

# Fall Armyworm Outbreak

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## SUMMARY KEYWORDS

people, ashley, fall, iowa, caterpillars, pests, field, crops, migratory species, alfalfa, temperatures, hay, erin, overwinter, feeding, crop, timing, migratory, storms, feed

## SPEAKERS

Dr. Erin Hodgson, Ashley Dean, Christa Hartsook, Speaker 3

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**C** Christa Hartsook 00:15

Hello, and welcome to the Small Farms Podcast, a production of the Small Farms Program at Iowa State University Extension and Outreach. Our podcast covers the opportunities and challenges associated with rural life. In this episode, I visit with Dr. Erin Hodgson, Field Crops Extension Entomologist and Professor of Entomology and Ashley Dean, Education Extension Specialist in Entomology at Iowa State University. I'm Christa Hartsook, Small Farms Program Manager, and we hope you enjoy the show. Ladies, welcome. Thanks for being on.

**D** Dr. Erin Hodgson 00:48  
Hi, Christa!

**A** Ashley Dean 00:49  
Thanks for having us.

**C** Christa Hartsook 00:51  
So today we are talking about armyworms. I thought first we probably should identify what those are and then how to identify them in your field. Erin, do you want to give us some tips and tricks?

**D** Dr. Erin Hodgson 01:03  
Well, in Iowa, there are a number of different armyworm species that are possible. Some of them successfully overwinter in Iowa, and some of them are migratory. But I think the thing that is of most importance today is something that Ashley and I have been dealing with what

for the last three weeks or so and that's fall armyworm. Actually Ashley, could probably provide a better description, but as the common name suggests, they become more troublesome in the fall. So that's why we're dealing with it right now is because they're super active right now. But Ashley, how would you describe them just generally?

A

Ashley Dean 01:41

Fall armyworms as a whole? Well, they get their name because they kind of travel in a pack from one place to another. So they sort of travel you know, as an army. So sometimes people will see something like wiggling across the road and if you get out and look that it's just a bunch of caterpillars, and typically fall armyworm or some other type of armyworm. But fall armyworm is particularly bad, I think in the way that they travel. So if you had to identify a fall armyworm in the field, what you would be looking for, it's a caterpillar so much like you know, Monarch caterpillars is something most people are familiar with. It's kind of a worm, and you would be looking for it's mostly brown, and it's got some stripes on it. Sometimes they're green, especially in the earlier instars, they can be green, but they've got stripes, what you'd look at is their head would have an inverted 'Y' on the on the head capsule. And combined with if you look at the last abdominal segment, there's four dots. They kind of look like bumps or warts that are in the shape of a square. And those two things combined, the inverted 'Y' and the four bumps, that's a fall armyworm.

C

Christa Hartsook 03:01

Okay. Erin, so we're obviously talking about this because we have seen an increase in the number of armyworms, and really more of an outbreak this fall than anything else. Why is that? Why are we seeing so many?

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Dr. Erin Hodgson 03:15

Why this year? It's a good question. Remember in 2019, when we had like that, thistle caterpillar apocalypse and you know, honestly, I don't know if I saw one this summer, it was very strange. So I think we get fall armyworms every year, there are migratory species, as I said, and it really depends on the environment of where they do spend the winter, which is in the southern U.S. So either Texas, Florida, some of the more southeastern states. We heard earlier this year that they had high numbers, so kind of the founding population was really high in the south. That combined with a couple of just really, I don't want to say violent, but just sort of these storms that cause them to move north. So that's how they would normally move north is on high winds, high storms, and then they just kind of fall down in the Midwest. So that's similar to corn earworm, blackworm, and a few other migratory species. So just high overwintering populations with just a series of storms, I think, brought them to Iowa. So we've had, I think, a couple different migratory flights, where we have females moving up over time. So unfortunately, we've seen what I would call mixed ages. So you see small caterpillars, large ones, and then you see sort of gaps of inactivity, and then it starts all over again. So it sort of in this strung out infestation or outbreak, as you said, throughout August and September. Just really high numbers. I've never seen anything like it before. This is my 12th summer here in Iowa. Ashley, can you tell us a little bit about some of the damage that you're seeing? What do these things do out there?

