

# Episode 11 Mixdown PROOFED

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## SUMMARY KEYWORDS

ants, colonies, bees, beekeepers, beekeeping, honey, hive, queen, carpenter ants, fire ants, top bar hive, princess, beetles, bee, pests, bait, podcast, wisconsin, beehives, problem

## SPEAKERS

Amy, Jamie, Cameron, Honey Bee, Guest, Stump The Chump, Guest 2

### Jamie 00:05

Welcome to Two Bees in a Podcast brought to you by the Honey Bee Research Extension Laboratory at the University of Florida's Institute of Food and Agricultural Sciences. It is our goal to advance the understanding of honey bees and beekeeping, grow the beekeeping community and improve the health of honey bees everywhere. In this podcast, you'll hear research updates, beekeeping management practices discussed and advice on beekeeping from our resident experts, beekeepers, scientists and other program guests. Join us for today's program. And thank you for listening to Two Bees in a Podcast. In this episode of Two Bees in a Podcast, we'll be talking with the American Honey Princess Sydnie Paulsrud. That will be followed by a new series of segments that we have for you entitled Pests in the Apiary. What are the things that attack honey bee colonies from the outside in? And our resident University of Florida expert Dr. Bill Kern will be joining us over the next few series to talk about pests in the apiary and today's podcast specifically, ants, what they do to bees and how to control them. And of course, we will conclude with a question and answer series.

### Amy 01:37

Hey, Jamie?

### Jamie 01:38

Hey, Amy. Yes?

### Amy 01:40

Have you ever wondered what it would be like to be a princess?

### Jamie 01:44

Can't say that I have.

### Amy 01:45

Well, we're about to have someone, our next guest is going to talk about being a princess, an American Honey Princess. Isn't that exciting?

**Jamie 01:53**

I think that is. I think we're gonna learn a lot about the American Beekeeping Federation's honey queen program.

**Amy 01:58**

Absolutely. So today, we have Sydnie Paulsrud. I'm sitting here like, "Is that right? Is that your name? Is that who you are?" She is with the American Beekeeping Federation. She is our 2020 American Honey Princess. She is from Wisconsin, and I'm not even gonna try to say where.

**Jamie 02:15**

You didn't want to say Eau Claire? Clearly, that is Eau Claire.

**Amy 02:21**

Anyway, so we are so happy to have you here today.

**Jamie 02:23**

Yeah, Sydnie, thanks for joining us.

**Guest 02:24**

Thank you for having me.

**Amy 02:25**

So can you tell us a little bit, even though Jamie doesn't want to be a princess, can you tell us a little bit about what a honey queen is or what the honey queen program is?

**Guest 02:33**

Absolutely. So, Queen Mary and I, we traveled the United States this year, and we get to help people learn all about the honey bees. And here I am at the University of Florida and I get to attend a beekeeper's course.

**Jamie 02:47**

Yeah, that's cool. Yeah it's funny, I grew up around agriculture, and so as a young fellow, I would say that there was the Honey Queen, there's the Watermelon Queen, there's the Blueberry Queen. Almost all of agriculture has some type of queen and princess.

**Amy 03:02**

There's a Dairy Queen.

**Jamie 03:07**

Yeah, Amy, that was actually pretty funny.

**Amy 03:09**

Thank you.

**Jamie 03:10**

I don't know how much credit I should give you for that. Do you think the dairy industry calls theirs the Dairy Queen? Why wouldn't they? Alright, so anyway, back to the Honey Queen. And so when I started keeping bees, I would get pamphlets from the American Beekeeping Federation from the Honey Queen or the Honey Princess and it would be a pamphlet that had recipes on how to make certain honey things. You guys still do that?

**Guest 03:30**

Yeah. I actually brought my recipes here.

**Jamie 03:32**

No way.

**Guest 03:33**

Yeah. And I give them out to people. They love them. They go, "Oh, yeah. I love cooking with honey. I love it so much."

**Jamie 03:39**

Well, I'll tell you what, well, instead of going straight to the cooking with honey, let's start at the beginning. So you've briefly described the Honey Queen program. We're gonna get a lot more into that. But before we get there, can you tell us a little bit about yourself and how you specifically got into the Honey Queen program and became the American Honey Princess?

**Guest 03:55**

Yeah. When my family learned about the honey bees, they wanted to raise bees of their own. And they haven't yet, but they wanted to go to the meeting. So they brought me along. And they needed a county queen for where I'm from. So I became the Eau Claire Chippewa County Queen.

**Jamie 04:11**

There you go. Chippewa.

**Amy 04:14**

Eau Claire Chippewa.

**Guest 04:16**

Yeah, we have a lot of weird names in Wisconsin.

