	4.7	52	15.9
y	2X	DeKalb XL72B	124	99	3.9	4.5	46	17.7
y	2X	DeKalb XL78	124	98	2.4	3.7	53	18.4
y	2X	Princeton SX840	123	99	3.9	3.8	54	19.7
y	2X	FFR 744C	123	97	3.4	4.0	50	16.7
y	M2X	DeKalb XL75A	122	98	2.9	3.8	58	19.5
y	2X	Golden Harvest H-2650D	122	99	3.2	4.5	51	18.0
y	2X	Trojan TXS114	122	96	4.1	4.2	52	16.0
y	M2X	Funk G-4776	122	100	3.1	2.8	60	19.1
y	2X	Funk G-4520	122	97	3.8	4.0	52	17.7
y	2X	Funk G-4636	121	98	2.9	4.0	52	19.2
y	3X	Trojan TX119A	120	96	3.4	4.7	53	17.8
y	2X	DeKalb XL75	113	99	3.9	3.7	51	17.7
L.S.D. (.05)			12.8	—	—	—	—	—
C.V. %			15.9	—	—	—	—	—

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

Table 3. Corn: Yields of medium season hybrids evaluated at five locations for 2 years (1977-78)

Color	Cross	Hybrid	Avg.	Knox- ville	Spring- field	Spring Hill	Martin	Milan
Bushels per acre								
y	2X	Pioneer brand 3147	142	131	172	101	138	167
w		T7100	138	133	186	94	130	150
w	3X	DeKalb XL390A	133	112	179	95	124	158
w		T7300	133	121	171	101	123	151
y	2X	Pioneer brand 3369A	132	105	160	104	129	161
y	2X	Pioneer brand 3184	130	110	155	97	132	148
y	M3X	Pioneer brand 3368A	131	104	164	105	133	156
y	2X	P.A.G. SX17A	129	111	155	86	124	166
y	2X	Funk G-4574	129	113	144	101	135	150
y		T4021	128	110	161	97	125	145
y	2X	Funk G-4507	127	103	143	97	138	152
y	2X	N.K. PX79	126	100	159	94	129	147
y	2X	Golden Harvest T.E. 6995	126	102	143	94	139	148
y	2X	Princeton SX840	125	108	149	95	135	140
y	3X	Asgrow RX114	125	107	171	98	111	139
y	2X	DeKalb XL80	124	112	157	93	124	136
y	2X	FFR 891C	124	109	140	101	137	133
y	2X	Funk G-4520	124	107	148	96	127	142
y	2X	Trojan TXS115A	123	104	136	100	138	136
y	2X	RA 1502	122	100	133	99	138	139
y	2X	Golden Harvest H-2666	122	106	144	95	122	141
y	2X	FFR 744C	122	100	138	91	137	141
y	3X	Trojan TX119A	121	101	145	100	130	132
y	2X	Golden Harvest H-2650D	121	105	143	93	129	134
y	2X	Funk G-4636	121	111	145	94	118	137
y	M2X	DeKalb XL75A	120	102	141	99	129	129
y	2X	Trojan TXS114	120	96	138	86	138	142
y	2X	DeKalb XL72B	120	101	132	94	124	147
y	M2X	Funk G-4776	119	104	151	92	116	132
y	2X	DeKalb XL75	115	93	140	80	116	139

Table 4. Corn: Yield and other characteristics of medium season hybrids evaluated for 2 years (1977-78)

Color	Cross	Hybrid	Yield	Erect plants	Grain quality	Husk cover	Ear Ht.	Grain moisture at harvest
			Bu/A	%	Rating ¹	Rating ¹	In.	%
y	2X	Pioneer brand 3147	142	90	4.5	4.2	55	19.8
w		T7100	138	86	3.2	2.6	58	20.7
w	3X	DeKalb XL390A	133	89	4.0	2.8	57	19.4
w		T7300	133	91	3.2	3.0	60	20.2
y	2X	Pioneer brand 3369A	132	93	3.0	4.6	49	17.2
y	2X	Pioneer brand 3184	131	97	3.6	4.5	50	19.3
y	M3X	Pioneer brand 3368A	130	91	2.6	3.8	50	17.8
y	2X	P.A.G. SX17A	129	87	4.4	4.2	50	17.0
y	2X	Funk G-4574	129	90	3.6	3.8	51	16.4
y		T4021	128	93	2.8	3.2	58	19.0
y	2X	Funk G-4507	127	94	3.7	3.8	51	17.0
y	2X	N.K. PX79	126	90	4.0	4.2	50	16.6
y	2X	Golden Harvest T.E.6995	126	92	3.4	3.6	50	17.2
y	2X	Princeton SX840	125	93	4.0	3.8	53	19.0
y	3X	Asgrow RX114	125	93	2.6	3.0	54	18.4
y	2X	DeKalb XL80	124	91	2.8	2.8	47	19.1
y	2X	FFR 891C	124	93	3.0	3.9	48	18.0
y	2X	Funk G-4520	124	96	3.6	4.0	49	17.6
y	2X	Trojan TXS115A	123	93	3.7	3.9	48	17.1
y	2X	RA 1502	122	95	3.2	3.6	49	18.9
y	2X	Golden Harvest H-2666	122	92	2.7	3.6	46	18.2
y	2X	FFR 744C	122	91	3.6	4.0	49	16.9
y	3X	Trojan TX119A	121	93	3.6	4.4	50	17.6
y	2X	Golden Harvest H-2650D	121	92	3.5	4.6	49	18.2
y	2X	Funk G-4636	121	94	2.8	4.1	49	19.0
y	M2X	DeKalb XL75A	120	94	3.6	3.2	55	18.8
y	2X	Trojan TXS114	120	86	4.2	4.0	51	16.4
y	2X	DeKalb XL72B	120	92	3.9	4.6	44	17.6
y	M2X	Funk G-4776	119	97	3.2	2.8	58	19.0
y	2X	DeKalb XL75	115	90	4.2	3.9	49	17.6

¹ 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 (1976-78)

Color	Cross	Hybrid	Avg.	Knox- ville	Spring- field	Spring Hill	Martin
Bushels per acre							
y	2X	Pioneer brand 3147	140	144	165	110	139
y	2X	Pioneer brand 3184	134	120	154	114	147
w	3X	DeKalb XL390A	131	121	164	100	140
y	2X	Princeton SX840	128	119	149	100	146
y	2X	Pioneer brand 3369A	127	119	152	105	133
y	2X	Funk G-4520	127	117	143	104	143
y	2X	DeKalb XL80	126	123	150	99	133
y	2X	P.A.G. SX17A	125	120	149	98	133
y	2X	N.K.PX79	125	114	151	98	136
y	2X	RA 1502	124	114	134	104	146
y	2X	FFR 744C	124	114	138	102	143
y	M2X	DeKalb XL75A	124	117	143	106	130
y	2X	FFR 891C	124	112	136	104	142
y	M3X	Pioneer brand 3368A	123	115	141	99	136
y	2X	Trojan TXS114	123	109	136	91	154
y	M2X	Funk G-4776	122	116	144	103	124
y	2X	DeKalb XL75	119	108	136	98	134
y	2X	DeKalb XL72B	118	112	128	102	129

Table 6. Corn: Yield and other characteristics of medium season hybrids evaluated for 3 years (1976-78)

Color	Cross	Hybrid	Yield	Erect plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
			Bu/A	%	Rating ¹	Rating ¹	In.	%
y	2X	Pioneer brand 3147	140	92	4.3	3.9	56	20.8
y	2X	Pioneer brand 3184	134	98	3.5	4.3	50	20.3
w	3X	DeKalb XL390A	131	91	3.8	2.9	58	20.4
y	2X	Princeton SX840	128	95	3.8	3.5	55	20.3
y	2X	Pioneer brand 3369A	127	95	2.8	4.5	50	18.5
y	2X	Funk G-4520	127	97	3.5	3.8	49	18.6
y	2X	DeKalb XL80	126	94	2.7	2.8	49	20.2
y	2X	P.A.G. SX17A	125	91	4.2	4.2	51	18.2
y	2X	N.K. PX79	125	93	4.1	4.0	52	17.6
y	2X	RA 1502	124	96	2.9	3.2	50	20.0
y	2X	FFR 744C	124	94	3.4	3.7	50	17.9
y	M2X	DeKalb XL75A	124	95	3.6	3.2	57	19.7
y	2X	FFR 891C	124	95	3.0	3.8	48	19.1
y	M3X	Pioneer brand 3368A	123	93	2.6	3.7	50	18.8
y	2X	Trojan TXS114	123	90	4.0	3.6	52	17.6
y	M2X	Funk G-4776	122	98	3.1	2.8	60	20.0
y	2X	DeKalb XL75	119	93	4.1	3.9	51	18.8
y	2X	DeKalb XL72B	118	94	3.8	4.4	45	19.1

¹ 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 medium season hybrids evaluated at Crossville in 1978 ¹

Color	Cross	Hybrid	Yield	Erect plants	Husk corn	Ear ht.	Grain moisture at harvest
			Bu./A.	%	Rating	In.	%
w		T7100	176	83	2.5	64	24.8
y	M2X	Pioneer brand 3311	172	94	4.0	59	25.1
w		T7300	167	90	3.0	64	26.5
y	2X	DeKalb XL80	165	95	3.5	60	25.2
y	2X	Funk G-4507	162	85	4.5	59	22.2
y	2X	Funk G-4636	161	100	4.0	56	25.6
y	2X	Pioneer brand 3147	161	92	6.0	60	27.2
y	M2X	Funk G-4709	160	86	4.5	60	25.4
y	2X	Pioneer brand 3184	160	98	5.5	56	25.7
y	2X	Princeton SX840	160	95	4.0	62	26.6
y	2X	RA 1502	159	94	3.0	57	24.7
y	2X	Pioneer brand 3369A	158	96	6.0	56	23.2
y	M2X	Funk G-4776	158	97	3.0	66	26.7
y	2X	Trojan TXS115A	158	95	4.5	61	21.6
y	2X	Golden Harvest H-2666	156	92	4.0	56	22.8
y	2X	Golden Harvest H-2650D	156	92	4.0	57	25.2
y	2X	S 7-111	155	96	4.5	58	22.2
y	2X	FFR 744C	154	97	5.0	58	22.2
y	2X	Trojan TXS114	154	100	4.5	57	22.0
y		T 4021	154	78	5.5	64	23.2
y	2X	Golden Acres T.E.6995	153	99	4.5	60	22.2
y	2X	P.A.G. SX333	152	90	5.5	55	22.6
y	2X	P.A.G. SX174	152	93	4.0	63	21.1
y	M2X	DeKalb XL75A	152	90	5.0	62	23.6
w	3X	DeKalb XL390A	152	93	3.5	60	26.0
y	2X	FFR 891C	151	94	4.0	52	25.4
y	2X	DeKalb XL78	150	89	3.5	58	25.5
y	2X	McNair X-194	148	86	4.0	58	23.2
y	2X	DeKalb XL75	148	99	4.5	59	23.6
y	3X	DeKalb XL72BB	148	96	3.5	68	26.0
y	3X	Asgrow RX114	148	94	3.0	62	25.0
y	2X	SS-112	147	96	4.0	58	21.8
y	2X	Funk G-4574	146	96	5.0	54	21.6
y	2X	P.A.G. SX346	142	99	5.0	60	20.6
y	2X	Funk G-4520	142	99	4.0	58	23.5
y	M3X	Pioneer brand 3368A	141	94	3.0	58	25.4
y	2X	DeKalb XL72B	140	99	6.0	56	24.4
y	2X	N.K. PX79	140	91	3.5	55	23.1
y	3X	Trojan TX119A	126	83	4.5	60	26.0
L.S.D. (.05)			N.S.	—	—	—	—
C.V. %			10.7	—	—	—	—
Avg.			153.3	—	—	—	—

¹ Hartsells loam (2% to 5% slopes).

