



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Coker's Pedigreed Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *seventeen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS SEEDS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS PROVIDED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

TOBACCO

'Coker 411'

In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 27th day of October in
the year of our Lord one thousand nine
hundred and seventy-six

Attest:

[Signature]
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

[Signature]
Secretary of Agriculture



APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

1. VARIETY NAME OR TEMPORARY DESIGNATION Coker 411	2. KIND NAME Tobacco	FOR OFFICIAL USE ONLY	
		PVPO NUMBER 72023	
3. GENUS AND SPECIES NAME Nicotiana tabacum	4. FAMILY NAME (Botanical) Solanaceae	FILING DATE 8/23/71	TIME 4:00 P.M.
	5. DATE OF DETERMINATION 1966	FEE RECEIVED \$750.00	CHARGES _____
6. NAME OF APPLICANT(S) Coker's Pedigreed Seed Company	7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) P. O. Box 340 Hartsville, S. C. 29550	8. TELEPHONE AREA CODE AND NUMBER 803 332-8151	
		9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) Corporation	10. STATE OF INCORPORATION South Carolina

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

Dr. Carol R. Miller
Coker's Pedigreed Seed Company
Box 340
Hartsville, South Carolina 29550

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- 12A. Exhibit A, Origin and Breeding History of the Variety (See Section 52, P.L. 91-577)
- 12B. Exhibit B, Botanical Description of the Variety
- 12C. Exhibit C, Objective Description of the Variety
- 12D. Exhibit D, Data Indicative of Novelty
- 12E. Exhibit E, Statement of the Basis of Applicant's Ownership

The applicant declares that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable. (See Section 52, P.L. 91-577).

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? (See Section 83(a), P.L. 91-577) (If "Yes," answer 14B and 14C below.) YES NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations? YES NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? Registered (1 year)
Certified (1 year)

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

The undersigned applicant(s) of this sexually-reproduced novel plant variety believes that the variety is distinct, uniform, and stable as required in Section 41 and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act (P.L. 91-577).

Sept. 3, 1975
(DATE)

Carol R. Miller, Director
(SIGNATURE OF APPLICANT)
Tobacco Breeding and Research
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

(Tobacco Application No. 72023 - "Coker 411")

Exhibit D. Data Indicative of Novelty. (Revised 4/13/76)

SUMMARY NOVELTY STATEMENT: Coker 411 most closely resembles Coker 319 and Coker 347. Coker 411 is clearly differentiated from Coker 319 by the fact that Coker 411 has high resistance to blackshank (Phytophthora parasitica var. nicotianae) whereas Coker 319 has low resistance to blackshank. Coker 411 is distinctly different from Coker 347 since Coker 411 is susceptible to root-knot nematode (Meloidogyne incognita) whereas Coker 347 is resistant to the above nematode (see Appendix).

(Tobacco Application No. 72023 - "Coker 411")

Exhibit D. Data Indicative of Novelty (Revised 3/10/76)

Summary Novelty Statement: Coker 411 can be differentiated from most other varieties of flue-cured tobacco on the basis of disease reaction (Table 1) as follows: Coker 411 is characterized as being susceptible to Fusarium Wilt whereas all other varieties except McNair 30, Speight G-7, Speight G-28, and Va. 115 have some degree of resistance to Fusarium Wilt; of the above four remaining varieties, Coker 411 differs from Speight G-28 in that Coker 411 is susceptible to the southern rootknot nematode whereas Speight G-28 is resistant; Coker 411 exhibits high resistance to blackshank and low resistance to Granville Wilt whereas both McNair 30 and Va. 115 exhibit only moderate resistance to blackshank and are susceptible to Granville Wilt (Table 1).

Since disease reactions of Coker 411 and Speight G-7 differ only with blackshank (Coker 411 has high resistance and Speight G-7 has moderate resistance) and since this difference is less striking than the above comparisons (Table 1), Coker 411 can best be differentiated from Speight G-7 by the fact that Coker 411 is 4 inches shorter (significant at .01 level) than Speight G-7 (Table 2).

Exhibit 12D. Data Indicative of Novelty

Coker 411 is a Coker 319-type of tobacco and, therefore, is very similar in overall appearance to Coker 319. Coker 411 differs from Coker 319 in that the leaves of Coker 411 are 17 to 29 mm longer (depending on stalk position); it yields approximately 150 to 200 lbs. more; blooms approximately one day earlier, and has an average of 0.3 additional leaves on a stalk that averages 2.54 cm shorter than Coker 319. Furthermore, Coker 411 exhibits a higher degree of resistance to black shank than does Coker 319 but is more susceptible to Fusarium wilt. (Refer to table below and the three tables appended to Exhibit 12A.)

Coker 411 differs from Coker 347 primarily because the leaves of Coker 411 do not tend to extend horizontally at maturity, and the fact that Coker 411 has greater resistance to black shank but less resistance to Granville Wilt, Fusarium Wilt, and rootknot nematodes.

Combined Yield and Disease Resistance Data of the 1973-74 Official Tobacco Variety Tests Conducted by the North Carolina Experiment Station.

Variety	Yield lbs/A	Disease Resistance*, 1974 Rating				
		Black Shank	Granville Wilt	Fusarium Wilt	Root Knot	Brown Spot
NC 2326	2725	M	S	L	Su	M.T.
NC 95	2654	M	H	H	R	T
Coker 254	2625	M	H	M	R	S
Coker 298	2771	H	H	S	Su	V.S.
Coker 319	2644	L	L	L	Su	S
Coker 347	2854	M	M	H	R	M.T.
<u>Coker 411</u>	<u>2842</u>	<u>H</u>	<u>L</u>	<u>S</u>	<u>Su</u>	<u>V.S.</u>
McNair 133	2569	H	H	S	Su	V.S.
McNair 135	2890	M	S	S	Su	V.S.
* McNair 944	2827	H	L	S	Su	V.S.
McNair 1040	2694	M	L	M	Su	S
NC 88	2851	M	M	H	R	T
SC 72	2711	M	H	H	R	S
Speight G-28	2713	H	H	H	R	T
Speight G-33	2862	M	M	H	R	T
Speight G-41	2643	M	H	H	R	T
Speight G-140	2991	H	M	L	Su	V.S.
Va. 080	2498	L	L	H	R	T
Va. 115	2846	M	L	S	Su	M.T.

*L=Low; M=Moderate; H=High; R=Resistant; S=Sensitive; Su=Susceptible; T=Tolerant; M.T.=Moderately Tolerant; S=Sensitive; V.S.=Very Sensitive.

