

# Episode 110 Aug Mgmt\_mixdown PROOFED

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## SUMMARY KEYWORDS

varroa, bees, colonies, hive, queen, year, nectar flow, beetles, august, treat, florida, beekeepers, honey bee, questioner, hive beetles, populations, traps, swarm, find, amy

## SPEAKERS

Jamie, Serra Sowers, Stump The Chump, Amy

### 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.

### Amy 00:49

Jamie, we are getting into August of 2022. And I feel like the monthly management series and the monthly management segments have been well received.

### Jamie 01:01

That's good. I was a little worried because people might worry that it's all Florida-specific, but it's not Florida-specific. We do our best to make sure and kind of talk around this idea of what's happening during that time of the year, regardless of where you are. So I'm glad to hear that it's well received. I hope it's helping people know what to do and how to do it when that time comes.

### Amy 01:23

Yeah, absolutely. So August, we're prepping, we're kind of getting in the middle of summer. But we're also starting to think about the fall. And so we're trying to transition, think about both seasons and what we need to do moving forward.

### Jamie 01:37

Yeah, so certainly, if you're in the northern hemisphere, you're in the middle of summer. Of course, it's completely reversed if you're in the southern hemisphere. You could just go back and listen to the right months for you when it's your time, but certainly, here we're in the peak of summer where we are in Florida. That means it's hot, hot, hot. And I know a lot of the temperate world in the northern hemisphere is experiencing very similar conditions. And like you said Amy, fall is right around the

corner. So it's an incredibly important management month as you start thinking about getting bees through winter even though winter seems like forever away since it's so hot. It's certainly time to begin thinking about that now.

**Amy 02:14**

Right. So I would love to even just start with so the Bee Informed Partnership does their survey where we're looking at beekeepers and some of the challenges that they have. And so the number one is Varroa. So let's go ahead and start with that.

**Jamie 02:28**

Varroa, Varroa, Varroa. It seems like we could go through the entire year talking about what's your next concern with Varroa. And here we are. It's August. We're thinking about it kind of from the Florida perspective, but this is kind of a universal issue that you have to worry about, and that universal issue is Varroa. Varroa is a principal killer of honey bees, regardless of where you are on planet Earth. I know a lot of you may be listening this podcast well into the future. But if you're following us in real-time, it's August 2022. Australia, they've just found Varroa there. So even around the world, people are thinking about Varroa. Where we are specifically, it's peak Varroa time of the year. In Florida, our Varroa populations really start skyrocketing in August. I know in other places in the northern hemisphere that the same is true, kind of that mid to late summer, and Varroa can cause significant downstream problems for you. If you're not on top of Varroa populations this time of year, you're going to struggle getting bees through fall and ultimately through winter. When you might think, "Hey, I don't see Varroa. It's not a Varroa population," but it could be rooted in Varroa problems that you have now in August. So what I would say to that, in August, you've really got to continue monitoring for Varroa. You need to be looking at Varroa populations, if not monthly, at least every other month. But certainly this time of year, the populations can grow so fast that I would begin to recommend that you start looking at it monthly.

**Amy 04:03**

Alright, so we always, Jamie, so we always talk about monitoring for Varroa. So you go in you monitor, our threshold is treating when you find three mites for a hundred bees, and so, you find three mites for 100 bees. So then, how do you decide? I mean, what are you going to do next?

**Jamie 04:19**

Amy, this is such a crucial discussion, because it's important that we don't just leave this discussion with monitoring. I believe that you should monitor in the months of August and September and November because this is the time of year that high Varroa populations can cause colonies to crash quickly. Now, even if you have a moderate Varroa population, you're at, or near that economic threshold of three mites per 100 bees, those mites can be taxing those new bees that are being produced. And if you live in a colder climate, it may be those bees that are your winter bees that you need to carry your bees through fall or winter. So you can't really even have marginal populations of Varroa this time of year, you really need to be treating at that threshold of three mites per 100 adult bees, which you can determine using alcohol washes or sugar shakes. So just like you asked Amy, what do you do if you find it? Well, August is tricky. And it's tricky because some of the treatments that we have available to us are incredibly temperature dependent. For us, if we find here in Florida at or more than three mites per hundred bees, then we have very limited options. For example, the formic acid treatments or the thymol-based treatments, we would have a hard time using this time of year

