1950 Variety Performance Trials of Field Crops

University of Tennessee Agricultural Experiment Station

Sam F. McMurray

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1950
VARIETY PERFORMANCE
TRIALS OF FIELD CROPS

Corn - Cotton - Oats - Wheat - Barley
Soybeans - Red Clover - Alfalfa

By
SAM F. McMURRAY

THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXPERIMENT STATION
KNOXVILLE
# RECOMMENDED VARIETIES FOR TENNESSEE

## CORN

### White Hybrids
- Dixie 33
- Dixie 17
- Tennessee 10

### Yellow Hybrids
- Dixie 22
- N. C. 27
- Tennessee 602
- Funk G711
- Dixie 44

### White (open-pollinated)
- Jellicorse
- Neal Paymaster

### Yellow (open-pollinated)
- None recommended

### Note:
Early corns are not recommended because of relatively low yields. However, if early varieties are desired see table 1 for data on them.

## SMALL GRAINS

### Winter Oats
- LeConte
- Forkedee
- Fulgrain (early)

### Spring Oats
- Columbia
- Clinton

### Wheat
- Thorne
- Fulcaster 612
- Vigo

### Barley
- Jackson No. 1
- Missouri Early Beardless (early, hooded)

## SOYBEANS

- S-100 (early)
- Ogden (midseason)
- Volstate (late)

## ALFALFA

- Kansas Common
- Oklahoma Common
- Buffalo (see text)
- Atlantic (on alfalfa)

## COTTON

### Early
- Empire
- Tennessee 241
- Cobal

### Medium Early
- Coker 100 Wilt
- White Gold Wilt
- Delfos 9169

### Medium Late
- Deltapine 15
- Stoneville 2B
- Coker 100 Staple

(See tables and text for data on these varieties)
INTRODUCTION

Variety performance trials are conducted to provide information about the adaptation and yielding ability of the many varieties of the major field crops, and serve as a basis for recommending those that are best adapted to Tennessee. The trials have been conducted primarily at the six Experiment Stations which are located in the principal agricultural regions of the State as shown on page 16.

WHAT THE DATA MEAN

The varieties recommended herein by the Experiment Station have been tested for two or more years. In order for a variety to be recommended it must yield well and have growth characteristics that are adapted to Tennessee conditions.

Some varieties on the recommended list carrying a brief explanation such as “early”, “late”, “awnless”, “hooded”, etc., may have been included because they fit more effectively into the plans of some farmers.

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 recommended varieties along with many other varieties. All commercial varieties are shown in bold-face type; other entries are experimentals. It is always good to compare data on a new variety with those of an old familiar one. The data are shown in the order of the 1950 performance, with highest yielding varieties at the top.

When checking a variety’s performance record in a table always look for the l. s. d. (least significant difference) figure at the bottom of the table. If the yields of any two varieties being compared differ by as much as the l. s. d. or more, the chances are very good that the variety having the higher yield is better than the other when grown under conditions similar to those under which the tests were conducted.
Tennessee, due to its narrowness north and south, has about the same length of growing season over much of its entire area. For this and possibly other reasons, a variety that does well in one part of the State usually does well state-wide. The varieties that utilize most of the available growing season are usually the ones that lead in yield. The Cumberland Plateau and Upper East Tennessee have shorter growing seasons, and full season crops in those sections may be damaged by fall frost unless they are planted early.

Adequate amounts of fertilizer, as determined by soil tests and other information, were applied to the variety plots at seeding time and the corn and small grain were given an application of nitrogen during the growing season.

**CORN**

The results of the corn tests are summarized in table 1. The data shown are the averages for 6 plots at each of 5 locations or the average of 30 plots for each entry. Individual plots consisted of 2 rows 3.5 feet apart and 20 feet long. A kernel was planted every 9 inches and thinned to a spacing of 18 inches apart in the rows giving an almost perfect stand at all locations of 8,300 plants per acre.

Most of the commercially available corns tested were chosen from those being sold to farmers in Tennessee. Seed of these was bought on the open market and represents exactly what the farmer gets when he buys these corns. A few of the more promising commercial hybrids from adjacent states also were included—adaptation does not stop at state lines. The 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 22, Dixie 33, and others have been in the past. All the corns performing well enough in these tests to be recommended are certified in Tennessee or an adjacent state.