**Jamie 04:19**

Including Wisconsin. No, I'm just kidding.

**Guest** 04:22

And then from there, they had me going to different promotional events around Eau Claire. And then they said, "You're allowed to run for Wisconsin Queen," and I thought that'd be super exciting. So I had to write an essay and turn in a form of a little bit about myself, and they had to accept it. Once accepted, I went to their convention and I was crowned the Wisconsin Honey Queen.

**Jamie** 04:44

So the essay, I guess it was on a beekeeping related topic.

**Guest** 04:44

Yes, I actually don't remember exactly.

**Jamie** 04:44

It's okay.

**Guest** 04:44

It was a while ago.

**Jamie** 04:46

Were you the Wisconsin Queen for 2019? Is that how it works?

**Guest** 04:47

Yes.

**Jamie** 04:51

Okay, and so when you are a state queen for a year, the following year at the American Beekeeping Federation, which always has their meeting in January, you can go and compete nationally for Honey Queen or Honey Princess. Correct? All right, so tell us a little bit about the American Beekeeping Federation Honey Queen program. Once you achieved the state level, then you moved on to the nationals. Tell us about that process.

**Guest** 05:17

Yes. So it's similar to the state process, at least for Wisconsin. We had to write an essay and we had to prepare a presentation to give to the audience that we had. We had judges secretly watching us during the convention. They had to see how well we could speak with people, what am I trying to say? Our beekeeping knowledge.

**Jamie** 05:41

Sure, sure, sure.

**Guest** 05:41

They had to check on those things and make sure we knew how to communicate well with other people.

**Jamie 05:45**

Now, does every state in the US participate in the Honey Queen program? Like, were there 50 competitors there? Or were there 10 or 15? I mean, how many individuals were you competing against for this crown?

**Guest 05:55**

Yeah, there were only three of us, unfortunately. Not every state has a Honey Queen program. It can be a costly thing. So our funds all come from donations and auctions and raffles.

**Jamie 06:07**

Yeah, a lot of people get confused about the Honey Queen and Princess program. But the way that I describe it is, really, these individuals, you guys are ambassadors for the beekeeping industry, right? So, essentially, when you're at the American Beekeeping Federation, and you're writing essays -- was there a public speaking, or an examination or a written exam?

**Guest 06:25**

Yeah, we so we did those presentations on pollination at an auxiliary luncheon. And then we also introduced ourselves in the microphone at the start of the convention.

**Amy 06:37**

So it's a different topic as far as your presentation every year, right? Next year's queen and princess will have to talk on something different, not pollination, but pollination was a topic that you guys had to talk about.

**Guest 06:48**

Yes, exactly.

**Jamie 06:49**

So, essentially, you're getting scores, necessarily, in all these categories, and they're trying to figure out who would be the best ambassador for the American honey production industry, right?

**Guest 06:57**

Yes.

**Jamie 06:58**

Okay. And so you're the Honey Princess, and you've been the Honey Princess since January of 2020.

**Guest 07:04**

Yep.

**Jamie 07:04**

All right. And for our listeners out there, we know this is a podcast without a date, this happens to be March.

**Amy 07:09**

What kind of date?

**Jamie 07:11**

We're a dateless podcast, sorry. But it happens to be March 2020 of the same year. So you've been the Honey Princess for two months. Alright, so the American Honey Princess. So, now what?

**Guest 07:22**

Next week, I will be in Texas at the Houston livestock show, or no, not Houston, yeah, it is Houston. Nevermind.

**Jamie 07:30**

That's okay, there are lots of cities in Texas.

**Guest 07:32**

There is. And then I'll be in Connecticut. And that will all be around 9-10 days, I'll be gone.

**Jamie 07:38**

Okay. And so that's just here in the next few weeks. So for the rest of the year, you're going to be traveling around the country to various beekeeping events?

**Guest 07:44**

Yes, sometimes we'll have government visits. We'll try to be at a lot of fairs because of the numbers we have there. And there's a lot of beekeepers that have their own booths there so we try to help with them as much as possible.

**Jamie 07:56**

You're speaking to thousands of people, probably, beekeepers at beekeeping meeting, like the one you're attending right now, but also these fairs. There's probably tons of people. You've got a tiara, right? That's the word? Right? A crown.

**Guest 08:06**

Yes.

**Amy 08:06**

A crown. A tiara. A diamond hat.

**Jamie 08:09**

You've got one of those so that's going to bring people to you so people will ask you questions.

**Guest** 08:12

Yes, it's an attention grabber.

**Jamie** 08:14

My kids, every time they travel with me, they always noticed the Queens and Princesses, especially my little boys.

**Guest** 08:19

Oh, yeah.

