Episode 64_mixdown PROOFED

Wed, Apr 06, 2022 12:25PM • 54:16

SUMMARY KEYWORDS

veterans, queen, beekeeping, colonies, swarm, program, honey bees, bees, hives, msu, year, bee yard, working, folks, michigan, military, msu extension, cages, extension, nectar flow

SPEAKERS

Amy, Stump The Chump, Jamie, Guest

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 01:12
Welcome to this segment of Two Bees in a Podcast. Today, we have a very exciting guest. We have Dr. Adam Ingrao. He is the State Extension Specialist and Agricultural Entomologist for Michigan State University. He is a Veteran's Liaison for MSU Extension. And many, many, many of you have reached out to me asking me about his program. He is the founder of Heroes to Hives. And so welcome, Adam, thank you so much for joining us today.

Guest 01:41
Thank you so much for having me. I'm excited to be on the show.

Amy 01:45
Alright, so we, normally, when we bring on a guest, we have them tell us all about themselves, your background, how you got into bees, how you got into extension, etc. So can you go ahead and tell us a little bit about yourself?

Guest 01:56
Absolutely. Yeah. So my journey into agriculture really started as a child. I started working on farms at about 14 years old in Southern California where I grew up and spent my, kind of my formative years in high school working on picking crews and packing crews. So picking cherries and apples and then

packing those and packing houses and getting them out to customers is kind of where I started. And that really kind of has stuck with me all my life. When I ended up graduated from high school and I finished that up, I went into the military, joined the army and served in the Army as a Patriot Missile Fire Controller. And when I got out in 2004 as a service connected disabled veteran, I was really looking, kind of, for that next opportunity and ended up spending a couple of years working as a mechanic, had been kind of spinning wrenches in the military, so that made sense for me when I first got out. But really, I was kind of at that time in my life kind of struggling to find that next mission. When I left the military, it was not by choice. It was becausnondeployableployable because of an injury that I had received. And that pretty much kind of ended a career that I had planned on doing. So I planned on spending 20 years in the military and retiring. Becoming an entomologist was never on my radar at that point. But when I came home, and, and met my wife, we started talking about kind of what our vision was for the future. And for me, you know, working as a mechanic, I still kind of had this, this real craving to serve my nation, I was not done serving my country. But you know, my country was kind of done with me serving as far as the military was concerned. So I was looking for kind of this kind of new opportunity to serve my country, and my wife and I had really had some interesting conversations about where we wanted to go in life. And we both identified agriculture as a place we wanted to go back to and a way that we could serve our country would be, you know, through providing healthy foods for our country. So I ended up taking that kind of notion and used my GI Bill to go back to school, and I finished my bachelor's degree at Cal Poly San Luis Obispo in plant science, and while I was there, during I think it was my first or second semester there, I took a beekeeping class as an elective. And that pretty much changed my entire life. I mean, from that first time in an apiary, I can pretty much chart my entire professional trajectory after that. It really was -- I'm not a very spiritual person, but I'll say it was probably the most spiritual experience I had had to that point. By being in that apiary, you know, being around hundreds of thousands of bees and really feeling a sense of calm that I hadn't felt in a long time, and I think part of that it for me is that you know, when you're in apiary, you have to be mindful, you have to be present. And that's a practice that those of us that are struggling with, you know, things leftover from the military, you know, kind of forces us in that space of being present and not reliving those experiences in the past. So I was having this really amazing experience working in the apiary. I started working more consistently with my first mentor Scott Jeffries out at Cal Poly, and he really instilled a lot of qualities, you know, within me as a mentor that really made me understand that there was an opportunity to serve my nation by serving honey bees and by being a steward of honey bees. And from that point on, it was all about entomology. I ended up working in our entomology lab with Dr. Dave Hedrick out at Cal Poly doing all sorts of research projects. Anything I could find that was related to an insect, I wanted to be part of. And that ended up turning into being recruited to MSU where I finished my PhD in the Department of Entomology here with Zsofia Szendrei and really gave me that opportunity to now, not only was I, you know, super excited about working with honey bees, but I had the academic background now at this point, and I had been keeping honey bees from that point at Cal Poly on where I could really kind of dig my teeth into helping others. And so that ended up, after I finished my Ph.D, I was recruited to MSU Extension, and they created a new position for me at the organization as the Veteran's Liaison for MSU Extension. And within that role, I work with over 600 employees across the entire state of Michigan, helping them understand how to better work with veterans and how to create programming for veterans. And in addition to that, I run the Heroes to Hives program as part of that appointment, and The Sustainable Agriculture Research and Education

Program State Coordinator or co-state coordinator for Michigan, and that's a USDA program. So yeah, that's kind of how, where I, where I came from, and how I got into extension now as an extension specialist working in Michigan. So, Adam, that's a really fantastic story. My father was in the military, you know, his whole adult life. And I remember, you know, all the work that he did through there. And I know since I've been keeping bees, especially been working at kind of the university level, a lot of military folks are in our program, and they all get very, you know, all inspired around the bees. And there's so many great stories that come in. I love how you arrived at bees, this idea that you want to serve your country, continue to serve your country and that you picked agriculture as the way to do that. What, what a really neat way to find your way in the bees. So we've got you on our podcast because listeners asked for you, number one. Number two, because you've created this program, you're the founder of a program called Heroes to Hives. So for our listeners who may not know, can you tell us a little bit more about this program and how it came to be? Yeah, so Heroes to Hives is really a program that grew out of my own personal experience during that transitional period of the military. So when I got out and was, you know, finding my way through Cal Poly and took that first class, it really became evident after spending a semester in a beekeeping class, that beekeeping was much more for me than just beekeeping. When we're in the apiary, it's an opportunity to be present. And when you're not present, the bees let you know, right? I mean, if you're being sloppy, if you're not paying attention to how you're handling frames, if you're moving too quickly, if you're just not paying attention, the bees are going to let you know, and they're gonna let you know by bringing you back with a sting, right?