A

Ashley Dean 05:01

Yeah, it can be pretty severe. So mostly what they're doing is they are eating the leaves any leaf tissue. They can also eat some of the stems if they're not maybe too big. It seems like we've heard that there are two strains of fall armyworm. So there's kind of a rice strain and a grass. So anyway, there's one strain that kind of focuses on more corn and sorghum and soybeans. And then the strain that we seem to have is the one that focuses on the small grains or are in forages. So what people are seeing is if they go out to a pasture or a hay field or something, they might see some defoliation happening, they might see some armyworms. Within 24 to 48 hours, that field can be completely gone and all you'll find a stems, so that's what is getting people really concerned is not only the level of feeding that's happening, but also how fast it can happen.

D

Dr. Erin Hodgson 06:05

Yeah, and, and they seem to have a fairly broad host range. So we've been hearing about personal lawns, like turf, commercial athletic fields, golf courses, anywhere that people like to have nice turf. And then just this morning, I had a call about an oat field in western Iowa. So we've had oats, other small grains, alfalfa, pastures, if people have kind of like CRP. As Ashley said, you can go out and check those fields and they look okay, and then 24 hours later, it almost looks like they were damaged by hail or something like that, because like the vegetation is gone very quickly. It's dramatic.

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Christa Hartsook 06:49

It's crazy to think about, you know, you could be planning to cut hay one day and the next day, plans change.

A

Ashley Dean 06:56

Yeah.

D

Dr. Erin Hodgson 06:57

Some people almost said, you know, it kind of looked like the, the alfalfa field was moving. And I think that's just the level of armyworms that were on the ground. As they're trying to find new food, it almost kind of looks like the ground was moving, which I think would be kind of creepy to see in person.

C

Christa Hartsook 07:14

It would be really creepy. Okay, do you know, ladies, I know you both track this and track insect populations and infestations pretty closely. Is it clear throughout Iowa? Can you tell where we are at in terms of an infestation level?

A

Ashley Dean 07:32

Yeah, so we had a call with all the field agronomists within Iowa, there's 11 regions, so they're scattered all around. It seemed like it was pretty much everywhere, so anywhere from you know, the field agronomist in southeast Iowa to the one in northwest Iowa, were all saying that they were getting calls about fall armyworm. Of course it sort of spanned a period of time where those calls were coming in. So it kind of started more in the southern part of the state. That's where we heard it first. But yeah, you can find it all the way through the state now.

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Christa Hartsook 08:08

So in recognizing that it is clear throughout the state, let's talk about control. What are what are options out there?

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Dr. Erin Hodgson 08:18

Well, you did mention cutting hay, and I would call it mechanical control, is an option for some of the crops like if you have alfalfa, or if you have some small grains and the timing is right for either the quality or the quantity of the crop that you're hoping for. In other cases, we've been hearing about armyworms in cover crops where they're simply trying to keep the ground covered to minimize water and soil erosion. So they're not necessarily grazing or harvesting those cover crops and no action may be needed for those situations. But there are some alfalfa stands that needed to be potentially receded, because the stand is so low. That gets a little more complicated because you can't necessarily put new alfalfa into old alfalfa stands, as I'm trying to learn because it's toxic. So you have to consider the timing and maybe what a replant might cost and how effective that might be. In some cases, like alfalfa, if you can cut it, you're taking away that food source and it sort of causes of starvation for that armyworm. Although they're highly mobile, they're going to try to find someplace else to feed and maybe enough to curb that level of injury and that field and so you get some regrowth possible for the next growing season. I don't know, Ashley, what do you think about chemical control for armyworms? Is it reasonable to suggest that?

