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# Virginia Dark-Fired Tobacco Variety Information for 2001

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Both pelleted seed and raw seed of VA 309, VA 312, VA 355, VA 359, Shirey, and Brownleaf, JH will be commercially available for 2000. Raw seed of Lizard Tail Orinoco will also be commercially available. VA 355 and VA 359 are two new varieties that were released for the 1999 growing season. Growers should plant a limited acreage of any new variety until more information is available from a wider range of soil and climatic conditions.

VA 355 and VA 359 were developed by the Virginia Agricultural Experiment Station. VA 355 was developed from the cross (VA 309 x VA 312) x DF 300. VA 359 was developed from the cross Lizard Tail Turtle Foot x VA 309. VA 355 and VA 359 are similar to Brownleaf, JH, Lizard Tail Orinoco, and VA 309 for plant height, days to flower, number of leaves per plant, and leaf length and width. Average yields of VA 355 are about 100 lbs/A less than the three check varieties, whereas yields of VA 359 are similar to the three check varieties. VA 355 and VA 359 both have a moderate level of resistance to black shank. Grower experience has shown that VA 359 is preferable in quality to VA 355 in the absence of black shank.

Information is provided for widely grown varieties in Tables 1 to 4 of this publication. Average performance of seven varieties included in the 2000 Virginia Dark-fired Variety Tests is presented in Table 1. These tests were conducted in Campbell (W. Whitlow), Charlotte (C. Vaughn, III), Pittsylvania (R. Mills, Jr.) and Nottoway (Southern Piedmont Agricultural Research and Extension Center) counties under the joint supervision of Extension Agents in respective counties and Virginia Polytechnic Institute and State University research and Extension personnel. Data from 1996 to 2000 are presented in Table 2.

Certain agronomic and disease information is given in Tables 3 and 4. In addition to yield, quality potential, and ease of handling, the history of disease problems should be considered when selecting the variety best suited to your farm. Black shank and black root rot are diseases caused by soilborne fungi that have continued to cause yield reductions in many seasons. VA 355 is more resistant to black shank than VA 309 or VA 359, but use of a soil fungicide is often necessary with each of these varieties. If a soil fungicide is used, disease control is usually best when part of the fungicide is applied at or before transplanting and the remainder at layby. Resistant varieties alone cannot prevent losses due to disease. Crop rotation should be practiced in every field, no matter what variety is grown. Resistant varieties should be used with crop rotation, early root destruction, and the proper use of labeled pesticides to achieve consistent, cost-effective disease control. Additional information on disease management systems may be found in the 1998 Dark-fired Tobacco Production Guide (VCE-Publication No. 436-049).

While the traditional flavor and aroma characteristic of certain old-line varieties such as Lizard Tail Orinoco and Walkers Broadleaf is still desirable, disease problems can often limit the production of these varieties. 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 production management systems and alleviate or reduce the severity of particular production problems.

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**Table 1. Virginia Dark-Fired Tobacco Variety Test Results: Yield, Value, Price, and Grade Index, 2000.** <sup>1</sup>

Variety	State Average		So. Piedmont AREC		Campbell Co.		Charlotte Co.		Pittsylvania Co.	
	Yield lbs/A	Price \$/cwt	Yield lbs/A	Price \$/cwt	Yield lbs/A	Price \$/cwt	Yield lbs/A	Price \$/cwt	Yield lbs/A	Price \$/cwt
Brownleaf, JH	2161	185	2431	171	2163	221	1945	192	2104	156
Liz Tail Tur Ft <sup>2</sup>	2274	181	2659	178	2128	201	1964	168	2344	178
Shirey	2172	181	2521	176	2512	220	1795	159	1860	170
VA 309	2156	176	2814	178	2329	213	1557	160	1922	152
VA 312	2150	173	2785	179	2321	207	1839	159	1655	146
VA 355	2051	171	2240	177	2480	178	1661	185	1824	142
VA 359	2247	179	2573	181	2424	194	1931	187	2060	154
Location Average	2173	178	2575	177	2337	205	1813	173	1967	157
	Value \$/A	Grade Index <sup>3</sup>	Value \$/A	Grade Index <sup>3</sup>	Value \$/A	Grade Index <sup>3</sup>	Value \$/A	Grade Index <sup>3</sup>	Value \$/A	Grade Index <sup>3</sup>
Brownleaf, JH	3997	62	4197	59	4763	74	3739	68	3290	46
Liz Tail Tur Ft	4107	60	4709	61	4251	68	3301	55	4166	56
Shirey	3992	60	4448	58	5510	74	2862	53	3147	55
VA 309	3860	58	5051	57	4971	71	2496	55	2920	48
VA 312	3783	59	4999	62	4779	68	2930	56	2423	50
VA 355	3527	54	3989	58	4440	60	3074	58	2604	40
VA 359	4027	62	4641	63	4696	67	3603	65	3168	52
Location Average	3899	59	4576	60	4773	69	3144	59	3103	50

