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Measured crop performance

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INTRODUCTION

Five new varieties are being made available for planting the 1960 crop. Several of these and some of the older varieties are high yielders. Yield potential, along with disease resistance and quality information, including chemical characteristics, is important to the grower in considering a variety for planting.

Quality is the most important advantage the United States has in marketing its tobacco throughout the world. From an appraisal point of view, quality may be divided into physical factors and chemical constituents. Among the physical factors important to the trade are color, body and texture. The results of a method of appraising tobacco on these physical factors are presented in this report.

There are a large number of chemical constituents in tobacco. A few of these have been studied widely and found to be important quality factors. Consequently, chemical evaluation is becoming more important in the evaluation of tobacco. The physical appearance may be deceiving; that is, tobacco may look good but may be undesirable chemically. Nicotine is one of the known chemical constituents that affects the smoking quality of tobacco. The ratio of nitrogen to nicotine has been used as an indication of chemical balance within the plant. Too low a content of nicotine or too high a ratio of nitrogen to nicotine has been considered undesirable. Some of the entries tested fell into this category, and some breeders withheld new lines from release due to their poor chemical balance.

Another quality factor that greatly affects the demand for United States flue-cured tobacco is flavor and aroma. Although no reliable method has been developed to measure or determine these traits, this does not eliminate flavor and aroma from serious consideration in the selection of a variety for

planting. Tobacco scientists are currently devoting considerable effort to the development of techniques for determining flavor and aromatic characteristics in tobacco.

Improvements are being made continually in quality evaluation and as these accomplishments are realized they are being utilized in this program. Research and leaf representatives of industry and commercial plant breeders are working cooperatively with United States Department of Agriculture and Agricultural Experiment Station personnel to evaluate breeding lines and study their physical and chemical characteristics before they are released.

The Tobacco Variety Evaluation Program in North Carolina is an effort to fulfill the need for information on varietal performance under diverse soil and climatic conditions. Experiments are conducted to determine agronomic, pathological, and chemical characteristics as well as acceptability, from both the growers' and manufacturers' viewpoint.

The evaluation program is composed of two phases. The first phase consists of testing of varieties and breeding lines by the utilization of small replicated plots located on five research stations. In this program are included experimental lines and varieties, both disease resistant and non-resistant, developed both by public and private agencies. Performance data are made on yield, value, agronomic characteristics, disease resistance, chemical characteristics and physical quality. Tobacco company leaf and research personnel cooperate in the physical and chemical evaluation of this material. The second phase of the program involves a more extensive study of fewer varieties and advanced lines grown under farm conditions in approximately one-half acre plots. Twelve locations were utilized, three in each of the Border, Eastern, Middle and Old Belts in 1959. This part of the evaluation program is a cooperative effort between the Experiment Station, U. S. D. A., tobacco companies, and growers.

Representatives from both domestic and foreign buyers obtain samples of the cured leaf for study in their leaf departments, laboratories and manufacturing plants. The participating companies in 1959 were (1) American Tobacco Company, (2) Brown & Williamson Tobacco Corporation, (3) Imperial Tobacco Company, (4) Liggett & Myers Tobacco Company, (5) Philip Morris, Inc., (6) R. J. Reynolds Tobacco Company and (7) P. Lorillard Tobacco Company.

This report presents data from the 1959 Tobacco Variety Tests and the Cooperative Variety Evaluation Tests. In addition to the 1959 results, a summary of tobacco variety tests during the last six years with respect to acre yield, acre value and value per hundred weight is presented. Also a two year summary of varieties is included for many characteristics.

Similar reports which record previous years' data have been issued. 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 testing over a period of years, and under farmer conditions, is needed to fully evaluate the performance of any variety.

EXPERIMENTAL PROCEDURE

What May Be Tested

Both private breeders and those with federal or state agencies may submit entries. One requirement for acceptance is quantitative data from experiments in which the proposed entry is compared with recognized varieties. These data must reveal meritorious performance in order for a variety or line to qualify for the test. The personnel of the testing program may include entries from seeds 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 in 1959

Bell Seed Farm, Rocky Mount, N. C.

Bissette's Seed Farm, Wilson, N. C.

Coker's Pedigreed Seed Company, Hartsville, S. C.

McNair's Yield-Tested Seed Company, Laurinburg, N. C.

N. C. Agricultural Experiment Station and U.S.D.A., Raleigh, N. C.

Reams Seed Company, Apex, N. C.

S. C. Agricultural Experiment Station and U.S.D.A., Florence, S. C.

Speight Seed Farms, Winterville, N. C.

Virginia Agricultural Experiment Station, Chatham, Va.

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. The experiment numbers and locations were as follows:

- TV 106 Border Belt Tobacco Research Station, Whiteville, N. C. representing the Border Belt.
- TV 107 Upper Coastal Plain Research Station, Rocky Mount, N. C. representing the Eastern Belt.
- TV 108 Central Crops Research Station, Clayton, N. C. representing the Eastern Belt.
- TV 109 Oxford Tobacco Research Station, Oxford, N. C. representing the Middle Belt.
- TV 110 Upper Piedmont Tobacco Research Station, Rural Hall, N. C. representing the Old Belt.

The map in Figure 1 shows the locations of these tests and also the locations of the cooperative grower tests.

METHODS

Official Variety Test

The Official Variety Tests were conducted on disease-free soil, in so far as possible, and the same entries occurred at

every location. All entries were coded in the plant bed and in the field. A total of 34 varieties and advanced lines were included in 1959.

Three replications of a randomized block design were used at each location. The plants were banded and individually selected for transplanting so as to get uniformity within plots. Each two row plot consisted of 40 competitive plants. The rows were 3.5 feet apart and were 38.5 feet long 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 normally accepted as good for the production of tobacco. Fertilizer was applied in accordance with soil test recommendations. TV 106 received 900 pounds of 4-8-10 per acre plus 200 pounds of 4-8-10 and 75 pounds of nitrate of potash (15-0-14) as topdressing. Eight hundred and sixty-five pounds of 4-8-10 plus 375 pounds of 4-8-10 as topdresser was applied on TV 107. TV 108 received 850 pounds of 6-12-15 plus 125 pounds of 8-0-24 as topdresser. TV 109 received 1350 pounds of 4-8-10 only. TV 110 received 600 pounds of 6-12-15 and 50 pounds of nitrate of soda as topdresser per acre.

All entries were topped and hand 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 of the whole plant. ^{1/} Disease reaction was noted in separate tests under severe disease conditions. ^{2/}

^{1/} Chemical analyses were made in the Tobacco Chemistry Laboratory under the supervision of J. A. Weybrew and John L. Hall.

^{2/} The Plant Pathology Faculty including E. L. Moore, N. T. Powell and G. R. Gwynn of the Department of Field Crops cooperated on the tests for disease reaction.

The methods of taking the data were the same as those used in previous years and are as follows:

Ground Suckers: Whenever ground suckers developed, they were removed prior to topping and the number in 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 one leaf below where the stalk commenced a sharp taper towards the flower head. Flowering plants were topped approximately every two days until all topping was complete. An average flowering date, when 50% of the plants had flowered, was calculated.

Number of Leaf Axil 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 weekly.

Number of Harvestable Leaves: The number of leaves that could be harvested during the season was recorded from 5 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 five 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 five 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 each plot and averages calculated.

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 auction price paid for that grade during the 1957 to 1959 seasons through October 1, 1959.

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.

Quality Index: This index was developed in cooperation with Federal and State research workers, representatives of foreign and domestic manufacturers and members of the Federal Grading Service. Each grade was evaluated for physical traits by rating the leaf for color, body and texture. Each of these characteristics was further divided into four categories ranging from good to very poor and a value assigned to each according to its contribution to quality. Color had a value of 35, body 25 and texture 40. A value was calculated for each plot using a score of 0 to 100 with 100 as best. This rating was made by Experiment Station personnel on all entries at all locations, except Rural Hall. In addition, ten of the varieties and advanced breeding lines from one replication at Whiteville and Oxford were rated by six tobacco companies.

Chemical Analyses: A sample of the cured leaf from the whole plant taken on a proportionate basis by weight of leaf grade from each plot was submitted to the tobacco biochemistry laboratory in the Department of Chemistry for chemical analysis. The per cent of the following chemical constituents was determined on a dry weight basis. (1) Nicotine and (2) nornicotine were determined by the Cundiff-Markunas method on one replication from each location but only the

nornicotine is reported in order to indicate converters of nicotine to nornicotine. (3) The total alkaloids as an indication of nicotine were determined on all replications using the Griffith Still. (4) Reducing sugars were by a modification of the Hassid procedure and (5) total nitrogen was by the Kjeldahl method modified to include nitrate nitrogen.

Stand Corrections: 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.

Standard Check Varieties: These checks or standards, Dixie Bright 101 and Hicks Broadleaf, were included for comparison and are the same that are used by other stations as recommended by the Regional Tobacco Variety Evaluation Committee of the Tobacco Workers' Conference. Hicks Broadleaf was substituted for 402 in 1959 because it is currently more widely planted.

The data from all 34 entries were statistically treated.^{3/} This report includes all the data on the breeding lines as

^{3/} Statistical analyses were made in the Statistical Laboratory under the supervision of Dale Matzinger.

well as the released varieties. The commercially available varieties are included in the top of the tables and the breeding lines in the bottom.

In general all tobacco in the Official Variety Test was planted under favorable conditions except Rural Hall which was exceptionally dry. After growth started all locations had varying amounts of drought followed by excessive rains except Whiteville where the rains were not as serious. These drought periods affected the nicotine content causing it to be somewhat higher than the total rainfall picture would indicate. Once rains started the tobacco made very fast growth and also had to be primed very rapidly so that harvest was completed within about a six week period at each location.

The Whiteville test, TV 106, was transplanted April 23 under average conditions with moderate rainfall in May. The first five days of June were rainy which caused rapid growth of the tobacco. Three weeks of dry weather following this period tended to give more body to the leaf but caused harvest to start early. Following this drought period there was almost continuous rain but not enough to damage the tobacco excessively except to make it light in color. Over-all the tobacco in this test tended to be light in color and slightly thinner bodied and smoother textured than normal.

The Rocky Mount test, TV 107, was transplanted May 7 under fairly dry conditions, consequently, the field was irrigated with 1/2 inch of water on May 9. The remainder of May had fair rainfall but the test was irrigated twice in June. During early June the tobacco was cultivated too close, and with the hot dry weather, there was considerable sunscald. A heavy rain in early July followed by a continuous rainy period caused the tobacco to recover but to have only fair texture.

The Clayton test, TV 108, was transplanted May 6 under fair moisture conditions. It was irrigated 3 days later. The tobacco got off to a poor start and showed effects of chemical damage from which it never completely recovered. June was rather dry so the tobacco was irrigated twice. There was excess rain in July. The general quality of the tobacco was low.

The Oxford test, TV 109, was transplanted May 20 under ideal conditions and grew off to a good start. Other than a dry June when the tobacco was irrigated once, rainfall was adequate. In fact, a 5.7 inch rain on July 10 caused severe damage but there was no drowning due to adequate drainage. This was one of the better tests this year and produced fair to good quality tobacco. Granville Wilt attacked some of the susceptible varieties and caused certain plots to be lost.

The Rural Hall test, TV 110, was transplanted May 13 under favorable moisture conditions. There was a drought following this and much replanting was required. June was very dry and as a result the tobacco was severely stunted. There was sufficient moisture in July and early August but the middle of August was again dry. This was the poorest of the tests. The tobacco was not uniform and the quality was poor.

Cooperative Farmer Tests

There were twelve cooperating farmers in the off-station tests with plots approximately one-half acre in size. Two varieties and three breeding lines were included in these tests. Fertility and other cultural practices as shown in Table 13 were those generally used by the growers and were considered moderate but not extreme. The tobacco from these tests was displayed on a warehouse floor for the participating companies to examine and sample for laboratory analyses. Each

company graded the tobacco according to the types they normally use in their manufacturing. In addition, they also rated each lot of tobacco for the physical quality characteristics from which the previously described quality index was determined.

RESULTS AND DISCUSSION

Official Variety Test

The data presented in Tables 1, 1A, 2, 3, and 9 are summary data for various years and locations. These tables will be discussed in detail, however, the remaining tables are of individual tests and will be discussed only to emphasize specific points.

In Table 1 the data are percentage comparisons with the mean performance of Hicks Broadleaf and Dixie Bright 101 from the period 1953-1959. The varieties with the higher number of comparisons have been included in the tests for a number of years while the varieties with only five comparisons have been in the tests only one year. The information on varieties which have been in the tests at several locations for a number of years gives a more accurate estimate of their general performance.

Most varieties in Table 1 maintain their same relative positions for value per acre as they do for yield except Hicks Broadleaf which improved its relative ranking in value per acre because of its higher value per 100 pounds. Bell 15, Hicks Broadleaf and White Gold moved up in value per 100 pounds which is indicative of their good quality. With Coker 187-Hicks there was a drop in value which is indicative of lower quality, particularly in the upper part of the plant.

In Table 1A twelve varieties that were common to the 1958 and 1959 tests are compared over a two year period for a large number of characteristics. The same general trend

was shown in these varieties during both years. Data of more than one year gives a better index of the performance of a variety.