Amy 07:55
Yep.

Guest 07:56
And that's one of the things that really worked -- so that's one of the things that really worked well for me, was that in the military, we're constantly trained to respond to physical discipline, right? So if I do something wrong in the military, the first thing my platoon sergeant is going to tell me is, you know, push or, you know, go run a mile or some sort of physical activity to reinforce that what I did was not right. And for me, that really made sense in the bee yard. Like, if I didn't do something right, the bees are going to sting me. So really that is kind of where this all started was that I was having these experiences where, you know, I was not worried about where my battle buddies were in Afghanistan, I wasn't worried about those friends that never came home. I wasn't worried about the guilt or the grief that I felt leaving my unit. I was in the bee yard, and I was present. So that's where this all came from. What happened was is that after I took that class at Cal Poly, beekeeping became a really big part of my life. And my wife, her background is in transpersonal psychology, and so she was readily seeing how the interaction with nature, with honey bees, changing things in my personality. That was really powerful. I totally saw a transformation in my life from honey bees. And although that may sound crazy to some folks, I mean, those of us that are in beekeeping know how how transformative experiences in the bee yard can be. And so when we -- when I came to Michigan to finish my, to do my Ph.D at MSU, the first year I was at MSU, part of our Ph.D. program at MSU was that we had to have some sort of a component of our Ph.D program that was totally outside of our areas of expertise. It was essentially kind of our opportunity to explore something that was not directly related to our research, but that could have a big impact, and I wanted to do something extension related. So I proposed that I was going to

create this beekeeping program as part of my my Ph.D program, and that's what we did. So the first year that we did this was in 2015. And what we did is that my wife and I had a two-acre urban farm about, it was about two miles off of MSU's main campus. And we had started that farm and we're farming that actively. We had, I think, about 15 beehives at the location at one point. And what we did was, we wanted to see if other veterans could maybe have the same experience I did, you know, maybe beekeeping could be transformative for other veterans as well. And so we did that first year -- was is that I, I was working for a nonprofit at the time while also doing my Ph.D. And I've always worked in kind of this space of serving underserved audiences in agriculture. So I was working for a nonprofit called Michigan Food and Farming Systems at the time. And in that nonprofit, I had developed a program called the Veterans and Agriculture Network, which is basically an outreach program for helping veterans identify agriculture as a career opportunity. So because I was doing all this other work with veterans, I knew a lot of veterans in the community. And so we basically selected five veterans from our neighborhood, from kind of the Lansing area where we were doing this. And those veterans followed me through an entire season of beekeeping for nine months. And we basically did hands-on experiences in the bee yard. I turned our living room into a lecture hall. So we were doing lectures in my living room. The garage was basically our workshop. And over the course of that year, we brought those students through an entire season of beekeeping. And, you know, it was a really great experience and the reactions that we were seeing from these veterans were really amazing. And one of the things, a couple things that really stood out for us was that number one, you know, after everybody got comfortable working with the bees, what we started to see was that the conversations in the bee yard stopped being about honey bees. And they started being about things that happened in the military. And I get a little choked up even thinking about it, because of some of the conversations that we had were, you know, not things that are easy to talk about, but rather, you know, maybe things that we were forced to do in combat that have left moral injury. And being able to have open discussions about that with other veterans and using beekeeping as a conduit for that healing was incredible. And I'll never forget the last session that we had of that first season was we were doing an extraction session. And so every -- we were extracting all the honey from the season. And we were splitting the honey with the students that were part of that program the first year. And one of the spouses of one of our participants came up to my wife and told her point-blank, "I don't know where, where my spouse would be without this program." And that has stuck with me since that point. And from that point on, I knew that it wasn't just me that was experiencing these transformative things in the bee yard, but it was other veterans that could do it as well. And so from that point on, we really focused on, "how could we build this program?" I'm the type of person that, given the opportunity, I will speak to anybody about anything. And when it comes to bees, I'm willing to talk to anybody. And so I started, you know, going around talking about this program that we were doing and how we were having, you know, this impact on some of these veterans. And it just so happened I was invited to give a talk at the Michigan House of Representatives about other veteran work I was doing, and I had included a little bit about Heroes to Hives. And it just so happened that a member from the AT&T Foundation was in the audience. And they ended up reaching out to me and said, "Hey, Adam, you know, we love what you're doing with veterans and beekeeping. Can we support this program in some way?" And they wanted to give us a $15,000 donation to build out the program. We were a for-profit business and couldn't accept that donation. So that is when I reached out to my colleagues at MSU, Meghan Milbrath particularly, and told Meghan, "Hey, you know, I've started this program -- my wife and I started this program, we see

that there's good opportunity here, we've got a little bit of seed money to get something going. Could we bring this to MSU, under your guidance, under the Michigan Pollinator Initiative to make this work?" And that's what we did. And since then, this program has been at MSU, first in the department of Entomology and for the last three years has been in, in the MSU Extension. Now operating and program has just grown leaps and bounds. It is, it's pretty crazy to see how quickly we've grown. But this year, we're just shy of 8000 students registered for the program. And those students are from every US state, territory except Samoa, and we have active duty personnel in Europe and Asia.