<sup>1</sup> Tests were conducted in Nottoway (So. Piedmont Ag. Res. and Ext. Ctr.), Campbell (W. Whitlow), and Charlotte (C. Vaughn, III) and Pittsylvania (R. Mills, Jr.) counties in 2000.

<sup>2</sup> Liz Tail Tur Ft = Lizard Tail Turtle Foot.

<sup>3</sup> Grade index is a numerical quality rating based on government grade. High ratings are best.

**Table 2. Virginia Dark-Fired Tobacco Variety Test Results by Years, Southern Piedmont Agricultural Research and Extension Center, Blackstone, VA.**

Variety	Yield, lbs/A					Value, \$/A					Price, \$/cwt					
	1996	1997	1998	1999	2000	Avg.	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Brownleaf, JH	2421	2301	2083	2611	2431	2369	4779	4862	4658	5603	4197	198	211	224	215	171
Daniels Special	2390	2275	1889	2457	2458	2294	4437	4816	4006	5012	3930	186	211	217	204	160
Liz Tail Orinoco <sup>1</sup>	2480	2279	2238	2527	2534	2412	4972	4795	4790	5198	3969	201	211	214	206	156
Liz Tail Tur Ft <sup>1</sup>	2384	2480	2269	2714	2659	2501	4719	5386	5115	6699	4709	198	217	225	248	178
Sears Special	2417	2446	2128	2742	2617	2470	4712	5134	4626	5620	3765	195	210	216	205	147
Shirey	2409	2454	2066	2310	2521	2352	5021	5616	4553	4703	4448	209	229	220	204	176
VA 309	2465	2454	2323	2747	2814	2561	4807	5221	4698	6345	5051	195	213	202	232	178
VA 310	2324	2346	2154	2599	2856	2456	4621	4922	4733	5031	5376	198	210	219	193	188
VA 312	2445	2613	2275	2561	2147	2536	4956	5651	5141	6661	4999	203	217	225	261	179
VA 331	2085	2147	2040	2363	2240	2156	3665	4207	3988	4594	2850	176	196	196	195	133
VA 355	2249	2241	2130	2171	2573	2206	4640	4726	4596	4879	3989	206	211	215	225	177
VA 359	2243	2444	2059	2368	2475	2337	4893	5315	4772	5607	4641	200	217	231	237	181
Walkers Broadleaf	2299	2438	2187	2533	2547	2386	4579	5129	4829	4865	4348	201	211	221	194	176
Year Average	2355	2378	2142	2516	2547	2387	4677	5060	4654	5447	4329	197	213	217	217	169

<sup>1</sup> Liz Tail Orinoco = Lizard Tail Orinoco; Liz Tail Tur Ft = Lizard Tail Turtle Foot.

**Table 3. Agronomic and Disease Information for Dark-Fired Tobacco Varieties Tested at the Southern Piedmont Agricultural Research and Extension Center, Blackstone, VA, 2000.**

