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SPEAKERS

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

Jamie 00:07

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 Logan Cutts, who's a fifth-generation beekeeper. He'll be with us talking about being a part of a beekeeping family and what does it mean to be part of such a long generation of beekeepers? Amy and I will follow that with a segment where we discuss commercial beekeeping. A lot of people, when they think commercial beekeeping, they think about honey production, but we will be discussing the other ways that commercial beekeepers make money. And of course, we'll finish today's podcast with a question and answer segment. For more information about this podcast, check out our website at UFHoneyBee.com. Amy, in this segment we've got something really neat to talk about. Before I lead into the segment, I want to ask you, personally, do you have any beekeepers in your family? Do you have any history of beekeeping in your family?

Amy 01:41

I have zero history of beekeeping in my family. My family thinks I'm absolutely insane for being a beekeeper.

Jamie 01:47

Really?

Amy 01:48

Yeah.

Jamie 01:49

For being a beekeeper? That's the only reason they think you're insane?

Amy 01:51

Well, there are lots of reasons.

Jamie 01:53

I had to do that.

Amy 01:55

That's fair. Yep.

Jamie 01:59

Well, it's funny. I kept bees at my grandparents' house because they lived in a rural area in Georgia and my parents wouldn't let me keep bees in our backyard. My grandfather was a dairy farmer. And nevertheless, when I would keep bees at their property, my grandmother did not like honey, and I was like, "Well Grandma, why don't you like honey?" She's like, well, her brother, so that would be my great uncle, apparently kept bees and brought honey in a lot. She just got tired of the smell of it. And so I forget his name, but they called him crazy something. So I think the premise was that he was crazy for having bees but also crazy for other reasons. Again, I forget his name, but nevertheless --

Amy 02:37

Could you imagine, Jamie, if you became a dairy farmer.

Jamie 02:41

Amy, I will tell people I actually wanted to be a dairy farmer. And if you think about it, you're like super close to paradise because paradise is the land of milk and honey, right?

Amy 02:51

Yeah, I guess you're right. That's true.

Jamie 02:53

If I was a beekeeping dairy farmer I'd be awfully close to paradise. Anyway, the reason I'm asking you this question is because, unlike you and unlike me, a lot of beekeepers come from long beekeeping families, especially a lot of our commercial beekeepers. Their dad did it or their granddad did it and might have skipped a generation here or there, but there's often continuity in commercial beekeeping ranks. And today, we're interviewing a Florida beekeeper who's a multiple-generation beekeeper here in Florida. And I know it's going to sound like a Florida-specific story if you're a listener from somewhere around the world, but I think you'll appreciate the story because you can relate to what we're going to talk about. That individual who we're interviewing today is Mr. Logan Cutts. Logan happens to be an Ag and Consumer Protection Inspector for the Florida Department of Agriculture and Consumer Services. But his father's an apiary inspector in the state, his grandfather was, and so forth. So we'll get into all of that. So Logan, I just want to start off by thanking you for joining us on Two Bees in a Podcast.

Guest 03:59

Well, I want to thank you for the opportunity to be on here and talk about my family and our experiences. It is a beautiful thing to carry on my family for sure.

Jamie 04:11

I think one of the neat things is when we talk about bees, we focus so much on the bees. But behind all the bees are just beekeepers who have these fantastic stories. Actually, a colleague of mine, a mentor of mine, Dr. Mike Hood, who once worked at Clemson University, he's retired from there now, he actually wrote a book recently from that perspective. It was a book about beekeeping, but less about bees and more about the beekeepers he met over the years. And Logan, your family kind of reminds me of that. Long after I retire, I'll have stories about the Cutts. So, let's go straight into it, Logan. Could you tell us a little bit about yourself, what you do, your interaction with bees, etc.? And then we'll kind of branch off into beekeeping in your family, how many generations, things like that, but let's first focus on you. Let's introduce you to our audience.

Guest 05:03

Sure. Well, my name is Logan Paul Cutts. I'm 23. I like long walks on the beach. But for real, I'm a fifth-generation beekeeper.

Jamie 05:15

I think we all like long walks on the beach, right?

Guest 05:16

Exactly, yeah. We've been beekeeping since 1889 as a final payment of two sewing machines. And when I was younger, I worked with my family apiary, learned the trade from my dad, my uncle, my cousin Ryan, of course, my legendary granddaddy, Lawrence Cutts. I loved working with Ryan back then. And I'm always there to help when needed or whenever asked. Whenever I graduated high school, I had plans to run track. But you mentioned working for you as a beekeeper for the lab. And I just wanted to continue bees. I knew those schools didn't have, either a good one, or any apiary education so, I took you up on that offer. Working at the lab was one of the best decisions I had. I learned so much about the research side, only the practical and commercial side before then, that's all I knew, I knew nothing about the scientific stuff. And that truly helped me understand a lot of what I was already doing just out of habit, out of, "Well, that's what we always do," kind of thing. It gave me that knowledge of why and how it all works and stuff. And I just want to give a shout-out to the amazing people I met that worked at the lab, my past co-workers, the volunteers like Susan Harris and Ray. All you guys are such a huge blessing. Dr. Ellis, you giving me the opportunity was just awesome. And after I worked at UF, I went to Australia and I brokered and audited bees for almond groves with the Munson family, and then I became a commercial beekeeper and a shepherd with the Kershaws. So if you guys are listening over there in Aussie, you guys were a major blessing to me too, and taught me a lot of things. And then I finally came back to Florida, I worked for Wendy Latner at Santa Fe Queens. Wendy and Ray reinstalled a lot of things that my family taught me, and also taught me a different way of doing things because beekeepers are creatures of habit. So like whatever dad did, whatever granddaddy did, and so on, and so forth, that's what everybody else does, because that's how they did it. And just learning a new way of doing the same thing was awesome. And it helped me morph into my

own style of learning from all these different beekeepers. And now I currently, on the side, help beekeepers as a private consultant, whether it be small scale, or sideline, or whatever. I just love the teaching aspect and helping people get on their feet and better management styles.

