

Audio file

[Ticks with Dr. Cammack FINAL.mp3](#)

Transcript

00:00:10 Dana Zook

Welcome back to the Extension Experience podcast. I'm Dana zook.

00:00:14 Dana Zook

We are focusing on seasonal topics here on the podcast a few weeks ago, we discussed deworming management with Doctor John Gillum at the vet school and this week we are.

00:00:24 Dana Zook

Talking about a couple other pesky parasites external in nature. So we're going to do horn flies and we're going to do ticks in kind of a series of podcasts here, so stay tuned. So this first episode, we're going to talk about ticks. So here to discuss these pesky parasites is doctor Jonathan Kamik.

00:00:44 Dana Zook

He's our new livestock entomologist at Oklahoma State University. Dr. Kamik, welcome.

00:00:50 Dr. Jonathan Cammack

Thanks, Dana.

00:00:51 Dana Zook

Newer listeners to the podcast may not know that I love to hear about people's stories and how they came to Oklahoma State, so doctor Kamik, you're on the hot seat now.

00:01:01 Dana Zook

Why don't you tell us a little bit about what brought you to the great state of Oklahoma? Because you are very new to the state?

00:01:09 Dr. Jonathan Cammack

Yeah, very new. A little more seasons now that we're here at the end of April. But I started my position at the end of January technically as the new livestock entomologist and parasitologist within the Department of Entomology and Plant pathology at OHSU and also have an appointment with extension.

00:01:29 Dr. Jonathan Cammack

In that that same role for parasitology and livestock entomology.

00:01:36 Dr. Jonathan Cammack

My background has been all in entomology in in kind of things that that are rotting and and kind of smell bad and have insects associated with him. And I've got entomology degrees from Texas A&M, Clemson and North Carolina State University and NC State is where I really kind of got thrown into livestock.

00:01:56 Dr. Jonathan Cammack

Symptomology because that's what my PhD advisor did. And so we we we did a lot of projects with pest management and all sorts of of livestock systems, broiler chicken.

00:02:08 Dr. Jonathan Cammack

Turkey, poult, dairy, cattle, swine production. It was a really good experience for that. And then when that was done, I returned to Texas A&M as a postdoc for about 5 years, working in kind of this larger area of decomposition ecology. So again, if you know it smells bad and bacteria and flies are eating it, I was.

00:02:28 Dr. Jonathan Cammack

Kind of working in that system for a number of different.

00:02:31 Dr. Jonathan Cammack

Spent a few years running an insect agriculture based company where we were using an insect. The black Soldier fly, which is also important in a lot of these livestock systems. We were using it to recycle organic waste streams and then turn there by insect protein biomass into treats for backyard chickens. And then I I worked in pesticide.

00:02:51 Dr. Jonathan Cammack

Safety education for most of last year before taking on this position that I have now and it was just really a a great opportunity. This position came open.

00:03:02 Dr. Jonathan Cammack

Last summer, and it was too good of an opportunity to, you know, to to turn down and apply for and and here.

00:03:09 Dr. Jonathan Cammack

I am.

00:03:10 Dana Zook

We are very glad to have you here. We have done. We've done a lot of meetings with Doctor Kamik over the last couple of months. We've really made him jump head first into the extension pool. I think you've said that you've done pigs, cattle, goat.

00:03:26 Dana Zook

All the things in the last couple of months.

00:03:27 Dr. Jonathan Cammack

They have chickens too? Yep.

00:03:29 Dana Zook

Let's jump right in and talk about 6 Doctor Cannon. What to what extent are ticks a problem in cat in cattle and tell us a little bit why? I mean, maybe we can't see them, but they they are really a big problem.

00:03:42 Dr. Jonathan Cammack

Yes, certainly. So there are there. There are some species that are more problematic than others. You just so we can just say that they're all there, that all of them are a problem because, you know, we've got kind of different behaviors and and some of these species do different things and. And as you indicated, they can be, they can be kind of small. They can be hard to see certain specs.

00:04:01 Dr. Jonathan Cammack

These will only attack the animals on certain parts of their bodies, like Gulf Coast ***** we typically find in the ears of cattle, whereas some of the other species you know, American dog tick and Lone Star tick we might find essentially all over the body and can be difficult to see because they're basically, you know, evolve parasites that have evolved to have a very close association with their host.

