



Episode 4— Managing Insects in Corn March 19, 2021

Announcer 1:

The Alabama Crops Report Podcast, your trusted information source for Alabama agriculture.

Scott Graham:

Hey everybody. Welcome in to the Alabama Crops Report Podcast. I'm Scott Graham an extension entomologist.

Amanda Scheer:

And I'm Dr. Amanda Scheer and extension plant pathologist. We're excited to be releasing regularly scheduled podcast episodes with up-to-date information about Alabama crops throughout the year. You'll be hearing from extension personnel from all over the state with the latest research and management recommendations.

Scott Graham:

Well, Amanda, how's it going? I know you've been busy. We're all getting ready to start getting trials planted and getting reporting and things finished off finally back out in the field.

Amanda Scheer:

Yeah. I can't wait to actually get back out in the field. I'm kind of getting sick of my computer to be quite honest.

Scott Graham:

Yeah.

Amanda Scheer:

And it's also good to come out and start recording some of these podcasts just to get into that feeling of production season.

Scott Graham:

Yeah, absolutely. Absolutely. All right. Our guest today is Dr. Kaitlin [Kessamer 00:00:57]. Kaitlin normally on this side of the microphone, but today she's going to be doing the interview. Kaitlin, how are you doing today?

Kaitlin Kessamer:

I'm good. A little nervous. I feel like I'm in the hot seat. So used to asking the questions and now will be asked of me, but glad to be here and talk about some issues we may encounter with corn this year.

Scott Graham:

Yeah. Just get all your answers right. And it won't be a big deal.

Kaitlin Kessamer:

All right. I feel like I'm back in school again. Too many years of that. I'm good.

Scott Graham:

Well, give us before we get into the topic, which is going to be kind of pre-planning corn considerations and early season insects in corn. Give us a little background on what your role is with Alabama extension.

Kaitlin Kessamer:

So I think I'm the oldest of the new extension specialists here with ACEs. I've been here about two years and I have state-wide extension entomology responsibilities with corn, other small grains, stored grain, pastures and forages, turf and hemp. So it's a mouthful and it also make sure I'm not bored.

Scott Graham:

Absolutely.

Amanda Scheer:

Yeah. I feel you on that one, same thing here and it's you try and make sure you get all those crops in when you're given your spiels.

Kaitlin Kessamer:

Yep.

Scott Graham:

So all right, Kaitlin. We're we're getting to the point now where folks are starting to do some field prep. We're getting tillage and in some parts of the state, but for the most part, we're getting ready to start doing burn downs and reduce till situations and things. So what are some aspects that producers need to be thinking about as we're getting ready to plant corn?

Kaitlin Kessamer:

Well, we know that corn is most vulnerable early in the season, those first couple of weeks after planting. And so you want to get your seed often running to the greatest art possible. So you can make your yields at the end of the year and protect it those first four weeks of the season. We do have some consistent corn pests that can affect seedling corn. We have some inconsistent ones that are really sporadic that may take, they're more opportunistic and take advantage of some high risk situations.

We have some soil pests, some above ground pests, but really the goal is to make sure you protect your corn in those first four weeks or month or so. So you can make your yield at the end of the year.

Amanda Scheer:

So you're talking a lot about seeds and seedling diseases. So that's getting me thinking about seed treatments. That's particularly something just coming from someone that works in cotton and peanut a lot, that we also try and keep in mind going into the season. Do you have any recommendations to producers to help kind of minimize some of the insect pests early on?

Kaitlin Kessamer:

Absolutely. Yeah. So I'm a fan of seed treatments and these days, most corn comes with seed treatments. You'd be hard pressed to find some without, and they act as insurance, especially like I said, in that first month where you're really vulnerable to below ground insect pests that can feed and then lead to corn diseases. And our standard cruiser upon show at label rates will provide fantastic insurance. As long as we don't run into a couple of scenarios where we have a high infestation level in a high risk field, or we end up with suboptimal growing conditions.

So if we have temperatures that dip below 55 degrees, soil temps that go real low at your planting or within those first couple of weeks, you may end up in a situation where your seed treatment effectiveness has run out and you still have some insect pressure. And then you have early growth stages of corn. But for the most part, you'll get great residual at label rates of most of our seed treatments.

Scott Graham:

So what are some of the things we should look at in terms of what a high risk field may be as we're getting ready to plant corn?

Kaitlin Kessamer:

So your field history is really going to tell you what your risk level is, especially early in the season. Most problem fields that we see with corn are rotating out of pasture or CRP where underground insect pests have been allowed to kind of thrive for several years or reduced till or no till fields. And we've talked about this as a scientist we like no till there's great benefits, but as an entomologist there's also benefits from those reduced till situations to the insects. And so they're allowed to survive. They're not mechanically killed or brought up to the surface to be preyed upon by birds or other predators.

