

Performance of Tobacco Varieties  
and Breeding Lines Tested in Virginia  
in 1960, 1961, and 1962

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PERFORMANCE OF TOBACCO VARIETIES AND  
BREEDING LINES TESTED IN VIRGINIA

In 1960, 1961, and 1962

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INTRODUCTION

Varietal performance trials on flue-cured tobacco are conducted by the Virginia Agricultural Experiment Station to obtain data on plant characteristics, yield, and quality of released varieties and advanced breeding lines. This information serves as a guide for growers to use in choosing varieties to plant on their farms. It is also helpful to the breeders in developing improved tobacco varieties.

While yield and quality data are of major concern to growers, data on disease resistance, curing and handling properties, leaf number, suckering habits, etc., are also of great importance. The following tests are conducted in Virginia to obtain this information: (1) official variety performance test, (2) advanced breeding line test, and (3) cooperative variety evaluation test. The plots are measured accurately in all tests, and the crop is carefully handled to give uniform treatment to all varieties. Yield per acre is calculated from the plot records, and quality is measured in terms of official government grades, visual ratings, and chemical content of the cured leaf. Data on plant and leaf characteristics are also recorded. Levels of disease resistance are determined from field plantings and laboratory tests.

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1/ Assistant Professors of Agronomy

2/ Associate Professors and Professor of Plant Pathology, respectively

Appropriate data are made available to Extension workers as soon as possible at the completion of each test each year. In some instances, pre-publication data releases were in a preliminary form and, therefore, may not agree in all detail with the final tabulations. Subsequent statistical analyses may have necessitated certain corrections or adjustments in the data.

Acknowledgment should be made of the valuable services rendered by cooperating producers, tobacco companies, U.S.D.A., and the Extension Service in conducting these tests.

#### MATERIALS AND METHODS

The official variety test was conducted at the Bright Tobacco Research Station at Chatham and at 2 farm locations. The cooperating producers were Mr. A.B. Reynolds, Red House (Charlotte County) during 1960-62, and Mr. Howard L. Hamlin, Union Level (Mecklenburg County) in 1962 only. The fertilization of the crop at each location was based on a soil analysis. The fertilizer used, soil type, and other information for each location are presented in Table 1.

The usual recommended practices of culture and management were followed. Plants were spaced at 22" in rows 45" apart. Plants were topped at a normal height and hand suckered. Individual plots were harvested according to degree of maturity, tagged, and kept separate during curing and sorting. In the farm tests, after weights were recorded, similar farm grades of leaf from the several plots were bulked together. The bulked piles of tobacco were placed on the auction floor for grading and selling. In 1960 and 1961, the price received for these bulked lots of tobacco was accepted as the base price for calculating the value of the tobacco from each plot represented in the bulk. The per-acre performance for varieties was calculated from these plot weights

and values. In the tests at the Chatham Station, the farm grades from each plot were graded by a U.S. Government Grader. Values were then calculated for each plot, using average auction price paid for the corresponding U.S. Government grade during the 2 previous years and through September of the respective year in which the test was conducted.

All tests were conducted in a lattice design with 4 replications. Plot size at all locations was 1/100 acre, except at the Chatham Station in 1962, where a 1/200 acre plot was used.

Data on plant characteristics were recorded as follows: days to flower - number of days from transplanting until 50% of the plants first showed pink in a flower; leaves per plant - number of harvestable leaves per plant; plant height - distance from ground level to the point at which plants were topped; internode length - plant height divided by number of leaves per plant.

The cooperative variety evaluation test was conducted on 1 farm in each of 6 major flue-cured producing counties. The cooperating producers were: Mr. C.H. Steed, Brunswick County; Mr. J.T. Williams, Mecklenburg County; Mr. E.E. Vaughan, Charlotte County; Mr. Kenneth Shelton, Halifax County; Mr. O.H. Adkins, Franklin County; Mr. B.J. Rogers, Pittsylvania County (1960 and 1961); Mr. Marvin Collie, Pittsylvania County (1962).

Accepted cultural practices of producing the crop were followed on each farm. The rate and kind of fertilizer was specified by the Experiment Station agronomist. The fertilizer recommendations were on the same basis as that explained above for the official variety tests. The plot size was 1/8 acre for each entry with 4 replications, which gave 1/2 acre of total area planted to each entry on each farm. When harvested, the leaves picked from the 4 plots of each entry were combined and handled as a unit. The cured tobacco was sorted into farm grades in a similar manner on each farm. The tobacco for the

several entries from the 6 farms was delivered at a specified date to a warehouse in Danville, where it was arranged on baskets and examined by government graders and company representatives. The warehouse weight on each basket of tobacco was recorded, along with the corresponding government grade. A value for each lot of tobacco was calculated on the basis of the average auction price for the season or previous week, whichever was higher, for the corresponding government grade. Representatives from 7 major tobacco companies assisted in the evaluation of the cured leaf.

#### PRESENTATION OF RESULTS

The results of the various tests are presented in tables on the basis of years. Data obtained each year are presented as follows; 1960, Tables 3-8; 1961, Tables 9-14; and 1962, Tables 15-20. The entry number, generation, variety name or number, and pedigree of all entries tested are presented in Table 2(1960); Table 9(1961); and Table 15(1962).

Statistical difference in varieties were determined by Duncan's multiple range test. The statistical group or groups in which the variety occurs are indicated by letters following the performance data for each variety. The significance of these groups can be comprehended if the reader understands that variety differences are not significant where the groups contain the same letter. For example, a variety that has a grouping of AB is not significantly different from a variety in the same test with a grouping of BC; but it is significantly different from one with a grouping CD.

Summary data of varietal comparisons for all tests conducted during the period of 1957-1962 are presented in Table 2. The data for each variety are expressed as a percentage of Hicks Broadleaf in the same test. The number of tests in which each variety occurred are given in the first column of Table 2. The data obtained from a larger number of tests are more reliable than those from only 1 or 2 tests.

Table 1. Cultural practices used in varietal performance tests, 1960, 1961, and 1962.

Test year and location	Soil type	Per acre fertilization	Per acre topdressing	Planting date	Rainfall (in.)				Irrigation date (in.)
					June	July	Aug.	Sept.	
<u>1960</u>									
Chatham	Mayodan	1300 lbs. 3-9-9	None	May 26-27	Total 15.22				
Red House	Appling	1200 lbs. 3-9-9	None	May 22	Total 13.20				Total 2.00
<u>1961</u>									
Chatham	Mayodan	1300 lbs. 3-9-9	100 lbs. of 8-0-24	-----	6.70	1.90	5.85	2.55	
Red House	Appling	1200 lbs. 3-9-9	None	May 26	9.39	1.69	9.04	0.16	7/4 (0.50) $\frac{1}{2}$
<u>1962</u>									
Chatham	Mayodan	1300 lbs. 3-9-9	None	May 24-29	6.92	3.28	1.56	----	
Union Level	Appling	1560 lbs. 3-9-9	150 lbs. of Sul-Po-Mag 97 lbs. nitrate of soda	May 22	9.10	3.30	2.30	----	7/13 (0.70) 7/20 (0.70)

Table 2. Comparison of flue-cured tobacco varieties with Hicks Broadleaf, 1957 - 1962.