The yields in the 1950 corn tests were satisfactorily high. This resulted from adequate fertilization together with sufficient moisture throughout the entire season. Yield of the individual entries should not be the only basis for selecting a corn to grow. Careful attention should always be given to the percentage of erect plants,
<table>
<thead>
<tr>
<th>Variety</th>
<th>1950 Acre Yield</th>
<th>Grain Quality Rating</th>
<th>Percent Erect Plants</th>
<th>Husk Cover Rating</th>
<th>Ears Per 100 Plants</th>
<th>Growing Season Required</th>
<th>1950 Acre Yields By Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bu.</td>
<td>Bu.</td>
<td>Bu.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>W Experimental T0120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W Dixie 33</td>
<td>97.9</td>
<td>112.1</td>
<td>119.3</td>
<td>good</td>
<td>good</td>
<td>86</td>
<td>205</td>
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<tr>
<td>W Dixie 17</td>
<td>94.2</td>
<td>109.2</td>
<td>117.9</td>
<td>good</td>
<td>good</td>
<td>76</td>
<td>199</td>
</tr>
<tr>
<td>W Experimental T9002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W Dixie 44</td>
<td>89.6</td>
<td>103.8</td>
<td>112.9</td>
<td>good</td>
<td>good</td>
<td>85</td>
<td>175</td>
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<td>W Tennessee 10</td>
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<td>107.5</td>
<td>112.8</td>
<td>good</td>
<td>good</td>
<td>74</td>
<td>199</td>
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<td>W Experimental T0114</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>W N. C. 27</td>
<td>88.0</td>
<td>102.5</td>
<td>109.5</td>
<td>good</td>
<td>good</td>
<td>85</td>
<td>186</td>
</tr>
<tr>
<td>W Experimental T0012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W Funk G711</td>
<td>84.2</td>
<td>98.3</td>
<td>106.9</td>
<td>good</td>
<td>good</td>
<td>74</td>
<td>132</td>
</tr>
<tr>
<td>W Tennessee 602</td>
<td>83.6</td>
<td>95.1</td>
<td>101.5</td>
<td>good</td>
<td>good</td>
<td>81</td>
<td>173</td>
</tr>
<tr>
<td>W Jellicorse (O. P.)</td>
<td>83.7</td>
<td>94.7</td>
<td>100.3</td>
<td>good</td>
<td>good</td>
<td>76</td>
<td>182</td>
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<tr>
<td>W Experimental T0010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W Kentucky 405B</td>
<td>89.1</td>
<td>96.0</td>
<td>90.5</td>
<td>good</td>
<td>good</td>
<td>89</td>
<td>123</td>
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<tr>
<td>W Neal Paymaster (O. P.)</td>
<td>80.6</td>
<td>92.6</td>
<td>96.0</td>
<td>good</td>
<td>good</td>
<td>74</td>
<td>167</td>
</tr>
<tr>
<td>Y Dixie 22</td>
<td>76.3</td>
<td>87.3</td>
<td>93.3</td>
<td>good</td>
<td>good</td>
<td>84</td>
<td>129</td>
</tr>
<tr>
<td>Y U. S. 523W</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Y Kentucky 102</td>
<td>77.4</td>
<td>87.3</td>
<td>92.8</td>
<td>fair</td>
<td>fair</td>
<td>78</td>
<td>138</td>
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<tr>
<td>Y Pioneer 505W</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Y DeKalb 923W</td>
<td>86.7</td>
<td>90.8</td>
<td>92.4</td>
<td>fair</td>
<td>fair</td>
<td>92</td>
<td>112</td>
</tr>
<tr>
<td>Y Indiana 750B</td>
<td>72.0</td>
<td>84.1</td>
<td>88.7</td>
<td>good</td>
<td>good</td>
<td>90</td>
<td>106</td>
</tr>
<tr>
<td>Y Missouri 148</td>
<td>79.3</td>
<td>86.3</td>
<td>84.8</td>
<td>fair</td>
<td>fair</td>
<td>84</td>
<td>129</td>
</tr>
<tr>
<td>Y Funk G80</td>
<td>79.8</td>
<td>85.9</td>
<td>93.2</td>
<td>fair</td>
<td>fair</td>
<td>86</td>
<td>126</td>
</tr>
<tr>
<td>Y Kentucky 158</td>
<td>80.6</td>
<td>85.2</td>
<td>92.4</td>
<td>fair</td>
<td>fair</td>
<td>88</td>
<td>113</td>
</tr>
<tr>
<td>W Broadbent 235W</td>
<td>82.7</td>
<td>84.6</td>
<td>91.9</td>
<td>fair</td>
<td>fair</td>
<td>91</td>
<td>106</td>
</tr>
<tr>
<td>Y National 134</td>
<td>77.6</td>
<td>81.6</td>
<td>86.0</td>
<td>fair</td>
<td>fair</td>
<td>86</td>
<td>110</td>
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<tr>
<td>Y Ed. J. Funk 840</td>
<td>78.4</td>
<td>78.9</td>
<td>92.4</td>
<td>fair</td>
<td>fair</td>
<td>92</td>
<td>110</td>
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<tr>
<td>Y Funk G145</td>
<td>81.3</td>
<td>77.9</td>
<td>89.9</td>
<td>fair</td>
<td>fair</td>
<td>89</td>
<td>110</td>
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<tr>
<td>Y Hunkerkoch H23</td>
<td>77.1</td>
<td>87.1</td>
<td>90.8</td>
<td>poor</td>
<td>poor</td>
<td>88</td>
<td>107</td>
</tr>
<tr>
<td>Y Missouri 313</td>
<td>74.8</td>
<td>76.7</td>
<td>87.6</td>
<td>poor</td>
<td>poor</td>
<td>87</td>
<td>113</td>
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<td>Y S. 33</td>
<td>67.9</td>
<td>74.9</td>
<td>76.5</td>
<td>fair</td>
<td>fair</td>
<td>89</td>
<td>110</td>
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<tr>
<td>Y DeKalb 847</td>
<td>75.6</td>
<td>92.2</td>
<td>92.0</td>
<td>poor</td>
<td>poor</td>
<td>92</td>
<td>110</td>
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<tr>
<td>Y Pioneer 366</td>
<td>75.6</td>
<td>91.0</td>
<td>109</td>
<td>poor</td>
<td>poor</td>
<td>91</td>
<td>109</td>
</tr>
<tr>
<td>Y Ed. J. Funk 746</td>
<td>73.2</td>
<td>89.0</td>
<td>109</td>
<td>poor</td>
<td>poor</td>
<td>89</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L. s. d. (5%)</td>
<td>4.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
husk cover, and grain quality which are shown in table 1. Ability of the plants to stand up in the field is of increasing importance in Tennessee as mechanical pickers become common. Corn grown in Tennessee should have a husk that goes well over the tip of the ear. This reduces insect, bird, and weather damage and makes a better quality grain.

Only about half of the corn acreage in Tennessee was planted to hybrids in 1950, and some of that was planted to the hybrids that have been proven unadapted because of their low yield, poor husk cover, and low grain quality.

