



EPISODE 215 TRANSCRIPT

Jamie

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

Hello everybody, and welcome to this segment of Two Bees in a Podcast. Today, I am joined by David Burns, who is an Eastern Apicultural Society master beekeeper, and many of you who are listeners may know him through his YouTube channel, and his YouTube channel is David Burns. Easy enough, right? He's calling in from Illinois, and today we are going to talk to him about his YouTube channel and information and how he disseminates information through YouTube. So, thank you so much, David, for joining us.

David Burns

It's a pleasure to be here.

Amy

All right, so of course we always ask this question at the very beginning of all of our episodes. Can you tell the audience about yourself and how you got into the beekeeping world?

David Burns

Yeah, I had an entirely different career that I was involved with, and I was living in Ohio at the time. I was maybe 30 years old, I think at the time, But I had a friend, and he was a beekeeper, and he said, hey, a tree fell over and there's some bees, I can get you started. So, we went over to a fallen tree one day and he put a bee suit on me. I had no idea what I was doing. I didn't know what was going on, and I was never really too familiar with, at all, honey bees. But I do remember he said, we're just going to open up the tree and move the comb over and put them in a box and you'll be a beekeeper. And it sounds simple enough. And then he said, "If you see me run, follow me." I was like, you know, "If I see you running, I'm going to be ahead of you." But boy, that was crazy. We did have to run a couple of times into the forest to kind of get the bees off of us at the time.



And that was my first start in beekeeping. I thought everybody started that way. That was a hard way. So, over the next few years I just kind of self-taught myself, you know, back in, what was that, late '80s, maybe or early '90s. It was like not much information out there. You're kind of on your own back in those days, a lot different than it is today. So, that's how I got started.

Jamie

So, David, you know, the rest is history. You actually run a very successful YouTube channel, and I really want to focus on this because Amy and I are information disseminators. Obviously, we're on a podcast right now. You know, you just alluded to the fact that, quote, back in the day, it was harder to get information. Mainly, it was books and beekeeper meetings. Now information just inundates us. You don't even have to look so hard. One of the best ways, and we've even kind of realized this here, to get information out is just to make a video and post it. People watch videos, so could you tell us about the evolution of your YouTube channel, the history, how it got successful, you know, those kinds of things?

David Burns

Sure. I was actually making beekeeping videos before YouTube started in 2006 on another platform. And then, you know, when YouTube started, it was not what it is today at all. When it first started in 2006, it was very minimal what people were putting on there. People were putting things just for fun for themselves, goofy things for their family and all. A couple years later, I think it was 2008, I decided I would just start throwing up some videos. Didn't really expect anybody to watch them, but beekeeping videos, I'd show people what I was doing and it was kind of like a blog, I guess, a video blog. And I actually kept doing it on and off all those years. When I look at my analytics, it's interesting because from when I started, I guess it probably ran about maybe a decade before I noticed that it had become something.

It was like, oh, there are people watching. 10 years later, I'm like, oh, look, there's a few people watching. So, around 2016, like 8 years later, I realized I was really seeing in the comments that I was helping people and that inspired me to make more educational videos.

I became a certified master beekeeper with EAS in 2010, and I began just kind of beefing up my channel to be educational to help primarily new beginners, new beekeepers. Because I do remember what it was like when I started.

I didn't know anything. And when I started there was no Internet. Internet wasn't a thing, let's put it that way. And yeah, you're right, just books and a few people helping me. So, as the channel grew, I'd have to teasingly say I'm a 20-year overnight success.

You know, some people think, wow, how'd you get that big? How did you do all that? I just kept doing the same thing over and over and over for a long period of time. And that's where I'm at today. So, it was just a slow growth on the YouTube channel. But I will say that I do watch the



comments, and I do try to gear my videos to help people that are leaving comments. I can see the level of struggle that they're having and that sometimes inspires me to make another video.

Amy

Yeah, David, that actually leads to my next question. But before I get to that question, I'm cracking up because you're saying, oh yeah, like, you know, a couple people. There are some people that like it. And as soon as I open up your page, you know, your first video has over 2 million views. So, yeah, I guess that's a couple.

David Burns

I guess so, yeah.

Amy

So, you had mentioned reading the comments, and kind of using that in the extension world here, it's kind of like a needs assessment, right? You identify like what people are asking, you identify what people are wanting, and then you go and, you know, make content on that. That's a way that you engage with your viewers. Can you describe what other ways that you engage with your viewers as well?

David Burns

Yeah, you know what? I have a lot of fun when I read the comments. When I first started YouTube, YouTube did not monitor their comments very well at all. They didn't have a lot of systems in place, and there were just some trolls, people way back in the, you know, early 2000s that were just mean and ugly on YouTube.

A lot of times stuff like that happened, but over the years they've really cleaned that up. They have a lot of things now that prevent that. And there for a while I'd really didn't pay close attention to my comments just because of the trolls and all that. But as the channel started becoming a main educational tool for people, then I did start looking at the comments and start responding and helping people.

I've started a live stream about two years ago. And so when I first started my live stream, I was thinking, and I've always done public speaking in my other career, so I'm OK in front of people, but live in beekeeping, you know, I was thinking, oh my, who's going to be on that night?

