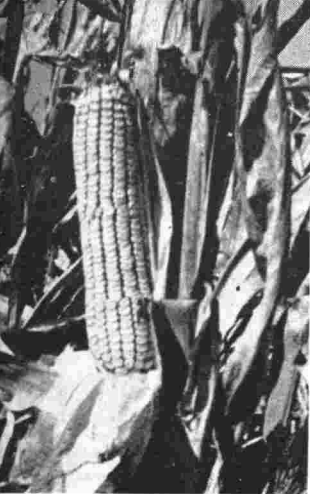




1967

PERFORMANCE OF FIELD CROP VARIETIES

by Charles R. Graves



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The University of Tennessee
Agricultural Experiment Station
John A. Ewing, Director
Knoxville

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1967 PERFORMANCE OF FIELD CROP VARIETIES

**CORN—COTTON—OATS—WHEAT—BARLEY—SOYBEANS
ALFALFA—RED CLOVER—GRAIN SORGHUM—TOBACCO**

by

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**SUDANGRASS AND SUDANGRASS-SORGHUM HYBRIDS
PEARLMILLETS**

by

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**Data for 1967 with Summaries of Results
from Previous Years**

Station Hatch Project No. 33

Evaluation of the Performance of Varieties of Field Crops

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RECOMMENDED CROP VARIETIES

(Listed alphabetically)

Corn Hybrids

White—DeKalb 999, Dixie 29R, Dixie 33,¹ Dixie 77, Funk G-580W, Funk G-795W, Funk G-4831, P.A.G. 653W,¹ Pioneer 509W, Pioneer 511,¹ Pioneer 511A, Princeton 990A, Stull's 400WA, Tenn. 501,¹ Tenn. 501R

Yellow—DeKalb 1006, Embro 222TA,¹ Funk G-710-AA, Funk G-711AA, McCurdy M97, P.A.G. SX-59, Pioneer 309B, Pioneer 3048, Pioneer 310, Tenn. 604.

Cotton

Early—Auburn M, Dixie King II, Hancock, Rex Smoothleaf, Stardel.¹

Late—Auburn 56, Carolina Queen,¹ Deltapine 45A, Stoneville 213.

Oats—Fall-Seeded—Blount.

Wheat—Knox 62, Monon, Reed,² Seneca.²

Barley—Dayton,¹ Harrison, Hudson, Wade.

Alfalfa—Atlantic, Cody, Buffalo, Narragansett, Vernal, Williamsburg.

Red Clover—Kenland

Soybeans—Dare, Dyer,³ Hill, Hood, Lee, Ogden, Pickett.³

Grain Sorghum—AKS 614,* DeKalb E-57, Ga. 615,* P.A.G. 515, Rico, R.S. 610.

Burley Tobacco—Burley 21, Burley 37, Burley 49, MS Burley 21 x Ky. 10.

Dark Fired Tobacco—Broad Leaf Madole, Black Mammoth, DF-516, DF-300.

Sudan grasses and Hybrids—Chow-maker (Excel), Cumberland, FFR 66, GHS-1, GHS-2A, Grazemaster (Taylor-Evans), Grazer A (Asgrow), Greenlan (Caladino), Green-M (Hunt & Tipps), Haygrazer (Taylor-Evans), Hi-dan 39 (Frontier), Lindsey 77-F, Mor-su (Rudy-Patrick), Pioneer 985, Piper, Sordan (Northrup-King), Su-1 (Rudy-Patrick), Su-chow 34, Su-chow 35 (Pfister), Sudax SX-6, Sudax SX-11, Sudax SX-12 (DeKalb), Sure-Graze (Dorman), Sweet Sioux (Paymaster), Taylor-Evans 3083 X, Trudan II, Trudan IV (Northrup-King).

Pearl millets—Gahi-1, Starr.

* Resistant to bird damage.

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

² Not recommended for West Tennessee.

³ Recommended where soybean cyst nematodes are a problem.

Characteristics of Recommended Corn Varieties for 1968
(Varieties listed alphabetically)

Hybrid	Corn virus	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
	Rating	%	No. Tested in four locations	Rating ¹	Rating ¹	In.	%
White—Full Season¹							
DeKalb 999	Fair	81	120	3.9	3.7	50	21.1
Dixie 29R	Fair	63	142	4.3	3.2	60	24.7
Dixie 33 ²	Poor	62	152	5.4	3.4	63	23.2
Dixie 77	Fair	— ^a	132	3.0	3.0	60	25.6
Funk G-580W	Fair	70	149	3.7	2.7	53	22.3
Funk G-795W	Fair	73	158	4.2	2.9	51	21.9
Funk G-4831	Good	79	122	2.5	1.6	52	26.4
P.A.G. 653W ²	Poor-Fair	65	166	3.1	2.7	54	22.2
Pioneer 511 ²	Fair-Good	74	156	3.8	2.7	55	22.1
Pioneer 511A	Fair-Good	76	163	3.0	2.2	56	22.9
Yellow—Full Season¹							
DeKalb 1006	Fair	75	120	3.1	3.4	60	23.5
Embro 222TA ²	Fair	— ^a	113	4.0	4.0	63	26.0
Funk G-710AA	Poor-Fair	— ^a	137	3.0	4.0	64	26.2
Funk G-711AA	Fair	73	120	3.9	3.6	58	25.9
Pioneer 309B	Fair	68	128	3.3	2.5	53	23.8
Pioneer 3048	Fair	76	125	4.2	2.5	59	25.3
Tested in seven locations							
White—Medium Season²							
Pioneer 509W	Fair	85	132	4.9	4.0	53	21.7
Princeton 990-A	Poor-Fair	88	100	4.6	4.8	52	21.4
Stull's 400WA	Fair-Good	85	120	3.7	3.3	52	22.0

Characteristics of Recommended Corn Varieties for 1968 (Continued)

Hybrid	Corn virus	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
	Rating	%	No.	Rating ¹	Rating ⁴	In.	%
Tenn. 501 ²	Good	77	149	3.7	2.9	52	22.3
Tenn. 501R	Good	78	143	4.1	3.2	52	21.8
Yellow—Medium Season³							
McCurdy M97 ⁵	Poor	79	122	4.2	3.6	54	25.5
P.A.G. SX-59	Poor	93	100	3.4	4.5	50	22.2
Pioneer 310	Poor	81	120	4.2	4.3	50	21.4
Tenn. 604	Fair-Good	76	140	3.4	3.4	54	21.3

¹ Tested at 4 locations.

² Present plans indicate that these varieties will not be recommended after this year.

³ Tested at 7 locations.

⁴ Ratings were based on a scale of 1 to 9 (1 being excellent and 9 poor).

⁵ Tested for 2 years, as full season hybrids.

⁶ Has not been included in test for all 3 years so lodging data might be misleading.

Cotton

Auburn M—A very early-maturing, medium to large-boll variety which has a lint percentage of about 36 to 38. Fiber properties:¹ Length (1.08), strength (1.75), and fineness (4.2). Resistant to fusarium wilt.

Auburn 56—A late, medium-boll variety with a lint percentage of about 36 to 38. Fiber properties:¹ Length (1.07), strength (1.78), and fineness (4.3). Plant type variable. Resistant to fusarium wilt and has tolerance to verticillium wilt. Auburn 56 has a high degree of storm resistance.

*Carolina Queen*²—A late, medium-boll variety with a lint percentage of about 36 to 39. Fiber properties:¹ Length (1.11), strength (1.83), and fineness (4.4). Resistant to fusarium wilt. Tall growth habit.

Deltapine 45A—A medium-late, small-boll variety with a lint percentage of 36 to 39. Fiber properties:¹ Length (1.11), strength (1.84), and fineness (4.6). It has tolerance to verticillium wilt and some resistance to fusarium wilt.

Dixie King II—A medium-early variety that has large bolls. Lint percentage 35 to 37. Fiber properties:¹ Length (1.08), fineness (1.77), and strength (4.3). Tolerant to fusarium wilt.

Hancock—A very early, high yielding, large-boll variety with lint percentage of 39 to 41. Fiber properties:¹ Length (1.06), fineness (1.78), and strength (4.3). Hancock's outstanding characteristics are its high yield, earliness, seedling vigor, and high lint percentage.

Rex Smoothleaf—An early, large-boll variety with a lint percentage of about 35 to 37. Fiber properties:¹ Length (1.09), strength (1.75), and fineness (4.1). Resistant to fusarium wilt and one strain of bacterial blight.

*Stardel*²—An early, small-boll variety with a lint percentage of about 36 to 38. Fiber properties:¹ Length (1.09), strength (1.92), and fineness (4.4). Not recommended where wilt is a problem.

Stoneville 213—A medium-late, small-boll variety with a lint percentage of 36 to 39. Fiber properties:¹ Length (1.08), strength (1.80), and fineness (4.6).

Oats

Fall-Seeded:

Blount—A short, stiff-strawed variety which matures 4 to 5

¹ All fiber properties are average values for a number of years.

² Present plans indicate that this variety will not be recommended after this year.

days later than Forkeddeer and is slightly less winterhardy. On the average, Blount will outyield Forkeddeer for grain by approximately 40%. When harvested for hay, Blount has a slight yield advantage over Forkeddeer. Blount is coarse-stemmed and has good resistance to lodging.

Wheat

Knox 62—A very early winter-hardy, white-chaffed variety with medium-short straw. Semi-upright type with fair to poor standing ability. Due to its earliness, Knox may escape serious damage by stem rust. It is resistant to some races of leaf rust in the mature plant stage. Hessian fly resistant.

Monon—A very early winter-hardy, white-chaffed variety with moderately stiff straw which is a few inches shorter than Knox. Monon has a head type similar to Knox but has shorter tip awns. The variety is resistant to certain races of leaf rust in the mature plant stage. It is susceptible to stem rust but may escape serious damage from this disease due to its earliness. Monon is resistant to Hessian fly.

Reed—A late-maturing variety with good straw strength. Reed is resistant to Hessian fly, leaf rust, and soil-borne mosaic. Moderately susceptible to stem rust, powdery mildew, and loose smut. *Not recommended for West Tennessee.*

Seneca—A red-chaffed variety of medium height and fair standing ability. Susceptible to leaf and stem rust. Matures later than Knox or Monon. *Not recommended for West Tennessee.*

Barley

*Dayton*¹—A winter-hardy, semi-rough-awned, early variety with good standing ability. Medium-tall; susceptible to mildew and scald.

Harrison—A medium-late, medium-tall, rough-awned variety with good standing ability. It has good resistance to powdery mildew, leaf rust, and scald. It has some resistance to net blotch. Harrison is non acid tolerant and performs best at a pH of 6.0 or above. This variety has performed very poorly at a pH of 5.0 or below.

Hudson—A winter-hardy, rough-awned variety with fair standing ability. It is medium-late with good resistance to mildew and scald.

Wade—A winter-hardy, six-rowed, short-awned variety with

¹ Present plans indicate this variety will not be recommended after this year.

medium height and medium-late in maturity. The spike is parallel and dense and seeds may be characterized by the lack of lemma teeth, semiwrinkled hulls, and a short-haired rachilla. Susceptible to powdery mildew.

Alfalfa

Atlantic—A variegated variety developed from selections having a wide genetic background. It has yielded well all over the state. Atlantic is somewhat tolerant but not resistant to bacterial wilt.

Cody—Selected out of Buffalo and resistant to spotted alfalfa aphid and bacterial wilt. Similar to Buffalo in its performance in Tennessee.

Buffalo—Selected out of an old Kansas Common strain and resistant to bacterial wilt. Buffalo is well adapted to Tennessee conditions and is one of the leading varieties sold in the state.

Narragansett—A synthetic variety of very diverse origin. It recovers somewhat slower than other adapted varieties after cutting. Narragansett is fine-stemmed and yields as well as Atlantic. Seed is in short supply in Tennessee.

Vernal—Variegated in flower color ranging from blue through yellow. This bacterial wilt resistant variety has performed well in Tennessee. However, in some years a minor leaf disease problem has been observed with this variety.

Williamsburg—Developed from selections out of Kansas Common. It is susceptible to bacterial wilt. This variety has been a good producer and is well adapted over the state.

Red Clover

Kenland—Kenland is a variety resistant to southern anthracnose and tolerant to powdery mildew. It has some tolerance to Sclerotinia crown rot and is widely adapted. It is a synthetic variety made by combining several strains from Kentucky, Tennessee, Virginia, North Carolina, and Missouri. It has performed best in Tennessee of all commercial varieties tested.

Soybeans

Dare—Dare matures 4 or 5 days earlier than Hood. Plants have white flowers and gray pubescence. Seeds are yellow with light brown hilum. It has resistance to purple stain, bacterial pustule, wildfire, 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 has a tendency to hold its leaves after maturity longer than some other varieties.

Dyer—Dyer is resistant to soybean cyst nematode, two root-knot nematodes, and bacterial pustule. It matures 5 days later than Hill and does not hold its beans as well as Hill. Dyer will lodge worse than Hill under some conditions. Dyer plants have purple flowers and tawny pubescence. Seeds are yellow with black hila. It has been observed to be susceptible to some soybean virus diseases. Recommended where cyst nematodes are a problem.

Hill—Hill matures about 14 days earlier than Hood. This variety has resistance to shattering, but is not quite as resistant to shattering as Lee.

Hood—Hood matures about 10 days earlier than Lee. It is supposed to have resistance to bacterial pustule, wildfire, frogeye, and target leaf spot disease. The seeds are yellow with a buff hilum.

Lee—Matures approximately 1 week later than Ogden. Lee has tawny pubescence and purple flowers, whereas Ogden has gray pubescence and purple flowers. Lee has more resistance to shattering than the other recommended varieties. Lee is reported to be resistant to the diseases bacterial pustule, wildfire, frogeye, and purple seed strain. Also, it is supposed to be moderately resistant to target spot. The seeds are yellow with a black hilum. Lee has a tendency to lodge under some conditions.

Ogden—This variety was developed by the University of Tennessee Agricultural Experiment Station and is widely grown in the Southeastern states. It produces high yields of seed with a good oil content. Ogden has a tendency to shatter and should be harvested shortly after maturity. It is a mid-season variety with about the same maturity as Hood. Ogden has olive-colored beans with a brownish-black hilum.

Pickett—Pickett is resistant to soybean cyst nematode, bacterial pustule, wildfire, and target spot. Pickett plants have gray pubescence and the seeds are yellow with a dark brown hilum. The new variety is similar to Lee in yield under cyst nematode-free conditions, matures a few days later than Lee, and has a tendency to retain its leaves longer than Lee after the bean pods have matured. Recommended where cyst nematodes are a problem.

Grain Sorghum Hybrids

AKS 614—A bird-resistant variety of medium maturity with an open type head in compactness.

DeKalb E-57—A variety of late maturity with an open type head in compactness.

Ga. 615—A bird-resistant variety of medium to late maturity with an open type head in compactness. *Ga. 615* has a tendency to lodge under certain conditions.

P.A.G. 515—A variety of late maturity with heads of tight compactness.

Rico—A variety of medium maturity, short plant height with a tight head in compactness.

R.S. 610—A medium-maturing hybrid with heads tight in compactness.

Burley Tobacco

Burley 21—A very upright-leaf type variety which produces good yields of fine quality tobacco. It has excellent resistance to wildfire and mosaic and fair resistance to black root rot. Plants are more vigorous and grow off faster in plant beds than most other varieties. *Burley 21* is the most widely grown variety in the state.

Burley 37—An upright-leaf type variety which has good resistance to black shank, excellent resistance to wildfire, and fair resistance to black root rot and fusarium wilt. This variety is recommended on farms where black shank is a problem. In the absence of black shank, *Burley 37* will not yield as well as *Burley 21*.

Burley 49—An upright-leaf type variety which has good resistance to black shank, excellent resistance to black root rot, wildfire, mosaic, and fair resistance to fusarium wilt. This variety is recommended on farms where black shank and black root rot are causing problems. In the absence of black shank and black root rot, *Burley 49* will not yield as well as *Burley 21*.

MS Bu. 21 x Ky. 10—A semi-drooping leaf type hybrid which has excellent resistance to wildfire and mosaic and fair resistance to black root rot. Yields about the same as *Ky. 10* but more than *Burley 21*. *MS Bu. 21 x Ky. 10* hybrid is better in quality than *Ky. 10*, but not as good as *Burley 21*.

Dark Fire-Cured Tobacco

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

Black Mammoth—Black Mammoth produces a leaf somewhat darker and broader than Madole. Usually it does not droop quite as much as Madole. Susceptible to mosaic and wildfire.

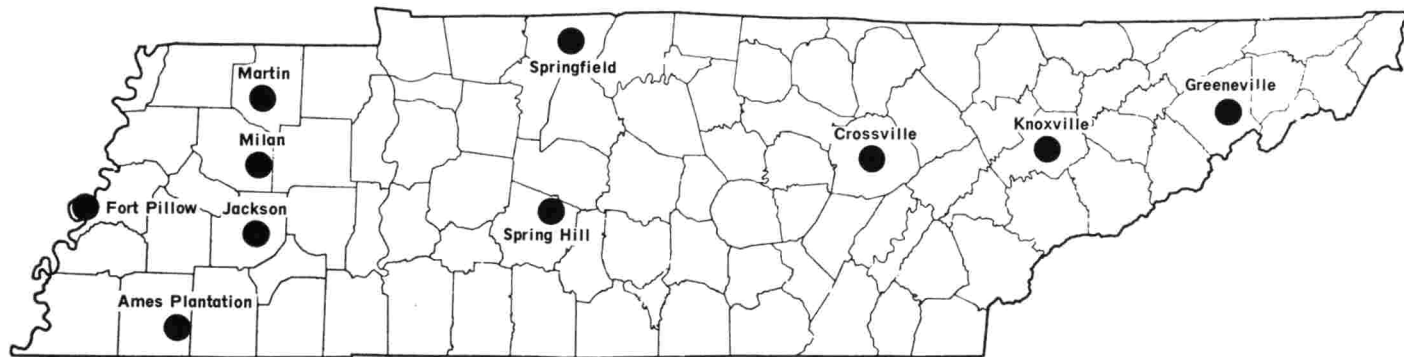
DF-516—A broad-leaved, open-growing, dark-green tobacco that is resistant to both mosaic and wildfire. Because of the large, broad leaves, this variety is perhaps best suited to the production

of cutting and wrapping tobacco. The leaf spacing of DF-516 is about the same as that of Madole.

DF-300—A variety moderately resistant to black shank, was developed and released in 1967 by the U. T. 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 quite capable of producing cutting or snuff tobacco.

Sudangrasses and Sudangrass-sorghum hybrids—Pearlmillet

For a description of some of the recommended varieties, see the section "Performance of Summer Annual Grasses for Grazing and Green-Chopping" on page 80 of this bulletin.



Locations of Field crop variety tests in Tennessee, 1967

1967
PERFORMANCE
OF FIELD CROP VARIETIES

CORN—COTTON—OATS—WHEAT—BARLEY—SOYBEANS
ALFALFA—RED CLOVER—GRAIN SORGHUM—TOBACCO
SUDANGRASS AND SUDANGRASS-SORGHUM HYBRIDS
PEARLMILLETS

Data for 1967 with summaries of results from previous years

INTRODUCTION

The purpose of the project, "Evaluation of the Performance of Varieties of Field Crops," 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 station 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 College 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 adaptation 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 1967 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



Figure 1. An example of a corn hybrid that lodged severely (55%) when grown at 16,000 plants per acre at Knoxville in 1967.



Figure 2. An example of a corn hybrid that lodged very little (10%) when grown at 16,000 plants per acre at Knoxville in 1967.

yielding ability. Also, coefficient of variation values (C.V.%) are shown at the bottom of each table. At each location where tests were conducted in 1967, the soil types are reported at the end of the table.

CORN

The 1967 Full-Season State corn hybrid tests were conducted at four locations and the early-maturing tests were conducted at seven locations. There were 30 entries in the full-season and 40 entries in the early-maturing test. The experimental design was a randomized complete block with 6 replications.

Yields at Fort Pillow and Spring Hill were reduced by virus disease, Fort Pillow yields being reduced the most. There was very little virus damage at the other locations. Lodging (Stalk breakage) was heavy at Fort Pillow and Greeneville. Also, there was some lodging at the other locations.

