Dark Tobacco Variety Selection For 2012

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The number of dark tobacco varieties available has increased dramatically in the past six years, and yield potential and quality of many of these newer varieties is also much improved compared to older varieties. The release of KT D4LC, KT D6LC, and KT D8LC from the University of Kentucky-University of Tennessee has set a new standard for yield potential in dark tobacco, with average yields consistently being over 3,600 lbs/acre and often around 4,000 lbs/acre, particularly in KT D4LC and KT D8LC. However, some buyers have expressed general quality concerns with the KT varieties, specifically rough texture, light or variable color, and perceived tendency for sweating. DT 538LC from Newton Seed has yield potential that approaches that of the KT varieties, but also has some of the same quality concerns for buyers.

Table 1. **Characteristics of dark tobacco varieties.**

Variety	Maturity	Black Shank (0-10)[a]	Use[b]	Relative Yield Score[c]	Relative Quality Score[c]	Black Root Rot	TMV[d]	Wildfire
		Race 0	*Race 1*					
NL Mad LC	Med-Late	0	0	F/A	7	9	None	None	None
TR Mad	Early-Med	0	0	F	6	6	None	None	None
Lit Crit	Med Late	0	0	A/F	5	9	None	None	None
DF 911	Medium	0	0	F	8	6	High	High	High
KY 160	Medium	0	0	A	3	9	None	High	None
KY 171[e]	Medium	0	0	A/F	7	7	High	High	None
VA 309	Early-Med	2	2	A/F	6	7	Low	None	-
VA 359	Medium	1	1	A/F	6	7	Low	None	-
TN D950	Early	3	3	F	8	6	High	High	High
KT D4LC	Medium	4	4	F/A	9	5	None	None	None
KT D6LC	Early-Med	3	3	F	8	7	High	High	High
KT D8LC	Medium	4	4	F/A	9	5	None	None	None
DT 538LC	Medium	4	4	F/A	8	6	High	-	-
PD 7312LC[e]	Medium	0	0	A/F	7	8	High	High	None
PD 7302LC[e]	Medium	10	0	F/A	6	7	High	High	-
PD 7309LC	Medium	10	0	F/A	7	8	None	None	-
PD 7318LC	Medium	10	0	F/A	8	7	High	High	-
PD 7305LC	Early	10	3	F	8	6	High	High	High

[a]Black shank resistance levels are based on a limited number of field tests and subject to change.

[b]F or A refers to use as a fire cured or air cured variety. F/A indicates either use with predominant use given first.

[c]Relative yield scores based on performance under disease-free conditions. Relative yield and quality scores given on a 1-10 scale, with 10 being best for the predominant use.

[d]Dash (-) means that resistance level is unknown or not rated at present.

[e]KY 171, PD 7312LC, and PD 7302LC have medium resistance to Fusarium wilt.

***Table 2.* Yield and quality grade index* of commercial varieties from 2010 dark fire-cured variety trials at Princeton and Murray, KY and Springfield, TN.**

	Princeton KY		Murray KY		Springfield TN		Average	
Variety	Yield (lbs/A)	Quality Grade Index	Yield (lbs/A)	Quality Grade Index	Yield (lbs/A)	Quality Grade Index	Yield (lbs/A)	Quality Grade Index
NL Mad LC	2271	43.5	2856	52.7	2864	55.6	2661	50.6
VA 309	2200	28.5	2663	33.3	2905	54.4	2509	38.7
TN D950	2757	35.8	3264	42.8	3029	49.2	3095	42.6
KT D4LC	2790	28.2	3766	32.2	3341	29.2	3441	29.9
KT D6LC	3140	34.7	3428	46.7	3241	41.5	3332	41.0
KT D8LC	2873	39.0	3173	42.2	3375	59.0	3073	46.7
DT 538LC	3580	37.3	2750	41.2	2915	38.5	3027	39.0
PD 7312LC	2258	41.0	2724	43.5	2975	51.8	2569	45.4
PD 7302LC	2125	52.2	3107	56.4	2824	51.1	2780	53.2
PD 7309LC	2534	41.6	3148	46.7	3005	60.7	2943	49.7
PD 7318LC	2450	42.3	3104	33.7	2838	47.5	2886	41.2
PD 7305LC	2637	45.0	2954	49.9	2791	42.3	2848	45.7

**Quality grade index is a 0-109 numerical representation of Federal Grade received and is a weighted average of all stalk positions (flag, second, and leaf).*

PD 7302LC and PD 7309LC from Rickard Seed do not have the yield potential of the KT varieties, but offer substantially better quality with characteristics resembling the old standards KY 171 and Narrowleaf Madole. PD 7305LC and PD7318LC also do not have the yield potential of KT varieties but generally have better quality. See Table 1 for more detailed information on characteristics of dark tobacco varieties and Table 2 for yield and quality performance data from 2010 dark tobacco commercial variety trials in Kentucky and Tennessee.

Black shank is by far the most damaging disease in dark tobacco, causing in excess of $2.5 million in lost revenue for dark tobacco growers each year. A major breakthrough in dark tobacco breeding efforts in the past five years has been incorporation of immunity to race 0 black shank in the Rickard varieties PD 7302LC, PD7309LC, PD 7305LC, and PD 7318LC. These varieties have good quality with PD 7302LC, PD 7309LC, and PD 7318LC having later maturity and more similarity to KY 171 and Narrowleaf Madole while PD 7305LC has earlier maturity and is very much similar to TN D950. However, PD 7302LC, PD 7309LC, and PD 7318LC have no resistance to race 1 black shank. Prior to the release of these varieties, most fields in the dark tobacco region of western Kentucky and Tennessee that had black shank likely had predominantly race 0 black shank, provided there was not a history of use of burley varieties like KY 14xL8 which was also immune to race 0 in University black shank variety trials that have been conducted since 2006 in a field near Hopkinsville, KY. Although the grower considered this field to be a "hot" field for black shank, the first trial in 2006 indicated that the black shank in this field was predominantly race 0 based on the fact that survival of PD 7302 in the trial was nearly 90 percent at the end of the season. Survival of PD varieties in the trial were still over 80 percent in the next 2 years, but by the fourth year of the trial in 2009, survival of PD 7302 was only 22 percent. These results suggest that a major increase in race 1 black shank occurred after 3 years of continuous tobacco and the use of varieties that have immunity to race 0 but no resistance to race 1.

Although many of the newer dark varieties that usually produce the best quality do not have any resistance to race 1 black shank, experimental lines are in development that would offer the same immunity to race 0 black shank but also provide medium levels of resistance to race 1 black shank. Although data is still being collected, these future varieties will hopefully offer quality and maturity characteristics more similar to traditional varieties along with the best black shank resistance that has ever been available in dark tobacco. Look for at least two new dark varieties to be released sometime in the next two years. Δ

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