Table 8. Corn: Yield and other characteristics of medium season hybrids evaluated at Crossville for 2 years (1977-78)

Color	Cross	Hybrid	Yield	Erect plants	Husk corn	Ear ht.	Grain moisture at harvest
			Bu/A	%	Rating	In.	%
Y	2X	Pioneer brand 3184	135	97	5.2	57	24.4
Y	2X	Funk G-4636	129	96	3.5	56	23.9
Y	2X	Pioneer brand 3147	126	90	4.8	61	24.8
Y	2X	Princeton SX840	126	96	3.5	62	24.5
Y	2X	RA 1502	125	94	3.0	56	23.4
Y	2X	FFR 744C	124	85	3.5	57	20.9
Y	2X	DeKalb XL80	123	93	3.2	56	23.3
Y	2X	Funk G-4507	122	80	3.8	56	21.1
Y	2X	Golden Harvest H-2666	122	88	3.5	53	21.7
Y	2X	Golden Harvest H-2650D	120	84	4.0	56	23.0
Y	2X	FFR 891C	120	87	3.5	53	23.8
Y	2X	DeKalb XL75	119	93	4.0	56	22.2
Y	2X	Trojan TXS115A	118	87	3.8	56	20.7
Y	2X	Golden Acres T.E.6995	118	90	3.8	58	20.8
y	M2X	Funk G-4776	117	92	3.5	65	24.2
y		T4021	117	65	4.5	65	22.4
w		T7300	116	82	3.2	66	23.9
y	2X	Pioneer brand 3369A	116	87	5.2	56	22.0
w		T7100	115	78	2.5	64	23.5
y	2X	Trojan TXS114	114	92	3.5	58	20.9
w	3X	DeKalb XL390A	113	84	3.2	61	23.8
y	2X	Funk G-4574	110	87	4.2	54	20.9
y	2X	Funk G-4520	111	96	3.5	55	22.0
y	M2X	DeKalb XL75A	109	85	4.5	60	22.8
y	2X	DeKalb XL72B	108	99	5.0	52	22.7
y	2X	N.K. PX79	109	77	3.2	54	21.8
y	2X	P.A.G. SX17A	107	80	4.2	60	20.6
y	3X	Asgrow RX114	106	87	3.0	62	23.5
y	3X	Trojan TX119A	105	83	4.0	57	23.2
y	M3X	Pioneer brand 3368A	104	88	2.8	58	23.4

Table 9. Corn: Yields of 36 full-season hybrids evaluated at four locations in 1978

Color	Cross	Hybrid	Avg. ¹	Knox-ville ²	Spring Hill ³	Ames Planta-tion ⁴	Jack-son ⁵	Avg. ⁶
Bushels per acre								
y	2X	Funk G-4848	128	149	102	134	59	111
y	M3X	Pioneer brand X5505	126	141	105	133	69	112
y	2X	Pioneer brand 3147	124	139	100	133	69	110
w	M3X	Funk G-4747W	124	152	92	128	43	104
y	3X	DeKalb XL 395A	124	148	94	129	53	106
y	2X	DeKalb XL80A	121	140	92	132	62	107
w	2X	Zimmerman Z-11W	121	160	97	106	58	105
y	3X	DeKalb XL394	120	139	92	130	63	106
w	3X	Zimmerman Z52-W	117	143	86	122	60	103
w	2X	Princeton SX910	116	146	86	116	52	100
w	3X	N.K. PX718W	115	135	97	113	57	100
y	2X	Golden Harvest H-2775	114	130	91	119	58	100
y	3X	N.K. PX715	114	119	95	127	62	101
y	M2X	RA 2601	113	134	100	106	51	98
w	3X	FFR 929W	113	143	88	108	50	97
y	4X	DeKalb 1295	111	144	79	110	49	96
w	2X	McNair X-233	111	139	90	105	50	96
y	2X	Wilstar 9990	111	129	87	115	57	97
y	2X	N.K. PX95	110	131	78	122	59	98
w	2X	Golden Harvest H-2660W	110	144	91	95	62	98
y	2X	Wilstar 9997	110	125	98	107	56	96
w	M2X	RA2602W	109	146	86	96	46	93
y	2X	McNair X-300	108	127	86	113	70	99
y	2X	Paymaster UC 12052	108	150	71	103	44	92
y	4X	Pioneer brand 3179	107	127	83	110	64	96
w	2X	P.A.G. SX70W	106	132	82	105	52	93
y	3X	Coker 22	106	100	90	127	60	94
y	3X	RA 3602	106	112	84	120	58	94
y	3X	DeKalb XL80B	106	125	78	114	59	94
w	SP 3X	Princeton SP936	104	120	79	111	54	91
y	3X	N.K. PX723	102	111	89	107	68	94
y	3X	Pioneer brand 3145	98	106	84	105	63	90
y	4X	Tenn. 608	98	119	80	96	54	87
w	4X	Tenn. 505	93	113	59	108	50	82
y	2X	Paymaster UC 9792	85	91	65	98	71	81
y	4X	McNair 488	75	88	40	97	40	66
L.S.D. (.05)			17.2	15.9	16.4	16.5	14.8	15.0
C.V. %			19.3	8.7	13.6	10.3	18.6	22.1
Avg.			110.2	130.5	86.0	113.9	56.9	98.8

¹ Jackson data not included in average.

² Sequatchie loam (2% to 5% slopes).

³ Maury silt loam (2% to 5% slopes).

⁴ Memphis silt loam (2% to 5% slopes).

⁵ Memphis, Loring, and Dexter silt loam (0% to 2% slopes).

⁶ Jackson data included in average.

Table 10. Corn: Yield and other characteristics of 36 full-season hybrids evaluated at four locations in 1978

Color	Cross	Hybrid	Without Jackson	With Jackson	Erect ¹ plants	Grain ² quality	Ear ht.	Grain moisture at harvest
			Average yield					
			Bushels	per acre	%	Rating ³	In.	%
y	2X	Funk G-4848	128	111	86	2.6	54	21.7
y	M3X	Pioneer brand X5505	126	112	68	4.0	61	19.7
y	2X	Pioneer brand 3147	124	110	92	4.0	54	19.1
w	M3X	Funk G-4747W	124	104	86	3.0	60	18.7
y	3X	DeKalb XL395A	124	106	86	2.4	61	22.3
y	2X	DeKalb XL 80A	121	107	88	3.8	57	19.8
w	2X	Zimmerman Z-11W	121	105	82	3.0	61	19.4
y	3X	DeKalb XL394	120	106	88	3.0	61	20.3
w	3X	Zimmerman Z52-W	117	103	82	3.4	63	18.7
w	2X	Princeton SX910	116	100	83	3.0	57	19.6
w	3X	N.K. PX 718W	115	100	83	3.0	60	19.1
y	2X	Golden Harvest H-2775	114	100	85	2.8	53	19.8
y	3X	N.K. PX715	114	101	75	3.8	59	17.7
y	M2X	RA 2601	113	98	92	2.4	56	22.4
w	3X	FFR 929W	113	97	85	3.4	58	19.0
y	4X	DeKalb 1295	111	96	90	2.6	66	20.7
w	2X	McNair X-233	111	96	85	2.8	60	19.8
y	2X	Wilstar 9990	111	97	86	2.6	51	19.9
y	2X	N.K. PX95	110	98	62	4.0	61	18.7
w	2X	Golden Harvest H-2660W	110	98	83	3.0	59	19.3
y	2X	Wilstar 9997	110	96	86	2.8	58	22.7
w	M2X	RA 2602W	109	93	87	3.0	61	19.5
y	2X	McNair X-300	108	99	84	3.0	52	19.7
y	2X	Paymaster UC 12052	108	92	94	3.4	56	22.4
y	4X	Pioneer brand 3179	107	96	74	3.4	58	18.2
w	2X	P.A.G. SX70W	106	93	76	3.4	55	19.4
y	3X	Coker 22	106	94	94	3.6	54	18.8
y	3X	RA 3602	106	94	89	3.0	59	19.0
y	3X	DeKalb XL80B	106	94	93	3.4	52	19.5
w	SP	3X Princeton SP936	104	91	76	3.4	61	19.0
y	3X	N.K. PX723	102	94	85	3.0	58	18.1
y	3X	Pioneer brand 3145	98	90	91	2.8	56	19.1
y	4X	Tenn. 608	98	87	79	3.8	63	20.2
w	4X	Tenn. 505	93	82	76	4.4	58	20.0
y	2X	Paymaster UC 9792	85	81	88	2.6	53	18.0
y	4X	McNair 488	75	66	85	3.8	61	21.5
L.S.D. (.05)			17.2	15.0	—	—	—	—
C.V. %			19.3	22.1	—	—	—	—

¹ Data from Jackson and Ames Plantation. No lodging occurred at Knoxville and Spring Hill.

² Data from Knoxville and Spring Hill. Corn hybrids at Jackson and Ames Plantation harvested with a picker sheller and no quality ratings made.

³ Rating based on a scale of 1 through 9 with 1 being excellent and 9 being poor.

Table 11. Corn: Yields of full-season hybrids evaluated at four locations for a 2-year period (1977-78)

Color	Cross	Hybrid	Avg.	Knox-ville	Spring Hill	Jackson	Ames Plantation
Bushels per acre							
y	2X	Pioneer brand DeKalb 3147	108	119	98	85	130
y	2X	Funk G-4848	106	130	95	78	121
y	3X	DeKalb XL394	102	125	87	72	123
y	2X	DeKalb XL80A	100	120	87	80	114
w	2X	Zimmerman X-11W	100	132	94	68	105
w	2X	Princeton SX910	98	133	86	70	104
y	2X	N.K. PX95	97	110	81	74	122
y	2X	Golden Harvest H-2775	96	115	83	77	111
y	3X	Coker 22	96	96	89	77	122
w	3X	FFR 929W	96	121	85	69	109
y	4X	Pioneer brand 3179	96	108	87	69	118
w	M3X	Funk G-4747W	96	123	86	59	114
y	3X	RA 3602	95	105	87	75	115
y	3X	Pioneer brand 3145	95	100	90	76	114
y	M2X	RA 2601	95	111	95	69	104
y	3X	N.K. PX723	95	103	88	83	105
y	2X	Paymaster UC 12052	94	125	79	67	105
y	2X	McNair X-300	93	107	80	82	105
y	2X	Paymaster UC 9792	92	95	79	86	108
w	2X	McNair X-233	92	120	82	62	105
w	2X	Golden Harvest H 2660W	92	107	80	82	105
y	2X	Wilstar 9997	92	107	91	75	94
w	M2X	RA 2602W	89	117	82	61	96
y	4X	Tenn 608	89	103	81	77	93
w	4X	Tenn 505	85	111	72	70	103

Table 12. Corn: Yields and other characteristics of full-season hybrids evaluated for four locations for a 2-year period (1977-78)

Color	Cross	Hybrid	Avg.	Erect	Grain	Husk	Ear	Grain
				plants	quality	cover	ht.	moisture
			Bu/A	%	Rating ²	Rating ²	In.	at
								harvest
y	2X	Pioneer brand 3147	108	86	4.0	2.3	53	18.1
y	2X	Funk G-4848	106	92	2.9	2.3	52	20.6
y	3X	DeKalb XL394	102	90	2.9	3.3	57	19.2
y	2X	DeKalb XL80A	100	87	3.8	4.2	51	18.8
w	2X	Zimmerman Z-11W	100	85	3.4	2.7	57	18.7
w	2X	Princeton SX910	98	86	3.1	2.7	57	18.9
y	2X	N.K. PX95	97	79	4.4	2.7	58	18.2
y	2X	Golden Harvest H-2775	96	89	2.9	2.8	50	18.8
y	3X	Coker 22	96	90	3.7	2.0	52	18.0
w	3X	FFR 929W	96	88	3.4	2.5	56	18.4
y	4X	Pioneer brand 3179	96	78	3.4	3.0	55	17.4
w	M3X	Funk G-4747W	96	83	3.4	2.2	59	18.2
y	3X	RA 3602	95	89	3.1	3.2	56	18.2
y	3X	Pioneer brand 3145	95	93	2.9	2.0	54	18.4
y	M2X	RA 2601	95	91	2.7	2.8	52	21.1
y	3X	N.K. PX723	95	88	3.2	3.0	57	17.7
y	2X	Paymaster UC 12052	94	96	3.4	1.7	55	20.6
y	2X	McNair X-300	93	87	3.0	3.7	48	18.8
y	2X	Paymaster UC 9792	92	86	2.6	3.1	52	17.7
w	2X	McNair X-233	92	85	3.2	2.0	59	19.0
w	2X	Golden Harvest H-2660W	92	86	3.1	3.0	57	18.8
y	2X	Wilstar 9997	92	88	2.8	2.5	54	21.1
w	M2X	RA 2602-W	89	86	3.4	2.3	57	18.6
y	4X	Tenn. 608	89	79	3.3	2.5	59	18.8
w	4X	Tenn. 505	85	76	4.1	3.3	56	18.3

¹ 1977 data only.

² Rating was based on a scale of 1 through 9 with 1 being excellent and 9 being poor.

Table 13. Corn: Yields of full-season hybrids evaluated at four locations for a 3-year period (1976-1978)

Color	Cross	Hybrid	Avg.	Knox-ville	Spring Hill	Jackson Plantation	Ames
Bushels per acre							
y	2X	Pioneer brand 3147	116	134	110	93	126
y	2X	Funk G-4848	114	143	109	86	116
w	2X	Zimmerman Z-11W	106	139	103	74	110
y	3X	DeKalb XL394	105	133	96	77	116
w	M2X	FFR 929W	104	132	98	77	109
y	2X	DeKalb XL 80A	102	131	92	83	104
w	2X	Princeton SX910	102	142	92	76	100
w	2X	Golden Harvest H-2660W	102	129	96	77	105
y	3X	Pioneer brand 3145	101	115	99	83	106
y	2X	McNair X-300	100	120	88	86	107
w	M2X	RA 2602-W	98	130	91	69	103
y	4X	Tenn. 608	96	115	93	79	96
w	4X	Tenn. 505	91	111	82	72	98

Table 14. Corn: Yields and other characteristics of full-season hybrids evaluated at four locations for a 3-year period (1976-1978)

Color	Cross	Hybrid	Avg.	Erect plants	Quality	Husk cover	Ear ht.	Grain moisture at harvest
			Bu/A	%	Rating ¹	Rating ¹	In.	%
y	2X	Pioneer brand 3147	116	90	4.0	2.9	54	18.7
y	2X	Fun kG-4848	114	94	2.8	2.6	53	21.6
w	2X	Zimmerman Z-11W	106	88	3.2	2.8	58	19.5
y	3X	DeKalb XL394	105	93	2.9	3.2	59	20.0
w	M2X	FFR 929W	104	91	3.2	2.8	57	19.3
y	2X	DeKalb XL80A	102	91	3.7	4.1	51	20.0
w	2X	Princeton SX910	102	90	3.0	2.5	56	19.7
w	2X	Golden Harvest H-2660W	102	90	3.0	3.1	58	19.6
y	3X	Pioneer brand 3145	101	95	2.9	2.4	54	19.4
y	2X	McNair X-300	100	90	3.2	3.5	49	19.8
w	M2X	RA 2602-W	98	90	3.1	2.6	57	19.4
y	4X	Tenn. 608	96	85	3.2	2.8	61	19.6
w	4X	Tenn. 505	91	80	3.7	3.0	57	19.5

¹ Rating based on a scale of 1 through 9 with 1 being excellent and 9 being poor.