* Not a Coker 319-Type

(Tobacco Application No. 72023 - 'Coker 411')

Exhibit D. APPENDIX (Revised 3/10/76)

Table. 1. Summary information on disease resistance.*

Varieties	Level of Resistance			
	Black-shank	Granville G Wilt	Fusarium Wilt	Rootknot
NC 2326	Mod. ^a	Low	Mod.	Susc. ^b
NC 95	High	High	High	Res. ^c
Bell 110	Mod.	Mod.	High	Res.
Coker 254	High	High	Low	Res.
Coker 298	High	High	Mod.	Susc.
Coker 319	Low	Low	Mod.	Susc.
Coker 347	Mod.	Mod.	Mod.	Res.
Coker 411	High	Low	Susc.	Susc.
Ga. 1469	Low	Mod.	Mod.	Res.
Ga. 1470	Res.	Susc.	Mod.	Susc.
McNair 30	Mod.	Susc.	Susc.	Susc.
McNair 133	High	Mod.	Low	Susc.
McNair 135	Mod.	Susc.	Low	Susc.
SC 71	Mod.	Low	Mod.	Susc.
Speight G-7	Mod.	Low	Susc.	Susc.
Speight G-28	High	Mod.	Susc.	Res.
Speight G-33	High	Mod.	High	Res.
Speight G-41	Mod.	Mod.	Mod.	Res.
Va. 115	Mod.	Susc.	Susc.	Susc.
Va. 770	Low	Low	Mod.	Res.

a)=Moderate; b)=Susceptible; c)=Resistant

*Rice, J. C., D. T. Gooden, and E. L. Price.
1971. Measured Crop Performance - Tobacco
Research Report. No. 41. Dept. of Crop
Science. North Carolina State University
at Raleigh.

(Tobacco Application No. 72023 - Coker 411)

Exhibit D. APPENDIX (Continued)

(Revised 3/10/76)

Table 2. Comparison of varieties in 1971
for plant height, for five locations.*

Varieties	Plant Height (in.)
NC 2326	43
NC 95	43
Bell 110	44
Coker 254	48
Coker 298	47
Coker 319	43
Coker 347	44
Coker 411	42
Ga. 1469	45
Ga. 1470	44
McNair 30	43
McNair 133	44
McNair 135	46
SC 71	44
Speight G-7	46
Speight G-28	39
Speight G-33	45
Speight G-41	43
Va. 115	41
Va. 770	42
L.S.D. (.05)	2
(.01)	3

*Rice, J. C., D. T. Gooden, and E. L. Price. 1971.
Measured Crop Performance - Tobacco. Research
Report No. 41. Dept. of Crop Science. North
Carolina State University at Raleigh.

Table 23

RESULTS OF OFFICIAL TOBACCO VARIETY TEST - 1970-71
Whiteville, Kinston, Rocky Mount, Oxford and Reidsville

Varieties	Yield lbs/A	Value \$/A	Price ^{1/} \$/cwt.	Suckers Per Plant		No. leaves per plant	Nic. %	Sugar %	Resistance ^{2/}			1971 Rating	
				Ground	Leaf Axil				BS	GW	FW	Root Knot	Brown Spot
NC 2326	2382	1869	78.46	.55	26.10	18.60	2.82	15.61	M	L	M	S	Mod. Tol.
NC 95	2519	1952	77.49	1.40	23.40	20.10	2.87	14.32	H	H	H	R	Mod. Tol.
*Bell 110	2410	1848	76.68	.95	22.65	20.40	2.75	14.72	M	M	H	R	Mod. Tol.
Coker 254	2576	2012	78.11	3.30	24.45	21.75	2.72	14.07	H	H	L	R	Sen.
Coker 319	2479	1938	78.18	1.25	26.65	21.20	2.61	14.92	(L)	L	M	S	Sen.
*Coker 347	2645	2064	78.03	1.30	24.65	21.70	2.61	14.32	M	M	M	(R)	Mod. Tol.
Coker 411	2552	1981	77.63	.70	22.00	20.90	2.72	14.25	(H)	L	S	(S)	V. Sen.
Ga. 1469	2543	1958	77.00	1.45	25.50	21.35	2.82	14.50	L	M	M	R	Mod. Tol.
McNair 30	2349	1813	77.18	1.40	25.70	18.75	2.92	14.06	M	S	S	S	Sen.
McNair 133	2499	1953	78.15	1.90	23.10	20.30	2.73	14.84	H	M	L	S	V. Sen.
McNair 135	2664	2062	77.40	.95	23.00	21.65	2.69	15.32	M	S	L	S	V. Sen.
*S.C. 71	2527	1921	76.02	1.30	24.90	20.45	2.94	15.28	M	L	M	S	V. Sen.
Speight G-7	2617	2054	78.49	2.05	24.50	21.10	2.82	16.25	M	L	S	S	Sen.
Speight G-28	2474	1898	76.72	.60	21.55	21.15	2.55	14.27	H	M	S	R	Tol.
*Speight G-33	2513	1948	77.52	1.00	23.35	21.10	2.66	15.98	H	M	H	R	Tol.
Speight G-41	2564	1988	77.54	.95	20.70	20.60	2.74	15.47	M	M	M	R	Tol.
Va. 115	2592	2021	77.97	.75	22.30	19.90	2.72	15.92	M	S	S	S	Mod. Tol.
*Va. 770	2234	1717	76.86	4.40	28.80	19.20	2.85	14.76	L	L	M	R	Mod. Tol.

1/ Price is based on average market price by grade. 2/ The descriptive rating applies specifically to North Carolina. H = High resistance; M = Moderate; L = Low; S = Susceptible; Tol. = Tolerant; Sen. = Sensitive; BS = Blackshank; GW = Granville Wilt; FW = Fusarium Wilt.

Varieties resistant to mosaic include S.C. 71 and Va. 770; Black Root Rot, Va. 770

Table 24

RESULTS OF OFFICIAL TOBACCO VARIETY TEST - AT INDIVIDUAL LOCATIONS 1971

Varieties	Whiteville			Rocky Mount			Kinston			Oxford			Reidsville		
	Yield	Value	Price	Yield	Value	Price	Yield	Value	Price	Yield	Value	Price	Yield	Value	Price
NC 2326	2844	2269	79.75	2250	1768	78.50	2006	1595	79.46	1968	1582	80.41	2332	1844	79.02
NC 95	2814	2252	80.02	2592	2013	77.66	2304	1831	79.43	2108	1675	79.50	2498	2019	80.83
*Bell 110	2868	2231	77.79	2470	1886	76.36	2160	1719	79.61	2086	1645	78.87	2158	1714	79.42
Coker 254	2968	2360	79.50	2742	2091	76.28	2310	1841	79.71	2170	1715	79.02	2316	1867	80.66
Coker 298	3080	2459	79.80	2764	2168	78.42	2320	1845	79.49	2266	1742	76.87	2138	1653	77.28
Coker 319	2852	2277	79.84	2516	2023	80.38	2340	1847	78.94	2088	1642	78.71	2448	1917	78.28
*Coker 347	3118	2479	79.48	2776	2198	79.18	2470	1951	78.96	2192	1728	78.84	2658	2163	81.37
Coker 411	2976	2354	79.12	2648	2075	78.46	2246	1760	78.40	2240	1743	77.86	2352	1860	79.01
Ga. 1469	2856	2227	78.00	2552	1955	76.41	2276	1780	78.21	2276	1781	78.94	2478	1990	80.32
McNair 30	2738	2128	77.78	2400	1916	79.87	1964	1565	79.61	1886	1484	78.71	2290	1818	79.37
McNair 133	2754	2194	79.67	2728	2179	79.87	2288	1807	78.98	2148	1717	79.92	2238	1769	78.92
McNair 135	3056	2430	79.49	2770	2106	76.04	2256	1736	79.59	2266	1803	79.58	2420	1926	79.67
*S.C. 71	2930	2319	79.13	2514	1915	76.21	2292	1810	78.96	2112	1587	75.19	2376	1831	77.11
Speight G-7	2982	2373	79.59	2850	2201	77.24	2492	1985	79.67	2194	1723	78.44	2516	2032	80.78
Speight G-28	2722	2162	79.44	2420	1896	78.31	2222	1755	78.97	2148	1631	75.95	2462	1956	79.38
*Speight G-33	2932	2358	80.44	2624	2044	77.86	2398	1892	78.90	2288	1783	77.94	2526	2038	80.67
Speight G-41	3046	2383	78.20	2660	2074	77.95	2252	1795	79.72	2028	1588	78.26	2340	1845	78.86
Va. 115	2992	2316	77.41	2506	1950	77.80	2182	1746	80.01	2210	1723	78.04	2640	2105	79.67
*Va. 770	2388	1850	77.44	2264	1671	73.77	1986	1542	77.66	1830	1377	75.25	2194	1760	80.19

*New varieties available for grower planting in 1972.