Amy 08:03

Logan, I feel like I knew you and I've worked with you before. I didn't realize you were in Australia, I didn't realize you worked at Santa Fe Queens, I had no idea. So that's pretty amazing. It feels like you have so much different experience with your background and experience with bees in general. So, you and I worked together through our county here in teaching beginner beekeepers, and I always feel like everyone is always just in awe when you start talking because you have so much experience and you've heard from your father, your grandfather. So are you a fifth-generation beekeeper?

Guest 08:39

Yeah, yeah. Fifth generation.

Amy 08:41

Okay. And so what does it mean to you to be part of a beekeeping family? I mean, Jamie can relate from the dairy side of things. I don't come from an ag background. But what does it mean to you?

Guest 08:53

I mean, it means a lot. One, it's a thing that you take pride in and, two, it's like really intimidating, because as a kid, you were granddaddy's shadow, going to different places meetings, or whatever. You were meeting all these big shots and hearing topics that just flew right over your head. And it was like, I didn't know any of that stuff. I'm just going around with granddaddy meeting new people. And then, now, I work with these people, I talk with these people, and they're like, "You were the little redhead that was with Lawrence?" I was quite literally surrounded, not just by my family, but by all the people that granddaddy would casually talk to. I was literally surrounded by the experts. And, inwardly, I put a huge burden on myself to be the best because of where I came from. I mean, I came from the Cutts family. Dr. Ellis, he really helped me in giving me a new avenue to be a successful Cutts beekeeper through research. Because granddad, he never put expectations on us to be the best, or even be a beekeeper. But, you put that on yourself like, "This is my family's legacy, I want to keep it going, I want to make them proud of me." It's a lot for sure. But there's nothing I'm more proud of than my granddaddy being the only beekeeper in the Ag Hall of Fame, my dad being a apiary inspector like him, my cousin Ryan and Uncle Larry taking over the family business. We got a lot to be proud of. Though, I feel like I've made a good name for myself, like I said, through the avenue of learning that scientific side and kind of being that bridge to commercial beekeepers and research and really shown them the importance of both, I feel like I'm still dwarfed by my family because there's just so much knowledge and even forgotten knowledge there. My granddaddy, dad, aunts, and uncles are all humble about it. So I like to be the one to brag about it for them.

Amy 08:55

That's fair.

Guest 09:16

So Logan, I know your granddad well. When I moved to Florida, he welcomed me, Mr. Lawrence Cutts, for the listeners sake, and he's been a really good ambassador for our beekeeping program. No matter really where you are in the United States, most people have heard of Lawrence Cutts, most commercial beekeepers, just all the work that he's done on behalf of beekeepers all around the US and one of my favorite memories -- so here's the deal, in my job, I travel the world talking about bees. So I meet beekeepers of all shapes and all sizes and all walks of life and just all kinds of backgrounds. And that's always exciting to me. One of my fondest memories of your granddad is he and I were, and it's odd to say it because our listeners don't know your granddad necessarily, but he and I were in Milan, Italy. There was a small hive beetle conference, and we were both there. And we had a free day and he and I were walking the city, and we went to the cathedral there in Milan and I remember sitting down and him just telling story after story after story about your grandma. And so that was really a sweet and precious time, I really enjoyed that. And it was just characters like that. That's what brings this kind of human aspect to beekeeping. And of course, your granddad did a lot, your family did a lot to help us build a bee lab here at the University of Florida. But now Logan, you being the fifth generation, you work for the Florida Department of Agriculture and Consumer Services, you don't necessarily work directly with bees and beekeeping. But you do help monitor the flow of ag products around the state of Florida. So that means that there will be beekeepers coming through your stations as they move into the state for honey production or for other things. Could you tell us a little bit about what you do in that regard? Oh, yeah, absolutely. My job is just so cool. I mean, I'm at those ag stations, like you said, checking the ag products that are coming through the state. And before I start, I just want to say all these opinions and thoughts are my own personal ones, and none of the department's so I just want to clarify that. And like you said, though, I focus on produce and plants and non-native species to Florida, we seasonally do get a flow of bee loads coming in for a Florida honey flow or overwintering purposes. So whenever they do come through, we don't open up the hives and look through them. But we look for the basic things of a proper bill of lading, where it's coming from, where it's going to, the state of origin, and of course, the proper registration that goes along with that.

Amy 13:35

Well, that sounds really great, Logan. Again, I'm super excited that you're still able to work with ag, whether that be with bees on the side or through your job. And so it seems like your whole life is really just consumed around that. I'm sure growing up you've heard lots of stories through your father, your grandfather, and so what do you feel like the big issues you've seen or have heard of just through yourself and/or through your family?

Guest 14:01

Yeah. So that's a really cool thing to talk about. Listening to granddaddy and all the old beekeepers that he introduces me to, listening to the stories about like the tracheal mite, the small hive beetle, all that stuff when it was brand new, granddaddy always says, "When you know very little about something and everyone else knows nothing about it, you automatically become the expert on it." And that's how he was with the small hive beetle as soon as it came out. But something that came out back in the 80s that just totally changed my family's future forever, really, was the tracheal mite. Whenever it came, I think it was 1985 or '86, they had to adapt in different ways to overcome, not only the struggles that the bees face from the mites, but from the economic standpoint. They couldn't they couldn't support their families because of the embargoes or it costed way too much money than they anticipated to treat for the mites.

