Episode 8 —Early Season Insect Management in Cotton

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Announcer:

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

Dr. Katelyn Kesheimer:

Hey everyone. Welcome into the Alabama Crops Report Podcast. I'm your host, Katelyn Kesheimer.

Dr. Adam Rabinowitz:

And I'm Dr. Adam Rabinowitz, system professor and extension economist. We're excited to be releasing regularly scheduled podcast episodes with up to date information about Alabama crops throughout the year. So you'll be hearing from extension personnel all over the state, with the latest in research and management recommendations. So how are you doing today, Katelyn?

Dr. Katelyn Kesheimer:

I'm good. How are you, Adam?

Dr. Adam Rabinowitz:

I'm doing well, thank you. Happy to be here as part of this podcast.

Dr. Katelyn Kesheimer:

Yeah. And I'm happy because we have a fellow bug person as our guest, Dr. Scott Graham, who's an extension entomologist and assistant professor with responsibilities in cotton, soy beans, and peanuts. Welcome, Scott.

Dr. Scott Graham:

Hey, how's it going? Excited to be on this side of the microphone this time.

Dr. Katelyn Kesheimer:

Absolutely. You're in the hot seat this week.

Dr. Scott Graham:

Yeah. Any day we get to talk about bugs and cotton is a good day, so I'm excited.

Dr. Katelyn Kesheimer:

It is a good day. So today we'll be talking about early season insect management in cotton. What are some of the early season pests that growers should be thinking about as we are approaching planting season?

Dr. Scott Graham:

Well, I think the obvious one are thrips, and that's really the most consistent insect pest we have in cotton, maybe even in row crops in general. You look at across the entire cotton belt, 100% of our acres are going to be infested with thrips, and we'll talk about them a little bit more later, I'm sure. But a lot of things that we're seeing are changes in the system, and part of that is in the last decade, 15 years or so, we've kind of shifted to more conventional and no till situations, and with that, we're starting to see some early season issues with some pests that we haven't historically dealt with. You think about things like grasshoppers, true army worms, cut worms, spider mites, slugs and snails. All of these different critters can be in a cotton field at planting and can really do some damage if we're not prepared to do something to mitigate that situation.

Dr. Katelyn Kesheimer:

I know we talk a lot about no till and conservation till and early season pests. And I've been talking a lot about it in corn the last couple weeks too. And so how does that lead to some of those pests you mentioned, grasshoppers, army worms, slugs, and snails?

Dr. Scott Graham:

Well, I mean, I think we talked about it a little bit on your podcast as well, we've got this situation where we've got a green, attractive crop, or weeds, or whatever it is in the field prior to planting. And these insects come in, and they move in, they start feeding on those things. They lay eggs. You've got immature insects in the field that aren't as mobile, so they can't fly away when the crop is planted or when there's nothing in the field. So they're just kind of hanging out waiting on something to come up, so it's really important that we try to do things, burn down three, four weeks prior to planting, mix in a pyrethroid or something at planting, to try to kill some of these caterpillar pests like army worms or things like that, to try to mitigate that issue.

And you can go back on forth on: Is it IPM or not? And really, a big part of IPM, as Adam I'm sure would love to chime in and remind us, is economics. And we know we're probably going to have an issue, especially if we're walking around giving the old foot check. I know y'all talk about that a lot of times with army worms in pastures and things. If you're walking through and you got worms crawling on your shoe, probably need to go ahead and throw something in the tank.

Dr. Adam Rabinowitz:

Yeah, Scott and Katelyn, I listen to you talk about all the bugs from an economist perspective, and really, it really hits home for me in terms of production risk and some of the risk management strategies that we think about related to insects and just the issues that producers are facing and need to consider. So along that line, what are some of the risks involved with grasshoppers? And what can producers actually do about that?

Dr. Scott Graham:

Adam, grasshoppers truly are a risk pest. And some years, they'll be in fields and they won't touch a cotton plant. And other years, they'll turn on the cotton and just eat 10 or 15 acres. We never really know what they're going to do that year until they've done it. So it's making treatment decisions a lot of times is just based on what level of risk is the producer willing to take on in that year. And if we're in fields where we've had issues before with grasshoppers in

the past, if it's kind of a sandier field, coming off of a winter where it's been a little bit drier than normal, particular in reduced and no till fields, we tend to see more issues with grasshoppers.