Tests conducted by John C. Rice and DeWitt E. Gooden, Crop Science Department, N. C. State University.

Table 15. Combined data of the 1971-1972 official tobacco variety tests conducted by the N. C. Agricultural Experiment Station

Whiteville, Rocky Mount, Kinston and Reidsville

Varieties	Yield lbs/A	Value \$/A	Price ^{1/} \$/cwt.	Suckers Per Plant		No. leaves per plant	Nic. %	Sugar %	Resistance ^{2/}			1972 Rating	
				Ground	Leaf Axil				BS	GW	FW	Root Knot	Brown Spot
NC 2326	2205	1805	81.94	1.2	25.1	17.5	3.37	15.96	M	L	M	S	Mod. Tol.
NC 95	2354	1920	81.68	2.8	23.8	18.8	3.52	15.30	H	H	M	R	Mod. Tol.
Bell 110	2287	1853	81.14	2.0	22.8	18.8	3.41	15.74	M	H	M	R	Mod. Tol.
Coker 254	2477	2017	81.49	3.6	23.5	20.8	3.31	14.49	H	H	S	R	Sen.
Coker 298	2463	1988	80.71	1.6	19.1	20.0	3.46	15.20	H	H	S	S	V. Sen.
Coker 319	2373	1937	81.73	2.3	26.6	19.5	3.05	15.34	L	L	L	S	Sen.
Coker 347	2592	2119	81.82	2.2	26.1	20.2	3.10	14.73	H	M	M	R	Mod. Tol.
Coker 411	2435	1983	81.49	1.4	22.3	18.8	2.99	15.11	H	L	S	S	V. Sen.
McNair 30	2220	1807	81.48	2.5	26.6	17.4	3.55	14.55	M	S	L	S	Sen.
McNair 133	2357	1921	81.56	3.2	23.3	19.0	3.26	15.19	H	H	S	S	V. Sen.
McNair 135	2483	2016	81.33	1.9	22.7	20.7	3.23	16.28	M	L	L	S	V. Sen.
*NC 88	2497	2044	81.97	3.4	24.1	18.5	3.69	14.52	L	M	L	R	Tol.
SC 71	2388	1916	80.27	2.4	23.4	19.6	3.53	15.83	M	L	M	S	Sen.
*SC 72	2435	1977	81.22	2.0	21.8	19.1	3.53	15.85	L	M	L	R	Sen.
Speight G-7	2545	2070	81.44	3.1	24.0	19.6	3.44	15.99	M	L	S	S	Sen.
Speight G-28	2316	1874	80.95	1.6	22.8	18.9	2.94	14.15	H	H	L	R	Tol.
Speight G-33	2496	2034	81.52	1.8	24.0	20.3	3.04	16.99	H	H	M	R	Tol.
Speight G-41	2406	1947	80.99	1.6	21.0	19.4	3.39	15.64	M	H	M	R	Tol.
*Speight G-140	2656	2161	81.42	2.1	21.5	20.4	3.21	16.94	M	M	M	S	Sen.
Va. 115	2374	1923	81.15	1.8	22.9	18.6	3.37	16.38	M	L	S	S	Mod. Tol.
Va. 770	2159	1731	80.09	5.0	28.3	17.5	3.36	14.47	L	M	L	R	Mod. Tol.

^{1/} Price is based on average market price by grade. ^{2/} The descriptive rating applied specifically to North Carolina. H = High resistance; M = Moderate; L = Low; S = Susceptible; Tol. = Tolerant; Sen. = Sensitive; BS = Blackshank; GW = Granville Wilt; FW = Fusarium Wilt.

17

Table 16. Results of Official Tobacco Variety Test - At Individual Locations 1971

Varieties	Whiteville			Rocky Mount			Kinston			Reidsville		
	Yield	Value	Price	Yield	Value	Price	Yield	Value	Price	Yield	Value	Price
NC 2326	2566	2188	85.26	2140	1785	83.46	2208	1868	84.59	1600	1351	84.44
NC 95	2628	2213	84.23	2088	1729	83.10	2364	1983	83.89	1902	1602	84.22
Bell 110	2608	2194	84.15	2058	1700	82.61	2568	2170	84.48	1666	1403	84.18
Coker 254	2884	2422	83.97	2302	1910	82.99	2586	2162	84.25	2054	1736	84.54
Coker 298	2844	2381	83.74	2540	2111	83.13	2276	1869	82.11	1984	1651	83.21
Coker 319	2734	2308	84.40	2228	1872	84.01	2252	1885	83.69	1968	1669	84.80
Coker 347	3084	2521	83.92	2422	2009	83.00	2598	2197	84.58	2134	1809	84.75
Coker 411	2662	2258	84.82	2276	1914	84.09	2500	2097	83.86	2094	1760	84.87
McNair 30	2560	2169	84.72	2066	1706	82.58	2146	1803	84.11	1958	1647	84.10
McNair 133	2626	2211	84.18	2318	1911	82.48	2356	1965	83.39	1826	1545	84.56
McNair 135	2934	2466	84.06	2380	1997	83.93	2336	1940	83.04	1996	1679	84.09
*NC 88	2670	2245	84.07	2268	1866	82.20	2424	2039	84.11	2048	1723	84.14
SC 71	2860	2375	83.07	2176	1805	82.96	2402	2017	83.28	1886	1582	82.84
*SC 72	2774	2331	84.03	2240	1841	82.22	2456	2065	84.07	2046	1730	84.55
Speight G-7	2974	2475	83.21	2364	1970	83.34	2528	2126	84.05	2060	1737	84.32
Speight G-28	2644	2220	83.92	2124	1747	82.24	2352	1964	83.50	1822	1536	84.28
Speight G-33	2912	2449	84.08	2500	2091	83.60	2536	2124	83.75	1800	1513	84.06
Speight G-41	2650	2229	84.13	2512	2048	81.50	2486	2090	84.06	1738	1459	83.82
*Speight G-140	2998	2516	83.93	2520	2073	82.27	2514	2107	83.80	2256	1905	84.41
Va. 115	2582	2179	84.38	2180	1811	83.01	2416	2039	84.38	1784	1481	83.06
Va. 770	2576	2154	83.62	1982	1644	82.97	2232	1851	82.93	1948	1632	83.78

* New varieties available for grower planting in 1972. Tests conducted by John C. Rice, DeWitt T. Gooden and Ernest Price, Crop Science Department, N. C. State University.