00:04:23 Dr. Jonathan Cammack

And they're always when they're feeding, they're attached to their hosts. So they want to make sure that they're protecting themselves from either being removed from that host or by some other predator in the environment, like a bird or something. So they're very good at hiding, which can make it difficult to notice them and then therefore be able to treat for them.

00:04:39 Dana Zook

We recently Doctor Kimmick and I presented at a meeting in Pond Creek and our Grant County for Grant County producers, and there was a producer there that said that he had a significant amount of ticks in the ears and so that was very apparent to him. Yeah. And so that's one way. I mean one place where you can really see him, but then otherwise you don't.

00:04:59 Dana Zook

Really notice them as.

00:05:02 Dana Zook

Tell us a little bit about the general life cycle of a tick. Maybe not every specific species, because we'll get into that, but generally, what's the life cycle?

00:05:10 Dana Zook

Of a tick.

00:05:11 Dr. Jonathan Cammack

OK.

00:05:12 Dr. Jonathan Cammack

Also, ticks can basically be broken down into two categories based on kind of their body design, and that's soft ticks versus hard ticks. Most of the ticks that we're dealing with in cattle production are hard ticks, and we can further break them down into how many different species.

00:05:32 Dr. Jonathan Cammack

Or number of.

00:05:34 Dr. Jonathan Cammack

Host animals they feed on throughout their life, and that's either going to be 1-2 or three. Host ticks is relatively easy to remember, and then most of the species that we have of

concern, particularly within livestock, are going to be 3 host ticks. So I'll focus on kind of the general biology of that. So they're going to have 4 developmental stages.

00:05:54 Dr. Jonathan Cammack

Any of that adult tick that's going to be taking the blood meal and producing eggs, that adult female tick is going to lay those eggs and those eggs will then hatch into very, very small what we call larvae. These have six legs.

00:06:09 Dr. Jonathan Cammack

They're sometimes called seed ticks, so if you've ever been unfortunate enough to encounter those, you know what? What kind of a problem those can be? There. I'm going to take a blood meal on a host, usually a smaller host, because they are pretty small pests at this point in their life. They're typically in feed on something small, like a a bird or a rodent. They're going to get a blood meal.

00:06:29 Dr. Jonathan Cammack

Drop off the.

00:06:30 Dr. Jonathan Cammack

Ghost molt into an 8 legged nymph that is then going to seek a new host that's going to be a little bit bigger, so you know maybe think you know Squirrel, Raccoon dog, something like that. That takes going to take its blood meal, drop off the host molt and then we have an adult that is going to start looking for that larger host. You know, typically something in the.

00:06:52 Dr. Jonathan Cammack

The dog, Deer, horse, kettle. Human. You know, size range of of host and this entire process is going to take typically about two years. They're usually going to lay their eggs in the spring.

00:07:04 Dr. Jonathan Cammack

And then you know, they're going to develop very slowly over that time frame. So that's one of the things that can make them challenging to control as they can live for for quite a long time.

00:07:14 Dana Zook

That's surprising. I didn't know that two years.

00:07:18 Dr. Jonathan Cammack

Two years for that development cycle and we can even have adult female ticks that can live for two 3-4 years without even getting a blood meal. So it's pretty crazy how resilient they are and how long they can survive in the environment.

00:07:32 Dana Zook

Wow. So since this is a podcast and not kind of a presentation with pictures, because listeners you are kind of missing out.

00:07:38 Dana Zook

On the picture part.

00:07:39 Dana Zook

But let's talk about some of the specific ticks. Give it a little bit of descriptions and summary of some of the most common species that affect cattle here in Oklahoma. There's. So why don't you start with the Gulf Coast tick?

00:07:51

OK.

00:07:55 Dr. Jonathan Cammack

OK. Yeah. So that one I think could you know potentially be confused with one of the other species that we're probably going to talk about here in a bit just in terms of their colorations.

00:08:07 Dr. Jonathan Cammack

So these are typically going to be a little bit more ornate. Umm is what we would call them their. Their bodies are usually kind of a dark brownish kind of a dark kind of maroonish color, and then they're going to have some sort of patterning across their back. And the patterning is specific to being able to identify a given species. But for the purposes of a podcast, right, you know.

