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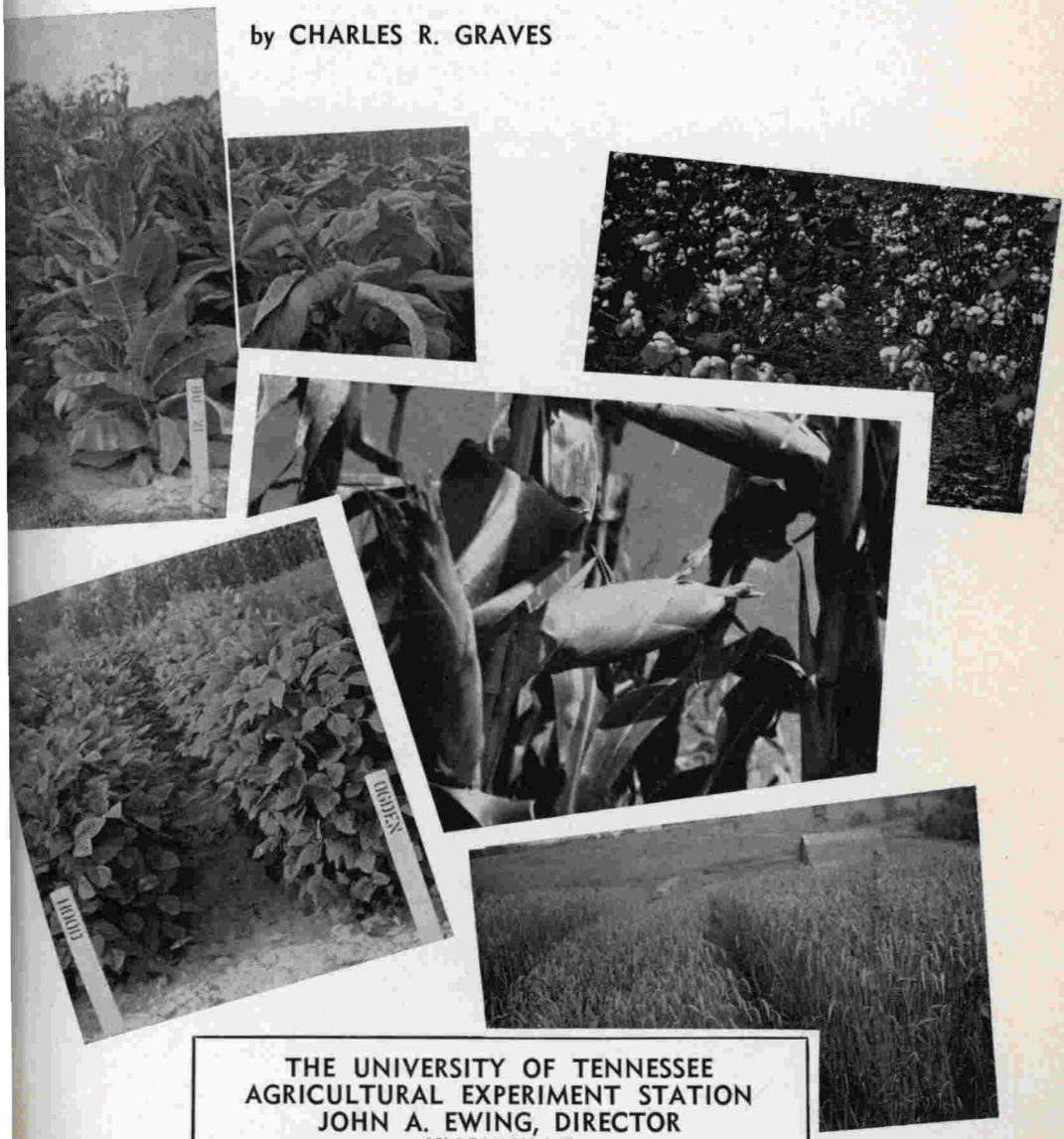
Performance Trials of FIELD CROP VARIETIES

by CHARLES R. GRAVES



THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXPERIMENT STATION
JOHN A. EWING, DIRECTOR
KNOXVILLE

1963

Performance Trials of

FIELD CROP VARIETIES

CORN — COTTON — OATS — WHEAT — BARLEY
SOYBEANS — ALFALFA — GRAIN
SORGHUM — TOBACCO

Data for 1963 with Summaries of Results from Previous Years

by
Charles R. Graves
Assistant Professor of Agronomy

STATION HATCH PROJECT NO. 33

Evaluation of the Performance of Varieties of Field Crops.

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Ames Plantation, Grand Junction.
Board of Cotton Examiners, USDA.

RECOMMENDED CROP VARIETIES

(Listed Alphabetically)

Corn Hybrids

White—DeKalb 925, Dixie 29, Dixie 33, Dixie 77, P.A.G. 631W[1], P.A.G. 633W, Tenn. 501, Tenn. 503, U.S. 523W.

Yellow—DeKalb 805, Dixie 22, Funk G-710AA, Funk G-144, McCurdy 999, Pioneer 309A, Pioneer 309B, Tenn. 604.

Cotton

Early—Cobal, Dixie King[2], Empire W.R. 61[2], Fox 4[1], Rex[2], Stardel.

Late—Auburn 56[2], Coker 100A (WR)[1, 2], DeKalb 108[2], Deltapine Smooth Leaf, Stoneville 7A.

Oats

Fall-Seeded—Blount, Forkedeer.

Wheat—Knox, Monon, Seneca.

Barley—Dayton, Hudson, Kenbar.

Alfalfa—Atlantic, Buffalo, DuPuits, Narragansett, Williamsburg.

Soybeans—Dorman, Hill, Hood, Lee, Ogden.

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[1]Present plans indicate that these varieties will not be recommended after this year.
[2]Recommended where fusarium wilt is prevalent.

Grain Sorghum—DeKalb E-56A, DeKalb F-63, Frontier 400C, McCurdy 70, R.S. 610.

Burley Tobacco—Burley 1, Burley 11A, Burley 21, Burley 37, Kentucky 16.

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

Characteristics of Recommended Varieties
(Listed Alphabetically)

Corn Hybrids

White—Full Season

Dixie 29—Good grain quality.

Dixie 33—Medium to good quality with a trace of copper-coloring in the grain.

Dixie 77—Good grain quality.

White—Medium Season

DeKalb 925—Single-eared—medium to good grain quality.

P.A.G. 631W[3]—Medium grain quality.

P.A.G. 633W—Good grain quality.

Tenn. 501—Good grain quality.

Tenn. 503—Medium to good grain quality—resistant to leaf blight.

U.S. 523W—Medium to good grain quality.

Yellow—Full Season

Dixie 22—Good grain quality.

Funk G-710AA—Good grain quality.

Pioneer 309B—Good grain quality.

Yellow—Medium Season

DeKalb 805—Single-eared—medium to good grain quality.

Funk G-144—Single-eared—medium grain quality.

McCurdy 999—Good grain quality.

Pioneer 309A—Single-eared—medium to good grain quality.

Tenn. 604—Medium to good grain quality.

Cotton

Early — Large bolls — Staple length 1-1/32 to 1-1/16 — Lint percent 35 to 37:

Cobal

DeKalb 108—Resistant to fusarium wilt. Strain-Cross variety.

[3]Present plans indicate that these varieties will not be recommended after this year.

Dixie King—Resistant to fusarium wilt.
Empire W.R. 61—Resistant to fusarium wilt.
Rex—Resistant to fusarium wilt and bacterial blight.

Early — Small bolls — Staple length 1-1/32 to 1-1/16 — Lint percent 36 to 38:
Fox 4[4]
Stardel

Late — Medium bolls — Staple length 1-1/32 to 1-1/16 — Lint percent 36 to 39:
Auburn 56—Resistant to fusarium wilt.
Coker 100A (WR)[4]—Resistant to fusarium wilt.

Late — Small bolls — Staple length 1-1/32 to 1-1/16 — Lint percent 37 to 39:
Deltapine Smooth Leaf
Stoneville 7A

Oats

Fall-Seeded:

Blount—A short, stiff-strawed oat slightly less winter-hardy than Forkedeer. Less lodging than LeConte and about equal in winter hardiness. Similar to LeConte in vegetative growth and appearance except that the panicle is slightly longer and more spreading. Has out-yielded most other varieties over a 5-year period. Maturity date falls between LeConte and Forkedeer. Due to its lodging resistance, Blount is suited to relatively-high levels of fertility.

Forkedeer—A very winter-hardy variety with yellow grain. Has a tendency to lodge under conditions of high fertility. Medium tall; matures a few days later than Victorgrain 48-93. Susceptible to crown rust.

Wheat

Knox—A very early winter-hardy variety with short straw. Due to its tendency to stool during warm spells in the early spring, it may be injured by late spring freezes. Should be grazed to delay maturity. Semi-upright type growth with fair standing ability. Yields slightly higher than Seneca. Resistant to leaf rust.

Monon—A very early winter-hardy variety with moderate stiff straw which is a few inches shorter than Knox. Monon has a head type simliar to Knox but has shorter tip awns. The variety is resistant to Hessian fly and highly resistant

[4]Present plans indicate that these varieties will not be recommended after this year.

to leaf rust in the mature plant stage, yields as well as Knox and better than Seneca except on the Cumberland Plateau.

Seneca—A red-chaffed variety of medium height and fair standing ability. Yields slightly less than Knox. Susceptible to leaf rust.

Barley

Dayton—A winter-hardy, semi-rough-awned, early variety with good standing ability. Medium tall; one of the highest yielders in the state variety test. Susceptible to mildew and scald.

Hudson—A winter-hardy, rough-awned variety with fair standing ability. It is 2 to 3 days earlier than Holston. Yields as well as Holston. Good resistance to mildew and scald.

Kenbar—A winter-hardy variety of medium height. About the same maturity as Dayton. Yields slightly less than Dayton and Holston. Good resistance to mildew and fair resistance to scald.

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.

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

DuPuits—A variety that has great eye appeal because of the tall growth and fast recovery after clipping. It matures faster and should be cut earlier than other recommended varieties. DuPuits is stemmier and not as long-lived as other recommended varieties.

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. This variety has been the top yielder at the Plateau Experiment Station, Crossville. Seed is in short supply in Tennessee.

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.

Soybeans

Dorman—A variety having large yellow beans with a buff colored hilum. Matures approximately 16 days earlier than Ogden. Dorman holds its seed very well, but not as well as Lee. It has good seed quality, and oil content similar to Ogden. The plants have heavy foilage, with leaves being very large when compared with other varieties.

Lee—Matures approximately 1 week later than Ogden and resembles Ogden in general growth characteristics. 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 stain. Also it is supposed to be moderately resistant to target spot. The seed are yellow with a black hilum. Lee has a tendency to lodge under some conditions.

Hill—Hill is about 2 days earlier in maturity than Dorman. This variety has more resistance to the major foliage diseases, lodging, and shattering than Dorman, but is not quite as resistant to shattering as Lee.

Hood—Hood matures about 10 days earlier than Lee and 2 days earlier than Ogden The growth of Hood is similar to Ogden in plant-type, height, pubescence, and flower color. Hood holds its seed better than Ogden, but not as well as Lee. It is supposed to have resistance to bacterial pustule, wildfire, frogeye, and target leaf spot diseases. The seed are yellow with a buff hilum.

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.