In Table 2 the average performance of varieties are compared at five locations in 1959. The data from all five locations were combined statistically to study average varietal performance over a wide area. Of the commercially available varieties, Coker 187-Hicks, Reams 51, Coker 316, Bissette Special, Speight 31 and McNair H-2 were the higher yielders and generally had the greatest value per acre. Hicks Broadleaf and Bell 15 were moderate yielders but due to their high price per 100 pounds they had relatively high values per acre. For varieties which have been in the tests only one year the data should be considered with caution. At this time it is not known whether or not the new varieties will produce tobacco desired by the trade. Some of the breeding lines such as Speight 34, NC 8045, Va 724-8 and Coker 58-186S were extremely high yielders.

The quality index, a determination based on physical characteristics, was again used. The three factors color, body and texture embody the important quality traits. One or a combination of these may render a line of tobacco undesirable, whereas, all must be acceptable for a tobacco to be desirable. This index currently appears to offer a potentially better method for evaluating physical quality than does price per pound based on government grades.

According to the quality index as shown in Table 2, Hicks Broadleaf rated highest followed by Bell 15. Coker 187-Hicks was lowest. The upper part of the plant of this variety was most noticeable as being poor in quality. The other varieties ranged between these extremes. Some of the breeding lines had a higher index and others a lower index than the commercially available varieties.

Bissette 11 was segregating for plant type with some plants showing the mammoth character and others the Hicks Broadleaf type. This line was not breeding true and was more unstable than any other in the test. Breeding lines should be stable before being entered in the variety test.

Speight 31, Coker 316 and Coker 128 produced more leaves than other varieties. However, some of the breeding lines averaged over 24 leaves per plant. No variety was as tall growing as Dixie Bright 101. Hicks Broadleaf and Bell 15 were considered low growing varieties. Data on internode length, a direct reflection of leaf number and height, are also presented in this table. Dixie Bright 101, Vesta 5, NC 73 and McNair H-2 tended to have wider spaced leaves than other varieties. Some of the breeding lines had very close spaced leaves.

Most varieties were intermediate in maturity, however, a few such as Hicks Broadleaf and Bell 15 were early flowering. Some of the breeding lines such as Bissette 11 were extremely late flowering. Bissette 11 also exhibited the mammoth characteristics in that certain plants failed to flower during the growing season.

Hicks Broadleaf, Bell 15 and Vesta 5 produced the most suckers per plant and Bell 16 and NC 73 the least. Dixie Bright 101 and Reams 51 produced the most ground suckers. Some of the breeding lines had a very low sucker count, an important trait in developing varieties.

NC 73 and McNair H-2 have slightly wider leaves than other varieties in these tests.

Although quality per se cannot be measured precisely at present, certain chemical constituents clearly related to quality can be determined. Four of these constituents,

nornicotine, total alkaloids (nicotine), sugar, and nitrogen, and the ratio of nitrogen to total alkaloids are presented in Table 2.

In general a nicotine content of about 1.75 to 2.75 per cent in a normal year has been found to be satisfactory to the trade. However, nicotine is definitely influenced by environment. A wet season tends to produce tobacco low in nicotine, while a dry season has the opposite effect. The long drought period late in the 1959 growing season caused the nicotine content to be higher than normal. None of these varieties shown in Table 2 had excessively high total alkaloid contents. All commercially available varieties appeared to be in the generally acceptable range of nornicotine, total alkaloids, sugar and nitrogen, although Coker 316 and Speight 31 were on the low side for total alkaloids. Some of the breeding lines such as NC 8045, Va 724-8 and Coker 58-186S had too low total alkaloid content and consequently were not released as varieties.

The ratio of nitrogen to total alkaloids may give some indication of the chemical balance within the plant. An improper balance of the chemical constituents is probably more serious to the tobacco manufacturers than the specific amount of any one constituent, such as nicotine. It is believed that, within limits, the higher the ratio the less desirable the tobacco since it does not age well or have a good flavor upon smoking. Since nitrogen varies with the environment far less than does total alkaloids, a ratio of the two should give a better index for comparison. In Table 2, ratios of nitrogen to total alkaloids are presented for varieties from the Official Variety Tests in 1959. There were differences between varieties. Hicks Broadleaf and Bell 15 had the lowest ratios which is indicative of good quality. While Coker 316 and Speight 31 had the highest

ratios of the commercially available varieties, some of the breeding lines such as NC 8045, Va 724-8 and Coker 58-186S had even higher ratios and were considered undesirable.

Generally the varieties with a low nicotine content and a high ratio of nitrogen to nicotine have been considered as neutral in flavor and aroma. Although there is no known analytical measure for aroma, nicotine, nitrogen, and certain other chemical constituents can be measured precisely. These have a bearing on aroma and the quality of the cigarette smoke.

In Figure 2 the relationship of nicotine percentage, yield and variety is shown for the commercially available varieties in the 1959 tests at five locations. In general the lower yielding varieties such as Hicks Broadleaf, Coker 187 and Bell 15 are higher in per cent nicotine. Coker 316 had the highest yield and lowest per cent nicotine. Speight 31, another high yielder, also had a low nicotine content. In Figure 2A the same relationship is shown for the breeding lines. In general, the breeding lines have higher yields and a lower nicotine content than the generally accepted varieties. A correlation of -0.75 existed between nicotine for each increase of 100 pounds in yield between 1900 and 2600 pounds per acre. Nicotine and yield are both variety traits, that is, each is controlled genetically, however, both are influenced by the environment.

The fact that recent high yielding varieties are generally low in nicotine does not preclude the possibility of the development of higher yielding varieties with desirable levels of nicotine. Yet, it is significant that in the new breeding lines yield is increasing while nicotine content is decreasing. However, there does appear to be some dilution effect of nicotine as the yield is increased. This appears to be in the wrong direction for quality. In breeding programs selection

pressure must be exerted toward improved quality, moderate nicotine, disease resistance and as high yields as can be obtained consistent with quality. With relation to quality, selection pressure must be exerted to retain color, body, texture and other quality factors. However, as the number of selection criteria increases so does the difficulty of keeping them in proper balance likewise increase. With many of the agronomic and pathologic characteristics within an acceptable range, breeders are shifting more and more emphasis on quality.

Information on disease resistance for 1959 is presented in Table 3. Data were only collected on black shank and bacterial wilt in 1959. The level of resistance of varieties such as Dixie Bright 101 to black shank has been classified as low. With new varieties carrying much higher levels of resistance, this represents a definite improvement in germ plasm carrying resistance to black shank. Dixie Bright 101 has a low level of resistance to black shank and Granville wilt. Bell 15 was susceptible to black shank and bacterial wilt. McNair 121 was highly resistant to both diseases. Coker 187-Hicks was highly resistant to black shank and moderately resistant to bacterial wilt. This represents a shift to less bacterial wilt resistance in this variety. NC 73 was highly resistant to black shank. Vesta 5 is now considered moderately resistant to black shank while Reams 51 is considered susceptible. Many of the breeding lines are showing extremely high levels of disease resistance. Disease resistance along with high yield does not seem to be a problem in developing new varieties. The problem seems to be in incorporating disease resistance and high yield with good quality.

In Table 9 data on physical quality appraisal by the companies are shown for certain entries in the 1959 variety tests. PD 42 had the lowest index and Hicks Broadleaf the

highest. The high quality index for Hicks Broadleaf is indicative of its acceptable quality. This data agrees with that taken by Experiment Station personnel on these same varieties.

Cooperative Evaluation Tests

In Table 10 data on yield and value are shown for the 1959 cooperative tests with tobacco farmers and manufacturers. NC 73 had the lowest yield and NC 8037 the highest. NC 475-2 had the highest value per acre and Hicks Broadleaf had the highest value per 100 pounds.

The cooperating growers rated the entries for preference based on general field handling characteristics, curability and quality. Based on a scale of 1 to 5 with 1 being best, line 475-2 was rated 1.50, Hicks 1.83, NC 73 3.08, 8037 3.92 and 8098 4.25. The line 475-2 was rated first by eight of the farmers, second by two and third by two. It did not receive any ratings below three. On the other hand, Hicks was rated first by 4 growers, second by five, third by one and fifth by one.

Quality appraisal forms were used in evaluating these farmer grown tobaccos by the tobacco companies. As shown in Table 11 Hicks Broadleaf received the highest rating with NC 475-2 second. Hicks Broadleaf was rated first by five companies and second by one. NC 475-2 was rated first by one company, and second by five. NC 8037 was rated lowest by all companies.

An index for the amount graded by the six participating companies was calculated and is shown in Table 12. The index ranged from 0 to 6 with six showing that all tobacco was graded by all of the participating companies. With the wide range of types in demand by the different companies it would not be expected that any variety would receive an index of 6, indicating that all companies could grade all of a particular

variety. The index for entries in decreasing order was: Hicks, NC 475-2, NC 73 and 8037. This grade index is indicative of the acceptability and desirability of these tobaccos.

It is important for the grower to study and consider all available data in choosing a variety of tobacco. The variety should be resistant to prevalent soil-borne diseases, easy to handle in the field and in curing, and produce a profitable yield of leaf possessing physical and chemical properties desired by the trade.

Table 1. Percentage Comparison With the Mean of Hicks Broadleaf and DB 101 of Certain Flue-Cured Tobacco Varieties in the Official Tobacco Variety Tests. 1953-1959.

Standard Hicks Broadleaf + DB 101 2		Acre Yield 1836	Acre Value \$1022	Value per 100 lbs. \$55.30
No. Comparisons*				
5	Coker 316 (119)	Coker 316 (121)	Hicks Broadleaf (104)	
15	Coker 187-Hicks (114)	Speight 31 (111)	White Gold (103)	
5	Speight 31 (110)	Coker 187-Hicks (107)	Coker 316 (103)	
13	Speight 42 (108)	McNair VG 2 (106)	Speight 31 (102)	
13	McNair VG 2 (107)	McNair H-2 (105)	Coker 128 (102)	
10	McNair H-2 (105)	Hicks Broadleaf (105)	McNair H-2 (100)	
18	Va 21 (105)	Coker 128 (105)	Bell 15 (100)	
10	Reams 51 (105)	Va 21 (104)	Va 21 (99)	
10	Bissette Sp. (104)	Speight 42 (104)	McNair VG 2 (99)	
5	Coker 128 (104)	Reams 51 (103)	Yel. Sp. A (99)	
20	Bell 15 (103)	Bissette Sp. (103)	S.C. 58 (99)	
15	Vesta 5 (103)	Bell 15 (102)	Coker 156 (99)	
15	McNair 121 (102)	Vesta 5 (102)	Bissette Sp. (99)	
31	Hicks Broadleaf (101)	White Gold (100)	NC 73 (98)	
10	Bell 16 (101)	McNair 121 (97)	Reams 51 (98)	
15	NC 73 (100)	NC 73 (97)	Oxford 1-181 (97)	
31	DB 101 (99)	Bell 16 (97)	DB 101 (96)	
20	Coker 187 (99)	Yel. Sp. A (97)	Vesta 5 (96)	
11	Yellow Sp. A (98)	DB 101 (95)	Bell 16 (96)	
11	White Gold (98)	Coker 187 (93)	McNair 121 (95)	
10	S.C. 58 (92)	S.C. 58 (91)	Speight 42 (95)	
5	Coker 156 (92)	Coker 156 (91)	Coker 187 (94)	
16	Oxford 1-181 (86)	Oxford 1-181 (84)	Coker 187-Hicks (94)	

* Number of times appeared in tests with DB 101 and Hicks Broadleaf. Same applies for acre value and value per 100 lbs. as for yield.

Table 1A. Comparison of certain varieties over two years at five locations in the Official Tobacco Variety Test, 1958 and 1959.

Varieties	Yield Lbs/A	Value Index		No. of leaves per plant	Height of plant (in.)	Ave. length of internode (in.)	Days to flower
		Dol/A	Dol/Cwt.				
DB 101	1928	1056	54.52	19.7	55.9	2.8	59
Hicks	1995	1181	58.71	17.1	41.7	2.5	49
Coker 187	1968	1063	53.51	18.6	46.9	2.5	56
Bell 15	2011	1194	58.92	17.2	41.6	2.4	50
Vesta 5	2022	1140	56.05	18.1	50.6	2.8	54
McNair 121	1988	1056	52.77	18.4	46.0	2.5	57
Coker 187-Hicks	2211	1172	52.80	20.5	47.1	2.3	58
Reams 51	2066	1155	55.47	19.6	49.9	2.5	59
Bell 16	1985	1087	54.33	18.3	48.0	2.6	54
NC 73	1957	1080	54.67	17.5	48.6	2.8	53
McNair H-2	2057	1174	56.59	18.6	51.4	2.8	55
NC 475-2	2174	1216	55.53	18.4	46.9	2.6	56

Varieties	Nornic. %	Tot. Alk. %	Red. Sug. %	Tot. N %	Ratio N/Nic
Hicks	.17	3.00	18.58	1.86	.63
Coker 187	.19	2.94	17.12	1.97	.67
Bell 15	.15	2.92	18.78	1.81	.63
Vesta 5	.19	2.88	18.74	1.84	.72
McNair 121	.21	2.78	16.33	1.88	.69
Coker 187-Hicks	.16	2.55	18.44	1.80	.70
Reams 51	.16	2.61	18.75	1.79	.68
Bell 16	.17	2.67	16.11	1.87	.72
NC 73	.19	2.92	16.47	1.91	.66
McNair H-2	.14	2.86	16.93	1.97	.69
NC 475-2	.18	2.41	17.46	1.83	.77

