

Research Report No. 20
December 1955

MEASURED CROP PERFORMANCE

TOBACCO

1955

GUY L. JONES,
ASSISTANT PROFESSOR

Department of Agronomy
North Carolina State College

INTRODUCTION

The laws of nature make the job of tobacco variety improvement very difficult since there are so many factors to consider. Improvements are made step by step. Usually an improvement is limited to one or a few characteristics of a line. However, continuous improvement and changes are being made in varieties. A variety to be acceptable must meet the needs of the manufacturer as well as the grower.

Since the breeding task is so complex an extensive testing program is required for adequate evaluation. The evaluation program in North Carolina consists of two phases. One, the Official Variety Test, involves the utilization of small replicated plots located on the research stations. In this program are included experimental lines developed both by public and private agencies. Measurements are made on yield, value, agronomic characteristics, disease resistance, irrigation effect and chemical characteristics.

This year a total of 27 varieties and advanced lines were tested at five locations, Whiteville, Rocky Mount, McCullers, Oxford and Rural Hall. At two of these locations - McCullers and Oxford - twenty of the entries were grown both with and without irrigation to determine varietal response to supplemental water.

The second phase involves a more extensive study of fewer varieties and more advanced lines under farm conditions with plots approximately one-half acre in size. Two varieties and three advanced lines were tested in 1955. Thirteen locations were involved, three in each of the Border, Middle and Old Belts and four in the larger Eastern Belt. This evaluation program is a cooperative effort between the Experiment Station and tobacco companies. Both domestic and foreign representatives obtain samples of the cured leaf for study in their leaf department, laboratory and manufacturing plant. The participating companies in 1955 were The American Tobacco Company, Brown & Williamson Tobacco Corporation,

The Imperial Tobacco Company, Liggett & Myers Tobacco Company, Philip Morris, and R. J. Reynolds Tobacco Company.

Although the total program of evaluation is comprehensive, it has many shortcomings and steps are constantly being taken to improve it. One example is that in the past all varieties at a given location have been cured together in one barn. Efforts are constantly being made to overcome such difficulties. Compromises naturally have to be made which may result in a penalty of certain entries. Since the same variety is not penalized all the time, the average results over a period at several locations probably do not affect the relative standings but the maximum potential of any given line is not necessarily determined. To avoid this source of error, small curing-compartments were used at Oxford this year and next season similar units will be in use at the Central Crops Research Station near Clayton.

A second problem pertains to the method of determining the dollar value. The approach now used involves the grading of each small plot, affixing to it the 1952 to 1954 season average price of that grade and calculating the acre value. This is a reproducible method and the best now known. The Federal Grading Service cooperates in this effort. It is apparent, however, that any failure of the grading system to reflect leaf characteristics important to the trade, such as paleness, slickness, aroma or flavor, would give an inaccurate picture of the true value.

There is a danger of relying too heavily on the single figure of pounds per acre or of dollars per acre in evaluating a variety. Elements of quality which can be measured in the laboratory on the cured leaf and in experimental cigarettes should also receive attention.

Through the years, leaf tobacco production has become highly specialized, each producing area supplying certain types and grades of leaf especially suited

to the manufacture of one or more particular products. This was due primarily to the fact that the desirable characteristics found in a given type of leaf are mainly the result of a combination of soil and climatic factors which experience had shown are to be found only in certain restricted areas. These type characteristics are still further developed in each case by the use of suitable varieties and the use of special skills of culture and curing. Consumer demands ultimately determine whether a given type of leaf produced in a particular area survives and the extent to which it is grown. The principle of a one variety program or even its close approach has no place in tobacco production on the basis of present day knowledge of manufacturer's needs.

In this report the data concerning varieties available to growers from the 1955 Official Tobacco Variety Tests and The Cooperative Variety Evaluation Tests are presented. These data, except for the summary, Table I, represent only one year's tests. It should be recognized that a single year's data may not portray the true performance of a variety over a wide range of seasonal conditions, and that further testing is needed to evaluate the performance of these varieties under other conditions.

Extensive tests are conducted each year to collect data on performance of the various varieties. Before changing varieties, the grower is advised to study all facts and information available in order that a wise decision be made.

What May Be Tested

Both private breeder and those with federal or state affiliation may submit entries. In the submission of a variety for evaluation in these tests comparative quantitative data from experiments in which the proposed entry is compared with recognized varieties is required. These data must show real merit in order to qualify it for being included in the test. The personnel of the testing program

may include entries whose performance records indicate that they may contribute to more effective crop production. In these tests there may be included certain entries from seed of lots offered for sale within the state, or from seed lots furnished by testing agencies of other states.

Early in December of each year rules governing the tests for the ensuing year are distributed to all previous participants and to those who make inquiry.

Agencies Sponsoring Entries

Bell's Seed Farm, Rocky Mount, N. C.
Bell Farm, Windsor, N. C.
Coker's Pedigreed Seed Company, Hartsville, S. C.
F. W. Huggins & Son, Fayetteville, N. C.
McNair's Yield-Tested Seed Company, Laurinburg, N. C.
North Carolina Agricultural Experiment Station, Raleigh, N. C.
Speight Seed Farm, Winterville, N. C.
Virginia Agricultural Experiment Station, Chatham, Virginia

Test Locations

Five locations were used to represent the different soil and climatic conditions of the State. At least one test was included in each of the flue-cured belts, on state experiment stations. The locations were as follows:

- TV-70 Border Belt Tobacco Research Station, Whiteville, N. C. representing the Border Belt.
- TV-71 Upper Coastal Plain Research Station, Rocky Mount, N. C. representing the Eastern Belt.
- TV-72 McCullers Branch Station, Apex, N. C. representing the Middle Belt.
- TV-73 Oxford Tobacco Research Station, Oxford, N. C. representing the Middle Belt.
- TV-74 Upper Piedmont Tobacco Research Station, Rural Hall, N. C. representing the Old Belt.

Experimental Procedure

The tests were conducted on disease-free soil and the same entries occurred at every location except the irrigated tests of TV-72 and TV-73 included only 20

of the entries. All entries were coded in the plant bed and in the field.

Four replications of a randomized block design were used at each location, except McCullers and Oxford. The tests at McCullers and Oxford had a split-plot design of three replications in which twenty of the entries were studied under both irrigated and non-irrigated conditions. All twenty-seven entries were represented in the non-irrigated replications. The plants were banded except at Oxford and individually selected for transplanting so as to get uniformity within plots. Each two row plot consisted of 40 guarded plants. The rows were 3.5 feet apart with the plants spaced 22 inches in the row.

Farm practices of plant bed preparation, liming, fertilization, planting date, cultivation, and insect and disease control were in accordance with those found to be favorable for the production of tobacco. Fertilizer was applied in accordance with soil test recommendation at the rate of 1000 pounds of 4-8-10 per acre on the McCullers and Rocky Mount tests, 800 pounds of 4-8-10 per acre on the Rural Hall Test and 900 pounds of 4-8-10 per acre at Whiteville and Oxford.

All varieties were topped and suckered. Individual plots were harvested according to the degree of maturity, tagged and kept separate throughout curing, sorting, and grading. Data on agronomic characters were taken in the field, and chemical determinations were made on the cured leaf. Disease reaction was noted in separate tests under severe disease conditions.

The methods of taking the data were as follows:

Ground suckers: Whenever ground suckers developed, they were removed prior to topping and the number on the total plot recorded. An average number per plant was calculated for each plot.

Days to flower: Starting when approximately 10% of the plants in the most advanced plots had flowered, the tops were broken when the first flower showed

pink, at the first leaf below the last lateral branch of the flower. Flowering plants were topped approximately every four days until all topping was complete. An average flowering date, when 50% of the plants had flowered, was calculated.

Number of suckers: The number of leaf axil suckers removed from plants in the entire plot during the growing season was recorded and an average number of suckers per plant was calculated for each plot. Suckers were removed whenever an appreciable number had exceeded six inches in length.

Number of harvestable leaves: Following the second or third primings the number of leaves (including the ones already harvested) that could be harvested during the season was recorded from 10 competitive plants of each plot. An average number of leaves per plant was calculated.

Plant height at maturity: At the time of making the leaf count, the height in inches of the same 10 plants was measured. An average height per plant was calculated.

Internode length: This was calculated from the leaf number and height of each of the 10 plants.

Leaf length and width: The length and width, at the widest place, of the 5th, 10th, and 15th leaves from the top were measured on five plants in two replications and averages calculated. Varieties differ in their ability to produce broad leaves toward the top of the plant.

Angle of leaf projection from the stalk: The angle of the same three leaves used in the leaf length and width measurements was taken. This character would be important for a completely mechanical harvester. The wider angle leaves would be easier to break off mechanically yet it would be desirable for the immature leaves to remain upright.

Yield per acre in pounds: When the harvest was completed, the tobacco was sorted and graded and the weight of the cured leaves harvested from each plot

was recorded. Yields per acre in pounds were calculated.

Value per acre: Under the supervision of a government grader the tobacco from each plot was graded into appropriate government grades. The value per acre was calculated by multiplying the pounds of each grade by the average price paid for that grade during the 1952 to 1954 season.

Value per 100 pounds: An average value per hundred pounds was calculated for each plot by dividing the value per acre by the yield per acre. This gives an index of quality based on price per pound.

Leaf grade distribution: Grades were divided into three groups according to government grades: High - B1, 2, 3; C1, 2, 3, 4; X1, 2; H1, 2, 3; Medium - B4, 5 (except B5K or R); C5, X3, 4; P3, 4; H4, 5; Low - B6, X5, P5, H6, B5K or R, and all N's.

Chemical analyses: A sample of the cured leaf from each plot was submitted to the tobacco biochemistry laboratory in the Department of Agronomy for chemical analyses. The per cent of the following chemical constituents was determined on a dry weight basis.

- (a) nicotine
- (b) nornicotine
- (c) total alkaloids
- (d) reducing sugars
- (e) nitrogen (total)

The data were subjected to appropriate statistical analyses.

In spite of efforts to obtain perfect stands it was occasionally necessary to make an adjustment for missing plants. If less than one-twentieth of the plants were missing from a given plot, no adjustment was considered necessary. If more than one-twentieth of the plants were missing, the following adjustment was made for those characters which might be influenced by stands. If end or

guard plants were missing, each missing plant was considered as one missing plant. Within the row, it was assumed that if adjacent plants were present, their increased growth would compensate for one-half of the missing plants. Thus, each guarded missing plant within a row was considered one-half a plant in adjusting for stand.

The data from all twenty-seven entries were statistically treated. This report only includes the data on the fourteen released varieties which were extracted from these analyses.

Standards for Comparison

Standard check varieties were included for comparison. These checks or standards, Dixie Bright 101 and 402, are the same that are used by other stations as recommended by the Regional Tobacco Variety Evaluation Committee of the Tobacco Workers' Conference.

Seasonal Conditions

In general the 1955 season was favorable for the production of tobacco. Rainfall was adequate in most of the state during the most crucial period. Rainfall data were taken at each of the locations and is included in table II.

The Whiteville test, TV-70, was transplanted April 27 under fairly favorable conditions. Early rains in April had left the soil in good condition. There was more than adequate rainfall throughout the growing season and the tobacco made excellent growth. Harvesting was completed prior to the hurricanes.