The experimental hybrids T6103 and T6006 were severely injured in the seedling stage by high rates of ammonium nitrate (150 lbs. of N per acre) at Jackson, thus reducing the yields for these two hybrids at this location. Injury from high rates of ammonium nitrate was noted at Knoxville for these two hybrids. However, they recovered to produce a good yield. Several other varieties were damaged at both locations by ammonium nitrate.

The virus disease data in Tables 4 and 8 were furnished by L. M. Josephson and J. W. Hilty of the Tennessee Agricultural Experiment Station at Knoxville. A scale ranging from 1 through 9 was used to rate these varieties at three locations where the virus disease occurred in previous years. The data represent two replications at each location.

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

- 1 = No apparent symptoms
- 2 = Top 2 or 3 leaves with mottling, no stunting.
- 3 = Plant above the ear mottled and discolored; none or very little stunting.
- 5 = Plant above ear discolored and stunted, ear reduced in size.
- 7 = Entire plant discolored and stunted, small or no ear.
- 9 = Plant completely collapsed, no ear.

The severity index for each entry was determined by multiplying the number of plants in each grade by the grade value, and the sum of these products was divided by the number of plants.

Pioneer 309A was included in both the full-season and the early-maturing tests to provide some measure of relative performance of the two groups.

Amounts of fertilizer applied to each test were considered sufficient for corn yields over 100 bushels per acre. All tests were planted at the rate of 28,000 plants per acre and thinned to give a stand of 14,000 plants.

The 1967 "average yields" and characteristics of the hybrids tested in the early-maturing group are presented in Tables 1 and 2. "Erect plants" is a measure of a variety's resistance or susceptibility to lodging. The higher the number, the better the standing ability of the hybrids. "Ears/100 plants" is a measure of the prolificacy of a variety. Single-eared hybrids will have a rating of about 100, whereas prolific hybrids under good weather conditions at about 14,000 plants per acre usually have a rating of 120 to 150.

"Grain quality" and "Husk cover" are ratings taken at the time of harvest. "Ear height" is a measure of the average distance from the ground to the ears.

"Grain moisture" is used to calculate yield (yields are expressed in bushels per acre, adjusted to 15.5% moisture) and measures relative maturity of the hybrids. A high moisture at harvest indicates a later-maturing hybrid, and a low moisture indicates an earlier-maturity hybrid.

Funk G-4831, Pioneer 511A, and DeKalb 999 were added to the recommended list in 1968. Funk G-4831 has good tolerance to the corn virus and has been the top grain producer in the test for the past 3 years. Pioneer 511A has fair to good virus tolerance and has also performed well where lodging has been a problem. DeKalb 999 has fair tolerance to the virus and has stood up well under stalk rot conditions. In fact, all three varieties have performed well under stalk rot conditions. Funk G-732 was not added to the recommended list because of its late maturity. This variety has performed well in the test and would make an excellent silage corn. However, it matures a little late for grain in some areas of the state.

Present plans indicate that Dixie 33 and P.A.G. 653W will not be recommended after this year because of the low yields and high lodging that has occurred with these two varieties the last few years. Embro 222TA and Tenn. 501 will be removed due to lack of seed availability, and Pioneer 511 will be removed if seed becomes unavailable.

Some of the new varieties that looked good in the test were DeKalb 1101, P.A.G. SX80W, Funk G-4660, Princeton SX804, Pioneer 3368, Stull's 307, and Funk G-5757.

Data are presented in Tables 1 through 8.

Table 1. Corn: Yields of 40 early-maturing hybrids tested at eight locations in 1967

Color	Hybrid	Avg.	Fort Pillow ¹	Jackson ²	Martin ³	Spring Hill ⁴	Springfield ⁵	Crossville ⁶	Knoxville ⁷	Greeneville ⁸
Bushels per acre										
Y 2X	Funk G-4660	107	96	113	101	87	108	94	142	118
Y 2X	Princeton SX-804	104	75	93	118	83	112	104	141	104
Y 2X	Pioneer 3369	102	80	88	103	91	104	114	132	103
Y	Stull's 307	102	77	97	140	94	107	80	115	106
W	Tenn. 501	101	70	100	122	90	103	90	116	117
W	Princeton 920-A	101	68	101	126	91	104	82	125	107
W	Tenn. 501R	99	76	96	116	102	98	73	115	113
Y	Funk G-5757	99	78	92	110	92	100	93	121	102
W	Stull's 400WA	98	70	94	121	93	100	75	120	112
Y 2X	Princeton SX809	98	70	96	112	84	92	90	134	104
W	Pioneer 509	97	64	100	119	80	103	86	110	113
Y	Funk G-5759	97	67	95	112	85	101	81	132	99
W	Funk G 508	96	67	94	120	73	110	92	115	96
Y 2X	McCurdy 92X11	96	62	90	120	84	103	91	121	96
W	Princeton 990-A	95	74	100	112	82	98	81	118	95
Y 2X	P.A.G. SX59	95	74	91	110	78	109	80	119	102
Y 2X	McCurdy 66X18	94	51	96	120	90	109	82	109	97
Y	Funk G-5858	93	57	95	108	75	108	87	114	100
Y	Pioneer 310	92	40	88	112	79	108	93	117	102
W 2X	Meacham's MX-75W	92	74	93	107	78	100	75	110	98
W	Meacham's M-7	91	75	94	102	77	89	84	108	97
Y	McCurdy M97	91	58	88	122	66	105	78	118	90
Y	Pioneer 309A	90	66	97	102	67	87	90	110	96
Y	Pioneer 3306	89	37	80	120	86	101	93	104	93
Y	Tenn. 604	88	54	74	121	83	95	79	94	102

Table 1. (Continued)

Color	Hybrid	Avg.	Fort Pillow ¹	Jackson ²	Martin ³	Spring Hill ⁴	Springfield ⁵	Crossville ⁶	Knoxville ⁷	Greeneville ⁸
Y 2X	McNair X202	88	45	76	110	73	97	99	107	95
Y	Stull's 100YM	88	57	85	108	78	91	86	101	93
Y 2X	DeKalb 805A	87	49	78	107	62	85	98	119	95
Y	DeKalb XT872	87	63	88	100	74	89	84	105	90
Y	Horn's HCS109	82	56	86	96	71	82	81	100	87
Y 3X	P.A.G. 399	82	53	72	96	77	87	73	106	88
Y	P.A.G. 437	80	42	83	100	65	93	78	106	76
Y 2X	Funk G-4641	80	43	77	97	64	92	77	106	85
Y 2X	Ed. Purdue PX100	77	59	67	96	62	84	77	99	69
Y 2X	Bonusmaker 3	76	56	70	89	66	78	80	104	61
Y 3X	Ed. Purdue PH19	73	45	65	85	54	82	80	100	71
Experimentals:										
Y	T4003	100	55	91	126	86	125	95	108	113
Y	T7007	97	51	86	127	88	125	101	82	118
Y	T6010	88	52	78	107	74	105	97	91	99
Y	T6009	86	47	84	115	63	100	93	92	94
	L.S.D. (.05)	—	24.4	11.6	10.8	13.2	11.9	8.6	15.4	11.0
	C.V. %	—	24.6	11.6	8.6	14.8	10.6	8.8	12.1	10.0

¹ Collins silt loam, (0% to 2% slopes).² Loring silt loam, level terrace phase, (0% to 2% slopes).³ Collins silt loam, (0% to 2% slopes).⁴ Huntington silt loam, phosphatic, (0% to 2% slopes).⁵ Huntington silt loam, local alluvium, (0% to 2% slopes).⁶ Hartsells loam, eroded, (2% to 5% slopes).⁷ Sequatchie silt loam, (0% to 5% slopes).⁸ Etowah silt loam, (2% to 5% slopes).

Table 2. Corn: Characteristics of 40 early-maturing hybrids tested at seven locations in 1967

Color	Hybrid	Avg. yield	Erect plants	Ears per 100 plants	Grain quality ¹	Husk cover ¹	Ear ht.	Grain moisture at harvest
		Bu./A	%	No.	Rating	Rating	In.	%
22	Y 2X Funk G-4660	107	80	136	4.4	5.4	50	22.3
	Y 2X Princeton SX804	104	85	118	5.0	5.5	52	22.7
	Y 2X Pioneer 3369	102	91	108	2.4	5.9	42	19.9
	Y Stull's 307	102	72	158	3.8	3.3	54	22.8
	W Tenn. 501	101	79	158	4.1	2.8	52	23.3
	W Princeton 920-A	101	87	116	3.7	2.7	47	25.1
	W Tenn. 501R	99	74	148	4.0	3.2	52	23.1
	Y Funk G-5757	99	89	124	3.8	4.1	49	26.0
	W Stull's 400WA	98	72	144	3.9	2.8	53	23.6
	Y 2X Princeton SX809	98	80	110	3.4	5.9	46	21.0
	W Pioneer 509	97	82	136	4.8	3.6	53	23.3
	Y Funk G-5759	97	84	118	3.8	3.4	50	25.0
	W Funk G-508	96	82	108	3.6	3.4	51	25.2
	Y 2X McCurdy 92X11	96	77	120	3.9	4.1	53	23.8
	W Princeton 990-A	95	81	106	4.5	4.9	50	22.7
	Y 2X P.A.G. SX59	95	89	104	3.4	4.5	50	23.2
	Y 2X McCurdy 66X18	94	72	149	2.9	3.7	59	23.2
	Y Funk G-5858	93	85	144	3.4	2.8	56	29.2
	Y Pioneer 310	92	71	126	4.4	4.2	50	23.0
	W 2X Meacham's MX-75W	92	82	110	3.0	3.9	47	24.4
23	W Meacham's M-7	91	78	120	4.2	3.9	50	24.0
	Y McCurdy M97	91	74	126	4.2	4.0	54	25.1
	Y Pioneer 309A ²	90	75	115	3.8	2.8	54	26.1
	Y Pioneer 3306	89	71	108	4.6	5.1	46	21.4

Table 2. (Continued)

Color	Hybrid	Avg. yield	Erect plants	Ears per 100 plants	Grain quality ¹	Husk cover ¹	Ear ht.	Grain moisture at harvest
		Bu./A	%	No.	Rating	Rating	In.	%
Y	Tenn. 604	88	66	146	3.3	3.2	53	23.4
Y 2X	McNair X202	88	66	100	3.4	4.2	51	22.2
Y	Stull's 100YM	88	71	115	5.2	5.9	51	21.8
Y 2X	DeKalb 805A	87	74	98	4.0	4.5	43	22.1
Y	DeKalb XT872	87	82	110	4.0	5.9	49	22.4
Y	Horn's HCS109	82	76	100	4.1	6.2	43	21.2
Y 3X	P.A.G. 399	82	84	122	5.9	6.4	44	18.6
Y	P.A.G. 437	80	84	112	5.1	6.1	45	20.2
Y 2X	Funk G-4641	80	75	108	6.3	5.9	44	19.5
Y 2X	Ed. Purdue PX100	77	75	110	5.0	6.1	44	20.0
Y 2X	Bonusmaker 3	76	76	106	6.8	6.5	39	19.9
Y 3X	Ed. Purdue PH19	73	76	108	5.9	6.3	42	21.1
Experimentals:								
Y	T4003	100	66	166	3.9	2.6	56	23.0
Y	T7007	97	65	138	4.1	3.4	57	27.6
Y	T6010	88	73	121	3.8	2.9	57	24.7
Y	T6009	86	65	155	3.2	3.0	55	24.4

¹ Ratings were based on a scale of 1 to 9 (1 being excellent and 9 poor).² Also included in test full-season hybrids.

Table 3. Corn: Yield and other characteristics of early-maturing hybrids tested for 2 or 3 years at seven locations

Color	Hybrid	3 yr. avg. 1965- 1967	2 yr. avg. 1966- 1967	Erect plants	Ears/ 100 plants	Grain quality ¹	Husk cover ¹	Ear ht.	Grain moisture at harvest
		Bu./A	Bu./A	%	No.	Rating	Rating	In.	%
W	Pioneer 509W	103	92	85	132	4.9	4.0	53	21.7
W	Stull's 400WA	100	90	85	120	3.7	3.3	52	22.0
W	Tenn. 501R	100	92	78	143	4.1	3.2	52	21.8
W	Tenn. 501	100	93	77	149	3.7	2.9	52	22.3
Y	Pioneer 310	98	90	81	120	4.2	4.3	50	21.4
Y 2X	P.A.G. SX59	97	89	93	100	3.4	4.5	50	22.2
Y	Tenn. 604	97	88	76	140	3.4	3.4	54	21.3
W	Princeton 990-A	97	87	88	100	4.6	4.8	52	21.4
Y	Pioneer 309A ²	91	82	85	110	3.8	3.0	56	23.8
Y	P.A.G. 437	88	79	89	109	5.2	5.9	47	18.7
Y 2X	Funk G-4660	—	100	84	125	4.8	5.6	50	21.8
Y	Princeton SX804	—	97	88	108	5.2	5.7	51	23.2
Y 2X	Pioneer 3369	—	93	92	99	2.8	5.8	44	19.9
Y	Funk G-5757	—	92	92	114	3.4	3.8	49	25.2
Y	Funk G-5759	—	90	86	108	3.8	3.6	49	24.9
Y	Princeton SX809	—	90	82	105	3.8	5.9	46	21.4
W	Princeton 920-A	—	90	89	107	3.6	2.7	47	25.2
Y	McCurdy M97	—	89	79	122	4.2	3.6	54	25.5
Y	Pioneer 3306	—	89	80	105	4.6	5.2	48	22.0
W	Meacham's M-7	—	86	83	110	4.0	3.8	51	24.6
Y 2X	McNair X202	—	85	77	96	3.6	4.6	50	22.4
Y	Stull's 100YM	—	84	79	108	5.2	6.0	52	21.7
Y 2X	DeKalb 805A	—	82	80	92	4.3	5.0	44	20.8
Y 3X	P.A.G. 399	—	80	89	113	6.0	6.2	45	19.6
Experimentals:									
Y	T4003	—	95	71	145	3.8	3.1	56	22.4

¹ Ratings were based on a scale of 1 to 9 (1 being excellent and 9 poor).² Also included in test of full-season hybrids.

Table 4. Corn: Virus reaction of 40 early-maturing corn hybrids tested at three locations in 1967¹
(Data furnished by Josephson and Hilty)

Hybrid	Knoxville (Knox Co.)			Waverly (Humphreys Co.)			Savannah (Hardin Co.)		
	Diseased Plants		Mean Sev. Index ²	Diseased Plants		Mean Sev. Index	Diseased Plants		Mean Sev. Index
	%	Sev. Index ²		%	Sev. Index		%	Sev. Index	
Tenn. 501	55	2.8	2.0	48	3.3	2.1	23	2.3	1.3
Tenn. 501R	29	2.6	1.4	16	2.2	1.2	18	2.6	1.2
Tenn. 604	70	3.2	2.5	34	1.9	1.4	14	1.6	1.2
Princeton 990A	70	3.2	2.5	49	2.5	1.9	52	3.9	2.5
Princeton SX804	65	3.2	2.4	48	2.5	1.7	28	3.6	1.7
Princeton SX809	71	3.2	2.6	76	2.8	2.4	60	4.0	2.8
Princeton 920A	60	2.8	2.2	22	3.8	1.6	20	2.6	1.4
Pioneer 3369	66	2.9	2.2	19	3.1	1.4	26	3.2	1.8
Pioneer 309A	61	3.0	2.3	25	2.0	1.2	45	2.8	1.8
Pioneer 310	77	3.2	2.6	54	2.7	1.9	54	4.0	2.6
Pioneer 509	66	3.0	2.4	62	3.3	2.3	30	3.3	1.6
Pioneer 3306	76	3.6	3.0	60	3.0	2.2	32	4.0	1.8
McCurdy M97	66	3.6	2.6	63	3.5	2.7	75	4.2	3.4
McCurdy 92x11	73	3.1	2.6	82	3.0	2.7	64	3.6	2.7
McCurdy 66x18	76	3.2	2.8	70	2.9	2.3	49	3.7	2.4
Funk G-4660	64	2.9	2.2	39	2.4	1.5	33	3.5	1.8
Funk G-5759	64	3.2	2.4	60	3.0	2.2	23	3.9	1.7
Funk G-5757	62	3.0	2.0	38	2.2	1.5	30	3.5	1.8
Funk G-4641	94	4.6	4.5	91	3.2	3.0	94	5.1	4.8
Funk G-5858	78	3.2	2.8	62	2.5	1.9	52	3.9	2.5
Funk G-508	56	3.2	2.2	50	2.9	2.0	36	2.8	1.8
McNair X202	90	4.1	3.9	93	3.1	2.9	72	4.5	3.6

Table 4. (Continued)

Hybrid	Knoxville (Knox Co.)			Waverly (Humphreys Co.)			Savannah (Hardin Co.)		
	Diseased Plants		Mean Sev. Index ³	Diseased Plants		Mean Sev. Index	Diseased Plants		Mean Sev. Index
	%	Sev. Index ²		%	Sev. Index		%	Sev. Index	
Stull's 400WA	32	2.5	1.5	36	2.0	1.4	14	3.0	1.3
Stull's 100YM	59	3.4	2.4	66	3.7	2.8	38	3.3	1.9
Stull's 307	52	2.6	1.8	62	3.0	2.2	18	1.8	1.3
Ed. Purdue PH19	83	3.4	3.0	94	3.0	2.9	76	4.5	3.6
Ed. Purdue PX100	84	3.6	3.3	58	2.7	2.1	54	5.0	3.2
P.A.G. SX59	70	3.0	2.4	88	2.8	2.6	44	4.2	2.4
P.A.G. 437	75	3.6	3.3	94	2.9	2.8	90	3.9	3.6
P.A.G. 399	96	3.8	3.8	88	3.0	2.8	58	3.6	2.5
Horn's HCS109	94	3.6	3.4	87	3.5	3.2	90	4.5	4.1
Meacham's M-7	58	2.8	2.0	75	3.0	2.6	24	3.1	1.5
Meacham's MX75W	66	3.2	2.4	46	3.5	2.2	27	3.9	1.8
DeKalb XT872	46	3.7	2.4	44	2.9	1.8	31	3.8	1.8
DeKalb 805A	86	3.8	3.8	94	3.0	2.8	84	4.3	3.8
Bonusmaker ³	95	4.0	3.9	83	3.1	2.7	100	4.5	3.5
Experimentals:									
T4003	36	2.6	1.6	64	2.3	1.8	6	2.5	1.1
T6009	62	4.1	3.2	40	2.4	1.6	55	3.2	2.2
T6010	64	3.4	2.6	38	2.8	1.8	28	2.6	1.5
T7007	57	2.8	2.0	48	3.4	2.2	18	2.8	1.3

¹ Data are means of two replications at Waverly, Savannah and two planting dates and two replications at Knoxville.

² Diseased plants only used to calculate index.

³ All plants in plot (healthy and diseased) were used to calculate index.

Table 5. Corn: Yields of 30 full-season hybrids tested at four locations in 1967

Color	Hybrid	Average	Jackson ¹	Fort Pillow ²	Spring Hill ³	Knoxville ⁴
Bushels per acre						
W 2X	Funk G-4831	112	114	120	82	129
W	DeKalb 1101	105	99	99	88	134
Y 2X	Pioneer X2425	104	100	88	89	138
W 2X	P.A.G. SX80W	103	111	91	82	130
W	Pioneer 511	102	103	77	94	134
W	Pioneer 511A	101	103	90	77	133
Y	Funk G-732	98	99	81	87	124
Y	McNair 440V	97	96	84	82	126
W	DeKalb 999	95	100	80	80	118
W	Funk G-580W	92	111	71	79	108
Y	Funk G-711AA	92	107	77	76	108
W	Dixie 77	91	98	63	86	116
Y	Asgrow A-204	90	101	60	89	109
Y	Pioneer 3048	90	90	71	78	121
Y	McNair 340V	89	83	72	84	118
Y 3X	DeKalb XL-385	89	93	72	75	114
Y	DeKalb 1006	88	95	70	78	110
Y	Pioneer 309B	86	91	71	75	106
W	Funk G-795W	85	83	77	79	101
W	Dixie 29R	84	85	58	84	107
W	Dixie 33	83	94	64	66	110
Y	Pioneer 309A	82	86	63	77	101
W	DeKalb XL390	79	82	66	68	101
W 2X	Stull's 800W SX	78	81	63	73	94
W	P.A.G. 653W	72	81	56	67	84
Y	McCurdy M306	71	85	50	54	93
Y	Silo King	70	78	49	61	92
Y	T.E. Silagemaster	66	84	43	53	85
Experimentals:						
W	T6103	80	61	62	75	120
Y	T6006	78	64	70	68	109
L.S.D. (.05)		—	12.2	16.5	14.7	15.6
C.V. %		—	11.7	20.2	16.9	12.2

¹ Loring silt loam, level terrace phase (0% to 2% slopes).