Amy 14:12
That is amazing. What a cool program, and what an awesome story. I'm just -- I'm so pumped about it, because you were, I mean, you were doing extension before you knew you were doing extension. You were just doing this workshop because, you know, you felt in your heart that it was going to make an impact, you know, and I think that that's the best way that, you know, these programs work. And the reason why it's so successful is because, you know, you've poured your heart into it. It came from your own personal experience, and that's just wow, what a story. I really appreciate you sharing that, you know, all with us and I can't believe you guys have 8000 students in the program this year. I have no idea how you manage that many people, you know, for a program, but congratulations. That's, that's really awesome.

Guest 14:57
I appreciate that, Amy. Yeah, it's -- it has been -- last year, we had just under 500 students. So this has been a bit of a shocker to us this year, and I'll definitely say it has been a lot of work. But you know, I think that we're going to be able to meet the challenge. But yeah, it's, it's been, it's been quite amazing to see the response from veterans, and I speak with veteran groups all across the country all the time, including large organizations like the Farmer Veteran Coalition. And every year, when I go and speak at events and things like that, I'm always shocked at just the number of veterans that this resonates with. And maybe it's the continued national service. I mean, I feel like, you know, anybody that's a farmer is serving our nation. And so maybe it's that, but you know, the healing aspect, I think, is huge for a lot of folks. And most folks, most veterans that are dealing with things like, you know, post traumatic stress, traumatic brain injury, you know, just the ramifications of combat, you know, those individuals are not always looking for, you know, help in four walls with a psychiatrist or psychologist. Many of them are looking for alternative ways to help myself and I am a firm believer in the power of natural healing and working with the cycles of nature to heal one's individual self, and honey bees are a great example of that. Because like I said earlier, you know, they always bring us back. It's not like, you know, cattle or something like that, you know, if you're not, you're not treating your cattle, right, yeah, they might get a little antsy or something like that, but they're not gonna, you know, they're not gonna bring you back with a physical response. Maybe they will. That's probably pretty unpleasant.

Amy 16:24
I was about to say, nothing against cattle.

Guest 16:27

Yeah, nothing against cattle. But, you know, the thing I think that works for a lot of people with bees is that it is kind of that constant, you know, you've got that kind of heightened adrenaline, which relates with a lot of veterans that have served in combat, you know. They need a little bit of adrenaline in their life to feel normal. And then you've also got this component of danger, which is, you know, something that resonates with a lot of veterans, but then again, it's that component of, you know, being forced to be mindful and be present. And having that sting is that, is that thing to bring you back. I think of it sometimes as like a mindfulness pill, you know, it's not, it's not like they're stinging me, it's just they're telling me, "Adam, you're not present, you need to be working with us, not thinking about what's outside of the apiary."

Amy 17:06
So you've kind of talked about, you know, some of the ways that this program has really had a huge impact on the veterans. And so I'm wondering if you can explain some other ways that this program has supported veterans. I've looked a little bit into your program. And I know that, you know, a lot of our bee programs, we do have to have funds, right, to form the program. So what does that look like? And so what are some of the ways that you've supported veterans in that aspect?

Guest 17:31
Yeah, so one of the main ways that that we make sure that we support veterans is, you know, number one, this program is a labor of love. And I feel like every individual who participates in this program has paid their dues. So this program is entirely free. You know, we have just shy of 8000 students that are all participating in this program at no cost. The other thing that we do to really support veterans is that we are constantly looking for ways to engage veterans with other support organizations. So for example, we've partnered with the Veterans of Foreign Wars organization here in the state of Michigan, and that group is actually going to be providing a lecture within our curriculum this year on, you know, how can the VFW support you? And so it's not just about, you know, letting them know, all the resources available to beekeepers, but it's also about letting them know the resources that are available to veterans, because not only are, you know, veterans have the opportunity to use benefits, like GI Bill benefits for certain things, they can go back to school for those types of things, so if they wanted to, you know, they took our course, and they wanted to move on to get a degree in entomology, you know, that's a pathway for a lot of those folks. But the other piece of that is, is that, you know, really individuals that are looking to kind of do this kind of an education, you know, we want to kind of have these wraparound services. So one of the other things that we do is that, you know, if I have veterans that reach out to me that are in our program that need something like food assistance, you know, because I work for MSU Extension, and we're such a broad organization, I have folks that I can put them in contact with that can help them with that. Maybe they're struggling with, you know, maybe their spouse, and we do allow dependents to participate in the program, as well, for free. You know, maybe the spouse, being a caregiver of a disabled veteran is having some issues. And we have caregiver programs at MSU Extension that can help with that as well. So not only are we offering them Heroes to Hives, but it's also an introduction to Extension in general and the vast amount of services that we can offer them as well. And then in addition, we also connect them with outside groups like the VFW, but even more importantly, you know, groups like Farmer Veteran Coalition. Farmer Veteran Coalition is a national organization that I work with very closely. I'm actually on their advisory committee for the