The Rocky Mount test, TV-71, was transplanted May 5 during a rather dry period so there was some replanting required. Adequate rains after that time provided good growing conditions. A heavy rain and windstorm on July 13 caused some damage to the experiment - many leaves were broken off. A hurricane on

August 12 with excess rain and wind again damaged the tobacco. The damage was rather general, however, the more brittle varieties were damaged most.

The McCullers test, TV-72, was transplanted May 13 under ideal seasonal conditions. The plants grew off to a good start and very little replanting was required. The first half of June was rather dry and the non-irrigated plots suffered from a lack of adequate moisture. After this dry spell the season was good and the tobacco made good recovery. The irrigated plots never suffered from a lack of moisture and made good growth throughout the season. Whenever the soil moisture dropped to approximately 40% of field capacity, one inch of irrigation water was applied. However, the irrigated tobacco showed signs of too much water and was lighter in color in the field. The cured leaf had less grain and other desirable characteristics than the non-irrigated tobacco. A hurricane just prior to the last harvest did some damage to this experiment and as a result the last priming on all varieties was of low quality.

At Oxford, TV-73, the transplanting season was rather hot and dry. The tobacco was transplanted May 4 and at least half of it had to be replanted. Unbanded plants were used and a good stand was difficult to obtain. As a result the plants within a plot were not too uniform. The irrigated plots were not irrigated until June 17 because of difficulty in obtaining the irrigation equipment. As a result they suffered from a lack of moisture in the early growth period the same as the non-irrigated plots. Once irrigation was started the same procedure used at McCullers was used. This test was not as critical as the ones at the other locations due to the non-uniformity and the poor season. A hurricane severely damaged the last two primings.

The Rural Hall test, TV-74, was transplanted May 20 under favorable conditions and the season remained fairly good. This was a very uniform test and

the quality of the tobacco was generally good.

Performance Records

A single year's data at a given location may not portray the true performance of a tobacco variety over a wide range of seasonal conditions. Therefore data from only one year's test should be taken cautiously. Longer records of performance are more dependable and should be utilized when available.

Presented in Table I is a comparison of certain flue-cured tobacco varieties from 1949 to 1955, with the exception of 1952 when the test failed. All the varieties are compared on a percentage of the average of a standard, 402 and Dixie Bright 101, in the test in which they appeared. The more comparisons available on a variety, the more reliable are the data. The varieties with the higher number of comparisons have been in the tests for a number of years, while the varieties with only five comparisons have appeared in the test only one year. The varieties are compared for acre yield, acre value, and value per 100 pounds.

In Table II the averages of fourteen varieties at five locations in 1955 are compared. The data from TV-70, TV-71, TV-72, TV-73, and TV-74 were combined to study average varietal performances over a wide area. The non-irrigated data from TV-72 and TV-73 were used. Comparisons are made for yield per acre, value per acre, value per 100 pounds, leaf grade distribution, days to flower, sucker characteristics, plant characteristics, and chemical constituents.

In considering value per acre, Va. 45 had the lowest acre return. Most of the other varieties had about the same value except Dixie Bright 244 and Coker 140 which were similar and higher and Coker 139 which had the highest value. There were differences in the number of leaves per plant ranging from 17.7 in White Gold

to 23.7 in Coker 139. Dixie Bright 244 was slightly taller than the other varieties tested. Also Coker 139 and Dixie Bright 244 were the latest varieties to flower. This does not mean that they were two to three weeks later in maturing but only that they flowered later. All varieties were ready to harvest at about the same time. The late flowering varieties tended to produce fewer suckers.

Included in Table 11 is a disease rating for Black shank, Fusarium wilt and Bacterial wilt. The Black shank data^{1/} were obtained on disease infested plots. These tests were located in Pitt and Lenoir Counties under severe disease conditions. The data represent the per cent of diseased plants as of August 26. The Fusarium wilt and the Bacterial wilt test were conducted in the greenhouse after the plant roots had been injured and artificially inoculated.

Data from individual locations are presented in Tables III, IV, V, VI, VII, VIII and IX. Certain varieties tended to perform differently at the various locations. The data in these tables represent only one location in one year.

In Table 10 the data on yield and value per acre, and value per 100 pounds from the Cooperative Tobacco Variety Evaluation Tests in 1955 are shown. These tests were conducted under farmer conditions on one-half acre plots. The averages by belts represent three farms in each belt except the Eastern which had four farms. The tests in the Middle Belt were severely damaged by the hurricane. Dixie Bright 244 had an intermediate acre return between Dixie Bright 101 and Coker 139.

^{1/} The Plant Pathology Faculty cooperated on the tests for disease reaction.

Differences in Characters

Small differences, in the various characters studied, should be considered cautiously since it is not possible to determine absolute performing ability. The size of difference that may have been due to chance has been computed and listed at the bottom of each table of the 1955 data as the "least significant difference (L.S.D.)". These measures of chance should remind the reader not to misinterpret small differences.

Table 1. Percentage comparison with the mean of 402 and D.B. 101 of certain flue-cured tobacco varieties. Official Tobacco Variety Test 1949-1955^{1/}

| Variety | Number of comparisons | Acre Yield | Acre ^{2/} Value | Value per 100 lbs. |
|------------------------------------|-----------------------|------------|--------------------------|--------------------|
| Standard $\frac{402 + DB\ 101}{2}$ | 24 | 1669 | \$878 ^{3/} | \$52.60 |
| | | Per cent | Per cent | Per cent |
| DB 101 | 24 | 101 | 99 | 99 |
| 402 | 24 | 99 | 101 | 101 |
| Hicks | 22 | 96 | 101 | 104 |
| Yel. Sp. A | 18 | 97 | 97 | 100 |
| DB 102 | 13 | 87 | 77 | 89 |
| Bot. Sp. | 12 | 106 | 102 | 96 |
| White Gold | 12 | 98 | 102 | 106 |
| Va. Gold | 11 | 109 | 106 | 98 |
| Oxford 1 | 10 | 86 | 77 | 90 |
| DB 28 | 10 | 109 | 102 | 94 |
| Sp. 42 | 8 | 109 | 107 | 99 |
| V.G. 2 | 8 | 106 | 107 | 101 |
| Coker 139 | 8 | 134 | 145 | 108 |
| Coker 140 | 8 | 109 | 113 | 104 |
| DB 244 | 8 | 120 | 117 | 100 |
| Golden Harvest | 6 | 98 | 97 | 98 |
| Golden Cure | 6 | 99 | 98 | 99 |
| Oxford 1-181 | 6 | 88 | 87 | 99 |
| Golden Gem 711 | 5 | 108 | 108 | 101 |
| Va. 45 | 5 | 94 | 92 | 98 |
| Buyer's Choice | 5 | 102 | 100 | 98 |
| Va. 21 | 7 | 102 | 105 | 103 |

^{1/} 1952 test not included.

^{2/} 1939 to 1941 average auction price on government grade basis used for 1949-51.
 1952 average auction price on government grade basis used for 1953 and 1954.
 1952 to 1954 average auction price on government grade basis used for 1955.

^{3/} Adjusted to 1955 average.

Table 2. Comparison of varieties in 1955 for certain characteristics.

Combined Analyses of All Locations

TV-70, Whiteville; TV-71, Rocky Mount; TV-72, McCullers; TV-73, Oxford; TV-74 Rural Hall

| Variety | Yield Lbs/A | Value Index ^{1/} | | Leaf Grade Dist. | | | No. of leaves per plant | Height of plant (in.) | Avg. Length of internode (in.) |
|----------------|----------------|---------------------------|----------|------------------|-----------|----------|-------------------------------|-----------------------------|--------------------------------------|
| | | Dol/A | Dol/Cwt. | High % | Med. % | Low % | | | |
| DB 101 | 1632 | 856 | 52.09 | 9 | 52 | 39 | 22.4 | 56.0 | 2.5 |
| 402 | 1645 | 878 | 53.11 | 17 | 52 | 31 | 18.9 | 47.8 | 2.5 |
| White Gold | 1677 | 947 | 56.21 | 27 | 50 | 23 | 17.7 | 44.1 | 2.5 |
| Hicks | 1730 | 984 | 56.79 | 29 | 53 | 18 | 18.5 | 44.1 | 2.4 |
| Speight "42" | 1831 | 971 | 52.56 | 10 | 58 | 32 | 22.1 | 55.2 | 2.4 |
| McNair V.G. 2 | 1773 | 955 | 53.67 | 18 | 59 | 23 | 19.5 | 46.7 | 2.4 |
| Coker 139 | 2244 | 1293 | 57.31 | 20 | 57 | 23 | 23.7 | 49.7 | 2.1 |
| Coker 140 | 1847 | 1039 | 55.85 | 17 | 56 | 27 | 22.7 | 50.5 | 2.2 |
| Va. 21 | 1733 | 940 | 54.07 | 20 | 45 | 35 | 18.9 | 50.7 | 2.7 |
| DB 244 | 1997 | 1053 | 52.39 | 11 | 54 | 35 | 22.1 | 59.2 | 2.7 |
| Va. 45 | 1537 | 797 | 51.57 | 9 | 59 | 32 | 20.1 | 52.7 | 2.7 |
| Yel. Sp. A | 1691 | 900 | 53.04 | 18 | 52 | 30 | 21.0 | 53.1 | 2.5 |
| Buyer's Choice | 1676 | 861 | 51.24 | 9 | 57 | 34 | 19.7 | 49.9 | 2.5 |
| Golden Gem 711 | 1762 | 939 | 53.08 | 12 | 57 | 31 | 19.0 | 50.0 | 2.6 |
| L.S.D. (.05) | 77 | 54 | 1.83 | | | | 1.1 | 2.4 | .16 |
| (.01) | 101 | 71 | 2.41 | | | | 1.5 | 3.2 | .21 |
| (%) | 6 | 9 | 5 | | | | 6 | 6 | 8 |

^{1/} Based on 3 year average (1952, 53 and 54) auction price on a government grade basis.

