

Selecting Burley Tobacco Varieties for 2007

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Variety selection is important to minimize disease incidence and severity and to suit the growth characteristics desired by individual producers. With contracts the norm for marketing tobacco, needs of contracting company must be considered. Most companies may want tobacco produced from screened seeds only. Others may require that the variety carry the LC logo designating that the tobacco came from seed screened to a specific standard. This seed screening process is intended to help reduce the possible accumulation of tobacco specific nitrosamines (TSNA) during curing and storage of cured tobacco. The level of screening in private varieties listed below could not be determined at the time this publication was written.

Black shank incidence throughout the burley growing regions makes variety selection for resistance extremely important and the degree of resistance can be an issue in areas where black shank pressure is high. In addition to disease resistance, characteristics like handling, stalk diameter, drought and excess moisture tolerance, growth habits and, of coarse, yield and quality are important traits to look for in a variety.

The number of varieties with high resistance to black root rot makes variety selection for this disease easy. As the amount of legume forage, like alfalfa, has increased, rotation to fields with such a history is common. Selection of root rot resistant varieties reduces the risk of developing this disease when rotating to a high-risk area.

Many new high yielding varieties are available to producers. However, labor problems and rainy weather late in 2006 increased the difficulty of handling and housing. Some producer may want to rethink their choices for 2007 and may look at handling characteristics as a major factor to consider when selecting a variety. However, producers must consider that 2006 was an unusual year and decide if they are willing to base future choices on an unusual year.

Variety Descriptions

TN 90 LC is the most popular burley tobacco variety in the US accounting for more than one quarter of the burley tobacco grown. Released in 1990, TN 90 LC offers a broad range of important characteristics. Originally thought of as a substitute for **TN 86 LC**, popularity of TN 90 LC took off due to tolerance, or partial resistance, to blue mold (see Figure 2), small stalk diameter and upright growth characteristics (ease of handling) and good cured leaf color. Although not as high yielding as some other varieties including TN 86 LC, TN 90 LC can produce a respectable yield with the potential to reach 3200 lb/A.

Like TN 86 LC, its yields vary more than most varieties from location to location. In addition to blue mold tolerance, it has level 4 resistance to both races of black shank and high root rot resistance. Its lack of Fusarium wilt resistance has caused some concern, but is not an issue for many producers. TN 90 LC has an upright growth habit that aids ease of harvest and housing.

Although still popular, quality issues prompted many producers to switch away from TN 86 LC. TN 86 LC has a tendency to germinate slow, grow slow early in the season and cure slow leaving undesirable variegated patterns on the cured leaf.

KT 204 LC may offer some improvements over that of KT 200 LC. While it still has the great disease package offered by KT 200 LC, it may actually fair better under heavy black shank pressure. It is not as late maturing as KT 200 LC, a complaint that some farmers have against KT 200 LC. It does not have as large of a stalk as KT 200 LC, which should improve handling. It is not as tolerant to blue mold as KT 200 LC or TN 90 LC, but not as susceptible as Hybrid 403. Quality is expected to be better than that of KT 200 LC with yields that can reach 3400 to 3500 lb/A under ideal conditions. KT 204 LC tends to grow slow early in the season which may discourage producers initially, but its growth in the later part of the season is impressive. KT 204 LC reverts to normal growth during the later part of the season due to the development of a good root system even though top growth may be slow initially. KT 204 LC does not tolerate drought and black shank resistance may not hold up well during dry seasons. Target spot incidence has been high for KT 204 LC. However, the extent of the susceptibility is not known.

KT 200 LC continues to have a loyal following, but may lose out to KT 204 LC in some cases. It has a similar disease resistance package, but should tolerate black shank pressure much better TN 90 LC. It has level-six resistance to both races of black shank. It has tolerance to blue mold similar to that of TN 90 LC. Yields have been excellent and can reach close to 3400-3500 lb/A (Figure 1). Some producers like KT 200 LC, but others were disillusioned with the stalk and plant size, its late maturity and

Figure 1. Burley tobacco variety trial, Woodford Co.—Rusty Thompson Farm.

