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1971 Performance of Field Crop Varieties

University of Tennessee Agricultural Experiment Station

Charles R. Graves

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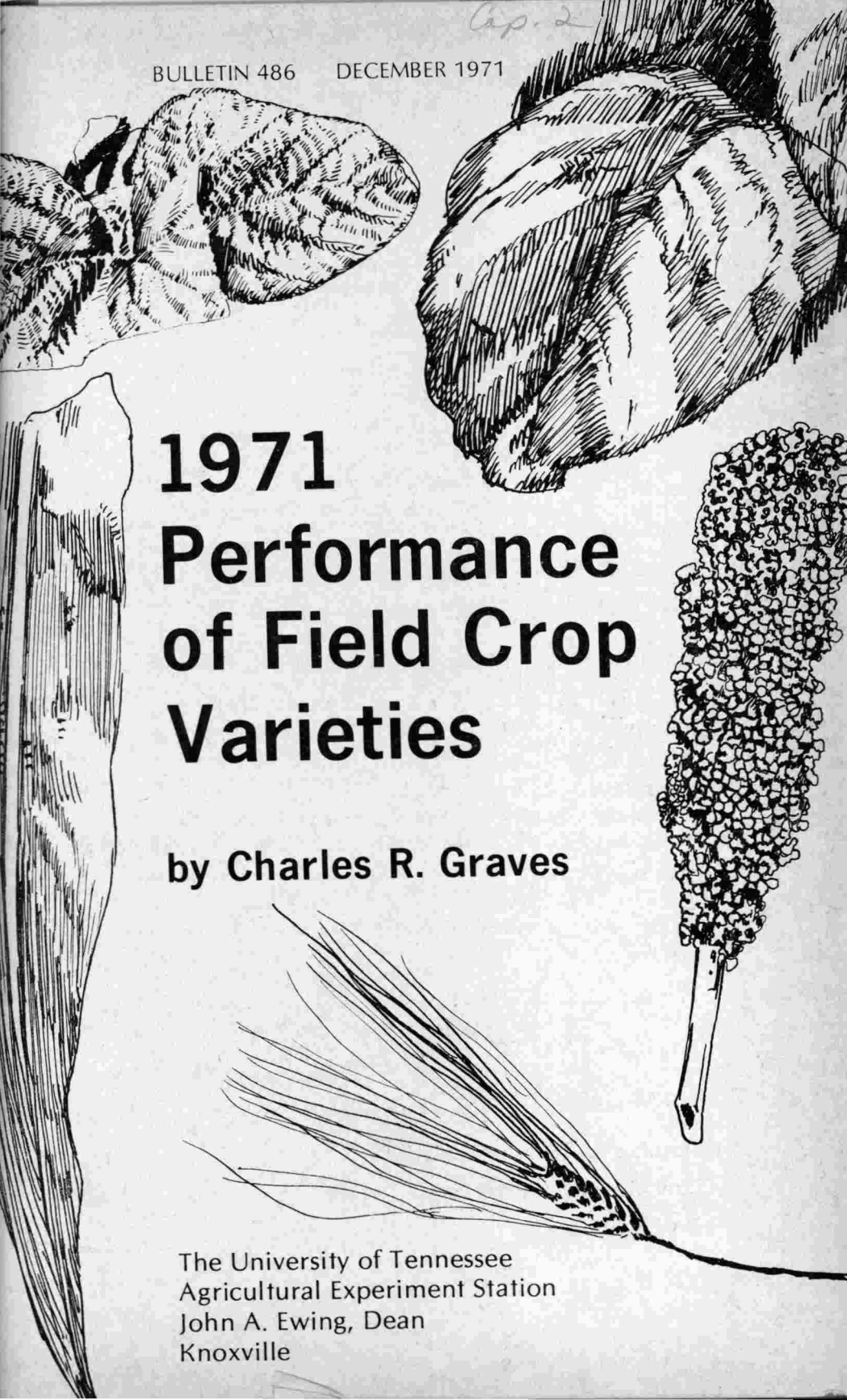
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1971 Performance of Field Crop Varieties

by Charles R. Graves

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



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1971

PERFORMANCE

OF FIELD CROP VARIETIES

Corn - Oats - Wheat - Barley - Rye - Soybeans - Alfalfa
Red Clover - Grain Sorghum - Tobacco

by

Charles R. Graves
Assistant Professor of Agronomy

DATA FOR 1971 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—Full Season—Moews SM821W, Pioneer brand 511A.

Yellow—Full Season—Pioneer brand 3048, McCurdy 67-14.

Yellow—Medium Season—Funk G-4761, Funk G-5757, and G-5759, Princeton SX809, Pioneer brand 3369A, Tenn. 606.

Corn hybrids that have performed well but are not recommended due to being tested for only 1 or 2 years.

Yellow—Full Season—Pioneer brand 3147 (2 yrs. data), McNair 508 (2 yrs. data).

White—Medium Season—P.A.G. 644W (2 yrs. data), Stull 850W (1 yr. data).

Yellow—Medium Season—Pioneer brand 3368 (1 yr. data), Funk G-4808 (1 yr. data), Pioneer brand 3191¹ (3 yrs. data).

Cotton²

Early—Auburn M, Dixie King II, Hancock, Hy-Bee 200A.

Late—Deltapine 16, Deltapine 45A³, Stoneville 213.

Oats

Fall-seeded—Blount, Coker 66-22.

Wheat

Arthur, Blueboy, Monon.

Barley

Barsoy, Harrison, Jefferson, Wade.

Alfalfa

Buffalo, Cody, Vernal, Williamsburg.

Red Clover

Kenland.

Soybeans

Dare, Dyer⁴, Hill, Mack⁴, Hood, Lee³, Lee 68, Pickett^{3,4}, Pickett 71⁴, York.

Grain Sorghum

Acco R-1093, AKS 614, Co-op Bird Go, Dorman Br100, Funk G-BR79, Ga. 615, McNair 546.

Burley Tobacco

Burley 21, Burley 37, Burley 49, Va. 509, MS Burley 21 x Ky. 10.

Dark Fire Tobacco

Broad Leaf Madole, Black Mammoth, DF-516, DF-300.

¹Pioneer brand 3191 did not perform as well in 1971 as it had in previous years.

²Cotton results will be given in a later publication.

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

⁴Recommended where soybean cyst nematodes are a problem.

Characteristics of Recommended Varieties

Virus Rating of Corn Varieties Recommended for 1972

Variety	Tolerance to corn virus	Variety	Tolerance to corn virus
White—Full Season		Yellow—Medium Season	
Moews SM821W	Fair	Funk G-4761	Good-Exc.
Pioneer brand 511A	Fair	Funk G-5757	Fair-Good
		Funk G-5759	Fair-Good
Yellow—Full Season		Pioneer brand 3369A	Fair
Pioneer brand 3048	Fair	Princeton SX809	Fair-Good
McCurdy 67-14	Fair	Tenn. 606	Good-Exc.

GRAIN SORGHUM HYBRIDS

Acco R-1093—A bird-resistant variety of medium maturity with an open type head in compactness. This variety has good standing ability.

AKS 614—A bird-resistant variety of medium maturity with an open type head. This variety tends to lodge when planted thick.

Co-op Bird Go—A bird-resistant variety of medium to late maturity with a medium to open type head. Tends to lodge under certain conditions such as a heavy planting rate.

Dorman Br100—A bird-resistant variety of medium maturity with a medium to open type head. Dorman has fair to good standing ability.

Funk G-BR79—A bird-resistant variety of medium maturity with a medium to open type head in compactness. This variety has fair standing ability.

Ga. 615—A bird-resistant variety of medium to late maturity with an open type head. Tends to lodge under certain conditions.

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

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 pus-

tule, 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 tends 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 a black hilum. It is 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. Hill performed well under root-knot nematode conditions.

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. It is susceptible to some soybean virus diseases.

Lee—Lee has tawny pubescence and purple flowers, and 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 seeds are yellow with a black hilum. Lee tends to lodge under some conditions.

Lee 68—A new soybean variety highly resistant to phytophthora rot and similar to Lee in maturity and other characteristics. This disease is of minor importance in Tennessee. It occurs on poorly drained, heavy clay soil. However, it is considered one of the most destructive diseases to soybeans in the Delta region of the south. In the State Variety Test in Tennessee, Lee 68 has lodged slightly more than Lee and seemed to be a little more variable in plant growth. Lee 68 has performed as well as Lee in seed yield. Lee 68 has resistance similar to Lee to the common foliar diseases bacterial pustule, wildfire, and target spot. The variety has purple flowers, brown pubescence, and yellow seed with a black hilum similar to Lee.

Mack—This variety was just released by the Arkansas Agricultural Experiment Station on December 1, 1971. The variety was identified in the State Variety Test in 1971 and previous years as

R68-105. Mack matures at about the same time as Dyer. Both these varieties mature 5 to 6 days later than Hill. This variety is resistant to phytophthora rot and race 3 of soybean cyst-nematodes. Mack is susceptible to root-knot nematodes and should not be planted under these conditions. Mack has purple flowers and tawny pubescence. Seed will be available to certified growers only in 1972. Seed should be available for planting in 1973.

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 variety is similar to Lee in yield under cyst nematode-free conditions, matures a few days later than Lee, and tends to retain its leaves longer than Lee after the bean pods have matured. Recommended where cyst nematodes are a problem.

Pickett 71—This variety resembles Pickett in plant and seed characteristics. Pickett 71 is resistant to phytophthora rot as well as being resistant to soybean cyst nematode. Phytophthora rot is of minor importance in Tennessee; however, it is considered one of the most destructive diseases to soybeans in the Delta region of the south. In addition to its resistance to cyst nematode and Phytophthora, it has resistance to bacterial pustule, wildfire, and target spot. Pickett 71 has gray pubescence and purple flowers. Seeds are yellow with a black hilum. Pickett 71 has performed similarly to Pickett in the State Variety Trials.

York—A soybean variety released by the Virginia Agricultural Experiment Station in cooperation with the U. S. Department of Agriculture, and the Maryland and North Carolina Agricultural Experiment Stations. It matures about the same time as Dare and is about 10 days later than Hill. Seeds of York are slightly off-round with a buff hilum and yellow seed coat. York has purple flowers and gray pubescence. York has good seed-holding qualities but not as good as Lee. York has very good resistance to lodging and has yielded well in the State Variety Test.

OATS

Fall-Seeded:

Blount—A short, stiff-strawed variety of medium-late maturity. Blount has not yielded as well in the past 2 years as it has in previous years. Blount is coarse-stemmed and has good resistance to lodging.

Coker 66-22—This variety has yielded well in the tests and is a few days earlier than Blount. Coker 66-22 has weak straw and lodges more than Blount. There has been little or no winter killing of this variety in the State Variety Test for the past 4 years (1968-71).

BARLEY

Barsoy—An early-maturing, rough-awned variety with good straw strength. By maturing early, this variety should be suited for double cropping. This is the reason the variety was named Barsoy by Kentucky: Bar for barley and soy for soybeans. In the State Variety Tests, Barsoy has performed better in Middle and West Tennessee than on the Cumberland Plateau and in East Tennessee.

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 not acid tolerant and performs best at a soil pH of 6.0 or above. This variety has performed very poorly at a pH of 5.0 or below.

Jefferson—This variety is an awnless counterpart of Harrison. Jefferson does not yield or stand as well as Harrison. It is about the same as Harrison in maturity. This variety should be good for a farmer who wants to grow an awnless barley.

Wade—A winter-hardy, six-rowed, short-awned variety with medium height and medium-late 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. Wade is tolerant to acid soils and can be grown with success in rotation with a crop which requires a low pH.

WHEAT

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

Blueboy—A semi-dwarf wheat with good yielding ability and low test weight. It matures 3 to 4 days later than Monon or Knox 62 and has excellent standing ability. It is variable in plant height and has a blue color before ripening. It is not Hessian fly resistant. Blueboy has had the highest average yield for the past 3 years of any wheat variety tested in the University of Tennessee State Yield Trials.

Monon—A very early winter-hardy, white-chaffed variety with moderately stiff straw which is a few inches shorter than Knox 62. Monon has a head type similar to Knox 62 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. Monon has not performed as well the past 2 years as it had in previous years.

ALFALFA

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 it is resistant to bacterial wilt. Buffalo is well adapted to Tennessee conditions and is one of the leading varieties sold in the state.

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.

BURLEY TOBACCO

Burley 21—A very upright-leaf 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 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 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 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. It is better in quality than Ky. 10, but not as good as Burley 21.

Virginia 509—An upright-leaf variety which has good resistance to black shank, excellent resistance to wildfire, and fair resistance to black root rot and fusarium wilt. It was selected from a cross of Burley 37 x Burley 21. The general characteristics are intermediate between those of Burley 21 and Burley 37. The leaves are not as erect and compact on the stalk as Burley 37, but they stand more erect than those of 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, which 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 capable of producing cutting or snuff tobacco.

1971 PERFORMANCE OF FIELD CROP VARIETIES

**Corn - Oats - Wheat - Barley - Rye - Soybeans - Alfalfa
Red Clover - Grain Sorghum - Tobacco**

**DATA FOR 1971 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.

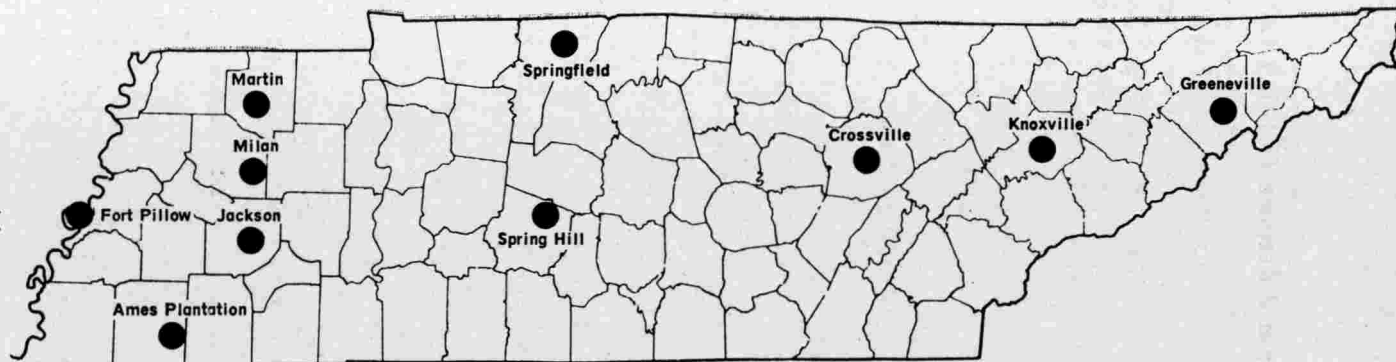
The tests were conducted using field plot designs, fertility levels, and experimental techniques that have been found suitable for each crop.

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

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

PRESENTATION OF DATA

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



Locations of field crop variety tests in Tennessee, 1970

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 1971 tests are shown at the bottom of each table. The yields of any two varieties being compared must differ by at least this amount in order for the varieties to be considered different in yielding ability. Also, coefficient of variation values (C.V.%) are shown at the bottom of each table. At each location where tests were conducted in 1971, the soil types are reported at the end of the table.

CORN

The 1971 Full-season State Corn Hybrid Tests were conducted at four locations and the Medium-season Tests were conducted at eight locations. All hybrids in these tests contained normal cytoplasm except Stull 307 which contained T cytoplasm. A blight test was conducted at seven locations comparing T cytoplasm corn hybrids with N cytoplasm hybrids, and F_1 (first generation) with F_2 (second generation) hybrids and open pollinated varieties. There were 26 entries in the Full-season and 40 in the Medium-season Tests. The experimental design was a randomized complete block.