00:08:28 Dr. Jonathan Cammack

Since we can't show pictures along with that, it's not going to, you know, do much other than say they've.

00:08:32 Dr. Jonathan Cammack

Some pretty spots and stripes and stuff that kind of cover their back, but typically with Gulf Coast we can identify them usually by where they're going to be found on the animal. That's

the pest that's typically going to be found in the ears of the cattle that cause that condition known as Gotch ear. And that's just a response by the cattle's ear of having a large number of ticks feeding in this small area.

00:08:53 Dr. Jonathan Cammack

And we start to see some some swelling, some inflammation, some irritation of the animals.

00:08:58 Dr. Jonathan Cammack

Years and then we could also see some some blood loss because of the large amount of ticks that are feeding in that area. And usually we're going to see these kind of about early April to mid June here in Oklahoma. So this is going to be kind of a spring to early summer tick, which is one of the ways that we can also identify it based on that seasonality.

00:09:19 Dana Zook

And so you did mention at the presentation that feral hogs are a big transporter.

00:09:25 Dana Zook

Transported. Probably not the right word, Doctor can make.

00:09:25

Yes.

00:09:27 Dana Zook

Of these texts is that.

00:09:28 Dr. Jonathan Cammack

Yeah. So there's some research that's coming out of South Texas where feral swine are a big problem and it's showing that they're playing a significant role in moving these ticks into the pasture environment. So, you know, we think about that. The different hosts that these ticks are feeding on the.

00:09:45 Dr. Jonathan Cammack

You know, feral hog might be, you know, one of these kind of smaller hosts that, you know, one of the nymphal stages or maybe the adults might be feeding on and they're getting moved around the environment by that, that pest animal. So we'd also want to take into consideration if you do have a feral hog problem, I'm controlling them as well because it can contribute to controlling the tick.

00:10:06 Dr. Jonathan Cammack

Relations and heard.

00:10:07 Dana Zook

Yeah. So that's why I was going to ask. So they can be like an early stage.

00:10:12 Dana Zook

Those for the tick or they could be like the adult the host for an adult. It could be any of those. So.

00:10:19 Dana Zook

That.

00:10:19 Dr. Jonathan Cammack

It could be yes.

00:10:20 Dana Zook

But cattle are typically the hosts they have in the adult stage. Is that OK?

00:10:25 Dr. Jonathan Cammack

Correct. Yeah. That kind of that third host and that three host life cycle is typically where we're going to see the the Gulf Coast tick, usually the the nymphs and the larvae are going to feed on something small like ground nesting birds and things like quail and and small rodents.

00:10:40 Dana Zook

All right, so tell us a little bit about another one of your tick.

00:10:44 Dr. Jonathan Cammack

OK. The next one we can go to would be the the American dog tick. That is another one of these kind of you know more ornate species that's got a lot of coloration on its back into, you know, the kind of untrained eye they're going to look very similar to to the Gulf Coast tick.

00:11:05 Dr. Jonathan Cammack

And their coloration can range quite quite a bit, and they can have white spots on their back or stripes. They could have Gray spots and stripes, or they could even be very silly.

00:11:13 Dr. Jonathan Cammack

Green color so they can be again very ornate and and quite beautiful. You know, if you just look at them for you know what they are, but not for the, you know, the kind of the pest status of things and all the other dirty things and you.

00:11:25 Dr. Jonathan Cammack

Know diseases and stuff that come along with them.

00:11:27 Dana Zook

Beautiful is in the eye of the beholder. OK, so.

00:11:32 Dr. Jonathan Cammack

Yeah. And like Gulf Coast, the American dog tick are they're three host ticks. They're typically going to be feeding on small rodents and and that larval and nymphal stage. And then as their name suggests, the the adults are common pests of dogs and other small animals.

00:11:49 Dr. Jonathan Cammack

And so we do see these on cattle as well, but they're going to be in other parts of the body, so basically everywhere but the year. So you know we would think about looking at the base of the tail between the legs along the neck along the brisket along the jaw line, a lot of places on the body. And that's one of the reason.

00:12:08 Dr. Jonathan Cammack

Things that you know they could be problematic and and and hard to spot is because they can be just about everywhere. So unless you're doing a good, thorough check of the animal all over its.