organization. And one of the things that they offer is a fellowship. So they offer a $5,000 fellowship that veterans can apply for for their farm. And so I've had dozens of our beekeepers that have gone through our program and have gone on to get that $5,000 fellowship to help them build their beekeeping program. And then lastly, we also partner with other universities. So Grand Valley State University is a college up here in Michigan, and they have what's called the Veteran Entrepreneurship Lab, which is basically like a, it's kind of like a Shark Tank competition where individuals come and they develop out business ideas. And then they basically do a pitch to a bunch of business executives on their business idea. And we've actually had two of our students win that competition. We had one that won the grand prize two years ago. And then his wife came back the second year and did a pitch on their value-added products for their beekeeping operation. So the first pitch was to develop out the apiary to be able to go out to Allman's and do pollination services out there. And then that second year, his wife came in and did a whole pitch on value-added products for their beekeeping products. And she won. I think it was the second-place award for that. So yeah, so our veterans, not only are they getting exposed to beekeeping, they're also getting exposed to a ton of other services available to them, in addition to USDA programs. So we also talk about that in the program as well, you know, how can you access USDA programs? What are things that you can use as far as being a veteran with the USDA? So like the Natural Resources Conservation Service has a veteran's preference when you apply for programs for those that nobody talks about, but we talk about those things in our program so that folks know how to take advantage of all the resources they have available to them to make their beekeeping endeavor, not only something that's sustainable, but something that does have support as well.

Jamie 21:22
Well, you know, it's hard to keep up with you, Adam, because you're just talking about so many great things that you're doing. I've taken a lot of notes, and there's like some really great quotes. I love this, "beekeeping serves a lot of needs, mindfulness," right, "beekeeping is transformative." I like this, that you're getting "great reactions from beekeeping." I love this idea that "beekeeping is a conduit for healing," all these great things that you're doing, how you're partnering with these other organizations, and how you're addressing veterans' needs, it really seems like this is a great example of a successful Extension program. And so Amy, you hit the nail on the head a little earlier, right, this labor of love, all this stuff folded together, the stars align, and you're doing a great service for veterans and agriculture in the US in general. So this is a bit of a rhetorical question, given your success from last year to this year, but do you have plans to expand the program? And how would that work? I mean, because, yeah, they're getting to do this for free. But when you go from 500 to 8000 individuals, there's a lot of work involved for you and your colleagues. So how do you expand and support this program as it continues to grow, what looks like exponentially?

Amy 22:31
I like how Adam just laughs.

Jamie 22:33
Yeah, exactly. He's like, "yeah, we're working on those questions right now."

Guest 22:37

Yeah, you're absolutely right. It's -- I laugh to keep from crying. Let's say that. No, I'm joking. But really, I mean, we do have plans to expand. So this year, we did -- we have undergone our first kind of pilot expansion. So we, what an expansion of our program kind of looks like: We have this online platform. So basically, our students take this nine month online program that they can get a certificate through MSU on, and then what we do is we dovetail that online experience with on-ground trainings, you know, in their, in their states is what we're looking at. So we've always had it in Michigan. We've got seven training locations in Michigan, but our folks that are out of state, you know, folks in Florida don't have an opportunity, well maybe if they traveled, but they don't have an opportunity to come to Michigan and do our workshops. And so what we're looking at through this national expansion is how can we get that on-ground component in other states. So what we're doing is we're partnering with other, with other schools that have, you know, developed beekeeping programs. So University of Minnesota, University of Nebraska, Lincoln and University of Missouri were our three first pilot universities that we're working with. And basically, the way it works is that the students are all taking the online course. But then they're able to take on-ground instruction in their own states. So we have, you know, our online syllabus, and then we'd have supplemental syllabi for each of those states with on-ground programming. So that's kind of what the model looks like for expansion. And we are absolutely interested in expanding. I think the big caveat for me, and I think Jamie, you hit the nail on the head, was funding, right? How do you fund something like this when you're trying to go all across the country, and you have all of this student involvement, but there's not a lot of income coming in from students. And, and so that's something that we have to readily consider. Now, what we've been very successful with in the past has been, I've been very successful at fundraising. So we have an endowment for this program at MSU. You know, we have a lot of sustaining donors. We do fundraising campaigns, pretty much, two to three times a year. We've got corporate sponsorships, things like that. And those are great. But when you have expansion like this, the funding has not kept up with the expansion. I mean, we went from 500 to 8000, essentially. And so what we're doing this year is we're really kind of, with these pilot schools, we're really kind of looking at what does that model look like that's sustainable for everybody? And we're looking at a couple different avenues. I mean, one of the big avenues that we're looking at right now is merchandising. You know, with 8000 students, veterans love to wear logos. You know, we have unit patches for the organization and things like that. And so what we're really looking at is, you know, developing a store to bring in some of that income. You know, we do rely on our students for some of those donations. So a lot of our students, when they complete the program, feel compelled to donate to the program. So that's always a good thing. We're always looking for foundations to work with. And we have a couple that are coming online this year to be working with us to help support the program. But then the big piece of this also is that there are grant opportunities out there. And we partnered on a grant with all of the universities we're partnered with this year to put into for a USDA grant. But I think the big thing is, is that as we continue to expand, there needs to be, I think, a little more concentration on fundraising within the states themselves, because that's really how the state programs are going to be sustainable is really supporting those individual states and really reaching out to those organizations within those states that look to support veterans. And so that is the other piece of this as we develop this more broadly, you know, having kind of a national infrastructure, which we're working on currently at MSU to figure out kind of what does this, you know, structure of Heroes to Hives look like now that it's this large? So we're looking at a lot of different ways on how to expand the program. But the short answer to that is yes, we are looking to expand. And yes, we are looking for

university partners. We're pretty particular about who we partner with. So it needs to be an organization that has a well-developed beekeeping program with training apiaries that are already being used for the general public. That's a big thing for us. So as long as those partners meet those criteria, and they have the experts on staff, you know, that's what we would be looking at to expand the program. But we are doing this very methodically. It's not like we're gonna go from, you know, three states to 20 states next year. We'll probably bring on three to four more universities next year and continue that slow rollout over the coming years to grab a national presence.

