



# FIELD CROP NEWS



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Cotton

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## New Technology in Cotton Varieties

Several new traits are available in new varieties of cotton. They include Roundup flex (RF or F), Widestrike (W), Liberty Link (LL), and Bollgard II (BGII or B2). Widestrike and Bollgard II are new generation worm control traits; the former is sold by Phytogen (Dow) and the latter by all other seed companies. The Roundup flex trait allows the grower a wider window of opportunity to spray Roundup and is sold by most seed companies. Liberty Link varieties contain genes for tolerance to herbicides glufosinate ammonium (Ignite, etc.) and are sold by Bayer as FiberMax varieties. Since these are new technologies, the first varieties may not be as productive as current varieties on the market. The Bollgard II varieties combined with the Roundup resistance technology tend to be the higher yielding new varieties.

I would caution growers against planting a large acreage of new varieties, particularly those that have not been tested in the North Carolina Official Variety Trials. With the advent of new technology, seed companies are rushing to get their varieties on the market. Recently, these new varieties are being entered in state variety trials at the same time they are being sold to growers. It is vitally important that growers plant only a small portion of their farm in any new variety, especially one with new technology.



## Soybean

### Soybean Nematode Problem

*Heterodera glycines*, the soybean cyst nematode is the most serious soybean disease problem that we experience in the counties with large soybean acreages where it infests at least 60% of the North Carolina acreage and accounts for at least a 5% loss in potential production. Severe yield loss caused by this pest is especially common in sandy coastal plain soils. Soybean cyst nematodes cause irregular patches of stunted and/or yellow soybeans (an up-and-down pattern of growth), yield decline over several years, and failure in weed control (weed problems are frequently more severe in soybean cyst nematode infested fields). The soybean cyst nematode can reproduce only on legumes such as soybean and snap bean, so crop rotation is a practical control measure. Eggs of soybean cyst nematodes are contained inside a cyst, which is the body of an adult female. The eggs hatch from April through June, and juvenile nematodes migrate through the soil. If the juveniles fail to locate roots of a legume within a few weeks, they die. When soybeans germinate, the roots exude substances that stimulate more hatching and attract juveniles to the root systems. Juveniles penetrate the roots, migrating in the root until they locate a feeding site. This penetration of the roots damages them, making the roots more susceptible to *Phytophthora*, *Pythium*, and *Rhizoctonia* root rots. As many as 10,000 juveniles have been found in a single soybean root system just 10 days after planting. The nematodes then become stationary and induce nurse cells in the root. The tap root may be killed 4 or 5 inches down severely limiting the soybean root system causing moisture and nutrition stress. Because nodulation of the soybean root system is inhibited, plants may be light green or yellow. The life cycle continues with two to five generations per year, late maturing soybeans allow more generations of soybean cyst nematodes. When adult females die, nurse cells in the root also die, providing an excellent avenue for various fungi to invade and further compromise the soybean root system. Southern stem blight, *Phytophthora* root rot, *Pythium* root rot and *Cylindrocladium* black root rot (red crown rot) are commonly associated with cyst nematode. The primary tactics for managing this pathogen are cultural practices, including rotation, selection of early maturing cultivars, and double-cropping wheat and soybean.

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Sincerely,



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