because it's just so hot, and we'd find ourselves outside the temperature range a lot. So we might have to default to those that are a little bit more flexible like Apivar, as an example the amitraz-based treatment. So that's why it's so crucial that you have a management strategy plan in place in August and September. When it's hot, you find yourself at these high numbers, what do you have available to you? That's, of course, Amy, why you and I are such a fan of the Honey Bee Health Coalition's Guide to Varroa control, because it walks you through that. If it's this time of year, and you've got this bee population, and you've got this Varroa population, and your temperatures are this, here are some good options for you. And they have that decision support tool that can kind of help walk you through making the decision what to do, depending on what you find. So I will tell you, it can be easier to select options for Varroa control in October and November or January, February, and March. It can be very difficult in August to select options because your options may be truncated, depending on the temperatures that you're experiencing.

**Amy 06:52**

Absolutely. You had mentioned a really good point, the Honey Bee Health Coalition, their Varroa management decision tool, and not only do they give you suggestions on what you can use, but they have how-to videos of how to use them. And I know that that is probably like the one thing people get really intimidated by, is oh, I just don't want to treat because I don't feel comfortable doing that. And so they have great educational videos on how to apply these different treatments in your apiary. Okay, so let's move on to other pests and diseases. So I've been seeing small hive beetles, when am I not seeing small hive beetles? They're always kind of around, right? They're always just really annoying to be around. But what do we do if we see small hive beetles? How do we monitor and control for these?

**Jamie 07:38**

Great, great questions. So many of you listening out there may not even have small hive beetles where you are. If that's you, you still need to listen to this segment because they may be where you are someday, or you just need to thank your lucky stars that you're not having to deal with this pest. But for those of you who do have this pest present, you will know that late mid to late summer, early fall, that seems to be when small hive beetle populations peak. Now, we tend to understand Varroa quite well: treat when you get three mites per 100 bees, here your treatment options, we know all of that stuff. But we don't have similarly good recommendations for small hive beetles. And so it's more like one of those things that your experience will tell you when you need to do something. So for example, it's not as easy for me to say, "When you take off the lid of your hive, if you count six small hive beetles you should treat. If you sample this particular way and you get 10 small hive beetles, you should treat." There are plenty of times where you can have what I would consider high hive beetle populations, when you're working a hive, you see 50 to 100, that you wouldn't need to do anything at all the bees have it under perfect control. Conversely, there are times where you see three to five small hive beetles and you may need to do something because the bees can't handle that depending on what state they are in. So it's a lot of experience with regard to small hive beetle control. So let me just kind of walk you through this process in August. It seems to be a time of year that those populations can easily get to damaging levels, and I just told you that there's no such thing as a level that you need to watch out for. But if you're starting to see kind of dozens of beetles upon inspection in August and your colonies are of small to moderate population, then you might consider trapping those small hive beetles. There are a number of traps that are available on the market but having traps in hives this time of year can be a

