Episode 143 PROOFED

Thu, Nov 16, 2023 4:51PM • 48:45

SUMMARY KEYWORDS

beekeeping, bees, colonies, beekeepers, good, produce, video, honey, drones, bob, pollination, work, plants, laying, commercial beekeeper, thought, honey bees, jamie, answer, workers

SPEAKERS

Jamie, Stump The Chump, Guest, Amy, Serra Sowers

Jamie 00:10
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. Hello, everyone, and welcome to Two Bees in a Podcast. We are very excited today to be joined by Bob Binnie. I've known Bob for a long time, at least since I was 18. And I'm not 18 anymore. He is a commercial beekeeper up in Lakemont, Georgia where he runs Blue Ridge Honey Company. If you listen to this podcast, that means by default, you like social media. And if you like social media and honey bees, you probably know of Bob. I knew him as a commercial beekeeper, but he's now a social media influencer. Bob, what do you think about that term?

Guest 01:20
Well, that's a stunning phrase. I never thought that would be that. That's what people are telling me now. So I guess I'm going to have to accept it and buy into it.

Jamie 01:30
Well, we're very grateful to have you on this podcast. Like I said, you and I go way back. But the listeners don't know that. So I'm just going to ask you the first softball question to let them discover you. Tell us a little bit, Bob, about how you got into your beekeeping journey and how you ended up where you are?

Guest 01:47
Well, I actually just read a book and got excited about it. And that was a long time ago. I think the year was probably 1978. I was living in Alaska at that time. I was living in the bush and had a lot of time on my hands in the winter. I read a book called "How to Keep Bees and Sell Honey" by Walter T. Kelly. I

must have read it three or four times. I thought, this sounds like it's for me. So I mail ordered some of the big books that you would recognize like "Hive and the Honey Bee," ABC, XYZ. But by the end of the winter, I'd read four or five substantial books. I was absolutely convinced I wanted to make my living at beekeeping and I never even stuck my finger in a beehive. Eventually, I found my way down back into the lower states and settled in Southern Oregon, and got a job with a commercial beekeeper. That really set me on my path. That was a tremendous experience. And, in fact, so I don't forget, if anybody's thinking of getting seriously involved in beekeeping for a living, it's probably really good advice to try to work for somebody who's already making their living at it. It can help you kind of avoid some of the pitfalls that come along the way when you're growing an outfit from scratch. So that was in Southern Oregon. It was all about pollination on the West Coast. This man I worked for, right away, I helped him move bees down into California for almond pollination. Then, I came back home to southern Oregon and pollinated pears, and then, on to Washington State on the east side of the Cascades, a little town called Chelan where we pollinated apples, and then on to North Dakota for honey production. I did that with him for three years while I was building my own smaller outfit on the side. After three years, I quit him and went out full-time on my own. I just stayed in California and Oregon, still concentrating on pollination, but not traveling like he did. For me, on the West Coast, I'd say three-quarters of my income came from pollination. And 25% probably came from honey production and sales. Whereas, when I moved to Georgia, it was a complete flip-flop out here. It's about making honey, selling honey, little bit of pollination, which I've given up on completely. Now, I don't do any pollination. And then, of course, eventually I got into honey packing and selling bees and quite a few things, actually. So that's my journey in a nutshell. Of course, there's a lot more to it than that. But that's the short version.

Amy 04:24
Well, my next question was going to ask you, let's get more into it. So tell us a little bit more about your operation. I know that we were talking off-air just about all the things that you do. We were kind of joking saying, what are you going to do in the wintertime? Do you just go on vacation for a couple of months? But let's talk about your operation and tell us what parts of the industry do you participate in. Let's delve into that a little bit more.

Guest 04:52
Well, in the early days of my life in Georgia, I did pollinate. I pollinated in South Georgia and sent bees to California and did all of that sort of stuff. But eventually, I got away from it because I felt like it was hard on the bees and kind of got in the way of doing the things I really wanted to do, which was grow bees and sell bees. Whenever people ask me what's important, why are you successful in the business? What would you recommend to somebody that's new? My first response is to be diversified. Don't put all of your income eggs in one basket. So right now we've got four or five things going on. So, we produce honey, we have a retail store, we buy lots of honey from other beekeepers, which makes us a produce-packer. We're selling bees, we have a not-very-good website. But we do have a website we're working on, we're trying to get a world-class website up, which I think is going to tremendously increase our retail trade. So I got about four irons in the fire. And I think that's really important for beekeepers to understand. They need to be doing more than one thing in case one thing fails. The other things can kind of help them ride the wave into the next season. For instance, if you're just

