



Virginia Dark-Fired Tobacco Variety Information for 2003

*C. A. Wilkinson, T. D. Reed, and C. S. Johnson**

Both pelleted seed and raw seed of VA 309, VA 355, VA 359, Shirey, and Brownleaf, JH will be commercially available for 2003. 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 and experience 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 to 200 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 have a moderate and low level resistance to black shank, respectively. Grower experience has shown that VA 359 is preferable in quality to VA 355 in the absence of black shank.

Information for widely grown varieties is provided in Tables 1 through 4. Average performance of seven varieties included in the 2002 Virginia Dark-fired Variety Tests is presented in Table 1. These tests were conducted in Campbell (W. Whitlow), Charlotte (D. Lacks), Pittsylvania (R. Mills, Jr.) and Nottoway (Southern Piedmont Agricultural Research and Extension Center) counties under the joint supervision of Extension agents in the respective counties and Virginia Tech research and Extension personnel. Data from 1998 to 2002 are presented in Table 2.

Tables 3 and 4 show certain agronomic and disease information. 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 is a disease caused by a soilborne fungus that has continued to cause yield reductions in many seasons. VA 355 is less susceptible to black shank than VA 309 or VA 359 (Table 4), but use of a soil fungicide is often necessary to minimize crop losses. If a soil fungicide is used, part of the fungicide should be 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 2002 Dark-fired Tobacco Production Guide (VCE-Publication No. 436-049).

Careful consideration should be given to the choice of variety to meet specific production objectives. Disease problems can often limit the production of oldline varieties such as Lizard Tail Orinoco or Brownleaf, JH. 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 that will fit into specific production management systems and alleviate or reduce the severity of particular production problems.

* Associate Professor of Agronomy; Extension Agronomist, Tobacco; and Extension Plant Pathologist, Tobacco, respectively; Virginia Tech, Southern Piedmont Agricultural Research and Extension Center, Blackstone, Virginia.

Table 1. Virginia Dark-Fired Tobacco Variety Test Results: Yield, Value, Price, and Grade Index, 2002.¹

Variety	State Average			So. Piedmont AREC			Campbell Co.			Charlotte Co.			Pittsylvania Co.		
	Yield lbs/A	Price \$/cwt	Grade Index ²	Yield lbs/A	Price \$/cwt	Grade Index ²	Yield lbs/A	Price \$/cwt	Grade Index ²	Yield lbs/A	Price \$/cwt	Grade Index ²	Yield lbs/A	Price \$/cwt	Grade Index ²
Brownleaf, JH	1920	196	61	2124	212	69	1906	160	45	1650	222	72	2000	188	56
Liz Tail Orinoco	1962	185	57	2404	216	71	1902	144	40	1629	214	68	1912	164	47
Shirey	2029	205	64	2154	221	72	1964	183	52	1990	222	71	2009	194	59
VA 309	1954	184	56	2276	195	59	1749	153	44	1764	216	69	2027	171	50
VA 312	1977	191	59	2286	220	70	1554	156	44	2132	212	68	1937	174	52
VA 355	2048	192	59	2214	204	65	1769	149	42	2072	222	72	2136	192	58
VA 359	2251	203	64	2247	221	73	2050	170	52	2120	220	70	2588	199	62
Location Average	2020	193	60	2244	213	68	1842	159	46	1908	218	70	2087	183	55
Brownleaf, JH	3746			4544			3025			3664			3750		
Liz Tail Orinoco	3643			5217			2756			3464			3134		
Shirey	4164			4760			3589			4402			3903		
VA 309	3597			4427			2688			3800			3472		
VA 312	3851			5033			2439			4528			3404		
VA 355	3978			4520			2672			4610			4108		
VA 359	4683			5411			3513			4669			5138		
Location Average	3951			4845			2955			4162			3844		

¹ Tests were conducted in Nottoway (Southern Piedmont Agricultural Research and Extension Center), Campbell (W. Whitlow), Charlotte (D. Lacks), and Pittsylvania (R. Mills, Jr.) counties in 2002.