It has been the plan to sample the hybrids being sold to Tennessee farmers each year by including in the tests as many as facilities permit. Any entry that has not shown itself adapted in either of two years can then be dropped. Accordingly most of the hybrids yielding less than U. S. 523W (table 1) that have been in the test for 2 or more years, will not be included in 1951. Georgia 101 will also be dropped because of its severe lodging even though it yields well. The record of the following hybrids in each of 2 previous years did not seem to justify testing them further, and they were not included in 1950: Funk G94, DeKalb 898, Pfister 170, Hunerkoch H14, Kentucky 103, Kentucky 203, and Pioneer 336. Their records can be found in Station Bulletins 206, 208, and 214.

COTTON

The cotton variety tests were conducted in cooperation with the U. S. Department of Agriculture and are part of the regional program for studying yield, fiber properties and spinning values of the more important commercial varieties and experimental strains. The tests were located in Knox County (East Tennessee), Lawrence County (lower Highland Rim) and Tipton County (Delta).

Results of the 1950 tests are shown in table 2. Varieties were replicated 8 times in each test. Plots at all locations were approximately 1/125 acre. A systematic insect control program was followed on all tests. The varieties are listed in order of the 1950 lint yields. Dollar values per acre are not presented in these tables, but the longer-stapled varieties make a more favorable showing when premiums for extra staple length are considered. In comparing the cotton varieties on the basis of value per acre, however, it
### TABLE 2—COTTON—AVERAGE ACRE YIELDS AND GENERAL CHARACTERISTICS OF VARIETIES TESTED IN KNOX, LAWRENCE AND TIPTON COUNTIES, 1950

<table>
<thead>
<tr>
<th>Variety</th>
<th>Acre Yields</th>
<th>Lint</th>
<th>Boll Size</th>
<th>Relative Maturity</th>
<th>Est. Loss to Verticillium Wilt</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knox County Test</strong></td>
<td></td>
<td></td>
<td>Lbs.</td>
<td>mg</td>
<td>Pct.</td>
</tr>
<tr>
<td><strong>Cobol</strong></td>
<td>829</td>
<td>1531</td>
<td>585</td>
<td>38.2</td>
<td>1-3/32</td>
</tr>
<tr>
<td><strong>Mix 2 (Exp.)</strong></td>
<td>821</td>
<td>1469</td>
<td>574</td>
<td>39.1</td>
<td>1-1/8</td>
</tr>
<tr>
<td><strong>Ute 4 (Exp.)</strong></td>
<td>883</td>
<td>1431</td>
<td>570</td>
<td>39.8</td>
<td>1-1/8</td>
</tr>
<tr>
<td><strong>Empire Wilt</strong></td>
<td>809</td>
<td>1388</td>
<td>537</td>
<td>38.7</td>
<td>1-3/32</td>
</tr>
<tr>
<td><strong>Ute 5 (Exp.)</strong></td>
<td>818</td>
<td>1361</td>
<td>535</td>
<td>39.3</td>
<td>1-1/8</td>
</tr>
<tr>
<td><strong>Tennessee 241</strong></td>
<td>824</td>
<td>1365</td>
<td>534</td>
<td>39.1</td>
<td>1-1/16</td>
</tr>
<tr>
<td><strong>Mix 3 (Exp.)</strong></td>
<td>782</td>
<td>1343</td>
<td>512</td>
<td>38.1</td>
<td>1-3/32</td>
</tr>
<tr>
<td><strong>Cemp 310 (Exp.)</strong></td>
<td>782</td>
<td>1213</td>
<td>479</td>
<td>39.5</td>
<td>1-1/16</td>
</tr>
<tr>
<td><strong>Plains</strong></td>
<td>785</td>
<td>1211</td>
<td>459</td>
<td>37.7</td>
<td>1-3/32</td>
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<tr>
<td><strong>Paula C</strong></td>
<td>789</td>
<td>1126</td>
<td>425</td>
<td>41.8</td>
<td>29/32</td>
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<tr>
<td><strong>Coker 100 Wilt</strong></td>
<td>707</td>
<td>1105</td>
<td>420</td>
<td>38.0</td>
<td>1-3/32</td>
</tr>
<tr>
<td><strong>Delfos 9169</strong></td>
<td>762</td>
<td>1165</td>
<td>409</td>
<td>35.1</td>
<td>1-1/8</td>
</tr>
<tr>
<td><strong>Stoneville 28</strong></td>
<td>739</td>
<td>1079</td>
<td>404</td>
<td>37.4</td>
<td>1-3/32</td>
</tr>
<tr>
<td><strong>White Gold Wilt</strong></td>
<td>729</td>
<td>1026</td>
<td>391</td>
<td>38.1</td>
<td>1-1/16</td>
</tr>
</tbody>
</table>

| **Lawrence County Test** | | | Lbs. | mg | Pct. |
| **Cobol** | 1016 | 825 | 425 | 37.7 | 1-1/16 | 6.11 | 67 | medium |
| **Coker 100 Wilt** | 743 | 2180 | 889 | 40.8 | 1-3/32 | 6.60 | 54 | medium |
| **Mix 3 (Exp.)** | 782 | 2113 | 479 | 39.5 | 1-1/16 | 6.44 | 62 | early |
| **Plains** | 785 | 2111 | 459 | 37.7 | 1-3/32 | 6.41 | 57 | medium |
| **Paula C** | 789 | 2126 | 425 | 41.8 | 29/32 | 5.81 | 51 | early |
| **Coker 100 Staple** | 707 | 2110 | 840 | 38.0 | 1-3/32 | 6.38 | 67 | medium |