(Appendix - Exhibit D, Page 3)

72023

REPORT ON NEW VARIETIES

The varieties listed below have been tested for several years. They have met the standards of the Flue-Cured Tobacco Variety Evaluation Committee and were released in 1972. Seed were increased during 1973 and will be available for the 1974 season. The following is a brief description of these varieties. Disease resistance data may be found in the disease section of this publication. Growers should be cautious about selecting a new variety with which they have had no experience and should plant only a portion of their crop with the new variety.

McNair 944 was developed from a cross of (Speight G-10 x McNair 30). It produced a high yield of high quality tobacco on the basis of government grades. The variety produced a high percentage of orange colored leaf which was medium in body and texture with a medium nicotine content. The plants grew medium tall with a medium number of leaves which were of medium length and width. There was a low number of ground suckers.

Va. 080 was developed from a cross of (NC 95 x Burley 49). It produced a medium to low yield of high quality tobacco on the basis of government grades. The variety produced a high percentage of orange colored leaf which was medium to thin in body and medium texture, with a medium to high nicotine content. The plants grew medium tall with a medium number of leaves which were of medium length and width. There was a medium number of ground suckers.

Table 18. Combined Data of the 1972-73 Official Tobacco Variety Tests Conducted By the N. C. Agricultural Experiment Station.

Varieties	Yield lbs/A	Value \$/A	Price ^{1/} \$/cwt.	Resistance ^{2/} 1973 Rating				
				BS	GW	FW	Root Knot	Brown Spot
NC 2326	2442	2105	86.20	M	Su.	L	Su.	M.T.
NC 95	2476	2124	85.78	M	H	H	R	T
Coker 254	2611	2240	85.79	M	H	L	R	S
Coker 298	2597	2216	85.33	H	H	Su.	Su.	V.S.
<u>Coker 319</u>	2568	2210	86.06	(L)	L	L	Su.	S
<u>Coker 347</u>	2756	2359	85.60	M	M	H	(R)	M.T.
<u>Coker 411</u>	2656	2291	86.26	(H)	L	Su.	(Su)	V.S.
McNair 133	2444	2096	85.76	H	H	Su.	Su.	V.S.
McNair 135	2674	2287	85.53	M	L	Su.	Su.	V.S.
*McNair 944	2700	2313	85.67	H	L	Su.	Su.	V.S.
NC 88	2633	2261	85.87	M	M	H	R	T
SC 72	2553	2187	85.66	M	H	H	R	S
Speight G-28	2547	2182	85.67	H	H	H	R	T
Speight G-33	2698	2311	85.66	M	H	H	R	T
Speight G-41	2524	2153	85.30	L	M	H	R	T
Speight G-140	2845	2440	85.76	M	M	L	Su.	V.S.
*Va. 080	2417	2069	85.60	L	L	H	R	T
Va. 115	2549	2184	85.68	M	L	Su.	Su.	M.T.

^{1/} Price is based on market price by grade.

^{2/} The descriptive rating applied specifically to North Carolina. H = High; M = Moderate; L = Low; Su = Susceptible; T = Tolerant; S = Sensitive; M.T. = Moderately tolerant; V.S. = Very Sensitive; B.S. = Black Shank; G.W. = Granville Wilt; F.W. = Fusarium Wilt complex.

VARIETY INFORMATION

Variety Selection

Selecting the variety or varieties to best fit a grower's situation is an important part of growing a good crop of tobacco. A grower should give major consideration to the following characteristics when making his decision:

1. Disease resistance needed.
2. Yield potential.
3. Quality of cured leaf.
4. Number of ground suckers.
5. General handling characteristics.

Growers should be cautious of selecting any variety with which they have had no experience. A new variety should be planted on a limited scale the first year it is available.

Table 18. Combined Data of the 1974-75 Official Tobacco Variety Tests Conducted by The N. C. Agricultural Experiment Station. ^{1/}

Appendix - Exhibit D, Page 6)

Variety	Release Date	Yield lbs/A	Value \$/A	1975 ^{2/} Quality Index	Resistance ^{3/}		1975 Rating	
					BS	GW	RK	B. Spot
NC 2326	1965	2768	2797	50	M	Su	Su	MT
NC 95	1961	2749	2744	48	M	H	R	T
*Coker 86	1974	2988	2936	41	H	H	R	Se
Coker 254	1967	2751	2759	50	M	H	R	Se
Coker 258	1966	2792	2742	43	H	H	R	Su
Coker 298	1965	2769	2738	46	H	H	Su	VS
Coker 319	1963	2664	2691	52	(L)	L	Su	Se
Coker 347	1969	2969	2981	48	M	M	(R)	Se
Coker 411	1969	2874	2901	52	(H)	L	(Su)	VS
McNair 944	1972	2944	2969	49	H	L	Su	VS
McNair 1040	1973	2797	2828	52	M	L	Su	VS
*NC 12	1974	2760	2776	45	M	M	Su	Se
*NC 79	1973	2909	2948	50	M	L	R	MT
NC 88	1971	2862	2875	50	M	M	R	T
*NC 98	1974	2674	2681	49	M	M	R	MT
Speight G-15	1972	2589	2610	51	M	M	R	T
*Speight G-23	1974	2786	2774	46	M	H	R	T
Speight G-28	1969	2711	2702	47	H	H	R	T
Speight G-33	1970	2910	2866	44	M	M	R	T
Speight G-140	1971	3052	3061	48	H	M	Su	VS
Va. 115	1965	2900	2904	48	M	L	Su	MT

*New variety available for grower planting in 1976.

^{1/} Conducted by John C. Rice, Glenn Hayes, and Ernest Price, Crop Science Department.

^{2/} Quality Index based on numerical quality rating based on government grade.

^{3/} Description rating applied specifically to North Carolina. H = High; M = Moderate; L = Low; Su = Susceptible; T = Tolerant; Se = Sensitive; M.T. = Moderately Tolerant; V.S. = Very Sensitive; BS = Black Shank; GW = Granville Wilt; FW = Fusarium Wilt Complex; RK = Root Knot; B. Spot = Brown Spot.

12B. BOTANICAL DESCRIPTION OF COKER 411 TOBACCO

The variety Coker 411 is a medium-broad leaf type very similar to Coker 319, which is planted extensively. Leaves will average approximately 24 inches in length and 12 inches in width at the widest point. Plants bloom at a medium early date and average 24 leaves. Leaves are spaced $2\frac{1}{4}$ inches on a stalk of 57 inches average height.

12C. OBJECTIVE DESCRIPTION OF COKER 411 TOBACCO

Coker 411 was bred and reselected for a distinct Coker 319 type with higher disease resistance, higher yield, and high quality. It has very good resistance to black shank, probably the most serious disease of tobacco, and moderately good resistance to Granville and Fusarium wilts, which are less prevalent and more or less localized in widely scattered areas. It has a medium-low degree of tolerance to the root knotting nematode.

12D. PARTICULARS OF PERFORMANCE OF COKER 411 TOBACCO

COMPARATIVE PERFORMANCE DATA OF COKER 319* AND COKER 411 VARIETIES OF
FLUE-CURED TOBACCO

Three year average for 1968, 1969, and 1970.

