New World Screw Worm with Barry Whitworth

[00:00:00]

Dana Zook: Welcome back to the Extension Experience Podcast. I'm Dana Zuck. This morning, Dr. Barry Whitworth is joining me to discuss this little issue we have called the New World Screw Worm. Dr. Whitworth is the Extension Area Food and Animal Quality Health Specialist. He is our licensed veterinarian and, a resource for all county extension educators across the state.

So we do appreciate him and so welcome Barry. Thank you. It's good to be here. I just flipped over my calendar. I'm the old fashioned calendar lady, Barry. It feels like summer today. We're recording June 2nd and.

Summer means external parasites in the livestock industry. And so an sort of unfamiliar external parasite has been dominating the headlines lately, and it's unfamiliar to us. The New World Screw Worm. I don't know. We'll just call it a screw worm. Is that all right, Barry? That sounds, that's sounds good to mes.

We don't need any tongue twisters on a Monday morning. No. So it's been dominating the news. [00:01:00] We really haven't experienced this parasite in a long time. Why don't we set the stage, Barry? Why don't you tell us just a little bit about the new World Screw Worm, kind of the biology of that.

We'll just jump into that first and then we'll give people a timeline of what has happened over the last six months or so.

Dr. Barry Whitworth: Sure. When you hear about screw worms, even when I was in practice, when I started in 1990, screw worms had been eradicated from the United States for several years. When I began my career as a veterinarian, still people would on occasion say, you know, bring me a cow or a sheep or a goat.

Said, ah, it's got screw worms. And I was like, no, it's got maggots. Doesn't have screw worms. Okay, you've got a. Injury here. Some type, something happened or you know, we've done something here. You've got necrotic [00:02:00] tissue and these maggots are feeding on dead tissue. So the difference between. Screwworm and maggots is they feed on live tissue.

That's the big thing about them. The, the female fly will find a wound or something like that on a cow, a tick bite, even, or, or if we do some type of procedure like castration or dehorning or something, they find that wound, they lay their eggs on it, or very near it, eggs hatch fairly quickly.

And they have that the screwworm comes from their appearance. They just screw down into that tissue and start to feed on that live tissue for a few days. Then they'll fall out. They'll burrow into the soil first, pupate and hatch in a few days, and we can start the whole cycle over again.

But the big deal is they feed on [00:03:00] flesh,

Dana Zook: live tissue in live tissue versus, yeah. And how often do you have how often do you have maggots in dead tissue on a living animal? I mean, is that very common?

Dr. Barry Whitworth: No, I wouldn't think. Really not.

Dana Zook: Okay.

Dr. Barry Whitworth: You'll just see it every now and then when I was in practice.

Dana Zook: Okay. All right. , That's kind of why it has caused such an uproar. Because we had gotten rid of it in the United States, and we'll talk about that in here in a minute.

And so here's kind of the timeline of what has happened and why this has come to light. So initially, the first case of the New World screw worm was reported in Mexico in November, and the border was temporarily shut down. Correct. Barry, am I right? That is correct.

Dr. Barry Whitworth: I've kind of followed this for a few years, but if you go back and look. In 2023 and previous years, Panama was probably having about, they'd have about 25 cases a year. And then all of a sudden it [00:04:00] went to like 6,000 cases and you know, and then i's even higher than that.

And then it started showing up in. Nicaragua Costa Rica started having this enormous increases in cases. So it shouldn't have been a big surprise that in November of 2024 that we found a case in Mexico because we knew it was bouncing around down in Central America and the cases were increasing.

That was the big deal. You're starting to see increased numbers of cases. And then of course in November they found the first cases in Mexico, like you said, shut the border down and they reopened it in February. They, they went through a process.

I mean, they did just arbitrarily say, oh, let's reopen It went through a process of what they were going to do as far as what and what restrictions and, and specifications they had to meet to cross the border from Mexico into the United States, and then again in May. [00:05:00] Secretary Rollins closed it again, and I think that's just because of the increased number of cases that continue to occur in Mexico.