| **Tipton County Test** | | | Lbs. | mg | Pct. |
| **Mix 3 (Exp.)** | 916 | 719 | 37.6 | 1-3/32 | 6.05 | 56 | early |
| **Cobol** | 821 | 719 | 37.6 | 1-3/32 | 6.05 | 56 | early |
| **Cempor 310 (Exp.)** | 782 | 647 | 37.4 | 1-1/8 | 6.10 | 56 | early |
| **Empire Wilt** | 785 | 637 | 37.4 | 1-3/32 | 6.16 | 57 | early |
| **Coker 100 Wilt** | 789 | 629 | 36.5 | 1-3/32 | 6.12 | 52 | med. early |
| **Plains** | 759 | 612 | 36.8 | 1-1/8 | 5.86 | 65 | medium |
| **Ute 5 (Exp.)** | 718 | 521 | 37.4 | 1-1/8 | 6.44 | 59 | medium |
| **Mix 3B (Exp.)** | 753 | 487 | 38.8 | 1-3/32 | 6.23 | 57 | medium |
| **White Gold Wilt** | 717 | 487 | 38.8 | 1-3/32 | 6.23 | 57 | medium |
| **Ceper 310 (Exp.)** | 717 | 386 | 41.0 | 1-1/16 | 6.01 | 69 | med. late |
| **Deltapine 15** | 1810 | 719 | 37.6 | 1-3/32 | 6.60 | 54 | medium |
| **L. s. d. (5%)** | 482 | | | | |

1 Classified by Memphis Cotton Classing Office, PMA.
should be borne in mind that premiums for extra staple diminish sharply if the grade is lower than middling.

The relatively low yields in Tipton County were due principally to verticillium wilt, a disease that has caused severe damage to many hundreds of acres of cotton in the Delta area in the past several seasons. None of the commercial varieties are resistant to this disease, but some varieties in the test were not hurt as badly as others. An estimate of the verticillium wilt damage in the Tipton County test is shown in table 2. A variety test planted in this general area in 1949 was so badly damaged by verticillium wilt that it was abandoned.

Under normal conditions it is easier to get a high grade of

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### TABLE 3—COTTON—SUMMARY OF YIELDS AND GENERAL CHARACTERISTICS OF VARIETIES TESTED AT THE WEST TENNESSEE EXPERIMENT STATION, JACKSON, 1950

**Average of 5 Replications**

<table>
<thead>
<tr>
<th>Variety Test</th>
<th>1948-49-50 Average</th>
<th>1950</th>
<th>Lint</th>
<th>Boll Size</th>
<th>Relative Maturity</th>
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</thead>
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<td></td>
<td>Ins.</td>
<td>Maturity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lbs/mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenn. 818</td>
<td>973</td>
<td>2018</td>
<td>793</td>
<td>39.3</td>
<td>63</td>
</tr>
<tr>
<td>Stonewall 28</td>
<td>940</td>
<td>1941</td>
<td>747</td>
<td>38.5</td>
<td>66</td>
</tr>
<tr>
<td>Empire Wilt</td>
<td>937</td>
<td>2057</td>
<td>778</td>
<td>37.8</td>
<td>55</td>
</tr>
<tr>
<td>Tenn. 241</td>
<td>928</td>
<td>2030</td>
<td>777</td>
<td>38.3</td>
<td>60</td>
</tr>
<tr>
<td>Coker 100 Staple</td>
<td>925</td>
<td>1997</td>
<td>767</td>
<td>38.4</td>
<td>73</td>
</tr>
<tr>
<td>White Gold Wilt</td>
<td>903</td>
<td>2072</td>
<td>798</td>
<td>38.5</td>
<td>66</td>
</tr>
<tr>
<td>Coker 100 Wilt</td>
<td>901</td>
<td>1822</td>
<td>709</td>
<td>38.9</td>
<td>68</td>
</tr>
<tr>
<td>Deltapine 15</td>
<td>885</td>
<td>1821</td>
<td>688</td>
<td>37.2</td>
<td>63</td>
</tr>
<tr>
<td>Paula</td>
<td>846</td>
<td>1664</td>
<td>667</td>
<td>40.1</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1866</td>
<td>683</td>
<td>36.6</td>
<td>61</td>
</tr>
<tr>
<td>L. s. d. (5%)</td>
<td>230</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**New Strains Test A**

<table>
<thead>
<tr>
<th>Variety Test</th>
<th>1948-49-50 Average</th>
<th>1950</th>
<th>Lint</th>
<th>Boll Size</th>
<th>Relative Maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ins.</td>
<td>Maturity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lbs/mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. P. L. Fox</td>
<td>2293</td>
<td>874</td>
<td></td>
<td>38.1</td>
<td>74</td>
</tr>
<tr>
<td>Deltapine 33</td>
<td>2043</td>
<td>823</td>
<td></td>
<td>40.3</td>
<td>79</td>
</tr>
<tr>
<td>Empire 45</td>
<td>2303</td>
<td>861</td>
<td></td>
<td>37.4</td>
<td>56</td>
</tr>
<tr>
<td>Tenn. 12</td>
<td>2608</td>
<td>970</td>
<td></td>
<td>37.3</td>
<td>61</td>
</tr>
<tr>
<td>L. s. d. (5%)</td>
<td>275</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The data in table 3 were taken and analyzed under the supervision of N. I. Hancock, as part of the Experiment Station's cotton breeding program.

The first nine varieties in the table above are all adapted to Tennessee conditions. Tennessee 818 is being released and is being increased this year for production. Tennessee 818 is very similar to White Gold Wilt and Coker 100 Wilt in type of plant, but is earlier and has larger bolls than these two varieties.