counting on honey production, that's really a mistake, unless you have a lot of money to back you up and you're able to look at the 10-year average, so to speak, because there will be bad years. If you don't have the money to back you up, you will fail. So if you have, say, good retail trade, maybe on a smaller level, you're making value-added products with your honey or perhaps lots of candles or something, you just got to be doing something besides just producing honey. Of course, a lot of large commercial beekeepers approach that point by pollinating in a very big way. And that works for them. That's two irons in the fire. I guess the pollination can keep you floating if it's a bad honey production year, or vice versa. I've chosen to get away from pollination just for personal reasons. I don't like what it does to the bees. The more I learn about comb and the toxic interactions that are occurring in our comb, the more I want to stay as far away from agriculture as I can. I think you can probably understand that. The more I learn, the scarier it is, and that's kind of a bad direction that our country and our beekeeping industry is going in, this chemical exposure. I don't have an answer to it. I just know I want to stay away from it.

Amy 07:39
Sounds like you've got a lot going on. I know that you have a ton planned for your business as well.

Guest 07:45
Yeah, we do. I'm actually decreasing my colony numbers. At one time, I peaked out at about 2800 colonies. We kind of settled down to 2000 for several years. And right now we've got about 1600. That feels pretty like a pretty good number to me right now because I have all of these things that I'm involved in. Honestly, it's the retail store or the business headquarters, that building, there's so much going on there. Theoretically, I'm the manager, so I have to be present at least some of the time. If the beekeeping is too big, then I can't at least give a little bit of time to the rest of the business. So we've kind of shrunk. 1600 colonies is still plenty, but it's nothing like 2800. And of course, I used to have more people working for me. You know that old adage, good help is hard to find. It's especially true in beekeeping because not everybody wants to work hard and get stung at the same time. Really, you gotta find somebody that's interested or passionate about bees. And if they don't have that, it's kind of hard to get them to stick. The people I have with me right now are all interested in beekeeping and they wouldn't want to do anything else. But I've been through a lot of employees that come and it doesn't take very long before they leave because it's just not for them. I have no judgment on that. I get it. Beekeeping is absolutely not for everybody. You have to be a specialized human being to want to be a commercial beekeeper.

Amy 09:19
So I'm interested actually in knowing how many employees you have, and how many do you think is a good amount of employees to have for a certain amount of colonies? So, would you say for over 1000 colonies, you would need this many people, or over 2000 colonies you would need this many people?

Guest 09:40
Well, like everything in beekeeping, there's always an equation and parts of the equation can change. If you're just running for honey production, I think one person can probably run 500 colonies just fine and do their own extracting. If you increase that after pollination and making splits and making packages

and doing a lot of the other aspects of beekeeping, then, probably need more than one person per 500. And just like any industry, the more employees, Jamie, you can probably report on this, when a colony doubles in size, it becomes 2.5 times as efficient, and so does a beekeeping outfit. As you get more and more employees, you can run more colonies per person because you become more efficient. So right now I've got 21 employees, but they're not all employed in the beekeeping. We have three beekeepers, along with myself, that we're currently running the 1600 colonies. Keep in mind, we're going to make a bunch of packages and nucs, and we'll sell colonies in the fall and rebuild them in the spring. So we got a lot more going on in our outfit than maybe some people do. 1000 to 1500 colonies can easily be run by two people if you're not getting too many irons in the fire. And the reason we have so many employees is that we pack a lot of honey. I said we have 1600 colonies, we packed at one and a half million pounds of honey last year. Obviously, we didn't produce all that. We probably produced around 100,000 pounds last year. Sometimes it's less, sometimes it's more. We have five full-time people that are running the packing part of my operation, we have two or three guys in the warehouse, we have four girls that work in the retail store, we have a full-time bookkeeper, that's the way my business is. If it was just beekeeping and that's all you were doing, two people could run 1000 colonies pretty easily. I have a friend down in Florida, you actually probably know him, Jamie, John Knox. There are just three people running 3500 colonies there. Sometimes it gets up to 45. But all he does is produce honey, and occasionally, send a couple of those to California. So it really just depends on what you're doing that will dictate how many people it takes to run a certain amount of bees.