² Collins silt loam, (0% to 2% slopes).

³ Maury silt loam, (0% to 2% slopes).

⁴ Sequatchie silt loam, (0% to 2% slopes).

Table 6. Corn: Characteristics of 30 full-season hybrids tested at four locations in 1967

Color	Hybrid	Avg. yield	Erect plants	Ears/ 100 plants	Grain quality ¹	Husk cover ¹	Ear ht.	Grain moisture at harvest
		Bu./A	%	No.	Rating	Rating	In.	%
W 2X	Funk G-4831	112	78	124	2.8	1.8	52	23.4
W	DeKalb 1101	105	82	190	4.2	2.2	63	23.7
Y 2X	Pioneer X2425	104	81	107	4.2	3.8	54	23.8
W 2X	P.A.G. SX80W	103	79	210	3.2	1.9	52	21.0
W	Pioneer 511	102	66	168	4.0	2.6	51	21.0
W	Pioneer 511A	101	70	169	4.4	2.1	55	23.2
Y	Funk G-732	98	78	156	3.2	2.9	61	25.4
Y	McNair 440V	97	69	184	3.4	3.1	56	24.9
W	DeKalb 999	95	76	124	3.8	3.4	50	20.8
W	Funk G-580W	92	59	169	4.4	3.5	51	22.8
Y	Funk G-711AA	92	69	120	4.2	3.6	57	24.6
W	Dixie 77	91	63	173	4.8	2.5	56	24.2
Y	Asgrow A-204	90	72	126	3.9	4.1	54	20.3
Y	Pioneer 3048	90	71	139	5.4	3.6	57	24.0
Y	McNair 340V	89	61	152	4.0	3.2	54	23.5
Y 3X	DeKalb XL-385	89	81	112	3.8	4.1	56	20.0
Y	DeKalb 1006	88	61	120	3.4	3.4	58	22.6
Y	Pioneer 309B	86	64	142	3.2	3.0	52	23.0
W	Funk G-795W	85	66	160	4.5	2.9	53	21.7
W	Dixie 29R	84	58	144	5.2	4.4	58	26.1
W	Dixie 33	83	49	159	5.9	3.9	62	21.3
Y	Pioneer 309A ²	82	62	124	4.2	2.6	53	21.8
W	DeKalb XL390	79	57	117	3.4	3.6	50	21.8
W 2X	Stull's 800WSX	78	56	98	3.0	3.9	51	22.0

Table 6. (Continued)

Color	Hybrid	Avg. yield	Erect plants	Ears/ 100 plants	Grain quality ¹	Husk cover ¹	Ear ht.	Grain moisture at harvest
		Bu./A	%	No.	Rating	Rating	In.	%
W	P.A.G. 653W	72	58	160	3.9	2.6	52	21.6
Y	McCurdy M306	71	59	162	4.6	1.9	60	24.4
Y	Silo King	70	66	106	5.1	6.9	47	20.0
Y	T.E. Silagemaster	66	54	114	5.5	4.9	51	20.2
Experimentals:								
W	T6103	80	60	147	5.2	2.5	59	23.4
Y	T6006	78	71	130	4.2	3.1	56	20.1

¹ Ratings were based on a scale of 1 to 9 (1 being excellent and 9 poor).

² Also included in test of early-maturing hybrids.

Table 7. Corn: Yield and other characteristics of full-season hybrids tested for 2 or 3 years at four locations

Color	Hybrid	3 yr. avg. 1965- 1967	2 yr. avg. 1966- 1967	Erect plants	Ears/ 100 plants	Grain quality ¹	Husk cover ¹	Ear ht.	Grain moisture at harvest
		Bu./A	Bu./A	%	No.	Rating	Rating	In.	%
W	Pioneer 511A	100	88	76	163	3.0	2.2	56	22.9
W	Pioneer 511	99	89	74	156	3.8	2.7	55	22.1
W	Funk G-580W	93	84	70	149	3.7	2.7	53	22.3
Y	Funk G-732	92	81	83	151	2.7	3.0	62	26.9
W	Dixie 29R	90	80	63	142	4.3	3.2	60	24.7
W	DeKalb 999	90	80	81	120	3.9	3.7	50	21.1
Y	DeKalb 1006	90	82	75	120	3.1	3.4	60	23.5
Y	Pioneer 3048	89	81	76	125	4.2	2.5	59	25.3
W	Funk G-795W	89	77	73	158	4.2	2.9	51	21.9
Y	Pioneer 309B	85	75	68	128	3.3	2.5	53	23.8
Y	Funk G-711AA	85	78	73	120	3.9	3.6	58	25.9
W	Dixie 33	83	74	62	152	5.4	3.4	63	23.2
Y	Pioneer 309A ²	79	71	69	117	4.1	3.3	55	22.6
W	DeKalb 390	79	70	69	115	3.5	3.3	52	22.4
W 2X	Stull's 800WX	78	67	67	107	2.7	3.6	52	22.5
W	P.A.G. 653W	76	66	65	166	3.1	2.7	54	22.2
W 2X	Funk G-4831	—	98	79 ³	122	2.5	1.6	52	26.4
W 2X	P.A.G. SX80W	—	91	76	204	2.6	2.1	52	24.6
Y 3X	DeKalb XL-385	—	75	87	117	3.8	3.4	55	21.8
Y	McCurdy M306	—	64	69	152	3.6	2.0	63	27.6

¹ Ratings were based on a scale of 1 to 9 (1 being excellent and 9 poor).

² Also included in test of early maturity hybrids.

³ Characteristics based on 2 years' data.

Table 8. Corn: Virus reaction of 30 full-season corn hybrids tested at three locations in 1967¹
(Data furnished by Josephson and Hilty)

Hybrid	Knoxville (Knox Co.)			Waverly (Humphreys Co.)			Savannah (Hardin Co.)		
	Diseased Plants		Mean Sev. Index ³	Diseased Plants		Mean Sev. Index	Diseased Plants		Mean Sev. Index
	%	Sev. Index ²		%	Sev. Index		%	Sev. Index	
Dixie 29R	69	3.0	2.4	38	2.8	1.7	32	3.0	1.6
Dixie 33	71	3.0	2.3	72	3.0	2.5	27	3.0	1.5
Dixie 77	55	2.8	2.0	62	2.7	2.0	38	2.5	1.6
McNair 340V	65	3.2	2.4	51	2.3	1.7	36	2.9	1.8
McNair 440V	54	2.8	2.0	34	2.6	1.5	26	3.2	1.6
Pioneer 511A	35	2.4	1.6	34	2.1	1.4	9	2.0	1.1
Pioneer 309A	56	2.8	2.1	60	3.0	2.2	17	3.5	1.5
Pioneer 309B	52	2.9	2.0	34	2.5	1.5	33	2.9	1.6
Pioneer 511	36	3.5	1.6	32	3.0	1.6	29	2.4	1.4
Pioneer 3048	58	3.2	2.2	37	2.4	1.5	40	3.0	1.8
Pioneer X2425	46	2.2	1.6	19	2.2	1.2	13	2.2	1.2
DeKalb XL-385	52	3.2	2.2	80	2.4	2.2	70	3.6	2.9
DeKalb 999	53	2.8	2.0	36	2.7	1.6	24	3.1	1.6
DeKalb 390	65	3.6	2.8	71	2.9	2.3	44	5.1	2.9
DeKalb 1006	45	2.9	1.9	28	3.4	1.7	32	1.9	1.6
DeKalb 1101	23	2.6	1.4	16	3.1	1.3	11	1.6	1.1
McCurdy M-306	71	3.6	2.8	76	3.2	2.7	69	3.6	2.7
Funk G-711AA	54	2.8	2.0	36	2.8	1.6	45	2.9	1.9
Funk G-4831	30	2.3	1.4	36	3.3	1.8	7	1.8	1.1
Funk G-580W	38	3.0	1.8	34	2.5	1.5	38	3.2	1.9
Funk G-795W	42	3.0	1.8	35	3.0	1.6	34	2.5	1.6
Funk G-732	49	2.8	1.8	47	2.9	1.9	24	3.1	1.5

Table 8. (Continued)

Hybrid	Knoxville (Knox Co.)			Waverly (Humphreys Co.)			Savannah (Hardin Co.)		
	Diseased Plants		Mean Sev. Index ¹	Diseased Plants		Mean Sev. Index	Diseased Plants		Mean Sev. Index
	%	Sev. Index ²		%	Sev. Index		%	Sev. Index	
Stull's 800WSX	54	3.2	2.2	55	3.1	2.1	55	4.1	2.8
P.A.G. 653W	74	2.8	2.4	54	2.8	2.1	26	3.3	1.8
P.A.G. SX80W	60	2.6	2.0	22	2.0	1.2	44	2.9	1.8
Asgrow A204	28	2.9	1.5	50	3.1	1.8	38	3.2	2.0
Silo King	78	3.3	2.6	39	3.5	2.1	61	3.2	2.3
Taylor-Evans Silagemaster	76	3.6	3.6	56	4.2	3.3	66	5.3	3.9
T6103	51	2.8	1.8	34	2.6	1.6	39	3.1	1.8
T6006	69	2.8	2.2	45	3.0	1.9	31	3.2	1.8

¹ Data are means of two replications at Waverly, Savannah and two planting dates and two replications at Knoxville.

² Diseased plants only used to calculate index.

³ All plants in plot (healthy and diseased) were used to calculate index.



Figure 3. An early maturing experimental cotton strain (T-59-538) grown at Milan in 1966.

COTTON

The 1967 cotton variety tests were conducted at Knoxville, Jackson, Ames Plantation, Fort Pillow, and Milan. No data are reported at Knoxville due to adverse weather conditions during the growing season. The test at Jackson, Ames Plantation, and Fort Pillow consisted of 24 entries in a randomized complete block design with 6 replications at each location. The test at Fort Pillow was harvested by hand and the tests at Ames and Jackson were spindle picked with a one-row harvester. At Milan two tests were conducted in 1967 (one on Collins silt loam and another on Memphis silt loam). Each test consisted of 16 entries and both were harvested with a two-row spindle picker. The test on Memphis at Milan was harvested twice, all other tests only once.

Yields at Fort Pillow were reduced by wilt and adverse weather conditions. The test at Ames was sprayed 14 times for boll weevil control and still a reduction in yield resulted from boll weevil damage. The cool temperature during the growing season reduced yields at all locations. The early maturing varieties, such as Auburn M and Hancock, performed well in 1967. Hancock ranked first in lint yield at all locations except at Fort Pillow where wilt is a problem. Auburn M ranked among the top six at all locations and second at three locations. An experimental T-59-538 performed well at Ames Plantation, Jackson, and Milan. It performed poorly at Fort Pillow under wilt conditions. Using a 3-year average, Hancock ranked first at Ames Plantation, first at Jackson and tied for first at Fort Pillow. Auburn M ranked second at Jackson and Ames Plantation and third at Fort Pillow (Table 15). Deltapine Smooth Leaf ranked last in lint yield at Jackson and Milan in 1967. Acala 1517D ranked last at Fort Pillow (under wilt conditions) and fifth at Jackson and sixth at Ames Plantation. At Milan, Acala 1517D performed well on the Memphis (upland) and poorly on the Collins (bottom) soil.

Two boll samples were taken from each variety before first picking. These samples were used to obtain gin, seed, and fiber data. Four samples of each variety were taken from the spindle-picked cotton. These samples were fractionated to determine the percent trash of each variety. The percent lint from hand-picked samples and the percent trash for each variety were used to calculate lint yields where tests were spindle picked. Yield and other characteristics of the varieties are presented in Tables 10 through 14. Bolls per pound is used to indicate the size of the cotton bolls. The higher the number the smaller the bolls. Percent total yield at

first picking is used to indicate the earliness of the cotton variety. A high percent of cotton harvested at first picking indicates an early variety and a low percent indicates a late variety. In 1967 only one test was picked more than once.

Fiber tests were not available for 1967 because it takes several months to process samples in the laboratory. The 2.5% span length, micronaire fineness reading, and fiber strength (T_1) are presented in Tables 16 through 21. The 2.5% span length is measured on the digital fibrograph and is closely correlated with upper-half mean length. The micronaire reading is a relative measure of fineness of the fiber. High readings indicate course fiber and low readings indicate fine fiber. The fiber strength (T_1) is measured on the stelometer. High readings indicate fibers of greater strength and low readings indicate fibers of lesser strength.

Table 9. Cotton: Lint yields of varieties tested at three locations in 1967

Variety	Avg.	Ames Plantation	Jackson	Fort Pillow ¹
Lint in pounds per acre				
Hancock	632	869	625	402
T-59-538 ²	551	819	593	241
Paymaster 54B	524	668	409	495
Auburn M	507	699	438	385
Hy-Bee 100	461	688	356	339
T-66-1 ²	452	627	476	253
Rex Smoothleaf	431	508	335	451
Coker 201	422	641	392	232
Emp. Der. K-11 ²	419	454	377	425
AHA Der. K-10 ²	416	514	492	243
Deltapine 45A	402	555	225	425
Deltapine 16	379	472	259	405
Hy-Bee 200	376	490	320	319
Acala 1517D	371	590	389	135
McNair 1032	369	505	313	288
Mo 61-470F	358	487	254	334
Empire W.R. 61	347	380	380	281
Coker 413	342	547	309	169
Dixie King II	330	371	325	293
Stoneville 213	310	429	295	206
Stoneville 7A	295	353	285	246
Deltapine 15A	294	460	207	216
Deltapine Smooth Leaf	249	402	160	185
Stoneville 508	231	314	200	178
L.S.D. (.05)	—	107.4	42.3	153.0
C.V. %	—	17.7	10.7	45.5

¹ Heavily infested with wilt. Fort Pillow test harvested by hand—other tests spindle picked.

² Experimentals.

Table 10. Cotton: Yield of lint and other characteristics of varieties harvested with a spindle picker at Ames Plantation in 1967

Variety	Avg.	Percent lint	Trash ¹	Bolls per lb.	Plant height
	Lint lb./A	%	%	No.	In.
Hancock	869	38.0	5.2	61	64
Auburn M	699	34.4	3.7	68	36
Hy-Bee 100	688	35.9	6.5	64	48
Paymaster 54B	668	35.2	6.1	70	30
Coker 201	641	36.7	6.2	71	50
Acala 1517D	590	34.4	6.3	66	56
Deltapine 45A	555	34.6	6.3	73	42
Coker 413	547	35.5	6.8	78	42
Rex Smoothleaf	508	33.2	5.3	60	48
McNair 1032	505	35.3	6.3	78	46
Hy-Bee 200	490	34.2	5.3	67	60
Mo 61-470F	487	34.0	4.7	71	46
Deltapine 16	472	34.5	6.3	68	44
Deltapine 15A	460	35.5	6.5	87	56
Stoneville 213	429	32.6	7.0	80	54
Deltapine Smooth Leaf	402	33.3	5.6	83	48
Empire W.R. 61	380	32.8	5.8	52	60
Dixie King II	371	33.9	6.8	61	44
Stoneville 7A	353	33.1	6.9	82	64
Stoneville 508	314	32.2	7.1	75	60
Experimentals:					
T-59-538	819	34.9	5.6	69	32
T-66-1	627	33.6	5.6	63	54
AHA Der. K-10	514	32.3	5.6	67	44
Emp. Der. K-11	454	33.3	6.2	66	42
L.S.D. (.05)	107.4	—	—	—	—
C.V. %	17.7	—	—	—	—

¹ Average of four fractionated samples.

Table 11. Cotton: Yield of lint and other characteristics of varieties harvested with a spindle picker at Jackson in 1967¹

Variety	Avg.	Percent lint	Trash ²	Bolls per lb.
	Lint lb./A	%	%	No.
Hancock	624	38.4	5.5	64
Auburn M	438	34.0	4.8	69
Paymaster 54B	409	36.1	5.7	69
Coker 201	392	37.4	8.1	74
Acala 1517D	389	34.0	5.7	67
Empire W.R. 61	380	33.4	5.5	57
Hy-Bee 100	356	36.0	6.2	71
Dixie King II	348	35.0	7.0	64
Rex Smoothleaf	335	33.1	6.7	64
Hy-Bee 200	320	34.7	6.2	79
McNair 1032	313	37.0	7.4	86
Coker 413	309	34.6	7.3	78
Stoneville 213	295	32.0	5.2	88
Stoneville 7A	285	33.7	7.1	87
Deltapine 16	259	35.0	6.8	78
Mo 61-470F	254	33.8	6.3	71
Deltapine 45A	225	33.0	7.9	79
Deltapine 15A	207	35.9	6.6	89
Stoneville 508	200	32.5	6.6	79
Deltapine Smooth Leaf	160	34.4	7.4	86
Experimentals:				
T-59-538	592	35.8	5.6	71
AHA Der. K-10	492	35.4	7.0	65
T-66-1	476	36.0	6.3	67
Emp. Der. K-11	377	33.6	6.5	71
L.S.D. (.05)	42.3	—	—	—
C.V. %	10.7	—	—	—

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

² Average of four fractionated samples after harvest with a spindle picker.

Table 12. Cotton: Lint yield and other characteristics of cotton varieties harvested by hand at Fort Pillow in 1967¹

Variety	Avg.	Percent lint	Bolls per lb.
	Lint lb./A	%	No.
Paymaster 54B	495	34.0	61
Rex Smoothleaf	451	32.2	59
Deltapine 45A	425	35.5	69
Deltapine 16	405	35.5	67
Hancock	402	35.8	61
Auburn M	385	34.9	64
Hy-Bee 100	340	33.6	59
Mo 61-470F	334	34.1	60
Hy-Bee 200	318	33.8	66
Dixie King II	291	35.0	61
McNair 1032	288	35.0	74
Empire W.R. 61	281	31.8	56
Stoneville 7A	246	35.0	77
Coker 201	232	36.6	73
Deltapine 15A	216	35.9	80
Stoneville 213	206	34.0	79
Deltapine Smooth Leaf	185	35.4	85
Stoneville 508	178	33.6	76
Coker 413	168	35.0	85
Acala 1517D	135	31.6	70
Experimentals:			
Emp. Der. K-11	426	34.5	62
T-66-1	253	33.1	67
AHA Der. K-10	243	32.0	70
T-59-538	241	32.2	73
L.S.D. (.05)	153.0	—	—
C.V. %	45.5	—	—

¹ Morganfield and Adler silt loam (0% to 2% slopes).

Table 13. Cotton: Lint yield and other characteristics of varieties harvested with a spindle picker at Milan on a Memphis silt loam in 1967

Variety	Avg.	Percent lint	Trash ¹	Bolls per lb.	Wt./100 seed	% Total yield at 1st picking	Plant height
	Lint lb./A	%	%	No.	Grams	%	In.
Hancock	1054	40.2	4.0	64	11.7	73	42
Auburn M	975	36.6	3.5	64	13.3	78	36
T-59-538	947	37.3	4.4	63	10.9	85	34
Coker 201	859	39.3	4.9	61	11.1	69	39
Dixie King II	854	38.4	3.2	80 ²	11.2	56	42
Acala 1517D	851	35.3	5.0	74	13.1	73	43
McNair 1032	844	38.7	4.5	81	10.6	56	39
Rex Smoothleaf	831	35.9	4.8	64	13.8	70	38
Deltapine 16	809	36.6	3.3	82	11.1	62	35
Mo 61-470F	804	36.6	5.0	69	13.4	75	37
Atlas 66	786	38.4	4.2	74	11.5	83	39
Deltapine 45A	784	37.5	1.6	75	10.7	61	40
Hy-Bee 200	755	36.0	4.0	71	11.5	59	42
Coker 413	752	37.5	5.6	79	11.1	64	39
Deltapine 15A	742	39.2	4.2	80	9.9	62	42
Deltapine Smooth Leaf	730	38.1	4.8	76	10.1	64	39
L.S.D. (.05)	145.2	—	—	—	—	—	—
C.V. %	15.3	—	—	—	—	—	—

¹ Average of four fractionated samples.

