

Variety Performance Trials of . . .

COTTON, CORN, BARLEY, OATS, WHEAT RED CLOVER, ALFALFA and SOYBEANS

Data for 1953 with Summaries of Results
from Previous Years

C. D. FISHER

The University of Tennessee
Agricultural Experiment Station
Knoxville

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C. D. FISHER, *Assistant Agronomist*

INTRODUCTION

Variety performance trials, conducted annually with the major agronomic crops grown in Tennessee, serve as a basis for recommending varieties that are best adapted to Tennessee soils and conditions. The experiments are conducted primarily at the six Experiment Stations located in the major agricultural regions in the State. Two cotton variety tests were conducted with farmer co-operators in West Tennessee, as cotton is grown predominantly in the western part of the State.

PRESENTATION OF DATA

In the tables which follow, the entries are listed in order of their 1953 performance, with the highest-yielding entry being first. The commercially available varieties are shown in bold-face type; other entries are experimentals from various plant breeding programs.

In choosing a variety, look over the recommended list and then check the text and tables which give the yield and general characteristics of the varieties. Some varieties, even though they may not produce highest comparable yields, have been recommended because they fit more effectively into the plans of some farmers due to differences in maturity dates, and other characteristics.

Do not be misled by small differences in yield between two varieties. The "L. S. D. 5%" value which is listed at the bottom of the tables should be considered as a measure of experimental error, and unless two varieties differ by at least the amount of this least significant difference, one should not be considered different from the other.

Tennessee lies within a very narrow range of latitude and, except for the areas of high elevation, has much the same length of

growing season over its entire area. Varieties adapted to average conditions in Tennessee usually do well throughout the State. At the higher elevations, as on the Cumberland Plateau and in upper East Tennessee, the growing season is shorter and specific varieties may be best adapted in those areas. Generally, the high yielding varieties are those that utilize the full growing season.

An attempt was made to use a reasonable amount of fertilizer for each trial, on the basis of soil tests and the crop history of the test area. Fertilization differed according to the soil fertility level from one location to another but was constant within a single test.

COTTON

The cotton variety tests were conducted in cooperation with the U.S. Department of Agriculture and are part of the regional program for evaluating the more important commercial varieties and experimental strains. Tests were located in Knox county (East Tennessee), Lawrence county (lower Highland Rim), Madison county and Tipton county (West Tennessee). Data from these tests are shown in Tables 1 through 4. Abnormal weather interfered with establishment of a test in Lake county.

Table 1 — *Cotton, average acre yields and general characteristics of varieties tested in Knox County, 1953*

Average of 8 Replications

Variety	Acre Yields			Lint Percent	Lint length		Lint Strength	Bolls Per lb.	Earli- ness Yield 1st Pick- ing
	1951-53 incl. Av. Lint	1953			Class- er's ¹	Fibro- graph			
	Seed Cotton	Lint	Pressley						
	Lbs.	Lbs.			Lbs.	%	32's in.	In.	
T89 (Exp.)		1541	640	41.5	34	1.00	7.56	79	73
Ute 5C (Exp.)	709	1555	603	38.8	34	1.07	7.22	63	64
Tenn. 12 (Exp.)		1412	566	40.1	33	1.05	6.91	61	77
Mix 2B (Exp.)		1431	557	38.9	34	1.08	7.24	63	78
Cobal	654	1427	557	39.0	34	1.09	7.13	63	81
Plains	682	1426	543	38.1	34	1.10	6.97	65	70
Auburn 56		1455	541	37.2	34	1.11	7.24	70	65
Fox	666	1451	540	37.2	34	1.09	7.12	75	76
Tenn. 818	662	1392	537	38.6	33	1.09	7.25	63	78
Coker 100-Wilt	655	1406	533	37.9	34	1.09	7.26	68	65
Coker 100-Staple	582	1419	528	37.2	34	1.14	7.34	72	71
Tenn. 241	631	1331	521	39.0	32	1.05	7.01	60	75
Deltapine 15	668	1256	519	41.3	33	1.04	7.20	81	71
Early Fluff	637	1349	515	38.2	33	1.00	7.47	69	79
Empire Wilt	614	1314	510	38.8	34	1.09	7.36	52	72
X. mal. 4 (Exp.)		1287	507	39.4	34	1.11	7.03	54	63
Stoneville 2B	623	1296	474	36.6	31	1.04	7.06	63	74
Delfos 9169	573	1229	433	35.2	35	1.16	7.03	63	59
L.s.d. 5%		148							

¹Classed by the Memphis Cotton Classing Office U. S. D. A.