A

Ashley Dean 09:53

I think in some cases it could be. It's a little bit harder to control fall armyworm larvae when they're larger, which is usually when people are seeing them because that's when they're consuming the most amount of plant tissues. So that's kind of when people start to notice them and it seems like when they're greater than about a half inch in length, they really can't be touched by the insecticide. Even if you use the highest rate, it seems to be really hard to control them. So if you happen to be catching them, when they're really small, and the majority of the larvae are really small, it could potentially work. But then you have some other considerations with that chemical, you'd have to know what's the use of that crop. So if you're using it for grazing or for hay, you have to be aware of pre-harvest intervals, which is just the amount of time between the insecticide spray and then when you can either harvest or graze. So kind of like Erin said, there's just a lot of components to these management decisions,

especially with perennial crops. Yeah, and because I don't have research in this program for for fall armyworm, because it's kind of caught us off guard a bit. I don't have any efficacy, evaluation type, data to support maybe one product works better than another. But I like Ashley, I've been hearing about some really poor knockdown from products that have been used. It's not clear if just the larger caterpillars are able to survive exposure, or if the timing of application isn't ideal, because they tend to hide out during the day. So the timing of when you can actually make contact with the body is also something that I don't understand very well. So you'd want to be spraying something when you can make good contact, because a lot of the products we use, but I think Ashley's point about pre-harvest interval is really important for like alfalfa, or some other pastures where you have animals feeding on that crop, you'd want to be absolutely sure that you're following the label. Remember the labels the law, so we want to be following that to the best that we can.

**C** Christa Hartsook 12:05

Absolutely. So if we're looking at mechanical control options, and we're ready to get out there and knock this hay down so that we can get it made maybe before there is extensive damage. Do armyworms like hay that has already been cut, will they continue to feed on that? Or will they prefer, you know, the active growing season?

**D** Dr. Erin Hodgson 12:28

I think they do prefer the vegetation that's still in the plant. But I have heard about people who are kind of windrowing the alfalfa or other crops, and you have kind of like that green vegetation and piles. If you kind of pick apart those piles, as they're drying up, the armyworms are still actively trying to feed in there. Eventually as it dries up, I think it becomes unpalatable. But yes, I think it would be continued trying to feed on if it's still green and not dry. What do you think, Ashley?

**A** Ashley Dean 13:01

No, I completely agree. I think just based on what we know about insects in general. I mean, if there's green tissue, I think they're gonna feed on it. I've heard a lot of agronomist are suggesting, you know, people mow the hay, if they can get it baled as soon as possible, that's the best thing because they will or the observations seem to be that they're continuing to feed on that kind of windrowed, mowed hay.

**D** Dr. Erin Hodgson 13:27

So bale it as soon as as they're able to. Yeah, I agree. That's probably a really good recommendation.

**C** Christa Hartsook 13:33

Okay. So, you know, you mentioned that insecticides or any possible chemical control is not super effective on the larger caterpillars. Do we know what stage we're at? Are we still at mixed

super effective on the larger caterpillars. Do we know what stage we're at? Are we still at mixed stages? Is this something that's going to be with us clear till frost? What what are we thinking ladies?

D

Dr. Erin Hodgson 13:54

Yeah, I mean, we had a in-person meeting with our team last week, which included all the field agronomists, and they were still talking about it and getting pictures of fields that were very quickly taken out. They go and visit those fields, and they're noticing mixed stages at still at this point. So this is the last week of September. So in my opinion, just the little that I've been trying to gather since you know, this outbreak last month is, I think we'll see caterpillars feeding until it freezes. I mean, it's a nice week this week, but I don't know how long those temperatures will continue. But I think because we still have some small ones, that it's going to take a good freeze to kind of knock them out. They're not very cold-hardy, so they'd be susceptible to those cold temperatures.

A

Ashley Dean 14:41

Yeah, I agree with that. Another point I think is important is we get really excited when you know the temperatures start to drop because there's a good chance that insects aren't going to like those cooler temperatures but also, they develop faster when temperatures are warmer. So if it's cold, but not cold enough to kill them, they're not developing as fast. So they're going to be feeding longer. So if you have the larger larvae, maybe it's not such a big deal. But if you have those smaller larvae, and then temperatures are cold, and then maybe it warms up kind of like we've been having, they're gonna feed for a lot longer than they normally would. So that's also something to keep in mind if people are trying to figure out if they want to manage these things.