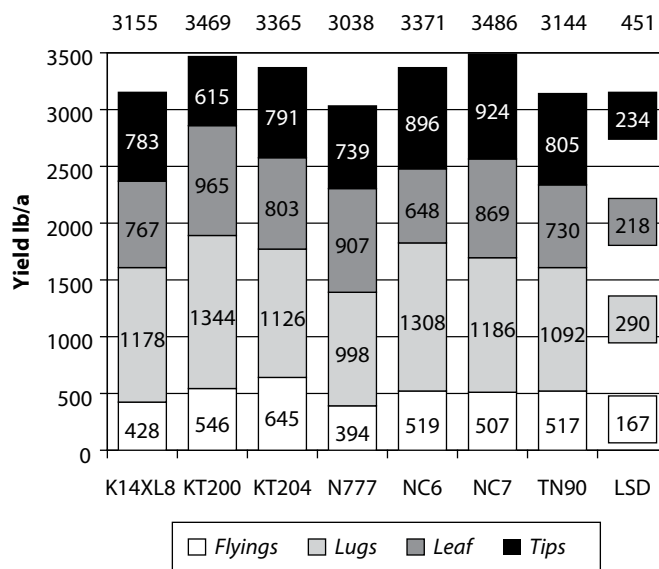
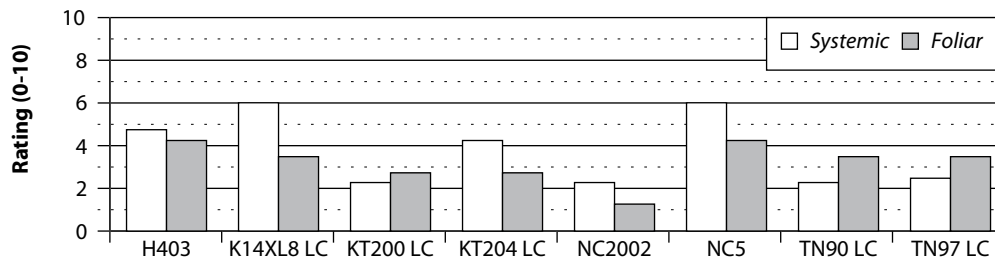


Figure 2. Systemic and foliar blue mold incidence—Menifee County.



quality issues. It has a high green stalk weight which may discourage growers. Many who tried KT 200 LC for the first time in 2004 or 2006 were disillusioned with the size of the variety which was even bigger than average due to high rainfall late in the season. Its late maturing nature was not a problem in 2006 due to labor shortages that force late harvest anyway. KT 200 LC has a dark green color while growing in the field and may have more of a tendency to cure green if not allowed to mature prior to harvest. Growers should top this variety early and let it stand 4-5 weeks before harvest to minimize a potential green cure.

KY 14 x L8 LC is still a widely used burley tobacco variety. Popularity is dropping due to the extra management required to produce high yields and good quality. It is an early maturing, short, spreading type of tobacco. Leaves droop to the extent that leaf breakage can be excessive under certain conditions. In addition, leaves appear to be more brittle than most varieties making KY 14 x L8 LC a poor choice for mechanical harvest or for farmers using laborers that may not take precautions during harvest. It has fewer leaves than most varieties, but compensates by producing larger leaves. Stalk diameter is small to medium. Yields average over 3000 lb per acre and may reach 3300 lb/A under ideal conditions. Quality can be excellent under proper management for this variety. Delayed topping increases sucker development and may make control more difficult. KY 14 x L8 LC initiates sucker growth sooner than most other varieties making early topping a must for this variety. Best results are achieved when 14 x L8 LC is harvested at three to four weeks after topping. Delayed harvest may increase sucker control problems and reduce cured leaf quality. KY 14 x L8 LC has high resistance to race 0 black shank, but no resistance to race 1 black shank. Race 1 black shank in many areas has forced producers to abandon KY 14 X L8 LC in favor of varieties with resistance to both races. Damage by the virus complex can be severe where virus pressure is high and blue mold incidence may be higher for than in most varieties. KY 14 x L8 LC may yield poorly if planted in an area with high root rot pressure.

HB04P LC, a hybrid variety from F.W. Rickard Seed, has excellent drought tolerance as demonstrated by its performance in 2002, 2005 and 2006, but also performed well under wet conditions in 2003 and 2004. HB 04P LC is resistant to black root-rot and mosaic. It has medium maturity and is similar to NC BH129 LC for its resistance to the virus complex. It has large leaves and an average-sized stalk diameter. HB04P LC has a yield potential of approximately 3300 lb/A. Cured leaf quality is generally good. With a yield close to that of KT 200 LC or

Hybrid 403 LC, it may be a better choice for those who do not like the late maturity of KT 200 LC or need the black shank resistance that KT 200 LC offers. It also offers more rotational choices than Hybrid 403 LC due to its root rot resistance. This variety is also well suited for hill top crops that may be prone to drought.

Hybrid 403 LC remains one of the top yielding burley tobacco varieties after several years on the market. Producers who wish to grow Hybrid 403 LC need to avoid fields with a history of black shank and rotations that might favor root rot development including continual tobacco production or any legume such as alfalfa, clovers or soybeans. A darker green variety in the field, Hybrid 403 LC has a higher incidence of blue mold than most varieties when conditions favor this disease (see Figure 2). Producers tend to like how this variety handles, especially at housing time. The ratio of cured leaf yield to green weight at harvest tends to be higher than in most other varieties. It has a yield potential in the absence of disease pressure of approximately 3500 lb/A. Some newer varieties with high yield potentials and better disease packages are beginning to challenge the popularity of Hybrid 403 LC.