Varieties	Suckers per plant		Width of leaves in inches			Length of leaves in inches		
	Ground	Leaf Axil	5th	10th	15th	5th	10th	15th
Hicks	1.7	19.9	9.6	11.5	12.4	22.3	23.3	21.2
Coker 187	.8	15.3	9.9	12.0	13.6	19.1	21.5	20.9
Bell 15	1.7	20.2	9.6	11.5	12.3	22.0	23.3	21.1
Vesta 5	2.9	19.0	9.7	12.1	13.0	19.7	22.5	21.3
McNair 121	1.9	17.2	10.2	12.0	13.6	18.8	21.2	21.2
Coker 187-Hicks	3.2	18.3	10.0	12.0	13.6	18.9	21.6	21.9
Reams 51	4.2	16.5	9.4	11.5	13.7	18.8	21.3	21.8
Bell 16	1.4	15.8	10.0	12.2	13.6	21.0	23.1	22.0
NC 73	1.4	14.6	9.9	12.8	14.3	19.7	22.2	21.3
McNair H-2	2.5	18.8	10.8	13.4	14.8	18.4	22.0	21.2
NC 475-2	.6	13.5	9.0	11.7	13.9	19.5	22.5	22.3

Table 2. Comparison of varieties in 1959 for certain characteristics. Combined for all locations. TV 106 - Whiteville, TV 107 - Rocky Mount, TV 108 - Clayton, TV 109 - Oxford, TV 110 - Rural Hall

Varieties	Yield Lbs/A	Value Dol/A	Index $\frac{1}{\text{Dol/Cwt}}$	Quality Index	No. of leaves per plant	Height of plant (in.)	Ave. length of internode (in.)	Days to flower
Commercially Available Varieties								
DB 101	1940	1086	55.79	38	20.0	58.0	2.9	63
Hicks B. Leaf	2061	1255	60.19	59	16.9	43.2	2.6	51
Coker 187	2008	1087	53.80	34	18.4	48.1	2.6	57
Bell 15	2050	1239	59.98	58	17.1	43.3	2.5	52
Vesta 5	2065	1208	58.32	46	18.3	52.3	2.9	57
McNair 121	2054	1102	53.44	37	18.8	48.1	2.6	59
Coker 187-Hicks	2240	1183	52.83	32	20.5	48.4	2.4	60
Reams 51	2146	1224	56.72	38	19.7	52.1	2.6	62
Bell 16	2061	1159	55.69	43	19.0	50.6	2.7	58
NC 73	2013	1145	56.35	52	17.9	50.6	2.8	56
Bissette Special	2142	1247	57.91	46	18.8	50.2	2.7	56
Speight 31	2195	1296	59.05	46	21.6	50.9	2.4	61
McNair H-2	2164	1271	58.35	50	19.1	53.2	2.8	58
Coker 316	2371	1416	59.74	53	21.1	50.8	2.4	61
Coker 128	2086	1233	59.00	49	21.4	49.9	2.3	59
Advanced Breeding Lines								
Bissette 11	2383	1289	53.78	34	28.8	60.3	2.1	72
Speight 34	2423	1464	60.30	56	21.2	50.5	2.4	63
McNair 829	2189	1261	57.40	38	19.5	51.4	2.6	59
NC 73 Br	2080	1173	55.81	48	18.8	52.0	2.8	56
NC 475-2	2279	1313	57.48	50	18.9	50.3	2.7	59
NC 8037	2245	1235	54.60	39	20.2	48.1	2.4	59
NC 8040	2360	1348	57.10	41	24.2	52.8	2.2	66
NC 8045	2415	1435	59.25	51	23.6	55.5	2.4	68
NC 8054	2203	1188	53.74	41	22.6	54.7	2.4	65
NC 8058	2205	1302	59.01	48	18.4	46.5	2.5	58
NC 8069	2209	1276	58.00	52	20.3	46.2	2.3	60
NC 8071	2341	1375	58.71	42	21.8	49.6	2.3	62
NC 8098	2189	1104	50.04	28	27.7	60.4	2.2	66
PD 42	2200	1261	57.01	51	18.4	47.0	2.6	58
PD 611	2159	1237	57.15	40	24.3	51.9	2.1	62
Va 724-8	2519	1484	58.78	49	19.8	52.1	2.6	61
Va 815	2262	1358	60.11	43	23.1	54.0	2.4	65
Coker 58-186S	2554	1552	60.81	62	21.9	52.8	2.4	65
Coker 58-126-1N	2263	1306	57.50	39	21.0	51.1	2.4	62
L.S.D. (.05)	84	60	1.79	9	.9	2.2	.10	2
(.01)	111	78	2.35	12	1.1	2.9	.13	3
C. V. (%)	5	7	4	21	6	6	5	5

$\frac{1}{\text{I}}$ Based on 3 yr. ave. all belts 1957-58-59 auction price on gov't. grade basis. 1959 prices through October 1.

Table 2. Continued. Combined Analyses of All Locations - 1959

Varieties	Suckers per plant		Width of leaves			Length of leaves		
	Ground	Leaf	in inches			in inches		
		Axil	5th ^{1/}	10th ^{1/}	15th ^{1/}	5th ^{1/}	10th ^{1/}	15th ^{1/}
Commercially Available Varieties								
DB 101	4.3	18.4	8.9	11.5	13.5	17.3	20.9	21.5
Hicks B. Leaf	1.7	20.4	9.2	11.6	12.9	22.2	24.0	22.1
Coker 187	.8	17.2	9.3	11.7	13.9	18.8	21.9	22.1
Bell 15	1.9	20.9	9.3	11.7	12.6	22.0	24.4	22.2
Vesta 5	3.2	21.0	9.2	12.0	13.4	19.2	22.8	22.2
McNair 121	1.9	19.2	9.7	12.0	14.0	18.4	21.6	22.2
Coker 187-Hicks	2.6	19.0	9.6	12.1	13.8	18.4	22.0	22.9
Reams 51	4.4	17.3	8.9	11.3	14.0	18.3	21.7	22.7
Bell 16	1.4	16.5	9.2	12.2	14.0	20.2	23.4	23.2
NC 73	1.5	15.4	9.1	12.5	14.8	19.0	22.7	22.5
Bissette Special	2.0	17.3	9.8	12.5	14.1	20.5	23.8	23.4
Speight 31	3.3	20.4	8.9	10.5	12.4	19.7	22.8	24.2
McNair H-2	2.4	19.3	10.3	13.2	15.1	17.8	22.4	22.4
Coker 316	3.6	18.1	9.1	11.1	13.6	18.1	21.6	23.2
Coker 128	.7	19.8	7.0	9.1	11.3	18.6	22.2	23.2
Advanced Breeding Lines								
Bissette 11	1.2	10.4	6.2	7.9	9.9	18.4	21.6	23.5
Speight 34	1.7	18.0	9.1	11.0	13.2	18.4	22.0	23.5
McNair 829	1.1	15.5	8.3	10.4	12.1	19.0	21.9	22.6
NC 73 Br	.9	17.9	8.7	12.1	14.5	18.7	22.7	23.3
NC 475-2	.7	14.9	8.1	11.4	14.3	18.4	22.9	23.8
NC 8037	1.2	17.7	8.1	10.3	12.7	17.1	21.0	22.8
NC 8040	1.0	15.3	7.6	9.1	11.6	18.4	22.1	24.6
NC 8045	2.8	11.1	7.4	9.1	11.4	17.4	21.2	23.3
NC 8054	1.9	12.1	7.6	9.5	12.2	17.0	21.0	23.3
NC 8058	2.0	17.9	10.3	12.3	13.6	18.7	21.4	21.5
NC 8069	1.3	16.4	8.2	10.6	13.2	18.1	21.6	22.9
NC 8071	2.7	16.5	9.7	11.5	14.0	17.4	20.6	22.5
NC 8098	1.7	15.5	6.9	8.0	9.6	15.0	17.6	19.7
PD 42	.6	13.8	9.2	12.0	13.6	19.2	22.1	21.3
PD 611	1.5	15.8	7.2	8.5	11.2	18.7	22.0	24.3
Va 724-8	.8	13.3	8.6	11.2	14.0	18.4	22.4	23.5
Va 815	4.0	21.1	8.2	10.0	12.0	18.1	21.0	22.8
Coker 58-186S	2.4	15.0	8.5	10.4	12.7	17.0	20.7	22.4
Coker 58-126-1N	2.0	15.6	7.7	9.6	12.4	18.6	22.4	24.2
L.S.D. (.05)	.5	2.0	.5	.5	.6	.8	.7	.8
(.01)	.6	2.6	.6	.7	.8	1.1	1.0	1.0
C. V. (%)	33	17	8	7	6	6	5	5

^{1/} No. leaves from top of plant.

Table 2. Continued. Combined Analyses of All Locations. 1959

Varieties	Analyses of Cured Leaf				Ratio
	Nornic. %	Tot. Alk. %	Red. Sug. %	Tot. N %	
Commercially Available Varieties					
DB 101	.21	2.59	19.90	2.38	.94
Hicks B. Leaf	.18	3.02	16.83	2.26	.78
Coker 187	.23	3.12	14.96	2.45	.81
Bell 15	.16	3.06	16.65	2.24	.78
Vesta 5	.22	2.79	17.89	2.32	.98
McNair	.22	2.89	14.31	2.40	.88
Coker 187-Hicks	.17	2.70	16.56	2.26	.85
Reams 51	.15	2.70	17.15	2.26	.84
Bell 16	.18	2.69	13.92	2.38	.92
NC 73	.20	2.94	15.18	2.36	.83
Bissette Special	.21	2.74	16.95	2.27	.92
Speight 31	.15	2.18	14.44	2.27	1.12
McNair H-2	.13	2.83	15.83	2.35	.84
Coker 116	.14	2.11	15.30	2.17	1.10
Coker 128	.18	2.69	16.14	2.31	.92
Advanced Breeding Lines					
Bissette 11	.10	2.29	14.01	2.16	.97
Speight 34	.09	1.84	15.64	2.12	1.20
McNair 829	.17	3.18	18.45	2.36	.77
NC 73 Br	.18	2.99	14.18	2.44	.86
NC 475-2	.16	2.45	16.04	2.30	.96
NC 8037	.16	2.49	16.42	2.28	.97
NC 8040	.09	1.94	14.07	2.29	1.24
NC 8045	.13	1.64	12.11	2.22	1.45
NC 8054	.13	1.90	12.49	2.39	1.28
NC 8058	.15	1.87	15.10	2.25	1.26
NC 8069	.21	2.97	15.32	2.49	.94
NC 8071	.19	2.54	15.95	2.19	.97
NC 8098	.16	2.11	13.47	2.27	1.12
PD 42	.21	2.99	15.44	2.32	.80
PD 611	.13	2.62	15.92	2.13	.88
Va 724-8	.11	1.66	18.30	2.09	1.29
Va 815	.13	2.01	14.29	2.23	1.12
Coker 58-186S	.12	1.71	16.76	2.03	1.24
Coker 58-126-1N	.16	1.93	14.63	2.28	1.32
L.S.D. (.05)	---	.26	1.32	.15	.16
(.01)	---	.34	1.74	.20	.22
C. V. (%)	---	14	12	7	18

Table 3. Summary Information on Disease Resistance 1959

Varieties	Black Shank - 1959			Bacterial Wilt - 1959		
	% Diseased		Level of Resistance ^{1/}	Gr. House Wilt Index ^{2/}	Field Per Cent Diseased	Level of Resistance
	Dall Farm	Davis Farm				
Commercially Available Varieties						
DB 101	4.1	49.3	Low	20	4.0	High
Hicks B. Leaf	76.0	98.6	Susc.	78	72.5	Susc.
Coker 187	4.0	19.1	High	25	6.7	High
Bell 15	82.6	100.0	Susc.	73	49.3	Susc.
Vesta 5	12.5	48.6	Moderate	81	54.7	Susc.
McNair 121	18.2	25.2	High	16	1.3	High
Coker 187-Hicks	8.2	26.0	High	46	4.0	Moderate
Reams 51	72.0	84.8	Susc.	38	4.0	Moderate
Bell 16	23.5	25.8	Moderate	30	13.3	Moderate
NC 73	4.3	21.0	High	45	16.7	Susc.
Bissette Special	87.8	100.0	Susc.	80	61.3	Susc.
Speight 31	6.3	33.8	Moderate	49	13.3	Low
McNair H-2	89.6	100.0	Susc.	71	61.1	Susc.
Coker 316	12.5	4.1	High	32	1.3	Moderate
Coker 128	42.0	40.0	Moderate	28	5.3	Moderate
Advanced Breeding Lines						
Bissette 11	48.0	78.8	Susc.	77	48.0	Susc.
Speight 34	75.3	97.2	Susc.	79	31.7	Susc.
McNair 829	6.0	39.1	Moderate	70	32.9	Susc.
NC 73 Br	6.0	23.3	High	61	30.2	Susc.
NC 475-2	12.4	26.7	Moderate	70	1.3	Susc.
NC 8037	0.0	15.3	High	41	11.0	Low
NC 8040	4.3	17.6	High	58	4.0	Susc.
NC 8045	14.4	52.2	Low	17	1.3	High
NC 8054	27.4	33.0	Moderate	47	0.0	Low
NC 8058	2.1	6.3	High	14	1.3	High
NC 8069	0.0	1.3	High	27	1.4	Moderate
NC 8071	6.5	21.8	High	52	12.0	Low
NC 8098	12.3	14.0	High	10	2.7	High
PD 42	6.1	7.1	High	27	1.3	Moderate
PD 611	86.6	100.0	Susc.	64	61.0	Susc.
Va 724-8	10.4	10.9	High	60	14.9	Susc.
Va 815	6.2	12.3	High	53	26.7	Low
Coker 58-186S	6.0	2.7	High	53	5.4	Low
Coker 58-126-1N	18.4	76.5	Susc.	12	34.6	Moderate

^{1/} A relative rating based on 1959 data plus information from other disease tests

^{2/} Wilt Index: 0 = no wilt; 100 = maximum wilt development.