**Amy** 08:20

Have you had a lot of people asking you today why you're wearing a crown? A tiara?

**Guest** 08:23

Not today. But people before have said, "Oh, it's the Queen or Princess." Sometimes they ask if there's a king too.

**Amy** 08:31

The drone.

**Guest** 08:32

Yeah.

**Jamie** 08:32

The Burger King.

**Amy** 08:33

He wouldn't do anything but eat.

**Jamie** 08:34

Since you were doing the Dairy Queen.

**Amy** 08:36

That's fair.

**Jamie** 08:39

So you speak at fairs. And in those cases, is it beekeepers who are inviting you to the fairs or the state fairs are just inviting the queens from all the various agricultural commodities?

**Guest** 08:50

Yeah, sometimes it'll be beekeepers, sometimes it'll be fair coordinators because they might have me go on stage and do a speech or cooking demonstration with honey. So it varies.

**Amy 09:00**

I guess that was my next question for you. How do you actually do your education. Is it PowerPoint? Do you stand in front of a group? Do you do hands-on stuff? I mean, and you just said cooking demonstration.

**Guest 09:11**

So I might do recipes from my brochure. I actually will be speaking to a lot of schools this year, and I'll do either a presentation or I have my photo prints of honey bees. There's a pollination one, there's a queen laying eggs one, there's workers. So I just go through those and show people what's going on in them and what their jobs are.

**Jamie 09:34**

We've had other American honey queens and princesses at our various Bee Colleges, University of Florida Bee Colleges over the years. And a few of them tell me that at other events, the beekeepers persuade them to put on bee beards. Have you had to do a bee beard?

**Amy 09:49**

Funny you mentioned that, Jamie.

**Jamie 09:52**

We don't do bee beards at programs that I run because of liability reasons. I'm curious if you had to put on a bee beard.

**Guest 09:58**

I haven't yet, but I'm really looking forward to this year.

**Jamie 10:01**

Really?

**Guest 10:02**

Yes.

**Jamie 10:03**

And you mean that?

**Guest 10:03**

Yes, I do.

**Amy 10:05**

You should tell Jamie about the fun fact that you have regarding bee stings.

**Jamie 10:10**



Have you ever been stung before?

**Guest** 10:11

Oh no, I haven't. Not by a honey bee.

**Amy** 10:14

That's a fun fact. Are you serious?

**Jamie** 10:16

That's a very difficult way to find out that stings hurt.

**Amy** 10:18

That's so funny.

**Guest** 10:19

I will make sure I get stung before I do a bee beard just in case I'm very allergic.

**Jamie** 10:25

So, let's go back to your brochure since I have childhood memories of honey queen brochures.

**Amy** 10:32

That's weird.

**Jamie** 10:33

That's not. That's what I would get in the mail from Danat when I would ask them for information about beekeeping, Amy. So what are some of the recipes that are on your brochure? Like what do you like to put honey into? Cookies or cakes or what?

**Guest** 10:47

Our recipes this year are more savory because a lot of people think well, honey is sweet so you have to put it in sweet recipes. One of my favorites in my brochure is our honey beer bread.

**Amy** 10:59

Honey beer bread?

**Guest** 10:59

Yes.

**Jamie** 11:00

So, you said the word beer.

**Guest** 11:01

Yep.

**Amy** 11:02

I'm like, oh, that sounds interesting.

**Guest** 11:05

Fortunately, the beer does not do anything to you because it's cooked.

**Jamie** 11:09

That's right. You know, alcohol evaporates out of food.

**Amy** 11:12

I'll just have a glass of wine while I'm making the beer bread.

**Jamie** 11:15

The honey beer bread. You left out the most important ingredient. Alright, so the honey beer bread. What else?

**Guest** 11:23

My recipe in there that I introduced are these honey pretzels. So you take pretzels and you make kind of a honey sauce and you bake them.

**Jamie** 11:32

What goes into that sauce in addition to honey?

**Guest** 11:35

I can't think of the ingredients right now.

**Jamie** 11:37

Probably butter. Do you put butter in that honey sauce?

**Guest** 11:40

I don't think so. I know it's spices.

**Amy** 11:43

Are these recipes located online? I mean, for people who aren't coming to your events, are they able to find resources online about the program and maybe some of the recipes that you have?

**Guest** 11:51

Yes. So, the American Beekeeping Federation has a website, ABFnet.org. And it has multiple facts and things you need to know about the Honey Queen program on there, amongst other things. And we have a Facebook page, the American Honey Queen program. And on there, we take photos and we post where we have been and what we do there. And people like to see what we've been doing so they

know that we are getting out there and spreading the word about honey bees and how we can help them.