Pounds per acre 1799		Percent of Hicks Broadleaf in same test		Value per 100 pounds \$ 58.82				
		Value per acre \$ 1058						
2*	Reams 64	(121)	2*	Reams 64	(122)	1*	Speight G-5	(104)
1	Speight G-19	(118)	1	Speight G-5	(119)	7	Bell 15	(102)
1	Speight G-5	(115)	1	Matthews 611	(114)	1	Coker 319	(102)
1	Matthews 611	(115)	2	Speight G-3	(112)	2	Reams 64	(101)
2	Speight G-3	(114)	1	Speight G-19	(110)	2	Speight G-10	(101)
4	Florida 22	(112)	13	Va. 12	(109)	2	McNair 12	(101)
2	Speight G-10	(111)	2	Speight G-10	(109)	1	Matthews 611	(100)
13	Va. 12	(110)	4	Florida 22	(107)	2	McNair H-2	(100)
6	Coker 316	(108)	6	Coker 316	(107)	6	402	(100)
6	Va. Gold	(107)	1	Coker 319	(107)	4	Speight 31	(100)
10	Coker 187-Hicks	(107)	6	Va. Gold	(105)	13	Va. 12	(100)
5	N.C. 75	(105)	2	McNair H-2	(104)	15	<u>Hicks Broadleaf</u>	(100)
1	Coker 319	(105)	3	Coker 80F	(104)	3	Coker 80F	(100)
2	Bissette 11	(105)	6	N.C. 95	(103)	6	Coker 316	(100)
6	N.C. 95	(105)	2	Bissette 11	(102)	2	Speight G-3	(100)
2	McNair H-2	(103)	6	Va. 21	(102)	13	Vesta 5	(99)
6	Va. 21	(103)	10	Coker 187-Hicks	(102)	6	Va. Gold	(99)
3	Coker 80F	(102)	2	McNair 12	(102)	9	D.B. 101	(99)
2	McNair 12	(102)	6	402	(101)	6	White Gold	(98)
6	402	(101)	15	<u>Hicks Broadleaf</u>	(100)	4	Florida 22	(98)
15	<u>Hicks Broadleaf</u>	(100)	7	Bell 15	(100)	6	Va. 21	(98)
7	Bell 15	(99)	13	Vesta 5	(98)	2	Bissette 11	(98)
13	Vesta 5	(99)	5	N.C. 75	(97)	6	N.C. 95	(98)
2	Bell 16	(98)	4	Speight 31	(97)	4	McNair 10	(98)
4	Speight 31	(97)	6	White Gold	(95)	3	OX. 1-181	(97)
6	White Gold	(97)	2	Bell 16	(92)	3	Coker 187	(97)
6	McNair 121	(96)	9	D.B. 101	(91)	2	Coker 128	(96)
2	Coker 128	(92)	4	McNair 10	(90)	10	Coker 187-Hicks	(96)
4	McNair 10	(92)	6	McNair 121	(90)	2	Bell 16	(94)
3	N.C. 73	(91)	2	Coker 128	(88)	6	McNair 121	(94)
9	D.B. 101	(91)	3	Coker 187	(88)	5	N.C. 75	(93)
3	Coker 187	(89)	3	OX. 1-181	(84)	1	Speight G-19	(93)
3	S.C. 58	(88)	3	N.C. 73	(80)	3	S.C. 58	(91)
3	OX. 1-181	(85)	3	S.C. 58	(80)	3	N.C. 73	(88)

\* Number of times the variety appeared in tests with Hicks Broadleaf.

Table 3. Entry number and pedigree of material tested in 1960.

1960			
no.	Variety	Generation	Pedigree
1	Vesta 5		
2	N.C. 8038-3	F-6	(C139 x Bel. 4-30) x C139) x 5346
3	N.C. 8069-5	F-6	" " " "
4	P.D. 42		
5	P.D. 106		
6	P.D. 608		
7	Va. 724-9 comp.	F-7	(Va. 259 x C139)
8	Va. 9-12 comp.	F-5	
9	Fla. 22-2		
10	Hicks Broadleaf		
11	Va. 12	Released	(Va. Gold x Hicks)
12	Coker 128	"	
13	Coker 316	"	
14	Coker 187-Hicks	"	
15	McNair H-2	"	
16	Speight 31	"	
17	Bell 15	"	
18	Bell 16	"	
19	N.C. 75	F-6	(DB102 x B. Spec.) x Bel 1-76
20	Va. 945	F-5	Hicks x C139
21	Va. 617-58 seed	F-5	
22	Va. 815	F-7	(DB102 x MR6B) x C139
23	Coker 59-79S		Sel. C-186-59
24	Coker 59-8K		Coker Hicks
25	Coker 59-8DF		(C187-Hicks x C139) x Hicks



Table 3. Continued - Material tested, 1960.

1960 no.	Variety	Generation	Pedigree
26	Va. 730 R	F-6	Va. 259-7 x C139
27	Va. 733 P4	F-6	Va. 259-1 x C139
28	Va. 740 R	F-5	Va. 259 x C139
29	Va. 740 P5R	F-5	Va. 257 x C139
30	Va. 7774-R	F-6	Va. 259 x C139
31	Va. 777-P4R	F-6	" " "
32	Vesta 5	Released	
33	Hicks Broadleaf	Released	
34	M9-R	F-5	(Va. 257-644-7 x C139) x C187
35	M7-R	F-5	Va. 617 x P.D. 17-18
36	M5-R	F-5	Va. 724 x C187
37	M12-R	F-5	" "
38	M11-R	F-5	Va. 617 x C187
39	Va. 9-9A4	F-7	403 x C139
40	Va. 940A1	F-6	Va. 259 x C139
41	Va. 9204A2	F-5	(Va. 21 x C139) x C139
42	Va. 969 A1	F-5	Va. 724 x C187
43	Va. 917	F-4	Va. 259 x C139 x P.D. 17-18
44	Coker 59-27S		
45	Coker 59-112S		(C139 x C187) x OX. 1-181
46	N.C. 8069-3	F-6	(C139 x Bel. 4-30) x C139) x Hicks
47	N.C. 8037-4F	F-6	C139 x Bel. 4-30) x C139)x 5346
48	Va. 9-180A2	F-4	P.D. 17-18 x Va. 724
49	Va. 9-86A1	F-4	Hicks x C139
50	Va. 9-101B3	F-6	(403 x C139)
<u>Cooperative Test</u>			
	Coker 186-S		Coker 187 x Golden Wilt
	Va. 815-9	F-7	(DB102 x MR6B) x C139
	Vesta 5		Check Variety
	Va. 724-9	F-7	Va. 259 x Coker 139
	Va. 617	F-5	Va. Gold x Vesta 30
	Va. 912	F-5	(Va. 21 x Coker 139) x Coker 139
	Va. 945	F-5	Hicks x Coker 139

Table 4. Performance of flue-cured tobacco varieties and breeding lines at Red House, and combined data from Red House and Chatham, Va., 1960.

1960 no.	Variety	Combined data from Red House & Chatham			Red House		
		Return per acre		Price per	Return per acre		Price per
		Pounds	Value	100 lbs.	Pounds	Value	100 lbs.
8	Va. 912*	2078 a	\$1303 a	\$62.70	2399 a	\$1630 ab	\$67.94
2	N.C. 8038-3*	2028 ab	1294 a	63.81	2361 ab	1643 a	69.59
23	Coker 79S*	2014 abc	1239 ab	61.52	2321 a-d	1553 abc	66.91
3	N.C. 95	1984 a-d	1217 abc	61.34	2357 abc	1540 abc	65.34
7	Va. 724-9*	1904 a-f	1206 a-d	63.34	2213 a-h	1507 a-d	68.10
22	Va. 815*	1930 a-e	1206 a-d	62.49	2188 a-i	1499 a-d	68.51
11	Va. 12	1888 b-g	1190 a-e	63.03	2174 a-i	1482 a-e	68.17
9	Fla. 2-22*	1938 a-e	1174 b-e	60.58	2309 a-d	1573 abc	68.12
24	Hicks (Coker)	1842 c-h	1147 b-f	62.27	2219 a-g	1526 abc	68.77
13	Coker 316	1837 c-h	1139 b-g	62.00	2263 a-e	1529 abc	67.56
20	Va. 945*	1789 e-i	1135 b-g	63.44	2137 a-i	1463 a-f	68.46
14	Coker 187-Hicks	1819 d-h	1119 b-h	61.52	2231 a-f	1489 a-e	66.74
15	McNair H-2	1758 e-i	1103 c-i	62.74	2109 a-i	1428 b-g	67.71
17	Bell 15	1724 f-j	1089 d-j	63.17	2066 b-i	1412 c-g	68.34
1	Vesta 5	1725 f-j	1078 e-j	62.49	2032 d-i	1378 c-g	67.81
5	PD 106*	1673 hij	1072 e-j	64.08	2033 d-i	1403 c-g	69.01
16	Speight 31	1727 f-j	1066 e-j	61.72	1971 e-i	1310 d-g	66.46
10	Hicks Broadleaf	1699 g-j	1065 e-j	62.68	2095 a-i	1445 a-f	68.97
25	Coker 59-80F*	1710 g-j	1047 f-k	61.23	1937 f-i	1303 d-g	67.27
6	PD 608*	1703 g-j	1038 f-k	60.95	2052 c-i	1392 c-g	67.84
19	N.C. 75	1781 e-i	1020 g-k	57.27	1964 e-i	1275 efg	64.92
4	PD 42*	1791 e-i	997 h-k	55.67	2025 d-i	1310 d-g	64.69
18	Bell 16	1671 hij	981 ijk	58.71	1894 i	1224 g	64.62
21	Va. 617*	1618 ij	968 jk	59.83	1909 hi	1258 fg	65.90
12	Coker 128	1566 j	939 k	59.96	1913 ghi	1275 efg	66.65

\* Unreleased breeding lines

Table 5. Performance of flue-cured tobacco varieties and breeding lines, Chatham, Va., 1960.