Who's going to just be mean or who's going to be just trying to stump me or something? But anyway, I plunge forward. And so, every Thursday, I go on live on YouTube and I answer beekeepers' questions for 59 minutes.



And it is astounding. It is shocking how many questions that I get. But that's another way that I engage with my viewers is through my live stream. I also have a mentorship program where I mentored beekeepers for about 8 years now.

And I call that Bee Team Six. It's where they can ask me questions all day long. I emailed them the answers, they send me pictures, I respond. So, I produce a lot of content, and I answer a lot of beekeepers' questions. I kept track one week just for fun to see how many questions I answered that week and it was over 1000 questions in one week that I answered. So yeah, I'm like a farmer. I farm a lot of content, and I answer a lot of beekeepers' questions and it's been good.

Jamie

Well, this isn't a scripted question, but I'm hearing you talk about all this, and I know that we just started a beekeeping kind of series ourselves, and how much time it takes to set the stage and the video editors to fix, all that. How much time in a week do you spend on this project producing videos, live streaming, and answering people's questions? This is your job, right? So, how much time every week do you spend on your job?

David Burns

Wow. I'm almost embarrassed to answer that question because it is every waking moment for me. Yeah, it's from sunup to sundown, and then at night I'm answering questions. I was responding to e-mail when I went to bed, when I wake up. And a lot of people might think, oh gosh, that's terrible. You don't have any time off. How can you do that non-stop? But you know, we do create a lot of content. I'm in the field almost every day making videos.

And like you said, Jamie, that's a lot. The set-up time, you know. I can inspect the hive in 12 minutes and know how the hive is doing. But when I go out there to make a video of the same inspection, I'm going to spend at least an hour to two hours with the hive open because we're adjusting the cameras, trying to get that angle, that shot, and then back in the edit room, that's really where it all comes together. I do my own editing. I love editing. I'm not a YouTuber that just wanders. I'm not winging it in the bee yard. I'm actually going out there, not with a script, but with an agenda of what I'm going to teach somebody today.

And then when I go back to the edit room, I have to overlay maybe some zoom in scenes or B roll from another video that shows them what an egg looks like. I try to be really educational, you know, they don't know what a robber screen is. I may have to grab, in the edit room, a robber screen and overlay it on my video. So, my videos take a long time to edit, they really do.

Amy

So, David, the reason we really brought you on here today is because we're looking to hire a video editor and wondering if you would accept our position.



David Burns

Oh my gosh.

Amy

I'm totally kidding.

David Burns

I know. I've been asked that before, and everyone says I should hire my own editor. But for me to hire an editor, truthfully, I would have to have someone that is an entomologist and maybe has a PhD, so they know that I'm saying the right thing. So, when I edit my own videos, I'm thinking, did I say that correctly? Is that supported by science? That really was me just talking, and that can be misleading, I'm going to delete that out, you know? So, I don't think if I hired an editor, I could get the benefit of really somebody scrutinizing my words as close as I do myself.

Jamie

Yeah, so, a PhD in entomology, how much do you pay, David?

Amy

Yeah, seriously. Jamie, you don't know how to edit video.

Jamie

I think I can learn. I think I can learn. I think I've got a learner's mind. You did say something a little earlier, David. This isn't part of the scripted question either, but I heard this from, I'm sure someone you know well, but a mutual friend, I'm guessing, Bob Binnie. And he made the point that – he also has an active YouTube channel – he made the point that he goes through and tries to respond to every comment, and that when you engage people that way, it really keeps bringing them back and expands the field.

That's something certainly we need to do better. But anyway, I'd like to pivot to the formal scripted question, which is, when there's so much you could talk about, how do you decide what actually to publish? You've alluded to it a little bit based on comments of viewers, but how do you decide what's next?

David Burns

You know, it's a real easy way to do that, Jamie. I've been on YouTube for 17 years, so almost 2 decades now, watching things and observing analytics and trying to get a feel for the audience. So, what I've found is I have been doing this long enough that I know the mindset, the heart of the viewer, no matter if they're an experienced beekeeper or a brand new or maybe thinking about doing it next year.

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I know what they're looking for. And YouTube provides a lot of analytics for us to watch. You know, we can actually watch every second of our video and how people are responding or playing it back, watching it, what parts of it they like the best, and I've just really have gone over that with a fine-tooth comb.

And of course, you make your own videos, and you see how people respond in the number of views, and you think, OK, for example, I made a video, which I love. It was on how to make queen candy. You know, a lot of people raised queens. You got to put the candy in the cage and all that. A lot of people ask me how do you make queen candy?

I'll make a video on it. The video didn't get many views. And so, it just goes to show that it's a helpful video for a very small crowd. And so, I'm not just chasing numbers. I still make content, I will choose, like, I've got to make a video on how to make queen candy because somebody's going to want to make queen candy. It took me a long time to figure it out, how to get it to stay soft and not harden up and all that. Won't get a lot of views, but it's going to be helpful. So, I guess I'm motivated more not for numbers and views and all, but what is really going to help somebody in beekeeping right now, like manipulating a frame, handling a hive tool just right.