**Jamie 12:19**

Sure. A lot of times, like I said, our Bee College is early in the year, so for the past five or so years, the Princess or Queen or both have come to our Bee Colleges here at UF. So I've been able to see it kind of firsthand, and you will be spending weeks and weeks and weeks away from home. You'll be, like you said, at fairs, at schools, etc. There'll be dozens upon dozens of events that you guys do. You'll be on the news, you'll be doing podcasts, like Two Bees in a Podcast, you'll be on radio programs, you'll be in the newspapers. I mean, you guys really do get the word out about honey.

**Guest 12:49**

I was in Indiana last week and I had a few interviews, it was two newspapers and then a TV and radio. That's just a great way to reach an audience that may not be at an event that I'm at.

**Jamie 13:01**

Sure. So what's your favorite type of honey?

**Guest 13:03**

My favorite, I really enjoy cranberry blossom.

**Jamie 13:06**

What! That sounds amazing.

**Guest 13:07**

I haven't had too many yet.

**Amy 13:08**

I don't think I've ever had it.

**Guest 13:09**

Yeah. So Wisconsin is the number one producer in cranberries so the honey bees will pollinate those.

**Jamie 13:15**

Yeah, it's interesting because when I always think cranberries, I think the northeast. So, I spoke at the Wisconsin Honey Producers Association in fall of 2019. And when I was there, I was able to see all those cranberry bogs that you guys had. That's pretty neat.

**Guest 13:27**

I have had Tupelo too, and I know Tupelo is popular here.

**Jamie 13:30**

It's the bomb.com.

**Amy 13:31**

That's what they say.

**Jamie 13:34**

Tupelo, for those of you who don't know, it's a shrubby kind of tree type thing. It's a big bush, essentially, that grows in the swamps of the Florida Panhandle and Southeast Georgia. And it's a fantastic honey. Yeah, I mean, you would think that honey doesn't need ambassadors because it's so good. But it really does. Promoting the importance of our industry. So let me ask another question. You travel all over the place, how is this funded? How are you financially able to do this? How's does the Honey Queen program?

**Amy 14:00**

You're paying for all of it right now, Jamie. No, I'm totally kidding.

**Guest 14:04**

So, at the ABF convention, we have multiple auctions. And that's the majority of where we pull our money from, as well as the Honey Queen and Princess will try to raffle or sell raffle tickets for a quilt at the ABF convention. And that's another area we pull a lot of our money from and receive money from. Some people just like to donate. If they think about it, they they like to because they know that we're doing something great and they want to help us continue to do that because it can be costly.

**Jamie 14:33**

So is it common for the people who have invited you in, like who are hosting you, to pay your expenses? Or is there ABF money to send you on flights and things like that?

**Guest 14:42**

It depends on the situation. If I'm staying in a hotel or something, I'll have to buy my own food and I get reimbursed. But usually, hosts will help pay for things because they understand.

**Jamie 14:55**

So you do this for a year and that's a pretty big involvement. So are you able to do other stuff? Are you a college student at the time? What's the restrictions? What's the structure of the program?

**Guest 15:05**

Yeah. So right now, in the spring, it's not as busy as it will be in August and September and October. Right now, I'm not in college. I will be planning on going back to do my general education after this is over. Usually, queens will take off because it's so busy. I have two other jobs right now at home. So I like to keep busy when I'm not doing this.

**Amy 15:27**

You will stay busy.

**Guest** 15:27

Yes.

**Jamie** 15:29

Well, I really appreciate all that you do to be an ambassador for the beekeeping industry. I mean, it's funny, I get the American Bee Journal and Bee Culture and I see both groups say who's going to be speaking where and the Queen and the Princess are always in the catalogs, always, everywhere, all the time. So I really appreciate what you guys do for the beekeeping industry.

**Guest** 15:47

Thank you.

**Amy** 15:48

Yeah, thank you.

**Jamie** 15:49

So guys, that was Sydnie Paulsrud who's the American Beekeeping Federation Honey Princess. She's from Eau Claire, Wisconsin, and she travels all around the United States as an ambassador for the beekeeping industry. Thank you for joining us on Two Bees in a Podcast.

**Guest** 16:04

Thank you for having me.

**Jamie** 16:05

Absolutely.

**Honey Bee** 16:11

Have questions or comments? Don't forget to like and follow us on Facebook, Instagram, and Twitter @UFhoneybeelab.

**Jamie** 16:24

Here at Two Bees in a Podcast, we are very conscious that there are lots of different things that can bother bee hives, bee colonies, we've got all the things that live inside the hive and affect bees directly. These are the pests, the parasites, the pathogens, etc. But there are also things that attack hives from the outside, things that come in from the outside, and we call those apiary pests. And there's a handful of these things. There are ants, Yellowjackets and Hornets, bears, birds, small mammals, cane toads, etc.