Dana Zook: Yeah. So concerned because it's moving north in Mexico and, and they have pretty strict procedures at the border to go through everything, but it just was concerning enough that they shut it down again.

Dr. Barry Whitworth: Because you, you think that, how is it gonna get into the United States?

Well, it's probably, an animal brings it into the United States would be a very, I wouldn't say a con, but it'd be a, a good way that it could get here. And actually the flies could actually just continue to migrate northward. And just get here because of that northward migration. The other thing you have to watch out is weather events.

We do know that , the flies have been dispersed. In different locations or movement because of weather events.

Dana Zook: So I didn't even [00:06:00] think about that. Yeah, yeah, yeah. How fly, how far does it fly? Fly when it's, that's being flown at 70 miles an hour in a storm.

Dr. Barry Whitworth: Exactly. Exactly. Wow. So they can be displaced due to weather events and show up in locations you wouldn't expect.

Dana Zook: Okay. Or

Dr. Barry Whitworth: make a quick, I would say maybe they make a quicker migration than you expect.

Dana Zook: Yeah, I mean, that's a good point. I didn't even think about that. So, so currently, so we talked about where it is in Mexico, like you said, the Caribbean. So it is. Present in Cuba, Jamaica right. And so we see it there.

Right. And as far as the species that it affects, Barry, speak to that because I have had some questions about

Dr. Barry Whitworth: that. Yeah. It's any warm blooded animal we could find it. Obviously you think, I think as far as agriculture's concerned, we think more of our. Cattle, sheep and goats, maybe a horse occasionally, but you think cattle, sheep, and goats is [00:07:00] probably the big ones.

And it, in the wildlife, you don't forget about the wildlife. You know, I've heard it, I've heard some of the older veterinarians and those people that dealt with it before, talk about. Like Whitetailed deer, there's nothing that was more beneficial to whitetailed deer populations than the eradication of Screwworm, you know, saved a lot of baby fawns, from dying.

Dana Zook: So as you say that, I mean, it is really hard on young livestock, so older mature livestock can tolerate it in a way, but yeah.

Dr. Barry Whitworth: Well, and And it's the navels, the open wound. Again, newborns have the navel and that's where they will infect. Yeah. You know? Okay. Again, I've heard nothing costs more cowboys their jobs than the eradication of Screwworm, because when you go back to the past, even at.

It had been that many a few months ago. I went to Chickasha and spoke to a group of cattle and, and one of the [00:08:00] cattle producers said, when I was a kid, dad got me a horse. And I got up every morning and rode and looked for newborn calves and treated every navel we had , for screw worm, prevent the, the flies from, getting on that wound and laying their eggs.

So.

Dana Zook: That is such a good point, Barry. Yeah, I've not even thought about that. Very interesting. . That speaks to just the prevalence of the impact it could have, so it could get into wildlife. We don't necessarily have a control on wildlife. It's No, you know, every young livestock animal, it could affect that.

So, right. It just speaks to the wider impact that it could have in why this is so serious. And so I think that that's important to understand.

Dr. Barry Whitworth: Sure. , And I think about like my great uncle who had. Wasn't a big cattle producer, but he had about 150 cows and this would go way back. And I, and I, and when you discuss with him back then, you know, they talked about they got all their procedures [00:09:00] done early in the spring.

You had to get, if castration is dehorns that, you know, did all that early in the spring because you couldn't, couldn't wait till. Get very far into the summer, or you would have to be worried about screwworm problems, so it all, or you had to wait until after frost, the first frost in the fall, then you could start working your cattle again.

So, yeah.

Dana Zook: A historical perspective.

Dr. Barry Whitworth: Mm-hmm.

Dana Zook: Never would've known that I don't consider myself an extremely young person, but Oh my goodness, so Barry, tell us about some of the controls that they have implemented in the last four decades in Central America to help control the spread.