Data obtained from three replicates at each of two locations, 1/100th acre size plots.

Variety	Lb./Acre	Price/Cwt.	Days to Bloom	Ground Suckers/Acre
Coker 319	2373	75.29	57	250
Coker 411	2612	75.24	57	11

*Most widely grown and accepted throughout the flue-cured district for a number of years.

12A. ORIGIN AND BREEDING HISTORY OF COKER 411 TOBACCO

- 1964 Cross of Coker 319 and Virginia 115.
(Coker 139 x Hicks) x (Coker 139 x Hicks)
- 1964-65 F₁ plants grown in South Florida winter nursery.
- 1965 F₂ grown and reselected in summer disease nursery.
- 1965-66 F₃ grown in South Florida winter nursery.
- 1966 F₄ stable progeny lines tested in advanced strain-variety test and summer disease nursery. Progeny row 411 selected for advanced testing and evaluation.
- 1966-67 F₅ grown in South Florida, bulked.
- 1967 F₅ and F₆ tested in advanced strain-variety test, summer disease nursery, and F₆ in regional small plot tests (as 66-411).
- 1968 F₇ tested in advanced strain-variety test, summer disease nursery, and regional small plot and farmer tests.
- 1969 F₈ tested in advanced strain-variety test, summer disease nursery, and regional small plot and farmer tests.
- 1970 F₉ grown in nurseries, demonstration plots, advanced strain-variety tests, and increase fields for seed.
- 1971 F₁₀ seed released for planting by farmers.

Coker 411 was selected from a cross of Coker 319 and Virginia 115, or (Coker 139 x Hicks) x (Coker 139 x Hicks), and was released for the 1971 growing season. The schedule for developmental procedures is shown. Nurseries in which this variety was produced are severely infested with the black shank organism and Granville (bacterial) wilt organism. Leaves were harvested, identified, cured, graded, and chemically analyzed from every plant progeny throughout entire developmental history. Fusarium and Granville wilt inoculation tests were also conducted in the greenhouse during the same winters plants were grown in South Florida near Homestead.

No persistent recurring variants have been observed since it was determined that this variety was stable. The appended data produced by North Carolina State University (Measured Crop Performance - Tobacco, 1972, 1973, and 1974) indicates that Coker 411 is a stable variety.

WHITEVILLE, KINSTON, ROCKY MOUNT, OXFORD AND REIDSVILLE

Table 4. Comparison of varieties for certain characteristics for five locations. 1974.

Varieties or Lines	Yield Lbs/A	Value Index		Grade Index	Days to Flower	Leaves per Plant	Height of Plant	Ground Suckers	
		Dol/A	Dol/Cwt.						
Commercially Available Varieties									
NC 2326	2702	2642	97.71	52	28.6	59	17.6	40	0.4
NC 95	2611	2523	96.55	48	31.5	61	17.2	38	1.7
Coker 254	2509	2433	96.87	49	30.1	68	18.7	41	1.9
Coker 258	2675	2565	95.80	45	34.4	65	19.7	40	1.0
Coker 298	2762	2655	95.98	47	35.2	66	18.9	43	0.8
Coker 319	2488	2424	97.14	51	29.4	64	18.7	38	0.7
Coker 347	2761	2673	96.73	46	31.5	64	18.8	38	0.8
Coker 354	2500	2435	97.35	52	29.4	64	18.6	39	1.3
Coker 411	2770	2700	97.43	51	30.8	62	18.1	38	0.3
McNair 133	2541	2467	96.99	50	31.6	65	17.9	40	1.5
McNair 135	2854	2771	97.01	47	31.5	65	19.9	42	0.6
McNair 1040	2627	2554	97.13	51	30.2	65	19.8	41	2.1
McNair 944	2706	2631	97.08	46	33.3	64	18.0	38	0.8
NC 79	2720	2653	97.46	49	30.9	60	17.2	41	0.2
NC 88	2802	2722	97.13	50	29.9	63	18.5	41	1.5
SC 72	2698	2615	96.87	46	32.2	63	18.1	38	0.8
Speight G-15	2406	2334	96.93	49	32.0	62	16.3	38	0.5
Speight G-28	2597	2506	96.42	46	33.5	63	18.6	36	0.3
Speight G-33	2808	2709	96.52	44	32.0	66	19.5	40	0.7
Speight G-41	2597	2510	96.64	47	31.1	64	18.9	40	0.4
Speight G-140	2889	2803	96.96	46	30.7	64	19.3	41	0.8
Va. 080	2416	2350	97.16	48	32.0	61	17.8	39	1.6
Va. 115	2838	2754	97.00	47	30.4	60	17.2	37	0.6

WHITEVILLE, KINSTON, ROCKY MOUNT, OXFORD AND REIDSVILLE

Table 4. Continued. Comparison of varieties for certain characteristics for five locations. 1974.

Varieties or Lines	Analysis of Cured Leaf				Ratios	
	Nic. %	Sol. Sug. %	Tot. N. %	Nor. Nic. %	T.N. Nic.	Sug. Nic.
Commercially Available Varieties						
NC 2326	3.10	17.99	2.15	.21	.70	6.45
NC 95	3.27	16.16	2.39	.29	.74	5.37
Coker 254	2.93	17.26	2.08	.24	.73	6.32
Coker 258	3.21	15.92	2.36	.33	.75	5.30
Coker 298	3.49	16.30	2.44	.23	.71	5.36
Coker 319	2.90	16.23	2.37	.25	.85	6.31
Coker 347	3.29	16.11	2.38	.28	.75	5.47
Coker 354	2.79	15.91	2.40	.25	.89	6.20
Coker 411	2.78	16.76	2.24	.26	.83	6.75
McNair 133	2.84	17.09	2.23	.28	.80	6.67
McNair 135	2.95	18.29	2.12	.23	.73	6.69
McNair 1040	2.90	16.97	2.23	.19	.78	6.21
McNair 944	2.94	17.46	2.27	.27	.78	6.35
NC 79	3.19	16.29	2.41	.30	.77	5.55
NC 88	3.35	16.57	2.23	.25	.69	5.56
SC 72	3.30	18.05	2.45	.30	.76	5.87
Speight G-15	3.48	17.09	2.32	.34	.68	5.31
Speight G-28	2.58	17.94	2.21	.18	.88	7.63
Speight G-33	2.96	16.70	2.18	.17	.76	6.18
Speight G-41	3.20	17.45	2.19	.27	.71	6.20
Speight G-140	2.64	19.66	2.13	.28	.82	7.84
Va. 080	3.57	15.08	2.39	.29	.68	4.59
Va. 115	2.98	15.95	2.31	.32	.79	6.00

WHITEVILLE, ROCKY MOUNT, OXFORD AND REIDSVILLE

Table 4. Comparison of varieties for certain characteristics for four locations. 1973.