² Dixie King II would usually have a lower number of bolls per pound.

Table 14. Cotton: Lint yield and other characteristics of varieties harvested with a spindle picker at Milan on a Collins silt loam in 1967

Variety	Avg.	Percent lint	Trash ¹	Bolls per lb.	Wt./ 100	Plant height
	Lint lb./A	%	%	No.	Grams	In.
Hancock	747	36.7	3.2	58	12.7	54
T-59-538	644	32.5	5.1	55	12.1	45
Auburn M	614	33.6	4.4	64	13.3	49
Rex Smoothleaf	580	32.4	2.5	60	14.8	47
Coker 201	493	36.4	6.6	—	11.5	54
Atlas 66	458	34.7	4.9	68	13.1	54
McNair 1032	456	34.9	7.7	63	11.6	62
Mo 61-470F	450	34.8	2.8	59	14.8	51
Dixie King II	448	35.1	4.9	56	13.0	50
Deltapine 15A	442	36.1	3.6	77	10.6	61
Coker 413	425	34.4	6.9	72	11.5	53
Hy-Bee 200	411	33.5	6.2	65	12.9	57
Deltapine 45A	405	35.1	5.4	71	11.7	54
Acala 1517D	381	32.3	7.9	59	14.1	65
Deltapine 16	369	34.1	6.5	67	11.8	57
Deltapine Smooth Leaf	341	33.6	7.1	73	11.2	55
L.S.D. (.05)	97.0	—	—	—	—	—
C.V. %	14.2	—	—	—	—	—

¹ Average of four fractionated samples.

Table 15. Cotton: Lint yield of varieties tested for 3 years (1965-67)

Variety	Avg. 1965-67	Jackson 1965-67	Fort Pillow 1965-67	Ames Plantation 1965-67
Lint in pounds per acre				
Hancock	842	967	871	686
Auburn M	761	820	786	675
Deltapine 45A	718	699	871	583
McNair 1032	701	751	798	554
Dixie King II	698	798	777	519
Rex Smoothleaf	693	787	769	523
Stoneville 213	692	754	761	561
Deltapine Smooth Leaf	656	666	735	566
Empire W.R. 61	646	782	684	471
Stoneville 7A	643	748	685	495
Experimentals:				
AHA Der. K-10	690	861	687	522
Emp. Der. K-11	630	726	713	451

Table 16. Length (2.5% span length), strength (T_1), and fineness (micronaire reading) of 14 cotton varieties tested at three locations from 1963 through 1966

Variety	Length (2.5 SL)	Strength (T_1)	Fineness (micronaire)
Carolina Queen	1.11	1.83	4.44
Empire W.R. 61	1.11	1.79	3.92
Deltapine Smooth Leaf	1.10	1.88	4.46
Stoneville 7A	1.10	1.86	4.56
Stardel	1.09	1.92	4.36
Rex Smoothleaf	1.09	1.75	4.07
Auburn M	1.08	1.76	4.24
Dixie King II	1.08	1.77	4.36
Stoneville 213	1.08	1.80	4.64
Auburn 56	1.07	1.78	4.33
Hancock	1.06	1.78	4.33
Experimentals:			
Emp. Der. K-11	1.10	1.84	4.10
T-56-210	1.08	1.81	4.19
AHA Der. K-10	1.06	2.02	4.60
Average	1.09	1.83	4.32

Table 17. Fiber and spinning data of cotton varieties tested at Ames Plantation in 1966

Variety	Length			Strength		Fineness Micronaire	Yarn Strength 27tx
	Classers in 32's	2.5 SL	.50 SL				
				T ₁	E ₁		
Auburn M	36	1.18	.58	17.38	9.38	3.70	117
Deltapine 45A	37	1.20	.60	19.21	9.61	3.96	123
Coker 413	40	1.25	.62	19.70	8.04	3.90	135
Paymaster 54B	34	1.07	.55	15.94	10.59	4.15	102
Stoneville 213	37	1.18	.59	18.33	9.60	4.20	118
Deltapine Smooth Leaf	35	1.20	.57	18.16	10.82	3.93	123
Carolina Queen	37	1.20	.60	19.04	8.82	4.03	123
Hy-Bee 200	36	1.19	.60	18.36	9.67	3.99	121
Hancock	36	1.16	.58	18.66	8.79	3.90	120
Auburn 56	34	1.19	.59	17.15	9.56	4.15	113
Rex Smoothleaf	36	1.17	.57	17.62	8.81	3.85	116
Stardel	34	1.17	.58	18.20	8.03	3.95	128
Acala 1517D	39	1.28	.66	20.85	9.97	3.90	143
Pennington Hy-Bee	35	1.18	.58	18.13	9.07	3.78	123
Empire W.R. 61	34	1.15	.56	17.11	7.79	3.70	116
Stoneville 7A	37	1.18	.57	17.88	7.75	4.07	126
McNair 1032	34	1.17	.59	19.16	9.58	3.95	122
Dixie King II	36	1.14	.57	17.68	7.86	4.19	115
Experimentals:							
Emp. Der. K-11	37	1.20	.60	19.63	8.74	3.89	120
T-56-210	35	1.16	.57	18.13	8.22	3.99	119
T-58-169	36	1.17	.59	17.83	8.80	4.00	124
AHA Der. K-10	37	1.16	.60	21.18	8.65	4.24	128

Table 18. Fiber and spinning data of cotton varieties tested at Fort Pillow in 1966

Variety	Length			Strength		Fineness Micronaire	Yarn Strength 27tx
	Classers in 32's	2.5 SL	.50 SL				
				T ₁	E ₁		
Stoneville 213	36	1.15	.56	18.28	8.44	4.24	—
Auburn M	34	1.13	.55	18.23	8.50	4.06	—
Auburn 56	34	1.12	.56	18.46	8.79	4.17	—
McNair 1032	34	1.11	.55	20.40	7.91	4.24	—
Hy-Bee 200	34	1.16	.57	18.52	8.05	4.18	121
Dixie King II	34	1.13	.55	18.39	7.34	4.07	—
Deltapine Smooth Leaf	35	1.18	.56	19.15	9.60	4.15	—
Carolina Queen	36	1.17	.56	18.86	7.54	4.10	—
Hancock	35	1.13	.55	18.75	8.09	3.95	123
Pennington Hy-Bee	36	1.17	.56	18.60	8.17	3.97	116
Rex Smoothleaf	35	1.15	.54	18.00	7.77	3.79	—
Deltapine 45A	34	1.16	.57	17.90	8.90	4.23	—
Stoneville 7A	36	1.17	.58	18.58	7.92	4.19	—
Empire W.R. 61	34	1.17	.56	17.99	7.69	3.61	—
Coker 413	37	1.26	.60	20.72	6.59	3.91	—
Acala 1517D	36	1.24	.62	21.85	7.36	3.86	—
Paymaster 54B	34	1.03	.53	17.22	9.25	3.90	—
Stardel	35	1.15	.53	18.97	7.55	3.71	—
Experimentals:							
Emp. Der. K-11	34	1.15	.56	18.34	7.57	3.90	123
AHA Der. K-10	36	1.11	.54	20.42	7.56	4.15	132
T-56-210	34	1.14	.54	18.75	7.31	3.74	121
T-58-169	37	1.13	.53	19.22	7.87	3.87	115

Table 19. Fiber strength, micronaire and yarn strength of cotton varieties tested at Jackson in 1966

Variety	Strength				Fineness Micronaire		Yarn strength 27tx	
	Hand picked ¹		Mechanically harvested ²		Hand picked	Mechanically harvested	Hand picked	Mechanically harvested
	T ₁	E ₁	T ₁	E ₁				
Hancock	17.02	7.20	17.40	8.36	4.69	4.27	116	112
Rex Smoothleaf	16.72	8.13	16.61	8.74	4.35	3.92	—	108
Deltapine 45A	17.93	8.13	18.49	8.19	4.58	4.17	—	109
Hy-Bee 200	17.30	8.32	16.88	8.32	4.59	3.63	112	107
Carolina Queen	17.61	7.85	16.96	7.49	4.75	4.30	—	111
Pennington Hy-Bee	17.17	7.31	17.94	7.49	4.59	3.92	116	109
Deltapine Smooth Leaf	17.64	9.92	18.68	9.74	4.70	4.17	—	110
McNair 1032	18.80	8.35	17.86	9.12	4.62	4.07	—	121
Coker 413	18.65	7.40	19.45	7.24	4.44	3.88	—	124
Empire W.R. 61	16.80	5.56	14.92	8.48	4.30	4.02	—	108
Auburn 56	16.58	8.74	16.95	9.29	4.75	3.92	114	104
Stardel	17.77	6.75	18.27	7.31	4.46	3.90	130	116
Stoneville 213	17.63	8.40	17.36	8.79	4.79	3.92	—	107
Acala 1517D	20.97	7.60	22.49	7.44	4.42	3.90	—	143
Auburn M	17.56	7.82	17.46	8.88	4.62	4.10	—	107
Dixie King II	17.12	7.13	16.06	7.82	4.80	4.38	—	104
Stoneville 7A	18.31	6.67	17.21	8.20	4.65	3.88	—	117
Paymaster 54B	16.33	9.08	15.96	9.90	4.40	4.17	—	96
Experimentals:								
Emp. Der. K-11	17.77	7.61	17.29	7.75	4.50	4.02	118	108
T-56-210	17.85	7.02	15.03	9.69	4.58	4.22	120	109
AHA Der. K-10	19.69	6.83	19.24	7.66	4.93	4.45	131	119
T-58-169	17.55	7.50	17.68	8.26	4.52	3.92	116	114

¹ Samples were hand picked and ginned on a 10-2 laboratory gin.

² Samples were obtained from mechanically-picked cotton and ginned on a commercial gin.

Table 20. Fiber length data of cotton varieties tested at Jackson in 1966

Variety	Length ¹			Length ²	
	Mechanically picked			Hand picked	
	Classers in 32's	2.5 SL	.50 SL	2.5 SL	.50 SL
	In.				
Hancock	34	1.06	.49	1.12	.55
Rex Smoothleaf	34	1.11	.48	1.17	.57
Deltapine 45A	35	1.12	.51	1.16	.57
Hy-Bee 200	34	1.08	.47	1.16	.57
Carolina Queen	35	1.11	.51	1.18	.59
Pennington Hy-Bee	35	1.12	.49	1.16	.57
Deltapine Smooth Leaf	35	1.11	.50	1.16	.57
McNair 1032	35	1.02	.46	1.10	.57
Coker 413	38	1.17	.53	1.19	.61
Empire W.R. 61	35	1.08	.48	1.14	.56
Auburn 56	34	1.06	.46	1.13	.57
Stardel	35	1.13	.49	1.15	.56
Stoneville 213	34	1.10	.48	1.13	.55
Acala 1517D	35	1.21	.58	1.21	.62
Auburn M	34	1.10	.51	1.15	.57
Dixie King II	34	1.07	.49	1.13	.56
Stoneville 7A	35	1.13	.51	1.18	.57
Paymaster 54B	33	0.98	.47	0.99	.51
Experimentals:					
Emp. Der. K-11	35	1.09	.49	1.14	.55
T-56-210	35	1.08	.50	1.14	.57
AHA Der. K-10	34	1.06	.49	1.10	.56
T-58-169	34	1.08	.47	1.15	.55

¹ Fiber length data from mechanically-picked cotton ginned on a commercial gin.² Fiber length data from hand-picked samples ginned on a 10-saw laboratory gin.

Table 21. Fiber data of cotton varieties tested at Jackson and Fort Pillow in 1966¹

Variety	Classers in 32's	Length		Strength			Fineness Micronaire
		2.5 SL	.50 SL	T ₁	:	E ₁	
	In.						
Hancock	34.5	1.12	.55	17.89	7.65	4.32	
Hy-Bee 200	34.0	1.16	.57	17.91	8.43	4.38	
Stoneville 213	35.0	1.14	.56	17.95	8.42	4.51	
Auburn 56	34.0	1.12	.56	17.52	8.76	4.46	
McNair 1032	34.5	1.10	.56	19.60	8.13	4.43	
Rex Smoothleaf	34.5	1.16	.55	17.36	7.95	4.12	
Auburn M	34.0	1.14	.56	17.89	8.16	4.34	
Carolina Queen	35.5	1.17	.58	18.23	7.69	4.42	
Deltapine Smooth Leaf	35.0	1.17	.56	18.39	9.76	4.43	
Deltapine 45A	34.5	1.16	.57	17.91	8.51	4.40	
Pennington Hy-Bee	35.5	1.16	.56	17.88	7.74	4.28	
Dixie King II	34.0	1.13	.55	17.73	7.23	4.42	
Empire W.R. 61	34.5	1.15	.56	17.39	7.13	3.97	
Stoneville 7A	35.5	1.17	.57	18.44	7.30	4.42	
Coker 413	37.5	1.23	.60	19.68	7.00	4.18	
Acala 1517D	35.5	1.22	.62	21.41	7.48	4.14	
Stardel	35.0	1.15	.54	18.37	7.15	4.09	
Experimentals:							
Emp. Der. K-11	34.5	1.14	.55	18.05	7.59	4.20	
T-56-210	34.5	1.14	.55	18.30	7.16	4.16	
AHA Der. K-10	35.0	1.10	.55	20.05	7.19	4.54	
T-58-169	35.5	1.14	.54	18.38	7.69	4.19	

¹ Hand-picked fiber data only.

SMALL GRAINS

Fall-seeded oats were evaluated at six locations, barley at seven locations, and wheat at eight locations in 1967. Spring oats variety tests were conducted at three locations. Forage and grain data were obtained from each test.

OATS

Blount oats produced the highest average grain and forage yields of the varieties tested. In 1967 Blount produced 30% more grain and 13% more forage than Forkeddeer. The 1967 fall-seeded oat grain yield data are presented in Table 22. Blount produced the highest yield of 118 bushels per acre at Springfield. Forkeddeer produced the lowest yield of 16 bushels per acre at Knoxville. This low yield was in part due to severe lodging, mak-

Table 22. Fall-seeded oats: Grain yield of varieties tested in 1967

Variety	Average	Greeneville ¹	Knoxville ²	Crossville ³	Springfield ⁴	Jackson ⁵	Spring Hill ⁶
Bushels per acre							
Blount	63	37	66	41	118	44	74
T-61-231 ⁷	59	34	52	43	110	56	62
T-60-32 ⁷	59	36	51	43	102	57	65
Nora	59	36	38	42	114	56	68
Coker 66-24	58	35	42	47	109	48	65
Ora	53	27	33	48	105	51	55
Coker 242	50	26	45	44	95	41	49
Jefferson	48	26	27	38	102	38	58
Forager	45	24	38	37	85	42	46
Forkeddeer	44	24	16	41	94	43	43
Houston	38	26	30	31	80	22	41
L.S.D. (.05)	—	10.1	9.3	9.6	11.4	10.4	9.8
C.V. %	—	23.1	16.4	16.1	7.8	15.8	11.9

¹ Cumberland silt loam, (2% to 5% slopes).⁵ Grenada silt loam, (0% to 2% slopes).² Etowah silt loam, (2% to 5% slopes).⁶ Maury silt loam, (2% to 5% slopes).³ Hartsells loam, (0% to 2% slopes).⁷ Experimentals.⁴ Mountview silt loam, (2% to 5% slopes).

ing it difficult to combine. It can be seen from Table 25 that Coker 242 and Houston had more tip damage due to cold weather at all locations than any other variety. Coker 66-24 and T-60-32 had very little tip damage. Coker 242 gave the highest average test weight and Coker 66-24 the lowest of the varieties tested.

Orbit produced the highest average grain yield of the spring oat varieties tested and Clintland 64 produced the lowest. Rodney was included in the Knoxville test and produced the highest forage yield and the lowest grain yield of the varieties tested at this location. Rodney is late and very coarse-stemmed. Rodney headed about 1 week later than any variety as can be seen in Table 29.

Blount is the only variety recommended for grain or forage production. Forkeddeer was removed from the recommended list due to its low grain yield and severe lodging.

Table 23. Fall-seeded oats: Test weight of varieties tested in 1967

Variety	Average	Knoxville	Crossville	Springfield	Jackson	Spring Hill
Test weight in pounds per bushel						
Coker 242	36.4	37.6	38.8	36.5	34.0	35.0
Nora	35.1	33.4	36.4	37.9	32.1	35.7
Houston	35.0	35.5	36.7	35.5	33.1	34.5
Forkeddeer	34.6	31.8	34.0	37.5	32.3	37.6
Jefferson	34.1	31.8	33.6	36.5	31.8	36.9
T-61-231	33.9	34.9	37.2	33.2	30.0	34.2
Ora	33.7	32.2	32.7	37.3	31.4	35.3
Blount	33.1	32.2	34.5	32.8	31.3	34.7
T-60-32	32.8	32.6	33.0	32.9	31.8	33.5
Coker 66-24	32.4	32.8	33.7	34.2	29.2	32.0

Table 24. Fall-seeded oats: Forage yield of varieties tested at four locations in 1967

Variety	Average	Knoxville	Springfield	Jackson	Spring Hill
Tons of air-dry forage per acre					
Blount	3.08	3.03	2.90	3.39	3.00
Nora	3.00	2.90	2.54	3.12	3.46
Jefferson	3.00	2.52	3.17	2.85	3.46
Coker 66-24	2.93	2.87	2.50	3.03	3.31
T-61-231	2.84	2.33	3.16	2.97	2.90
Ora	2.84	2.66	2.70	2.73	3.26
T-60-32	2.72	2.41	2.88	2.67	2.91
Forkeddeer	2.69	2.97	2.35	2.33	3.12
Forager	2.53	2.84	1.93	2.36	2.98
Coker 242	2.49	2.42	2.14	2.56	2.83
Houston	2.07	2.35	2.18	1.62	2.12
L.S.D. (.05)	—	0.47	0.65	0.49	0.22
C.V. %	—	12.0	17.3	11.1	5.1

Table 25. Fall-seeded oats: Leaf tip damage¹ of varieties tested in 1967

Variety	Avg.	Knoxville	Spring Hill	Jackson	Springfield	Greeneville
Blount	3.6	4.5	3.0	4.3	2.5	3.8
T-61-231	3.1	3.8	2.5	3.5	2.5	3.0
T-60-32	2.8	2.8	2.5	3.8	1.5	3.5
Nora	4.1	4.0	2.5	4.3	1.8	8.0
Coker 66-24	2.9	3.0	2.5	3.8	1.5	3.5
Ora	4.1	4.5	2.5	4.5	2.0	6.8
Coker 242	8.4	10.0	7.0	8.0	7.2	9.8
Jefferson	4.8	5.8	5.0	6.3	3.0	4.0
Forager	6.4	5.2	7.0	6.0	5.0	8.8
Forkeddeer	4.1	6.2	4.0	4.3	2.5	3.5
Houston	9.0	10.0	8.0	9.3	7.5	10.0

¹ A scale of 1 through 10 (1 being slight and 10 being very severe) was used to rate the varieties for tip damage due to cold injury.

Table 26. Fall-seeded oats: Date headed of varieties tested at four locations in 1967

Variety	Knoxville	Springfield	Jackson	Spring Hill
Coker 66-24	4-25	4-21	4-23	4-20
Nora	4-25	4-20	4-23	4-17
Jefferson	4-28	4-21	4-22	4-17
Ora	4-28	4-17	4-24	4-17
Coker 242	5-4	4-21	4-25	4-22
Houston	5-5	4-18	4-24	4-17
Forkedeer	5-6	4-24	4-29	4-24
Forager	5-7	4-27	5-1	4-25
T-60-32	5-7	4-27	4-25	4-25
Blount	5-7	4-27	5-2	4-28
T-61-231	5-8	4-27	4-25	4-25

Table 27. Fall-seeded oats: Grain yield of varieties tested at five locations for 2 or 3 years

Variety	Average	Knoxville 1965 & 67	Crossville 1966-67	Springfield 1965-67	Jackson 1965-67	Spring Hill 1965 & 67
Bushels per acre						
Tenn. 61-231 ¹	70	49	72	100	64	54
Blount	66	50	62	103	51	50
Forkedeer	42	16	53	66	43	21

¹ Experimental.