Those are the things I try to focus on with special unique tips on working a hive. So, I'm kind of just getting a pulse from the audience, I think.

Amy

So, I'm interested, you know, in the logistics of the actual recording. So, are you the one doing the recording? Do you have a tripod, you know, what kind of camera are you using? And is videography kind of your specialty or how did you get into that?

David Burns

Good question. Because I did actually when I was younger, you know, I grew up in the '60s and my dad had an 8mm movie projector.

I don't think it has sound, but I played with that. So, I had my own 8mm splicer that you know, you cut the film, the actual film rolls and splice it together. I was playing with all that. I was a photographer in my early days. I had a dark room and all, made black and white pictures.

But yeah, I've always been intrigued by, you know, using a video camera and taking pictures. I don't do my own video work in the field anymore as much as I used to. I used to do all my own, like you said, a tripod.

Some of my children when they were still living at home, I would talk them into filming me. But recently, Patrick Stevenson, he's a good friend/beekeeper, and he has chosen to offer his services of videotaping me. And it's a hoot now because, you know, when I was doing it, a cloud would go over.



So, I record everything, manual exposure. I'd have to go over and change my exposure because I'm under a cloud now, and then the sun comes out and I got to go back and change my – or you know, you take the top deep off, and you had your camera pointed at the top deep. Well, now you're too high.

You got to go and point the camera down at the bottom deep. So, with Patrick filming me now, it's so much fun. I can stay in the hive. I can keep working, not worry about the cameras. But it's tough. Our cameras will overheat out in the field. We film in 4K and so we're always trying to keep cameras going and microphones on and everything. I don't think people realize what goes on behind the scenes. It is challenging.

Amy

Definitely, I understand what goes on behind the scenes, but I know it's a lot of work. So, the next question I have for you is, just as far as giving information out, you are the expert on YouTube and to your viewers. So, what are some of the responsibilities that you feel like you have of giving out information on YouTube, doing these live streams, answering people's questions?

David Burns

You know, since I am a certified master beekeeper, I really love beekeeping science, and I fall back on science. I'm not going to say that there aren't times that I will say, hey, this works for me. I can't really find science to support it, but right now it seems to be working.

So, you know, there's always those moments. But I really do try to stay focused on the science in beekeeping, and I try to really get that across to my viewers. And that hasn't always been the case. When I first started YouTube, I noticed back then that science in beekeeping wasn't as accepted as it is today. I remember making videos and I was trying to, you know, bring the science involved in it more, early 2000s maybe. I could tell people were pushing back, you know, they were like, oh, you know, I don't need that, all that science information.

I've got a buddy down the road. He's been doing this for 42 years. That beats science, you know. So, I remember it took me a long time, when Varroa mites came, it took me a long time in my videos to see a shift where people were willing to do an alcohol wash or to actually think they had mites.

In the early days of my YouTube channel, I had comments that said I don't have mites, I don't have mites, and I was saying you're just not looking, you're not testing, you have them. And so, it's shifted now where people have adapted. They've gone to accept science.

And so that really fits me well now because when I make a YouTube channel, I always think of it like, gosh, I got to make this video. You know, not just beginners are watching, maybe not just some new beekeepers that don't know a lot, but there'll be people watching like you guys that



know a lot about bees and you're going to be critiquing if I've got, you know, did I pronounce the scientific name for American foulbrood correctly?

You know, I do spend some time thinking through the science behind every video that I make. Is that scientifically correct? And if I don't know if it is or isn't, you know, I usually say something to say that. So, for me, I really do try to fall back on using things that are supported by the literature today.

Jamie

Yeah. I mean, David, we spent a lot of time trying to do some of that information that's believable and based on science and all the things that you mentioned are certainly issues that we face ourselves. The whole time you're talking, I'm like, amen, amen. Because it just sounds like you've been there, and we sympathize. All right. So, being online is potentially more impactful than being in person. I think about it. I travel to a state meeting, I speak to 150 beekeepers, it cost me a whole weekend to do that. 150 people saw me. You post a video and in 10 minutes, 150 people watch it. And it's always there. But there are some challenges as well with having an online presence. So, could you talk a little bit about the strengths and challenges of disseminating information online?

David Burns

Sure. You know, that's exactly right. I get a lot of people over the years that will say, David, I like your channel, I will pay you money to come to my place and work a hive with me, or can I come to your place and work a hive with you and all of that.

And I love people. I'm an extrovert. I really do enjoy being with people. But at the same time, we've had to, this sounds terrible, but we've had to put a gate at the end of our lane and no trespassing signs. And so, you know, if I accepted everybody that comes and wants to work a hive with me, I could never make a video. I could never produce anything. I try to communicate this when people seem disappointed that they can't work one-on-one with me, that for me to reach the largest amount of people, to help the largest amount of people at one time, one video is going to do it. But if I just work with one person for four hours, I'm only helping one person. Some people say, well, that's worth it, and sure it is. But at the same time, for the amount of work that you invest in helping people, you want to have a bigger return so that you can help more people.

So, that's how I justify it and, and truthfully, I look at it this way too. My channel grew not necessarily because I wanted it to, it grew because people were wanting to watch it. So, I can't answer every question on my channel, and I love to do that, but I can't, and I can't teach every person one-on-one.