Grain Sorghum Hybrids

DeKalb E-56A—A few days later than Martin Milo. The hybrid has deep red seed on large open heads. Good standing ability.

DeKalb F-63—A variety of medium plant height, maturity, and head compactness.

Frontier 400C—A variety of medium maturity with heads tight in compactness.

McCurdy 70—A variety of medium maturity. Red seed on heads of tight compactness.

R. S. 610—An early-maturing hybrid with heads tight in compactness.

Burley Tobacco

Burley 1—A "stand-up" variety which produces good yields of excellent quality tobacco. It has good resistance to black root rot, but does not have any resistance to other major tobacco diseases. This variety performs best when topped early and kept suckered.

Burley 11-A—A brittle, drooping leaf variety which has good resistance to black shank, black root rot, and fusarium wilt. This variety will not yield as well as Burley 37, but has a little more resistance to black root rot and fusarium wilt. Burley 11-A is early maturing and is often ready to harvest 1 week earlier than other varieties.

Burley 21—A very upright-leafed 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—A "stand-up" 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 present. In the absence of black shank, Burley 37 will not yield as well as Burley 21, but is comparable in quality.

Kentucky 16—A "semi-stand-up" variety which has fair resistance to black root rot, but does not have any resistance to other major tobacco diseases. In the absence of diseases it produces good yields of quality tobacco.

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.

PERFORMANCE TRIALS

OF

CORN — COTTON — OATS — WHEAT — BARLEY
SOYBEANS — ALFALFA — GRAIN
SORGHUM — TOBACCO

Data for 1963 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 stations and other agencies.

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

Committees composed of specialists from the research, resident instruction, and extension staffs of the University of Tennessee 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 test 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 1963 tests are shown at the bottom of each table. The yields of any two varieties being compared must differ by at least this amount in order for the varieties to be considered different in yielding ability. Also, coefficient of variation values (C.V.%) are shown at bottom of each table. At each location where tests were conducted in 1963, the soil types are reported at the end of the table.

CORN

The 1963 full-season corn variety tests were conducted at 4 locations and the early-maturing tests were conducted at 7 locations. There were 30 entries in the full-season test and 36 in the early-maturing test. The experimental design used was a randomized complete block with 6 replications.

The growing season was generally good in the locations of the tests except for Fort Pillow and Jackson. A full-season test was conducted at each of the above locations, thus reducing the state average of the full-season corn.

Dixie 29 and Pioneer 309A were 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, except the Knoxville tests, were considered sufficient for corn to yield over 100 bushels per acre. The Knoxville data, both full-season and early maturing were excluded from the state average due to insufficient nitrogen being applied to these tests. All tests were planted at the rate of 28,000 plants per acre and thinned to give a stand of 14,000 plants.

The average state yields and characteristics of the hybrids tested in the early maturing group are presented in table 2. Erectness of plants is a measure of a variety's resistance or susceptibility to lodging. The higher the number the better the standing ability of the hybrid. In 1963 very little lodging was noted at most locations due to early harvest dates and dry fall. Ears/100 plants is a

Figure 1. An example of a prolific hybrid. Most prolific hybrids under adequate fertilization, moisture and plant population will have only two ears per stalk instead of three as shown here.

measure of the prolificacy or lack of 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 will have a rating of 120 to 150.

Grain quality and husk cover are ratings taken at the time of harvest. Usually corn that has a good husk cover will have good grain quality. In 1963 the quality of the corn hybrids was better than usual due to the dry weather prior to 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 variety and a low moisture indicates an earlier maturing hybrid.

Data are presented in tables 1 through 8.

Table 1. Corn: Yields of 36 early-maturing hybrids at each of seven locations in 1963
Six Replications at Each Location

Color	Hybrid	State av.[8]	Greeneville[1]	Knoxville[2,8]	Crossville[3]	Jackson[4]	Spring Hill[5]	Springfield[6]	Martin[7]
Commercially available:					Bushels per acre				
W	P.A.G. 633	119	125	66	113	105	117	136	118
W	Dixie 29[9]	118	130	69	139	81	117	128	113

Table 1.—(Continued)

Color	Hybrid	State avg.[8]	Greene-ville[1]	Knox-ville[2,8]	Cross-ville[3]	Jack-son[4]	Spring Hill[5]	Spring-field[6]	Martin[7]
Commercially available:					Bushels per acre				
W 3X	Meacham's MX50W	117	125	70	121	95	120	128	116
Y SX	P.A.G. SX-59	117	131	105	135	98	94	124	117
Y	Pioneer 310	116	133	82	127	86	113	136	102
Y	Embro Jarvis E	116	122	54	122	86	122	132	110
Y SX	McCurdy 972X7	114	124	91	130	96	110	121	107
W	Princeton 990	114	117	91	121	102	115	125	104
W	Tenn. 501	114	112	80	130	86	115	130	109
Y SX	McCurdy 7X11	114	127	84	128	95	103	119	110
W	Pioneer 509W	113	118	76	125	87	116	125	108
W	Princeton 990A	113	110	75	121	90	120	127	111
W	Stull 400WA	112	121	64	127	94	110	125	99
W	Meacham's M-7	112	121	68	122	90	117	119	104
Y	Tenn. 604	112	119	85	124	91	106	128	106
Y SX	Stull 807Y	112	118	88	124	95	107	124	103
Y	Stull 101YA	111	122	92	129	93	99	123	97
Y SX	P.A.G. SX-29	111	122	94	111	92	114	125	100
Y SX	DeKalb 805	110	110	84	124	91	104	124	103
Y	Embro 49 BR	107	118	64	119	91	101	118	98
Y	Pioneer 309A[9]	107	114	72	127	83	104	121	94
Y	Watson 401	107	116	79	125	87	100	119	94
W	DeKalb 925	106	112	69	108	90	105	122	100
Y	Funk G-144	106	111	83	112	86	106	113	103
W	Tenn. 503	104	115	78	124	81	98	119	90
Y	McCurdy 999	104	101	76	119	75	106	120	99
Y	P.A.G. 436	103	115	82	120	77	98	109	98
Y	DeKalb 824	101	114	84	119	86	87	106	92
Y SX	Hilligoss 9X9	91	101	69	90	78	89	98	90
Experimentals:									
W	T1118	125	127	82	136	90	130	146	118
W	T1112	124	131	92	125	96	124	145	121
W	T1105	117	129	90	129	83	116	142	104
W	T9111	116	128	84	116	89	114	141	109
Y	T0044	115	127	75	127	84	113	138	104
Y	T9022	113	116	79	130	84	110	126	112
Y	T0044B	112	127	78	125	79	108	129	100
	L.S.D. (.05)	—	9.7	14.7	9.6	12.8	10.4	9.6	13.9
	C.V. %	—	7.1	16.3	6.9	12.6	8.4	6.7	11.6

[1]Lindside silt loam, (0% to 2% slopes).
[2]Sequatchie silt loam, (0% to 2% slopes).
[3]Hartsells loam eroded, (2% to 5% slopes).
[4]Dexter loam, (2% to 5% slopes) and Loring silt loam, (0% to 2% slopes).
[5]Maury silt loam, (2% to 5% slopes).
[6]Ennis silt loam, (0% to 2% slopes).
[7]Collins silt loam, (0% to 2% slopes).
[8]Knoxville data were not included in the state average because applied nitrogen was insufficient for high yields.
[9]Also included in tests of full-season hybrids.
SX Denotes a single cross or a special cross hybrid.
3X Denotes a three-way cross hybrid.

Table 2. Corn: Characteristics of 36 early-maturing hybrids tested at seven locations in 1963

Color	Hybrid	State avg. yield	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
Commercially available:		Bu./A.	%	No.			In.	%
W	P.A.G. 633	119	78	138	Good	Good	60	20.7
W	Dixie 29*	118	84	138	Med.-Good	Good	64	24.0
W 3X	Meacham's MX50W	117	86	109	Good	Med.-Good	58	22.7
Y SX	P.A.G. SX-59	117	88	102	Good	Fair-Med.	53	20.6
Y	Pioneer 310	116	83	114	Med.-Good	Med.	55	19.3
Y	Embro Jarvis E	116	84	128	Good	Good	56	22.9
Y SX	McCurdy 972X7	114	90	106	Good	Med.	58	18.4
W	Princeton 990	114	76	104	Med.	Fair-Med.	61	18.3
W	Tenn. 501	114	79	138	Good	Med.-Good	55	21.2
Y SX	McCurdy 7X11	114	90	101	Good	Fair	50	18.2
W	Pioneer 509W	113	77	121	Med.	Med.	60	20.7
W	Princeton 990A	113	77	101	Med.	Fair-Med.	56	21.0
W	Stulls 400WA	112	81	102	Good	Med.	56	21.1
W	Meacham's M-7	112	89	104	Med.-Good	Med.	58	20.7
Y	Tenn. 604	112	78	138	Good	Med.-Good	58	19.1
Y SX	Stull 807Y	112	83	101	Good	Fair-Med.	53	18.7
Y	Stull 101YA	111	83	106	Med.-Good	Med.	54	19.2
Y SX	P.A.G. SX-29	111	88	114	Med.	Poor-Fair	54	17.8
Y SX	DeKalb 805	110	78	98	Med.-Good	Fair	49	17.8
Y	Embro 49BR	107	86	116	Med.-Good	Med.	51	21.5
Y	Pioneer 309A*	107	83	115	Good	Med.	61	23.0
Y	Watson 401	107	89	102	Med.-Good	Fair-Med.	49	20.0
W	DeKalb 925	106	80	115	Med.-Good	Good	58	19.5
Y	Funk G-144	106	82	109	Med.	Med.	50	18.2
W	Tenn. 503	104	90	112	Med.-Good	Med.-Good	55	23.1
Y	McCurdy 999	104	89	112	Med.-Good	Med.-Good	58	20.6
Y	P.A.G. 436	103	86	104	Med.-Good	Fair-Med.	50	19.1
Y	DeKalb 824	101	85	104	Med.	Fair-Med.	52	19.2
Y SX	Hilligoss 9X9	91	82	104	Fair	Poor-Fair	50	17.4
Experimentals:								
W	T1118	125	83	162	Med.-Good	Med.	65	19.1
W	T1112	124	80	176	Good	Good	64	20.3
W	T1105	117	79	164	Good	Good-Exc.	65	20.4
W	T9111	116	73	152	Good	Good	59	20.9
Y	T0044	115	79	140	Med.-Good	Med.-Good	58	20.4
Y	T9022	113	85	138	Med.-Good	Med.	58	20.8
Y	T0044B	112	86	138	Med.-Good	Med.	56	20.8

3X—Denotes a three-way cross hybrid.
SX—Denotes a single cross or a special cross hybrid.
*Also included in tests of full-season hybrids.