Table 28. Spring oats: Grain and forage yield of varieties tested at three locations in 1967

Variety	Average	Greeneville	Knoxville	Spring Hill	Knoxville	Spring Hill
			Bu./A.		Tons of air-dry forage/A.	
Orbit	49	43	46	57	1.83	1.61
Putnam	42	35	52	40	1.54	1.36
Clintford	42	36	51	39	1.95	1.31
Newton	41	50	40	32	2.14	1.32
Brave	41	34	47	42	1.59	1.25
Tonka	40	41	42	37	1.15	1.44
Tyler	38	31	46	37	1.82	1.26
Tippecanoe	37	24	46	42	1.58	1.42
Elgin	36	36	40	31	1.56	1.28
Clintland 64	31	26	40	28	1.99	1.21
Rodney	—	—	31	—	2.63	—
L.S.D. (.05)	—	10.2	9.2	6.9	0.53	0.17
C.V. %	—	19.6	14.7	12.4	20.7	8.9

Table 29. Spring oats: Characteristics of varieties tested at Knoxville in 1967

Variety	Date headed	Plant height	Lodged	Test weight	Crown rust ¹
		Inches	%	Lb./bu.	
Orbit	5-27	41.8	46.2	28.3	3.2
Putnam 61	5-26	47.5	48.8	27.8	4.5
Clintford	5-29	36.8	28.8	32.0	3.5
Newton	5-28	44.8	40.0	29.2	2.2
Brave	5-27	46.0	63.8	29.4	3.2
Tonka	5-21	40.2	51.2	34.8	3.5
Tyler	5-27	38.0	20.0	36.5	4.5
Tippecanoe	5-27	38.5	33.8	28.4	4.2
Elgin	5-28	45.8	60.0	31.3	2.5
Clintland 64	5-28	42.8	17.5	30.2	1.8
Rodney	6-7	50.2	17.5	23.7	1.8

¹ Scale 1 to 6.

WHEAT

Five varieties (Benhur, Blueboy, Coker 65-20, Riley, and Sturdy) were evaluated for the first time in 1967.

Sturdy, a semi-dwarf, hard red winter variety, had excellent straw strength but a poor yield record at most locations. Blueboy had the highest average yield and one of the lowest test weights in the 1967 variety tests. Its straw strength was excellent. Riley is similar to Monon, but is resistant to loose smut. Like Knox 62, Benhur is resistant to Hessian fly. Benhur occasionally has blackening of heads and stems which is not due to disease but is a characteristic derived from a parent which contributed stem rust resistance.

Coker 65-20 produced about the same yield as Knox 62 but lodged considerably and had a low test weight. Further information is needed on its winterhardiness since leaf damage by freezing was evident in 1967.

Table 30. Wheat: Grain yield of varieties tested in 1967

Variety	Average	Knoxville ¹	Crossville ²	Springfield ³	Martin ⁴	Jackson ⁵	Spring Hill ⁶	Milan
Bushels per acre								
Blueboy	44	46	47	43	36	44	47	53
Benhur	38	39	32	41	32	44	38	—
Reed	37	33	44	36	31	— ⁷	41	50
Redcoat	37	37	39	40	30	36	41	—
Coker 65-20	36	28	40	43	32	38	37	—
Knox 62	36	27	46	44	30	36	35	52
Riley	34	33	38	40	28	33	31	48
Seneca	34	27	38	36	38	24	39	45
Knox	34	23	36	41	34	37	33	—
Monon	32	31	38	32	30	31	33	48
Sturdy	24	29	24	29	28	28	19	—
Triumph	—	—	—	36	—	—	—	—
L.S.D. (.05)	—	3.8	11.6	4.2	4.7	7.0	3.2	N.S.
C.V. %	—	8.3	17.2	7.6	10.3	11.7	6.2	7.3

¹ Etowah silt loam, (2% to 5% slopes).² Hartsells loam, (0% to 2% slopes).³ Mountview silt loam, (2% to 5% slopes).⁴ Memphis silt loam, (2% to 5% slopes).⁵ Grenada silt loam, (0% to 2% slopes).⁶ Maury silt loam, (2% to 5% slopes).⁷ No grain yield reported due to bird damage.

Table 31. Wheat: Test weight of varieties tested in 1967

Variety	Average ¹	Knoxville	Crossville	Springfield	Martin	Jackson	Spring Hill	Milan ¹
Test weight in pounds per bushel								
Monon	58.7	59.5	58.6	60.0	59.0	58.4	56.5	60.8
Knox 62	58.5	58.8	58.2	60.2	59.0	57.8	57.2	60.0
Redcoat	58.5	59.2	59.0	58.8	58.0	58.3	57.8	—
Benhur	58.1	59.9	57.1	58.9	57.0	59.2	56.3	—
Riley	58.1	58.2	58.2	59.6	58.0	58.3	56.3	60.8
Reed	58.1	58.4	58.4	58.7	58.0	58.0	57.2	52.6
Seneca	57.8	57.6	57.8	58.2	58.5	57.1	57.6	60.9
Knox	57.4	57.7	57.3	60.0	57.9	54.9	56.6	—
Sturdy	56.7	56.3	56.6	57.5	57.0	57.6	55.2	—
Coker 65-20	54.9	55.1	52.7	57.9	55.0	53.8	55.0	—
Blueboy	54.9	56.7	56.2	55.7	53.0	53.4	54.2	57.0

¹ Milan data not included in average.

Table 32. Wheat: Forage yield of varieties tested at four locations in 1967

Variety	Average	Knoxville	Springfield	Jackson	Spring Hill
Tons of air-dry forage per acre					
Seneca	3.45	4.24	3.14	3.13	3.29
Redcoat	3.02	3.86	2.18	3.01	3.04
Blueboy	2.92	3.52	2.17	2.94	3.07
Benhur	2.88	3.21	1.87	3.10	3.33
Reed	2.87	3.03	2.70	2.94	2.81
Knox 62	2.82	3.50	1.76	3.12	2.90
Riley	2.70	3.24	1.85	3.06	2.65
Knox	2.61	3.03	1.87	2.63	2.90
Monon	2.38	3.20	1.62	2.01	2.70
Coker 65-20	2.36	2.73	1.42	2.69	2.62
Sturdy	2.14	2.83	1.53	1.89	2.29
L.S.D. (.05)	—	0.45	0.43	0.56	0.33
C.V. %	—	9.4	15.1	14.0	7.9

Table 33. Wheat: Characteristics of varieties tested at Knoxville in 1967

Variety	Date boot stage	Date headed	Date mature	Plant height	Tip damage	Lodged
				In.	Scale 1-10	%
Knox	4-18	4-21	6-8	38	0.5	64
Seneca	4-27	5-7	6-13	46	0.5	2
Monon	4-14	4-20	6-7	38	0.0	21
Sturdy	4-18	4-21	6-7	31	0.5	0
Knox 62	4-14	4-21	6-8	39	0.5	62
Blueboy	4-18	4-22	6-10	37	1.0	0
Benhur	4-14	4-19	6-7	38	0.5	1
Coker 65-20	4-21	4-26	6-13	37	8.0	55
Riley	4-18	4-22	6-6	38	0.0	0
Reed	4-27	5-6	6-14	47	0.5	0
Redcoat	4-24	5-5	6-14	44	0.5	0

Table 34. Wheat: Characteristics of varieties tested at Jackson in 1967

Variety	Date boot stage	Date headed	Date ready for harvest	Plant height	Lodged	Growth habit ¹
				In.	%	Scale (1-5)
Knox	4-11	4-16	5-29	38	30	3.5
Seneca	4-25	5-1	6-13	40	10	1.0
Monon	4-12	4-17	5-29	38	10	3.3
Sturdy	4-16	4-30	6-6	30	0	4.3
Knox 62	4-11	4-16	6-1	38	42	3.5
Blueboy	4-12	4-17	6-8	37	4	5.0
Benhur	4-11	4-15	6-5	38	6	3.5
Coker 65-20	4-10	4-15	6-8	38	65	5.0
Riley	4-15	4-28	6-6	40	9	4.5
Reed	4-25	5-2	6-13	38	9	3.5
Redcoat	4-24	4-30	6-13	42	5	2.5

¹ A scale of 1 through 5 was used to rate growth habit (1 prostrate and 5 upright). Data were taken on March 16.

Table 35. Wheat: Date headed of varieties tested at five locations in 1967

Variety	Knoxville	Springfield	Martin	Jackson	Spring Hill
			Date headed		
Benhur	4-19	4-17	4-18	4-15	4-13
Monon	4-20	4-17	4-16	4-17	4-14
Knox	4-21	4-16	4-18	4-16	4-13
Sturdy	4-21	4-22	4-20	4-30	4-16
Knox 62	4-21	4-16	4-18	4-16	4-13
Riley	4-22	4-21	4-22	4-28	4-16
Blueboy	4-22	4-21	4-20	4-17	4-16
Coker 65-20	4-26	4-15	4-18	4-15	4-14
Redcoat	5-5	4-29	5-12	4-30	4-24
Reed	5-6	5-3	5-9	5-2	5-1
Seneca	5-7	5-4	5-5	5-1	4-27
Triumph	—	4-18	—	—	—

Table 36. Wheat: Susceptibility of wheat varieties to Powdery Mildew¹ under natural field conditions at five locations, 1967

Variety	Knoxville	Spring Hill	Jackson	Springfield
	April 5	May 10	April 19	April 20
Blueboy	0.6	2.0	2.5	3.0
Benhur	1.3	1.7	3.8	3.2
Reed	2.8	3.3	4.5	2.5
Redcoat	2.0	1.0	1.5	0.2
Coker 65-20	0.0	0.0	2.3	1.0
Knox 62	1.5	1.3	2.8	3.0
Riley	3.0	2.3	4.5	3.0
Seneca	1.8	3.7	4.5	4.5
Knox	3.2	1.0	3.3	3.2
Monon	3.5	4.7	4.3	4.2
Sturdy	3.0	2.0	3.8	6.0
Triumph	—	—	—	3.8

¹ A scale of 1 through 6 was used to rate Powdery Mildew and leaf rust (1 being least damage and 6 severe).

Table 37. Wheat: Grain yield of varieties tested at seven locations for 2 or 3 years

Variety	Average	Greeneville 1965-66	Knoxville 1965 & 67	Crossville 1965-67	Springfield 1965-67	Jackson 1965 & 67	Spring Hill 1965 & 67	Martin 1965-67
Bushels per acre								
Reed	39	49	31	46	35	— ¹	33	38
Monon	38	46	26	42	39	39	30	38
Seneca	36	41	27	42	36	26	33	38
Knox 62	35	35	25	39	38	41	29	36
Knox	34	37	23	36	37	39	29	36

¹ One year's data

Table 38. Wheat: Varieties ranked by 2- or 3-year grain yield at six locations

Variety	Greeneville 1965-66	Knoxville 1965 & 67	Crossville 1965-67	Springfield 1965-67	Spring Hill 1965 & 67	Martin 1965-67
Ranked grain yield						
Reed	1	1	1	5	1	3
Monon	2	3	2	1	5	4
Seneca	3	2	3	4	2	1
Knox 62	5	4	4	2	3	4
Knox	4	5	5	3	4	5

BARLEY

In 1966, Harrison gave the highest average grain yield and Dayton the lowest. In 1967, Wade gave the highest average grain yield and Harrison ranked second. Dayton again was the lowest grain producer in the test. Harrison was added to the recommended list for 1968. This variety is not acid tolerant and should not be grown at a low soil pH.

Harrison is medium late in maturity with excellent resistance to lodging. In 1967 Harrison had the highest average test weight of any variety in the test and Dayton the lowest. Of the varieties tested, Wade and Colonial 2 seem to have the most tolerance to acid conditions. (Low pH).

The barley data are presented in Tables 40 through 48.

Table 40. Barley: Grain yield of varieties tested in 1967

Variety	Average	Greeneville ¹	Knoxville ²	Crossville ³	Springfield ⁴	Jackson ⁵	Spring Hill ⁶	Milan
Bushels per acre								
Wade	57	49	48	54	73	48	71	73
Hudson	50	43	36	45	68	42	69	—
Harrison	50	41	41	47	61	45	66	48
Colonial 2	49	47	38	44	74	41	50	55
Barsoy	45	33	36	28	72	52	52	—
Dover	44	32	32	41	70	37	52	—
T-59-15 ⁷	41	28	27	31	59	39	62	—
Zora	41	30	22	43	73	31	45	—
Dayton	34	28	13	35	62	26	39	52
Kenbar	36	27	25	42	55	30	37	—
L.S.D. (.05)	—	17.1	5.3	12.3	9.3	6.4	8.4	16.3
C.V. %	—	19.7	11.6	20.6	9.7	11.3	5.4	17.8

¹ Cumberland silt loam, (2% to 5% slopes).

² Etowah silt loam, (2% to 5% slopes).

³ Hartsells loam, (0% to 2% slopes).

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

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

⁶ Maury silt loam, (2% to 5% slopes).

⁷ Experimental.

Table 41. Barley: Test weight of varieties tested in 1967

Variety	Average	Greeneville	Knoxville	Crossville	Springfield	Jackson	Spring Hill
Pounds per bushel							
Harrison	46.4	45.6	49.4	46.8	46.2	44.6	45.9
Wade	45.4	46.4	49.4	45.1	42.5	43.0	45.8
Hudson	45.4	47.0	48.4	46.1	43.2	43.1	44.2
Dover	45.0	43.5	48.2	45.5	44.6	43.2	44.8
Barsoy	43.5	40.0	47.3	44.2	44.8	41.0	43.5
Zora	43.3	44.1	45.8	44.6	42.0	40.3	43.2
T-59-15 ¹	42.4	46.0	44.0	44.1	37.8	40.2	42.6
Kenbar	42.1	43.8	45.6	44.5	39.1	38.9	40.6
Colonial 2	41.7	42.8	43.4	42.8	40.0	40.2	41.2
Dayton	39.9	42.6	40.5	43.6	38.6	35.1	39.0

¹ Experimental: Fifteen percent of heads damaged by loose smut.

Table 42. Barley: Forage yield of varieties tested at four locations in 1967

Variety	Average	Knoxville	Springfield	Jackson	Spring Hill
Tons of air-dry forage per acre					
Wade	3.14	2.94	2.44	3.14	4.06
Colonial 2	2.91	2.78	2.32	2.93	3.60
Dover	2.89	2.78	2.16	3.10	3.53
Zora	2.75	2.88	2.55	3.41	2.75
T-59-15	2.72	2.28	1.98	3.11	3.53
Barsoy	2.69	2.47	2.47	2.68	3.15
Harrison	2.54	2.33	1.95	2.67	3.19
Kenbar	2.54	2.54	1.86	2.58	3.16
Hudson	2.50	2.58	1.92	2.38	3.10
Dayton	2.28	1.78	2.05	2.15	3.16
L.S.D. (.05)	—	0.47	N.S.	0.45	0.35
C.V. %	—	12.2	13.8	11.8	7.0

Table 43. Barley: Characteristics of varieties tested at Knoxville 1967

Variety	Date boot stage	Date headed	Date mature	Lodged	Tip injury ¹	Growth habit ²	Net blotch ³
				%	Scale (1-10)	Scale (1-5)	Scale (1-10)
Colonial 2	4-14	4-19	5-30	40	1.5	3.5	0.0
Wade	4-14	4-19	5-31	8	4.2	4.0	0.0
Barsoy	4-5	4-11	5-21	18	1.0	3.6	0.2
Dover	4-11	4-16	5-21	6	1.8	3.0	0.5
Harrison	4-13	4-17	5-28	0	7.5	1.2	0.5
Dayton	4-11	4-15	5-27	48	4.8	5.0	6.5
Zora	4-13	4-17	5-27	24	4.8	4.0	7.2
Kenbar	4-11	4-14	5-26	38	2.0	3.6	1.8
Hudson	4-14	4-19	5-31	6	3.2	3.6	0.0
T-59-15	4-11	4-16	5-28	2	2.8	2.9	1.3

¹ A scale of 1 through 10 was used on March 10 to rate tip damage, due to cold injury (1 least damage and 10 severe damage).

² A scale of 1 through 5 was used to rate growth habit, 1 being prostrate and 5 upright.

³ A scale of 1 through 10 was used to rate net blotch.

Table 44. Barley: Characteristics of varieties tested at Springfield 1967

Variety	Date harvested for forage	Date headed	Tip damage ¹	Lodged	Plant height	Powdery mildew ²
			Scale (1-10)	%	In.	Scale (1-6)
Colonial 2	4-14	4-15	2.8	11	31	0.5
Wade	4-14	4-15	3.8	0	31	0.6
Barsoy	4-11	4-5	1.2	51	31	1.1
Dover	4-11	4-16	1.2	1	30	0.0
Harrison	4-15	4-18	1.0	0	31	0.0
Dayton	4-11	4-7	3.0	36	32	3.0
Zora	4-11	4-12	1.2	28	31	2.0
Kenbar	4-11	4-10	1.0	32	31	1.2
Hudson	4-17	4-20	1.2	1	35	0.2
T-59-15	4-13	4-13	1.8	0	32	0.2

¹ A scale of 1 through 10 was used to rate tip damage, due to cold injury (1 least damage and 10 severe damage).

² A scale of 1 through 6 was used to rate Powdery Mildew.

Table 45. Barley: Characteristics of varieties tested at Jackson 1967

Variety	Date boot stage	Date ready for harvest	Tip damage ¹	Lodged	Plant height	Powdery mildew April 19 ²	Leaf rust April 19
			Scale (1-10)	%	In.	Scale (1-6)	Scale (1-6)
Colonial 2	4-11	5-27	5.0	79	30	0.5	0.3
Wade	4-11	5-25	7.3	28	32	1.0	0.0
Barsoy	4-2	5-16	4.5	78	32	0.0	2.0
Dover	4-6	5-16	4.3	80	31	0.0	2.8
Harrison	4-11	5-27	4.3	3	33	0.0	0.8
Dayton	4-6	5-18	3.5	88	31	3.8	2.5
Zora	4-6	5-20	4.5	82	32	3.8	0.8
Kenbar	4-6	5-18	3.8	85	32	3.3	1.5
Hudson	4-11	5-29	4.3	38	34	0.8	2.3
T-59-15	4-6	5-18	4.8	42	32	0.3	2.8

¹ A scale of 1 through 10 was used to rate tip damage, due to cold injury (1 least damage and 10 severe damage).

² A scale of 1 through 6 was used to rate Powdery Mildew and leaf rust.

Table 46. Barley: Characteristics of varieties tested at Spring Hill 1967

Variety	Date ready for harvest	Plant height	Lodged	Powdery mildew ¹	Leaf rust ¹
		In.	%	Scale (1-6)	Scale (1-6)
Colonial 2	5-29	30	50	1.8	1.3
Wade	6-1	30	0	2.5	0.0
Barsoy	6-1	26	75	0.0	3.3
Dover	5-26	26	2	0.0	3.0
Harrison	6-1	32	0	0.0	1.8
Dayton	5-26	24	50	0.0	3.8
Zora	5-26	30	60	0.3	1.5
Kenbar	5-20	24	80	1.5	3.3
Hudson	6-1	30	5	0.0	1.8
T-59-15	5-26	30	25	0.0	3.0

¹ A scale of 1 through 6 was used to rate Powdery Mildew and leaf rust (1 being least damage and 6 severe).

Table 47. Barley: Date headed of varieties tested at three locations in 1967

Variety	Knoxville	Springfield	Jackson
Barsoy	4-11	4-5	4-5
Kenbar	4-14	4-10	4-10
Dayton	4-15	4-7	4-10
Dover	4-16	4-16	4-11
T-59-15	4-16	4-13	4-11
Zora	4-17	4-12	4-11
Harrison	4-17	4-18	4-14
Colonial 2	4-19	4-15	4-14
Wade	4-19	4-15	4-14
Hudson	4-19	4-20	4-14

Table 48. Barley: Yield of varieties tested at six locations for 2 or 3 years

Variety	Average	Greeneville 1965-67	Knoxville 1965 & 67	Crossville 1965-67	Springfield 1965-67	Jackson 1965-67	Spring Hill 1965 & 67
Bushels per acre							
Harrison	54	65	44	50	63	45	49
Wade	53	54	46	55	56	47	48
Colonial 2	48	52	38	47	61	44	41
Hudson	46	47	38	41	60	45	41
Tenn. 59-15	43	37	38	36	56	43	46
Kenbar	40	40	32	46	47	42	27
Dayton	36	35	26	38	51	37	25

GRAIN SORGHUM

The grain sorghum tests were conducted at Ames Plantation, Martin, Milan, Spring Hill, and Knoxville. The grain yields of some varieties at Ames Plantation were reduced due to sorghum midge damage. Several varieties either escaped damage from the midge or have some resistance to this insect. The sorghum midge damage ratings are presented in Table 50. The test at Milan was planted and harvested by machine. All other tests were planted with a Planet Junior and harvested by hand before threshing. The test at Milan was damaged some by birds. Slight to no bird damage was noted at the other locations.