**Amy** 16:52

People.

**Jamie** 16:53

People. That's right, Amy. So here at Two Bees in a Podcast, we decided that we're going to run a short series where we discuss these apiary pests one by one and in some detail talking about what they do to hives, how they impact colonies, how we can prevent them, what beekeepers can do to address these issues. One of the leading experts in the state of Florida on this very topic is Dr. Bill Kern. Dr. Bill Kern is an Associate Professor in Entomology from the Entomology and Nematology department. He's stationed at the University of Florida, Fort Lauderdale Research and Education Center. Bill, thanks for joining us today on Two Bees in a Podcast.

**Guest 2** 17:28

Thank you for having me.

**Jamie** 17:29

Well, Bill, the very first apiary pest that we want to discuss in this series of segments that we're going to discuss apiary pests is the ant. For years of me being in Florida, lots of people have emailed me and talked to me about ants and you created what I think is really the best resource on ants and bees, really, in the United States. And I think it's really relevant to beekeepers, really, around the world, beekeepers who are finding themselves address ants. For those of you who are listening today, we're going to have this particular document linked in the show notes and the resources. But Bill, let's talk about ants and the threat that they pose to bees and bee colonies. So let's start kind of thinking about it systematically. There are different groups of ants that do different things to bee colonies, right?

**Guest 2** 18:15

Yes, that's true. There are ants that are predators that actually go after the brood and will pull brood out of a colony to take back and feed to their young. Carpenter ants are a good example of that. Then you have those ants that are the sugar-loving ants, so they're gonna go in to steal honey. Some of the notorious ones worldwide are things like Argentine ants. And then, you also have some of the ones that occasionally just move into colonies and are living underneath your lid or between your lid and your inner cover. They're not really bothering the bees that much. Things like ghost ants, or what people in California call black-headed ants, *Tapinoma melanocephalum*.

**Jamie** 19:13

Easy for you to say.

**Guest 2** 19:18

The one problem you have to watch out with some of these ants is if you go in and you squash them, especially these, what we call, the stinky ants.

**Jamie** 19:30

The poopoo ants?

**Guest 2** 19:31

Well, no, they're called the stinky ants because they have a chemical that they use for defense. Well, that chemical is surprisingly similar to the defensive chemical of honey bees. So you squash a colony of ghost ants, your colony may react as if aggression pheromone has been released.

**Jamie 19:55**

Interesting. I want to talk, Bill, about these three kinds of categories in detail. Let me see if I get them right. You've got the predators, you've got the sugar eaters, and then you've got, essentially, those ants who are using the hive as a place where they can make their own colony. So let's talk about that first category, the predators. So you mentioned, which ants did you mention as a good example of that?

**Guest 2 20:17**

Carpenter ants are probably the best example. They have a worldwide distribution. We have multiple species here in Florida, we have multiple species in North America, and you can go to virtually any place in the world and you will find, if not that same genus of *Camponotus*, you will find some equivalent.

**Jamie 20:41**

They're going into the hive, physically, to steal the brood from that hive. Do they also eat adult bees or attack adult bees?

**Guest 2 20:48**

They can but, usually, they're going to attack a weakened colony. If you have a colony that is weak because of a poor queen, they're going to be more prone to attacking.

**Jamie 20:59**

Now, do fire ants also fall into this category?

**Guest 2 21:02**

Fire ants will go in and they will raid and they will take the young, take the brood because they are actually grease-loving ants or oil-loving ants. So they're actually going after the brood because it's a fan nice, fat, juicy glob of lipids.

**Jamie 21:24**

Well, that's interesting. When I see fire ants as a problem in colonies that I have worked, in my own and in my own research colonies, I see them nesting right at the bottom, at the base of the hive. When bees hit the ground, or when I'm working colony and bees hit the ground, the ants are on them instantly. Even in my own backyard here in Florida, I see that. So, let's think, then, about that second category, the sugar-stealers, right? Why would they pose a threat to bees?

**Guest 2 21:50**

Mostly, it's because they're disturbing the colony. Sometimes, they probably aren't eating enough honey to really cause a problem for the beekeeper. But they're agitating the bees. But then you have something like Argentine ants. When Argentine ants move into a bee colony, they move in, and they'll

have foraging columns in the millions. And they will literally clean out a colony. So it's a serious problem. And we have, in my farm in Georgia, that's my number one pest ant is Argentine ants. In Florida, we don't seem to have as much of a problem because they tend to be spotty. You go to someplace like California, and that is the number one pest ant throughout California. It was introduced every place. There's actually a colony of Argentine ants in southern Europe that extends from the southern coast of Portugal all the way around the coast of Spain, the coast of France, to Northern Italy.

