A GROWER'S PERSPECTIVE

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Abstract

The first year observations of growing several thousand acres of BT cotton (Deltapine NuCOTN 33^B) as compared to non BT cotton (DP 5409) comparing insect control methods and costs.

During 1995 I grew Deltapine NuCOTN 33^B on approximately 70% of my cotton acreage. This variety contains the Bollgard™ gene from Monsanto. This planting was a part of Deltapine's 36,000 acres of seed production allowed by the EPA to reproduce BT seed to be released for the 1996 crop year. NuCOTN 33^B was developed by back crossing DP 5415 to Coker 312 BT.

Even though NuCOTN 33^B's recurrent parent is Deltapine 5415 it has several characteristics that are vastly improved over DP 5415 while still retaining its superior fiber and high yield. NuCOTN 33^B seed size is larger (approximately 10%) thereby improving emergence and seedling vigor. NuCOTN 33^B doesn't seem to be as prone to stay vegetative as long as 5415 and settles down to fruiting sooner than 5415. I did not have a direct comparison of the two varieties in 1994 because of the requirements for seed purity, so this is a subjective call.

My entomologist, Tucker Miller, and I have always felt that June worms are difficult to control since there are less definite cycles of egg depositions in June than in July and August. Timing June worm insecticide applications can be tricky and less effective than later in the season. Having the insecticide in the plant 24 hours a day, every day, means that no matter when the hatching occurs the worm is killed. Because of more effective June worm control, plant mapping data show a higher fruit retention than non BT cotton and therefore an earlier crop.

Several agronomic practices which are necessary for maximum yields with all cultivars must be performed on BT cotton as well, especially 5415, which tends to "run away" or "go vegetative" if not performed.

These are:

1. Pay special attention to early season insect control. Save all the early fruit so an early crop can be produced. The Bollgard™ gene will control the worms therefore scouting for other insects can then become more intense. Plant bugs account for almost all of early fruit loss if worms are controlled, so concentrate on plant bug numbers and don't hesitate to spray. DP 5415 is prone to fruit one to two nodes later than some earlier varieties so those first fruits must be saved.

2. Use PIX judiciously. On our deep soils NuCOTN 33^B will tend to grow too tall and use energy stolen from the fruit. Keep the internode length less than three inches.

3. Watch out for boll weevils. I was convinced that I did not have a boll weevil problem on my farm. However, I found I was controlling my weevils with my worm sprays - without those sprays weevil appeared and demanded control measures. I am convinced that we should have sprayed them on a closer interval and later into the season.

I will plant BT cotton on all my acreage next year. Deltapine NuCOTN 33^B yields as much or more than other varieties and saves from $60 to $90 an acre in insect control costs. The insecticide is in the plant; it won't be washed off in a rain; it is in the plant whenever the worms feed - timing an application is not an issue; center pivot irrigation systems don't have to be stopped to spray; there are no missed swaths and no missed fields.

Total insect control costs including the airplane and Temik was $144 an acre in the non BT cotton (DP 5409) and $54 an acre in the BT cotton (DP NuCOTN 33^B). Therefore, one must assume that it cost $90 an acre to control heliothine pests in 1995 on my farm. Monsanto charged an extra $30 per acre for the BT seed. Yields were slightly higher (20# of lint per acre) on the NuCOTN 33^B on comparable fields - soil type and irrigation.

There is no hesitancy on my part to plant all the acreage I can to NuCOTN 33^B.

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