Table 2. Con't. Combined Analyses of All Locations 1955.

| Variety | Days to flower | Suckers per plant | | Analyses of Cured Leaf | | | | |
|----------------|-------------------|-------------------|--------------|------------------------|--------------|----------------|----------------|--------------|
| | | Ground | Leaf Axil | Nic. % | Nornic. % | Tot. Alk. % | Red. Sug. % | Total N % |
| DB 101 | 61.7 | 2.5 | 17.8 | 2.20 | .23 | 2.43 | 18.80 | 2.11 |
| 402 | 56.0 | 1.9 | 17.8 | 3.20 | .17 | 3.38 | 15.82 | 2.30 |
| White Gold | 53.2 | 1.2 | 20.2 | 2.60 | .20 | 2.83 | 18.22 | 2.10 |
| Hicks | 53.3 | 1.2 | 21.7 | 2.71 | .16 | 2.90 | 18.32 | 2.04 |
| Speight "42" | 59.7 | 2.9 | 17.0 | 2.31 | .21 | 2.48 | 17.08 | 2.01 |
| Mc. V.G. 2 | 54.8 | .9 | 17.6 | 2.82 | .15 | 2.99 | 16.86 | 2.11 |
| Coker 139 | 66.0 | 1.2 | 12.5 | 1.56 | .12 | 1.70 | 18.28 | 1.91 |
| Coker 140 | 61.1 | .8 | 15.8 | 1.60 | .10 | 1.72 | 17.01 | 2.03 |
| 15 Va. 21 | 53.4 | 1.4 | 17.3 | 2.64 | .17 | 2.83 | 16.74 | 2.25 |
| 3044-5 | 63.3 | .5 | 11.3 | 1.88 | .14 | 2.04 | 19.21 | 1.99 |
| Va. 45 | 56.1 | 1.4 | 20.7 | 2.66 | .18 | 2.87 | 15.56 | 2.29 |
| Yel. Sp. A | 56.4 | 2.2 | 20.3 | 2.96 | .19 | 3.16 | 17.50 | 2.18 |
| Buyer's Choice | 58.0 | 1.8 | 19.7 | 3.20 | .17 | 3.37 | 16.90 | 2.22 |
| Golden Gem 711 | 57.7 | 1.7 | 20.1 | 2.78 | .19 | 2.99 | 17.90 | 2.17 |
| L.S.D. (.05) | 1.1 | .4 | 1.5 | .25 | N.S. | .26 | 1.46 | .16 |
| (.01) | 1.5 | .5 | 1.9 | .33 | N.S. | .34 | 1.92 | .21 |
| C.V. (%) | 3 | 46 | 14 | 13 | 82 | 12 | 10 | 6 |

Table 2. Con't. Combined Analyses of All Locations - 1955.

| variety | Angle of leaf proj. from stalk | | | Width of leaves in inches | | | Length of leaves in inches | | |
|----------------|-----------------------------------|--------------------|--------------------|------------------------------|--------------------|--------------------|-------------------------------|--------------------|--------------------|
| | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} |
| | DB 101 | 67.3 | 41.5 | 46.7 | 7.8 | 9.3 | 10.9 | 16.7 | 18.6 |
| 402 | 60.3 | 39.5 | 43.9 | 8.2 | 10.1 | 11.5 | 18.4 | 20.6 | 21.4 |
| white Gold | 55.2 | 40.2 | 42.6 | 7.3 | 8.5 | 10.3 | 18.8 | 21.1 | 21.1 |
| Hicks | 52.4 | 40.8 | 43.5 | 7.1 | 9.1 | 10.7 | 19.3 | 22.1 | 21.7 |
| Speight 42 | 54.5 | 35.4 | 36.7 | 8.1 | 9.8 | 11.8 | 16.4 | 19.6 | 21.6 |
| Mc. V.G. 2 | 53.1 | 37.5 | 40.9 | 8.4 | 9.6 | 11.5 | 20.1 | 22.3 | 22.8 |
| Coker 139 | 44.1 | 35.0 | 35.5 | 8.5 | 9.2 | 11.2 | 17.7 | 20.0 | 22.1 |
| Coker 140 | 53.4 | 37.8 | 40.3 | 7.9 | 9.7 | 11.0 | 17.9 | 20.0 | 21.6 |
| Va. 21 | 61.1 | 40.2 | 40.4 | 8.6 | 10.2 | 11.8 | 18.4 | 20.7 | 21.6 |
| DB 244 | 46.9 | 32.9 | 33.6 | 8.7 | 10.6 | 13.0 | 15.8 | 18.9 | 21.1 |
| Va. 45 | 61.0 | 35.7 | 39.3 | 7.5 | 9.6 | 11.2 | 17.2 | 20.2 | 21.6 |
| Yel. Sp. A | 59.7 | 39.7 | 40.4 | 7.7 | 9.5 | 11.2 | 18.4 | 20.6 | 21.8 |
| Buyer's Choice | 69.4 | 42.7 | 44.9 | 7.9 | 9.5 | 11.2 | 17.7 | 20.5 | 21.4 |
| Golden Gem 711 | 68.9 | 43.0 | 46.3 | 8.4 | 10.3 | 11.9 | 17.9 | 20.8 | 22.1 |
| L.S.D. (.05) | 6.0 | 3.4 | 3.5 | 5.9 | 6.8 | 5.9 | 9.8 | 9.8 | 7.1 |
| (.01) | 7.9 | 4.5 | 4.6 | 7.8 | 8.9 | 7.8 | 13.0 | 12.9 | 9.3 |
| C.V. (%) | 12 | 10 | 10 | 8 | 8 | 6 | 6 | 6 | 4 |

^{2/} No. of leaves from top of plant.

Table 2. Con't. Combined Analyses of All Locations 1955.

| Variety of Line | Black shank ^{1/} % | Fusarium wilt ^{2/} | Bact. wilt Wilt Index ^{3/} |
|-----------------|--------------------------------|-----------------------------|--|
| DB 101 | 81.4 | 0.0 | 38 |
| 402 | - | 90.0 | - |
| White Gold | - | 60.0 | - |
| Hicks | - | 40.0 | - |
| Speight "42" | - | 50.0 | - |
| v.G. 2 | - | 100.0 | - |
| Coker 139 | 55.1 | 100.0 | 22 |
| Coker 140 | 47.2 | 50.0 | 78 ^{4/} |
| va. 21 | - | 50.0 | - |
| 3044-5 | 72.3 | 20.0 | 38 ^{6/} |
| va. 45 | - | 60.0 | - |
| Yel. Sp. A | - | 90.0 | - |
| Buyer's Choice | 75.9 | 100.0 | - |
| Golden Gem 711 | 86.9 | 90.0 | - |
| DB 102 ch | 57.0 | - | 30 |
| Bot. Sp. ch 400 | 100.0 | - | - |
| L.S.D. (.05) | 14.6 | - | - |
| (.01) | 19.3 | - | - |
| C.V. (%) | 23.0 | - | - |

1/ 4 replications of 25 plants at each location. Disease expressed as per cent plants killed or showing infection above ground level on August 26.

2/ Greenhouse test - two replicates of 5 plants.

3/ 0 = no disease and 100 = all plants killed. Average of 7 Greenhouse tests, unless otherwise noted, with each consisting of 10 plants.

4/ Two tests with Coker 140, in each case being less resistant than any line except susceptible check.

5/ 5 tests.

6/ 6 tests.

Table 3. Comparison of Varieties in 1955 for certain characteristics.

TV-70 Whiteville

| Variety | Yield Lbs/A | Value Index ^{1/} | | Leaf Grade Dist. | | | No. of leaves per plant | Height of plant (in.) | Avg. Length internode (in.) |
|----------------|----------------|---------------------------|----------|------------------|-----------|----------|-------------------------------|-----------------------------|-----------------------------------|
| | | Dol/A | Dol/Cwt. | High % | Med. % | Low % | | | |
| DB 101 | 2195 | 1193 | 54.43 | 21 | 45 | 34 | 23.8 | 61.1 | 2.6 |
| 402 | 1989 | 1150 | 57.91 | 43 | 34 | 23 | 20.0 | 50.9 | 2.6 |
| White Gold | 2104 | 1266 | 60.02 | 49 | 37 | 14 | 18.4 | 44.4 | 2.4 |
| Hicks | 2193 | 1360 | 62.27 | 53 | 36 | 11 | 18.8 | 44.8 | 2.4 |
| Speight "42" | 2284 | 1308 | 57.25 | 20 | 57 | 23 | 23.7 | 59.4 | 2.5 |
| McNair V.G. 2 | 2183 | 1240 | 56.77 | 19 | 65 | 16 | 20.0 | 46.4 | 2.3 |
| Coker 139 | 2779 | 1694 | 60.99 | 29 | 55 | 16 | 26.6 | 54.2 | 2.0 |
| Coker 140 | 2254 | 1357 | 60.18 | 36 | 43 | 21 | 22.7 | 54.7 | 2.4 |
| Va. 21 | 2166 | 1290 | 59.50 | 33 | 51 | 16 | 20.3 | 50.5 | 2.5 |
| DB 244 | 2536 | 1463 | 57.61 | 28 | 48 | 24 | 23.7 | 63.9 | 2.7 |
| Va. 45 | 2093 | 1146 | 54.71 | 12 | 60 | 28 | 22.2 | 55.4 | 2.5 |
| Yel. Sp. A | 2071 | 1175 | 56.70 | 33 | 40 | 27 | 22.3 | 55.1 | 2.5 |
| Buyer's Choice | 2041 | 1126 | 55.13 | 20 | 55 | 25 | 19.2 | 49.7 | 2.6 |
| Golden Gem 711 | 2122 | 1195 | 56.28 | 24 | 52 | 24 | 19.7 | 52.9 | 2.7 |
| L.S.D. (.05) | 145 | 112 | 2.93 | | | | 2.1 | 5.0 | .2 |
| (.01) | 192 | 148 | 3.89 | | | | 2.7 | 6.6 | .3 |
| (%) | 4 | 6 | 4 | | | | 5 | 5 | 5 |

^{1/} Based on 3 year average (1952, 53 and 54) auction price on a government grade basis.

Table 3. Con't. TV-70 Whiteville 1955.

| Variety | Days to Flower | Suckers per plant | | Analyses of Cured Leaf | | | | |
|----------------|----------------|-------------------|-----------|------------------------|-----------|-------------|-------------|-----------|
| | | Ground | Leaf Axil | Nic. % | Nornic. % | Tot. Alk. % | Red. Sug. % | Total N % |
| DB 101 | 57 | 4.3 | 15.9 | 1.64 | .08 | 1.73 | 20.58 | 1.54 |
| 402 | 50 | 2.3 | 16.0 | 2.06 | .14 | 2.22 | 19.11 | 1.60 |
| White Gold | 46 | 1.4 | 20.6 | 2.02 | .22 | 2.27 | 20.18 | 1.60 |
| Hicks | 46 | .8 | 18.6 | 1.58 | .35 | 1.96 | 19.54 | 1.51 |
| Speight "42" | 55 | 3.3 | 15.0 | 1.40 | .12 | 1.54 | 19.08 | 1.46 |
| Mc. V.G. 2 | 49 | 1.1 | 16.5 | 2.16 | .06 | 2.24 | 21.01 | 1.68 |
| Coker 139 | 61 | 1.7 | 12.1 | .95 | .11 | 1.08 | 19.31 | 1.46 |
| Coker 140 | 53 | 1.0 | 16.2 | .91 | .09 | 1.02 | 20.28 | 1.43 |
| o Va. 21 | 49 | 1.6 | 16.2 | 1.78 | .14 | 1.94 | 16.11 | 1.74 |
| + DB 244 | 58 | .6 | 12.4 | 1.28 | .13 | 1.42 | 21.21 | 1.57 |
| Va. 45 | 50 | 1.8 | 17.7 | 1.80 | .20 | 2.08 | 19.56 | 1.86 |
| Yel. Sp. A | 50 | 2.6 | 18.9 | 2.08 | .13 | 2.22 | 20.14 | 1.68 |
| Buyer's Choice | 49 | 3.4 | 18.3 | 2.08 | .12 | 2.15 | 20.71 | 1.54 |
| Golden Gem 711 | 50 | 2.5 | 18.6 | 2.01 | .16 | 2.18 | 20.01 | 1.65 |
| L.S.D. (.05) | 2.1 | 1.2 | 2.3 | .41 | N.S. | .43 | N.S. | |
| (.01) | 2.7 | 1.6 | 3.0 | .56 | N.S. | .58 | N.S. | |
| C.V. (%) | 3 | 44 | 11 | 12 | 74 | 12 | 9 | |