Table 2. — *Cotton, average acre yields and general characteristics of varieties tested in Lawrence County, 1953*

Average of 8 replications

Variety	Acre Yields			Lint Percent	Lint length		Lint	Bolls Per lb.	Earliness Yield 1st Pick- ing
	1951-53	1953			Class- er's ¹	Fibro- graph	Strength		
	incl.	Seed	Lint				Pressley		
	Av.	Cotton							
	Lint								
Lbs.	Lbs.	Lbs.	%	32's in.	In.	Lbs./mg	No.	%	
T89 (Exp.)	-----	1337	547	40.9	30	.96	7.94	75	64
Ute 5C (Exp.)	384	1195	472	39.5	32	1.02	7.63	72	71
Mix 2B (Exp.)	-----	1199	470	39.2	33	1.03	7.42	68	80
Cobal	397	1166	466	40.0	34	1.02	7.12	71	90
Plains	372	1199	456	38.0	32	1.00	7.44	72	64
Tenn. 818	380	1143	455	39.8	32	1.04	7.27	70	77
Tenn. 12 (Exp.)	-----	1143	442	38.7	30	.96	7.18	69	82
Coker 100-Wilt	379	1151	439	38.1	31	1.01	6.97	77	70
Tenn. 241	403	1093	437	40.0	32	1.03	7.42	67	75
Fox	353	1174	436	37.1	29	1.04	6.85	84	70
Empire Wilt	372	1068	427	40.0	33	1.03	7.32	62	81
Auburn 56	-----	1180	424	35.9	33	1.06	7.16	77	67
Coker 100-Staple	337	1180	424	35.9	33	1.10	7.34	78	66
X. mal. 4 (Exp.)	-----	1071	423	39.5	31	1.05	7.65	62	76
Early Fluff	423	1089	412	37.8	29	1.01	7.37	73	73
Deltapine 15	351	1023	410	40.1	31	.99	6.67	79	62
Delfos 9169	351	1044	396	37.9	33	1.03	7.03	75	61
Stoneville 2B	350	1055	383	36.3	30	1.01	6.83	70	55
L.s.d. 5%	-----	134	-----	-----	-----	-----	-----	-----	-----

¹Classed by the Memphis Cotton Classing Office U.S.D.A.Table 3. — *Cotton, average acre yields and general characteristics of varieties tested in Madison County, 1953*

Average of 8 replications

Variety	Acre Yields			Lint Percent	Lint length		Lint	Bolls Per lb.	Earli- ness Yield 1st Pick- ing		
	1951-53 incl. Av. Lint	1953			Class- er's ¹	Fibro- graph	Strength				
		Seed Cotton	Lint				Pressley				
							Lbs.			Lbs.	Lbs./mg
Lbs.	Lbs.	Lbs.	%	32's in.	In.	Lbs./mg	No.	%			
T89 (Exp.)	-----	1717	565	32.9	34	1.06	7.43	76	77		
Mix 2B (Exp.)	-----	1496	488	32.6	34	1.10	7.23	64	78		
Fox	649	1535	485	31.6	35	1.15	7.01	79	79		
Tenn. 818	632	1398	463	33.1	34	1.11	7.42	74	82		
Bobshaw	-----	1376	461	33.5	34	1.07	7.35	69	57		
Cobal	550	1369	461	33.7	34	1.11	7.39	71	74		
Tenn. 19 (Exp.)	-----	1401	446	31.8	34	1.11	6.97	67	60		
Tenn. 241	508	1325	441	33.3	33	1.08	7.16	68	68		
Ute 5C (Exp.)	606	1325	436	32.9	34	1.09	7.69	77	67		
Empire Wilt	589	1285	415	32.3	34	1.13	7.57	63	75		
Plains	604	1256	413	32.9	33	1.10	7.01	73	63		
Delfos 9169	559	1271	413	32.5	32	1.14	7.16	72	71		
Deltapine 15	595	1198	412	34.4	35	1.15	7.15	78	69		
Tenn. 12 (Exp.)	-----	1209	403	33.3	34	1.08	7.59	71	72		
Auburn 56	-----	1303	395	30.3	34	1.08	6.96	77	47		
X. mal. 4 (Exp.)	-----	1231	383	31.1	34	1.10	7.33	66	71		
Coker 100-Staple	577	1274	377	29.6	35	1.17	7.44	79	73		
Coker 100-Wilt	545	1056	345	32.7	34	1.13	7.24	82	58		
Stoneville 2B	575	1064	334	31.4	34	1.10	7.08	77	68		
Early Fluff	629	1122	333	29.7	33	1.09	7.56	81	62		
L.s.d. 5%	-----	204	-----	-----	-----	-----	-----	-----	-----		

¹Classed by the Memphis Cotton Classing Office U.S.D.A.