1960 no.	Variety	Return per acre		Price per 100 lbs.	Days to flower	Leaves per plant	Plant height(in.)	Internode length(in.)
		Pounds	Value					
8	Va. 912*	1758 a	\$977 a	\$55.57	55	20.4	40	2.00
2	N.C. 8038-3*	1694 ab	944 a	55.73	56	21.0	39	1.86
23	Coker 79S*	1708 ab	925 ab	54.16	65	19.8	36	1.80
3	N.C. 95	1612 a-d	894 abc	55.46	61	18.2	31	1.72
7	Va. 724-9*	1594 a-e	906 abc	56.84	62	21.0	35	1.67
22	Va. 815*	1671 abc	913 ab	54.64	58	21.6	34	1.54
11	Va. 12	1602 a-e	897 abc	55.99	57	17.4	37	2.18
9	Fla. 2-22*	1568 a-f	775 def	49.43	57	18.2	31	1.72
24	Hicks (Coker)	1465 d-g	768 def	52.42	57	17.4	29	1.76
13	Coker 316	1410 efg	748 def	53.05	58	19.6	33	1.65
20	Va. 945*	1440 d-g	806 cd	55.97	60	21.0	35	1.67
14	Coker 187-Hicks	1406 e-h	749 def	53.27	59	20.0	34	1.70
15	McNair H-2	1407 e-h	778 def	55.29	62	16.4	35	2.19
17	Bell 15	1382 fgh	765 def	55.35	61	16.8	33	1.94
1	Vesta 5	1417 efg	778 def	54.90	54	17.4	38	2.24
5	PD 106*	1313 gh	742 def	56.51	61	17.4	33	1.94
16	Speight 31	1482 c-g	823 bcd	55.53	56	18.8	34	1.79
10	Hicks Broadleaf	1303 gh	686 efg	52.65	61	15.6	31	1.94
25	Coker 59-80F*	1483 c-g	791 de	53.34	52	17.6	31	1.72
6	PD 608*	1354 g-h	684 efg	50.52	53	17.6	33	1.83
19	N.C. 75	1599 a-e	766 def	47.90	63	16.2	36	2.25
4	PD 42*	1558 b-f	685 efg	43.97	61	16.6	32	1.88
18	Bell 16	1449 d-g	738 def	50.93	59	17.2	36	2.12
21	Va. 617*	1326 gh	678 fg	51.13	63	16.0	34	2.12
12	Coker 128*	1219 h	603 g	49.47	65	19.6	36	1.80

\* Unreleased breeding lines.

Table 5. Continued - Chatham, Va., 1960.

1960 no.	Variety	% Nic.	% Nor- nic.	% Reducing sugars	% Total N	Ratio T.N./Nic.	Black Shank loss.*
1	Vesta 5	3.80	.09	10.80	2.54	.65	53.5 bc
2	8038-3	2.24	.09	14.20	2.58	1.08	40.1 ab
3	8069-5	3.10	.22	11.70	2.32	.70	43.2 ab
4	P.D. 42	2.81	.22	8.60	2.35	.76	39.3 ab
5	P.D. 106	3.68	.TR	14.80	2.58	.70	49.3 abc
6	P.D. 608	3.68	.35	9.30	2.23	.55	74.3 d
7	724-9	2.31	.16	15.12	2.32	.94	33.3 ab
8	Va. 912	2.31	.22	13.60	2.09	.83	52.5 bc
9	Fla. 222	3.53	.22	8.04	2.26	.60	83.8 d
10	Hicks Broadleaf	3.36	.22	9.87	2.54	.71	78.5 d
11	Va. 12	3.24	.22	12.96	2.38	.69	81.0 d
12	Coker 128	2.67	.35	9.40	2.40	.90	42.5 ab
13	Coker 316	2.10	.09	11.70	2.28	1.09	38.8 ab
14	Coker 187 Hicks	2.24	.22	11.70	2.15	.96	37.8 ab
15	McNair H-2	2.96	.09	10.10	2.47	.83	77.2 d
16	Speight 31	2.24	.09	8.60	2.38	1.06	41.0 ab
17	Bell 15	2.31	.09	9.80	2.35	1.02	80.1 d
18	Bell 16	2.38	.22	8.60	2.38	1.00	47.3 ab
19	N.C. 75	2.53	.22	10.10	2.38	.94	44.6 ab
20	Va. 945	2.24	.22	10.40	2.32	.94	30.5 a
21	Va.-617-58	3.10	.09	9.40	2.43	.78	43.4 ab
22	Va. 815	2.38	.TR	10.40	2.26	.95	39.5 ab
23	Coker-59-79S	1.67	.09	11.30	2.38	1.43	39.9 ab
24	Hicks (Coker)	2.46	.22	10.10	2.17	.88	67.1 cd
25	Coker-59-80F	2.38	.35	9.40	2.42	1.02	48.3 ab

\* Transformation from percent of plants killed.

Table 6. Performance of flue-cured tobacco breeding lines, Chatham, Va., 1960.

1960 no.	Variety	Return per acre		Price per 100 lbs.	Days to flower	Leaves per plant	Plant height(in.)	Internode length(in.)
		Pounds	Value					
31	Va. 777 P-4	942 a	\$1718 a	\$54.83	74	21.2	36	1.71
41	Va. 912	862 abc	1677 ab	51.40	67	20.0	35	1.75
49	Va. 9-86 A1	975 a	1671 ab	58.35	69	20.0	34	1.70
29	Va. 740 P-5	874 ab	1624 abc	53.82	69	18.2	39	2.17
40	Va. 940 A-1	880 ab	1623 abc	54.22	68	19.6	36	1.80
39	Va. 834-9	730 cde	1584 a-d	46.09	67	20.2	35	1.75
28	Va. 740	887 ab	1539 b-e	57.63	70	17.8	36	2.00
30	Va. 777 L	841 abc	1532 b-e	54.90	72	19.2	38	2.00
36	M-5	798 bcd	1503 c-f	53.09	70	20.0	37	1.85
42	Va. 9-69A-1	732 cde	1468 c-f	49.86	69	17.6	33	1.83
50	Va. 9-101B-3	694 def	1453 d-g	47.76	70	19.8	38	1.90
26	Va. 730	697 def	1431 d-h	48.71	68	17.0	34	2.00
45	Coker 59-112S	606 ef	1419 e-h	42.71	68	19.0	36	1.89
43	Va. 9-176B1	779 bcd	1417 e-h	54.98	70	18.2	33	1.83
46	N.C. 8069-3	677 def	1379 e-i	49.09	71	19.6	35	1.75
44	Coker 59-27S	576 f	1358 f-i	42.42	74	17.4	32	1.88
47	N.C. 8037	687 def	1344 f-i	51.12	67	18.6	34	1.79
37	M-12	600 ef	1290 g-j	46.51	70	18.2	32	1.78
35	M-7	587 f	1279 hij	45.90	73	20.0	33	1.65
32	Vesta 5	625 ef	1276 hij	48.98	69	16.8	35	2.06
34	M-9	599 ef	1272 hij	47.09	71	17.8	34	1.89
48	Va. 9-180A1	605 ef	1245 ij	48.59	71	18.2	37	2.06
33	Hicks Broadleaf	572 f	1163 jk	49.18	70	16.0	29	1.71
27	Va. 733P4	554 f	1153 jk	47.18	66	19.8	36	1.80
38	M-11	414 g	1047 k	39.54	71	16.2	35	2.19

Table 7. Performance of flue-cured tobacco varieties and breeding lines in cooperative variety evaluation trials, 1960. Farm cooperators - B.J. Rogers, E.E. Vaughan, C.H. Steed, Kenneth Shelton, J.T. Williams, and O.H. Adkins.

Variety	County						Av.
	Brunswick	Mecklenburg	Charlotte	Pittsylvania	Franklin	Halifax	
			<u>Pounds per acre</u>				
Coker 186	1968	1689	1566	2073	2422	2248	1994
Va. 815-9	1941	1663	1686	1699	2251	2140	1897
Vesta 5	1420	1369	1505	2020	2044	1968	1721
Va. 724-9	1763	1424	1351	2175	2232	2113	1843
Va. 617	1367	1323	1833	1663	1980	1848	1669
Va. 912	1689	1546	1947	--	--	--	--
Va. 945	--	--	--	2369	2051	2224	--
			<u>\$ per acre</u>				
Coker 186	1300	1118	904	1338	1640	1409	1285
Va. 815-9	1276	1076	1100	1108	1595	1325	1247
Vesta 5	907	796	857	1186	1329	1124	1033
Va. 724-9	1178	941	814	1298	1511	1323	1178
Va. 617	823	735	1107	972	1228	1081	991
Va. 912	1085	942	1148	--	--	--	--
Va. 945	--	--	--	1544	1446	1415	--
			<u>\$ per 100 lbs.</u>				
Coker 186	66.06	66.19	57.73	64.54	67.71	62.68	64.15
Va. 815-9	65.74	64.70	65.24	65.21	70.86	61.92	65.61
Vesta 5	63.87	58.14	56.94	58.71	65.02	57.11	59.97
Va. 724-9	66.82	66.08	60.25	59.68	67.70	62.61	63.86
Va. 617	60.20	55.56	60.39	58.45	62.02	58.50	59.19
Va. 912	64.24	60.93	58.96	--	--	--	--
Va. 945	--	--	--	65.18	70.50	63.62	--

Table 8. Comparison of Va. 724-9 and Vesta 5 for physical appearance in the cooperative variety evaluation trials, 1960.

