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SPEAKERS

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

Jamie 00:05

Welcome to Two Bees in a Podcast brought to you by the Honey Bee Research and 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 today's episode of Two Bees in a Podcast, we are joined by Dr. Jay Evans, who is a United States Department of Agriculture scientist at the bee research laboratory in Beltsville, Maryland. He is joining us to talk about USDA bee research laboratories in general, what they do for beekeepers, and how they address beekeeper needs. We will follow that with an interview of Miss Jennifer Holmes, who is the president of the Florida State Beekeepers Association. We'll be interviewing Jennifer about what State Beekeepers associations do on behalf of their beekeepers. And of course, we'll finish today's episode of Two Bees in a Podcast with a question and answer series: Stump The Chump. So listener, thank you for joining us on Two Bees in a Podcast. Obviously, this is one of the ways that we try to get information to you through our podcast. But we're really just one lab or one lab out of a lot of labs globally, trying to address bee health, bee related issues and help beekeepers. In the United States, we have a set of labs that are managed at the federal level. These are our United States Department of Agriculture bee research laboratories. So there's a handful of those scattered around the country. I know there's even some new ones that will be popping up soon or that have popped up recently. And in order to tell you about those labs, we brought in one of the research leaders from one of those USDA labs and that research leader is Dr. Jay Evans. He is based at the USDA ARS Bee Research Laboratory in Beltsville, Maryland. So Jay, thank you for joining us on Two Bees in a Podcast.

Guest 02:18

Thank you. I'm glad to be here.

Jamie 02:20

So Jay, we're bringing you in to talk about what the USDA labs are in general, and then we'll kind of hone in specifically on the lab that you are the Research Leader for, up in Beltsville. So can you tell us a little bit about your position specifically at the USDA? And then maybe we'll let Amy ask you some specific questions about bee research labs at the USDA level in general. So let's just start with you, who you are, the one you work at, and a little bit about what you do at the USDA.

Guest 02:50

Sure. Yeah, so I'm a scientist with the USDA ARS Bee Research Laboratory in Beltsville, Maryland. I've been a research entomologist there for 21 years, the last six of which I've been the research leader of our group of scientists there, and this involves, as you might expect, managing budgets and such, and also advocating and working to develop opportunities for the scientists in the laboratory. And of course, the latter is the part of the job that's the most fun and rewarding. We are a group devoted to honey bee research and to applied research primarily on honey bees and the threats that they might face.

Amy 03:41

Awesome. Can you tell me what ARS stands for?

Guest 03:44

Oh, I'm sorry. Yes, it's agricultural research service. And it's the branch of USDA that's devoted - it's an intramural branch devoted to research on any number of crop issues, animal, livestock, even human nutrition are all encompassed by ARS.

Amy 04:07

Oh, very cool. Can you tell us about some of the USDA bee research labs in the nation? How many are there? And is it typical to have a Research Leader with a certain amount of scientists that work under them?

Guest 04:21

Sure, yeah. As being part of one of several I don't have tremendous insights across the breadth of them other than to say we do have four historical honey bee research laboratories, and there's ours in Beltsville, there's the Baton Rouge Honey Bee Genetics and Breeding Laboratory as you might imagine, their strength and their trade is on making better bees from Russian bees to Varroa sensitive hygiene and other traits. The new poll line lineage of bees, for example, so they do research on genetic traits of honey bees with the hope of developing and partnering with the industry to bring out better genetics in bees. There's also the Carl Hayden Bee Research Center in Tucson, Arizona, and they have largely had a focus on forage and nutrition. So it's landscape-level effects. They're doing really neat work on that, both very close in Arizona, but also in California, towards the almond industry and in the Dakotas in the northern Great Plains, where there's certainly a lot of beekeeping and impact with bees. And there is also a USDA ARS bee lab in Logan, Utah. And that has been the lab historically focused on the hundreds of other bee species, especially the ones that are most important for agriculture, like bumble bees, Mason bees, and leafcutter bees. So those are the four current brick-and-mortar, long-standing bee labs for USDA, but there are some great efforts and scientists in places like



Davis, California, Stoneville, Mississippi and Fargo, who are also in that fold and doing bee research. And we all get together at meetings, certainly electronically, especially this spring and go over research. We're under a program where we try to coordinate research, not overlap so much with each other, so it's a fairly diverse set of research programs and group of scientists who are in different parts of the country.

Jamie 06:46

So Jay, from the outside looking in, since I work for a university, it looks like to us that the USDA labs essentially have specialties, you'd mentioned that already the, for example, the Baton Rouge lab, they focus on breeding and genetics. And you said the one out in Tucson is more nutrition and forage, etc. So it looks like that's what happens. Maybe they all have different specialties, but also the structure of a lab is there usually one kind of Research Leader, right? And then there'll be multiple scientists, usually what, three to five at that lab, and each of those doing their own kind of branch of whatever the general lab focuses on, just wanting to talk a little bit about the structure of a board.

Guest 07:29

That's right, yeah, and maybe because we are a government agency or government group unit, there is a structure. But we also blend together in our interests, but the Beltsville laboratory has been historically and is focused on disease and disease management issues. So everything from American foulbrood to viruses and fungal pathogens and pathogens now have adult bees, so kind of the span of bad actors that can impact honey bees. We have six scientists, five of us running field or lab projects on everything from physiology and effects of chemicals, with Dr. Stephen Cook, who's also picked up I think, in collaboration with you in Gainesville, a big Varroa mite program, right? And Dr. Miguel Corona who's been looking at interactions of nutrition and disease lately in the physiology of bees, how their long-term impacts of having a bad food day might be. Dr. Judy Chen is a scientist working very closely with me we're both really keen on diseases and also how bees fend off those diseases. She's an expert in viruses and nosema and has long standing work in that realm. We have a new research scientist, Dr. Mohamed Alburaki and he aspires to blend some of our projects together at the colony level. So looking at both chemical stress and other stresses on bees at colonies at the colony level. And he will use some of these sort of newer technologies such as RFID tags on bees to kind of see what happens in the big picture as they go out and about in their lives. And we're also joined by Dr. Anna Childers, who is a computational biologist. And she, again, bridges different projects and has some larger scale projects with genomics for ARS as a whole, sequencing insect genomes. So that's the group, those are the ones sitting, doing research but also planning for the year, and then we have eight other full time employees supporting those efforts and really driving many of the experiments themselves. And they're a great set of people. We're full up, as it were, for employees, and we couldn't be happier with the staff there. And then I think as with your unit, the honey bee research and extension lab, we also benefit from visitors. So our population is almost always double those 14 in terms of scientists at all stages in their careers, students, volunteers, and such. And then in the summer, we pick up a few more to help with field projects. So at the max, we're about 30 people in the building.