Table 15. Corn: Yield of 20 early maturing hybrids evaluated at four locations in 1978

Color	Cross	Hybrid	Avg.	Knox- ville ¹	Cross- ville ²	Martin ³	Ames Planta- tion ⁴
Bushels per acre							
y	2X	McCurdy MSX70	128	122	155	122	114
y	2X	McCurdy 84aa	126	122	158	117	109
y	2X	RA 1501	123	119	151	108	116
y	2X	Funk G-4507	122	110	154	116	108
y	2X	Zimmerman Z-24Y	122	122	153	106	107
y	2X	Wilstar 6663	121	118	152	115	100
y	2X	Funk G-4430	121	113	147	114	111
y	2X	DeKalb XL72AA	121	109	145	118	112
y	2X	Golden Harvest H-2606	120	110	146	114	111
y	3X	FFR 799C	120	107	138	130	103
y	2X	Golden Harvest H-2500	119	104	146	111	114
y	2X	Seed Kem SKX68M	118	134	148	87	105
y	2X	Golden Harvest H-2600	116	106	142	106	111
y	2X	P.A.G. 314	116	107	148	121	88
y	2X	DeKalb XL61	116	111	147	96	108
y	2X	FFR 707C	114	121	142	91	101
y	3X	N.K. PX675	113	108	145	99	100
y	2X	Funk G-4525	114	108	136	98	113
y	2X	McNair X-170	108	106	138	102	85
y	2X	DeKalb XL53	103	89	130	93	99
L.S.D. (.05)			11.3	8.8	11.5	21.6	15.4
C.V. %			13.7	5.5	5.5	16.8	10.3
Avg.			118.1	112.3	146.1	108.3	105.7

¹ Sequatchie loam (2% to 5% slopes).

² Hartsells loam (2% to 5% slopes).

³ Collins silt loam (2% to 5% slopes).

⁴ Loring silt loam (2% to 5% slopes).

Table 16. Corn: Yield and other characteristics of early maturing hybrids evaluated at four locations in 1978

Color	Cross	Hybrid	Avg.	Erect plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
			Bu/A	%	Rating ¹	Rating ¹	In.	%
y	2X	McCurdy MSX70	128	98	3.5	3.5	51	20.5
y	2X	McCurdy 84aa	126	91	4.2	3.2	51	22.6
y	2X	RA 1501	123	96	5.0	4.8	51	20.8
y	2X	Funk G-4507	122	92	3.8	4.5	49	20.4
y	2X	Zimmerman Z-24Y	122	96	3.0	4.2	49	21.5
y	2X	Wilstar 6663	121	97	4.5	4.2	53	21.3
y	2X	Funk G-4430	121	92	4.2	5.2	50	17.5
y	2X	DeKalb XL72AA	121	96	4.7	4.0	51	20.4
y	2X	Golden Harvest H-2606	120	98	4.0	4.0	49	20.7
y	3X	FFR 799C	120	95	4.0	3.5	46	21.0
y	2X	Golden Harvest H-2500	119	95	2.8	4.0	49	18.3
y	2X	Seed Kem SK X 68M	118	94	4.5	4.0	50	20.8
y	2X	Golden Harvest H-2600	116	96	3.7	4.5	48	19.9
y	2X	P.A.G. 314	116	96	3.8	3.5	52	21.0
y	2X	DeKalb XL61	116	98	4.0	4.8	46	21.0
y	2X	FFR 707C	114	95	3.2	3.8	51	18.2
y	3X	N.K. PX675	113	88	4.3	4.8	48	20.2
y	2X	Funk G-4525	114	95	3.5	3.5	46	18.5
y	2X	McNair X-170	108	98	3.2	4.5	46	20.6
y	2X	DeKalb XL53	103	96	5.5	6.0	48	18.4
L.S.D. (.05)			11.3	—	—	—	—	—
C.V. %			13.7	—	—	—	—	—

¹ Rating based on a scale of 1 through 9 with 1 being excellent and 9 being poor.

Table 17. Corn: Yields of early maturing hybrids evaluated at four locations for 2 years 1977-78

Color	Cross		Avg.	Knox-ville	Cross-ville	Martin	Ames Planta-tion
					Bushels per acre		
y	2X	McCurdy MSX70	123	119	138	134	101
y	2X	Zimmerman Z24y	121	126	130	127	101
y	2X	McCurdy MSX84aa	120	127	128	127	94
y	2X	DeKalb XL72AA	116	111	129	129	95
y	2X	RA 1501	116	114	126	124	99
y	2X	Funk G-4507	116	106	132	118	106
y	2X	Golden Harvest H-2600	115	116	130	122	93
y	2X	P.A.G. 314	110	103	128	129	81
y	3X	FFR 799C	110	108	122	124	85
y	2X	FFR 707C	108	108	123	109	93
y	2X	Golden Harvest H-2500	108	106	120	117	89
y	2X	Funk G-4525	108	108	116	106	101
y	2X	McNair X-170	104	110	123	114	72

Table 18. Corn: Yield and other characteristics of early maturing hybrids evaluated for 2 years (1977-78)

Color	Cross	Hybrid	Yield	Erect	Grain	Husk	Ear	Grain
				plants	quality	cover		moisture
			Bu/A	%	Rating ¹	Rating ¹	In.	at
y	2X	McCurdy MSX70	123	95	4.2	3.4	51	harvest
y	2X	Zimmerman Z24y	121	95	3.1	4.1	49	%
y	2X	McCurdy MSX84aa	120	93	4.4	3.5	51	19.8
y	2X	DeKalb XL72AA	116	96	4.4	4.0	49	20.5
y	2X	RA 1501	116	96	4.4	4.2	50	21.6
y	2X	Funk G-4507	116	92	4.3	4.4	48	19.7
y	2X	Golden Harvest H-2600	115	91	3.6	4.2	48	19.1
y	2X	P.A.G. 314	110	91	4.2	3.6	50	19.8
y	3X	FFR 799C	110	94	4.6	3.8	45	20.2
y	2X	FFR 707C	108	94	4.1	4.2	50	18.4
y	2X	Golden Harvest H-2500	108	94	4.4	3.8	50	20.0
y	2X	Funk G-4525	108	95	4.0	3.2	46	18.6
y	2X	McNair X-170	104	97	3.6	4.2	46	20.0

¹ Rating based on a scale of 1 through 9 with 1 being excellent and 9 being poor.

Table 19. Corn: Yield of early maturing hybrids evaluated at three locations for 3 years (1976-78)

			3 year avg.			
Color	Cross	Hybrid	(1976-78)	Knoxville	Crossville	Martin
				Bushels per acre		
y	2X	Zimmerman Z-24Y	129	135	123	130
y	2X	Funk G-4507	125	121	130	125
y	2X	P.A.G. 314	124	114	121	135
y	3X	FFR 799C	121	117	122	124
y	2X	DeKalb XL72AA	120	112	123	125
y	2X	FFR 707C	119	119	116	122
v	2X	Funk G-4525	116	117	110	121

Table 20. Corn: Yield and other characteristics of extra varieties evaluated at Knoxville in 1978¹

Color	Cross	Hybrid	Yield	Ear ht.	Grain moisture at harvest
			Bu/A	in.	%
		SK 72W	161	63	21.0
y	M2X	Funk Exp. 28555	153	50	19.7
		SK 71AW	152	67	20.2
y	2X	McCurdy 75-200	152	60	23.6
y	3X	Green 1302	152	48	23.2
y	3X	Asgrow RX140A	148	59	21.9
y	3X	McCurdy 75-210	148	60	22.4
y	3X	McNair S-338	148	59	21.2
y	2X	O'S Gold SX5509	147	53	18.3
w	M2X	Funk Exp. 28236W	141	56	19.5
y	M2X	RA2502	137	46	19.2
y	M2X	SS 120A	137	50	18.4
y	M2X	SS 125	135	52	21.4
y	2X	McCurdy 72-44A	134	56	18.0
y	3X	FFR Exp. 2307	134	52	18.0
y	3X	Wilstar 7676	134	51	18.3
y	M2X	RA 2501	133	50	18.3
y	3X	Green 1304	133	53	20.0
y	3X	Asgrow RX112	132	48	19.8
y	2X	McCurdy 76-92	131	51	19.5
y	2X	Funk Exp. 28597	131	48	16.8
y	3X	Green 1303	128	44	20.0
y	2X	Funk Exp. 28549	128	47	17.6
y	M2X	Funk G-4606	127	51	16.9
y	M2X	Super Crost 5330	127	56	15.7
		SK 94	126	57	16.1
y	2X	Paymaster UC-8951	126	54	19.4
y	2X	Zimmerman Z20Y	125	55	16.8
y	2X	Becks 8871	123	56	16.5
		SK 80	122	55	16.1
y	2X	Super Crost 5440	122	54	15.2
w	2X	Becks 87MDM	122	58	16.8
y	2X	Trojan MDM 116	121	58	17.0
y	2X	Golden Acres T.E. 6968	120	55	17.0
y	M2X	Super Crost 6800	117	52	16.2
w	2X	Seedkem SX76	117	44	16.0
y	SP3X	Funk G-4574	116	52	16.0
y	2X	Golden Acres T.E. 6992	115	52	15.8
y	2X	Golden Acres T.E. 6945	113	48	16.4
y	2X	Asgrow RX88	112	48	16.8
L.S.D. (.05)			14.2	—	—
C.V. %			7.7	—	—

¹ Sequatchie loam (2% to 5% slopes).

Table 21. Corn: Yields and other characteristics of 18 extra hybrids evaluated at Knoxville in 1978 ¹

Hybrid	Yield	Erect plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
	Bu/A	%	Rating	Rating	In.	%
Funk G-4848	182	100	3.5	3.0	58	25.0
DeKalb XL394	172	97	2.5	3.0	66	24.0
Pioneer brand 3145	146	97	3.0	3.0	62	21.6
Coker 911A	146	91	4.0	3.0	71	24.0
Funk G-4776	144	95	2.5	3.5	62	21.6
Coker 16	141	100	3.0	4.5	54	21.8
Coker 56	141	91	3.0	4.0	66	27.0
Mason 9998	138	89	3.0	4.0	55	21.8
Coker 18	137	80	3.0	3.0	53	22.8
Funk G-5757	134	97	3.0	4.0	54	22.2
Mason 8866	131	98	3.0	4.5	50	21.5
Golden Harvest H2644W	131	100	3.5	3.0	48	20.2
Mason 5550	129	95	3.5	3.5	56	21.9
Golden Harvest H-2606	129	98	4.0	5.0	54	18.3
Funk G-4525	125	95	4.0	3.0	50	15.8
Mason 8869	121	100	3.0	3.0	52	23.1
DeKalb XL53	119	100	4.0	6.5	49	15.8
Golden Harvest H-2580	116	97	3.5	4.5	55	18.8
L.S.D. (.05)	12.6	—	—	—	—	—
C.V. %	6.4	—	—	—	—	—

¹ Huntington silt loam, local alluvium (2% to 5% slopes).

Table 22. Mean virus reaction of corn hybrids grown in Humphreys County, Tennessee in 1978 ^{1 2 3}

Hybrid	Diseased plants		Mean sev. index
	%	Sev. index	
Full-Season Hybrids			
Pioneer brand 3145	27.2	4.0	1.9
Pioneer brand 3147	45.1	3.5	2.1
Pioneer brand 3179	44.8	3.5	2.6
Pioneer brand X5505	37.8	4.0	2.1
DeKalb XL 80A	96.0	7.0	6.8
DeKalb XL80B	100	6.5	6.5
DeKalb XL394	16.2	3.0	1.3
DeKalb XL395A	72.4	5.0	4.1
DeKalb 1295	53.1	4.0	2.6
Funk G-4747W	45.4	3.5	2.2
Funk G-4848	59.4	3.8	2.7
McNair X-233	46.7	4.0	2.5
McNair X-300	92.5	6.0	5.4
McNair 488	56.0	4.5	2.8
Coker 22	92.8	6.0	5.4
Golden Harvest H-2660W	53.6	4.5	3.0
Golden Harvest H-2775	91.4	5.0	4.5
Princeton SX910	45.4	4.5	2.6
Princeton SP936	53.5	3.8	2.5
RA 2601	100	7.0	7.0
RA 2602W	38.2	4.0	2.1
RA 3602	71.4	5.5	4.3
FFR 929W	62.1	4.0	2.9
Zimmerman Z-11W	39.5	3.5	2.0
Zimmerman Z-52W	30.5	4.0	1.9
Wilstar 9990	96.2	6.0	5.8
Wilstar 9997	91.7	6.3	5.4
N.K. PX95	71.9	4.5	3.6
N.K. PX715	73.3	5.3	4.2
N.K. PX718W	34.3	4.5	2.9
N.K. PX723	39.4	3.5	2.0
P.A.G. SX70W	71.4	5.8	4.4
Paymaster UC9792	74.2	5.5	4.5
Paymaster UC12052	100	6.8	6.8
Tenn. 505	20.0	3.0	1.4
Tenn. 608	31.6	3.0	1.6