The D. P. L. Fox is an early Deltapine type, but does not have quite as high lint turnout as Deltapine 15. Fox is prolific and the bolls, though small, pick well; it is not as vigorous in plant type as Deltapine 15.
cotton from the early varieties. Two new early varieties of cotton have recently been released for certification in Tennessee. They are Tennessee 241 developed by the Tennessee Experiment Station and Cobal developed by the U. S. Department of Agriculture in cooperation with the Experiment Station. Tennessee 241 has about the same maturity date as Empire and it also has a large boll similar to that of Empire. Tennessee 241 is adapted to areas of heavy clay soils of high fertility or to bottom lands. Cobal is slightly earlier than Empire. The bolls are large, fluffy, and easy to pick, but the seed cotton does not string out or fall from the burr. Cobal is medium vigorous and well adapted to all cotton soils in Tennessee. There will be only a limited amount of Cobal seed available for 1951 planting. See the recommended list of varieties on page 2.

**SMALL GRAINS**

Winter Oats—LeConte, a new variety released by the Tennessee Experiment Station in 1949, has done well in the tests again this year. LeConte should appeal to the farmers who harvest with combines because of its ability to stand long after it is ripe. It can

![Fig. 1—Colonial, a true awnless barley at left; Jackson No. 1, an owned variety at right.](image-url)
TABLE 4—SMALL GRAIN—SUMMARY OF YIELDS AND GENERAL CHARACTERISTICS OF VARIETIES TESTED IN 1950

Average of 4 Replications At Each Location

<table>
<thead>
<tr>
<th>Variety</th>
<th>Av. Acre Yields 1948-'49 '50</th>
<th>Winter Hardness</th>
<th>Standing Ability</th>
<th>Relative Maturity</th>
<th>Relative Height</th>
<th>Type of Awn</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bu. Bu.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WINTER OATS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forkedeer</td>
<td>76.2 62.1</td>
<td>good</td>
<td>fair</td>
<td>med. early</td>
<td>tall</td>
<td></td>
</tr>
<tr>
<td>LeConte</td>
<td>73.5 61.5</td>
<td>good</td>
<td>good</td>
<td>med. late</td>
<td>tall</td>
<td></td>
</tr>
<tr>
<td>090 x Bond-23 (Exp.)</td>
<td>75.3 60.9</td>
<td>fair</td>
<td>good</td>
<td>med. early</td>
<td>tall</td>
<td></td>
</tr>
<tr>
<td>Coker 45-67</td>
<td>57.5 58.3</td>
<td>fair</td>
<td>fair</td>
<td>med. early</td>
<td>tall</td>
<td></td>
</tr>
<tr>
<td>Stanton</td>
<td>73.2 56.3</td>
<td>fair</td>
<td>fair</td>
<td>med. early</td>
<td>tall</td>
<td></td>
</tr>
<tr>
<td>Fulgrain</td>
<td>60.5 50.0</td>
<td>poor</td>
<td>good</td>
<td>early</td>
<td>short</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L. s. d. (5%)</td>
<td>5.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHEAT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thorne</td>
<td>34.4 30.5</td>
<td>good</td>
<td>good</td>
<td>late</td>
<td>med.</td>
<td>awnless</td>
</tr>
<tr>
<td>Nured</td>
<td></td>
<td>28.6</td>
<td>good</td>
<td>medium</td>
<td>med.</td>
<td>awnless</td>
</tr>
<tr>
<td>Yahoht</td>
<td></td>
<td>27.9</td>
<td>good</td>
<td>medium</td>
<td>med.</td>
<td>awnless</td>
</tr>
<tr>
<td>Vigo</td>
<td>31.7 27.5</td>
<td>good</td>
<td>good</td>
<td>late</td>
<td>tall</td>
<td>awnless</td>
</tr>
<tr>
<td>Fulcaster 612</td>
<td>32.7 27.3</td>
<td>good</td>
<td>good</td>
<td>medium</td>
<td>tall</td>
<td>awned</td>
</tr>
<tr>
<td>Tenn. 46-1-1 (Exp.)</td>
<td>34.9 26.8</td>
<td>good</td>
<td>good</td>
<td>medium</td>
<td>tall</td>
<td>awned</td>
</tr>
<tr>
<td>Tenn. 47-1-20 (Exp.)</td>
<td>32.6 26.2</td>
<td>good</td>
<td>good</td>
<td>medium</td>
<td>tall</td>
<td>awnless</td>
</tr>
<tr>
<td>Corolo</td>
<td>25.4 18.0</td>
<td>fair</td>
<td>fair</td>
<td>early</td>
<td>short</td>
<td>awnless</td>
</tr>
<tr>
<td></td>
<td>L. s. d. (5%)</td>
<td>2.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BARLEY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jackson No. 1</td>
<td>67.6 42.4</td>
<td>good</td>
<td>good</td>
<td>med. early</td>
<td>tall</td>
<td>smooth awned</td>
</tr>
<tr>
<td>Colonial</td>
<td></td>
<td>40.7</td>
<td>fair</td>
<td>med. early</td>
<td>tall</td>
<td>rough awned</td>
</tr>
<tr>
<td>Kentucky No. 1</td>
<td>63.7 39.0</td>
<td>good</td>
<td>fair</td>
<td>late</td>
<td>tall</td>
<td></td>
</tr>
<tr>
<td>Wong</td>
<td>52.7 33.2</td>
<td>fair</td>
<td>good</td>
<td>med. early</td>
<td>tall</td>
<td>short awned</td>
</tr>
<tr>
<td>Calhoun</td>
<td>59.3 32.7</td>
<td>fair</td>
<td>good</td>
<td>early</td>
<td>med.</td>
<td></td>
</tr>
<tr>
<td>Hooded 921-14 (Exp.)</td>
<td>34.2 32.1</td>
<td>good</td>
<td>good</td>
<td>early</td>
<td>med.</td>
<td></td>
</tr>
<tr>
<td>Mo. Early Beardless</td>
<td>32.7 29.6</td>
<td>good</td>
<td>fair</td>
<td>early</td>
<td>tall</td>
<td></td>
</tr>
<tr>
<td></td>
<td>L. s. d. (5%)</td>
<td>2.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 The 1950 average yield is an average of 6 tests for oats and 5 tests for wheat and for barley.

be used on highly fertile soil where Forkedeer and Stanton tend to lodge. Fulgrain, recommended only because of its earliness, is short and also stands well.

