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VIRGINIA DARK-FIRED TOBACCO — VARIETY INFORMATION FOR 1977

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Many excellent varieties of dark-fired tobacco are available to producers and careful consideration should be given to the choice of variety to meet specific production objectives. Varieties differ in disease reaction, chemical composition, response to nutrient levels in the soil, and many other factors. Careful study of the information presented in this publication may be helpful in choosing a variety which will fit into specific management systems and alleviate or reduce the severity of particular production problems.

There is a continuing demand for Virginia Dark-Fired tobacco with traditional flavor and aroma, characteristic of certain old-line varieties such as Lizard Tail Orinoco, Hastings and Walkers Broad Leaf, but disease problems may limit the production of these varieties. One additional problem associated with the production of old-line varieties is the tendency for premature flowering under certain unfavorable seasonal conditions.

One of the major reasons for changing varieties is to obtain desired disease resistance. The black shank disease, caused by the soil borne fungus Phytophthora parasitica, has increased in importance in the dark-fired tobacco area of Virginia and black root rot, a disease caused by another soil borne fungus Thielaviopsis basicola, has continued to cause yield reductions in most seasons. Several disease resistant varieties have been released by the Virginia Agricultural Experiment Station in recent years; however, these varieties are not immune to these diseases.

Best results have been obtained when resistant varieties and other disease control measures are utilized. Soil fumigation, early root destruction, crop rotation, and general sanitation practices reduce disease problems.

Tests were conducted on the R. L. Hanes Farm in Buckingham County and at the Southern Piedmont Center in Nottoway County in 1975. The Buckingham County test was grown under the supervision of Extension Agent, Mr. Gordon Baldwin, and V.P.I. & S.U. Research and Extension personnel. Data are provided in this report on yield, acre value, price, chemical composition, disease reaction, grade composition, and certain physical and agronomic factors. Additional information to that presented in the tables is given in the varietal descriptions (Page 3).

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Table 1. Performance of Virginia Dark-Fired Tobacco Varieties Tested at the Southside Virginia Research Station and the Southern Piedmont Center,^{1/}1971-1975.

Variety	Yield, lbs/A						Value, \$/A						Price, \$/Cwt				
	1971	1972	1973	1974	1975	Avg.	1971	1972	1973	1974	1975	Avg.	1971	1972	1973	1974	1975
Brown Leaf	1982	1852	1770	1407	1723	1747	1048	1269	1326	1288	1639	1314	53	69	75	92	95
Hastings	2022	1779	1754	1667	1519	1748	1086	1189	1323	1519	1409	1305	54	67	75	91	93
Ky 170	2202	1938	1975	1609	1577	1860	1179	1366	1478	1385	1498	1381	54	70	75	86	95
Lizard Tail Orinoco	2008	1842	1803	1531	1630	1763	1057	1250	1342	1365	1557	1314	53	68	74	89	96
Nance	1979	1846	2009	1359	1608	1760	1058	1256	1503	1254	1399	1294	53	68	75	92	87
Sears Special	1973	1867	1871	1492	1692	1779	1064	1260	1396	1326	1584	1326	54	67	75	89	94
Va 309	2126	2137	1947	1665	1707	1916	1166	1490	1464	1472	1605	1439	55	70	75	88	94
Va 310	1933	1911	2199	1467	1847	1871	1032	1238	1688	1270	1745	1395	53	65	76	87	94
Va 312	1826	2039	1922	1450	1677	1783	987	1396	1432	1256	1640	1342	54	68	75	87	98
Va 331	1903	1797	1903	1592	1817	1802	1029	1153	1404	1450	1740	1355	54	64	74	91	96
Walkers Broad Leaf	1738	1546	1582	1458	1454	1556	936	1002	1166	1300	1314	1144	54	65	74	89	90
MS Va 331 x Va 312	2125	1883	2258	1383	1890	1908	1167	1298	1669	1229	1786	1430	55	69	74	89	95

^{1/}1975 Data are from Tests Conducted at the Southern Piedmont Center, Blackstone.

Table 2. Group, Quality, and Color Classification of Varieties Tested at the Southside Virginia Research Station and the Southern Piedmont Center, 1972-1975.

Variety	Group (%) ^{1/}				Quality (%) ^{2/}					Color (%) ^{3/}				
	X	C	B	N	2	3	4	5	L	F	D	M	G	
Brown Leaf	25	14	59	3	18	31	40	8	4	47	21	7	21	
Hastings	19	30	46	4	1	33	59	4	0	65	2	19	2	
Ky 170	21	41	39	0	11	30	46	6	0	53	12	23	12	
Lizard Tail Orinoco	19	53	26	3	0	32	54	12	16	58	0	21	5	
Nance	20	48	30	2	0	30	49	17	0	76	0	22	2	
Sears Special	24	51	25	0	0	28	50	19	8	73	0	11	9	
Va 309	20	65	12	4	0	36	54	7	9	51	0	16	23	
Va 310	27	54	20	0	0	38	55	7	9	51	0	16	23	
Va 312	22	53	24	2	0	39	50	10	17	57	0	22	5	
Va 331	24	51	24	1	0	30	50	10	15	46	0	39	0	
Walkers Broad Leaf	24	36	38	2	0	36	51	12	20	37	10	33	0	
MS Va 331 X Va 312	2	62	31	3	0	31	37	28	27	72	0	2	0	

^{1/}X - lungs; C-thin leaf; B-heavy leaf; N-Nondescript

^{2/}2- Fine; 3-good; 4-fair; 5-low

^{3/}L-Light Brown; F-Medium Brown; D-Dark Brown; M-Mixed or Variegated; G-Green

Table 3. Chemical^{1/}, Agronomic^{2/}, and Disease^{3/} Information For Varieties Tested in Virginia, 1975.

