

Measured Crop Performance

TOBACCO

1969

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PERFORMANCE OF TOBACCO VARIETIES IN NORTH CAROLINA

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The year 1969 represents the sixth season in testing new tobacco varieties under the Regional Minimum Standards Program initiated in 1963-64. Early in the program, the 1969 season was designated as a year for seed increase of any new varieties released during 1968. The breeding lines which meet the minimum standards in the 1969 test as outlined by the Quality Evaluation Committee of the Tobacco Workers' Conference will be included in the 1969 Official Variety Test, but they will not be available for farmer planting until the 1971 growing season. Seed will be increased during 1970 for any new variety by the originating agency or by certified seed growers.

Under the Minimum Standards Program, four varieties were made available to farmers in 1964; Coker 298, NC 2326, Speight G-36 and Va. 115. In 1965, two varieties, NC 2512 and Speight G-7, met the minimum standards established by the Regional Committee. Coker 258 and PD 5 met the standards in 1966, followed by Bell 93, Coker 254, McNair 14 and Speight G-13 in 1967. In 1968 four varieties met the minimum standards program: Coker 213, Coker 411, McNair 133 and Speight G-28. All except Coker 411 were increased during 1969 for seed sales in the 1969-70 growing season.

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The authors wish to acknowledge the assistance of personnel on the Research Stations, including Wallace Dickens, Kimble Brock, Warren Bailey, Thilbert Suggs, Sandy Barnes, Larry Gardner, Billy N. Ayscue, Gene Britt, Howell Gentry and Darrell Dunnigan in conducting these tests.

The minimum standards serve as a guide to breeders in developing new varieties that will be acceptable to the trade. It is a voluntary program that has been enthusiastically endorsed by all segments of the tobacco industry. The program adopts the principle of testing new varieties against standard varieties. New varieties should be genetically stable and should not differ from the standards, Hicks Broadleaf and NC 95, by more than plus or minus specified percent for measurable chemical traits. For 1970, the variety, NC 2326, will replace Hicks Broadleaf as one of the standard varieties. The acceptable range for nicotine is plus 15 percent and minus 20 percent of the mean of Hicks and NC 95. New varieties should not contain more than 8 percent of the total alkaloids as nornicotine. Variety candidates should compare favorable with the standard varieties for color, body, texture, moisture equilibrium, filling value, flavor and aroma. A minimum of two years evaluation throughout the flue-cured region of the United States on both experiment stations and farmer plots is required.

Such a program should mean much to our domestic and export trade and to our growers because it assures the manufacturers that new varieties will have been thoroughly tested and evaluated for agronomic, pathologic, physical, chemical and smoke characteristics. Quality is the one factor the American farmer has to sell and this program should help to assure that quality is continuously improved. Varieties play a determining role in quality and should be carefully selected by the grower.

The tobacco variety evaluation program in North Carolina is a part of the Regional Test. Data are presented from the 1969 Official Variety Tests in North Carolina and the 1969 Regional Farm Tests. In addition a

summary table of variety performance over different years and locations is presented. Similar reports which record previous years' data have been issued. Testing over a period of years and under farm conditions is needed to fully evaluate the performance of any variety. Information of this nature serves as a guide to tobacco breeders in the development of varieties and to growers in choosing a variety.

EXPERIMENTAL PROCEDURE

The Tobacco Variety Evaluation Program in North Carolina is divided into three phases. The first phase, the Official Variety Test, consists of testing varieties and breeding lines in small replicated plots located on five research stations. In 1969 a total of 48 entries were included. The second phase of the program involves a more extensive study of fewer varieties and advanced breeding lines grown under farm conditions in approximately one-fourth acre plots and is referred to as the Regional Farm Test. Ten entries including the two check or standard varieties were tested in 1969. The third phase is the Regional Small Plot Test, conducted in five states, and this data is presented in a separate publication.

Official Variety Test

Disease resistant and non-resistant experimental lines and varieties developed by public and private agencies are included. One requirement for acceptance is quantitative data from experiments in which the proposed entry is compared with recognized varieties. Entries of seeds of lots offered for sale within the state or from seed lots furnished by testing agencies from other states may also be included. Performance data are collected on yield, value, agronomic characteristics, disease

resistance^{2/} chemical characteristics^{3/} and physical quality traits. Tobacco company leaf and research personnel cooperate in the physical and chemical evaluation of this material.

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

Agencies Sponsoring Entries in 1969

Bell's Seed Farm, Rocky Mount, N. C.

McNair Seed Company, Inc., Laurinburg, N. C.

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

N. C. Agricultural Experiment Station and USDA, Raleigh, N. C.

Georgia Agricultural Experiment Station, Tifton, Georgia

S. C. Agricultural Experiment Station and USDA, Florence, S. C.

Speight Seed Farms, Winterville, N. C.

Watson Seed Farms, Inc., Rocky Mount, N. C.

Test Locations

Five locations were used to represent the different soil and climate conditions of the state. The experiment numbers and locations were as follows:

^{2/} N. T. Powell and Furney Todd of the Plant Pathology Department and G. R. Gwynn of the Department of Crop Science and USDA - CRS cooperated on the tests for disease reaction. Their assistance is gratefully acknowledged.

^{3/} Chemical analyses were made under the supervision of J. A. Weybrew and John L. Hall of the Department of Crop Science. Their assistance is gratefully acknowledged.

- TV 193 Border Belt Tobacco Research Station, Wallace Dickens, Superintendent, Whiteville, N. C., representing the Border Belt.
- TV 194 Upper Coastal Plain Research Station, Warren Bailey Superintendent, Rocky Mount, N. C., representing the Eastern Belt.
- TV 195 Lower Coastal Plain Tobacco Research Station, Sandy Barnes, Superintendent, Kinston, N. C., representing the Eastern Belt.
- TV 196 Oxford Tobacco Research Station, Billy Ayscue, Superintendent, Oxford, N. C., representing the Middle Belt.
- TV 197 Upper Piedmont Tobacco Research Station, Howell Gentry, Superintendent, Reidsville, N. C., representing the Old Belt.

The map in Figure 1 shows the locations of these stations and also the Regional Farm Tests.

Methods

The Official Variety Tests were conducted on disease-free soil, insofar as possible. All entries were coded in the plant bed and in the field and were included at each location.

Three replications of a randomized block design were used at each location.^{4/} There were fifteen varieties and thirty-three breeding lines included in the tests for a total of 48 entries. The plants were banded approximately two weeks prior to transplanting and individually selected at transplanting for maximum uniformity within plots at all locations. Each one-row plot consisted of 20 competitive plants. The rows were

^{4/} Statistical analyses were made in the Computing Center under the supervision of Dr. John Rawlings and Sandra L. Biggs. Their assistance is gratefully acknowledged.

3.75 feet apart at all locations, and hills were spaced 22 inches apart. Cultural practices are shown in Table 15.

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

The methods of recording data were the same as those used in previous years, except as noted, and may be found in Crop Science Research Reports Number 12 (1964), Number 16 (1965), Number 20 (1966), Number 24 (1967) and Number 28 (1968).

Value per Acre: After the tobacco was sorted into lots, a Federal Tobacco Inspector graded the tobacco from each plot into appropriate government grades. The value per acre was calculated by multiplying the pounds of each grade by the average auction price paid for the grade during the 1968 and 1969 seasons through September 12, 1969.

Quality Index: Each grade was evaluated for physical traits by rating the leaf for color, body and texture on a scale of 10 to 50. The categories were: 10 = very good, 20 - good, 30 fair, 40 = poor and 50 = very poor. A quality index was then calculated for each plot. This rating was made by experiment station personnel at the time the individual plots were graded.

Seasonal Conditions: The transplanting of tobacco at all five locations

of the 1969 Official Variety Test was conducted under favorable moisture conditions. Early growing conditions were, in general, favorable with good stands reported at all locations.

Based on reports from producers and warehousemen as of October 1, production of flue-cured tobacco in North Carolina was forecast at 706,800,000 pounds and was nine percent above the 648,533,000 pounds produced last year. Yield per acre in the Eastern Belt was 55 pounds below 1968 and the Border Belt yield was 145 pounds under last year. This was primarily due to excess rainfall throughout the growing season. The Old Belt yield was expected to be 130 pounds above 1968. The nine percent increase in production was primarily the result of an increased acreage in 1969.

The outlook for the Middle and Old Belts (Type 11) was for a yield of 1,800 pounds per acre from 147,000 acres for a production of 264,600,000 pounds. In the Eastern Belt (Type 12) an expected yield of 1,900 pounds on 186,000 acres would produce a total of 353,400,000 pounds. Border Belt (Type 13) yields were expected to average only 1,850 pounds per acre for a production of 88,800,000 pounds on 48,000 acres.

The Whiteville Test, TV 193, was transplanted on May 5 under ideal moisture conditions. Rainfall during the growing season was as follows: May - 5.37; June - 9.86; July 5.37. The new fertilizer grade 6-12-18 was used in amount of 600 pounds per acre. The tobacco in this test tended to be fair in color and had medium body and fair texture. Brown Spot caused some damage in the more susceptible entries and a pathological reading on the degree of Brown Spot was made at this location. The tobacco in this test was of fair to good quality.

The Rocky Mount Test, TV 194, was not used because of severe damage to yield and quality caused by the disease, Black Shank.

The Kinston Test, TV 195, was planted under good moisture conditions. The early growing season here was cool with periods of heavy rainfall. The mid and late growing season was favored by warm temperatures and adequate moisture. The tobacco produced in this test was an improvement over that produced at this location in 1967 and 1968. Eight hundred pounds of 4-8-12 was applied with 50 pounds of 15-0-14 as topdressing on this crop. The leaf was of fair color, medium body and good texture.

The Oxford Test, TV 196, was transplanted on May 22 under dry conditions. Rainfall for the balance of May was 0.23 inches and 3.5 inches fell in June. July was wet with 9.15 inches. This test was irrigated on June 30 with 1.2 inches of water. The quality was fair to good with moderate yield.

The Reidsville Test, TV 197, was transplanted under adequate moisture conditions. The season and fertility level were favorable for good growth and development of this crop. Over $7\frac{1}{2}$ inches of rain fell in June and 3.84 inches in July giving a good growing season. Overall, the quality of the entries was good to very good in this test and no irrigation was necessary.

Regional Farm Tests

The number of entries in this test is necessarily limited since the plots are rather large and there are many locations. In this program are included advanced breeding lines that have met the minimum standards in the Regional Small Plot Test. It is desirable to gain information on these breeding lines and varieties under farm conditions. Also, this provides an opportunity for the tobacco companies to study the breeding lines and new varieties for their manufacturing characteristics.

This part of the evaluation program is a cooperative effort of the experiment station, extension service, USDA, tobacco companies and growers. The participating companies were: The American Tobacco Company, Brown and Williamson Tobacco Corporation, Imperial Tobacco Company, Liggett and Myers Tobacco Company, Philip Morris, Inc., P. Lorillard Company, R. J. Reynolds Tobacco Company and Export Leaf Tobacco Company.

Eleven locations were utilized -- one in South Carolina, two each in Georgia and Virginia and six in North Carolina. This is a cooperative program and permission was granted for the inclusion of all locations in this report.

Fertilization and other cultural practices, as shown in Table 14 were those generally used by the growers and were considered moderate. A nematode assay was made on all fields and those with a nematode problem were fumigated. Only information on the North Carolina Tests are shown here.

Representatives from both domestic and foreign buyers visited these plots in the field. The cured tobacco 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 its physical quality characteristics according to the previously described quality index.

In general, the 1969 season was cool early in the growing period followed by rains in early June and July and hot dry conditions in late July and August. The growing conditions were conducive to producing a light, lemon-colored crop in most areas.

Edmund transplanted during a period of ample moisture and the crop started well with little replanting. It was somewhat dry early in the growing season, but rainfall was adequate at the latter stages of growth. The tobaccos produced at this location were generally of good quality.

The test at Harrell's was produced under good fertility and climatic conditions. A moderate hail storm in mid-June apparently did not greatly affect the growth characteristics and quality of the tobacco. The general characteristics of the tobacco, both in the field and the cured leaf, were good.

Johnson transplanted on April 24 under good soil moisture conditions. The tobacco grew and developed well during the early part of the growing season. Heavy rains during the third week caused what appeared to be a severe leaching problem. The replacement application of fertilizer apparently adversely affected the quality of this tobacco.

Denny transplanted approximately two weeks later than usual due to a cold, late spring at this location. The early growing season was

favorable and good stands were obtained. Irrigation was used during dry periods to produce the moderate yield and good quality of this crop.

Crews transplanted on May 21 and the early growing season was favorable. Late June and early July were hot and dry causing the tobacco to be under stress. This crop responded nicely to rains late in July, however, and the overall quality of the crop was fair.

Busick transplanted May 10. Weather conditions were fair with sufficient rainfall during most of the season. Overall quality of this crop was fair to good.

All six cooperators used T-148 contact sucker control material with fair to good results in controlling suckers.

RESULTS AND DISCUSSION

The data are discussed under the headings (1) Official Variety Tests and (2) Regional Farm Tests. Individual location data are presented but are discussed only to emphasize specific points.

Official Variety Test

The data presented in Tables 1 and 2 are summary data for various years and locations and indicate how several varieties have been performing over a period of years at various locations.

In Table 1, the data are percentage comparisons with the average performance of Hicks Broadleaf for the period 1953 to 1969. The varieties with the higher number of comparisons have been included in the tests from two to seventeen years and give a more accurate estimate of their general performance, while the varieties with eight comparisons have been in the test only one year. Most varieties in Table 1 maintain

their same relative position for value per acre as they do for yield.

In Table 2, varieties that were common in the 1967, 1968 and 1969 tests are compared for a large number of characteristics. The same general trend was shown in these varieties during all years. Speight G-7, Coker 258 and Speight G-36 had the highest acre value. Speight G-7, NC 2326 and McNair 14 averaged above \$70.00 per one hundred pounds. Hicks Broadleaf was the earliest to flower. All varieties had about average percent nicotine, ranging from 2.99 for Coker 319 to 3.47 for Hicks. All varieties were in an average range for other chemical and agronomic traits.

The average performance of varieties and lines compared at four locations in 1969 is shown in Table 3. There was some variety x location interaction for the characters studied, however, it probably was not sufficient to affect the choosing of a variety to plant. Varieties tended to perform the same relative to each other, that is, they did not make major shifts. The variety x location mean squares were used for computation of L.S.D. values. The entries shown at the top of Table 3 are commercially available varieties, whereas, those in the lower portion are breeding lines.

Commercially Available Varieties

Thirteen of the fifteen commercially available varieties tested in 1969 yielded equal to or greater than Hicks. There was a fairly wide spread for dollars per hundred weight, ranging from a low of \$69.36 for Speight G-36 to a high of \$73.24 for Speight G-7. The quality rating followed the same general pattern as did the dollars per hundred weight.