Method	Variety	Farm 1	Farm 3	Farm 5	Average 3-farms
<u>Company grades:</u>					
% graded - 1 or more companies	Va. 724-9	100	83	87	89.6
	Vesta 5	85	60	50	64.7
% graded - Av. 6 companies	Va. 724-9	43.4	25.9	40.7	35.5
	Vesta 5	17.8	17.0	17.0	17.2
<u>Government grades:</u>					
	Va. 724-9	\$66.82	\$67.70	\$66.08	\$66.98
	Vesta 5	\$63.87	\$65.02	\$58.14	\$62.73
<u>Score Sheet:</u>					
5 company men	Va. 724-9	572	580	407	519
	Vesta 5	437	461	295	397
6 station men	Va. 724-9	611	820	504	645
	Vesta 5	499	645	407	515
Average 2 groups	Va. 724-9	591	700	456	582
	Vesta 5	468	553	349	457
<u>Ranking by Methods:</u>					
Company grades (Av. 6 co.)	Va. 724-9	1	3	2	
	Vesta 5	4	4	4	
Government grades	Va. 724-9	2	1	3	
	Vesta 5	5	4	.6	
Score Sheet (company men)	Va. 724-9	1	1	4	
	Vesta 5	3	2	5	
Score Sheet (station men)	Va. 724-9	3	1	4	
	Vesta 5	4	2	5	

Table 9. Entry number and pedigree of material tested in 1961.

1961 no.	Variety	Germination	Pedigree
1	Hicks Broadleaf	1945	Farmer Selection
2	Vesta 5	1952	(OX. 26 x Vesta 11)
3	Va. 940-A1	F-7	(Va. 259 x C139)
4	N.C. 95	1961	(C139 x Bel. 4-30) x C139) x Hicks
5	N.C. 0116	F-5	(C139 x Bel. 4-30) x C139) x Hicks x 5346
6	P.D. 25	F-7	Same as P.D. 28
7	P.D. 28	F-7	OX. 1-181, W. Gold, 400, Fla. 301, TI 448A
8	P.D. 420	F-5	(Bel. 4-30 x C139) x C139) x Hicks - BC <sub>2</sub>
9	Fla. 22-2(7)	F-7	(37 x 402) F4 x (402 x 70) F4 x (402 x 42) x (401 x 37) F4
10	T.G. 5	F-7	(Hicks x C139)
11	Va. 12		
12	Va. 777-60	F-7	(Va. 259 x C139)
13	Va. 076	F-5	(Va. 259 x V.S.F.7) x C139
14	Coker 316	1959	(C187 x Hicks) x OX. 1-181
15	McNair 10	1961	(DB 101 x DB 102) x OX. 1-181
16	Va. 082	F-5	(Vesta 46 x C139) x C139) x Va. Gold
17	Va. 091	F-5	(N.C. 6046 x Vesta 5)
18	Va. 0210	F-8	(Va. 259 x C139)
19	Coker 187-Hicks	1957	(G. Wilt x OX. 1-181) x Hicks
20	Bell 15		
21	Speight 31	1959	(OX. 1-181 x Va. Gold) x C139
22	Bissette 11	1961	(Golden Gem 711 x Bissette Sp.)
23	Coker 60-24S	F-6	(C139 x Hicks)
24	Coker 60-32-1S	F-6	(C139 x Hicks)
25	McNair 0189		(C139 x Vesta 5)



Table 9. Continued - Material tested, 1961.

1961 no.	Variety	Germination	Pedigree
26	Va. 12 N.L.		(Narrow Leaf Sel. of Va. 12)
27	Va. 733 P4	F-7	(Va. 259 x V.S.F. 11) x Coker 139
28	Va. M-9	F-6	(Va. 257 x V.S.F. 7) x Coker 139) x Coker 187
29	Va. M-7	F-6	Va. 617 x P.D. 17-18
30	Va. M-11	F-6	Va. 617 x Coker 187
31	Vesta 5		
32	Va. 9-18042	F-5	Va. 724 x P.D. 17-18
33	M-4-9	F-4	Va. 733 x Coker 156
34	M-2-9	F-4	Va. 724 x Coker 156
35	Hicks Broadleaf	1945	Farmer Selection
36	Va. 042 comp.		
37	Va. 093-0	F-5	(Va. 21 x Coker 139) x 5357) x Coker 187
38	Va. 079 comp.	F-5	P.D. 17-18 x Va. 724
39	Speight 3A	F-4	
40	Speight 8	F-4	
41	Speight 9	F-4	
42	Va. 0101 comp. 5 heads		
43	M-40		S.C. Mosaic Resistant Hicks line
44	P.D. 603A	F-6	(Bel. 4-30 x Coker 139) x Coker 139) x Hicks
45	P.D. 603B	F-6	(Bel. 4-30 x Coker 139) x Coker 139) x Hicks
46	McNair 0917		
47	Coker 60-32-3S (Entry #3)		
48	Coker 60-34S (Entry #4)		
49	Coker 60-46S (Entry #5)		
50	Coker 60-39-93-94S (Entry #6)		
	<u>Cooperative Test</u>		
	Coker 316		Released
	Va. 777-60	F-7	(Va. 259 x Coker 139)
	N.C. 95		Released
	McNair 10		Released
	Vesta 5		Released
	Va. 940-A1	F-7	(Va. 259 x Coker 139)

Table 10. Performance of flue-cured tobacco varieties and breeding lines at Red House, and combined data from Red House and Chatham, Va., 1961.

1961 no.	Variety	Combined data from Red House & Chatham			Red House		
		Return per acre		Price per	Return per acre		Price per
		Pounds	Value	100 lbs.	Pounds	Value	100 lbs.
3	Va. 940A1*	2253	\$1419	\$62.52	2554 a	\$1707 a	\$66.79 d-h
25	McNair 0189*	2017	1289	63.84	2257 bc	1509 bc	67.04 c-g
5	N.C. 0116*	1987	1253	62.24	2327 ab	1576 ab	67.86 a-e
12	Va. 777-60*	1947	1235	62.65	2182 bcd	1467 bcd	66.85 d-h
18	Va. 0210*	1995	1209	60.49	2100 b-e	1376 c-f	65.60 ghi
11	Va. 12	1899	1181	61.65	2087 b-f	1389 b-f	66.60 e-h
13	Va. 076*	1918	1173	60.69	2106 b-e	1383 c-f	65.40 hi
14	Coker 316	1872	1173	62.12	2105 b-e	1412 b-e	66.76 o-h
9	Fla. 22	1907	1156	59.36	2197 bcd	1473 bcd	66.86 d-h
23	C. 60-24S*	1848	1150	61.78	2082 b-f	1405 b-f	67.48 c-f
21	Bissette 11	1857	1145	61.15	2020 c-f	1359 c-f	67.48 c-f
1	Hicks Broadleaf	1764	1122	62.38	2062 b-f	1422 b-e	69.17 a
7	P.D. 28*	1736	1118	63.10	2074 b-f	1417 b-e	68.21 a-d
20	Bell 15	1713	1108	64.11	1957 def	1346 c-f	69.00 ab
19	Coker 187-Hicks	1796	1101	60.79	2074 b-f	1341 c-f	64.74 i
6	P.D. 25*	1728	1100	62.61	1943 def	1315 def	67.76 a-e
10	T.G. 5*	1787	1099	60.45	2126 b-e	1404 b-e	66.13 e-i
24	C. 60-32-1S*	1788	1098	60.95	2001 c-f	1322 c-f	65.97 f-i
4	N.C. 95	1734	1091	61.77	2095 b-e	1416 b-e	67.40 c-f
8	P.D. 420*	1689	1058	61.22	1955 def	1342 c-f	68.53 abc
22	Speight 31	1645	1055	63.60	1850 ef	1259 ef	68.03 a-e
16	Va. 082*	1703	1048	60.86	1875 ef	1232 ef	66.07 f-i
2	Vesta 5	1688	1037	60.26	1937 def	1305 def	67.31 c-f
15	McNair 10	1587	985	60.97	1844 ef	1250 ef	67.64 b-e
17	Va. 091*	1599	980	60.21	1816 f	1213 f	66.86 d-h

\* Unreleased breeding lines.

