



## **Season 1 Episode 7 – All Things Horticulture**

**October 3, 2022**

Speaker 1:

Welcome to the Farming Basics Podcast with Olivia Fuller. We'll have sustainable farming tips from growers across the state and extension specialists at Auburn University.

Olivia Fuller:

Hello everybody. Today we have Dr. Des Layne, the Head of Department for Horticulture. So our favorite department here at Auburn. And it's me, Olivia Fuller, and your co-host Jacob Kelly. And we're super excited to have you, Dr. Layne. Thank you for joining us.

Dr. Layne:

Thank You.

Olivia Fuller:

So first off, let's talk a little bit about you before we get deep into all the projects that's going on. What brought you to Auburn? What are some of the major stepping stones that got you where you are today?

Dr. Layne:

Getting me to Auburn was, I was recruited to come and be the Head of the Department of Horticulture. And I already knew a lot about Auburn, I had friends here and I was at the stage of my career where being a

Department Head was something I was interested in doing. And when I came and interviewed and just met everybody and saw the opportunity, I was super excited and actually got offered the job, so that was good. And came and started in July 2018. So almost four years now.

Olivia Fuller:

Oh yeah, it is.

Dr. Layne:

And I will say, in all truthfulness, this is the best job I've ever had.

Olivia Fuller:

Oh, that's great.

Dr. Layne:

Thoroughly love it. But being in the southern part of the United States working in agriculture, and I tell people where I'm from and they're like, "Oh, how did you get there?" So I grew up in the south, but actually in southern Ontario, Canada.

Jacob Kelly:

Okay.

Dr. Layne:

Where I grew up was in the primary... we might call the fruit and vegetable zone of Southern Ontario where they grow a lot of fruits, lots of vegetables, even peaches. And so all of my high school jobs growing up were working on fruit and vegetable farms.

Olivia Fuller:

So you were just in the horticulture world-

Dr. Layne:

Yeah. My first job was picking peaches when I was 14 years old for a summer job. So I studied agriculture at Ontario Agricultural College, got a Bachelor's degree in Horticulture and knew that I wanted to work with farmers and do research and help solve their problems. So I went to Michigan State to do a Master's in PhD in Horticulture, focusing in tree fruit crops and really trying to do research and extension outreach to help solve grower problems.

And my career has taken that path from grad school all the way until now. So I spent four years in Kentucky, I spent 15 years at Clemson, I spent six years at Washington State and then I came to Auburn as a department

head. But I've worked mostly in peaches and then other tree fruit crops like cherries and apples. And then I've had a lot of teaching responsibilities too.

Jacob Kelly:

So we are in the presence of greatness.

Olivia Fuller:

Yes.

Jacob Kelly:

Dr. Layne has a peach book out there. He's world famous. Don't let him fool you, by his humble demeanor, he's big time. I feel like our show is big time now because we've had Dr. Layne.

Dr. Layne:

Well, I grew up in a town of 2000 people and a high school of 500 students in rural Ontario. So started very humble.

Jacob Kelly:

And come a long way, come a long way. Well, what's the department up to these days? We keep hearing a lot of good things going on. Can you tell us about some of those latest projects that are going on in the department and what they mean to you?

Dr. Layne:

Yes. So we've had a mixed blessing where we've had several faculty who've retired, who were awesome. But they got to that point in their career where it was appropriate for them to retire and they chose to. Spend time with grandkids, just enjoy life, post professorate. And we've had the opportunity to hire a bunch of new really smart, dedicated, hardworking young faculty. So we're going through some positive changes in that regard. And they're building and establishing programs, new research areas, which is really cool.

Couple areas that are really exciting. One is the development of the Transformation Garden on the Auburn University Campus. And that's a huge project that's going to take several years. And so some people think about it and when we talk about it, they think it's done. We're just getting started. But ultimately that's going to be a resource for the whole university and for the community, where what we would say is high impact, transformational, hands on experiences for students.

Olivia Fuller:

And that's so important because so many students are graduating without that hands on experience and putting them behind when trying to decide which career they even want to go into.