Due to the range used in assigning the quality index (10 to 50, with 10 being best), varieties seemed to be quite similar, however, small differences are important in this index and are significant. Considering all entries in the test, there has been a high correlation between the value per hundred weight and the quality index, indicating that the two are giving a somewhat similar picture. If the tobaccos are normal in physical appearance that would be expected.

Most varieties were intermediate in their flowering habit, ranging from 2 to 11 days later than Hicks Broadleaf. All varieties had more leaves per plant than Hicks, although the maximum difference was only 4.5 leaves. Data were collected on internode length on the basal, middle and upper part of the plant. Information of this nature would be useful to the engineer in developing mechanical harvesting equipment. The range was small in the lower two stalk positions, but wide in the upper position. Coker 213 and Speight G-7 had a high ground sucker count. Speight G-36 and Speight G-28 had the lowest axillary sucker count per plant. Measurements on leaf size indicated that most varieties were quite similar. Most are of the old line type with medium width leaves. This has been the direction of selection by breeders in recent years and has produced varieties that tend to more nearly resemble those of the old line type.

Quality is divided into visual or physical appearance, chemical characteristics and smoking characteristics. The visual characteristics can be readily seen by the eye, whereas the chemical and smoke characteristics must be determined in the laboratory. Data on several chemical

constituents that are associated with quality are presented in Table 3. Most of the varieties appear to have satisfactory chemical compositions with Speight G-28 being the lowest in nicotine content as compared with the other varieties. The nicotine content in 1969 ranged from 3.15 to 4.04 although most test locations received adequate rainfall. Weather conditions during the growing season caused all entries to be higher in nicotine than for a more normal growing season. Within limits, it is generally assumed that the higher the ratio of nitrogen-to-nicotine, the less desirable the tobacco since it does not age satisfactorily. This ratio is also used as an indication of chemical balance within the plant. All of the varieties had a ratio below 1.00 this season, with no exceptions. The total nitrogen content was similar to past years.

McNair 133 and Speight G-28 had a higher proportion of their alkaloid in the form of nornicotine than the other varieties. Several varieties showed some cherry red in the cured leaf. All of the varieties were in a range of eight to eleven percent sugar and the sugars were consistently lower than in 1968.

The ratio (reducing sugar/nicotine) was calculated as a measure of the relationship of the carbohydrates to the alkaloid fraction. To be of value, the constituents included in the ratio must be within the acceptable range. A higher ratio tends to indicate mildness and smoothness while a very low ratio may be indicative of a harsh irritating smoke. If the ratio is too high, it might indicate that the tobacco is too mild to be acceptable to the smoker. There was a range from 2.09 for McNair 30 to 3.10 for Speight G-28.

Information on disease resistance is presented in Table 4. Data were collected on Black Shank, Granville Wilt, Fusarium Wilt, Root Knot and Brown Spot. A relative rating of the level of resistance to each disease is given for each variety based on this and other disease tests. The disease tests were fairly critical at all locations. Much progress appears to have been made in developing disease resistant varieties released in the last few years. There are several varieties carrying a high level of resistance to Black Shank, Granville Wilt, Fusarium Wilt and Root Knot. Several other varieties carry a moderate to high level of resistance to Granville Wilt and Fusarium Wilt. The choice of varieties carrying Granville Wilt resistance is somewhat higher than in recent years. Brown Spot readings were obtained at three locations (Kinston, Rocky Mount and Oxford) on the cured leaf. The varieties were rated as tolerant, moderate tolerant, sensitive and very sensitive for Brown Spot.^{1/}

Advanced Breeding Lines

Data on advanced breeding lines are also shown in Table 3, however, since these lines are in early stages of testing, the data will not be discussed in detail at this time.

Since most of the breeding lines have only been in the Official Variety Test for one year, regional testing was not available. The lines are rated as resistant without any index or level of resistance shown.

The same type of rating is given for the Granville Wilt and Fusarium Wilt levels. There has been an increase in breeding lines for Granville Wilt resistance in recent years. It has been difficult to obtain varieties or breeding lines with multiple resistance to all diseases, good

^{1/}C. E. Main, Assistant Professor, Plant Pathology cooperated on obtaining Brown Spot ratings.

physical and chemical characteristics and acceptable smoke ratings.

Under the Acreage-Poundage Program, some pressure has been eliminated for the plant breeder to continue to develop each year higher and higher yielding lines. This situation has enabled the plant breeder to direct more attention to the selection criteria for disease resistance.

Many of the entries carry resistance to Root Knot nematode species Meloidogyne incognita, which is the most prevalent species of nematode in North Carolina soils. There are other species of Root Knot nematodes as well as meadow and stunt nematodes to which these lines may be susceptible.

Regional Farm Tests

A summary of the results from the Regional Farm Tests is presented in Table 9. Yields ranged from 2070 to 2304 pounds per acre for McNair 159 and Speight G-27 respectively. Value per acre followed the same trend as yield. Hicks had the highest dollars per hundred pounds of the entries in this test with a value of \$75.27.

The tobacco from each of the locations was displayed on a warehouse floor at Kinston and Fuquay Varina and appraised for the physical quality factors; color, body and texture by leaf and research personnel of each of the eight participating tobacco companies. The results of this quality appraisal are shown in Table 10. The ratings varied from company to company but tended to follow the same general pattern.

Table 12 shows percent tobacco usable by at least one company for individual North Carolina farms and a means for all farms and varieties. The high numbers indicate that the majority of the new lines could be used by at least one buying company.

In Table 13, an index of the amount graded is shown by grower for each variety. If all eight companies could grade all of a variety into their grades, then it received an index of 8. However, since companies have different requirements, all would not tend to grade each lot of new line tobacco. In the overall average for all companies, the varieties, Speight G-41, NC 95, McNair 135, McNair 159 and Coker 347 received the highest ratings.

The farmers were asked to rate the varieties for grower desirability with their highest preference shown as number one. The data are shown in Table 13. The rating indicated that the growers preferred Speight G-27 and Speight G-41 over the other varieties.

Both physical and chemical information should be considered along with yield and value data relative to a variety or line. Also the handling characteristics are important. A thorough evaluation of breeding material is important if quality is to be maintained and improved.

These various indices are not conclusive but show trends in preferences which are indicative of the acceptability and desirability of these tobaccos by manufacturers and growers. All information should be studied relative to varietal performance for all characteristics and not just a selected one or two.

Table 1. Percentage comparison with the mean of Hicks Broadleaf of certain flue-cured tobacco varieties in the Official Tobacco Variety Test. 1953 - 1969.

Standard Hicks Broadleaf	Acre Yield 2048 lbs.	Acre Value \$1282	Value per 100 lbs. \$62.10
No. Comparisons*			
13	Speight G-13	(115)	Coker 254 (114) NC 2326 (102)
17	Coker 258	(114)	Speight G-13 (114) Coker 254 (101)
32	Speight G-36	(114)	Speight G-7 (113) McNair 14 (101)
36	Va. 115	(114)	Coker 258 (112) Speight G-7 (101)
13	Coker 254	(113)	Va. 115 (112) Coker 319 (100)
22	Speight G-7	(112)	S.C. 66 (108) <u>Hicks Broadleaf</u> (100)
45	NC 95	(109)	Speight G-36 (108) McNair 133 (100)
13	Bell 93	(106)	NC 95 (107) Speight G-13 (100)
8	Coker 213	(106)	NC 2326 (106) Bell 93 (99)
36	Coker 319	(106)	Bell 93 (105) Coker 258 (99)
8	McNair 133	(106)	McNair 133 (105) Va. 115 (99)
17	S.C. 66	(106)	Coker 319 (104) McNair 30 (98)
31	McNair 30	(105)	Coker 213 (103) NC 95 (98)
8	Speight G-28	(105)	McNair 14 (102) Speight G-28 (98)
32	NC 2326	(104)	McNair 30 (102) S.C. 66 (98)
13	McNair 14	(102)	Speight G-28 (102) Coker 213 (97)
76	<u>Hicks Broadleaf</u>	(100)	<u>Hicks Broadleaf</u> (100) Speight G-36 (95)

THREE YEAR AVERAGE 1967, 1968, 1969

Table 2. Comparison of certain varieties and lines in Official Tobacco Variety Test.

Varieties or Lines	Yield Lbs/A	Value Index		Days to Flower	Leaves per Plant	Height of Plant
		Dol/A	Dol/Cwt.			
Hicks Broadleaf	2205	1536	69.43	49	17.0	45
NC 95	2368	1642	69.21	55	20.0	47
Bell 93	2312	1594	68.89	52	18.2	47
Coker 319	2325	1622	69.78	57	21.1	48
Coker 258	2527	1744	69.02	59	21.4	47
McNair 14	2236	1566	70.04	54	19.3	46
NC 2326	2322	1650	70.93	50	18.0	47
Speight G-7	2486	1769	71.13	54	20.4	49
Speight G-36	2517	1694	67.25	58	20.5	52

Varieties or Lines	<u>Suckers per plant</u>		Width of leaf (in.)			Length of leaf (in.)		
	Ground	Leaf Axil	5th	10th	15th	5th	10th	15th
Hicks Broadleaf	2.3	25.2	10.4	12.8	13.6	24.3	26.3	24.6
NC 95	1.9	21.4	9.7	12.1	13.8	20.4	23.9	24.0
Bell 93	1.8	23.4	10.2	12.8	14.2	23.0	25.8	25.0
Coker 319	1.9	25.1	9.0	11.5	13.7	21.8	25.2	25.9
Coker 258	1.8	20.0	9.0	11.6	13.2	19.9	24.1	24.7
McNair 14	1.3	23.2	10.8	12.8	14.0	21.8	24.8	24.2
NC 2326	0.8	22.9	10.0	12.5	13.8	23.3	25.8	24.5
Speight G-7	3.1	23.0	10.4	13.0	14.3	20.7	24.1	24.4
Speight G-36	1.2	18.5	9.4	12.3	14.0	21.0	24.4	24.5

Varieties or Lines	Nic.	Nor.Nic.	Red. Sug.	Tot. N.	T.N.	Sug.
	%	%	%	%	Nic.	Nic.
Hicks Broadleaf	3.47	.11	14.57	2.33	.69	4.44
NC 95	3.22	.13	14.17	2.28	.72	4.56
Bell 93	3.40	.12	13.19	2.35	.71	4.13
Coker 319	2.99	.10	12.62	2.39	.83	4.56
Coker 258	3.40	.13	12.89	2.33	.71	4.11
McNair 14	3.25	.20	13.65	2.52	.79	4.40
NC 2326	3.22	.11	14.70	2.28	.73	4.82
Speight G-7	3.36	.14	14.86	2.27	.69	4.70
Speight G-36	3.21	.10	13.78	2.33	.74	4.61

WHITEVILLE, OXFORD, KINSTON and REIDSVILLE

Table 3. Comparison of varieties in 1969 for certain characteristics, for four locations.

Varieties or Lines	Yield Lbs/A	Value Index		Q.I.	Days to Flower	Leaves per Plant	Height of Plant	Internode Length			
		Dol/A	Dol/Cwt.					0-10"	10-20"	20"-top	
Commercially Available Varieties											
Hicks Broadleaf	2184	1568	71.75	33.4	46	17.6	45	1.7	2.3	3.4	
NC 95	2351	1687	71.99	33.2	52	21.1	48	1.8	2.2	2.5	
Bell 93	2194	1551	70.84	35.4	50	18.9	48	1.8	2.3	3.0	
Coker 213	2260	1575	69.86	35.5	54	22.1	50	1.7	2.2	2.6	
Coker 254	2304	1664	72.25	35.1	57	22.1	51	1.7	2.3	2.6	
Coker 258	2440	1738	71.29	36.1	57	21.8	47	1.7	2.1	2.4	
Coker 319	2210	1587	71.86	34.6	54	21.4	48	1.7	2.1	2.5	
McNair 14	2156	1575	73.07	32.1	50	19.9	47	1.8	2.4	2.6	
McNair 30	2293	1613	70.43	35.5	51	18.7	48	1.8	2.3	3.2	
McNair 133	2283	1653	72.46	32.9	53	20.6	51	1.9	2.4	2.8	
NC 2326	2262	1655	73.18	31.1	48	18.4	48	1.8	2.3	3.3	
Speight G-7	2436	1782	73.24	31.6	51	21.4	51	1.8	2.2	2.7	
Speight G-13	2531	1844	72.89	32.7	55	20.5	53	1.8	2.6	3.0	
Speight G-28	2253	1592	70.83	34.7	53	20.7	43	1.7	2.0	2.3	
Speight G-36	2477	1718	69.36	37.1	55	21.1	52	1.8	2.3	2.9	
Advanced Breeding Lines											
Coker 66-411	2300	1635	71.09	35.4	51	20.8	48	1.7	2.2	2.6	
Coker 67-347	2507	1794	71.70	35.0	54	21.5	47	1.6	2.1	2.5	
Ga. 1096	2367	1658	70.36	35.3	52	21.5	48	1.7	2.1	2.6	
McNair 135	2383	1697	71.30	34.8	54	22.1	51	1.7	2.2	2.7	
McNair 159	2290	1580	69.00	38.3	52	21.6	47	1.7	2.1	2.5	
NC H-1	2367	1708	72.27	33.8	49	20.0	49	1.8	2.2	3.0	
NC 383-5-9	2364	1647	69.86	36.9	55	21.0	52	1.8	2.4	2.8	
NC 1802	2560	1891	73.87	31.4	53	21.5	52	1.8	2.3	2.8	
NC 5831	2302	1647	71.63	34.6	54	21.4	51	1.8	2.2	2.7	
NC 6799	2360	1628	69.10	38.0	51	21.1	52	1.7	2.2	3.0	
NC 6857-4	2327	1636	70.62	34.3	53	18.9	46	1.7	2.2	3.0	
NC 7062C	2518	1865	74.09	32.0	55	21.5	53	1.7	2.4	2.9	
NC 7816-5	2478	1833	74.11	31.0	49	20.1	48	1.8	2.3	2.9	
NC 7818-2C	2489	1818	73.08	32.5	49	19.7	49	1.8	2.2	3.0	
NC 8007	2317	1692	73.15	32.9	52	20.0	54	1.9	2.6	3.2	
NC 8083	2322	1660	71.71	32.9	50	18.3	50	2.0	2.6	3.2	
NC 8090	2338	1708	73.25	32.6	52	20.1	51	1.8	2.4	3.0	
NC 8626	1897	1281	67.62	37.6	50	18.9	51	1.8	2.5	3.2	
NC 8766	1829	1086	60.00	43.0	45	17.4	44	1.7	2.4	3.3	
NC 8768	1984	1285	64.90	40.8	46	18.0	46	1.7	2.4	3.2	
NC 8790	2306	1640	71.26	35.4	54	20.0	51	1.9	2.3	3.0	
NC 8802	2423	1745	72.09	34.5	50	19.0	49	1.8	2.3	3.1	
NC 8855	2516	1841	73.25	32.7	52	20.8	48	1.7	2.1	2.7	
NC 8879	2275	1631	71.82	34.6	53	20.5	46	1.7	2.1	2.6	
PD 8	2433	1713	70.54	34.3	52	20.1	47	1.8	2.1	2.8	
PD 183	2299	1626	70.55	33.8	51	20.2	49	1.8	2.3	2.8	
Speight G-27	2504	1789	71.58	34.6	54	20.3	46	1.8	2.2	2.5	
Speight G-41	2409	1742	72.35	33.3	53	20.8	48	1.7	2.2	2.6	
Speight G-46	2799	2074	74.20	31.8	57	23.1	54	1.8	2.3	2.5	
Speight G-120	2435	1693	69.65	37.7	53	21.5	48	1.7	2.2	2.5	
Speight G-140	2445	1749	71.56	34.1	55	22.7	51	1.8	2.2	2.4	
Speight G-160	2635	1843	69.90	36.2	51	20.9	46	1.7	2.2	2.5	
Watson D-34	2342	1687	72.31	32.5	50	20.1	51	1.7	2.2	3.2	
L. S. D.	(.05)	174	148	2.28	2.9	2	1.1	2	.1	.1	.2
	(.01)	228	195	3.00	3.8	3	1.4	3	.1	.2	.3
C. V.	(%)	9	11	4	10	5	6	5	7	8	10

WHITEVILLE, OXFORD, KINSTON and REIDSVILLE

Table 3. Continued. Comparison of varieties in 1969 for certain characteristics, for four locations.