Table 11. Performance of flue-cured tobacco varieties and breeding lines at Chatham, Va., 1961.\*\*

1961 no.	Variety	Return per acre		Price per 100 lbs.	Days to flower	Leaves per plant	Plant height(cm.)	Internode length(cm.)
		Pounds	Value					
3	Va. 940A1*	1952 a	\$1131 a	\$58.24 abc	63.8	18.9	103.1	5.46
25	McNair 0189*	1776 bc	1068 ab	60.64 a	62.0	19.8	104.5	5.28
18	Va. 0210*	1889 ab	1042 abc	55.37 b-e	62.5	19.0	104.6	5.51
12	Va. 777-60*	1712 cd	1002 bcd	58.45 abc	65.0	20.7	101.7	4.91
11	Va. 12	1711 cd	972 b-e	56.70 a-d	62.8	18.8	107.6	5.72
13	Va. 076*	1729 cd	962 b-f	55.97 b-e	63.8	18.9	100.5	5.32
14	Coker 316	1638 c-g	934 c-g	57.48 a-d	65.0	19.5	92.7	4.75
21	Bissette 11	1694 cde	930 c-g	54.82 cde	66.0	21.2	97.9	4.62
5	N.C. 0116*	1646 c-f	929 c-g	56.61 a-d	58.9	22.2	90.6	4.08
23	C. 60-24S*	1613 c-i	895 d-h	56.07 b-e	63.5	21.4	105.9	4.95
6	PD 25*	1512 f-k	884 e-i	57.45 a-d	59.0	18.4	93.0	5.05
24	C. 60-32-1S*	1575 d-j	874 e-i	55.92 b-e	65.5	21.9	97.5	4.45
20	Bell 15	1469 g-l	869 e-i	59.22 ab	59.8	18.4	93.6	5.09
16	Va. 082*	1531 e-k	863 e-j	55.64 b-e	62.3	19.0	105.6	5.56
19	Coker 187-Hicks	1518 f-k	861 e-j	56.83 a-d	65.0	20.3	96.8	4.77
22	Speight 31	1440 h-l	850 f-j	59.16 ab	63.8	20.3	98.0	4.83
9	Fla. 22	1617 c-h	838 g-j	51.86 e	66.3	20.9	89.9	4.30
1	Hicks Broadleaf	1465 g-l	822 g-k	55.59 b-e	59.8	19.0	98.5	5.18
7	PD 28*	1397 jkl	819 g-k	57.98 a-d	61.8	17.9	96.0	5.36
10	T.G. 5*	1448 h-l	794 h-k	54.77 cde	59.3	20.1	77.5	3.86
8	PD 420*	1423 jkl	774 ijk	53.90 de	60.5	19.3	94.1	4.88
2	Vesta 5	1438 i-l	769 ijk	53.21 de	62.0	18.5	103.5	5.59
4	N.C. 95	1372 kl	766 ijk	56.13 bcd	62.5	21.3	83.6	3.92
17	Va. 091*	1381 kl	747 jk	53.55 de	60.5	19.4	107.0	5.52
15	McNair 10	1330 l	719 k	54.29 cde	63.8	19.6	98.6	5.03

\* Unreleased breeding lines.

\*\* Tobacco severely damaged by hail on June 24.

Table 11. Continued - Chatham, Va., 1961.

1961 no.	Breeding no.	% Total alk.	% Nor- nic.	Ratio Nornic./T.A.	Black Shank kill**	Root rot***
24	Coker 60-32-1S*	5.10	.29	.06	5.7 e	S
3	Va. 940A1*	3.98	.18	.05	8.7 de	M
19	Coker 187-Hicks	3.60	.22	.06	8.8 de	S
12	Va. 777-60*	3.31	.29	.09	8.8 de	R
4	N.C. 95	3.98	.18	.05	8.9 de	M
14	Coker 316	3.31	.22	.07	9.8 de	S
18	Va. 0210*	3.60	.29	.08	10.1 de	M
25	McNair 0189*	3.09	.29	.09	11.3 de	S
6	P.D. 25*	4.59	.27	.06	11.4 de	S
23	Coker 60-24S*	4.68	.09	.02	12.9 de	S
2	Vesta 5	4.67	.24	.05	13.3 de	S
17	Va. 091*	3.88	.22	.06	15.7 de	S
5	N.C. 0116*	3.95	.27	.07	16.3 de	S
13	Va. 076*	3.89	.16	.04	16.8 de	S
22	Speight 31	3.51	.35	.10	17.7 de	S
7	P.D. 28*	4.63	.27	.06	17.8 de	S
15	McNair 10	4.02	.29	.07	20.9 de	S
16	Va. 082*	4.31	.22	.05	21.9 d	M
10	T.G. 5*	4.51	.32	.07	22.1 d	S
8	P.D. 420*	4.60	.24	.05	36.7 c	R
21	Bissette 11	3.75	.09	.02	38.0 c	M
20	Bell 15	3.74	.22	.06	60.1 b	M
1	Hicks Broadleaf	4.14	.21	.05	65.3 b	M
9	Fla. 22	4.87	.21	.04	78.7 a	S
11	Va. 12	4.04	.09	.02	81.5 a	M

\* Unreleased breeding line.

\*\* Transformation.

\*\*\* S = Susceptible; M = Mixed or tolerant; R = Resistant.

Table 12. Performance of flue-cured tobacco breeding lines at Chatham, Va., 1961.\*

1961 no.	Variety	Return per acre		Price per 100 lbs.	Days to flower	Leaves per plant	Plant height(cm.)	Internode length(cm.)	B.S. kill**	Root rot***
		Pounds	Value							
40	Speight 8	1647 ab	\$966 a	\$59.06 a	64.5	19.8	101.5	5.13	9.9	S
46	McNair 0197	1632 abc	955 ab	58.05 a	65.3	20.5	103.4	5.04	14.8	S
41	Speight 9	1669 a	955 ab	57.43 ab	68.5	23.8	82.8	3.48	5.7	S
26	Va. 12 N.L.	1503 bcd	882 abc	58.38 a	65.8	20.2	89.2	4.42	78.3	M
38	Va. 079	1504 bcd	853 a-d	56.76 ab	61.8	17.8	93.4	5.25	7.1	S
36	Va. 042	1469 def	851 a-d	58.27 a	65.8	17.7	100.3	5.67	8.4	S
42	Va. 0101	1486 cde	847 a-d	57.96 a	62.0	19.1	95.2	4.98	10.9	S
31	Vesta 5	1449 def	819 cde	56.26 ab	61.3	17.4	102.6	5.90	15.8	S
35	Hicks Broadleaf	1384 d-g	805 c-f	58.21 a	58.5	16.4	99.8	6.09	49.0	M
48	C. 60-34S	1429 def	802 c-f	55.57 ab	66.0	21.4	105.2	4.92	7.4	VS
39	Speight 3A	1386 d-g	797 c-f	57.38 ab	62.0	17.5	90.0	5.14	8.8	S
44	P.D. 603A	1348 d-h	793 c-f	58.74 a	60.3	22.8	87.1	3.82	18.7	M
29	Va. M-7	1359 d-h	771 c-g	55.80 ab	63.8	20.7	101.3	4.89	13.1	S
49	Coker 80F	1324 e-h	768 d-g	57.04 ab	62.8	21.5	99.0	4.60	6.7	S
47	C. 60-32-38	1376 d-g	767 d-g	55.55 ab	68.3	20.6	91.3	4.43	5.8	M
34	Va. M2-9	1361 d-h	764 d-g	55.53 ab	60.5	17.5	101.0	5.77	11.4	S
50	C. 60-89-93-94S	1405 d-g	754 d-g	53.56 bc	62.5	20.1	94.9	4.72	11.6	S
33	Va. M4-9	1324 e-h	753 d-g	56.69 ab	62.0	19.2	104.3	5.43	18.2	S
27	Va. 733P4	1383 d-g	741 d-g	53.53 bc	63.0	19.7	102.1	5.18	51.1	S
28	Va. M-9	1316 fgh	717 efg	53.87 bc	60.5	18.2	98.3	5.4	5.8	VS
43	S.C. M-40	1262 ghi	695 fgh	55.19 ab	63.0	17.5	98.9	5.65	52.9	VS
32	Va. 9-180A2	1264 ghi	677 gh	53.60 bc	56.8	16.7	95.4	5.71	9.9	S
30	Va. M-11	1160 i	602 hi	51.41 c	62.8	18.1	108.9	6.02	7.2	S
45	P.D. 603B	1120 i	568 i	50.90 c	59.8	18.7	91.4	4.89	8.9	S
37	Va. 093-0	1211 hi	561 i	46.29 d	62.8	19.3	80.2	4.16	11.0	VS

\* Tobacco severely damaged by hail on June 24.