really good idea if you're starting to see escalating beetle populations. And what are those? How do those traps work? Well, a lot of them are attractant-based. They'll recommend things like apple cider vinegar or vegetable oil or mineral oil. Vegetable oil and mineral oil, as far as we know, are not necessarily attractants. You're not going to get beetles wanting to go in there. But they naturally go into these traps anyway and will die from vegetable oil or mineral oil. On the flip side, we know they are attracted to apple cider vinegar. But the downside there is they are able to go in and out of apple cider vinegar with no negative repercussions. So a lot of beekeepers will mix apple cider vinegar for the attractant side of things with vegetable oil or mineral oil for the killing agent side of things. They'll mix those in a trap so that you can get both an attractant and a killing agent and get beetles in these traps. Having one or two traps per box of your hive is a pretty good idea this time of year if beetles are a thing for you. So let's just say, for example, your standard hive configuration is a single deep brood box with a medium super on top of that. Then you would need, say, two traps in the bottommost box and two traps in that next box as well. Those seem to be configurations that we use in our lab pretty effectively here at the University of Florida. So we tend to use two or so traps per hive box depending on the type of trap you use. Make sure your colonies are level and just make sure your colonies are not moved, or if they are moved while you have traps in, that you keep those colonies level because you don't want the contents of those traps to spill out into the hive. And then you'll want to check those traps every other week to make sure that they have enough attractant or killing agent in them during the beetle time or in case the beetle populations get full in those traps. You can clean them out and repurpose those traps and start over. And so those things seem to be really good ways to kind of keep taxing those beetle populations that are high. There are a couple of chemical control agents for them, but I don't usually mention those because those don't work overly well. At least, the labeled products don't work overly well. And of course, I can't recommend the off-label use that seems to be popular for controlling small hive beetles. Beyond trapping, you want to keep your colony strong and healthy and control all the other things that you can control: food reserves, good queen, Varroa, because as long as those stressors are minimized in your hives and you're trapping beetles with some regularity, then bees tend to be able to address the beetles themselves.

**Amy 12:28**

All right, so I've been getting phone calls about treating colonies with Terramycin, or tylosin for American foulbrood. And so do we need to start thinking or looking at the different foulbrood periods at this point of the year?

**Jamie 12:44**

Amy, this is such a difficult discussion. It's funny, because 20 years ago when I was keeping bees, close to a brand new beekeeper, been keeping bees for about 10 years by that point, I suppose, and when I just started educating beekeepers it was really simple for us with recommendations regarding European and American foulbrood. We would just say treat twice a year, treat spring, treat fall, the antibiotics are available, treat prophylactically, you will not have these issues. But the science and the strategy has absolutely kind of flipped over the last 20 years. So what do I mean by that? Well, let's break it up into the two foulbroods because the recommendations are different. If you find European foulbrood, European foulbrood is caused by a non-spore-forming bacterium. So if you find it, you can, at least in the US, treat with an antibiotic and it will clear up the European foulbrood. So I wouldn't recommend prophylactic treatment for European foulbrood. In other words, I wouldn't recommend treating in advance of seeing European foulbrood. You can just treat in response to it. A lot of folks take

the anti-antibiotic stance in colonies. That's perfectly okay. In that case, if you see European foulbrood, you can feed colonies, you can requeen colonies, you can add bees or brood to help them naturally overcome that infection. And usually that will help pull bees out of it. Now, American foulbrood is a whole different story. A lot of the recommendations, the treat twice a year kind of came out of the American foulbrood paradigm but American foulbrood is caused by a spore-forming bacterium. So you've kind of got this vegetative state, the active state of American foulbrood, and then you've got this hearty, resistant straight, which is kind of the spore trait of the American foulbrood. And so why is this a problem? Well, it's a problem because when you see active or vegetative, an active infection of American foulbrood, you can treat with an antibiotic and the signs of infection will go away because you will have killed the active American foulbrood. But you will not have killed the spore form of American foulbrood. And so sometime after treatment with an antibiotic, that spore can reanimate and become active, and you get the infection all over again. So you can't really cure a colony with antibiotics for American foulbrood like you can with European foulbrood. Furthermore, it's not easy any longer to get antibiotics in the United States for European and American foulbrood because you have to have a prescription or a VFD, veterinary feed directive, depending on which of the two diseases you're treating, and how you're treating based on the product label. So you'll need to work with a veterinarian for that here in the US. But the general recommendation that we make for American foulbrood now in our lab is if you find it in a colony, if you see active signs of infection, that you simply burn that colony. Let's just say you have an apiary, of, say 10 colonies. If you find it in a colony, you would burn that colony, and then you would consider working with your veterinarian to secure a VFD or a prescription to treat the other colonies in that apiary. So you wouldn't necessarily go across all of your colonies across all of your management apiaries, you would burn the infected colony, and then you would treat the rest of the colonies in that same apiary. Again, working with a veterinarian to secure that treatment, make sure that you're following the label. So we always bring up AFB and EFB this time of year out of habit. It's just the time of year we would tell people to treat, but now we're just using this as a reminder, always look out for it, and make sure you respond to the two diseases appropriately.