Table 22 continued

Hybrid	Diseased plants		Mean Sev. index
	%	Sev. index	
Medium-Season Hybrids			
Pioneer brand 3184	76.7	4.8	3.9
Pioneer brand 3311	94.6	5.0	4.8
Pioneer brand 3368A	86.7	4.5	4.0
Pioneer brand 3369A	90.6	5.5	5.1
DeKalb XL72B	17.1	2.5	1.2
DeKalb XL72BB	51.7	3.8	2.4
DeKalb XL75	100.0	6.0	6.0
DeKalb XL75A	100.0	6.0	6.0
DeKalb XL78	100.0	6.5	6.5
DeKalb XL80	97.0	5.5	5.4
DeKalb XL390A	74.2	5.5	4.3
Funk G-4507	100.0	6.8	6.8
Funk G-4520	92.6	6.2	5.8
Funk G-4574	97.0	6.0	5.8
Funk G-4636	100.0	8.5	8.5
Funk G-4709	91.4	4.8	4.5
Funk G-4776	50.0	4.0	2.5
P.A.G. SX17A	63.6	3.5	2.6
P.A.G. SX333	94.4	6.0	5.7
P.A.G. SX346	91.4	4.0	3.7
Princeton SX840	100.0	6.5	6.5
RA 1502	96.4	7.5	7.3
N.K. PX79	82.4	5.5	4.7
Trojan TXS114	90.6	6.5	6.0
Trojan TXS115A	100.0	7.0	7.0
Trojan TX 119A	84.4	5.2	4.5
FFR 744C	100.0	7.8	7.8
FFR 891C	92.8	6.5	6.1
Golden Harvest H-2650D	94.1	5.0	4.8
Golden Harvest H-2666	100.0	5.5	5.5
Golden Acres T.E. 6995	96.0	7.2	7.0
Asgrow RX 114	81.8	5.0	4.3
McNair X-194	97.0	6.5	6.3
Security Seed S7-111	81.8	5.8	4.9
Security Seed SS-112	100.0	6.0	6.0
T7100	52.9	3.5	2.5
T7300	68.8	4.5	3.4
T4021	70.0	3.5	2.7

Table 22 continued

Hybrid	Diseased plants		Mean sev. index
	%	sev. index	
Early Maturing Hybrids			
DeKalb XL53	100.0	7.0	7.0
DeKalb XL61	93.5	6.0	5.7
DeKalb XL72AA	95.4	7.0	5.5
Funk G-4430	100.0	6.0	6.0
Funk G-4507	100.0	7.5	7.5
Funk G-4525	39.4	3.5	1.4
P.A.G. 314	96.4	6.5	6.3
McCurdy MSX70	91.2	6.0	3.8
McCurdy 84A	100.0	7.8	7.8
R.A. 1501	96.2	7.2	7.0
FFR 707C	25.6	3.0	1.5
FFR 799C	100.0	7.0	7.0
Golden Harvest H-2500	100.0	7.5	7.5
Golden Harvest H-2600	96.9	6.5	6.3
Golden Harvest H-2606	100.0	6.0	6.0
McNair X-170	100.0	5.0	5.0
Zimmerman Z-24Y	100.0	5.0	5.0
Wilstar 6663	100.0	7.0	7.0
N.K. PX 675	84.8	5.8	5.0
Seed Kem SKX68m	32.4	3.2	1.7
Extra Hybrids			
Funk G-4574	100.0	6.0	6.0
Funk G-4606	96.4	5.5	5.3
Funk (Exp) 28236W	5.4	2.5	1.1
Funk (Exp) 28549	83.3	4.0	3.5
Funk (Exp) 28555	43.3	4.0	2.3
Funk (Exp) 28597	94.1	4.8	4.6
McCurdy 72-44A	100.0	5.5	5.5
McCurdy 75-200	100.0	6.0	6.0
McCurdy 75-210	100.0	4.8	4.8
McCurdy 76-92	100.0	5.5	5.5
RA 2501	89.6	4.8	4.4
RA 2502	79.5	4.5	3.8
FFR (Exp) 2307	89.2	5.5	5.0
Zimmerman Z-20Y	96.7	6.0	5.8
Wilstar 7676	93.9	5.2	4.9

Table 22 continued

Hybrid	Diseased plants		Mean sev. index
	%	Sev. index	
Seed Kem SX76	93.9	4.2	4.0
SK 71AW	55.9	3.2	2.2
SK 72W	63.3	3.0	2.3
SK 80	93.9	4.5	4.3
SK 94	76.5	4.5	3.7
McNair S-338	89.6	4.8	4.4
Trojan MDM116	65.7	3.0	2.6
Super Crost 5330	81.8	4.2	3.6
Super Crost 5440	97.0	7.5	7.3
Super Crost 6800	88.4	6.5	5.9
Asgrow RX112	75.9	3.8	3.1
Asgrow RX140A	67.7	3.5	2.7
Asgrow RX88	93.5	5.8	5.5
O'S Gold SX5509	95.8	4.5	4.3
Beck's 87 MDM	41.0	3.0	1.8
Beck's 8871	78.1	4.5	3.7
Green 1302	88.0	4.8	4.3
Green 1303	93.5	5.5	5.2
Green 1304	96.7	5.0	4.9
Golden Acres T.E. 6945	60.6	3.8	2.7
Golden Acres .E. 6968	93.1	5.5	5.2
Golden Acres T.E. 6992	96.3	6.5	6.3
Paymaster UC 8951	78.6	5.5	4.5
SS 120A	87.5	5.0	4.5
SS 125	92.3	4.2	4.0
Premier SX64L-I	94.4	6.0	5.7
Premier SX 639	83.9	5.0	4.4
Premier SX 688	79.4	5.0	4.2

Table 23. Corn: Yield and other characteristics of 25 selected hybrids grown on Owens Bros. Farm, Humphreys County, under virus conditions in 1978

Variety	Yield	Moisture at harvest	Erect plants	Diseased plants		Mean sev. index	Quality rating of hybrid
				%	Sev. index		
	Bu/A	%	%	Virus			Grade ¹
Seed Kem SX X 68M	118.7	16.2	86.6	2.6	1.5	1.0	1.0
FFR 707C	104.5	16.5	91.6	5.0	1.5	1.1	1.2
DeKalb XL72B	102.0	22.2	88.8	6.0	3.2	1.2	1.0
Funk G-4525	97.5	16.0	78.2	4.3	1.5	1.1	1.8
Pioneer brand 3179	95.3	20.8	83.2	31.0	3.0	1.7	1.8
Pioneer brand 3147	94.5	22.6	73.0	29.3	3.2	1.7	1.8
DeKalb XL394	93.7	23.4	83.3	5.0	2.0	1.1	1.9
Funk G-4848	89.6	26.0	78.8	29.6	3.5	1.8	1.6
Tenn. 608 (H.P.)	86.6	22.8	66.4	13.2	3.2	1.4	1.4
Zimmerman Z11W	81.4	23.8	76.0	27.5	3.8	1.9	1.0
Funk G-4747W	80.9	22.2	58.9	24.0	3.2	1.7	1.0
N.K. PX718W	80.7	21.6	62.0	17.3	2.5	1.4	1.8
Pioneer brand 3184	80.5	22.6	52.7	22.7	3.5	1.8	1.8
Pioneer brand 3145	74.6	23.0	75.5	24.5	3.2	1.6	1.6
Tenn 505	74.0	23.5	72.4	19.7	3.0	1.7	1.8
G.H. H-2660W	73.8	23.3	70.3	36.1	3.8	2.2	1.2
RA 2602W	73.4	21.5	67.9	29.4	4.0	2.0	1.4
Princeton SX-910	72.9	22.8	74.1	37.0	3.5	2.0	1.4
Beck's 87 MDM	70.3	20.2	59.7	25.8	3.5	1.8	2.2
DeKalb XL393 (W)	68.7	22.2	52.6	38.7	4.2	2.4	1.8
FFR 929W	63.0	22.9	61.6	26.0	3.8	1.8	1.6
RA 3602	60.5	21.6	64.0	56.5	4.9	3.4	1.5
RA 2601	53.9	24.8	60.7	82.1	5.4	4.6	2.0
Pioneer brand 3369A	42.9	19.9	56.9	81.0	5.8	4.9	3.0
RA 1502	30.2	21.7	63.6	63.8	6.1	5.6	2.5
Means	78.6	21.8	70.4	29.5	3.4	2.1	1.6
L.S.D. (.05)	25.5			16.0	1.22	0.86	
C.V. %	23.0			37.4	24.4	29.1	

¹ 1.0 excellent to 5.0 very poor.

PERFORMANCE OF SMALL GRAIN VARIETIES

WHEAT

Fourteen soft red winter wheat varieties were evaluated at eight locations and eleven new or experimental varieties were evaluated at six locations. The leading varieties evaluated at eight locations were Coker 747, Hart, McNair 1003, and Arthur. McNair 1003 performed well at all locations except Greeneville and Crossville. At these two locations yields were reduced due to winter injury. McNair 1003 had performed well at Greeneville the previous year.

Potomac, Coker 76-22, and McNair 1813 were winter killed at Greeneville and Crossville. Stoddard was evaluated only at Knoxville.

Pioneer brand S76 and Pioneer brand S78 were the leading varieties in the new or experimental strains of the soft red winter wheat varieties evaluated at six locations. Arthur and Emma are very similar in appearance and performance. Delta Queen was winter killed at Greeneville and Crossville. Using a 3-year average, the five leading varieties in grain yield were Coker 747, Arthur, McNair 4823, Beau, and Doublecrop.

The hard red winter wheat varieties were evaluated in 1978 at Springfield. Vona, Larned, and Agate were the leading varieties in grain yield. Triumph Improved has been one of the leading hard red winter wheat variety for several years. However, this variety tends to lodge.

The recommended soft red winter wheat varieties for 1978-79 are Abe, Arthur, Coker 747, Doublecrop, Stoddard, and McNair 4823.

Table 24. Wheat: Grain yield of 14 soft red winter wheat varieties tested in 1978 at eight locations

Variety	Avg.	Greene- ville ¹	Knox- ville ²	Cross- ville ³	Spring- field ⁴	Spring Hill ⁵	Jack- son ⁶	Martin ⁷	Milan ⁸
Bushels per acre									
Coker 747	53	49	62	42	51	59	40	64	58
Hart	48	45	56	38	40	56	46	56	—
McNair 1003	48	23	56	22	50	54	50	69	61
Arthur	48	45	55	36	37	58	38	60	54
Doublecrop	46	49	51	34	40	58	36	50	53
Oasis	46	45	50	30	37	56	35	60	56
Potomac	45	9	60	31	46	58	41	64	61
Sullivan	44	41	48	35	39	52	38	45	51
Beau	44	44	41	35	38	52	34	55	48
Abe	42	37	43	24	34	61	31	56	52
McNair 4823	41	34	44	25	33	50	42	53	49
Coker 76-22	35	9	43	11	21	56	30	58	61
McNair 1813	31	9	29	9	30	40	35	61	46
Stoddard	—	—	56	—	—	—	—	—	—
L.S.D. (.05)	—	6.2	8.0	8.0	5.7	6.1	3.1	6.8	
C.V. %	—	8.9	11.4	19.4	10.4	7.8	5.7	8.2	

¹ Decatur silt loam (2% to 5% slopes).

² Decatur silt loam (2% to 5% slopes).

³ Hartsells loam (2% to 5% slopes).

⁴ Mountview and Dickson silt loam (2% to 5% slopes).

⁵ Maury silt loam (2% to 5% slopes).

⁶ Memphis silt loam (0% to 2% slopes).

⁷ Grenada silt loam (0% to 2% slopes).

⁸ Memphis silt loam (2% to 5% slopes).

⁹ No data due to winter killing.

Table 25. Yield and other characteristics of soft red winter wheat varieties evaluated at eight locations in 1978

Variety	Yield	Date headed	Date mature	Plant height
	Bu/A			In.
Coker 747	53	5-9	6-15	37
Hart	48	5-11	6-16	40
McNair 1003	48	5-11	6-17	38
Arthur	48	5-6	6-14	40
Doublecrop	46	5-7	6-14	40
Oasis	46	5-8	6-14	39
Potomac	45	5-15	6-19	44
Beau	44	5-8	6-15	38
Sullivan	44	5-6	6-14	39
Abe	42	5-7	6-14	37
McNair 4823	41	5-13	6-18	38
Coker 76-22	35	5-14	6-18	34
McNair 1813	31	5-8	6-16	38

Table 26. Wheat: Grain yield of new and experimental soft red winter wheat varieties evaluated at six locations in 1978

Variety	Avg.	Greeneville ¹	Knoxville ²	Crossville ³	Springfield ⁴	Spring Hill ⁵	Jackson ⁶
				Bushels per acre			
Pioneer S76	49	50	64	29	42	60	49
Pioneer S78	47	45	63	26	43	61	43
Janie 78	46	45	63	24	41	57	44
Arthur	44	47	50	31	40	57	39
Emma	44	47	52	27	40	58	40
T60-335	42	42	42	26	46	55	42
Kimberly II	41	39	51	25	37	60	36
Argee	38	50	49	24	38	41	29
Kimberly I	36	24	53	25	26	46	44
T67-310	33	22	25	14	39	56	43
Delta Queen	24	⁷	30	⁷	31	51	32
L.S.D. (.05)	—	7.8	14.1	4.5	6.4	4.6	5.2
C.V. %	—	13.1	19.8	12.3	11.7	5.3	9.0

¹ Decatur silt loam (2% to 5% slopes).

² Decatur silt loam (2% to 5% slopes).

³ Hartsells loam (2% to 5% slopes).

⁴ Mountview and Dickson silt loam (2% to 5% slopes).

⁵ Maury silt loam (2% to 5% slopes).

⁶ Grenada silt loam (0% to 2% slopes).

⁷ No yields due to winter killing.

Table 27. Yield and other characteristics of new and experimental soft red winter wheat varieties evaluated at six locations in 1978

Variety	Avg.	Date headed	Date mature	Plant height
	Bu/A			In.
Pioneer S76	49	5-14	6-16	38
Pioneer S78	47	5-15	6-17	36
Janie 78	46	5-15	6-15	37
Arthur	44	5-11	6-16	39
Emma	44	5-11	6-16	39
T60-335	42	5-16	6-19	48
Kimberly II	41	5-12	6-16	36
Argee	38	5-21	6-20	41
Kimberly I	36	5-6	6-13	39
T67-310	33	5-19	6-20	46
Delta Queen	24	5-14 ¹	6-18 ¹	34 ¹

¹ Average of four locations.