00:12:17 Dr. Jonathan Cammack

Body you might miss them.

00:12:18 Dana Zook

And they transmit anaplasmosis. Is that correct?

00:12:22 Dr. Jonathan Cammack

They do? Yeah, they are the primary vector of anaplasma marginality in cattle, particularly the males, because they're going to feed on multiple host animals or multiple cows within your herd. So from a biological standpoint, the females need to get basically one really big.

00:12:38 Dr. Jonathan Cammack

That meal, that way they can have the protein necessary to produce their eggs, so they're going to spend a considerable amount of time on a host getting that blood meal, and then they're going to drop off so they can find a place in the environment to lay their eggs. Now the males don't have to invest all that energy in producing those eggs. So they're going to get on an animal, take a blood meal.

00:12:58 Dr. Jonathan Cammack

If they blood feed from an infected animal, they're going to get that, you know, microorganism in their body. And so they're going to take it up, and then they are actually a biological vector of that pathogen. So that anaplasma marginality, pathogen is going to replicate in the salivary glands of that tick, so that when the tick feeds on.

00:13:18 Dr. Jonathan Cammack

The next cow in that herd, it's going to basically transmit that pathogen to that animal.

00:13:23 Dana Zook

I think a lot of people misunderstand how anaplasmosis is transmitted. I mean, I think humans do a little bit of that with needles and stuff like that, but I think a lot of people think it's flies, but it is for slides, you're.

00:13:33

Yes.

00:13:38 Dr. Jonathan Cammack

Yeah, horse flies and deer flies, which are starting to become a problem. I noticed yesterday when I pulled into my driveway. I was like, oh, what are all these cool little things flying around the truck and?

00:13:47 Dr. Jonathan Cammack

As I stopped couple of deer flies landed on the the mirrors and I was like.

00:13:50 Dana Zook

Ohh no really wow.

00:13:52 Dr. Jonathan Cammack

Yeah.

00:13:53 Dr. Jonathan Cammack

They're also, they're mechanical vectors. They're not biological vectors like the ticks are, so their mouth parts just get dirty and infected with with the animal anaplasma kind of like, you know, needles and other instruments would, for you know, whatever vaccines we might be giving them.

00:13:56 Dana Zook

OK, OK.

00:14:08 Dr. Jonathan Cammack

It's essentially the same the mouth parts of a deer fly or horsefly serve in that same capacity.

00:14:13 Dana Zook

OK. OK. That's interesting. Alright. So what about the Lone Star tech? Tell us.

00:14:17 Dr. Jonathan Cammack

Lone Star tick. Yeah, that's probably the one that everybody would be most familiar with. It's one of definitely one of the easiest ones to identify. The females are again have that kind of brownish coloration, but they've got a bright white spot right in the middle of their back. The males don't have that same characteristic coloration. So they're a little bit difficult to ID.

00:14:36 Dr. Jonathan Cammack

Qualify, but the females have, you know, they're they're very easy to identify. And this is going to be one of the most commonly encountered ticks within the state of Oklahoma. They're an important pest of basically everything, all livestock, all wildlife, our pets, and also us. So essentially nobody is going to be safe from them. The Lone stars are typically what we.

00:14:58 Dr. Jonathan Cammack

See when somebody has been unfortunate enough to have gotten into a batch of seed ticks.

00:15:03 Dr. Jonathan Cammack

Because that female is going to lay such a large cluster of eggs in an area, they're all going to hatch about the same time, and those tiny larvae are going to crawl up to the top of a a blade of grass or something and stand there and wait for a host to walk by. And if you just

happen to be unlucky enough to be that host that walks by, they're all gonna latch on to you, and then you're going to have a lot of new friends hanging out, you know, trying to.

00:15:23 Dr. Jonathan Cammack

Trying to take a blood.

00:15:23 Dr. Jonathan Cammack

Meal from you.

00:15:25 Dana Zook

So I guess what what's unique about the tick is and you may have mentioned this, Sergeant hammock, I was distracted by ticks crawling all over me.

00:15:34 Dana Zook

The females actually, do they produce more eggs than the normal tick or at one time? Or is that OK? You're giving me the look like maybe not.