Varieties or Lines	Yield Lbs/A	Value Index		Q.I.	Days to Flower	Leaves per Plant	Height of Plant	Ground Suckers
		Dol/A	Dol/Cwt.					
Commercially Available Varieties								
NC 2326	2754	2412	87.62	30.9	55	17.3	45	0.7
NC 95	2708	2366	87.37	32.5	61	18.9	44	1.4
Coker 254	2769	2421	87.44	30.6	66	20.6	49	3.5
Coker 298	2783	2428	87.22	33.8	66	21.2	50	0.9
Coker 319	2839	2486	87.57	30.2	62	19.7	45	1.4
Coker 347	2971	2584	86.81	32.6	64	20.9	44	1.7
Coker 411	2933	2574	87.77	29.6	60	19.2	43	0.9
McNair 133	2605	2284	87.68	30.6	63	19.6	47	2.4
McNair 135	2935	2554	87.09	34.1	63	20.6	48	0.8
McNair 944	2979	2596	87.13	33.3	60	18.8	44	0.9
NC 88	2913	2554	87.70	30.6	62	19.3	48	1.8
SC 72	2727	2381	87.31	32.7	63	19.4	45	1.1
Speight G-28	2858	2497	87.37	32.7	62	20.0	41	0.8
Speight G-33	2959	2578	87.17	32.9	65	20.4	47	1.5
Speight G-41	2701	2348	86.97	32.8	63	19.7	45	1.0
Speight G-140	3118	2730	87.60	31.2	64	20.6	46	1.4
Va. 080	2601	2271	87.35	32.8	61	18.9	44	1.7
Va. 115	2856	2491	87.24	33.5	59	18.4	43	0.9

WHITEVILLE, ROCKY MOUNT, OXFORD AND REIDSVILLE

Table 4. Continued. Comparison of varieties for certain characteristics for four locations. 1973.

Varieties or Lines	Analysis of Cured Leaf				Ratios	
	Nic. %	Sol. Sug. %	Tot. N. %	Nor. Nic. %	T.N. Nic.	Sug. Nic.
Commercially Available Varieties						
NC 2326	3.11	16.22	2.13	.14	.68	5.39
NC 95	3.23	13.51	2.21	.19	.68	4.25
Coker 254	2.83	13.32	2.06	.16	.73	4.75
Coker 298	2.99	15.05	2.12	.19	.71	5.19
Coker 319	2.85	13.99	2.26	.18	.79	4.99
Coker 347	2.81	14.22	2.08	.19	.74	5.17
Coker 411	2.70	14.68	2.06	.08	.76	5.60
McNair 133	3.03	14.58	2.03	.25	.70	4.88
McNair 135	3.03	14.52	2.08	.20	.69	4.87
McNair 944	2.99	16.48	2.07	.20	.69	5.69
NC 88	2.99	14.97	1.97	.18	.66	5.07
SC 72	3.18	14.68	2.19	.19	.69	4.77
Speight G-28	2.55	13.67	2.04	.12	.80	5.63
Speight G-33	2.64	15.00	1.96	.16	.74	5.80
Speight G-41	3.29	14.22	2.12	.30	.64	4.44
Speight G-140	2.77	16.73	2.10	.17	.76	6.20
Va. 080	3.26	13.61	2.14	.23	.66	4.26
Va. 115	3.15	14.55	2.18	.19	.69	4.83

WHITEVILLE, KINSTON, ROCKY MOUNT and REIDSVILLE

Table 4. Comparison of varieties in 1972 for certain characteristics, for four locations.

Varieties or Lines	Yield Lbs/A	Value Index		Days to Flower	Leaves per Plant	Height of Plant	Internode Length			
		Dol/A	Dol/Cwt.				Q.I.	0-10"	10-20"	20"-top
Commercially Available Varieties										
NC 2326	2129	1798	84.44	28.1	58	16.6	40	1.7	2.2	3.3
NC 95	2244	1882	83.86	32.2	62	17.7	41	1.8	2.2	2.7
Bell 110	2225	1867	83.86	31.6	62	17.7	41	1.8	2.2	2.9
Coker 254	2452	2058	83.94	29.8	66	19.8	45	2.0	2.2	2.5
Coker 298	2411	2003	83.05	35.1	65	18.5	44	2.0	2.2	2.8
Coker 319	2296	1933	84.23	29.0	61	18.1	40	1.8	2.1	2.7
Coker 347	2540	2134	84.06	29.7	65	18.5	40	1.8	2.1	2.6
Coker 411	2378	2007	84.41	28.8	61	17.2	38	1.8	2.1	2.8
McNair 30	2183	1832	83.88	32.1	59	16.5	41	2.0	2.2	3.1
McNair 133	2282	1908	83.65	32.7	61	18.1	42	1.9	2.3	2.6
McNair 135	2412	2020	83.78	32.8	63	20.0	44	1.8	2.1	2.5
NC 88	2353	1968	83.63	30.8	60	17.3	41	1.9	2.2	2.8
SC 71	2331	1940	83.21	33.3	61	19.2	39	1.8	2.2	2.6
SC 72	2379	1992	83.72	33.3	63	18.2	41	1.9	2.2	2.6
Speight G-7	2482	2077	83.73	27.0	62	18.3	42	1.9	2.2	2.7
Speight G-28	2236	1867	83.49	34.5	61	17.3	36	1.8	2.1	2.4
Speight G-33	2437	2044	83.87	30.9	65	18.9	42	1.8	2.2	2.6
Speight G-41	2347	1957	83.38	30.5	63	18.5	42	1.9	2.2	2.5
Speight G-140	2572	2150	83.60	31.6	62	19.3	43	1.8	2.2	2.5
Va. 115	2241	1877	83.71	32.1	59	17.6	36	1.8	2.2	2.7
Va. 770	2185	1821	83.32	32.2	62	16.5	41	2.0	2.4	3.0

WHITEVILLE, KINSTON, ROCKY MOUNT and REIDSVILLE

Table 4. Continued. Comparison of varieties in 1972 for certain characteristics, for four locations.

Varieties or Lines	Analysis of Cured Leaf				Ratios	
	Nic. %	Sol. Sug. %	Tot. N. %	Nor.Nic. %	T.N. Nic.	Sug. Nic.
Commercially Available Varieties						
NC 2326	3.39	15.31	2.22	.33	.66	4.89
NC 95	3.64	14.32	2.32	.30	.66	4.54
Bell 110	3.52	15.22	2.28	.25	.66	4.81
Coker 254	3.39	12.97	2.14	.27	.64	4.26
Coker 298	3.40	14.25	2.28	.33	.69	4.65
Coker 319	3.17	14.18	2.31	.21	.75	5.18
Coker 347	3.22	13.52	2.22	.29	.70	4.69
Coker 411	2.82	14.27	2.20	.17	.79	5.75
McNair 30	3.73	13.32	2.39	.29	.64	3.78
McNair 133	3.34	13.93	2.31	.42	.70	4.62
McNair 135	3.34	15.27	2.23	.28	.68	5.09
NC 88	3.89	12.84	2.32	.39	.60	3.73
SC 71	3.47	14.95	2.23	.31	.65	4.67
SC 72	3.63	14.71	2.35	.35	.66	4.50
Speight G-7	3.49	14.34	2.21	.36	.64	4.33
Speight G-28	3.07	12.64	2.20	.19	.74	4.84
Speight G-33	3.04	16.14	2.03	.24	.68	5.96
Speight G-41	3.48	14.20	2.18	.41	.64	4.72
Speight G-140	3.21	15.61	2.16	.21	.68	5.35
Va. 115	3.47	15.55	2.27	.38	.67	5.11
Va. 770	3.30	13.92	2.31	.30	.71	4.74