Amy 26:50
Yeah. So, Adam, I know that you and I were actually meeting separately from this podcast. And, you know, on that note, what advice do you have for other Extension specialists throughout the nation that might be interested in forming something or partnering with you all?

Guest 27:05
Yeah, if you're interested in partnering and beekeeping is your gig at Extension, I definitely want to hear from you. I'm happy to have conversations about how we can bring things to your university. You know, my main concern is that I just want to make sure that our veterans are receiving a quality education. So that's why we really focus on universities as partners is because I know the folks, my colleagues at other universities are doing their due diligence to make sure that their clients are getting the best education and knowledge when it comes to beekeeping. So if you're looking to partner with us, I'd say just get in contact with me. It's ingraoad@msu.edu is my email address. If you're looking to start your own program, there's definitely been a lot of learning that has gone on over the last six years we've been doing this. Some things we've done in the past haven't worked so well. Some things have. I will say that if you're thinking about developing your own program focused on veterans, I think one of the key components that you need to be aware of is that you need to have somebody working with you that is a veteran, whether you're a veteran or a veteran spouse or something like that, that would be great. But if you're not, you know, that shouldn't exclude you for not being able to work with veterans, but rather, you know, having somebody you know, maybe a master beekeeper from a state level organization or something like that, that's a veteran, that can talk the language. You know, we speak in acronyms a lot within the military and, and that can be confusing for folks who are not part of that culture. But also, you know, having somebody that can be present, they can understand some of the challenges that go on with veterans. Working with veterans is not, you know, it's not always an easy thing. A lot of things that we see with some of our students, and our students, you know, we do a lot of data collection on our students and about -- it's a little over 70% of our students this year, have service connected disability. So the big thing when you're working with veterans is that you have, you have to acknowledge that disabilities are going to be a part of working with veterans. And so you know, one of the big things that we focus on as we're, we're looking for partnership, and as we're working with other universities is that that has to be at the forefront of our mind. ADA accessibility, making sure that your bee yard has a toilet that's ADA accessible, making sure that if you have a classroom that you're doing presentations in is ADA accessible, making sure that your bee yard is set up on flat ground that has hives that are spaced apart so that you can get a wheelchair in between, you know, making sure that you have alternative hives that may be present, so you know, a top bar hive or an AZ hive, that may be something that someone that does not have the ability to lift you know, Langstroth boxes can work on.

So you know, those types of things are considerations that you need to make. And then lastly, what I'll say, you know, as you're developing out programs like this, and this is something that I think all of us in Extension need to be aware of, is I've worked in the nonprofit sector before coming to Extension for about a decade. And I saw a lot of really good programs live and die by grant cycles. And that is something that I think as an educator, as an Extension specialist, that kills me to spend, you know, months or years developing something and then after a three-year grant cycle is done, the program's just done because we can't fund it anymore. And that was something that I was really aware of when we were developing heroes to hives in Michigan. You know, my vision was never for this to become a national program. It was after about three years of the program, and we were seeing all this growth. But when we first started it, this was going to be just a Michigan program. And so, you know, when we started this program, my priority was making sure that we had sustainable funding. And so like, when we got our endowment a couple years ago, that was a huge win, because that's sustainable funding to move forward, that is an educator that we can now you know, pay on those dollars in perpetuity. And so that was a huge part of it. Fundraising is a huge component of getting a program like this off the ground, but not only off the ground, but continued to run. Because if it weren't for those sustainable dollars, you know, if we missed a grant cycle this year and didn't get a grant funded, who knows what would have happened to Heroes to Hives, but we're in a situation where we've built up enough equity and dollars within the organization that that's not an issue for us in Michigan. But it is something, as we continue to expand and you know, as we build these partnerships, that I'm always talking about our partners with is that, you know, how can we build funding in your state? You know, veterans and bees are a pretty easy thing to fundraise on. It hits a lot of people's, kind of like, priorities, you know, that folks are concerned about honey bees. And I know, in the last 15 years I've been in the industry, we've seen growth like nobody's business in the beekeeping industry. So there's a lot of public interest in it, but also simultaneously, you know, we're winding down 20 years of combat, and there's a lot of men and women coming home that are looking for that next mission and beekeeping seems to resonate with them. So I think that you know, whatever state you build a program like Heroes to Hives or partner with us in, we see tremendous response. Most of our partners that we have on this year have hundreds of students in their states. So it's a it's, it's, it's something to think about as you're developing these things out, it's kind of what are the things that you should be concerned about? And I mean, the big things are, is making sure that disabilities are a priority, and that you're addressing those. But you know, secondarily, making sure that, you know, your organization is set up so that this isn't something that just comes and goes but rather something that is, that is something that veterans can depend on, that's going to be there from year to year.

Jamie 32:10
Adam, all that's really great information. I know that we probably have a lot of veterans out there listening to this podcast so that sounds like a really good program that they can be involved in. We're going to make a point to link to your website, link to Heroes to Hives and put all the information in, you even shared your email address, we'll put all of that in the show notes so folks can know how to reach out to you. And maybe there's some folks listening on this podcast who aren't veterans, but have the capacity to support it in some other ways. So maybe, if you're listening, you might consider helping out this program. It sounds like a great program that's really going a long way to help our country's veterans. Of course, we have a lot of folks listening from overseas as well. So there might be

opportunities out there overseas for you to run similar programs in your countries. Either way, Adam, I'm sure you'd be willing to be a resource for folks who are looking to explore more about this topic.