Dr. Layne:

That's right. So there are students who choose to do an online degree. For example, my daughter did an online degree and it was perfect for her. But if you want to be a residential student on a university campus, it's these kinds of experiences that will make it really, really special. And we want as many of those as possible. So this garden, it's going to be the largest classroom in Auburn's campus, it's 16 acres. It'll cover all the horticultural crops, all the agronomic crops. It will have fruits and vegetables and ornamental plants and things that we grow, like cotton, and peanuts, and soybeans.

And our students will take classes that will have laboratories that will meet out there. They'll do independent research projects out there, and we'll engage with the community. So we will have a community... Well, it's technically a children's garden and that's in partnership with Bonnie Plants. They made a significant donation to help us get this project going. And so we'll work with master gardeners and we'll work with the local community. We'll bring in kids from the local grade schools, they'll come and tour.

But for Auburn students, it'll be a place to do all manner of things to learn about our food system and get hands on experience growing, looking for insects and diseases, what kind of pollinators are out there. Invasive species and how we manage weeds and how do we grow stuff in the ground versus in a high tunnel or versus a vertical farm, state-of-the-art technology. So all these pieces will be part of what we do out there. It's going to be-

Olivia Fuller:

It's truly wonderful.

Dr. Layne:

... it's going to be awesome.

Olivia Fuller:

Yeah. I'm glad fruits and vegetables are getting that attention in the state now and through Auburn, that's really exciting.

Jacob Kelly:

What is the project you're most excited about at the Transformation Garden? What is that wow factor project that really gets you going and gets the wheels turning?

Dr. Layne:

I would say the fact that we have this partnership with Campus Dining and we have these two state-of-the-art vertical farms that are already there. That's a very cool partnership that started before I came to Auburn. So Dr. Daniel Wells and Glen Lothridge... So Daniel is one of our faculty. He works more in the aquaponics and hydroponics area. And then Glen Lothridge is the director of Campus Dining. And they were working together for

several years to look at ways to grow fish and to grow produce in the greenhouse that could go into campus dining and also help fuel the research program.

And so when I came on board, we were beginning to develop this Transformation Garden and we were talking about what could be something that we could do that would expand on that partnership and enable us to go in even a different direction. And so we talked about possibly greenhouses or vertical farms. And we settled on the vertical farms because we could buy those pre-fabricated, install them and start using them right off the bat. And so actually Campus Dining paid for them and we got them ordered. Then the pandemic hit, then we had a delay and another delay. And eventually they got delivered about last April. And they've been operational now for just about a year.

And what's really cool about that is we are growing produce in there for our Edge Campus Dining facility. And if you go there even today, where they have the salad bar, the spring mix there is all grown from the vertical farms by our Auburn students for our Auburn students. And they're harvesting there every day of the week, year round. And it's state-of-the-art and the students, our undergraduate students are the growers. So they're getting a high impact transformational experience.

Jacob Kelly:

For sure.

Olivia Fuller:

Right.

Dr. Layne:

Because they're doing it.

Olivia Fuller:

Yeah. No, and that's really the future of food, the vertical farming, container gardening.

Dr. Layne:

So the person who was managing those for us up until a few weeks ago, Kyle Henserling, who did a Bachelor's in Horticulture, did a Master's in Horticulture. He got recruited for a position in South Carolina that he has already started with Solely Organic. And he's going to be the chief grower for a hundred something thousand square foot vertical farming operation in Anderson, South Carolina.

Jacob Kelly:

Wow. That's exciting.

Dr. Layne:

So we lost him, which is kind of a bummer. But we've got people in the queue and we're about training. So we're training that next generation and we want them to go out and get these great jobs and be industry leaders. We're happy for Kyle, we're sorry to see him go because he was Johnny on the spot.

Jacob Kelly:

A rock star.

Dr. Layne:

He knew it inside out, backwards and forwards. But now he's taking that knowledge to a much, much bigger operation.

Olivia Fuller:

I see the focus going towards that style of growing too, especially when it comes to vegetables. The urban farm movement has been great because it does keep people interested and it keeps people fed locally. As you know, I worked on the Rooftop Farm in New York City and I've, thankfully, been brought onto the Culinary Science Center, their rooftop garden. Which has brought a lot of excitement, because I think it ties a lot of those missing pieces, because all in one building the food is grown, it's harvested, and then it's cooked and then it's eaten all in the same place. And I think that is really cool because people learn how to utilize the vegetables and different herbs that they're growing. Keeps it exciting, too.