Table 28. Wheat: Yield of varieties evaluated at six locations from 1976 through 1978

Variety	Avg.	Cross-ville	Greene-ville	Knox-ville	Spring-field	Spring Hill	Jackson
Bushels per acre							
Coker 747	51	32	63	55	53	63	40
Arthur	43	26	45	47	41	60	41
McNair 4823	42	20	60	43	35	56	40
Beau	42	25	48	40	40	57	42
Doublecrop	41	25	45	45	42	54	36
Oasis	40	24	44	42	40	57	35
Abe	40	22	43	36	38	44	35
McNair 1813	36	16	30	40	41	48	35

Table 29. Wheat: Yield and other characteristics of hard red winter wheat evaluated at Springfield in 1978¹

Variety	Yield	Date headed	Plant ht.	Lodging
	Bu/A		In.	%
Vona	42	5-10	33	0
Larned	36	5-16	41	5
Agate	36	5-20	43	2
Parker 76	35	5-14	40	0
Triumph Imp.	35	5-9	40	59
Sage	32	5-18	40	8
Rall	32	5-14	40	11

¹ Mountview silt loam (2% to 5% slopes).
Planted October 5, 1977.

BARLEY

The leading varieties in yield were Volbar, Maury, and Ames. Ames and Volbar are very similar in appearance; however, Ames winter killed more than Volbar. No yield data are reported for Greeneville due to winter killing. Sharon exhibited plant characteristics similar to Barsoy and was the earliest-maturing variety in the test. Sharon produced the lowest yield of all varieties evaluated.

The recommended Barley varieties for 1978-79 are Keowee, Volbar, and Maury.

Table 30. Barley: Grain yield of varieties evaluated at five ¹ locations in 1978

Variety	Avg.	Knox-ville ²	Cross-ville ³	Spring-field ⁴	Spring Hill ⁵	Jackson ⁶
Bushels per acre						
Volbar	59	70	51	51	57	66
Maury	56	69	49	64	44	52
Ames	55	53	48	50	60	63
Monroe	53	54	38	66	46	61
Henry	51	46	41	61	49	58
Boone	49	46	33	59	46	60
Surry	48	48	43	56	43	53
Sharon	46	52	34	51	35	60
L.S.D. (.05)	—	15.2	10.4	8.8	10.8	7.6
C.V. %	—	19.0	16.8	10.5	15.4	8.7

¹ All varieties at the Greeneville location winter killed.

² Decatur silt loam (2% to 5% slopes).

³ Hartsells loam (2% to 5% slopes).

⁴ Mountview silt loam (2% to 5% slopes).

⁵ Maury silt loam (2% to 5% slopes).

⁶ Memphis silt loam (0% to 2% slopes).

Table 31. Barley: Yield and other characteristics of barley varieties evaluated in 1978

Variety	Yield	Date headed	Date mature	Plant height	Lodging
	Bu/A			In.	%
Volbar	59	5-8	6-14	38	14
Maury	56	5-8	6-9	36	11
Ames	55	5-9	6-14	37	24
Monroe	53	5-10	6-10	35	11
Henry	51	5-7	6-10	35	13
Boone	49	5-11	6-9	29	28
Surry	48	5-7	6-10	34	11
Sharon	46	5-3	6-6	28	7

Table 32. Barley: Yield of six varieties evaluated at five locations for 3 years (1976-78)

Variety	Avg. (1976-78)	Knox- ville	Cross- ville	Spring- field	Spring Hill	Jackson
Bushels per acre						
Volbar	55	59	41	62	42	72
Maury	55	63	36	63	58	56
Monroe	54	57	31	62	57	64
Henry	53	56	32	59	58	59
Boone	52	57	32	60	57	57
Surry	51	54	35	58	52	57

FALL SEEDED OATS

No yield data are reported for Crossville and Greeneville due to winter killing. Salem winter killed at all locations except Jackson. The leading oat in yield was Coker 716. Barley Yellow Dwarf virus disease was not as severe in the oats test in 1978 as it has been in previous years.

The recommended oats varieties for 1978-79 are Cumberland, Coker 66-22, and Coker 716.

Table 33. Fall Seeded Oats: Yield of varieties evaluated at six locations in 1978 ¹

Variety	Avg.	Knox- ville ²	Spring- field ³	Spring Hill ⁴	Jackson ⁵
Bushels per acre					
Coker 716	86	82	102	64	95
Coker 66-22	70	56	90	61	72
Cumberland	69	30	95	60	90
Salem	—	6	6	6	35
L.S.D. (.05)	—	7.6	11.0	N.S.	10.6
C.V. %	—	7.8	6.6	10.3	9.0

¹ No yield data for Crossville and Greeneville due to winter killing.

² Decatur silt loam (2% to 5% slopes).

³ Dickson silt loam (2% to 5% slopes).

⁴ Maury silt loam (2% to 5% slopes).

⁵ Memphis silt loam (0% to 2% slopes).

⁶ No yield reported due to winter killing.

Table 34. Yield and other characteristics of varieties evaluated at four locations in 1978 ¹

Variety	Yield	Date headed	Date mature	Plant height	Lodging
	Bu/A			In.	%
Coker 716	86	5-15	6-15	37	34
Coker 66-22	70	5-15	6-16	38	40
Cumberland	69	5-20	6-18	38	7

¹ No data were included from Crossville and Greeneville due to winter killing.

SPRING-SEEDED OATS

Four spring oats varieties were evaluated for grain and forage at Knoxville in 1978. Cumberland winter oat was included in the test as a check. Cumberland produced the highest yields with Clintford being second. There was no significant difference in forage yields among the varieties included when the plots were harvested in the boot stage. Although Clintford produced the highest average yield, most varieties lodged with Clintford lodging the least. Clintford was the shortest and one of the earliest maturing varieties evaluated.

Table 35. Spring Oats: Yield of grain and forage and other characteristics of varieties evaluated at Knoxville in 1978

Variety	Yield		Date headed	Date mature	Plant height	Lodging	Test weight
	Bu/A ³	T/A ⁴			In.	%	Lb/Bu
Cumberland ²	74	5.41	6-1	7-3	42	78	30.5
Clintford	62	5.90	5-26	6-30	38	46	36.1
Dal	59	4.99	6-3	7-3	42	74	30.9
Lodi	56	5.66	6-7	7-5	52	60	32.2
Clintland 64	52	5.48	5-30	6-30	44	79	30.9
L.S.D. (.05)	12.4	N.S.	—	—	—	—	—
C.V. %	13.4	11.2	—	—	—	—	—

¹ Emory silt loam (2% to 5% slopes).

² Winter oats included as a check.

³ Grain yield.

⁴ Forage yield.

PERFORMANCE OF GRAIN SORGHUM VARIETIES

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 highest grain-producing, bird resistant varieties—using the average of four locations—were Coker 7672 BR, McNair 656 BR, and Coker 7681 BR. The variety Funk G-623 GBR should have been included in the non-bird resistant test because it is resistant to the green bug and is not bird resistant. Paymaster BR-y 93 performed well at Knoxville and Ames Plantation but very poorly at Martin. There were only four varieties that had been evaluated for 3 years. These varieties were McNair 656 BR, Paymaster BR-y 93, RA Bird Go-68, and DeKalb BR-64. Most varieties evaluated had a red or brown pericarp with a yellow endosperm. For example, McNair 656 BR has a brown pericarp with a yellow endosperm. It is very difficult to look at a variety growing in the field and tell what color the endosperm is.

The non-bird resistant varieties were evaluated at Martin and Ames Plantation only because at other locations the birds are such a problem it is impossible to evaluate the hybrids. The top varieties in grain production at Ames in 1978 were McNair 654, GSA ML 135, Wilstar 1225, Funk G-522A, Coker 7675, and Wilstar 1330. At Martin the yields were low for all varieties. However, Coker 7675, Wilstar 1330, and Wilstar 1225 were among the top grain producers at this location. Funk G-522 DR topped the test in yield. GSA ML 135 was second in yield at Ames Plantation but near the bottom at Martin.

Using a 3-year average for Ames Plantation and Martin, the five highest-yielding non-bird resistant varieties were Wilstar 1330, Wilstar 1225, Paymaster R1029-A, McNair 654, and GSA ML 135.

Table 36. Grain Sorghum: Yield of bird resistant varieties evaluated at four locations in 1978

Variety	Avg.	Knox-ville ¹	Spring Hill ²	Martin ³	Ames ⁴ Plantation
Bushels per acre					
Coker 7672 BR	103	117	104	87	122
McNair 656 BR	105	110	104	88	118
Coker 7681 BR	105	106	108	81	123
Paymaster BR-y 93	98	118	94	52	127
Savanna 5	97	121	66	78	122
McCurdy Birds Off 91 AyG	95	108	95	66	108
DeKalb BR-65 +	94	104	90	74	107
Coker 7652 BR	94	98	90	70	116
DeKalb BR 45 +	93	104	82	76	111
Pioneer brand B815	92	105	91	74	96
RA Bird Go -68	92	108	92	74	94
DeKalb BR-64	90	108	85	76	92
Funk G-623 GBR ⁵	79	90	37	79	111
L.S.D. (.05)	—	6.3	12.0	17.5	7.7
C.V. %	—	4.1	9.6	9.6	4.8

¹ Sequatchie loam (2% to 5% slopes).

² Maury silt loam (2% to 5% slopes).

³ Falaya silt loam (2% to 5% slopes).

⁴ Loring silt loam (2% to 5% slopes).

⁵ Non-bird resistant variety—yields reduced due to bird damage.

Table 37. Grain Sorghum: Yield and other characteristics of bird resistant varieties evaluated at Knoxville in 1978 ¹

Variety	Yield	Date headed	Plant height	Head type
	Bu/A		In.	(1-3) ²
Savanna 5	121	7-24	67	1
Paymaster BR-y93	118	7-25	54	3
Coker 7672 BR	117	7-25	53	3
McNair 656 BR	110	7-25	50	3
DeKalb BR-64	108	7-26	61	3
McCurdy Birds-Off 91AyG	108	7-25	52	3
R.A. Birds Go 68	108	7-26	52	3
Coker 7681 BR	106	7-25	54	2.5
Pioneer brand B815	105	7-27	60	2
DeKalb BR-65 +	104	7-27	56	2
DeKalb BR-45 +	104	7-25	52	2
Coker 7652 BR	98	7-24	49	2.5
Funk G-623 GBR ³	90	7-27	50	3
L.S.D. (.05)	6.3	—	—	—
C.V. %	4.1	—	—	—

¹ Sequatchie silt loam (2% to 5% slopes).

² 1=tight and 3=open type head.

³ Non-bird resistant variety—yields reduced due to bird damage.

Table 38. Grain Sorghum: Yield and other characteristics of bird resistant varieties evaluated at Spring Hill in 1978 ¹

Variety	Yield	Head type	Plant height	Bird damage to Grain	Date headed
	Bu/A	(1-3) ²	In.	%	
Coker 7681 BR	108	2	56	3	7-20
Coker 7672 BR	104	2	52	2	7-20
McNair 656 BR	104	1	52	2	7-20
McCurdy Birds-Off 91AyG	95	2	48	3	7-24
Paymaster BR-y93	94	2	58	7	7-18
RA Bird Go 68	92	2	52	2	7-24
Pioneer brand B815	91	2	56	7	7-21
DeKalb BR-65 +	90	3	60	1	7-24
Coker 7652BR	90	2	52	4	7-18
DeKalb BR-64	85	2	64	40	7-24
DeKalb BR-45 +	82	3	52	15	7-18
Savanna 5	66	3	68	32	7-18
Funk G-623 G BR ³	37	3	48	79	7-20
L.S.D. (.05)	12.0	—	—	—	—
C.V. %	9.6	—	—	—	—

¹ Maury silt loam (2% to 5% slopes).

² 1=tight and 3=open type head.

³ Non-bird resistant variety.

Table 39. Grain Sorghum: Yield and other characteristics of bird resistant varieties evaluated at Martin in 1978 ¹

Variety	Yield	Head type	Plant ht.	Head exertion	Date mature
	Bu/A	Rating	In.	In.	
McNair 656 BR	88	Open	58	9	9-22
Coker 7672 BR	87	Open	60	8	9-24
Coker 7681 BR	81	Med.	56	6	9-28
Funk G 623 BR	79	Med.	54	7	9-26
Savanna 5	78	Tight	71	10	9-27
DeKalb BR-45 +	76	Med.	49	9	9-27
DeKalb BR-64	76	Med.	69	11	9-24
Pioneer B-815	74	Tight	65	9	9-23
DeKalb BR-65 +	74	Med.	61	11	9-27
R.A. Bird Go 68	74	Med.	55	7	9-30
Coker 7652 BR	70	Med.	54	8	9-24
McCurdy Birds-Off 91AyG	66	Med.	54	7	9-28
Paymaster BR-y93 ²	52	Med.	57	8	9-22
L.S.D. (.05)	17.5	—	—	—	—
C.V. %	9.6	—	—	—	—

¹ Seeded June 6, 1978 on soil test pH=5.6, P=28 and K=260.

Fertilized with 130-80-80 per acre. Falaya silt loam (2% to 5% slopes).

² 75% of plants lodged. No other variety lodged.

Table 40. Grain Sorghum: Yield and other characteristics of bird resistant varieties evaluated at Ames Plantation in 1978 ¹

Variety	Yield	Plant height	Head type
			Rating (1-3)
	Bu/A	In.	
Paymaster BR-Y93	127	59	2.8
Coker 7681 BR	123	60	2.7
Savanna 5	122	69	1.5
Coker 7672 BR	122	57	3.0
McNair 656 BR	118	58	3.0
Coker 7652 BR	116	50	2.8
DeKalb BR-45 ²	112	53	1.5
Funk G-623 GBR ²	111	55	2.8
McCurdy Birds-Off 91 AYG	108	58	3.0
DeKalb BR-65 ²	107	61	1.0
Pioneer brand B815	96	60	1.5
RA Bird Go 68	94	59	2.8
DeKalb BR-64	92	71	2.2
L.S.D. (.05)	7.7	—	—
C.V. %	4.8	—	—

¹ Loring silt loam (2% to 5% slopes).