Varieties	Suckers per plant		Width of leaf (in.)			Length of leaf (in.)		
	Ground	Leaf Axil	5th	10th	15th	5th	10th	15th
Commercially Available Varieties								
Hicks Broadleaf	2.8	23.6	10.0	12.9	14.9	23.4	26.2	25.1
NC 95	2.3	19.9	9.4	11.9	14.1	19.7	23.9	23.6
Bell 93	2.2	19.9	9.5	12.9	15.0	21.5	25.1	24.9
Coker 213	4.6	24.0	9.7	12.8	15.3	19.4	24.1	24.4
Coker 254	3.3	21.5	10.5	13.2	15.3	20.2	24.5	24.3
Coker 258	2.0	18.9	9.0	11.7	14.0	19.1	24.0	24.5
Coker 319	2.2	23.2	8.8	11.7	14.5	20.7	24.6	25.8
McNair 14	1.8	23.1	10.7	12.9	14.5	21.1	24.2	23.7
McNair 30	2.0	22.6	9.8	13.0	14.9	22.0	25.3	24.9
McNair 133	3.3	20.8	10.6	13.1	14.8	20.0	23.7	24.2
NC 2326	0.9	21.2	9.7	12.7	14.9	22.5	25.4	24.7
Speight G-7	3.7	22.7	9.6	12.5	14.7	19.4	23.5	24.4
Speight G-13	1.8	17.6	9.6	12.9	14.7	20.2	24.5	24.6
Speight G-28	0.7	17.3	9.1	11.5	14.0	19.6	23.3	23.8
Speight G-36	1.2	17.3	9.2	12.0	14.6	20.3	23.8	24.4
Advanced Breeding Lines								
Coker 66-411	1.9	20.0	9.1	12.0	14.4	20.8	24.8	24.7
Coker 67-347	2.6	21.2	9.1	12.4	14.4	21.3	25.5	26.1
Ga. 1096	2.8	23.2	9.3	12.0	14.0	20.0	23.9	24.3
McNair 135	1.7	21.0	8.5	11.4	14.2	20.5	25.1	25.0
McNair 159	2.9	25.8	8.5	11.1	14.1	21.1	25.2	25.8
NC H-1	3.0	22.3	9.4	12.7	14.8	21.3	24.8	24.9
NC 383-5-9	2.8	16.7	8.9	11.8	15.0	20.7	24.6	25.5
NC 1802	4.2	22.3	10.0	13.8	15.9	19.9	24.5	24.9
NC 5831	3.9	24.0	10.6	13.1	15.9	20.0	23.7	24.6
NC 6799	3.2	23.0	9.6	12.3	15.2	20.7	24.7	25.3
NC 6857-4	0.7	19.9	9.2	12.5	14.4	20.5	24.8	24.4
NC 7062C	4.1	19.9	8.8	12.0	14.1	20.1	23.5	23.9
NC 7816-5	0.7	21.5	8.9	11.2	13.6	21.0	23.8	24.4
NC 7818-2C	0.5	22.4	9.5	12.1	14.1	21.8	25.1	24.9
NC 8007	3.4	20.7	10.2	13.2	15.2	21.2	24.7	24.7
NC 8083	2.8	21.8	10.5	13.3	15.1	20.0	23.4	23.1
NC 8090	4.2	21.1	9.3	12.9	14.9	21.0	24.7	24.3
NC 8626	3.3	20.8	10.5	13.9	15.7	21.5	24.5	24.5
NC 8766	2.5	17.0	8.7	11.8	13.6	22.2	24.1	23.1
NC 8768	2.2	17.0	9.0	11.4	13.9	22.2	24.5	23.2
NC 8790	1.6	16.1	8.9	12.4	14.7	20.6	24.7	24.8
NC 8802	2.5	17.7	9.0	12.2	14.3	20.2	24.0	23.8
NC 8855	3.1	20.7	9.6	12.4	14.3	20.5	24.7	24.9
NC 8879	1.7	20.7	8.7	11.7	14.5	19.2	23.6	24.5
PD 8	2.0	19.6	8.7	12.1	14.6	20.3	24.5	25.3
PD 183	1.6	19.7	9.6	12.5	14.9	19.6	23.5	24.4
Speight G-27	2.1	20.0	10.3	13.6	14.7	19.8	24.4	23.3
Speight G-41	1.5	17.0	9.0	11.7	14.3	19.6	23.7	24.4
Speight G-46	3.7	19.8	10.2	12.9	15.9	20.5	25.1	25.3
Speight G-120	1.1	17.8	8.1	11.3	14.1	20.2	24.7	24.5
Speight G-140	1.8	17.9	9.4	12.4	15.4	20.2	24.4	25.5
Speight G-160	1.6	18.2	9.4	12.1	14.9	20.5	24.1	24.9
Watson D-34	5.0	21.0	9.6	12.9	15.2	21.4	24.7	25.1
L. S. D. (.05)	.7	2.7	.7	1.0	.8	1.2	1.1	.9
(.01)	.9	3.6	1.0	1.3	1.1	1.6	1.5	1.2
C. V. (%)	34	17	10	10	7	7	6	5

WHITEVILLE, OXFORD, KINSTON and REIDSVILLE

Table 3. Continued. Comparison of varieties in 1969 for certain characteristics, for locations.

Varieties or Lines	Analysis of Cured Leaf				Ratios	
	Nic. %	Sol. Sug. %	Tot. N. %	Nor.Nic. %	T.N. Nic.	Sug. Nic.
Commercially Available Varieties						
Hicks Broadleaf	3.84	10.80	2.51	.02	.66	2.90
NC 95	3.49	10.59	2.52	.05	.74	3.02
Bell 93	3.85	8.58	2.57	.04	.68	2.26
Coker 213	3.70	10.35	2.43	.02	.68	2.85
Coker 254	4.04	8.87	2.45	.06	.61	2.22
Coker 258	4.03	8.63	2.63	.05	.67	2.20
Coker 319	3.59	8.04	2.69	.04	.77	2.25
McNair 14	3.66	10.16	2.79	.06	.78	2.84
McNair 30	3.94	8.23	2.72	.05	.70	2.09
McNair 133	3.52	9.88	2.51	.10	.73	2.89
NC 2326	3.65	10.78	2.50	.05	.69	2.99
Speight G-7	3.85	10.40	2.53	.03	.66	2.75
Speight G-13	3.68	10.81	2.66	.05	.74	3.04
Speight G-28	3.15	9.38	2.44	.07	.79	3.10
Speight G-36	3.64	8.96	2.60	.06	.74	2.58
Advanced Breeding Lines						
Coker 66-411	3.82	8.88	2.59	.06	.70	2.36
Coker 67-347	3.85	10.02	2.60	.07	.69	2.64
Ga. 1096	3.71	9.22	2.59	.12	.71	2.53
McNair 135	3.64	10.64	2.52	.04	.70	2.96
McNair 159	3.29	7.49	2.59	.05	.80	2.29
NC H-1	3.78	10.61	2.58	.12	.70	2.90
NC 383-5-9	3.21	7.85	2.64	.09	.85	2.55
NC 1802	3.54	11.87	2.46	.05	.71	3.40
NC 5831	2.97	9.93	2.48	.02	.86	3.47
NC 6799	3.89	8.64	2.65	.06	.69	2.24
NC 6857-4	3.86	9.02	2.66	.04	.70	2.39
NC 7062C	3.73	12.46	2.46	.03	.67	3.43
NC 7816-5	3.25	13.03	2.44	.09	.75	4.13
NC 7818-2C	3.59	11.01	2.58	.01	.74	3.13
NC 8007	3.51	11.71	2.56	.05	.75	3.42
NC 8083	4.44	10.31	2.77	.03	.63	2.37
NC 8090	3.84	9.92	2.54	.12	.68	2.68
NC 8626	4.25	7.84	2.86	.03	.73	1.92
NC 8766	4.56	5.57	2.94	.05	.65	1.23
NC 8768	4.53	5.38	2.85	.04	.64	1.21
NC 8790	3.38	9.36	2.47	.09	.75	2.82
NC 8802	3.17	9.90	2.43	.02	.78	3.14
NC 8855	3.71	10.01	2.46	.04	.68	2.79
NC 8879	3.33	11.29	2.51	.06	.77	3.42
PD 8	3.50	10.36	2.52	.04	.73	2.97
PD 183	3.71	11.17	2.63	.04	.72	3.11
Speight G-27	3.77	9.76	2.63	.02	.70	2.66
Speight G-41	3.76	10.36	2.52	.02	.68	2.87
Speight G-46	2.65	11.71	2.30	.10	.90	4.67
Speight G-120	3.80	9.41	2.44	.05	.66	2.45
Speight G-140	3.49	10.87	2.66	.04	.77	3.16
Speight G-160	3.43	11.57	2.51	.05	.74	3.44
Watson D-34	3.61	10.40	2.40	.07	.69	3.01
L.S.D. (.05)	.31	1.66	.20	.07	.06	.68
(.01)	.41	2.18	.26	.09	.08	.90
C.V. (%)	11	21	10	157	11	31

Table 4. Summary information on disease resistance.

Varieties or Lines	Level of Resistance				
	Black Shank	Granville Wilt	Fusarium Wilt	Brown Spot ^{2/}	Root Knot ^{3/}
Commercially Available Varieties					
Hicks Broadleaf	Susc.	Susc.	Low	Mod. Tol.	Susc.
NC 95	High	High	High	Mod. Tol.	Resistant
Bell 93	Mod.	Susc.	Low	V. Sen.	Susc.
Coker 213	High	Mod.*	High*	Sen.	Susc.
Coker 254	High	High	Mod.	Sen.	Resistant
Coker 258	High	High	High	Mod. Tol	Resistant
Coker 319	Low	Low	Low	Sen.	Susc.
McNair 14	Mod.	High	Susc.	Sen.	Susc.
McNair 30	Mod.	Susc.	Low	Sen.	Susc.
McNair 133	High	High*	Low*	Sen.	Susc.
NC 2326	Mod.	Low	Low	Mod. Tol.	Susc.
Speight G-7	High	Low	Susc.	Mod. Tol.	Susc.
Speight G-13	Mod.	Mod.	Low	Mod. Tol.	Seg.
Speight G-28	High	High*	Mod.	Mod. Tol.	Resistant
Speight G-36	High	High	Mod.	V. Sen.	Susc.
Advanced Breeding Lines ^{1/}					
Coker 66-411	R	S	R		
Coker 67-347	R	High	High		Resistant
Ga. 1096	R	High	High		Resistant
McNair 135	R	S	Low		Susc.
McNair 159	R	Low	Mod.		Susc.
NC H-1	R	R	S		
NC 383-5-9	R	R	S		
NC 1802	R	R	S		
NC 5831	R	R	R		
NC 6799	S	R	S		
NC 6857-4	S	S	R		
NC 7062C	R	R	R		
NC 7816-5	R	R	R		
NC 7818-2C	R	R	R		
NC 8007	R	R	R		
NC 8083	R	R	S		
NC 8090	R	R	R		
NC 8626	S	S	R		
NC 8766	R	R	S		
NC 8768	R	R	S		
NC 8790	S	R	R		
NC 8802	S	R	R		
NC 8855	R	R	R		
NC 8879	R	R	R		
PD 8	R	High	High		Resistant
PD 183	R	Mod.	Low		Susc.
Speight G-27	R	High	Low		Susc.
Speight G-41	R	High	Mod.		Resistant
Speight G-46	R	S	S		
Speight G-120	R	R	R		
Speight G-140	R	R	R		
Speight G-160	R	R	S		
Watson D-34	S	S	S		

^{1/} Ratings for level of resistance based on data for one year. R Resistance

^{2/} Tolerance does not mean resistance. For example: brown spot may cause damage on all varieties under conditions favorable for disease development. Breeding lines are not rated.

^{3/} Resistant to Meloidogyne incognita, most prevalent species of root knot nematode occurring on flue-cured tobacco.

* This variety was not evaluated during 1969. The resistance rating shown is based on information obtained in previous years.

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Table 5. Comparison of varieties for certain characteristics.