**Jamie** 23:02

That's incredible.

**Guest 2** 23:03

And it's one super colony.

**Jamie** 23:05

Let me ask, then, about this third category. And then I'm gonna turn it over to Amy because I know she's got some questions to you about control. But this third category, the ants that use a beehive as a nest structure, actually, here in my backyard, here in Florida, that's one of the biggest problems I have. I have two types of ants, and even though I'm an entomologist, I'm not an ant-tomologist so I can't recognize any of these.

**Amy** 23:27

Good one, Jamie.

**Jamie** 23:28

But I do have at least two species of ants, one that will live up under my outer cover, between my outer cover and inner cover, and then one that physically tunnels into the walls of my wooden beehive. Those cause a lot of damage because my walls actually degrade over time. So, in this case, it's a structural issue for me. They don't seem to be bothering the bees, they're just bothering the structure of the hive.

**Guest 2** 23:53

In some places, in some parts of the world, carpenter ants can be a serious wood-destroying problem. We also generally use relatively soft woods when we are constructing our woodenware for our beehives. Most carpenter ants do not eat wood. Well, no carpenter ants eat wood. But they will tunnel into the wood to create nest cavities. In Florida, the problem we're having is actually an introduced ant called the compact carpenter ant. That's the one I find damaging my woodenware. Our native carpenter ants, they just get up underneath the cover and are just sort of hanging out. In my top bar hive, they got in and they had a huge colony right on top of my top bars.

**Jamie** 24:54

We've got these three categories. We've talked about them in detail. The predators, the sugar thieves, and the nest inhabitants. Why is it important that a beekeeper know which of those categories of ants their colonies are encountering?



**Guest 2** 25:08

Well, in order to do control, you really want to know what food habits your ants are having. One of the ways we do that is we do what's called a bait test card. It's just a piece of cardstock, like an index card with a little glob of peanut butter that represents the fat-loving ants or the lipid-loving ants.

**Jamie** 25:34

There's fat in peanut butter?

**Guest 2** 25:35

Oh, yeah.

**Jamie** 25:36

You just destroyed my life.

**Guest 2** 25:38

Well, there's a fair amount of protein too, but there's a lot of oil. There's also a lot of sugar in most commercial peanut butter. I use either a little bit of honey or you can use corn syrup to represent the carbohydrate. And then I use a piece of either hot dog or vienna sausage, just a little thin slice, to represent the meat.

**Jamie** 26:03

There's meat in hot dogs?

**Amy** 26:07

Are we talking about dogs or ants?

**Guest 2** 26:09

There's supposed to be a little bit of meat.

**Jamie** 26:11

Okay. All right.

**Guest 2** 26:12

So, and then you see --

**Jamie** 26:13

You're rocking my world right now.

**Guest 2** 26:13

So then you see what the ants are coming to. So if the ants are coming, and they're just going gangbusters on the hotdog, now, we've got a protein-loving, ant. This is one that is likely going to go in and eat your brood.

**Jamie 26:28**

Got ya. That makes sense.

**Amy 26:30**

Okay, so we're talking about how to control it once they're already there. But I really just don't want them there at all. So how do I and other beekeepers prevent this from happening? How do we prevent ants from coming into our colonies and stealing our resources and tunneling through our structures, etc, etc.? One of the best things I like to do, and I do this for all of my hives, is to use ant guards on all my hives. Okay, what is that?

**Guest 2 26:58**

An ant guard is usually some type of mechanical structure that the ants can't get past. And you can either line it with something like axle grease, or some people create moats with soapy water. And then the leg of your hive goes down into that.

**Jamie 27:21**

So, the hives are, essentially, on stands that have legs and the legs themselves are in something or wrapped by something. So the wrap will be something that they cannot cross, or if they're physically sitting in a can, the can may contain soap water, etc. so the ants can't swim across and get to the leg. But in this case, you're gonna have to be aware that you can't let grass grow up and touch the hive or twigs from trees come down and touch. So barriers, you're creating a barrier.

**Guest 2 27:45**

You're creating a barrier. And again, yes, weed control is important in the hive. And personally, I know some people don't like the use of Roundup, I use a flamer. I literally use a flamer to control my weeds.

**Jamie 28:04**

Okay, what is a flamer?

**Guest 2 28:05**

It's essentially a propane burner that you use for weed control. And it works very well. It doesn't seem to bother the bees nearly as much as something like a string trimmer, or a lawnmower that bees absolutely hate because of the frequency of sound it makes. It does produce a little bit of smoke when it's burning the weeds that may help to calm the bees.

**Jamie 28:37**

Really kind of sounds awesome.