Table 3. Corn: Yield and other characteristics of early-maturing hybrids tested for 2 or 3 years[1]

Color	Hybrid	3 Yr. avg. 1961-1963	2 Yr. avg. 1962-1963	Erect plants	Ears/100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	Bu./A.	%	No.			In.	%
W	Dixie 29[2]	114	112	83	147	Good	Good	59	22.4
W	P.A.G. 633	110	108	86	139	Good	Good	55	20.1
W	Tenn. 501	108	106	82	136	Good	Med.-Good	52	20.3
Y SX	DeKalb 805	107	104	86	98	Med.-Good	Fair-Med.	46	17.8
Y	Tenn. 604	106	105	81	137	Med.-Good	Med.	54	18.5
W	DeKalb 925	105	102	78	114	Med.-Good	Med.-Good	55	19.5
W	Princeton 990	105	103	81	103	Med.	Fair-Med.	56	18.0
Y	Pioneer 309A[2]	104	101	90	113	Med.-Good	Med.-Good	57	21.3
W	Tenn. 503	101	97	91	110	Med.-Good	Med.-Good	52	21.4
Y	Funk G-144	100	98	89	109	Med.	Fair-Med.	46	18.1
Y	Pioneer 310	—	108	90	111	Med.-Good	Med.	52	19.0
W	Pioneer 509W	—	106	82	121	Med.-Good	Med.	56	19.8
W	Meacham's M-7	—	105	90	104	Med.-Good	Med.	54	20.0
Y	P.A.G. 436	—	96	90	105	Med.-Good	Fair-Med.	50	18.6
Experimentals:									
W	T9111	113	109	78	150	Good	Good	53	19.9
Y	T0044	110	107	82	137	Med.-Good	Med.	52	19.2
W	T1118	—	115	86	154	Med.-Good	Med.	62	19.1
W	T1112	—	112	84	163	Good	Good	60	19.8
W	T1105	—	110	86	154	Good	Good	61	20.1

[1]Knoxville data for 1963 were not included in 2 or 3 year average.

[2]Also included in tests for full-season hybrids.

SX—Denotes a single cross or special cross hybrid.

Table 4. Corn: Yields of 12 early-maturing hybrids tested at each of six locations from 1961 through 1963

Color	Hybrid	Avg.	Greene-ville	Knox-ville	Cross-ville	Jack-son	Spring Hill	Spring-field
Commercially available:				Bushels per acre				
W	Dixie 29*	113	137	99	107	93	105	134
W	P.A.G. 633	107	128	88	98	100	100	130
W	Tenn. 501	107	123	94	107	90	101	130
Y SX	DeKalb 805	107	121	92	112	92	96	128
Y	Tenn. 604	106	124	94	104	91	93	132
W	DeKalb 925	104	121	91	98	89	97	129
W	Princeton 990	104	121	92	101	90	97	126
Y	Pioneer 309A*	103	118	91	102	88	96	122
W	Tenn. 503	101	121	92	101	80	89	123
Y	Funk G-144	99	116	86	99	84	91	119
Experimentals:								
W	T9111	112	140	102	101	83	100	145
Y	T0044	109	132	97	105	87	97	137

SX—Denotes a single cross or special cross hybrid.

*Also included in tests of full-season hybrids.

Table 5. Corn: Yields of 30 full-season hybrids tested at four locations 1963

Six Replications at Each Location

Color	Hybrid	State avg.	Knoxville[1,5]	Fort Pillow[2]	Jackson[3]	Spring Hill[4]
Commercially available:				Bushels per acre		
W	Funk G-795W	102	95	82	99	124
W	Dixie 33	101	74	76	94	133
Y	McCurdy M97	95	78	78	94	113
W	P.A.G. 653W	95	86	72	96	117
Y	DeKalb 1006	93	64	86	95	97
Y	McCurdy 999	92	70	80	85	111
Y	Pioneer 3048	92	88	74	79	122
Y	Funk G-710AA	91	80	72	88	113
W	Dixie 29[6]	90	78	75	78	119
Y	Embro 222TA	90	79	75	84	112
W	Funk G-580W	90	77	78	80	112
Y	Pioneer 309B	90	72	78	88	102
Y	Dixie 22	89	80	62	85	119
W	Dixie 77	88	79	69	81	114
Y	Stull 111YA	86	93	64	75	120
Y	Pioneer 3037	86	78	65	93	100
W	McCurdy 951W	86	83	93	75	109
Y	Funk G-711AA	85	68	68	78	110
Y	DeKalb 1004	85	64	76	86	94
Y	Pioneer 309A[6]	83	76	70	75	104
Y	McNair 304A	79	66	60	81	96
Y	P.A.G. 488	79	62	53	86	97
Y	P.A.G. 486	75	64	49	77	100
Experimentals:						
W	T2101	101	80	81	96	125
W	T2105	98	78	83	88	123
Y	T2004	97	92	80	85	125
W	T2111	97	80	72	94	124
W	T9106	96	72	71	89	128
Y	T6003	95	73	75	92	117
W	Dixie 29B	91	74	75	79	120
	L.S.D. (.05)	—	13.9	12.3	N.S.	9.5
	C.V. %	—	15.9	14.9	17.4	7.4

[1]Sequatchie silt loam, (0% to 2% slopes).
[2]Collins silt loam, (2% to 5% slopes).
[3]Collins silt loam, (0% to 2% slopes).
[4]Maury silt loam, (2% to 5% slopes).
[5]Knoxville data were not included in the state average because applied nitrogen was insufficient for high yields.
[6]Also included in tests of early-maturing hybrids.

Table 6. Corn: Characteristics of 30 full-season hybrids tested at four locations in 1963

Color	Hybrid	State avg. yield	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
Commercially available:		Bu./A.	%	No.			In.	%
W	Funk G-795W	102	94	156	Good	Good	62	21.1
W	Dixie 33	101	94	134	Med.-Good	Good	69	20.1
Y	McCurdy M97	95	94	109	Med.-Good	Fair-Med.	61	18.6
W	P.A.G. 653W	95	92	155	Good-Exc.	Good	62	19.1
Y	DeKalb 1006	93	92	100	Good-Exc.	Med.-Good	65	20.4
Y	McCurdy 999	92	94	108	Good	Med.	62	17.8
Y	Pioneer 3048	92	98	111	Good	Good	65	21.3
Y	Funk G-710AA	91	92	128	Good	Good	68	22.5
W	Dixie 29*	90	94	126	Good	Good	66	20.6
Y	Embro 222TA	90	92	109	Good	Good	67	20.8
W	Funk G-580W	90	94	124	Good-Exc.	Good	58	19.3
Y	Pioneer 309B	90	98	110	Good-Exc.	Good	59	21.1
Y	Dixie 22	89	88	130	Good	Med.	69	20.7
W	Dixie 77	88	100	121	Med.-Good	Good-Exc.	66	21.4
Y	Stull 111YA	86	92	126	Good	Med.-Good	71	20.6
Y	Pioneer 3037	86	95	132	Good-Exc.	Good	62	21.3
W	McCurdy 951W	86	94	124	Good-Exc.	Good-Exc.	64	21.9
Y	Funk G-711AA	85	90	104	Good	Med.-Good	64	21.8
Y	DeKalb 1004	85	94	92	Good	Med.-Good	60	18.4
Y	Pioneer 309A*	83	95	96	Good	Med.-Good	60	19.2
Y	McNair 304A	79	88	104	Good	Med.-Good	57	20.6
Y	P.A.G. 488	79	86	114	Good	Good	61	22.7
Y	P.A.G. 486	75	92	115	Good	Med.-Good	60	20.1
Experimentals:								
W	T2101	101	96	122	Good	Med-.Good	64	22.1
W	T2105	98	98	140	Good	Good	65	20.8
Y	T2004	97	95	118	Good	Good-Exc.	72	20.7
W	T2111	97	95	125	Good	Good	70	21.3
W	T9106	96	98	146	Good-Exc.	Good-Exc.	65	19.2
Y	T6003	95	95	131	Good-Exc.	Good-Exc.	70	22.0
W	Dixie 29B	91	94	124	Good	Good	66	22.0

*Also included in test of early-maturing hybrids.

Table 7. Corn: Yield and characteristics of full-sason hybrids tested for 2 or more years[1]

Color	Hybrid	3 Yr. avg. 1961-1963	2 Yr. avg. 1962-1963	Erect plants	Ears/ 100 plants	Grain quality	Husk cover	Ear ht.	Grain moisture at harvest
		Bu./A.	Bu./A.	%	No.			In.	%
W	Dixie 33	94	91	77	128	Med.-Good	Good	62	20.0
W	Dixie 29[2]	91	85	78	125	Good	Good	58	21.0
Y	Dixie 22	90	85	74	122	Good	Med.-Good	64	20.5
W	Dixie 77	90	86	80	123	Good	Good	58	21.0
Y	Funk G-710AA	89	86	81	120	Good	Good	59	21.8
Y	Pioneer 309B	88	87	85	113	Good	Good	52	20.5
Y	McCurdy 999	88	86	83	105	Good	Med.-Good	54	18.1
Y	Funk G-711AA	84	81	81	105	Med.-Good	Med.-Good	57	21.7
Y	Pioneer 309A[2]	84	81	89	101	Good	Med.-Good	54	19.8
Y	P.A.G. 486	76	71	82	120	Good	Med.-Good	54	20.4
W	Funk G-795W	—	93	89	148	Good	Good	58	21.0
W	P.A.G. 653W	—	89	88	142	Good-Exc.	Good	58	19.4
W	Funk G-580W	—	87	90	126	Good-Exc.	Good	54	19.6
Y	Embro 222TA	—	84	88	100	Good	Good	64	21.6
Y	McNair 304A	—	77	85	102	Good	Med.-Good	52	20.6
Experimentals:									
W	T9106	96	92	81	140	Good-Exc.	Good	58	18.9
Y	T6003	94	90	76	133	Good	Good	62	21.1

[1]Knoxville data for 1963 were not included in 2 or 3 year average.

[2]Also included in test of early-maturing hybrids.

Table 8. Corn: Yields of 12 full-season hybrids tested at each of four locations for 2 or 3 years

Color	Hybrid	State avg.	Knoxville 1961-63	Fort Pillow 1961-63	Jackson 1961-63	Spring Hill 1962-63
Commercially available:				Bushels per acre		
W	Dixie 33	90	95	71	91	111
W	Dixie 29*	89	93	72	90	109
Y	Dixie 22	88	96	68	87	110
W	Dixie 77	88	96	75	82	106
Y	Funk G-710AA	87	90	70	91	103
Y	Pioneer 309B	86	90	73	86	102
Y	McCurdy 999	86	84	72	89	103
Y	Pioneer 309A*	83	88	68	82	100
Y	Funk G-711AA	82	86	65	83	101
Y	P.A.G. 486	74	78	56	76	92
Experimentals:						
W	T9106	93	98	75	92	113
Y	T6003	91	98	71	93	107

*Also included in test of early-maturing hybrids.

COTTON

The 1963 cotton variety tests were conducted in cooperation with the U. S. Department of Agriculture. Tests were conducted at four locations with eight replications at each location. Yield and other characteristics of the different varieties are presented in tables 9 through 19. Bolls per pound is used to indicate the size of the cotton bolls. The higher the number the smaller the bolls, and consequently the lower the number the larger 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. The upper half mean length, micronaire fineness readings, and fiber strength (T_1) are presented in tables 14 through 19. Upper half mean length is measured on the Fibrograph and is closely correlated with staple length.

The micronaire reading is a relative measure of the fineness of the fiber. Higher readings indicate coarse fiber and low readings indicate fine fiber.

The fiber strength (T_1) is measured on the stelometer. Higher readings indicate fibers of greater strength and low readings indicate fibers of lesser strength.

Figure 3. A photo of an early maturing variety, Empire W.R. 61, Ames Plantation, September 20, 1963.

NOTE: Descriptions under pictu
on pages 19 and 20 should be ex

Figure 2. A photo of a late variety, Deltapine Smooth Leaf, Ames Plantation, September 20, 1963

Detailed laboratory analysis of the fiber properties of these cottons may be obtained on request from the Department of Agronomy, University of Tennessee.