My dad says that it looked like they got sprayed, just dead bees everywhere. And he said it all happened all at once. Just a clean sweep through the panhandle, and just massive amounts of bee die offs all at one time. And it totally changed my family forever. I mean, granddaddy had to struggle to find a way to convert from queen and package production to honey production. And it led him to go to Gainesville to be the chief apiary inspector, which, if it wasn't for the tracheal mite, I wouldn't be here right now because whenever they moved to Gainesville, my dad met my mom. So shout-out to tracheal mites for your boy. But commercial beekeepers, I mean, some of them couldn't adapt and it's happening today with Varroa mites. It came too hard on them, too fast and they couldn't adapt with the pests and that's why places like you guys, the UF Bee Lab, are so important to help not only educate and extension, but to help those people in a practical sense, the commercial guys help face the new challenge. Heck, I mean, some of the stuff that they were using for tracheal mites are actually transferred to Varroa mites because of research. That's the biggest thing right now is Varroa mites, for sure, hands down, but ignorance is a big one too. Because you get your occasional call of someone treating a swarm of bees with pesticides and not calling a beekeeper, or a bee stung me. It wasn't a bee, it was a wasp. So there's a lot of these bad stigmas around, but really, the biggest ignorance problem for bees is people not understanding the complexity and the fragileness of them. They go into beekeeping with the wives' tales, and not the facts with research attached to it. And they don't treat their hives for mites not knowing the huge problem they are, and then they cause a mite bomb. So it doesn't only just kill their hive, but it kills everybody else's hives, and potentially, it makes someone lose their livelihood. And that's why ignorance is, in my opinion, like the biggest thing right now from tracheal mites, small hive beetles, Varroa mites. There's so much that bees and beekeepers have to face throughout the years of the industry. And that's why, again, places like UF are just so important. Not just the research against the pests, but the extension of breaking those bad stigmas and the false tales that are out there. Granddaddy fought so hard to build the best bee research facility for the best bee researchers like Dr. Ellis And we're just so happy to be a part of that and to help support that. Logan, I think those are all great comments. I've never heard anybody give a shout-out to tracheal mites before. Honestly, if tracheal mites are what brought your parents together, sometimes those things may be necessary. And that does bring up this old philosophical discussion about how little minor things cascading over time can certainly change the trajectory of an individual or a family, and I think that that's the beauty of stories like your family's stories about beekeeping, right? I mean, it's stories just like that, I mean, Mr. Cutts, your grandfather came, of course, to Gainesville, helped lead the inspection program, of course, build the bee lab that I'm in now. In fact, the office that I have is named after your grandfather, in honor of your grandfather. So it's neat to see how beekeeping families like yours shape what happens. It's interesting, always, to talk to beekeepers, especially, long dynasties like the Cutts dynasty because just like what you said, they go through so many things, tracheal mites, Varroa, small hive beetles, that people who've seen a lot of different things. It just really gives you an appreciation for the human aspect of beekeeping. So as we kind of wind down Logan, I want to ask you, how do you want to contribute to the beekeeping community? How do you like contributing to the beekeeping community? What's your goal with regard to helping beekeepers in the future, your personal goal? Well, my personal goal is to reach as many people whether it be the public or beekeepers in general, as many people as I can because I love sharing my knowledge of bees to people, seeing their eyes light up whenever I tell them bees have five eyes and four wings and bees talk to each other, they use their tongues to feed each other. People like just small things. To me, that's like basic bee knowledge, or like something brand new to somebody and to see them light up and be like, "Wow, I never knew

bees used smells like pheromones to communicate." And it's like, "Yeah, they do it every day." And, "I didn't know bees actually did the waggle dance." So to share that knowledge is something that I really enjoy. And I feel like that I'm really good at it because that's why I went into this private consulting stuff, not only with small-scale beekeeping and sideliners, but local towns and farmers, school FFA is trying to get an apiary started up. To help people and to do my part in breaking the ignorance and bad stigmas is something that I enjoy a lot because it gets the people that thought, "I'd never keep bees," into beekeeping, "Man, this is so fascinating." I'm like, "Yeah, you're right. I mean, my whole life has been bees. I know how great it is. I want to share it with you." I help with the Alachua County extension class, like Amy said, so shout-out to the coolest beekeepers in the 352, Gainesville area code. We have a lot of fun over there. That's where I get a huge crowd. Normally, it's just one on one, but to see a lot of people sign up and within two weeks, we've already sold all the tickets, all the seats away, it's just awesome to me. That's the only answer is teaching people because you guys do so much research there. But you guys also do so much extension there, and that's the only way that we can help bees is through better days through better ways like the FFA motto says. People don't know unless you teach them. So I just really want to say that you guys been so fruitful already in the incredible work that you guys are doing. And I know that my granddaddy is so happy about it and through that, my family, myself, are just so happy at how successful the bee lab has been.

Jamie 22:09

Well, thanks, Logan. I think that's a fantastic story. I mean, again, people listening around the world might wonder why we're talking about this. But what I'd like to convey is these very types of stories are at your fingertips right now. Just go find an older beekeeper and just sit in and take them to lunch and listen to them talk about their experiences, what they've encountered, etc. I'm getting old enough in my own life now that a lot of the beekeepers who I knew as a young fella, they were older, they're passing away now. Perhaps one of the most notable examples of that is Carl Webb, a very notable Georgia beekeeper who passed away over about a month or so ago. And what a tremendous experience it is to meet with older beekeepers and just listen to their stories about beekeeping. It'll really make you appreciate that the bees aren't the only part of what we do here. We hang out with really great people around the world who have fantastic stories, legacies, impact on our industry. Logan, you and your family exemplify that through your grandfather, who I've known his kids, and now you guys, the grandkid generation. So what a great contribution you guys have made to beekeeping here in Florida, but around the US. So Logan, I really appreciate you joining us here on Two Bees in a Podcast.

Guest 23:28

Thank you so much for having me. And again, Jamie, I just want to thank you for the opportunity you gave me as a young kid to go work at UF and to learn so much under you guys and the visiting scholars that came. I mean, it really helped me establish myself and help myself just learn more and be better. So thank you for that.

Jamie 23:51

Our pleasure. And the cool thing about it is there are bee labs around the country and the world giving opportunities just like we were able to do for you. I know that the future's bright in the beekeeping world. So everybody, that was Logan Cutts, an Ag and Consumer Protection Inspector for the Florida Department of Agriculture and Consumer Services, and more importantly, a fifth-generation beekeeper

who has lots of stories to share about his time here. So thank you for joining us for this segment on Two Bees in a Podcast.