² 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					Avg.	Value, \$/A					Price, \$/cwt				
	1998	1999	2000	2001	2002		1998	1999	2000	2001	2002		1998	1999	2000	2001
Brownleaf, JH	2083	2611	2431	2494	2124	2349	4658	5603	4197	5539	4544	224	215	171	222	212
Liz Tail Orinoco ¹	2238	2527	2534	2571	2404	2455	4790	5198	3969	5261	5217	214	206	156	205	216
Liz Tail Tur Ft ¹	2269	2714	2659	2693	2437	2554	5115	6699	4709	6181	5374	225	248	178	229	218
Shirey	2066	2310	2521	2478	2154	2306	4553	4703	4448	5486	4760	220	204	176	221	221
VA 309	2323	2747	2814	2693	2276	2571	4698	6345	5051	5435	4427	202	232	178	202	195
VA 310	2154	2599	2856	2447	2120	2435	4733	5031	5376	5075	4396	219	193	188	207	206
VA 312	2275	2561	2147	2535	2286	2488	5141	6661	4999	5511	5033	225	261	179	218	220
VA 331	2040	2363	2240	2177	2174	2180	3988	4594	2850	3452	4159	196	195	133	158	192
VA 355	2130	2171	2573	2357	2214	2222	4596	4879	3989	4926	4520	215	225	177	209	204
VA 359	2059	2368	2475	2730	2447	2435	4772	5607	4641	5689	5411	231	237	181	209	221
Year Average	2164	2497	2556	2518	2264		4704	5532	4423	5256	4784	217	222	172	208	211

¹ 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, 2002.

Variety	Days to Flower	Plant Height (in)	Leaf no.	Ground Suckers per Plot ¹	Length (L) and Width (W)				Disease Reaction ²			Group (%) ³			Color (%) ⁴	
					Mid Leaf L	Mid Leaf W	Top Leaf L	Top Leaf W	BS	TMV	BRR	X	C	B	F	M
Brownleaf, JH	82	21.8	12.8	0	29.1	13.3	27.3	13.0	S	S	L	10	63	27	59	41
Liz Tail Orinoco ⁵	81	25.0	14.1	0	28.1	12.0	26.2	12.4	S	S	S	21	79	0	79	21
Liz Tail Tur Ft ⁵	80	22.2	13.5	0	30.4	13.3	29.7	13.0	S	S	S	7	93	0	80	20
Shirey	83	22.6	12.9	0	29.2	12.7	27.5	12.9	S	S	L	18	82	0	78	22
VA 309	80	22.5	13.1	1.0	26.9	13.4	27.2	13.5	L	S	M	21	79	0	82	18
VA 310	82	24.1	13.3	0	28.7	11.9	28.2	13.0	L	S	L	9	91	0	91	9
VA 312	82	22.5	12.5	0.3	29.9	13.6	28.8	14.0	S	R	H	0	100	0	90	10
VA 331	77	23.8	12.9	0	27.6	12.3	27.5	12.9	L	S	L	26	37	37	74	26
VA 355	83	20.1	12.3	0	28.7	11.9	25.5	11.2	M	S	---	0	64	36	71	29
VA 359	82	22.9	13.5	0	28.8	14.0	28.0	13.0	L	S	---	10	90	0	81	19

¹ Ground suckers/18 plant plot.

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

³ X = lugs; C = thin leaf; B = heavy leaf.

⁴ F = medium brown; M = mixed or variegated.

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

Variety	State Average	Nottoway County	Dinwiddie County	Halifax County	Charlotte County
Brownleaf, JH	54.93	100	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

¹Tests were conducted in Nottoway (Southern Piedmont Agricultural Research and Extension Center), 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 is 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.



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*Virginia Cooperative Extension
U.S. Department of Agriculture
Virginia Polytechnic Institute
and State University
Blacksburg, Virginia 24061*