**Spring Oats**—Many years of testing have shown that the winter oats will outyield spring oats in almost every case when both are seeded at their proper times. There is a place for spring oats where corn is harvested too late for fall oats to be seeded; under these conditions, however, there is no winter cover or winter grazing realized from spring oats. Columbia and Clinton have been the leading varieties in Tennessee but tests have shown that Ajax, Clinton 59, Binton and Mindo are also satisfactory in this State.

**Barley**—Jackson No. 1 led the tests again this year. This variety has a smooth awn, stands well, and threshes easily. Colonial
and Calhoun are true beardless varieties that yield well and would be recommended if they were more winter hardy. Missouri Early Beardless is a hooded variety that is recommended only where an early or hooded variety is desired.

**Wheat**—There was only a small yield difference between the different varieties in the wheat tests this year except for the early variety Carala which was reduced in yield because of a heavy infestation of mildew and rust. Although the other commercial varieties are not resistant to these diseases they were not damaged as much as Carala, probably because of their later maturity. The experimental variety Tennessee 46-1-1 is resistant to both diseases and Tennessee 47-1-20 is resistant to rust. Vigo has done well in the wheat experiments for 3 years and is being added to the list of recommended wheats this year.

**SOYBEANS**

The average yield data from the soybean variety experiments for the years from 1946 through 1949 (see Station Bulletin 214) show no significant difference between any of 6 of the leading varieties grown in Tennessee which consist of Ogden, Volstate, S-100, Roanoke, Arksoy, and Macoupin. These data indicate that the performance of varieties differing in maturity is about equal over a period of several years, although in any one year the rainfall distribution may favor either an early, midseason, or late variety. The varieties S-100 (early), Ogden (midseason), and Volstate (late) are recommended for seed and hay in Tennessee on the basis of

**TABLE 5—SOYBEANS—SUMMARY OF YIELDS AND GENERAL CHARACTERISTICS OF VARIETIES TESTED IN 1950**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Average Yield 1949, '50 (3 tests)</th>
<th>1950 Yields By Locations</th>
<th>Oil Content</th>
<th>Range in Date of Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bu.</td>
<td>Bu.</td>
<td>Bu.</td>
<td>Bu.</td>
</tr>
<tr>
<td>Ogden</td>
<td>40.3</td>
<td>43.9</td>
<td>42.3</td>
<td>37.8</td>
</tr>
<tr>
<td>Volstate</td>
<td>37.0</td>
<td>37.2</td>
<td>35.3</td>
<td>33.6</td>
</tr>
<tr>
<td>S-100</td>
<td>37.0</td>
<td>35.5</td>
<td>39.9</td>
<td>23.5</td>
</tr>
<tr>
<td>D823-9</td>
<td>36.0</td>
<td>34.8</td>
<td>37.9</td>
<td>26.3</td>
</tr>
<tr>
<td>Webush</td>
<td>36.0</td>
<td>34.6</td>
<td>36.5</td>
<td>24.9</td>
</tr>
<tr>
<td>L6-5679</td>
<td>32.7</td>
<td>33.4</td>
<td>24.8</td>
<td>39.9</td>
</tr>
<tr>
<td>L. s. d. (5%)</td>
<td></td>
<td>2.3</td>
<td>7.7</td>
<td>4.4</td>
</tr>
</tbody>
</table>
their good yields, high oil content, good quality of beans, and dis-
tribution of maturity dates, see table 5. The varieties mature about
October 1, October 15, and November 1 respectively, making it pos-
sible for a grower to distribute his soybean harvest over a period
of a month or more. Wabash, a relatively new variety, has had a
fair yield in the tests for the past two years. It is about two weeks
earlier than S-100; and has a very high oil content.

**RED CLOVER**

See table 6 for yield data on red clover variety trials. Kenland,
Tennessee Wilt Resistant, and Cumberland are the red clover varie-
ties that are recommended for Tennessee. Kenland is a new variety
that was developed cooperatively by the Kentucky Experiment
Station and the USDA. It is resistant to southern anthracnose
and is characteristically longer-lived than most other varieties.
Tennessee Wilt (anthracnose) Resistant and Cumberland are two
high yielding disease resistant varieties. Large amounts of seed
are sold in Tennessee under these names that are not these varieties
and are usually inferior to them. Midland does not have southern
anthracnose resistance, but yields well when this disease is not
serious. Tennessee Purple Seeded red clover is an experimental
variety of this Station. It is southern anthracnose resistant, pow-
dery mildew resistant and possesses a uniform seed color (purple).
It has a long life comparable to that of Kenland.