Varieties or Lines	Yield Lbs/A	Value Index		Q.I.	Days to Flower	Leaves per Plant	Height of Plant	Internode Length		
		Dol/A	Dol/Cwt.					0-10"	10-20"	20"-top
Commercially Available Varieties										
Hicks Broadleaf	2498	1802	72.16	35.0	50	17.5	52	1.8	2.4	4.1
NC 95	2654	1839	69.32	38.4	57	23.0	57	2.0	2.3	2.8
Bell 93	2448	1695	69.23	37.5	53	20.3	57	1.9	2.3	3.5
Coker 213	2668	1859	69.73	36.7	61	24.3	61	1.9	2.4	2.8
Coker 254	2528	1832	72.46	40.3	62	23.7	58	1.8	2.5	2.7
Coker 258	2742	1932	70.43	36.4	62	23.5	57	1.8	2.2	2.7
Coker 319	2606	1860	71.41	36.1	61	23.7	59	1.8	2.2	2.9
McNair 14	2390	1769	74.04	34.1	55	21.2	55	1.9	2.5	3.0
McNair 30	2482	1702	68.61	39.8	53	18.7	55	1.9	2.5	3.8
McNair 133	2524	1830	72.50	33.1	59	21.5	60	2.1	2.5	3.2
NC 2326	2552	1884	73.82	35.2	50	17.7	54	2.0	2.5	4.0
Speight G-7	2634	1941	73.72	34.4	55	21.7	57	1.9	2.3	3.1
Speight G-13	2776	2001	72.05	36.1	61	21.1	60	1.9	2.8	3.3
Speight G-28	2414	1697	70.32	37.2	59	21.8	50	1.8	2.2	2.5
Speight G-36	2782	1973	70.94	37.8	60	22.2	61	1.9	2.4	3.2
Advanced Breeding Lines										
Coker 66-411	2510	1773	70.65	37.5	57	22.3	55	1.7	2.4	2.8
Coker 67-347	2876	2071	72.02	36.5	59	22.5	56	1.8	2.1	3.0
Ga. 1096	2590	1766	68.23	37.0	57	23.1	57	1.9	2.3	2.8
McNair 135	2738	1938	70.77	36.8	58	23.3	60	1.8	2.4	3.0
McNair 159	2480	1727	69.62	39.3	55	21.9	56	1.9	2.4	2.9
NC H-1	2604	1866	71.64	36.3	53	20.1	57	1.9	2.4	3.5
NC 383-5-9	2540	1725	67.94	38.1	61	21.7	60	2.0	2.7	3.1
NC 1802	2934	2168	73.88	33.5	58	23.7	63	1.8	2.5	3.0
NC 5831	2578	1859	72.13	36.2	62	22.3	61	2.1	2.3	3.1
NC 6799	2484	1654	66.60	40.0	58	21.9	61	1.7	2.6	3.3
NC 6857-4	2700	1862	68.98	38.8	58	20.1	55	1.9	2.4	3.3
NC 7062C	2748	2018	73.42	35.4	60	22.5	62	1.8	2.8	3.1
NC 7816-5	2674	1926	72.12	35.9	51	19.5	55	1.9	2.5	3.4
NC 7818-2C	2656	1893	71.27	39.2	52	19.2	57	2.1	2.4	3.6
NC 8007	2606	1887	72.47	33.4	58	20.9	62	1.9	3.0	3.4
NC 8083	2522	1770	70.14	36.6	53	17.9	58	2.2	2.9	3.9
NC 8090	2670	1950	73.02	35.1	56	20.2	59	1.8	2.9	3.5
NC 8626	1877	1208	63.96	41.7	56	18.6	57	2.0	2.8	3.7
NC 8766	1866	1032	55.32	44.8	49	17.0	51	1.9	2.4	4.2
NC 8768	2184	1366	62.05	43.4	50	17.9	55	1.9	2.6	4.0
NC 8790	2564	1805	70.26	39.3	60	20.8	60	2.1	2.6	3.3
NC 8802	2560	1793	70.06	38.5	55	19.7	55	1.8	2.6	3.5
NC 8855	2828	2025	71.64	36.7	58	22.1	58	1.8	2.4	3.1
NC 8879	2540	1815	71.44	36.2	58	21.0	53	1.8	2.4	3.0
PD 8	2698	1863	69.13	39.4	56	21.7	57	1.9	2.3	3.1
PD 183	2432	1771	72.79	33.2	56	21.1	57	1.9	2.5	3.1
Speight G-27	2974	2112	71.02	37.9	60	21.9	57	1.9	2.6	2.9
Speight G-41	2660	1915	72.01	35.2	58	22.5	58	1.7	2.4	3.1
Speight G-46	3118	2311	74.18	35.3	62	25.1	64	1.8	2.5	2.8
Speight G-120	2746	1938	70.56	38.3	57	22.8	58	1.9	2.4	2.9
Speight G-140	2648	1879	70.93	36.3	61	23.8	60	2.0	2.5	2.8
Speight G-160	2864	2035	71.06	37.1	56	23.1	57	1.8	2.4	2.7
Watson D-34	2741	1912	69.86	37.4	54	20.6	60	1.9	2.5	3.6
L. S. D. (.05)	204	171	3.40	3.6	3	1.7	3	.3	.3	.4
(.01)	268	225	4.47	4.7	4	2.2	4	.3	.4	.5
C. V. (%)	5	6	3	6	3	5	3	8	7	7

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Table 5. Continued. Comparison of varieties for certain characteristics.

Varieties	Suckers per plant		Width of leaf (in.)			Length of leaf (in.)		
	Ground	Leaf Axil	5th	10th	15th	5th	10th	15th
Commercially Available Varieties								
Hicks Broadleaf	2.8	24.0	11.6	14.5	15.7	25.9	28.9	27.5
NC 95	2.2	21.8	10.2	12.9	14.4	21.0	25.7	25.3
Bell 93	1.6	21.6	10.9	14.3	15.5	23.7	27.8	28.7
Coker 213	4.3	27.6	10.2	12.9	15.5	19.5	25.6	27.1
Coker 254	2.6	24.2	11.8	14.7	15.9	21.2	27.1	27.1
Coker 258	1.6	22.4	9.8	11.7	14.5	19.0	23.8	26.8
Coker 319	1.9	24.3	9.4	11.2	14.2	20.4	24.1	27.7
McNair 14	1.9	24.9	11.7	12.9	14.5	21.5	25.0	24.8
McNair 30	1.8	24.6	11.5	14.7	15.9	24.7	27.6	27.3
McNair 133	3.1	20.6	11.5	14.3	15.5	21.4	25.5	26.0
NC 2326	1.2	21.2	11.3	14.2	15.6	24.7	27.3	27.3
Speight G-7	3.7	23.6	10.9	12.9	14.5	21.5	25.5	26.1
Speight G-13	1.4	17.0	10.4	13.7	15.1	21.4	25.5	26.6
Speight G-28	0.3	19.1	10.4	12.3	14.5	21.3	24.8	25.8
Speight G-36	1.1	18.7	10.0	12.8	15.2	21.0	24.7	26.0
Advanced Breeding Lines								
Coker 66-411	0.8	20.7	10.0	12.4	14.7	21.1	25.3	26.7
Coker 67-347	1.8	23.3	10.1	12.7	14.5	22.7	27.0	28.7
Ga. 1096	3.1	24.8	9.7	12.7	14.1	20.6	25.7	26.4
McNair 135	1.2	24.9	9.6	11.7	14.8	21.1	26.0	27.4
McNair 159	2.2	25.8	9.9	12.2	14.4	22.5	26.4	27.4
NC H-1	2.5	21.3	10.9	13.8	15.7	23.7	26.5	27.8
NC 383-5-9	2.8	22.1	9.6	12.2	15.8	21.1	25.8	27.1
NC 1802	3.1	24.8	11.3	14.6	16.5	21.5	25.9	27.2
NC 5831	3.2	25.8	11.5	13.6	15.8	20.5	24.3	25.9
NC 5799	2.6	24.7	10.1	13.0	16.1	21.3	25.9	27.8
NC 6857-4	0.2	20.8	10.5	13.9	14.9	21.7	26.9	26.3
NC 7062C	4.0	20.0	9.9	13.7	15.4	20.7	25.9	26.5
NC 7816-5	0.3	25.5	10.6	12.7	14.4	22.9	25.9	26.3
NC 7818-2C	0.2	22.4	9.9	13.0	14.3	22.7	27.0	26.9
NC 8007	3.1	22.1	11.7	14.5	16.8	23.3	26.4	27.3
NC 8083	2.1	22.3	11.7	13.4	16.3	22.6	24.7	24.9
NC 8090	3.5	22.4	10.3	13.8	15.8	23.2	27.2	26.8
NC 8626	3.0	15.9	11.7	14.5	16.5	22.7	26.2	26.2
NC 8766	1.7	17.1	9.3	11.3	13.1	23.9	25.4	25.3
NC 8768	1.4	18.1	9.8	12.0	14.7	23.5	26.1	25.8
NC 8790	1.1	18.4	9.5	12.5	14.5	20.9	25.5	26.8
NC 8802	2.7	19.1	10.1	13.7	14.6	21.5	25.6	26.1
NC 8855	3.6	22.6	9.9	12.1	14.7	20.4	24.9	27.5
NC 8879	1.6	24.1	9.7	12.3	14.7	21.1	25.2	27.3
PD 8	1.4	23.3	10.1	12.6	14.9	21.7	25.8	27.7
PD 183	1.4	20.6	11.2	14.2	15.5	21.3	24.9	26.0
Speight G-27	2.0	21.7	11.7	14.1	15.5	21.1	26.5	26.6
Speight G-41	1.6	19.4	9.3	11.4	13.6	20.3	24.3	26.1
Speight G-46	2.9	22.4	11.8	13.0	16.0	21.1	24.9	27.1
Speight G-120	1.1	17.9	8.7	11.5	14.1	21.0	25.6	26.8
Speight G-140	1.1	19.5	10.7	11.9	15.2	21.1	24.5	27.8
Speight G-160	1.0	19.3	10.9	12.7	15.1	22.0	24.5	26.9
Watson D-34	5.6	20.7	11.1	14.3	16.5	22.7	26.6	28.3
L.S.D. (.05)	1.8	4.6	1.1	1.6	1.3	1.9	1.8	1.3
(.01)	2.4	6.0	1.5	2.0	1.7	2.5	2.3	1.8
C.V. (%)	5	13	7	7	5	6	4	3

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Table 5. Continued. Comparison of varieties for certain characteristics.

Varieties or Lines	Analysis of Cured Leaf				Ratios	
	Nic. %	Sol. Sug. %	Tot. No. %	NorNic. %	T.N. Nic.	Sug. Nic.
Commercially Available Varieties						
Hicks Broadleaf	3.17	8.07	2.52	.0	.80	2.58
NC 95	3.07	7.63	2.51	.04	.82	2.50
Bell 93	3.18	6.31	2.63	.02	.83	1.98
Coker 213	2.79	8.98	2.36	.01	.85	3.22
Coker 254	3.43	8.06	2.37	.11	.69	2.35
Coker 258	3.03	7.99	2.48	.05	.82	2.63
Coker 319	2.73	6.10	2.60	.0	.96	2.26
McNair 14	2.85	9.01	2.71	.14	.95	3.16
McNair 30	3.24	6.60	2.69	.11	.83	2.06
McNair 133	2.78	9.34	2.46	.04	.89	3.45
NC 2326	3.22	9.12	2.42	.07	.76	2.93
Speight G-7	3.10	9.42	2.29	.02	.74	3.08
Speight G-13	2.83	10.92	2.31	.08	.82	3.92
Speight G-28	2.55	6.80	2.43	.04	.95	2.68
Speight G-36	2.61	8.94	2.39	.05	.92	3.44
Advanced Breeding Lines						
Coker 66-411	3.13	6.60	2.63	.04	.84	2.17
Coker 67-347	3.13	8.33	2.47	.11	.80	2.71
Ga. 1096	2.90	7.59	2.55	.19	.88	2.67
McNair 135	3.16	9.15	2.47	.08	.78	2.94
McNair 159	2.83	5.31	2.67	.09	.95	1.90
NC H-1	3.16	9.45	2.53	.06	.80	3.00
NC 383-5-9	2.38	7.47	2.44	.09	1.03	3.22
NC 1802	2.81	10.44	2.25	.07	.80	3.72
NC 5831	2.15	8.40	2.25	.0	1.06	4.00
NC 6799	3.34	6.57	2.51	.09	.76	2.01
NC 6857-4	3.24	7.24	2.57	.04	.79	2.26
NC 7062C	2.77	11.90	2.08	.0	.75	4.33
NC 7816-5	2.83	10.68	2.38	.15	.84	3.81
NC 7818-2C	2.91	8.53	2.54	.0	.88	2.96
NC 8007	2.79	9.88	2.57	.05	.93	3.69
NC 8083	3.70	8.56	2.65	.07	.72	2.35
NC 8090	2.93	9.09	2.40	.31	.83	3.22
NC 8626	3.05	5.83	2.87	.0	1.08	1.99
NC 8766	3.89	3.79	3.07	.09	.79	.97
NC 8768	3.82	4.13	2.94	.03	.77	1.08
NC 8790	2.72	7.36	2.48	.18	.92	2.66
NC 8802	2.60	6.49	2.45	.02	.95	2.49
NC 8855	2.84	8.99	2.31	.03	.82	3.27
NC 8879	2.90	9.68	2.47	.10	.86	3.35
PD 8	2.98	7.68	2.46	.07	.82	2.56
PD 183	3.06	10.31	2.51	.09	.82	3.39
Speight G-27	3.00	8.96	2.27	.01	.76	2.99
Speight G-41	2.86	10.62	2.35	.0	.82	3.77
Speight G-46	1.90	9.88	2.04	.24	1.10	5.41
Speight G-120	3.13	8.01	2.28	.05	.73	2.61
Speight G-140	2.87	7.87	2.48	.02	.87	2.79
Speight G-160	2.83	8.48	2.40	.05	.85	3.00
Watson D-34	2.66	9.40	2.21	.09	.84	3.64
L. S. D. (.05)	.50	2.40	.22	.16	.17	1.10
(.01)	.66	3.16	.28	.21	.22	1.44
C. V. (%)	11	18	5	146	12	24

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Table 6. Comparison of varieties for certain characteristics

