

New Burley Tobacco Varieties Available for 2005 Production

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Burley producers will see some changes in variety choices for 2005 as six new releases from the Kentucky-Tennessee breeding program will be available for production. Five of the new releases are actually “new and improved” versions of varieties that have been around for a few years. These new releases are the result of industry requests for varieties with reduced formation of tobacco specific nitrosamines (TSNAs).

Because TSNAs are known carcinogens, they have recently come under intense scrutiny throughout the tobacco industry. Although TSNA content in burley tobacco is influenced by numerous cultural, environmental and storage factors, considerable research has demonstrated that there is a significant correlation between secondary alkaloid content and TSNA levels. Nornicotine, the primary secondary alkaloid, occurs in some tobacco plants as a result of the spontaneous breakdown of nicotine; this process is commonly referred to as “nicotine conversion”. High levels of nornicotine have always been undesirable in tobacco products due to its detrimental effects on smoke flavor. Recently, even low levels of nornicotine in tobacco have become a concern because of its role in TSNA formation.

Levels of nornicotine present in a burley variety can be reduced by 70 to 80% by eliminating individual converter plants from foundation seed lots. This is accomplished by chemically analyzing seed plants as they are growing in the field and destroying all plants that have greater than 3% nornicotine. This process results in the production of new, low converter (LC) varieties. The LC varieties will not differ from the original versions for yield, quality, agronomic type or disease resistance; only the chemistry has been altered. **TN 90LC, TN 86LC, TN 97LC, KT 200LC, and KY 907LC** have already been released and will be available for planting in 2005; **ms KY 14 X L8LC, KY 14LC, and KY 17LC** will be released in 2005 and should be available to growers for the 2006 season. Although some seed of the original versions of these varieties may still be available in 2005, seed production has been discontinued and they will eventually be withdrawn from the market.

Burley producers will also have a new, high yielding black shank resistant variety available for the 2005 season. **KT 204LC** has a black shank resistance rating of seven and a yield rating of nine on a 10 point scale. The new variety has a higher level of black shank resistance than any variety currently available, and it is the first black shank resistant variety with yield potential comparable to the best non-resistant varieties when grown under disease-free conditions. It has high resistance to black root rot, wildfire, and tobacco mosaic and tobacco vein mottling viruses. **KT 204LC** also has medium resistance to tobacco etch virus and low resistance to fusarium wilt; it is not resistant to blue mold.

KT 204LC was compared with four standard burley varieties in seventeen non-black shank trials from 2000 through 2003. KT 204LC produced an average yield of 3338 pounds per acre, compared with 3380 for Hybrid 403, 3182 for KT 200, 3068 for TN 97, and 3009 for TN 90. KT 204LC was the highest yielding variety among 30 entries in the 2003 commercial burley variety test conducted at Greeneville and Springfield, Tennessee, and Lexington and Versailles, Kentucky. The average per acre yield of KT 204LC was 3446 pounds, compared with 3401 for Hybrid 403, 3201 for KT 200, 3121 for ms KY 14 X L8, 3087 for TN 90, 3074 for NC 5 and 2944 for R 630.

KT 204LC has consistently performed better than standard black shank resistant varieties when evaluated under extreme disease pressure. In eight black shank trials conducted over two years, KT 204LC yielded an average of 1839 pounds per acre, compared to 1317 for KT 200, currently the burley cultivar with the highest level of resistance, and 1192 for TN 90, which is the most widely grown burley variety.

KT 204LC is a medium to late maturing variety, flowering approximately four days later than TN 90. It produces medium to tall plants with an average of 22 large leaves. The growth habit of KT 204LC is semi-upright, similar to TN 90. KT 204LC produces cured leaf that is medium to heavy bodied and tan to reddish-tan in color under normal curing conditions. KT 204LC has significantly better cured leaf color than KT 200 and is comparable to other popular burley varieties.