Table 9. Cotton: Yields of lint per acre of varieties tested in 1963

Variety	State avg.[1]	Fort Pillow[2]	Jackson[3]	Ames Plantation[4]	Knoxville[5]
Commercially available:			Lint pounds per acre		
Auburn M	1018	1170	944	939	798
Carolina Queen	1003	1250	956	803	751
Coker 100A (WR)	993	1200	887	892	782
Stardel	956	1087	898	883	799
Stoneville 213	951	1122	903	829	769
Auburn 56	942	1152	795	878	756
Delta Queen	937	1139	803	868	816
Dixie King	924	1185	832	754	696
Fox 4	923	1165	800	804	750
DeKalb 108	922	1075	796	894	746
DeKalb 220	904	1025	864	824	721
Stoneville 7A	899	1030	870	796	707
Deltapine Smooth Leaf	890	1054	790	826	654
Cobal	870	1038	798	774	631
Empire W.R. 61	870	1038	820	752	676

Table 9.—(Continued)

Variety	State avg.[1]	Fort Pillow[2]	Jackson[3]	Ames Plantation[4]	Knoxville[5]
Rex Smoothleaf	855	1017	837	710	686
Experimentals:					
Tenn. 59-134	1082	1413	938	895	900
Tenn. 56-210	999	1199	894	904	927
Tenn. 56-312	937	1093	901	817	818
Emp. Der. K8	928	1135	831	819	742
B-57-478	865	997	802	796	653
AHA Der. K7	834	1067	700	735	655
L.S.D. (.05)	—	138.4	81.6	114.0	69.0
C.V. %	—	12.5	9.7	13.9	9.3

[1]Knoxville data not included in state average.
[2]Morganfield and Adler silt loam, (0% to 2% slopes).
[3]Memphis and Grenada silt loam, (0% to 2% slopes).
[4]Loring silt loam, (2% to 5% slopes).
[5]Cumberland clay loam, eroded (5% to 8% slopes).

Table 10. Cotton: Characteristics of 22 cotton varieties tested at three locations in 1963*

Variety	State avg. yield	Percent lint	Bolls per lb.	Percent total yield at 1st picking
Commercially available:	Lint Lb./A.	%	No.	%
Auburn M	1018	37.6	67	80
Carolina Queen	1003	39.5	69	68
Coker 100A (WR)	993	38.5	72	67
Stardel	956	39.2	78	78
Stoneville 213	951	39.8	75	72
Auburn 56	942	36.8	72	70
Delta Queen	937	38.0	71	68
Dixie King	924	37.0	59	68
Fox 4	923	37.6	73	71
DeKalb 108	922	37.1	67	68
DeKalb 220	904	38.4	68	72
Stoneville 7A	899	39.3	76	63
Deltapine Smooth Leaf	890	39.4	79	66
Cobal	870	37.2	63	84
Empire W.R. 61	870	36.2	58	70
Rex Smoothleaf	855	37.2	64	77
Experimentals:				
Tenn. 59-134	1082	41.0	64	83
Tenn. 56-210	999	38.5	68	82
Tenn. 56-312	937	38.4	68	83
Emp. Der. K8	928	36.6	62	80
B-57-478	865	37.1	70	82
AHA Der. K7	834	36.1	68	75

*Knoxville data not included in this table.

Table 11. Cotton: Percent yield at first picking for 22 varieties tested at four locations in 1963

Variety	State avg.	Fort Pillow	Jackson	Ames Plantation	Knoxville
Cobal	80	82	88	83	67
Auburn M	75	79	85	77	60
Rex Smoothleaf	71	71	85	75	54
Stardel	69	78	80	75	41
Empire W.R. 61	64	70	74	64	49
DeKalb 220	64	72	70	73	38
Auburn 56	63	72	72	67	39
DeKalb 108	61	66	70	68	42
Dixie King	61	71	69	63	41
Stoneville 213	61	78	72	65	28
Fox 4	60	77	73	62	30
Delta Queen	60	75	64	66	37
Carolina Queen	60	67	66	71	36
Coker 100A (WR)	59	71	63	68	34
Deltapine Smooth Leaf	58	67	56	74	36
Stoneville 7A	52	62	67	61	18
Experimentals:					
B-57-478	79	75	90	80	70
Tenn. 59-134	78	82	87	79	63
Tenn. 56-210	76	86	82	78	58
Tenn. 56-312	76	80	85	82	56
Emp. Der. K8	74	84	84	72	56
AHA Der. K7	70	73	77	75	54

Table 12. Cotton: Average yield and other characteristics of varieties tested for 2 years 1962-63[1]

Variety	Average	Percent lint	Bolls per lb.	Percent total yield at 1st picking
Commercially available:	Lint Lb./A.	%	No.	%
Auburn M	1010	37.8	68	83
Carolina Queen	968	39.5	71	75
Coker 100A (WR)	957	38.4	73	73
Stardel	952	39.1	81	83
Stoneville 213	946	40.0	78	78
Dixie King	927	37.2	59	76
Auburn 56	919	36.5	72	77
DeKalb 108	918	37.2	68	76
Delta Queen	910	38.0	74	76
Stoneville 7A[2]	907	39.6	77	72
DeKalb 220	900	38.4	70	80
Fox 4	893	37.7	76	80
Deltapine Smooth Leaf	881	39.7	80	74
Rex Smoothleaf[3]	872	37.7	67	84
Empire W.R. 61[4]	864	36.9	60	78
Cobal	851	36.8	64	89
Experimentals:				
Tenn. 56-210	952	38.4	68	86
Tenn. 56-312	939	38.3	71	86

[1]Knoxville data not included in this table.
[2]Tested in 1961 as Stoneville 7.
[3]Tested in 1961 and 1962 as Rex.
[4]Tested in 1961 as Empire W.R.

Table 13. Cotton: Average yield and other characteristics of varieties tested for 3 years 1961-63[1]

Variety	Average	Percent lint	Bolls per lb.	Percent total yield at 1st picking
Commercially available:	Lint Lb./A.	%	No.	%
Stardel	976	38.6	80	80
Coker 100A (WR)	957	37.9	73	67
Dixie King	953	36.9	58	73
DeKalb 108	943	36.8	66	73
Auburn 56	936	36.2	71	73
DeKalb 220	918	37.9	69	75
Stoneville 7A[2]	916	39.0	76	69
Delta Queen	912	37.5	72	71
Fox 4	901	37.1	74	75
Deltapine Smooth Leaf	892	39.0	79	69
Rex Smoothleaf[3]	888	37.4	66	80
Cobal	880	36.5	64	86
Empire W.R. 61[4]	873	36.6	59	76
Experimentals:				
Tenn. 56-210	974	37.9	67	84
Tenn. 56-312	971	38.0	70	84

[1]Knoxville data not included in this table.
[2]Tested in 1961 as Stoneville 7.
[3]Tested in 1961 and 1962 as Rex.
[4]Tested in 1961 as Empire W.R.

Table 14. Cotton: Upper half mean (UHM) fiber length (in inches) of varieties tested in 1962

Variety	Average*	Jackson 1962	Fort Pillow 1962	Knoxville 1962
Coker 100A (WR)	1.10	1.06	1.14	1.24
Stoneville 7A	1.10	1.05	1.14	1.23
Cobal	1.09	1.04	1.14	1.23
Deltapine Smooth Leaf	1.09	1.04	1.14	1.22
Delta Queen	1.09	1.04	1.13	1.26
DeKalb 108	1.08	1.04	1.12	1.22
Acala 4-42	1.08	1.04	1.12	1.21
Carolina Queen	1.08	1.04	1.14	1.22
Auburn 56	1.07	1.02	1.12	1.95
Fox 4	1.07	1.04	1.10	1.22
Deltapine 15	1.07	1.02	1.11	1.20
Mix 10-H	1.07	1.02	1.12	1.22
Empire W.R. 61	1.06	1.04	1.09	1.23
Dixie King	1.06	1.04	1.10	1.20
Stardel	1.06	1.02	1.10	1.22
Rex	1.06	0.98	1.12	1.20
DeKalb 220	1.06	1.02	1.10	1.22
Stoneville 213	1.06	1.02	1.11	1.20
Auburn M	1.06	1.04	1.08	1.20
Mix 11-F	1.04	1.00	1.08	1.18
Tenn. 56-210	1.04	1.00	1.08	1.18
Lankart 57	1.04	0.98	1.08	1.16
Tenn. 56-312	1.03	1.00	1.06	1.16
Plains	—	0.98	—	1.18
Pope	0.97	0.92	1.01	1.12

*Knoxville data not included in average.

Table 15. Cotton: upper half mean (UHM) fiber length (in inches) of varieties tested from 1960-62

Variety	Average[1]	Jackson 1960-62	Fort Pillow 1960 & 62	Ames Plantation 1960	Knoxville 1960-62
Cobal	1.15	1.14	1.16	1.16	1.20
Coker 100A (WR)	1.14	1.16	1.16	1.08	1.20
Deltapine Smooth Leaf	1.13	1.14	1.15	1.07	1.19
DeKalb 108	1.13	1.13	1.13	1.12	1.18
Empire W.R. 61[2]	1.12	1.12	1.13	1.10	1.12
Acala 4-42	1.12	1.11	1.13	1.10	1.18
Rex	1.12	1.10	1.16	1.09	1.17
Dixie King	1.12	1.12	1.12	1.09	1.16
Stoneville 7A[3]	1.12	1.13	1.14	1.09	1.20
Auburn 56	1.12	1.10	1.14	1.10	1.16
Fox 4	1.12	1.12	1.12	1.08	1.18
Deltapine 15	1.11	1.11	1.13	1.08	1.16
Stardel	1.11	1.11	1.12	1.10	1.18
Plains	1.09	1.09	1.09[4]	1.08	1.14
Lankart 57	1.07	1.07	1.08	1.06	1.11
Pope	1.03	1.02	1.04	1.03	1.08

[1]Does not include the Knoxville data, but is an average of the fiber length of individual years at the 3 locations in West Tennessee.

[2]Tested in 1960 and 1961 as Empire W.R.

[3]Tested in 1960 and 1961 as Stoneville 7.

[4]1962 data only.

Table 16. Cotton: fiber fineness of varieties tested in 1962 (Micronaire Reading)

Variety	Average[1]	Jackson 1962	Fort Pillow 1962	Knoxville 1962
Lankart 57	4.62	4.26	4.99	4.08
Stoneville 7A	4.61	4.39	4.83	4.69
Mix 11-F	4.58	4.49	4.66	4.40
Fox 4	4.54	4.26	4.82	4.58
Stoneville 213	4.51	4.24	4.78	4.52
Deltapine Smooth Leaf	4.48	4.14	4.82	4.16
Carolina Queen	4.38	4.10	4.65	4.30
Dixie King	4.29	4.09	4.49	4.18
Auburn 56	4.28	4.00	4.55	4.04
Acala 4-42	4.26	4.23	4.28	3.90
Deltapine 15	4.24	4.12	4.35	3.94
Auburn M	4.21	3.88	4.54	3.85
Coker 100A (WR)	4.18	3.86	4.50	4.24
DeKalb 108	4.16	3.92	4.40	4.06
Stardel	4.06	3.58	4.54	4.15
Tenn. 56-210	4.06	4.02	4.10	4.02
Cobal	4.05	3.84	4.26	3.82
Delta Queen	4.05	3.72	4.38	4.05
DeKalb 220	4.04	3.65	4.42	3.99
Tenn. 56-312	4.02	3.79	4.26	4.10
Mix 10-H	3.98	3.88	4.08	3.86
Empire W.R. 61	3.96	3.76	4.16	3.88
Rex	3.91	3.66	4.16	3.82
Pope	3.78	3.39	4.18	3.75
Plains	—	3.62	—	3.98

[1]Knoxville data not included in average.