Amounts of fertilizer applied to each test were considered sufficient for corn to yield over 100 bushels per acre. Each test was planted at the rate of 28,000 plants per acre and thinned to a stand of 19,000 plants.

Results from the blight test are in Tables 1 and 2. In most cases the 100% normal cytoplasm hybrid out-yielded the same hybrid as a blend or with 100% T cytoplasm. Pioneer brand 3191 (blend) outyielded Pioneer brand 3191 (normal). Tenn. 606B (normal) yielded 139 bushels per acre and Tenn. 606B (100%T) yielded only 92 bushels per acre. Pioneer brand 3369A (70%N-30%T) performed as well as Pioneer brand 3369A (100%N). Pioneer brand 3369A (blend) yielded well in 1970 under southern corn leaf blight conditions.

Several F_1 and F_2 hybrids were compared and the results are given in Table 1. Pioneer brand 511A F_1 yielded 132 bushels per acre for the average and Pioneer brand 511A F_2 yielded 101 bushels per acre. Tenn. 5009 F_1 , a single cross hybrid, yielded 148

bushels per acre and Tenn. 5009 F₂ yielded only 91 bushels per acre on the average. This was a difference of 57 bushels per acre in favor of the F₁ hybrid. These differences probably would not be as great in a drier season but this does show what can happen in a favorable corn growing season. Tenn. 606 F₂ yielded 103 bushels per acre compared to Tenn. 606 F₁ which produced 122 bushels per acre. It is hoped that there will be enough seed of F₁ hybrids with normal cytoplasm to supply the demand for 1972 and there will be no reason to plant F₂ (second generation) corn.

At Knoxville several corn hybrids and varieties were injured in the seedling stage from the use of NH₄NO₃ as a source of nitrogen when the soil pH was about 5.5. However, after the fertilizer was applied the pH dropped below 5.0. The varieties that were injured are given in Table 9. There was some seedling damage from NH₄NO₃ noted at Spring Hill and Martin but not to the extent that it was at Knoxville. T222 x T232 (100%T) was injured worse than T222 x T232 (100%N). However, 100% normal of T139 x T111 was severely injured whereas T139 x T111, which contained 100%T cytoplasm, was not injured. Tenn. 5009 was injured in all three tests at Knoxville and this variety had not been injured in previous years. For best results with corn it seems that the soil reaction—especially on sandy soils with low buffering capacity—should be kept at a pH of 6 to 7 if high rates of acid forming fertilizer are to be used.

Results for the Medium-season test are given in Tables 3 through 5. Tenn. 5009, McNair x 210, Pioneer brand 3369A, Stull 850W, and McCurdy 67-10 were the leading commercial hybrids in grain yield. The 1971 corn yields were among the highest ever obtained in the State Variety Trails. For example, Tenn. 5009 produced 176 bushels per acre in the Medium-season corn variety test and 177 bushels per acre at Crossville in a mechanically harvested test (Table 10). The corn yields at Spring Hill were reduced due to a moisture stress during the growing season. All other locations received adequate moisture for producing high corn yields. Some of the newer corns that looked good in the test were: P.A.G. 644W, Pioneer brand 3368, Princeton SX850, and Funk G-4808. Pioneer brand 3191 did not perform as well in 1971 as it has in previous years. This was pointed out in the blight test where the Pioneer brand 3191 blend out-yielded the Pioneer brand 3191 (100%N) which was used in the medium-season test. Funk G-5757, Funk G-5759, and Funk G-4761 did not perform as well

in 1971 as these hybrids had performed in previous years. One of the early maturing corns which showed good grain quality was DeKalb XL44.

Results from the Full-season Test are given in Tables 6 through 8. The leading varieties in this test were Pioneer brand 3147, McNair 508, McCurdy 67-14, Pioneer brand 511A, Tenn. 5009, and Pioneer brand 515. The leading commercial variety in grain yield was Pioneer brand 3147. This hybrid has been in the State Variety Test for 2 years and has had a good yield record. It has good MDMV resistance and seems to show promise of being an outstanding corn hybrid for silage. The husk cover and grain quality of Pioneer brand 3147 is not as good as Pioneer brand 3369A or Pioneer brand 511A. Under some conditions this might cause a problem when this hybrid is harvested for grain. McNair 508 has been tested for 2 years and shows good husk and grain quality. The ear placement of McNair 508 seems to be a little high. McCurdy 67-14 has been evaluated in the test for 3 years and has performed well all 3 years. This hybrid was added to the 1972 recommended list. There were several varieties removed from the recommended list due to lack of seed being available. These varieties were DeKalb 999, DeKalb 1006, Funk G-711AA, Funk G-732, Pioneer brand 509W, Princeton 920A, Princeton 990A, Stull 400WA, Tenn. 501, McCurdy 66-18, McCurdy 92-11, Pioneer brand 3369, and Tenn. 5009. Seed of some of these varieties can't or won't be produced any more. Results of the corn test are given in Tables 1 through 11.

Table 1. Corn: Yield comparing T cytoplasm corn hybrids with N cytoplasm hybrids, and F_1 with F_2 hybrids and open pollinated varieties at seven locations in 1971.

Variety or hybrid	Type cytoplasm	Avg.	Greene- ville ¹	Knox- ville ²	Cross- ville ³	Spring- field ⁴	Spring Hill ⁵	Martin ⁶	Jackson ⁷
	%				Bushels per acre				
McCurdy MSX88	100T	92	91	84	106	99	66	93	107
McCurdy MSX88	50N-50T	105	115	108	128	118	61	107	100
McCurdy MSX88	100N	118	120	133	139	121	75	132	108
McCurdy 67-14	100T	102	132	89	81	106	76	107	120
McCurdy 67-14	50N-50T	124	140	131	122	135	88	119	134
McCurdy 67-14	100N	139	150	158	172	130	89	144	131
P.A.G. SX91	40N-60T	97	100	100	115	88	76	95	105
P.A.G. SX91	100N	107	100	111	149	90	77	118	102
Pioneer brand 3369A	70N-30T	126	123	136	143	126	82	143	132
Pioneer brand 3369A	100N	129	122	127	151	137	86	143	136
P.A.G. SX39	50N-50T	102	115	97	104	122	62	107	104
P.A.G. SX39	100N	124	123	131	160	140	71	135	109
Pioneer brand 3191	50N-50T	122	118	119	150	124	96	133	116
Pioneer brand 3191	100N	108	86	120	135	116	77	119	104
T139 x T111	100T	80	96	58	72	87	69	82	96
T139 x T111	100N	113	115	101	138	131	83	117	105
T222 x T232	100T	91	99	68	71	106	78	91	123
T222 x T232	100N	117	112	122	159	133	82	102	110
Tenn. 606B	100T	92	109	84	68	111	68	86	115
Tenn. 606B	100N	139	133	149	166	151	86	151	139
Pioneer brand 511A	100N	132	149	155	147	134	88	144	106
Pioneer brand 511A _{1/2}	100N	101	118	114	115	118	70	91	79
T7106	100N	138	150	150	164	146	99	134	123
T1706 F_2	100N	79	71	96	95	90	70	58	76
Tenn. 5009	100N	148	157	164	167	153	102	154	140

Tenn. 5009 F ₂	100N	91	94	110	98	92	65	96	80
Tenn. 606	100N	122	136	139	141	132	91	106	109
Tenn. 606 F ₂	100N	103	87	106	136	138	83	92	81
Neal Paymaster	100N	107	116	116	132	119	70	106	90
Jellicorse	100N	99	116	117	112	116	64	88	81
Burris	100N	89	95	98	129	100	40	88	76
Abati-1 (Flint)	100N	77	80	78	94	80	52	80	75
T. E. M-20-W	100T	94	124	89	85	112	62	84	104
T. E. Silagemaster	100T	84	92	72	92	93	59	92	90
Excel E944	Blend	108	123	112	119	127	67	107	98
DeKalb 633A	Blend	97	95	96	122	108	69	107	84
DeKalb XL85	Blend	108	115	110	130	117	65	113	105
L.S.D. (.05)	—	—	19.3	20.8	18.6	27.9	19.8	21.7	21.4
C.V. %	—	—	8.3	11.4	9.2	11.7	16.3	12.1	12.5
Average	—	—	114	112	124	117	74.7	110	105

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

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

³ Hartsells loam (2% to 5% slopes).

⁴ Huntington silt loam, local alluvium (2% to 5% slopes).

⁵ Maury silt loam (2% to 5% slopes).

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

⁷ Loring silt loam (0% to 2% slopes).

T = Texas male sterile cytoplasm; N = Normal cytoplasm.

Blends—Consists of some plants containing Normal cytoplasm and others containing T cytoplasm.

F₂—Second generation of a hybrid.

Table 2. Corn: Leaf blight tests at six locations in 1971—natural infection

Variety	Cytoplasm type	Greeneville	Knoxville	Crossville	Springfield	Spring Hill	Martin
Rating (0-5) ¹							
McCurdy MSX88	50N-50T	3.5	4.0	0.5	1.0	2.5	3.5
McCurdy MSX88	100T	4.5	4.0	1.0	2.0	3.5	3.5
McCurdy MSX88	100N	1.0	T	0.0	T	0.0	0.0
McCurdy 67-14	50N-50T	3.5	3.5	2.5	2.0	2.5	3.5
McCurdy 67-14	100T	4.5	4.0	3.2	3.5	3.5	4.0
McCurdy 67-14	100N	0.5	T	0.0	0.0	0.0	0.0
P.A.G. SX91	40N-60T	4.5	3.5	0.5	1.0	2.5	3.5
P.A.G. SX91	100N	T	0.5	0.0	0.0	0.0	0.0
Pioneer brand 511A F ₂	100N	T	0.0	0.0	0.0	0.0	0.0
Pioneer brand 3369A	70N-30T	2.0	2.5	0.0	0.5	1.5	2.0
Pioneer brand 3369A	100N	0.0	0.0	0.0	0.0	0.0	0.0
P.A.G. SX39	50N-50T	4.5	4.5	2.0	3.0	3.5	3.5
P.A.G. SX39	100N	0.5	T	0.0	0.0	0.0	0.0
Pioneer brand 3191	50N-50T	3.0	2.5	0.5	0.0	1.5	2.5
Pioneer brand 3191	100N	0.0	T	0.0	0.0	0.0	0.0
T.E. M-20-W	100T	4.5	4.5	3.0	3.5	4.0	4.5
T.E. Mastermaker	100T	4.5	4.5	2.5	3.5	4.0	4.0
T.E. Silagemaster	100T	4.0	4.5	3.0	3.0	3.5	4.0
Excel E944	50N-50T	3.5	3.5	3.0	2.5	3.0	3.5
T7106 F ₂	100N	0.0	0.0	0.0	T	0.0	0.0
T7106	100N	0.0	0.0	0.0	0.0	0.0	0.0
Pioneer brand 511A	100N	0.0	0.0	0.0	0.0	0.0	0.0
Tenn. 5009 F ₂	100N	0.5	0.0	0.0	T	0.0	0.0
Tenn. 5009	100N	0.0	0.0	0.0	0.0	0.0	0.0
Tenn. 606	100N	0.0	0.0	0.0	0.0	0.0	0.0
Tenn. 606 F ₂	100N	0.5	0.5	0.0	0.0	0.0	0.0
Neal Paymaster	100N	0.5	0.5	0.0	0.0	0.0	0.0
Jellicorse	100N	0.5	T	0.0	0.0	0.0	0.0
DeKalb 633A	Blend	4.0	4.0	0.5	2.0	3.5	3.2
DeKalb XL85	Blend	2.5	4.0	0.5	2.0	2.5	3.5
Abati-1 (Flint)	100N	0.5	T	0.0	T	0.0	0.0
T139 x T111	100T	4.5	4.0	3.0	4.0	4.0	3.5
T139 x T111	100N	0.0	T	0.0	0.0	0.0	0.0
T222 x T232	100N	0.5	T	0.0	0.0	0.0	0.0
T222 x T232	100T	5.0	4.0	3.2	4.0	4.0	4.0
Tenn. 606B	100T	5.0	4.0	3.2	4.0	4.5	4.2
Tenn. 606B	100N	0.5	T	0.0	0.0	0.0	0.0
Burris	100N	0.0	T	0.0	0.0	0.0	0.0

¹0=no infection to 5=very heavy infection—all leaves. Ratings were based only on those plants showing blight.

T=trace.

Table 3. Corn: Yields of 40 medium-season hybrids tested at seven locations in 1971

Color		Hybrid	Avg.	Greeneville ¹	Knoxville ²	Crossville ³	Springfield ⁴	Spring Hill ⁵	Martin ⁶	Jackson ⁷	
Bushels per acre											
21	Y	2X	Tenn. 5009	140	134	158	148	176	100	143	123
	Y		T9014 ^s	139	136	149	150	165	102	144	128
	Y		T8026 ^s	137	135	159	153	156	87	148	122
	Y		T8030 ^s	136	145	152	135	162	95	137	123
	Y	2X	McNair X210	134	132	154	165	156	67	138	124
	Y	2X	Pioneer brand 3369A	133	122	140	146	145	94	154	132
	Y		T8024 ^s	131	134	146	136	149	92	148	109
	Y		T0011 ^s	130	126	135	151	148	100	139	106
	W	2X	Stull 850W	128	126	109	152	158	110	128	109
	Y	2X	McCurdy 67-10	127	132	132	138	136	85	149	118
	W	3X	P.A.G. 644W	126	117	134	143	133	104	138	116
	Y	3X	Pioneer brand 3368	126	121	135	136	133	88	146	121
	Y	2X	Princeton SX850	126	125	138	139	140	77	143	119
	Y	2X	Funk G-4808	126	131	134	139	119	98	132	125
	Y	2X	Princeton SX836	124	120	123	140	138	88	143	118
	Y	2X	P.A.G. SX39	124	118	116	146	142	85	136	127
	Y	4X	Tenn. 606	124	113	156	120	156	80	135	107
	Y	2X	Stull 807SX	124	118	134	154	130	83	130	116
	Y	3X	Pioneer brand 3329	122	120	117	135	141	84	138	115
	Y	3X	Stull 809A	121	116	130	142	139	72	132	118
	W	3X	Stull 560W	121	125	132	140	127	82	127	112
	Y	2X	Stull 809SX	118	121	131	150	133	78	112	98
	Y	2X	McCurdy MSX88	116	112	126	129	128	64	138	118
	Y	2X	P.A.G. SX98	115	119	104	129	133	77	138	106
	Y	2X	Excel E8244	114	102	114	124	138	81	125	109

Table 3. (Continued)

Color		Hybrid	Avg.	Greeneville ¹	Knoxville ²	Crossville ³	Springfield ⁴	Spring Hill ⁵	Martin ⁶	Jackson ⁷
Bushels per acre										
Y	2X	Funk G-4646	113	106	114	147	121	72	131	102
Y	4X	Funk G-5757	113	111	112	131	129	75	120	111
Y	4X	Funk G-5759	112	122	115	128	116	79	125	102
Y	Sp3X	Funk G-4761	112	114	124	106	126	83	114	119
Y	2X	P.A.G. SX91	109	104	110	145	104	88	104	105
Y	3X	Pioneer brand 3191	108	95	116	123	107	85	120	114
Y		Stull 307 ⁸	108	114	103	110	128	80	110	105
Y	2X	DeKalb XL66	107	102	104	142	124	72	119	86
Y	2X	P.A.G. SX93	107	101	101	127	138	53	136	93
Y	3X	Pioneer brand 3571	103	106	100	120	109	76	114	97
Y	Sp3X	Funk G-4550	102	110	102	129	112	56	116	93
Y	4X	P.A.G. 438	97	99	108	129	108	51	103	83
Y	2X	DeKalb XL44	90	88	79	119	91	66	100	88
Y	2X	DeKalb XL45A	84	86	86	114	88	41	102	72
Y	4X	DeKalb F880	83	77	79	101	87	56	90	88
L.S.D. (.05)			6.1	12.0	17.0	18.1	15.5	18.4	15.2	16.4
C.V. %			9.8	7.4	9.8	9.5	8.4	16.4	8.4	10.7
Average			118	116	123	135	132	80	129	109

¹ Hermitage silt loam (2% to 5% slopes).² Sequatchie silt loam (2% to 5% slopes).³ Hartsells loam (2% to 5% slopes).⁴ Huntington silt loam, local alluvium (0% to 2% slopes).⁵ Maury silt loam (2% to 5% slopes).⁶ Collins silt loam (2% to 5% slopes).⁷ Loring silt loam (0% to 2% slopes).⁸ Experimentals.⁹ This hybrid contained T cytoplasm and all other hybrids contained normal cytoplasm.