So, you're exactly right. Having a video that goes out, it goes before the whole world. I mean, I see people responding from Spain and Italy and all over the world about these videos, how they're helping them. So, for me, that's the most effective way to me to utilize my educational arm of trying to help beekeepers is through my video.

Amy

So, David, we were recommended by a faculty member in Arkansas to interview you. And of course, he told us to interview you about your great YouTube channel, but he also discussed a queen rearing involvement that you have. And so, he said, "You've got to interview him on his channel, talk to him about some of the logistics, and then also ask him about his queen rearing." So, that's the last question I have for you, and the last topic we'll talk about today is tell us about your queen production and what that's all about.

David Burns

Yeah, I started becoming interested in raising my own queens many years ago, and I went to some conferences, and I sat through some queen rearing courses or classes way back then, and I just couldn't wrap my head around it. You know, I was probably too new of a beekeeper at the time. So, I offered to pay a gentleman at Ohio State University. I offered to pay him to teach myself and a couple of my older children to raise queens. And he accepted. We went to his place, and he began to teach us how to raise queens. He did not accept any money. He wouldn't let us pay him. But we spent the whole day with him. And so, we came back, and my family just started working with queen rearing. We homeschooled our children, and so we had them at our disposal to work while they're learning as well. So, we began raising queens. I began studying it more. I'm real specific on documenting everything that happens. So, I was documenting the graft.

I was documenting where I placed it in the back of the cell. Was it in the center? Was it off a little bit when I placed the larvae in there? Was the larvae one day old? Was it maybe a little bit older? And then I would measure the outcome, I'd measure the outcome of the queen, how well she would lay and all.

And I finally got to where I overcame a lot of obstacles and started raising some very good queens. And then I started raising queens, started looking for more stock that was in old barns that had never been touched and thinking I could get some genetics that were self-sustained beehives and all.

I started doing that. And you know, I had a lot of fun doing it. I don't know what year it was, but we started doing liquid nitrogen, VSH work, testing for Varroa sensitivity and that proved to be a little bit helpful too.



It became really easy for me to make a lot of queens. In fact, one year we were struggling financially with our business, and I needed to pay some large bills, and that year, the only way that I had to pay those large bills, I committed myself to raise 100 queens a week. And by gum, I did it. That was a lot for us, then. I was raising 100 queens a week, shipping them out, doing all that with my family and getting those bills paid. So, it was a real motivator for me. And raising queens, I think is one of the most simple things to do.

I love doing it, and I speak a lot throughout the country. I've never been asked to speak on queen rearing. That's a topic that I would love to talk on, but I've never been asked to speak on that. But I do like queen rearing. And I want to drop back. I forgot to say one thing about your previous questions about having an online presence. One of the parts of that is the parasocial relationship that you have with people that watch you, but you don't really know them, but they know you really well.

I have people that know me better than I know myself because they remember when I made that video and they remember when my youngest son was, you know, in that scene or something, and I don't remember it at all. And so sometimes that's a little bit awkward. I'll go to conferences when I speak and a lot of people will always say, oh my gosh, you're a lot taller than I thought you were.

And they look at me like, you know, some kind of TV star or something. And when that first happened, it felt really awkward for me because I just put my pants on like everybody else, one leg at a time, and I'm just a beekeeper with a camera. And yet they think I'm something more than that and I'm not.

But I've gotten used to that a little bit. But it's still a little bit overwhelming when I go speak at conferences. But it is comforting and inspiring when people say, I started beekeeping because of you. And I get that a lot, and that motivates me to want to come back and make more videos because, a lot of times, I'm staring at a camera, and I don't really always think there's people out there and is this worth it, you know?

But then when you go to a conference and a lot of people tell you how it's helping them, it inspires me to go back and make more videos for people. But I haven't made a lot of videos on queen rearing. I've thought about doing it every year, but I'm always busy raising queens, and I don't really have time to film it, so I might do that one day. But I really do love raising queens.

Jamie

So, that actually gave us 2 bonus questions. I was thinking, what's your favorite topic to discuss, which is no doubt separate from what's the most common topic you discuss. To seed this conversation, when people bring me in to speak, it's almost always about the problems. Could you come talk about controlling Varroa? Could you come talk about the yellow-legged hornet? Could you come talk about small hive beetles? Can you talk – I feel like I'm the speaker of



doom, right? From a YouTube perspective, you get to control what you talk about. So, again, what's your favorite topic to discuss and what do you discuss most commonly in your videos?

David Burns

Oh yeah. Well, when I'm at a conference, they usually give me – I think all the conferences this year, they've asked me what do you want to talk about? So that's great. My favorite topic to speak on in front of a crowd is how to get into critical thinking in beekeeping. Today, it is so easy for beekeepers to want a date, a time of the year.

They want a specific action. David, what do I need to do now that it's April the 2nd? I live in Minnesota. Right? I keep trying to teach, it's not a cookbook science. Two bees right beside each other in the same yard aren't going to swarm on the same date or they're not going to find that Goldilocks patch of clover out there.