Jamie 12:04
So Bob, I met you, I was just thinking while you while you're chatting about that again, when I was around 18. So that was 25-27 or so years ago. And I remember at the time, if I remember correctly, it was just you. You might have had a seasonal employee here or there and you were managing, if I remember correctly, around 700,000 colleagues maybe. I remember having this very conversation with you about the number of employees it would take to manage so many colonies. I also remember you kind of expanding into packing and you had all of that going, the extraction and packing facility, in the basement of your home. I knew you were starting to sell nucs and things like that. So before I segue to a completely different aspect of what you do, as a beekeeper, a commercial beekeeper, I'm curious, which of the things do you like best? Do you like making bees best? Do you like making honey best? Do you like the packing part best? The appropriate answer is not all these but I realize that you have to do all the above for diversification sake, but what really just makes you happy when you're doing it?

Guest 13:19
Well, I'll start off by saying you have a pretty good memory because you nailed those numbers. I was running 500 to 700 by myself. 700 actually proved to be a bit too much. I was working too hard. So I backed it down to about 500. Around the time I met you, I was starting to sell nucs and I really fell in love with making bees and selling them, not just shaking packages, but actually making nucs, making a fine quality nuc and actually selling colonies and producing new colonies. I really like splitting and creating new colonies of bees. Of everything I do, I think that's probably my favorite. And now these days, of course, we're raising our own queens, and we're putting our own cells and all of this stuff and I really liked that aspect of the business more than packing or retail or even honey production, honestly.

Jamie 14:14
It's funny. I think that would be my favorite as well. Just making colonies is just really attractive. Now, you live in an area that's got amazing honey though. The premium crop there is sourwood so I know producing that probably never gets old.

Guest 14:28
No, it's a very valuable crop. This year, when I was buying wildflower honey out of places like Florida and South Georgia, I was paying an average price of about $2.85 a pound. I think the going price was $2.75 when the dust settled. I was pay a little more so the people I buy from want to sell to me, and they feel like I'm treating them right. Whereas, sourwood would have been worth $6.50 a pound in a drum, so that's quite a difference. That's what makes sourwood production so attractive. If it wasn't that much money, it wouldn't be so attractive because you just don't have that many really great years when it comes to sourwood. The trees always blow. The potential is always there. But up in this area, of course, the potential for rain in July is pretty great. We live in one of the top five wettest counties in the USA, as far as the lower 48 goes. We've been averaging 80-120 inches of rain every year for a while now. And a lot of it, believe it or not, comes in the summer in the form of thunderstorms, and then, also these hurricanes coming up out of the Gulf of Mexico. So often, we're staged, the bees are great, the trees are great, conditions are great for solid wood production in July, and then it just rains for three weeks and it messes us up. So that's part of riding the wave. Again, if you were counting on just sourwood production, it would really be precarious. But when you hit it, it's quite valuable. So two years ago, we made 90 drums. Well just do 90 drums times 650 pounds a drum, times 650 a pound, you can do the math, it's a lot of money. And then if we're able to sell it in wholesale cases, or perhaps, retail in the store, the value goes way up to maybe $10 a pound or more. So that much sourwood honey suddenly is a pretty tremendous shot in the arm.

Jamie 16:31
Yeah, it's a truly amazing honey. I was always fun when I was able to visit you up in the mountains and see you guys at it. Now, what I really want to do is kind of segue a little bit away from the beekeeping, per se, where the next thing we're going to talk to you about, you're not necessarily out physically working bees. But Bob, you've become a social media star. I mean, you've always been a beekeeping educator. I saw you as a young beekeeper myself giving lectures at the Georgia Beekeepers Association meeting and other meetings around the US. But you recently branched out into having a YouTube presence, and my gosh, it has blown up under your feet. You have a substantial YouTube channel. So if we can focus a little bit about your contributions to beekeeper education, starting where you were giving talks, and then kind of where you ended up now as this YouTube channel, I know our listeners would love to hear the evolution of your impact and education.

Guest 17:27
Okay, well, it really has been a surprise. This is not a self-deprecating statement, I just understand myself, and I know what I'm like. I'm not a sophisticated speaker, and I'm certainly not a sophisticated video maker. But I think it's just a case of, I think, I kind of sorta know what I'm talking about. And people respond to that. I also always tried to be a nice person, and I think people respond to that, too. We used to get a lot of people coming into our store asking about how we made candles. The girl that