**Amy 16:43**

What about those take-home tests that they have for foulbroods, would you recommend using those? I mean, is there one, I can't remember if there's one specific for American foulbrood versus European foulbrood. Can you talk a little bit about that?

**Jamie 16:55**

Yeah, Amy, thanks for bringing that up. So I do recommend those. There is at least one company that sells these tests that you can use to determine if you've got AFB or EFB and you have to do a different test for both. So it's not like you can do one test on a colony, you have to do one test to see if it's AFB or not or one test to see if it's EFB or not. And this particular test is what we call in the science world an Eliza test. It's very similar to a pregnancy test. The idea is the same. You process an infected individual in a liquid, the liquid is then placed onto this test. And I forget if it's one line or two lines, it's positive or negative, you just follow the test direction, but it's very accurate if you get a positive. So a positive you can feel really good about. A negative, you can get false. I think the rate of false negatives is a little higher than the rate of false positives. So it's the same thing for pregnancy tests. So if you see it, then you feel really confident that you have it. If you don't see it, it's reasonable confidence that you don't have it but you can't rule it out completely. So I do like the test, especially for folks who are

uncomfortable identifying American and European foulbrood. Having those tests on hand really make it easy for you to do a kind of a quick and dirty field diagnostic of it with really good accuracy.

**Amy 18:26**

Yeah, so we're always talking about Varroa. I feel like our listeners are probably like, "When are they not going to talk about Varroa anymore?" And the answer is once we take care of the problem, right?

**Jamie 18:36**

Exactly.

**Amy 18:37**

All right, so with the Bee Informed Partnership, another reason beekeepers state that they lose their colonies is because of nutrition. At this time of year, maybe we could talk about, do we need to feed our bees, what's going on? I don't know about you, but I feel like there's not much blooming at this time.

**Jamie 18:55**

Yeah, so it's such a tricky thing to talk about feeding bees in August. A lot of people are like, "What are you talking about? My bees have plenty of honey." Well, it depends on where you are in around the world. I know where we are here, specifically in the Gainesville area where the University of Florida is headquartered, colonies here can run out of food this time of year. If you didn't have a significant spring nectar flow, only had a marginal spring nectar flow, by the time you make it to this point in summer, your bees may need food. Again, I'm going to use a very specific example and I know is very unique to where we are, but where we are here in the Gainesville area, our bees can run out of food. They might have had a very marginal spring nectar flow, they will have exhausted their food stores through summer, so your bees may not make it to the next nectar flow. The next nectar flow for us is Spanish needle, which many people consider a weed growing in our area, but it's a very important plant for honey bees. And if you get copious amounts of Spanish needle that start blooming kind of in late August and early and through September, you can get up to a super of honey. But if your bees don't have food now, they're not going to make it to Spanish needle. So you've got to look at your colonies and say, "Hey, do my bees have enough honey to make it to some of these late summer or fall nectar flows?" And if they don't, you've got to feed. Just giving a very personal example, where I live in the High Springs area in Florida, Spanish needle is the thing that my bees need. And if that's a month away, there were times in August that I have to feed in order to make sure that the bees make it to that point. So what I would recommend in that regard is that you just go and hoist your colonies from behind to see what the overall weight is, or physically go into your hive to see if they have enough stored food. If not, you're going to need to feed as those bees are making it through to that next nectar flow. And if you're fortunate enough to live in an area that gives you a good nectar flow in kind of late August and September like we see here, if not, you might not get a nectar flow until September, October, or maybe not one at all. And so your bees are going to have to make it all the way through to next spring. And so you definitely want to monitor stored nectar or stored honey this time of year because you want to make sure the bees have enough of it to power their way through fall and winter.