Table 17. Cotton: fiber fineness of varieties tested from 1960-62 (Micronaire Reading)

Variety	Average[1]	Jackson 1960-62	Fort Pillow 1960 & 62	Ames Plantation 1960	Knoxville 1960-62
Lankart 57	4.82	4.56	4.98	5.26	4.26
Stoneville 7A[2]	4.75	4.52	4.84	5.28	4.53
Fox 4	4.70	4.38	4.85	5.33	4.40
Deltapine Smooth Leaf	4.54	4.22	4.80	4.94	4.26
Stardel	4.37	4.07	4.62	4.75	4.17
Dixie King	4.35	4.20	4.40	4.72	4.17
Deltapine 15	4.30	4.14	4.39	4.60	4.00
Auburn 56	4.29	4.03	4.50	4.66	4.09
Coker 100A (WR)	4.27	4.04	4.46	4.62	4.17
DeKalb 108	4.21	3.96	4.40	4.56	4.07
Acala 4-42	4.12	3.91	4.32	4.36	3.76
Cobal	4.08	3.94	4.08	4.52	3.95
Pope	4.03	3.81	4.12	4.52	4.04
Rex	4.04	3.77	4.15	4.63	3.90
Plains	3.99	3.77	4.24[4]	4.42	4.03
Empire W.R. 61[3]	3.95	3.76	4.07	4.29	3.97

[1]Does not include the Knoxville data, but is an average of the fiber fineness of individual years at the 3 locations in West Tennessee.

[2]Tested in 1960 and 1961 as Stoneville 7.

[3]Tested in 1960 and 1961 as Empire W.R.

[4]1962 data only.

Table 18. Cotton: fiber strength, T_1, as measured on the stelometer of varieties tested in 1962

Variety	Average[1]	Jackson 1962	Fort Pillow 1962	Knoxville 1962
Acala 4-42	2.20	2.24	2.16	2.38
Mix 11-F	2.01	1.96	2.06	2.16
Deltapine Smooth Leaf	1.90	1.92	1.88	2.02
Delta Queen	1.89	1.88	1.90	2.01
Fox 4	1.88	1.88	1.89	2.02
Mix 10-H	1.86	1.80	1.92	2.04
Stardel	1.85	1.79	1.92	2.10
Deltapine 15	1.83	1.85	1.80	1.96
Stoneville 213	1.83	1.84	1.82	2.01
Coker 100A (WR)	1.82	1.82	1.81	1.94
Cobal	1.82	1.80	1.85	2.00
Tenn. 56-210	1.81	1.74	1.87	1.94
Carolina Queen	1.80	1.74	1.86	1.90
Auburn 56	1.78	1.80	1.75	1.97
Auburn M	1.76	1.72	1.78	1.82
DeKalb 108	1.76	1.74	1.78	1.96
Empire W.R. 61	1.75	1.72	1.78	1.90
DeKalb 220	1.74	1.72	1.76	1.96
Stoneville 7A	1.72	1.67	1.78	1.93
Pope	1.72	1.56	1.86	1.87
Tenn. 56-312	1.72	1.68	1.75	1.88
Dixie King	1.70	1.71	1.70	1.90
Lankart 57	1.67	1.74	1.60	1.78
Rex	1.58	1.48	1.67	1.80
Plains	—	1.69	—	1.87

[1]Knoxville data not included in average.

Table 19. Cotton: fiber strength, T_1, as measured on the stelometer of varieties tested from 1960-62

Variety	Average[1]	Jackson 1960-62	Fort Pillow 1960 & 62	Ames Plantation 1960	Knoxville 1960-62
Acala 4-42	2.28	2.28	2.28	2.32	2.24
Stardel	1.97	1.94	1.94	2.12	2.09
Fox 4	1.96	1.97	1.94	1.98	1.97
Deltapine 15	1.92	1.93	1.87	1.98	1.90
Deltapine Smooth Leaf	1.92	1.94	1.87	1.97	1.93
Cobal	1.91	1.88	1.90	2.02	1.90
DeKalb 108	1.86	1.83	1.91	1.90	1.88
Pope	1.84	1.81	1.87	1.88	1.93
Coker 100A (WR)	1.84	1.83	1.84	1.84	1.86
Dixie King	1.82	1.84	1.82	1.80	1.85
Stoneville 7A[2]	1.82	1.84	1.78	1.86	1.88
Auburn 56	1.82	1.84	1.79	1.82	1.86
Empire W.R. 61[3]	1.82	1.81	1.80	1.92	1.84
Plains	1.78	1.76	1.76[4]	1.75	1.83
Rex	1.71	1.72	1.65	1.78	1.73
Lankart 57	1.64	1.64	1.64	1.63	1.62

[1]Does not include the Knoxville data, but is an average of the fiber fineness of individual years at the 3 locations in West Tennessee.

[2]Tested in 1960 and 1961 as Stoneville 7.

[3]Tested in 1960 and 1961 as Empire W.R.

[4]1962 data only.

FALL-SEEDED SMALL GRAIN

Generally good yields of wheat were obtained over the state in 1963. Ace was the only wheat variety that was injured by the severe winter of 1962-63.

Figure 4. Oat variety test, Springfield, April 9, 1963. Note winter kill of 1) Victorgrain 48-93 as compared with 2) Blount, 3) Tenn. 60-32 (experimental) and 4) Moregrain.

All oat varieties suffered some winter kill at all locations. The Jackson oat variety test was a failure due to severe winter kill of all varieties. Percent stand survival of oat varieties tested are presented in table 21. Victorgrain 48-93, Moregrain, and Sumter were injured more than any of the other varieties tested. Forkedeer proved to be the most winter-hardy variety at all locations except Springfield.

The barley varieties were injured by the cold winter but not as severely as the oat varieties. Percent stand survival are presented in table 28. The most winter kill occured at Spring Hill and the least at Jackson.

The Greeneville data were not included in the 3 year average because data for all 3 years at this location are not available.

A summary of the disease injury of small grain has been prepared by H. E. Reed, Department of Plant Pathology, Agricultural Experiment Station, Knoxville. These data were collected at six of the experiment stations where small grain tests were conducted in 1963.

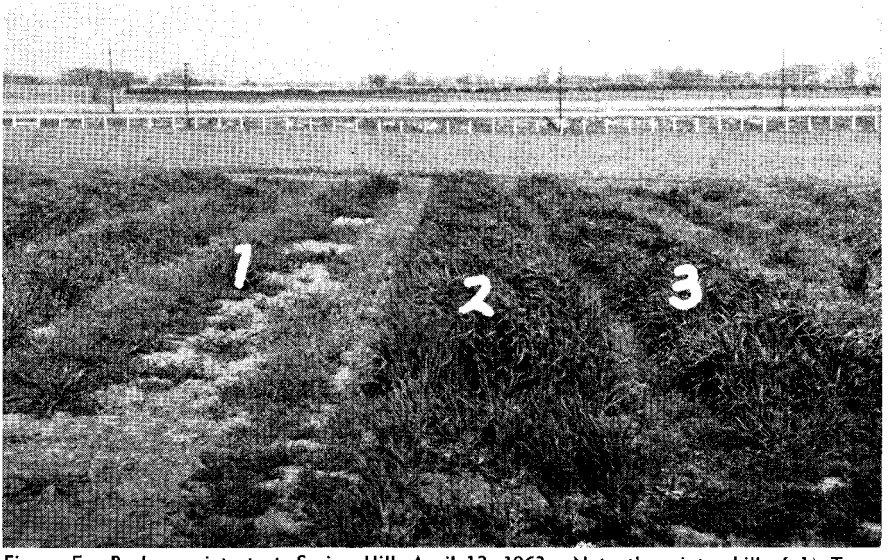

Figure 5. Barley variety test, Spring Hill, April 12, 1963. Note the winter kill of 1) Tenn. 60-24 as compared with 2) Tenn. 59-15 and 3) Dayton.

Table 20. Fall-seeded oats: yield summary of varieties tested in 1963. Four replications at each location

Variety	State[1] avg. 1961-63	State avg. 1963	Knoxville[2]	Crossville[3]	Springfield[4]	Spring Hill[5]	Jackson[6]
			Bushels per acre				
Blount	73	60	30	91	97	82	00[8]
LeConte	67	53	29	93	78	66	00
Forkedeer	66	58	29	94	87	80	00
Victorgrain 48-93	52	21	09	46	50	00[7]	00
Moregrain	—	21	03	33	69	00	00
Sumter	—	10	03	25	21	00	00
Experimentals:							
Tenn. 59-6	70	51	19	96	88	53	00
Tenn. 59-19	66	45	14	70	84	57	00
Tenn. 60-32	—	70	28	124	104	96	00
Tenn. 60-28	—	63	25	111	99	79	00
Tenn. 61-175	—	47	22	76	92	44	00
Average	—	—	19	78	79	69	—
L.S.D. (.05)	—	—	10.1	19.2	33.7	18.7	—
C.V. %	—	—	36.3	17.0	29.5	18.4	—

[1]Does not include Greeneville data.
[2]Cumberland loam, eroded (2% to 5% slopes).
[3]Hartsells loam, eroded (2% to 5% slopes).
[4]Dickson silt loam, eroded (2% to 5% slopes).
[5]Maury silt loam, eroded (2% to 5% slopes).
[6]Almo silt loam. (0% to 2% slopes).
[7]Zero yield included in state average but omitted from analysis.
[8]Zero yield due to winter kill.