Honey Bee 24:20

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

Amy 24:27

For this segment, Jamie and I wanted to talk about the commercial beekeeping industry and some of the commodities that they work with and, essentially, just the whole industry. A lot of people, when they think about commercial beekeeping, they automatically think large operations, which is true, but sometimes I don't think people realize what goes into those large operations. Jamie, I think a lot of the time, even some of the commercial beekeepers, some of them may not even keep bees anymore. They're just working their businesses. We, in this episode, wanted to talk about some of the different things that commercial beekeepers do, what makes up the industry? And so we'll touch a little bit about that. So, Jamie, tell me what you think. I guess not what you think but what you know to be the biggest beekeeping commercial beekeeper operations. What do people do?

Jamie 25:19

Yeah, so I mean, that's a series of interesting comments and then we've got some good questions to address. And so I'll start off with asking, what is a commercial beekeeper because, almost certainly, when people think commercial beekeeping, they associate it with a size of the operation. For example, here in Florida, I forget what it is. It's somewhere 500 or so colonies. I forget, Amy, you can correct me. Maybe 250, I forget.

Amy 25:42

It's 101.

Jamie 25:44

Oh, is it? Well, there you go. Make it official. So what's a sideliner then, if that's the case?

Amy 25:49

41 to 100.

Jamie 25:50

Interesting. But, nevertheless, the way that I define commercial beekeeping is that it's when you are engaged in beekeeping activities, that's the principal source of income for you or your family. So when we say sideline beekeeping, sideline beekeepers are those individuals usually who have another job and the beekeeping aspect supplements that income. So really commercial beekeepers are those individuals who that's what they do for a living. And of course, when the general public thinks of beekeeping and commercial beekeepers, I'm sure their mind, as you've already said, instantly gravitates towards honey production because we call them honey bees after all, right? And when I was a kid and started keeping bees, I thought the same thing. And of course, a lot of commercial beekeepers do, in fact, engage in honey production. They're constantly moving their bees all over the

place to produce honey to chase honey flows. But I'll tell you that honey production is really just one of many components of things that beekeepers do. I will kind of preface the rest of our discussion with, I started off with this idea that commercial beekeeping means that people are deriving most of their income from it. In the States, in Florida, the average commercial beekeeper has over 1000 colonies, and we've got beekeepers in the US who have 60, 70, or 80,000 colonies. But in most places around the world, you can be a commercial beekeeper with just hundreds of colonies, especially in Europe and other places where I travel, people consider themselves commercial if they have 2, 3, 4, or 500 colonies. But in the States, commercial beekeepers have many, many more colonies, typically. I think we're some of the largest beekeeping operations in the world. So with that background, a lot of beekeepers around the world keep bees to make honey. However, as I've noted already, there's a lot of spin off things that you can do with commercial beekeeping.

Amy 27:47

What are those spin off things?

Jamie 27:48

Yeah, I mean, Amy, the very first thing I think that we would think about here in the US is we would think about pollination. Right? So there's an entire agriculture industry in the US that was responsible for growing what the USDA or the United States Department of Ag calls specialty crops. And those would be things like blueberries, watermelons, cantaloupes, squashes, almonds, just things that aren't necessarily the staples of our diet, but that are very important. Nevertheless, a lot of those things, in fact, everything I just named, needs to be pollinated in order to have adequate fruit set, fruit quality, and all of this stuff. So these commercial beekeepers will move their bees all around the country to put their bees on these crops while these crops are in bloom so their bees can provide pollination services for these crops. And in return, the grower pays the beekeeper a fee. It's almost like rent. So Amy, if you have 10 colonies and I have a lot of blueberries, I might pay you per colony for you to put your colonies out on my blueberry orchard while it's in bloom. Blueberries, for example, in Florida, the blueberry growers will pay around \$70 a colony for your colonies to be out there while they're in blooming. Almonds in California, as an example, might pay upwards of \$200 a colony for those colonies to be on almonds while they're in bloom. So that's kind of the scale. You might get down as few as \$50 a colony for pollination service or as much as \$200, \$225 depending on the growing rate. And in the US, pollination is an incredibly important part of the commercial beekeepers' business. In fact, I would argue that it's probably eclipsed honey production, that most bee colonies in the United States are kept by commercial beekeepers who move them around to pollinate crops. And what's interesting and a neat statistic in the US, at least, is the average commercial beekeeper who's using his or her bees to pollinate crops probably moves their bees to four to five different crops a year to provide pollination services. So just to make the math super easy, if you're moving to five crops and you're getting \$250 because you're getting \$50 a crop, that's what the beekeeper can expect. Now, say, they're making \$70 on some crops, \$100 on some crops and as much as \$200 on almonds, and so, the average colony might be bringing beekeepers \$400, \$500, \$600 through pollination services where it would be very difficult to reproduce that amount of money just via honey production. So in the US, at least, a lot of bees are moved for pollination purposes. Around the world, that's true in a lot of places, but not all places. This is an overgeneralization. But I would say that in the US, we we have a huge emphasis on pollination, whereas in many other countries around the world, the emphasis is on honey production.

So it's really interesting to see the differences in commercial beekeeping, depending on where you are on the planet.

Amy 30:52

Sure. And also some of the commercial beekeepers have contracts with brokers. I mean, there are brokers out there that help with the landowners and the farmers and with the beekeepers. Is that common?

Jamie 31:04

Yeah, I mean, it is. Pollination is a very complicated business. And the United States, and again, I know we have an international audience, so hopefully, our international listeners can glean something from this, but the US is a big country. Florida is thousands of miles from California yet, a lot of commercial beekeepers here in the state of Florida will ship their bees out to California every January to pollinate the almonds that are in bloom in late January, February, and they often go to these places sight unseen. So there might be brokers who are negotiating between the almond growers and the beekeepers about the colony prices and where to move colonies. In fact, almonds need pollination by honey bee so bad that a lot of the growers will even pay the shipping cost for commercial beekeepers to get their bees out to California. And we've got this duplicated on a small scale around the US for other crops, and really around the world for their respective crops too, so it's it's a really interesting paradigm. And honestly, I see the pollination need growing and growing and growing as our world population gets bigger and bigger and bigger. So I certainly think this is something that commercial beekeepers, the world over, will be doing in the next few decades, transitioning heavily to pollination services.