Dr. Barry Whitworth: Right. Obviously we had insecticides is how we had to control it.

Prevent it, you know, control it, whatever you want to word you wanted to use that ranchers and farmers used when they did any type of procedures, or like I said, when they treated the [00:10:00] naves and newborns, that's what we did. But in the early fifties, they developed a technique and it was originally developed in fruit production.

They call it the sterile insect technique, where they figured out they could take these, male flies, raise 'em a day, day around day six or seven. They would put 'em into a chamber and use radiation. They zapped them, so to speak. And then those males are then sterile. Again, it was, it was originally in fruit flies.

Then they got, well, maybe this would work for screw worm. And so they did it. What you get out of that is you get a a male that was sterile. And it also goes along with the biology of the species because typically females only mate once. So if we throw enough sterile males out there, they mate with the females, then these eggs are not [00:11:00] viable.

When she lays her eggs, they're not going to hatch. So they built facilities, I think originally built a facility in Florida. Then I'm not sure if the other facility was in Texas or where, but they built facilities, United States basically eradicated. I. Fly from the United States. Then they went to Mexico and built a facility and continued to progress down south and they have now currently the, what they call the copeg facility, C-O-P-E-G, is in Panama.

It's a joint venture with the United States and Panama, and they had produced the sterile flies for many years there, and they were released between Panama and Columbia and what I think they called the Darien Gap. And that was to keep these flies from migrating up from South America and pretty well had.

The species eradicated from Panama all the way north, except as you mentioned, some of the Caribbean countries and stuff. They [00:12:00] didn't. But , pretty much all the Central America and Mexico into the United States, we eradicated the species. I think the last known, actual documented case in Oklahoma was in 1976 they said was the last documented case.

So and except for sporadic cases that were actually brought into the United States, either on people or an animal, you know, that visited a country that had it, we didn't have any problems until 2016 when we had a case in the Florida Keys with the key deer. But. Ramped up production of the sterile flies and released them all over Florida and the Florida Keys and that outbreak was stopped in 2017.

Dana Zook: What a success story.

Dr. Barry Whitworth: Yes. I mean, there is no telling. If we added up the number, I've seen different figures and they're all variable, but there's no telling how many. Probably billions of dollars that this program has saved [00:13:00] cattle producers in the United States.

Dana Zook: And we don't even, I mean now we don't even think about it, but Exactly.

Until now. Right? Until now. Up until now. Right. Yeah.

Dr. Barry Whitworth: Sorry. Yeah. Yeah. We never worried about it.

Dana Zook: So, interesting. And you were able to visit that facility on the ag leadership trip Yes. That you took to Panama? Right,

Dr. Barry Whitworth: right. It's a very interesting facility. If you'd like to go and see maggots, it's really cool.

Our tour started in where they mix their feed up and they talked about all the ingredients. There's, there's blood meal in it, there's different milk products, all that, that they feed. And, and they've got these huge cages with all these flies flying around. And they've got this material on the, on the, at the, on the floor of this where they lay their eggs and they slide those eggs out.

They incubate 'em, grow 'em. And then you get to see all the pupils there. And then when they run those pupils through [00:14:00] the irradiation, they hatch and they're sterile and they have to do it all, it's all time because you can only do it at certain times where it's gonna be effective. So it was really, and the people that worked there were excited about what they do.

I mean, they, they really were, I thought, very informative , and just were enthusiastic about what they did so

Dana Zook: well. It makes such an impact.

Dr. Barry Whitworth: Yes.

Dana Zook: I mean, you're not just working with flies, you're really, I mean, you really are doing good work for, right. The world's livestock industry and, and people.

Can affect people, right. If, if you have that issue. Mm-hmm. So that's really cool. There was footage, I will say there's footage on sunup, an old sunup episode. Barry, you did look very interested. You said maybe not everybody was as interested as you were, but

Dr. Barry Whitworth: No, I was probably out of the group. I was probably the.

