

Bt Corn for Georgia
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As corn planting time approaches producers in Burke County are making preparations. Most producers are aware of the potential benefits that can come with using hybrid varieties of corn. What do you know about Bt corn and how it can be used?

First of all, if you do not know, what is Bt corn? Bt corn is defined as corn hybrids that contain one or more gene(s) from the bacterium *Bacillus thuringiensis* (designated Bt). These genes produce a toxin that helps control a selected group of insect pests. Bt corn with single gene for corn borer and other caterpillar control have been available in Georgia since 1998. Bt corn is a preventive type of pest control so a farmer has to decide the value of this control before planting without knowledge of whether there will be a serious pest infestation. The presence of one or more Bt genes in a corn hybrid will not increase yield. It prevents the loss of yield from certain insects. What a farmer has to remember is that if the insect population in a field is high enough, the Bt corn will pay off. If the “insect pressure” is not there, then he may not see a benefit.

Bt traits that target several different types of insects are now available. Some of the Bt genes protect against corn borers while other genes protect the roots from western corn rootworm. Still others help prevent leaf and ear damage from various caterpillars including corn earworm and fall armyworm. These genes often used in various combinations, with or without genes for tolerance to the herbicides. This makes the selection of a Bt corn more complicated. Farmers must make sure that they understand exactly what kind of Bt corn hybrid they are buying.

Aflatoxin is a highly toxic mycotoxin produced when kernels are infected by the fungus, *Aspergillus flavus*. Aflatoxin contamination is affected by many factors including heat and water stress, hybrid genetics, kernel hardness and integrity, ear drooping, husk coverage, and insect damage. It stands to reason that improved ear/kernel protection by Bt corn may help reduce grain aflatoxin contamination. This can help justify the cost of using Bt technology.

How much does Bt technology cost? The price of corn seed has risen dramatically in the past decade. This is because the price includes insecticide and fungicide seed treatments, as well as herbicide resistance and Bt traits. The cost of Bt technology for corn borers and other caterpillars is about \$10 per bag (80,000 units) or \$3.70 per acre or more for newer technology. For a lot of the corn in Georgia that is planted at the recommended planting time of March through Mid-May serious insect damage may not be an issue. A clear benefit has been shown in later plantings. At corn prices of about \$4.00 per bushel, the added cost of over the non-Bt hybrids equals about 2.5 to 3.0 bushels per acre. Bt hybrids may or may not prevent this level or more of yield loss by corn earworm, but it will reduce the risk of serious ear damage by this insect in on-time plantings.

The three situations where it is easy to recommend planting hybrids containing Bt:

1. Corn statewide that will be planted after the recommended planting date.
2. Northwest Georgia including the Limestone Valley, which has high corn borer populations.
3. Non-rotated (corn after corn) in the northern half of Georgia, where western corn rootworm can be a problem.

For more information regarding corn hybrids or related information, contact the Burke County Extension office at (706)554-2119.