\*\* Transformation from percent of plants killed.

\*\*\* VS = very susceptible, S = susceptible, M = mixed or tolerant, R = resistant.

Table 13. Performance of flue-cured tobacco varieties and breeding lines in the cooperative variety evaluation trials, 1961. Farm cooperators - C.H. Steed, O.H. Adkins, Kenneth Shelton, E.E. Vaughan, J.T. Williams.

Variety	County					Av.
	Brunswick	Franklin	Halifax	Charlotte	Mecklenburg	
			<u>Pounds per acre</u>			
Coker 316	1817	2012	1794	1653	1281	1711
Va. 777-60	1871	2004	1886	1616	1569	1789
N.C. 95	1496	1499	1812	1385	1372	1513
McNair 10	1504	1633	1624	1357	1180	1460
Vesta 5	1693	1567	1642	1318	1318	1508
Va. 940-A1	1926	2067	1884	1615	1556	1810
			<u>\$ per acre</u>			
Coker 316	1216	1392	1194	1081	776	1132
Va. 777-60	1283	1362	1206	1059	924	1166
N.C. 95	997	979	1233	951	858	1003
McNair 10	1006	1096	1054	883	728	953
Vesta 5	1149	1009	1083	875	797	983
Va. 940-A1	1325	1342	1200	1035	981	1176
			<u>\$ per 100 lbs.</u>			
Coker 316	66.93	69.19	66.56	65.41	60.56	65.73
Va. 777-60	68.56	67.94	63.95	65.50	58.85	64.96
N.C. 95	66.62	65.31	68.05	68.66	62.53	66.23
McNair 10	66.88	67.13	64.89	65.04	61.69	65.13
Vesta 5	67.85	64.35	65.96	66.34	60.48	65.00
Va. 940-A1	68.81	64.92	63.70	63.07	63.05	64.91

Table 14. Acceptability of cured-leaf of breeding lines to manufacturing companies, cooperative variety evaluation trials, 1961.

Variety	County					Av.	
	Brunswick	Franklin	Halifax	Charlotte	Mecklenburg		
	Percent acceptable to at least one company (six co. participating)						
Coker 316	78.8	56.7	75.9	38.7	48.7	59.8	
Va. 777-60	34.7	14.1	60.7	26.3	0.0	27.2	
N.C. 95	41.9	23.6	76.0	68.4	22.2	46.4	
McNair 10	68.1	57.7	56.0	54.7	34.6	54.2	
Vesta 5	30.5	57.0	63.2	42.4	28.6	44.3	
Va. 940-A1	17.9	5.7	59.8	36.4	16.7	27.3	
	Average percent acceptable to each company by counties						
Coker 316	22.4	17.9	43.3	12.9	18.1	22.9	
Va. 777-60	6.3	2.3	26.3	8.8	0.0	8.7	
N.C. 95	7.0	5.0	37.0	27.0	3.7	15.9	
McNair 10	16.2	14.0	19.8	19.3	5.8	15.0	
Vesta 5	7.5	15.8	25.4	12.5	4.8	13.2	
Va. 940-A1	3.9	1.9	22.2	12.6	5.6	9.2	
	Percent acceptable to each company (averaged over counties)						
	Company						
	A	B	C	D	E	F	Av.
Coker 316	8.8	8.8	39.1	36.7	30.3	14.0	22.9
Va. 777-60	5.2	0.9	13.5	14.3	13.1	5.6	8.8
N.C. 95	7.1	7.1	22.9	26.1	23.3	9.0	15.9
McNair 10	3.0	2.0	12.1	25.2	14.5	33.2	15.0
Vesta 5	3.3	3.1	11.2	23.3	17.6	20.5	13.2
Va. 940-A1	2.1	4.0	15.8	14.4	15.0	4.2	9.2

Table 15. Entry number and pedigree of material tested in 1962.

1962 no.	Variety	Generation	Pedigree
1	N.C. 1002	F-6	N.C. 95 x N.C. 5346
2	N.C. 1004	F-6	" " "
3	N.C. 95	Rel.1961	(C139 x Bel. 4-30) x C139) x Hicks
4	Hicks Broadleaf	Rel.1945	
5	N.C.T.G. 5		(Hicks x Coker 139) comp.
6	P.D. 29	F-8	(OX. 1-181 x Coker 139) Sel. of P.D. 83 in 1960
7	P.D. 690	F-6	(F <sub>1</sub> (F <sub>1</sub> (Tetraploid Bot. Sp. x Plumbag) x 402) x 402
8	P.D. 603	F-7	(Bel. 4-30 x Coker 139 x Coker 139) x Hicks-BC3
9	Va. 1104	F-6	(Vesta 46 x Coker 139) x Coker 139) x Virginia Gold
10	Va. 187	F-8	Hicks x Coker 139
11	Coker 316	Rel.1959	(Coker 187 x Hicks) x debneyi
12	Coker 80F		(Coker 187 x Coker 139) x Coker Hicks
13	McNair 10	Rel.1961	(DB 101 x DB 102) x OX. 1-181
14	McNair 12	Rel.1962	McNair 121 x Coker 139
15	Reams 64	F-8	Coker 187 x White Gold
16	Speight G-3	F-5	Vesta 30 x Coker 187
17	Speight G-10	F-5	OX. 1-181 x Speight 42
18	Florida 22		(Root Knot Material-402-401)
19	Va. 1105	F-6	(Vesta 46 x Coker 139) x Coker 139) x Virginia Gold
20	Va. 198	F-6	Va. 259 x V.S.F.7) x Coker 139) x P.D. 17-18
21	Va. 1159	F-4	(Va. 724 x Vamorr 48) x Va. 724) x Va. 724
22	Va. 1163	F-4	" " "
23	Va. 118	F-5	Va. 724 x Coker 187-Hicks
24	Va. 179	F-9	Selection of Virginia 724
25	RK-226	F-3	(Va. 215E x Va. 724) comp. C & E



Table 15. Continued - Material tested, 1962.

1962 no.	Variety	Germination	Pedigree
26	Va. 1115	F-5	Va. 724 x Coker 156
27	Va. 1126	F-5	Va. 724 x Coker 187-Hicks
28	RK-1228D	F-3	Va. 215E x Va. 724
29	RK-1225B	F-3	Va. 215E x Va. 724
30	Matthews 61-1	F-6	Va. 724 x Coker 156
31	Matthews 61-6	F-5	Va. 724 x Coker 187-Hicks
32	Va. 1120	F-5	Va. 724 x Coker 156 comp. 1 & 2
33	Va. 1156	F-4	Va. 724 x (6046 x Va. 617) comp. 1-D-1 & D-2
34	Va. 190	F-7	Va. 724 x Coker 187 comp. 3-4 & 136 B-2
35	N.C. 383-5-44	F-9	(Coker 139 x Bel. 4-30) x Coker 139) x N.C. 5346
36	P.D. 32	F-6	Sel.P.D. 91 in 1960 F <sub>6</sub> (Coker 139 x DB 244)
37	P.D. 16-8	F-1	Coker 316 x S.C. 58
38	Va. 12 Narrow Leaf	F-8	Va. Gold x Hicks
39	Reams K-1	F-8	Coker 187 x White Gold
40	Reams H3	F-8	DB 101 x OX. 1-181
41	Speight G-5	F-5	Coker 139 x Hicks
42	Speight G-19	F-5	Coker 187 x Speight 31
43	McNair 0189	F-7	Coker 139 x Vesta 5
44	McNair 183		
45	Coker 61-292-99S	F-5	Coker 187-Hicks x Debneyi
46	Coker 61-328S	F-9	Coker 139 x Hicks
47	Hicks Broadleaf	Rel.1945	Farmer Selection
48	Va. 724-58	F-7	Va. 259 x Coker 139
49	N.C. 95	Rel.1961	
50	Coker 316	Rel.1959	
	<u>Cooperative Test</u>		
	Va. 1104	F-6	(Vesta 46 x C139) x C139) x Va. Gold
	Va. 198	F-6	(Va. 259 x V.S.F.7) x C139) x P.D. 17-18
	Coker 80F	Rel.	(Coker 187 x Coker 139) x Coker Hicks
	Reams 64	Rel.	Coker 187 x White Gold
	N.C. 95-Check Variety	Rel.	(C139 x Bel. 4-30) x C139) x Hicks
	McNair 12	Rel.	(McNair 121 x Coker 139)
	Va. 187	F-8	(Hicks x Coker 139)

Table 16. Performance of flue-cured tobacco varieties and breeding lines at Union Level, and combined data from Union Level and Chatham, Va., 1962.