**Relationship of Total Alkaloid Percentage
Yield and Commercially Available Varieties
1959
N. C. Official Variety Test**

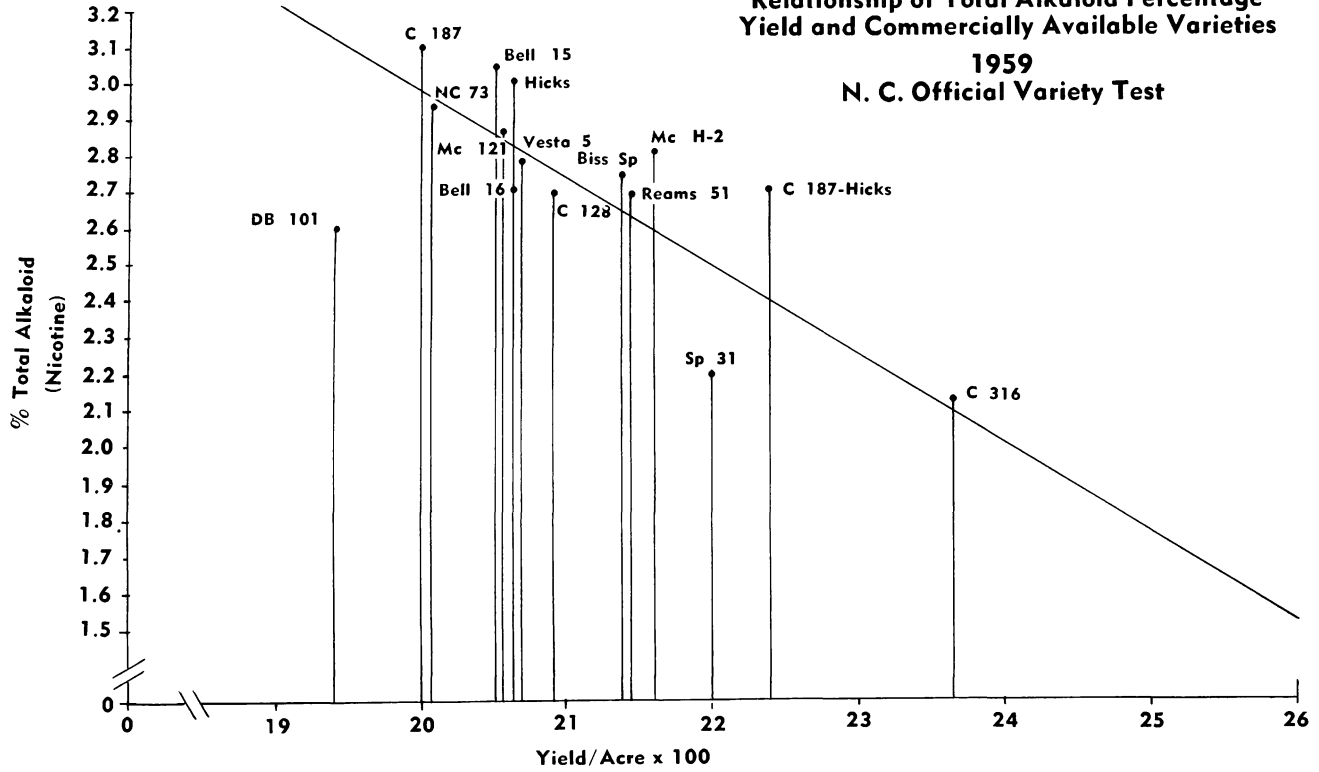


Figure 2

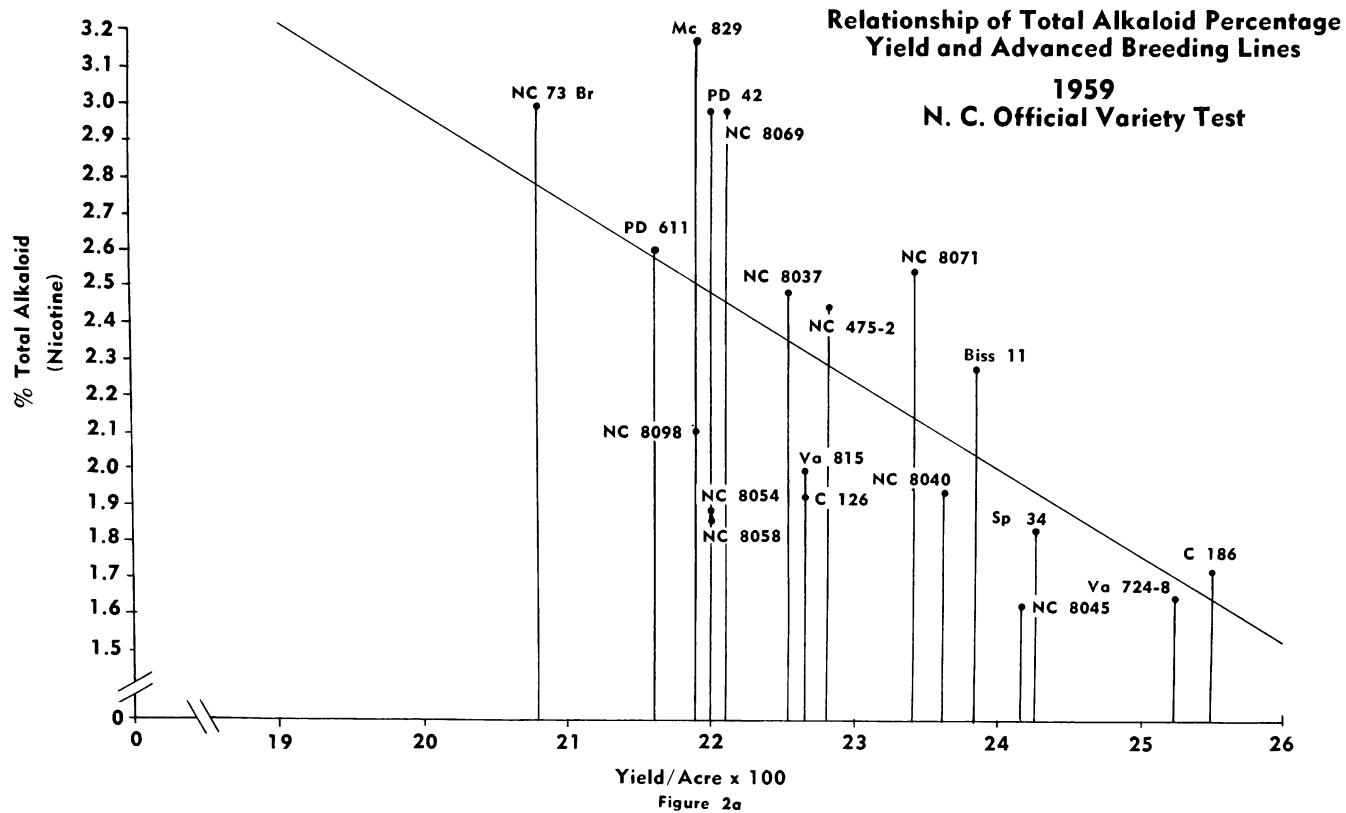


Table 4. Comparison of varieties in 1959 for certain characteristics. TV 106 - Whiteville

Varieties	Yield Lbs/A	Value Dol/A	Index ^{1/} Dol/Cwt	Quality Index	No. of leaves per plant	Height of plant (in.)	Ave. length of internode (in.)	Days to flower
Commercially Available Varieties								
DB 101	2061	1246	60.47	67	17.7	63.7	3.6	60
Hicks B. Leaf	2428	1594	65.63	76	15.8	53.7	3.4	49
Coker 187	2289	1406	61.42	50	17.3	56.1	3.2	56
Bell 15	2438	1571	64.44	79	16.0	53.5	3.3	50
Vesta 5	2396	1483	61.84	60	16.6	58.9	3.6	53
McNair 121	2250	1338	59.48	68	17.8	54.5	3.1	58
Coker 187-Hicks	2388	1396	58.45	51	18.4	53.5	2.9	55
Reams 51	2419	1469	60.76	51	19.0	57.5	3.0	60
Bell 16	2335	1428	61.15	65	17.5	57.8	3.3	54
NC 73	2410	1533	63.64	67	16.9	59.3	3.5	51
Bissette Special	2423	1510	62.33	65	17.2	57.3	3.3	53
Speight 31	2334	1470	63.01	43	20.3	56.3	2.8	58
McNair H-2	2400	1489	62.05	70	17.7	60.7	3.4	55
Coker 316	2604	1669	64.10	47	19.6	57.1	2.9	59
Coker 128	2408	1499	62.27	61	20.5	57.0	2.8	56
Advanced Breeding Lines								
Bissette 11	2650	1573	59.23	55	24.4	59.1	2.4	64
Speight 34	2629	1658	62.99	60	19.5	55.1	2.8	57
McNair 829	2454	1509	61.52	60	18.4	59.3	3.2	57
NC 73 Br	2482	1545	62.24	64	17.2	58.8	3.4	53
NC 475-2	2594	1612	62.06	70	17.1	55.0	3.2	53
NC 8037	2698	1614	59.80	54	18.4	54.9	3.0	57
NC 8040	2564	1626	63.42	36	24.0	56.5	2.4	60
NC 8045	2646	1668	63.04	67	21.7	60.8	2.8	63
NC 8054	2475	1488	60.12	58	21.4	61.7	2.9	61
NC 8058	2456	1584	64.49	63	15.9	51.9	3.3	53
NC 8069	2415	1486	61.52	66	19.1	51.0	2.7	55
NC 8071	2587	1588	61.39	40	20.3	52.6	2.6	57
NC 8098	2522	1429	56.68	41	26.6	61.3	2.3	61
PD 42	2543	1578	62.10	75	17.6	53.7	3.0	53
PD 611	2474	1508	60.95	41	23.2	56.3	2.4	57
Va 724-8	2942	1819	61.88	55	18.3	58.9	3.2	54
Va 815	2291	1476	64.48	36	20.2	57.7	2.9	60
Coker 58-186S	2779	1733	62.35	60	21.0	57.7	2.7	61
Coker 58-126-1N	2514	1581	62.84	47	18.7	58.8	3.1	59
L.S.D. (.05)	130	111	2.55	17	1.8	3.0	.26	2
(.01)	173	148	3.39	23	2.4	4.0	.35	3
C. V. (%)	3	4	3	14	6	3	5	2

^{1/} Based on 3 yr. ave. all belts 1957-58-59 auction price on gov't. grade basis. 1959 prices through October 1.

Table 4. Continued. TV 106 Whitveille - 1959

Varieties	Suckers per plant		Width of leaves			Length of leaves		
	Ground	Leaf Axil	in inches			in inches		
			5th ^{1/}	10th ^{1/}	15th ^{1/}	5th ^{1/}	10th ^{1/}	15th ^{1/}
Commercially Available Varieties								
DB 101	6.0	22.2	7.9	12.0	15.3	16.3	21.8	23.6
Hicks B. Leaf	1.7	18.3	8.5	12.9	14.7	21.1	25.7	23.8
Coker 187	.3	16.9	8.5	12.7	16.5	17.5	23.5	24.5
Bell 15	1.6	19.0	9.1	13.0	14.8	22.3	27.0	24.1
Vesta 5	4.9	18.5	9.7	14.1	15.6	20.3	25.7	23.3
McNair 121	2.1	20.9	8.5	12.5	16.1	16.5	23.1	24.2
Coker 187-Hicks	3.5	20.8	8.3	12.7	16.2	16.4	22.3	24.9
Reams 51	5.5	21.3	7.7	11.6	16.5	15.7	21.9	24.5
Bell 16	.4	19.1	8.4	12.8	16.0	18.7	24.3	25.4
NC 73	1.2	16.1	9.1	13.9	17.2	19.3	24.3	23.3
Bisette Special	2.0	16.3	8.9	13.5	15.8	18.8	24.7	24.9
Speight 31	4.2	22.4	7.4	10.3	13.7	17.6	23.5	26.5
McNair H-2	3.6	21.1	9.7	14.5	17.0	16.3	24.3	24.5
Coker 316	3.9	20.3	7.6	10.9	15.4	15.5	21.2	24.9
Coker 128	.4	20.2	6.0	9.1	12.8	17.2	22.7	25.5
Advanced Breeding Lines								
Bisette 11	.8	16.6	5.4	7.5	11.7	16.8	21.7	25.6
Speight 34	2.0	24.0	7.7	10.9	15.1	15.9	22.5	25.3
McNair 829	.2	16.3	6.9	10.7	14.4	17.0	22.5	24.8
NC 73 Br	.7	17.1	8.2	13.2	17.4	18.0	24.0	25.4
NC 475-2	.4	15.2	7.6	12.5	16.7	17.5	24.3	25.7
NC 8037	.8	18.0	7.4	10.6	14.7	14.7	21.5	24.9
NC 8040	1.3	20.1	5.5	.8	11.4	14.2	20.3	25.4
NC 8045	2.8	15.8	5.9	.8	12.4	14.5	19.8	24.9
NC 8054	2.3	14.7	6.0	9.0	13.7	14.4	20.8	24.9
NC 8058	2.6	19.7	9.7	13.5	15.2	17.7	22.9	22.5
NC 8069	1.5	20.4	6.5	10.0	14.2	15.1	21.4	24.6
NC 8071	3.2	20.3	7.9	11.1	15.6	15.0	19.9	23.9
NC 8098	1.4	19.1	5.0	6.1	8.7	11.1	14.6	18.9
PD 42	.4	15.5	8.1	12.8	15.9	17.6	23.9	23.3
PD 611	1.4	20.1	6.3	.8	11.7	16.4	21.5	26.4
Va 724-8	1.4	16.0	7.8	12.5	17.1	17.0	24.3	26.5
Va 815	4.9	26.9	6.8	.9	12.7	15.9	20.9	24.1
Coker 58-186S	2.9	17.5	6.2	.9	13.5	13.2	19.0	23.8
Coker 58-126-1N	1.7	19.7	5.9	9.1	14.4	15.6	22.1	25.8
L.S.D. (.05)	1.1	3.7	.9	1.3	1.2	1.6	1.6	1.4
(.01)	1.4	4.7	1.2	1.7	1.6	2.2	2.1	1.9
C. V. (%)	30	11	7	7	5	6	4	3

^{1/} No. leaves from top of plant.