Varieties or Lines	Yield Lbs/A	Value Index		Q. I.	Days to Flower	Leaves per Plant	Height of Plant	Internode Length		
		Dol/A	Dol/Cwt.					0-10"	10-20"	20"-top
Commercially Available Varieties										
Hicks Broadleaf	2138	1404	65.44	47.5	47	19.1	51	1.6	2.5	3.5
NC 95	2462	1753	71.29	38.0	54	24.5	56	1.8	2.3	2.4
Bell 93	2426	1681	69.14	41.5	50	21.2	57	1.7	2.4	3.3
Coker 213	2396	1619	67.75	41.6	55	24.1	56	1.7	2.4	2.6
Coker 254	2492	1771	71.10	40.3	58	24.1	58	1.8	2.3	2.7
Coker 258	2830	1997	70.53	40.8	58	23.9	55	1.7	2.2	2.6
Coker 319	2356	1689	71.69	38.6	53	23.1	53	1.8	2.2	2.6
McNair 14	2152	1511	70.26	41.0	51	22.0	52	1.8	2.4	2.6
McNair 30	2672	1859	69.24	39.1	52	21.4	57	1.8	2.4	3.2
McNair 133	2356	1661	70.49	41.3	53	22.4	54	1.8	2.5	2.6
NC 2326	2212	1566	70.76	41.2	50	20.3	55	1.8	2.4	3.3
Speight G-7	2670	1893	70.82	38.9	54	23.6	58	1.8	2.3	2.8
Speight G-13	2768	2015	72.81	35.6	58	23.5	61	1.9	2.8	2.9
Speight G-28	2434	1627	66.82	43.9	55	23.5	50	1.8	1.9	2.4
Speight G-36	2546	1712	67.27	43.6	56	24.2	61	1.7	2.3	2.9
Advanced Breeding Lines										
Coker 66-411	2500	1753	70.12	40.6	53	22.9	55	1.8	2.3	2.7
Coker 67-347	2882	1986	68.80	41.1	55	24.3	55	1.6	2.2	2.6
Ga. 1096	2646	1774	67.02	42.7	53	23.3	55	1.8	2.3	2.6
McNair 135	2666	1896	71.09	39.2	55	24.7	59	1.7	2.3	2.7
McNair 159	2370	1537	64.72	44.6	52	23.6	53	1.7	2.2	2.5
NC H-1	2542	1768	69.49	41.1	51	22.1	57	1.8	2.3	3.0
NC 383-5-9	2408	1603	66.72	43.9	55	23.2	60	1.9	2.5	2.9
NC 1802	2590	1862	71.85	37.4	55	24.1	59	1.7	2.4	2.8
NC 5831	2370	1612	68.04	43.1	54	23.5	58	1.8	2.3	2.8
NC 6799	2658	1796	67.62	42.8	52	23.1	59	1.7	2.4	3.1
NC 6857-4	2586	1751	67.81	41.9	53	21.4	52	1.7	2.2	2.9
NC 7062C	2934	2160	73.63	37.7	57	23.7	59	1.7	2.4	2.9
NC 7816-5	2614	1897	72.60	37.7	51	22.7	55	1.7	2.2	2.9
NC 7818-2C	2586	1882	72.83	36.7	50	21.4	56	1.7	2.3	3.2
NC 8007	2340	1675	71.67	41.8	54	22.0	62	1.8	2.6	3.3
NC 8083	2620	1819	69.35	40.7	54	20.9	57	2.0	2.6	3.1
NC 8090	2596	1833	70.75	37.9	54	21.7	58	2.0	2.5	3.0
NC 8626	2072	1303	62.69	47.2	50	20.6	58	1.8	2.7	3.4
NC 8766	2156	1149	53.38	50.0	47	18.9	50	1.8	2.7	3.2
NC 8768	2288	1443	63.11	48.4	49	19.3	51	1.7	2.5	3.2
NC 8790	2464	1677	68.10	42.4	55	22.7	58	1.8	2.4	2.9
NC 8802	2702	1923	71.17	39.1	51	21.2	56	1.9	2.2	3.1
NC 8855	2750	2011	73.11	36.4	51	22.3	54	1.7	2.3	2.8
NC 8879	2446	1734	70.93	40.9	55	23.5	52	1.7	2.0	2.5
PD 8	2718	1910	70.38	39.3	53	21.7	54	1.7	2.2	3.0
PD 183	2226	1501	67.31	42.7	53	22.7	55	1.8	2.3	2.7
Speight G-27	2872	2043	71.14	39.5	56	22.5	54	1.8	2.3	2.7
Speight G-41	2726	1935	71.00	37.8	54	23.5	55	1.7	2.3	2.6
Speight G-46	2966	2132	71.85	38.3	59	25.0	61	1.9	2.5	2.6
Speight G-120	2654	1758	66.29	44.5	55	24.4	55	1.7	2.2	2.5
Speight G-140	2704	1952	72.18	35.9	57	25.7	60	1.8	2.2	2.6
Speight G-160	2772	1933	69.81	39.8	53	23.3	52	1.7	2.2	2.5
Watson D-34	2598	1863	71.71	37.7	52	22.1	60	1.7	2.4	3.4
L. S. D. (.05)	305	226	3.19	4.9	3	1.4	3	.2	.3	.3
(.01)	401	297	4.19	6.4	4	1.8	4	.2	.3	.4
C. V. (%)	8	8	3	7	3	4	4	6	7	6

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Table 6. Continued. Comparison of varieties for certain characteristics.

Varieties	Suckers per plant		Width of leaf (in.)			Length of leaf (in.)		
	Ground	Leaf Axil	5th	10th	15th	5th	10th	15th
Commercially Available Varieties								
Hicks Broadleaf	4.2	35.9	10.6	13.0	15.3	23.5	25.8	26.3
NC 95	2.9	25.1	9.9	12.0	13.4	19.5	22.9	22.9
Bell 93	2.9	28.0	9.9	12.3	15.0	21.7	25.1	25.1
Coker 213	5.7	36.0	9.5	12.1	15.2	19.0	22.5	23.7
Coker 254	4.4	30.6	10.7	12.8	14.6	20.8	23.9	25.3
Coker 258	3.1	28.4	9.7	11.6	14.2	19.7	23.9	24.9
Coker 319	2.2	34.9	9.7	12.3	15.3	22.8	24.9	26.7
McNair 14	2.0	35.1	11.8	12.7	14.4	22.3	23.1	23.5
McNair 30	2.9	33.1	9.6	12.3	14.1	21.3	24.6	25.2
McNair 133	3.9	28.6	11.7	13.1	14.3	20.3	23.2	23.6
NC 2326	1.3	29.1	10.1	12.1	14.4	21.7	24.6	24.9
Speight G-7	4.3	32.6	11.1	13.3	15.3	20.9	24.3	24.7
Speight G-13	2.1	23.5	10.2	12.9	14.3	21.1	24.3	24.6
Speight G-28	0.7	25.0	9.8	11.3	13.4	20.9	23.6	23.7
Speight G-36	1.3	25.9	10.1	12.3	14.8	21.3	23.5	24.8
Advanced Breeding Lines								
Coker 66-411	2.2	27.6	9.1	11.5	14.0	21.1	24.4	25.0
Coker 67-347	4.0	30.0	9.7	12.4	14.9	22.1	25.4	27.0
Ga. 1096	3.6	31.3	10.5	12.2	13.7	21.3	23.7	25.1
McNair 135	2.4	31.0	8.5	10.5	14.2	20.9	24.0	25.1
McNair 159	3.1	35.7	9.5	10.8	14.3	21.5	24.1	25.7
NC H-1	2.9	31.2	10.3	12.7	15.4	21.9	24.5	26.1
NC 383-5-9	2.2	21.0	9.7	12.5	14.9	21.9	24.7	25.4
NC 1802	5.5	30.4	10.3	13.3	15.5	20.1	24.4	25.0
NC 5831	5.0	33.9	11.1	12.6	15.7	20.7	22.7	24.6
NC 6799	2.9	31.0	10.0	11.7	15.2	21.0	23.7	25.4
NC 6857-4	1.0	28.9	9.8	12.3	14.1	21.0	24.4	24.1
NC 7062C	4.2	27.8	9.9	12.5	14.3	20.9	23.3	23.5
NC 7816-5	1.5	32.9	9.9	12.1	14.5	22.4	24.5	25.7
NC 7818-2C	0.9	33.3	10.4	11.9	14.8	22.6	24.8	26.2
NC 8007	4.1	31.1	11.5	13.6	15.3	21.9	25.1	25.5
NC 8083	3.8	30.5	10.9	13.2	14.0	20.4	23.0	23.1
NC 8090	5.1	33.0	10.1	13.1	14.7	21.0	24.8	24.9
NC 8626	4.2	32.5	10.4	13.5	15.5	20.9	23.7	24.5
NC 8766	3.4	22.2	9.6	12.8	14.9	23.5	24.9	24.7
NC 8768	2.6	23.7	9.5	11.1	13.4	22.6	25.2	22.7
NC 8790	1.0	24.2	9.5	12.2	14.9	21.2	24.7	25.4
NC 8802	2.4	24.4	8.7	10.5	13.5	19.2	22.5	23.3
NC 8855	3.7	28.5	10.5	12.7	14.7	21.2	24.3	26.1
NC 8879	1.5	28.7	8.8	11.6	14.3	19.0	23.3	24.2
PD 8	3.2	26.0	9.3	12.3	14.9	20.8	24.7	25.9
PD 183	1.7	27.6	9.7	11.7	14.3	19.7	22.7	23.7
Speight G-27	2.5	27.0	10.5	12.5	14.3	20.1	23.4	23.8
Speight G-41	2.0	24.5	9.6	11.8	14.2	19.8	23.2	24.5
Speight G-46	4.5	25.4	10.7	12.9	15.5	21.7	25.4	25.5
Speight G-120	0.7	25.6	9.2	11.6	14.7	20.7	24.7	25.4
Speight G-140	2.5	25.0	10.2	12.6	15.5	21.1	24.1	26.1
Speight G-160	1.7	28.7	9.9	12.1	15.0	21.2	24.1	24.9
Watson D-34	5.6	27.2	10.2	12.3	14.7	20.9	24.7	25.5
L.S.D. (.05)	1.8	4.6	1.2	1.3	1.5	1.6	1.3	1.6
(.01)	2.4	6.0	1.6	1.8	2.0	2.1	1.7	2.0
C.V. (%)	39	10	8	7	6	5	3	4

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Table 6. Continued. Comparison of varieties for certain characteristics.

Varieties or Lines	Analysis of Cured Leaf				Ratios	
	Nic. %	Sol. Sug. %	Tot. N. %	Nor.Nic. %	T.N. Nic.	Sug. Nic.
Commercially Available Varieties						
Hicks Broadleaf	4.39	4.78	2.86	.02	.66	1.09
NC 95	3.12	8.38	2.72	.06	.88	2.69
Bell 93	3.97	2.93	2.67	.05	.68	0.74
Coker 213	3.54	7.09	2.51	.02	.71	2.06
Coker 254	4.25	5.14	2.78	.09	.65	1.21
Coker 258	4.13	4.54	2.81	.10	.69	1.11
Coker 319	3.74	4.84	2.78	.04	.74	1.30
McNair 14	3.97	5.86	3.19	.05	.80	1.46
McNair 30	4.07	4.03	3.02	.01	.74	0.97
McNair 133	3.65	4.71	2.83	.06	.77	1.31
NC 2326	3.71	5.42	2.86	.07	.78	1.51
Speight G-7	4.15	5.47	2.97	.03	.71	1.32
Speight G-13	3.77	8.53	3.04	.04	.82	2.30
Speight G-28	3.45	3.53	2.73	.02	.80	1.06
Speight G-36	3.66	4.74	2.90	.04	.79	1.30
Advanced Breeding Lines						
Coker 66-411	3.73	3.80	2.81	.0	.76	1.01
Coker 67-347	3.65	6.49	2.86	.06	.79	1.79
Ga. 1096	3.99	5.85	2.86	.07	.72	1.48
McNair 135	3.81	7.21	2.99	.01	.79	1.91
McNair 159	3.09	3.09	2.71	.09	.88	1.02
NC H-1	4.17	5.45	2.97	.04	.73	1.31
NC 383-5-9	3.15	3.44	2.85	.05	.91	1.14
NC 1802	3.64	6.15	2.99	.04	.84	1.69
NC 5831	3.20	4.60	2.99	.01	.95	1.45
NC 6799	3.60	4.65	2.88	.0	.80	1.29
NC 6857-4	3.92	5.06	3.01	.02	.77	1.31
NC 7062C	3.66	9.30	2.93	.07	.81	2.54
NC 7816-5	3.63	7.31	3.00	.05	.83	2.01
NC 7818-2C	3.53	8.91	2.83	.0	.82	2.69
NC 8007	3.55	6.44	2.81	.01	.80	1.87
NC 8083	4.45	6.55	3.12	.0	.70	1.50
NC 8090	4.22	6.71	2.91	.05	.69	1.59
NC 8626	4.78	2.64	3.36	.09	.71	0.56
NC 8766	4.48	2.34	3.03	.01	.67	0.52
NC 8768	4.42	2.81	2.83	.05	.64	0.64
NC 8790	3.69	3.67	2.86	.03	.78	1.00
NC 8802	3.30	6.79	2.83	.01	.86	2.06
NC 8855	4.04	6.10	2.99	.02	.74	1.52
NC 8879	3.39	7.18	2.80	.01	.83	2.11
PD 8	3.46	7.40	2.85	.03	.82	2.14
PD 183	3.98	6.35	3.13	.03	.79	1.68
Speight G-27	3.90	7.06	2.85	.0	.73	1.83
Speight G-41	3.95	5.32	2.98	.04	.75	1.35
Speight G-46	3.03	4.80	2.91	.05	.98	1.62
Speight G-120	3.60	3.77	2.93	.0	.82	1.06
Speight G-140	3.59	6.80	3.29	.07	.91	1.89
Speight G-160	3.90	7.76	3.16	.03	.82	2.04
Watson D-34	3.78	6.07	2.73	.10	.74	1.68
L.S.D. (.05)	.61	2.33	.45	.10	.17	.77
(.01)	.80	3.06	.59	.13	.23	1.01
C.V. (%)	10	26	10	157	14	32

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Table 7. Comparison of varieties for certain characteristics