Amy 10:46

That's amazing. It's always so fun to hear about different specialties, and of course, all the research that's going on. And I know I've said it before in past podcasts, but it's just, there's so much to be done. You might agree with it, you might disagree with it. But there's just so much research that can be done, which is really awesome. So you've just told us about your research projects. And so I guess I have a question about the research that you all do. You said you had some field research and some lab research. Do you guys have an apiary? Do you normally collaborate with beekeepers? Or how does that research look like as far as field research goes?

Guest 11:22

Yeah, great question. So we do have, we're actually lucky enough to be on a 4000 acre campus that's historically been there for USDA. And we have 10 to 12 apiaries scattered across campus, for different projects, some of which are aspiring to be more isolated than others, and some that are right outside the building. Some of the colonies that I'll tap into for samples for testing disease are a walk outside the back door of the building, next to our pollinator garden. In the summer, we get up to nearly 300 colonies, and then we pare back quite a bit in the winter. But always a bit more than 100, maybe 140 or so colonies. Most of the field projects are being run by doctors Cook and Corona. And I think Mohamed will also kick in, of course with those. But, Judy and I kind of aspire to that too. So we'll have our own pet apiaries with between 12 to 20 colonies, and we'll mess around with those as well to test some of them, mainly following disease loads and occasionally doing a trial medicine for those colonies. But yeah, so that's the lay of the land for the colonies. And then, of course, we have indoor laboratories where we do genetics work and chemistries and things like that. And the hope is that we're looking at management tools. So we'll try, as I mentioned, Dr. Cook is hot on the trail with collaborators to get the next generation of Varroacides. Judy and I are really keen to find an antiviral treatment of some sort. So we've tried natural products, mushroom extracts, RNA interference, we're very broad in terms of what we will prospect on for that. And we've worked with other researchers, of course, in that because ideas come from all over, and just trying to sort out with experimentation, bees in cups quite often, or even injected bees, just to see if we can get some leads on that window. Because we don't really have anything to offer beekeepers for things like viruses currently.

Jamie 13:52

So Jay, one of the things that's always amazing to me is when I wear my scientist hat, and I show up at meetings, is I often see USDA scientists. You mentioned that your lab, in your area there are six, and then you mentioned these other labs, and I'm assuming there's three to five people at each of those. So there's what 20 to 25 USDA scientists in the US working on bees?

Guest 14:14

I'd say so yeah.

Jamie 14:16

So that's a lot of diversity. And it's, as you've mentioned, it's federally funded. And you've also mentioned the application to beekeepers. So I'm just curious, how do you set your priorities to address beekeeper needs? I struggle with that here at the University of Florida sometimes I just wonder on the

national level, the federal level, where you're working across states, as it were, how do you set your priorities to make sure you're addressing those needs that the beekeepers feel they have?

Guest 14:48

Yeah, that's a great question. And it's as in your laboratory, it's often on our minds to to get feedback from beekeepers to find out if there's a new scourge for beekeeping and from, I'm not gonna say it, but the murder hornet on down.

Amy 15:05

You had to say it Jay, murder hornet. Come on.

Jamie 15:08

Well, since he said it, our podcast is now going to get 50,000 more listens.

Guest 15:14

I did hear your fantastic interview with the great scientists from Washington state. So yeah, that's a topic that's been, let's say discussed. But no, we aren't working directly on those as a research topic other than maybe some genetics with Anna's work.

Amy 15:31

Oh, dang, I was gonna send all of our callers over to you.

Guest 15:35

Yeah, we finally at least learned how to identify it. So that's a plus. There is a voucher for the Washington State one as a plug for USDA that's being held by the Beltsville, this systematic entomology laboratory. So the one wasp collected last December is in their possession. And it's physically in the Smithsonian, the National Natural History Museum, but it's minus one leg, sadly, which was taken for its genetic identification, it will be.

Jamie 16:10

Have you seen it yet?

Guest 16:13

I haven't seen the physical one. I have pictures of it.

Jamie 16:16

That's a bummer because I was about to ask did it kill you. But nevertheless, the point that I was trying to make and I think that you're really illustrating well is that USDA is a tremendous resource for beekeepers. And I love the fact that there's so much diversity. I love the fact that there's a breeding and genetics lab that's cranking out new stocks. I love the fact that there's forage and nutrition, they all do other things as well. But it's cranking out new information about nutrition. And historically, as you mentioned, the Beltsville lab's been the disease and pest lab, and so much has come out. You can



even mention that you guys offer diagnostic services. Beekeepers can send samples to you to figure out what it is they have in their colonies.