Guest 32:59
Absolutely. I'm always willing to talk about bees and veterans. So please feel free to reach out if that's something you want to talk about.

Amy 33:06
Sounds like MSU definitely found the right person for the position, or I guess the right, well, they created your position for you. So, congratulations.

Guest 33:14
Yeah, yeah, it was a bit of clever recruiting on their part, I think.

Amy 33:18
That's great. All right. Well, thank you so much, Adam, thank you so much, again, you know, for your service. And we hope to hear back from you soon to hear what's going on with your program. And it's very exciting to see where it'll go.

Guest 33:33
Thank you both so much, Amy and Jamie, for this opportunity. And like I said before we came on, I'm a big fan of the show, so this is awesome to be part of this.

Amy 33:41
Alright, well everybody that was Dr. Adam Ingrao. He is a State Extension Specialist and Agricultural Entomologist for Michigan State University. He is the Veteran's Liaison for MSU Extension, and he is the founder of Heroes to Hives. Thanks for joining us today on Two Bees in a Podcast.

34:15
For more information about this podcast, check out our website at UFhoneybee.com.

Amy 34:35
In the last episode that we had released, we were talking about the stimuli that lead to swarming. So Jamie, today, we're going to talk about basic swarm management techniques. Five Minute Management. I feel like this is a very common question that we receive all the time. I mean, it's almost like I can't go a day or two without someone asking me about swarm management.

Jamie 34:57
Yeah, they're in swarm season. Our phone's ringing off the hook and our emails flood like crazy. Folks are always trying to figure out how to get on top of swarming.

Amy 35:05
Alright. Okay, so you have five minutes to talk about basic swarm management techniques, and go.

Jamie 35:11
Alright, so if you're a listener out there, it would really benefit you to go listen to the Five Minute Management from the last episode, because in it, I talked a lot about the nine major stimuli that lead a colony to swarm. Three of those were environmental, warming weather, lengthening daylight and increasing nectar availability. And six of those are more biological things happening in the nest, an aging queen, presence of queen cells, drone production, dilution of the queen's pheromones, lack of cells in which to lay eggs and colony congestion. So, swarm management then is working on those things you can control. Three of them, we can't. We can't control increasing nectar availability, lengthening daylight and warming weather, but we can address nectar, sorry, colony congestion, we can address the presence of queen cells and aging queens. So I always tell folks, there are six basic things to do to work against swarming. Alright, and I'll go -- some of them deal specifically with managing queens and some of them are just general management practices. So, very first one I'm going to talk about is requeening. If an aging queen and the dilution of the queen's pheromones are two stimuli that lead to swarming, then requeening once a year is a really good management practice that helps lessen the swarm impulse. Now it's important to hear: No one of these things will control swarming by itself, you're going to have to employ multiple swarm management strategies in order to stay on top of swarming. But requeening once a year does help. Now people always ask me, "When is it best to requeen?" Well, it's ideal to requeen about a month or so before the swarm season would begin. But it's also difficult to requeen that time of year because that tends to be when queens are less or least available. So a lot of folks might like to requeen in late summer, because that's when queens are available, in the very least. But if you do it late summer your queens are only about six to eight months old when swarm season rolls around. I also tell people to clip their queens, if it is the old queen that swarms, if she's unable to fly then she cannot swarm and clipping queens is not swarm control. Rather, it is swarm insurance. You are basically saying, "If all else fails, if I fail to control swarming and you try to swarm and the very least, I can collect that colony because the queen can't fly." I also tell folks that they should do a third thing, especially if you're a hobbyist or a sideliner, and that's going into your colonies and removing queen cells or swarm cells every seven to 10 days. And I tell folks this, because as I said a little earlier, this is kind of the straw that breaks the camel's back. Once they get capped queen cells, then they're going to try to swarm, and I always tell folks, if you go out every seven to 10 days, and remove all swarm cells during swarm season, you'll be able to stay on top of that stimulus. If congestion leads to swarming, then add more space. This is the fourth recommendation. Add supers. Maybe add some empty combs in the brood nest so the queen has more cells in which to lay eggs. Swarm management technique number five, equalize colonies. Go into your stronger colonies and take frames of bees and brood and move them to your smaller colonies or weaker colonies. This does two things. It beefs up the population in your weaker colony and reduces the population in your stronger colonies. It makes them all equal as it were. This is good swarm management practice that a lot of commercial beekeepers do in advance of the major nectar flow, which leads me to the final point, point number six, which is split your colonies. A lot of commercial beekeepers, four to six weeks before the major nectar flow, invest heavily in splitting colonies. It basically is a controlled swarm. You're telling the bees, "Hey, you've swarmed, no need to try to do it anymore." So those six things are things that I recommend that you consider. We have an EDIS document on all of this, we'll make sure and link it in

the show notes so that you guys can see some of these management practices and learn a bit more about them.

Amy 39:17
All right, you had 50 seconds left.

Jamie 39:19
I can't believe that. I felt like I was being pushed for sure. That's crazy

Amy 39:23
No, you did great. And, you know, I feel like -- I feel like this topic specifically, who said beekeeping was easy? I don't know. Has anyone ever said that?