Amy 32:16

Sure. So we had put out a survey just to the Florida Commercial Beekeepers last October. And I remember, a lot of the beekeepers will make a lot of their money through pollination, but they also make money through other sources and selling other things as well. So let's go ahead and transition over to that. So, I mean, I guess there was just a list of things that beekeepers do so what about selling bees or equipment? Or can you talk a little bit about that process? Do you think that the people who are doing pollination, the commercial beekeepers doing pollination, are they also selling bees and doing other things? Or do you think it's primarily just doing pollination, and there are other commercial beekeepers doing other things?

Jamie 32:58

Amy, you're bringing up a very important point. I think I can say this with clarity of conscious, I don't think I know a single beekeeper who only does one thing. Almost all of them, especially the commercial beekeepers, invest in diversity in their operation, even the ones who are almost 100% diehard pollinators, they're going to produce honey on the side and might sell colonies here and there. So you're right, most commercial beekeepers, even around the world for that matter, are heavily diversified in their operations. So they're not just producing honey or pollinating crops. You mentioned specifically selling bees. There is a segment of beekeepers in the US and around the world who invest heavily in just the production of bees. They might be queen producers, they might be packaged bee producers, they might be nuc producers, they might produce whole colonies, and these individuals, and I'll just be

frank with you, these individuals are the ones who I see, at the moment, making the greatest amount of money because there's such a high demand for bees, that those individuals who specialize in the production and sale of bees in whatever capacity, queens, packaged bees, nucs, etc., they're really making a lot of money because of the loss rates of colonies and the high demand for bees for pollination and honey production purposes. So almost everyone dabbles in it. You might see colonies out to California for pollination, and you don't want to bring 100 of them back. So you might sell them while you're out there. So that kind of thing happens all the time. And so the bee production and sale business is huge.

Amy 34:37

Yeah, so let me ask you this as far as selling bees, are there wholesalers when it comes to selling bees? Is that a silly question? I mean, are there brokers between that as well? Are there people who are just buying tons of bees from commercial beekeepers and then selling it to the general public? Does that happen?

Jamie 34:53

So it does a little bit. So let me kind of explain what happens there. Again, there's kind of different components of this industry. So there is a component that focuses principally on queen production. Usually, if you are selling queens, you're usually selling packaged bees as well. So those individuals often sell direct to consumer, so from hobbyists to commercial beekeepers will contact these queen and packaged bee producers and place their orders. But I do know a lot of individuals who will actually purchase a lot of packages from a package producer, say at a wholesale price, and then they'll take them back to their house and sell for \$5 more per package to recover the transportation cost. So I wouldn't necessarily call them brokers, I would call those individuals who are buying in volume to kind of get the volume discount. But the vast majority of individuals go straight to the queen and packaged bee producers. Nucs are the same way. For the most part, commercial beekeepers who are needing to purchase nucs will go straight to the nuc producers or straight to the producers of whole colonies. I mean, here in Florida, we have some of the largest nuc and whole colony producers in the whole of the United States and that's principally their whole business is to produce and sell nucs or colonies. Usually, the beekeepers know who those individuals are and will go to direct to the producer. So I don't see brokering happening as much. Usually, if it's brokering for packaged bees, it might be a bee club. For example, maybe it's hard for you or me as a hobbyist to buy a package in March, but maybe it'd be easier for our club president to buy 500 packages and bring them back to our local bee club and then we buy the packages from him or her. So that's usually what I see happening kind of in that regard. But there's a lot of money to be made right now in the production and sale of bees and I see it. It's interesting to me because I think people are kind of waking up to that and getting into that business as well.

Amy 36:46

That's pretty cool. Okay, so we talked about selling bees. Another thing that people said that they did from the survey that we had put out was selling equipment. So I know that there are a handful of big named equipment manufacturers out there. I don't know if I see a lot of smaller equipment manufacturers, so can you tell me a little bit, I guess, about that industry?

Jamie 37:06

Yeah, it's funny you asked about that. If we don't have a place to put bees, we're kind of stuck. So we get these packages, we get these nucs, we get these colonies, well, where are going to put them? So, of course, there's a segment of our industry that provides the equipment needed for our industry. They produce and sell the hive boxes or the frames. They produce and sell the beekeeping personal protective equipment, the veils, the suits, and all of that stuff. They sell the honey processing, extracting, handling, and bottling equipment, they sell books, they sell specialty product equipment. And you mentioned there are some very big players in the US. I mean, we think traditionally about Dadant and Mann Lake and some of the other big equipment producers in the US. But there are a lot of people who are starting to provide this service for hobbyists. I'll give my father-in-law as an example. He always had the skill set of building. He built his own house. He just likes to work with his hands. And now that he's retired, he makes and sells beekeeping equipment and serves a lot of hobbyists and sideliners where he lives. I'm seeing a lot of these operations popping up around the US and frankly, the demand for bees and beekeeping is at an all-time high. Everybody seems to be wanting to get into hobbyist beekeeping. So there's room at the moment to support this. And of course, there are the big equipment producers, a lot of our commercial beekeepers tend to go to those individuals so they can get the wholesale prices and get it in bulk. And I tell you, when I speak to people who produce and sell beekeeping equipment, they're always taxed to their end because they are working overtime because of the demand that people have for beekeeping equipment at the moment.

Amy 38:46

Alright, so some people buy that equipment. And what they do is they do bee removal. They do live removals. I don't know if we have a lot of beekeepers that do eradication. They might but that also is an industry in and of itself, isn't it? I mean, we have so many people that call about bee removals.