Guest 16:57

Oh, yes. And I was remiss in that. I'm so sorry. Yes, we have, in fact, our birth was from a service and effort in DC at the Winton building, perched on the Smithsonian Mall or the Capitol Mall, doing diagnostics, doing disease, starting with American foulbrood, which was formally named by USDA researcher 114 years ago. So yeah, that diagnostic service has evolved over 100 years and is a big part of our contact with beekeepers, and especially the state inspectors. So we can offer free diagnostics, especially for brood disease, which is again, the root of this service. And we provide those to any number of folks from Hobby beekeepers to commercial beekeepers. And of course, the inspectors and the goal, reportable goal, or the actionable goal is to try to limit American foulbrood. But we get EFB samples in droves these days. And we also do a service to check mite counts and noseema counts for those beekeepers who just maybe want a second opinion from their own abilities. So the diagnostic service is a great way- and we get kind of a beat on what's happening in different states that way, in terms of brood disease, there's been upticks of EFB in different places. So we get that as a great way to do different experiments later in our laboratories. If we find out EFB is a problem, we might pick up some research in that direction, for example. The truth is also with our US university colleagues. There are so many questions to tackle with bees, and there are so many different ways and different expertise of the scientists. And you have an army looking at it, and you all want to do what you're good at and try to benefit from the manyfold more research that's in different institutions. So there's a lot of coordination and discussion of research at meetings and online to help us shape what would be most impactful.

Jamie 19:29

That's just exciting. I look out and see, it seems to me that the USDA is even bulking up some. They're adding positions, adding places, and I just think that there's even more great things that's going to come out of the USDA research labs in the future. I'm excited to watch it. I'm glad it's happening now. I think it's going to be a great benefit to beekeepers, really not just in the US but outside of the US as well. So Jay, I really thank you so much for joining us today to talk about all that the USDA offers and what they do on behalf of bees and bee health.

Guest 20:00

Thank you very much Jamie and Amy. It's been super talking to both of you and I truly enjoy your podcast and also, of course, the huge efforts you're making for bee health as well.

Jamie 20:13

You've been listening to Dr. Jay Evans. He's the Research Leader at the USDA ARS Bee Research Laboratory stationed in Beltsville, Maryland. All of these labs will have links to the labs in our show notes so that you can go check out their website, see what it is they do, see the scientists who are there. I regularly use the scientists as resources for questions that I have. And I think you guys will find them useful as well. So make sure you visit the show notes and take a look at what the USDA research labs do for you.

Honey Bee 20:45

For more information about this podcast, check out our website at UFhoneybee.com.

Jamie 20:56

One of the things that you'll find out when you get into beekeeping is that there are bee clubs absolutely everywhere. Sometimes people ask me, Amy, when I'm traveling, what are you traveling for? I'm like, well, I'm gonna go give a talk about bees. They're like, well, who are you going to give a talk about bees? Just beekeepers. They're like, there are beekeeper clubs? When I was hired in Florida in 2006. I think there were maybe a dozen or two dozen beekeeping associations in the state of Florida but now there are 40 plus and with these bee loss issues, clubs have exploded. There are local bee clubs popping up everywhere, including in big cities. So there are local clubs, there are state clubs, regional clubs and national clubs and even international beekeeping organization. So listeners, the reason I'm introducing this topic this way is because you likely have a bee club near you and I want to spend some time talking about the value of beekeeping clubs, beekeeping organizations, what they mean for you as beekeepers, how you can get involved. And we are blessed today to have a great guest Jennifer Holmes, who's the president of the Florida State Beekeepers Association. She's also the owner and proprietor of the Hani Honey company.

Amy 22:10

Huh-NIE? It's HAH-ni!

Jamie 22:12

I know, I was gonna mess it up anyway, but she's also the UF IFAS senior honey judge and the reason we're using Jennifer is because our state association here in Florida is a really good model for other state associations. It's been very productive. Jennifer, I'm sorry, even though we went over it pre-show, I'm sorry.

Amy 22:30

We even practiced it!

Jamie 22:32

I'm messing up Hani Honey company so you can go ahead and chastise me as you get welcomed onto the microphone.

Guest 2 22:38

Jamie, you're not alone. It happens all the time. We just chuckle about it. But thank you.

Jamie 22:43

The shameful thing is I prepared. And then I was like, Oh my gosh, what was the word? I'm about to introduce her honey company but then it was too late. It was all up. But it makes sense. H A N I so it should be honey. All right.

Guest 2 22:54

It's all good.

Jamie 22:56

So Jennifer, we have a lot to talk to you about today. You're the president of the Florida State Beekeepers Association. You wear so many other hats. You do beekeeping, commercial beekeeping. You're involved in so many ways, but we really have you here today to talk to you about the value of state organizations or for that matter, any beekeeping organization. But before we get started, our listeners are gonna want to know how did you get into beekeeping in the first place?

Guest 2 23:19

I got into beekeeping, Jamie and Amy, has anybody else besides me said that rhymes? I can't be -

Jamie 23:24

Yes, Jamie, Amy, Amy Jamie,

Amy 23:27

And then we call we call Humberto "Schmamy," so.

Jamie 23:30

Anytime we have another another host we try to make them have a rhyming name and we are so fortunate to have a rhyming name.

Guest 2 23:38

I got into beekeeping just out of interest. Literally, I had always been into nature, plants, food, gosh, I love to eat. I get excited about all our local farmers [markets]. Oh my gosh. So we live, I think in such a really unique area, than other parts of the rest of the US, Florida. And it's not where I'm from. I moved here about 25 years ago. And it took me a little while to get used to the differences in weather patterns. And it's summer here in spring, and in winter, it's spring and we've got a lot of interesting dynamics. Luckily, when I started beekeeping, it was about 2012, the number of beekeepers in the state was still pretty low. I want to say like seven or 800 maybe? Does that sound about right, Jamie, like 2012?

Jamie 24:30

We were growing a little bit at that [time], when I got hired in 2006 we were just under 1000. I think it's kind of been growing and then about 12/13 is when it just really exponentially started going up.