Variety	Days to Flower	Plant Height (in)	Leaf no.	Ground Suckers per Plot <sup>1</sup>	Length (L) and Width (W)				Disease Reaction <sup>2</sup>			Group (%) <sup>3</sup>			Color (%) <sup>4</sup>					
					Top Leaf L	Top Leaf W	Mid Leaf L	Mid Leaf W	BS	TMV	BRR	X	C	B	N	F	D	M	G	OT
Brownleaf, JH	56	29.9	13.7	1.3	30.1	14.9	28.4	13.0	S	S	L	11	58	31	0	58	0	32	10	0
Daniels Special	57	29.0	13.5	3.0	29.6	13.5	27.4	11.1	S	S	L	34	30	36	0	66	0	13	21	0
Liz Tail Orinoco <sup>5</sup>	57	30.4	14.9	8.0	28.2	13.5	24.7	10.6	S	S	S	34	35	31	0	54	0	36	10	0
Liz Tail Tur Ft <sup>5</sup>	56	28.4	14.3	3.3	32.8	14.5	29.6	11.9	S	S	S	19	49	32	0	70	0	20	10	0
Sears Special	56	27.2	13.0	18.3	29.8	14.8	28.2	13.6	S	S	M	23	59	18	0	34	0	56	10	0
Shirey	57	27.4	13.7	1.7	29.5	13.7	26.9	11.1	S	S	L	20	50	30	0	69	0	11	20	0
VA 309	56	27.3	13.3	4.3	28.3	15.0	27.3	14.3	M	S	M	31	38	31	0	69	0	12	19	0
VA 310	56	30.2	14.3	5.7	31.4	13.6	29.2	12.4	M	S	L	11	57	32	0	68	0	21	11	0
VA 312	56	30.0	13.8	2.0	33.3	14.8	31.5	12.2	S	R	H	0	85	15	0	57	0	43	0	0
VA 331	54	30.7	14.2	1.0	30.4	14.3	26.0	11.3	M	S	L	28	36	36	0	36	13	42	9	0
VA 355	57	23.8	13.6	2.7	30.7	13.7	27.9	11.8	M	S	—	10	58	32	0	80	0	20	0	0
VA 359	59	27.1	14.4	1.3	30.8	14.1	28.6	12.7	M	S	—	8	75	17	0	60	0	40	0	0
Walkers Broadleaf	57	29.7	14.5	4.7	30.7	13.3	28.4	11.7	S	S	L	21	46	33	0	66	0	13	21	0

<sup>1</sup> Ground suckers/18 plant plot.

<sup>2</sup> Disease reaction: BS = Black Shank; TMV = Tobacco Mosaic Virus; BRR = Black Root Rot. H= high resistance; M= moderate; L = low; R = resistant; S = susceptible.

<sup>3</sup> X = lugs; C = thin leaf; B =heavy leaf.

<sup>4</sup> F =medium brown; M = mixed or variegated; G = green.

<sup>5</sup> Liz Tail Orinoco = Lizard Tail Orinoco; Liz Tail Tur Ft = Lizard Tail Turtle Foot.

**Table 4. Percent plants infested with black shank at the end of the season after transplanting into a naturally infested field.<sup>1</sup>**

Variety	State Average	Nottoway County	Dinwiddie County	Halifax County	Charlotte County
Brownleaf, JH	54.93	100.00	17.42	47.52	54.64
VA 309	17.71	54.56	8.62	5.76	1.91
VA 355	3.21	3.49	5.07	4.10	0.20
VA 359	20.77	68.14	7.30	7.25	0.40

<sup>1</sup> Tests were conducted in Nottoway (So. Piedmont Ag. Res. and Ext. Ctr.), Dinwiddie (E. Baskerville farm), Halifax (B. Carr farm), and Charlotte (D. Lacks farm) counties in 1999 and 2000.

Following are descriptions of some other varieties.

**Brownleaf, JH** is a variety that originated in Kentucky. It has relatively large leaves of medium body which are medium spaced on the stalk. It has low resistance to black root rot and no resistance to black shank.

**Lizard Tail Orinoco** is an old variety that has been grown in Virginia for many years. The leaves are closely spaced on the stalk and are of medium size and heavy body. This variety has no disease resistance.

**VA 309** was developed from a series of crosses involving Vesta 55, VA 312, and Lizard Tail Orinoco. It is intermediate in plant type between Lizard Tail Orinoco and VA 312. The soft texture and dull green color of the leaf are similar to that of Lizard Tail Orinoco. The leaf surface at maturity is wrinkled with a marked depression of the veins and midribs. The cured leaf tends to be thinner than that of Lizard Tail Orinoco and usually has a higher percentage of mixed color grades. It has moderate resistance to black shank and black root rot.

**VA 310** was developed from a series of crosses involving Vesta 55, KY 2, VA 312, and Hastings. Leaves are large like those of VA 312 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 shank and low resistance to black root rot.

**VA 312** was developed from a cross of Walkers Broadleaf, Lizard Tail Orinoco, and a breeding line. It is somewhat intermediate in plant type between Lizard Tail Orinoco and Walkers Broadleaf. Its leaves have a tendency to become brittle at maturity, and breakage during storms may be greater than with other varieties. The cured leaf is rich red in color with thin body. It has excellent resistance to black root rot and tobacco mosaic virus.

**Walkers Broadleaf** originated as a farmer selection in Cumberland County, Virginia. The leaves are large with medium body and they are medium spaced on the stalk. It has low resistance to black root rot and no resistance to black shank.



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