Table 4. Continued. TV 106 Whiteville - 1959

Varieties	Analyses of Cured Leaf			Tot. N %	Ratio N/TA
	Nornic. %	Tot. Alk. %	Red. Sug. %		
Commercially Available Varieties					
DB 101	.21	2.31	21.74	2.00	.91
Hicks B. Leaf	.19	2.60	18.44	1.86	.78
Coker 187	.17	2.67	15.89	2.02	.80
Bell 15	.14	2.47	17.59	1.89	.82
Vesta 5	.18	2.53	19.26	1.94	.76
McNair 121	.21	2.45	15.48	1.98	.87
Coker 187-Hicks	.07	2.13	18.41	1.79	.86
Reams 51	.10	2.28	18.26	1.88	.84
Bell 16	.10	2.35	15.78	1.95	.88
NC 73	.09	2.37	17.48	1.82	.82
Bissette Special	.10	2.14	18.26	1.89	.90
Speight 31	.07	1.82	17.55	1.85	1.08
McNair H-2	.08	2.35	17.07	1.94	.82
Coker 316	.12	1.51	15.18	1.74	1.24
Coker 128	.17	2.08	17.30	1.94	1.10
Advanced Breeding Lines					
Bissette 11	.08	1.90	16.37	1.76	.94
Speight 34	.10	1.59	15.66	1.68	1.08
McNair 829	.11	2.62	20.55	1.90	.74
NC 73 Br	.13	2.40	16.81	1.95	.88
NC 475-2	.11	2.10	18.63	1.88	.90
NC 8037	.13	1.88	19.03	1.80	.92
NC 8040	.07	1.67	17.89	1.75	1.12
NC 8045	.12	1.39	15.11	1.72	1.22
NC 8054	.10	1.55	14.44	1.93	1.27
NC 8058	.10	1.44	19.70	1.82	1.32
NC 8069	.15	2.28	17.15	2.00	.90
NC 8071	.24	2.39	18.93	1.80	.80
NC 8098	.13	1.65	16.07	1.80	1.32
PD 42	.16	2.50	18.44	1.88	.82
PD 611	.11	2.28	15.78	1.90	.86
Va 724-8	.05	1.26	19.22	1.71	1.42
Va 815	.07	1.80	17.15	1.80	1.08
Coker 58-186S	.06	1.44	19.59	1.62	1.24
Coker 58-126-1N	.08	1.58	15.67	1.78	1.24
L.S.D. (.05)	---	.33	2.85	N.S.	.24
(.01)	---	.44	3.79	N.S.	.32
C. V. (%)	---	10	10	6	12

Table 5. Comparison of varieties in 1959 for certain characteristics. TV 107 - Rocky Mount

Varieties	Yield Lbs/A	Value Dol/A	Index ^{1/} Dol/Cwt	Quality Index	No. of leaves per plant	Height of plant (in.)	Ave. length of internode (in.)	Days to flower
Commercially Available Varieties								
DB 101	2036	1134	55.74	24	22.1	59.3	2.7	55
Hicks B. Leaf	2145	1311	61.16	53	18.6	45.1	2.4	49
Coker 187	2173	1139	52.40	24	20.1	51.0	2.5	54
Bell 15	2153	1329	61.70	47	18.5	43.5	2.3	49
Vesta 5	2208	1276	57.78	34	20.1	54.8	2.7	53
McNair 121	2149	1194	55.57	27	19.8	46.3	2.3	55
Coker 187-Hicks	2441	1328	54.43	26	22.3	48.0	2.2	55
Reams 51	2259	1332	59.00	43	21.5	52.4	2.4	55
Bell 16	2171	1222	56.26	40	20.4	53.0	2.6	51
NC 73	2090	1186	56.74	40	19.8	54.3	2.7	52
Bissette Special	2330	1364	58.57	37	20.6	51.3	2.5	50
Speight 31	2385	1382	57.97	39	23.6	50.1	2.1	54
McNair H-2	2349	1428	60.77	44	20.5	53.2	2.6	52
Coker 316	2455	1482	60.39	50	22.1	51.1	2.3	56
Coker 128	2169	1262	58.18	42	24.3	50.7	2.1	54
Advanced Breeding Lines								
Bissette 11	2591	1358	52.37	28	33.9	68.3	2.0	67
Speight 34	2665	1649	61.89	56	22.0	49.1	2.2	55
McNair 829	2313	1317	56.88	27	21.7	50.5	2.3	54
NC 73 Br	2180	1211	55.61	32	20.9	55.1	2.6	53
NC 475-2	2262	1292	57.16	29	20.0	52.9	2.6	53
NC 8037	2419	1305	53.96	26	22.8	51.4	2.2	55
NC 8040	2445	1313	53.68	33	25.2	51.4	2.0	58
NC 8045	2564	1573	61.37	46	25.5	57.0	2.2	60
NC 8054	2313	1238	53.52	28	24.5	56.2	2.3	58
NC 8058	2349	1422	60.59	37	20.1	47.9	2.4	52
NC 8069	2368	1403	59.24	37	20.8	46.3	2.2	55
NC 8071	2529	1479	58.50	32	22.5	47.9	2.1	56
NC 8098	2222	1110	49.95	16	29.1	62.2	2.1	58
PD 42	2389	1328	55.57	39	19.9	47.8	2.4	53
PD 611	2229	1280	57.45	32	25.5	53.0	2.1	55
Va 724-8	2631	1526	58.04	35	21.7	55.5	2.6	55
Va 815	2456	1508	61.43	44	24.7	56.5	2.3	58
Coker 58-186S	2688	1649	61.35	52	23.1	52.1	2.2	58
Coker 58-126-1N	2367	1410	59.58	46	23.3	53.2	2.3	55
L.S.D. (.05)	132	99	3.33	14	1.8	3.5	.2	2
(.01)	176	131	4.43	19	2.4	4.6	.2	3
C. V. (%)	3	4	4	19	5	4	5	3

^{1/} Based on 3 yr. ave. all belts 1957-58-59 auction price on gov't. grade basis. 1959 prices through October 1.

Table 5. Continued. TV 107 Rocky Mount - 1959

Varieties	Suckers per plant		Width of leaves			Length of leaves		
	Ground	Leaf Axil	in inches			in inches		
			5th ^{1/}	10th ^{1/}	15th ^{1/}	5th ^{1/}	10th ^{1/}	15th ^{1/}
Commercially Available Varieties								
DB 101	5.7	20.6	9.0	11.1	12.1	17.3	20.8	20.9
Hicks B. Leaf	2.5	25.6	9.3	11.1	13.1	23.4	24.4	22.7
Coker 187	1.2	19.3	9.1	11.1	13.8	18.8	21.7	22.9
Bell 15	2.4	24.0	8.8	10.9	12.4	22.4	24.3	23.0
Vesta 5	4.4	27.0	9.2	11.2	13.3	19.3	22.1	23.7
McNair 121	1.9	23.3	10.2	12.1	13.2	19.6	21.7	22.5
Coker 187-Hicks	3.8	19.8	10.0	11.6	12.3	18.7	21.9	22.0
Reams 51	7.2	19.4	8.1	10.3	12.7	17.4	20.3	21.9
Bell 16	3.1	21.0	8.9	11.3	14.0	20.4	23.4	23.7
NC 73	2.4	20.4	9.1	11.7	14.7	18.7	22.1	23.3
Bissette Special	2.5	20.5	10.5	12.6	14.9	22.5	24.5	24.9
Speight 31	4.3	25.7	9.4	10.5	12.1	20.9	22.9	23.8
McNair H-2	2.3	25.4	10.5	11.9	14.3	17.5	20.9	21.8
Coker 316	4.6	19.6	9.1	10.8	12.4	18.1	21.9	22.5
Coker 128	1.7	21.6	6.9	8.3	9.5	18.6	21.5	22.4
Advanced Breeding Lines								
Bissette 11	1.4	11.7	5.7	7.4	7.6	18.5	21.7	22.9
Speight 34	2.5	22.0	10.5	11.1	11.8	19.8	21.7	22.6
McNair 829	1.9	19.1	8.7	10.1	11.0	20.0	21.9	22.5
NC 73 Br	1.2	21.2	8.2	11.3	14.2	18.2	22.4	24.1
NC 475-2	.4	18.4	7.9	11.3	13.9	18.6	22.9	24.5
NC 8037	1.3	22.7	8.3	9.7	11.2	16.9	20.1	22.3
NC 8040	.7	19.4	7.7	9.3	11.3	18.4	21.5	23.7
NC 8045	4.0	14.1	8.1	9.4	10.1	17.7	21.1	21.9
NC 8054	2.8	15.8	8.1	8.9	10.9	17.4	20.3	22.3
NC 8058	2.6	22.0	10.3	11.8	13.2	18.6	20.7	21.2
NC 8069	1.4	18.7	8.3	10.0	12.0	18.9	22.0	21.5
NC 8071	3.4	19.4	11.1	12.3	13.2	19.1	20.9	22.0
NC 8098	2.8	21.1	6.5	8.1	9.5	14.9	17.3	19.9
PD 42	.6	17.7	9.3	11.9	13.1	20.3	21.9	22.1
PD 611	1.1	19.5	8.3	9.1	10.9	20.6	23.4	24.1
Va 724-8	.3	15.5	8.9	10.7	11.5	18.6	22.2	22.8
Va 815	6.0	25.7	8.7	10.4	11.9	18.7	21.2	22.6
Coker 58-186S	3.4	17.1	9.3	10.7	11.7	18.1	20.7	21.7
Coker 58-126-1N	2.7	16.5	7.9	9.1	10.7	19.7	21.8	23.5
L.S.D. (.05)	1.2	4.0	1.1	1.0	1.2	1.7	1.4	1.4
(.01)	1.5	5.4	1.5	1.3	1.6	2.3	1.9	1.8
C. V. (%)	27	12	8	6	6	6	4	4

^{1/} No. leaves from top of plant.

Table 5. Continued. TV 107 Rocky Mount - 1959

Varieties	Analyses of Cured Leaf			Tot. N %	Ratio N/TA
	Nornic. %	Tot. Alk. %	Red. Sug. %		
Commercially Available Varieties					
DB 101	.14	2.23	21.81	2.12	1.02
Hicks B. Leaf	.14	2.72	15.67	2.24	.89
Coker 187	.22	2.56	15.37	2.08	.91
Bell 15	.11	2.44	17.81	2.10	.90
Vesta 5	.21	2.49	18.59	2.12	.92
McNair 121	.18	2.53	16.26	2.17	.95
Coker 187-Hicks	.10	2.14	18.18	1.94	.98
Reams 51	.12	2.34	17.74	2.04	.93
Bell 16	.12	2.36	13.85	2.14	.98
NC 73	.15	2.54	14.11	2.20	.92
Bissette Special	.14	2.00	16.37	2.21	1.40
Speight 31	.16	2.13	13.11	2.28	1.09
McNair H-2	.12	2.42	17.89	2.02	.86
Coker 316	.07	1.72	16.81	2.00	1.20
Coker 128	.21	2.49	16.85	2.26	.90
Advanced Breeding Lines					
Bissette 11	.07	2.00	13.85	2.02	1.10
Speight 34	.04	1.66	16.78	1.90	1.19
McNair 829	.14	2.88	18.07	2.21	.79
NC 73 Br	.14	2.38	13.59	2.42	.95
NC 475-2	.15	2.15	15.70	2.21	1.02
NC 8037	.17	2.12	15.63	2.26	1.03
NC 8040	.09	1.51	11.89	2.36	1.61
NC 8045	.07	1.62	11.44	2.12	1.56
NC 8054	.10	1.74	11.63	2.32	1.36
NC 8058	.10	1.66	15.74	2.08	1.28
NC 8069	.22	2.59	16.37	2.24	.86
NC 8071	.14	2.17	17.59	2.02	.90
NC 8098	.19	2.12	13.37	2.25	1.05
PD 42	.12	2.62	13.66	2.28	.90
PD 611	.14	2.27	15.74	2.10	.96
Va 724-8	.10	1.61	18.33	2.10	1.29
Va 815	.12	1.82	14.81	2.14	1.20
Coker 58-186S	.06	1.49	16.89	1.90	1.38
Coker 58-126-1N	.08	1.65	15.63	2.03	1.32
L.S.D. (.05)	---	.43	3.11	N.S.	.30
(.01)	---	.57	4.13	N.S.	.40
C. V. (%)	---	12	12	7	14

