

2009 GUIDE TO BURLEY TOBACCO VARIETIES

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Disease resistance, yield potential, and maturity are often the most important traits for growers to consider when selecting a burley tobacco variety. Here, these traits are described for nearly all of the varieties and hybrids currently on the market.

Selecting a variety begins with determining which disease problems are occurring on the farm where the tobacco will be grown. However, it must be remembered that varieties are not the only factor to consider for disease control. Crop rotation, site selection, sanitation, and the use of fungicides are all important parts of a disease control strategy.

Black shank, black root rot, and the virus complex cause more damage to tobacco every year than any other diseases. If you have had problems with black shank and black root rot and have not taken steps to control them, you must assume the disease-causing organisms will persist and continue to cause disease problems. Viruses included in the virus complex have become more common in many areas and it may be important to consider selecting a resistant variety.

Black Shank

In this publication we are using a rating system to provide information on the level of black shank resistance. The numerical ratings range from 0 to 10 with 0 meaning no resistance and 10 meaning very high resistance.

Ratings were based on data from numerous field trials under black shank conditions. All varieties have received a resistance rating for each race of black shank. The L8 hybrids have received a 10 rating for Race 0 and a much lower rating for Race 1. At this time, there are no varieties of burley tobacco which have very high resistance (a 10 rating) to all types or races of black shank. On average, a variety with a 6 rating for both races would be expected to have fewer plants die and have less root damage

under black shank conditions than a variety with a 4 or 5 rating. This is why we describe this as a relative rating.

There are other factors which may affect the overall performance of a variety under black shank conditions. For example, a variety with a black shank rating of 5 and low resistance to black root rot could sustain significant root damage, stunting, and even death from a combination of low black shank and a moderate level of black root rot. Significant increases in black root rot and black shank may occur in fields planted to tobacco for more than one year even though resistant varieties are used.

Virus Resistance

Viruses included in the "Virus Complex" are tobacco etch virus (TEV) and tobacco vein mottling virus (TVMV). Those varieties with an "**R**" rating have a high level of resistance to TVMV and a medium level of resistance to TEV. Varieties with an "**S**" rating have no resistance to these viruses. There are different strains of TEV, TVMV, and the related potato virus Y (PVY) to which the "R" rated varieties have little resistance. At present these strains are relatively uncommon and except in fields where these strains predominate, the "R" varieties should provide adequate protection against TEV and TVMV.

Black Root Rot Resistance

Ratings for black root rot resistance are low (**L**), medium low (**ML**), medium (**M**), and high (**H**). Varieties with a "**H**" for black root rot resistance should suffer virtually no yield or vigor reduction from this disease. Performance of varieties with a "**L**", "**ML**", or "**M**" ratings can vary considerably depending on the level of the black root rot fungus in the soil.

Tobacco Mosaic Virus Resistance

Varieties are labeled as either resistant (**R**) or susceptible (**S**) to tobacco mosaic virus (TMV). In susceptible varieties the virus will spread throughout the plant (become systemic) after infection. In resistant varieties the virus remains localized at the infection site.

Fusarium Wilt

Fusarium wilt and yellows occur in all burley areas but usually only a few scattered plants in a field are infected. The more serious infections are most often associated with low, wet areas of sandy soils such as river bottoms. Resistant varieties are strongly suggested for such sites. The Fusarium wilt rating

has been changed to a numerical scale ranging from 0 for no resistance to 10 for high resistance. These ratings are based on 4 years of field data except for newly released varieties. Ratings for recent releases are subject to change after further study.

Relative Yield Scores

A 1 to 10 score has been used to rate the relative yield of the different varieties under **disease-free** conditions. This means that a variety with a relative yield score of 7 would be expected to produce a greater yield than a variety with a lower score if there were no diseases present. Of course, diseases, weather, management, and other factors affect the actual performance of a variety on a particular farm. The relative yield scores were assigned on the basis of numerous field trials and observations on sites properly rotated and managed for optimum yield.