Table 4. — *Cotton, average acre yields and general characteristics of varieties tested in Tipton County, 1953*

Average of 8 replications

Variety	Acre Yields			Lint Percent	Lint length		Lint	Bolls Per lb.	Earli- ness Yield 1st Pick- ing
	1951-53 incl. Av. Lint	1953			Strength				
		Seed Cotton	Lint		Pressley				
						Class- er's ¹	Fibro- graph		
	Lbs.	Lbs.	Lbs.	%	32's in.	In.	Lbs./mg	No.	%
T89 (Exp.)		2458	978	39.8	33	1.01	8.05	68	66
Empire Wilt	689	2184	791	36.2	34	1.13	7.20	56	71
Tenn. 241	677	2196	777	35.4	34	1.09	7.51	61	66
Mix 2B (Exp.)		2145	770	35.9	34	1.11	7.57	63	71
Fox	626	2135	756	35.4	33	1.11	7.00	76	62
Tenn. 12 (Exp.)		2145	755	35.2	34	1.12	7.33	62	59
Tenn. 818	662	2051	736	35.9	33	1.12	7.24	65	64
Ute 5C (Exp.)	647	2048	733	35.8	34	1.12	7.62	64	62
Cobal	592	2064	710	34.4	35	1.11	6.94	62	67
Auburn 56		1931	687	35.6	31	1.12	7.16	68	54
Coker 100-Wilt	593	1834	664	36.2	34	1.15	7.27	68	49
Plains	654	1848	656	35.5	34	1.10	7.41	66	48
X. mal. 4 (Exp.)	627	1833	654	35.7	34	1.13	7.62	56	57
Stoneville 2B	654	1828	642	35.1	33	1.10	7.14	64	39
Delfos 9169	626	1838	636	34.6	34	1.16	6.77	65	45
Deltapine 15	627	1643	624	38.0	35	1.10	6.86	72	45
Early Fluff	600	1754	616	35.1	34	1.06	7.63	70	53
Coker 100-Staple	612	1754	601	33.9	35	1.18	7.27	71	52
L.s.d. 5%		194							

¹Classed by the Memphis Cotton Classing Office U.S.D.A.

Weather conditions of 1953 were abnormal at all locations especially at Jackson where the lint percentages averaged considerably below and immature fibers higher than those at other locations.

Summary of results of the 1953 tests are shown in Table 5. There were 18 varieties and experimental strains common to all experiments. These varieties were planted in randomized blocks with eight replications of each variety. Each plot consisted of two rows 50 feet in length or approximately 1/125 acre. The varieties in each table are listed in order of the 1953 lint yield for that location. Dollar values per acre are not presented, but varieties with longer fiber make a more favorable showing when premiums for extra staple length are considered. In comparing cotton varieties on the basis of value per acre, however, it should be borne in mind that premiums for extra staple diminish sharply if the grade is lower than middling. Under normal harvesting conditions middling and better grades of cotton are expected from early varieties.

Tennessee is in the "northern-rim" area of the Cotton Belt and has a relatively short growing season for cotton. Late-set bolls have little chance of maturing before frost damage. For this

Table 5. — *Cotton, summary of acre yield of lint, lint percent, length, and earliness of 18 varieties grown in the 4 Tennessee cotton variety tests, 1953*

State Average

Variety	Yield of Lint		Lint Percent	Lint Length		Earliness Yield at 1st Picking
	'51-'53 incl.	1953	1953	Classer's ¹ 1953	Fibrograph	1953
	Lbs.	Lbs.	%	32's in.	In.	%
T-89 (Exp.)	-----	683	38.8	33	1.01	70
Mix 2B (Exp.)	-----	571	36.7	34	1.08	77
Ute 5C (Exp.)	-----	587	36.8	34	1.07	66
Fox	-----	573	35.3	33	1.10	72
Cobal	-----	549	36.8	34	1.08	78
Tenn. 818	-----	584	36.9	33	1.09	75
Tenn. 241	-----	555	36.9	33	1.06	71
Tenn. 12 (Exp.)	-----	542	36.8	33	1.05	73
Empire Wilt	-----	566	36.8	34	1.09	75
Plains	-----	578	36.1	33	1.07	61
Auburn 56	-----	512	34.8	33	1.09	58
Coker 100-Wilt	-----	543	36.2	33	1.09	61
X. mal. 4 (Exp.)	-----	492	36.4	33	1.10	67
Deltapine 15	-----	560	38.5	34	1.07	62
Coker 100-Staple	-----	527	34.2	34	1.15	66
Delfos 9169	-----	527	35.1	34	1.12	59
Early Fluff	-----	572	35.2	32	1.04	67
Stoneville 2B	-----	550	34.9	32	1.06	59