In that situation, what we recommend is putting out Dimilin, which is an insect growth regulator, with your burn down application, your herbicide application. And what that can do is provide three to four weeks of residual control, really try to keep those immature grasshoppers from developing into adults. And one of the difficult things about it is they're laying eggs over long periods of time. There's a lot of eggs in these little pods that they lay down in the soil, so they're emerging over three or four months sometimes. So it's really important that we try to do something to control those immature grasshoppers while the cotton's still coming up in the crook stage because really what we're worried about is just trying to get our stand established. We're not too concerned about the foliation and things like that. We're just trying to keep them from clipping plants off and really hurting stand.

Dr. Katelyn Kesheimer:

Scott, are you talking about immature grasshoppers or adults in this case?

Dr. Scott Graham:

Well, I've been primarily talking about the immature grasshoppers, Katelyn. But one thing to think about, if we do get into a situation where there's a lot of adult grasshoppers in the field, that kind of changes what we're doing. Dimilin, which I mentioned for immatures, is an insect growth regulator, so it's only going to control the immature grasshoppers. Now some people recommend pyrethroids for adult grasshoppers. I don't have a lot of experience with it. But Dr. Ron Smith, who's been around about as long as cotton has in Alabama, it seems like at times, tells me that he's done a lot of trial with that in the past. And when he sprayed adult grasshoppers with pyrethroids, they'll jump 15, 20 feet in the air, come back down, and go right back to gnawing on the cotton.

So really, if we've got a lot of adults in the field, we recommend acephate, a little bit higher rate, maybe two thirds of a pound, something like that, to take care of those adult grasshoppers, a lot harder to control than the immatures. And the immatures, we can't can't kill them with pyrethroids, but we don't get that same residual control that we do out of the Dimilin.

Dr. Katelyn Kesheimer:

I was really impressed with your ability to relate to us bug people using grasshoppers, so thank you for that. And as a bug person, I always tell people that I study things that are creepy and crawly, which would include, like Scott mentioned, slugs and snails. But for the taxonomists out there, we know that they are not officially insects, so we can't use insecticides to control them. Correct?

Dr. Scott Graham:

That's right. Shocker, right? Insecticides that don't kill something that's not an insect.

Dr. Adam Rabinowitz:

Katelyn, I was always wondering about the classification of slugs and snails from entomologists.

Dr. Katelyn Kesheimer:

Yeah. I like the term creepy crawlies because your slugs, your spiders, your scorpions, centipedes, all the great things in this world. But when it comes to snails and crops, not so great. Right?

Dr. Scott Graham:

That's right. Yeah. I just tend to throw them all as critters. You can get them out that way. That's my Mississippi coming out, I think. But unfortunately with these snails and slugs, there's not a lot we can do. There are some baits that are available. They're marginally effective, but they're pretty expensive. I think they're something like 20, 30 bucks an acre. And you're talking about putting out 20 pounds per acre. So really, they're hard to put out. They do show some efficacy, but for the price, they're really not that effective. You can try to do things, maybe a little light tillage. I know we really don't like tilling, and we've kind of gotten away from some of the equipment that we need to

do that, but light tillage would be an option. With slugs in particular, you can blame Katelyn because we see issues behind our grass crops like corn and sorghum. And Katelyn-

Dr. Katelyn Kesheimer:

You're welcome for that.

Dr. Scott Graham:

Keeping us busy. The snails are a problem that kind of started out in the southern part of the state I think, and hung out there for a while. But we saw fields in Cherokee County, or at Sand Mountain, that had to be replanted from snails in 2020. Unfortunately, we really don't have a lot of answers. One thing to think about with slugs is, if you are in a no till situation, maybe set your row cleaners or trash whompers, or whatever you want to call them, a little bit more aggressive. Try to push that residue back some, get it off of the furrow, and make sure you get the furrow closed as well. We can create slug highways, where they'll just run the drill, go through, and clip every single plant off. So really important that we try to do what we can to mitigate those issues.