**Amy 21:16**

Yeah, absolutely. I mean, I know that our beekeepers were also just harvesting some honey. I guess there's that fine line between providing them forage and also pulling honey. Alright, so we've talked

about Varroa, we discussed small hive beetles, we discussed American foulbrood, European foulbrood, we talked about feeding colonies if we need to, the last thing that I wanted to talk about is that it's really hot outside right now. And I brought it up at the beginning, but I'm bringing it up to finish off this segment. Well, I mean, there are two parts of it, right? So there's the colony piece of making sure that your colony is staying cool, and we can talk about that. But there's also the human aspect side of things, Jamie, where I went out and worked bees a week ago or so, and it was so hot out there, I could not stand it. It was rough. It was hard to breathe.

**Jamie 22:10**

Yeah, so let's do that kind of in reverse of the way you talked about and what you talk about most recently. Humans, right? You gotta be careful out there. A lot of folks, if you're listening to me, you're probably a beekeeper, you almost certainly started keeping bees in full bee suits and bee veils and gloves. But man, August is a hard time a year to do that. Especially if you're closer to the equator. Here in Florida, we're pretty close. Maybe in New York or England or Germany or places like that, you're further away, but gosh, it can be hot in August. You've really got to make sure and take care of yourself. When you're in an apiary, take plenty of water, make sure that you are hydrated, make sure that you're not overheating, look for the signs of heat exhaustion, make sure you take care of yourself, right? Beekeeping is a fun, enjoyable thing but you want to stay healthy and safe in the process. Now, from the bees' perspective, bees are pretty good at taking care of themselves with regard to heat, but you can do things to help them out a bit. Two things come to mind. Number one, you've got to remember bees work hard to thermoregulate in the heat. They have to cool that nest. And one of the ways that they do that is they collect water and sprinkle droplets of that water around the nest and then they stand at the nest entrance and the walls of the nest, fan their wings, which circulates air through the nest, and through evapotranspiration, you get a cooler nest. Well, the key ingredient is water. So you've got to make sure in the hot months that your bees have good access to clean water. What I mean by clean water, a lot of beekeepers respond, "Well, bees don't actually collect clean water, they always collect the dirtiest looking stuff that they can find." I'm fine with that and what I mean by clean water is you just want to make sure it's free of contaminants like pesticide runoffs, as an example. So you want to make sure that bees just have safe water. Maybe that's the best way to explain it. Secondly, it helps the bees a little bit if they're in afternoon shade. My mentor taught me early morning sun and afternoon shade can kind of help them out in the summer months. There's quite a few degrees difference between being in full sun and being in shade. I don't recommend bees being in full sun or recommend bees being in full shade. I like the sun to wake them up in the morning and they get a lot of sun exposure through about lunch but right between those lunch hours to the five o'clock hour, it's nice if the bees are in a little bit of shade. That kind of helps them thermoregulate better in the warmer times of the day. Otherwise, bees do their thing. They know what to do, if they can have water and a little bit of morning sun and afternoon shade, they can do their thing. I know a lot of commercial beekeepers who keep colonies in full sun, so bees totally can do that. It's just that making sure they have good safe water, as well as afternoon shade can really help them keep that colony cool on those days that are so, so hot.

**Amy 25:14**

All right. So those are our recommendations for management and your apiary for August. We hope you have some happy beekeeping in August of 2022. Let us know if you have any questions. And as

always, these recommendations will be in our additional notes and resources located on our website, UFHoneybee.com.

**Stump The Chump 25:40**

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

**Amy 25:52**

Welcome back to the question and answer segment. Jamie, the first question I have actually we've been receiving a lot of follow-up emails from some of the Q&A's that we've been releasing, which I actually like because that means people are actually listening to us.