Table 3. Con't. TV-70 Whiteville

| Variety | Angle of leaf proj. from stalk | | | Width of leaves in inches | | | Length of leaves in inches | | |
|----------------|-----------------------------------|--------------------|--------------------|------------------------------|--------------------|--------------------|-------------------------------|--------------------|--------------------|
| | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} |
| | | | | | | | | | |
| DB 101 | 93.0 | 51.5 | 56.0 | 8.0 | 9.5 | 11.0 | 16.5 | 18.0 | 20.0 |
| 402 | 68.0 | 44.5 | 50.5 | 7.5 | 10.0 | 12.5 | 16.5 | 20.5 | 21.0 |
| White Gold | 66.5 | 45.5 | 48.0 | 7.5 | 9.5 | 12.0 | 19.0 | 22.5 | 21.5 |
| Hicks | 59.5 | 44.5 | 46.5 | 7.5 | 9.5 | 11.5 | 19.5 | 23.0 | 21.5 |
| Speight 42 | 73.0 | 47.0 | 42.5 | 8.5 | 9.5 | 12.0 | 16.5 | 19.0 | 21.0 |
| Mc. V.G. 2 | 56.0 | 40.0 | 44.5 | 8.5 | 9.5 | 12.0 | 19.5 | 22.0 | 22.5 |
| Coker 139 | 52.0 | 39.0 | 40.5 | 9.0 | 9.5 | 11.0 | 18.5 | 20.5 | 22.0 |
| Coker 140 | 68.5 | 43.0 | 46.0 | 8.0 | 9.5 | 11.0 | 17.5 | 19.5 | 20.5 |
| Va. 21 | 72.0 | 44.5 | 44.0 | 8.5 | 10.0 | 13.0 | 18.0 | 20.0 | 21.5 |
| DB 244 | 66.0 | 40.5 | 40.0 | 9.5 | 9.5 | 12.0 | 16.5 | 17.0 | 20.5 |
| Va. 45 | 70.0 | 39.5 | 42.5 | 7.5 | 9.0 | 12.0 | 16.5 | 19.0 | 22.5 |
| Yel. Sp. A | 74.5 | 46.0 | 47.0 | 7.5 | 10.0 | 11.0 | 17.5 | 20.0 | 20.5 |
| Buyer's Choice | 85.5 | 48.0 | 46.0 | 7.0 | 9.5 | 12.0 | 15.0 | 20.0 | 21.5 |
| Golden Gem 711 | 84.5 | 46.5 | 47.5 | 8.5 | 10.5 | 12.5 | 16.5 | 20.5 | 22.0 |
| L.S.D. (.05) | 14.1 | 8.2 | 6.3 | 1.3 | 1.2 | 1.3 | 2.2 | 1.7 | 1.3 |
| (.01) | 19.1 | 11.1 | 8.5 | 1.8 | 1.6 | 1.7 | 3.0 | 2.3 | 1.7 |
| C.V. (%) | 10 | 9 | 7 | 8 | 6 | 5 | 6 | 4 | 3 |

^{2/} No. of leaves from top of plant.

Table 4. Comparison of varieties in 1955 for certain characteristics.

TV-71 Rocky Mount

| Variety | Yield Lbs/A | Value Index ^{1/} | | Leaf Grade Dist. | | | No. of leaves per plant | Height of plant (in.) | Avg. Length internode (in.) |
|----------------------|----------------|---------------------------|----------|------------------|-----------|----------|-------------------------------|-----------------------------|-----------------------------------|
| | | Dol/A | Dol/Cwt. | High % | Med. % | Low % | | | |
| DB 101 | 1432 | 692 | 47.84 | 16 | 41 | 43 | 21.7 | 60.8 | 2.8 |
| 402 | 1720 | 860 | 49.80 | 18 | 43 | 39 | 19.0 | 52.1 | 2.7 |
| White Gold | 1851 | 987 | 53.44 | 22 | 50 | 28 | 18.0 | 49.3 | 2.7 |
| Hicks | 1870 | 923 | 49.78 | 17 | 52 | 31 | 18.4 | 48.4 | 2.7 |
| Speight "42" | 1957 | 1029 | 52.44 | 24 | 39 | 37 | 22.0 | 61.7 | 2.8 |
| McNair V.G. 2 | 1879 | 934 | 49.62 | 22 | 55 | 23 | 20.7 | 55.1 | 2.7 |
| Coker 139 | 2168 | 1240 | 57.18 | 23 | 54 | 23 | 20.9 | 50.7 | 2.4 |
| Coker 140 | 2000 | 1114 | 55.47 | 19 | 60 | 21 | 22.9 | 52.4 | 2.3 |
| Va. 21 ^{3/} | - | - | - | - | - | - | - | - | - |
| DB 244 | 2102 | 1052 | 50.02 | 23 | 34 | 43 | 21.0 | 65.4 | 3.1 |
| Va. 45 | 1386 | 692 | 50.01 | 12 | 57 | 31 | 18.0 | 59.9 | 3.4 |
| Yel. Sp. A | 1865 | 910 | 48.69 | 32 | 32 | 36 | 20.1 | 59.4 | 3.0 |
| Buyer's Choice | 1836 | 876 | 47.76 | 17 | 38 | 45 | 20.9 | 56.3 | 2.7 |
| Golden Gem 711 | 1936 | 964 | 49.50 | 17 | 45 | 38 | 18.6 | 54.3 | 2.9 |
| L.S.D. (.05) | 212 | 159 | 6.13 | | | | 2.5 | 4.9 | .4 |
| (.01) | 282 | 212 | 8.16 | | | | 3.4 | 6.6 | .6 |
| C.V. (%) | 8 | 13 | 9 | | | | 7 | 5 | 9 |

^{1/} Based on 3 year average (1952, 53 and 54) auction price on a government grade basis.^{3/} Lost from Black shank.

Table 4. Con't. TV-71 Rocky Mount 1955.

| Variety | Days to Flower | Suckers per plant | | Analyses of Cured Leaf | | | | |
|---------------------------------------|----------------|-------------------|-----------|------------------------|-----------|-------------|-------------|-----------|
| | | Ground | Leaf Axil | Nic. % | Nornic. % | Tot. Alk. % | Red. Sug. % | Total N % |
| DB 101 | 60 | 2.2 | 22.2 | 2.24 | .22 | 2.48 | 16.18 | 2.18 |
| 402 | 54 | 3.1 | 22.4 | 3.18 | .13 | 3.32 | 13.90 | 2.66 |
| White Gold | 51 | 2.2 | 21.0 | 2.39 | .11 | 2.52 | 18.34 | 2.24 |
| Hicks | 52 | 1.9 | 24.2 | 2.64 | .06 | 2.70 | 17.94 | 2.18 |
| Speight "42" | 57 | 4.7 | 21.2 | 2.38 | .49 | 2.57 | 14.94 | 2.18 |
| Mc. V.G. 2 | 53 | 1.5 | 21.1 | 3.04 | .16 | 3.22 | 14.30 | 2.41 |
| Coker 139 | 61 | 1.7 | 16.2 | 1.50 | .06 | 1.58 | 17.41 | 2.10 |
| Coker 140 | 61 | .8 | 18.1 | 1.48 | .09 | 1.59 | 17.64 | 2.21 |
| 21 ^{3/} Va. 21 ^{3/} | - | - | - | - | - | - | - | - |
| 1 DB 244 | 62 | .5 | 13.0 | 2.08 | .16 | 2.26 | 18.34 | 2.10 |
| Va. 45 | 55 | 1.7 | 26.7 | 2.94 | .19 | 3.18 | 12.15 | - |
| Yel. Sp. A | 54 | 2.6 | 23.6 | 2.62 | .20 | 2.86 | 16.76 | - |
| Buyer's Choice | 57 | 2.5 | 23.3 | 3.48 | .25 | 3.75 | 16.28 | 2.60 |
| Golden Gem 711 | 57 | 2.1 | 24.6 | 2.27 | .13 | 2.41 | 14.17 | 2.41 |
| L.S.D. (.05) | 2.1 | 1.0 | 3.1 | .73 | N.S. | .72 | N.S. | |
| (.01) | 2.7 | 1.27 | 4.1 | 1.00 | N.S. | .98 | N.S. | |
| C.V. (%) | 2 | 38 | 12 | 15 | 93 | 14 | 13 | |

^{3/} Lost from Black shank.

Table 4. Con't. TV-71 Rocky Mount 1955.

| Variety | Angle of leaf proj. from stalk | | | Width of leaves in inches | | | Length of leaves in inches | | |
|----------------------------|-----------------------------------|----------------|----------------|------------------------------|----------------|----------------|-------------------------------|----------------|----------------|
| | <u>2/</u> 5th | <u>2/</u> 10th | <u>2/</u> 15th | <u>2/</u> 5th | <u>2/</u> 10th | <u>2/</u> 15th | <u>2/</u> 5th | <u>2/</u> 10th | <u>2/</u> 15th |
| | DB 101 | 57.5 | 34.5 | 42.0 | 9.0 | 10.0 | 12.0 | 18.5 | 20.5 |
| 402 | 57.5 | 45.0 | 49.0 | 10.5 | 12.5 | 14.0 | 22.5 | 24.0 | 23.5 |
| White Gold | 47.0 | 33.0 | 41.5 | 8.5 | 10.0 | 12.0 | 21.5 | 24.0 | 23.5 |
| Hicks | 43.5 | 36.5 | 41.5 | 9.5 | 10.5 | 12.5 | 22.5 | 24.0 | 24.0 |
| Speight " <u>42</u> " | 48.5 | 30.0 | 32.0 | 10.0 | 11.5 | 14.5 | 20.5 | 23.5 | 25.0 |
| Mc. V.G. 2 | 54.5 | 37.0 | 39.5 | 10.0 | 12.0 | 15.0 | 23.5 | 27.0 | 26.0 |
| Coker 139 | 41.5 | 31.5 | 32.0 | 9.0 | 10.0 | 12.5 | 19.0 | 21.0 | 23.0 |
| Coker 140 | 52.0 | 33.0 | 34.5 | 9.5 | 10.0 | 12.0 | 20.0 | 21.5 | 24.0 |
| <u>23</u> Va. 21 <u>3/</u> | - | - | - | - | - | - | - | - | - |
| <u>1</u> 30 <u>44</u> -5 | 41.0 | 28.0 | 29.0 | 10.0 | 12.5 | 16.0 | 18.5 | 22.0 | 24.0 |
| Va. 45 | 48.0 | 34.5 | 38.0 | 10.0 | 12.0 | 14.5 | 20.0 | 24.0 | 25.0 |
| Yel. Sp. A | 48.0 | 33.5 | 37.0 | 8.5 | 10.5 | 12.5 | 20.5 | 22.5 | 23.5 |
| Buyer's Choice | 62.5 | 34.5 | 43.0 | 9.5 | 11.5 | 14.0 | 21.0 | 24.0 | 24.5 |
| Golden Gem 711 | 55.0 | 38.5 | 43.0 | 10.0 | 11.5 | 13.5 | 20.0 | 23.0 | 24.0 |
| L.S.D. (.05) | 9.6 | 7.4 | 10.2 | 1.2 | 1.82 | 1.6 | 2.1 | 2.02 | 1.7 |
| (.01) | 13.0 | 10.0 | 13.8 | 1.7 | N.S. | 2.2 | 2.8 | 2.74 | 2.2 |
| C.V. (%) | 9 | 11 | 13 | 6 | 8 | 6 | 5 | 4 | 3 |

2/ No. of leaves from top of plant.3/ Lost from Black shank disease.