2X=single cross; 3X=3-way cross; 4X=double or 4-way cross.

Table 4. Corn: Average yield and other characteristics of 40 medium-season hybrids tested at seven locations in 1971.

Color		Hybrid	Avg. yield	Erect plants	Ears per 100 plants	Grain quality ¹	Husk cover ¹	Ear height	Grain moisture at harvest
			Bu./A.	%	No.	Rating	Rating	In.	%
Y	2X	Tenn. 5009	140	93	142	2.9	4.9	65	20.7
Y		T9014 ^a	139	96	125	3.8	3.3	63	19.8
Y		T8026 ^a	137	82	122	3.2	2.7	66	21.4
Y		T8030 ^a	136	89	116	3.3	3.1	63	19.4
Y	2X	McNair X210	134	98	94	3.4	3.2	51	20.3
Y	2X	Pioneer brand 3369A	133	98	101	3.2	3.4	53	19.6
Y		T8024 ^a	131	95	112	3.0	2.7	64	20.4
Y		T0011 ^a	130	92	132	3.4	3.5	65	20.6
W	2X	Stull 850W	128	93	94	2.9	2.5	58	22.1
Y	2X	McCurdy 67-10	127	95	103	3.9	3.8	52	19.2
W	3X	P.A.G. 644W	126	96	95	3.4	2.8	62	20.9
Y	3X	Pioneer brand 3368	126	98	100	3.4	3.2	54	19.6
Y	2X	Princeton SX850	126	97	102	3.6	4.2	52	18.7
Y	2X	Funk G-4808	126	97	98	3.0	2.8	54	22.3
Y	2X	Princeton SX836	124	97	97	5.2	3.6	56	19.5
Y	2X	P.A.G. SX39	124	96	98	3.8	4.0	56	19.7
Y	4X	Tenn. 606	124	90	113	3.8	3.2	65	21.8
Y	2X	Stull 807SX	124	95	96	3.9	3.5	52	20.0
Y	3X	Pioneer brand 3329	122	96	107	3.2	2.5	60	19.7
Y	3X	Stull 809A	121	95	98	3.8	2.8	56	20.0
W	3X	Stull 560W	121	93	100	4.7	3.5	60	20.2
Y	2X	Stull 809SX	118	97	93	4.3	2.8	51	21.1
Y	2X	McCurdy MSX88	116	99	96	4.6	4.9	49	19.0
Y	2X	P.A.G. SX98	115	97	95	4.3	5.4	50	19.0
Y	2X	Excel E8244	114	96	88	4.6	3.4	53	19.5

Table 4. (Continued)

Color		Hybrid	Avg. yield	Erect plants	Ears per 100 plants	Grain quality ¹	Husk cover ¹	Ear height	Grain moisture at harvest
			Bu./A.	%	No.	Rating	Rating	In.	%
Y	2X	Funk G-4646	113	97	100	4.0	4.2	46	19.4
Y	4X	Funk G-5757	113	98	99	4.4	2.9	56	20.9
Y	4X	Funk G-5759	112	97	98	4.0	3.7	54	20.5
Y	Sp3X	Funk G-4761	112	97	96	3.6	2.7	53	21.2
Y	2X	P.A.G. SX91	109	100	96	3.9	3.8	52	20.2
Y	3X	Pioneer brand 3191	108	97	81	3.7	3.2	57	21.0
Y		Stull 307 ²	108	83	110	4.1	3.1	63	19.9
Y	2X	DeKalb XL66	107	94	96	3.9	4.6	47	18.4
Y	2X	P.A.G. SX93	107	95	100	5.0	4.6	46	19.5
Y	3X	Pioneer brand 3571	103	100	100	5.5	4.1	47	17.5
Y	Sp3X	Funk G-4550	102	96	90	4.1	3.9	49	18.9
Y	4X	P.A.G. 438	97	96	97	4.8	3.7	52	17.8
Y	2X	DeKalb XL44	90	97	96	3.7	4.0	40	17.5
Y	2X	DeKalb XL45A	84	97	94	5.7	4.2	39	16.2
Y	4X	DeKalb F880	83	94	108	2.2	2.5	55	20.8
L.S.D. (.05)			6.1	—	—	—	—	—	—
C.V. %			9.8	—	—	—	—	—	—
Average			118	—	—	—	—	—	—

¹ Rating was based on a scale of 1 to 9 (1 being excellent and 9 poor).² Experimentals.³ This hybrid contained T cytoplasm and all other hybrids contained normal cytoplasm.

Table 5. Corn: Virus reaction of medium-sized hybrids grown in three locations in Tennessee in 1971¹

Hybrid	Knoxville (Knox Co.)			Waverly (Humphreys Co.)			Savannah (Hardin Co.)		
	Diseased plants		Mean sev. index	Diseased plants		Mean sev. index	Diseased plants		Mean sev. index
	%	Sev. index		%	Sev. index		%	Sev. index	
Pioneer brand 3369A	42.5	3.3	2.0	100.0	4.2	4.2	86.1	4.2	3.8
Pioneer brand 3191	49.0	3.4	2.2	97.5	4.2	3.8	71.9	3.7	3.0
Pioneer brand 3329	44.8	2.6	1.6	100.0	3.3	3.3	62.0	3.7	2.7
Pioneer brand 3368	26.1	2.4	1.4	85.7	4.3	4.0	77.2	4.0	3.3
Pioneer brand 3571	41.6	2.6	1.6	66.6	4.1	3.1	75.4	4.2	3.0
DeKalb XL44	91.2	3.7	3.5	100.0	5.2	5.2	100.0	4.7	4.7
DeKalb XL45A	40.2	2.5	1.6	100.0	4.8	4.8	100.0	4.1	4.1
DeKalb XL66	64.2	2.9	2.2	75.0	5.4	3.9	96.6	3.5	3.4
DeKalb F880	58.9	3.8	2.8	64.5	4.2	3.2	69.7	3.6	2.6
Funk G-4550	65.2	3.0	2.4	91.6	4.4	4.0	88.4	4.4	4.0
Funk G-4646	61.5	3.4	2.6	100.0	4.4	4.4	94.1	4.2	4.0
Funk G-4761	22.5	2.2	1.2	12.5	2.0	1.2	23.5	3.0	1.5
Funk G-4808	3.2	1.5	1.1	5.6	2.0	1.1	19.2	3.4	1.5
Funk G-5757	35.8	2.2	1.4	27.1	3.2	1.6	67.2	3.0	2.4
Funk G-5759	30.1	2.8	1.4	48.2	3.6	2.2	50.6	3.4	2.2
Stull 560W	63.2	3.0	2.2	48.4	4.5	2.6	66.4	3.7	2.8
Stull 807SX	42.2	3.1	1.8	25.0	2.0	1.5	100.0	5.7	5.7
Stull 809SX	64.8	3.0	2.4	100.0	5.5	5.5	75.8	3.8	3.2
Stull 809A	44.0	3.3	2.0	100.0	5.8	5.8	77.6	4.2	3.5
Stull 850W	44.0	2.6	1.9	66.0	4.8	3.6	70.6	4.8	3.8
Stull 907Y	54.8	3.4	2.4	59.6	3.4	2.6	74.6	4.0	3.3
McNair X210	65.6	3.8	2.7	100.0	4.0	4.0	71.5	3.9	3.1
Excel E8244	72.5	3.6	3.0	89.0	5.4	4.9	92.8	4.0	3.8
P.A.G. SX39	72.8	3.6	2.8	77.2	4.6	4.0	88.6	4.1	3.8
P.A.G. SX91	15.4	2.7	1.3	91.5	3.1	2.9	64.2	4.0	2.8

¹ Data furnished by L. M. Josephson and are means of two replications.

Table 5. (Continued)

Hybrid	Knoxville (Knox Co.)			Waverly (Humphreys Co.)			Savannah (Hardin Co.)		
	Diseased plants		Mean sev. index	Diseased plants		Mean sev. index	Diseased plants		Mean sev. index
	%	Sev. index		%	Sev. index		%	Sev. index	
P.A.G. SX93	81.2	3.0	2.6	100.0	2.8	2.8	100.0	5.8	5.8
P.A.G. SX98	11.7	3.0	1.3	22.6	2.0	1.3	97.5	4.6	4.5
P.A.G. 438	46.4	2.8	1.9	43.6	3.2	2.0	96.2	4.4	4.2
P.A.G. 644W	33.8	3.4	1.8	41.6	2.8	1.0	82.6	4.4	2.5
McCurdy 67-10	63.8	3.8	2.8	87.1	4.4	3.9	94.8	4.0	3.8
McCurdy MSX88	54.1	3.4	2.4	83.4	3.4	3.0	79.1	3.6	3.1
Princeton SX836	86.1	3.7	3.4	93.8	4.6	4.4	94.7	4.4	4.2
Princeton SX850	57.0	3.6	2.7	92.3	4.3	4.0	73.4	4.2	3.4
Tenn. 5009 (T224xT232)	3.4	1.5	1.0+	57.2	5.0	4.2	4.2	2.0	1.2
Tenn. 606 (T220xT222) (T224xT232)	43.4	2.8	1.8	34.0	2.8	1.7	55.0	3.2	2.2
Tenn. 606B (T222xT232) (T224xT220)	44.7	2.8	1.8	64.6	3.1	2.4	49.8	3.4	2.2
Experimentals									
T8024 (T224xT232) (Oh7BxT222)	21.1	2.6	1.4	50.0	2.0	1.5	9.6	3.0	1.2
T8030 (T232xOh7B) (T222xT224)	27.7	2.6	1.4	33.4	2.0	1.4	15.4	2.5	1.4
T9014 (T224xT220) (T232xOh7B)	23.2	2.8	1.5	0	—	1.0	19.4	3.0	1.4
T0011 (T224xT61.984-1) (T232xMo12Y)	19.0	2.6	1.3	20.0	2.5	1.6	16.1	3.2	1.4

Table 6. Corn: Yields of 26 full-season hybrids tested at four locations in 1971

Color	Hybrid**	Avg.	Knox- ville ¹	Spring Hill ²	Jackson ³	Fort Pillow ⁴
Bushels per acre						
W	T0104*	136	149	112	134	149
W	T0102*	134	151	101	135	148
Y 2X	Pioneer brand 3147	132	150	118	150	109
Y 4X	McNair 508	127	147	122	120	121
Y 2X	McCurdy 67-14	127	144	97	132	133
W	T7106*	126	151	102	125	124
W	T9102*	124	137	98	138	122
W 4X	Pioneer brand 511A	122	142	107	120	122
Y 2X	Tenn. 5009	122	149	95	129	114
W 4X	Pioneer brand 515	120	144	111	116	109
W	T9101*	119	143	96	127	111
Y	T8030*	116	134	92	120	120
Y 4X	Pioneer brand 3009	115	134	93	135	98
W 3X	Moews SM821W ⁵	115	130	91	131	108
W 4X	Excel E901W	112	118	95	119	114
W 3X	Funk G-2538W*	108	133	91	100	108
Y 4X	Tenn. 606	107	134	82	117	94
Y 4X	P.A.G. 492	106	116	89	122	96
Y 3X	Pioneer brand 3151	104	111	89	111	104
Y 3X	DeKalb XL389	101	123	86	107	89
Y	Texas 28A	92	107	67	97	97
Y 2X	Princeton SX804	92	109	72	106	81
Y 2X	Asgrow IXL9	90	122	80	106	50
Y 3X	Excel 1022	88	96	80	88	87
W Sp3X	Funk G-4895W	77	113	59	78	56
Y 2X	Asgrow RX100	66	79	61	91	34
L.S.D. (.05)		8.3	18.5	14.2	15.5	18.1
C.V. %		10.8	10.1	11.0	9.4	12.3
Average		111	130	92	118	104

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

² Maury silt loam (2% to 5% slopes).

³ Loring and Memphis silt loam (0% to 2% slopes).

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

⁵ Formerly tested as Moews M5559W.

* Experimentals.

** All hybrids in this test contained normal cytoplasm.

2X = single cross; 3X = 3-way cross; 4X = double or 4-way cross.

Table 7. Corn: Average yield and other characteristics of 26 full-season hybrids tested at four locations in 1971

Color	Hybrid	Avg. yield	Erect plants	Ears per 100 plants	Grain quality ¹	Husk cover ¹	Ear height	Grain moisture at harvest
		Bu./A.	%	No.	Rating	Rating	In.	%
W	T0104 ²	136	93	142	3.8	3.0	65	20.8
W	T0102 ²	134	93	143	4.0	3.7	62	19.2
Y	2X Pioneer brand 3147	132	98	96	4.9	5.0	59	20.2
Y	4X McNair 508	127	98	137	3.3	2.3	67	23.4
Y	2X McCurdy 67-14	127	98	89	2.6	3.8	53	23.9
W	T7106 ²	126	95	134	3.0	3.2	60	21.2
W	T9102 ²	124	97	121	3.9	1.8	58	19.5
W	4X Pioneer brand 511A	122	95	121	2.8	2.2	61	19.2
Y	2X Tenn. 5009	122	90	120	3.1	3.5	64	19.4
W	4X Pioneer brand 515	120	98	103	2.4	1.7	71	21.2
W	T9101 ²	119	95	120	4.2	2.5	58	18.9
Y	T8030 ²	116	92	116	3.2	2.0	61	17.8
Y	4X Pioneer brand 3009	115	96	84	2.2	1.8	62	22.8
W	3X Moews SM821W (M5559W)	115	100	88	3.6	1.8	56	20.8
W	4X Excel E901W	112	90	86	2.4	2.0	61	20.8
W	3X Funk G-25389W ²	108	99	112	4.2	2.5	64	19.4
Y	4X Tenn. 606	107	93	117	3.8	3.5	60	20.1
Y	4X P.A.G. 492	106	95	89	4.2	2.3	56	20.7
Y	3X Pioneer brand 3151	104	96	89	3.5	2.5	59	19.2
Y	3X DeKalb XL389	101	96	90	3.8	4.5	56	21.2
Y	Texas 28A	92	91	96	5.5	3.5	64	20.9
Y	2X Princeton SX804	92	98	94	4.8	3.8	50	17.3
Y	2X Asgrow IXL9	90	95	98	4.9	6.7	46	18.8
Y	3X Excel 1022	88	96	85	4.0	3.0	65	23.0
W	Sp3X Funk G-4895W	77	96	81	5.8	2.5	51	21.4
Y	2X Asgrow RX100	66	94	87	3.6	6.8	45	17.6
L.S.D. (.05)		8.3	—	—	—	—	—	—
C.V. %		10.8	—	—	—	—	—	—
Average		111	—	—	—	—	—	—

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

² Experimentals.