One may and one may not, but a lot of beekeepers think that it's all very boiler-plated what bees do. So, I teach critical thinking, and I go into great detail about you as a beekeeper. You really have to own up to know how to read the frames, how to read your bees, how to know what to do, how to really respond to everything you're seeing as a real strong critical thinker. And if you know bee biology, the basic science behind honey bees, it answers a lot of the questions for you. If you learn to read the different ages of the larvae, you'll know when your queen died and all that.

I teach critical thinking, and I have a hoot doing it when I speak at conferences. People love that the most when I really press in on critical thinking. On YouTube, I do a little bit of critical thinking, and I try to think about what are people dealing with this time of the year across the US?

You know, what are they going to be working on now? What are they going to be struggling with? You're right, Jamie, I think the best YouTube videos are the ones that are solving people's problems. I mean, that's why people look. I look at YouTube to figure out how to fix my dryer, right? I got a problem.

Is there a video on that problem? And so a lot of beekeepers are looking for – I'll probably make a video soon on robbing because, you know, we're getting in the season now where people might forget and or not know they can't feed in the entrance to induce robbing. And I'll make a video on robbing screens and all. Even though I've made the video before, I'm going to have to follow what people are kind of wondering about or struggling with at the moment.

Amy

You're giving me so many ideas of what I can do for classes. I love the critical thinking class. We have an event called Bee College and one of our speakers, Boaster, he's got like a little following, you know, to all the different rooms because he does a CSI honey bee.



And he basically puts up pictures and has people kind of discuss what they see, what they're reading on the frame, and ultimately, what they think the issue is, and then how would they resolve it? So, I think there's interactive classes and classes where you just teach people how to read a frame and understand the bees and just understand what time of year it is and what sources they have. It's just all great stuff, so keep doing the good work.

David Burns

Yeah, I think it is challenging for people because some people might be critical of learning beekeeping on YouTube. And OK, I understand that. Sure. I would rather teach everybody, you know, here in my training center one-on-one in a hive. But the reality is most people are learning about beekeeping and finding their information on YouTube. Whether you're like that or not, that's what's happening. So, I'm trying hard to present more critical thinking skills to people and how they can really get a handle on it.

And a lot of times, it's just helping people see and complimenting them when they are thinking it through and not just wanting an answer, right? Because if somebody wants an answer and you give them that answer, a lot of times I'll give the answer knowing that it's not going to really help them because they only know one answer to one question.

And now they have all the other things that they don't know. I like to use more of a Socratic way of teaching. I keep asking questions. Well, what would you do now? What would happen if you took the queen out right now? I think, even with master beekeeper programs, for example, I like what we do in certifying master beekeepers, we make them memorize all the anatomy of the honey bee and all that and things.

But wouldn't it be fun if we had a way to test them where they had to really critically think about things? Like if you had a test and you designed it where, OK, here's a hive and we're going to take the hypopharyngeal gland out of all the nurse bees and now they don't have that gland, what would the outcome be of the hive?

You know, that would be interesting to critically think through something like that. The truth of the matter is, sometimes in the fall, the nurse bees don't have enough consumption of nectar pollen to produce royal jelly, and it can have a devastating effect on the bees that can't make bees of winter physiology in the winter time.

So, I just like the critical thinking skills. It's fun when people can go beyond just getting answers and thinking on their own and making their own decisions.

Amy

Absolutely. All right. David, is there anything else that you wanted to share with our listeners?

David Burns

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No, I don't think so. You guys have been great. I really appreciate your podcast and the effort that you guys put into it. It's great being with you today.

Amy

Yep, Thank you so much for being with us today, and we'll be sure to link your YouTube channel to our additional notes and resources as well.

David Burns

Thank you.

Amy

Jamie, I really enjoyed speaking to David. You know, it's like one of those things where he puts out content, we put out content, so I could have gone on for a very long time asking him questions about the logistics and everything that goes on behind making content.

Jamie

Yeah, I mean, he said so many things that we've discovered to be true, just doing our own YouTube series that we started last year. And just a couple things come to mind. You know, a lot of people wonder how in the world can you keep creating content that's new and original. But honestly, I found in my 30 something years of working with honey bees, they're just an endless source of things to talk about. That's number one. Number two, I want to go back to what I said.

You know, even the biggest meeting that I've ever spoken at, maybe a few thousand people in the room, it requires flights and hotels and food and rental cars and time away from home, and and and and and. But one good beekeeping video can reach 100 to 200,000 people all around the world.

I'm a parent of teenagers, I work with teenagers in other ministry things, and I just watch them, and they spend so much time watching video content. We work at a university; the students here spend so much time looking at video content on their phones. It's just a great way to get information out. David's been doing this for decades. He saw it early, he took advantage of it early. He's got a great website, very informational. When I hear him talk about the pros and the cons and the experiences, these are all things that we've encountered kind of just in the short time we've been investing in this heavily. And it just makes sense. Educational videos just make sense from a "how are you going to invest your time" perspective. So, it's really cool seeing someone who does this for a living and professionally and does it well.

Amy

Yeah, absolutely. You know, I wanted to kind of touch base on what he had said about, you know, you can't learn beekeeping online or you can't learn beekeeping because we've heard the same,

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right? Of course, with the master beekeeper programs around the nation. It is difficult. And yeah, I totally agree. You can't learn everything there is to know. You can't learn beekeeping just, you know, virtually and online. But I also think that these are all just different tools that we can use in the toolbox, right?