**TABLE 6—RED CLOVER—SUMMARY OF YIELDS OF VARIETIES TESTED IN 1949
AND 1950 AT KNOXVILLE, CROSSVILLE AND JACKSON**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Average Yield—Tons Air-Dry Hay Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1949-1950 (6 tests)</td>
</tr>
<tr>
<td>Tons</td>
<td>Tons</td>
</tr>
<tr>
<td>Kenland</td>
<td></td>
</tr>
<tr>
<td>Tennessee Purple Seeded (Exp.)</td>
<td></td>
</tr>
<tr>
<td>Midland</td>
<td></td>
</tr>
<tr>
<td>Tennessee Wilt Resistant</td>
<td></td>
</tr>
<tr>
<td>Cumberland</td>
<td></td>
</tr>
<tr>
<td>Van Fossen</td>
<td></td>
</tr>
<tr>
<td>L. s. d. (5%)</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 6**—SUMMARY OF YIELDS OF VARIETIES TESTED IN 1949
AND 1950 AT KNOXVILLE, CROSSVILLE AND JACKSON

Average of 4 Replications At Each Location
ALFALFA

Seeding good alfalfa seed of one of the adapted varieties is very important because a poor stand can result in a relatively large loss of time and money. It is important to obtain common alfalfa seed from those states that have a climate similar to that of Tennessee. Therefore, the bag of common alfalfa seed should carry a tag stamped U. S. Verified Origin showing the place of production. The varieties that have produced best in Tennessee are Kansas Common and Oklahoma Common, see table 7. Buffalo and Atlantic, two relatively new varieties, have also been found to yield heavy hay crops under Tennessee conditions. Buffalo was developed at the Kansas Experiment Station from an old line of Kansas Common. It was selected for its resistance to bacteria wilt (not important in Tennessee) and for its high production. Atlantic was developed by the New Jersey Experiment Station. Both of these varieties yield well but are not recommended over the Kansas Common varieties, especially if one must pay a premium for their seed. California Common alfalfa is not winter-hardy enough for Tennessee. Certain other new varieties in the alfalfa variety test look promising.

TABLE 7—ALFALFA—SUMMARY OF YIELDS OF VARIETIES TESTED IN 1950

Average of 4 Replications At Each Location
Yields In Tons Air-Dry Hay Per Acre

<table>
<thead>
<tr>
<th>Variety</th>
<th>Location of Tests Seeded Fall 1949</th>
<th>Average 4 Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Knoxville</td>
<td>Crossville</td>
</tr>
<tr>
<td>Atlantic</td>
<td>2.65</td>
<td>3.46</td>
</tr>
<tr>
<td>Oklahoma Common</td>
<td>2.47</td>
<td>2.94</td>
</tr>
<tr>
<td>Kansas Common</td>
<td>2.40</td>
<td>3.08</td>
</tr>
<tr>
<td>Buffalo</td>
<td>2.18</td>
<td>2.73</td>
</tr>
<tr>
<td>California Common</td>
<td>1.57</td>
<td>1</td>
</tr>
<tr>
<td>Narragansett</td>
<td>2.26</td>
<td>3.98</td>
</tr>
<tr>
<td>New Mexico</td>
<td>..</td>
<td>2.88</td>
</tr>
<tr>
<td>Argentina</td>
<td>2.09</td>
<td>2.96</td>
</tr>
<tr>
<td>Williamsburg</td>
<td>2.77</td>
<td>..</td>
</tr>
<tr>
<td>L. s. d. (5%)</td>
<td>.51</td>
<td>.45</td>
</tr>
</tbody>
</table>

1 California Common came up to a perfect stand and was 99% winter-killed at Crossville.
THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXPERIMENT STATION
KNOXVILLE, TENNESSEE

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DONALD E. DAVIS, Fellow, Oak Ridge

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MARY W. FRAZIER, Laboratory Assistant, Oak Ridge
WALTER L. GRAF, Research Assistant, Oak Ridge
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HENRY C. HARRIS, Fellow, Oak Ridge
SAM L. HOOD, Research Associate, Oak Ridge
FRANCES S. Houser, Laboratory Assistant, Oak Ridge
ROMAN KULWICH, Fellow, Oak Ridge
DANIEL P. LAND, Business Manager, Oak Ridge
FRANCES S. Houser, Laboratory Assistant, Oak Ridge
WILLIAM E. LOTZ, Research Assistant, Oak Ridge
MICHAEL C. MITCHELL, Laboratory Assistant, Oak Ridge
ROBERT A. MONROE, Research Assistant, Oak Ridge
JOHN R. PAYSINGER, Research Assistant, Oak Ridge
MILLARD P. PLUMLEE, Research Assistant, Oak Ridge
GEORGE W. ROYSTER, JR., Laboratory Assistant, Oak Ridge
JOHN R. RUST, Research Veterinarian, Oak Ridge
GLADYS B. SCHNEIDER, Laboratory Assistant, Oak Ridge
WILLIAM M. WHITNEY, Senior Scientist, Oak Ridge
JAMES L. WILDING, Senior Scientist, Oak Ridge

N. I. HANCOCK, Plant Breeder
J. K. UNDERWOOD, Associate Botanist

W. H. MacINTIRE, Soil Chemist
G. A. SHREY, General Chemist
FAIRY CLAPP, Assistant Chemist
MARY D. EVANS, Assistant Soil Chemist
WINNIFRED HESTER, Assistant Chemist
DORIS E. HOLMES, Assistant Chemist
HELEN E. McCOY, Asst. General Chemist
J. B. McLAREN, Asst. in Chemistry, Columbia
BROOKS ROBINSON, Asst. Soil Chemist
K. B. SANDERS, Assoc. General Chemist
W. M. SHAW, Associate Soil Chemist
A. J. STERGES, Associate Soil Chemist
MAY ELLEN TUBB, Assistant Chemist
J. B. WILLIAMS, Assistant Chemist
S. H. WINTERBERG, Assoc. Soil Chemist
SARAH M. WOODS, Asst. General Chemist
J. B. YOUNG, Assistant Soil Chemist
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C. E. WYLIE, Dairy Husbandman, Chairman Dairy Committee
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ROBERT H. LUSH, Dairy Husbandman
FRANK D. HINTON, Herdsman
S. A. HINTON, Assistant Dairy Husbandman
J. N. MADUX, Asst. Dairy Husb., Lewisburg
W. W. OVERCAST, Assoc. Dairy Husbandman
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B. T. THROOP, Bacteriologist

