

A Proactive

Nematode Treatment

Sample For Corn Nematodes, Plan Proactive Treatment

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Nematodes are having more of an effect on corn plants in recent years, according to Craig Abell, technical support representative for Syngenta Crop Protection.

"As we look at cultural practices, we probably have more reduced tillage, no-till, than we have had historically and undisturbed soil makes a pretty good environment for a nematode to live and survive," he said. "We have seen more of them; as we go to a field and look at a crop and see a plant that doesn't look very good, we wonder what's affecting that plant. So after further studying that we've realized that nematodes are having somewhat of an impact on corn."

The impact is greater than seen 20 years ago, probably because farmers now rely less on organophosphate insecticides.

"We see a trend towards more GMO plants and also pyrethroid insecticides and so by utilizing this technology we could see more nematode pressure than we have in previous years," Abell said. He covers Illinois territory from about I-80 down to about I-70/I-64, so for all practical purposes he covers most of Illinois.

Abell said nematodes are somewhat of a silent killer, one that the grower doesn't readily notice. It was commonly known that nematodes were present in some of the lighter more coarse textured soils of Illinois, but recent research has shown the heavy black soils had nematode pressure as well. It's more widespread than at first suspected. Generally the farmers don't readily think of nematode problems in corn. They may not be aware of how much damage their corn crop is receiving from nematodes.

"A lot of people have the issue, or may have the issue and may not realize it, and that's what we're learning in the market as well," he said.

"They don't think about nematodes. It's something they really don't plan for and they really don't know it until the corn is at the seedling stage; and in a lot of cases they might see a pocket in a field where there is stunted corn plants, they might be discolored and then after further evaluation some stubby roots or some malformed type roots may be discovered. But it's something that, until you do further investigation, you really don't notice it."

The past three to five years more growers are talking about nematodes. They have come to more of a realization of their presence. Also there has been more testing to evaluate the nematode problem and more has been brought to the press. So the grower that may have had a crop that wasn't living up to its potential may have decided to look into soil sampling to see if there is an issue. If the farmer misses the problem in the seedling, there's further deterioration that appears later.

"The plants might continue to be shorter, you might see nutrient deficiencies in the plant just because the root system is affected, and then the overall conditions, later in the season you might see a smaller ear," Abell explained. "So instead of having a large robust ear, you might have less rows around the cob and less kernels on that ear. So a smaller ear would equate to a smaller yield. That tends to occur in a pocket in a field. There generally isn't widespread damage across an entire field."

A pocket could be the size of a pickup truck or two pickup trucks in a field, and there may be two or three of those areas across the field. However, generally it doesn't spread uniformly across a field.

"That may be a pocket where there is a visual affect, but you may also have adjacent plants that have no visual affect where the nematodes may still be attacking," he said. "The reason I say that is because of the trial work I've done in the past two years. In the trials, we would either split a field or we would split a planter with half the planter using Avicta treated corn and half of it not treated. When we did those comparisons, we saw a six to eight bushel difference in yield between Avicta seed treatment versus the untreated seed."

Economically, Avicta Complete Corn is \$15 net per unit incremental over Cruiser Extreme 250. Looking at economics today, with corn fluctuating at about \$6.20 a bushel, a six to eight bushel difference can have an impact on a farmer's bottom line.

Abell said that farmers who notice a field or even pockets in a field where the corn isn't producing as expected should be alarmed.

One issue affecting yield is night time temperatures. Every night the low temperature is above 70 degrees it can cause a yield loss of 1 bu/A due to increased respiration.

"If you can't trace it back to a fertility problem and you can't trace it back to a cultural practice, then it may be something to take a look at; let's take a look at a sample and see what kind of nematode pressure you have," he said.

To sample for nematodes, he suggests you pull a soil core and basically do a composite sample from the area that's affected. The farmer may do an affected area and he may do an area where it may not be affected as well. That soil core, taken four to six inches deep, should be sent for analysis to a nematode lab, two of

which are the University of Illinois and University of Nebraska.

A composite sample, he explained, would be to take a soil probe and pull a number of samples from that affected area, put them in a bucket and, combine them. In a fourth of an acre, a farmer would pull two or three cores from that area; or maybe 10 samples in a 100-foot square area.

Syngenta markets the chemistry for controlling the nematode problem.

"It is a package, Avicta Complete seed treatment," Abell explained. "With that you get Avicta which is a seed treatment nematicide; you get Cruiser which is the seed treatment insecticide; and you have three seed treatment fungicides, Maxim, Apron XL and Dynasty as



More reduced tillage, no-till, and undisturbed soil makes a pretty good environment for a nematode to live and survive, says Craig Abell, Technical Support Representative for Syngenta Crop Protection.

Photo by John LaRose

well. So you get a package not only to control your nematodes but also insects and diseases that would have an affect on seedlings. So Avicta Complete is the product and it's something that would be applied by the seed company to the seed before you purchase it."

Today's seeds are treated for different pests. "Every corn seed you purchase has a seed treatment and most of the time it's a fungicide," Abell said. "When you buy treated hybrids, those are treated with a fungicide and an insecticide. But as we look at the nematicide segment of the market, that's a relatively new area; I would say we've really been on the market a couple of years. However, it's a rapidly growing segment of the market too. So pretty much all seed is treated and then as we get into the higher value seeds we add the products to that,"

"Avicta is the only true nematicide on the market. There are some other products on the market that are repellents and you may run across them; but Avicta is the only true nematicide on the market."

A map of the Midwest shows the northern tier of states are substantially affected by nematodes, however, Abell says the potential is there for infestation in the southern tier as well.

"The company has done some sampling and it's much more widespread than originally believed; you know, initially we thought nematodes might be a southern Illinois, Missouri, Kansas, Nebraska thing, but it's much more widespread."

Nematodes in corn are different than those in soybeans. With soybeans there's the cyst forming nematode.

"That's not really the case we have here in corn," Abell said. "It's a non-cyst forming nematode that's affecting the corn. A parasite is actually penetrating the root. Then you have an open lesion there where a disease can readily attack the plant, so that's why we sell it as a package, so you can take care of diseases too."

Farmers may notice on the yield monitor while harvesting that a pocket in the field may not be producing as it should.

"A lot of time if you're sitting in a combine cab and you see the drop in the yield monitor for what seems like no reason, that's another look-out that there may be something else that can be affecting yield," he said.

While corn nematodes can be a challenge at the present time, as minimum tillage is occurring, more and more nematodes are appearing; by using Avicta Complete, farmers can control nematodes and have an added benefit of controlling other pests as well.

"Correct! That's one of those things as we look at trying to maximize yield and maximize return on an investment, nematodes, insects and diseases are all three things that have a negative effect on the crop; and if we can eliminate those we can maximize the return on our investment," Abell summed.

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