Jamie 39:03

It is and it's funny, Amy, because, I'm from Georgia, when I was up in Georgia, I didn't really think much about this all the time. Where I'm from, I did not see a lot of feral colonies, and if there were feral colonies, I was the one as a kid who got called to remove them. So, I never saw it as a huge business. And since I've been working in Florida for the University of Florida, we have African bees in the southern half of the state, we've got so many beekeepers, so many bee colonies, just the feral population, especially in the southern half of the state, the feral population in Florida is just ridiculous. And as a result, we've had, in the last decade or so, quite an explosion in the number of beekeepers who provide bee removal services. They'll come to houses and take bees out of walls or out of chimneys or out of water meter boxes, or out of trees, etc. And so there's been a focused and steady growth in demand for bee removal services in the state of Florida. And I've seen that really around the US, now that I'm a, quote, professional and work for a university, I'm consulted a lot on these services. States all over the US, countries all around the world, beekeepers are really getting into providing these bee removal services. And they're doing it under a couple of premises. Number one, bee losses are a reality, and people are struggling with them. So rather than treat these colonies that are considered nuisance colonies, because they're nesting too close to people, rather than treat them and kill them, bring in a beekeeper who can remove them safely. And I use the term rehabilitate the colony, which simply means to one of our standard managed boxes and bring them under management. And so this is becoming incredibly popular. There's a lot of beekeepers in our state who provide this service. And I

think it's a really neat way to supplement one's income. Heck, a lot of people do it for their full-time business and have so much business because of the population of feral bees in some parts of the country that they're just working from sunup to sundown. So it is an underlooked or overlooked portion of our commercial beekeeping industry because it's not beekeeping in the traditional sense. It's very different, but it's rewarding for those individuals who do it. And they're providing a very important service for those people who have bees nesting on their property.

Amy 41:19

So I think it's really interesting that you say that when you are in Georgia, you are going and doing the bee removals yourself because I have a friend who lives in Missouri, who also is a beekeeper, and they don't call anybody when it comes to bee removal. They basically just go out and remove bees on their own, and then they keep them for themselves. So I think it's really interesting because I don't think I had thought about calling someone out to remove bees until I came down here to Florida. And of course, with the Africanized, or African-derived honey bees, of course, there are other states like Texas, Arizona, right? And they also have African-derived bees. So I think it's really interesting just as far as where you are in the United States.

Jamie 41:59

I think that's key. I think that's really the issue. And this is just my guess here, but the key issue is everywhere African bees are presents present, you have these very robust bee removal businesses. You know that I've got my PhD from an institution in South Africa. So I was able to live in South Africa for three years. And when I was there, the population of feral, or in Africa's case, wild honey bees, because they're native there, just was high, the density was incredible. And I've only seen a density like that one other place, and that was South Florida, where African bees are present. So my point is where you've got these bees, you can have a very high feral population, which, whether you love them or hate them, these bees can be a risk to humans or animals, etc. So you tend to see robust bee removal businesses in areas where these bees are present because homeowners are routinely calling beekeepers, and for that matter, pest control operators to have these bees removed.

Amy 42:56

Yeah, so we've talked about pollination, we've talked about selling bees selling equipment, bee removal, what am I missing? Am I missing something?

Jamie 43:05

Yeah, so there's about three things that I want to mention still.

Amy 43:09

Alright, then tell me those three things.

Jamie 43:10

I'll tell you those three things so that you'll know to ask me about me about them, Amy. So the first of those that I'll going into is kind of some other hive products and then we can talk as a spin-off segment of that some specialty products. Then, of course, I'll talk about the production of mead. So let me start a little bit with hive products. So honey bees don't only produce honey, they also secrete wax, they

produce royal jelly, they have venom, they collect tree rosins and saps, etc. for use as propolis. And there is a sub-component or sub-segment of our commercial beekeeping industry where these beekeepers actually harvest these things they keep bees for the production and rendering and sale of beeswax or for the production of royal jelly or bee venom to be used for apitherapy purposes are propolis. Now, admittedly, royal jelly, venom, and propolis, if they are being collected, if they're being produced and collected, harvested, refined, etc., it's almost always for the perceived medicinal benefit. So outside of the US, especially in Asian cultures, these things are very routinely used as part of just kind of holistic health management. Again, that's royal jelly and propolis. In the US, since there's not nearly as much focus on that kind of medicine, we don't have industries quite as big for the production of those things. But around the world when I travel, and I'm hosted by other beekeepers around the world, it's very common for them to also produce royal jelly or venom or propolis, etc. So these things can be very important for commercial beekeepers because there's a lot of specialty markets, a lot of customers who want these things. That kind of leads me, naturally, very naturally, into the next point that I'll make. A lot of people keep bees for the production of these hive products, wax, royal jelly, venom, propolis, heck, you can even harvest pollen, people harvest and sell pollen. And what they'll do is they'll make stuff with these things and sell this stuff, the specialty products. So with wax, they'll make candles or other wax features, or they'll make cosmetics or lip balm. With propolis, they'll do similar stuff. So there's a lot of people who will harvest these hive products, and then as a result, make specialty products from those things to sell direct to consumer. Everybody who produces honey is going to produce wax as a byproduct. You've got to uncap frames, there's a lot of just wax produced in that process. So a lot of beekeepers will just melt down and render their wax and sell it as bulk to other individuals. But there are some beekeepers who will take it a step further and they will produce those specialty products that they sell direct to consumers.

Amy 45:55

Okay, and you mentioned mead. Is that considered a specialty product? Does it fit into that or no?

Jamie 46:01

Yeah, it's kind of a weird thing. And I know I'm gonna get it wrong. If I answer your question, I consider it kind of a specialty product because it's not directly produced by the bees themselves. So what is mead? Mead is a fermented honey beverage. So there are some historians who think honey was actually the first sugared substance that was fermented for the purpose of having an alcoholic beverage. And most people have never heard of mead until you've heard of the story Beowulf, which everybody has to read at some point in their Scholastic development. In Beowulf, they all hang out in the mead halls at nighttime and a mead hall is just this gigantic gathering, it's a big bar where the principal beverage was some sort of product derived from honey. And these days, individuals keep bees to produce specialty honey, honeys that might be underrepresented on the market like sourwood, Tupelo, etc. And with the specialty honey bees, they'll ferment them in a controlled manner. They'll add certain flavors, citrus, etc., and they'll make mead, dry meads, sweet meads, etc. And so mead production is really starting to grow. A lot of it, Amy, I attribute to these kind of local microbreweries that are popping up all over the place.