Table 5. Comparison of varieties in 1955 for certain characteristics.

TV-72 McCullers (Non-Irrigated)

| Variety | Yield Lbs/A | Value Index ^{1/} | | Leaf Grade Dist. | | | No. of leaves per plant | Height of plant (in.) | Avg. Length internode (in.) |
|----------------|----------------|---------------------------|----------|------------------|-----------|----------|-------------------------------|-----------------------------|-----------------------------------|
| | | Dol/A | Dol/Cwt. | High % | Med. % | Low % | | | |
| DB 101 | 1701 | 899 | 52.66 | 7 | 58 | 35 | 22.9 | 51.1 | 2.2 |
| 402 | 1711 | 832 | 48.66 | 6 | 61 | 33 | 18.8 | 43.5 | 2.3 |
| White Gold | 1594 | 856 | 53.55 | 22 | 45 | 33 | 18.7 | 39.8 | 2.1 |
| Hicks | 1671 | 967 | 57.88 | 34 | 55 | 11 | 19.8 | 45.2 | 2.2 |
| Speight "42" | 1953 | 997 | 51.04 | 5 | 69 | 26 | 22.7 | 52.0 | 2.3 |
| McNair V.G. 2 | 1843 | 979 | 53.06 | 17 | 57 | 26 | 19.0 | 43.5 | 2.3 |
| Coker 139 | 2425 | 1383 | 57.01 | 12 | 69 | 19 | 25.3 | 53.3 | 2.1 |
| Coker 140 | 1935 | 1086 | 56.11 | 14 | 61 | 25 | 22.1 | 48.0 | 2.2 |
| Va. 21 | 1713 | 885 | 51.68 | 0 | 73 | 27 | 20.0 | 48.0 | 2.4 |
| DB 244 | 2018 | 990 | 49.07 | 4 | 65 | 31 | 24.9 | 60.0 | 2.4 |
| Va. 45 | 1601 | 765 | 47.78 | 8 | 55 | 37 | 21.0 | 48.0 | 2.3 |
| Yel. Sp. A | 1763 | 952 | 54.03 | 14 | 57 | 29 | 22.9 | 46.7 | 2.1 |
| Buyer's Choice | 1830 | 937 | 51.17 | 3 | 65 | 32 | 20.0 | 47.8 | 2.4 |
| Golden Gem 711 | 1862 | 986 | 52.94 | 15 | 54 | 31 | 20.2 | 47.6 | 2.4 |
| L.S.D. (.05) | 148 | 130 | 4.92 | | | | 2.3 | 4.3 | .3 |
| (.01) | 198 | 174 | 6.56 | | | | 3.0 | 5.8 | .3 |
| C.V. (%) | 5 | 9 | 6 | | | | 5 | 4 | 5 |

^{1/} Based on 3 year average (1952, 53 and 54) auction price on a government grade basis.

Table 5. Cont. TV-72 McCullers 1955 (Non-Irrigated)

| Variety | Days to Flower | Suckers per plant | | Analyses of Cured Leaf | | | | |
|----------------|----------------|-------------------|-----------|------------------------|-----------|-------------|-------------|-----------|
| | | Ground | Leaf Axil | Nic. % | Nornic. % | Tot. Alk. % | Red. Sug. % | Total N % |
| DB 101 | 56 | 3.1 | 24.7 | 2.57 | .38 | 2.99 | 17.30 | 2.58 |
| 402 | 50 | 2.5 | 19.9 | 3.74 | .15 | 3.89 | 13.78 | 2.55 |
| White Gold | 47 | 1.6 | 22.0 | 3.13 | .22 | 3.38 | 15.78 | 2.60 |
| Hicks | 48 | 2.4 | 22.6 | 3.17 | .14 | 3.32 | 15.80 | 2.32 |
| Speight "42" | 54 | 4.0 | 23.6 | 2.64 | .19 | 2.85 | 15.22 | 2.21 |
| Mc. V.G. 2 | 50 | 1.5 | 19.3 | 3.04 | .23 | 3.29 | 14.45 | 7.41 |
| Coker 139 | 61 | 1.7 | 17.1 | 1.85 | .13 | 1.99 | 15.99 | 2.27 |
| Coker 140 | 54 | 1.6 | 21.1 | 1.99 | .08 | 2.09 | 13.89 | 2.38 |
| Va. 21 | 50 | 2.2 | 18.7 | 3.10 | .23 | 3.35 | 14.76 | 2.83 |
| 3044-5 | 57 | .5 | 17.7 | 2.24 | .17 | 2.42 | 16.23 | 2.44 |
| Va. 45 | 51 | 2.2 | 20.5 | 3.21 | .17 | 3.40 | 12.85 | 2.55 |
| Yel. Sp. A | 52 | 2.8 | 22.1 | 3.38 | .17 | 3.56 | 17.68 | 2.32 |
| Buyer's Choice | 55 | 1.3 | 21.8 | 3.79 | .26 | 4.07 | 13.16 | 2.44 |
| Golden Gem 711 | 52 | 1.6 | 21.4 | 3.49 | .19 | 3.70 | 17.43 | 2.49 |
| L.S.D. (.05) | 2.1 | .7 | 3.2 | .42 | N.S. | .41 | N.S. | 1.53 |
| (.01) | 2.8 | .9 | 4.3 | .56 | N.S. | .55 | N.S. | 2.04 |
| C.V. (%) | 3 | 24 | 10 | 9 | 66 | 8 | 14 | ' |

Table 5. Cont. TV-72 McCullers - 1955 (Non-Irrigated)

| Variety | Angle of leaf proj. from stalk | | | Width of leaves in inches | | | Length of leaves in inches | | |
|----------------|-----------------------------------|--------------------|--------------------|------------------------------|--------------------|--------------------|-------------------------------|--------------------|--------------------|
| | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} |
| | | | | | | | | | |
| DB 101 | 64.0 | 39.5 | 49.0 | 9.0 | 10.0 | 11.5 | 19.0 | 21.0 | 21.5 |
| 402 | 56.5 | 32.0 | 38.0 | 8.5 | 9.5 | 11.0 | 21.0 | 22.0 | 23.5 |
| White Gold | 49.5 | 36.5 | 39.5 | 8.5 | 9.5 | 10.5 | 21.0 | 22.0 | 22.5 |
| Hicks | 57.5 | 41.5 | 46.0 | 7.5 | 9.5 | 11.5 | 22.0 | 23.5 | 23.0 |
| Speight "42" | 50.0 | 32.0 | 35.5 | 8.0 | 10.5 | 12.0 | 17.5 | 21.5 | 22.5 |
| Mc. V.G. 2 | 52.0 | 36.5 | 42.5 | 8.0 | 9.5 | 10.5 | 20.5 | 22.5 | 23.0 |
| Coker 139 | 36.0 | 34.5 | 36.0 | 9.0 | 9.5 | 11.0 | 18.0 | 22.0 | 23.5 |
| Coker 140 | 51.0 | 35.5 | 39.5 | 8.5 | 11.5 | 11.0 | 20.0 | 22.5 | 22.5 |
| Va. 21 | 70.5 | 36.0 | 35.5 | 9.0 | 10.0 | 11.5 | 19.5 | 21.0 | 22.5 |
| DB 244 | 40.0 | 27.5 | 29.5 | 9.0 | 11.0 | 14.0 | 16.5 | 21.5 | 22.5 |
| Va. 45 | 59.5 | 26.5 | 30.5 | 8.0 | 10.0 | 11.0 | 19.5 | 22.5 | 22.5 |
| Yel. Sp. A | 57.0 | 37.0 | 33.5 | 7.5 | 9.5 | 11.5 | 19.5 | 21.5 | 23.0 |
| Buyer's Choice | 67.5 | 38.5 | 42.5 | 9.0 | 9.5 | 11.0 | 21.5 | 22.5 | 23.5 |
| Golden Gem 711 | 72.0 | 46.0 | 49.0 | 9.0 | 10.0 | 12.0 | 20.0 | 22.0 | 23.0 |
| L.S.D. (.05) | 17.6 | 9.0 | 3.4 | 1.1 | 1.4 | 1.1 | 1.8 | 1.5 | 1.7 |
| (.01) | 23.8 | 12.2 | 4.6 | 1.5 | N.S. | 1.5 | 2.4 | 2.0 | 2.3 |
| C.V. (%) | 17 | 13 | 11 | 7 | 7 | 5 | 5 | 3 | 4 |

^{2/} No. of leaves from top of plant.

Table 6. Comparison of varieties in 1955 for certain characteristics.
TV-72 McCullers (Irrigated)

| Variety | Yield Lbs/A | Value Index ^{1/} | | Leaf Grade Dist. | | | No. of leaves per plant | Height of plant (in.) | Avg. Length internode (in.) |
|----------------|----------------|---------------------------|----------|------------------|-----------|----------|-------------------------------|-----------------------------|-----------------------------------|
| | | Dol/A | Dol/Cwt. | High % | Med. % | Low % | | | |
| DB 101 | 1833 | 1077 | 58.80 | 45 | 36 | 19 | 22.1 | 62.4 | 2.8 |
| 402 | 1932 | 1086 | 56.22 | 33 | 48 | 19 | 19.0 | 54.7 | 2.9 |
| White Gold | 2072 | 1251 | 60.34 | 55 | 36 | 9 | 17.9 | 49.9 | 2.8 |
| Hicks | 1973 | 1215 | 61.53 | 68 | 20 | 12 | 18.2 | 49.3 | 2.7 |
| Speight "42" | 2193 | 1181 | 53.79 | 39 | 37 | 24 | 20.7 | 61.4 | 3.0 |
| McNair V.G. 2 | 2068 | 1233 | 59.64 | 55 | 31 | 14 | 19.8 | 55.6 | 2.8 |
| Coker 139 | 2648 | 1625 | 61.37 | 55 | 33 | 12 | 23.6 | 52.5 | 2.3 |
| Coker 140 | 2136 | 1306 | 61.14 | 46 | 39 | 15 | 22.7 | 54.9 | 2.4 |
| DB 244 | 2353 | 1352 | 57.37 | 34 | 43 | 23 | 23.1 | 68.8 | 3.0 |
| Buyer's Choice | 1966 | 1062 | 54.00 | 23 | 55 | 22 | 19.2 | 60.8 | 3.2 |
| Golden Gem 711 | 2112 | 1148 | 54.35 | 29 | 51 | 20 | 19.8 | 58.9 | 3.0 |
| L.S.D. (.05) | 144 | 135 | 5.14 | | | | 1.6 | 5.7 | .4 |
| (.01) | 192 | 180 | 6.88 | | | | 2.2 | 7.8 | .5 |
| C.V. (%) | 4 | 7 | 6 | | | | 3 | 4 | 6 |

^{1/} Based on 3 year average (1952, 53 and 54) auction price on a government grade basis.