7200023

ASSIGNMENT OF PLANT VARIETY PROTECTION CERTIFICATES

WHEREAS, COKER'S PEDIGREED SEED COMPANY, a South Carolina corporation ("Coker's"), having its offices at 900 Darlington Highway, Hartsville, South Carolina 29550, has adopted and used and is the sole and exclusive owner of certain United States Plant Variety Protection Certificates and similar rights under laws of countries other than the United States as listed in Exhibit A hereto:

WHEREAS, COKER'S PEDIGREED SEED CO. and NORTHRUP KING CO., a Delaware corporation ("NK"), have entered into an Asset Purchase Agreement, dated July 20, 1988, providing for the purchase and sale of substantially all of the assets and business of Coker's and the assumption of certain of Coker's liabilities and obligations by NK; and

WHEREAS, NK desires to acquire the right, title and interest in, to and under the Plant Variety Protection Certificates listed on Exhibit A hereto and the pending applications hereto (collectively, the "Plant Variety Protection Certificates").

Winter Oat Varieties

<u>Variety Name</u>	<u>U.S. Plant Variety Certificate Number</u>	<u>Issue Date</u>	<u>Term (Yrs.)</u>
Coker 227	7500007	Oct. 20, 1977	17
Coker 716	7900003	Dec. 28, 1978	17
Coker 820	8400059	June 30, 1987	18
Coker 234	7500008	Oct. 26, 1977	17
Four Twenty Two	7700085	Apr. 12, 1979	17
Big Mac	8200121	Aug. 19, 1982	18
Mesquite	8200122	Aug. 19, 1982	18

Tobacco Varieties

Coker 347	72022	Oct. 27, 1976	17
Coker 411	72023	Oct. 27, 1976	17
Coker 86	7600004	Oct. 27, 1976	17
Coker 48	7800008	Sept. 20, 1978	17
Coker 51	8100048	Feb. 18, 1982	18
Coker 176	8300056	Sept. 29, 1983	18
Coker 206	8500040	Apr. 30, 1986	18
Coker 371 Gold	8700049	Sept. 30, 1987	18

Cotton Varieties

Coker 310	7100021	Jan. 18, 1974	17
Coker 304	7700024	Dec. 21, 1978	17
Coker 420	7900087	Jan. 29, 1980	17
Coker 315	8000087	Dec. 18, 1980	17

Exhibit 12E. Statement of the Basis of Applicant's Ownership
of Coker 411 Tobacco.

Coker 411 is owned by Coker's Pedigreed Seed Company. All breeding, developmental and testing of Coker 411 (other than that performed by the regional variety testing committee) was done on land owned or operated by Coker's Pedigreed Seed Company and under the direct supervision of personnel of the tobacco department of said company. All seed were also produced on land owned or operated by Coker's Pedigreed Seed Company, supervised by tobacco department personnel, and inspected and approved by the South Carolina Crop Improvement Association and the South Carolina Department of Agriculture.

19 pages for
Certificate
inserts

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OBJECTIVE DESCRIPTION OF VARIETY
Tobacco (*Nicotiana tabacum*)

NAME OF APPLICANT(S) Coker's Pedigreed Seed Company	VARIETY NAME OR TEMPORARY DESIGNATION Coker 411
ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P. O. Box 340 Hartsville, South Carolina	FOR OFFICIAL USE ONLY PVPO NUMBER <div style="font-size: 2em; text-align: center;">72023</div>

Place the appropriate number that describes the varietal character in the boxes below.
Place a zero in first box (e.g. or when number is either 99 or less or 9 or less.

1. CLASS:

<input checked="" type="checkbox"/> 1 = FLUE-CURED	<input type="checkbox"/> 2 = FIRE-CURED	<input type="checkbox"/> 3 = AIR-CURED	<input type="checkbox"/> 4 = CIGAR FILLER	<input type="checkbox"/> 5 = CIGAR BINDER	<input type="checkbox"/> 6 = CIGAR WRAPPER
<input type="checkbox"/> 7 = MISCELLANEOUS-DOMESTIC	<input type="checkbox"/> 8 = FOREIGN-CIGAR LEAF	<input type="checkbox"/> 9 = FOREIGN-NON-CIGAR LEAF			

AIR-CURED: 1 = BURLEY 2 = MARYLAND 3 = DARK AIR-CURED

STANDARD VARIETIES

01 = NC 95	02 = NC 2326	03 = COKER 319	04 = HICKS	05 = SPEIGHT G-28	06 = SC 58
07 = Ky 151	08 = BURLEY 21	09 = BURLEY 49	10 = Ky 10	11 = MARYLAND 609	12 = Ky 165
13 = Pennbel 69	14 = HAVANA 503	15 = FLORIDA 17	16 = OTHER		

2. MATURITY (Transplant to 50% plants 1 Fl.) (Select code from Standard Varieties listed above)

<input type="text" value="0"/> <input type="text" value="6"/> <input type="text" value="1"/> NO. OF DAYS	<input type="text" value="0"/> <input type="text" value="1"/> DAYS EARLIER THAN ...	<input type="text" value="0"/> <input type="text" value="3"/>
	<input type="text" value="0"/> <input type="text" value="4"/> DAYS LATER THAN ...	<input type="text" value="0"/> <input type="text" value="2"/>

3. SEEDING TO TRANSPLANTING (Select code from Standard Varieties listed above)

<input type="text" value=""/> <input type="text" value=""/> NO. OF DAYS	<input type="text" value=""/> <input type="text" value=""/> DAYS EARLIER THAN ...	<input type="text" value=""/> <input type="text" value=""/>
	<input type="text" value=""/> <input type="text" value=""/> DAYS LATER THAN ...	<input type="text" value=""/> <input type="text" value=""/>

4. PLANT HEIGHT (After topping) (Select code from Standard Varieties listed above)

<input type="text" value="1"/> <input type="text" value="0"/> <input type="text" value="2"/> CM TALL	<input type="text" value="0"/> <input type="text" value="2"/> CM SHORTER THAN ...	<input type="text" value="0"/> <input type="text" value="3"/>
	<input type="text" value="0"/> <input type="text" value="5"/> CM TALLER THAN ...	<input type="text" value="0"/> <input type="text" value="5"/>

