

Pest Control

Specialist Offers Overview Of Real, Potential Corn, Soybean Pests

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Dr. Doug Johnson, University of Kentucky Extension Entomologist, has a few words of advice to corn and soybean growers who want to get ahead of pests before they're a problem.

"First of all, work some biology into your business decisions," he said. "You have to make business decisions and especially our corn producers for example: When considering Bt traits get the traits that you need, and don't use traits that you don't need. First as a business decision, because you don't want to pay for them, and second as a biological decision because you don't want to expose populations to controls that you don't need and thereby place selection pressure on the population."

He also urges farmers to keep an eye on the fields even if they are not scouted regularly.

"Look at them at very critical times, for example at podding in soybean, for stink bugs," Johnson added. "Most people know what the green stink bugs look like. They may not be able to identify individual species but look for something that you don't know. If you don't know what it is and you haven't seen it before and it seems odd to you, get it to your extension office for an identification so that we'll know the movement of these insects and so we can develop a plan to deal with what will happen from their movement."

Johnson spoke recently on a number of pests and their management. He discussed which traits farmers should select in corn particularly in Kentucky.

"Of course everybody is familiar with the Bt type traits, especially the borer traits that help us control European and southwestern corn borer and I think they're pretty much universal.

"But we also have problems with secondary pests, leaf feeders, foliage feeders," he said. "Two of the common ones are fall armyworm and corn earworm. Most people think of corn earworm feeding on the ear, which is true, but they also do some leaf feeding."

There are some new traits on the market that give very good control of these insects and they probably have a fit in Kentucky. Among the secondary pests are caterpillars and he urged farmers to take a look at these traits, by placing some strip tests in their fields.

"Put some of the traits to curb caterpillars in your fields. Kentucky many times doesn't have huge pressure from caterpillars, other times it does. If you get stuck planting very late, they may give you a good return; if you're planting really early, it's probably not going to give you such a good return. But farmers may have a place for some of our producers here."

A number of products are company products because the trait is in the genetics of the corn. The herbicide traits and insect traits which come in a mix or match combination really are a marketing tool. However, there is a biological point that goes along with that as well.

"When you are selecting a trait in Kentucky, if you're growing corn in the major corn producing area and you're in a corn-soybean rotation you don't need a corn rootworm trait," he explained. "You don't want to pay for a corn rootworm trait because it's not doing you any good. However, a number of people may say 'well I'm not being charged for corn rootworm trait because this is not a corn rootworm market' and that may or may not be true."

What is true is this: Corn rootworm is in Kentucky but crop rotation is a very, very good control option and it doesn't cost any money.

"Also we do not want those corn rootworms that are resident in Kentucky to become resistant to any corn rootworm trait. We want them to remain completely naive, never having been exposed to this trait so if the time ever comes that we do have a corn rootworm problem, we want to be able to use those traits without worrying that our population has already been exposed to them."

Resistance is the same basic biological process regardless of pest. Whether it's fungi, weeds or insects, when you put a pressure on sexually reproducing population you select for traits in that population, not in an individual insect, but in the population.

"What we want to do is avoid that selection process," he explained. "We want to avoid that selection until the very last possible minute, when we need that control. That's when we want to start putting pressures on those populations.

"Ric Bessin has a very, very good chart that lists a number of the very popular corn products for Kentucky and tells you which traits they have in them. It also gives a rating scale which is more or less our opinion of how good they are against various insects. Anyone that would like to have one of those charts can send an email to Ric Bessin in the entomology department at University of Kentucky or to me and we'll be glad to furnish it. There are other charts like that around, particularly in Wisconsin, Minnesota, in the north central states."

Farmers in northern areas will be much more interested in corn rootworm than farmers here, but there's a lot of good information coming out of those universities.

"One less popular thing we have to deal with is the number of invasive species that are coming our way," Johnson said. "This last winter season I've been introducing people to three stink bugs. Technically it's two stink bugs and a close relative. We already have the brown marmorated stink bug in the state. Any readers that don't know what that is should get on the internet with their favorite search engine and check it out. About a billion pages are going to come up because these insects are eating them up on the east coast. That insect is just moving down I-64 coming west. To the best of my knowledge it's just in two counties just west of I-65. Basically that's the line but they're definitely present in the state."