Also high levels of residual covering the soil can kind of create a nice comfy cozy environment for the insects to overwinter. And we know when insects come out of overwintering, they want to start feeding and so you're creating a scenario where the environment is really beneficial for insects. Similarly, we have fields that are adjacent to pastures where insects will move out of the pastures into the corn. And so just understanding your local landscape will help you figure out what your risk level is.

Scott Graham:

So what would you recommend for a burndown timing as far as trying to eliminate the, I'll use an entomologist buzzword, the green bridge.

Kaitlin Kessamer:

Ah, yes. The green bridge. So I like to see 30 days. Four weeks, 30 days. To make sure we don't have that green bridge. Obviously it's not always possible in terms of time management, chemical availability, weather restrictions. And so then you do have some options to go out with like a broadcast application of pyrethroid, which will be label rates fine take care of armyworms, cutworms. We had some armyworm problems last year, but if you're within that 30 day period, you should reduce as much risk as possible.

Amanda Scheer:

So Kaitlin, what are some of the specific insects, their associated damage the producers really need to be concerned about prior to planting?

Kaitlin Kessamer:

So a lot of the high risk scenarios that I talked about can help underground pests thrive. So we're talking about wireworms, which can feed on the seeds themselves [inaudible 00:07:03]. In some cases we have white grubs, especially if we're coming out of a pasture situation. And then at the surface, our most common ones are going to be cutworms or armyworms. And then every once in a blue moon we'll see issues with sugar cane beetles. We saw some issues last year where a field had to be replanted because of sugar cane beetle damage.

Scott Graham:

Now, I was going to ask about sugar cane beetles. That's one that when I was an undergraduate student worker at Mississippi State, we had a graduate student project working with sugar cane beetles. And we did a lot of black light trapping and things making collections. And we infested fields with PVC pipes and we also did

mechanical damage. But I've always kind of joked, I think, joked that we caught every sugarcane beetle in the state of Mississippi because we had those two years, that project and the first year, I mean, it was easy to catch them. The second year is a little bit harder. By the third year we couldn't hardly find one. And I don't really know how to describe why that is. But I was curious if sugar cane beetles are much of an issue in Alabama since I'm still relatively new.

Kaitlin Kessamer:

[inaudible 00:08:13] and I feel for that grad student and working on that project because we know they're cyclical, but we don't know the cycle. Right. We don't know the timing or a lot of the situations that can lead to an infestation. They're present in Alabama every year, but it's only when we have major infestations that it's a problem. And it's interesting because I talked about white grubs and wireworms and that's the larval stage that's going to cause the damage. It's these adult beetles that are chewing at the base of the plant. And we do know that fields that have bright lights or near gas stations that the adult beetles are attracted to and then start feeding and laying eggs. We had some isolated problems in Northern Alabama last year, and that was in the two seasons I've been here. That was the only time. But I do like to mention it because it's something to think about and can lead to a replant situation.

Scott Graham:

Just a little behind the curtains there for folks looking at how some of the research happens of what we do to make recommendations and things. You mentioned fields around lights, they're attracted to that. We woke up for three weeks straight before sunrise and we would go to gas stations in Starkville, Mississippi, and try to find sugar cane beetles just crawling around empty gas stations and things like that. So that brought back some good memories for me [crosstalk 00:09:39]. Trying to make it happen, trying to get good answers for our producers and figure some things out. But anyway, that's an aside. Just made me think of that.

Amanda Scheer:

Yeah. When you said lights, it's making me think of as a grad student, I worked a lot with tomatoes and they're own raised beds with mulches. Well, sometimes people will use reflective mulch to help manage some of those insect pests, trying to keep them from landing in the fields and trying to rate a tomato plant in the middle of Florida in the middle of summer. High intensity [crosstalk 00:10:12].

Kaitlin Kessamer:

... Doing the good work, Amanda.

Amanda Scheer:

So I feel you on that. You come out kind of blinded by the light there, but it's fun times, but we do try very hard to get that information out.

Scott Graham:

So kind of back [inaudible 00:10:31], we kind of took us down a little rabbit trail there. Back to the topic at hand. One of the things that's difficult as a researcher, as a farmer, a consultant, scout, whatever it is, is trying to make replant considerations. A lot of thresholds for these early season pests are based on percent stem loss or estimated stem loss. Or sometimes it's when stem loss is less than, or stem is less than desirable, which is, but what are some things you think about when recommending a replant situation?

Kaitlin Kessamer:

Yeah, that's a great question. And it's kind of like we have to look at the entire system, pre-plant what the stand count is. And typically I say, get out there, get a stand count, look at what your projected yields are going to be. Typically, I keep talking about this four week window, if you are within that four weeks of planting and you've lost more than half your stand, then it may be economical to replant. If you're past that magic four week window and you've lost more than half, you're not going to recoup any of your costs from replant than you would with the original stand. However, we do need to talk about field history. What date is it? What's the weather currently.