1962 no.	Variety	Combined data from Union Level & Chatham			Union Level		
		Return per acre		Price per	Return per acre		Price per
		Pounds	Value	100 lbs.	Pounds	Value	100 lbs.
15	Reams 64	1808	\$1132	\$61.96	1605 ab	\$ 990 ab	\$60.29
24	Va. 179*	1743	1066	61.36	1680 a	1006 a	60.71
16	Speight G-3	1706	1046	61.25	1546 a-e	940 a-d	60.86
18	Fla. 22	1730	1043	61.99	1667 a	969 abc	62.08
11	Coker 316	1625	1020	61.90	1451 b-h	897 a-f	60.45
17	Speight G-10	1657	1013	61.87	1579 abc	925 a-e	60.14
20	Va. 198*	1653	1009	61.12	1565 a-d	943 a-d	60.15
6	PD 29*	1571	981	61.88	1452 b-h	891 a-f	60.32
25	RK-226*	1639	977	59.72	1441 c-h	878 b-f	60.54
23	Va. 118*	1566	972	62.48	1445 c-h	857 c-g	61.20
2	N.C. 1004*	1573	969	61.52	1410 d-j	849 c-g	59.98
10	Va. 187*	1570	968	61.34	1525 a-f	941 a-d	60.48
12	Coker 80F	1561	964	61.73	1369 f-j	825 d-g	60.48
19	Va. 1105*	1609	960	60.11	1524 a-f	897 a-f	59.99
14	McNair 12	1524	953	62.18	1387 f-j	841 d-g	60.38
1	N.C. 1002*	1506	943	61.65	1357 g-j	843 d-g	60.25
9	Va. 1104 *	1549	934	60.34	1470 b-g	888 a-f	60.51
4	Hicks Broadleaf	1496	930	61.50	1422 c-i	866 c-g	59.72
7	PD 690*	1527	929	61.18	1399 c-j	842 d-g	60.72
22	Va. 1163*	1537	910	59.83	1435 c-i	853 c-g	60.97
21	Va. 1159*	1478	909	61.21	1277 j	788 fg	61.52
3	N.C. 95	1494	899	60.19	1482 b-g	890 a-f	60.24
8	PD 603*	1463	882	60.68	1357 g-j	786 fg	58.92
5	N.C.T.G.5*	1420	873	60.68	1303 hij	817 efg	60.44
13	McNair 10	1408	854	60.79	1286 i-j	757 g	59.56

\* Unreleased breeding lines.

Table 17. Performance of flue-cured tobacco varieties and breeding lines at Chatham, Va., 1962.\*\*

1962 no.	Variety	Return per acre		Price per 100 lbs.	Days to flower	Leaves per plant	Plant height(in.)	Internode length(in.)
		Pounds	Value					
15	Reams 64	2010 a	\$1274 a	\$63.62 a	60.6	21.6	42.8	1.98
16	Speight G-3	1866 ab	1152 b	61.64 ab	54.1	17.3	44.0	2.53
11	Coker 316	1799 b-e	1142 bc	63.34 a	58.2	19.7	42.8	2.14
24	Va. 179*	1805 bcd	1125 bc	62.00 ab	56.0	18.2	47.8	2.58
18	Fla. 22	1792 b-e	1117 bcd	61.89 ab	56.0	20.6	40.2	1.98
12	Coker 80F	1753 b-f	1102 b-e	62.98 ab	54.2	20.8	43.5	2.06
17	Speight G-10	1735 b-f	1101 b-e	63.59 a	55.4	20.7	42.5	2.02
2	N.C. 1004*	1735 b-f	1089 b-f	63.05 a	57.3	20.1	41.8	2.06
23	Va. 118*	1686 b-h	1086 b-f	63.76 a	57.1	18.0	45.2	2.51
20	Va. 198*	1741 b-f	1075 b-g	62.08 ab	53.2	18.5	46.5	2.47
25	RK-226*	1830 bc	1075 b-g	58.90 cd	57.1	17.3	43.5	2.49
6	P.D. 29*	1690 b-g	1071 b-g	63.44 a	56.4	19.5	43.2	2.17
14	McNair 12	1661 c-h	1065 b-g	63.98 a	56.7	19.6	42.2	2.17
1	N.C. 1002*	1654 c-h	1043 b-h	63.05 ab	55.3	19.3	44.5	2.24
21	Va. 1159*	1678 c-h	1029 b-h	60.90 abcd	56.0	18.1	45.0	2.48
19	Va. 1105*	1694 b-g	1022 c-h	60.22 bcd	55.4	17.5	43.0	2.43
7	P.D. 690*	1655 c-h	1015 c-h	61.64 abc	59.1	15.5	47.3	3.03
10	Va. 187*	1615 e-h	995 d-h	62.19 ab	56.2	18.8	39.8	2.11
4	Hicks Broadleaf	1570 fgh	994 d-h	63.28 a	53.3	17.1	42.8	2.47
9	Va. 1104*	1627 d-h	979 e-h	60.16 bcd	56.6	17.2	43.7	2.44
8	P.D. 603*	1569 fgh	977 e-h	62.44 ab	55.0	17.3	42.5	2.42
22	Va. 1163*	1638 d-h	966 f-h	58.68 d	57.2	18.6	43.0	2.37
13	McNair 10	1530 gh	951 g-h	62.02 ab	55.4	18.2	46.7	2.52
5	N.C.T.G. 5*	1537 gh	928 h	60.92 abcd	54.7	19.0	39.2	1.98
3	N.C. 95	1506 h	907 h	60.13 bcd	56.7	20.4	40.8	2.02

\* Unreleased breeding lines.

\*\* Third Priming lost in fire.

Table 17. Continued - Chatham, Va., 1962.

1962 no.	Variety	% nic.	% Nor- nic.	% Nic. f normic.	Black Shank		Black Root Rot	
					Kill**	Level of Res.***	Wt.(g./12 pl.)	Level of Res.
15	Reams 64	1.47	.40	1.89	12 e-h	High	.34	Susc.
16	Speight G-3	2.04	.30	2.33	24 cde	Mod.	.35	Susc.
11	Coker 316	1.80	.35	2.16	9 h	High	.37	Susc.
24	Va. 179*	1.73	.36	2.03	11 fgh	High	1.77	Res.
18	Fla. 22	2.74	.45	3.21	80 a	Susc.	.45	Susc.
12	Coker 80F	2.62	.38	3.06	10 gh	High	.38	Susc.
17	Speight G-10	2.09	.45	2.58	13 e-h	High	.35	Susc.
2	N.C. 1004*	2.20	.43	2.67	28 cd	Mod.	.92	Mod.
23	Va. 118*	1.18	.38	1.56	10 gh	High	1.27	Res.
20	Va. 198*	1.62	.36	1.98	9 h	High	.40	Susc.
25	RK-226*	2.26	.45	2.69	18 c-h	Mod.	1.00	Mod.
6	P.D. 29*	2.72	.42	3.13	21 c-h	Mod.	.34	Susc.
14	McNair 12	1.82	.40	2.19	23 c-f	Mod.	.30	Susc.
1	N.C. 1002*	2.42	.38	2.81	20 c-h	Mod.	.68	Susc.
21	Va. 1159*	2.32	.32	2.61	10 gh	High	1.10	Res.
19	Va. 1105*	1.96	.45	2.37	30 c	Mod.	1.72	Res.
7	P.D. 690*	2.72	.42	3.18	16 d-h	High	1.91	Res.
10	Va. 187*	2.36	.34	2.70	13 e-h	High	.33	Susc.
4	Hicks Broadleaf	2.32	.52	2.81	81 a	Susc.	.22	Susc.
9	Va. 1104*	2.14	.38	2.48	24 cde	Mod.	1.40	Res.
8	P.D. 603*	2.77	.52	3.29	69 b	Low	.50	Susc.
22	Va. 1163*	1.53	.32	1.87	22 c-g	Mod.	.82	Mod.
13	McNair 10	2.84	.45	3.31	19 c-h	Mod.	.33	Susc.
5	N.C.T.G. 5*	2.53	.40	2.94	16 d-h	High	.46	Susc.
3	N.C. 95	2.26	.30	2.58	10 gh	High	.43	Susc.

\* Unreleased breeding lines.

\*\* Transformation from percent killed.

\*\*\* Based on ratings from regional data obtained from one or more years.