This insect will not just be moving from crop to crop, but it moves with people. It is a home invader, and in the fall these insects come out of their natural habitat in the field and try to get into houses, barns or storage buildings. They don't want to hurt anything, they're not wood eating, they're just looking for a place to get through the winter. That means they're going to get into shipping crates, around machinery, into trailers, and go wherever these items go.

"It gets around because it was in somebody's trailer or in a shipping crate or something like that," he continued. "So they can pop up just about anywhere. This is a very difficult insect to control. I don't want to scare anybody but I don't want to sugar coat this. It's going to be much worse on the vegetable, fruit people than it will on the field crops, but it will feed on corn and soybeans. It's a typical stink bug in that it has a piercing, sucking mouth part. It pierces the sheath on corn, it doesn't have to go through the top like an earworm, it doesn't bore in. It just sits on the outside, sticks its proboscis in, puts the enzyme from its mouth inside to break down the contents of the cell and then it sucks the contents out. It's a very typical stink bug feeder and it can do a lot of damage.

"Of course as one might imagine this pest will be very damaging on fruits and vegetables, by causing cat facing of the fruit, and may cause the fruit to simply abort. In field corn, just depending upon the population size, it could be an annoyance or it can be pretty big trouble. I don't think we have really established yet in field corn how bad it is going to be. We're hoping it's rather more northern adapted and won't do as well in the heat of the south, but we don't really know that because we haven't been able to study it yet."

Johnson is a little more hopeful about the other two stink bugs one of which is the red banded stink bug that's moving up from the south.

"It's a horrible pest in Louisiana on soybeans. It is not quite as bad in Mississippi. It is present in western Tennessee and southeastern Missouri. Last year in our survey of stink bugs in 14 counties across the state, we did not detect it. We're in the middle of that survey again now and the report will be out next year. We're hoping that's a very southern adapted stink bug, so even if it gets here it won't do much damage. But again we don't know. This will look like the green stink bug that farmers are familiar with, except it's going to have a red band across its back."

We have a look alike to the red banded in Kentucky. The other stink bug in Kentucky is the red shouldered stink bug and it can look very similar to the red banded."

Fortunately the red shouldered is not an economic pest, but it can be confused with the red banded. Regardless of which you find, Johnson suggests that if farmers see what looks to them like a regular green stink bug with red on it, take it to your county extension office for identification, because that can be an important piece of information so researchers will know where it's present.

"We need to know what the distribution of this bug is," he said. "Again, we don't have a lot of work on it here because we don't have it, but in southern Mississippi and Louisiana they're doing a fair amount of work, so we'll have some good information on what controls will be required. In Kentucky, we generally just don't have to treat very often for a lot of insects in soybeans, if this insects get here it may be a different story."

Another insect gaining attention is the bean plataspid, which probably came from Asia and settled in Georgia. They are studying it for the second season now, and it's been here a little over three years.

"The bean plataspid, like the brown marmorated and not like the red banded, does not move from just crop to crop, but is a home invader. It travels in people's belongings, possessions, automobiles and trucks. It is not technically a stink bug but we're splitting hairs here. It looks like a stink bug, acts like a stink bug and the damage is the same as a stink bug. The difference, according to Georgia's work, is it does not feed on the pod, it feeds on the stem and the petiole. But if it destroys that petiole it might as well feed on the pod because that pod is going to abort.

"We already know this is in the range of a five bushel pest, maybe a little more than that. Though only in the second year of work, they're doing a lot of insecticide screening in Georgia, North Carolina, South Carolina and Alabama."

Since this is another hitchhiker, prospects are it may come out of Chattanooga on I-24, go through Nashville, and come by the Princeton station. It could come up I-75 from North Georgia, move across Kentucky, and chances are good it will get to the major soybean producing areas of Kentucky.

"I don't know if it's been determined yet whether this is a more northern or southern adapted insect, but apparently it's doing very well in North Georgia," Johnson reported. "So anything that's like a Piedmont area I think is going to have a problem. Whether western Kentucky will be subject to it is still unknown. It's a weird looking little bug. I can't really give you a good description of it but I can tell you that when you see it, you'll probably know what it is. It's very odd. It's not like something that we have around here and, like the brown marmorated, if you see it in the fall it's going to be in very large numbers and those numbers can be clumped together."

Though not all the research is taking place in Kentucky, Johnson is keeping an eye open on the research in other areas, and will be looking to them for their information if any of these insects should invade the state. Δ

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