**Jamie 26:07**

Or it means that I'm doing a terrible job explaining so people feel like, "Could you have Jamie do that again, please?"

**Amy 26:15**

No, I really like it. Because, I mean, it gives us an opportunity to provide.

**Jamie 26:20**

Elaborate.

**Amy 26:20**

Yeah, and also for people to provide feedback. So it's like our way of communicating with them. And then they can communicate back with us. And we can do that on air, which is so much fun. So the first question we have, so this questioner was listening to a Q&A segment, and he said that you said --

**Jamie 26:42**

Uh oh.

**Amy 26:43**

Yeah, we get in trouble when we do that. But he said that you said that you use swarm cells only if or when you can't get other queens for your colony. So if you said that, why would that be? And this person always kind of considered swarm cells being the best that they can get. So maybe elaborate on that just a little bit?

**Jamie 27:05**

Yeah. So I guess I need to be more careful with what I say kind of moving forward. Let's start this idea over. So the premise here is that I've got a queenless hive or a queenless colony, I'm working it, and there are some swarm cells available. Do I just allow the colony to requeen itself? I cull out all the swarm cells, except maybe one or two, allow the colony to requeen itself using those cells, and probably, I danced around this issue and said that that is not my preferred way. And it really has nothing at all to do with the bee genetics, it just all has to do with timing. So kind of hear me out. Bees swarm, usually, in the weeks leading up to or during the weeks of the major nectar flow. So if swarm cells are available, then it's likely that I'm about to go into or I'm in my major nectar flow. So if my colony is queenless around that time, I don't want to use swarm cells to requeen it because it just takes too



much time. I need bees and a queen now. So think about it. If I see a cell, it's going to be a week or two before the queen emerges, it's going to take two weeks for her to mate, and three weeks for her first egg to go through all of the developmental stages and produce an adult honey bee. And so we're talking six, seven weeks by that point, and by that time, the major nectar flow is over. So it really doesn't have anything to do with genetics, it's all just timing. If my colony is queenless at a time of year swarm cells are available, that means my colony is queenless usually around my major nectar flow, and I don't want that to happen. So it really has nothing to do at all with the quality of the queen. I really liked what the questioner says. He or she said, I always considered swarm cells the best cells I can get. I like that idea, this premise that, hey, if the bees are making a queen on purpose, then they are treating that young female larva like royalty all of the time that they can treat her like royalty rather than like a colony goes queenless and now they're scrambling to find a female larva to push towards a queen. So I totally get that. So my statement was not really born out of anything to do with the quality of queen produced or swarming genetics, which is what they're asking me about, this idea that if I choose the queen from a swarm cell, am I selecting for colonies that want to swarm more? It really has nothing to do with any of that. It really has to do with, usually, if I'm having to produce the queen from a swarm cell, I need a queen yesterday and not seven weeks from now, right?

**Amy 29:39**

Exactly.

**Jamie 29:40**

-or her offspring seven weeks from now, which is really what I would have meant by that statement. So great, great follow-up. Appreciate the questions. Yeah, and I'm grateful for the opportunity to clarify kind of what I what I had meant.

**Amy 29:52**

Absolutely. So the second question is about cold weather beekeeping, which we know nothing about because we live in Florida.

**Jamie 29:58**

I can make up an answer to that, that's easy, shoot them out.

**Amy 30:01**

It's really funny because the questioner is from Washington state. It's just funny reading the question. They're heading into June and the weather has been between 50 and 60 degrees Fahrenheit. I think here in Gainesville, Florida, we probably have 50 to 60 degrees like a week of the entire year, right? I mean, we're in the, I don't know it, we're in the 80s, 90s most year-round. But, anyway, so let's go back to cold weather beekeeping. So the questioner is asking, what are some minimum temperature ranges for specific activities like brood inspection, shaking bees for splits, and looking for swarm cells, basically, what is the minimum temperature where we would be able to actually go into a colony and work a colony? They also mentioned that it's been too cold to work them, but they also swarm when it gets above 60 degrees.