Dr. Adam Rabinowitz:

Scott, there's another pest that I've been thinking about too, which is thrips. Can you tell me a little bit about thrips and just the management that producers need to think about to address this pest/

Dr. Scott Graham:

Yeah, absolutely. So like I said, thrips are really the dominant insect seedling pest of cotton across the entire cotton belt. And Alabama is no different in that situation. Growers have several different options. Really, the go to right now are neonicotinoid insecticide seed treatments. We recommend those be imidacloprid based. There's a lot of different product names and things for that, Gaucho, Arysta, [inaudible 00:10:18], are just couple of them. Starting to see a little bit of slippage with that, some resistance building up, and really, I think it's pretty complicated on whether or not we get good control out of our seed treatments. But generally speaking, we kind of tend to recommend if we plant, our cotton planted in the later planting window tends to be able to get through without needing a foliar supplemental insecticide application.

Dr. Katelyn Kesheimer:

Scott, can you talk about that a little bit more, the relationship between planting date, potential thrips damage, and seed and/or foliar treatments?

Dr. Scott Graham:

Yeah. So generally speaking, thrips injury is a function of how well your cotton crop is growing. So earlier in the planting window, temperatures are a little bit cooler, particularly nighttime temperatures, when the plants really night grow, and we may not have as many thrips infesting the cotton. But when the plant's not growing, it's taking on thrips damage. So when we get later in the window, we'll maybe have more thrips in the field, but our cotton's growing so much faster, we can kind of get through that susceptible window, which is generally speaking, about the fourth or fifth true leaf stage. Typically, once we get beyond that point, we can kind of close the door on thrips for the year and start getting ready for plant bugs. But really, those nighttime temperatures are pretty important. The cooler it is at night when the crops just night grow, those thrips are really able to feed and do some damage.

Dr. Katelyn Kesheimer:

That's basically an arms race between the cotton and the insects in this case.

Dr. Scott Graham:

That's right. That's right. The seed treatments can provide four or five maybe weeks of control, depending on a lot of different factors. But really, what we're trying to do is just get through that fourth of fifth true leaf stage as fast as we can. Now an other option you've got are some in furrow products, imidacloprid is a good option. Acephate's a good

option in the right environmental conditions if it's kind of cold and wet, and you're not growing, similar to the seed treatments, you can lose some of that acephate before the plant really uptakes it and is able to express it in the leaves to protect from the thrips. And then Aldicarb, AgLogic, the new Temick, if you will, still very, very good product. We see very consistent results out of AgLogic. So that's another good option for growers.

Dr. Adam Rabinowitz:

So Scott, you mentioned something about a potential supplemental foliage spray. What are those options?

Dr. Scott Graham:

Yeah, Adam, so kind of like I mentioned before, that cotton that's planted in the earlier part of the planting window is likely going to need some sort of a foliar application. Typically, those are best when they're made around the first or second true leaf stage. We've got several options. Acephate is typically our go to recommendation, about a third of a pound or so tends to provide good control. Problem with acephate is you're running the risk of flaring secondary pests like spider mites, things like that. And it's not as rain fast as some of our other options.

We like to see at least eight to 12 hours of no rain on acephate after we spray it. Bidrin's another option. It's a little less likely to flare mites, and it's a little bit more rain fast than acephate. However, it is more likely to cause crop injury if you're tank mixing with a herbicide. Dimethoate, another option. Again, not too bad on flaring secondary pests and pretty good rain fastness, but it is the most likely to cause some sort of crop injury if it's tank mixed with herbicides. So that's just some things to think about there.

And Intrepid Edge, which is traditionally we think of that as a worm material, but it's got the same, one of the same active ingredients that Radiant has, a good thrips material, really not likely at all to flare secondary pests, so that's a good thing. Only thing about that is we may want to think about putting in a surfactant if we go with Intrepid Edge. I'll just kind of close with this, pyrethroids are not effective. Still some folks trying to get away with spraying pyrethroids or trying to spray imidacloprid. And if your imidacloprid seed treatment didn't hold on, you probably don't want to spray imidacloprid foliar, even though it's cheap, probably not going to get a lot out of that like you would want to, so again, acephate I think is our best option for foliar thrips control. But make sure you're checking your herbicide labels if you are trying to tank mix, piggyback that application and make sure that you've got approval for the different herbicide technologies that you may or may not be using.

Dr. Katelyn Kesheimer:

Thanks, Scott. That was some fantastic information. Adam and I were super happy to have you on the podcast today. And I know with two bug people, Adam, you probably enjoyed yourself as well.

Dr. Adam Rabinowitz:

I learned a lot of great information today, so I appreciate that. Thank you for being here, Scott.

Dr. Scott Graham:

Thank y'all for having me. Enjoyed the conversation.

Announcer:

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