The test at Knoxville consisted of all bird resistant varieties because of the severe bird problem encountered in 1966 at this location. Half of this test was sprayed with propazine and the other

half cultivated. It was thought that propazine might be delaying heading of certain varieties. The data in 1967 indicated that propazine does not delay heading or maturity of the varieties studied. The propazine plots produced a lower average yield, but there was no significant difference ($P > .05$) between the propazine and cultivated plots.

Ga. 615, Co-op #4, AKS 614, Savanna, and McNair 546 performed well at all locations. ArK 62005 performed poorly at most locations. DeKalb BR60 and BR62 were damaged more by the sorghum midge at Ames Plantation than any other varieties.

Table 49. Grain Sorghum: Yield summary of varieties tested at several locations in 1967

Variety	Average all 5 locations	Average of 4 locations ¹	Ames Plan- tation ²	Spring Hill	Martin	Milan	Knoxville
Bushels per acre							
Ga. 615	113	110	90	87	155	107	127
Co-op #4	109	107	88	91	155	94	117
AKS 614	104	100	79	85	132	103	119
Savanna	100	98	74	82	129	107	108
McNair 546	99	97	82	77	127	103	106
Frontier 409	98	95	68	75	140	97	111
Lindsey BR75	97	95	64	76	138	103	104
ArK 62004	85	80	55	59	124	82	106
DeKalb BR62	80	76	30	68	131	74	96
DeKalb BR60	75	72	37	54	120	76	88
ArK 62005	62	63	48	47	85	72	57
P.A.G. 515	—	93	75	65	144	87	—
Green's G814	—	92	73	70	132	92	—
R.S. 610	—	92	62	76	139	90	—
R.S. 671	—	90	84	61	132	85	—
Pioneer 828	—	90	50	70	149	92	—
Excel 505	—	88	66	69	132	87	—
Co-op #3	—	87	63	63	132	91	—
DeKalb E-57	—	86	63	65	128	89	—
Co-op #6	—	86	48	69	145	81	—
Rico	—	83	74	53	115	91	—
Lindsey 744	—	74	50	56	104	85	—
Co-op #5	—	73	50	52	105	86	—

¹ Knoxville data not included in this average.

² Yields of some varieties reduced by sorghum midge damage. See ratings in Table 50.

Table 50. Grain Sorghum: Yields and other characteristics of varieties tested at Ames Plantation in 1967¹

Variety	Yield	Sorghum midge damage ²	Head type ³	Plant height	Head exsertion ⁴
	Bu./A	Rating (1-10)	Rating (1-3)	In.	In.
Ga. 615	90	0.3	1	62	10
Co-op #4	88	0.8	1	66	10
Paymaster 5604	87	0.5	1	54	10
R.S. 671	84	2.8	2	50	6
McNair 546	82	0.5	1	50	10
AKS 614	79	0.3	1	52	8
P.A.G. 515	75	2.2	3	56	6
Rico	74	3.0	2	46	10
Savanna	74	0.5	1	46	8
McCurdy 62	73	2.5	2	36	4
Green's G814	73	1.0	1	48	8
Pioneer 866	72	3.2	2	54	12
Dorman BR100	70	1.8	1	48	8
N.K. 265	69	1.8	2	58	12
Frontier 409	68	0.5	1	50	10
Excel 505	66	3.2	3	54	12
N.K. 280	66	3.3	2	52	12
Lindsey BR75	64	1.5	1	58	10
Co-op #3	63	3.5	2	54	10
DeKalb E-57	63	3.2	2	55	12
R.S. 610	62	2.8	2	52	12
N.K. 222	60	3.8	1.5	42	12
Co-op #1	59	3.8	3	52	8
Ark 62004	55	2.5	1	62	12
Lindsey 744	50	2.0	2	48	10
Co-op #5	50	4.5	2	36	4
Pioneer 828	50	5.0	2	66	10
Ark 62005	48	2.0	2	36	10
Co-op #6	48	4.5	3	58	10
DeKalb BR60	37	5.1	3	48	8
DeKalb BR62	30	5.1	3	68	8
L.S.D. (.05)	15.3	—	—	—	—
C.V. %	14.0	—	—	—	—

¹ Loring silt loam (2% to 5% slopes), Memphis silt loam (2% to 5% slopes).

² Rating based on a scale of 1 through 10 (1 being slight damage and 10 severe).

³ Head type was rated 1 through 3 (1 open, 2 medium, and 3 tight in compactness).

⁴ The length in inches from the flag leaf to the tip of the head.

Table 51. Grain Sorghum: Yields and other characteristics of varieties tested at Spring Hill in 1967¹

Variety	Yield	Date headed	Plant height	Head exsertion ²
	Bu./A		In.	In.
Co-op #4	91	7-28	60	7
Ga. 615	87	7-28	54	7
AKS 614	85	7-28	50	5
Savanna	82	7-27	48	7
McNair 546	77	7-28	46	6
Lindsey BR75	76	7-27	50	7
R.S. 610	76	7-27	50	6
Frontier 409	75	7-31	46	6
Green's G-814	70	7-27	48	6
Pioneer 828	70	8-2	54	7
Excel 505	69	7-27	48	6
Co-op #6	69	7-31	42	5
DeKalb BR62	68	7-31	50	7
P.A.G. 515	65	7-28	46	6
DeKalb E57	65	7-27	50	7
Co-op #3	63	7-28	42	4
R.S. 671	61	7-31	42	4
ArK 62004	59	7-31	48	7
Lindsey 744	56	7-27	42	5
DeKalb BR60	54	7-31	44	6
Co-op #5	52	7-31	36	5
Rico	53	7-27	40	5
Pioneer 820	51	8-1	42	6
ArK 62005	47	7-31	34	2
L.S.D. (.05)	11.8	—	—	—
C.V. %	12.4	—	—	—

¹ Maury silt loam (0% to 2% slopes).

² The distance in inches from the flag leaf to the base of the head.

Table 52. Grain Sorghum: Yields and other characteristics of varieties tested at Martin in 1967¹

Variety	Yield	Mid-bloom date	Head type	Plant height	Grain moisture ³	Lodging
	Bu./A		Rating ²	In.	%	%
Ga. 615	155	7-30	1	65	16.9	45
Co-op #4	155	7-30	1	66	18.0	33
Pioneer 828	149	8-3	2	73	18.1	2
Co-op #6	145	7-31	2	62	17.0	25
P.A.G. 515	144	8-1	2	64	17.8	37
Frontier 409	140	7-30	1	59	18.2	5
R.S. 610	139	7-29	3	59	16.1	52
Lindsey BR75	138	7-29	1	59	17.1	15
AKS 614	132	7-29	1	58	17.0	23
Green's G814	132	7-31	1	60	17.8	12
R.S. 671	132	8-2	2	57	18.8	0
Excel 505	132	7-31	2	58	16.5	3
Co-op #3	132	7-31	2	57	18.2	33
DeKalb BR62	131	8-3	3	70	17.7	5
Savanna	129	7-27	1	57	16.5	65
DeKalb E57	128	8-1	1	61	17.7	2
McNair 546	127	7-28	1	56	15.6	20
ArK 62004	124	8-2	1	61	18.4	5
Pioneer 820	122	8-2	2	55	18.5	37
DeKalb BR60	120	8-1	1	59	17.3	33
Rico	115	7-29	3	56	15.6	40
Co-op #5	105	8-1	2	45	16.6	7
Lindsey 744	104	7-30	2	51	16.7	38
ArK 62005	85	8-1	1	49	16.3	32
L.S.D. (.05)	13.1	—	—	—	—	—
C.V. %	7.6	—	—	—	—	—

¹ Grenada silt loam, (2% to 5% slopes).

² Rating: (1) open (2) medium (3) tight.

³ Moisture samples taken a few days before harvest to indicate maturity.

Table 53. Grain Sorghum: Yield and other characteristics of varieties tested at Milan in 1967¹

Variety	Average	Date of 1st head	Plant height	Ease of combining ²	Head exertion ³	Head type ⁴	Moisture at harvest
	Bu./A ⁵	Date	In.	Rating (1-5)	In.	Rating (1-3)	%
Ga. 615	107	7-26	54	1	6	2	16.5
Savanna	107	7-23	57	1	7	1	15.8
McNair 546	103	7-24	52	1	5	2	15.3
AKS 614	103	7-23	55	1	5	2	16.0
Lindsey BR-75	103	7-23	57	2	6	2	15.6
Frontier 409	97	7-23	56	1	7	2	15.3
Co-op #4	94	7-25	65	1	7	3	16.6
Green's G-814	92	7-25	60	5	7	1	16.4
Pioneer 828	92	7-28	65	3	8	3	15.5
Co-op #3	91	7-25	48	2	6	2	15.5
R.S. 610	90	7-25	60	4	8	3	14.8
Rico	91	7-26	46	3	6	3	14.1
DeKalb E-57	89	7-26	57	2	7	1	16.1
Excel 505	87	7-26	56	3	4	3	15.1
P.A.G. 515	87	7-26	51	5	5	3	17.3
Co-op #5	86	7-25	44	2	6	2	13.8
Lindsey 744	85	7-24	47	3	5	3	13.8
R.S. 671	85	7-26	46	5	6	3	14.2
Pioneer 820	83	7-26	55	2	7	3	15.2
ArK 62004	82	7-26	54	2	7	1	18.5
Co-op #6	81	7-26	54	2	4	3	15.1
DeKalb BR-60	76	7-30	58	3	7	2	16.8
DeKalb BR-62	74	7-29	53	2	5	3	15.5
ArK 62005	72	7-25	45	4	4	3	15.0
L.S.D. (.05)	11.4	—	—	—	—	—	—
C.V. %	9.1	—	—	—	—	—	—

¹ Two row plots 60 feet long harvested by machine.

² A rating of 1 through 5 (1 being easy to combine and 5 very difficult).

³ The length in inches from the flag leaf to the base of the head.

⁴ Head type was rated 1 through 3 (1 open, 2 medium, and 3 tight in compactness).

⁵ Vicksburg silt loam, (0% to 2% slopes).

Table 54. Grain Sorghum: Yields and other characteristics of varieties grown when weeds were controlled by cultivation or propazine at Knoxville in 1967¹

Variety ²	Yield		Date headed		Plant height	
	Cultivated	Propazine	Cultivated	Propazine	Cultivated	Propazine
	Bu./A				In.	In.
Ga. 615	127	116	8-1	8-1	50	51
AKS 614	119	98	8-2	8-2	47	47
Co-op #4	117	118	8-3	8-3	55	56
Frontier 409	111	95	8-4	8-2	48	46
Savanna	108	96	7-31	7-31	46	46
ArK 62004	106	90	8-4	8-4	44	47
McNair 546	106	100	8-2	8-1	42	45
Lindsey BR75	104	97	7-31	8-1	50	50
Dorman BR100	103	99	8-2	8-1	47	47
DeKalb BR62	96	84	8-9	8-9	52	50
DeKalb BR60	88	82	8-9	8-9	46	45
ArK 62005	57	49	8-13	8-12	35	42
Average	104	94	Difference between weed control methods was not significant.			

L.S.D. (.05) between varieties was 13.3 bu./A.

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

² All varieties in this test were bird resistant.

ALFALFA

Alfalfa results reported here are from tests seeded in 1962, 1964, and 1965. New seedings were made in the fall of 1967 at Greeneville, Knoxville, and Springfield. The leading varieties at Jackson after 5 years of production were Williamsburg, Buffalo, Cody, Cherokee, and Vernal. DuPuits and P.A.G. FD-100 stands were so poor that no yield data were obtained in 1967. At Springfield the leading varieties were Williamsburg, Atlantic, Delta, and Cherokee. New varieties in the test that show promise are Cherokee, Culver, Delta, W.L. 303, and Europa. Europa seems to perform well at Crossville. Cody and Buffalo had very poor stands at Crossville at the beginning of the growing season.

The alfalfa data are presented in Tables 55 through 58.

Table 55. Alfalfa: Yield of varieties seeded in 1962 at Jackson¹

Variety	Avg.	1967	1966	1965	1964	1963
Tons of air-dry hay per acre						
Williamsburg	4.58	3.84	5.40	4.84	4.74	4.06
Buffalo	4.52	3.92	5.23	4.74	4.57	4.16
Cody	4.39	3.85	5.11	4.50	4.65	3.86
Cherokee	4.30	3.16	5.18	4.78	4.59	3.78
Vernal	4.29	3.32	4.89	4.72	4.59	3.93
Culver	4.10	3.24	4.84	4.37	4.44	3.63
Atlantic	4.06	2.98	4.88	4.62	4.22	3.62
Narragansett	3.96	2.83	4.55	4.43	4.24	3.73
Orchies	3.74	2.66	4.26	4.13	3.83	3.80
Cardinal	3.30	1.79	3.47	3.87	3.47	3.92
DuPuits	3.06	0.00	3.55	4.11	3.84	3.78
P.A.G. FD-100	2.80	0.00	3.00	3.70	3.54	3.75
L.S.D. (.05)	—	0.65	0.80	0.50	0.44	N.S.
C.V. %	—	14.3	12.4	7.9	7.2	6.5

¹ Loring silt loam (0% to 2% slopes).Table 56. Alfalfa: Yield of test seeded at Springfield in 1965¹

Variety	Avg.	1967	1966	Variety	Avg.	1967	1966
Tons of air-dry hay per acre				Tons of air-dry hay per acre			
Williamsburg	3.34	3.40	3.27	Narragansett	3.12	3.12	3.12
Atlantic	3.33	3.26	3.40	Pioneer 582	3.07	2.69	3.45
Delta	3.32	3.53	3.10	W.L. 302	3.06	2.64	3.47
Cherokee	3.31	3.22	3.40	Cody	3.06	2.78	3.34
W.L. ² 303	3.30	3.11	3.48	Alfa	3.05	2.81	3.29
Progress	3.24	3.25	3.22	Culver	2.96	2.98	2.95
Saranac	3.24	3.13	3.34	Pioneer 522	2.96	2.68	3.24
Cayuga	3.22	3.29	3.16	Crecy	2.68	2.35	3.02
Cardinal	3.28	3.00	3.56	Ky. Creeper	2.66	2.67	2.64
Buffalo	3.16	3.20	3.11	Lahontan	2.49	2.47	2.51
L.S.D. (.05)	—	—	—		—	0.57	0.32
C.V. %	—	—	—		—	13.6	7.1

¹ Dickson silt loam (2% to 5% slopes).² W. L. denotes Watterman-Loomis.

Table 57. Alfalfa: Yield of varieties seeded in 1964 at Spring Hill¹

Variety	Avg.	1967	1966	1965
Tons of air-dry hay per acre				
Culver	4.49	5.13	4.45	3.88
Vernal	4.48	4.82	4.63	3.98
Atlantic	4.46	4.70	4.52	4.16
W.L. 303	4.44	5.13	4.51	3.67
Williamsburg	4.36	5.46	4.37	3.24
Cardinal	4.36	5.19	4.32	3.57
Warrior	4.34	5.09	4.54	3.40
Pioneer 522	4.23	5.40	4.19	3.10
DuPuits	4.19	4.97	4.24	3.35
Cherokee	4.17	4.88	4.26	3.38
Buffalo	4.17	4.98	4.28	3.26
Alfa	4.16	4.92	4.30	3.25
Pioneer 525	4.14	5.07	4.02	3.34
Glacier	4.13	5.30	4.21	2.89
Saranac	4.08	5.07	4.15	3.02
W.L. 302	4.08	4.80	4.14	3.31
P.A.G. FD-100	4.04	5.26	4.49	3.38
Cayuga	3.94	4.83	3.86	3.14
Pioneer 583	3.93	4.75	3.94	3.10
Haymor	3.89	4.49	4.04	3.13
W.L. 304	3.86	4.82	3.90	2.86
Cody	3.73	4.48	4.02	2.69
A.S. 49	3.71	4.85	3.86	2.42
Progress	3.69	3.71	3.93	3.43
Ranger	3.65	4.47	3.82	2.66
Tuna	3.64	4.34	3.97	2.61
Resistador	3.55	4.57	3.59	2.50
Rhizoma	3.53	3.78	3.78	3.02
Narragansett	3.36	4.40	3.46	2.21
Norseman	3.16	2.82	3.02	3.64
C.L. 35	3.01	2.70	3.35	2.99
Ky. Creeper	2.99	2.68	3.22	3.06
Rambler	2.86	2.65	3.14	2.78
N.Y. 64-4 Creeper	2.82	2.22	2.78	3.46
A.S. 13	1.47	2.28	1.78	0.34
Sonora	0.00	0.00	0.00	0.00
L.S.D. (.05)	—	0.84	0.65	1.13
C.V. %	—	13.5	11.8	26.4

¹ Maury silt loam (2% to 5% slopes).

Table 58. Alfalfa: Yield of varieties seeded in 1966 at Crossville¹

Variety	1967	Variety	1967
Tons of air-dry hay per acre			
Europa	4.04	Vernal	3.36
Cherokee	3.76	Cayuga	3.28
Culver	3.51	Warrior	3.20
Delta	3.44	Saranac	3.16
Pioneer 522	3.44	Progress	3.14
Pioneer 583	3.44	Atlantic	3.08
W.L. 303	3.43	Cody	2.48
Williamsburg	3.40	Buffalo	2.23
L.S.D. (.05)	—		0.56
C.V. %	—		12.0

¹ Hartsells loam (2% to 5% slopes).

RED CLOVER

The results for Red Clover are from tests seeded in 1963, 1964, and 1965. These data indicate that Ky. Syn. A₂ (an experimental) performs well under Tennessee conditions. In Table 59 it can be seen that Ky. Syn. A₂ was the only variety at Crossville and Knoxville that produced any forage the third year. At Crossville in 1967 Ky. Syn. A₂ had an excellent stand of clover and all other varieties had very few plants remaining.

Data are presented in Tables 59 through 61.

Table 59. Red Clover: Yield summary of tests seeded in 1964

Variety	Avg.	Crossville ¹			Spring Hill ²			Knoxville ³		
		1965	1966	1967	1965	1966	1967	1965	1966	1967
Tons of air-dry hay per acre										
Ky. Syn. A ₂	2.98	3.53	5.90	4.32	2.18	2.54	2.13	2.86	2.23	1.10
Kenland	2.23	3.72	5.40	0.00	2.15	2.32	1.76	2.72	2.00	0.00
Orbit	2.16	4.02	5.80	0.00	2.05	1.81	1.46	2.50	1.76	0.00
Pennscott	2.10	3.86	5.53	0.00	1.87	1.75	1.65	2.61	1.66	0.00
Lakeland	1.94	3.24	5.36	0.00	2.12	1.68	1.40	2.02	1.64	0.00
L.S.D. (.05)	—	0.54	N.S.	—	0.20	0.26	0.51	0.38	0.34	—
C.V. %	—	9.4	5.6	—	6.2	8.5	19.7	10.0	8.8	—

¹ Hartsells loam (2% to 5% slopes).

² Maury silt loam (2% to 5% slopes).

³ Etowah silt loam (2% to 5% slopes).

Table 60. Red Clover: Yield of test seeded in 1965 at Knoxville and Spring Hill

Variety	Average	Knoxville	Spring Hill
Tons of air-dry hay per acre			
Illinois No. 1	2.63	3.04	2.22
Ky. Syn. A ₂	2.62	2.88	2.37
Illinois	2.61	3.05	2.17
Kenland	2.48	2.86	2.10
Tensas	1.98	2.26	1.69
Chesapeake	1.70	2.50	1.91
L.S.D. (.05)	—	0.42	N.S.
C.V. %	—	9.9	14.7

Table 61. Red Clover: Yield of tests seeded in 1963 and 1965 at Jackson

Variety	Avg. ¹ 1964-66	1966 ²	1967 ²
Tons of air-dry hay per acre			
Ky. Syn. A ₂	3.29	3.17	4.93
Kenland	2.25	3.34	1.36
Orbit	2.18	—	—
Ky. 215	2.11	—	—
Lakeland	1.98	—	—
Pennscott	1.84	—	—
Illinois No. 2	—	3.55	2.79
Illinois No. 1	—	3.35	3.68
Chesapeake	—	2.91	1.66
L.S.D. (.05)	—	N.S.	0.47
C.V. %	—	14.2	10.6

¹ Average of test seeded in 1963.