² Non-bird resistant variety.

Table 41. Grain Sorghum: Yield of bird resistant varieties evaluated at four locations from 1976-78

Variety	Avg.	Knoxville	Spring Hill	Martin	Ames Plantation
Bushels per acre					
McNair 656 BR	105	122	103	107	88
Paymaster BR-y 93	101	120	100	95	89
RA Bird Go-68	94	113	97	90	75
DeKalb BR-64	90	110	87	95	70

Table 42. Grain Sorghum: Yield and other characteristics of non-bird resistant varieties evaluated at Martin in 1978 ¹

Variety	Yield	Date headed	Head type	Plant ht.	Head exertion	Date mature
	Bu/A			In.	In.	
Funk G-522 DR	67	7-31	med.	54	6	9-22
N.K. 2884	62	7-29	med.	53	6	9-23
Coker 7675	62	7-29	tight	56	8	9-21
Wilstar 1330	62	8-1	med.	62	6	9-22
Wilstar 1225	62	7-31	med.	52	7	9-23
DeKalb E-59 +	60	8-2	med.	53	8	9-22
McNair 654	58	7-29	med.	59	7	9-24
DeKalb E-57 b +	57	7-31	med.	62	9	9-21
RA 807	57	8-6	tight	57	8	9-21
Paymaster 1029	56	7-31	open	54	6	9-22
Funk G-522 A	56	7-31	open	51	7	9-23
Wilstar 1425	55	8-5	open	53	4	9-22
Coker 7638	55	7-31	med.	44	4	9-22
N.K. 2779	55	7-30	med.	52	10	9-23
Paymaster 1090	54	7-30	med.	53	7	9-21
RA 811A gb	53	8-2	med.	58	8	9-21
GSA 1320y	52	8-4	open	55	5	9-27
McNair 650	50	7-31	med.	51	7	9-25
GSA ML 135	47	7-31	med.	52	8	9-22
R.A. 808	41	8-3	med.	55	7	9-21
McNair 550	41	8-4	med.	51	7	9-24
Funk GHW 1762	35	8-2	open	45	5	9-21
L.S.D. (.05)	12.7	—	—	—	—	—
C.V. %	16.5	—	—	—	—	—

¹ Grenada and Henry silt loam (0% to 2% slopes).

Table 43. Grain Sorghum: Yield and other characteristics of non-bird resistant varieties evaluated at Ames Plantation in 1978

Variety	Yield	Plant height	Head type
			Rating ² (1-3)
	Bu/A	In.	
McNair 654	119	58	2.2
GSA ML135	119	53	3.0
Wilstar 1225	117	53	2.8
Funk G-522A	116	52	3.0
Coker 7675	115	55	1.5
Wilstar 1330	115	66	2.7
Coker 7638	113	50	2.7
McNair 650	112	51	2.8
Paymaster 1090	112	56	3.0
Funk G-522 DR	112	53	2.5
Paymaster 1029A	110	57	3.0
Wilstar 1425	110	56	3.0
N.K. Brand 2884	103	60	2.2
DeKalb E 576 ^{b+}	102	66	1.8
RA 811A g ^b	101	61	2.0
N.K. Brand 2779	98	57	2.5
GSA 1320Y	98	54	3.0
RA 808 g ^b	96	60	2.2
DeKalb E-59 ⁺	94	62	1.5
Funk GHW 1762	93	48	2.8
McNair 550	90	55	2.7
RA 807	81	57	1.3
L.S.D. (.05)	11.3	—	—
C.V. %	7.5	—	—

¹ Loring silt loam (2% to 5% slopes).

² Rating: 1=tight and 3=open.

Table 44. Grain Sorghum: Yield of non-bird resistant varieties evaluated at two locations for 3 years (1976-78)

Variety	3-year avg. (1976-78)	Ames Plantation	
		Martin	
		Bushels per acre	
Wilstar 1330	89	86	92
Wilstar 1225	87	81	94
Paymaster R 1029-A	85	85	86
McNair 654	84	81	86
GSA ML 135	84	77	92
Paymaster R-1090	82	74	90
McNair 650	82	78	86
Wilstar 1425	80	76	83
McNair 550	78	71	85

PERFORMANCE OF ALFALFA

Alfalfa results are from tests seeded in 1975 and 1976. New alfalfa and red clover seedings were made in the fall of 1978 at Greeneville, Crossville, Springfield, and Spring Hill. The stand at Knoxville was very weak for most varieties and will require a new seeding in 1979. The test at Knoxville was weakened by anthracnose in 1977 and was further damaged in 1978 by leaf hoppers. The leading varieties in yield at Knoxville were Saranac AR, Arc, Lancer, Gladiator, Apalachee, and N.K. K0-612 (an experimental). In the small test at Knoxville, Olympic, Atlas, and RSW A2-Anl (an experimental) performed well.

At Spring Hill, Saranac AR, Apalachee, Vanguard, Apollo, Gladiator, and Pioneer brand 521 produced the highest average yield for a 3-year period. At Jackson, the six top-producing varieties using a 3-year average were Vanguard, Team, Gladiator, Apollo, Saranac AR, and Arc. Yields in each table are expressed as oven-dry forage.

Table 45. Alfalfa: Yield of varieties seeded in the fall of 1976 at Knoxville ¹

Variety	Avg.	1978	1977
Tons per acre			
Saranac AR	3.00	2.44	3.56
N.K. K0-612	2.95	2.45	3.45
Arc	2.92	2.47	3.37
Lancer	2.92	2.49	3.34
Gladiator	2.90	2.48	3.33
Cody	2.90	2.49	3.31
Apalachee	2.90	2.54	3.26
Pioneer brand 521	2.84	2.49	3.18
Buffalo	2.82	2.41	3.22
N.K. 3-10	2.82	2.43	3.22
Apollo	2.79	2.46	3.12
Pioneer brand 520	2.78	2.46	3.10
Williamsburg	2.78	2.52	3.04
Vanguard	2.75	2.38	3.12
Team	2.74	2.50	2.98
Weevlchek	2.69	2.50	2.88
L.S.D. (.05)	—	N.S.	N.S.
C.V. %	—	7.0	11.5

¹ Linside and Captina silt loam (2% to 5% slopes).

Table 46. Alfalfa: Yield of six varieties seeded in the fall of 1976 at Knoxville ¹

Variety	Avg.	1978	1977
Tons per acre			
Olympic	3.06	2.22	3.91
Atlas	3.04	2.14	3.94
RSW A2-An1	2.98	2.14	3.83
D69-An1 W1	2.73	2.26	3.63
Resistador II	2.63	2.06	3.20
N.K. KO-3	2.48	1.92	3.05
L.S.D. (.05)	—	0.10	0.23
C.V. %	—	3.2	4.2

¹ Linside and Captina silt loam (2% to 5% slope).

Table 47. Alfalfa: Yield of varieties seeded in the spring of 1976 at Spring Hill ¹

Variety	Avg.	1978	1977	1976
Tons per acre				
Saranac AR	2.92	0.97	4.09	3.70
Apalachee	2.91	1.00	4.08	3.64
Vanguard ²	2.90	0.94	4.26	3.50
Apollo	2.74	1.14	3.79	3.28
Gladiator	2.71	0.91	3.62	3.61
Pioneer brand 521	2.70	1.16	3.51	3.43
Arc	2.64	0.88	3.93	3.10
Williamsburg	2.60	0.88	3.45	3.48
Pioneer brand 520	2.58	0.82	3.24	3.67
Team	2.56	0.92	3.48	3.28
Lancer	2.54	0.85	3.52	3.25
Cody	2.47	0.78	3.52	3.12
Weevlchek	2.43	1.10	3.23	2.97
N.K. 3-10	2.38	0.62	3.20	3.33
N.K. Ko-612	2.03	0.50	2.82	2.78
L.S.D. (.05)	—	0.26	0.64	N.S.
C.V. %	—	20.0	12.7	11.1

¹ Maury silt loam (2% to 5% slope).

² Evaluated in previous year as Victor.

Table 48. Alfalfa: Yield of varieties seeded in fall of 1975 at Jackson ¹

Variety	Avg.	1978	1977	1976
Tons per acre				
Vanguard ²	4.48	4.34	4.37	4.73
Team	4.44	4.38	4.72	4.22
Gladiator	4.36	4.49	4.64	3.96
Apollo	4.36	4.37	4.27	4.43
Saranac AR	4.33	3.91	4.66	4.43
Arc	4.31	4.09	4.34	4.50
Weevichek	4.25	4.42	4.55	3.78
Apalachee	4.23	3.80	4.50	4.39
Pioneer brand 520	4.21	4.33	4.71	3.60
Cody	4.21	4.34	4.71	3.58
Buffalo	4.21	4.42	4.58	3.62
Williamsburg	4.18	4.22	4.64	3.68
Lancer	4.18	4.31	4.42	3.81
Pioneer brand 521	4.15	4.28	4.21	3.97
N.K. 3-10	4.11	4.08	4.44	3.81
N.K. KO-612	3.81	4.12	4.20	3.12
L.S.D. (.05)	—	N.S.	N.S.	.46
C.V. %	—	9.0	7.9	8.2

¹ Memphis silt loam (0% to 2% slopes).

² Evaluated in previous years as Victor.

PERFORMANCE OF SUMMER ANNUALS

(Sorghum X Sudangrass Crosses, Sudangrass)

Twenty-four summer annual cultivars were evaluated in 1978 for forage production at Knoxville. The plants were cut to a 6-inch stubble when they reached 30 inches in height. All varieties yielded well in 1977 and 1978. The leading Sorghum X Sudangrass crosses using a 3-year average were Sweet Sioux IV, Sudax SX-17, Mor Su II, Sweet M, and Wandergraze.

The millets were not evaluated in 1977. The leading millet in 1978 was Southgraze.

Table 49. Yields of summer annual varieties and hybrids evaluated at Knoxville from 1976 through 1978

Variety	Avg. 1976-78	1978	1977	1976
Tons per acre (oven dry forage)				
Sorghum X Sudan Grass Crosses				
Sweet Sioux IV	4.00	4.50	4.67	2.83
Sudax SX-17	3.95	4.51	4.70	2.64
Mor Su II	3.96	4.66	4.54	2.67
Sweet M	3.88	4.47	4.34	2.83
Wandergraze	3.81	4.75	4.11	2.57
Graze-N-Bale	3.76	4.35	4.38	2.55
Drip-o-Honey	3.74	4.11	4.30	2.80
Paymaster S-99	3.65	4.46	4.01	2.48
FFR 66	3.63	3.87	4.25	2.78
Sudax SX-16a	3.54	3.48	4.50	2.64
FFR 74A	3.30	3.56	3.91	2.42
NAPB 77-22-01	—	4.64	4.62	—
Sordan 77	—	4.58	4.20	—
Tastemaker	—	4.46	4.19	—
Funk G-83F	—	4.76	—	2.74
Summergrazer	—	4.51	—	—
Su-Chow 33	—	4.28	—	—
Faster Pasture	—	3.87	—	—
Ho-K	—	3.36	—	—
Energy-Plus	—	2.98	—	—
Sweet Sioux III	—	—	—	3.04
Sudax SX-16	—	—	—	2.86
Sordan 70A	—	—	4.50	2.84
Sudax SX-15	—	—	—	2.76
SS 603	—	—	—	2.66
Saxon	—	—	—	2.66
McNair 711A	—	—	4.04	2.60
Funk G-99F	—	—	—	2.26
FFR S422 (Exp)	—	—	—	2.18
Sudan SX-7 +	—	—	4.41	—
Sudangrass				
Trudan 7	—	3.71	4.19	—
Trudan 5	—	—	4.40	—
Millet				
Southgraze	—	3.32	—	—
Pearlex 24	—	3.18	—	2.77
Millex 23	—	3.12	—	2.42
Millet 78-21-01	—	3.06	—	—
L.S.D. (.05)	—	.63	N.S.	0.40
C.V. %	—	11.1	9.2	10.7

Summer annuals tested and the seed company originating each cultivar

Company	Variety or Hybrid	Company	Variety or Hybrid
	<u>Sorghum X Sudangrass Crosses</u>		<u>Sudangrass</u>
Acco			
Acco			
DeKalb	Sweet Sioux IV	Northrup King	
DeKalb	(Paymaster) S-99		Trudan 7
Funk	Sudax SX-16a		
Funk	Sudax SX-17		
Helena	83F		<u>Millets</u>
Wilstar	Faster Pasture		
	Tastemaker	RP-NAPB	Millet 78-21-01
McCurdy	Graze-N-Bale	RP-NAPB	Pearlex 24
McNair		Northrup King	Millex 23
McNair	Sweet M	Pennington	Southgraze
McNair	Energy-Plus		
Northrup King	Drip-O-Honey		
Northrup King	HO-K		
Pennington	Sordan 77		
P.A.G.	Sawan Wandergraze		
	Summergrazer		
RP-NAPB	Su-Chow 33		
RP-NAPB			
Farmers Forage	Mor Su II		
Research	77-22-01		
Farmers Forage	FFR66		
Research	FFR74A		

PERFORMANCE OF SOYBEAN VARIETIES

Soybean varieties were evaluated in 1978 at Greeneville, Knoxville, Crossville, Spring Hill, Springfield, Martin, Ames Plantation, and Milan.

Four early-maturing variety tests were conducted at Crossville, Springfield, Martin, and Milan. Also at Jackson a strains test was conducted in addition to several commercial varieties in a Benlate test. Tests at all other locations contained varieties in maturity groups V or VI with a few varieties in group VII.