**Jamie 30:02**

All right, so for the rest of the world, I just want to apologize that we still use Fahrenheit in the States. So 60 degrees Fahrenheit is roughly 15 and a half degrees Celsius. So the questioner is basically saying, can I work my colonies under 15 and a half degrees Celsius or 60 degrees Fahrenheit? Because the moment it crosses 15 and a half degrees Celsius, or 60 degrees Fahrenheit, the bees swarm! So what am I supposed to do? And it's funny that they mentioned 60 because that's usually the threshold that's taught in the books, that's also the threshold I tend to use. If it's over 60 units, 50 and a half, I'm very comfortable working the colony and making splits and all that kind of stuff that the questioner was asking about. If it's kind of 50 to 60, which would be, I don't know, 10 to 15 and a half or so, I get a little bit more nervous about doing those things. And if it's under 50, I tend not to do those things. So I would be comfortable if it's over 60 degrees Fahrenheit. So the questioner is like, well, that sounds good and stuff, but the moment it crosses 60, they start to swarm. So I would be comfortable just under 60 starting these activities to try to stay ahead of the bees. And it's funny, everybody has a different perspective on what it means to be cold. Amy, you mentioned it, we live in Florida, so it's not ever really cold here, but we routinely work bees in the 50s and 60s here in Florida. And I vividly remember when I was up in Georgia, I needed to collect samples from some colonies at Clemson University. When I was at the University of Georgia, I was working with a collaborator at Clemson University, and it had iced a couple of days before I needed to work those colonies and it was still in the 30s Fahrenheit, which is just above zero Celsius.

**Amy 32:43**

Oh, that's too cold.

**Jamie 32:44**

And there was ice on the top of the hive, and I had to take a chainsaw with me because the ice had caused some trees to break and fall down in the path. I was still going into those hives and collecting samples of bees and things like that. Now, I wouldn't want to do that for management purposes. But for research purposes, I needed to be. So why am I telling this story? Because I tend to be more comfortable working bees when it's slightly cooler than what the books will say. So I don't mind working bees when it's a few degrees under 60 degrees Fahrenheit or 50 and a half Fahrenheit. And I know a lot of beekeepers in colder climates do this routinely. I think the key is when you're opening colonies in those situations, you really just need to do your job and get out because those temperatures are cool enough to cause brood damage. And so you want to get in, do your thing, and get out and not leave those hives open for great periods of time. But I think 55 to 60 is usually okay, especially if there's no wind and it's sunny, but if you're gonna do that, get in there, do your job, and get out as quickly as possible so you don't cause brood to be chilled.

**Amy 33:47**

Okay, so the third question we have, I'm just going to read the background and the question straight from the email. So this person said, "I just purchased a queen and installed her. She started laying a few days later and this person tried to mark her using a little marking cage with the sponge plunger." That thing that looks like the Flintstones popsicle ice cream thing. Do you know what I'm talking about Jamie? Alright.

**Jamie 34:11**

Oddly enough, I do. The moment you said that, you said the word Flintstone, and I'm like, "How is she going to turn this into Flintstones?" But then you said Flintstone popsicle thing, I'm like--

**Amy** 34:20

Yeah!

**Jamie** 34:21

Perfect. Just for the rest of the world, there's this little frozen dessert you can get- forget about it.

**Amy** 34:28

I'll link that in our additional-

**Jamie** 34:29

It looks like the Flintstones popsicle things. Maybe link it in our show notes. Put a picture up.

**Amy** 34:33

I will. Alright, so this person's used these several times before, no problem, to mark the queen. This time, however, with very light pressure applied, the queen seemed to freeze up as if she had died, and then she started twitching a little bit. So after she was twitching a little bit, several minutes went by, this person set her on the frame, she seemed to hold on more or less. So we don't know, actually, if the queen is dead at this point, right? So fast forward a couple of days later, they did find eggs in the hive. And so, Jamie, what are your thoughts on this? Was the queen dead? Was she alive? Is it a new queen? Is it the queen laying eggs? What's happening?

