

Gettysburg Area Corn Growers

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shank, and other damage from the larvae.

The feeding can affect corn nutrient uptake (causing a purpling of the upper stalk), can introduce fungus and other diseases, and can also, more importantly, cause the ears to drop and fall off as a result of damage to the ear shank.

The Bt varieties, however, remained largely unaffected by the borer. Most stands looked healthy.

For the grower who is producing grain, the Bt varieties could mean enormous savings in terms of less lodged corn and unharvested ears. But for silage producers, the advantages of paying the extra premium for the transgenic corn may be questionable.

"Is there an economic advantage to paying extra dollars for Bt seed corn?" Swartz said. "My guess is that, in some years, it will pay off and some it won't."

The reasons: there are a lot of variables in the growing season, including weather, soil conditions, pest and weed load, variety selection, and other concerns that could affect the yield.

One of several test areas across the state, the Bt and non-Bt comparisons will shed some light about how yield is affected and the quality of grain that is produced.

This year has been a year of stark contrasts compared to 1997. Rainfall came at critical times, including silking and ear growth, in mid-summer to help the crop along.

"We've had adequate moisture," said Swartz. "We had a lot of rainfall in the spring. Though we could use some right now." Conditions were droughty for most growers throughout the state last growing season.

Swartz said, during the days he scouted in September, that "the crops looks good for the most part — a lot better than last year." The test plots involved several that were no-till. One has been no-tilled the past nine years.

Most of the Bt varieties controlled the corn borer. There were also check plots planted to non-Bt corn.

On one 200-acre farm (about half in corn) managed by Tom Oyler in Gettysburg, the soil has been no-tilled continuously for eight years. The fields make use of Roundup Read and Bt, some in stacked configurations, on the test plots. The corn stood at 9-10 feet high.

There was some feeding damage on the non-Bt corn from second generation borer. The borer chews into the stalk, leaving residue on the outside, and can move up or down, feeding away, at the center of the stalk. When the stalks turn dry in the fall, they can break or lodge. This downed corn can have a significant effect on grain yields.

In other fields on different test sites, there was shank damage caused to corn, which caused the ears to droop and fall off prematurely — this can also significantly affect grain yield.

Also, some ears on other

plots showed evidence of feeding, around the husk and, in some cases, right into the kernels.

The corn was planted mid-May. It was the third year the field was planted to corn.

On the farm operated by Lee Horst in Gettysburg, about 126 acres are in corn and about 133 acres in beans. This is the first year that Horst has used Bt corn.

This year they planted about 22 acres in Bt corn, including some Roundup Ready Bt. Horst noted he is looking at applications at his farm for the "stacked gene" varieties.

The Horsts, including Lee's son Arvin, use minimum till (chisel plow) and use turkey manure. They obtain their manure from a 10,000-bird operation under contract for Wampler.

Lee noted that there could be a 7-14 bushel per acre differential between using or not using Bt corn for grain.

Because of the mild winter, Horst expected a lot of overwintering of the insect, but noted "this year doesn't look any worse than any other year." The Horsts, last year, harvested about 40 bushels of corn per acre as a result of the drought conditions.

This year, they could harvest about 150 bushels per acre.

At the Richard Adams farm in Gettysburg, some second-generation corn borer damage was evident. Some ear shank damage was evident and sections of ears were eaten by the borer.

The Adams farm had 16 rows of Bt and 16 of non-Bt hybrids in a replicated format. This is the first-time that Bt



was used on the dairy. The corn was planted the third Saturday in May.

Richard noted that he, along with brother Ed, farm about 120 acres of corn, some for cash grain. They have about 100 cows on the dairy.

Growers should examine the tradeoffs for cost versus need

and see if Bt varieties could be used on their farm.

For growers, Swartz said, "If you've had good luck with a certain variety, maybe you could use non-Bt variety," he said. "Does it justify a corn grower to spend more money for Bt corn?"

Additional research may tell.



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