Varieties or Lines	Yield Lbs/A	Value Index		Q.I.	Days to Flower	Leaves per Plant	Height of Plant	Internode Length			
		Dol/A	Dol/Cwt.					0-10"	10-20"	20"-top	
Commercially Available Varieties											
Hicks Broadleaf	1944	1419	73.00	26.7	46	16.5	38	1.7	2.2	3.0	
NC 95	2090	1538	73.60	27.2	49	16.7	36	1.8	2.3	2.3	
Bell 93	1971	1400	71.21	33.5	49	16.3	38	2.0	2.2	2.6	
Coker 213	2018	1448	71.80	31.6	51	18.5	41	1.8	2.2	2.5	
Coker 254	2018	1470	72.80	29.1	52	18.3	43	1.9	2.2	2.8	
Coker 258	2073	1498	72.12	33.3	52	19.5	38	1.8	2.0	2.0	
Coker 319	1980	1420	71.72	32.0	51	18.6	39	1.8	2.0	2.4	
McNair 14	2018	1472	72.97	26.8	47	17.2	37	1.9	2.4	2.3	
McNair 30	1848	1318	71.33	31.4	51	16.3	37	1.8	2.3	2.6	
McNair 133	2054	1519	73.96	28.8	50	17.5	42	2.0	2.5	2.6	
NC 2326	2142	1562	72.94	25.3	45	16.7	39	1.8	2.3	2.7	
Speight G-7	2202	1611	73.22	27.6	48	18.4	40	1.9	2.1	2.4	
Speight G-13	2070	1512	73.14	30.2	52	17.4	42	1.8	2.4	2.9	
Speight G-28	1946	1409	72.36	29.0	49	17.2	32	1.7	1.9	1.8	
Speight G-36	2258	1606	71.12	33.9	51	17.8	42	1.9	2.2	2.9	
Advanced Breeding Lines											
Coker 66-411	1952	1373	70.32	34.0	46	17.0	37	1.8	2.3	2.5	
Coker 67-347	1998	1447	72.45	29.8	51	18.7	36	1.7	2.0	2.1	
Ga. 1096	2008	1447	72.13	30.7	50	18.5	36	1.7	2.0	2.1	
McNair 135	2002	1427	71.35	32.9	50	18.9	41	1.7	2.0	2.5	
McNair 159	2008	1402	69.76	37.1	50	19.7	39	1.7	1.9	2.1	
NC H-1	2082	1525	73.23	29.8	47	17.4	39	1.9	2.0	2.7	
NC 383-5-9	2132	1550	72.75	33.3	51	17.7	40	1.8	2.3	2.5	
NC 1802	2266	1676	73.96	28.5	49	17.8	40	1.8	2.3	2.6	
NC 5831	2032	1473	72.52	30.2	51	18.1	39	1.9	2.0	2.5	
NC 6799	1930	1343	69.51	34.9	49	18.4	40	1.8	2.0	2.6	
NC 6857-4	1970	1434	72.71	26.6	49	15.9	36	1.8	2.1	2.9	
NC 7062C	2054	1523	74.16	27.2	51	18.5	43	1.8	2.3	2.7	
NC 7816-5	2204	1661	75.33	25.1	48	18.1	39	1.7	2.4	2.4	
NC 7818-2C	2200	1606	73.01	27.9	48	17.7	36	1.7	2.2	2.2	
NC 8007	2126	1580	74.30	29.8	50	17.7	44	2.0	2.5	2.8	
NC 8083	1978	1451	73.48	26.6	48	15.7	40	2.0	2.6	2.9	
NC 8090	2076	1558	75.06	30.6	50	17.3	42	1.9	2.3	2.9	
NC 8626	1956	1392	71.27	31.0	51	17.5	43	1.8	2.6	2.8	
NC 8766	1652	1133	68.37	39.8	46	16.1	37	1.8	2.4	2.7	
NC 8768	1792	1207	67.21	36.5	46	16.6	38	1.8	2.4	2.7	
NC 8790	2108	1561	74.05	28.9	51	17.1	42	1.9	2.4	2.9	
NC 8802	2008	1476	73.43	30.7	47	16.1	39	1.9	2.4	2.9	
NC 8855	2186	1626	74.33	26.4	50	18.5	38	1.7	2.0	2.3	
NC 8879	2022	1462	72.39	31.0	50	18.1	38	1.8	2.1	2.4	
PD 8	2200	1570	71.44	29.8	49	17.4	38	1.9	2.2	2.5	
PD 183	2058	1428	69.35	31.3	48	16.9	37	1.9	2.2	2.4	
Speight G-27	2060	1503	73.04	29.3	51	17.1	35	1.8	2.1	2.2	
Speight G-41	2194	1625	74.10	29.7	49	18.1	38	1.9	2.0	2.4	
Speight G-46	2378	1782	74.96	27.4	52	19.1	41	1.8	2.2	2.3	
Speight G-120	2126	1503	70.64	35.7	49	17.8	38	1.8	2.3	2.3	
Speight G-140	2200	1579	71.76	35.0	51	19.2	39	1.8	2.2	2.1	
Speight G-160	2314	1569	67.80	34.7	49	17.6	35	1.8	2.0	2.2	
Watson D-34	1928	1414	73.34	27.9	48	18.1	39	1.8	2.1	2.5	
L.S.D.	(.05)	218	175	2.48	4.9	2	1.1	4	.2	.3	.3
	(.01)	286	230	3.24	6.4	2	1.5	6	.2	.4	.4
C.V.	(%)	7	7	2	10	2	4	7	6	8	8

Table 7. Continued. Comparison of varieties for certain characteristics

Varieties	Suckers per plant		Width of leaf (in.)			Length of leaf (in.)		
	Ground	Leaf Axil	5th	10th	15th	5th	10th	15th
Commercially Available Varieties								
Hicks Broadleaf	2.8	16.8	8.6	12.7	15.5	21.2	23.9	22.6
NC 95	2.2	15.1	8.4	11.2	15.7	18.6	22.4	23.0
Bell 93	2.5	15.0	7.8	12.0	15.1	19.3	22.6	22.3
Coker 213	3.9	15.2	9.5	12.9	15.5	19.0	23.2	22.7
Coker 254	3.0	13.8	9.8	12.2	15.7	19.7	22.5	21.7
Coker 258	2.1	12.5	7.7	11.7	14.4	18.6	23.1	22.7
Coker 319	2.6	17.3	8.1	11.6	15.7	19.7	24.1	24.2
McNair 14	2.4	16.1	9.3	12.7	15.5	19.8	23.3	22.7
McNair 30	1.6	16.8	8.0	12.5	15.1	19.2	23.3	22.5
McNair 133	3.2	17.3	9.5	12.6	15.5	18.9	22.5	23.3
NC 2326	0.8	16.2	8.3	12.4	15.1	20.8	23.3	22.1
Speight G-7	3.9	18.2	8.1	12.5	14.9	17.6	21.9	23.2
Speight G-13	2.1	13.2	9.3	13.5	16.1	19.6	24.6	23.3
Speight G-28	0.9	11.5	7.1	10.8	15.1	16.9	20.8	22.2
Speight G-36	1.7	12.1	8.8	11.9	15.1	20.0	23.3	22.7
Advanced Breeding Lines								
Coker 66-411	3.0	15.1	7.8	11.9	14.9	19.4	23.0	22.7
Coker 67-347	3.0	15.5	7.3	11.5	14.3	18.7	22.7	23.6
Ga. 1096	2.3	16.1	8.2	11.5	14.7	18.2	21.8	21.5
McNair 135	2.1	14.2	7.3	11.1	14.3	19.6	23.5	23.0
McNair 159	3.3	19.9	6.9	10.4	14.8	19.5	23.9	24.7
NC H-1	3.3	17.8	7.3	12.5	14.3	19.1	23.1	22.1
NC 383-5-9	3.6	12.4	8.2	10.9	15.1	19.5	23.0	24.1
NC 1802	4.0	15.5	8.4	13.5	16.4	17.7	22.9	22.9
NC 5831	4.2	16.2	9.6	12.8	17.5	19.1	23.5	24.4
NC 6799	3.5	14.6	8.4	11.7	14.9	19.3	23.0	22.9
NC 6857-4	0.9	13.6	7.5	11.7	15.5	19.1	23.0	23.9
NC 7062C	4.0	14.5	7.3	11.3	14.3	19.0	22.3	21.5
NC 7816-5	0.7	13.0	6.9	10.1	13.7	18.3	21.6	22.4
NC 7818-2C	0.8	17.0	8.2	12.0	14.0	19.3	23.4	22.7
NC 8007	3.6	13.0	9.3	13.5	16.1	20.1	23.4	22.9
NC 8083	2.2	14.4	9.3	13.6	15.3	17.8	22.1	21.9
NC 8090	4.1	13.2	8.0	12.3	15.4	19.0	22.8	22.5
NC 8626	3.2	17.0	9.9	14.1	16.0	20.9	24.0	23.9
NC 8766	2.7	13.5	7.6	12.6	13.8	19.8	22.4	21.1
NC 8768	2.5	13.1	8.3	12.3	14.5	21.0	23.3	22.1
NC 8790	2.3	10.7	7.9	12.7	15.5	19.3	23.5	22.8
NC 8802	2.6	12.5	7.5	11.6	14.4	18.3	22.5	22.1
NC 8855	2.3	14.4	8.6	12.1	14.7	20.3	23.9	22.7
NC 8879	1.9	14.2	7.7	11.0	15.9	18.0	21.9	23.2
PD 8	2.0	15.7	8.2	13.0	16.0	19.8	23.5	23.6
PD 183	2.1	13.8	7.9	11.9	15.3	17.8	22.4	23.8
Speight G-27	1.9	15.0	9.0	13.5	14.2	18.3	22.3	20.2
Speight G-41	1.8	13.5	8.1	12.4	15.7	17.9	22.8	22.9
Speight G-46	3.7	14.5	8.0	11.9	16.7	18.1	23.7	23.4
Speight G-120	1.5	13.1	6.5	10.7	14.6	17.8	22.9	22.7
Speight G-140	1.9	13.4	7.9	12.8	15.9	19.0	23.9	23.5
Speight G-160	1.7	9.8	7.6	11.5	15.7	18.5	22.6	23.0
Watson D-34	4.7	17.5	7.5	11.6	14.8	19.1	22.2	22.7
L.S.D. (.05)	1.0	3.6	1.3	1.6	1.3	1.9	1.8	1.8
(.01)	1.3	4.7	1.7	2.1	1.7	2.5	2.3	2.4
C.V. (%)	24	15	10	8	5	6	5	5

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Table 7. Continued. Comparison of varieties for certain characteristics.

Varieties OR Lines	Analysis of Cured Leaf				Ratios	
	Nic. %	Sol. Sug. %	Tot. N. %	NorNic. %	T.N. Nic.	Sug. Nic.
Commercially Available Varieties						
Hicks Broadleaf	3.71	16.30	2.28	.02	.63	4.50
NC 95	3.86	13.03	2.48	.02	.65	3.45
Bell 93	3.97	12.81	2.58	.09	.65	3.37
Coker 213	4.02	13.74	2.46	.07	.61	3.46
Coker 254	4.15	11.81	2.41	.01	.58	2.89
Coker 258	4.41	12.24	2.73	.0	.62	2.90
Coker 319	4.02	11.84	2.77	.02	.69	2.99
McNair 14	3.89	14.05	2.58	.01	.67	3.75
McNair 30	4.27	12.83	2.63	.0	.61	3.10
McNair 133	3.72	13.73	2.39	.20	.64	3.83
NC 2326	3.80	14.92	2.40	.03	.63	3.99
Speight G-7	3.99	14.37	2.42	.01	.61	3.63
Speight G-13	4.44	12.13	2.79	.02	.63	2.74
Speight G-28	3.03	15.02	2.22	.03	.74	5.07
Speight G-36	3.71	13.83	2.43	.09	.65	3.74
Advanced Breeding Lines						
Coker 66-411	3.98	13.67	2.47	.10	.63	3.62
Coker 67-347	4.23	14.03	2.60	.05	.62	3.45
Ga. 1096	3.86	12.15	2.45	.15	.64	3.19
McNair 135	3.88	12.76	2.41	.08	.62	3.35
McNair 159	3.48	11.96	2.56	.02	.74	3.65
NC H-1	4.04	14.48	2.63	.33	.67	3.76
NC 383-5-9	3.53	12.34	2.55	.10	.72	3.62
NC 1802	4.02	14.90	2.39	.07	.60	3.83
NC 5831	3.34	12.74	2.47	.07	.74	3.96
NC 6799	4.10	12.29	2.65	.11	.65	3.11
NC 6857-4	3.97	12.87	2.49	.03	.64	3.41
NC 7062C	3.99	16.76	2.27	.01	.57	4.22
NC 7816-5	3.32	17.21	2.18	.11	.66	5.24
NC 7818-2C	4.07	13.26	2.56	.01	.63	3.31
NC 8007	3.49	17.16	2.34	.08	.67	4.92
NC 8083	4.65	14.19	2.58	.01	.56	3.20
NC 8090	4.10	13.03	2.50	.04	.61	3.24
NC 8626	4.35	14.07	2.60	.01	.60	3.26
NC 8766	4.59	10.43	2.79	.09	.61	2.35
NC 8768	4.44	9.15	2.77	.06	.62	2.09
NC 8790	3.42	14.79	2.28	.08	.67	4.34
NC 8802	3.38	14.89	2.21	.01	.66	4.60
NC 8855	3.84	14.15	2.24	.04	.59	3.76
NC 8879	3.26	15.15	2.48	.12	.76	4.71
FD 8	3.70	15.24	2.36	.04	.64	4.25
PD 183	3.97	14.64	2.56	.03	.65	3.79
Speight G-27	3.87	13.32	2.92	.01	.71	3.57
Speight G-41	3.85	14.02	2.34	.01	.61	3.72
Speight G-46	2.89	16.95	2.19	.09	.77	6.09
Speight G-120	4.10	13.49	2.36	.08	.57	3.32
Speight G-140	3.78	15.00	2.44	.01	.65	4.16
Speight G-160	3.54	15.44	2.26	.0	.64	4.44
Watson D-34	4.01	14.11	2.35	.05	.59	3.66
L.S.D. (.05)	.62	3.08	.31	.18	.07	1.18
(.01)	.81	4.05	.41	.24	.09	1.55
C.V. (%)	10	14	8	199	7	20

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Table 8. Comparison of varieties for certain characteristics