was doing it for me at that time, her name was Pamela. She was really good at it, and she had a very nice demeanor and nice personality. I thought, well, I'm going to ask her if it was okay. She said yes. We made a video on making candles. And it actually, to this date, it's still our most successful video. It's 600,000 views or maybe more, I really don't pay attention to it. When I saw that, I thought, kind of a light bulb moment, I thought, well, perhaps I could do something too. And so that kind of led me further into video making. Actually, if I go back in time, a little bit before that I was speaking to a symposium on medium and small-size packers up in Medina, Ohio for the Bee Culture magazine. Kim Flottum was the editor at that time, and he asked me to come up and be part of a group of speakers. We were having dinner the last night, Kim was a very good, very nice host, and he was purchasing dinner for all of us in a nice Chinese restaurant. I was sitting right across from him at a table, and I was very politely critical of his magazine. I wasn't trying to be rude, I just was pointing out something, a flaw that I thought there was in his magazine. I told him that, personally, I like to read and see more of the nuts and bolts types of articles where beekeepers are really telling how they do things and not necessarily how they do it in Africa, or "I caught my first swarm," those kinds of article, which have value, and I'm not trying to put them down. But I like the real heart of beekeeping type articles, which you're good at, Jamie. Your question and answer thing is tremendous because you're getting right down to the nuts and bolts when you're talking about that stuff. Kim thought for a moment, he didn't take it personally, I didn't mean it personally, he thought for a moment, he got quiet. And then he leaned way across the table and looked me right straight in the eyes, and he said, "The problem is that people who are doing it aren't writing about doing it." And I know what he meant. I had to think about that at the motel that night. It was really meant for me, I was being totally hypocritical. There I was being critical of his magazine because he wasn't talking about real beekeeping enough, and I realized that I was chastising him, but not contributing at all. Totally hypocritical. And right then and there, I thought I would write a few articles for him. I did and they turned out good. Then, I also saw this Ian Steppler guy up in Canada doing some videos. One of my employees came and said, "You should watch this guy. He's feeding his bees just like we do." And I watched his video, and then I had another light bulb boom. And I thought, you know what, I could do this. Writing was painful, for me, Jamie. I'm not like you. If I write an article, it takes me a month of editing and spell-checking and all of that stuff. And then I have to have somebody else look at it to make sure I didn't screw it up too badly. And so I thought, well, I'll try the videos. I did that video with Pamela. And it just happened. I just stepped into it kind of by accident and it took off at a very surprising pace. I was kind of shocked at what happened. The comments started to come in, and I've always tried to take the time to answer the comments, answer the questions, and I think people responded to that, too. Honestly, it's shocking. I'm still not really used to it. I was in Paducah, Kentucky a while back and coming out of a Mexican restaurant and I was going out and another guy was coming in, and he said, "Your Bob Binnie." And I thought, yeah, do I know you? "Well, yeah, I've seen you on YouTube." And that's when it really drove home. It's like, oh, my gosh, I'm two states away from home and somebody knows who I am. It was just incredible.

Jamie 22:15
You've arrived, Bob, you've arrived.

Guest 22:18

That's one way of looking at it. It's still a shock. I still am learning to try to accept it, to embrace it and be gracious. At first, when somebody would come in the store and say, "You're Bob Binnie, I watch all your videos. Oh, how great they are and you're great." My answers were always self-deprecating, like, oh, no, I'm not really that good, or something. And I've learned to not do that. My wife was the one who said, "You've got to stop that and you got to just start being gracious." I'm learning to do that where I just try to be as nice as I can and just accept it. But it's still very foreign to me, I gotta tell you.

Amy 23:02
Well, Bob, I've looked at your YouTube videos, I've watched a couple of your videos, and I just love what you do. You're real, you sit there, and you have so many different guests. I'm wondering about the logistics of it. So how often are you doing videos? How often do you record? How has this YouTube channel kind of taken over your business? What has a YouTube channel done for your business? How much time do you actually put into this channel?