00:15:44 Dr. Jonathan Cammack

Yeah, maybe, maybe not. I mean, they, they do produce a lot of eggs, you know, in in the numbers of, you know, hundreds to thousands. But most of the ticks are gonna kind of fall within that range. But I I think that with the Lone stars, they're just, you know, so problematic is because there are so many of them already present, you know, in in, in most of the.

00:16:02 Dr. Jonathan Cammack

State that it's going to, that we're more likely to encounter them because they are. They are so abundant.

00:16:09 Dana Zook

OK, So what about the Lone Star tick? Doctor kamik? Tell us a little bit about that and how it impacts cattle.

00:16:14 Dr. Jonathan Cammack

Sure. So this is probably the most commonly encountered tick species that we have in the state of Oklahoma. They're an important pest of basically everything, livestock, pets, people, wildlife essentially.

00:16:26 Dr. Jonathan Cammack

Is safe, and if you've ever been unfortunate enough to have gotten into a batch of seed ticks, this is the species that was likely responsible for that, because the females are going to lay a large batch of eggs, you know, somewhere in the environment, those eggs are going to hatch. The larger you're going to crawl up to the top of blades of grass, or you know or something like that. And if you're unfortunate enough to walk by, they're going to latch on to you, and then you're going to.

00:16:47 Dr. Jonathan Cammack

Have seat.

00:16:48 Dr. Jonathan Cammack

It's present, but in terms of cattle production, you know they can be found just about anywhere on the body. So kind of like.

00:16:56 Dr. Jonathan Cammack

The American dog tick that we talked about previously. So we want to check, you know, the neck, the jaw line, brisket, between the legs, and even a pretty low number of these ticks can have a pretty significant impact on weight gain and performance within cattle. So as few as about 10 female Lone Star ticks, blood feeding on.

00:17:14 Dr. Jonathan Cammack

An animal can impact weight gain and performance, so it's, you know, very low number. So something that we've got to be very Cognizant, cognizant of to you know check the animals and and make sure that we're identifying these pests and and removing them or treating them if necessary.

00:17:28 Dana Zook

So it sounds like the Lone Star tick is maybe a little bit more impactful from a weight gain standpoint on cattle. If you have a certain number of ticks.

00:17:34 Dr. Jonathan Cammack

Yes.

00:17:35 Dana Zook

On that animal. So.

00:17:37 Dana Zook

What can producers expect as far as its range across the state of Oklahoma? Does it reach into our Western area?

00:17:44

Yes.

00:17:45 Dr. Jonathan Cammack

You know, typically what we're seeing with ticks is they need a pretty humid area to be able to deliver it. So that's one of the things that's helped driving their expansion westward is the expansion of eastern red cedar as it is moving across the state. It's creating these areas that have a lot higher humidity, that the ticks are then able to survive in that they wouldn't normally be able to survive.

00:18:06 Dr. Jonathan Cammack

So within the state of Oklahoma, we're seeing loans.

00:18:10 Dr. Jonathan Cammack

Pretty much across most of the state, with the exception of the Panhandle and maybe you know a little bit of that kind of being a far western part of the state, whereas with some of the other species, they're a little bit more restricted to the eastern part. But the Lone Star takes distribution is unfortunately expanding both W both westward and northward throughout the country.

00:18:30 Dana Zook

OK. Unfortunate. I guess. All right, So what about this new problem tick, we are hearing about?

00:18:38 Dr. Jonathan Cammack

Yeah. So the hemophilus longicornis, that is the Asian Longhorn tick, that is a a new species that we kind of need to have on our radar. So they were first found.

00:18:50 Dr. Jonathan Cammack

In New Jersey at about 2017, but we now know through some kind of older samples of ticks that have been gone through, you know, a little more recently than than that initial publication that they were, they were likely present on the East Coast as early as 2000.

00:19:06 Dr. Jonathan Cammack

And and they are spreading relatively rapidly across the United States from east to West, and the central portion of Oklahoma is at about kind of the the westernmost portion of their predicted range based on environmental variables. Again, that you don't need for humidity and and moisture in the environment.

00:19:27 Dr. Jonathan Cammack

We currently do not have the species documented in the state of Oklahoma. It's present in Arkansas and Missouri, so very close.