Table 6. Comparison of varieties in 1959 for certain characteristics. TV 108 - Clayton

Varieties	Yield Lbs/A	Value Dol/A	Index ^{1/} Dol/Cwt	Quality Index	No. of leaves per plant	Height of plant (in.)	Ave. length of internode (in.)	Days to flower
Commercially Available Varieties								
DB 101	2015	1128	56.00	31	18.1	53.7	3.0	54
Hicks B. Leaf	1929	1180	61.17	42	15.1	35.6	2.4	46
Coker 187	1785	975	54.64	25	17.0	45.6	2.7	51
Bell 15	2087	1291	61.90	51	15.0	39.1	2.6	45
Vesta 5	2173	1210	55.79	39	16.9	48.9	2.9	49
McNair 121	1947	981	50.46	24	17.3	45.1	2.6	52
Coker 187-Hicks	2020	1089	53.81	25	17.9	43.1	2.4	53
Reams 51	1957	1043	53.04	21	18.1	45.5	2.5	52
Bell 16	1953	1077	55.09	27	17.4	46.3	2.7	48
NC 73	1845	1058	57.58	53	16.5	42.3	2.6	49
Bissette Special	2065	1202	58.29	35	16.8	46.5	2.8	48
Speight 31	2162	1281	59.68	54	18.8	45.5	2.4	50
McNair H-2	2124	1231	57.50	34	17.3	47.8	2.8	50
Coker 316	2184	1349	61.82	56	18.6	44.8	2.4	53
Coker 128	1881	1166	61.97	46	19.2	44.6	2.3	51
Advanced Breeding Lines								
Bissette 11	2552	1398	54.77	20	31.3	65.1	2.1	66
Speight 34	2168	1327	61.09	47	19.0	44.6	2.3	52
McNair 829	2017	1113	55.17	23	18.2	43.9	2.4	50
NC 73 Br	1963	1117	56.99	37	16.7	47.2	2.8	50
NC 475-2	2201	1283	58.37	43	17.0	46.4	2.7	51
NC 8037	2062	1183	57.31	31	18.7	45.2	2.4	51
NC 8040	2224	1338	60.18	46	22.1	51.3	2.3	55
NC 8045	2265	1378	60.80	42	22.3	51.9	2.3	58
NC 8054	2045	1108	54.16	28	20.7	48.6	2.3	55
NC 8058	1954	1179	60.29	35	17.2	41.1	2.4	50
NC 8069	1993	1199	60.30	51	18.7	41.8	2.2	52
NC 8071	2188	1314	60.05	49	19.6	44.7	2.3	54
NC 8098	2199	1117	51.06	29	26.3	58.9	2.2	56
PD 42	2061	1223	59.26	40	16.8	42.9	2.5	49
PD 611	1992	1163	58.44	40	20.2	44.5	2.2	52
Va 724-8	2365	1427	60.33	54	17.3	46.2	2.7	53
Va 815	2209	1295	58.66	31	21.1	50.0	2.4	55
Coker 58-186S	2304	1451	62.91	64	19.7	47.4	2.4	55
Coker 58-126-1N	2148	1201	55.96	22	18.5	45.7	2.5	52
L.S.D. (.05)	246	171	4.41	N.S.	1.6	6.5	.3	2
(.01)	327	227	5.86	N.S.	2.1	8.6	.4	3
C. V. (%)	7	9	5	34	5	9	7	3

^{1/} Based on 3 yr. ave. all belts 1957-58-59 auction price on gov't. grade basis. 1959 prices through October 1.

Table 6. Continued. TV 108 Clayton - 1959

Varieties	Suckers per plant		Width of leaves			Length of leaves		
	Ground	Leaf	in inches			in inches		
		Axil	5th ^{1/}	10th ^{1/}	15th ^{1/}	5th ^{1/}	10th ^{1/}	15th ^{1/}
Commercially Available Varieties								
DB 101	6.2	28.3	8.2	9.9	13.6	16.1	19.9	20.9
Hicks B. Leaf	3.2	29.6	9.0	11.9	13.5	22.0	23.9	22.2
Coker 187	1.8	25.8	8.7	11.1	14.5	17.9	20.8	20.9
Bell 15	4.5	28.5	9.0	12.7	13.2	22.1	24.8	21.4
Vesta 5	4.9	31.1	8.4	12.4	14.4	18.6	23.0	22.3
McNair 121	3.9	24.8	8.4	11.1	14.1	16.7	20.7	21.5
Coker 187-Hicks	4.0	26.0	8.7	12.3	15.0	17.5	22.3	22.6
Reams 51	5.2	24.5	8.1	10.9	14.8	17.3	21.1	22.7
Bell 16	3.0	24.3	9.5	12.9	14.9	19.9	23.5	22.3
NC 73	2.8	20.6	7.9	12.2	15.1	17.5	22.3	22.5
Bissette Special	4.0	22.6	9.8	13.1	14.5	20.2	23.9	22.2
Speight 31	5.5	30.4	7.7	10.3	13.3	18.1	22.1	23.6
McNair H-2	4.1	26.5	9.3	13.3	15.5	16.6	21.4	21.1
Coker 316	4.9	25.1	8.1	11.2	14.1	17.5	21.3	22.1
Coker 128	1.0	26.5	5.9	8.7	12.3	17.7	22.5	23.4
Advanced Breeding Lines								
Bissette 11	2.7	14.1	5.7	7.8	10.7	17.3	21.3	23.7
Speight 34	3.0	26.8	7.6	10.4	13.5	16.9	21.5	22.4
McNair 829	2.9	23.8	7.1	9.5	11.9	18.3	22.0	21.6
NC 73 Br	2.2	25.3	8.6	12.7	15.1	18.9	23.6	22.3
NC 475-2	1.9	24.9	7.5	11.7	15.4	18.1	23.7	23.1
NC 8037	2.5	25.1	7.1	10.1	14.0	16.2	21.2	23.3
NC 8040	2.3	24.3	7.0	9.5	11.7	17.6	23.1	24.5
NC 8045	4.2	18.5	6.1	8.9	12.2	15.8	21.1	23.3
NC 8054	3.4	19.3	6.6	9.3	12.9	15.1	20.8	23.3
NC 8058	3.4	22.4	8.9	11.6	13.7	17.4	20.9	20.9
NC 8069	2.8	23.3	7.2	10.5	14.0	16.2	21.1	22.4
NC 8071	4.5	22.5	8.6	10.8	14.6	15.4	19.8	21.9
NC 8098	2.8	26.7	6.4	7.7	9.5	14.1	17.8	19.7
PD 42	1.6	19.5	7.9	10.8	13.7	18.3	20.7	19.4
PD 611	3.7	24.3	6.5	8.5	12.9	17.1	21.6	24.3
Va 724-8	1.4	20.4	7.5	10.3	14.9	17.0	21.5	22.3
Va 815	4.8	30.1	7.3	9.5	11.9	16.9	20.5	22.3
Coker 58-186S	3.7	24.7	7.4	10.3	14.0	15.6	21.1	22.0
Coker 58-126-1N	3.7	23.3	7.3	10.1	13.6	17.8	22.5	23.9
L.S.D. (.05)	1.5	5.8	1.1	1.3	1.4	2.0	1.6	1.7
(.01)	1.9	7.7	1.4	1.7	1.8	2.7	2.2	2.3
C. V. (%)	26	14	9	7	6	7	5	5

^{1/} No. leaves from top of plant.

Table 6. Continued. TV 108 Clayton - 1959

Varieties	Analyses of Cured Leaf			Tot. N %	Ratio N/TA
	Nornic. %	Tot. Alk. %	Red. Sug. %		
Commercially Available Varieties					
DB 101	.29	3.15	19.51	2.69	.78
Hicks B. Leaf	.23	3.12	18.48	2.45	.76
Coker 187	.31	3.87	14.37	2.95	.74
Bell 15	.21	3.54	17.74	2.52	.72
Vesta 5	.35	3.63	18.00	2.84	.72
McNair 121	.23	3.22	13.52	2.59	.85
Coker 187-Hicks	.25	3.33	16.37	2.77	.79
Reams 51	.21	3.11	19.19	2.66	.77
Bell 16	.36	3.41	12.15	2.86	.80
NC 73	.28	3.36	15.70	2.69	.73
Bissette Special	.37	3.25	18.18	2.49	.76
Speight 31	.22	2.77	14.89	2.63	1.05
McNair H-2	.13	3.33	15.81	2.69	.75
Coker 316	.21	2.26	16.30	2.25	1.02
Coker 128	.25	3.39	14.78	2.52	.74
Advanced Breeding Lines					
Bissette 11	.14	2.56	12.34	2.41	.92
Speight 34	.17	2.24	16.77	2.50	1.00
McNair 829	.30	4.15	20.11	2.78	.65
NC 73 Br	.23	3.38	13.48	2.76	.84
NC 475-2	.19	3.08	14.41	2.62	.84
NC 8037	.22	2.57	18.70	2.36	.90
NC 8040	.13	2.07	14.89	2.42	1.12
NC 8045	.24	1.81	10.89	2.50	1.30
NC 8054	.20	2.20	13.63	2.44	1.10
NC 8058	.17	2.07	15.37	2.50	1.12
NC 8069	.23	3.20	15.26	2.69	1.20
NC 8071	.24	3.22	15.04	2.56	.78
NC 8098	.16	2.38	12.89	2.60	1.00
PD 42	.24	3.40	16.15	2.55	.72
PD 611	.14	2.63	17.07	2.02	.80
Va 724-8	.16	1.68	21.89	1.99	1.14
Va 815	.15	2.30	13.48	2.54	1.00
Coker 58-186S	.17	1.92	17.59	2.28	1.12
Coker 58-126-1N	.40	1.98	13.89	2.60	1.54
L.S.D. (.05)	---	.73	3.64	.37	N.S.
(.01)	---	.97	4.84	.50	N.S.
C. V. (%)	---	16	14	7	25

Table 7. Comparison of varieties in 1959 for certain characteristics. TV 109 - Oxford

Varieties	Yield Lbs/A	Value Dol/A	Index ^{1/} Dol/Cwt	Quality Index	No. of leaves per plant	Height of plant (in.)	Ave. length of internode (in.)	Days to flower
Commercially Available Varieties								
DB 101	1943	1081	55.73	28	18.4	51.5	2.8	56
Hicks B. Leaf	2143	1389	64.80	66	15.6	34.3	2.2	46
Coker 187	1938	1146	59.14	38	17.9	41.0	2.3	53
Bell 15	1828	1174	64.25	55	16.0	33.1	2.1	44
Vesta 5	1857	1171	63.06	52	16.7	41.2	2.5	49
McNair 121	1977	1134	57.36	28	17.1	38.9	2.3	55
Coker 187-Hicks	2065	1128	54.63	24	19.5	40.2	2.1	55
Reams 51	2129	1255	58.94	37	19.0	48.1	2.5	57
Bell 16	2073	1253	60.40	40	17.8	41.2	2.3	52
NC 73	1970	1179	59.80	46	17.1	42.6	2.5	51
Bissette Special	2066	1258	60.89	47	17.5	41.5	2.4	50
Speight 31	2108	1320	62.64	47	21.7	48.6	2.2	60
McNair H-2	2004	1253	62.50	51	17.7	44.7	2.5	52
Coker 316	2264	1439	63.52	60	20.5	45.6	2.2	57
Coker 128	2029	1238	60.98	46	20.1	42.3	2.1	51
Advanced Breeding Lines								
Bissette 11	2117	1190	56.24	33	27.2	51.5	1.9	66
Speight 34	2326	1472	63.22	58	21.0	46.4	2.2	58
McNair 829	2205	1328	60.22	40	17.9	45.2	2.5	56
NC 73 Br	1982	1210	61.03	58	18.0	43.4	2.4	52
NC 475-2	2153	1346	62.50	56	18.0	41.7	2.3	54
NC 8037	2115	1253	59.23	43	19.3	40.6	2.1	56
NC 8040	2207	1325	60.06	49	23.3	48.5	2.1	62
NC 8045	2320	1445	62.27	50	23.0	51.6	2.2	63
NC 8054	2079	1220	58.66	48	21.1	47.5	2.2	62
NC 8058	2099	1276	60.77	55	17.7	39.5	2.2	55
NC 8069	1985	1226	61.75	51	18.8	38.7	2.1	54
NC 8071	2099	1287	61.30	48	21.1	45.3	2.1	57
NC 8098	2084	1063	50.91	26	27.2	56.3	2.1	63
PD 42	2075	1218	58.60	50	16.6	38.7	2.3	53
PD 611	2076	1280	61.63	45	23.7	46.5	2.0	55
Va 724-8	2330	1445	61.93	52	18.9	43.1	2.3	54
Va 815	2016	1269	63.01	61	22.3	47.0	2.1	61
Coker 58-186S	2424	1546	63.81	70	22.1	49.9	2.3	61
Coker 58-126-1N	2134	1289	60.39	40	20.5	42.1	2.1	56
L.S.D. (.05)	130	118	3.58	18	1.9	4.5	.2	5
(.01)	174	157	4.77	25	2.5	5.9	.2	6
C. V. (%)	4	6	4	19	6	6	5	5

^{1/} Based on 3 yr. ave. all belts 1957-58-59 auction price on gov't. grade basis. 1959 prices through October 1.