NC BH129 LC has been one of the most consistent yielding varieties regardless of weather or soil conditions. With a 3200 lb/A yield potential, this variety has performed well for many producers. It has high resistance to black root rot, but low black shank resistance. NC BH129 LC is a tall variety with more space between leaves than most other varieties. It produces very high cure leaf quality with the exception of color, which tends to be bright. Early topping significantly improves color in this variety. Its medium to early maturity makes it a good choice when coupled with a late maturing variety for scheduling labor.

R 630 LC is an early maturing variety with a yield potential around 3000 lb/A. While unable to yield with some of the newer varieties, it still has a good yield potential. Even though it has the same level 4 rating for both races of black shank as R 610 LC, some trials indicate that it may fair better in black shank fields. R 630 LC's drought tolerance may be part of the reason why. R 610 LC can develop significant stress during a drought with significant leaf loss or burn. While R 630 LC shares a similar name, maturity, and yield potential to that of R 610 LC, the similarities end there. It has high resistance to black root rot, a disease that often afflicts R 610 LC. Viruses have caused serious losses in R 610 LC in some areas, but R 630 LC has resistance to the virus complex. While R 630 LC leaf quality may not be quite as good as that of R 610 LC, no other variety can make that claim either.

R7-12 LC is a late maturing variety with a high yield potential that may reach past the 3400 lb/A mark. Although it has no black shank resistance, it does have high black root rot resistance, which will make it suitable for more locations than Hybrid 403 LC. It has wide upright leaves, medium stalk diameter, and a good cured leaf color and quality.

N 126 is a medium maturity variety with a yield potential of 3200 lb/A. It has very little disease resistance and yields would suffer if disease pressure was high. Avoid fields with a history of root rot or black shank when growing this variety. N 126's other strong point besides yield is its dark cured leaf color, which makes it stand out at the market. N 126 has a relatively small stalk diameter making handling potentially easier than big stalk varieties.

N 7371 LC is a new variety released by Newton Seeds Inc. Although not fully evaluated black shank resistance appears good. N 7371 LC is a late maturing variety with a high number of long but narrow leaves and is a high yielding, good quality variety.

TN 97 LC is a medium to late, high yielding variety with a yield potential that can reach 3400 lb/A. Its potential as a black shank resistant variety has not lived up to the expectations. It does have black root rot resistance and resistance to the virus complex. It appears to be more susceptible to drought than many other varieties making it more suitable where irrigation is possible. Its susceptibility to drought may decrease its resistance to black shank. A variety like TN97 LC handles the excess moisture of a year like 2003 better than most other varieties.

NC 2000 is a late maturing, blue mold resistant variety. It has very little resistance to other major diseases like black shank or black root rot. It has one of the lowest yield potentials of all of the varieties currently available at approximately 2600 lb/A. Its usefulness is limited to those producers whose tobacco suffers a high degree of damage from blue mold annually, but is not exposed to black shank.

NC 2002 is a blue mold resistant variety. It has very little resistance to other major diseases like black shank or black root rot. It is a higher yielding variety than NC 2000 with a yield

potential of approximately 3000 lb/A under ideal conditions and no disease pressure. Its resistance to blue mold is demonstrated in the variety trial from Menifee County (Figure 2).

NC 3, a medium, late maturing variety, may surpass the yield of NC BH129 LC by 100 lb/A, but disease resistance is similar. It does have virus resistance, although NC BH129 LC should show some tolerance also. NC 3 is also a consistent variety and may produce a better color at curing than NC BH129 LC.

NC 5 is a variety with good potential for control of black shank. It has very high resistance to race 0 black shank like that of 14 x L8, but also has a medium level of resistance to race 1, which 14 x L8 does not have. It has high resistance to black root rot and the virus complex, but does not have Fusarium wilt resistance. It is medium to late in maturity. Yields may not compete with higher yielding varieties.

NC 6 is a medium-late maturity with high yield potential and good leaf quality. Yields are expected to reach 3400 to 3500 lb/A under ideal growing conditions. NC 6 is a big robust variety but stalk size is manageable. It has high resistance to race 0 black shank, but low-to-medium resistance to race 1 black shank. It also has resistance to black root rot and the virus complex. In addition, it has resistance to Southern root knot nematode, but is susceptible to Fusarium wilt.

NC 7 has high resistance to race 0 black shank, and low-to-medium resistance to race 1. Otherwise, NC 7 has a good disease resistance package including resistance to black root rot, Fusarium wilt, tobacco mosaic virus, and wildfire. It has a big, robust growth habit with a large stalk diameter. Handling may be difficult under conditions that increase plant size. It has some unique resistance that may not be significant in Kentucky, including resistance to root knot nematode and tobacco cyst nematode. Yields are expected to reach 3500 lb/A under ideal conditions and quality is expected to be good.

These and other varieties could help to improve disease control and improve yield and quality. Other varieties not listed here may produce equal results, if selections meet disease resistance and management needs. Look for 2006 yield results as they become available.