Table 8. Corn: Virus reaction of full-season hybrids grown in three locations in Tennessee in 1971¹

Hybrid	Knoxville (Knox Co.)			Waverly (Humphreys Co.)			Savannah (Hardin Co.)		
	Diseased plants		Mean sev. index	Diseased plants		Mean sev. index	Diseased plants		Mean sev. index
	%	Sev. index		%	Sev. index		%	Sev. index	
Pioneer brand 511A	23.7	2.8	1.4	75.0	3.7	3.0	46.7	2.8	2.0
Pioneer brand 515	7.2	2.8	1.1	66.7	3.5	2.7	15.0	3.0	1.3
Pioneer brand 3009	25.0	2.7	1.5	20.0	1.9	1.4	68.4	3.9	3.0
Pioneer brand 3147	0	—	1.0	20.8	5.0	1.9	52.2	3.8	2.5
Pioneer brand 3151	70.7	3.7	3.0	83.4	4.5	3.8	86.1	4.3	4.0
DeKalb XL389	67.4	3.2	2.5	58.4	3.8	2.6	74.0	4.5	3.6
Funk G-4895W	54.0	3.4	2.6	50.0	2.2	2.2	79.9	5.2	4.4
Funk G-25389W	22.1	3.0	1.4	20.0	1.8	1.3	26.3	4.4	2.2
Asgrow RX100	41.6	3.2	2.0	58.4	4.5	3.0	92.1	5.6	5.3
Asgrow IXL9	21.7	3.2	1.5	52.6	3.5	2.2	85.3	4.0	3.6
McNair 508	10.6	2.5	1.2	51.8	3.8	2.0	15.6	2.4	1.4
Excel E901W	45.8	3.4	2.1	54.5	4.0	2.6	71.2	4.5	3.8
Excel 1022	39.1	2.8	1.7	10.0	2.0	1.2	62.8	3.8	3.0
P.A.G. 492	61.4	3.0	2.3	87.5	5.8	5.3	88.9	5.0	4.6
McCurdy 67-14	48.0	2.9	2.0	69.3	3.4	2.6	86.7	4.3	3.8
Princeton SX804	21.6	2.4	1.5	16.6	3.0	1.6	86.6	3.3	3.0
Moews SM821W (M5559W)	33.4	3.0	1.7	100.0	3.0	3.0	76.0	3.6	3.0
Texas 28A	63.6	3.9	2.8	75.0	3.0	2.5	75.8	4.3	3.4
Tenn. 5009 (T224xT232)	30.4	2.2	1.4	8.0	2.5	1.1	0	—	1.0
Tenn. 606 (T220xT222) (T224xT232)	44.3	2.7	1.8	0	—	1.0	52.0	3.7	2.3
Experimentals									
T7106 (T115xMo18W)	15.0	2.2	1.2	21.4	2.0	1.4	11.8	3.0	1.2
T8030 (T232xOh7B) (T222xT224)	10.3	2.0	1.2	36.1	4.0	1.8	31.2	3.3	1.8
T9101 (T111xMp339) (T115xMo18W)	13.8	2.4	1.2	42.9	4.6	2.6	48.2	3.3	2.2
T9102 (T115xMp339) (Ga209xMo18W)	10.0	2.2	1.2	37.5	2.0	1.4	36.6	3.2	2.0
T0102 (T115xMo18W) (T61w.c.xGa209)	15.5	2.5	1.2	4.2	1.6	1.5	24.3	3.8	1.6
T0104 (T115xMo18W) (T61w.c.xMp339)	15.5	2.4	1.2	29.6	2.2	1.4	72.8	4.1	3.5

¹ Data furnished by L. M. Josephson and are means of two replications.

Table 9. Corn: NH_4NO_3 seedling injury to several corn varieties in three variety tests at Knoxville in 1971¹

Blight Test²

Variety	Cytoplasm type	Damaged plants %
P.A.G. SX91	(40N-60T)	7.3
P.A.G. SX91	(100N)	3.5
T. E. Silagemaster	(100T)	16.5
Tenn. 5009SX	(100N)	31.2
Neal Paymaster	(100N)	8.2
Jellicorse	(100N)	6.7
T139 x T111 ³	(100N)	86.8
T222 x T232	(100T)	29.8
T222 x T232	(100N)	3.5
Burris	(100N)	15.9

Medium Season Corn Test⁴

Tenn. 5009	(100N)	7.1
P.A.G. SX98	"	2.7
Stull 850W	"	2.6
T9014	"	5.4
T8024	"	2.6
DeKalb XL45A	"	2.7
Funk 4808	"	44.3
Pioneer brand 3329	"	30.5
P.A.G. SX91	"	7.5

Full Season Variety Test⁵

Tenn. 5009	43.0
Funk G-4895W	3.0
Pioneer brand 3151	13.7
T8030	2.8
Tenn. 606	5.7
P.A.G. 492	2.7
T9101	5.7

¹ The tests were on Sequatchie silt loam (2% to 5% slopes) which had been fertilized with 500 pounds of 0-20-20 plus 120 pounds of N per acre using NH_4NO_3 as the source. The pH before fertilization was about 5.5 and the area had received 2 tons of lime per acre in the fall of 1970.

² A total of 38 varieties were in the blight test and the only varieties listed were those showing injury.

³ Yields were reduced by this severe injury.

⁴ A total of 40 varieties were evaluated and only varieties showing injury were listed.

⁵ Only 26 varieties were in this test and all contained 100% N cytoplasm.

Table 10. Corn: Yields of corn varieties harvested mechanically at Crossville in 1971

Variety	Yield Bu./A.	Variety	Yield Bu./A.
Tenn. 5009	178	DeKalb XL66	150
Pioneer brand 3369A	167	Funk G-4550	147
Funk G-4646	166	Funk G-5759	144
Funk G-5757	165	Pioneer brand 3571	142
Stull 807SX	163	Funk G-4761	140
P.A.G. SX91	154	Princeton SX850	140
P.A.G. 644W	152	Tenn. 606	139
DeKalb XL81	151	Pioneer brand 3191	134
L.S.D. (.05)	11.0		11.0
C.V. %	4.8		4.8

Table 11. Corn: Grain yield and other characteristics of 19 corn hybrids harvested mechanically at Ames Plantation in 1971¹

Variety	Yield Bu./A.	Lodging %	Population P./A.	Grain moisture at harvest %
Tenn. 5009	108	9	18,948	14.9
Moews SM821W (M5559W)	107	5	19,602	16.2
Funk G-4761	103	10	18,818	14.4
Pioneer brand 511A	101	12	19,145	15.6
Pioneer brand 3369A	99	11	18,883	14.4
Funk G-5757	97	9	19,079	14.6
P.A.G. SX91	87	4	19,014	15.0
Pioneer brand 3191	86	8	18,099	14.6
DeKalb XL81	82	8	18,557	14.2
Pioneer brand 3571	82	7	18,883	13.8
Funk G-5759	82	15	18,753	14.6
Funk G-4646	82	11	18,622	14.4
Tenn. 606	80	13	17,707	15.2
Princeton SX850	80	12	18,491	14.4
P.A.G. 644W	77	12	18,687	15.4
DeKalb XL66	74	16	17,830	14.6
Stull 807SX	74	10	17,707	14.2
Funk G-4550	68	16	17,577	14.0
Abati-1 (Flint)	61	13	18,557	15.0
L.S.D. (.05)	18.1	—	—	—
C.V. %	14.9	—	—	—

¹ Loring silt loam (2% to 5% slopes).

GRAIN SORGHUM

The grain sorghum tests were conducted at Knoxville, Spring Hill, Milan, Martin, Ames Plantation, and Crossville. The tests at Milan and Ames Plantation were planted and harvested by machine. All other tests were planted with a Planet Junior and harvested by hand before threshing. In 1970 the leading varieties in grain yield were Dorman Br105, Dorman Br100, McCurdy Birds-off, Acco R-1093, and Ga. 615. The leading varieties in average grain yield in 1971 were Penngrain B.R., DeKalb X1538 (Experimental), McCurdy Birds-off 81, McCurdy Birds-off, Dorman Br100, Ga. 615, Co-op Bird Go, and Acco R-1093.

A test was conducted at Crossville for the first time in 1971. Very high grain yields were obtained at this location (Table 16). Funk G-BR79 produced 161 bushels per acre and this is the highest grain yield we have ever obtained in the State Variety Trials. The other leading varieties at this location were Ga. 615, Frontier 409, Co-op Bird Go, and Dorman Br100. Mini-Milo Br54, a very early variety, produced only 75 bushels per acre at this location.

The recommended varieties for 1972 are Acco R-1093, AKS 614, Co-op Bird Go, Dorman Br100, Funk G-BR79, Ga. 615, McCurdy Birds-off, and McNair 546. Frontier 409 was removed from the recommended list due to the lack of a seed supply in Tennessee. However, seed can be obtained from Frontier Hybrids, Inc., Scott City, Kansas 67871. Funk G-BR79 and McCurdy Birds-off were added to the 1972 recommended list. Funk G-BR79 should be available locally and McCurdy Birds-off can be obtained from W. O. McCurdy & Sons, Fremont, Iowa 52561. Another variety that was in very short supply in Tennessee in 1971 was Acco R-1093. This variety can be obtained from Acco Seed, P. O. Box 1630, Plainview, Texas 79072. Dorman Br100 can be obtained from Dorman and Company, P. O. Box 303, Lubbock, Texas 79415. All other varieties on the recommended list should be readily available in Tennessee.

The average yields of several varieties were reduced due to their poor performance at Ames Plantation. These varieties were: Co-op Bird Go, Funk G-BR79, Bravis R, DeKalb Br 64, Savanna 2, DeKalb Br 44, and X1629 (experimental). DeKalb Br 64 has performed poorly for the past 3 years at Ames Plantation. The leading varieties at Ames in 1971 were DeKalb X1538 (experi-

mental), McCurdy Birds-off 81, and McCurdy Birds-off. The leading varieties in grain yield at Spring Hill were McCurdy Birds-off, DeKalb X1538 (experimental), Dorman Br100, and Co-op Bird Go. The leading varieties at Martin were Penngrain B.R. and Co-op Bird Go. Yield data for five locations are given in Table 12.

Table 12. Grain Sorghum: Grain yield of varieties tested at five locations in 1971

Variety	Avg.	Knox-ville ¹	Spring Hill ²	Milan ³	Martin ⁴	Ames Plantation ⁵
Bushels per acre						
Penngrain B.R.	103	118	101	95	120	80
DeKalb X1538 (Exp.)	102	109	108	91	112	91
McCurdy Birds-off 81	102	102	98	94	118	98
McCurdy Birds-off	100	107	110	95	114	96
Dorman Br100	99	108	105	94	110	78
Ga. 615	96	106	99	87	111	77
Co-op Bird Go	95	109	104	88	121	54
Acco R-1093	95	96	91	96	110	81
Frontier 409	94	102	97	90	111	67
Funk G-BR79	93	118	95	89	116	49
Funk G-BR630	91	93	90	87	106	79
T.E. Bird-A-Boo	91	95	96	90	102	70
Bravis R	90	99	97	96	111	48
McCurdy Birds-off 31	90	87	85	89	100	87
DeKalb Br 64	90	103	96	92	109	48
AKS 614	88	85	90	88	106	74
McNair 546	88	93	95	78	101	72
AKS 663	87	97	98	78	105	57
Pioneer brand BR804	87	90	88	98	102	57
Savanna 2	86	88	99	77	113	53
McNair 880	84	85	90	77	106	62
Shoo Bird	84	84	87	83	91	74
McCurdy Birds-off 52	83	87	83	78	93	75
Acco R-1023 BR	82	76	79	83	92	78
McCurdy Birds-off 10	81	75	72	81	102	74
DeKalb Br 44	75	88	91	67	101	30
DeKalb X1629 (Exp.)	72	78	90	62	75	55
L.S.D. (.05)	—	14.1	10.4	9.5	13.5	7.6
C.V. %	—	10.2	7.8	7.6	9.1	16.7

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

² Maury silt loam (2% to 5% slopes).

³ Collins silt loam (0% to 2% slopes).

⁴ Falaya silt loam (0% to 2% slopes).

⁵ Loring silt loam (2% to 5% slopes).

Table 13. Grain Sorghum: Yield and other characteristics of varieties tested at Knoxville in 1971¹

Variety	Yield	Date headed	Plant height	Head type	Grain moisture before harvest ²
	Bu./A.		In.	(1-3)	%
Penngrain B.R.	118	7-19	60	3.0	29.3
Funk G-Br79	118	7-21	61	3.0	31.1
Co-op Bird Go	109	7-21	64	3.0	34.4
DeKalb X1538 (Exp.)	109	7-22	54	1.8	28.4
Dorman Br100	108	7-18	56	3.0	26.0
McCurdy Birds-off	107	7-15	58	3.0	24.3
Ga. 615	106	7-21	61	3.0	31.2
DeKalb Br 64	103	7-20	62	3.0	29.6
McCurdy Birds-off 81	102	7-15	46	2.5	25.7
Frontier 409	102	7-20	53	2.8	27.8
Bravis R	99	7-13	52	3.0	23.8
AKS 663	97	7-19	55	3.0	27.9
Acco R-1093	96	7-16	56	3.0	28.2
T.E. Bird-A-Boo	95	7-15	48	3.0	26.2
Funk G-BR630	93	7-19	50	3.0	26.8
McNair 546	93	7-21	52	3.0	29.1
Pioneer brand BR804	90	7-17	51	3.0	25.6
DeKalb Br 44	88	7-14	54	2.2	24.6
Savanna 2	88	7-22	52	2.2	25.8
McCurdy Birds-off 31	87	7-8	45	3.0	19.5
McCurdy Birds-off 52	87	7-19	48	2.5	15.6
McNair 880	85	7-22	48	1.5	26.0
AKS 614	85	7-17	54	3.0	25.8
Shoo Bird	84	7-14	41	3.0	22.0
DeKalb X1629 (Exp.)	78	7-23	45	1.5	29.6
Acco R-1023 BR	76	7-14	51	3.0	25.8
McCurdy Birds-off 10	75	7-8	42	3.0	18.1
L.S.D. (.05)	14.1	—	—	—	—
C.V. %	10.2	—	—	—	—

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

² Moisture sample taken several days before harvest to obtain an estimate of maturity.