Table 21. Winter kill of eleven oat varieties at six locations in 1962-63

Variety	State avg.	Knoxville	Greeneville	Crossville	Springfield	Jackson	Spring Hill
			Percent stand survival				
Forkedeer	62	85	71	80	50	32	55
Tenn. 59-19	53	45	32	82	81	20	57
Tenn. 60-32	51	39	27	76	88	28	48
Tenn. 60-28	50	41	45	75	76	30	33
Blount	47	40	48	65	73	23	32
Tenn. 61-175	44	38	50	72	60	11	32
LeConte	39	24	32	65	70	05	40
Tenn. 59-6	38	38	33	68	61	03	23
Victorgrain 48-93	21	31	48	22	22	00	01
Moregrain	13	12	20	10	36	00	00
Sumter	07	04	25	05	07	00	00

Table 22. Fall-seeded oats: yield summary of varieties tested at 5 locations for 3 years, 1961-63

Variety	Average	Knoxville	Crossville	Springfield	Spring Hill	Jackson
			Bushels per acre			
Blount	73	56	78	90	67	74
LeConte	67	50	83	79	60	60
Forkedeer	66	47	74	84	67	57
Victorgrain 48-93	52	43	42	69	37	67
Experimentals						
Tenn. 59-6	66	47	68	85	59	71
Tenn. 59-19	70	54	84	88	60	66

Table 23. Fall-seeded oats: characteristics of varieties

Variety	Winter-hardiness	Standing ability	Relative maturity	Plant ht. in inches 1962
Blount	Good	Good	Med.-Late	35
LeConte	Good	Good	Late	40
Forkedeer	Good	Poor	Med.	38
Victorgrain 48-93	Fair	Good	Early	40
Moregrain	Fair	Good	Early	—
Sumter	Fair	Good	Early	—

Table 24. Wheat: yield summary of varieties tested in 1963 four replications at each location

Variety	State[1] avg. 1961-63	State avg. 1963	Knoxville[2]	Greeneville[3]	Crossville[4]	Springfield[5]	Spring Hill[6]	Jackson[7]	Martin[8]
					Bushels per acre				
Monon	47	49	42	64	55	42	56	47	38
Seneca	46	46	43	59	55	49	53	37	29
Knox	45	47	44	62	57	38	51	46	34
Dual	44	46	45	62	54	44	49	29	35
Knox 62	—	48	43	62	54	40	52	44	38
Reed	—	48	41	67	58	40	56	38	33
Ace	—	44	41	64	56	35	45	35	35
Triumph[9]	—	—	—	—	—	36	—	—	—
Experimentals:									
Tenn. 60-23	48	50	40	73	62	43	58	35	34
Tenn. 60-18	—	44	38	67	56	37	48	36	29
Tenn. 61-35	—	44	41	64	57	36	44	37	31
Average	46	47	42	64	56	41	51	38	34
L.S.D. (.05)	—	—	N.S.	N.S.	N.S.	4.0	3.3	8.1	5.8
C.V. %	—	—	—	—	—	6.8	4.4	9.3	11.8

[1]Does not include Greeneville data.
[2]Cumberland loam, eroded (2% to 5% slopes).
[3]Cumberland loam, eroded (2% to 5% slopes).
[4]Hartsells loam, eroded (2% to 5% slopes).
[5]Dickson silt loam, eroded (2% to 5% slopes).
[6]Maury silt loam, eroded (2% to 5% slopes).
[7]Almo silt loam, (0% to 2% slopes).
[8]Calloway silt loam, (0% to 2% slopes).
[9]Hard red winter wheat included for comparison.

Table 25. Wheat: yield summary of varieties tested at 5 locations for 3 years, 1961-63

Variety	Average	Knoxville	Crossville	Springfield	Spring Hill	Jackson
			Bushels per acre			
Monon	47	38	40	47	50	53
Seneca	46	39	54	49	45	44
Knox	45	39	44	43	47	54
Dual	44	40	45	43	47	44
Triumph[1]	—	—	—	38	—	—
Experimentals:						
Tenn. 60-23	48	39	51	51	50	48

[1]Hard red winter wheat included for comparison.

Table 26. Wheat: characteristics of varieties

Variety	Winter hardiness	Standing ability	Relative maturity	Plant ht. in inches
Monon	Good	Good	V. Early	36
Seneca	Good	Fair-Good	Med.-Late	45
Knox	Good	Fair	V. Early	38
Dual	Good	Good	Late	43
Knox 62	Good	Fair	V. Early	38
Reed	Good	Good	Late	41
Ace	Fair-Good	Good	Med.	44

Table 27. Barley: yield summary of varieties tested in 1963 four replications at each location

Variety	State[1] avg. 1961-63	State avg. 1963	Knoxville[2]	Greeneville[3]	Crossville[4]	Springfield[5]	Spring Hill[6]	Jackson[7]
				Bushels per acre				
Hudson	67	70	54	74	78	71	84	57
Dayton	66	59	42	45	65	69	79	54
Kenbar	63	54	41	45	67	69	66	39
Holston	61	59	34	68	68	68	73	45
Experimentals:								
Tenn. 60-15	69	64	36	54	62	70	94	68
Tenn. 60-38	59	51	32	54	68	56	42	57
Tenn. 60-34	58	52	36	70	57	60	25	65
Tenn. 60-19	—	51	33	59	60	49	50	58
Tenn. 61-28	—	51	41	54	68	50	26	68
Tenn. 60-168-2-3	—	47	35	54	64	52	22	58
Tenn. 60-24	—	39	34	48	67	34	00[8]	48
Average		55	38.1	56.9	64.0	58.8	55.9	56.0
L.S.D. (.05)		—	8.6	11.4	3.5	6.7	10.6	9.6
C.V. %		—	15.6	14.0	3.8	7.9	13.1	11.9

[1]Does not include Greeneville data.
[2]Cumberland loam, eroded (2% to 5% slopes).
[3]Cumberland loam, eroded (2% to 5% slopes).
[4]Hartsells loam, eroded (2% to 5% slopes).
[5]Dickson silt loam, eroded (2% to 5% slopes).
[6]Maury silt loam, (2% to 5% slopes).
[7]Memphis and Grenada silt loams, (0% to 2% slopes).
[8]Zero yield included in state average but omitted from analysis.

Table 28. Winter kill of 11 barley varieties at 6 locations in 1962-63

Variety	State avg.	Knoxville	Greeneville	Crossville	Springfield	Jackson	Spring Hill
			Percent stand survival				
Hudson	92	98	87	96	87	100	86
Kenbar	86	95	86	83	87	100	67
Dayton	81	88	78	76	81	100	65
Tenn. 59-15	81	77	75	77	80	100	82
Holston	80	81	78	68	83	100	75
Tenn. 60-19	72	86	76	82	65	100	26
Tenn. 61-28	63	82	61	80	51	93	16
Tenn. 60-38	62	75	66	77	52	82	21
Tenn. 60-34	59	72	56	70	55	92	13
Tenn. 60-168-2-3	59	65	60	76	56	86	12
Tenn. 60-24	54	72	75	87	32	51	07

Table 29. Barley: yield summary of varieties tested at 5 locations for 3 years, 1961-1963

Variety	Average	Knoxville	Crossville	Springfield	Spring Hill	Jackson
			Bushels per acre			
Hudson	67	51	69	67	80	68
Dayton	66	50	58	73	77	72
Kenbar	63	46	67	70	71	59
Holston	61	42	67	62	76	57
Experimentals:						
Tenn. 60-15	69	47	61	69	86	81
Tenn. 60-38	59	47	52	62	62	74
Tenn. 60-34	58	46	56	61	55	73

Table 30. Barley: characteristics of varieties

Variety	Winter hardiness	Standing ability	Relative maturity	Plant ht. in inches	Awn or beard character
Hudson	Good	Fair	Late	36	Rough
Dayton	Good	Good	Early	35	Semi-rough
Holston	Good	Good	Late	36	Semi-smooth
Kenbar	Good	Poor	Early	37	Semi-smooth

Table 31. Susceptibility of wheat varieties to diseases[1] under natural field conditions at 7 locations, 1963

Variety	Avg.	Knoxville	Greeneville	Crossville	Springfield	Spring Hill	Jackson	Martin
Wheat				Leaf Rust				
Dual	0.9	T	0	0[2]	1	T	0[2]	3
Knox	2.2	-[3]	1	0	1	2	0	5
Seneca	3.4	3	3	0	3	3	0	5
Ace	1.2	T	1	0	T	T	0	4
Monon	2.0	1	1	0	2	2	0	4
Knox 62	1.8	1	1	0	1	2	0	4
Reed	1.0	1	1	0	T	1	0	2
Tenn. 60-23	2.0	1	2	0	1	2	0	4
Tenn. 60-18	1.8	1	1	0	1	2	0	4
Tenn. 61-35	1.4	1	2	0	1	1	0	2
Triumph[4]	—	-	-	-	2	-	-	-
				Powdery Mildew				
Dual	2.5	2	1	3	1	5	3	0[2]
Knox	1.2	T	T	1	1	3	2	0
Seneca	2.5	2	1	4	1	5	2	0
Ace	1.5	T	1	2	1	2	3	0
Monon	2.4	T	1	3	2	5	3	0
Knox 62	1.3	0	0	1	1	3	3	0
Reed	3.3	3	2	4	3	4	4	0
Tenn. 60-23	1.5	0	T	1	2	4	2	0
Tenn. 60-18	3.2	2	2	5	2	5	3	0
Tenn. 61-35	3.5	3	2	4	4	5	3	-
Triumph	—	-	-	-	1	-	-	-
				Steam Rust				
Dual	—	0	0	0	0	0	0	0
Knox	—	0	0	0	0	0	0	0
Seneca	—	2	1	0	0	0	0	0
Ace	—	0	T	0	0	0	0	0
Monon	—	T	0	0	0	0	0	0
Knox 62	—	0	0	0	0	0	0	0
Reed	—	T	T	0	0	0	0	0
Tenn. 60-23	—	1	0	0	0	0	0	0
Tenn. 60-18	—	T	T	0	0	0	0	0
Tenn. 61-35	—	1	T	0	0	0	0	0

[1]Leaf rust ratings on wheat were based on Cobb's modified scale ranging from 0, in which no disease symptoms were apparent, to 6 in which the leaf surface was entirely covered with rust. All other diseases were rated on a scale of 0 to 6. The letter "T" (Trace) was used to indicate that a few localized spots of a disease occurred, or that the percentage of the leaf surface affected was less than 1%.

[2]Data not included in average.

[3]Too mature to rate.

[4]Included at Springfield as a check.

Table 32. Susceptibility of barley varieties to diseases[1] under natural field conditions at 6 locations, 1963[2]

Variety	Knoxville	Greeneville	Crossville	Springfield	Spring Hill	Jackson
Barley			Leaf Rust			
Dayton	0	2	3	2	3	0
Kenbar	0	T	3	2	2	0
Holston	0	1	3	1	2	0
Hudson	0	1	3	1	2	0
Tenn. 60-38	0	3	4	3	4	0
Tenn. 59-15	0	2	3	2	3	0
Tenn. 60-34	0	4	4	2	4	0
Tenn. 60-19	0	1	2	1	3	0
Tenn. 60-168-2-3	0	3	3	2	4	0
Tenn. 61-28	0	3	4	3	4	0
Tenn. 60-24	0	2	3	2	4	0
			Powdery Mildew			
Dayton	0	0	0	0	3	0
Kenbar	0	0	0	0	-	0
Holston	0	0	0	0	2	0
Hudson	0	0	0	0	0	0
Tenn. 60-38	0	0	0	0	2	0
Tenn. 59-15	0	0	0	0	-	0
Tenn. 60-34	0	0	0	0	1	0
Tenn. 60-19	0	0	0	0	2	0
Tenn. 60-168-2-3	0	0	0	0	1	0
Tenn. 61-28	0	0	0	0	0	0
Tenn. 60-24	0	0	0	0	-	0

[1]The barley varieties were rated for disease in the same manner as the wheat varieties.

[2]A blank space (-) indicates that the barley was too mature or failed to grow for some reason and no disease rating was made.

ALFALFA

Results reported here are from tests seeded in 1960, 1961, and 1962. The Greeneville, Knoxville, and Springfield tests were seeded in 1960. One test at Knoxville was seeded in 1961. Results for both tests are reported. The 1962 tests were seeded at Spring Hill, Jackson, and Crossville.

Figure 6. Alfalfa variety test, Middle Tennessee Experiment Station, Spring Hill, Tennessee, 1963.

The test at Knoxville was infected with diseases in 1963. A disease rating for Southern anthracnose was made on the alfalfa variety test seeded at Knoxville in 1960. It was rated on July 9, 1963. Another rating was made on August 8, 1963 to measure stand survival. These results are reported in table 36. Leaf spot diseases (both large and small) were affecting many varieties at the time these ratings for anthracnose were made. However, the infestation of the leaf spot diseases was not heavy enough at this time to cause much damage.