**Amy 28:38**

Yeah, it's kind of funny, because when I first started keeping bees, I remember not even thinking about all these different pests in the apiary, and we're like, "We want to be here to save the bees. But get rid of everything else around it." We don't want all these other things coming around.

**Jamie 28:51**

So Bill, you've said two things under prevention. You're going to build a barrier, and also under prevention, you're going to remove structures that might otherwise touch the hive to create a drawbridge for the ants to get to them.

**Amy 29:03**

All right. So, after we've prevented them from coming in, I guess, inevitably they're going to be coming in anyway. How do we control it after that?

**Guest 2 29:11**

If you need to control the ants --

**Amy 29:14**

and when do you need to control the ants?

**Guest 2 29:16**

Oh, that's a good question. Oftentimes, it's a problem that depends on the sensibilities of the individual beekeeper.

**Jamie 29:30**

Really scholarly there, Bill.

**Guest 2 29:32**

So for a long time, I would make sure that my excluders were working, and I was actually happy to have fire ants underneath my hives because all of those small hive beetle larvae that crawled out, well, they never made it into the soil to pupate. The fire ants ate them up.

**Amy 29:32**

How sensitive are you?

**Jamie 29:57**

They also ate the bees, though, that dropped off your frames. Are there different control strategies for the three categories of ants?

**Guest 2 30:04**

Well, it's going to be dependent on the bait. So you figure out what kind of bait they like. So a sugar bait, a lipid bait or a protein bait.

**Amy 30:16**

So you identify what kind of ant you're looking for. Okay.

**Guest 2 30:20**

You don't even have to identify the specific species of ant, but what do they like to eat? So if they are going to a sugar bait, then you can use a sugar and water liquid bait with either borax or boric acid. Or you can use one of the commercial sugar baits. The important thing to realize is your bees will be attracted to those baits too, so you have to make sure that they are inaccessible to the bees. And I usually do that by just simply putting my bait station out, and if I have to, cover it with a box. The ants will crawl underneath the box to get to the bait. The bees won't.

**Jamie** 31:05

So that's the sugar feeders. How about killing those lipid feeders and those meat eaters?

**Guest 2** 31:09

For the lipid feeders, there are certain oil-based baits. For the protein-loving ants, there are actually baits that are primarily protein. Actually, what they tend to use is ground-up silkworm pupi as the protein base. And evidently, ants really like ground-up caterpillars for some reason. That is very attractive to things like fire ants and carpenter ants.

**Jamie** 31:45

I love this premise. Know your enemy. Once you know what your enemy is going to do in this case, know your pest, what they eat, you can develop a bait or purchase a bait that addresses what they like to eat. So at the end of the day, though, Bill, we prevent them, we can control them. I think these are all great recommendations. How likely are these pests actually going to be a problem for most beekeepers? Do you think most beekeepers will encounter an ant problem at some point in their beekeeping tenure?

**Guest 2** 32:15

At some point you're going to run into ants as a problem. It's going to be more likely if your colonies are weak. So one of the most important things is to keep a good strong colony, and they can do a fairly good job of defending themselves from ant pests. Then, the question is, well, how much irritation can you and your bees tolerate?

**Amy** 32:46

Yeah, actually, the first time I ever went into a colony without gloves, I went out there and I'm like, "Okay, I'm not gonna get stung by a bee. I'm not gonna get stung by a bee." I was just using my hands. And I just got stung up by fire ants. It was the worst. And I came back in and I was just, "Well is it biting or singing?" They do both, right?

**Jamie** 33:05

They do both.

**Guest 2** 33:06

They do both.

**Jamie** 33:07

It's funny you mentioned that because when I was having those ants nesting in the walls of my hives, I was getting bitten and stung by those way more than I ever got stung. They were more of a nuisance for me than they were for the bees. So, Dr. Bill Kern, Associate Professor in Entomology from the Entomology and Nematology Department at University of Florida, stationed at the Fort Lauderdale Research and Education Center, thank you for joining us on Two Bees in a Podcast and discussing the apiary pest ants.

**Guest 2** 33:33

Thank you for having me.

**Stump The Chump** 33:42

It's everybody's favorite game show, Stump The Chump.

**Jamie** 33:52

Cameron, it's that time again.

**Cameron** 33:54

It's that time.

**Jamie** 33:54

You know what time it is?

**Cameron** 33:56

Game time.

**Jamie** 33:57

No, Cameron. It's question and answer time where we get to read some of the questions that our listeners have posted either on our online accounts or emailed to us or called and left messages. And then we attempt to answer those questions.

**Cameron** 34:11

Sounds good. We got one here from Twitter. They asked, "How many beehives are needed per acre or per hectare in almond pollination?"