Varieties or Lines	Yield Lbs/A	Value Index		Q. I.	Days to Flower	Leaves per Plant	Height of Plant	Internode Length		
		Dol/A	Dol/Cwt.					0-10"	10-20"	20"-top
Commercially Available Varieties										
Hicks Broadleaf	2156	1647	76.41	24.3	43	17.5	40	1.6	2.1	3.0
NC 95	2196	1619	73.74	29.0	49	20.2	43	1.6	2.0	2.6
Bell 93	2006	1477	73.64	29.6	47	18.8	42	1.6	2.1	2.9
Coker 213	1958	1375	70.16	32.2	51	21.4	43	1.5	2.0	2.4
Coker 254	2178	1583	72.65	30.7	55	22.3	45	1.6	2.0	2.3
Coker 258	2114	1524	72.07	34.0	54	20.5	39	1.6	1.8	2.1
Coker 319	1898	1379	72.63	31.8	49	20.3	40	1.5	1.9	2.4
McNair 14	2064	1548	75.00	26.3	48	19.3	43	1.7	2.2	2.6
McNair 30	2170	1574	72.52	31.6	47	18.4	45	1.6	2.1	3.3
McNair 133	2198	1603	72.88	28.3	48	21.1	47	1.6	2.1	2.7
NC 2326	2142	1610	75.19	22.5	44	19.1	43	1.6	1.9	3.1
Speight G-7	2238	1684	75.19	25.8	49	21.9	46	1.6	2.0	2.5
Speight G-13	2356	1736	73.65	28.2	50	19.1	46	1.7	2.4	2.9
Speight G-28	2216	1635	73.82	28.8	49	20.5	40	1.6	1.9	2.3
Speight G-36	2322	1582	68.12	33.3	54	20.2	43	1.6	2.1	2.6
Advanced Breeding Lines										
Coker 66-411	2236	1639	73.26	29.7	47	21.0	43	1.6	1.9	2.5
Coker 67-347	2270	1673	73.52	32.5	51	20.7	42	1.6	2.0	2.4
Ga. 1096	2222	1647	74.06	30.9	48	21.1	44	1.6	1.8	2.6
McNair 135	2124	1528	71.99	30.3	52	21.7	44	1.5	2.0	2.4
McNair 159	2302	1655	71.90	32.4	50	21.4	42	1.6	1.9	2.3
NC H-1	2238	1673	74.73	27.8	44	20.4	45	1.5	2.0	2.8
NC 383-5-9	2376	1711	72.03	32.4	52	21.3	47	1.7	2.0	2.6
NC 1802	2448	1855	75.78	26.3	49	20.6	46	1.7	2.0	2.8
NC 5831	2228	1645	73.84	28.8	51	21.9	48	1.6	2.0	2.6
NC 6799	2368	1717	72.58	34.2	46	21.1	48	1.6	1.9	3.0
NC 6857-4	2050	1498	72.98	29.8	50	18.4	41	1.6	2.1	2.9
NC 7062C	2336	1758	75.16	27.7	50	21.2	49	1.7	2.2	2.8
NC 7816-5	2418	1848	76.40	25.1	45	20.1	44	1.7	1.9	2.7
NC 7818-2C	2514	1890	75.21	26.4	45	20.5	46	1.6	1.9	3.0
NC 8007	2194	1627	74.17	26.5	47	19.5	47	1.7	2.1	3.1
NC 8083	2168	1601	73.86	27.7	45	18.8	46	1.7	2.3	3.0
NC 8090	2010	1493	74.16	26.8	48	21.1	46	1.6	2.0	2.7
NC 8626	1684	1222	72.56	30.4	44	18.8	44	1.7	2.1	3.0
NC 8766	1640	1031	62.90	37.3	38	17.6	37	1.5	2.0	2.9
NC 8768	1672	1124	67.21	34.7	39	18.3	40	1.5	2.0	3.0
NC 8790	2086	1515	72.61	30.9	50	19.5	44	1.6	2.0	3.0
NC 8802	2420	1785	73.70	29.7	47	19.2	44	1.7	2.1	2.9
NC 8855	2300	1701	73.93	31.3	50	20.1	43	1.6	2.0	2.6
NC 8879	2090	1515	72.51	30.3	49	19.4	40	1.5	1.9	2.6
PD 8	2116	1508	71.20	28.8	50	19.5	40	1.5	1.9	2.6
PD 183	2478	1803	72.75	28.1	48	19.9	46	1.7	2.0	2.8
Speight G-27	2108	1498	71.12	31.7	50	19.8	40	1.7	2.0	2.3
Speight G-41	2054	1493	72.28	30.6	51	19.3	40	1.7	1.9	2.5
Speight G-46	2732	2071	75.79	26.1	54	23.3	49	1.6	2.0	2.4
Speight G-120	2212	1571	71.09	32.2	49	21.2	43	1.5	2.0	2.4
Speight G-140	2228	1586	71.36	29.1	51	22.1	45	1.6	2.1	2.3
Speight G-160	2588	1836	70.94	33.1	47	19.7	41	1.7	2.0	2.4
Watson D-34	2100	1561	74.33	26.9	45	19.6	45	1.5	2.0	3.1
L.S.D. (.05)	313	243	2.48	3.5	3	1.3	4	.2	.2	.3
(.01)	412	319	3.26	4.7	4	1.7	5	.2	.3	.4
C.V. (%)	9	9	2	7	3	4	6	6	7	7

TV 197 Reidsville 1969

Table 8. Continued. Comparison of varieties for certain characteristics

Varieties	Suckers per plant			Width of leaf (in.)			Length of leaf (in.)		
	Ground	Leaf	Axil	5th	10th	15th	5th	10th	15th
Commercially Available Varieties									
Hicks Broadleaf	1.6	17.8		9.4	11.5	13.2	23.1	26.3	24.1
NC 95	1.8	17.5		9.3	11.5	13.1	19.5	24.5	23.2
Bell 93	1.6	16.7		10.0	13.1	14.3	22.2	25.8	24.3
Coker 213	4.3	17.2		9.7	13.1	15.1	20.3	25.0	24.3
Coker 254	3.4	17.6		9.7	13.1	14.9	19.1	24.7	23.2
Coker 258	1.3	12.2		8.8	11.9	13.1	19.2	25.3	23.8
Coker 319	1.9	16.3		7.9	11.6	12.9	20.1	25.4	24.7
McNair 14	1.0	16.3		10.0	13.1	13.6	20.7	25.4	23.7
McNair 30	1.7	16.0		10.3	12.7	14.5	22.8	26.5	24.7
McNair 133	3.1	16.7		9.8	12.3	13.8	19.5	23.6	23.9
NC 2326	0.3	18.2		9.0	12.1	14.4	22.7	26.2	24.5
Speight G-7	2.9	16.3		8.1	11.5	14.2	17.7	22.4	23.7
Speight G-13	1.8	15.4		8.3	11.6	13.7	18.4	23.7	23.5
Speight G-28	0.9	13.8		9.1	11.8	13.1	19.4	24.1	23.3
Speight G-36	0.7	12.4		7.9	11.0	13.3	18.9	23.7	24.1
Advanced Breeding Lines									
Coker 66-411	1.5	16.7		9.7	12.3	14.0	21.5	26.6	24.5
Coker 67-347	1.8	15.9		9.3	12.9	14.0	21.8	26.9	25.1
Ga. 1096	2.3	20.7		8.9	11.6	13.7	19.9	24.5	24.3
McNair 135	1.1	14.1		8.7	12.3	13.5	20.4	26.8	24.7
McNair 159	3.0	22.0		7.9	10.9	13.1	20.9	26.4	25.3
NC H-1	3.4	18.8		9.1	12.0	13.9	20.5	25.1	23.7
NC 383-5-9	2.5	11.3		8.3	11.7	14.4	20.4	25.1	25.3
NC 1802	4.2	18.3		10.0	13.9	15.0	20.4	24.7	24.5
NC 5831	3.5	20.3		10.3	13.3	14.5	19.7	24.4	23.7
NC 6799	3.6	21.7		10.0	12.9	14.4	21.3	26.1	25.2
NC 6857-4	0.8	16.2		9.1	12.1	13.2	20.3	25.0	23.3
NC 7062C	4.3	17.4		8.2	10.4	12.6	19.9	22.5	24.1
NC 7816-5	0.4	14.7		8.3	10.1	11.8	20.5	23.1	23.2
NC 7818-2C	0.1	16.9		9.5	11.7	13.5	22.6	25.2	23.9
NC 8007	2.9	16.4		8.3	11.3	12.6	19.5	23.7	23.1
NC 8083	3.1	20.1		10.2	13.1	14.8	19.4	23.9	22.7
NC 8090	4.1	15.8		8.7	12.3	13.7	20.9	24.0	23.1
NC 8626	2.9	17.7		10.2	13.5	15.0	21.7	24.2	23.5
NC 8766	2.2	15.1		8.3	10.5	12.8	21.4	23.7	21.3
NC 8768	2.2	13.3		8.5	10.3	13.2	21.5	23.4	22.2
NC 8790	2.0	11.0		8.7	12.1	13.9	21.3	25.3	24.1
NC 8802	2.4	14.9		9.5	13.0	14.7	22.0	25.3	23.9
NC 8855	2.7	17.2		9.3	12.6	13.0	20.1	25.5	23.3
NC 8879	2.1	15.8		8.4	12.0	13.3	18.8	24.3	23.3
PD 8	1.2	13.3		7.2	10.7	12.7	18.8	24.0	24.3
PD 183	1.3	16.9		9.5	12.4	14.4	19.5	24.2	23.9
Speight G-27	1.9	16.3		9.9	14.1	14.6	19.9	25.5	22.9
Speight G-41	0.7	10.6		9.1	11.3	13.7	20.6	24.6	24.1
Speight G-46	3.7	17.0		10.3	14.0	15.3	21.2	26.5	25.3
Speight G-120	1.3	14.5		8.1	11.3	13.1	21.1	25.6	23.1
Speight G-140	1.8	13.7		8.9	12.2	14.9	19.7	25.1	24.9
Speight G-160	2.2	15.1		9.1	12.3	13.8	20.4	25.1	24.9
Watson D-34	4.1	18.7		9.9	13.4	14.8	23.1	25.3	24.2
L.S.D. (.05)	.9	3.7		1.5	1.7	1.5	2.2	1.9	1.8
(.01)	1.2	4.8		1.9	2.2	2.0	2.9	2.6	2.4
C.V. (%)	26	14		10	9	7	7	5	5

TV 197 Reidsville 1969

Table 8. Continued. Comparison of varieties for certain characteristics.

Varieties or Lines	Analysis of Cured Leaf				Ratios	
	Nic. %	Sol. Sug. %	Tot. N. %	NorNic. %	T.N. Nic.	Sug. Nic.
Commercially Available Varieties						
Hicks Broadleaf	4.11	14.05	2.36	.05	.58	3.44
NC 95	3.89	13.31	2.37	.08	.61	3.44
Bell 93	4.23	10.84	2.38	.01	.56	2.58
Coker 213	4.47	11.58	2.40	.0	.54	2.65
Coker 254	4.33	10.47	2.25	.03	.52	2.43
Coker 258	4.57	9.75	2.52	.06	.55	2.15
Coker 319	3.86	9.40	2.60	.09	.68	2.44
McNair 14	3.94	11.73	2.68	.03	.69	3.00
McNair 30	4.18	9.45	2.55	.10	.61	2.24
McNair 133	3.95	11.73	2.38	.12	.60	2.96
NC 2326	3.88	13.66	2.35	.03	.60	3.54
Speight G-7	4.15	12.35	2.44	.05	.59	2.98
Speight G-13	3.92	12.10	2.54	.04	.65	3.09
Speight G-28	3.57	12.17	2.39	.21	.68	3.57
Speight G-36	4.57	8.34	2.69	.07	.59	1.85
Advanced Breeding Lines						
Coker 66-411	4.43	11.44	2.45	.09	.56	2.65
Coker 67-347	4.39	11.24	2.46	.07	.56	2.61
Ga. 1096	4.11	11.29	2.49	.06	.61	2.77
McNair 135	3.70	13.45	2.22	.01	.60	3.64
McNair 159	3.76	9.61	2.44	.02	.65	2.59
NC H-1	3.76	13.07	2.18	.06	.58	3.53
NC 383-5-9	3.77	8.16	2.72	.10	.72	2.24
NC 1802	3.71	15.99	2.19	.02	.59	4.36
NC 5831	3.20	13.99	2.21	.01	.69	4.45
NC 6799	4.53	11.07	2.55	.05	.56	2.53
NC 6857-4	4.30	10.89	2.58	.05	.60	2.60
NC 7062C	4.50	11.90	2.55	.06	.57	2.65
NC 7816-5	3.21	16.93	2.20	.04	.69	5.44
NC 7818-2C	3.84	13.34	2.40	.05	.64	3.57
NC 8007	4.21	13.36	2.52	.07	.60	3.20
NC 8083	4.94	11.92	2.74	.03	.56	2.42
NC 8090	4.09	10.85	2.35	.08	.58	2.68
NC 8626	4.83	8.82	2.60	.02	.54	1.85
NC 8766	5.28	5.73	2.87	.02	.54	1.09
NC 8768	5.43	5.44	2.87	.03	.53	1.02
NC 8790	3.68	11.64	2.28	.06	.62	3.28
NC 8802	3.39	11.43	2.23	.05	.66	3.40
NC 8855	4.12	10.81	2.30	.07	.56	2.63
NC 8879	3.75	13.15	2.28	.0	.61	3.49
PD 8	3.84	11.11	2.41	.01	.63	2.93
PD 183	3.81	13.37	2.31	.01	.61	3.58
Speight G-27	4.32	9.70	2.49	.06	.58	2.25
Speight G-41	4.37	11.46	2.40	.03	.55	2.66
Speight G-46	2.76	15.22	2.04	.01	.74	5.57
Speight G-120	4.39	12.35	2.20	.06	.50	2.81
Speight G-140	3.74	13.80	2.42	.04	.65	3.79
Speight G-160	3.44	14.61	2.24	.12	.65	4.28
Watson D-34	3.98	12.04	2.32	.02	.58	3.05
L.S.D. (.05)	.54	2.88	.27	.12	.07	1.05
(.01)	.71	3.79	.35	.15	.09	1.37
C.V. (%)	8	15	7	144	7	22

REGIONAL FARM TEST - AVERAGE OF ELEVEN LOCATIONS- 1969

Table 9.

Varieties	Yield Lbs/A	Value Dol/A	Index Dol/Cwt.	% Nicotine	% Red. Sugar	% Tot N.	% Alpha Amino N.	% W.S.A.	T.V.B.	Alk. No. W.S.A.	Nor. Nic.	Ratio	
												N/Nic.	Sug/Nic.
Hicks	2078	1568	75.27	2.70	14.79	2.21	.225	4.72	.43	2.82	.16	0.89	6.55
NC 95	2163	1603	74.18	2.78	13.28	2.30	.223	4.98	.44	3.34	.24	0.89	5.69
McNair 159	2070	1497	72.36	2.33	11.64	2.26	.249	4.43	.42	3.02	.11	1.12	5.99
PD 183	2118	1541	72.64	2.84	13.96	2.39	.228	4.74	.45	2.41	.10	0.93	5.96
Speight G-41	2237	1652	73.82	3.15	13.44	2.30	.214	5.25	.45	2.99	.16	0.78	5.21
Coker 67-347S	2284	1694	74.45	2.74	13.62	2.26	.219	5.02	.44	2.70	.22	0.89	5.89
PD 8	2291	1676	73.18	2.62	13.66	2.28	.218	5.05	.43	3.46	.26	0.91	6.18
McNair 135	2270	1681	74.09	2.89	13.41	2.25	.207	4.85	.46	3.54	.18	0.84	5.37
Speight G-27	2304	1685	73.09	2.52	13.43	2.18	.205	4.71	.42	3.20	.21	0.92	6.43
Ga. 1096	2133	1576	73.64	2.67	12.62	2.29	.228	4.85	.43	3.27	.20	0.92	5.70

REGIONAL FARM TESTS 1969

Combined Across 11 Farms and All Tobacco Companies

Percent Tobacco in Various Color, Body and Texture Classes;
Quality of Color Index, Percent Usable and Desirability Index

Table 10.