² Test seeded in 1965.



Figure 4. Hood soybeans grown at Crossville, 1967. Note the severe lodging due to virus disease.

SOYBEANS

Soybean varieties were tested in 1967 at Martin, Jackson, Milan, Springfield, Spring Hill, Crossville, and Knoxville. At Martin one test was conducted under a cyst nematode condition and the second under a cyst nematode-free condition. Hood yielded well at all locations except at Crossville where the yields were reduced due to a virus disease. Hood lodged severely at Crossville as shown in Figure 4.

The experimental V61-20 performed well at all locations tested. The leading varieties in yield at Knoxville were Dare, Hood, Hill, and Kent. Bragg and Semmes were near the bottom of the tests in yield at all locations. Dyer and Dare were added to the 1968 recommended list. Dyer is resistant to soybean cyst nematode, two root-knot nematodes, and bacterial pustule. It matures 5 days later than Hill and does not hold its beans as well as Hill. Dyer will lodge worse than Hill under some conditions. This variety is recommended where cyst or root-knot nematodes are a problem. Dare matures 4 or 5 days earlier than Hood. It has resistance to purple stain, bacterial pustule, wildfire, and target spot. It is also moderately resistant to phytophthora root rot. Data are presented in Tables 62 through 68.

Table 62. Soybeans: Yield and other characteristics of varieties tested at Knoxville in 1967

Variety	Avg.	Date 1st flower	Date mature	Plant height	Lodging
	Bu./A			In.	%
Dare	49	7-31	10-13	40	63
V61-20 (York)	46	7-24	10-10	36	26
Hood	46	8-2	10-13	37	37
Hill	43	7-31	10-8	39	80
Kent	42	7-13	10-4	43	10
Davis	39	8-13	10-30	46	97
Dyer	38	7-30	10-22	37	77
Bragg	37	8-9	10-30	44	87
Lee	37	8-7	10-26	39	73
R64-501	36	8-4	10-26	41	87
Pickett	33	8-13	10-28	40	57
Semmes	33	8-13	10-30	44	27
Custer	32	7-12	10-4	40	27
L.S.D. (.05)	7.5	—	—	—	—
C.V. %	12.5	—	—	—	—

Table 63. Soybeans: Yield and other characteristics of varieties tested at Milan in 1967

Variety	Avg. ¹	Plant height	Date 1st flower	Date of maturity	Shattering ²	Lodging
	Bu./A	In.			Rating (0-5)	%
Hood	54	32	7-30	10-27	2	50
V61-20 (York)	53	40	7-26	10-23	1	20
Dyer	50	35	7-28	10-12	4	60
R64-501	50	38	7-29	10-28	4	90
Hill	50	32	7-28	10-10	1	75
Dare	49	36	7-28	10-24	2	40
Davis	49	39	8-7	11-1	1	60
Lee	47	32	8-8	10-28	0	35
Custer	44	39	7-10	10-2	3	75
Pickett	43	32	8-8	11-1	2	40
Bragg	43	40	8-9	10-28	2	80
Semmes	39	38	8-15	10-28	3	50

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

² Zero no shattering and 5 severe shattering.

Table 64. Soybeans: Yield and other characteristics of varieties tested at Spring Hill in 1967

Variety	Yield	First flower	Last flower	Maturity	Plant height
	Bu./A	Date	Date	Date	In.
V61-20 (York)	52	7-20	8-15	10-13	36
Dare	49	7-25	8-15	10-13	40
Hill	49	7-25	8-15	10-6	36
Hood	48	7-31	8-22	10-13	40
R64-501	46	8-3	8-22	10-23	36
Dyer	47	7-25	8-15	10-13	36
Dortch Lee	44	7-31	8-22	10-23	36
Lee	44	7-31	8-18	10-23	36
Pickett	42	8-3	8-22	10-23	36
Davis	41	8-9	8-29	10-23	48
Custer	41	7-3	8-7	9-28	48
Bragg	38	8-3	8-29	10-25	48

Table 65. Soybeans: Yield and other characteristics of varieties tested at Jackson in 1967

Variety	Yield	Seed quality	Date mature	
			No irrigation	Irrigated
	Bu./A ¹	Rating ²		
T-61-30	44	3.0	10-18	10-21
Dyer	42	2.3	10-2	10-6
Custer	42	3.0	9-15	9-15
Hill	40	3.0	9-26	10-4
Dare	40	1.7	10-6	10-9
Davis	39	2.0	10-23	10-26
Pickett	39	3.8	10-24	11-4
Lee	39	2.8	10-24	10-24
Bragg	35	3.7	Frost ²	Frost
Semmes	34	3.5	Frost	Frost
L.S.D. (.05)	N.S.	—	—	—
C.V. %	14.7	—	—	—

¹ Average of non-irrigated and irrigated beans.

² Freeze on November 4 and beans were not mature at that time.

³ Seed quality is rated from 1 to 5: 1 very good and 5 very poor.

Table 66. Soybeans: Yield and other characteristics of varieties tested at two locations at Springfield in 1967

Variety	Yield	Plant height	Lodging	Yield	Plant height	Lodging
	Bu./A ¹	In.	%	Bu./A ²	In.	%
Kent	46	38	14	44	38	00
Lee	42	37	39	36	41	32
Dyer	41	35	58	—	—	—
V61-20 (York)	40	39	10	—	—	—
Hood	35	36	36	—	—	—
Custer	35	40	18	—	—	—
Dare	33	38	76	38	45	14
Hill	33	34	44	35	42	32
R64-501	32	39	42	—	—	—
Davis	29	43	58	—	—	—
Pickett	27	32	16	—	—	—
Bragg	21	46	56	—	—	—
L.S.D. (.05)	5.8	—	—	3.5	—	—
C.V. %	11.8	—	—	5.8	—	—

¹Bewleyville silt loam (2% to 5% slopes) and Huntington silt loam (2% to 5% slopes).

²Dickson silt loam (2% to 5% slopes).

Table 67. Soybeans: Yield and other characteristics of varieties tested at Martin

Variety	Avg. 1967 ¹	First flower	Date 1st bean formed	Ready for harvest	Martin cyst nematode test ²	
					1967	1966
	Bu./A	Date	Date	Date	Bu./A	
V61-20 (York)	50	8-1	8-21	10-15	28	—
Hood	47	8-3	9-5	10-20	19	22
Hill	46	7-31	8-21	10-10	25	22
Dare	45	8-4	8-25	10-20	24	23
Custer	41	7-25	8-5	10-5	32	—
Dyer	39	8-2	8-21	10-15	32	30
Lee	39	8-11	8-29	10-25	22	22
29-6-4	38	8-3	8-14	10-17	34	31
Davis	38	8-14	9-12	10-30	21	22
Pickett	30	8-21	9-5	10-30	24	33
Semmes	29	8-18	9-12	10-30	20	18
Bragg	26	8-14	9-5	10-30	25	—
L.S.D. (.05)	5.8	—	—	—	6.5	5.1
C.V. %	10.5	—	—	—	17.7	15.1

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

² Test conducted in a cyst nematode-infested area.

Table 68. Soybeans: Yield of varieties tested at Crossville in 1967

Variety	Avg.	Variety	Avg.
	Bu./A		Bu./A
D61-1513	36.4	Dare	24.3
Wayne	32.9	Lee	23.1
Lindarin 63	29.6	Hill	19.8
Custer	27.8	D63-6425	19.4
Dyer	26.9	Hood	16.8
Kent	24.8	Davis	12.4
L.S.D. (.05)	—		5.4
C.V. %	—		27.0

TOBACCO

Data for burley tobacco were furnished by the personnel at the University of Tennessee Tobacco Experiment Station at Greeneville, Tennessee. The burley tobacco work is a cooperative project with the U. S. Department of Agriculture.

Since the 1967 variety results were not available, the data included in this bulletin are for 1966 and previous years. The burley varieties were tested at four locations and the dark fire-cured and dark air-cured tobacco at one location.

Data are presented in Tables 69 through 73.

Table 69. Burley Tobacco: Average yield for years 1964-1966 at several locations

Variety or Hybrid	Greeneville	Rutledge	Spring Hill ¹	Springfield	Average
Pounds per acre					
Burley 1	2644	2747	2685	3004	2770
Burley 21	2509	2595	2713	2873	2673
Burley 37	2278	2444	2415	2687	2456
Burley 49	2455	2355	2276	2794	2470
Kentucky 10	2814	2731	2888	3074	2877
Kentucky 12	2743	2712	2646	3083	2796
MS Bu. 21 X Ky. 10	2835	2871	2878	3223	2952
MS Bu. 21 X Ky. 12	2724	2719	2793	3193	2857
MS L8 X Bu. 21	2178	2532	2556	2784	2513
L.S.D. (.05)	—	—	—	—	122

¹ Two-year average (1964-1965).

Table 70. Burley Tobacco: Acre value¹ 1964-1966 at several locations

Variety or Hybrid	Greeneville	Rutledge	Spring Hill ²	Springfield	Average
Dollars per acre					
Burley 1	1709	1788	1756	1972	1806
Burley 21	1632	1706	1768	1929	1759
Burley 37	1502	1594	1573	1787	1613
Burley 49	1602	1551	1405	1864	1606
Kentucky 10	1838	1790	1828	2017	1868
Kentucky 12	1777	1733	1713	2034	1814
MS Bu. 21 X Ky. 10	1859	1884	1907	2178	1957
MS Bu. 21 X Ky. 12	1779	1764	1851	2138	1883
MS L8 X Bu. 21	1387	1625	1623	1817	1613
L.S.D. (.05)	—	—	—	—	90

¹ Acre values calculated from average market value of federal grades.

² Two-year average (1964-1965).

Table 71. Burley Tobacco: Average percentage graded desirable by five cigarette manufacturers 1964-1966

Variety or Hybrid	Greeneville	Rutledge	Spring Hill ²	Springfield	Average
Burley 1	57.8	52.3	38.6	36.5	46.3
Burley 21	57.0	68.5	45.6	46.9	54.5
Burley 37	54.7	64.8	36.0	45.0	50.1
Burley 49	48.6	51.5	31.1	31.5	40.7
Kentucky 10	52.5	38.9	35.4	15.8	35.6
Kentucky 12	52.5	37.9	38.8	21.8	37.7
MS Bu. 21 X Ky. 10	54.5	52.9	37.1	22.9	41.8
MS Bu. 21 X Ky. 12	48.3	45.6	38.2	23.4	38.8
MS L8 X Bu. 21	43.7	41.7	25.2	17.1	31.9
L.S.D. (.05)	—	—	—	—	8.3

² Two-year average (1964-1965).

Table 72. Dark fire-cured tobacco: Average yield and acre value of varieties grown on the Highland Rim Experiment Station, Springfield, Tennessee from 1964 through 1966

Variety	Acre yield				Acre value ¹			
	1964-1966	1966	1965 ²	1964 ³	1964-1966	1966	1965	1964
	Pounds per acre				Dollars per acre			
Tennex 902	2432	2781	1999	2517	987	1117	802	1043
Broad Leaf Madole	2272	2558	1810	2447	933	1012	749	1039
D.F.-300	2141	2289	1854	2279	903	979	789	941
Tennex 500	—	2783	2097	—	—	1154	834	—
Madole Atkins Strain	—	2775	—	—	—	1119	—	—
Tennex 904	—	2756	1919	—	—	1103	774	—
Dex 9	—	2582	—	—	—	1027	—	—
Ky. 170	—	2455	—	—	—	1032	—	—
Tennex 905	—	2556	2093	—	—	1020	818	—
Tennex 801	—	2473	—	—	—	985	—	—
Black Mammoth	—	—	1899	2558	—	—	765	1055
Ky. 157	—	—	1646	2152	—	—	647	862
Va. 331	—	—	1659	2125	—	—	642	800
Tennex 903	—	—	1856	2202	—	—	768	869
Tennex 901	—	—	—	2242	—	—	—	876
DF-516	—	—	—	2294	—	—	—	843
L.S.D. (.05)	—	151.0	161.5	86.6	—	78.3	80.5	41.6
C.V. %	—	5.0	7.4	3.2	—	6.4	9.1	3.8

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

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

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

Table 73. Dark air-cured tobacco: Average yield and acre value of varieties grown on the Highland Rim Experiment Station, Springfield, Tennessee, from 1964 through 1966

Variety	Acre yield				Acre value ¹			
	1964-1966	1966 ²	1965 ²	1964 ³	1964-1966	1966	1965	1964
	Pounds per acre				Dollars per acre			
O.S. 901	2442	2514	2167	2646	904	985	768	961
Ky. 160	2088	2078	1790	2395	839	868	701	948
O.S. 902	—	2667	2257	—	—	1025	768	—
Ky. 163	—	1985	—	—	—	793	—	—
Johns	—	—	2069	2662	—	—	761	1001
O.S. 900	—	—	1991	2641	—	—	700	905
L.S.D. (.05)	—	173.4	76.7	93.6	—	77.2	45.3	42.4
C.V. %	—	6.1	3.1	3.0	—	6.8	5.1	3.6

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

² Bowleyville silty clay loam (5% to 12% slopes).

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

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

PERFORMANCE OF SUMMER ANNUAL GRASSES FOR
GRAZING AND GREEN-CHOPPING, 1965-1967
Sudangrasses—Sudangrass-Sorghum Hybrids—Pearlmillet

by

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Summer annual grasses are important, particularly in farm enterprises where a reliable source of quality forage during the hot and dry part of the growing season is required. The development of improved varieties of Sudangrass and pearl millet and of hybrids between Sudangrass and male-sterile sorghums has resulted in a large number of varieties for which seed is available commercially. All these plants can be grazed, green-chopped, or even used for stored feed; however, they are difficult to cure properly for hay in Tennessee and are generally considered as emergency silage crops.

Variety evaluation tests and management studies have been conducted by the University of Tennessee. The results obtained have been published in Tennessee Agricultural Experiment Station Bulletins 373 (Revised), 384, 396, and 413.

Differentiation among the varieties and hybrids of Sudangrass is difficult, especially if leaf characteristics alone are used. To some extent, seed shape, glume color, stalk size, maturity, sweetness of juices, presence of rhizomes, and nature of heads and blooms can all be used to differentiate among these varieties and hybrids. Some hybrids of Sudangrass and sorghum resemble true Sudangrasses; others resemble sweet sorghum, having characteristically thicker and juicier stalks, whereas others approach grain sorghum in appearance, with compact heads and very large stalks.

The average yields, using all available data and adjusted for location-to-location and year-to-year variation, are presented in Table 1. In addition, the distribution of production during the growing season, disease and uniformity ratings, and prussic acid potential classes have been tabulated. In Table 2 are presented the yields for 1965, 1966, and 1967, obtained at each of the six lo-

cations; at some locations in 1966 and 1967, relative production and regrowth potential ratings were made.

A production or regrowth potential rating in the table is the average of observations made on a number of occasions (12-15) during the growing season, using a scale from 1 to 9. Average values of 5.0 or larger would be considered an indication of acceptable production and/or regrowth. For more detailed descriptions and information on management, see Bulletin 373 (Revised).

In 1967, the varieties generally were harvested when growth reached a height of between 24 and 30 inches and were cut to a stubble of 6 inches. Occasionally, harvesting was delayed after growth reached 30 inches in height; in such cases, yields were higher and fewer harvests were made during the season. At some locations, all varieties were cut at the same time; at others, each variety was cut individually whenever it reached the desired stage of growth.

Since yield alone is not the only consideration in selecting a variety, a number of other factors were evaluated in deciding on the varieties of summer annual grasses to be recommended by the University of Tennessee for grazing or green-chopping. These considerations generally include the following: 1) the variety has been tested under at least five different environments extending over at least a 2-year period; 2) the total dry matter adjusted average yield was larger than 3 tons per acre per year for Sudangrasses and pearl millets, and larger than 3.5 tons per acre per year for Sudangrass-sorghum hybrids; 3) more than 45% of the yearly production occurs after August 1, and more than 22% after September 1; 4) disease incidence was low (less than 2.5 with scale of 0-5); 5) uniformity was high (more than 5.0 with scale of 1-9); 6) leafiness was high; 7) prussic acid potential was less than 200 parts per million on a green weight basis (sampling top-most leaf blade with a formed collar); and 8) seed was expected to be available to growers. The varieties meeting these criteria have been starred in Table 1.

Table 1. Sudangrasses, Sudangrass-sorghum hybrids and millets: Summary of yield of dry matter, cumulative seasonal distribution of production, disease and uniformity ratings, and prussic acid potential, at six locations in Tennessee, 1955-1967

Variety or strain (Listed alphabetically)	Number of experi- ments	Adjusted average ¹ yield (T/A)	Cumulative distribution of production (percent)					Prussic acid potential ²	Disease rating ³	Uni- formity rating ⁴
			Before June 30	After July 1	After Aug. 1	After Sept. 1	After Oct. 1			
SUDANGRASSES AND HYBRIDS:										
† Arkansas AKS 20	4	2.52	16.5	83.5	44.9	24.3	4.3	H	1.5	5.1
† AKS 22	4	2.43	18.1	81.9	43.4	22.9	4.1	M	1.5	5.3
† Leafmaster 43	4	2.61	16.1	83.9	43.6	21.6	4.4	M	1.1	5.6
† Asgrow Astro	3	3.06	14.8	85.2	51.9	27.4	7.3	—	1.4	6.9
** Grazer A	14	4.22	18.7	81.3	53.2	28.7	7.8	H	1.5	6.0
H6553	7	3.12	14.4	86.8	54.5	29.2	8.6	VH	1.5	6.2
Sorgusbord	7	2.99	18.0	82.0	49.4	20.2	3.7	H	1.9	5.2
** Caladino Greenlan	10	3.94	20.1	79.9	49.5	25.4	4.8	H	1.8	6.4
** Cumberland (Tenn. Syn. 1)	44	3.52	19.0	81.0	51.7	25.4	7.0	L	2.0	6.3
† DeKalb FS 15	3	2.48	15.9	84.1	49.2	22.8	4.7	—	1.1	6.4
† FS 26	3	2.82	15.3	79.3	43.5	23.2	6.4	—	2.2	5.8
† Sudax SX 5	3	3.06	14.5	85.5	51.6	28.8	7.0	—	1.8	7.2
** Sudax SX-6	8	3.74	14.1	85.9	56.5	27.2	6.5	M	1.8	6.1
** Sudax SX-11	34	3.84	19.4	80.7	49.0	24.5	5.3	M	2.0	5.9
** Sudax SX-12	12	3.92	17.2	83.2	53.6	27.3	10.0	H	1.6	6.1
† X1777	3	3.48	13.8	85.2	49.2	28.9	6.8	—	2.1	6.6
** Dorman Sure-Graze	10	3.52	14.9	85.1	56.8	25.7	3.4	H	1.7	6.4
** Excel Chow-Maker	10	3.74	20.3	79.7	54.4	27.9	5.8	H	1.4	5.6
** Frontier Hi-Dan 39	10	3.53	17.6	82.4	54.4	26.1	5.7	H	1.9	5.8
† Hi-Dan 39A	2	2.93	24.9	75.1	48.9	24.2	3.5	—	1.9	7.2
Greenleaf	50	3.10	16.2	83.8	53.0	24.4	6.5	L	2.0	6.4
** Hunt & Tipps Green-M	14	3.46	19.3	81.1	50.5	23.8	8.0	M	2.0	5.7
** Lindsey 77F	17	3.73	18.8	81.2	50.2	24.6	8.6	M	1.6	6.1
† 261S	2	2.71	12.9	87.1	41.2	21.2	5.4	—	1.0	6.7
† 8029F	3	3.05	21.0	79.0	41.6	20.3	4.4	—	1.7	7.1

Table 1. (Continued)