¹Classed by the Memphis Cotton Classing Office U.S.D.A.

reason, early varieties may be expected to give consistently better results under Tennessee conditions.

High lint turnout, so strongly emphasized in certain sections of the State, is not a sound basis upon which to choose a variety and may work to the disadvantage of the farmer. Varieties that have high lint turnout are not necessarily those that yield most per acre. **The net return per acre for lint and seed** is the important thing — not the size of the wagon box required to haul a bale to the gin. In addition, boll size, ease of picking, date and uniformity of maturity affect harvesting costs, quality of lint, and other land use following the cotton crop.

In general, the performance of early and medium-early varieties was better than the later maturing varieties in 1953. See the list of recommended varieties on page 14.

CORN

The results of the corn tests are summarized in Table 6. The data shown are the averages for six plots at each of six locations or the average of 36 plots for each entry. Individual plots consisted of two rows 3.5 feet apart and 30 feet long. A kernel was plant-

Table 6. — *Corn, summary of yields and general characteristics of varieties tested at 6 locations, 1953*
 Acre yields, based on dry-shelled corn (15.5% moisture)-average 6 replications at each location

Variety	Averages as stated		Percent Erect Plants	Husk Grade	Grain Quality Rating	Ears Per 100 Plants	Growing Season	1953 Acre Yield by Locations					
	1953 (6 Loc.)	'51-'53 incl.						Colum-bia	Cross-ville	Greene-ville	Jack-son	Knox-ville	Spring-field
W T0142 (Exp.)	71.1	62.7	98	Good	Good	160	Full	71.7	102.3	57.9	73.4	72.9	48.6
W Dixie 33	70.9	65.5	98	Good	Good	157	Full	74.9	102.7	55.0	71.5	75.2	45.8
W Tenn. 29 ¹	68.7	65.6	99	Good	Good	153	Full	71.5	93.8	56.2	75.7	69.5	45.6
W T2579 (Exp.)	68.1	—	97	Good	Good	149	Full	70.7	94.1	54.3	76.0	72.3	41.0
W T0107 (Exp.)	66.6	—	99	Good	Good	130	Full	61.8	97.7	50.8	71.0	70.6	47.9
Y T2239 (Exp.)	66.6	—	97	Good	Good	117	Full	64.6	91.0	54.9	71.3	73.1	44.9
W P.A.G. 636	66.4	—	97	Good	Good	145	Medium	68.0	89.0	59.7	69.0	64.9	47.5
Y U.S. 357	65.3	—	97	Fair	Fair	113	Full	66.9	86.6	53.7	69.3	76.8	38.7
Y Funk's G-704	65.3	—	99	Fair	Fair	104	Medium	68.7	86.9	57.8	67.4	65.6	45.2
W Stulls 400W	65.1	—	97	Fair	Good	107	Medium	62.9	87.7	57.7	64.6	70.2	47.4
Y Tenn. 90 ²	65.1	59.1	97	Good	Good	111	Full	67.3	93.5	56.0	67.0	67.1	39.4
W U.S. 523 W	64.2	58.8	93	Good	Good	117	Medium	68.2	85.7	58.1	60.3	66.1	46.6
W Dixie 17	63.8	59.5	93	Good	Good	160	Full	60.0	99.3	50.3	68.2	63.3	41.4
Y Keystone 222A	63.4	—	90	Fair	Fair	135	Full	67.5	91.6	49.1	71.2	57.9	43.0
W T0131 (Exp.)	63.3	—	98	Good	Good	112	Full	54.5	90.1	50.8	66.2	74.3	43.7
W Tenn. 10	63.1	58.9	96	Good	Good	163	Full	64.0	93.4	51.8	60.6	66.9	41.7
W Funk's G-512W	63.1	57.9	97	Fair	Fair	108	Short	54.3	87.7	61.4	68.3	63.3	43.7
W P.A.G. 631	63.1	59.7	93	Good	Good	117	Medium	61.4	81.6	53.2	75.8	67.9	38.6
W T0125 (Exp.)	62.7	55.4	99	Good	Good	109	Full	61.8	84.9	54.2	69.7	66.6	38.8
W Pioneer 505W	62.4	55.0	97	Fair	Fair	105	Medium	57.5	85.5	53.3	66.8	65.3	45.8
Y Funk's G-134	61.9	—	99	Fair	Fair	98	Short	59.7	86.1	61.0	60.0	62.4	42.3
Y Dixie 22	61.6	55.6	97	Good	Good	140	Full	60.2	90.1	47.5	63.7	73.5	34.3
Y Indiana 816	61.5	—	99	Poor	Fair	108	Short	60.3	83.0	59.8	58.2	64.3	43.6
W Funk's G-779W	61.2	56.0	97	Fair	Good	137	Full	54.3	82.4	50.2	70.2	71.4	38.4
W P.A.G. 620	61.0	56.9	97	Fair	Good	110	Medium	61.2	87.4	56.4	60.1	64.3	36.5
Y Funk's G-711 ³	60.9	54.6	89	Good	Good	124	Full	56.0	83.7	50.5	71.8	61.9	41.7
Y P.A.G. 170	60.8	—	98	Poor	Fair	102	Short	62.3	82.6	57.3	59.9	56.7	45.7
Y Dekalb 1002	60.4	53.5	96	Fair	Fair	104	Medium	60.3	80.5	51.8	61.6	62.5	45.6
Y U.S. 13	60.4	54.5	97	Poor	Fair	105	Short	61.5	86.2	55.8	55.6	59.3	44.0
Y Kentucky 102	60.1	52.9	90	Fair	Fair	121	Medium	55.9	88.7	49.6	66.9	61.9	37.7
W Keystone 111W	58.9	—	98	Good	Good	101	Medium	53.5	83.2	53.5	58.1	68.0	37.1
W Southern States 903	57.9	—	98	Good	Good	105	Medium	55.4	84.1	52.2	59.4	54.5	41.6
W Jellicorse (O.P.)	56.5	51.0	95	Good	Good	144	Full	55.9	81.3	42.4	65.8	57.4	36.3
W Neal Paymaster (O.P.)	52.4	49.0	93	Good	Good	141	Full	52.5	75.9	44.6	56.2	50.4	34.5
L.s.d. 5%	4.0	—	—	—	—	—	—	N.S.	7.7	6.2	8.7	12.1	6.6