Guest 2 24:40

Well, the gentleman I worked with had been doing it for about 40 years. So he just had a couple hundred hives and made a voluminous amount of honey and really had it dialed in it was all done by hand, no mechanization. So imagine 30 or 40 acres on the coast of Florida in southeast Florida interacting with nature and getting exposed to bees, I was instantly hooked, it was just magical. I got to do all the things most people need help with, that don't want to do, cleaning frames, stacking boxes, storage, feeding bees, and eventually bottling honey. But I got that little taste of beekeeping here and

there and it really just, I got just immediately hooked. So I would raise five or 10 hives, five or 10 of them would die, and then I'd start all over again. And that happened for a couple years. And then my husband joined in, he was just as interested. But being the gentleman he is he had gotten me my first lesson with a commercial beekeeper and took a side position. And then he loved it too. And so the two of us were not beekeepers when we met. But we both started beekeeping. And after about seven years, we were able to work part time or full time jobs and eventually quit and started our Hani Honey Company. And that's been about five years. So five years in. And as a president of a State Beekeepers Association. I've seen such changes in such a short period of time, haven't you guys? I mean, one of the things that I find so interesting about having a state organization and by the way, we're 100 years old this year, Florida State Beekeepers Association. I would have liked to have seen it in 1920.

Amy 26:27

Yeah, definitely. Well, Jennifer, we are so grateful and fortunate to have you in the state of Florida and being a huge leader for all these beekeepers with the state. And I know that you're involved in so many different projects. And I assume that you work with new beekeepers or people who are just interested in keeping bees because you're just so good at outreach and education. So how would you describe the State Beekeepers Association to someone that you just met?

Guest 2 26:57

I would describe it as an organization that provides education. So yeah, absolutely, we interact with new beekeepers all the time, but also a filter for all the different subjects and topics that come up in beekeeping, that need attention and are difficult to mitigate or come up with solutions for, and support other associations, agencies and organizations. You know, Florida Department of Agriculture, yourself, the University of Florida, I mean, all these things. Amy, you've seen a lot of them since you came on board and oh my gosh, my hat is off to you. I mean, just this week, the Asian Hornet. Holy mackerel.

Amy 27:40

We'll talk about that in a different segment.

Guest 2 27:43

Oh my gosh, we're just constantly having to face phone calls about different things, I'd say some of our number one things that we have to be a resource for is bee removal. So we get a lot of consumers and citizens that are concerned about having bees on their property, they don't know exactly what to do. The second thing is we get a lot of people calling because they're concerned about what's happening to honey bees. And they don't know what to do. And any of these topics come up and are difficult for our associations and agencies and other nonprofits to mitigate, we sort of as a state association, will take that task on. So we have a varied amount of officers that have different, say backgrounds, most of them are beekeepers, and again, most of them have been involved in their local association. So I'd say if I was to put it in context, like I got involved as a beekeeper, the story I told in the beginning, and then I started going to my local meeting. And then I discovered the University of Florida IFAS and Honey Bee Research and Extension Lab and you guys with the master beekeeper program and bee college, and I dove right and I mean, that was a definite huge door to education and getting involved. And then I started learning about the state association. And I got involved and I felt like I had the opportunity to do

things that would be helpful. Jamie, you might mention some of the things that you've seen the state of state association do in your tenure and over the years that you've been talking out there, but I've had a blast the last few years going to the local association meetings, and literally meeting all the beekeepers across the state and being able to explain what the Association does. And I still feel like there's a ton of work to do. But behind the scenes, our state association is constantly having meetings, say, monthly and we're liaising with our regional association. So Eastern Apiculture Society, American Beekeeping Federation, we usually have a representative from the state among those associations. We usually have somebody sitting on the honey bee technical counsel, our state's lucky enough to have a honey bee technical counsel. If your state doesn't have one, you should reach out to us and ask us about it. And that's something that may benefit you. So we get involved in national and international stuff, too, which is kind of fun.

Jamie 30:08

Yeah, I think, Jennifer, when I think about associations, I usually work my way from the bottom up. These local associations, these county associations or regions within a state, they are really good opportunities for education, providing resources to beekeepers, and networking for beekeepers. And occasionally, you'll see these local associations take on a local issue of political interest to beekeepers. But by the time you're at the state level, like you are the president of Florida State Beekeepers Association, you're tackling issues that beekeepers from all walks of life are having, in Florida alone, and a lot of other states and other countries around the world can say the same thing. There's this huge span of beekeepers, from hobbyists with one colony to commercial beekeeper with tens of thousands, and this state association has to represent all those beekeepers, and all of those interests. And then you'll have some people say, well, why would I want to join a state association? What value would it give to me? So my question to you then Jennifer, is why should beekeepers join any association for that matter, but specifically state or national associations?

Guest 2 31:20

I think one of the best reasons would be because the organization has the opportunity to refine that networking and really filter through all the data. Like, for example, our Association recently formed a few new committees. Outreach is one of them. And we're lucky enough to have some amazing beekeepers on these committees. We realize that with the changing world of beekeeping, and all the different crises and issues we're facing, topics, we had to come up with a little bit of a different approach. Two of our other committees right now that I think any new member would feel comfortable supporting: our commercial beekeeping committee, and our small scale beekeeping committee. And they're starting to reach out to beekeepers, not only in Florida, but outside and finding out what the major issues they're facing are. And we're coming up with ways to tackle those. And again, liaising directly with other organizations and agencies that have really good structure and ability to try to work on that. We also reach out to our local representative, state representatives, legislatively. It's not my forte, I'll be the first to admit that when I joined the association as a leader, I had to tell them, Look, we really need to have some people that are skilled here to help us facilitate these things. And so I've learned a ton about what needs to be done. And I've learned it's a lot of work. That's what I'll say. Year after year, our association is going to bat to try to create an identity for beekeepers that, I don't know how you guys feel, but I'm still finding that through the Department of Agriculture in our state, we don't

really have the identity that I'd like to see us have. I've traveled to a couple other states in the last year, Colorado being one of them. And it was an event that wasn't primarily for beekeeping, but they really embraced beekeeping. The organization is Slow Food USA. And they have this really cool event in Denver every year called Slow Food nations. And I had the opportunity to listen to their Department of Agriculture leader speak and I was blown away at how much embracing and legislative support there was for beekeeping there, that I said this is one way we could grow as an organization is to liaise and sort of see success somewhere else, and then bring it home and try to emulate it here. So I hope that helps people understand what we're really ultimately doing behind the scenes and how much we value the membership and it can really support us because we're all volunteers so far in this organization, basically.