5. LEAF SIZE (At leaf maturity) (Select code from Standard Varieties listed above)

LENGTH		
<input type="text" value="6"/> <input type="text" value="8"/> <input type="text" value="0"/> CM 5TH LEAF	<input type="text" value="6"/> <input type="text" value="9"/> <input type="text" value="8"/> CM 8th LEAF	<input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> CM 15TH LEAF
<input type="text" value=""/> <input type="text" value=""/> longer than standards CM SHORTER THAN ... <input type="text" value=""/> <input type="text" value=""/>	<input type="text" value=""/> <input type="text" value=""/> longer than standards CM SHORTER THAN ... <input type="text" value=""/> <input type="text" value=""/>	<input type="text" value=""/> <input type="text" value=""/> CM SHORTER THAN ... <input type="text" value=""/> <input type="text" value=""/>
<input type="text" value="2"/> <input type="text" value="0"/> CM LONGER THAN ... <input type="text" value="0"/> <input type="text" value="3"/>	<input type="text" value="2"/> <input type="text" value="9"/> CM LONGER THAN ... <input type="text" value="0"/> <input type="text" value="3"/>	<input type="text" value=""/> <input type="text" value=""/> CM LONGER THAN ... <input type="text" value=""/> <input type="text" value=""/>
WIDTH		
<input type="text" value="2"/> <input type="text" value="7"/> <input type="text" value="6"/> CM 5TH LEAF	<input type="text" value="2"/> <input type="text" value="8"/> <input type="text" value="8"/> CM 8th LEAF	<input type="text" value=""/> <input type="text" value=""/> <input type="text" value=""/> CM 15TH LEAF
<input type="text" value="1"/> <input type="text" value="6"/> CM NARROWER THAN ... <input type="text" value="0"/> <input type="text" value="1"/>	<input type="text" value="2"/> <input type="text" value="3"/> CM NARROWER THAN ... <input type="text" value="0"/> <input type="text" value="2"/>	<input type="text" value=""/> <input type="text" value=""/> CM NARROWER THAN ... <input type="text" value=""/> <input type="text" value=""/>
<input type="text" value="1"/> <input type="text" value="7"/> CM WIDER THAN ... <input type="text" value="0"/> <input type="text" value="3"/>	<input type="text" value="1"/> <input type="text" value="4"/> CM WIDER THAN ... <input type="text" value="0"/> <input type="text" value="3"/>	<input type="text" value=""/> <input type="text" value=""/> CM WIDER THAN ... <input type="text" value=""/> <input type="text" value=""/>

6. LEAF YIELD (Select code from Standard Varieties listed above)

<input type="text" value="3"/> <input type="text" value="0"/> <input type="text" value="1"/> <input type="text" value="6"/> KG/HA	<input type="text" value=""/> <input type="text" value=""/> % LESS THAN ... <input type="text" value=""/> <input type="text" value=""/>	<input type="text" value="0"/> <input type="text" value="6"/> % MORE THAN ... <input type="text" value="0"/> <input type="text" value="3"/>
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Yields more than standards

72023

Coker 411

GROUPING:

STANDARD VARIETIES

- 01 = NC 95 02 = NC 2326 03 = COKER 319 04 = HICKS 05 = SPEIGHT G-28 06 = SC 58
 07 = Ky 151 08 = BURLEY 21 09 = BURLEY 49 10 = Ky 10 11 = MARYLAND 609 12 = Ky 165
 13 = Pennbel 69 14 = HAVANA 503 15 = FLORIDA 17 16 = OTHER

7. LEAF NUMBER (Select code from Standard Varieties listed above)

TOPPED NORMAL:

NO. PER PLANT

NO. OF LEAVES > 40.6 CM

CM HEIGHT OF LAST LEAF > 40.6 CM

NOT TOPPED:

NO. OF LEAVES OR NODES TO "CROWFOOD" FROM 1ST HARVESTABLE LEAF

8. INTERNODES (Topped) (Select code from Standard Varieties listed above)

MM LENGTH

MM SHORTER THAN

MM LONGER THAN

9. LEAF CHARACTERISTICS:

PETIOLE ANGLE:

DEGREES

GROUPING: 1 = < 35°

2 = 35-45°

3 = 46-65°

4 = > 65°

LEAF CARRIAGE

1 = ARCHED (DROOPING)

2 = HORIZONTAL

3 = UPRIGHT

LEAF COLOR (At topping or when 50% of plants with 1 flower)

1 = LIGHT GREEN

2 = GREEN

3 = DARK GREEN

4 = YELLOW-GREEN

5 = YELLOW

LEAF SHAPE:

1 = BROADER THAN LONG

2 = LENGTH EQUALS WIDTH

3 = LONGER THAN BROAD

1 = BROADEST AT MIDDLE

2 = BELOW MIDDLE

3 = ABOVE MIDDLE

TIP SHAPE

1 = ACUTE

2 = ACUMINATE

3 = OBTUSE

VENATION PATTERN:

1 = SQUARE

2 = ANGULAR

LEAF SURFACE

1 = SMOOTH (HICKS)

2 = PUCKERED (NC 95)

3 = intermediate

1 = WAVY

2 = NOT WAVY

1 = RECURVED

2 = NOT RECURVED

10. FLOWERS:

COLOR: 1 = WHITE

2 = PINK

3 = RED

4 = OTHER

FLOWER HEAD HABIT:

1 = CLOSED (NC 95)

2 = INTERMEDIATE

3 = OPEN (HICKS)

11. PLANT FORM

1 = PYRAMIDAL

2 = COLUMNAR

3 = OTHER (Specify)

intermediate

12. GROUND SUCKERS:

NO. PER PLANT

13. DISEASE (0 = Not tested, 1 = Susceptible, 2 = Resistant)

BLACK SHANK (RACES) Common Race

BLACK ROOT ROT

BLUE MOLD

WILDFIRE (SPECIES)

BLACKFIRE

FUSARIUM WILT (NICOTIANA)

FUSARIUM WILT (BATATAS)

FROGEYE

BROWN SPOT

BACTERIAL WILT (low)

13. DISEASE (0 = Not tested, 1 = Susceptible, 2 = Resistant)

<input checked="" type="checkbox"/> 1	POTATO VIRUS Y	<input checked="" type="checkbox"/> 1	TMV
<input type="checkbox"/> 0	NEMATODE ROOT ROT (LESION, SPECIES) _____	<input checked="" type="checkbox"/> 1	ROOT KNOT NEMATODE
<input checked="" type="checkbox"/> 1	TOBACCO ETCH VIRUS	<input type="checkbox"/> 0	OZONE AIR POLLUTION
<input type="checkbox"/>	OTHER (Specify) _____	<input type="checkbox"/>	OTHER (Specify) _____

NOTE: Under 16 "Comments", give comparative reaction with a standard variety appropriate for each disease tested and indicate if disease reaction of the variety exceeds, equals or is less than that of the standard).

14. LEAF CONSTITUENTS (Give data for described and standard variety):

VARIETY	NICOTINE %	NOR NICOTINE %	TOTAL NITROGEN %	REDUCING SUGARS % (FLUE-CURED)
SUBMITTED	2 7 6	1 7	2 1 6	1 5 2 2
STANDARD	3 2 0	2 3	2 1 6	1 6 4 9
NAME OF STANDARD VARIETY	NC 2326	NC 2326	NC 2326	NC 2326

15. VARIETIES MOST CLOSELY RESEMBLING THAT DESCRIBED FOR THE CHARACTERS GIVEN:

CHARACTER	VARIETY	CHARACTER	VARIETY
MATURITY	Coker 319	LEAF TIP SHAPE	NC 2326
LEAF LENGTH	Coker 319	VENATION PATTERN	Va. 115
LEAF WIDTH	Coker 319	LEAF SURFACE	Va. 115
LEAF CARRIAGE	Coker 319-Va.115	LEAF MARGIN	Coker 319
PETIOLE ANGLE	Va. 115	LEAF COLOR	Coker 319
LEAF SHAPE	NC 2326	PLANT FORM	Coker 319

16. COMMENTS (For increasing accuracy of description)