**Jamie** 35:11

I love this. I've never actually had to answer a question about this ever. Amy, are you aware of those fainting goats?

**Amy** 35:18

Oh, the ones that fake faint? Like they get scared and faint?

**Jamie** 35:18

Yeah, that's it.

**Amy** 35:18

People do that too, sometimes.

**Jamie** 35:20

That's right, people do it too. But there's like this breed of goats that if you make anxious they just like, drop.

**Amy** 35:20

I feel like that sounds so bad.

**Jamie** 35:27

I've seen videos of it. Yeah, it's crazy. So anyway, why am I talking about this? Well, in my 30 years of keeping bees, I've seen exactly what this beekeeper is describing on multiple occasions, and I have no better explanation for it than it's kind of like the fainting goat scenario. I have seen queens, under what appears to be duress, simply stop moving. And everything this listener said is exactly what I experienced. "Oh my gosh, is she dead? She's not moving. Wait, she might be twitching. Wait, she's only sort of twitching. Did I squish her? Did I pinch her between frames? Did I hit her in some way? What did I do to kill her? Well, I guess I've got no better recourse than to put her back in the hive and come back a few days later." And then she's walking around and there's eggs.

**Amy 36:24**

And she's totally fine?

**Jamie 36:25**

Totally fine. So all you are describing is something that I've seen multiple times, and that it's always described as kind of a fainting queen syndrome, where if, I've never seen it explained scientifically, I've always seen people explain it away, kind of like the fainting goat thing. They're just stressed out, and boom, they stop moving. And I don't know physiologically what triggers it. I don't know why all queens don't do it, only some do it, what leads to it, what happens, how long it takes them to recover. But every time I've seen it happen, they've recovered. And a few days later, I have eggs and she's walking around as if nothing happened. So what you're seeing is normal. I just have no good research explanation for it other than it's possibly a response to stress, kind of like the fainting goat syndrome. So there you go.

**Amy 37:23**

That's interesting.

**Jamie 37:24**

It's neat you were able to see it. And I'm glad you brought it up in our Q&A, because maybe many of our listeners around the world have kind of tossed such queens aside, but when I see it, I always put her back in the hive and wait a couple of days before I make a decision on whether or not they're queenless. The listener is saying, "I came back four days later and there's eggs but she died." So she didn't die. That's the key. She reanimated, and life was good after you put her back in the hive.

**Amy 37:50**

That is so funny.

**Jamie 37:51**

There you go.

**Amy 37:52**

Fainting queen syndrome.

**Jamie 37:53**

We've got to do a project.

**Amy 37:55**

You heard it here first.

**Jamie 37:56**

What is that? What would that acronym be? FQS. There we go.

**Amy 38:00**

FQS.

**Jamie 38:00**

Yes, FQS.

**Amy 38:01**

We just started something.

**Jamie 38:02**

We made our own bee acronym, happy. Happy now.

**Amy 38:04**

Yes we did, because we needed another acronym in the honey bee world.

**Jamie 38:07**

That's right. Well, we've got the best ones, parasitic mite syndrome, and what is that? My favorite one, of course, that one's PMS. And then the other one's, I forget, automatic self-sacrifice. I forget what's the first word, but it's something like that. We have the best acronyms in the bee world. So now we have FQS.

**Amy 38:28**

Alright, so if you have other questions, these questions are really fun, I'm excited. Some of the questions we don't actually know we have to actually do some research and look for some stuff, right?

**Jamie 38:39**

We don't know everything?

**Amy 38:41**

Yes. So if you have other questions, if you have follow-up questions, if you want us to clarify anything that you've heard on the podcast, please let us know via email or on our social media pages: Facebook, Instagram, or Twitter.

**Serra Sowers 38:59**

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