Jamie 34:02

So you know, I do also travel quite a bit, Jennifer, and I'm often speaking at states. In fact, I had to add this up the other day, I think I've spoken at 36 or 37 state associations around the country. So there's still some states that haven't had me, but maybe someday they will. Nevertheless, I've seen a lot of people's state bee club, their meetings, I've talked with their officers, I've listened to things and they have some of the same issues that we have here in Florida. This idea of it's hard to get people to want to join, how do we show them value? And I will tell you I can use Florida as an example, obviously, because I'm most familiar with it, but when I look at what the Florida State Beekeepers Association has accomplished, I keep thinking if all of our states could do similar things and continue moving forward, beekeepers would have a lot of their issues addressed. And so people might say, well, what is it that beekeepers actually need addressing politically or at the state or national level? And I'm just gonna read a list of a few things that the FSBA has tackled in the last 10 or 12 years: number one, when I first got here they pushed really hard for the definition of a honey and now there's a honey standard that's being copied around the country. People will ask why do we need a definition of honey? Well, before there was a honey standard, all you had to do was slap the word honey on a jar and you could sell it. It didn't actually have to be honey. Now there's a definition and standard for it. There's the apiary protection bill here in Florida where the local municipalities can't tell you that you can or can't keep bees, that's kind of looked at at the state level, the beekeepers wanted that, they wanted kind of that protection from municipalities saying that you can't keep bees here and the FSBA went and got it for them. Bee removal, when I first got here, beekeepers weren't technically allowed to perform bee removals because it was considered pest control without a license. Well, the FSBA worked with other groups and made the removal possible. The cottage food law, this idea that if you don't bottle your honey in a licensed honey extraction and bottling facility i.e. a licensed inspected kitchen, then you can't sell it. Now, the cottage food law makes it permissible for people who are a small scale beekeepers to do that. Personally, you know, the University of Florida has benefited with their relationship with the FSBA. You guys went out, lobbied for, and built a brand new bee lab on our campus. You developed a strategy for addressing the veterinary feed directive issue that we had when beekeepers no longer had access to antibiotics and needed prescriptions or VFDs to get it. You also helped out with ag classification issues when there were tax-related issues with areas being zoned agriculture and whether or not beekeeping counted. And I just listed these, you guys have also gone after a license plate to benefit bee research and extension and on and on.

Amy 36:46

Like I have like goosebumps right now. Wow, that's so awesome.

Jamie 36:50

But that's the thing, the state association in Florida and again, I know there's listeners from around the world. This is not just to trumpet Florida, I'm just using this as an example. But the State Association of Florida has gone to bat for its beekeepers trying to take on big issues. You guys are always in the state capitol, you're always talking to legislators, the senators. And you know, the American beekeeping Federation, the American Honey Producers Association, our two national groups, they do similar things at the national level. And I wish beekeepers saw and found the value in that so that they would know that joining the state association or their local association, or national, and supporting the cause was worthy, because groups like the FSBA really do care about beekeepers, and really do want to address the things that Beekeepers feel need addressing. And I think especially when it comes to political issues, there's strength in numbers, if there's a small weak state association, you're not going to be very powerful when you're trying to lobby on behalf of your constituents. But the FSBA has really been able to push through some things, even during times where a lot of other agencies weren't getting the same type of attention. So state associations have very important value to their beekeepers beyond just education, they really do fight for and change the lives of their beekeepers, and beekeepers need to know that, and they need to demand it out of their state association or national association. And I think they would, and the state association leadership would value the partnership with our beekeepers. So I've set you up to talk a little bit about that. But I just wanted to point those things out and share with our listeners that there is value in coming together at the association level.

Guest 2 38:38

I really loved hearing that list. Jamie, thank you so much. Just to point out, the veterinary feed directive is an ongoing thing that we will continue to support. We've taken control of the website. And so again, membership is really helping keep things like that going. There's financial responsibilities to a lot of the stuff that we do. We actively keep a budget so that we can stay within those confines. But we join and are members of many of the organizations you just mentioned. So we truly support our regional and state and national associations in other places. We also want to come out and speak to all the local clubs and educate like Amy mentioned earlier. That's probably my favorite thing to do. I've been speaking at bee college for a number of years, and I've always appreciated it, but it was really neat to see how it evolved and still evolves, as I got more involved with the state association. And there's a really gratifying feeling going to a local bee association or bee club and having a member say, "You know, I honestly hadn't ever met anybody from Florida State Beekeepers Association before and I'm really grateful that you came out here and showed us how to make cream honey tonight." I mean, it's the kind of thing that I think make beekeepers really special, and we all wear lots of different hats. I already admitted to you that the legislative part wasn't my forte, but I'm more comfortable now. And I feel like we have this amazing support system having so many different officers and volunteers and committees that are structured. So yeah, honestly, if you don't have a state association in your area, or even a local association, but you feel like you have time to devote, I feel like you'll feel it's very gratifying to come together, we have an example that we can share. I think another thing we can offer folks is an example of our structure. So say a local bee association wanted to start up and they had no

idea even how to form a board or create bylaws or a constitution or complete paperwork, we would answer that call, we would say we can help you with that. That's not a problem. That's what we do. We can even pull you along until you feel comfortable. And it's a big state. I have to say.

Amy 41:01

It's a huge state. Yeah.