Jamie 39:32
A lot of people think you can just throw them in your backyard and make honey. I will tell you this is important to me. Everybody worries about Varroa and requeening and nutrition. Very few people who get into beekeeping worry about swarming and this is actually how they lose that honey flow. If you think about it from a practical perspective, Amy, bees are wanting to swarm immediately before the major nectar flow, which means your colonies are splitting when you least need them to and a lot of people don't take swarming seriously, so they lose lots and lots of honey production. If they had just stayed on top of swarming, they might have been able to make a lot more honey.

Amy 40:04
Absolutely. And I hope our listeners, you know, take the time to listen to this segment over and over again, because there are a couple of tips that I think sometimes we forget. So thanks for that Five Minute Management.

Stump The Chump 40:24
It's everybody's favorite game show, Stump the Chump.

Amy 40:36
Alright, so let's get to the question. So the first question we have from our audience, this person is going to do splits and order queens. Because of the weather, they're unable to the splits right away. So they're basically getting the queen and they're wondering how long the Queen can stay in the cage. And you know, how long can a queen stay in a cage and stay healthy, until this person is able to put them into the splits? And how do you take care of them? Do you give, you know, how do you feed them, keep them alive, etc.?

Jamie 41:02
So my answer to those questions kind of relies on the status of the queen in the cage. And by that I mean, is the queen accompanied by attendance, and is there food already in that cage? So for example, a lot of queens that you purchase will have, there will be, they will be in queen cages with the attendant workers to take care of them all the way. And at some point, somewhere in that cage, there

will be some food provided to them, usually in a very thick powdered sugar/sugar water honey mixture that's just very thick. So the queen can stay in cages in this setting for a week or longer just at room temperature in your house. If, though, she is not accompanied by workers to take care of her, as well as food on which they can feed, then I will often put a drop or two of honey on those cages throughout the day. You don't want to put too much because these queens can get completely covered in that stuff if their body touches it. So I would argue that if she's accompanied by workers and has food in the cage with her, you can make those splits as late as a week later. If, though, she doesn't have workers, you're going to have to feed them a couple of times a day, or better yet, you can put that caged queen into a hive in a situation that we would call a queen bank. And what you would do in that setting is you would just make sure the bees in that hive are unable to release that queen. In other words, whatever opening to that cage is corked, so the queen can't get out. And you put that into a hive and the worker bees in that hive will take care of the queen for you until it's time for you to use that queen in a different hive. We just call that process banking the queen. Commercial queen breeders can bank queens sometimes for months on end. So it's not like that, that that would damage her. It's just that in this particular question, it sounds like the person really wants to be able to make the splits in a few days, and they're wondering if the queen can make it that long. And she absolutely can, but if you want to keep her in that cage a week or longer, you might consider banking her.

Amy 43:05
That's interesting. So with the banking process, do the workers not try to kill the queen?

Jamie 43:12
They don't. And so let me let me tell you, Amy, how we've done it here at the University of Florida in the past. There are times where we might purchase 20 or 30 queens or more that we're not really wanting to use tomorrow. And so what we'll do is we'll go to the strongest colony in the apiary, and we'll take off the lid and we'll put on a medium super that has no frames, we'll put it on the uppermost box. Then we will put all the queen cages in there, and we will put the queen cages on their side if they're the wooden cages. And the reason we have to do that is if you put them on the screen, then the bees in that hive will not have access to those queens, so you want to make sure that the screen is available for them. If you're using the plastic cages, it doesn't matter as much because the entire cage is made out of screen and the bees can access her any direction, but if you're using a wooden cage, you have to make sure that the screen is accessible. The other thing you have to make sure is you have to make sure that the bees in those hives cannot accidentally release those queens. And a lot of cages today will not be shipped with caps on them. The bees will have direct access to the candy the moment you put the cage in there, and you don't want that to happen. So if you're going to bank queens, you have to set up a scenario where the bees cannot release her, so you have to cap the candy or make sure the corks are in both ends of the wooden cages. And assuming you do all this and assuming that colony is really strong, you can bank queens this way for weeks, or in other cases, maybe even a month. I do know when commercial queen producers want to bank queens for extended lengths of time, they have these special frames that will hold the queen cages and they will put those queen cages in those frames and drop those frames directly into the brood chamber of the hive so that they're surrounded by bees at all time. But if you're wanting to bank them for a week or two, just throwing an empty super on top of that

hive and putting those cages in there should be enough. Sorry. That should be enough, again, as long as the bees don't have a way to release those queens from the cages.

Amy 45:11
That's pretty cool. Alright, so the second question we have is still related to queens. So, when a colony swarms, how long does it take for a new queen to mate and then begin laying eggs? So how long is that brood break, usually?

Jamie 45:24
It's usually a two to three week process. Remember, when a colony swarms, it will swarm after it has kept over ripe queen cells. So I'm going to round everything to the nearest week to make it easier to discuss. But those capped cells have about a week before the queen will emerge. Once that new queen emerges, it will be about two weeks until she mates. So about a week until she emerges, about two weeks until she mates, so now we're at three weeks. So after a swarm, it will take about two to three weeks before that virgin queen will emerge, knock off her competition, get mated and begin to lay eggs. I usually expect to see eggs in that hive about three weeks after that queen emerges, sorry after that colony swarms. But I will say there's a caveat that you've got to remember. It takes three weeks for that first egg she lays to go through all the developmental stages before you have a worker bee emerging from the cell. So you've got three weeks until the first egg shows up in the hive. And then you've got three more weeks until that egg progresses through all the developmental stages and you get an adult worker bee. So you get that six week brood back break as it were. So, you know, a colony swarming can lead to a significant loss of brood and bee production over the next, you know, four to six weeks.