Table 14. Grain Sorghum: Yield and other characteristics of varieties tested at Spring Hill in 1971¹

Variety	Yield	Date headed	Plant height	Head type	Moisture before harvest ³
	Bu./A.		In.	(1-3) ²	%
McCurdy Birds-off	110	7-9	46	3.0	13.3
DeKalb X1538 (Exp.)	108	7-16	44	1.2	15.8
Dorman Br100	105	7-9	44	3.0	13.6
Co-op Bird Go	104	7-14	44	2.9	13.8
Penngrain B.R.	101	7-12	40	2.8	12.9
Savanna 2	99	7-15	44	2.4	13.5
Ga. 615	99	7-13	42	2.8	13.5
McCurdy Birds-off 81	98	7-11	36	2.1	13.0
AKS 663	98	7-18	52	3.0	13.3
Bravis R	97	7-10	42	3.0	12.7
Frontier 409	97	7-12	44	3.0	13.0
T.E. Bird-A-Boo	96	7-9	38	3.0	12.5
DeKalb Br 64	96	7-17	52	2.5	15.0
McNair 546	95	7-12	38	3.0	13.1
Funk G-BR79	95	7-13	48	2.8	14.3
Oro	91	7-14	34	1.9	14.4
Acco R-1093 BR	91	7-11	38	3.0	13.5
DeKaib Br 44	91	7-12	36	1.5	13.9
Funk G-BR630	90	7-12	36	3.0	13.0
DeKalb X1629 (Exp.)	90	7-18	38	1.9	15.7
AKS 614	90	7-11	42	2.9	14.5
McNair 880	90	7-15	38	1.9	15.2
Pioneer brand BR804	88	7-14	38	2.8	12.7
Shoo-Bird	87	7-9	32	3.0	11.9
McCurdy Birds-off 52	83	7-15	34	1.8	12.4
McCurdy Birds-off 31	85	7-6	42	3.0	14.9
Acco R-1023 BR	79	7-10	36	3.0	12.7
McCurdy Birds-off 10	72	7-5	30	1.8	13.2
L.S.D. (.05)	10.4	—	—	—	
C.V. %	7.8	—	—	—	

¹ Maury silt loam (2% to 5% slopes).

² A rating of 1 through 3 was used; 1 being tight, 2 medium, and 3 open head in compactness.

³ Moisture taken on Sept. 22 as a rough measurement of maturity.

Table 15. Grain Sorghum: Yield and other characteristics of varieties tested at Milan in 1971

Variety	Yield	Date headed	Plant height	Moisture at harvest	Head exertion	Head type
	Bu./A.		In.	%	In.	
Pioneer brand BR804	98	7-20	49	16.0	5	Open
Acco R-1093	96	7-19	50	15.8	6	Open
Bravis R	96	7-19	49	15.8	7	Open
Penngrain B.R.	95	7-16	59	16.2	7	Open
McCurdy Birds-off	95	7-16	53	16.0	5	Open
McCurdy Birds off 81	94	7-19	46	14.0	6	Med.
Dorman Br100	94	7-16	48	16.0	5	Med.
DeKalb Br 64	92	7-20	64	16.4	7	Med.
DeKalb X1538 (Exp.)	91	7-19	63	16.2	6	Med.
T.E. Bird-A-Boo	90	7-16	44	15.2	5	Open
Frontier 409	90	7-16	43	15.4	4	Med.
Funk G-BR79	89	7-16	52	16.2	6	Med.
McCurdy Birds-off 31	89	7-12	46	15.0	5	Open
AKS 614	88	7-16	45	15.4	5	Open
Co-op Bird Go	88	7-19	55	16.4	6	Open
Ga. 615	87	7-16	54	15.8	6	Open
Funk G-BR630	87	7-16	46	15.8	5	Open
Oro	85	7-21	52	14.0	5	Med.
Shoo-Bird	83	7-14	41	14.0	4	Open
Acco R-1023 BR	83	7-19	45	15.0	6	Med.
McCurdy Birds-off 10	81	7-12	39	14.0	4	Tight
McCurdy Birds-off 52	78	7-21	49	13.6	7	Med.
McNair 546	78	7-16	47	15.6	4	Open
AKS 663	78	7-23	60	15.4	6	Open
McNair 880	77	7-19	49	16.0	6	Med.
Savanna 2	77	7-19	48	14.2	5	Open
DeKalb Br 44	67	7-20	56	14.2	8	Med.
DeKalb X1629 (Exp.)	62	7-23	50	15.0	6	Tight
L.S.D. (.05)	9.5	—	—	—	—	—
C.V. %	7.6	—	—	—	—	—

Soil type: Collins silt loam (0% to 2% slopes).

Planting date: May 21.

Date harvested by machine: Sept. 24.

Table 16. Grain Sorghum: Yield and other characteristics of grain sorghum varieties evaluated at Crossville in 1971¹

Variety	Yield	Date headed	Plant height	Moisture before harvest ²
	Bu./A.		In.	%
Funk G-BR79	161	8-6	65	21.9
Ga. 615	153	8-6	64	21.2
Frontier 409	150	8-5	56	18.0
Co-op Bird Go	149	8-7	66	22.4
Dorman Br100	148	8-2	59	16.4
AKS 614	141	8-2	56	17.2
Acco R-1093	139	8-2	54	16.4
Savanna 2	138	8-7	54	17.3
DeKalb Br 44	134	8-3	55	15.4
DeKalb Br 64	134	8-9	58	21.2
Bravis R	133	8-2	52	17.4
McNair 546	128	8-5	54	16.8
McCurdy Birds-off 31	124	7-28	46	14.2
Mini-Milo Br54	78	7-20	45	11.6
L.S.D. (.05)	10.7			
C.V. %	5.5			

¹ Hartsells loam (2% to 5% slopes).

² Moisture used as a rough measurement of maturity.

Table 17. Grain Sorghum: Yields of grain sorghum varieties tested for 3 years, 1969-71¹

Variety	1969-71	1971	1970	1969
	Bushels per acre			
Dorman B 100	85	99	76	81
McCurdy Birds-off	85	100	75	80
Ga. 615	84	96	73	84
Co-op Bird Go	83	95	68	87
Acco R-1093	83	95	73	82
Frontier 409	83	94	71	85
Funk G-BR79	82	93	68	84
AKS 614	81	88	72	82
McNair 546	81	88	71	83
DeKalb Br 64	80	90	67	84
T.E. Bird-A-Boo	79	91	67	80
AKS 663	77	87	63	80

Table 18. Grain Sorghum: Virus reaction of grain sorghum hybrids grown in three locations in Tennessee in 1971¹

Hybrid	Knoxville (Knox Co.)			Knoxville (Knox Co.)			Savannah (Hardin Co.)		
	Diseased plants		Mean sev. index	Diseased plants		Mean sev. index	Diseased plants		Mean sev. index
	%	Sev. index		%	Sev. index		%	Sev. index	
Frontier 409	0	—	1.0	0	—	1.0	2.6	4.5	1.1
Funk G-BR79	1.0	4.5	1.1	1.4	1.5	1.1	5.4	6.0	1.2
Funk G-BR60	1.4	2.0	1.1	0	—	1.0	0	—	1.0
Funk G-393	0	—	1.0	0	—	1.0	5.2	2.5	1.2
Funk G-522	1.5	4.5	1.1	0	—	1.0	3.7	2.0	1.1
AKS 614	0	—	1.0	0	—	1.0	5.6	2.0	1.1
AKS 663	0	—	1.0	0	—	1.0	7.1	3.0	1.2
Dorman Br100	0	—	1.0				7.0	3.8	1.2
McNair 546	0	—	1.0				0	—	1.0
McNair 654	9.4	7.8	1.6	20.5	6.0	2.2	2.8	1.5	1.1
McNair 880	21.0	6.2	2.2	25.0	3.0	1.5	0	—	1.0
Co-op Bird Go	3.4	3.4	1.1	6.9	2.0	1.1	5.2	5.0	1.2
Ga. 615	3.4	4.4	1.2	20.0	4.3	1.7	4.4	2.4	1.1
Acco R-109	0	—	1.0	0	—	1.0	3.6	4.5	1.1
Acco R-1023 BR	1.5	4.0	1.1	0	—	1.0	4.8	6.2	1.2
Acco R-1093 BR	4.0	4.8	1.3	41.4	3.0	1.8	0	—	1.0
DeKalb Br 44	68.2	7.4	5.4	70.4	8.1	6.2	52.8	5.2	3.4
DeKalb Br 64	9.8	4.1	1.3	36.0	7.4	3.4	9.4	2.9	1.2
DeKalb X1538 (Exp.)	5.2	2.4	1.2	56.2	5.3	3.5	1.7	4.5	1.1
DeKalb X1629 (Exp.)	0	—	1.0	5.0	3.0	1.2	0	—	1.0
T.E. Bird-A-Boo	1.2	4.5	1.1	29.0	4.2	2.0	13.3	4.0	1.4
McCurdy Birds-off	1.2	2.0	1.0+	18.8	3.7	1.5	7.6	3.8	1.2
McCurdy Birds-off 10	0	—	1.0	0	—	1.0	1.2	1.5	1.0+
McCurdy Birds-off 31	0	—	1.0	1.6	2.5	1.1	2.2	2.2	1.1
McCurdy Birds-off 52	1.3	3.0	1.1	0	—	1.0	1.8	5.0	1.2
McCurdy Birds-off 81	0	—	1.0	0	—	1.0	2.4	4.5	1.2

¹ Data furnished by L. M. Josephson and are means of two replications.

Pioneer brand BR804	2.2	3.2	1.1	5.2	6.5	1.2	0	—	1.0
Bravis R	4.4	2.5	1.1	5.4	2.5	1.2	0	—	1.0
Savanna 2	1.4	3.0	1.1	0	—	1.0	2.1	3.2	1.1
Shoo Bird	0	—	1.0	0	—	1.0	0	—	1.0
Oro	0	—	1.0	0	—	1.0	0	—	1.0
Dorado	9.8	7.5	1.6	0	—	1.0	0	—	1.0
Dorado M	0	—	1.0	0	—	1.0	1.8	2.5	1.1
Double TX	6.6	6.6	1.4	0	—	1.0	7.5	1.6	1.1
Penngrain B.R.	3.6	6.8	1.2	0	—	1.0	2.8	5.5	1.2
Total	9.2	7.6	1.6	0	—	1.0	5.9	3.0	1.2

SOYBEANS

Soybean varieties were tested in 1971 at Knoxville, Crossville, Springfield, Martin, Milan, Jackson, Ames Plantation, and Spring Hill.

York, Dare and R 68-105¹ performed well at all locations. York led the test in yield at Jackson and Milan, and Dare led at Martin and Crossville. Lee and Lee 68 produced the same average yield and performed similarly at all locations.

York, R 68-105¹ and Dyer performed well at Springfield while Pickett and Pickett 71 did not perform well. D-68-128, an experimental strain, had a leaf disease and performed poorly at Springfield, but performed well at all other locations with no disease problem.

Bragg was evaluated at only four locations in 1971 and performed well at Knoxville and Milan.

Hill did not perform as well in 1971 as it has in previous years. Hale 3, a tall and viney variety, yielded well. Lee and Lee 68 tended to lodge whereas York was one of the best varieties for standing ability.

At Ames Plantation the leading varieties were York, Dare, R 68-105¹ Pickett, Pickett 71, and Dyer. Dyer usually does not perform well at this location and Bragg did not perform as well at Ames as it has in previous years.

Data on soybeans are shown in Tables 19-25.

¹ R 68-105 strain was named Mack and released on December 1, 1971 by the Arkansas Experiment Station. Seed will be available only to certified growers in 1972. Certified seed should be available for farmer planting in 1973.

Table 19. Soybeans: Yield of soybean varieties evaluated at seven locations in 1971

Variety	Average	Knox- ville ¹	Cross- ville ²	Spring Hill ³	Spring- field ⁴	Martin ⁵	Milan ⁶	Jackson ⁷	Ames Plantation ⁸
Bushels per acre									
York	45	41	36	43	46	47	50	50	47
Dare	43	42	37	40	41	55	44	40	44
R 68-105 (Mack)	43	37	33	37	48	50	44	48	45
Dyer	42	37	36	36	48	51	42	40	44
Lee 68	41	44	30	38	41	48	49	38	39
Lee	41	40	30	40	36	52	47	39	38
Hood	40	42	30	40	42	46	41	39	38
Pickett 71	38	42	29	41	29	44	45	36	42
Hill	38	33	30	38	38	49	38	40	39
Pickett	38	39	34	38	24	48	45	35	43
Hale 3	—	42	33	36	28	45	49	—	35
Bragg	—	46	—	32	—	—	43	—	36
D-68-128	—	48	32	42	26	52	54	—	—
L.S.D. (.05)	—	6.0	3.4	3.1	10.8	N.S.	5.2	7.4	4.4
C.V. %	—	10.2	7.4	5.6	20.1	11.5	8.0	10.7	7.4

¹ Sequatchie silt loam (2% to 5% slopes).² Hartsells loam (2% to 5% slopes).³ Maury silt loam (2% to 5% slopes).⁴ Bewleyville and Huntington silt loam (2% to 5% slopes).⁵ Grenada silt loam (2% to 5% slopes).⁶ Vicksburg silt loam (0% to 2% slopes).⁷ Memphis silt loam (0% to 2% slopes).⁸ Loring silt loam (2% to 5% slopes).

Table 20. Soybeans: Yield and other characteristics of 13 varieties evaluated at Knoxville in 1971¹

Variety	Yield	Date 1st flower	Date mature	Plant height
	Bu./A.			In.
D-68-128	48	7-20	10-18	42
Bragg	46	8-2	10-26	48
Lee 68	44	7-31	10-23	39
Hale 3	42	7-30	10-13	53
Dare	42	7-20	10-14	40
Pickett 71	42	8-3	10-25	37
Hood	42	7-30	10-20	37
York	41	7-18	10-9	39
Lee	40	7-31	10-25	39
Pickett	39	8-6	10-24	39
R 68-105 (Mack)	37	7-22	10-8	38
Dyer	37	7-20	10-8	33
Hill	33	7-20	9-27	38
Kanza ²	20	7-16	9-27	43
L.S.D. (.05)	6.0	—	—	—
C.V. %	10.2	—	—	—

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

² Kanza yield not included in analysis because it was planted in four plots at one end of field and not randomized.

Table 21. Soybeans: Yield and other characteristics of varieties tested at Crossville in 1971^{1, 2}

Variety	Yield	Date 1st flower	Date last flower	Date mature	Plant height
	Bu./A.				In.
Dare	37	7-28	8-24	10-8	40
Dyer	36	7-28	8-25	10-8	37
York	36	7-26	8-23	10-8	45
Pickett	34	8-6	8-29	Frost	39
Hale 3	33	8-6	8-30	Frost	52
R 68-105 (Mack)	33	7-30	8-25	10-8	38
D-68-128	32	7-29	8-25	Frost	42
Hood	30	8-2	8-29	Frost	38
Lee	30	8-6	8-26	Frost	39
Hill	30	7-29	8-26	10-5	38
Lee 68	30	8-6	8-27	Frost	39
Pickett 71	29	8-9	8-30	Frost	37
L.S.D. (.05)	3.4				
C.V. %	7.4				

¹ Hartsells loam (2% to 5% slopes).

² Planted on May 5, 1971.

Table 22. Soybeans: Yield and other characteristics of 13 soybean varieties evaluated at Spring Hill in 1971¹

Variety	Yield	Date 1st flower	Date last flower	Date mature	Plant height	Lodging
	Bu./A.				In.	%
York	43	7-6	8-16	10-11	30	16
D-68-128 ²	42	7-9	8-20	10-6	34	14
Pickett 71	41	7-19	8-31	10-19	36	58
Dare	40	7-9	8-20	10-6	36	38
Hood	40	7-16	8-27	10-11	32	65
Lee	40	7-19	8-24	10-19	35	67
Hill	38	7-12	8-17	10-1	34	45
Lee 68	38	7-19	8-24	10-18	36	58
Pickett	38	7-21	8-31	10-18	36	50
R 68-105 ² (Mack)	37	7-12	8-17	10-6	34	42
Dyer	36	7-9	8-17	10-8	30	15
Hale 3	36	7-19	8-31	10-8	50	82
Bragg	32	7-23	8-31	10-18	46	90
L.S.D. (.05)	3.1	—	—	—	—	—
C.V. %	5.6	—	—	—	—	—

¹ Maury silt loam (2% to 5% slopes).