¹Tenn. 29 was tested in previous years as T0014 (Exp.).

²Tenn. 90 was tested in previous years as T0009 (Exp.).

³Funk's G-711 was not included in 1952 Crossville test.

ed every 9 inches in the row and the plants later thinned to a spacing of 18 inches, giving an almost perfect stand of 8,300 plants per acre at all locations.

The commercially available corns tested were chosen from those being sold to farmers in Tennessee. Seed of these were bought on the open market and are representative of seed purchased by farmers using these varieties. A few of the more promising hybrids from adjacent states also were included—adaptation does not stop at state lines. Experimental hybrids from the Tennessee corn breeding program are indicated by “T”. It is from such entries that future commercial hybrids are chosen, just as Dixie 33, Tenn. 29, and others have been in the past.

The yields in the 1953 corn tests reflect differences among locations, due primarily to the unequal distribution of rainfall during the growing season. For this, and other reasons, results over a period of years at several locations are more reliable in evaluating a particular hybrid than records for a single year or at a single location.

Yield should not be the only basis for selecting a variety of corn. Consideration always should be given the percentage of erect plants, husk cover and grain quality, which are shown in Table 6. Standing ability is especially important where mechanical pickers are used. The presence of a good husk cover reduces damage by insects, birds, and weather, resulting in better grain quality.

SMALL GRAINS

Small grains also were tested at six locations. Each variety was replicated four times at each location in a simple randomized block design. The plot size varied from 3.5 to 7 feet in drill width and from 40 to 60.5 feet in length at various locations. Data are presented in Table 7.

Winter Oats — The mild winter was reflected in higher yields of semi-winter types as compared with the winter types. Fulgrain, an early-maturing oat that winter-kills during severe winters, was second in, yield to Victorgrain 48-93, another semi-hardy type which was under test for the first time. Further testing of Victorgrain 48-93 and Arkwin will be necessary before an accurate evaluation can be made. Forkeddeer, recommended for its winter hardiness, and LeConte for its standing ability, yielded less than other varieties this one season, but ranked first and second respectively in the 3-year averages.