So, we've heard great feedback of, oh yeah, we listened to this episode, and then we went out to the apiary the very next day, and it was exactly what you guys were talking about in the Q&A, and so we knew what to do. And I'm sure it's the same with YouTube. Of course, with YouTube, the beauty of YouTube is being able to have video images, right?

And I do go to YouTube to learn how to do things every once in a while and just replay the same thing so that I can see how someone else is doing it. So, I agree with the whole, yeah, you can't learn everything, and you can't learn how to keep bees fully online. But at the same time, you know, I think that online resources are incredibly important and helpful to the beekeeping world as well.

Jamie

Yeah, you got to get your hands dirty, right? You got to physically get into bees and know how to have tool holds and know how to light a smoker and to see what it feels like when you're trying to remove a lid that's stuck to the inner cover with propolis. That is all true. But if you think about the way people consume information and then go forth and try to use it, folks go so many different places.

There are readers. There are people who want to e-mail you directly. There are people who want to call you. There are people who want to watch you in person in their apiary or at a meeting. Obviously, we're communicating right now through a podcast because people want podcasts.

But if you look at the numbers, videos are just by volume, so many people go there. And just what you said is so true. Like our words through this podcast, you need to put your hive tool between the boxes and pry down, which lifts the super and you can pick it up.

Okay, so people will, with a mental image, make that happen. But with a video they see it. That's not the same as doing it yourself. That is true, but what the video offers is it shows you the direction he pushed, how he held the hive tool, how the super responded, how they grabbed that super and picked it up. And it's really second only to having that person in the apiary with you. So, people learn this way. Historically, people needed someone in the classroom to stand in front of them and say, hey, this is how you do things. But now people learn so many different ways.

And YouTube really is so tremendously impactful. And for all of our listeners out there who may or may not believe this, just ask yourself, when's the last time you went to YouTube to do something you didn't know how to do? And David even said, you know, fix a dryer. I've fixed my dryer, I've fixed my dishwasher, I've fixed a part of a car, I fixed my kids' Wii, I mean, I've done



so many things that I don't know how to do just by watching YouTube videos. Of course, why would beekeeping be different, right? So, it's such a great resource.

Amy

I agree. All right, well, if you listeners are out there and you've got your favorite Youtubers, send us a link. We'd love to take a look at all the great content that's out there.

Stump the Chump

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

Amy

Welcome back to the question-and-answer segment. Jamie, the first question that we have today, what are your thoughts on VSH queens? So, maybe you want to tell our listeners what VSH queens are, versus mite mauler queens?

Jamie

So, VSH is Varroa sensitive hygiene, and we've talked about this, we've interviewed some people about it on past podcasts. I'm going to reference those. If you're interested in a more in-depth discussion of that topic, just go back to those podcasts and listen to them. They're really good and really give you a great view of what Varroa sensitive hygiene is. But it basically means that bees remove brood that is being parasitized by Varroa that are reproducing at that moment, right?

Then it's saying VSH queens versus mite mauler queens, and mite mauler queens would be queens that were selected to produce worker bees that were really good at the hygienic removal and chewing of mites. So, VSH would target mites in brood, mite maulers would target mites on adult bees and also mites coming out of brood cells and things like that.

The question was what are my thoughts on VSH queens versus mite mauler queens? I'm not aware of any research projects that's directly compared the two. I'm not going to say one is better than the other. I will just say both are no doubt worth using. And what do I mean by that?

Well, I am a huge fan of basing your beekeeping operation on some sort of Varroa resistant stock. That could be VSH queens. That could be mite mauler queens, that could be the ankle biters out of Purdue. That could be hygienic queens. That could be Russian queens, it could be the new Pol-lines that are being developed by the USDA. You know, I believe fervently that if you're going to start beekeeping at any level, hobbyist, sideline, or commercial, that your beekeeping footprint, your foundation should be built on the back of resistance stock.

And so rather than saying, well, this stock's better than that stock, etc., where I've not seen, you know, huge direct stock comparisons for these purposes, I would just say buy some of each, put in your operation and see which ones you like the best and what works well for you.



The only way to really know if you're getting a benefit from these things is if you're actually doing Varroa washes, sampling for Varroa to see that you actually have reduced Varroa loads compared to doing nothing at all. But rather than, you know, pitting one against the other, I would just simply say, hey, why not try them both and see if they work for you? Why not throw in Russian queens or Pol-lines in there as well? I'm just a huge fan of trying these things, figuring out which ones work best for you in your apiary, and then sticking with it. But starting with some sort of queen that has been selected for resistance to Varroa.

Amy

That actually leads us into the second question of – I think we're just on a VSH/Varroa Q&A today. The second question is specifically from a person that lives in Florida, and they're asking if there are Varroa resistant stocks that survive well in Florida. They seem to think that the Florida mutts are better than, you know, other types of queens, but just wondering what your thoughts are on that.

Jamie

Yes, so, all of the Varroa resistant stocks survive in Florida. I get this question a lot. Also, I travel all over the country and speak and people say things like, well, you know, you can't use this stock here because it's this or that or the other.