Table 6. Con't. TV-72 McCullers 1955 (Irrigated)

| Variety | Days to Flower | Suckers per plant | | Analyses of Cured Leaf | | | | |
|----------------|----------------|-------------------|-----------|------------------------|-----------|-------------|-------------|------------|
| | | Ground | Axil Leaf | Nic. % | Nornic. % | Tot. Alk. % | Red. Sug. % | Total N. % |
| DB 101 | 56 | 4.4 | 18.2 | 2.00 | .17 | 2.19 | 21.91 | 2.18 |
| 402 | 51 | 3.6 | 17.2 | 2.13 | .19 | 2.34 | 18.41 | 2.18 |
| White Gold | 48 | 2.3 | 19.8 | 2.11 | .24 | 2.36 | 18.65 | 2.07 |
| Hicks | 48 | 1.8 | 17.8 | 2.09 | .10 | 2.18 | 20.10 | 2.13 |
| Speight "42" | 54 | 4.3 | 19.2 | 1.62 | .15 | 1.78 | 20.41 | 2.02 |
| Mc. V.G. 2 | 51 | 2.0 | 14.7 | 1.42 | .08 | 1.75 | 21.30 | 1.79 |
| Coker 139 | 58 | 1.5 | 17.3 | 1.29 | .23 | 1.55 | 18.74 | 1.99 |
| Coker 140 | 54 | .8 | 18.3 | 1.22 | .17 | 1.41 | 17.63 | 2.35 |
| DB 244 | 57 | .6 | 15.3 | 1.28 | .17 | 1.47 | 20.85 | 1.93 |
| Buyer's Choice | 52 | 4.0 | 19.9 | 2.05 | .45 | 2.51 | 19.46 | 2.18 |
| Golden Gem 711 | 53 | 3.4 | 20.5 | 2.30 | .53 | 2.87 | 19.03 | 2.35 |
| L.S.D. (.05) | 2.4 | 1.5 | 3.7 | .44 | N.S. | .41 | N.S. | |
| (.01) | 3.2 | 2.1 | 4.9 | .59 | N.S. | .55 | N.S. | |
| C.V. (%) | 3 | 45 | 12 | 15 | 97 | 12 | 12 | |

Table 6. Con't. TV-72 McCullers 1955 (Irrigated)

| Variety | Angle of leaf proj. from stalk | | | Width of leaves in inches | | | Length of leaves in inches | | |
|----------------|-----------------------------------|--------------------|--------------------|------------------------------|--------------------|--------------------|-------------------------------|--------------------|--------------------|
| | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} |
| | | | | | | | | | |
| DB 101 | 81.0 | 42.0 | 49.5 | 8.0 | 9.5 | 11.0 | 18.5 | 20.0 | 21.0 |
| 402 | 66.5 | 32.5 | 39.0 | 8.5 | 10.0 | 12.5 | 20.0 | 22.0 | 20.0 |
| White Gold | 61.0 | 36.5 | 40.5 | 8.5 | 9.5 | 11.5 | 22.0 | 23.0 | 24.0 |
| Hicks | 69.5 | 40.0 | 42.5 | 7.5 | 9.5 | 11.0 | 19.5 | 22.0 | 22.5 |
| Speight 42 | 55.5 | 33.5 | 39.0 | 8.5 | 10.0 | 12.5 | 17.5 | 20.5 | 24.0 |
| Mc. V.G. 2 | 70.5 | 28.0 | 35.0 | 8.5 | 8.5 | 11.0 | 21.5 | 22.0 | 23.5 |
| Coker 139 | 57.0 | 32.0 | 35.5 | 9.5 | 9.5 | 11.5 | 20.5 | 22.0 | 23.0 |
| Coker 140 | 58.5 | 32.5 | 37.0 | 8.5 | 9.0 | 11.0 | 19.5 | 21.5 | 22.0 |
| DB 244 | 53.5 | 24.5 | 27.5 | 9.0 | 11.0 | 14.0 | 16.5 | 21.0 | 23.0 |
| Buyer's Choice | 78.0 | 40.0 | 44.0 | 8.5 | 9.5 | 12.0 | 19.0 | 21.5 | 23.0 |
| Golden Gem 711 | 80.5 | 37.5 | 40.0 | 8.5 | 10.0 | 11.5 | 19.0 | 22.0 | 23.0 |
| L.S.D. (.05) | 22.9 | 6.7 | 7.9 | N.S. | N.S. | 1.7 | 3.1 | N.S. | 2.0 |
| (.01) | | 9.2 | 10.8 | N.S. | N.S. | N.S. | N.S. | N.S. | N.S. |
| C.V. (%) | 17 | 10 | 10 | 8 | 9 | 7 | 8 | 6 | 4 |

^{2/} No. of leaves from top of plant.

Table 7. Comparison of varieties in 1955 for certain characteristics.

TV-73 Oxford (Non-irrigated)

| Variety | Yield Lbs/A | Value Dol/A | Index ^{1/} Dol/Cwt. | Leaf Grade Dist. | | | No. of leaves per plant | Height of plant (in.) | Avg. Length internode (In.) |
|----------------|----------------|----------------|---------------------------------|------------------|-----------|----------|-------------------------------|-----------------------------|-----------------------------------|
| | | | | High % | Med. % | Low % | | | |
| DB 101 | 1339 | 649 | 48.60 | 0 | 43 | 57 | 19.1 | 45.1 | 2.4 |
| 402 | 1321 | 680 | 51.57 | 18 | 46 | 36 | 15.1 | 39.5 | 2.6 |
| White Gold | 1283 | 692 | 53.93 | 26 | 49 | 25 | 13.9 | 41.1 | 3.0 |
| Hicks | 1206 | 644 | 53.47 | 10 | 67 | 23 | 14.0 | 33.4 | 2.5 |
| Speight "42" | 1400 | 651 | 46.46 | 0 | 53 | 47 | 18.2 | 44.7 | 2.5 |
| McNair V.G. 2 | 1350 | 665 | 49.34 | 12 | 52 | 35 | 15.8 | 35.5 | 2.3 |
| Coker 139 | 1788 | 995 | 55.73 | 16 | 58 | 26 | 17.9 | 37.3 | 2.2 |
| Coker 140 | 1410 | 755 | 53.48 | 11 | 58 | 31 | 18.2 | 40.3 | 2.2 |
| Va. 21 | 1349 | 714 | 52.99 | 23 | 46 | 31 | 14.6 | 41.5 | 2.9 |
| D.B. 244 | 1595 | 771 | 48.35 | 0 | 53 | 47 | 17.3 | 45.3 | 2.7 |
| Va. 45 | 1210 | 578 | 47.82 | 6 | 53 | 41 | 16.7 | 42.3 | 2.6 |
| Yel. Sp. A | 1270 | 635 | 50.12 | 7 | 58 | 35 | 17.0 | 41.2 | 2.5 |
| Buyer's Choice | 1287 | 637 | 49.40 | 7 | 56 | 37 | 16.0 | 41.3 | 2.6 |
| Golden Gem 711 | 1348 | 688 | 51.01 | 4 | 59 | 37 | 15.6 | 39.8 | 2.6 |
| L.S.D. (.05) | 153 | 78 | 3.13 | | | | 3.3 | 7.4 | N.S. |
| (.01) | 204 | 104 | 4.17 | | | | 4.4 | 10.1 | N.S. |
| C.V. (%) | 7 | 7 | 4 | | | | 9 | 8 | 11 |

^{1/} Based on 3 year average (1952, 53 and 54) auction price on a government grade basis.

Table 7. Con't. TV-73 Oxford 1955 (Non-Irrigated)

| Variety | Days to Flower | Suckers per plant | | Analyses of Cured Leaf | | | | |
|----------------|----------------|-------------------|-----------|------------------------|-----------|-------------|-------------|-----------|
| | | Ground | Axil Leaf | Nic. % | Nornic. % | Tot. Alk. % | Red. Sug. % | Total N % |
| DB 101 | 74 | 2.4 | 12.1 | 1.92 | .19 | 2.13 | 19.74 | 2.16 |
| 402 | 70 | 1.7 | 12.2 | 3.46 | .28 | 3.76 | 17.39 | 2.69 |
| White Gold | 69 | 1.0 | 13.9 | 2.43 | .30 | 2.82 | 19.34 | 2.16 |
| Hicks | 69 | 1.1 | 13.6 | 3.04 | .15 | 3.20 | 19.52 | 2.30 |
| Speight "42" | 74 | 2.1 | 11.5 | 2.74 | .17 | 2.93 | 18.65 | 2.41 |
| Mc. V.G. 2 | 70 | .5 | 12.0 | 3.10 | .19 | 3.31 | 17.19 | 2.24 |
| Coker 139 | 79 | .9 | 9.8 | 1.90 | .17 | 2.08 | 20.30 | 2.04 |
| Coker 140 | 74 | .8 | 11.6 | 1.79 | .19 | 2.01 | 18.01 | 2.38 |
| 31 Va. 21 | 70 | 1.6 | 13.4 | 3.00 | .15 | 3.17 | 19.10 | 2.30 |
| DB 244 | 75 | .5 | 6.6 | 1.88 | .06 | 1.95 | 20.52 | 1.99 |
| Va. 45 | 71 | 1.4 | 13.4 | 2.73 | .21 | 2.96 | 17.47 | 2.58 |
| Yel. Sp. A | 70 | 2.9 | 15.3 | 3.49 | .30 | 3.82 | 17.96 | 2.49 |
| Buyer's Choice | 72 | 1.6 | 15.0 | 3.38 | .15 | 3.54 | 17.85 | 2.55 |
| Golden Gem 711 | 72 | 2.1 | 14.2 | 2.82 | .30 | 3.14 | 19.83 | 2.24 |
| L.S.D. (.05) | 2.4 | 1.3 | 3.3 | .67 | N.S. | .72 | N.S. | |
| (.01) | 3.1 | 1.7 | 4.3 | .89 | N.S. | .96 | N.S. | |
| C.V. (%) | 2 | 59 | 18 | 15 | 87 | 15 | 9 | |