Table 7. — *Small grains, summary of yields and general characteristics of varieties tested in 1953*

Average of 4 replications at each location

Variety	Av. Acre Yields		Winter Hardiness	Standing Ability	Relative Maturity	Relative Height	Awn Characteristics
	1953 Bu.	'51-'53 inc. Bu.					
WINTER OATS							
Victorgrain 48-93	113.5	—	fair	good	m. early	med.	—
Fulgrain	107.1	67.7	poor	good	early	short	—
Arkwin	93.7	—	fair	good	m. late	tall	—
090 x Bond 138-1-20 (Exp.)	93.0	—	good	good	m. late	short	—
090 x Bond 313 (Exp.)	89.7	—	good	good	m. late	med.	—
Leconte	85.0	70.7	good	good	m. late	tall	—
090 x Bond 280-8 (Exp.)	83.3	—	good	good	m. late	tall	—
Forkedeer	81.7	80.3	good	fair	m. early	tall	—
L.s.d. 5%	6.9	—	—	—	—	—	—
BARLEY							
Upright 50-106-11 (Exp.)	69.5	—	good	good	m. early	tall	smooth awned
Upright 11-172 (Exp.)	65.5	—	good	good	m. early	tall	smooth awned
Upright 50-99-1 (Exp.)	64.8	—	good	good	m. early	tall	smooth awned
Hooded 5-23 (Exp.)	57.5	—	fair	fair	m. early	tall	hooded
Wong 50-343-1 (Exp.)	57.4	—	good	fair	m. late	tall	short awned
Upright 50-85-11 (Exp.)	54.4	—	good	fair	m. late	tall	smooth awned
Colonial	53.8	49.8	fair	fair	m. early	med.	awnless
Hooded 50-27-3 (Exp.)	52.5	—	fair	fair	m. late	tall	hooded
Jackson No. 1	49.1	48.4	good	good	m. early	tall	smooth awned
Kentucky No. 1	45.5	44.7	good	fair	m. late	tall	rough awned
L.s.d. 5%	4.8	—	—	—	—	—	—
WHEAT							
Seneca	46.9	44.2	good	good	late	med.	beardless
Thorne	43.7	41.6	good	good	late	med.	beardless
Vigo	41.2	37.4	good	good	late	tall	beardless
Fulcaster 612	40.3	37.7	good	good	med.	tall	bearded
Little Prolific	39.8	—	good	fair	early	short	beardless
L.s.d. 5%	1.9	—	—	—	—	—	—

Barley — Yields were much higher than usual at all locations. The experimental strains made significantly higher yields than Jackson No. 1 which has led the test during past seasons. Upright 11-172 (Exp.), under test for the past two years, has a stiffer straw and more erect head than does Jackson No. 1. Seed is being increased for release under the name Watauga. Colonial, an awnless barley, yields well but is not recommended since it is susceptible to scald, a serious disease in some years. It was especially serious at Jackson in 1953.

Wheat — The performance of all wheat varieties was good. Seneca, a beardless, red chaffed variety developed at the Ohio Station did well again this year. It is a sister selection to Thorne and is indistinguishable from Thorne in the field. It has a slightly higher test weight than Thorne and yields a little higher, as shown in the yield averages. Vigo, a beardless, red chaffed variety, and Fulcaster 612, the only bearded variety tested, yielded significantly less than Seneca or Thorne. Little Prolific, under test for the past two years, has made yields comparable with Vigo and Fulcaster 612, and may be useful because of its earliness and short straw.

RED CLOVER

Trials with red clover were conducted at three locations. Summary of data is presented in Table 8. Kenland, a red clover variety developed by the Kentucky Experiment Station and the United States Department of Agriculture, led the tests in yield again this year. It is resistant to southern anthracnose and is longer lived than most other varieties under Tennessee conditions. Tenn. Improved, which was tested as Tenn. Purple Seeded (Exp.), is re-