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Dr. Erin Hodgson 15:28

Yeah, that's a good point. Temperature plays a big role in insect development. So if we do kind of have an extended fall, the feeding could continue for many weeks into October for sure.

C

Christa Hartsook 15:40

So million dollar question, ladies, are fall armyworms, something you need to plan for on a more regular basis? Or did we just have a perfect storm this year for this kind of an outbreak? Ashley, what do you think?

A

Ashley Dean 15:54

Oh man, that's a really good question. So just from what I know about their life cycle, and where they overwinter, and things, what I would want to say is this might just be a one off kind of situation. I definitely think everyone is probably going to be a little more on edge, and they'll be looking for it more next year. I think this has brought awareness to the fact that we could

have these unexpected pests. But my assumption is maybe that it's going to be more of a one off thing. It might have been a big deal this year, but maybe it won't be as big of a deal next year or maybe we won't see a single armyworm next year, kind of like with the thistle caterpillar problem that we had a couple years ago. But I've heard a lot of people say with more extreme weather events, are we going to have more moths that could potentially be brought up kind of on the storm systems like Erin was describing, and you know, that is the million dollar question. I don't know that we can really predict that, but I think, definitely be aware of it. Now that we know that it's a huge problem and the amount of devastation it can cause, we should be more aware and proactive.

D

Dr. Erin Hodgson 17:02

Yeah, and I also think about our counterparts in the South and the Southeast, talking about more and more problems with fall armyworm is becoming more prevalent pest for them. So what that means to me is fall armyworm plus a couple other caterpillars, like corn earworm and black cutworm because they're migratory, we can expect some of them every year. But it's really hard to predict when and where, and, and how many might land. But as Ashley said, with these more severe weather and a warmer climate, I think we could expect to see more and more of these migratory species becoming a problem in the Midwest. So yeah, I think it did raise awareness, we're going to have to scout from spring until fall, especially on our high value crops. Whether it's small farm or large farm, I think the regular scouting is going to provide you a little bit more flexibility for management, whether that's mechanical control, or cultural control, or maybe even chemical control will provide you some flexibility on how to manage those pests.

C

Christa Hartsook 18:05

Absolutely. Anything else that we didn't talk about that you want to make sure to raise a point on?

D

Dr. Erin Hodgson 18:11

Well, I think probably most of your listeners are subscribed to your electronic newsletter. And I just want to point people over to our newsletter, which is called ICM News. Ashley and I try and put some updates about these sort of migratory pests and also other persistent pests that we see in all kinds of crops and around farms. So I would encourage people to subscribe to ICM news as well, just to keep up to date with some of the pests that are more difficult to predict like fall armyworm is a good example. We'll try and give you a heads up on identification and scouting and management recommendations.

C

Christa Hartsook 18:52

That's a great plug, Erin. Thank you.

A

Ashlev Dean 18:54

Ashley Dean 18:51  
We have to plug where we can right?

D Dr. Erin Hodgson 18:56  
That's right.

C Christa Hartsook 18:57  
Ashley, anything else you want to mention?

A Ashley Dean 19:00  
No, I don't I don't think so. I think we covered all of the the highlights for fall armyworm and kind of the observations around Iowa that we've been seeing and hearing from people around the state.

D Dr. Erin Hodgson 19:13  
Both of us are on Twitter and we got a lot of really great updates from farmers, agronomists, crop consultants, because we can't be everywhere. So we really appreciate the updates. So keep them coming because sometimes they're the first eyes, you know, feet on the ground to help us with confirming some of those migratory species.

C Christa Hartsook 19:35  
Absolutely. Ladies, thanks so much for being on today. We appreciate it.

D Dr. Erin Hodgson 19:39  
Yeah, thanks.

A Ashley Dean 19:39  
Thank you.

S Speaker 3 19:40  
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