Guest 2 41:03

I mean, I didn't realize how big it was until we had that meeting in Chipley about seven or eight years ago. And like, change the timezone driving there. Once I got there, I was just blown away at the camaraderie and education and support and accomplishments. So couple of goals we have in the next year or two, again, the license plate was a really important goal that we've had. It's the third year trying; I apologize if I got that wrong. But the revenue generated from having a honey bee license plate, and who does not want a honey bee license plate? [That] would support research in Florida and again, find solutions for all beekeepers all over and we're committed to that. If we can't do that successfully we're going to work on another avenue and that's why our commercial beekeeping committee and other committees are starting to have more meetings, especially with things changing right now. Our in person meetings are a little bit -we're not sure, we don't know what's going to happen in the next few months. So we're moving and adapting like our bees do to try to find ways to come up with goals for getting this research money that's needed. Even honey bees, I heard you guys maybe could use some colonies up at the lab for Humberto to do some research on and we may have some colonies. Florida State Beekeepers Association is registered as beekeepers, and we're part of the Fresh From Florida program, and I think we might have bees. If we do, we'd be happy to make them available for research. So that's just a taste or a sample of what we've been working on behind the scenes. And there's just so much more.

Amy 42:48

So Jennifer, we've talked, there's so much that the State Association does. I think on an individual level, what type of resources do these associations have to offer for people? I know personally, I've benefited with my beekeeping practices just by joining associations and finding a mentor and meeting other beekeepers. So what other resources would you say that these associations have?

Guest 2 43:13

I'd say the sky's the limit. We're still really trying to define those. And we're asking beekeepers what they want. And that was a process that has taken a few years just from visiting the local clubs and sending out surveys. Sometimes beekeepers look forward to perks, so we're asking some of our beekeeping supply companies if they're willing to offer a discount. So we're working on some things like that. I'd say the veterinary feed directive is one thing that is of value that is available for all beekeepers. And it's tangible. People can wrap their brain around that. We have to maintain that and take care of the financial responsibility. And the education: we host events, we have an annual event. Last year and the year before we hosted some fun events, I think they were both really fun. And members were able to attend for free and we had some great speakers and really good attendance. Thankfully, we had you guys come, we always appreciate that so much. So we offer a lot of education as a benefit to the



membership. So that's been one one way that we've been trying to give back to our members is just to have a great annual event and have education. Since things have changed a little right now we're going to shift to some online education and try to roll that out shortly. Again, that's going to be a benefit and free to members and of course I'm sure it'll be made available to everyone, but those are just some examples.

Jamie 44:44

Yeah, those are great examples. I feel that beekeepers are a lot like the critter they keep. The critter they keep are social animals and people will often say beekeepers are loners. Well, that is true but they sure love forming associations. There's local associations, state, regional, national, international ones, and I always recommend to people to join and be involved in your nearest local association. I really do feel like that they will have trickle up effects because you'll end up in the state association and maybe even these regional or national ones. Generally speaking, these ones that are kind of local in nature and more educational. But as you move up the chain, there's a lot of policy being shaped because of the lobbying effort. Jennifer, what you mentioned here about the Florida State Beekeepers Association is a really good example about how a state association functions and what it can offer. I encourage beekeepers around the world to find their nearest association, get involved, and see what they can offer the association and see if they can work with their association to make sure that it's offering what the beekeepers need. Jennifer, thank you so much for joining us today.

Guest 2 45:47

Thank you, Jamie and Amy.

Jamie 45:48

Absolutely. Listeners, that was Jennifer Holmes, who's the president of the Florida State Beekeepers Association. She runs the Hani Honey company, and she's a UF IFAS Senior Honey Judge, I probably butchered your company name again. But look, I'm from Georgia, this is the best my tongue can do. So I appreciate having you on board, Jennifer, talking to us about state associations.

Guest 2 46:10

It was a pleasure, thanks to both of you.

Jamie 46:13

Thank you so much. We'll have some information in our show notes about the Florida State Beekeepers Association. But we'll also link our regional and national and some international associations that you need to be aware of so that you know how you can get involved to help beekeepers everywhere.

Stump The Chump 46:34

It's everybody's favorite game show, Stump the Chump!

Amy 46:47

Welcome back, everybody. It is q&a time. And we've got a couple of questions from our audience. So Jamie, the first question I have for you is kind of a funny one. So after I work my bees I smell like smoke for the rest of the day. Is there an ancient beekeeper trick for removing smoke besides taking a shower?

Jamie 47:06

All right, well, there's two ways to answer this question. And that's the short way and the long way. The short way is no, there's not. When I work bees, and certainly when I work bees a lot more than I'm able to today, my wife would always make that joke when I'd come home. "I can tell you've been working bees today! You smell like smoke," there's really no remedy for it, and I'm only chuckling because this is kind of the thing that all beekeepers struggle with over the years. but if you work bees early in the morning, you're going to smell like smoke the rest of the day. And even if you change outfits, your hair will smell like smoke, your hands will smell like smoke, so you're going to have to take a shower. And believe it or not, I so firmly believe that there's really no other remedy, that when we built our new bee lab here at the University of Florida I made sure we had showers. I suspected there would be times where I or others have to work bees in the morning, but meet with our administrators in the afternoon, so we built showers specifically for that purpose. If any of you beekeepers out there know of any good lifestyles or something that we might try, I'd be happy to. I know for example when we go fishing, oftentimes these fish cleaning kits, they will come with something that looks like a bar of soap, but it's made of metal, and the idea if you rub it all over your hands - and these are like respectable fishing kits, like Bass Pro and others - so I guess the point that I'm trying to make is, as they say if you rub this metal on your hands the smell of fish will go away. That may or may not be true, I've just not used them enough to know and I'm wondering, beekeepers out there listening to us, if there are in fact tricks that can help remove smoke from our hands, and I know from our clothes are basically going to have to change outfits, but maybe you can rub something on you, but try hard not to spray yourself down with cologne or perfume. I think that that can also be a problem

Amy 48:56

That was a great question. Thank you.

Jamie 48:58

Just taking a shower. That's the take home message.

