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Virginia Dark-Fired Tobacco Variety Information for 1999

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Seed of two new varieties, VA 355 and VA 359, will be available to tobacco producers in 1999. Both pelleted seed and raw seed of VA 355 and VA 359 will be commercially available for 1999. Both primed pelleted seed and raw seed of VA 309, Shirey, and Brownleaf JH will also be available. Raw seed of Lizard Tail Orinoco and VA 312 should also be available. Growers should consider planting 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 (tested as Dark 955) and **VA 359** (tested as Dark 959) 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. Agronomic characteristics of VA 355 and VA 359 are similar to Brownleaf JH, Lizard Tail Orinoco, and VA 309. Average yields of VA 355 are about 80 lbs/A less than the three check varieties, whereas yields of VA 359 are similar to the three check varieties. Average price of VA 359 is slightly higher compared to the three check varieties. Research to date indicates that VA 355 and VA 359 are as resistant, if not more resistant, to black shank than VA 309.

Information is provided for widely grown varieties in Tables 1 and 2 of this publication. The Dark-Fired Official Variety Test was conducted at the Southern Piedmont Agricultural Research and Extension Center, Virginia Polytechnic Institute and State University, in Nottoway County. Data from 1994 to 1998 are presented in Table 1.

Certain agronomic and disease information is given in Table 2. In addition to yield, quality potential, and ease of handling, the history of various disease problems on your farm should be considered when selecting the variety best suited to your farm. Black shank (a disease caused by the soilborne fungus *Phytophthora parasitica*) and black root rot (a disease caused by the soilborne fungus *Thielaviopsis basicola*) have continued to cause yield reductions in many seasons. For fields where black shank is a problem, VA 309, VA 355, or VA 359 are suggested. VA 312 is also suggested for fields where black root rot alone is a problem. 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 by Years, Southern Piedmont Agricultural Research and Extension Center, Blackstone, VA.¹

| Variety | Yield, lbs/A | | | | | Avg. | Value, \$/A | | | | | Price, \$/cwt | | | | |
|-------------------------------|--------------|------|------|------|------|------|-------------|------|------|------|------|---------------|------|------|------|------|
| | 1994 | 1995 | 1996 | 1997 | 1998 | | 1994 | 1995 | 1996 | 1997 | 1998 | | 1994 | 1995 | 1996 | 1997 |
| Brownleaf, JH | 2070 | 2308 | 2421 | 2301 | 2083 | 2237 | 3518 | 3816 | 4779 | 4862 | 4658 | 170 | 165 | 198 | 211 | 224 |
| Daniels Special | 2170 | 2096 | 2390 | 2275 | 1889 | 2164 | 3516 | 3341 | 4437 | 4816 | 4006 | 162 | 159 | 186 | 211 | 217 |
| Liz Tail Orinoco ² | 1990 | 2159 | 2480 | 2279 | 2238 | 2229 | 3244 | 3371 | 4972 | 4795 | 4790 | 163 | 156 | 201 | 211 | 214 |
| Liz Tail Tur Ft ² | 2325 | 2273 | 2384 | 2480 | 2269 | 2346 | 3847 | 3966 | 4719 | 5386 | 5115 | 164 | 175 | 198 | 217 | 225 |
| Sears Special | 2179 | 2265 | 2417 | 2446 | 2128 | 2287 | 3435 | 3741 | 4712 | 5134 | 4626 | 157 | 165 | 195 | 210 | 216 |
| Shirey | 2006 | 2140 | 2409 | 2454 | 2066 | 2215 | 3276 | 3649 | 5021 | 5616 | 4553 | 163 | 170 | 209 | 229 | 220 |
| VA 309 | 1984 | 2170 | 2465 | 2454 | 2323 | 2279 | 3004 | 3618 | 4807 | 5221 | 4698 | 152 | 167 | 195 | 213 | 202 |
| VA 310 | 2214 | 2373 | 2324 | 2346 | 2154 | 2282 | 3409 | 3714 | 4621 | 4922 | 4733 | 154 | 157 | 198 | 210 | 219 |
| VA 312 | 2140 | 2296 | 2445 | 2613 | 2275 | 2354 | 3490 | 3940 | 4956 | 5651 | 5141 | 162 | 172 | 203 | 217 | 225 |
| VA 331 | 2109 | 2134 | 2085 | 2147 | 2040 | 2103 | 3356 | 3373 | 3665 | 4207 | 3988 | 159 | 158 | 176 | 196 | 196 |
| VA 355 | — | 2044 | 2249 | 2241 | 2130 | 2166 | — | 3476 | 4640 | 4726 | 4596 | — | 169 | 206 | 211 | 215 |
| VA 359 | — | 2171 | 2243 | 2444 | 2059 | 2229 | — | 3747 | 4893 | 5315 | 4772 | — | 173 | 200 | 217 | 231 |
| Walkers Broadleaf | 2087 | 2067 | 2299 | 2438 | 2187 | 2214 | 3453 | 3389 | 4579 | 5129 | 4829 | 165 | 164 | 201 | 211 | 221 |

¹ Averages are not directly comparable unless the number of years is equivalent.² Liz Tail Orinoco = Lizard Tail Orinoco; Liz Tail Tur Ft = Lizard Tail Turtle Foot.