Guest 23:31
Sounds like a two-pronged question. Well, first of all, I only probably average one a week, sometimes a little less. I try to put a video out every Sunday morning at 7:30. I've learned that if people know, maybe you do the same with your podcasts, I don't know, but if people know exactly when it's going to come out, you get a better response. And the YouTube algorithm recognizes that if a video comes out, and it gets clicked on a lot, they will promote it. I learned that by watching a YouTube video actually. So I learned to be predictable. So for the first eight or 24 hours of my video, I get a lot of clicks and then YouTube will promote it because they see that happening. And that's been quite helpful. In order to do that, sometimes, at the last minute, I'm just conjuring something up. Some of my best videos have just been done at 11 o'clock on a Saturday night honestly. I'm always watching, always thinking. That was part of my visit to see Jamie a few years ago. I knew that would be a good interview and it was. It still gets a pretty good response even though it's an older video. Everywhere I go, if I think I'm gonna have an opportunity to do anything for YouTube, the camera is in the truck. We take it with us to the bee yards and, sometimes, we'll just stop right in the middle of the work we're doing because I recognize an opportunity for a learning moment, and we'll just get the camera out and do it. A lot of times, I go to the clubs and do lectures, and you might see that some of my videos are just me lecturing to a Bee Club. One of my very best videos was just put out a few days ago with Keith, Jamie. I went over to the bee lab there and asked him about his old subject, polyandry. Well, I knew he would be good and I knew that there would be good information, but I did not expect the video to get very many views because of the subject matter. I was correct. There was a 40-41 minute video, and the average click-through rate was much lower than my average. I wasn't surprised by that, I expected it. But then within 24 hours, out of over 150 videos that I have out there, I saw the number come back as the second most viewed video I've ever had in the first 24 hours. Well, this didn't make sense to me at all. So I went back and analyzed where the views were coming from, and this is a huge number that I'm about to give you. 38% of the views on that video are coming from sources other than YouTube. What that means is that people were sharing the link with other people, and as you know, that's a sign of a really good video when people share it that much. I just lucked into that one. Keith was the star of that. Of course, I just asked him questions like you're asking me and he would answer and it just turned out to be a tremendous video. So, sometimes, the very best videos come from a place you least expect.

Jamie 26:53
So, Bob, that's really an amazing story listening to you talk about how you, like I said earlier, became a social media influencer. Just the number of folks you're able to educate that way has been really impressive, and that you do all that on top of your other responsibilities of making honey and making nucs and packing honey and all the other business things you have to deal with. So, given your really broad experience and your time in the industry and and how well you know the industry, as we wind down this interview, I'm curious what do you see as some of the biggest challenges facing beekeeping and beekeepers in the next 10 to 20 years?

Amy 27:27
So Bob, you've been able to interview a lot of different people around the world, you've been able to meet and connect and work with all different aspects of the industry, and so my question for you is what excites you most about the industry?

Guest 27:27
Well, of course, there's always public enemy number one, probably don't even have to bring that one up: Varroa mites. Challenges for the beekeeping industry, I think chemicals. I think the toxic landscape that the bees are constantly running into, I think that's becoming a greater and greater problem. I'm learning more about the toxic synergistic interactions that the bees are experiencing because of the array of chemicals that we're running into and what chemicals already exist in the comb back home in their colony. I think that's a challenge that's getting more and more prominent in our industry. I know a lot of commercial beekeepers, obviously, and I keep hearing complaints about, "I'm having a hard time keeping my bees alive," and, "I don't get it. Why are the queens being superseded so quickly?" I really think it comes down to chemicals and old comb and agriculture and that's why I've chosen to stay as far away from agriculture as I can. I think my bees are much better off for it, and I sleep better at night not worrying about my bees crashing for some unforeseen reason. I'm sure you guys are getting exposed to a lot of those types of questions down there too. I honestly think, except for Varroa mite, of course, I think that's the biggest challenge we face, the chemicals that the bees are always being exposed to. They're like a canary in the coal mine, but I honestly think they're more sensitive than the canary. They really succumb to this stuff much more easily than people think. What excites me most about the industry? I'll tell you what's exciting, and this is all unexpected. In the last few years, I believe I'm seeing an influx of newer younger beekeepers. Quite often you'll go to a meeting, and there's kind of a joke that when you look across the room, all you see is gray hairs. Well, here, recently, I'm seeing some young people getting excited, and not only interested in having a few beehives, but looking at it like it might be something they want to do for a living. That's exciting to me. It's kind of reassuring that maybe this industry won't fade away because of a lack of interest or, honestly, a lack of people willing to do the hard work, because as we know, a lot of young people want to sit behind a desk or work from home, work on their computer, and they're really not interested in getting out there in the trenches, so to speak, and doing that type of work. So it's exciting to me. I think there's hope for the industry to actually stay viable and stay alive.

Amy 30:27

Yeah, when I was looking at your YouTube channel, I clicked on a video about one of your employees getting a new tattoo. That video made me laugh out loud. It was so funny. It was just a quick minute and a half. It's a very quick clip. And I just thought it was so funny. But, then I was reading the comments and how people were talking about how the younger generation is getting the tattoos, etc. So I just thought that was pretty funny.

Guest 30:56
It was. The way my reaction seemed on the video was not actually a good representation of what I was feeling. I was surprised and I was interested, and I use the word, "Well, that's interesting." A lot of the comments I got were like, "I don't think Bob approves." Because I wasn't really excited, I just found it very interesting and I was intrigued with the idea that somebody would use their whole arm to put a beekeeping scene on, so yeah, it was very interesting.