00:19:34 Dr. Jonathan Cammack

But again, they probably don't know state borders and and county lines and things like that. So the probability that they could already be present in that kind of northeastern corner of the state is is quite high. We just haven't found them yet.

00:19:49 Dana Zook

So, I mean, they're on the, it's in the been identified in the county right next to Oklahoma in the Arkansas County.

00:19:55 Dr. Jonathan Cammack

Yes. Yeah, those two county, those two counties, right in the very top northwestern corner of Arkansas.

00:19:59 Dana Zook

So how do you think this tick spread to the US? Was it from trade? I mean, that's got to be how it is.

00:20:07 Dr. Jonathan Cammack

Yeah, right. That's that's really the only reason that something is going to show up, you know, basically across the.

00:20:12 Dr. Jonathan Cammack

Motion.

00:20:13 Dana Zook

I mean, they're not going to want to.

00:20:15 Dana Zook

Bring it here. I'm going to bring.

00:20:15 Dr. Jonathan Cammack

No.

00:20:16 Dana Zook

This unique tick back in the.

00:20:17 Dr. Jonathan Cammack

Yeah, yeah. And it and it didn't slam here, you know, or or or anything like that. It, you know, they it wouldn't have gotten on a, you know, gotten on a the piece of driftwood or something and floated all the way. So yeah. Yeah. It it had to have been some sort of human mediated transport likely in it, you know accidental and inadvertently. But that's how most of the pests.

00:20:18 Dana Zook

Net no, we're not.

00:20:37 Dr. Jonathan Cammack

That get transported around the world.

00:20:41 Dr. Jonathan Cammack

Occur right you typically by accident where they're they have contaminated some goods and it ends up in its, you know new location and.

00:20:49 Dr. Jonathan Cammack

If it's, if it's caught early enough, it doesn't become a problem, or if it's not caught, you know, in the case of a lot of pests like this, you know, we don't know about it until a few years later. And by that point, they're already established.

00:20:59 Dana Zook

What is unique about this tick and why are we so concerned about it in in the cattle industry is this?

00:21:06 Dr. Jonathan Cammack

OK. Yeah, there, there are two reasons. Well, three reasons I guess. So the adults are are very small.

00:21:11 Dr. Jonathan Cammack

The the the nymphs are about the size of a a pin head of like a a stick pin or you know like what you would use for for like you know sewing or crafty type stuff. I mean the females or or maybe two or three times bigger than that. So they're very small in comparison to some of these other ticks that we've talked about so far. But the reason they're most problematic is they reproduce through.

00:21:32 Dr. Jonathan Cammack

A phenomenon known as parthenogenesis, which means that they are able to reproduce asexually. So without the presence of a male, that female is able to lay eggs.

00:21:42 Dr. Jonathan Cammack

That are viable and can hatch without, you know, her mating. And so we can see huge increases in population numbers quite rapidly because of that, because we don't have to have the system where the males and females have to locate each other and she's just going to be able to reproduce after taking that blood meal and getting that protein she needs to produce the eggs.

00:22:02 Dana Zook

I'm glad not a lot of other things can do that. That seems a little scary. So why is it so impactful? Why are we still worried about it in?

00:22:09 Dana Zook

The livestock industry.

00:22:10 Dr. Jonathan Cammack

Yeah, that's and that's kind of the third, you know, point of you know as to why they're problematic and that's their vector potential.

00:22:17 Dr. Jonathan Cammack

Or a particular strain of tylerius ASIS, which is a a pathogen and disease in cattle. So *Tyleria orientalis* is a pathogen that we need to be concerned about, particularly the Ikeda strain which is highly pathogenic to cattle. But you know, no need to sound the alarms yet, right? We don't have the tick in Oklahoma and we don't have the Ikeda.

00:22:39 Dr. Jonathan Cammack

Strain of tyleria orientalis in Oklahoma, so you know we it's, but it's something we need to be on the lookout for definitely.

00:22:46 Dr. Jonathan Cammack

Because, you know, we've got the pest here or at least knocking on the even the door over there, right. You know, kind of the Arkansas misery border. So the pest will be here and so we just need to make sure that we're we're monitoring you know their populations and testing them to make sure that we don't have you know some sort of an uptick in in this title area this.