The one most fascinated with the facilities.

Dana Zook: Yeah. So I mean, it would be an [00:15:00] interesting job to go to work and be around all those flies all day. Yeah. I mean, my son has an insect zoo in our backyard and so I mean, there's some interest out there. Everybody has their own interests

Dr. Barry Whitworth: for sure. They probably would enjoy visiting that facility.

Dana Zook: Yeah. I mean that would be all little boys all, all about know that kind of stuff. Right.

That was very, that's very interesting. I, I guess there, I don't think, as we talked about before we started recording, I don't think there's a cause for, cause for alarm. But I think, I think it warrants a higher level of awareness.

So that being said, what signs would producers look for in livestock?

Dr. Barry Whitworth: Right. And, and as we said, we don't want people to panic or anything. And, and I would pay attention to the news.

First of all, as we talked earlier, watch for Texas. It would be very unusual for a case to show up in Oklahoma before it shows up in Texas. That's what I would be paying attention to. Do we get a case in Texas? We get a case in [00:16:00] Texas. That's when I would be a lot more concerned as far as things that I would look for in my, in the animals.

In general, these are irritating. You know, you've got a, you've got this maggot sitting there chewing on live tissue, so it's painful. These animals are gonna be irritated about it. They may be shaking their head or, you know, something like that. There should be a smell to it.

You can just imagine if these, these screwworm are sitting there chewing on flesh, there's going to begin to be a smell probably gonna ooze from a wound somewhere of some blood tinged fluid. And these animals will just be, just won't be thrifty. That's what you're gonna look for.

You wait too late. Those wounds are gonna expand quite a bit and get much bigger. These animals are gonna get toxic and die from secondary bacteria 'cause you're gonna have invasion of bacteria in there. So they're gonna get secondary bacterial infections and die.

If they're left untreated, they're probably not gonna [00:17:00] survive unless they're treated.

Dana Zook: Right. Right. And, and this comes at a time when we've got all kinds of other parasites, external parasites Sure. We're dealing with and, and so

yeah, just, just being aware of the, of the thing I think is, is important. Like a lot of things in livestock, it's, it's about management and care.

Right. And understanding of, of health.

Dr. Barry Whitworth: Exactly. I mean. In my experience when I was a veterinarian in practice, summertime producers, as when I, and I'm. In general, I'm talking about cattle producers.

Mm-hmm. We get caught up. There's lots of softball and baseball games. Go to family events. We gotta, we gotta take care of our hay issues, those types of things. Cattle kind of get put on the back burner. We look, look at 'em, you know, every two or three days maybe don't pay as close attention to 'em. This is a summer. If you start hearing about cases of screwworm in Texas or something like that, probably better start paying attention to our cattle and observe 'em daily and [00:18:00] look and it, and it's again. Let's not wait and see what happens tomorrow with this, if we've got one that we can tell is not right.

This is probably not the year to say, eh, we'll check her tomorrow and see how she's doing. Okay. Yeah, let's go ahead and get her up and take a look at her.

Dana Zook: Yeah, absolutely. Well, this is excellent information, Barry. I guess I'll tell listeners to just stay tuned and ear to the ground and look for the news and that sort of thing will keep people informed.

So any last words, Barry, before we sign off?

Dr. Barry Whitworth: Oh, no, I, again, I'm, I agree with you, just pay attention to.

To, to the news. I think USDA is putting out a lot of information right now. Dr. Hall is currently forming putting a lot of effort in, into trying to get information out and, and, and they're going, they're forming a plan and what, what producers need to know. So that should be coming shortly.

Dana Zook: Well thank you so much, [00:19:00] listeners for joining in. Thank you Barry for taking the time outta your busy schedule. I will have some resources in the show notes. You can also call your county extension educators if you have more questions. Barry and I are always here to answer questions if need be.

But with that we will catch you next time.