Jamie 31:34
Well, Bob, it's been an absolute pleasure to be able to interview you on this podcast. I mean, I haven't said this yet, but I remember when I was working with you, almost 30 years ago, gosh, it's hard to believe. But you had the nicest hive boxes, the best-kept frames, the cleanest apiaries of anybody I've ever worked with. And I kind of said to myself, at that time, "This guy takes it seriously. He not only cares about doing it right, but he's very caring and interested in the bees." And I think that's even reflected in the conversation that we've had in this interview today. So I just thank you for joining us. And I'm excited for all of the accomplishments that you've made and how big your business has grown and how well you run it. It's just been really a pleasure to be able to have you on today's episode.

Guest 32:17
Well, thank you very much. In the beekeeping industry, we have all these friends that we don't see very often, and you're one of those people for me. When we see each other three years later, we're just like old friends, like we saw each other last week. I look forward to the next time I see you. And Amy, it was a pleasure meeting you on the screen online and I look forward to meeting you someday too.

Amy 32:45
I can't wait.

Guest 32:47
All right, cool. If I get to Florida, I'll be giving you a call.

Amy 32:51
You're welcome anytime.

Guest 32:53
Thank you.

Amy 33:05

So, Jamie, I watched Bob Bennie's videos and his voice is just so soothing. He's just so calm. He's so cool. I want to be him when I grow up.

Jamie 33:14
Amy, Bob is a good human. I've known him now almost three decades, right? Somewhere between 25-30 years and he's just good. He's always been that way, very even-keeled. I remember one of the near quotes that he said. I liked one of the reasons that he said his videos are potentially so appealing. He just tries to be nice. Imagine that! Being nice in today's world, and it seems to really work for him. I don't think he's trying. I think he's just genuinely a good human, a good soul. I saw it from my years with him. I've since heard it with folks who worked with him, and you can, of course, see it come through in his desire just to put education out there for beekeepers.

Amy 33:51
Yeah, I think this is like my call to the audience to let them know, let's make a shirt with Bob Bennie's face on it, and it just says, "Just tell the truth and be nice."

Jamie 34:03
Is Bob Binnie the Bob Ross of the bee world?

Amy 34:06
You know what? I think he is.

Jamie 34:10
But again, it's genuine. What he does is genuine. He is genuinely a good beekeeper. He genuinely cares about the bees. He genuinely cares about the products he produces. He genuinely cares about his customers. He genuinely cares about other beekeepers to the point that he wants to educate them through his YouTube channel. I think it's really paying big dividends for him. I mean, he's obviously wildly successful. He's a really good beekeeper to model yourself and your business after, and I'm sure he shared some things today that are beneficial to all of our listeners out there around the world.

Amy 34:45
I would encourage our listeners to go and take a look at his YouTube channel, so we'll be sure to add it to our additional notes and resources on our website.

Stump The Chump 34:57
It's everybody's favorite game show, Stump The Chump.

Amy 35:06
Hey, everybody. Welcome back to the question and answer time. Jamie, I'm super excited for our questions today. I've been receiving these questions quite a bit in the past couple of weeks, so I figured we'd go ahead and answer them on air. So the first question we have, this person recently split their hives, everything was successful, it was all good. Now, the colonies are growing again, they're

becoming overcrowded again. Would it be more productive to add another deep? Or should they split it again?

Jamie 35:38
I love this question. The reason I do is because I cannot possibly give her an answer to it because it's 100% opinion. It's completely up to the beekeepers. So Amy, we'll provide a little bit of background. I don't know for sure when this question came in, but it's April, middle April right now that we're answering. So I presume it probably came in the last month. So if that's true, then this is the time of year, at least, in the northern hemisphere, that colonies are absolutely growing. Usually, most major nectar flows and pollen flows are starting, maybe, late March and really going strong into April. So this beekeeper has split some hives, they were successful. These hives, the colonies in those hives are growing and now they're becoming overcrowded. Well, they're probably becoming overcrowded because the questioner was feeding them or because of all the bountiful resources available in the environment. So the ultimate question is, do I add more brood space? And do I give them another brood box to let them lay more eggs? Or do I split them again? Well, the answer is that it all depends on the answer to this question: Do you want more colonies? Or do you want to stay where you are? If you want more colonies, man, take advantage of this. There's a lot of incoming nectar and pollen still to be had. I mean, we're only in the first third of April. There's a lot more opportunity for your bees to bring in nectar and pollen over the course of the rest of April and through May. If your colonies are really growing, another split will allow you to have even more colonies. Just keep in mind, if you split, specifically this time of year, you're kind of sacrificing honey production in those colonies that you split. But maybe that's not of interest to you, maybe you just simply want more colonies, in which case, I would strongly advocate splitting, it's a great, great, great time of year to split. But if you don't want a single extra colony, you're happy where you are, you can either add another brood brood box for them to continue to have more space, or you can add honey supers and let them produce honey. It all depends on the configuration of the hive you run. I personally don't like running double deeps. That's just not how I manage bees. So maybe you don't want a double-deep brood chamber, maybe you only want a single deep. But it's really up to you at this point. Another option for you that I just kind of thought about while I was answering questions is maybe you split because you want to sell those splits to other beekeepers. Maybe you're happy with where you are with the number of colonies, but you can see splitting and selling those splits as another source of income. So really all the options are on the table, and it's completely up to you and the answer to the question, do you want more bees or not, or do you want bees to sell or not? And how you answer those questions dictate your beekeeping response, but I will tell you, it's a great time of year to split. I think you're seeing that, and I think your question exemplifies the fact that when resources are coming in and colonies are growing, it's a good time of year to split, make increases or produce colonies that are available for sale.