Table 8. — *Red clover, summary of yields of varieties tested in 1953*

Average of 4 replications at each location
Tons Air-Dry Hay Per Acre

Variety	Locations				
	1953 Average 3 tests	4 Yr. Ave. All Locations	Columbia	Jackson	Knoxville
	Tons	Tons	Tons	Tons	Tons
Kenland	3.53	3.31	3.30	4.88	2.40
Louisiana (Synthetic No. 1)	3.24	—	2.99	4.80	1.94
Tenn. Improved	2.99	2.89	3.00	3.92	2.05
Midland	2.97	2.88	2.96	3.95	2.01
Cumberland	2.97	2.90	2.97	3.73	2.20
Nolin (La. Red)	2.48	—	2.31	3.28	1.86
L.s.d. 5%	.18	—	.26	.36	.30

sistant to southern anthracnose and powdery mildew, has a uniform purple seed color, and has a long life comparable to that of Kenland. Midland does not have southern anthracnose resistance but yields well when the disease is not serious. Cumberland has been found to have some resistance to southern anthracnose. Louisiana Synthetic No. 1 resulted from a combination of selections made at the Louisiana Station. This variety was second to Kenland in yield and shows promise. Further testing will be necessary for an accurate evaluation of the variety.

ALFALFA

The 1953 yields of alfalfa (Table 9) represent an average of 4 tests seeded in the fall of 1952 at Columbia, Jackson, Knoxville and Springfield. Also included are 3, and 4-year averages of tests seeded in the fall of 1949 and 1950 at Greeneville, Crossville and Jackson. The ability of a variety to persist and produce high yields for a number of years is very important; therefore, long-

Table 9. — *Alfalfa, summary of yields of varieties tested at Columbia, Greeneville, Crossville, Jackson, Knoxville, and Springfield, 1953*

Average of 4 replications at each location

Variety	Yields in Tons Air-Dry Hay Per Acre			
	Columbia, Knoxville Jackson, Springfield	Greeneville	Crossville	Jackson
	Seeded Fall '52	Seeded Fall '50	Seeded Fall '49	Seeded Fall '49
	1953 Yields	3 Yr. Ave. '51-'53 incl.	4 Yr. Ave. '50-'53 incl.	4 Yr. Ave. '50-'53 incl.
	Tons	Tons	Tons	Tons
Williamsburg	4.06	2.43	-----	-----
DuPuits	3.98	-----	-----	-----
Atlantic	3.91	-----	3.26	5.14
Oklahoma Approved**	3.87	2.58	3.26	4.67
Kansas Common	3.85	2.65	3.16	5.03
Narragansett	3.81	2.78	3.69	-----
Buffalo	3.65	2.40	2.52	4.67
California Common	3.27	2.25	*	2.25
L.s.d. 5%	.12			

*California Common completely winter-killed at Crossville during first winter after seeding.

**Oklahoma Approved represents seed of an adaptable variety grown under the supervision of the Okla. Crop Improvement Association.

time averages are needed for the selection of better adapted varieties. Varieties such as Atlantic, Buffalo, and Oklahoma Approved that originate in a climate similar to that of Tennessee, are usually superior in performance. California Common is not winter-hardy enough for Tennessee. Narragansett, recommended for the first

time, was developed at the Rhode Island Experiment Station and has a dark green color, high percentage of leaves, and appears to be the most winter-hardy of the varieties tested. Williamsburg was developed at the Virginia Experiment Station. DuPuits, a variety developed in France, has been tested for only one year. Further testing is necessary to evaluate Williamsburg and DuPuits.

SOYBEANS

Since the abnormally dry season of 1953 resulted in poor stands and unreliable yield comparisons, the data on soybeans are from 1952 tests. These are shown in Table 10. Usually the later maturing varieties have a slight yield advantage but the earlier varieties may produce equal or higher yields, depending on the rainfall distribution. The varieties S-100 (early), Dorman (early), Ogden (midseason), and Volstate (late) are recommended for seed and hay in Tennessee. Dorman, the newest of the recommended varieties, has a maturity date and yield about the same as that of S-100. The oil content is about the same as Ogden or 2 percent higher than S-100. Wabash, a very early-maturing variety is not recommended due to its poor seed quality under Tennessee conditions.

Table 10. — *Soybeans, summary of yields and general characteristics of varieties tested in 1952*

Average of 4 replications at each location

Variety	Average Acre Yield		Colum- bia	Knox- ville	Jack- son	Oil Content	Range in Date of Harvest
	1950, 1951 1952	1952 (3 tests)					
	Bu.	Bu.	Bu.	Bu.	Bu.	%	
Ogden	36.9	37.5	42.7	36.5	33.5	21.0	Oct. 15—Oct. 25
Volstate	33.1	31.6	37.9	44.1	12.8 ¹	21.3	Oct. 25—Nov. 5
Dorman	30.6	29.2	27.1	33.8	26.8	21.7	Sept. 15—Sept. 25
S-100	30.9	25.3	23.1	25.5	27.3	19.1	Sept. 25—Oct. 10
L-6	27.8	21.4	24.0	15.6	24.7	22.7	Sept. 20—Oct. 10
Wabash	28.3	19.2	14.1	33.3	10.3	23.2	Aug. 30—Sept. 10
L.s.d. 5%		3.6	2.9	6.8	8.2		

¹Volstate came up to a poor stand at Jackson.