The test at Jackson suffered late in the growing season from the extremely dry fall.

Table 33. Alfalfa: yield summary of tests seeded in 1962

Variety	Avg.	Jackson[1] 1963	Columbia[2] 1963	Crossville[3] 1963
		Tons of air-dry hay per acre		
Williamsburg	3.97	4.06	5.60	2.24
Cardinal	3.94	3.92	5.79	2.11
P.A.G. FD-100	3.87	3.75	5.68	2.17
Narragansett	3.81	3.73	5.58	3.81
Buffalo	3.79	4.16	5.15	2.07
DuPuits	3.76	3.78	5.42	3.76
Orchies	3.71	3.80	4.98	2.36
Cody	3.71	3.86	4.06	2.20
Atlantic	3.67	3.62	5.52	1.87
Vernal	3.58	3.93	4.77	2.04
Culver	3.56	3.63	5.11	1.93
Cherokee	—	3.78	—	—
Europe	—	—	5.77	2.26
L.S.D. (.05)	—	N.S.	0.59	N.S.
C.V. %	—	6.5	7.6	10.6

[1]Loring silt loam, (0% to 2% slopes).
[2]Maury silt loam, (2% to 5% slopes).
[3]Hartsells loam, (2% to 5% slopes).

Table 34. Alfalfa: yield summary of tests seeded in 1961

Variety	Avg.	Knoxville[1] 1962	Knoxville[1] 1963	Greeneville[2] 1962	Greeneville[2] 1963
		Tons of air-dry hay per acre			
P.A.G. FD-100	3.78	3.42	3.02	2.67	6.00
Williamsburg	3.76	3.67	3.36	3.05	5.95
Socheville	3.69	3.47	2.73	2.62	5.94
Culver	3.66	2.60	3.16	2.98	5.88
Orchies	3.60	3.10	2.72	2.78	5.82
Narragansett	3.57	2.62	2.91	2.80	5.95
Buffalo	3.38	2.02	2.48	3.07	5.97
DuPuits	3.38	2.84	2.08	2.68	5.92
Maliani	3.12	2.02	2.63	2.57	5.25
Ranger	—	3.28	3.60	—	—
Stoneville P.C. 1	—	3.09	3.74	—	—
Rhizoma	—	2.98	3.46	—	—
N.C. Syn. F(56) 1	—	3.22	3.18	—	—
N.C. Syn. G(57) 2	—	2.94	2.97	—	—
Vernal	—	2.74	3.04	—	—
N.C. Syn. G(57) 3	—	2.89	2.62	—	—
L.S.D. (.05)	—	0.86	N.S.	0.17	0.35
C.V. %	—	21.1	23.2	4.2	4.1

[1]Alcoa silt loam (2% to 5% slopes).
[2]Cumberland silt loam (2% to 5% slopes), eroded.

Table 35. Alfalfa: yield summary of tests seeded in 1960

Variety	Avg.	Springfield[1] 1961	Springfield[1] 1962	Springfield[1] 1963	Knoxville[2] 1961	Knoxville[2] 1962	Knoxville[2] 1963
		Tons of air-dry hay per acre					
DuPuits	4.08	2.48	3.60	5.97	2.90	4.80	4.76
Socheville	4.08	2.50	3.60	5.70	3.10	5.02	4.57
Williamsburg	4.08	2.48	3.61	5.76	2.88	4.60	5.13
P.A.G. FD-100	3.94	2.52	3.51	5.64	3.24	4.32	4.44
Narragansett	3.85	2.11	3.25	5.48	3.22	4.21	4.84
Buffalo	3.83	2.05	3.02	5.29	3.10	4.39	5.12
Maliani	3.56	2.15	3.25	5.26	2.71	3.62	4.39
Vernal	3.54	1.94	3.01	5.18	2.40	3.86	4.82
Lahontan	3.48	1.99	3.10	5.25	2.52	3.27	4.74
Zia	3.44	1.91	2.77	5.17	1.97	4.27	4.54
Orchies	—	2.30	3.32	5.64	—	—	—
N.C. Syn. G(57) 3	—	—	—	—	3.46	5.11	4.76
N.C. Syn. F(56) 1	—	—	—	—	2.82	5.14	4.96
N.C. Syn. G(57) 2	—	—	—	—	2.96	4.66	5.03
N.C. Syn. E (58)	—	—	—	—	2.87	4.46	5.17
Ranger	—	—	—	—	2.44	3.95	5.10
Rhizoma	—	—	—	—	3.14	3.68	4.38
L.S.D. (.05)	—	0.30	0.43	0.46	0.67	0.57	0.40
C.V. %	—	9.2	9.1	5.8	16.4	9.4	5.8

[1]Bewleyville silty clay loam (2% to 5% slopes), severely eroded. [2]Cumberland loam (2% to 5% slopes).

Table 36. Alfalfa: summary of disease and stand ratings on the alfalfa variety test at Knoxville 1963

Variety	Southern[1] anthracnose	Stand[2] survival
Rhizoma	1.0	2.5
N.C. Syn. E (58)	1.0	2.0
Vernal	1.0	2.8
Narragansett	1.2	3.5
Williamsburg	1.8	1.8
Ranger	1.8	3.0
Zia	1.8	3.8
Buffalo	2.0	1.0
DuPuits	2.2	4.2
N.C. Syn. G(57) 3	2.2	4.5
N.C. Syn. G(57) 2	2.5	3.0
N.C. Syn. F(56) 1	2.8	3.2
P.A.G. FD-100	3.0	4.8

Table 36.—(Continued)

Variety	Southern[1] anthracnose	Stand[2] survival
Socheville	3.0	4.8
Maliani	3.0+	1.5
Lahontan	3.0+	1.8

[1]A scale of 1 (light) to 3 (heavy) was used to rate varieties for Southern anthracnose infestation on July 9, 1963. These data are an average of four replications and the ratings were made by L. F. Johnson, Department of Plant Pathology, Agricultural Experiment Station, Knoxville.

[2]A scale of 1 (good) to 5 (poor) was used to rate Stand Survival of varieties after clipping on August 8, 1963.

SOYBEANS

Soybean varieties were tested at three locations in 1963. Data are presented for irrigated and non-irrigated soybean tests at Jackson in 1962 and 1963.

Figure 7. Lee and Hill Soybean Varieties at the Highland Rim Experiment Station, Springfield, Tennessee, September 23, 1963. Note the relative maturity of the two varieties.

The irrigated soybean data at Jackson were furnished by W. L. Parks, Professor of Agronomy, U. T. Experiment Station, Knoxville.

Data are presented in tables 37 and 39.

Table 37. Soybeans: yield summary of varieties tested in 1963

Variety	Martin[1]	Spring Hill[2]	Jack-son[3]	Jack-son[4]	Jackson[5] irrigated	Approximate date of Maturity
			Bushels per acre			
Hill	18	37	20	28	41	Sept. 26
Lee	17	30	18	28	37	Oct. 25
Dorman	8	34	—	23	43	Sept. 28
Hood	20	—[6]	—	29	30	Oct. 15
Ogden	15	34	—	14	36	Oct. 15
Hale 3	15	35	15	—	—	Oct. 15
Arthur Hopkins	11	21	12	—	—	Oct. 28
Kent	12	39	23	—	—	Sept. 14
Hampton	13	20	14	—	—	Nov. 1
Clark	17	—	—	—	—	Sept. 14
Rebel	—	—	—	14	27	Nov. 1
L.S.D. (.05)	3.5	4.2	5.0	6.4	8.8	
C.V. %	18.5	11.8	19.4	15.7	13.5	

[1]Grenada silt loam, (2% to 5% slopes).
[2]Maury silt loam, (2% to 5% slopes).
[3]Memphis silt loam, (0% to 2% slopes).
[4]Memphis silt loam, (0% to 2% slopes).
[5]Memphis silt loam, (0% to 2% slopes).
[6]No yield obtained due to poor germination.

Table 38. Soybeans: yield summary of varieties tested at Jackson from 1961 through 1963

Variety	Avg.	1961	1962	1963	Irrigated 1962	Irrigated 1963
			Bushels per acre			
Lee	36	30	37	28	47	37
Hill	33	37	20	28	41	41
Hood	33	32	32	29	39	30
Dorman	31	35	15	23	40	43
Ogden	31	30	26	14	48	36
Hale 3	—	27	—	—	—	—
Hale 7	—	24	—	—	—	—
Rebel	—	—	28	14	34	27
L.S.D. (.05)	—	4.9	5.3	6.4	8.7	8.8
C.V. %	—	12.2	11.0	15.7	11.4	13.5

Table 39. Soybeans: characteristics of varieties

Variety	Seed color	Hilum color	Flower color	Pubescence	Seed quality	Resistance to shattering
Hill	Yellow	Light brown	White	Tawny	Good	Good
Dorman	Yellow	Buff	White	Gray	Good	Medium
Hood	Yellow	Buff	Purple	Gray	Good	Medium
Ogden	Olive-green	Brownish-black	Purple	Gray	Good	Fair
Lee	Yellow	Black	Purple	Tawny	Good	Good

GRAIN SORGHUM

The grain sorghum tests reported were conducted at Springfield, Spring Hill, and Jackson. The tests at Springfield and Spring Hill were grown under good moisture conditions. At Jackson there was some moisture stress late in the growing season. Several varieties at Jackson were not harvested due to severe bird damage. The AKS 614 and Ga. 609 varieties which are supposed to be resistant to bird damage were injured very little.

Figure 8. Four of the recommended Grain Sorghum varieties in a demonstration plot at Springfield, Tennessee, 1963. Note DeKalb E-56A open type head and McCurdy's tight heads.

A good grain sorghum variety is one that has a high yield potential, open or loose head, early or medium maturity, good standing ability, bird damage resistance, and the proper height for ease of combining.

Data are presented in tables 40 and 41.

Table 40. Grain sorghum: yields and other characteristics of varieties tested in 1963

Variety	Avg.[1]	Spring-field[2]	Spring Hill[3]	Jack-son[4]	Plant height	Head type	Maturity
		Bushels per acre			In.		
P.A.G. 515	128	146	109	—[5]	58	Tight	Late
Aks. 614	126	142	110	84	55	Open	Late
Advance 14	123	140	105	75	54	Med.-Open	Med.
DeKalb E-57	123	136	109	78	55	Open	Late
DeKalb F-63	113	124	103	71	55	Med.	Med.
Frontier 400C	112	122	103	—	55	Tight	Med.
McCurdy 70	112	124	101	—	56	Tight	Med.
Frontier 22X	112	128	97	—	56	Tight	Late
Lindsey 744	111	125	97	86	51	Med.-Tight	Early
Advance 51	110	125	95	—	59	Med.-Tight	Med.
P.A.G. 430	109	120	98	81	50	Med.	Early
Lindsey 755	108	115	101	—	61	Med.-Tight	Med.
Ga. 609	104	117	91	82	55	Open	Late
R.S. 610	104	118	90	78	54	Med.-Tight	Med.
DeKalb C-44b	102	108	97	—	51	Open	Med.
Triple T	101	118	84	62	57	Tight	Very late
McCurdy 62	99	109	88	—	49	Tight	Med.
Lindsey 531	98	107	88	83	47	Med.-Tight	Med.
DeKalb E-56A	96	96	97	66	51	Open	Early
R.S. 622	96	100	92	67	42	Open	Med.
R.S. 621	92	98	86	79	40	Open	Early
Frontier 67X	88	94	82	—	44	Med.-Open	Late
R.S. 616	85	85	85	67	38	Open	Med.
Martin	85	88	81	64	53	Med.	Med.
L.S.D. (.05)	—	8.0	10.2	13.5	—	—	—
C.V. %	—	4.9	7.6	12.6	—	—	—

[1]Jackson data not included in average due to missing data for some varieties due to bird damage.