Amy 38:27
Yeah, absolutely. I had a public speaking engagement last week with some new beekeepers, and it was funny because I made the comment, like, "Just be careful. It's a slippery slope." I think most of the beekeepers in that room totally agreed with me. They were like, "Yep, it is." I'm like, "Pretty soon, you started with two, you're gonna end up with four, you're gonna have eight, and it's gonna keep going." So, you've got to determine for yourself when to stop.

Jamie 38:54
I mean, it's like 2, 4, 8, then 1264. Once you hit that critical threshold, you can't get enough. It's kind of bee fever. Right?

Amy 39:05
Right. Okay, so for the second question we have, this person is asking, what is the best way to assist our bees during periods of drought? I like the second question, can bees hear the stress of plants? Plants speak to each other. Right?

Jamie 39:22
Good questions. Well, there is some research literature suggesting that plants are able to communicate with one another, often through the production of specific chemicals. It's not like the way honey bees communicate through pheromones, but there can be stress compounds and things like that that can increase or slow the development of other plants in the neighboring area. But to answer the second question first, can bees hear stress in plants, there's currently no evidence that bees can detect stressed plants. Now, I'm going to throw that out with this big huge caveat, which is science and biology are always amazing to me, so I wouldn't be surprised if someday there wasn't research to show that bees can detect stressed plants and either avoid them purposely or utilize them purposely, depending on how that benefits the bees. But to my knowledge, there's no research at the moment on the ability of bees to be able to perceive trouble or stress in plants. So, the first question was, well, can we assist bees in times of drought? Well, I would stress that as long as bees have adequate honey or nectar reserves and good access to water, then they can take care of themselves during drought. If, for some reason, their honey reserves plummet, then you are going to have to feed. Or if, for some reason, your bees don't have adequate access to water, then you're going to have to provide it for them. So the two biggest stressors in drought times are inadequate food reserves, right? Because if it's a drought, then you don't have nectivorous, or pollen-bearing plants out there in the environment, so bees don't have that resource coming in, so you might need to provide it if they're running out. Bees deal with drought and lack of water by needing water to be able to thermoregulate the nest, so you may have to provide one or the other, or both, if it is a true drought.

Amy 41:21
Yeah, absolutely. I wonder if plants, when they start to stress, don't produce -- I don't know, I'm totally making this up -- maybe they don't produce a quality nectar or pollen content, and maybe bees avoid them altogether? Who knows? I'm sure there's something, right?

Jamie 41:38
Yeah, I mean, you're 100% right about that. If plants are truly suffering from drought stress, they may produce significantly less nectar or pollen. Maybe something that's very useful for bees during periods of good rainfall is terrible for bees in the absence of rainfall. So I don't know if bees can perceive it from a plant stress perspective, they may perceive it simply from a "This plant has resources for me," or, "It doesn't." But again, there's definitely evidence in the literature that suggests that some plants produce these secondary plant compounds in stressed times or in times that herbivory is high. For example,

here, I'm in South Africa, Amy, as I answer this question. I'm still on my two-month research trip, and I know that there are some plants around here that respond to herbivory by producing tannins that make the plants less palatable to the things that are eating them. So for example, if a giraffe is munching very heavily on a particular bush, that bush may produce a compound that causes the other bushes in the area to produce similar compounds that now make that not so palatable to giraffes. So there is definitely communication between plants. The question is, do bees perceive that? Do they cater their response to it? And I would say the jury's still out there. I just don't think it's a research topic. But it's certainly something that's possible.