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H. J. BONSER, Assoc. Agr. Economist
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M. A. SHARP, Agricultural Engineer
H. A. ARNOLD, Assoc. Agr. Engineer
A. L. KENNEDY, Assoc. Agr. Engineer
J. B. LILJEDahl, Assoc. Agr. Engineer
ARTHUR H. MORGAN, Mechanical Engineer

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S. MARCOVITCH, Entomologist
W. W. STANLEY, Associate Entomologist
FORESTRY
JAMES S. KRING, Forester, Harriman

HOMEOECONOMICS
JESSIE W. HARRIS, Advisor in Home Econ. Research
FLORENCE L. MacLEOD, Asst. Director Home Economics Research
RUTH L. GALBRAITH, Asst. Textile Chem.
LORNA GASKET, Assoc. in Home Mgt.

DOROTHY S. JACQUES, Asst. Family Econ.
BONNIE B. McDONALD, Asst. Human Nutr.
BERNADINE MEYER, Food Economist
RUTH MOORE, Asst. Food Economist
ELISE MORRELL, Asst. Human Nutr.
JOSEPHINE STAAB, Family Economist
DOROTHY E. WILLIAMS, Human Nutr.

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BROOKS D. DRAIN, Horticulturist
T. R. GILMORE, Assoc. Hort., Crossville
TROY H. JONES, Assoc. Horticulturist
R. E. OGLE, Asst. Horticulturist (on leave)
W. E. ROEVER, Assoc. Hort., Jackson
A. B. STRAND, Assoc. Hort., Dandridge
H. D. SWINGLE, Asst. Horticulturist

INFORMATION
A. J. SIMS, Head of Department
SARAH C. CURRELL, Assoc. Librarian
W. N. DUDNEY, Asst. Editor-Photographer
WILLIA S. MCKINNEY, Asst. Librarian
R. E. WRIGHT, Editorial Assistant

PHYSICS
K. L. HERTEL, Physicist
C. J. CRAVEN, Associate Physicist
DONALD A. EWING, Asst. Physicist
REBA LAWSON, Asst. in Physics
W. A. SHARP, Asst. Physicist

PLANT PATHOLOGY
J. O. ANDRES, Plant Pathologist
E. S. BROWN, Asst. in Plant Pathology
JAMES M. EPPS, Assoc. Plant Pathology, Jackson
R. L. FELIX, Assoc. Plant Pathologist
H. E. HEGGESTAD, Assoc. Plant Pathology, Greeneville
DENNIS H. LATHAM, Assoc. Plant Pathology, Springfield
H. E. REED, Assoc. Plant Pathologist

POULTRY
O. E. GOFF, Poultryman, Chairman Poultry Committee
R. L. TUGWELL, Assoc. Parasitologist
E. O. ESSARY, Asst. Poultry Husbandman
B. J. MCSPADDEN, Poultry Husbandman
HOMER PATRICK, Poultry Nutritionist

SUBSTATIONS
LESTER WEAKLEY, Assistant, Highland Rim Experiment Station, Springfield
A. G. VAN HORN, Superintendent, Dairy Experiment Station, Lewisburg
E. J. CHAPMAN, Superintendent, Middle Tennessee Experiment Station, Columbia
JOHN A. ODOM, Superintendent, Plateau Experiment Station, Crossville
E. L. BOHANAN, Assistant Superintendent, Plateau Experiment Station, Crossville
J. HUGH FELTS, Superintendent, Tobacco Experiment Station, Greeneville
J. MERRILL BIRD, Farm Supt., UT-AEC Agricultural Research Program, Oak Ridge
BEN P. HAZLEWOOD, Superintendent, West Tennessee Experiment Station, Jackson

* Cooperative with U.S.D.A.
** Cooperative with Institute of Nuclear Studies
† Cooperative with United States Army
‡ Cooperative with University of Florida
§ Cooperative with Alabama Polytechnic Institute
LOCATION OF VARIETY TESTS

- Location of Experiment Stations where all experiments except cotton were conducted.
- Location of cotton tests which were conducted on the USDA Cotton Field Station, Knoxville; E. T. Adams' farm, Lawrenceburg; and Wooten Brothers farm, Munford.

Project Leader:
Sam F. McMurray, Assistant Agronomist, University of Tennessee Experiment Station, Knoxville.

Cooperators:
J. Hugh Felts, Superintendent, Tobacco Experiment Station, Greeneville.
J. N. Odom, Superintendent of Farms, Main Experiment Station, Knoxville.
John Odom, Superintendent, Plateau Experiment Station, Crossville.
E. J. Chapman, Superintendent, Middle Tennessee Experiment Station, Columbia.
D. H. Latham, Associate Plant Pathologist, Highland Rim Experiment Station, Springfield.
Ben Hazlewood, Superintendent, West Tennessee Experiment Station, Jackson.
John Holt, Assistant Agronomist, West Tennessee Experiment Station, Jackson.
Agronomy Plot Assistants at the above-mentioned Experiment Stations.
D. M. Simpson, Agronomist, USDA Cotton Field Station, Knoxville.
E. N. Duncan, Science Aid, USDA Cotton Field Station, Knoxville.
Jack and Paul Wooten, Munford, Tennessee.