00:23:06 Dr. Jonathan Cammack

Within cattle herd.

00:23:08 Dana Zook

So several different species to be concerned about. Several reasons, many reasons to think about control this upcoming spring and summer.

00:23:17 Dana Zook

As we round this out, what are what are in your opinion, doctor hammock, what are the best ways to control ticks on cattle?

00:23:26 Dr. Jonathan Cammack

Yeah, that's that's a a hard one, right. I mean, I think if we knew that, we wouldn't have any of these problems. And so I think unfortunately they're not going to go away anytime soon, right? They're they're feeding on a lot of different animals within the environment and they're changing hosts from these different life stages, which can make it difficult to.

00:23:43 Dr. Jonathan Cammack

To treat for them and to you know, try to control them. So we have to kind of think about controlling them in kind of a a very a more broad approach. You know we we talked about Gulf Coast ticks being transported by barrel hogs through the environment. So you want to make sure that you're managing feral swine or feral hogs. If you've got a problem with them.

00:24:04 Dr. Jonathan Cammack

Because that can limit the spread of these ticks. We know that eastern red cedar movement across the state is one of the things that's contributing to the westward spread of a lot of these species. So Cedar management is going to be something that you could implement to help limit.

00:24:19 Dr. Jonathan Cammack

That potential spread in these areas where the ticks can kind of hang out in terms of what we can do for our cattle, you want to make sure that we're putting ear tags in because the ear tags that we're using for fly control are also going to help with Gulf Coast ticks in the ears. If you're using a dewormer for your animals, those compounds are also providing a little bit of control against ticks.

00:24:39 Dr. Jonathan Cammack

If they are blood feeding on the animals and then we want to think about from an environmental perspective the kind of the areas where tip ticks are typically going to be hanging out, so you know more wooded, more humid areas, so you.

00:24:53 Dr. Jonathan Cammack

Limit your animal's access to just, you know, kind of walking around the woods or areas that have a lot of brush. If you have tall grass that's not being grazed for for some reason, you want to make that, make sure you keep that mode and keep it short. That way, it doesn't kind of serve as this area for the ticks to be. I'm kind of hanging out in and and looking for those hosts, so we've got to take a number of different factors.

00:25:15 Dr. Jonathan Cammack

Put that into consideration.

00:25:17 Dana Zook

You mentioned burning is actually helps with tick control. If we're doing that anyway.

00:25:22 Dr. Jonathan Cammack

Yeah. So if you're, if you're participating in that kind of patch burning program where you're burning a smaller portion of your pastures, maybe a third of them every every year rather than burning all of it once every three years. And we see that have huge impacts.

00:25:38 Dr. Jonathan Cammack

On tick populations, about an 80% reduction in tick numbers just from doing patch burning alone.

00:25:43 Dana Zook

Also, a shout out to Laura Goodman, doctor Laura Goodman and her team over in.

00:25:47 Dana Zook

Trim as far as the patch burn, patch burn grazing those types of things. Lots of integrative management. So we call it integrated pest management. Right. Doctor. Doctor hammack. I'm not an entomologist, but I think that's a keyword there. Or key term and rotation. Of course. Of the chemicals. If you're rotating fly.

00:25:57 Dr. Jonathan Cammack

Yep.

00:26:07 Dana Zook

Control. Make sure you're rotating. If it's ticks are a concern, work with your local veterinarian to to address a lot of these things, because they can help you with that. We're partners.

00:26:16 Dana Zook

With.

00:26:17 Dana Zook

With the veterinarians, we can help you with some information. They can help you with the treatment and control.

00:26:22 Dana Zook

So doctor Kamik, I I really appreciate you taking the time today to to talk to us about this very interesting even I learned against something a couple more things about 6:00 today. So I appreciate it.

00:26:34 Dr. Jonathan Cammack

Yep, glad to be here.

00:26:35 Dana Zook

Listeners, if you have any questions about what we've heard on the podcast, check out the show notes. If you're listening in Oklahoma, stop by your local county extension office. We have an office in all 77 counties and we are happy to help you with any questions that you might have with tick control. But all external and internal parasite control. So we have lots of good information on that. So listeners, thanks so much for joining us.

00:26:56 Dana Zook

And have a great week.