Amy 41:53
All right. So we have reached our third question. I feel like there's a lot of research, and I'm sure there's always been research, but I feel like there's more up-and-coming research about drones lately. I think drones are at the top of many beekeepers' minds. This kind of leads me into that third question. The person's wondering what drones look like as a result of laying workers. We know that laying workers typically lay multiple eggs in a cell. That's one of the signs that we see, right? So if there are multiple eggs that are laid in a cell, does one hatch and just kind of take over? What happens to the other eggs, and are the drones smaller or not smaller? I mean, I have all these questions, but, basically, can you just talk to us about drones as a result of laying workers and what we know about that?

Jamie 43:51
This is an interesting series of questions. We know that when colonies go hopelessly queenless, some of the workers in the nest, their ovaries can develop and they can begin to lay eggs. Since they cannot mate, they can only lay unfertilized eggs, which, for most subspecies of honey bees, results in male honey bees or drones. So laying workers produce drones and the questioner asked specifically, too, about multiple eggs per cell. And that's because that is a condition of laying workers. Laying workers tend to be so happy and excited that they're able to lay that they will often oviposit more than one egg in a cell. So one of the characteristic signs of laying worker infestation, as it were, is you'll get lots of cells with multiple eggs in them. All these eggs, of course, are unfertilized and are likely to result in drones. Now, to kind of go with the first question first, what are the drones like that are the result of laying workers, they look like drones. They are often smaller, and that is likely not due to the fact that they are produced by laying workers, but it is likely due to the fact that the workers don't necessarily know they're laying drone eggs, and they're laying them often in worker-sized cells. So the drones are developing in a smaller space and are correspondingly smaller. So, it's not that they couldn't be large. It's just that their environment prohibits that from happening. With that said, research has shown that the drones produced by laying workers are fertile. They are able to produce semen that's mobile and can fertilize eggs. I don't think they're appropriately represented at DCAs, drone congregation areas. Their small size and other factors may limit their success at DCAs. But nevertheless, they just look like small drones, usually, and they are 100% fertile. Now, because there are multiple eggs per cell, how does only one drone end up in that cell? Well, that almost certainly has to do with the behaviors of the workers in the nest. It's not like one drone larva comes out of the egg first and eats his competition. They're not carnivores. What's far more likely to happen is that a worker will actually remove all but one of the eggs, or once the first egg hatches and there's a larva, she'll remove the rest of the eggs in that cell. So that is almost certainly worker-controlled. So then the next question is, are they smaller than

normal because they're raised in smaller cells? That's exactly what happens. When drones are raised in worker cells, they're certainly smaller. And so yeah, those are great questions, very thoughtful. But fortunately, science has answers to those. And it's a really neat phenomenon that we see. A lot of people think that the development of laying workers in colonies is basically a colony's last-ditch attempt to get its genes out there before it dies, right? Because colonies headed by laying workers are doomed, given that drones can't do anything in the nest, except mate. And so it's probably a colony's last-ditch attempt to just throw their genes out through any drones that they are able to develop and that are able to mate with queens successfully at drone congregation areas.

Amy 46:52
Gosh, I kind of wonder, like all this talk about the drones and the quality of semen and whether they're able to actually mate or not, maybe someone has done this already, but I was thinking, if you instrumentally inseminated a queen with worker laying drones, what would the quality of that queen be? Right? If she was inseminated with all worker-laying drones, that'd be a pretty cool question.

Jamie 47:20
That's a really good thought, Amy. I think that that's been done. It's just that I cannot remember the paper well enough to answer that question. But I think it's been done, which is what I believe is the basis for the idea that laying worker drones are fertile. We need to maybe dig that up and bring it up in a good Q&A again in the future because it's a really fascinating topic. As I said a little earlier, I happen to be in South Africa at the moment answering this question. And here, the Cape honey bees laying workers don't produce drones. They usually produce females without mating. And that's a whole nother story for a whole nother day.

Amy 47:57
Alright, well, thank you so much for your questions, listeners. Don't forget to send us an email or send us a message on one of our social media pages.

Serra Sowers 48:07
Thank you for listening to Two Bees in a Podcast. For more information and resources on today's episode, check out the Honey Bee Research Lab website at UFhoneybee.com. If you have questions you want answered on air, email them to us at honeybee@ifas.ufl.edu or message us on social media at UF honey bee lab on Instagram, Facebook and Twitter. This episode was hosted by Jamie Ellis and Amy Vu. This podcast is produced and edited by Amy Vu and Serra Sowers. Thanks for listening and see you next week.