² Experimentals.

Table 23. Soybeans: Yield and other characteristics of 12 varieties evaluated at Martin under cyst nematode free conditions in 1971.

Variety	Yield	Flower color	Pubes- cence color	Date mature	Plant height	Lodging
	Bu./A.				In.	%
Dare	55	White	Gray	10-22	34	1
D-68-128 ¹	52	White	Tawny	10-12	30	5
Lee	52	Purple	Tawny	11-2	36	55
Dyer	51	Purple	Tawny	10-12	26	5
R 68-105 ¹ (Mack)	50	Purple	Tawny	10-15	38	25
Hill	49	White	Tawny	10-4	30	1
Lee 68	48	Purple	Tawny	11-2	38	25
Pickett	48	Purple	Gray	11-2	37	45
York	47	Purple	Gray	10-22	28	15
Hood	46	Purple	Gray	10-22	32	25
Hale 3	45	Purple	Gray	10-15	54	25
Pickett 71	44	Purple	Gray	11-2	34	25
L.S.D. .05)	N.S.	—	—	—	—	—
C.V. %	11.5	—	—	—	—	—

¹ Experimentals.

Table 24. Soybeans: Yield and other characteristics of 12 soybean varieties evaluated at Martin under cyst nematode conditions in 1971.

Variety	Yield	Date 1st flower	Flower Color	Pubes- cence color	Date mature	Plant height	Lodging
	Bu./A.					In.	%
D-68-128 ¹	46	7-20	White	Tawny	10-12	30	0
R 67-105 ¹ (Mack)	42	7-20	Purple	Tawny	10-15	38	10
Dyer	42	7-20	Purple	Tawny	10-12	26	0
Dare	40	7-20	White	Gray	10-22	34	10
Pickett 71	39	8-8	Purple	Gray	11-2	34	10
York	39	7-20	Purple	Gray	10-22	28	10
Pickett	37	8-8	Purple	Gray	11-2	37	5
Hill	36	7-20	White	Tawny	10-4	30	0
Lee 68	35	7-28	Purple	Tawny	11-2	38	15
Lee	34	7-28	Purple	Tawny	11-2	36	10
Hale 3	34	7-30	Purple	Gray	10-15	54	10
Hood	30	7-27	Purple	Gray	10-22	32	10
L.S.D. (.05)	4.4	—	—	—	—	—	—
C.V. %	8.1	—	—	—	—	—	—

¹ Experimentals.

Table 25. Soybeans: Yield and other characteristics of varieties tested at Milan in 1971^{1, 2}

Variety	Yield	Date 1st flower	Date last flower	Date mature	Plant height	Lodging
	Bu./A.				In.	%
D-68-128	54	7-26	9-4	10-29	36	35
York	50	7-30	9-6	10-29	31	15
Lee 68	49	7-12	8-24	10-12	30	60
Hale 3	49	7-12	8-22	10-8	32	50
Lee	47	7-19	8-26	10-18	35	60
Pickett 71	45	7-12	8-24	10-18	36	20
Pickett	45	8-5	9-11	11-2	39	40
R 68-105 (Mack)	44	7-9	8-22	10-18	34	0
Dare	44	7-27	9-5	10-29	35	40
Bragg	43	7-26	8-26	10-29	42	50
Dyer	42	7-20	8-24	10-20	36	90
Hood	41	7-28	9-6	10-29	37	70
Hill	38	7-12	8-24	10-18	37	40
L.S.D. (.05)	5.2	—	—	—	—	—
C.V. %	8.0	—	—	—	—	—

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

² Planted May 21.

FALL-SEEDED OATS

The oat varieties were evaluated at six locations in 1971. Two experimentals, T 62-232 and T 60-32, led the test in grain yield (Table 26). Coker 66-22 and Walkin led the commercial varieties in grain yield. Yancey and Blount did not perform as well in 1971 as they had in previous years. Grain yield of Yancey was reduced at Crossville and Spring Hill due to winter injury. Coker 69-20 suffered some winter injury at all locations. Coker 66-22, Yancey and Coker 69-20 were the earliest maturing varieties. Walkin was the latest maturing variety (Tables 27 and 28). Blount and Coker 66-22 are the recommended varieties for 1971-72. The data are shown in Tables 29 and 30.

Table 26. Fall-Seeded Oats: Grain yield of varieties tested in 1971

Variety	Avg.	Knox- ville ¹	Greene- ville ²	Cross- ville ³	Spring- field ⁴	Spring Hill ⁵	Jackson ⁶
Bushels per acre							
T 62-232 ⁷	77	68	105	69	106	29	84
T 60-32 ⁷	76	60	78	69	102	31	94
T 69-101 ⁷	68	48	106	57	88	24	83
T 61-225 ⁷	65	47	106	56	92	18	71
Coker 66-22	64	44	93	59	97	23	66
Walkin	62	34	100	60	93	27	57
T 61-216 ⁷	60	51	99	53	79	15	62
Yancey	58	52	89	33	95	0	81
Blount	57	36	96	52	80	16	64
Coker 69-20	33	17	44	27	69	0	40
L.S.D. (.05)	—	15.7	23.5	9.5	14.4	5.4	30.3
C.V. %	—	23.6	14.4	12.2	11.1	16.2	30.8

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

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

³Hartsells loam (2% to 5% slopes).

⁴Dickson silt loam (2% to 5% slopes).

⁵Maury silt loam (2% to 5% slopes).

⁶Memphis silt loam (0% to 2% slopes).

⁷Experimentals.

Table 27. Fall-Seeded Oats: Date headed of varieties tested at five locations in 1971

Variety	Knoxville	Crossville	Springfield	Spring Hill	Jackson
Coker 66-22	5-12	5-17	5-9	5-19	5-4
Coker 69-20	5-15	5-20	5-11	— ¹	5-6
T 61-225	5-15	5-21	5-10	5-21	5-4
T 61-216	5-14	5-21	5-10	5-21	5-4
Yancey	5-16	5-22	5-11	5-24	5-3
T 60-32	5-19	5-24	5-12	5-24	5-7
T 62-232	5-18	5-26	5-13	5-26	5-7
T 69-101	5-19	5-22	5-13	5-26	5-8
Blount	5-18	5-26	5-13	5-24	5-8
Walkin	5-30	5-31	— ²	5-29	5-23

¹ Winter injury.

² Missing data.

Table 28. Fall-Seeded Oats: Date mature of varieties tested at four locations in 1971

Variety	Knoxville	Crossville	Spring Hill	Jackson
Coker 66-22	6-13	6-18	6-16	6-22
Coker 69-20	6-14	6-18	— ¹	6-19
Yancey	6-13	6-21	— ¹	6-19
T 61-225	6-15	6-21	6-18	6-21
T 62-232	6-15	6-22	6-18	6-22
T 60-32	6-16	6-21	6-21	6-24
T 61-216	6-15	6-21	6-18	6-26
Blount	6-15	6-22	6-18	6-26
T 69-101	6-15	6-21	6-21	6-27
Walkin	6-17	6-22	6-26	6-28

¹ Winter injury.

Table 29. Fall-Seeded Oats: Yield and other characteristics of varieties tested in 1971

Variety	Grain yield	Date headed	Date mature	Plant height	Test weight
	Bu./A.			In.	Lb./Bu.
T 62-232 ¹	77	5-18	6-19	41	36
T 60-32 ¹	76	5-17	6-20	41	36
T 69-101 ¹	68	5-18	6-21	42	38
T 61-225 ¹	65	5-14	6-19	38	37
Coker 66-22	64	5-12	6-17	42	38
Walkin	62	5-28	6-23	39	37
T 61-216 ¹	60	5-14	6-20	42	37
Yancey	58	5-15	6-18	34	36
Blount	57	5-18	6-20	42	37
Coker 69-20	33	5-13	6-17	33	35

¹ Experimentals.

Table 30. Fall-Seeded Oats: Average yield of four varieties that have been evaluated for 4 years at six locations, 1968-71

Variety	Average	1971	1970	1969	1968
Bushels per acre					
T 62-232	91	77	95	99	94
T 60-32	91	76	97	96	96
Coker 66-22	86	64	89	107	85
Blount	82	57	83	92	95

RYE

Rye varieties were evaluated at Knoxville for grain and forage in 1971. MSU Tetraploid led the test in grain yield. This is an experimental rye from Michigan and should be released in the near future. This variety was the latest maturing variety evaluated. Balbo produced the lowest grain yield. There was no significant difference among varieties in the total forage yield. These varieties were harvested four times for forage and the only cutting that showed a significant difference among varieties was the last cutting which was made on April 14, 1971. Rye data are shown in Tables 31 and 32.

Table 31. Rye: Forage yields of varieties evaluated at Knoxville in 1970-71¹

Variety	Total yield	Date harvested			
		Oct.28 1970	Nov. 25 1970	Feb. 18 1971	April 15 1971
Tons of oven dry forage per acre					
Penngrazer W	3.14	.47	.32	.23	2.12
Winter King	3.14	.47	.38	.26	2.03
Balbo	3.12	.29	.32	.34	2.16
Wintergrazer	2.99	.49	.36	.32	1.82
Kool Grazer	2.98	.47	.36	.24	1.92
McNair Vita-Graze	2.94	.48	.37	.24	1.85
Wintergrazer 70	2.91	.34	.38	.28	1.91
Weser	2.87	.52	.35	.25	1.75
Tenn. 4063	2.86	.43	.34	.22	1.87
Explorer	2.79	.42	.36	.28	1.74
Emory	2.72	.43	.34	.24	1.70
MSU Tetraploid	2.70	.51	.36	.19	1.64
Wintermore	2.66	.34	.33	.23	1.75
L.S.D. (.05)	N.S.	N.S.	N.S.	N.S.	.25
C.V. %	9.5	29.8	21.7	29.3	9.4

¹ Seeded September 11, 1970.² Cumberland silt loam (2% to 5% slopes).Table 32. Rye: Grain yield and other characteristics of rye varieties evaluated at Knoxville in 1971¹

Variety	Grain yield	Forage yield	Date headed	Date mature	Plant height
	Bu./A.	T./A.			In.
MSU Tetraploid	33	2.70	5-3	6-27	71
Weser	19	2.87	4-22	6-18	60
Tenn. 4063	19	2.86	4-27	6-19	65
Penngrazer W	19	3.14	4-21	6-19	64
Wintergrazer 70	19	2.91	4-22	6-18	62
Wintergrazer	18	2.99	4-21	6-17	58
Kool Grazer	17	2.98	4-21	6-19	65
Wintermore	15	2.66	4-21	6-19	62
Winter King	15	3.14	4-21	6-18	62
Explorer	14	2.79	4-21	6-19	63
McNair Vita-Graze	14	2.94	4-21	6-17	59
Emory	12	2.72	4-21	6-19	60
Balbo	7	3.12	4-21	6-17	62
L.S.D. (.05)	5.3				
C.V. %	21.6				

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

BARLEY

Barley varieties were evaluated at six locations in 1971. Keowee and Knob performed well in these tests. Harrison, Barsoy, and Jefferson did not perform as well as they had in previous years. Barsoy, an early maturing variety, was damaged by the freeze on May 4, 1971 at Knoxville and Greeneville.

The experimental malting type barley, 6005-18 from Cornell, performed well at all locations except Jackson. Cass, the other malting type barley did not perform well and tended to lodge.

The recommended varieties for 1971-72 are Barsoy, Harrison, Wade, and Jefferson. Jefferson, which was added to the list in 1970, is an awnless counterpart to Harrison barley. Jefferson does not yield or stand as well as Harrison. Wade is tolerant to acid soils whereas Harrison is very sensitive to acid soil (low pH) and should not be grown under these conditions. Barsoy, due to its earliness, was injured by late spring freezes in 1971, especially in East Tennessee. However, due to this earliness, Barsoy in most years should do well in a double cropping system. Data are shown in Tables 33-37.

Table 33. Barley: Grain yield of varieties tested in 1971

Variety	Avg.	Knox-ville ¹	Greene-ville ²	Cross-ville ³	Spring-field ⁴	Spring Hill ⁵	Jackson ⁶
Bushels per acre							
T 65-117 ⁷	75	72	110	71	89	56	52
T 65-118 ⁷	74	48	103	68	89	60	76
Keowee	70	52	107	61	83	47	71
Knob	66	43	97	70	85	46	58
6005-18 ^{7, 8}	66	46	90	73	91	56	42
Harrison	61	44	81	68	72	52	47
Barsoy	60	35	65	71	88	41	61
Jefferson	56	37	77	64	64	52	42
Cass ⁸	55	29	84	63	69	43	41
Mo. B-475	51	27	72	66	68	33	44
L.S.D. (.05)	—	9.8	15.4	10.0	10.7	11.4	13.0
C.V. %	—	16.9	12.4	11.1	9.7	12.8	11.0

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

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

³Hartsells loam (2% to 5% slopes).

⁴Dickson silt loam (2% to 5% slopes).

⁵Maury silt loam (2% to 5% slopes).

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

⁷Experimentals.

⁸Malting barleys.

Table 34. Barley: Date headed of varieties tested at five locations in 1971

Variety	Jackson	Crossville	Springfield	Spring Hill	Knoxville
Barsoy	4-19	4-28	4-18	4-24	4-24
Cass	4-20	5-6	4-23	4-30	4-27
Knob	4-20	5-10	4-26	5-1	4-29
T 65-137	4-21	5-12	5-2	4-29	4-28
Jefferson	4-24	5-10	4-21	5-4	5-1
Harrison	4-24	5-9	4-28	5-5	4-30
Keowee	4-21	5-10	4-25	5-4	4-29
6005-18	4-22	5-10	4-27	5-1	5-1
T 65-117	4-23	5-11	4-28	5-4	4-29
Mo. B-475	4-22	5-6	4-27	5-6	4-29
T 60-34-69	4-22	5-12	5-11	— ¹	4-30
T 65-118	4-24	5-11	5-2	5-7	5-2

¹ Winter injury.

Table 35. Barley: Date mature of varieties tested at five locations in 1971

Variety	Jackson	Crossville	Springfield	Spring Hill	Knoxville
Barsoy	5-24	6-3	6-3	5-29	6-1
Jefferson	5-30	6-9	— ¹	6-4	6-5
Cass	5-25	6-8	6-17	6-2	6-3
Mo. B-475	5-26	6-8	6-17	6-2	6-4
Knob	5-26	6-7	6-15	6-2	6-4
T 65-137	5-30	6-10	6-17	6-3	6-6
Harrison	5-30	6-10	6-17	6-4	6-6
Keowee	5-26	6-10	6-17	6-8	6-6
6005-18	5-26	6-10	6-17	6-5	6-6
T 65-117	5-30	6-14	6-15	6-8	6-9
T 60-34-69	5-30	6-14	6-17	— ¹	6-8
T 65-118	5-31	6-16	6-15	6-9	6-10

¹ Winter injury.

Table 36. Barley: Yield and other characteristics¹ of varieties tested in 1971

Variety	Grain yield	Date headed	Date mature	Plant height	Test weight
	Bu./A.			In.	Lb./Bu.
T 65-117 ²	75	4-29	6-9	38	44
T 65-118 ²	74	5-1	6-10	37	42
Keowee	70	4-28	6-7	37	47
Knob	66	4-27	6-5	34	45
6005-18 ^{2, 3}	66	4-28	6-7	32	45
Harrison	61	4-28	6-7	37	46
Barsoy	60	4-21	5-31	34	47
Jefferson	56	4-28	6-4	38	46
Cass ³	55	4-25	6-5	38	47
Mo. B-475	51	4-29	6-5	38	44

¹ Winter injury.