Variety	Total Alkaloids (%)	Days to Flower	Number Leaves per Plant	Length (L) and Width (W) in Inches				Ground Suckers per Plant	Disease Reaction		
				Middle Leaf		Top Leaf			BS	BRR	TMV
				L	W	L	W				
Brown Leaf	6.75	57	14.8	31	15	26	10	1.3	S	L	S
Hastings	6.54	59	14.6	30	16	25	10	2.5	S	S	S
Ky 170	6.77	60	15.1	30	16	27	11	0.6	S	H	R
Lizard Tail Orinoco	5.80	56	10.6	30	16	25	11	1.0	S	S	S
Nance	6.28	57	15.2	29	14	24	11	1.5	S	S	S
Sears Special	6.34	56	12.8	30	16	26	12	2.1	S	M	S
Va 309	6.12	58	14.9	30	16	26	13	1.8	M	M	S
Va 310	6.54	53	12.7	31	16	28	14	2.4	M	L	S
Va 312	6.18	55	12.7	32	16	28	13	2.3	S	H	R
Va 331	5.50	58	14.8	30	15	25	11	1.5	M	L	S
Walkers Broad Leaf	6.72	49	12.5	31	16	28	14	2.1	S	L	S
MS Va 331 X Va 312	-	56	15.0	33	10	28	11	0.7	L	M	R

^{1/}Chemical data are averages of 1972, 1973, 1974, and 1975 crops.

^{2/}Agronomic data are for 1975 only.

^{3/}Disease reaction: BS= Black Shank; BRR= Black Root Rot; TMV= Tobacco Mosaic Virus; H= High resistance; M=Moderate; L= Low; S=Susceptible; R=Resistant.

Table 4. Performance of Varieties and Breeding Lines Evaluated on R. L. Hanes Farm in Buckingham County, 1974-1975.

Variety or Breeding Line	1974			1975			Average	
	Yield lbs/A	Value \$/A	Price \$/Cwt	Yield lbs/A	Value \$/A	Price \$/Cwt	Yield lbs/A	Value \$/A
Walkers Broad Leaf	1870	1637	87.54	1730	1781	108.95	1800	1709
MS Va 331 X Va 312	2445	2164	88.51	1610	1655	102.80	2028	1910
Va 312	2218	1992	89.81	1655	1695	102.43	1937	1844
Va 309	2262	2044	90.36	1815	1861	102.53	2039	1953
Va 310	2354	2055	87.30	-	-	-	-	-
Va 331	2184	1929	88.32	-	-	-	-	-
(B 49 X 4310) X 4210F ₁₀	-	-	-	1770	1771	100.06	-	-

DESCRIPTIONS OF VARIETIES

BROWN LEAF - This variety originated in Kentucky. It has relatively large leaves of medium body which are medium-spaced on the stalk. It has fair resistance to black root rot, no resistance to black shank and no resistance to mosaic.

HASTINGS - This variety originated in the Blackstone area of Virginia as a grower selection. It has medium sized leaves of heavy body. It has no resistance to black root rot, black shank, or mosaic.

LIZARD TAIL ORINOCO - This is one of the old varieties that has long been grown in Virginia. The leaves are closely spaced on the stalk and are of medium size. Leaf body is heavy. This variety has no disease resistance.

NANCE - This variety has leaves of medium size and medium body which were medium spaced on the stalk. It has poor resistance to black root rot and no resistance to black shank or mosaic.

SEARS SPECIAL - Developed by Virginia Polytechnic Institute and State University from a cross of Little Dick and Va 312. The leaves are medium in width and length and are medium-spaced on the stalk. The upper leaves on mature plants are wrinkled and the margins have a tendency to roll downward.

VA 309 - Developed by Virginia Polytechnic Institute and State University from a series of crosses involving Vesta 55, Virginia 312 and Lizard Tail Orinoco. Plant type of Virginia 309 is intermediate between Lizard Tail Orinoco and Virginia 312. The mature leaves have the soft texture and dull green color of the Lizard Tail Orinoco parent. This variety has moderate resistance to black shank and black root rot.

VA 310 - Developed by Virginia Polytechnic Institute and State University from a series of crosses involving Vesta 55, Kentucky 2, Va 312 and Hastings. Leaves are large like those of the Virginia 312 parent and spaced closely on the stalk. The percentage of green grades in this variety tends to be high which suggests that it is slow to mature and should have special attention in curing. It has moderate resistance to black root rot and black shank.

VA 312 - Developed by Virginia Polytechnic Institute and State University from a cross of Walkers Broad Leaf on a hybrid of the Lizard Tail Orinoco type. Its leaves are large and thin. It has excellent resistance to black root rot, no resistance to black shank, and resistance to mosaic.

VA 331 - Developed by Virginia Polytechnic Institute and State University from a cross of Walkers Broad Leaf and Vesta 55. This variety has poor resistance to black root rot, moderate resistance to black shank, medium leaf spacing, medium leaf size, and thin body.

(continued)

DESCRIPTIONS OF VARIETIES
(continued)

WALKERS BROAD LEAF - This variety originated in Cumberland County, Virginia, as a farmer selection. It has tolerance to black root rot, no resistance to black shank, and no resistance to mosaic. The leaf spacing is medium, the leaves are large with medium body.

KY 170 - Developed and released by the University of Kentucky Agricultural Experiment Station as a dark fire-cured (Types 22 and 23) cultivar with high resistance to black root rot, wildfire, and tobacco mosaic. The leaves are large with heavy body.

MS VA 331 X VA 312 - This hybrid variety is somewhat intermediate between Va 331 and Va 312 in plant type and field appearance. It is slightly later in maturing than its Va 312 parent. It has low resistance to black shank, moderate resistance to black root rot, and is resistant to mosaic.