Variety or strain (Listed alphabetically)	Number of experi- ments	Adjusted average ¹ yield (T/A)	Cumulative distribution of production (percent)					Prussic acid potential ²	Disease rating ³	Uni- formity rating ⁴
			Before June 30	After July 1	After Aug. 1	After Sept. 1	After Oct. 1			
† Martin-Lane Big Red	2	3.34	10.9	89.1	53.0	29.4	3.5	—	1.3	7.4
† Tiger-SU	2	3.15	5.2	94.7	56.6	32.8	9.1	—	1.5	7.0
† Midwest Res. Assoc. FS 500	2	2.21	23.8	76.2	38.2	14.7	4.5	—	0.9	4.9
† FS 550	2	3.24	17.7	82.3	49.7	27.5	7.3	—	1.8	7.6
† FS 551	2	3.36	10.9	89.1	53.1	26.7	4.6	—	1.7	5.9
** Northrup-King Sordan	15	3.65	22.7	77.3	48.8	24.7	6.0	M	1.3	5.6
** Trudan II	11	3.16	17.1	82.9	57.2	26.4	6.6	L	2.4	5.2
** Trudan IV	11	3.37	17.5	82.5	57.5	29.4	10.4	L	3.0	6.2
** Paymaster Sweet Sioux	22	4.10	23.7	76.3	48.3	25.2	5.6	M	2.0	5.8
Sweet Sioux A	8	3.48	12.9	87.1	56.0	28.4	6.1	M	1.8	6.0
Thunderbird	10	3.43	20.0	80.0	54.9	27.2	7.2	M	1.9	4.7
** Pfister Su-Chow 34	16	4.36	22.2	77.8	50.4	27.5	7.3	M	1.5	6.8
Su-Chow 35	19	3.93	19.7	80.3	49.7	27.3	6.1	M	2.2	6.3
Pioneer 931	10	2.99	20.9	79.1	48.4	23.5	5.8	VH	1.9	4.8
** 985	10	3.58	17.5	82.5	54.1	28.2	6.4	M	1.8	6.1
** Piper	51	3.10	20.2	79.8	47.4	20.4	5.5	L	3.2	5.9
Riley Ga-Su	9	3.35	22.7	77.3	50.9	23.5	3.7	—	2.3	6.7
Hy-Su	9	3.47	20.8	79.2	48.4	23.5	2.8	—	1.8	6.9
Su-Graze	9	3.39	25.7	74.3	49.0	21.7	3.6	—	2.0	6.9
** Rudy-Patrick Mor-Su	16	3.94	23.3	76.7	48.9	26.5	6.4	M	1.9	5.6
** Su-1	12	3.41	17.8	82.2	53.5	28.3	9.1	M	1.5	5.7
Suhi-1	22	3.92	15.0	85.0	53.2	31.0	8.4	M	1.7	7.4
** Taylor-Evans Grazemaster	11	3.72	18.3	81.7	52.3	25.6	3.0	H	1.9	6.4
** Haygrazer	14	3.95	20.5	79.5	49.5	27.3	6.4	H	2.1	5.8
** 3083-X	10	3.56	18.1	81.9	54.9	27.8	5.1	M	1.6	5.7
† Tenn. Farmers Co-op Exp. 11	2	2.62	33.0	67.0	29.9	15.9	3.8	—	1.2	6.0
** For. Res. FFR 66	5	3.51	11.0	89.0	56.1	34.3	8.4	M	1.5	5.8
† For. Res. FFR 74	2	3.68	5.2	94.8	60.4	39.0	12.0	H	1.6	5.5

Table 1. (Continued)

Variety or strain (Listed alphabetically)	Number of experi- ments	Adjusted average ¹ yield (T/A)	Cumulative distribution of production (percent)				After Oct. 1	Prussic acid potential ²	Disease rating ³	Uni- formity rating ⁴
			Before June 30	After July 1	After Aug. 1	After Sept. 1				
** Tenn. Farmers Co-op GHS-1	11	3.92	23.0	77.0	53.4	27.3	8.0	H	2.1	6.2
GHS-2	13	3.30	17.2	84.0	56.8	29.1	7.5	M	1.7	5.8
** GHS-2A	8	3.51	13.9	86.1	54.9	27.4	6.9	H	1.8	5.7
† GHS-3	3	3.31	18.0	82.0	53.1	27.1	4.3	—	1.4	6.8
† GHS-4	3	3.27	16.1	83.9	52.1	28.1	5.3	—	1.5	7.4
† U.S. Seeds H.G. 12	2	3.22	15.7	84.3	49.7	25.0	7.4	—	1.5	6.6
† Warner Gro-N-Graze	2	3.52	8.5	91.5	57.4	26.9	5.0	—	1.7	6.5
† Sucrose	2	3.22	9.1	90.9	52.1	28.6	5.1	—	1.7	6.4
MILLETS:										
** Gahi-1	51	4.38	15.1	84.9	51.6	25.9	7.7	—	1.4	5.9
† Northrup-King Hybrid Millet X1001	1	2.87	16.2	83.8	49.2	25.2	1.9	—	1.0	6.7
† Hybrid Millet X1002	1	2.41	7.8	92.2	48.1	27.8	0.9	—	1.6	6.3
** Starr	50	3.33	13.8	86.2	49.3	22.3	4.7	—	0.7	7.1

Variety total for years and locations grown X All Years and locations base average

¹ Adjusted variety average = Base total for years and locations variety grown

Base average based on performance of Piper and Greenleaf Sudangrasses and Starr and Gahi-1 pearl millets.

² Parts per million on green weight basis (avg. of 10 determinations)
(by courtesy of Elmer Gray)

L = Low = 0 to 50 p.p.m.

M = Moderate = 51 to 125 p.p.m.

H = High = 126 to 200 p.p.m.

VH = Very high = 201 p.p.m. and over

#0 = no disease 5 = most disease

#9 = most uniform 1 = least uniform

** Recommended varieties.

† Insufficient information for recommendation.

Table 2. Sudangrasses, Sudangrass-sorghum hybrids, and millets: Dry matter production (Tons per acre), or relative production and regrowth indices, and number of harvests at five locations in Tennessee, 1965-1967

Variety or Strain (listed alphabetically)	Springfield ¹			Knoxville ²				Martin ³		Spring Hill ⁴				Crossville ⁵			Jackson ⁶			
	1965	1966	1967	1966		1967		1967		1967		Yield	Relative re- growth po- ten- tial index	1965	1966	1967	1965	1966	1967	
				Relative pro- duc- tion index ⁷	Relative re- growth po- ten- tial index ⁸	Relative pro- duc- tion index	Relative re- growth po- ten- tial index	Relative pro- duc- tion index	Relative re- growth po- ten- tial index											
Number of harvests -->	4 to 5	5	6	5 to 6	5 to 6	5 to 8	4	5	5	5	4 to 5	4	4	8	8	10				
SUDANGRASSES AND HYBRIDS:																				
AKS 20	—	—	2.81	—	4.1	1.0	5.9	5.8	2.3	3.0	—	—	2.16	1.0	—	—	2.28	—	—	1.94
AKS 22	—	—	2.68	—	3.6	3.0	5.9	6.0	2.0	2.3	—	—	2.23	1.7	—	—	1.97	—	—	1.92
Leafmaster	—	—	2.71	—	3.4	2.5	5.4	5.2	2.8	3.7	—	—	2.65	3.0	—	—	2.52	—	—	1.72
Asgrow Astro	—	—	3.44	—	—	—	7.3	7.4	5.8	6.7	—	—	2.65	6.3	—	—	2.64	—	—	—
Grazer A	—	—	3.78	5.63	4.8	6.5	7.4	7.4	7.8	8.3	3.81	4.12	—	—	—	—	3.31	—	—	3.36
H6553	—	2.00	3.32	—	3.3	3.7	7.5	8.0	5.8	6.0	—	3.56	3.08	7.3	—	3.57	3.06	—	—	3.01
Sorgusbord	—	2.32	3.26	—	3.0	4.0	6.0	5.8	4.5	4.0	—	2.94	2.62	4.0	—	—	2.42	—	2.73	2.47
Caladino Greenlan	3.68	—	—	5.43	4.5	6.0	7.5	7.0	7.0	8.0	3.49	—	3.56	6.0	—	4.28	—	—	3.06	—
Cumberland (Tenn. Syn. 1)	—	—	3.05	4.92	—	—	6.8	7.2	3.5	4.7	3.80	—	2.69	7.3	—	—	2.69	—	—	2.97
DeKalb FS 15	—	—	2.68	—	—	—	6.0	6.0	3.5	4.3	—	—	—	—	—	—	2.09	—	—	1.99
FS 26	—	—	3.27	—	—	—	5.2	4.0	4.3	2.7	—	—	—	—	—	—	2.68	—	—	1.97
Sudax SX-5	—	—	2.95	—	—	—	6.6	6.4	7.8	7.3	—	—	—	—	—	—	2.62	—	—	3.22
SX-6	—	3.20	3.18	—	5.2	6.2	7.0	7.3	8.3	8.7	—	4.12	3.78	7.3	—	4.05	2.95	—	3.35	3.34
SX-11	2.90	2.99	2.76	4.62	5.6	6.3	7.3	7.0	6.5	7.0	3.42	3.77	2.58	7.3	2.80	3.09	2.62	3.38	2.67	2.97
SX-12	3.26	—	3.71	4.83	4.9	5.3	7.4	7.0	7.8	8.0	3.52	—	3.47	6.7	—	3.50	—	—	3.01	—
X1777	—	—	3.00	—	—	—	7.0	7.6	7.0	7.7	—	—	—	—	—	—	3.66	—	—	3.74
Dorman Sure-Graze	3.62	3.23	—	5.20	5.0	6.0	8.0	7.8	7.0	7.0	3.23	3.44	—	—	—	—	2.84	—	—	3.01
Excel Chow-Maker	3.98	3.25	—	4.94	5.4	5.6	7.7	7.8	3.5	4.3	3.71	3.67	—	—	—	3.92	3.27	3.55	2.97	3.18
Frontier Hi-Dan 39	3.64	3.13	3.48	4.77	4.6	6.2	7.8	8.0	8.3	8.0	3.25	3.67	3.75	7.3	—	4.01	—	3.57	2.91	—
Hi-Dan 39A	—	—	—	—	—	—	7.0	6.2	7.3	7.3	—	—	2.63	7.3	—	—	—	—	—	3.00
Greenleaf	2.33	2.24	2.71	4.18	4.0	5.4	6.0	7.4	5.5	6.3	3.32	3.47	2.55	7.3	3.96	2.65	1.87	3.02	2.88	2.76

Table 2. (Continued)

Variety or Strain (listed alphabetically)	Springfield ¹			Knoxville ²				Martin ³				Spring Hill ⁴				Crossville ⁵			Jackson ⁶		
				1966		1967		1967				1967									
				Relative pro- duc- tion index ⁷	Rela- tive re- growth po- ten- tial index ⁷	Relative pro- duc- tion index	Rela- tive re- growth po- ten- tial index	Relative pro- duc- tion index	Rela- tive re- growth po- ten- tial index			Relative pro- duc- tion index	Rela- tive re- growth po- ten- tial index								
	1965	1966	1967																		
Number of harvests →	4 to 5	5	6	5 to 6	5 to 6	5 to 8	4	5	5	5	5	4 to 5	4	4	8	8	10				
Hunt & Tipps Green-M	3.03	2.97	—	5.13	5.4	5.5	7.0	7.0	6.8	7.3	3.62	—	2.90	7.3	3.88	3.56	—	3.53	—	3.28	
Lindsey 77F	3.48	—	3.10	4.89	4.7	5.5	7.6	7.4	8.3	8.7	3.45	3.45	—	—	3.82	—	2.99	3.49	2.70	—	
261S	—	—	2.79	—	—	—	6.8	6.3	4.0	4.0	—	—	2.50	3.0	—	—	—	—	—	—	
8029F	—	—	2.96	—	—	—	7.5	7.0	6.3	6.0	—	—	3.07	5.0	—	—	—	—	—	3.10	
Martin-Lane Big Red	—	—	—	—	—	—	7.3	8.0	9.0	9.0	—	—	3.30	7.3	—	—	2.87	—	—	—	
Tiger-Su	—	—	3.11	—	—	—	6.5	7.0	7.0	7.0	—	—	—	—	—	—	2.88	—	—	—	
Midwest Res. Assoc. FS 500	—	—	2.59	—	—	—	6.2	5.3	4.0	3.7	—	—	—	—	—	—	—	—	—	1.57	
FS 550	—	—	3.54	—	—	—	8.0	7.8	8.3	8.0	—	—	—	—	—	—	—	—	—	3.17	
FS 551	—	—	—	—	—	—	6.9	7.0	6.0	7.0	—	—	3.30	7.3	—	—	2.93	—	—	—	
Northrup-King Sordan	—	3.13	2.88	5.03	4.9	6.8	7.4	6.6	7.0	7.3	3.27	—	3.36	7.3	—	—	—	—	2.87	—	
Trudan II	2.64	2.09	2.71	4.79	3.7	4.0	7.2	7.4	9.0	8.0	3.80	3.25	2.86	7.3	4.07	3.17	—	3.32	2.90	—	
Trudan IV	2.60	2.59	2.66	6.53	4.3	4.3	6.5	7.2	8.0	9.0	3.56	3.42	—	—	3.13	3.76	—	3.14	2.98	3.29	
Paymaster Sweet Sioux	—	3.33	—	5.19	5.3	6.2	7.9	7.0	6.3	8.0	3.55	4.13	—	—	—	—	2.98	—	—	3.36	
Sweet Sioux A	—	3.19	3.06	—	5.8	6.0	7.1	7.3	7.0	7.3	—	3.61	3.40	7.3	—	3.64	2.82	—	3.05	3.05	
Thunderbird	3.10	2.92	3.16	5.55	4.8	4.8	7.0	6.8	6.5	7.7	3.56	3.58	—	—	3.97	3.45	—	3.32	2.81	—	
Pfister Su-Chow 34	—	—	3.36	—	—	—	6.9	6.2	7.0	6.0	—	—	—	—	—	—	2.67	—	—	—	
Su-Chow 35	—	—	3.11	5.24	5.4	6.0	7.6	7.7	7.3	8.0	3.26	3.47	—	—	—	—	2.74	—	—	2.69	
Pioneer 931	—	3.04	3.22	3.90	4.7	5.3	6.2	3.0	3.5	5.3	2.72	3.46	—	—	3.42	3.73	—	3.06	2.76	2.02	
985	—	3.24	—	5.08	5.0	5.8	7.2	7.3	6.0	4.7	4.43	3.83	—	—	3.95	4.08	2.76	3.54	2.92	3.27	
Piper	2.14	2.13	2.58	4.02	4.6	5.0	6.5	7.4	7.8	9.0	3.44	3.32	2.75	7.3	2.70	2.84	2.08	3.16	2.77	3.12	
Riley Ga-Su	—	—	—	—	—	—	7.6	7.4	7.0	7.7	—	—	3.40	7.3	—	—	—	—	—	3.10	
Hy-Su	—	—	—	—	—	—	7.7	7.4	8.5	8.7	—	—	3.10	7.3	—	—	—	—	—	2.83	
Su-Graze	—	—	—	—	—	—	6.8	6.6	7.3	7.7	—	—	3.10	6.0	—	—	—	—	—	3.19	
Rudy-Patrick Mor-Su	—	3.01	—	5.06	4.5	5.6	7.5	7.8	6.8	6.7	4.28	—	3.36	7.3	4.51	—	3.22	—	3.03	—	
Su-1	3.28	—	2.76	4.47	4.4	4.8	7.3	6.6	7.8	8.3	3.51	—	2.68	5.7	—	3.27	—	—	2.69	—	

Table 2. (Continued)

Variety or Strain (listed alphabetically)		Springfield ¹			Knoxville ²				Martin ³		Spring Hill ⁴				Crossville ⁵			Jackson ⁶			
					1966		1967		1967		1967										
					Relative pro- duc- tion index ⁷	Rela- tive re- growth po- ten- tial index ⁷	Relative pro- duc- tion index	Rela- tive re- growth po- ten- tial index	Relative pro- duc- tion index	Rela- tive re- growth po- ten- tial index	Relative pro- duc- tion index	Rela- tive re- growth po- ten- tial index									
		1965	1966	1967	1965	1966	1967	1965	1966	1967	1965	1966	Yield	1965	1966	1967	1965	1966	1967		
Number of harvests →		4 to 5	5	6	5 to 6	5 to 6		5 to 8		4		5	5	5		4 to 5	4	4	8	8	10
Suhi-1		—	—	—	—	—	—	7.7	7.2	7.8	7.7	—	—	—	—	—	—	2.27	—	—	—
Taylor-Evans Grazemaster		3.48	—	4.37	5.51	5.2	6.0	7.0	7.0	8.3	8.7	3.78	3.66	—	—	4.62	—	2.95	—	—	3.12
Haygrazer		—	—	3.32	5.39	5.1	6.0	6.6	6.6	6.0	7.3	3.43	3.85	—	—	—	—	3.27	—	—	—
3083-X		3.67	3.12	—	4.89	5.3	5.3	6.8	7.0	7.5	8.0	3.24	3.70	3.29	7.3	—	4.12	3.00	3.53	2.91	—
Tenn. Farmers Co-op. Exp. 11		—	—	—	—	—	—	6.2	5.7	4.3	5.0	—	—	2.79	2.3	—	—	—	—	—	2.10
FFR 66		—	—	4.18	—	5.3	6.0	7.6	6.8	8.0	9.0	—	—	3.28	7.3	—	3.48	3.47	—	—	3.27
FFR 74		—	—	4.35	—	5.5	6.0	6.7	7.4	7.3	7.3	—	—	—	—	—	—	3.04	—	—	—
GHS-1		—	3.14	—	4.82	5.5	6.3	7.4	7.2	8.0	8.3	4.09	—	3.33	7.3	2.92	4.72	—	—	—	2.94
GHS-2		3.16	3.23	3.07	4.69	5.4	6.0	7.5	7.3	7.0	7.3	3.18	3.53	3.34	7.3	3.57	2.71	2.78	3.49	3.98	3.16
GHS-2A		—	2.97	3.16	—	5.2	5.6	7.3	7.3	7.3	8.0	—	4.07	2.94	7.3	—	3.77	2.78	—	3.05	3.18
GHS-3		—	—	—	—	—	—	7.6	7.2	7.5	8.7	—	—	3.30	7.3	—	—	2.93	—	—	3.23
GHS-4		—	—	—	—	—	—	7.9	7.4	6.8	7.3	—	—	3.06	7.3	—	—	3.13	—	—	3.09
U. S. Seeds H.G. 12		—	—	3.56	—	—	—	7.0	7.3	7.8	7.0	—	—	3.02	7.0	—	—	—	—	—	—
Warner Gro-N-Graze		—	—	—	—	—	—	7.3	6.6	5.5	7.0	—	—	3.28	7.0	—	—	3.34	—	—	—
Sucrose		—	—	—	—	—	—	6.4	6.2	5.5	6.7	—	—	3.02	7.3	—	—	2.89	—	—	—
MILLETS:																					
Gahi-1		4.22	3.83	4.01	4.96	4.2†	2.0†	6.0	5.4	4.0	4.7	3.46	3.58	2.76	4.3	4.90	5.34	3.12	3.66	3.13	2.41
Northrup-King Hybrid Millet X1001		—	—	—	—	—	—	7.0	7.0	3.8	4.0	—	—	—	—	—	—	—	—	—	3.14
Hybrid Millet X1002		—	—	—	—	—	—	5.3	5.8	4.0	4.7	—	—	2.19	5.0	—	—	—	—	—	—
Starr		2.74	2.25	2.11	3.16	3.9†	2.7†	5.8	6.0	3.0	3.3	2.55	2.76	2.41	3.0	3.72	3.42	2.05	2.90	2.55	—
L.S.D. (.05)		.48	.25	.48	1.11	—	—	—	—	—	—	.51	1.62	.42	—	1.18	.69	.46	.76	.21	.42

¹ Dickson silt loam (2% to 5% slopes).² Huntington and Sequatchie silt loams (0% to 2% slopes).³ Grenada silt loam (2% to 5% slopes).

† Low values due to nematode damage.

⁴ Maury silt loam (0% to 2% slopes).⁵ Hartsells loam (2% to 5% slopes).⁶ Memphis silt loam (0% to 2% slopes).⁷ 1 = least; 9 = most.

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