In reality, all the stocks that I'm aware of here in the United States can live and survive everywhere in the United States. They may not be optimized for use in those areas, but what I would say in reply to this specific question essentially is should I use unselected stock, i.e., the Florida mutts, or should I use VSH queens?

I would say start with VSH queens because, again, there have been selected breeding programs whose goal was to have resistance to Varroa bred into this stock. And in contrast, unselected stock hasn't had that. Now, there's a lot of research going on into breeding queens, and this predates my time as a beekeeper and bee scientist.

I mean, it just goes back, you know, 30 years or longer here in the US. And the reason I'm saying that is there's clear evidence that some traits, like resistance traits, linked to certain other traits in honey bees and may, you know, be counter linked to other traits.

So, for example, you might breed a bee that's super resistant to Varroa but then end up with a bee that's not very productive from a honey standpoint. So, I'm not saying that our typical unselected stocks are useless. I'm not saying that at all. What I would say is that we would start with a resistant stock, something like VSH, and you might incorporate in your apiary some other things.

And I'll just use the term the questioner asked, the Florida mutts, as it were, use them in the apiary and then allow those to crossbreed so that you get kind of some of the best of both stocks



and traits in your operation. But going back to my answer to the first question, I would just start with some sort of resistant stock.

Let me tell you what I would do, Amy, if I had unlimited funds and I wanted to start a beekeeping operation on my own, and let's just say I did it with 100 colonies. OK, I moved somewhere, I got out of being a professor, I become just a beekeeper with 100 colonies.

How would I start? Well, what I would do is 20 of my colonies would be led by one stock, I'll just say Russians. Another 20 would be the VSH Pol-lines, another 20 might be the mite maulers, another 20 might be New World Carniolans, and another 20 would just be unselected stock produced in the state, you know, in which I live. So, I'd have 100 colonies, and I would just compare them directly. Do I like their behavior? Do I like their mite resistance? Do I like how much brood that they produce heading into winter or coming out of winter? I would test the waters myself with these different stocks to see what I think works better in the area where I live and what I like managing best.

But fundamentally, I'd be starting with stocks that have had some sort of directed breeding for Varroa. And again, just to give an unselected stock a fair shake, 20 of my colonies would be that. So, you know, I'm basically saying in 20% of my operation, each 20% would be led by a different genetic line. And then I would do that for a few years to figure out just what I like best, what do I like best, what managed well, what controls Varroa? But I certainly wouldn't just say, well, I'm just going to go buy this and this unselected stock because someone says that, well, our bees are better than any of those bees that are coming out of breeding programs.

I'd give them a chance. You know, controlling Varroa is too important of an issue to kind of leaving it to hearsay. I would definitely take into consideration what other folks are saying for the area if I moved into the area for the first time. But man, I'd just give stocks a chance before I made a decision.

Amy

Yeah, and I definitely – that's something that's common with a lot of the producers that we have here as well. You know, they do have different lines of stock that they will look at. And obviously, you know, when people are asking us what types of queens should I get, it really is just one of those things where it depends on what you're trying to keep bees for as well, right Jamie?

Jamie

100% And if I were doing this for a business, obviously I would do a ton of research because you know, you've got to make money, you have got to do it right. I would go to the area, you know, let's go back to my 100 colonies.



I'd go to the area, I'd look up especially commercial beekeepers because commercial beekeepers have to stay alive doing what they're doing, right? So, you have got to go to those folks where the rubber meets the road. What are you using? What do you see gives Varroa results? What are your sources for these stocks and things like that?

But I'm also a tinkerer, you know, I have to see it for myself. I'd play around with the different stocks that are available. And I'd do it for a few years before converting a lot of my business to maybe one or two stocks. But I would always have a couple of side apiaries where I was just playing around with any new stocks or any new developments or any new lines just to make sure that I'm using what I feel is best and most available and works best under the situation I'm managing it under. I'm a huge proponent of that. Now, how do you scale that down to a hobbyist with five colonies? Well, you're not going to have a fair shake if one colony is Russian and one colony's VSH and one colony is – you know, that's not a fair comparison. It's a sample size of one, but you might have half of them one stock, half the other, just to give them a chance and play around and see what works best for you.

But it still all starts with something that was selectively bred to have some level of resistance to Varroa, whether it's a mauler or VSH or ankle biter, I don't care, but I would start there.

Amy

All right. That leads us to our third question. This is also a Varroa question. Would you say that our strategy of treating Varroa chemically has delayed the development of a potential natural resistance in honey bees? What are your thoughts on this?

Jamie

Probably so. Here's the truth. When you treat chemically, and that's the thing that most colonies experience. I'm not going to say most people do it because, you know, most beekeepers are hobbyist beekeepers, but they only keep a small, tiny fraction of the overall percentage of colonies. So, fewer beekeepers are commercial beekeepers, but they keep the most colonies. So, the most colonies here in the US, as an example, are treated because commercial beekeepers by and large treat their colonies to control Varroa. So, you could argue that treating colonies in a regimented manner 2, 3, 4 times per year as necessary keeps alive stocks that aren't resistant to Varroa. Right? You could argue that. You could also argue, when Varroa were introduced or discovered in the US in the 1980s, when they were discovered – I don't know what number of colonies were in the US then, let's just say 3 million for the sake of a discussion point – If no one treated at all, no one at all treated, you would have had a huge crash from 3 million colonies down to some small number of colonies.