The varieties with the highest average yield in 1978 were Essex, SSF 503, Va 72-580 (an experimental), Forrest, SSF 500N, and Multi-Var 100. At Knoxville the leading varieties in yield were Essex, Forrest, Green Soy 73, McNair 3167, Coker 156, and Multi-Var 100. The yields for most varieties at Crossville in 1978 were low. The best producing varieties at this location were Essex, Forrest, and SSF 503 with Pickett 71, Bedford, and Centennial producing the lowest yield. Any variety on the recommended list in Maturity groups VI and VII is not recommended for the Cumberland Plateau. At Springfield and Spring Hill the two highest producing varieties were SSF 503 and Essex. Essex, SSF 503, Bedford, and SSF 500N performed the best at this location with Green Soy 73, Pickett 71, and Green Soy 74 producing the lowest yield.

At Milan 22 varieties were evaluated with Kimberly, SSF 500N, Forrest, Janie 77, SSF 503, and Essex producing the highest yields. Most varieties produced well at this location. At Ames Plantation most variety yields were reduced by dry weather.

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 1978 data for these early varieties are presented in Tables 50 through 62.

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.

Use Of Benlate

If Benlate is used, the maturity of many varieties may be delayed several days.

Table 50. Soybeans: Yield of varieties evaluated at eight locations in 1978

Variety	Avg.	Greeneville ¹	Knoxville ²	Crossville ³	Spring Hill ⁴	Springfield ⁵	Martin ⁶	Ames Plantation ⁷	Milan ⁸
Bushels per acre									
Essex	38	57	37	32	33	38	31	26	53
SSF 503	36	52	—	30	34	30	30	25	53
VA 72-580 (Bay)	35	53	—	27	30	33	29	27	48
Forrest	34	52	32	31	29	25	28	24	55
SSF 500N	34	53	28	27	27	27	30	24	56
Multi-var 100	33	51	31	24	30	32	27	22	51
Bedford	32	51	28	20	30	27	30	24	49
RA 501A	32	45	30	25	30	35	26	27	41
McNair 500	32	49	28	25	24	34	27	27	45
Green Soy 73	32	55	31	27	21	31	19	—	42
RA 526	32	48	30	25	24	31	27	24	44
FFR 557	32	57	28	27	22	28	23	25	44
McNair 600	30	51	25	21	24	25	22	27	42
Pickett 71	30	44	—	20	29	23	17	29	47
Centennial	29	50	30	18	23	26	21	24	46
Green Soy 74	—	58	—	26	24	27	15	—	44
Kimberly	—	—	—	—	—	—	—	26	57
Janie 77	—	—	—	—	—	—	—	24	54
McNair 3167	—	—	31	—	—	—	—	25	48
RA 603	—	—	—	—	—	—	—	23	47
Coker 156	—	—	31	—	—	—	—	29	39
Lancer	—	—	—	—	—	—	—	20	41
L.S.D. (.05)	—	5.6	N.S.	5.7	4.8	6.9	5.5	4.3	12.4
C.V. %	—	7.6	14.4	15.8	12.5	16.1	21.2	12.6	6.3

¹ Hermitage silt loam (2% to 5% slopes).

² Etowah clay loam (2% to 5% slopes).

³ Hartsells loam (2% to 5% slopes).

⁴ Maury silt loam (2% to 5% slopes).

⁵ Dickson silt loam (2% to 5% slopes).

⁶ Grenada silt loam (2% to 5% slopes).

⁷ Loring silt loam (2% to 5% slopes).

⁸ Vicksburg silt loam (2% to 5% slopes).

Table 51. Soybeans: Yields and other characteristics of varieties evaluated at Knoxville in 1978 ¹

Variety	Yield	Date		Matur- ity	Lodg- ing	Plant height
		First flower	Last flower			
	Bu/A				%	In.
Essex	37	8-4	²	10-6	0	32
Forrest	32	8-7	9-1	10-14	55	36
Green Soy 73	31	8-15	9-4	10-23	0	37
McNair 3167	31	8-16	9-4	10-23	10	36
Coker 156	31	8-9	9-4	—	15	36
Multi Var. 100	31	8-11	—	10-13	60	34
RA 526	30	8-11	9-3	10-6	70	32
Centennial	30	8-14	9-4	10-23	15	38
RA501A	30	8-11	—	10-9	30	44
SSF 500N	28	8-7	9-3	10-14	60	39
McNair 500	28	8-15	9-3	10-16	40	35
Bedford	28	8-15	9-4	10-21	90	40
FFR 557	28	8-14	9-4	10-16	15	40
McNair 600	25	8-15	9-3	10-20	65	37
L.S.D. (.05)	N.S.	—	—	—	—	—
C.V. %	14.4	—	—	—	—	—

¹ Planted June 17 on an Etowah clay loam (5% to 12% slope).

² Dates missed.

Table 52. Soybeans: Yields and other characteristics of varieties evaluated at Crossville in 1978 ¹

Variety	Yield	Date		Height	Lodg- ing
		1st flower	Last flower		
	Bu/A			In.	%
Essex	32	7-27	8-17	37	20
Forrest	31	7-30	8-18	39	40
SSF 503	30	7-27	8-15	36	15
Va-72-580 (Bay)	27	7-27	8-15	42	30
SSF 500N	27	7-30	8-15	35	60
FFR 557	27	7-31	8-25	46	40
Green Soy 73	27	8-7	8-23	43	30
Green Soy 74	26	7-31	8-23	44	30
RA 501A	25	7-27	8-18	53	65
McNair 500	25	7-31	8-22	39	40
RA 526	25	8-5	8-23	34	50
Multi Var 100	24	7-27	8-18	36	45
McNair 600	21	8-2	8-25	44	75
Pickett 71	20	8-7	8-25	43	30
Bedford	20	8-7	8-25	49	60
Centennial	18	8-7	8-25	42	45
L.S.D. (.05)	5.7	—	—	—	—
C.V. %	15.8	—	—	—	—

¹ Planted May 25 on a Hartells loam (2% to 5% slopes).

Table 53. Soybeans: Yield and other characteristics of varieties evaluated at Springfield in 1978 ¹

Variety	Yield	Date 1st flower	Date full bloom	Date mature	Plant height
	Bu/A				In.
SSF 503	34	7-17	7-21	10-3	42
Essex	33	7-17	7-21	9-29	36
Va 72-580 (Bay)	30	7-20	7-24	10-3	42
Bedford	30	7-24	7-28	10-3	42
RA 501A	30	7-18	7-24	9-29	48
Multi-Var 100	30	7-17	7-21	9-29	40
Pickett 71	29	7-31	8-7	10-13	40
Forrest	29	7-18	7-24	10-3	42
SSF 500N	27	7-18	7-24	9-29	38
RA 526	24	7-24	7-28	9-29	38
Green Soy 74	24	7-21	8-2	10-13	42
McNair 600	24	7-28	8-2	10-13	42
McNair 500	24	7-21	7-28	10-3	36
Centennial	23	7-21	8-2	10-20	40
FFR 557	22	7-24	8-2	10-13	44
Green Soy 73	21	7-31	8-7	10-13	42
L.S.D. (.05)	4.8	—	—	—	—
C.V. %	12.5	—	—	—	—

¹ Maury silt loam (2% to 5% slopes).

Table 54: Soybeans: Yield and other characteristics of varieties evaluated at Springfield in 1978 ¹

Variety	Yield	Plant height	Lodging
	Bu/A	In.	%
SSF 503	40	25	6
Essex	38	26	26
RA 501A	35	40	48
McNair 500	34	31	3
Va-72-580 (Bay)	33	36	6
Multi-Var 100	32	31	34
Green Soy 73	31	35	10
RA 526	31	28	19
FFR 557	28	36	3
Green Soy 74	27	34	23
SSF 500N	27	32	4
Bedford	27	40	39
Centennial	26	36	50
Forrest	25	34	1
McNair 600	25	36	30
Pickett 71	23	31	18
L.S.D. (.05)	6.9	—	—
C.V. %	16.1	—	—

¹ Dickson silt loam (2% to 5% slopes).

Table 55. Soybeans: Yield and other characteristics of varieties evaluated at Martin in 1978 ¹

Variety	Yield	Date 1st flower	Date mature	Plant ht.	Lodging	Flower color	Pubes- cence color
	Bu/A			In.	%		
Essex	31	7-25	11-7	34	0	purple	gray
SSF 503	30	7-27	11-7	29	0	purple	tawny
Bedford	30	8-6	11-18	53	50	white	tawny
SSF 500N	30	7-27	11-15	47	30	white	tawny
Va 72-580 (Bay)	29	7-29	11-16	37	0	purple	gray
Forrest	28	7-27	11-16	39	20	white	tawny
RA 526	27	8-1	11-13	42	10	purple	tawny
Multi-Var 100	27	7-28	11-12	40	30	P & W	T & G
McNair 500	27	7-31	11-17	41	50	purple	tawny
RA 501A	26	7-29	11-15	48	10	purple	tawny
FFR 557	23	8-7	11-19	39	0	white	gray
McNair 600	22	8-6	11-21	41	30	purple	tawny
Centennial	21	8-6	11-21	43	30	purple	tawny
Green Soy 73	19	8-10	11-21	40	0	white	gray
Pickett 71	17	8-11	11-23	40	80	purple	gray
Green Soy 74	15	8-2	11-21	39	0	white	gray
L.S.D. (.05)	5.5	—	—	—	—	—	—
C.V. %	21.2	—	—	—	—	—	—

¹ Planted June 6, 1978 on a Grenada silt loam. No fertilizer was added.

Table 56. Soybeans: Yield and other characteristics of varieties evaluated at Milan in 1978 ¹

Variety	Yield	Date			Plant height	Lodging	Flower color	Pubescence color
		First flower	Last flower	Maturity				
	Bu/A				In.	%		
Kimberly	57	7-10	8-12	10-12	45	30	W	T
SSF 500N	56	7-13	8-10	10-6	46	0	W	T
Forrest	55	7-15	8-20	10-10	52	50	W	T
Janie 77	54	7-20	8-12	10-12	47	30	W	T
SSF 503	53	7-7	8-7	10-6	36	10	P	G
Essex	53	7-11	8-10	10-6	38	10	P	G
Multi-Var 100	51	7-13	8-12	10-6	42	10	P & W	T & G
Bedford	49	7-21	9-2	10-18	56	60	W	T
McNair 3167	48	7-21	9-8	10-18	46	25	P	G
Va-72-580 (Bay)	48	7-11	8-12	10-6	48	5	P	G
Pickett 71	47	7-24	9-2	10-14	41	90	P	G
RA 603	47	7-11	8-16	10-18	54	30	W	T
Centennial	46	7-19	9-2	10-18	51	40	P	T
McNair 500	45	7-18	8-24	10-10	46	10	P	T
RA 526	44	7-15	8-14	10-2	39	80	P	T
Green Soy 74	44	7-18	8-20	10-20	48	0	W	G
FFR 557	44	7-24	9-8	10-18	49	5	W	T
McNair 600	42	7-24	9-2	10-18	52	90	P	T
Green Soy 73	42	7-24	9-2	10-20	48	0	W	G
RA-501A	41	7-15	8-14	10-4	54	20	P	T
Lancer	41	7-24	9-2	10-18	51	0	P	G
Coker 156	39	7-21	9-8	10-18	51	20	W	G
L.S.D. (.05)	12.6	—	—	—	—	—	—	—
C.V. %	6.3	—	—	—	—	—	—	—

¹ Planted May 18 on a Vicksburg silt loam (2-5% slope).

Table 57. Soybeans: Yield of varieties evaluated at seven locations for 2 years (1977-78)

Variety	Avg. (1977-78)	Greene- ville	Knox- ville	Spring Hill	Spring- field	Martin	Milan	Ames Planta- tion
Bushels per acre								
Essex	40	58	45	25	44	37	57	25
SSF 500N	40	57	43	23	35	35	59	27
Forrest	39	50	42	24	35	34	60	28
Multi-Var 100	39	51	44	24	40	34	54	24
McNair 500	38	51	43	20	39	38	53	24
Bedford	37	47	38	23	35	36	55	23
Centennial	36	50	38	20	31	34	50	30
Pickett 71	36	45	—	25	29	29	51	34
RA 526	35	45	36	19	35	35	49	24

Table 58. Soybeans: Yield and other characteristics of early-maturing varieties evaluated at Crossville in 1978 ¹

Variety	flower	Date 1st yield	Date last flower	Flower ² color	Date mature	Plant ht.	Shatter- ing	Lodg- ing
	Bu/A					In.	Rating ³ (.05)	%
Elf	48	7-10	7-31	P	9-14	22	1	0
Mitchell	42	7-11	8-4	P	9-14	38	3	50
SRF 425	41	7-11	7-31	W	9-14	42	1	70
SRF 350	40	7-10	7-31	W	9-14	37	3	85
RA 401	39	7-12	8-2	P	9-18	38	1	40
Franklin	36	7-11	8-2	P	9-14	39	1	65
FFR 444	32	7-12	8-4	P	9-14	40	0	15
L.S.D. (.05)	4.6	—	—	—	—	—	—	—
C.V. %	7.8	—	—	—	—	—	—	—

¹ Hartsells loam (2% to 5% slopes).

² W=White and P=Purple.

³ Rating based on a scale of 0 through 5 with 0=no shattering and 5=severe shattering.