Amy 47:20

Yeah, I was about to say, there are craft beers. And so people are turning meaderies into a thing. Yeah.

Jamie 47:27

Exactly. A lot of these craft beer, microbrewery individuals who invest in these things will try to carry a honey product from a local beekeeper and make some sort of fermented honey beer, honey beverage, or honey mead. So, one of the things that I think, and I think, personally that the production of mead is really interesting and to me, it's very artistic. There's flavors, there's colors, and a lot of it's under your control. Some of it, you're at the mercy of the honey that you use, but I feel like this could be a growing business in the future if people continue to invest in it and market it well. And at the end of the day, when we talk about a lot of these products, honey production and pollination, that's the raw brute force labor, queen packaged, bee production, raw brute force, they're out there working hard labor, labor, labor. But when we talk about hive products and specialty products and mead, all of this stuff's kind of what I call the delicacy of beekeeping, where you can get really artistic. Honestly, Amy, that's where people are making money. A lot of the commercial beekeepers who are producing honey, they'll sell their honey in bulk for \$2 a pound. Whereas if you just put that honey in a jar, you can get \$10 or \$15. I know a beekeeper who put honey in wine bottles, a pound of honey in wine bottles, and I might have gotten \$5 for a pound of honey, and now he's getting \$20 just because it's in a wine bottle.

Amy 48:59

It looks prettier.

Jamie 49:00

Exactly. Making these specialty products, there's a lot of opportunity for value-adding. So commercial beekeeping is very diverse. It's very rich. Commercial beekeepers are just an interesting group of people because you've got these people with lots of colonies that are just working sunup to sundown, moving bees, extracting honey, and then you've got these other individuals who are doing the kind of artistic side where they're making these. It's really interesting to see the spectrum and I see this around the world. It's really an exciting time to be a commercial beekeeper.

Amy 49:33

Yeah, I think that's great. It's so funny. I am sure a commercial beekeeper will hear our podcast and let us know the things that we've missed on this because there's so much that they do. I mean, I know that some of them even educate. So that's also one of the things that commercial beekeepers do, and they're very involved with their local associations. So I think it's so much fun to hear about the commercial beekeeping industry and quite frankly, I didn't really know about a lot of this stuff until I actually took my position here. So I wanted to share that with everybody who's listening to us who may just have started being a beekeeper or have considered going to become a sideline or commercial beekeeper. So these are just a few of the opportunities that you can look into. But that was great. Thanks, Jamie.

Jamie 50:19

My pleasure. And shout-out to all the commercial beekeepers out there. These men and women are hard workers and they really ensure the world's food production. And they do a lot of manual labor, hard work, a lot of stress. And it's just great that we have commercial beekeepers out there. I always tell people if you like to eat, you need to go hug and thank a commercial beekeeper.

Amy 50:43

Well, don't hug them right now because we're in COVID.

Stump The Chump 50:51

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

Amy 51:01

Jamie, do you feel like because of COVID that you've become more antisocial? Or do you feel like you were antisocial?

Jamie 51:07

Well, here's the deal. I'm actually pretty anti-social. My wife and I are both this way. We tend to prefer to be at home alone with our family. We don't have a lot of friends. I know that's a sad statement. But it's true. So COVID, it was good to change us a lot in that regard. It changed us a lot in other regards, but not in that particular regard.

Amy 51:33

I feel like I haven't seen anybody in about six months or so, and I feel like a hermit in my closet right now. And so I was just thinking about that. It was just kind of funny. Anyway, alright, so I have three questions for you. The first one is about manuka honey. I've actually received some emails about manuka honey, and so can you just tell me about manuka honey and what's the deal? Why is it so fancy and why do people want it?

Jamie 52:00

Well, manuka honey is really interesting to me. So there is a shrub or a tree shrub called manuka that grows principally in New Zealand but it also grows in Australia as well. The Australians will remind me of that every time I go over to Australia. The reason I'm saying this is manuka is almost always associated with New Zealand honey bees and New Zealand honey production. But the Australians actually produce really good quality manuka as well. Anyway, so this manuka, the bush, just tree shrub kind of thing produces nectar from which bees make honey and the honey is called manuka honey. So, manuka honey is so famous because of its scientifically documented health benefits. So, manuka honey, which I think does not really taste that good, so I'm sorry for everybody out there who likes it. Manuka honey has certain properties associated with it that improve the health benefits. For example, if you purchase manuka honey, there will also often be a number, some groups call it the UMF, the unique manuka factor, and there'll be a number on that jar, and depending on the size of that number, it will dictate the amount of some of those special components that it has. So at the end of the day, for example, one of the key components in manuka honey that everybody goes so crazy about is methylglyoxal, and I'm not even sure I said that right. But that is a key signature found in manuka honey, and it's one of the things that's very important. There are other key things as well. If you look up information about manuka honey, you'll get a few other things, leptospermum as an example, there are some acronyms, MGO, DHA, etc. And a lot of this stuff is claimed to have medicinal properties. So manuka honey is sold for that purpose around the world as topical wound healers. A lot of people take

it, consumption. Like I said, it doesn't taste so good to me. So a lot of people will use it in teas and things just for ingestion purposes.

Amy 54:04

What does it taste like?