Maturity

The length of time from transplanting to flowering is important for many growers. We have assigned each variety to one of five maturity classes: Early, Medium-Early, Medium, Medium-Late, and Late. The actual number of days from transplanting to flowering will depend upon growing conditions and production practices, but the relative maturity differences among varieties should remain the same. The actual amount of time from transplanting to harvest can also be managed by topping earlier (bud-topping) or later (but no later than 50% bloom).

Blue Mold

This airborne fungal disease can cause significant damage under cool wet conditions. At this time two varieties (NC 2000 and NC 2002) have been released with a medium level of resistance. TN 90 and KT 206 are thought to have a low level of resistance to blue mold, with KT 206 believed to have slightly better resistance than TN 90.

Root Knot Nematode

Nematodes are a relatively minor problem in Kentucky and Tennessee. However, they are seen on rare occasions in sandy soils.

2009 NEW AND SELECTED^{\$} BURLEY TOBACCO VARIETIES

RELATIVE DISEASE RESISTANCE, YIELD SCORES, AND MATURITY

VARIETY	BLACK SHANK		VIRUS COMPL EX	BLACK ROOT ROT	TMV	Fusar- ium WILT	RELATIVE YIELD SCORE ☒	MATURITY
	RACE 0	RACE 1						
ms KY 14 X L8LC	10	0	S	M	R	6	7	Early
KY 907LC	2	2	R	H	R	1	8	Med-Late
KT 200LC	6	6	R	H	R	0	8	Late
KT 204LC	7	7	R	H	R	1	9	Med-Late
KT 206LC [#]	10	7	R	H	R	1	9	Late
NC BH 129	1	1	S	H	R	1	7	Med-Early
NC 3 ^{**}	2	2	R	H	R	1	7	Med-Late
NC 4	2	2	R	H	R	6	5	Late
NC 5 ^{**}	10	4	R	H	R	0	7	Med-Late
NC 6 ^{**}	10	3	R	H	R	0	8	Med-Late
NC 7 ^{**}	10	4	R	H	R	5	8	Med-Late
NC 2000 ^{&}	0	0	S	L	R	1	2	Late
NC 2002 ^{&}	0	0	S	L	R	0	3	Late
TN 86LC	4	4	R	H	S	0	7	Late
TN 90LC [#]	4	4	R	H	R	0	5	Med-Late
TN 97LC	4	4	R	H	R	0	6	Med-Late
HYBRID 403LC	0	0	S	M	R	6	9	Medium
HYBRID 404 LC	0	0	S [*]	H [*]	R [*]	-	9	Medium
HYBRID 501LC	5	5	S	H	R	4	5	Med-Early
N 126	0	0	S	M	R	3	8	Medium
N 777LC	2	2	S	M	S	0	3	Med-Late
N 7371LC	3 [*]	3 [*]	-	-	-	-	7 [*]	Late
NBH 98	2	2	S	M	R	3	5	Medium
HB04PLC	0	0	S	H	R	0	8	Medium
HB3307PLC	10 [*]	3 [*]	R [*]	H [*]	R [*]	-	8 [*]	Medium
R 610LC	4	4	S	M	-	3	5	Medium
R 630LC	3	3	R	M	R	4	5	Early
R7-11	0	0	S	M	R	6	7	Medium
R7-12LC	0	0	S	H	R	4	8	Late

- ^{\$} For an extensive list of varieties go to www.uky.edu/Ag/Tobacco
- ☒ Relative Yield Scores are based on growth under disease-free conditions.
- ^{*} Based on a limited number of field tests and subject to change.
- ^{**} Resistant to root knot nematode (*Meloidogyne incognita*, Races 1 and 3).
- [#] Low Resistance to blue mold (*Peronospora tabacina*).
- [&] Medium Resistance to blue mold (*Peronospora tabacina*).
- Resistance not rated for this disease.