Table 59. Soybeans: Yield and other characteristics of early-maturing varieties evaluated at Milan in 1978 ¹

Variety	Yield	Date 1st flower	Date last flower	Flower ² color	Pubes- cence ³ color	Date mature	Plant ht.	Shatter- ing Ratir:g
	Bu/A						In.	(o-5)
SRF 350	60	6-20	7-24	W	T	9-8	46	2
SRF 425	58	6-23	7-20	W	T	9-14	57	2
RA 401	58	6-24	7-28	P	G	9-20	50	1
Mitchell	57	6-23	7-26	P	T	9-14	48	2
FFR 444	52	6-24	7-28	P	T	9-12	47	2
Franklin	51	6-21	7-24	P	G	9-12	50	2
Elf	44	6-20	7-15	P	T	9-14	17	2
L.S.D. (.05)	6.1	—	—	—	—	—	—	—
C.V. %	7.6	—	—	—	—	—	—	—

¹ Vicksburg silt loam (2% to 5% slopes).

² W=White and P=Purple.

³ T=Tawny and G=Gray.

Table 60. Soybeans: Yield and other characteristics of varieties evaluated at Jackson in 1978 ¹

Variety	Yield	Plant height	Date mature
	Bu/A	In.	
Forrest	39	46	10-2
Essex	38	34	9-21
Coker 136	37	47	10-9
FFR 666	34	39	Frost
York	31	43	10-8
Mitchell	30	40	9-21
Centennial	30	46	Frost
Bedford	29	50	10-6
Lee 74	29	42	Frost
Pickett 71	26	41	Frost
L.S.D. (.05)	7.3	—	—
C.V. %	16.4	—	—

¹ Seeded May 15 on a Grenada silt loam. Varieties sprayed with Benlate.

Table 61. Soybean: Yield and other characteristics of early maturing varieties evaluated at Springfield in 1978 ¹

Variety	Yield	Plant height	Lodging
	Bu/A	In.	%
SRF 425	58	45	94
RA 401	53	42	10
SRF 350	52	40	98
Franklin	51	40	82
FFR 444	51	42	92
Mitchell	49	42	96
Elf	46	18	0
L.S.D. (.05)	N.S.	—	—
C.V. %	9.6	—	—

Huntington silt loam, local alluvium (2%-5% slopes).

Table 62. Soybeans: Yield and other characteristics of early-maturing varieties evaluated at Martin in 1978 ¹

Variety	Yield	Date 1st flower	Plant height	Date mature	Shatter- ing
	Bu/A		In.		Rating (0-5)
RA 401	30	7-14	34	10-6	0
SRF 450	27	7-16	28	10-7	0
SRF 425	24	7-14	31	10-6	0
Mitchell	22	7-12	27	10-1	2
Franklin	19	7-11	34	10-6	0
SRF 350	17	7-12	28	9-30	2
L.S.D. (.05)	11.2	—	—	—	—
C.V. %	11.7	—	—	—	—

¹ Falaya silt loam (2% to 5% slopes).

Table 63. Soybeans: Yield and other characteristics of strains evaluated at Jackson in 1978 ¹

Variety	Yield	Plant height	Date mature	Shatter- ing	Lodging
	Bu/A	In.		Rating (0-5)	Rating (0.5)
RA (c) 56	40	50	Frost	0	2.5
Westbrook	37	45	9-26	0	1.5
Lusk	37	44	9-24	0.2	1.0
Janie	31	50	9-29	1.2	3.0
RA (c) 107	31	44	9-21	2.2	1.0
Green GS759	31	31	9-13	0.8	0
McNair 3253	30	44	Frost	1.0	2.8
McNair 3181	28	49	Frost	0	2.1
McNair 3182	26	48	Frost	0.2	1.0
RA (c) 108	26	54	Frost	0.8	2.2
RA (a) 9	25	52	Frost	.2	2.2
McNair 3152	25	46	9-16	1.5	0.5
L.S.D. (.05)	9.1	—	—	—	—
C.V. %	20.7	—	—	—	—

¹ Planted May 15 on a Grenada silt loam (0% to 2% slopes).

DARK TOBACCO

The dark fire-cured and dark air-cured tobacco varieties were evaluated at Springfield. The 1978 data are not available so the data included in this report are for 1975 through 1977.

The leading varieties in yield using a 3-year average were Tennex 804 (an experimental), Madole, and DF-911. The varieties that produced the highest yield and acre value in 1977 were Tennex 805 (an experimental), DF-911, Tennex 804, and Modole.

In the dark air-cured test the leading variety using a 3-year average was OS 806 (an experimental). Ky 160 and several experimentals yielded about the same. OS 806 had the highest acre value in 1977.

Table 64. Dark Fire-Cured Tobacco: Average yield and acre value of varieties grown at Springfield in 1975, 1976, and 1977

Variety	Avg. 1975-77	Acre yield			Acre value ¹ 1977
		1977	1976	1975	
		Pounds per acre			\$ per acre
Tennex 804 ²	2410	2644	1772	2813	3913
Madole	2328	2614	1749	2620	3903
DF-911	2321	2676	1895	2392	4030
Tennex 917	2284	2564	1857	2431	3849
Tennex 916	2279	2566	1845	2426	3850
KY 171	2132	2390	1691	2316	3580
Tennex 915	2101	2334	1518	2452	3512
Tennex 803	2064	2216	1605	2371	3210
Tennex 805	—	2829	1885	—	4188
Tennex 918	—	2490	1866	—	3686
Tennex 914	—	—	—	2441	—
Tennex 912	—	—	—	2431	—
L.S.D. (.05)	—	189.8	197.0	112.6	302.0
C.V. %	—	10.5	8.7	3.9	6.9

¹ These values are based on the average value for the various grades on all type 22 markets in 1977.

² All with Tennex numbers are experimentals.

Table 65. Dark Air-Cured Tobacco: Average yield and acre value of varieties grown at Springfield in 1975, 1976, and 1977

Variety	Avg. 1975-77	Acre yield			Acre value ¹ 1977
		1977	1976	1975	
		Pounds per acre			\$ per acre
OS 806 ²	2343	2739	1862	2429	3450
KY 160	2162	2510	1778	2199	3174
OS 804	2157	2615	1634	2221	3317
OS 800	2131	2606	1672	2114	3280
OS 801	2118	2596	1494	2264	3271
OS 802	2081	2563	1529	2151	3299
OS 805	2045	2455	1471	2210	3092
OS 803	1997	2421	1544	2027	3021
L.S.D. (.05)	—	163.7	135.8	206.9	214.9
C.V. %	—	5.4	6.5	6.4	5.7

¹ These values are based on the average value for the various grades on all type 35 markets during 1977.

² All with OS numbers are experimentals.

BURLEY TOBACCO¹

C. L. Gupton and T. C. Corbin ²

The commercial potentials of several varieties and hybrids of burley tobacco were assessed in terms of yield, market value, usability, disease resistance, and plant characteristics. The data were taken in 1975, 1976, and 1977 at three locations.

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. Abnormally high rainfall in June and low rainfall in July and August occurred at Greeneville in 1977.

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Yields of the varieties are presented in Table 1. Ky. 10, Ky. 14, MS Burley 21 x Ky. 10, and MS Ky. 14 x L8 usually produced the highest yields. Va. 509, MS Bu. 21 x L8, and MS Bu. 37 x L8 produced on the average about 100 pounds per acre less tobacco than the highest yielding varieties. Burley 37, Burley 49, and Burley 64 were generally the lowest in yield.

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 that need to be considered 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, Burley 64, and the new variety Ky. 17 are usually resistant to both race 0 and race 1. Under certain conditions, however, these varieties will suffer varying degrees of loss to black shank. In 1975 all of the resistant varieties tested 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, Burley 49, Burley 64, or Ky. 17 should be grown. 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 Virus (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, indicates 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 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.

During 1977 and 1978, less virus damage was observed on tobacco than in 1976. In most instances the virus appeared to be TVMV rather than TEV. 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 ¹ in pounds per acre by varieties, locations, and years

Variety	Greeneville			Springfield			Spring Hill ²		Variety average
	1975	1976	1977	1975	1976	1977	1975	1977	
	Pounds per acre								
Burley 21	2271	2602	2580	3397	2044	2944	2793	1915	2568
Burley 37	2093	2294	2290	3094	1810	2803	2782	2026	2399
Burley 49	2021	2386	2134	2966	2254	2831	2665	2146	2425
Burley 64	2116	2326	2265	2997	2155	2824	3137	1751	2446
Va. 509	2337	2720	2600	3399	2332	3421	3228	2171	2776
Ky. 10	2490	2957	2695	3794	2512	3480	3109	1940	2872
Ky. 14	2241	2949	2538	3446	2476	3245	3396	2257	2818
Hybrid									
MS Burley 21 x Ky 10	2556	2383	2730	3794	2672	3545	3401	2324	2926
MS Burley 21 x L8	2387	2341	2689	3455	2495	3150	3048	2463	2754
MS Burley 37 x L8	2296	2147	2721	3499	2249	3157	3378	2192	2705
MS Ky. 14 x L8	2394	2626	2682	3712	2596	3670	3495	2366	2943
L.S.D. (.05)	211	304	307	307	275	354	345	289	
C.V. %	6.0	8.0	8.3	6.2	8.0	7.6	7.0	9.3	

¹ Based on four replications of 50 plants per replication.

² 1976 data not available.

Table 2. Burley Tobacco: Market value in dollars per hundredweight ¹ by varieties, locations, and years

Variety	Greeneville			Springfield			Spring Hill ²		Variety average
	1975	1976	1977	1975	1976	1977	1975	1977	
Dollars per hundredweight									
Burley 21	108.07	112.65	118.68	111.55	111.02	115.15	113.71	116.43	113.41
Burley 37	108.15	111.62	118.40	111.55	111.72	114.50	113.44	116.45	113.23
Burley 49	108.06	111.10	116.75	110.84	112.22	114.98	113.77	116.33	113.01
Burley 64	107.77	112.45	117.48	111.52	111.22	115.15	113.99	116.15	113.23
Va. 509 ¹	107.35	119.92	117.85	111.04	111.35	116.45	113.56	116.18	114.21
Ky. 10	109.61	114.47	118.18	112.21	112.55	115.23	113.83	114.93	113.88
Ky. 14	110.00	113.42	118.40	111.60	110.87	114.45	114.12	116.63	113.69
Hybrid									
MS Burley 21 x Ky. 10	109.48	114.60	118.08	112.26	111.57	115.73	113.75	116.33	113.96
MS Burley 21 x L8	109.27	112.82	118.03	112.05	113.35	114.05	113.85	116.60	113.75
MS Burley 37 x L8	108.76	112.60	118.25	110.39	113.47	113.88	113.78	116.67	113.48
MS Ky. 14 x L8	109.67	113.52	118.60	110.92	112.10	113.73	113.43	116.08	113.51
L.S.D. (.05)	1.79	1.51	1.74	1.75	2.07	2.08	0.35	2.37	
C.V. %	1.47	0.92	1.02	1.06	1.28	1.20	0.65	0.51	

¹ Dollars per hundred weight were calculated from the average market value of the U.S. Government grades for the given year.

² 1976 data not available.

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

Variety	Greeneville			Springfield			Spring Hill ¹		Variety average
	1975	1976	1977	1975	1976	1977	1975	1977	
					Percent				
Burley 21	82	61	80	73	63	73	88	75	74
Burley 37	77	50	76	71	52	57	89	64	67
Burley 49	81	41	73	69	65	64	80	68	68
Burley 64	82	56	63	73	43	67	77	57	65
Va. 509	80	54	65	59	34	55	73	62	60
Ky. 10	81	47	62	75	35	67	83	64	64
Ky. 14	82	74	66	73	25	77	75	62	67
Hybrid									
MS Burley 21 x Ky. 10	83	64	62	69	44	65	80	59	66
MS Burley 21 x L8	68	68	60	75	46	59	71	56	63
MS Burley 37 x L8	79	59	64	67	40	61	80	64	64
MS Ky. 14 x L8	68	64	57	75	37	58	69	69	62

¹ 1976 data not available.

Table 4. Burley Tobacco: Resistance to black shank and black root rot and sensitivity to TMV

Variety	Survival in Race 0 infested soil			Survival in Race 1 infested soil			Resistance to black root rot	Extremely sensitive to TMV
	1975	1976	1977	1975	1976	1977		
	Percent							
Burley 21	1	2	14	2	0	36	low	no
Burley 37	80	95	92	97	100	97	low	yes
Burley 49	86	99	97	91	97	92	high	yes
Burley 64	76	98	91	99	92	99	high	yes
Va. 509	41	87	97	89	98	100	low	yes
Ky. 10	0	0	43	—	—	—	medium	no
Ky. 14	0	0	29	0	4	2	medium	no
Hybrid								
MS Burley 21 x Ky. 10	3	5	4	0	—	—	low	no
MS Burley 21 x L8	82	89	99	2	16	80	med. high	no
MS Burley 37 x L8	84	97	91	67	76	98	med. high	yes
MS Ky. 14 x L8	59	87	75	2	17	41	med. high	no

Table 5. Burley Tobacco: Plant characteristics—average of 1975, 1976, and 1977 at Greeneville, TN

Variety	Days to flower	Plant height	Number of leaves	Leaf internode	Largest leaf	
					Length	Width
		In.		In.	Inches	
Burley 21	67	46.9	17.4	2.70	27.4	12.9
Burley 37	66	43.9	17.2	2.56	26.9	13.2
Burley 49	70	40.7	17.8	2.29	25.6	12.5
Burley 64	81	39.8	18.4	2.17	26.0	12.5
Va. 509	69	43.5	17.6	2.47	28.2	13.6
Ky. 10	70	41.4	17.8	2.31	27.9	13.7
Ky. 14	70	44.7	18.1	2.47	28.2	13.7
Hybrid						
MS Burley 21 x Ky. 10	68	45.9	18.1	2.54	28.2	13.9
MS Burley 21 x L8	63	46.0	16.9	2.73	28.7	13.7
MS Burley 37 x L8	64	44.4	17.0	2.60	28.6	14.0
MS Ky. 14 x L8	66	46.1	17.1	2.71	29.8	14.5

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