Variety	Lemon	Orange	Greenish		Brown	Red	Other Color	Quality of Color Index
			Lemon	Orange				
Hicks	11.2	56.8	0.9	7.4	5.2	2.5	16.4	2.5
NC 95	18.2	46.9	1.5	9.0	5.1	2.5	16.6	2.4
3	14.1	46.7	0.8	2.3	13.4	1.3	21.0	2.2
4	14.6	42.0	0.9	5.7	9.6	2.6	24.1	2.2
5	23.5	41.4	1.5	7.7	5.1	1.6	18.1	2.4
6	13.6	53.6	0.6	6.0	7.1	2.5	17.4	2.4
7	16.7	44.5	1.9	10.0	7.2	2.0	17.4	2.4
8	7.1	59.1	0.3	3.8	9.0	2.3	18.2	2.4
9	20.8	42.5	2.8	6.1	7.1	2.7	16.9	2.3
10	17.1	48.4	0.9	7.2	8.2	1.9	15.9	2.4

Variety	Chaffy Body	Thin Body	Medium Body	Medium Heavy Body	Heavy Body	No. Obser.
NC 95	5.6	30.7	38.2	19.0	6.6	88
3	6.3	28.7	37.9	14.8	12.3	88
4	4.8	29.4	35.7	20.4	10.0	88
5	5.0	26.1	36.7	21.5	10.7	88
6	5.5	27.0	35.9	20.6	11.4	88
7	3.3	24.9	37.8	22.7	11.3	88
8	6.5	29.4	32.7	21.0	10.2	88
9	5.5	32.1	36.6	16.8	9.0	88
10	5.0	27.9	35.4	19.9	11.8	88

Variety	Open Grain Texture	Medium Texture	Smooth Texture	Slick Texture	Other Texture	Usable	Desirability Index
NC 95	14.1	29.4	27.2	9.4	19.8	43.4	0.9
3	12.1	32.2	18.7	5.7	31.2	40.9	0.8
4	10.1	26.4	27.3	13.0	23.5	35.2	0.7
5	13.3	31.2	23.6	10.0	22.0	39.4	0.8
6	15.0	28.5	22.8	11.0	23.0	41.9	0.8
7	11.4	26.2	31.2	9.2	20.8	39.3	0.8
8	14.5	32.4	22.8	8.6	21.4	42.8	0.8
9	10.1	23.5	29.3	13.1	24.3	37.5	0.8
10	11.9	28.1	27.2	6.9	25.8	38.5	0.8

REGIONAL SMALL PLOT TESTS 1969

Percent Cured Leaf Usable by Tobacco Companies

Average Across 6 Locations

Table 11.

	Tobacco Companies								Average
	A	B	C	D	E*	F	G	H	
Hicks	4.7	33.2	3.0	11.7	20.6	28.8	14.0	72.7	23.6
NC 95	24.5	51.5	15.0	22.0	40.2	70.5	22.7	76.3	40.3
McNair 159	16.8	38.7	2.5	22.3	35.6	38.0	10.3	44.1	25.9
PD 183	16.0	41.2	16.0	0.0	35.6	52.5	10.8	62.0	29.1
Speight G-41	24.2	52.3	20.0	21.8	41.2	51.2	24.2	78.0	39.1
Coker 67-347S	16.3	43.3	2.0	7.8	33.0	43.8	21.7	60.0	28.4
PD 8	15.0	45.7	7.8	19.0	32.0	37.7	35.3	41.8	29.2
McNair 135	18.3	46.7	10.0	22.5	32.0	55.0	26.7	69.8	35.2
Speight G-27	19.8	38.5	14.3	11.8	34.2	60.2	20.8	67.2	33.3
Ga. 1096	21.0	36.8	9.7	14.3	34.2	30.7	31.7	69.2	30.9

Rating For Variety Potential

Average Across 6 Locations

	A	B	C	D	E*	F	G	H	Average
Hicks	3.8	3.2	3.8	3.5	3.4	3.2	3.8	2.3	3.4
NC 95	2.7	1.8	3.3	2.8	2.8	2.3	3.3	2.2	2.7
McNair 159	3.3	2.8	3.8	3.0	3.2	2.8	3.8	2.8	3.2
PD 183	3.3	2.2	3.5	4.0	2.6	2.8	3.8	2.7	3.1
Speight G-41	3.2	2.0	3.5	3.3	2.6	2.8	3.7	2.2	2.9
Coker 67-347S	3.2	1.8	3.8	3.7	2.6	2.8	3.7	2.5	3.0
PD 8	3.5	2.3	3.8	3.3	3.2	3.3	3.2	2.7	3.2
McNair 135	3.2	2.0	3.5	3.3	2.6	2.5	3.2	2.2	2.8
Speight G-27	3.2	2.0	3.5	3.3	2.8	2.7	3.3	2.2	2.9
Ga. 1096	3.2	2.2	3.7	3.5	3.0	3.2	3.3	2.3	3.0

Data from:

*5 locations

Table 12. REGIONAL FARM TESTS 1969

% Usable Tobacco by at Least One Company
Individual North Carolina Farms
and a Mean for all Farms and Varieties

Variety	North Carolina						Average
	Edmund	Johnson	Harrell	Denny	Crews	Busick	
Hicks	100	100	100	100	100	97	99.5
NC 95	100	100	100	100	95	94	98.2
Coker 347	100	100	100	100	100	94	99.0
PD 8	100	100	100	100	100	94	99.0
McNair 135	100	100	100	100	100	100	100.0
Speight G-27	100	100	100	100	100	75	95.8
Ga. 1096	100	100	100	100	91	95	97.7
McNair 159	100	100	100	100	100	99	99.8
PD 183	100	100	100	100	100	95	99.2
Speight G-41	100	100	100	100	100	94	99.0
Average	100	100	100	100	98.6	93.7	98.7

Table 13. Index^{1/} on amount graded of each entry by eight participating companies from the six farms in the North Carolina Regional Farm Test. 1969

Belt and Grower	Variety or Line									
	Hicks	NC 95	Coker 347	PD 8	McNair 135	Speight G-27	Ga. 1096	McNair 159	PD 183	Speight G-41
<u>Border</u>										
Edmund	3.8	4.6	4.0	3.4	3.3	3.0	4.3	3.2	3.4	4.3
<u>Eastern</u>										
Johnson	2.2	2.8	2.5	2.2	4.5	3.4	2.7	3.1	1.8	2.9
Harrell	3.7	4.5	4.0	3.7	2.8	2.9	3.1	3.0	3.6	4.1
<u>Middle</u>										
Denny	3.9	4.7	5.1	4.0	4.0	2.8	3.2	4.2	3.1	4.7
Crews	2.4	2.3	3.2	2.7	3.2	2.7	3.1	3.9	3.7	2.5
<u>Old</u>										
Busick	1.7	2.3	1.8	2.0	2.4	1.7	2.2	3.2	1.8	1.8
Overall Average	3.0	3.5	3.4	3.0	3.4	2.8	3.1	3.4	2.9	3.4

^{1/} 0 None graded; 8 All graded by all eight participating companies.

Grower rating^{1/} for preference for each entry in Regional Farm Test in North Carolina. 1969

Grower	Variety or Line									
	Hicks	NC 95	Coker 347	PD 8	McNair 135	Speight G-27	Ga. 1096	McNair 159	PD 183	Speight G-41
<u>Border</u>										
Edmund	10	3	1	5	2	4	8	7	9	6
<u>Eastern</u>										
Johnson	9	6	8	2	4	3	10	5	7	1
Harrell	7	5	8	2	10	3	6	9	4	1
<u>Middle</u>										
Denny	3	8	4	7	6	1	5	9	10	2
Crews	9	4	7	3	6	1	8	5	10	2
<u>Old</u>										
Busick	8	7	3	9	2	4	10	1	6	5
Overall Average	7.7	5.5	5.2	4.7	5.0	2.7	7.8	6.0	7.7	2.8

^{1/} 1 Most desirable; 10 - least desirable

* The undesirable ratings placed on Hicks were due mainly to its low disease resistance.

Table 14. Grower practices by individual farms, Regional Farm Test in North Carolina - 1969

Belt and County	Farm	Soil Fumigation	Row Width and Hill Spacing	Date of Planting	Date of first Harvest	Fertilizer	Topdressing	Insecticide	Curing Unit	No. Times Irrigated
<u>Border</u> Columbus	Edmund	Mocap Broadcast 60 lbs/Ac.	44" Rows 20" Drill	April 16	June 24	1000# 3-9-9	500# 3-9-9 100# 15-0-14	DDT	H & N	None
<u>East</u> Lenoir	Johnson	Shell DD 10 gal/Ac. (Row)	42" Rows 21" Drill	April 24	June 30	800# 4-8-12	380# 15-0-14 100# 16-0-0	Disyston Thiodan	Golden Cure	None
Wilson	Harrell	Dorlone 5 gal/Ac. (Row)	42" Rows 22" Drill	May 2 May 6	July 2	1200# 4-8-12	200# 15-0-14	None	Tharington	None
<u>Middle</u> Moore	Denny	None	44" Rows 24" Drill	May 8	July 21	800# 4-8-12	200# 15-0-15 400# 4-8-12	Sevin	Henry Vann	Two
Granville	Crews	Telone 6 gal/Ac.	48" Rows 21" Drill	May 21	July 23	1250# 4-8-12	150# 15-0-14	None	Mayo	None
<u>Old</u> Caswell	Busick	Penphene 1 gal/Ac. Row	48" Rows 24" Drill	May 10	July 24	1000# 4-8-12	125# 15-0-14	None	Gastobac	None

Table 15. Cultural practices for the Official Variety Test - 1969

Station	Fertilization	Top Dressing	Soil Type	Fumigation	Irrig.	Date of Transplanting	Date of first Harvest
Border Belt Tobacco Research Station Whiteville, N. C.	600# 6-12-18	165# 15-0-14	Goldsboro fsl	Vorlex 6 gal/A	None	May 5	July 1
Lower Coastal Plain Tobacco Research Station Kinston, N. C.	800# 4-8-12	50# 15-0-14	Lynchburg and Goldsboro fsl	Vorlex 6 gal/A	None	May 15	July 16
Oxford Tobacco Research Station Oxford, N. C.	1000# 4-8-12	100# 15-0-14	Helena ls	DD 10 gal/A	One (1.2 in.)	May 22	July 15
Upper Piedmont Tobacco Research Station Reidsville, N. C.	1250# 4-8-12	None	Appling sl	Vorlex 6 gal/A	None	May 29	July 23

Table 16. Border Belt Tobacco Research Station, Whiteville, N. C.

Date	April	May	June	July	August	September
1					1.18	.20
2			.05		.29	
3			.60		1.30	
4				.55	1.25	
5					.70	.05
6	1.50					
7				.09	.08	
8				.14		.08
9		.05				
10			1.89		.13	
11	.34			.23	.27	
12			1.35	.07	.06	
13			.70		.07	
14			1.23			
15		.25	.39		.23	
16	.29		.49	.03	.27	
17						.25
18	.92	.12	.20			
19	.06	.87				1.25
20	.03	.10				.10
21		.20	.42	.05		.03
22	.11	.83		.22	T	
23	.10		.05			
24			.03			.04
25			.80	.88		.15
26		2.95	.64			
27						
28						
29	.80			2.27		
30			1.02			
31				.84		
TOTALS	4.15	5.37	9.86	5.37	5.83	2.15

T Trace

() - Irrigation

Table 16. Upper Coastal Plain Research Station, Rocky Mount, N. C.

Date	April	May	June	July	August	September
1					.09	
2					.07	
3	.01		.73		.23	
4	.11			.46	.41	
5	.01				2.16	
6	.74				.03	.46
7				3.05		
8				.36		.24
9		.02	.17	T	.10	T
10			.14		.39	
11	.18	.07	T	.07	.11	
12			.02	.42		
13			.88		.43	
14			.23		.42	
15		.07	1.27		1.32	
16	1.65		.18		.02	
17	.02		.01			1.74
18	.40		.25			.54
19	.21	.45	2.69			
20		2.67	T	.02	.07	1.89
21	.08					.39
22					T	
23				.33		
24			.38	T		T
25		.55	.50	1.05		.08
26						
27				.02		
28				T		
29	.25			.28		
30	T			.04		
31		.04				
TOTALS	3.66	3.87	7.45	6.10	5.85	5.34

T Trace

() Irrigation

Table 16. Lower Coastal Plain Research Station, Kinston, N. C.

Date	April	May	June	July	August	September
1			.27		.09	.08
2		.01	.17	.21	.12	.24
3	.03		.12	.01	.01	.03
4	.19		.01	.23	.97	
5		T			1.76	.63
6	.99				.22	.26
7				.25	.01	
8	.01			1.73		.09
9		.16	.02	.01		.01
10		.03		.04	.53	.34
11	.16		.07	.77		.33
12			.06	.30	.24	
13			.60		.87	
14			.27	.02	.72	
15			.80		.03	.02
16	.37		.31		.90	
17	.03		.02			.76
18	.31		.26		.02	.98
19	1.11	3.20	.03		.01	.23
20	.02	3.30	.40		.02	.23
21		.01	.03		.01	.15
22	.03					
23			.23	.03		.02
24			.22			.07
25		1.48		.13	.01	.04
26				.01		.02
27				.07		
28				.07	.01	
29	.20	.06		.55		
30	T		1.06	.02		
31						
TOTALS	3.45	8.25	4.95	4.55	6.35	4.53

T - Trace

() Irrigation

Table 16. Oxford Tobacco Research Station, Oxford, N. C.

Date	April	May	June	July	August	September
1				.11	.22	
2			T	.01	.15	.46
3	.04		.64	.06	.50	.03
4	.21				.95	
5	.19				.57	T
6	.55	.08				.20
7				.76		
8			.54	.11		.01
9		.27	T	.01		
10	T		.27	.74	.22	
11	.15			T		
12				.11		
13			.22		.03	
14	T		T		.27	
15	.14	.12	.22		.16	
16	.52		.51			
17	T					1.02
18	.52				.01	T
19	.06	.41	.90			
20	.10	.80			.20	1.34
21				.01		.11
22	.06			1.55		T
23				.05		
24				.12		.62
25		.11	.21			.11
26		T				.01
27		.12		.07		
28				2.00		
29	.04			3.44		
30			(1.20)			
31						
TOTALS	2.58	1.91	4.71	9.15	3.28	3.91

T - Trace

() Irrigation

Table 16. Upper Piedmont Research Station, Reidsville, N. C.

Date	April	May	June	July	August	September
1						
2	.02		.04	T	.02	T
3			.32	.53	.50	T
4	.12			T	.54	.01
5	T				.04	
6	.13		.05		.11	
7						
8			.38	1.21		
9		.08		T	.03	.45
10		.08	1.14	.30	.44	
11	.20		.11	.06	T	
12			T	.35		
13			.05			
14			.78		.21	
15	.09	.13	.97			
16	.92		1.22		.01	
17	.04				.71	
18	.35					.22
19	.29	.53	.75		.06	
20		.81	.02		.36	2.10
21			.11	.86		.61
22	.01		.35	.18		
23			.04	T		
24		T		.06		.73
25		T	.20	T		1.15
26		.19	.37	.01		.17
27		.80				.40
28			T	.04		
29	.11		.69	.20		
30				.04		
31						
TOTALS	2.28	2.62	7.59	3.84	3.03	5.84

T Trace
() Irrigation