Table 18. Performance of flue-cured tobacco breeding lines at Chatham, Va., 1962.\*\*

1962 no.	Variety	Return per acre		Price per 100 lbs.	Days to flower	Leaves per plant	Plant height(in.)	Internode length(in.)
		Pounds	Value					
43	McNair 0189	1889	\$1221	\$64.64	55.5	18.8	46.3	2.48
27	Va. 1126	1805	1153	63.80	55.5	18.4	45.6	2.50
41	Speight G-5*	1689	1124	66.64	54.0	18.4	42.9	2.37
31	Matthews 61-6	1712	1107	64.46	58.0	17.0	45.0	2.66
26	Va. 1115	1828	1082	59.60	55.5	17.4	47.6	2.78
30	Matthews 611*	1695	1079	64.07	56.5	18.1	45.8	2.52
50	Coker 316	1638	1078	65.87	58.0	19.5	41.7	2.09
45	Coker 61-292-99S	1713	1075	62.72	56.5	19.9	43.8	2.20
48	Va. 724-58	1732	1063	61.50	56.5	17.7	45.4	2.54
38	Va. 12 N.L.	1669	1062	63.76	52.5	17.1	45.4	2.66
34	Va. 190	1683	1049	62.17	55.5	17.4	46.6	2.68
33	Va. 1156	1632	1044	63.86	54.0	18.8	46.2	2.46
42	Speight G-19*	1733	1040	59.40	58.0	22.9	44.0	1.94
36	P.D. 32	1615	1019	63.22	55.5	20.7	38.9	1.89
46	Coker 319*	1550	1010	65.30	58.0	21.1	40.4	1.91
44	McNair 183	1771	1005	56.90	60.5	19.2	41.4	2.18
32	Va. 1120	1642	1004	60.27	54.0	17.4	44.7	2.56
28	RK-1228D	1713	1001	59.04	58.0	17.8	44.4	2.54
39	Reams K-1	1565	977	62.52	56.5	18.8	43.8	2.33
29	RK-1225B	1612	962	60.40	58.0	17.9	45.4	2.56
40	Reams H-3	1567	950	60.74	54.0	17.7	45.9	2.56
37	P.D. 16-8	1584	947	59.37	54.0	18.8	46.7	2.48
47	Hicks Broadleaf	1472	947	63.95	54.0	16.3	42.0	2.54
49	N.C. 95	1460	911	62.65	58.0	20.7	43.2	2.06
35	N.C. 383-5-44	1464	907	61.64	54.0	18.9	43.5	2.28
	L.S.D. (.05)	NS	NS	3.20	NS	1.7	4.5	.20
	L.S.D. (.01)	NS	NS	4.41	NS	2.4	6.2	.28
	C.V. (%)	7	7	2	6	4	4	4

\* Released for the 1963 crop.

\*\* Third priming lost in fire. Data from only two replications.

Table 18. Continued - Chatham, Va., 1962.

1962 no.	Variety	% Nic. / Nornic.	Black Shank		Black Root Rot	
			Kill**	Level of Res.***	Wt. (g./12 pl.)	Level of Res.
43	McNair 0189	1.44	15 d		1.7	Susc.
27	Va. 1126	1.02	13 d		5.2	Res.
41	Speight G-5*	1.39	23 cd	Mod.	1.9	Susc.
31	Matthews 61-6	1.22	13 d		5.6	Mixed
26	Va. 1115	2.35	13 d		7.0	Res.
30	Matthews 611*	1.70	14 d		10.3	Res.
50	Coker 316	1.40	6 d	High	1.0	Susc.
45	C-61-292-995	1.52	9 d	High	1.4	Susc.
48	Va. 724-58	1.50	9 d	High	6.9	Mixed
38	Va. 12 N.L.	1.77	64 a	Susc.	1.3	Susc.
34	Va. 190	1.55	7 d		1.1	Susc.
33	Va. 1156	1.22	6 d		1.1	Susc.
42	Speight G-19*	1.81	10 d	Mod.	2.1	Susc.
36	P.D. 32	1.76	7 d		1.4	Susc.
46	Coker 319*	1.74	12 d	Mod.	1.4	Susc.
44	McNair 183	1.91	9 d	High	1.6	Susc.
32	Va. 1120	1.31	12 d		6.4	Mixed
28	RK-1228D	1.28	9 d		2.0	Mixed
39	Reams K-1	1.34	14 d		4.4	Res.
29	RK-1225B	1.32	39 bc	Low	1.3	Susc.
40	Reams H-3	1.58	33 c	Low	1.2	Susc.
37	P.D. 16-8	1.77	9 d	High	1.6	Susc.
47	Hicks Broadleaf	2.22	52 ab	Susc.	1.5	Susc.
49	N.C. 95	1.85	7 d	High	1.2	Susc.
35	N.C. 383-5-44	1.76	9 d	High	1.8	Susc.

\* Released for the 1963 crop.

\*\* Transformation from percent kill.

\*\*\* Based on rating from regional data from one or more years.

Table 19. Performance of flue-cured tobacco varieties and breeding lines in the cooperative variety evaluation trials, 1962. Farm cooperators - C.H. Steed, O.H. Adkins, Kenneth Shelton, E.E. Vaughan, J.T. Williams, and Marvin Collie.

Variety	County					Franklin	Av.
	Brunswick	Halifax	Pittsylvania	Mecklenburg	Charlotte		
	<u>Pounds per acre</u>						
Coker 80F	1714	1836	1668	1381	1870	1405	1646
N.C. 95	1533	1780	1790	1393	1954	1687	1690
Va. 1104	1760	1923	1948	1332	1997	1335	1716
Va. 198	2006	1813	1849	1456	2144	1414	1780
Reams 64	1906	2020	--	1715	2224	1632	1920
Va. 187	1965	1902	1853	--	--	--	--
McNair 12	--	--	--	1606	2111	1376	--
					L.S.D.	(.05)	137
					C.V.	( % )	6
	<u>\$ per acre</u>						
Coker 80F	1095	1146	1103	783	1205	940	1045
N.C. 95	1010	1174	1182	804	1261	1108	1090
Va. 1104	1064	990	1175	817	1285	828	1026
Va. 198	1136	1091	1073	888	1308	951	1074
Reams 64	1190	1315	--	1001	1412	1088	1216
Va. 187	1250	1120	1185	--	--	--	--
McNair 12	--	--	--	889	1428	938	--
					L.S.D.	(.05)	78
					C.V.	( % )	6
	<u>\$ per 100 lbs.</u>						
Coker 80F	63.90	62.40	66.15	56.72	64.47	66.92	63.43
N.C. 95	65.86	65.99	66.02	57.71	64.55	65.71	64.31
Va. 1104	60.42	51.48	60.34	61.30	64.35	62.02	59.98
Va. 198	56.62	60.18	58.04	60.96	61.02	67.23	60.68
Reams 64	62.45	65.10	--	58.37	63.46	66.63	63.33
Va. 187	63.59	58.85	63.95	--	--	--	--
McNair 12	--	--	--	55.34	67.65	68.22	--
					L.S.D.	(.05)	N.S.
					C.V.	( % )	5

Table 20. Acceptability of cured-leaf of breeding lines to manufacturing companies, cooperative variety evaluation trials, 1962.

Variety	Percent acceptable to at least one company								Overall av.
	County				County				
	Brunswick	Halifax	Pittsylvania	Av.	Mecklenburg	Charlotte	Franklin	Av.	
Coker 80F	13	37	62	37	27	8	98	44	41
N.C. 95	28	49	58	45	12	11	95	39	42
Va. 1104	39	29	38	35	30	0	82	37	36
Va. 198	16	37	42	32	32	19	87	46	39
Reams 64	24	57	--	--	18	0	100	39	--
Va. 187	6	39	53	33	--	--	--	--	--
McNair 12	--	--	--	--	35	53	100	63	--

  

Variety	Percent acceptable to each company							Av.
	Counties - Brunswick, Halifax, and Pittsylvania							
	Company							
	A	B	C	D	E	F	G	
Coker 80F	34	14	8	33	28	8	19	21
N.C. 95	34	28	3	21	25	0	22	19
Va. 1104	21	22	7	28	20	0	0	14
Va. 198	17	19	12	13	9	0	3	10
Va. 187	27	16	12	9	14	2	20	14

  

Variety	Percent acceptable to each company							Av.
	Counties - Mecklenburg, Charlotte, and Franklin							
	Company							
	A	B	C	D	E	F	G	
Coker 80F	41	4	4	21	21	0	0	13
N.C. 95	23	34	12	17	19	0	0	15
Va. 1104	30	20	0	14	23	0	0	12
Va. 198	33	18	34	25	13	0	0	18
Reams 64	38	41	0	22	15	0	0	17
McNair 12	63	93	28	32	25	8	0	36