Table 2. Agronomic and Disease Information for Dark-Fired Tobacco Varieties Tested at the Southern Piedmont Agricultural Research and Extension Center, Blackstone, VA, 1998.

| 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 | | Top Leaf | BS | TMV | BRR | X | C | B | F | M | G | |
| | | | | | L | W | L | | | | | | | | | | W |
| Brownleaf, JH | 62 | 24.9 | 13.3 | 0.3 | 29.0 | 15.1 | 29.2 | 13.8 | S | S | L | 20 | 48 | 32 | 86 | 14 | 0 |
| Daniels Special | 62 | 22.6 | 14.1 | 0.3 | 28.0 | 14.2 | 27.5 | 13.1 | S | S | L | 15 | 45 | 39 | 84 | 16 | 0 |
| Liz Tail Orinoco ⁵ | 62 | 25.4 | 14.1 | 1.3 | 27.5 | 14.5 | 28.7 | 14.1 | S | S | S | 14 | 45 | 41 | 78 | 6 | 16 |
| Liz Tail Tur Ft ⁵ | 61 | 24.0 | 14.3 | 0 | 30.0 | 14.5 | 29.3 | 13.3 | S | S | S | 5 | 75 | 20 | 78 | 22 | 0 |
| Sears Special | 60 | 23.7 | 13.5 | 16.0 | 28.6 | 15.1 | 28.4 | 15.3 | S | S | M | 6 | 80 | 13 | 75 | 25 | 0 |
| Shirey | 62 | 23.7 | 13.2 | 0 | 29.4 | 14.9 | 28.8 | 13.3 | S | S | L | 21 | 44 | 34 | 79 | 21 | 0 |
| VA 309 | 60 | 24.3 | 13.2 | 2.3 | 27.7 | 14.5 | 27.1 | 14.9 | M | S | M | 20 | 42 | 38 | 51 | 30 | 20 |
| VA 310 | 62 | 25.1 | 13.9 | 1.0 | 28.3 | 13.5 | 28.3 | 13.0 | M | S | L | 11 | 63 | 26 | 82 | 18 | 0 |
| VA 312 | 60 | 24.5 | 12.9 | 0.7 | 29.5 | 14.9 | 30.0 | 15.1 | S | R | H | 0 | 86 | 14 | 74 | 26 | 0 |
| VA 331 | 57 | 24.2 | 13.7 | 0.7 | 28.0 | 14.5 | 27.8 | 14.2 | M | S | L | 16 | 51 | 32 | 51 | 40 | 9 |
| VA 355 | 62 | 20.6 | 13.1 | 0.7 | 28.1 | 13.2 | 27.5 | 12.3 | M | S | — | 14 | 23 | 63 | 84 | 16 | 0 |
| VA 359 | 62 | 22.8 | 14.0 | 0 | 28.3 | 14.5 | 29.1 | 13.6 | M | S | — | 14 | 74 | 12 | 76 | 24 | 0 |
| Walkers Broadleaf | 62 | 26.4 | 14.2 | 1.7 | 28.8 | 13.6 | 28.0 | 13.2 | S | S | L | 22 | 47 | 31 | 85 | 15 | 0 |

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; G = green.

⁵ Liz Tail Orinoco = Lizard Tail Orinoco; Liz Tail Tur Ft = Lizard Tail Turtle Foot.

Table 3. Yield and quality data from three on-farm variety tests. ¹

| Variety | Yield lbs/A | Value \$/A | Price \$/cwt | Grade index ² | Color Grades ³ (%) | | | |
|---------------|----------------|---------------|-----------------|-----------------------------|-------------------------------|----|----|----|
| | | | | | L | F | M | G |
| Brownleaf, JH | 1853 | 3858 | 208 | 68 | 0 | 82 | 13 | 5 |
| VA 309 | 2186 | 4444 | 203 | 65 | 0 | 62 | 29 | 9 |
| VA 355 | 1875 | 3747 | 202 | 61 | 0 | 60 | 20 | 20 |
| VA 359 | 2116 | 4627 | 218 | 68 | 18 | 49 | 33 | 0 |

¹ One test was conducted in 1996 and two tests were conducted in 1997.

² Grade index is a numerical quality rating based on government grades. High ratings are best.

³ L = light brown; F = medium brown; M = mixed or variegated; G = green.



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