And if you would have selected from those and spread that stock around the US and did the same thing next year and there's a Varroa crash and you selected from the survivors and do this over



and over and over and over a year for the last, you know, 35, 40 years, We might have stocks now that were highly tolerant of or resistant to Varroa.

But obviously, that's very difficult to do in a system where people's livelihoods depend upon living bees and a system where pollination is so important. It's not an approach that people could take. It's not really a good solution to managing a pest that's been discovered once it's thoroughly throughout an area. You can't just do nothing, because people's livelihoods depend on it and pollination depends on it. So, you need the happy medium.

You need a short-term solution, right? And that's really what chemical treatment was supposed to provide, short-term solution. And if mites became resistant to it, there'd be another chemical behind it that would be safer bees and deadly for mites. All the while, people would be breeding bees to create these stocks.

And you know, 20, 30, 40 years later, you would have this seamless integration between resistant stocks, chemicals that you could use that are safe for bees and deadly to mites that would be available anytime mite populations peak. We've got some kind of weird, perverted version of that right? You know, people have been breeding bees for resistance. We've talked about this already for decades here in the US. But breeding bees is not like breeding cows or chickens because queens made in the air, on the wing, they mate with drones that are out there. You can lose these traits. It's just not as easy as it is to produce a cow that's got those traits that you want.

It's possible people have done it, but it's not easy. Likewise, from the chemical standpoint, it's just been very difficult to find good candidate chemicals that both kill mites and are safe for bees. So, if everything had gone according to plan, we'd have really amazing resistant stocks, we'd have some really good ones, and we'd have 5-10 different highly effective chemical control options, and we have this perfect seamless integration of the two and this perfect integrated pest management approach. We don't have that perfect system. We've got a good system, but there's still more breeding work that needs to be done, still other strategies that to control Varroa that need to be done.

And so, you could argue that our strategy of using chemicals might have delayed getting where we've wanted to go, but it's also, in my opinion, staved off catastrophic losses of honey bees that would have been incredibly detrimental around the US and elsewhere around the world. So, you know, I feel like in some ways, what had to happen is what happened, right? We're where we are because we've had to follow this path, maybe. It's not a perfect path, but I do believe I'm very optimistic that we get better every year. Every year the breeding is better. Every year the chemical control options are potentially going to get better. Every year there's new things that are coming out to make survival with Varroa possible, and I'm an optimist about that.

Amy



Gosh, Jamie, you know, I'm just thinking if we lived in a perfect system, we wouldn't have a podcast, first of all. We wouldn't probably have jobs. But you just kind of think about it. Like, imagine if it was just as easy as us saying, yeah, this is what you should use. This is how you fix this problem, and then that fixes the entire world and the entire industry and, you know, everything related to honey bees and everything in the world, right?

Jamie

I mean, Amy, you're so 100% right. I mean, just think about our second question, this whole Varroa stock, does it survive well in Florida? The point is management recommendations are also so local. You know, I live in Florida, but I'm from Central Georgia and you know, that's five hours north from where I live.

Beekeeping 5 hours north from beekeeping here is like super different and different flowers and different feeding strategies and different mite populations, it's so regional contextually. So, just like what you said, if it was just this perfect work world and bees were completely resistant, it would be so much easier.

But it's difficult because of these regional complexities, because of how the bees do their thing and the arms race between the bees and the Varroa. It's just, it's difficult, which is why we've got scientists and why we've got beekeepers and why we've got industry and why we've got government. And it takes a lot to keep agriculture moving forward in general.

Amy

I totally agree. Couldn't have said it better myself. All right, listeners, if you have – I've just realized as I'm doing this podcast, Jamie, I'm feeling a little like – I'm just going to go off the cuff. I say, "alright" a lot. I'm noticing all these things about what I'm saying. I think I still am going to blame Zoe Mac for this. There are things that people hear me say over and over and over again, and I guess alright is one of those words. So, you guys will just have to deal with it. I'm just becoming well aware of my words these days.

Jamie

Well, there are Amy-isms and Jamie-isms, but let's just lean into it.

Amy

Yeah, that's fair. Alright, well –

Jamie

There you go. You did it.

Amy

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I know I did that on purpose. OK everyone, if you have questions, you already know how to find us. Send us an e-mail or send us a message on one of our social media pages.

Hey everyone, thanks for listening today. We would like to give an extra special thank you to our podcast coordinator, Jeffrey Carmichael. Without his hard work, Two Bees in a Podcast would not be possible.

Jamie

Visit the UF/IFAS Honey Bee Research and Extension Laboratory's website, UFhoneybee.com, for additional information and resources for today's episode. Email any questions that you want answered on air to honeybee@ifas.ufl.edu. You can also submit questions to us on X, Instagram, or Facebook @UFhoneybeelab. Don't forget to follow us while you're visiting our social media sites. Thank you for listening to Two Bees in a Podcast.