Jamie 54:04

It's just, to me, it's a very dark and strong honey, like what you would expect from honey. Yeah, it's kind of it's just got its unique, strong taste. It's amazing. I will tell you, when I was young and beekeeping, I basically had this statement, if it's light honey, it's table grade, and that means you'd be willing to put it on a biscuit and eat it raw. But if it's dark, and it tastes bad, people just call it medicinal. So honey that tastes bad automatically gets the medicinal label, but in this case, manuka actually does have benefits. And one of the funny stories I have is I was in Germany a few years ago, I think, I forget, two or three years now, and I was at a grocery store and they had six different -- it was the same manufacturer, same labels, but six different jars of manuka honey side by side. It had that maduka factor on the jar, and as you stepped up from factor to factor to factor, it cost significantly more to go higher up the jar. So for example, one kilogram of honey, which was the smallest, which was the standard amount that they have there, I forget what it was, it was five or 10 euros. And that was at its lowest manuka factor. And as it graded up, I mean, we finished over 100 euros per same-size jar. It just had more of that particular ingredient in it that people want to see so much, that methylglyoxal that they want to see so much in manuka. So a lot of people go really crazy for it because of its reputed health benefits. What I would say is, as with anything related to health, consult a doctor before you get head over heels about it, read a lot about it, but it's certainly not harmful to eat. And so you can look into that, and I'll tell you to the New Zealand beekeepers, and the Australian beekeepers, but specifically the New Zealand beekeepers, it is a prized, honey. It's almost like gold, the value of that stuff to them. And if we're paying, oh, over 100 euros per kilogram for this in Europe, as an example, you can imagine what the beekeepers are making per kilogram. So, they will helicopter colonies into places that have isolated manuka patches.

Amy 56:20

That's so crazy. That's kind of cool

Jamie 56:21

It is a really interesting-- I think there's even a manuka Mafia, like if you get too close to my hives your bees are going to disappear. So it's a really fun story to read about. It's a really unique and amazing honey. And the last thing I'll say, then, is that a lot of other places around the world who also have unique honeys have been investigating their honey for some of the same properties that manuka has. I remember there was a research project in Florida, for example, where they were screening a lot of our local honeys to see if they have some of the same factors that manuka honey has. So a lot of people are identifying what makes manuka so beneficial and trying to see if those things exist in their own honeys as well. So it's really a neat story that people should read about. Un fact, yeah, I would argue, we probably need to invite a beekeeper from New Zealand to come and join us and talk about this and discuss what they see as a whole segment related to manuka honey.

Amy 57:14

Great, let's do it. Okay, so we have two more questions. The second question is, should we keep bees in the sun or the shade? Where's the best placement? And should the entrances be phased in a certain direction? I get that question pretty often.

Jamie 57:27

Yeah, it's the standard question that people will give when they're starting up their apiaries. And so the truth of the matter is that the data that I've seen on these very questions is kind of all over the place. So the short answer is you can do what's convenient for you, or what's convenient for the bees. A lot of this kind of has faced a resurgence because there's this general belief that if your colonies are in shade, they have bigger problems with small hive beetles than if they're in full sun. I even did a research project on that as a postdoc, and I found a difference, but it wasn't all that grand. So what I find is that if bees are in full sun, they have to work really hard to cool their colonies, there's a lot of thermoregulation, they have to collect a lot of water, a lot of fanning. And to me, I just don't know that the perceived health benefits of having them in full sun are worth the very clear stress of them having to thermoregulate so hard. A lot of beekeepers keep them in full sun, just out of necessity. A lot of commercial beekeepers will have these holding yards or stocking yards where there's no other choice, there's no trees, and so they'll put hundreds in a field. And that's just what it is. But I don't think the data is strong enough at the moment to make the average hobby beekeeper change things significantly. So what I usually say is morning sun and some afternoon shade are really good for bees. And I will say, I'll tell you what I was taught, and this is just an old wives' tale and it's only anecdotal, but I like it when my colonies face south. And that's just a personal preference. And the idea is in the northern hemisphere, if your colonies face south, they have maximum sun exposure on the entrance. So it kind of gets the bees up first thing in the morning. And so generally speaking, as I was always told, and I always kind of try to do is morning sun and afternoon shade with entrances facing south. But if you don't have those conditions available to you, it's okay. Do what you've got. And don't sweat over it too much.

Amy 59:22

Yeah, so that actually leads to our last question for today about observation hives. So can observation hives survive in a home? Again, just like the last question we had, does the placement of where those observation hives matter. I mean, could they scorch? I mean, I'm just thinking, if you're talking about a south-facing window, could the bees scorch in an area like that?

Jamie 59:46

So, observation hives are a very unique thing. I don't think I've ever answered a question on observation hives. Maybe I have. Yeah, observation hives are very difficult to keep alive. So we do it a lot. I've used them a lot from all the way being in high school when I was doing science fair projects through my undergrad postdoc days, even now here at University of Florida, we use observation house for research purposes. However, usually, for research purposes, we set them up, we do our work, and we take them down, because anything outside of that, we call it blowout. So what I would say is it is possible to keep observation hives alive a long time and maybe into perpetuity in a house. I know this is possible. Beekeepers all over the place do it, they just need extra attention because most observation hives, you only accommodate two, three, or four frames, and your colonies are going to outgrow that three or four times a year. So there's a high propensity for swarm. It's difficult sometimes to provide

them food if they need it. It's difficult to manage queens because you've got to take it outside and open it up and then place it back inside. It's difficult for disease and pest management, but it's doable. So honestly, as long as inside, if you put it on a south-facing wall, I don't think that that would be overly bad for them because the hive itself is in a climate controlled building on the inside of that wall. So I don't think that's a problem. And usually when people do observation hives, they'll make sure and have a curtain over the window so the colony is not getting too much exposure to sunlight directly. Or like I said, it's in a climate controlled situation, where even if it is sunny, it's still cool inside the building. So it's possible. We have a University of Florida factsheet on observation hives, there's been books on observation hives written. We'll at least link the fact sheet in our show notes for today. But yeah, I love them. They make great show pieces. They're just a little bit of extra work, and you're gonna have to be willing to put in the time to manage it. But it can be a very rewarding experience for you.

Amy 59:53

Well, you're about to. That's great. Yeah, we've had some great questions from the audience. So I would encourage you all to continue sending us emails or writing to us on social media. Don't forget to rate us on any podcast app. We love seeing comments whether they are good or bad. I always joke around saying, "If it's bad, don't let us know." But but we do like to receive constructive criticism. So we welcome any and all feedback that you all have. So thanks, Jamie. 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 1:02:31

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!