Table 7. Con't. TV-73 Oxford 1955 (Non-Irrigated)

| Variety | Angle of leaf proj. from stalk | | | Width of leaves in inches | | | Length of leaves in inches | | |
|----------------|-----------------------------------|--------------------|--------------------|------------------------------|--------------------|--------------------|-------------------------------|--------------------|--------------------|
| | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} |
| DB 101 | 52.5 | 48.5 | 49.0 | 7.0 | 9.0 | 10.0 | 15.5 | 17.5 | 18.0 |
| 402 | 47.5 | 45.0 | 44.0 | 7.5 | 10.0 | 10.5 | 16.5 | 18.5 | 18.5 |
| White Gold | 46.0 | 48.0 | 41.0 | 6.5 | 7.5 | 9.0 | 15.5 | 17.5 | 18.0 |
| Hicks | 49.5 | 49.0 | 44.5 | 6.0 | 8.5 | 10.0 | 16.5 | 19.5 | 19.0 |
| Speight "42" | 41.0 | 43.0 | 42.5 | 7.5 | 10.0 | 11.5 | 15.5 | 18.5 | 19.5 |
| Mc. V.G. 2 | 45.0 | 44.0 | 42.0 | 7.5 | 9.5 | 11.0 | 19.0 | 20.5 | 20.0 |
| Coker 139 | 45.5 | 44.5 | 41.0 | 9.0 | 9.5 | 11.0 | 18.5 | 19.5 | 20.0 |
| Coker 140 | 46.0 | 50.0 | 47.5 | 7.5 | 10.5 | 10.5 | 18.0 | 20.5 | 19.5 |
| Va. 21 | 46.0 | 48.0 | 44.0 | 7.5 | 10.5 | 11.0 | 17.5 | 20.0 | 19.5 |
| EB 244 | 41.0 | 41.5 | 40.5 | 8.5 | 11.0 | 12.0 | 15.5 | 19.0 | 18.5 |
| Va. 45 | 49.0 | 49.5 | 47.0 | 7.0 | 9.5 | 10.0 | 15.5 | 18.5 | 18.0 |
| Yel. Sp. A | 49.0 | 52.0 | 48.0 | 7.5 | 9.0 | 11.0 | 17.5 | 19.0 | 19.5 |
| Buyer's Choice | 50.5 | 55.5 | 52.0 | 7.5 | 9.5 | 10.0 | 16.5 | 18.5 | 17.5 |
| Golden Gem 711 | 47.5 | 51.0 | 53.5 | 8.0 | 11.0 | 11.5 | 17.5 | 20.5 | 20.5 |
| L.S.D. (.05) | N.S. | 7.1 | 7.9 | 1.5 | 1.6 | N.S. | N.S. | 1.7 | 1.7 |
| (.01) | N.S. | N.S. | 10.7 | N.S. | N.S. | N.S. | N.S. | 2.4 | 2.3 |
| C.V. (%) | 8 | 4 | 8 | 10 | 8 | 7 | 8 | 4 | 4 |

^{2/} No. of leaves from top of plant.

Table 8. Comparison of varieties in 1955 for certain characteristics.
TV 73 Oxford (Irrigated)

| Variety | Yield Lbs/A | Value Index ^{1/} | | Leaf Grade Dist. | | | No. of leaves per plant | Height of plant (in.) | Avg. Length internode (in.) |
|----------------|----------------|---------------------------|----------|------------------|-----------|----------|-------------------------------|-----------------------------|-----------------------------------|
| | | Dol/A | Dol/Cwt. | High % | Med. % | Low % | | | |
| DB 101 | 1742 | 933 | 53.38 | 19 | 43 | 38 | 18.8 | 55.4 | 3.0 |
| 402 | 1476 | 798 | 54.05 | 14 | 61 | 25 | 16.4 | 49.0 | 3.0 |
| White Gold | 1590 | 917 | 57.65 | 33 | 51 | 16 | 15.1 | 48.0 | 3.2 |
| Hicks | 1580 | 969 | 61.33 | 51 | 42 | 7 | 15.6 | 50.7 | 3.3 |
| Speight "42" | 1926 | 1028 | 53.34 | 17 | 55 | 28 | 18.1 | 59.8 | 3.4 |
| McNair V.G. 2 | 1742 | 970 | 55.62 | 30 | 44 | 26 | 16.6 | 50.6 | 3.1 |
| Coker 139 | 2139 | 1290 | 60.31 | 44 | 38 | 18 | 19.2 | 48.6 | 2.6 |
| Coker 140 | 1846 | 1084 | 58.81 | 46 | 32 | 22 | 18.0 | 53.5 | 3.0 |
| DB 244 | 1921 | 984 | 51.14 | 5 | 62 | 33 | 18.6 | 59.2 | 3.2 |
| Buyer's Choice | 1720 | 926 | 53.54 | 24 | 42 | 34 | 15.4 | 52.6 | 3.4 |
| Golden Gem 711 | 1805 | 957 | 53.01 | 18 | 51 | 31 | 15.6 | 49.7 | 3.2 |
| L.S.D. (.05) | 138 | 115 | 5.16 | | | | 1.7 | 6.1 | .4 |
| (.01) | 185 | 153 | 6.90 | | | | 2.3 | 8.3 | .6 |
| C.V. (%) | 5 | 7 | 6 | | | | 5 | 5 | 7 |

^{1/} Based on 3 year average (1952, 53 and 54) auction price on a government grade basis.

Table 8. Cont. TV-73 Oxford 1955 (Irrigated)

| Variety | Days to Flower | Suckers per plant | | Analyses of Cured Leaf | | | | |
|--------------------------------------|----------------|-------------------|-----------|------------------------|-----------|-------------|-------------|-----------|
| | | Ground | Leaf Axil | Nic. % | Nornic. % | Tot. Alk. % | Red. Sug. % | Total N % |
| D.B. 101 | 73 | 5.2 | 11.7 | 1.66 | .27 | 1.97 | 21.88 | 1.68 |
| 402 | 72 | 2.3 | 8.2 | 2.44 | .17 | 2.62 | 21.54 | 1.65 |
| White Gold | 71 | 1.9 | 13.5 | 2.10 | .41 | 2.54 | 21.88 | 1.79 |
| Hicks | 70 | 1.3 | 10.6 | 1.59 | .28 | 1.89 | 22.12 | 1.34 |
| Speight ^m 42 ⁿ | 75 | 3.1 | 8.2 | 1.43 | .23 | 1.69 | 21.85 | - |
| Mc. V.G. 2 | 71 | .9 | 10.6 | 1.63 | .27 | 1.93 | 20.81 | 1.79 |
| Coker 139 | 77 | .8 | 8.7 | .93 | .23 | 1.19 | 21.67 | 1.62 |
| Coker 140 | 74 | 2.4 | 10.0 | 1.13 | .10 | 1.24 | 21.23 | 2.04 |
| D.B. 244 | 77 | .7 | 7.1 | 1.33 | .21 | 1.56 | 21.30 | 1.96 |
| Buyer's Choice | 72 | 3.9 | 11.6 | 2.17 | .10 | 2.28 | 20.99 | 1.76 |
| Golden Gem 711 | 71 | 3.2 | 10.4 | 1.87 | .34 | 2.25 | 22.10 | 1.68 |
| b.S.D. (.05) | 2.9 | 1.4 | 2.9 | .64 | N.S. | .52 | 1.83 | |
| (.01) | 3.9 | 1.8 | 3.8 | .85 | N.S. | .70 | N.S. | |
| C.V. (%) | 2 | 40 | 18 | 24 | 71 | 17 | 5 | 26 |

Table 8. Con't. TV-73 Oxford 1955 (Irrigated)

| Variety | Angle of leaf proj. from stalk | | | Width of leaves in inches | | | Length of leaves in inches | | |
|----------------|-----------------------------------|--------------------|--------------------|------------------------------|--------------------|--------------------|-------------------------------|--------------------|--------------------|
| | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} |
| DB 101 | 56.5 | 52.5 | 51.5 | 9.0 | 10.0 | 11.0 | 18.0 | 19.0 | 18.5 |
| 402 | 50.0 | 48.5 | 53.5 | 9.0 | 11.0 | 12.5 | 19.0 | 20.0 | 20.0 |
| White Gold | 47.0 | 48.0 | 50.0 | 6.5 | 9.5 | 9.5 | 18.5 | 20.5 | 19.0 |
| Hicks | 42.0 | 48.0 | 45.5 | 7.5 | 9.5 | 10.5 | 18.5 | 21.5 | 21.5 |
| Speight 42 | 50.5 | 45.0 | 42.5 | 9.5 | 11.0 | 12.5 | 18.0 | 21.0 | 21.0 |
| Mc. V.G. 2 | 47.5 | 43.0 | 45.5 | 8.0 | 9.0 | 10.5 | 17.5 | 20.0 | 20.0 |
| Coker 139 | 51.5 | 47.5 | 47.5 | 8.5 | 8.5 | 10.5 | 16.0 | 18.0 | 20.0 |
| Coker 140 | 51.5 | 45.5 | 48.0 | 8.0 | 9.5 | 11.0 | 18.0 | 19.5 | 20.5 |
| DB 244 | 42.5 | 39.5 | 45.5 | 9.5 | 11.0 | 13.0 | 16.5 | 18.0 | 19.5 |
| Buyer's Choice | 56.0 | 51.0 | 54.5 | 9.5 | 11.0 | 11.5 | 19.5 | 21.0 | 20.5 |
| Golden Gem 711 | 61.5 | 46.5 | 50.5 | 8.5 | 11.0 | 10.0 | 18.5 | 19.5 | 20.0 |
| L.S.D. (.05) | 9.8 | N.S. | N.S. | N.S. | 1.7 | N.S. | 1.8 | 1.7 | N.S. |
| (.01) | | N.S. | N.S. | N.S. | N.S. | N.S. | 2.5 | 2.3 | N.S. |
| C.V. (%) | 9 | 9 | 9 | 10 | 8 | 9 | 5 | 4 | 5 |

^{2/} No. of leaves from top of plant.

Table 9. Comparison of varieties in 1955 for certain characteristics.

TV 74 Rural Hall

| Variety | Yield Lbs/A | Value Index ^{1/} | | Leaf Grade Dist. | | | No. of leaves per plant | Height of plant (in.) | Avg. Length internode (in.) |
|----------------|----------------|---------------------------|----------|------------------|-----------|----------|-------------------------------|-----------------------------|-----------------------------------|
| | | DoI/A | DoI/Cwt. | High % | Med. % | Low % | | | |
| DB 101 | 1438 | 805 | 56.19 | 0 | 75 | 25 | 24.0 | 56.8 | 2.4 |
| 402 | 1422 | 808 | 56.10 | 2 | 76 | 22 | 20.7 | 49.2 | 2.4 |
| White Gold | 1433 | 845 | 58.86 | 16 | 69 | 15 | 18.9 | 42.9 | 2.3 |
| Hicks | 1565 | 939 | 60.01 | 33 | 53 | 14 | 21.2 | 46.1 | 2.2 |
| Speight "42" | 1485 | 798 | 53.71 | 0 | 73 | 27 | 23.2 | 52.5 | 2.3 |
| McNair V.G. 2 | 1522 | 890 | 58.34 | 20 | 66 | 14 | 21.0 | 49.0 | 2.3 |
| Coker 139 | 1993 | 1102 | 55.19 | 23 | 48 | 29 | 27.4 | 49.9 | 1.8 |
| Coker 140 | 1550 | 825 | 53.47 | 7 | 61 | 33 | 27.4 | 53.8 | 2.0 |
| Va. 21 | 1466 | 843 | 57.35 | 17 | 67 | 16 | 20.4 | 49.3 | 2.4 |
| DB 244 | 1639 | 902 | 55.06 | 0 | 72 | 28 | 23.3 | 55.7 | 2.4 |
| Va. 45 | 1331 | 742 | 55.64 | 5 | 69 | 26 | 22.3 | 53.1 | 2.4 |
| Yel. Sp. A | 1401 | 775 | 55.17 | 7 | 72 | 21 | 22.5 | 58.6 | 2.6 |
| Buyer's Choice | 1326 | 694 | 52.28 | 0 | 73 | 27 | 21.7 | 51.4 | 2.4 |
| Golden Gem 711 | 1465 | 810 | 55.12 | 0 | 76 | 24 | 20.6 | 51.6 | 2.5 |
| L.S.D. (.05) | 183 | 110 | 3.08 | | | | 3.2 | 6.0 | .3 |
| (.01) | 243 | 146 | 4.08 | | | | 4.3 | 8.1 | .4 |
| C.V. (%) | 9 | 10 | 4 | | | | 6 | 5 | 6 |

^{1/} Based on 3 year average (1952, 53 and 54) auction price on a government grade basis.