Table 7. Continued. TV 109 Oxford - 1959

Varieties	Suckers per plant		Width of leaves			Length of leaves		
	Ground	Leaf Axil	in inches			in inches		
			5th ^{1/}	10th ^{1/}	15th ^{1/}	5th ^{1/}	10th ^{1/}	15th ^{1/}
Commercially Available Varieties								
DB 101	3.7	15.0	9.6	12.1	13.7	17.9	20.2	20.2
Hicks B. Leaf	1.3	13.1	10.3	12.0	12.7	22.0	22.7	19.8
Coker 187	.5	11.0	10.3	12.6	13.2	19.4	21.6	20.7
Bell 15	.9	17.7	10.2	11.8	12.1	21.8	22.8	20.3
Vesta 5	1.7	18.3	9.5	11.5	12.9	19.3	21.8	20.1
McNair 121	1.2	14.0	10.8	12.1	13.8	19.3	20.7	20.7
Coker 187-Hicks	1.3	14.1	10.1	11.4	12.8	19.4	20.5	21.6
Reams 51	3.1	11.4	10.5	11.9	13.6	20.7	22.3	21.4
Bell 16	.3	12.0	10.5	13.3	13.9	21.7	23.4	21.8
NC 73	1.0	11.5	9.5	13.3	15.3	18.5	22.0	21.7
Bissette Special	1.1	14.7	9.9	12.5	13.3	20.1	22.6	21.2
Speight 31	1.8	12.8	9.9	10.9	11.9	21.8	22.9	23.8
McNair H-2	1.8	13.3	10.6	13.7	15.1	18.0	21.3	20.1
Coker 316	3.5	13.4	9.9	11.3	13.2	18.8	20.6	21.8
Coker 128	.6	18.7	7.7	9.6	11.2	19.1	21.7	22.4
Advanced Breeding Lines								
Bissette 11	.8	6.3	7.1	8.7	10.1	18.9	21.3	21.7
Speight 34	1.1	12.2	9.9	11.3	12.8	19.3	21.0	20.9
McNair 829	.5	10.0	10.1	11.3	12.0	20.9	21.9	21.9
NC 73 Br	.5	12.1	8.9	12.1	14.3	18.5	21.7	21.9
NC 475-2	.6	8.8	8.1	10.6	13.4	18.1	21.6	21.7
NC 8037	.8	11.7	9.0	10.8	12.4	18.3	21.1	21.4
NC 8040	.6	8.8	8.7	9.8	11.9	20.5	22.5	23.9
NC 8045	3.0	5.8	9.0	9.5	11.2	19.9	21.6	22.7
NC 8054	1.0	6.9	8.9	10.5	11.7	18.8	20.9	22.0
NC 8058	1.4	15.2	11.4	12.5	13.1	20.1	20.6	20.5
NC 8069	.8	12.5	9.7	11.3	12.8	20.0	21.2	21.2
NC 8071	2.2	12.2	10.6	11.6	13.6	18.0	19.9	21.0
NC 8098	1.4	6.6	8.0	9.2	10.3	16.8	18.6	19.4
PD 42	.3	8.9	10.7	12.7	13.4	19.7	21.4	18.9
PD 611	1.1	10.6	8.1	8.9	10.7	19.1	21.4	22.1
Va 724-8	.7	9.4	9.3	11.5	13.8	19.1	21.5	21.3
Va 815	3.2	14.1	9.2	10.4	12.0	19.8	21.2	21.5
Coker 58-186S	1.8	8.7	10.2	11.1	12.2	19.3	21.3	21.5
Coker 58-126-1N	1.8	11.4	8.6	9.9	12.3	19.8	22.0	22.4
L.S.D. (.05)	.9	3.0	1.1	1.1	1.2	2.1	1.7	1.5
(.01)	1.1	4.0	1.5	1.4	1.6	2.8	2.2	1.9
C. V. (%)	35	15	7	6	6	7	5	4

^{1/} No. leaves from top of plant.

Table 7. Continued. TV 109 Oxford - 1959

Varieties	Analyses of Cured Leaf				Ratio N/TA
	Nornic. %	Tot. Alk. %	Red. Sug. %	Tot. N %	
Commercially Available Varieties					
DB 101	.33	2.75	24.15	2.16	.78
Hicks B. Leaf	.18	3.31	22.11	1.96	.59
Coker 187	.23	3.30	20.52	2.16	.67
Bell 15	---	3.34	21.66	2.07	.62
Vesta 5	---	3.12	21.78	1.96	.63
McNair 121	.23	3.46	18.63	2.17	.67
Coker 187-Hicks	.28	3.26	20.92	2.02	.66
Reams 51	.22	3.15	19.52	2.02	.68
Bell 16	.20	2.98	18.56	2.21	.76
NC 73	.29	3.67	20.22	2.26	.60
Bissette Special	.23	3.28	21.40	2.02	.64
Speight 31	.13	2.21	16.33	2.10	.97
McNair H-2	.18	3.64	19.37	2.18	.62
Coker 316	.20	2.56	19.85	2.27	.86
Coker 128	.17	2.92	21.07	2.25	.84
Advanced Breeding Lines					
Bissette 11	.12	2.62	19.18	1.96	.80
Speight 34	.13	2.17	18.59	2.00	1.04
McNair 829	.18	2.90	21.61	2.28	.82
NC 73 Br	.23	3.37	19.11	2.08	.66
NC 475-2	.20	2.62	21.96	1.99	.82
NC 8037	.13	2.91	19.00	2.14	.80
NC 8040	.10	2.30	17.04	2.18	1.02
NC 8045	.10	1.90	15.03	2.02	1.19
NC 8054	.16	2.28	16.00	2.18	.99
NC 8058	.24	2.62	16.44	2.32	.94
NC 8069	.29	4.20	19.44	2.26	.54
NC 8071	.25	2.72	18.48	2.17	1.20
NC 8098	.18	2.57	16.70	2.08	.82
PD 42	.26	3.59	18.81	2.17	.64
PD 611	---	3.86	22.55	2.10	.54
Va 724-8	.12	1.91	21.63	1.96	1.04
Va 815	.20	2.47	17.66	2.21	.94
Coker 58-186S	.21	2.07	19.59	1.93	.96
Coker 58-126-1N	.14	2.56	19.18	2.18	.96
L.S.D. (.05)		.64	3.05	.23	.34
(.01)		.85	4.07	N.S.	N.S.
C. V. (%)		13	10	5	21

Table 8. Comparison of varieties in 1959 for certain characteristics. TV 110 - Rural Hall

Varieties	Yield Lbs/A	Value Dol/A	Index ^{1/} Dol/Cwt.	No. of leaves per plant	Height of plant (in.)	Ave. length of internode (in.)	Days to flower
Commercially Available Varieties							
DB 101	1648	840	51.01	23.5	61.7	2.6	90
Hicks B. Leaf	1662	801	48.21	19.7	47.5	2.4	66
Coker 187	1853	768	41.38	19.6	46.7	2.4	72
Bell 15	1742	828	47.62	20.1	47.5	2.4	70
Vesta 5	1690	899	53.15	21.4	57.7	2.7	83
McNair 121	1947	863	44.31	21.8	55.7	2.5	76
Coker 187-Hicks	2285	972	42.80	24.5	57.4	2.3	81
Reams 51	1966	1019	51.86	20.9	57.0	2.7	84
Bell 16	1771	813	45.57	22.0	54.7	2.5	85
NC 73	1748	767	43.96	19.3	54.5	2.8	78
Bissette Special	1823	899	49.46	21.7	54.5	2.5	78
Speight 31	1986	1029	51.95	23.4	54.0	2.3	85
McNair 4-2	1942	955	48.94	22.5	59.5	2.6	82
Coker 316	2348	1143	48.86	24.5	55.5	2.3	82
Coker 128	1940	999	51.60	23.1	55.1	2.4	81
Advanced Breeding Lines							
Bissette 11	1998	925	46.27	27.1	57.7	2.1	99
Speight 34	2327	1214	52.31	24.6	57.3	2.3	91
McNair 829	1953	1037	53.20	21.3	58.0	2.7	80
NC 73 Br	1792	780	43.16	21.3	55.3	2.6	71
NC 475-2	2184	1032	47.32	22.2	55.7	2.5	84
NC 8037	1931	819	42.69	22.0	48.4	2.2	79
NC 8040	2360	1136	48.17	26.2	56.3	2.1	95
NC 8045	2279	1113	48.79	25.6	56.2	2.2	95
NC 8054	2102	887	42.23	25.3	59.4	2.3	89
NC 8058	2167	1050	48.89	21.3	52.2	2.4	82
NC 8069	2285	1068	47.21	24.3	53.5	2.2	86
NC 8071	2301	1206	52.30	25.7	57.7	2.2	84
NC 8098	1920	800	41.58	29.3	63.3	2.2	93
PD 42	1932	957	49.54	21.3	52.3	2.4	80
PD 611	2023	956	47.26	29.1	59.3	2.1	91
Va 724-8	2327	1204	51.73	22.8	56.8	2.5	90
Va 815	2339	1240	52.96	27.1	58.9	2.2	93
Coker 58-186S	2575	1380	53.64	23.7	56.9	2.4	91
Coker 58-126-1N	2151	1048	48.73	24.2	55.6	2.3	87
L.S.D. (.05)	264	161	5.67	2.5	6.3	.2	10
(.01)	351	214	7.55	3.4	8.4	.3	13
C. V. (%)	8	10	7	7	7	5	7

^{1/} Based on 3 yr. ave. all belts 1957-58-59 auction price on gov't. grade basis. 1959 prices through October 1.

Table 8. Continued. TV 110 Rural Hall - 1959

Varieties	Suckers per plant		Width of leaves			Length of leaves		
	Ground *	Leaf Axil	in inches			in inches		
			5th ^{1/}	10th ^{1/}	15th ^{1/}	5th ^{1/}	10th ^{1/}	15th ^{1/}
Commercially Available Varieties								
DB 101	.1	5.6	9.8	12.2	12.9	19.0	21.8	22.1
Hicks B. Leaf	0	15.3	9.2	10.0	10.5	22.5	23.2	22.0
Coker 187	.1	13.1	10.1	11.1	11.6	20.4	22.0	21.6
Bell 15	.1	15.5	9.2	10.3	10.6	21.7	23.1	22.1
Vesta 5	.1	10.0	9.1	10.8	10.7	18.7	21.3	21.6
McNair 121	.3	13.1	10.6	12.5	13.1	20.1	21.9	22.0
Coker 187-Hicks	.2	14.0	11.0	12.3	12.8	20.1	22.8	23.2
Reams 51	1.0	10.0	10.1	11.8	12.4	20.5	22.9	22.9
Bell 16	0	6.2	8.9	10.5	11.3	20.1	22.5	22.9
NC 73	0	8.2	10.2	11.4	11.8	20.9	22.7	21.7
Bissette Special	.1	12.3	9.8	11.0	11.9	20.9	23.1	23.8
Speight 31	.8	10.6	9.9	10.6	11.2	21.3	22.7	23.3
McNair H-2	.2	10.2	11.1	12.7	13.8	20.4	23.9	24.4
Coker 316	1.3	12.2	10.8	11.3	13.1	20.7	22.9	24.5
Coker 128	.1	11.9	8.3	10.0	10.5	20.5	22.8	22.5
Advanced Breeding Lines								
Bissette 11	0	3.5	7.3	8.1	9.4	20.3	22.2	23.8
Speight 34	0	4.9	9.7	11.2	13.0	20.2	23.5	26.1
McNair 829	0	8.4	8.6	10.5	11.3	18.7	21.3	22.3
NC 73 Br	0	14.0	9.4	10.9	11.4	19.9	22.0	23.0
NC 475-2	0	6.9	9.3	10.8	12.1	19.9	22.3	23.9
NC 8037	.3	11.0	8.9	10.3	11.1	19.3	21.0	22.4
NC 8040	0	3.7	9.1	9.3	11.5	21.6	22.8	25.7
NC 8045	.1	1.1	8.1	9.6	11.3	19.4	22.6	23.9
NC 8054	0	4.0	8.7	9.7	11.9	19.5	22.2	24.3
NC 8058	.2	1.0	11.2	11.9	12.7	19.5	22.1	22.4
NC 8069	0	6.9	9.6	11.1	12.9	20.3	22.6	25.0
NC 8071	.4	8.2	10.5	11.9	13.1	19.3	22.5	23.9
NC 8098	.1	4.0	8.5	8.8	9.9	17.9	19.6	20.7
PD 42	0	7.5	10.3	11.7	12.1	19.9	22.5	22.8
PD 611	.1	4.7	6.9	8.1	9.7	20.1	22.2	24.5
Va 724-8	0	5.3	9.5	10.9	12.6	20.3	22.5	24.5
Va 815	1.0	8.5	9.1	10.3	11.4	19.1	21.4	23.5
Coker 58-186S	.4	6.8	9.5	11.1	12.1	18.8	21.5	23.2
Coker 58-126-1N	.2	7.1	8.7	9.9	11.3	20.0	23.6	25.5
L.S.D. (.05)	.6	5.5	1.3	1.3	1.6	2.0	N.S.	2.4
(.01)	.8	7.4	1.7	1.7	2.2	N.S.	N.S.	3.2
C. V. (%)	164	39	8	7	8	6	6	6

^{1/} No. leaves from top of plant.

* Rounded to nearest tenth.