Amy 46:45
All right, you know, what I didn't realize is that all of these questions have to do with queens. I just don't think I realized that until just right now. Okay, so the last question, how often do hives have two mated and laying queens? And why or how does this happen? I know that here at the University of Florida, we've encountered plenty of colonies that have had two queens.

Jamie 47:08
So I mean, this, this is a tough question. And the reason it's tough is because I've never seen a research project where folks have tried to determine the answer to this question. So most of what I'm going to share is going to be purely anecdotal. And it may be one of those things that changes completely as more research comes out. All right. I say that it's actually fairly common to find colonies with two queens. And the reason I say that is when I was a Ph.D student in South Africa, I did a lot of work with observation hives. So I was looking at these hives three times a day in the morning, in the afternoon, and at night time to try to follow bee behavior. When I was doing this, I was routinely finding colonies with two queens. The interesting thing about that is I only had three observation hives up and running at a time. So in these scenarios, I was, you know, watching three observation hubs, and it was very common for me to find one, or maybe two, of them with two queens. Now, granted, I was living in South Africa, and I was working with African subspecies of honey bee. So maybe this two queen trait was more common over there. But it did lead me to think that this happens more often than we notice.

And then when I came back to the States and started keeping bees in my backyard, you know, I would never keep many colonies in my backyard, I live in an area that's not very full of nectar producing plants. So I would only keep, you know, somewhere between three to seven colonies in my backyard. But every year, at least one or two of those colonies would have two queens. And so just working on those ratios, you know, 10, 20, maybe even 30% of the colonies that I would work would have two queens at some point during the year. I'm not arguing that this is something that lasts throughout the year. But I would argue that it is something that happens for maybe 10, 20 30% of the colonies at least once during the year. And the reason most beekeepers don't see it is when you find a queen, you stop looking for the queen, right? So you pull out that third frame, the queen's on one side, and you don't look for a queen on frames four through 10. And the only time I would notice it in my own personal colonies is when I would see a queen on one side of the frame, flip the frame and see her over there and go, "Man, she got over there quickly." And then I'd flip back, find her again, and flip back and find her again. And then I discovered, oh gosh, I'm not seeing the same queen. So it's easier to diagnose when you see it happen on the same frame, but it's much less, it's much harder to diagnose when you see her on frame three and then again on frame six, and you usually make the explanation, well she just ran down the wall and got on frame six. Well, that's not usually the case. It's more often the case that there's a second queen. So I would argue it happens maybe to 10 to 30% of our colonies at least once a year. I would argue it's more likely to happen during swarm season and shortly thereafter, when bees are just producing lots of queens. And so I've got some pet hypotheses about why this occurs, but none of them have been tested. And one hypothesis is that when queens get older, their pheromonal output decreases. That doesn't mean they're laying fewer eggs, that just means they, maybe are start producing less rich of a pheromone, okay, so the bees may begin to think themselves queenless, even though there's brood being produced, and so they're getting these mixed signals, right, we've got brood, but we can't smell a queen. So we need to make a queen. And if this hypothesis is true, then you might expect the new queen who emerges to not even recognize the old queen in there, so not be tempted to fight her. I would also argue, more often than not, these two queen colonies don't last very long. Not not the colony itself, but the two queens situation. Usually when I find a hive that has two queens, usually within a month or two, it now only has one. So I would argue it happens to a lot of colonies throughout the year, in most years, but that it's not a situation that lasts long, maybe a couple of months. So I really feel, Amy, that this is one of those areas that's just waiting for graduate students to get a hold of to try to answer what's going on in the biology of colonies in this scenario.

Amy 51:20
Well, so let me ask you this. If you do find, you know, two queens, do you normally just leave it alone? Or would you try to pull one off, and you know, make a split that way?

Jamie 51:28
Great question, Amy, because I struggled with this as someone who was managing bees. Usually, when I saw it, I would leave it alone, because I've watched it enough to know that it's going to cell sort in the coming months. Because my concern about trying to address it is let's say that I said well, then the old queen's doing just fine, I'm going to get rid of the new queen or move her to a new colony that's queenless. Well, if I do that, whatever stimuli led bees to produce that new queen in the first place, presumably are still there and would cause them maybe to try to produce a second queen. So as I've

shared, you know, more often than not, I run into this situation, and it ultimately remedies itself, right? And so given that history of me seeing it remedy itself, I've been very tentative to try to step in and try to solve the problem on my own. I usually just let nature take its course because, Amy, I will say, it almost always happens after the nectar flow, at least in my case, is over. So it's, it's during a time of the year where it's more acceptable to me to have a queen problem. If I saw it during a major nectar flow, or immediately before, I might be tempted to try to solve the problem. But given that for me, I would see it after the nectar flow or during summer, I'd be less concerned and allow the bees to take care of it themselves.

Amy 52:46
Cool. That makes sense. All right. Well, thank you everyone, for your questions. Don't forget to send your questions to us via email, Facebook, Twitter, or Instagram, however you'd like to send them over to us. These have been great questions, and we look forward to seeing what what else you all have. Hi, everyone, thanks for listening today. We'd like to give an extra special thank you to our podcast coordinator, Megan Winfrey and to our audio engineer, James Weaver. Without their hard work, Two Bees in a Podcast would not be possible.

Jamie 53:35
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!