Table 9. Cont. TV-74 Rural Hall 1955

| Variety | Days to Flower | Suckers per plant | | Analyses of Cured Leaf | | | | |
|----------------|----------------|-------------------|-----------|------------------------|-----------|-------------|-------------|-----------|
| | | Ground | Leaf Axil | Nic. % | Nornic. % | Tot. Alk. % | Red. Sug. % | Total N % |
| D.B. 101 | 63 | .7 | 14.4 | 2.55 | .13 | 2.69 | 20.50 | 2.10 |
| 402 | 57 | .2 | 17.8 | 3.16 | .09 | 3.26 | 15.14 | 1.99 |
| White Gold | 55 | .0 | 22.6 | 2.82 | .06 | 2.89 | 18.11 | 1.93 |
| Hicks | 54 | .0 | 27.8 | 2.76 | .12 | 2.94 | 19.14 | 1.82 |
| Speight "42" | 61 | .3 | 13.9 | 1.99 | .09 | 2.10 | 17.64 | 1.79 |
| Mc. V.G. 2 | 55 | .1 | 18.3 | 2.52 | .06 | 2.58 | 18.38 | 1.82 |
| 37 Coker 139 | 69 | .2 | 7.9 | 1.28 | .12 | 1.42 | 18.54 | 1.68 |
| 4 Coker 140 | 65 | .0 | 12.1 | 1.52 | .03 | 1.56 | 16.28 | 1.74 |
| Va. 21 | 57 | .1 | 19.7 | 2.55 | .12 | 2.68 | 17.51 | 1.96 |
| D. B. 244 | 65 | .0 | 7.5 | 1.74 | .22 | 1.99 | 20.58 | 1.85 |
| Va. 45 | 56 | .0 | 23.5 | 2.30 | .13 | 2.44 | 16.18 | 2.07 |
| Y.S.A. | 59 | .3 | 21.0 | 2.72 | .10 | 2.83 | 14.68 | 2.07 |
| Bell #5 | 58 | .2 | 19.6 | 2.88 | .03 | 2.92 | 17.88 | 1.99 |
| Golden Gem 711 | 59 | .2 | 20.4 | 2.96 | .12 | 3.10 | 17.34 | 2.04 |
| L.S.D. (.05) | 3.4 | .2 | 4.3 | .44 | N.S. | .43 | 1.98 | |
| (.01) | 4.5 | .2 | 5.7 | .60 | N.S. | .58 | 2.68 | |
| C.V. (%) | 4 | 77 | 21 | 9 | 57 | 8 | 6 | |

Table 9. Con't. TB-74 Rural Hall 1955

| Variety | Angle of leaf proj. from stalk | | | Width of leaves in inches | | | Length of leaves in inches | | |
|----------------|-----------------------------------|--------------------|--------------------|------------------------------|--------------------|--------------------|-------------------------------|--------------------|--------------------|
| | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} | 5th ^{2/} | 10th ^{2/} | 15th ^{2/} |
| | DB 101 | 69.3 | 33.3 | 37.3 | 6.0 | 8.0 | 9.5 | 13.5 | 15.5 |
| 402 | 71.8 | 30.9 | 38.1 | 7.0 | 8.5 | 10.0 | 15.5 | 18.5 | 21.0 |
| White Gold | 66.8 | 38.1 | 42.9 | 5.5 | 6.5 | 8.5 | 17.0 | 19.0 | 19.5 |
| Hicks | 52.2 | 32.6 | 39.0 | 5.5 | 7.5 | 8.0 | 16.0 | 20.5 | 21.0 |
| Speight 42 | 59.9 | 25.1 | 30.9 | 6.5 | 7.5 | 9.5 | 12.5 | 15.5 | 20.0 |
| Mc. V.G. 2 | 57.8 | 29.9 | 36.0 | 8.0 | 8.0 | 9.5 | 18.0 | 19.5 | 22.5 |
| Coker 139 | 45.6 | 25.2 | 28.2 | 7.0 | 8.0 | 10.0 | 15.0 | 17.0 | 22.0 |
| Coker 140 | 49.7 | 27.4 | 33.9 | 6.5 | 7.0 | 10.0 | 14.0 | 16.0 | 21.5 |
| Va. 21 | 54.7 | 33.1 | 34.8 | 7.0 | 8.5 | 9.5 | 16.0 | 19.5 | 21.0 |
| DB 244 | 46.6 | 26.8 | 29.1 | 6.5 | 9.0 | 10.5 | 12.0 | 15.0 | 20.0 |
| Va. 45 | 78.7 | 28.7 | 38.7 | 6.0 | 7.5 | 8.5 | 14.0 | 17.5 | 20.0 |
| Yel. Sp. A | 69.9 | 30.1 | 36.7 | 8.0 | 8.5 | 10.0 | 17.0 | 19.5 | 22.5 |
| Buyer's Choice | 81.1 | 36.9 | 40.9 | 6.5 | 8.0 | 9.0 | 14.5 | 17.0 | 20.0 |
| Golden Gem 711 | 84.9 | 33.1 | 38.4 | 7.0 | 8.5 | 10.0 | 15.5 | 18.5 | 20.5 |
| L.S.D. (.05) | 17.0 | 7.2 | 6.9 | 1.6 | N.S. | 1.2 | 2.6 | 3.7 | 1.8 |
| (.01) | 13.0 | 9.8 | 9.3 | N.S. | N.S. | 1.7 | 3.6 | 5.0 | 2.4 |
| C.V. (%) | 14 | 12 | 10 | 12 | 11 | 6 | 9 | 11 | 4 |

^{2/} No. of leaves from top of plant.

Table 10. Results of Cooperative Tobacco Variety Evaluation Test 1955.

| Belt | DB 101 | | | DB 244 | | | Coker 139 | | |
|----------------------|----------------|---------------|------------------|----------------|---------------|------------------|----------------|---------------|------------------|
| | Yield Lbs/A | Value \$/A | Index \$/Cwt. | Yield Lbs/A | Value \$/A | Index \$/Cwt. | Yield Lbs/A | Value \$/A | Index \$/Cwt. |
| Border | 1935 | \$949 | 49.50 | 2242 | \$1106 | 49.29 | 2335 | 1261 | 54.23 |
| Eastern | 1711 | 802 | 46.97 | 2105 | 999 | 47.21 | 2281 | 1162 | 50.93 |
| Middle ^{1/} | 1270 | 671 | 52.35 | 1418 | 735 | 51.60 | 1675 | 967 | 57.49 |
| Old | 1275 | 732 | 57.64 | 1510 | 861 | 56.95 | 1608 | 935 | 58.23 |
| Average | 1560 | 789 | 51.62 | 1841 | 931 | 51.26 | 1998 | 1084 | 55.22 |

- 39 -

^{1/} Severe hurricane damage to all tests.

| | | Varieties | | |
|--------|-----|-----------|---------|------------|
| | | Yield | Value/A | Value/Cwt. |
| L.S.D. | .05 | 94 | 59 | 2.08 |
| | .01 | 126 | 80 | 2.79 |
| C.V. | % | 7 | 8 | 5 |

Table 11. Rainfall record in inches by location 1955.

| Days | March | April | May | June | July | August | Sept. | Total |
|---|-------|-------|------|----------|-------------|--------|-------|-------|
| <u>Border Belt Tobacco Research Station, Whiteville, N. C.</u> | | | | | | | | |
| 1-8 | 1.26 | 1.29 | .12 | .52 | .11 | .67 | 5.61 | |
| 9-16 | 1.25 | 2.92 | 1.40 | .06 | 1.59 | 4.67 | 1.16 | |
| 17-24 | .31 | 0 | .76 | 4.61 | .57 | 2.96 | 5.15 | |
| 25-31 | 0 | 0 | .40 | .31 | .19 | .60 | .85 | |
| Total | 2.82 | 4.21 | 2.68 | 5.50 | 2.46 | 8.90 | 12.77 | 39.34 |
| <u>Upper Coastal Plain Research Station, Rocky Mount, N. C.</u> | | | | | | | | |
| 1-8 | 2.16 | .50 | .12 | 2.21 | .37 | 1.06 | 4.38 | |
| 9-16 | 1.37 | .61 | .95 | .91 | 5.06 | 6.51 | .12 | |
| 17-24 | 1.28 | .04 | 2.09 | 3.79 | .19 | 3.36 | 4.28 | |
| 25-31 | 0 | .08 | .90 | 1.14 | .66 | .15 | .05 | |
| Total | 4.81 | 1.23 | 4.06 | 8.05 | 6.28 | 11.08 | 8.83 | 44.34 |
| <u>McCullers Experiment Station, Apex, N. C.*</u> | | | | | | | | |
| 1-8 | .50 | .25 | 0 | .34 (1) | .11 (1.81) | .11 | 8.77 | |
| 9-16 | 1.41 | 3.29 | .54 | 0 (1) | 2.87 | 3.05 | .45 | |
| 17-24 | .74 | 0 | 1.06 | 1.00 (1) | .08 (1.05) | 4.90 | 1.36 | |
| 25-31 | 0 | .15 | 1.29 | 1.02 | 2.04 (1) | 1.45 | .77 | |
| Total | 2.65 | 3.69 | 2.89 | 2.36 (3) | 5.10 (3.86) | 9.51 | 11.35 | 37.55 |

* Figure in parenthesis is amount of water applied as irrigation.

Table 11. Con't. Rainfall record in inches by location 1955.

| Days | March | April | May | June | July | August | Sept. | Total |
|---|-------|-------|------|----------|----------|--------|-------|-------|
| <u>Oxford Tobacco Research Station, Oxford, N. C.*</u> | | | | | | | | |
| 1-8 | 1.36 | .13 | 0 | .99 | .73 (1) | .39 | 1.33 | |
| 9-16 | 1.66 | 1.97 | 1.22 | .55 | 3.44 | 3.46 | .21 | |
| 17-24 | .84 | 1.25 | 1.72 | .26 (1) | .29 (1) | 5.19 | 1.35 | |
| 25-31 | 0 | .16 | .51 | .31 (1) | 2.65 (1) | 0 | .09 | |
| Total | 3.86 | 3.51 | 3.45 | 2.11 (2) | 7.11 (3) | 9.04 | 2.98 | 32.06 |
| <u>Upper Piedmont Tobacco Research Station, Rural Hall, N. C.</u> | | | | | | | | |
| 1-8 | .60 | .24 | 0 | .58 | .97 | .42 | .10 | |
| 9-16 | 1.25 | 4.11 | 1.00 | .78 | 1.47 | 1.17 | 0 | |
| 17-24 | 1.33 | .34 | .94 | 1.08 | 0 | 1.72 | .03 | |
| 25-31 | .07 | .63 | .01 | .37 | 1.78 | .03 | .71 | |
| Total | 3.25 | 5.32 | 1.95 | 2.81 | 4.22 | 3.34 | .84 | 21.73 |

* Figure in parenthesis is amount of water applied as irrigation.