Recommended Varieties for Tennessee

The varieties recommended herein by the Experiment Station have been tested for at least three years. In order that a variety be recommended it must yield well and have growth characteristics suitable for Tennessee conditions.

Certified seed provides assurance of varietal identity and uniform high standards of purity and germination. The use of certified seed is strongly recommended.

Cotton

The following varieties are recommended for all general growing areas of the State:

Early	Late
Empire W. R.	Coker 100-Wilt
Fox	Deltapine 15
Cobal	Stoneville 2B
Tenn. 241	Delfos 9169
	Plains

The following varieties are recommended for specific areas where cotton wilt (*Fusarium vasinfectum*) is prevalent:

Plains
Coker 100-Wilt
Empire W. R.

CORN

Full Season Hybrids

White

Tenn. 10 — The first widely grown hybrid in Tennessee, and still popular. Prolific, good husk cover, tendency to lodge. Red cobs, kernels on some ears have a copperish tinge.

Dixie 17 — Slightly more resistant to lodging than Tenn. 10 and slightly better husk protection. A prolific with a light red cob.

Dixie 33 — A full season hybrid that stands well, picks well, and has an adequate husk. Has been outstanding in official yield trials and is gaining rapidly in popularity.

Tenn. 29 — (Seed will be available for 1955 planting) White cobbed prolific with good standing ability.

Yellow

Dixie 22 — A full season semi-prolific hybrid. Approximately half the cobs are red and half are white.

Medium and Short Season Hybrids**White**

P.A.G. 631 — A medium season hybrid with good husk and grain. A few stalks produce two ears.

U.S. 523W — A medium early hybrid that carries the ears low and is easy to harvest mechanically. A few stalks produce two ears.

Funk's G-512W — A short season hybrid that yields well for an early type. Has only one ear per stalk in most cases.

Open Pollinated Varieties — Better hybrids consistently outyield open pollinated varieties. These have been the best of the open pollinated varieties.

Neal Paymaster — White prolific with red cobs.

Jellicorse — White prolific with white cobs.

SMALL GRAINS**Winter Oats**

Forkeddeer — A very winter-hardy variety that yields well. Has tendency to lodge on soils of high fertility.

Leconte — A stiff strawed, winter-hardy oat. Stands better than Forkeddeer, a very important factor when combining.

Barley

Jackson No. 1 — A winter-hardy high yielding smooth awned barley. Produces long-drooping heads.

Kentucky No. 1 — A very winter hardy, rough awned barley. Has made yields almost as high as Jackson No. 1. Less desirable because of rough awns.

Wheat

Seneca — A beardless, red chaffed, stiff strawed variety of medium height. Is a sister selection to Thorne, but has a

slightly higher test weight and a slight yield advantage over Thorne.

Thorne — Indistinguishable from Seneca in the field. (See Seneca)

Fulcaster 612 — A tall, bearded variety. Has been grown in Tennessee for many years.

Vigo — A beardless, white chaffed variety, with a strong straw. Adapted to soils of high fertility.

Alfalfa

Buffalo — A selection from Kansas Common that is resistant to bacterial wilt.

Atlantic — A variegated alfalfa variety, adapted to areas in the eastern states where bacterial wilt is not a problem. Has out-yielded Buffalo in official varietal trials.

Oklahoma Approved — Seed of an adapted variety grown under the supervision of the Oklahoma Crop Improvement Association.

Narragansett — A new variety developed at the Rhode Island Experiment Station. Has dark green color, high percentage of leaves, and appears to be longer lived than other varieties when wilt is not a major factor.

Red Clover

Kenland — A red clover resistant to southern anthracnose and characteristically longer lived than most other varieties.

Soybeans

S-100 — An early season yellow soybean, matures about October 1. Seed quality not quite as good as Dorman.

Dorman — A large yellow soybean that has made yields equal to S-100, and matures about the same time. Has approximately 2 per cent more oil than S-100.

Ogden — A high yielding variety of midseason maturity (October 15), with purple blossoms and olive colored beans.

Volstate — A medium large yellow soybean that matures about November 1.