

Let Variety Trials *Be* Guide

New Technologies Show Promise, But Choose Varieties Based On Trial Performance

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New technologies in corn and soybeans was a topic addressed by Dr. Scott Stewart, extension entomologist with the University of Tennessee, recently.

"In soybean, nothing really dramatic is happening," he said. "We have some new insecticides and we have a few new technologies but we don't have anything that I think is going to be game changing."

One thing he stressed is the value of good insect management. Another was the insecticide seed treatments.

"They're not really new, but we have been increasing the use of seed treatments in soybeans quite a bit in the last several years and there are new ones coming out," Stewart said. "A lot of the insecticide seed treatments come in a package with other components with them; of course, many come with a fungicide, but being marketed pretty aggressively in some areas are the nematocidal seed treatment components, and we have some data on that."

"Regionally we've been testing those insecticide or insecticide plus nematocidal treatments plus fungicide seed treatments. Last year we evaluated all the company offerings that are out there, and the data has shown consistently what we've noticed for the last several years; that is, we are getting a bump of two or three bushel yield per acre with insecticide seed treatments. The response to insecticide seed treatments varies from nothing up to 10-12 bushels depending upon the year, location, planting date and other factors."

There were no clear results in testing last year with the nematocidal seed treatments, so researchers are continuing to look at that to see if they are bringing any value to soybean.

"Corn is a different subject, there are a lot of changes in corn," he said. "We have a lot of new GMO technology, specifically the new Bt corns and I've been talking about that a lot for the last couple of years."

Stewart has discussed the new GMO technologies in corn for several years, and it's still a topic of interest for producers. It is such a big change and it's an expense to the grower, so there's a lot of interest in seeing what value they bring. So he showed more of the same data this year, providing a detailed look at the newer technologies and what they are doing.

"These new Bt traits have more genes for control of caterpillar pests, and primarily what we're targeting in the south is better control of corn earworm and fall armyworm. That contrasts them with the older technologies like the YieldGard and Herculex which were primarily used to control corn borers and had less effect on ear feeding caterpillars."

"So our data show these technologies are giving us quite a bit better protection of the ears," he continued. "We're seeing a lot less kernel damage in the ears from corn earworm and in some areas fall armyworm. That hasn't translated to yield in my test yet and that's been a little bit perplexing to me. It hasn't really matched with the industry advertisements that are out there, so I'm trying to show our data and give a little balance."

"Having said that I don't want to dismiss these new technologies, I think they're going to have some value to us, I'm not sure I can put a dollar figure on that yet, but there is going to be some benefit to using the newer trait packages."

One value they have is reduced refuge requirements. That's potentially very important because corn borers can be a real threat in Tennessee. The growers in compliance with Bt



Dr. Scott Stewart, extension entomologist with the University of Tennessee, discusses the new technologies in corn and soybeans.

refuge requirements in many counties must plant many acres in non Bt corn. The new technologies will allow growers to reduce the size of the required refuge and take advantage of those Bt technologies on more acres.

"The other thing we're trying to get a handle on is how much these new technologies are going to affect grain quality," he said. "They clearly can improve grain quality and they will improve it more when you have a lot of corn earworms, so I think you're going to see the most potential benefits on late planted corn. I expect we will see some reduction in mycotoxins, including aflatoxin, in some environments."

However, Stewart cautions that aflatoxin is primarily a weather driven phenomenon and can occur even in the absence of insect pests. More data is needed to determine how much these new Bt technologies might reduce the risk of mycotoxins.

"Again we don't have a real good handle on that yet. I don't think the university has a real good handle on that yet; but it's there, it's going to show up occasionally."

Stewart's take home message to growers is to take a look at the new technologies.

"I think growers need to look at them, evaluate them, but I don't think right now there's a big reason to rush into using these new technologies just because they're new technologies," he said. "They're going to be pushed that direction soon enough as these newer technologies are quickly replacing the older options in the market place. You still want to pick your corn hybrids based on their performance in variety trials. I think that's the number one thing you want to look at." Δ

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