[2]Ennis, silt loam, local alluvium phase.

[3]Maury silt loam, (2% to 5% slopes).

[4]Vicksburg silt loam, (0% to 2% slopes).

[5]No yield obtained due to bird damage.

Table 41. Grain sorghum: summary of yields at Springfield for 1961-63

Variety	Springfield				
	1961-1963	1962-1963	1961	1962	1963
Frontier 400C	118	117	119	112	122
R.S. 610	112	114	108	110	118
McCurdy 70	112	117	101	110	124
DeKalb F-63	111	113	109	101	124
DeKalb E-56A	92	91	95	85	96
Martin	78	80	75	71	88
P.A.G. 515	—	126	—	106	146
Lindsey 744	—	112	—	98	125
Lindsey 755	—	108	—	101	115
P.A.G. 430	—	108	—	95	120
McCurdy 62	—	103	—	97	109

TOBACCO

Data for burley tobacco were furnished by L. J. Hoffbeck, Assistant Professor of Agronomy (cooperative with the USDA), and J. Hugh Felts, Superintendent, Tobacco Experiment Station.

Since the 1963 variety results were not yet available, the data included in the bulletin are for 1962 and previous years. Data were adjusted for lines tested less than 8 years in an attempt to

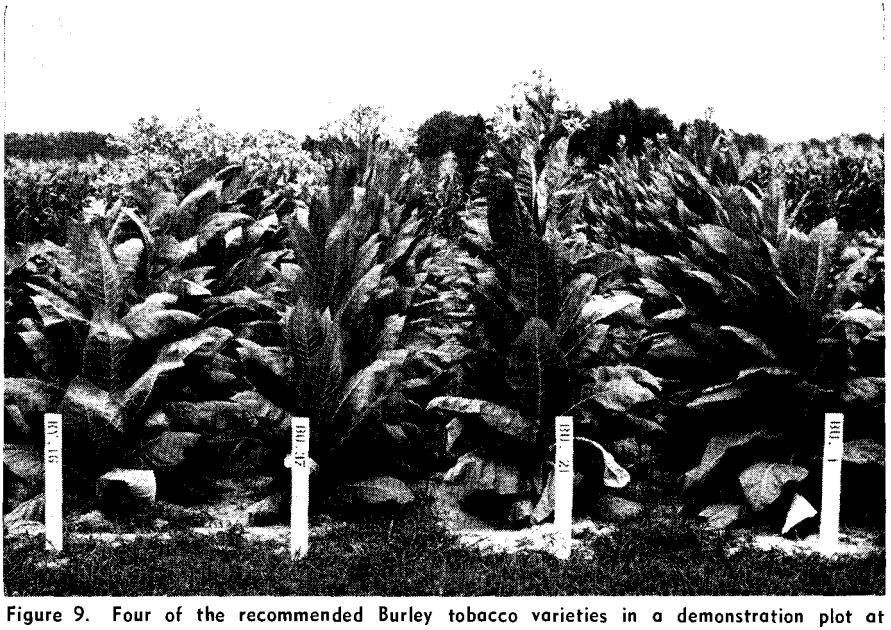

Figure 9. Four of the recommended Burley tobacco varieties in a demonstration plot at Springfield, 1963.

make all values comparable. In figure 9 note the relative lateness of Burley 1 as compared with the other three varieties. The burley varieties were tested at four locations and the dark-fired and dark air-cured tobacco at one location.

Data are presented in tables 42 through 48.

Table 42. Burley tobacco: average yield for 1962

Variety	State Avg.	Greene-ville[1]	Rutledge[2]	Spring Hill[3]	Spring-field[4]
			Pounds per acre		
Ky. 10	2715	2935	2823	2724	2379
Ky. 12	2680	2605	2788	2882	2444
Burley 1	2588	2660	2726	2878	2089
Ky. 9	2573	2589	2618	2742	2342
Burley 37	2414	2664	2300	2706	1986
Burley 21	2408	2512	2498	2511	2113
Ky. 16	2396	2322	2487	2619	2158
Average	2539	2612	2606	2723	2216
L.S.D. (.05)	121	218	259	293	238

[1]Cumberland silt loam
[2]Hayter loam
[3]Maury silt loam
[4]Lobelville silt loam

Table 43. Burley tobacco: acre value for 1962

Variety	State Avg.	Greene-ville	Rutledge	Spring Hill	Spring-field
			Dollars per acre		
Ky. 10	1804	2036	1833	1828	1518
Ky. 12	1776	1803	1841	1921	1538
Burley 1	1726	1839	1866	1900	1298
Ky. 9	1708	1800	1746	1830	1454
Burley 37	1618	1860	1559	1814	1241
Burley 21	1598	1728	1687	1671	1308
Ky. 16	1581	1601	1648	1746	1330
Average	1687	1810	1740	1816	1384
L.S.D. (.05)	83	149	182	202	161

Table 44. Burley tobacco: average yield for years 1955-62

Variety	Years tested	State avg.	Greene-ville	Rutledge	Spring Hill	Spring-field
				Pounds per acre		
Burley 1	1955-62	2216	2201	2459	2109	2296
Burley 21	1955-62	2131	1964	2295	2058	2208
Ky. 16	1955-62	2076	1890	2281	1931	2201
Ky. 35	1955-61[1]	2020	1888	2208	1843	2143
Burley 11A	1955-61	1842	1664	1987	1754	1963
Ky. 41A	1955-59	1986	1796	2189	1834	2126
Ky. 10	1960-62	2294	2230	2483	2232	2233
Ky. 9	1959-62[2]	2229	2076	2370	2107	2362
Burley 37	1960-62	2044	1999	2173	1988	2015
Ky. 12	1961-62	2352	2220	2624	2214	2349
Average		2119	1973	2307	2007	2190

[1]Data were adjusted for lines tested less than 8 years in an attempt to make all values comparable.

[2]Ky. 9 was not included in the 1961 test.

Table 45. Disease resistance of recommended burley tobacco varieties

Disease Resistance

Variety	Black shank	Wildfire	Mosaic	Fusarium wilt	Black root rot
Burley 1					X
Burley 11-A	X			X	X
Burley 21		X	X		X
Burley 37	X	X		X	X
Ky. 16					X

Table 46. Burley tobacco: acre value for years 1955-62

Variety	Years tested	State avg.	Greene-ville	Rutledge	Spring Hill	Spring-field
				Dollars per acre		
Burley 1	1955-62	1446	1318	1593	1362	1513
Burley 21	1955-62	1388	1291	1485	1332	1444
Ky. 16	1955-62	1346	1251	1457	1243	1435
Ky. 35	1955-61[1]	1306	1241	1416	1179	1386
Burley 11A	1955-61	1198	1100	1287	1128	1276
Ky. 41A	1955-59	1277	1778	1379	1174	1376
Ky. 10	1960-62	1478	1431	1574	1442	1466
Ky. 9	1959-62[2]	1429	1297	1504	1373	1541
Burley 37	1960-62	1333	1320	1405	1291	1317
Ky. 12	1961-62	1522	1470	1658	1434	1528
Average		1372	1290	1476	1296	1428

[1]Data were adjusted for lines tested less than 8 years in an attempt to make all values comparable.

[2]Ky. 9 was not included in the 1961 test.

Figure 10. Dark Fire-Cured Tobacco Variety Demonstration at Springfield, Tennessee, 1963.

Table 47. Dark fire-cured tobacco: average yield and acre value of varieties grown on the Highland Rim Experiment Station, Springfield, Tennessee from 1960 through 1962

	Acre yield				Acre value[1]			
Variety	1960-62	1962[2]	1961[3]	1960[4]	1960-62	1962	1961	1960
	Pounds per acre				Dollars per acre			
Broad Leaf Madole	2132	2413	1745	2238	936	1042	704	1063
Va. 312	2060	2250	1838	2092	910	983	744	1004
Black Mammoth	2034	2298	1687	2118	888	1006	667	993
Ky. 152	1938	2126	1671	2017	851	938	664	952
Little Stalk Black Mammoth	1970	2194	1919	1798	846	984	723	829
DF-516	1990	2188	1881	1900	805	929	669	817
Ky. 157	—	2032	1693	—	—	883	686	—
Ky. 156	—	1890	1585	—	—	819	606	—
Ky. 155	—	1775	1408	—	—	744	536	—
Ky. 151	—	—	—	1949	—	—	—	941
Experimentals:								
Tennex 300	—	2200	1554	—	—	979	634	—
Tennex 900	—	2223	1566	—	—	933	594	—
Tennex 901	—	2211	—	—	—	917	—	—
Line 29	—	—	—	2026	—	—	—	868
Line 303	—	—	—	1958	—	—	—	772
Line 12	—	—	1431	—	—	—	588	—
Average	2021	2150	1665	2011	873	930	651	915
L.S.D. (.05)	—	143	209	94	—	78	97	72
C.V. %	—	5.7	10.8	4.0	—	7.3	12.8	6.7

[1]These values are based on the average value for the various grades on all type 22 markets, during the 5-year period, 1954-58.
[2]Mountview silt loam (2% to 5% slopes), and Dickson silt loam (2% to 5% slopes).
[3]Sango silt loam (2% to 5% slopes).
[4]Sango silt loam (2% to 5% slopes).

Table 48. Dark air-cured tobacco: average yield and acre value of varieties grown on the Highland Rim Experiment Station, Springfield, Tennessee from 1960 through 1962

Variety	Acre yield				Acre value[1]			
	1960-62	1962[2]	1961[3]	1960[4]	1960-62	1962	1961	1960
	Pounds per acre				Dollars per acre			
Va. Imp. Str. 2	1838	2086	1757	1669	737	839	663	703
Johns	1895	2201	1802	1682	733	838	655	708
Ky. 160	1772	1979	1697	1639	713	811	666	662
Narrow Leaf One Sucker	1729	1994	1690	1503	678	774	623	636
Ky. 163	—	1921	1651	—	—	700	654	—
Ky. 164	—	1655	1538	—	—	595	582	—
Va. Imp. Str. 3	—	—	1668	1608	—	—	631	691
Va. Sleek Stalk Str. 1	—	—	1504	1451	—	—	549	593
Experimentals:								
Line 215	—	—	—	2167	—	—	—	836
Line 210	—	—	—	1972	—	—	—	791
Average	1808	1973	1664	1711	715	760	628	702
L.S.D. (.05)	—	83	103	126	—	40	50	53
C.V. %	—	3.5	5.3	6.3	—	4.4	6.8	6.4

[1]These values are based on the average value for the various grades on all type 35 markets, during the 5-year period, 1954-58.
[2]Bewleyville silt loam (5% to 12% slopes), and Dickson silt loam (2% to 5% slopes).
[3]Sango silt loam (2% to 5% slopes).
[4]Dickson silt loam (2% to 5% slopes).

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