² Average of several locations.

³ Experimentals.

³ Malting Barleys.

Table 37. Barley: Average yield of varieties tested for 3 years at six locations, 1969-71

Variety	3 yr. average 1969-71	1971	1970	1969
Bushels per acre				
Barsoy	77	60	81	90
Keowee	75	70	71	84
Harrison	70	61	79	70
Jefferson	69	56	69	82
Knob	69	66	65	75

WHEAT

Soft Red Winter Wheat variety tests were conducted at seven locations in 1971. At Springfield a Hard Red Winter Wheat test was conducted in addition to the Soft Red Winter Wheat test. In 1971 yields were good at Greeneville, Springfield, and Jackson. The yields were fair at Knoxville and Martin, and low at Spring Hill. Coker 68-15 experimental produced the highest average grain yield followed closely by three other experimentals: McNair 4823, McNair 1587, and T 65-301. The two leading commercial varieties were Blueboy and Arthur. Monon did not perform as well as it had in previous years. Coker 68-19 was winter-killed at Spring Hill and suffered winter injury at several other locations. Coker 68-19 performed well at only one location (Table 38). Coker 68-15 and McNair 4823 experimentals produced grain with the highest test weight (Table 41). McNair 1587, Blueboy, and McNair 2203 produced grain with the lowest test weight.

Tenn. 4063 is an experimental tetraploid rye being evaluated with the wheat varieties.

Data for the Hard Red Winter varieties are shown in Table 43. Triumph Imp. has been the leading grain producer for the past 3 years (1969-71) but lodges severely. Parker was planted in the test but due to poor seed, failed to produce an adequate stand.

Varieties currently recommended for production are Arthur, Blueboy, and Monon.

Table 38. Wheat: Grain yield of varieties tested in 1971

Variety	Avg. ¹	Knoxville ²	Greenville ³	Crossville ⁴	Springfield ⁵	Spring Hill ⁶	Jackson ⁷	Martin
Bushels per acre								
Coker 68-15 ⁸	51	46	72	38	55	22	71	31
McNair 4823 ⁸	50	39	77	38	51	29	67	37
McNair 1587 ⁸	47	37	72	41	58	23	52	44
T 65-301 ⁸	45	35	62	44	45	25	56	—
Blueboy	44	27	65	41	60	17	56	33
Arthur	43	26	56	40	52	24	62	43
Tenn. 4063 ⁹	43	37	42	51	48	30	51	—
T 65-314 ⁸	42	35	51	40	51	23	54	—
McNair 1813 ⁸	41	27	58	33	43	14	70	35
McNair 2203	41	33	54	31	50	18	58	39
Monon	37	21	50	45	46	15	47	49
Coker 68-19	23	14	30	10	26	0	58	20
L.S.D. (.05)	—	10.5	11.4	6.7	10.1	4.5	7.5	6.6
C.V. %	—	23.4	13.8	12.4	14.4	14.2	8.8	14.3

¹ Martin data not included in average.² Cumberland silt loam (2% to 5% slopes).³ Cumberland silt loam (2% to 5% slopes).⁴ Hartsells loam (2% to 5% slopes).⁵ Dickson silt loam (2% to 5% slopes).⁶ Maury silt loam (2% to 5% slopes).⁷ Memphis silt loam (0% to 2% slopes).⁸ Experimentals.⁹ Tenn. 4063 is an experimental rye being evaluated with the wheat varieties.

Table 39. Wheat: Date headed of varieties tested at six locations in 1971

Variety	Jackson	Crossville	Springfield	Knoxville	Martin	Spring Hill
Tenn. 4063 ¹	4-22	5-3	—	4-30	—	4-23
Monon	5-3	5-15	5-6	5-9	4-31	5-7
Arthur	5-5	5-17	5-5	5-10	5-3	5-7
McNair 2203 ²	5-4	5-15	5-7	5-11	4-31	5-10
Coker 68-15 ²	5-4	5-17	5-5	5-10	4-31	5-12
McNair 4823 ²	5-8	5-16	5-2	5-14	5-6	5-9
McNair 1813 ²	5-2	5-18	5-6	5-12	5-3	5-12
McNair 1587 ²	5-6	5-17	5-8	5-11	4-29	5-13
Coker 68-19	5-8	—	5-12	5-14	5-3	—
Blueboy	5-7	5-18	5-10	5-14	5-6	5-14
T 65-301 ²	5-8	5-20	5-13	5-16	—	5-15
T 65-314 ²	5-11	5-20	5-13	5-15	—	5-15

¹ Experimental rye being evaluated with the wheat varieties.² Experimentals.

Table 40. Wheat: Date mature of varieties tested at six locations in 1971

Variety	Jackson	Crossville	Springfield	Knoxville	Martin	Spring Hill
Arthur	6-14	6-12	6-22	6-13	5-30	6-16
Monon	6-14	6-18	6-22	6-12	5-30	6-16
McNair 1587 ¹	6-14	6-18	6-23	6-14	5-27	6-15
Coker 68-15 ¹	6-14	6-18	6-21	6-15	6-3	6-16
McNair 2203	6-14	6-18	6-22	6-15	5-27	6-16
McNair 4823 ¹	6-16	6-21	6-20	6-15	6-10	6-18
McNair 1813 ¹	6-14	6-23	6-23	6-14	5-27	6-16
Coker 68-19	6-16	—	6-20	6-18	6-10	—
Blueboy	6-16	6-22	6-21	6-17	6-10	6-21
T 65-314 ¹	6-17	6-23	6-22	6-16	—	6-21
T 65-301 ¹	6-18	6-23	6-23	6-18	—	6-21
Tenn. 4063 ²	6-21	6-24	6-21	6-22	—	6-23

¹ Experimental Wheats.² Experimental Rye.

Table 41. Wheat: Grain yield and other characteristics¹ of varieties tested in 1971

Variety	Grain yield	Date headed	Date mature	Plant height	Test weight	Lodging
	Bu./A.			In.	Lb./Bu.	%
Coker 68-15 ²	51	5-10	6-17	36	59	2.5
McNair 4823 ²	50	5-10	6-18	37	59	3.3
McNair 1587 ²	47	5-11	6-17	38	54	1.3
T 65-301 ²	45	5-14	6-21	47	57	1.3
Blueboy	44	5-13	6-19	40	54	2.9
Arthur	43	5-9	6-15	40	57	30.7
Tenn. 4063	43	4-27	6-22	58	52	11.3
T 65-314 ²	42	5-15	6-20	51	57	31.7
McNair 1813 ²	41	5-10	6-18	35	56	1.2
McNair 2203	41	5-9	6-17	34	53	18.4
Monon	37	5-8	6-16	44	57	37.3
Coker 68-19	23	5-11	6-18	34	57	0.0

¹ Average of several locations.

² Experimental varieties.

Table 42. Wheat: Average yield of varieties that have been tested for 3 years at six locations 1969-71

Variety	3 year average 1969-71	2 year average 1970-71	1971	1970	1969
Bushels per acre					
Blue Boy	60	56	44	68	67
McNair 1587	57	54	47	62	61
Arthur	55	54	43	66	56
McNair 2203	54	51	41	61	61
Monon	48	46	37	55	51
Coker 68-19	46	40	23	58	56

Table 43. Wheat: Grain yield and characteristics of hard red winter wheat varieties tested at Springfield in 1971¹

Variety	Grain yield	Date headed	Lodging	Plant height	Test weight
	Bu./A.		%	In.	Lb./Bu.
Triumph Imp.	41	4-30	75	42	57.3
Pronto	41	4-30	6	39	59.2
Danne	37	5-6	6	42	57.5
Caprock	35	5-8	0	34	55.7
Santanta	34	5-6	0	40	58.4
Triumph	33	5-4	17	46	57.4
Gage	32	5-9	2	45	57.2
Kaw 61	32	5-8	8	48	59.5
Ponca	28	5-10	0	47	58.1
L.S.D. (.05)	6.4	—	—	—	—
C.V. %	12.7	—	—	—	—

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

ALFALFA

Alfalfa results reported here are from tests seeded in 1967, 1968, and 1969. The leading varieties at Knoxville were Delta, Atlantic, Cherokee, and Cayuga (Table 45). Three out of the four years at Knoxville there was no significant difference among varieties. The first cutting in 1970 was discarded due to differential weevil damage and the last cutting in 1971 was discarded due to crabgrass content.

The leading varieties at Springfield were Saranac, W. L. 303, Buffalo, Warrior, Glacier, and Europa (Table 46). The leading varieties at Jackson were Europa, Cody, Delta, W. L. 303, and Saranac (Table 47). Most varieties in the test at Jackson performed well. Apalachee and Weevlc hek led the test at Spring Hill (Table 48).

Buffalo, Weevlc hek, and Team were evaluated at Springfield and Jackson. No weevil control measures were used. There was no significant difference in yield among varieties both years at Jackson (Table 49). At Springfield in 1971, there was a significant difference in yield among varieties.

Table 44. Alfalfa: Yields of varieties seeded in 1967 at Greenville¹

Variety	Average	1971	1970	1969	1968
Tons per acre					
Europa	3.75	4.18	3.20	4.48	3.13
Cody	3.64	4.10	2.92	4.70	2.84
Vernal	3.62	3.83	3.06	4.65	2.95
Atlantic	3.60	3.62	3.16	4.71	2.90
Buffalo	3.60	4.01	3.13	4.50	2.74
Cherokee	3.57	3.80	2.98	4.62	2.88
Progress	3.57	3.83	3.08	4.30	3.07
Cayuga	3.54	3.56	3.26	4.52	2.83
Glacier	3.55	3.70	2.94	4.50	3.07
Saranac	3.54	3.43	3.27	4.43	3.03
Warrior	3.54	3.72	3.26	4.39	2.81
Pioneer brand Pat 30	3.54	3.58	3.08	4.47	3.01
Delta	3.52	3.63	3.26	4.73	2.46
Pioneer brand 522	3.51	3.74	3.12	4.74	2.45
Culver	3.43	3.51	2.96	4.34	2.91
W.L. 303	3.41	3.58	3.18	4.04	2.84
L.S.D. (.05)	—	.33	N.S.	N.S.	N.S.
C.V. %	—	6.2	N.S.	9.8	10.6

¹ Cumberland silt loam (2% to 5% slopes). Eroded.Table 45. Alfalfa: Yields of varieties seeded in 1967 at Knoxville¹

Variety	Average	1971 ²	1970 ³	1969	1968
Tons per acre					
Delta	2.74	2.95	2.59	3.48	1.93
Atlantic	2.70	3.05	2.52	3.36	1.88
Cherokee	2.68	3.27	2.45	3.08	1.94
Cayuga	2.61	3.09	2.58	2.82	1.94
Pioneer brand 522	2.55	2.94	2.28	3.16	1.82
Vernal	2.53	2.66	2.51	3.14	1.82
Warrior	2.52	2.87	2.32	2.88	2.03
W.L. 303	2.52	2.82	2.46	3.00	1.80
Europa	2.50	2.99	2.17	2.90	1.94
Saranac	2.48	2.89	2.24	2.88	1.89
Cody	2.48	2.90	2.29	2.89	1.86
Glacier	2.48	2.85	2.30	2.83	1.96
Culver	2.46	3.20	2.58	2.40	1.64
Buffalo	2.40	2.68	2.07	2.84	1.99
Progress	2.34	2.51	2.22	2.90	1.74
Pioneer brand Pat 30	2.24	2.44	2.23	2.54	1.74
L.S.D. (.05)	—	N.S.	N.S.	4.49	N.S.
C.V. %	—	19.2	13.8	11.7	9.5

¹ Sequoia loam (2% to 5% slopes).² Last cutting discarded due to crabgrass content.³ First harvest discarded due to differential weevil damage.

Table 46. Alfalfa: Yield of varieties seeded in 1967 at Springfield¹

Variety	Average	1971	1970	1969	1968
Tons per acre					
Saranac	3.28	4.06	3.67	2.89	2.52
W.L. 303	3.12	3.72	3.56	2.88	2.34
Buffalo	3.03	3.66	3.42	2.65	2.38
Warrior	3.07	3.56	3.46	2.78	2.49
Glacier	2.98	3.53	3.32	2.61	2.45
Europa	2.96	3.26	3.35	2.56	2.68
Pioneer brand Pat 30	2.92	3.16	3.18	2.71	2.63
Pioneer brand 522	2.90	3.48	3.06	2.67	2.37
Cayuga	2.88	3.68	3.09	2.35	2.39
Vernal	2.88	3.52	3.04	2.54	2.40
Atlantic	2.88	3.39	3.16	2.62	2.36
Cody	2.83	3.44	3.22	2.46	2.20
Progress	2.82	3.26	3.09	2.52	2.40
Delta	2.80	3.29	2.99	2.60	2.30
Cherokee	2.75	2.92	3.04	2.62	2.42
Culver	2.63	3.17	2.86	2.35	2.13
L.S.D. (.05)	—	0.54	0.38	0.31	0.20
C.V. %	—	11.0	8.3	8.4	6.0

¹ Bewleyville silt loam (2% to 5% slopes).Table 47. Alfalfa: Yield of varieties seeded in 1968 at Jackson¹

Variety	Average	1971	1970	1969
Tons per acre				
Europa	5.30	4.97	5.64	5.30
Cody	5.12	5.02	5.72	4.63
Delta	5.08	4.78	5.63	4.82
W. L. 303	5.01	4.84	5.54	4.66
Saranac	4.98	4.72	5.21	5.02
Cherokee	4.97	4.66	5.39	4.85
Scout	4.96	4.72	5.46	4.71
Pioneer brand 522	4.93	4.77	5.23	4.80
Warrior	4.91	4.66	5.16	4.92
Williamsburg	4.90	4.71	5.32	4.68
Cayuga	4.87	4.66	5.37	4.57
Buffalo	4.79	4.69	5.11	4.56
Pioneer brand P.A.T. 30	4.68	4.36	4.95	4.74
Glacier	4.64	4.44	4.95	4.53
Progress	4.51	4.44	4.94	4.15
Culver	4.39	4.14	4.89	4.15
L.S.D. (.05)	—	0.31	0.43	N.S.
C.V. %	—	4.6	5.7	9.2

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

Table 48. Alfalfa: Yield of varieties seeded in 1969 at Spring Hill¹

Variety	1970 1971 average	1971	1970	Variety	1970 1971 average	1971	1970
	T./A.				T./A.		
Apalachee	4.41	4.62	4.20	Buffalo	4.10	4.38	3.81
Weevilchek	4.34	4.54	4.14	W. L. 303	4.04	4.26	3.81
Warrior	4.29	4.47	4.11	Cody	3.98	4.47	3.50
Saranac	4.28	4.33	4.24	Team	3.98	4.34	3.63
Rancher 400	4.28	4.56	4.01	Cherokee	3.90	4.20	3.61
Pioneer brand 522	4.19	4.58	3.80	Europa	3.89	4.11	3.67
Delta	4.19	4.41	3.97	Glacier	3.70	3.90	3.49
Titan	4.14	4.51	3.78	Scout	3.52	4.01	3.03
Flandria	4.14	4.28	4.00	Kanza	3.28	3.71	2.86
L.S.D. (.05)	—				—	0.50	0.42
C.V. %	—				—	8.1	8.0

¹ Maury silt loam (2% to 5% slopes).