If you go into a replant situation, can you get access to short season varieties? Are they going to be within your budget for that year? What's your weed situation? What is your herbicide situation? Have you applied a post emergent herbicide? Because that's going to restrict your plant back options. You may go back with corn. If you can get a short season variety, sorghum, beans, but a lot that's going to depend on what was applied and according to the label, and we can get David back on here to talk about some of those details with chemicals.

But also what's the cost to replant? What's it going to cost for time and labor and equipment? And we have to keep in mind if we're replanting, we have to kill the current stands. And so we don't want to have managing a situation where we're managing multiple growth stages. And so can we do that mechanically and make sure we get the growing point? Can we do it chemically and still plant back what we want to plant back? And so it's a complicated question and every scenario is going to be different. And so if anyone has questions, which I hope that no one has to deal with that this year, but give me a shout or call your local REA. And we can kind of walk through and look at what are the economics of these decisions, because that's what it's going to come down to.

Scott Graham:

Yeah. Yeah. And that's one of the things we talked about too with cotton and soybeans is don't plant it into the same situation. So if you've got grasshoppers decimated in the field, if you are going to have to replant do something to get rid of the grasshoppers before we plant back.

Kaitlin Kessamer:

Yep. Exactly. Yep. And so a lot of factors that can go into that decision. But if you're going to get back 90% of your yields, then we can go back with corn within that first couple of weeks, but that's not always the case.

Amanda Scheer:

So Kaitlin, this has been a bunch of good information today. But another thing that I've been kind of thinking about in terms of reducing those risks is thinking about variety selection. Do you have any thoughts on that for producers for 2021?

Kaitlin Kessamer:

Absolutely. So really when it comes to picking variety, you want to look at yield and disease package are going to be key. What works in your area on your farm. You're going to know your farm, your soils, your situation, better than anybody. And so that'll play into varietal selections.

Also, what traits in terms of BT, do you need for above or below ground insect control. And then it's really important to pay attention to refuge requirements. And those requirements are going to vary based on the specific toxin that you're planting. But for corn, we're looking at 20% of your corn acreage needs to be planted into non BT. If you're planting a single gene, BT that's goes up to 50% and really making sure we plan a refuge is going to be the best thing we can do to preserve these traits, both in corn and cotton, moving forward.

We know some of them are starting to slip, but yeah, as good stewards we know we want to plant that refuge. We have some options, whether it's within the BT, whether it's adjacent or in a completely separate block, that's within a half mile, we have refuge in a bag. So there's lots of options. And I know that there are little data regarding some of the yields of non BT varieties. So we're excited that we're starting with the on-farm variety trials this year. We're incorporating some non BT variety, so we can get those yield data out to growers to help them make better decisions that works for their farm.

Amanda Scheer:

Yeah, and that sounds like it'll be a really interesting field trial to get those results. So probably have you back on the podcast later to discuss some of that.

Kaitlin Kessamer:

That sounds fantastic. Yeah. You and I can discuss insect and disease ratings and those trials too. I think that'll be really helpful for our producers.

Scott Graham:

You know Kaitlin, the one thing that you mentioned there that I think is important is protecting these BT technologies in cotton and corn and pretty much a hundred percent of the corn earworms or bollworms that go into cotton, came out of corn. So there's lot of selection pressure there. So that's one of the things that the cotton States entomologist across the cotton belt, we really would like to reduce the amount of VIP corn, the third gene in both cotton and corn.

We would really like to see a little of that planted as possible. You can speak more if you'd like about the potential yield impacts of planting VIP corn, but really that puts a lot of selection pressure in VIP cotton or three gene cotton varieties, where the cries are still hanging on and an Alabama or two gene cottons are still

performing pretty well for now, but we know that's not going to last forever. And we're trying to do what we can to keep VIP in the system as long as we can at an effective level.

Amanda Scheer:

Yeah, that's a great point. And speaking of corn our two gene, one gene, non BT, they perform fantastically. We don't see any reduction in yields. The only issue we run into is if we are late planting, and then we may see some problems from corn earworm or cotton bollworm. But yeah, I want to be clear that we do have some BTS that are slipping, but here in the cotton belt, non BT one and two gene BT corn perform just as well. So great point.

Scott Graham:

All right. Well, Kaitlin, thank you very much. We enjoyed it. Hope you enjoy being on the other side of the microphone.

Kaitlin Kessamer:

It was a new experience, but yeah. I enjoyed chatting with you guys.

Amanda Scheer:

I'm sure we'll all get a chance to be on the hot seat too, Scott. Don't feel too left out.

Scott Graham:

Thanks everybody for tuning in today, I'll be looking for another episode of the Alabama Crops Report dropping next week.

Announcer 1:

The Alabama Crops Report is a production of the Alabama Cooperative Extension System.