Dr. Layne:

Like roof-to-table, right. And that's what we'll be doing up there. That's a hugely exciting project.

Olivia Fuller:

Yeah. Will you talk more about that partnership?

Dr. Layne:

Sure. So the Rain Culinary Sciences Center, that's in the process of being completed, that'll open, hopefully, in August. This is a hundred plus million dollar building. And Jimmy Rain, who's one of our board of trustees members, made a very significant donation to help get this started and it's going to be done. When they designed the building, they built in about 4,400 square feet of rooftop garden space. And the College of Human Sciences asked horticulture to help them, basically to design out that space and to run it. Which is a huge privilege, a great opportunity for us and our students.

And so we have met numerous times and we've basically come up with planting design and all the plants that we need and what we're going to grow when. We've got some graduate students that will be supervising the undergraduate students that will work there. We've got nine students already identified that will work up there, starting in May. They'll basically be growing produce. Well, it'll be fruits, vegetables, flowers, herbs that'll be grown year round. And whether it goes into the 1858 restaurant, or it goes into the spa side or the hotel room

side, or flower arrangements, or decorations for cocktails, or whatever it might be. We're going to be growing all year round and the students will be up there.

Olivia Fuller:

That's great. And that may sound like a small size of a space to grow food for a restaurant, but what I learned was if you can do succession planting, you can get so much food off of a small space like that.

Dr. Layne:

It's going to be amazing. And I think the opportunity for our students to be engaging with the patrons that come, the people that visit there, or that are staying there to educate them. So they'll have a horticulture hat, a horticulture shirt, they'll be up there when they're working and they can be asked questions. We'll have signage up there, so maybe there'll be a QR code. And you take a picture with your phone and it pulls up the basal plant that you're looking at and it tells you how you can grow it in your raised bed, in your backyard or in a container. And then how you can make pesto out of it and make a delicious pasta dish.

Olivia Fuller:

I love to see people connecting with their food in that way now.

Dr. Layne:

That's going to be really, really cool.

Jacob Kelly:

Knowing where your food comes from. It kind of a day's gone by thing. Nobody really knows where it comes from anymore, it comes from the grocery store. When you ask kids where did that tomato come from? "The grocery store, that's where it was." There is nothing going past that.

Olivia Fuller:

But the more that they care, the more recognition that the farmers get.

Dr. Layne:

That's right.

Olivia Fuller:

And they are caring more about buying local and then supporting the local economy and the farmers in the area.

Dr. Layne:

That's right. And one of the things that'll be beautiful is the freshness of the food. The time it takes from when it's harvested until it's actually being consumed. We're talking hours or maybe a day or two, which will be really great. So the quality of the final product will be superb. The nutritional value will be really superb. And honestly, it's going to be a challenge for us because a lot of these plants will do well in the ground. How are they going to do on the top of a building when they're exposed to full sun, the blazing heat of Alabama summer?

So we're going to do some things by trial and error. We'll figure things out as we go. Some plants will do better, some won't do as well. We'll be trying a bunch of different varieties, all different kinds of plants. And some of them will just strictly be up there for beauty, so that we'll have flowering plants up there too.

Olivia Fuller:

And I think we went with an orange and blue color scheme, so that was exciting. And a lot of them are edible too.

Dr. Layne:

Every plant that was chosen has edible parts.

Jacob Kelly:

Oh, that's great.

Dr. Layne:

Yeah, that was intentional.

Jacob Kelly:

I love just walking around and grabbing pieces of plants and eating them.

Dr. Layne:

Yeah. We might even have some wasabi arugula up there.

Jacob Kelly:

Oh, okay.

Dr. Layne:

Have you tried that?

Jacob Kelly:

Yeah, I love that stuff. Yeah. It's super spicy. I really like it. It'll burn you down if you're not ready for it.



Dr. Layne:

Yeah, but then it dissipates real quick.

Jacob Kelly:

Yeah. It's not bad. It's definitely a great flavor.