Table 49. Alfalfa: Yields of three varieties grown at two locations without weevil control

Variety	Avg.	Jackson		Springfield	
		1971	1970	1971	1970
		Tons of air-dry forage per acre			
Team	3.60	4.99	3.56	2.99	2.87
Weevilchek	3.49	4.91	3.43	2.78	2.84
Buffalo	3.25	4.69	3.36	2.40	2.56
L.S.D. (.05)	—	N.S.	N.S.	0.12	N.S.
C.V. %	—	7.2	9.9	1.9	4.5

RED CLOVER

At Knoxville and Jackson, seed of Certified Kenland was compared with breeder's seed and in both tests, clover seeded from breeder's seed performed better than clover seeded from Certified seed. Ky. Syn. A₂ and Ky. Syn. A₃ performed well, as they have for many years. Brazen Pac. did not perform well at Jackson. Illinois No. 1 and 2 performed well at both locations. Data are shown in Tables 50 and 51.

Table 50. Red Clover: Yield of varieties seeded in 1969 at Knoxville

Variety	Average	1971	1970
Tons of air-dry forage per acre			
Illinois No. 1	2.56	1.55	3.56
Ky. Syn. A ₃	2.48	1.44	3.53
Kenland (79-L38-96) ¹	2.42	1.47	3.38
Ky. Syn. A ₂	2.36	1.46	3.26
Illinois No. 2	2.35	1.23	3.47
Kenland (FC 39, 730) ²	1.81	0.62	3.00
L.S.D. (.05)	—	0.29	0.36
C.V. %	—	14.8	7.2

¹ Breeders seed.

² Certified seed.

Table 51. Red Clover: Yield of varieties seeded in the fall of 1968 at Jackson

Variety	Average	1971	1970	1969
Tons oven-dry forage per acre				
Ky. Syn. A ₂	3.50	1.57	3.92	5.00
Ky. Syn. A ₃	3.49	1.36	3.76	5.34
Kenland (79-L38-96) ¹	3.45	1.39	3.94	5.01
Illinois No. 1	3.34	1.54	3.77	4.70
Illinois No. 2	3.28	1.32	3.76	4.75
Kenland (FC.39,730) ²	2.25	0.00	2.81	3.95
Brazin Pac.	2.11	0.00	2.42	3.91
L.S.D. (.05)	—	0.15	0.52	0.48
C.V. %	—	6.6	10.1	7.0

¹ Breeders seed.² Certified seed.

DARK TOBACCO

The dark fire-cured and dark air-cured tobacco varieties were tested at the Highland Rim Experiment Station, Springfield. Since the 1971 variety results were not available, the data included in this bulletin are for 1970 and 1969. Tennex 500 performed well in 1969 and 1970. Madole and Black Mammoth were the leading commercial varieties in yield. There was no significant difference in yield or acre value among the three dark air-cured tobacco varieties evaluated in 1970. Data are in Tables 52 and 53.

Table 52. Dark Fire-cured Tobacco: Average yield and acre value of varieties grown on the Highland Rim Experiment Station, Springfield, in 1969 and 1970

Variety	Acre yield			Acre value ¹		
	1969-1970	1970	1969	1969-1970	1970	1969
	Pounds per acre			Dollars per acre		
Tennex 500	2695	2468	2922	1080	984	1176
Madole	2638	2460	2817	1055	965	1146
Black Mammoth	2602	2484	2719	1064	1007	1120
Tennex 907	2562	2472	2653	986	893	1079
Ky. 170	2528	2483	2573	1070	1016	1124
Tennex 904	2509	2339	2678	1034	916	1151
DF-516	2419	2114	2725	962	828	1095
Tennex 909	—	2676	—	—	1031	—
Tennex 910	—	2326	—	—	906	—
Tennex 908	—	2317	—	—	949	—
Tennex 902	—	—	2938	—	—	1199
Tennex 802	—	—	2617	—	—	1015
Tennex 903	—	—	2491	—	—	1009
L.S.D. (.05)	—	235.1	141.6	—	109.8	86.4
C.V. %	—	8.4	4.6	—	10.0	6.7

¹ These values are based on the average values for the various grades on all type 22 markets, during the 5-year period, 1954-1958.

Table 53. Dark Air-cured Tobacco: Average yield and acre value of varieties grown on the Highland Rim Experiment Station, Springfield, in 1970

Variety	Acre yield	Acre yield ¹
	1970	1970
	Pounds per acre	Dollars
Ky. 165	2122	855
Ky. 163	2090	797
Ky. 160	2080	826
L.S.D. (.05)	N.S.	N.S.
C.V. %	6.8	12.6

¹ These values are based on the average value for the various grades on all type 35 markets, during the 5-year period, 1954-1958.

BURLEY TOBACCO¹

C. L. Gupton, M. O. Neas, and V. E. Kirk²

Our data are from tests of burley varieties and hybrids grown in 1968, 1969, and 1970 at four locations. Despite extended periods of hot and dry weather in 1968, tobacco of good yield and quality was produced at all locations except Spring Hill. The average yields were about the same in 1969 as in the previous year; however, weather during the growing season was generally unfavorable for producing high-quality leaf. In 1970, rainfall was adequate at Springfield during the growing season. It was unusually dry and hot at Greeneville and Rutledge during June and July but good weather conditions prevailed during August; however, conditions were exactly the opposite at Spring Hill.

Acre yields of the varieties are presented in Table 1. The highest yielding varieties were Ky 10, MS Burley 21 x Ky 10, Ky 12, MS Burley 21 x Ky 12, and Va 509. Burley 37 and Burley 49 were always lowest in yield. Sometimes Burley 21, MS Burley 21 x L8, and MS Burley 37 x L8 did not differ significantly from the low group, but in other instances they were intermediate between the high and low groups in yield.

The market value per hundredweight differed significantly among varieties in a few tests (Table 2). However, on the average there was practically no difference in value among varieties.

The percentage of tobacco fitting manufacturers' cigarette grades (Table 3) is a measure of the overall demand for the type of tobacco produced by a given variety. Burley 21, Burley 37, Burley 49, and Va 509 ranked high in acceptability to the trade, and differences among these varieties were not statistically significant. The lowest percent of tobacco acceptable for cigarette grades was produced by Ky 10 and MS Burley 21 x L8. Acceptability of the remaining varieties in the test were about equal and intermediate with respect to the other two groups.

The data in Table 4 should be considered where black shank and/or black root rot are problems. Race 1 of the black shank

¹Cooperative investigations of the Plant Science Research Division, Agricultural Research Service, U. S. Department of Agriculture, and the Tennessee Agricultural Experiment Station, Greeneville, Tennessee.

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organism may present a serious problem under a continuous culture of hybrids involving L8. This race was first identified in Middle Tennessee but is now present in East Tennessee. It should be noted that, although Burley 37 is resistant, MS Burley 37 x L8 is not resistant to race 1 of the organism. In 1969, the percent survival of all varieties was reduced in Maury County by a season-long drought. The choice of varieties is severely restricted if both black root rot and black shank are problems; under these conditions only Burley 49 should be grown.

Some plant characteristics of the commercial varieties are presented in Table 5. The number and size of leaves, plant height, distance between leaves, and days from transplant to flowering may be considered when selecting a variety for ease of handling. Under the new control program these factors may be more important in the choice of a variety than under the former program.

Table 1. Burley Tobacco: Yield¹ in pounds per acre by varieties, locations, and years

Variety	Greeneville			Rutledge			Springfield			Spring Hill ²		Avg. ³
	1968	1969	1970	1968	1969	1970	1968	1969	1970	1968	1970	
	Pounds per acre											
Burley 21	2424	2533	2696	2358	2648	2614	2611	2640	3306	1806	1908	2513
Burley 37	2245	2452	2376	2279	2662	2398	2619	2455	2943	1756	1644	2363
Burley 49	2432	2433	2316	2310	2440	2254	2653	2499	2869	1795	1636	2341
Ky. 10	2858	2254	3126	2824	2777	2959	3012	2985	3655	2171	2044	2778
Ky. 12	2846	2379	2967	2853	2528	2802	2896	2759	3146	2082	1905	2643
Ky. 16	2425	2367	2758	2392	2785	2653	3006	2754	3493	1914	2024	2600
Va. 509	2543	2552	2957	2660	2976	2622	3014	2879	3456	1941	1846	2687
MS Burley 21 x Ky. 10	2678	2555	3016	2814	2781	2820	3116	3041	3563	2136	2016	2777
MS Burley 21 x Ky. 12	2625	2480	2935	2683	2926	2942	2883	2795	3423	2210	1933	2714
MS Burley 21 x L8	2356	2065	2660	2346	2584	2716	3042	2919	3436	1877	1865	2532
MS Burley 37 x L8	2397	2085	2669	2403	2625	2513	3012	2859	3293	1929	1865	2514
L.S.D. (0.05)	188	N.S.	259	189	N.S.	234	277	200	273	195	212	
C.V. %	5.1	10.0	6.0	5.1	9.0	6.0	6.6	5.0	5.0	6.8	7.0	

¹ Based on four replications of 100 plants per replication.

² 1969 crop destroyed by wind.

³ Average includes only 2 years at Spring Hill.

Table 2. Burley Tobacco: Market value in dollars per hundredweight¹ by varieties, locations, and years

	Greeneville			Rutledge			Springfield			Spring Hill ²		
Variety	1968	1969	1970	1968	1969	1970	1968	1969	1970	1968	1970	Avg.
	Dollars per hundredweight											
Burley 21	74.51	71.87	74.12	74.24	69.79	72.03	74.34	72.28	75.55	72.09	74.36	73.15
Burley 37	74.47	72.67	74.10	73.77	70.10	72.20	74.65	72.70	75.49	72.00	73.90	73.15
Burley 49	74.51	72.00	73.81	73.64	68.82	71.89	74.16	72.58	75.13	71.56	73.10	72.69
Ky. 10	74.71	70.34	74.47	74.92	70.55	73.04	74.54	72.76	75.38	72.50	74.70	73.26
Ky. 12	74.53	70.76	74.46	74.94	70.51	73.32	74.61	71.60	75.49	72.37	74.07	73.14
Ky. 16	74.41	70.95	73.84	73.07	69.54	72.34	73.90	72.91	75.68	72.24	74.40	72.87
Va. 509	74.67	72.45	74.51	74.22	70.95	72.92	74.99	73.83	75.93	72.31	74.45	73.64
MS Burley 21 x Ky. 10	74.61	71.54	74.53	74.55	70.49	73.01	74.56	72.42	75.54	72.83	74.29	73.33
MS Burley 21 x Ky. 12	74.48	70.34	74.40	74.33	70.53	72.43	74.23	73.09	75.79	72.60	74.33	73.16
MS Burley 21 x L8	73.94	70.04	73.80	73.51	70.90	72.13	74.32	71.93	74.94	72.34	74.42	72.77
MS Burley 37 x L8	74.62	71.87	73.61	73.98	70.14	72.18	74.62	73.02	75.46	72.20	74.73	73.18
L.S.D. (0.05)	0.51	1.55	0.77	0.66	0.96	0.56	0.47	1.18	0.66	0.59	0.76	
C.V. %	0.48	1.50	0.72	0.62	0.90	0.53	0.50	1.10	0.60	0.57	0.71	

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

² 1969 crop destroyed by wind.

³ Average includes only 2 years at Spring Hill.

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

Variety	Greeneville			Rutledge			Springfield			Spring Hill	Avg. ¹
	1968	1969	1970	1968	1969	1970	1968	1969	1970	1970	
	Percent										
Burley 21	83	75	69	56	53	43	65	84	58	62	67
Burley 37	88	79	67	52	65	48	66	82	76	59	69
Burley 49	86	76	56	62	54	45	72	78	61	61	66
Ky. 10	79	44	60	49	48	45	58	55	33	62	54
Ky. 12	64	54	42	72	60	51	68	74	47	60	60
Ky. 16	79	63	53	53	61	27	65	75	52	62	60
Va. 509	85	56	64	54	67	43	76	83	58	59	66
MS Burley 21 x Ky. 10	65	47	60	49	65	48	52	81	57	60	59
MS Burley 21 x Ky. 12	63	70	63	48	60	51	59	76	60	59	61
MS Burley 21 x L8	61	63	50	42	52	37	50	32	69	61	51
MS Burley 37 x L8	56	83	61	46	57	41	71	67	62	63	61
L.S.D.											11

¹ The Spring Hill location is not included in the average.

Table 4. Resistance of burley tobacco varieties to black shank and black root rot

Variety	Black Shank ¹						Black Root Rot ²
	Greene County (Race 0)			Maury County (Race 0 & 1)			
	1968	1969	1970	1968	1969	1970	
Burley 21	0	0	17	0	3	2	Low
Burley 37	94	98	98	91	67	92	Low
Burley 49	98	98	98	97	73	94	High
Ky. 10	0	2	0	0	—	—	Medium
Ky. 12	0	0	9	0	—	—	Medium High
Ky. 16	0	24	3	—	—	—	Medium
Va. 509	92	96	97	92	70	82	Low
MS Burley 21 x Ky. 10	0	4	21	0	—	—	Low
MS Burley 21 x Ky. 12	0	0	10	0	—	—	Medium
MS Burley 21 x L8	94	94	90	0	6	2	Medium High
MS Burley 37 x L8	92	94	96	29	7	70	Medium High

¹ Percentage survival in field nursery.

² Based on greenhouse tests and previous experience in the field.

Table 5. Burley Tobacco: Plant characteristics—average of 1968, 1969, and 1970 for two locations

Variety	Fifth Leaf		Leaf No.	Plant height	Leaf Internode	Days to flower	Nicotine
	Length	Width					
	In.	In.	No.	In.	In.	No.	%
Greeneville							
Burley 21	22.5	10.0	20.4	48.9	2.41	75	4.44 ¹
Burley 37	21.4	9.9	21.8	47.3	2.36	72	4.92
Burley 49	21.3	10.1	22.7	45.4	2.01	78	4.46
Ky. 10	23.6	10.5	21.1	47.3	2.25	80	4.84
Ky. 12	21.5	9.9	25.1	48.6	1.96	81	3.53
Ky. 16	22.7	10.3	18.5	45.6	2.47	72	4.73
Va. 509	22.3	10.0	20.4	47.8	2.37	80	5.47 ¹
MS Burley 21 x Ky. 10	23.3	10.4	21.5	50.3	2.35	76	4.72
MS Burley 21 x Ky. 12	22.3	9.9	24.2	50.1	2.09	79	4.34
MS Burley 21 x L8	23.5	10.3	18.1	46.5	2.58	65	5.04
MS Burley 37 x L8	23.0	10.3	18.1	45.3	2.52	66	5.31
Springfield							
Burley 21	24.5	11.3	21.8	53.4	2.47	84	4.33
Burley 37	22.4	11.5	22.5	53.3	2.38	80	4.22
Burley 49	21.3	10.9	23.2	49.4	2.14	85	4.34
Ky. 10	24.1	11.2	22.5	49.9	2.23	89	4.31
Ky. 12	23.2	10.8	24.8	53.4	2.16	88	3.62
Ky. 16	25.3	12.2	21.0	52.8	2.52	77	4.21
Va. 509	23.7	11.3	23.2	53.4	2.31	88	4.70
MS Burley 21 x Ky. 10	24.8	11.9	23.0	54.9	2.40	85	4.51
MS Burley 21 x Ky. 12	23.8	11.2	24.3	55.4	2.29	87	3.99
MS Burley 21 x L8	26.7	12.5	20.0	51.8	2.60	73	4.34
MS Burley 37 x L8	25.5	12.6	20.6	52.6	2.57	73	4.53

¹ Average of 1969 and 1970 only.