**Jamie** 34:24

So, how many colonies are needed per acre for almond pollination? Well, for insurance purposes, you're usually required to put out at least two colonies per acre, but they usually shoot for having something around two and a half to three colonies per acre.

**Cameron** 34:40

And a follow-up question, "How strong the colonies have to be to be able to go into almond pollination?"

**Jamie** 34:45

That's obviously an important one. If you're using bees to pollinate almonds, you really want to be putting out living colonies, colonies that have living bees and you want to make sure there's enough bees in there to do the job. Right now, they are graded to be at least six to eight full frames of bees. They're assuming that if there's a frame of bees, those bees are covering brood. You actually get bonuses, oftentimes, in your contract for having more than eight frames of bees. And so we could talk about hive structure too. These could be in singles, these could be in single deeps with a medium, these can be in double deeps, etc. But at the end of the day, you really want your colonies to have at least six to eight full frames of bees, they need to be queenright, and of course, if there's bees and a queen, then you've got brood brood is what's creating that demand for pollen and all of that will get the bees out in the field.

**Cameron** 34:57

Great. We got another one from Bespoke Beehives, and they said, "Good morning. I love the podcast."

**Jamie** 35:41

Well, good morning and thank you.

**Cameron** 35:44

"It's wonderful getting info backed by actual science. I've seen a lot of sites pushing top bar hives as being a better choice for bee health. Is there any validity to that?"

**Jamie** 35:54

So, I've been a beekeeper now for 30 years, and I've seen a lot of craze associated with different hive styles. In my opinion, so this is an opinion, not a fact comment, in my opinion. Langstroth-style colonies are the easiest hives to manage. Colonies in those types of hives are the easiest to manage. However, there are top bar hive enthusiasts and long box hive enthusiasts, and they'll often come up with lots and lots and lots of reasons that these are better for bee health. I've just never seen those reasons substantiated. If there's plenty of scientific evidence in the future that suggest keeping, in this case, bees in top bar hives is better for them Varroa-wise or Nosema-wise, then I'll be happy to believe it. But I can't think of any reason a Varroa would be less effective on a bee in a top bar hive than it would be in a Langstroth-style hive. So I think there's little validity. That doesn't mean that beekeepers shouldn't use them. I always tell people, "You're free to use what you want to and enjoy what you use and own what you use." So I'm not knocking top bars from that perspective. I'm just saying, I don't believe there's any validity to them being healthier because of the hive style. But who knows what data will show in the future?

**Cameron** 37:10

One more, we can do. From Escambia County Bees, they asked, "When should a beekeeper be worried about hive beetles?"

**Jamie** 37:16

I get that question all the time. Cameron, people are always saying, "I've got beetles in my colonies, I need to destroy them. What's going on?" But frankly, you need to be more worried about the condition

of your colonies that would allow beetles to be a problem than seeing beetles in your colonies. And so what do I mean by that? You shouldn't allow colonies to be queenless or weak or be overrun by Varroa. These are situations that cause beetles to, for lack of a better term, explode in your colony. So rather than being worried about a specific number of beetles, you need to be worried about the overall health of your colonies and making sure that colonies are set up to be able to battle the beetles themselves. We did a study years ago, colleagues of mine at University of Georgia and Clemson years ago, and we varied beetle populations in colonies and we had colonies with as few as 75 beetles to colonies with upwards of 1200 beetles. And no beetle population allowed us to predict damage. So we would have colonies with 75 beetles collapse and colonies with 1200 beetles be just fine. So it wasn't necessarily a population thing. It was, what else was happening to the colony that allowed any beetle population to overrun that colony? Does that make sense? Do you see what I'm saying? So we're not necessarily managing against a beetle number, we're managing to keep conditions to where beetles can't explode in that colony. All right, listeners, thank you so much for submitting those questions. We love being able to answer the questions that you ask. Continue going on our social media accounts or visiting our website ,any way that you want to get a question to us. Maybe it will be answered on Two Bees in a Podcast.

**Amy 39:03**

We'd like to give an extra special thank you to the following: to our editors Shelby Hal and Bailey Carol, and to our audio engineer James Weaver. Without their hard work, Two Bees in a Podcast would not be possible. So thank you.

**Jamie 39:19**

For more information and additional resources for today's episode, don't forget to visit the UF/IFAS Honey Bee Research Extension Laboratory's website [ufhoneybee.com](http://ufhoneybee.com) Do you have questions you want answered on air? If so, email them to [honeybee@ifas.ufl.edu](mailto:honeybee@ifas.ufl.edu) or message us on Twitter, Instagram or Facebook @UFhoneybeelab. While there don't forget to follow us. Thank you for listening to Two Bees in a Podcast!