Amy 49:01

It's almost like when you eat bacon, or make bacon in your house. That smell just never goes away.

Jamie 49:05

You know what's funny, Amy? Is my wife will no longer cook bacon in the house. We have this gas grill outside, it's got a side burner, and anytime we're going to eat anything with bacon she goes outside and cooks it just for that reason. So bacon and fish and bee smoke, that's what they all have in common. We just discovered it right here on Two Bees in a Podcast.

Amy 49:23

I was about to say you just made a great joke." What do those things have in common?" So for the next question that we have: when you first receive a package I've been told you're supposed to seal the entrance for the first day or two. Is this true?

Jamie 49:41

So that is true, yes and no. So what I would say from the yes part is, it might actually be ideal because of what happens when you install a package. Let's slow down and think about it. So you got this package. If you read the instructions, it often says mist the bees with water, with a little mister from the outside. That helps them clump together and you dump them into that new hive in which you're wanting to hive them. Well as they begin to dry off, they'll come out and they can fly away. I have certainly installed, even here at the University of Florida honey bee lab, we've installed 100 packages one time where two or three or more of our colonies just instantly left. And they coalesced into these mega clusters hanging on trees, these mega swarms. And I think in those instances, what's happening is that there can be a virgin queen or a queen in general running around in the package. Because believe it or not, the hives that they use to dump the bees into the packages from, are different than the hives that they use to rear the queens. So these queens will be in cages from one cohort of hives and the bees will be dumped into the package from another cohort of hive. And then they'll put the cage in there and ship it to you. So there will be a queen in the package cage. But there may also be a free running queen that was missed when the bees were shaken into the package. Or placed in the package. I don't know if shook or shake is right. I'm from Georgia, I'm just moving on. When they are placed into the package. So I think oftentimes what can lead these bees to leave these hives is that there might be a free running queen, or there was a free running queen in another package and they they swarmed and just everybody got swarm fever. I mean, I've seen that with my own eyes. And so what a lot of people will do then to stop these package migrations is they will close the entrance of their hives for 24 hours. Just like this questioner asked. With the premise that if I can get them to stay in their hive, for that period of time that I'm minimizing the risk that when I open the entrance that I'm going to lose that package. But that can only be done successfully if it's not hot outside. Because you you close that entrance and you install a package and the bees can overheat very quickly during spring and summer. So a lot of people with that kind of premise. and we've even done it here at the University of Florida bee lab is you will actually install those packages, but then move those hives into a heavily air conditioned room or maybe even a refrigerated unit with the idea of keeping them cool, keeping them clustered, trying to coerce them to believing that that is their home so that when they put them outside and open the entrance, it's not a bad thing. However, that's a lot of discussion around the take home messages. So take home message one is you can screen the entrance if you want to, but it can't be hot. Take home message two most people I know do not screen entrances, they just kind of accept the risk that if you're installing 100 packages, two or three might migrate. Actually what we see as a bigger problem is if we install like ten packages in a straight row, as the bees kind of come out of their hive and trying to figure out where home is they tend to migrate to the end hives. So your colonies on the end get real strong, but your hives in the middle are less strong. And so a lot of people will keep the entrances on packages for that reason. So what we have done to combat this at UF anytime we're installing lots of packages for a research project is we will mist the bees, open the package, take out the feed can that's in the package and remove the queen that's in the cage and we will hang the queen cage between a couple of frames in the center of the hive. Next, we will take out three frames from one

side of the hive. And we will sit the entire package in that space with the open side up. Then we close the hive back. So essentially, the package slow-releases itself over a couple of hours. They dry off, they come out of that package, they move to the frames, they find their queen, excetera. And it's a much slower release rather than this very dramatic, dump, shake, dump, shake, move and we found that that greatly minimizes drift between hives and certainly reduces the risk that we're going to leave a package. And in fact, the last point I'll make with regard to that, is when we put packages in hives for that kind of slow release strategy, we always reduce the entrance, just so that when they do dry off they don't come storming off, but we're only comfortable reducing entrances if the bees have a lot of shade, if it's not so hot outside, and if their on screen bottom board so that there's plenty of ventilation. So to summarize, yes, you can close them up for a day. But it's gotta be cool. Gotta be cool. I don't think it's worth doing that. I think that you can slow release them, as I've mentioned, or you could just dump them straight in and just be prepared for migration. That's a great question. And probably when they asked that question, they didn't realize that there was so much information behind it. And that's only because I've made so many mistakes installing packages over the years that I've kind of figured out how to minimize even though not eliminate it. But when in doubt, you can keep them in a super air conditioned room, if they got a screen bottom board. Do that for 24, 48 hours, and then you can move them out to where you want them to be.

Amy 55:29

Great. And that kind of helps with the queen pheromones being released, too, and them taking to her, right?

Jamie 55:33

Absolutely, absolutely. That's the key. A lot of new beekeepers don't know that queen is not the queen of the bees in that package. So the bees in that package have got to become accustomed to her too before they're introduced to one another, which is why she's in a cage.

Amy 55:47

Yeah, that's fair. It was funny. This individual is actually messaging me and saying, oh, she the queen is in an envelope. And I'm like, wait, she's in an envelope? And he said, yeah. And I'm like, wait, is she in a cage in an envelope? Or she's just roaming in an envelope? And he was like, no, she's in a cage in an envelope. Right. Well, now I feel better about what you just told me. So while we're kind of talking about swarms, I feel like lately, a lot of people have just been asking questions about swarms. So I'll just move forward to the third question that we had. This person had a unique experience to share with what they would call false swarms. So twice within a couple of weeks, they saw what appeared to be a very small swarm flying in and out and also bearding in a tree. So one was the size of a grapefruit and the other was the size of two grapefruits. Which I don't even know what that is, like, what's the size of two grapfruits?

Jamie 56:42

What kind of grapefruit? We live in Florida so we know there's multiple types of grapefruit. So there's small ones and big ones. I'm trying to picture now which variety of grapefruit this person means.