Table 8. Continued. TV 110 Rural Hall - 1959

Varieties	Analyses of Cured Leaf				Ratio N/TA
	Nornic. %	Tot. Alk. %	Red. Sug. %	Tot. N %	
Commerically Available Varieties					
DB 101	.09	2.52	12.29	2.94	1.23
Hicks B. Leaf	.14	3.36	9.44	2.77	.90
Coker 187	.20	3.21	8.66	3.06	.94
Bell 15	.19	3.50	8.44	2.63	.82
Vesta 5	.13	2.18	11.81	2.73	1.84
McNair 121	.23	2.81	7.67	3.10	1.07
Coker 187-Hicks	.17	2.65	8.92	2.78	.98
Reams 51	.12	2.60	11.07	2.69	.98
Bell 16	.10	2.34	9.26	2.72	1.18
NC 73	.17	2.76	8.37	2.83	1.06
Bissette Special	.21	3.05	10.51	2.73	.90
Speight 31	.17	1.98	10.33	2.50	1.39
McNair H-2	.14	2.40	9.00	2.92	1.14
Coker 316	.08	2.48	8.33	2.60	1.19
Coker 128	.09	2.57	10.70	2.58	1.02
Advanced Breeding Lines					
Bissette 11	.07	2.38	8.33	2.66	1.10
Speight 34	.03	1.55	10.41	2.52	1.70
McNair 829	.10	3.35	11.89	2.59	.86
NC 73 Br	.15	3.40	7.89	3.01	.97
NC 475-2	.14	2.30	9.52	2.78	1.20
NC 8037	.16	2.97	9.74	2.86	1.19
NC 8040	.06	2.17	8.67	2.72	1.32
NC 8045	.12	1.49	8.07	2.74	2.00
NC 8054	.07	1.74	6.74	3.08	1.70
NC 8058	.14	1.56	8.26	2.52	1.64
NC 8069	.16	2.57	8.40	3.24	1.18
NC 8071	.10	2.20	9.70	2.41	1.16
NC 8098	.12	1.85	8.30	2.62	1.39
PD 42	.26	2.84	10.11	2.73	.94
PD 611	.11	2.06	8.44	2.52	1.22
Va 724-8	.10	1.84	10.44	2.70	1.56
Va 815	.10	1.66	8.37	2.44	1.40
Coker 58-186S	.10	1.63	10.15	2.40	1.53
Coker 58-126-1N	.12	1.90	8.81	2.78	1.54
L.S.D. (.05)	---	.69	2.12	N.S.	.47
(.01)	---	.92	2.82	N.S.	.64
C. V. (%)	---	18	14	9	19

Table 9. Quality appraisal based on color, body and texture, by companies averaged over Whiteville and Oxford locations for certain entries.

Varieties	Companies						Average	Rank
	A	B	C	D	E	F		
Hicks Broadleaf	71	84	78	45	45	61	64.3	1
Speight 31	66	73	61	60	53	50	60.8	5
NC 8058	80	64	70	53	51	47	61.0	3
McNair H-2	86	58	76	40	50	40	58.6	6
NC 8069	68	66	64	44	49	37	54.8	8
PD 42	74	53	63	37	51	39	53.2	10
Va 724-8	72	61	62	42	57	36	55.4	9
Coker 186	72	74	73	55	66	42	64.0	2
Coker 316	85	62	70	49	60	39	61.0	4
Coker 128	80	62	61	48	52	34	56.5	7

Table 10. Results of Cooperative Evaluation Tests 1959. 12 locations (3 in each belt)

	<u>Belt</u>				Average
	Border	Eastern	Middle	Old	
	<u>Yield Lbs/A</u>				
Hicks Broadleaf	1753	1792	1446	1805	1699
NC 73	1858	1724	1469	1523	1634
NC 475-2	2057	1940	1611	1798	1851
NC 8037	2156	2026	1693	1705	1895
NC 8098	2074	1959	1618	1711	1840
L.S.D. (.05)					86
(.01)					116
C. V. (%)					6
	<u>Value Index \$/A</u>				
Hicks Broadleaf	1160	1162	963	1146	1108
NC 73	1211	1074	886	820	997
NC 475-2	1371	1257	1030	1057	1179
NC 8037	1336	1239	1040	914	1132
NC 8098	1321	1158	984	965	1107
L.S.D. (.05)					62
(.01)					83
C. V. (%)					7
	<u>Value Index \$/Cwt</u>				
Hicks Broadleaf	65.86	64.91	66.33	62.57	64.92
NC 73	64.92	62.32	60.08	53.54	60.21
NC 475-2	66.65	64.77	63.73	58.64	63.45
NC 8037	61.81	61.23	61.25	53.19	59.37
NC 8098	63.19	59.15	60.30	56.29	59.73
L.S.D. (.05)					1.9
(.01)					2.6
C. V. (%)					4

Table 11. Quality appraisal based on color, body and texture by companies on Cooperative Farmer Test averaged from eight locations.

	Company					
	A	B	C	D	E	F
Hicks	37 (1)	62 (1)	38 (2)	65 (1)	66 (1)	66 (1)
NC 73	29 (3)	54 (3)	35 (3)	54 (3)	52 (3)	47 (3)
475-2	31 (2)	57 (2)	43 (1)	57 (2)	56 (2)	57 (2)
8037	26 (4)	50 (4)	33 (4)	50 (4)	45 (4)	45 (4)

Table 12. Index on amount graded by participating companies from the twelve farmer tests*

	Hicks	NC 73	475-2	8037
Hardin	2.07	1.02	.4	.2
Edmunds	1.5	1.2	1.8	.9
Newkirk	.2	.3	.08	.3
Border Belt Ave.	1.26	.8	.8	.5
Harper	1.0	.6	1.4	.4
Dilda	2.3	2.2	1.5	1.3
Sanderson	.9	1.0	1.2	.9
Eastern Belt Ave.	1.4	1.3	1.4	.9
Hopkins	2.1	.9	1.6	.8
Ferrell	2.5	1.9	1.9	2.0
Smith	2.3	1.5	2.5	1.9
Middle Belt Ave.	2.3	1.4	2.0	1.6
Brann	2.0	.6	1.9	.7
Tucker	.1	.09	.2	.6
Young	2.1	1.4	1.4	1.5
Old Belt Ave.	1.4	.7	1.2	.9
Over all Ave	1.6	1.1	1.3	1.0

* 0 = none graded; 6 = all graded by all six participating companies.

Table 13. Grower practices by individual farms - 1959

Belt & County	Farm	Soil Fumigation	Fertilizer	Top Dressing	Insecticide	Curing Unit	No. times Irrigated
<u>Border</u>							
Robeson	Hardin	None	2000 lbs. 3-9-9	100 lbs. 8-0-24	Endrin	Buckeye	None
Columbus	Edmunds	None	1200 lbs. 3-9-9 1000 lbs. lime	200 lbs. 3-9-9	Endrin Parathion	Buckeye	None
Sampson	Newkirk	DD 10 gal/acre	1000 lbs. 4-8-10	300 lbs. 4-8-10 100 lbs. potash mixed	TDE	Henry Vann	1
<u>Eastern</u>							
Lenoir	Harper	Telone 8 gal/acre	1200 lbs. 3-9-9	200 lbs. NaNO ₃ 400 lbs. K ₂ SO ₄ 400 lbs. 3-9-9 Mixed at rate 400 lbs/acre	Aldrin Endrin DDT	Silent Flame	None
Pitt	Dilda	None	1000 lbs. 4-8-10	120 lbs. 8-0-24	TDE	Anchor	1
Wayne	Sanderson	DD 10 gal/A	600 lbs. in Row 4-8-10 400 lbs. side dress 4-8-10	60 lbs. Calnitro 100 lbs. 8-0-24 60 lbs. Nitrate Soda	DDT	Henry Vann	None
<u>Middle</u>							
Wake	Hopkins	None	1300 lbs. 3-9-9	200 lbs. 8-0-24	TDE - Endrin	Gas	4
Wake	Ferrell	None	1200 lbs. 3-9-9	None	TDE	Henry Vann	1
Vance	Smith	DD 8 gal/A	1100 lbs. 3-9-9	312 lbs. 3-9-9	TDE	Mayo	1
<u>Old</u>							
Guilford	Brann	None	1200 lbs. 4-8-10	None	Endrin - DDT Malathion	Gas	0
Forsyth	Tucker	None	1500 lbs. 3-9-9	100 lbs. 8-0-24 100 lbs. 50% K ₂ O	TDE	Buckeye	0
Stokes	Young	None	1600 lbs. 3-9-9	200 lbs./A 8-0-24 50 lbs./A 16% N	Endrin	Chilton	0

Table 14. Rainfall Record in Inches
Border Belt Tobacco Research Station, Whiteville, N. C., 1959

Date	March	April	May	June	July	August
1	.01			.17		
2	1.46	1.24		.25	.11	
3			.05	.12	.78	
4	.24			.42		
5	.01		.20	.40		.15
6	3.50					
7						Final Harvest
8					.55	
9					.33	
10			.30		.93	
11		.15			.05	
12	.06	2.18		.02	.31	
13		.40	.66		.74	
14					.78	
15	.17				.37	
16						.35
17				.01	.52	.06
18						
19		.15			.42	
20			.05		.05	1.65
21	.11	.15	.37			
22		.29		.02	.05	
23					.33	
24			2.56			
25				1.03		
26						.51
27	.91					1.10
28						
29	.05	.40			3.10	
30	.65	.26			.70	
31			.24		.40	
Total	7.17	5.22	4.43	2.44	10.52	3.82

Table 14. Continued. Rainfall Record in Inches
Upper Coastal Plains Research Station, Rocky Mount, N. C. 1959

Date	March	April	May	June	July	August
1	.04			.14		1.60
2	.92	1.07		.64		.05
3	.01	.02		.02	4.02	
4	.23					.07
5	.21					.23
6	1.35					.03
7					.69	.06
8						.03
9			.50*		.38	.02
10			.08		.70	
11	.01	.23	.33*	1.25 *	.90	
12	.20	1.76		.02	.80	
13		.45	.36	.16	1.25	
14		.15	.07		.77	
15	.19				.67	
16					.18	
17					.03	Final Harvest
18			.19		.02	.10
19		.54	.25		.04	
20		.99	.02		.22	.42
21	.09		.41		.27	
22		1.67	.03	1.25*		
23		.04				
24				.36		
25				.48	.17	
26					.37	
27	1.08				1.30	
28				.03	.80	T
29					.72	.37
30	.94				T	.82
31			.03		.47	.12
Total	5.27	6.92	1.44	1.85	14.77	3.92

* Applied as irrigation.

Table 14. Continued. Rainfall Record in Inches
Central Crops Research Station, Clayton, N. C., 1959

Date	March	April	May	June	July	August
1				.42	.56	
2	.73	.76		1.33		1.00
3	.02				.78	
4	.46	.07	.23	1.61		.06
5			.10			.59
6	1.27					.15
7						.02
8						.15
9			1.00*		.14	
10			.60		1.86	
11	.05	.50	.01		2.29	
12	.05	2.25			.62	
13		.38	.25		.65	
14		.23	.08		.75	
15	.22				1.13	
16					.18	
17				.01		Final Harvest
18			.02			
19		.88			.05	.34
20		1.39	.24	1.25*	.03	
21	.10		.40		.64	
22		.99	.20		.47	
23		.12	.05	.05	1.32	
24						
25					.26	
26						
27	.64			1.25*	1.15	
28					.56	.01
29		.03			.05	
30	.80				.05	
31	.01				1.51	1.07
Total	4.35	7.60	2.18	3.42	15.05	3.39

* Applied as irrigation.

Table 14. Continued. Rainfall Record in Inches
Oxford Tobacco Research Station, Oxford, N. C., 1959

Date	March	April	May	June	July	August
1				.27	1.00*	
2	.32	.91		.20		
3	.26	.13	.22		1.37	
4				1.42		.04
5	.02					
6	.56					
7						
8						.42
9					.42	
10	Trace		.07		5.72	
11		.54			.15	
12		1.73			.09	
13		.11	.23	.09		
14					.12	
15	.05				.12	
16						
17			.10			
18					.21	
19		.64	Trace		.20	
20		.42	.38		.12	
21	.06	Trace	1.04		.15	
22		.56	.13	.58	.25	
23		.21				
24						.08
25					.05	
26						
27	.81	Trace			.07	Final Harvest
28		.34				
29					.16	
30	.80				.28	1.45
31			.29		1.29	Trace
Total	2.88	5.59	2.46	2.56	10.77	1.99

* Applied as irrigation.

Table 14. Continued. Rainfall Record in Inches
Upper Piedmont Tobacco Research Station, Rural Hall, N. C., 1959

Date	April	May	June	July	August	September
1			.03			.87
2	.95		.68	.05	.03	.13
3		.22	.03	.04		
4	.76	.09	.15		.50	
5		.11		T	.12	.36
6				T	.36	2.10
7					.63	.58
8						.11
9		.05		.27	T	Final Harvest
10		.03		.68		
11	.44	.01		.12		
12	1.03			.04		
13	.10	.28				
14	.10			2.75		
15				.40		
16						
17				.05		
18	.09	T		.43		
19	.69			.08		
20	.20	.20		.24		
21	.07	.12		.42		
22	.33	.04	.02	.12		
23	.29		.03			
24				.15	.19	
25				.26		
26				.63	.67	
27				.03	.06	
28	.27					
29					T	
30					.91	
31		.67		.43	.08	
Total	5.32	1.82	.94	7.19	3.55	