Amy 56:42

Is this a softball a beach ball? I don't know.

Jamie 56:54

I think that's always a fair description is to use the ball analogy. But grapefruit, that's fine. I can appreciate that.

Amy 57:01

Okay, so when when they capture the swarm by shaking the nuc, then they inspect it, there is no queen in there. But they also could see bees leaving the nuc and flying back to one of the hives. So all right, long story short, in the third instance, saw another swarm fly out over the water, then return over shore and dissipate. Have you ever seen this behavior before? And what in the world is going on?

Jamie 57:23

Yeah, so I'm going to try to work backwards with those comments. So basically, there's two swarms that they're trying to explain. And then the third instance, they had this swarm leave and go over a large body of water and then return. So let's start with that. Is it safe to assume that that third one happened in fall too, Amy, the one that went over the water? Did they specify?

Amy 57:41

They did not specify. Wait. Did you say fall? Like seasonal?

Jamie 57:46

Yes. Fall seasonal.

Amy 57:47

I would assume that it's probably summer, because they just asked this and we're in June.

Jamie 57:52

Okay, perfect. All right. So there is some belief that bees struggle orienting when they fly over large bodies of water, so I don't exactly know how large the body of water is that they're talking about. So it's possible that they went back to their hive just to restart and try again tomorrow for that reason. It's also possible that it's a failed swarm. You know, one of the things that I want to preface my answer to this series of questions is swarming is part of the biology, and biology is messy. And what I mean by that is that we always try to assume that things happen the same way, every time. That we kind of paint bees into a box or for that matter, we paint people into a box or, dogs into a box. Within biology, we are all capable of a huge range of behavior. So while it is most normal for colonies to swarm in spring, colonies can swarm in summer, and fall. And in southern Florida, they often will swarm all winter too. So a lot of it has to do with the cues that the bees are experiencing. If there's a lot of nectar coming in, if there's warm days, if the colony has grown, then the bees can read the conditions erroneously, and they can issue a swarm when it's not otherwise a good time of year to issue a swarm. Fall is a terrible time of year for bees to swarm. Because even though it's natural, it's natural in the sense that the bees did it and the bees are natural. So if they did it, it must be natural. But that doesn't mean it's ideal. So if

your research has shown the later into the year, the bee colony swarms, the less likely it is to survive winter. So I would argue to you that those swarms that you saw in fall are perfectly within the range of behaviors that one would expect in messy biology. However, those swarms are almost certainly going to not survive winter. So your question is, is why would they do it? Again, bees could misread cues, it could be possible that virgin queens emerged maybe the colony was queenless. And multiple queens emerged at the same time so instead of the two queens fighting one just left with a swarm and bees left with it, I mean, there's just a lot of potential explanations for why they swarm that's within the range of 'this is normal.' What I would argue to you is that, you did the right thing, you saw the swarms, you tried to hive them. I don't know that there's a logical explanation that we have to seek or necessarily hear to understand what happened. Except to say that, had they continued on with the process, they would have almost certainly died. Why would they cluster on a tree limb and then fly back, maybe they clustered and the queen never landed? Maybe they clustered and she went back, so they went back? I mean, there's just a lot of reasons that this may have happened. And again, it's kind of within the range of natural behaviors that bees are capable of doing. But the very reason you're asking me is because you know it's not best for them to do it that time of year. So we see lots of reasons that bees will issue these swarms off season, but whatever the reason, the swarm's almost always doomed unless they return home.

Amy 1:01:04

Sure. And this person had used the words, false swarm. So I didn't know, is that a term that people use?

Jamie 1:01:11

Yeah, beekeepers do that. They'll say false swarm or winter swarms. They basically just mean a swarm that happens in fall, it's not like, if you think about it, Amy, if you've got 1000 colonies, some small percentage of them's going to make a mistake and try to swarm in fall. I mean, I'll use Florida as an example. I appreciate that a lot of our listeners are from around the world. But to use Florida as an example, we have a pretty significant honey flow in August and September. And it's with the invasive species, Brazilian pepper, and there's so much nectar that comes in off of that plant, that colonies can almost get artificial feedback. Hey, we're growing, the resources are abundant. It's still hot, let's swarm. And that's a late summer, when September rolls around, it's almost an early fall swarm. And so beekeepers just refer to these late swarms just based on when the seasons are, fall swarms, winter swarms, things like that, it's nothing unique, it just illustrates that when you've got a messload of bee colonies in one place, you're going to have these errant behaviors pop up here and there. But incidentally, it's this natural diversity that drives the improvement of species over time, these behaviors tend to get weeded out if they're no good, or amplified if they're useful. And in this case, I can't imagine a useful case for it. But nevertheless, it's within the realm of normal.

Amy 1:02:32

Awesome. All right. Well, thank you. And thank you, everyone for submitting your questions. We've been getting a lot of feedback on Facebook and Instagram, and even on our email, so keep it coming. We love positive reinforcement. So you know, if you guys have positive things to say about our podcast, let us know. If not, don't tell us.



Jamie 1:02:51

Amy, you raise an interesting point. One of the things I want to say is kind of we thank our listeners for the questions. Hey, if you like us, go to our podcast and write us, and help spread the word, help us get more [listeners]. Amy and I, we don't get paid extra to do this. This is something that we really want to do to try to get information out to beekeepers. So we just want to reach as many beekeepers as we can. So like us, share us, rate us, that helps us spread this podcast around so that more people can listen and benefit. So thank you guys all for listening to Two Bees in a Podcast.

Amy 1:03:24

Hi everyone, thank you so much for listening to this week's episode of Two Bees in a Podcast we would like to give an extra special thank you to our audio engineer James Weaver and to our podcast coordinator Jacqueline Aenlle. Without their hard work Two Bees in a Podcast would not be possible.

Jamie 1:03:42

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 Do you have questions you want answered on air? If so, email them to 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!