Dr. Layne:

We grow that in our vertical farm.

Jacob Kelly:

Oh really?

Dr. Layne:

Yeah.

Jacob Kelly:

I'm going to have to go check out that salad bar.

Dr. Layne:

Yeah.

Olivia Fuller:

So we've talked about some of the trends that you're seeing in the world of horticulture and in your department. What are you seeing though, students becoming more interested in, because it seems like the fruit and vegetable world is expanding and getting a lot of attention right now. Do you see any trends, any interest from students picking up right now?

Dr. Layne:

So we have strong enrollment in that area. A lot of students are interested in the food system. They're interested in food security, high nutrition value food. So we have a good number of students in the fruit and vegetable major. We have great job opportunities for them. I think we've got students that are becoming growers or trainees in the Bonnie Plants company. Like I talked about, Kyle, who's working for this vertical farming company. Some of our graduates are going and working for the companies that provide products for farmers.

And there are great opportunities for employment. We have basically 100% job placement. And when we do our career fairs in the fall and the spring and the companies come in that employ our students, we don't have

enough graduates for the number of jobs that are out there. That's a good problem. It's not good for the industry because they need our graduates, we just need more students in our programs. And-

Olivia Fuller:

That's encouraging.

Dr. Layne:

It is.

Olivia Fuller:

Because I feel like a lot of students are not getting, I know I didn't, getting jobs that are in their field when they graduate, that's so rare now. And I think is good and bad, for me, it taught me a lot of skills that expanded me as a person, branching out and doing different things. But that's so exciting to think, "Wow, you could graduate with a job because that's hard to come by."

Dr. Layne:

And our industry partners, a lot of them are alums. So they love Auburn. They know that we produce really qualified, excellent students. And they're becoming more involved in engaging our students through participating in our careers class, through participating in career fairs, offering internships, and then providing good jobs. So we could fill a lot more positions than we currently have students.

So that's a cry out for more students to pursue horticulture because we've got great career opportunities that, you can have a really good profession. You could be an extension like the two of you guys. You could work for state government, you could work for a private company, you could be self-employed. We have students that have come back that are now working in research. So there's lots of great opportunities for young people to make an impact on the world.

Jacob Kelly:

Right. And we'll be having an extension internship opening up here soon. And I'm excited about that. I can't wait to get an undergrad under my wing and show them what I do every day and why I love what I do. And tell them how great and wonderful it is and sign them up, in a couple of years when they graduate and get them running down the extension train. We have a great time in extension and I love educating these growers out there and learning from them. I probably learn way more from them than they learn from me, but I enjoy teaching them because that's the way I learn. I've got to know the subject so I can teach it to them and then they ask the perfect questions when you're out there.

Dr. Layne:

That's right.

Jacob Kelly:

And I learned from those questions. "I don't know, I'm going to have to call somebody and find out."

Dr. Layne:

So let me mention something, Olivia asked me this question at the very beginning. Like I said, I grew up in Ontario and the summer between my sophomore and junior year, I worked effectively as an intern, in extension, in my county in Canada. And I was a Biological Science's Major up until the end of my sophomore year. And I worked with a horticulture extension agent that summer. And by the end of that summer, I was convinced I was going to pursue a degree in horticulture and I was going to eventually go on and do research and extension in the fruit industry. And I switched my major to horticulture that coming fall.

Olivia Fuller:

That really did change the course your life.

Dr. Layne:

It changed my life, because I got to see how somebody who had a college education could go on to and farm and be respected because of what they knew and advise the farmer. And the farmer would make decisions based on the advice that they gave. First, because they trusted the person. But second of all, because that person knew what they were talking about and gave them good advice.

And actually we were out pruning an apple orchard and the county agent came, talked with a farmer and we adjusted our pruning style based on the things that she shared with him that same day. I know, I'll never forget that. And I thought, "Wow, that's some real power for good." And I want our students to be able to get those kind of experience working with folks like you. And they see that's where the rubber meets the road.

That's where their education is actually used for something beneficial, not just so that they're smart. So now they can extend that and help the producer. And actually a lot of our producers are really smart anyway. And sometimes we just come along to help to affirm a decision that they already made, but then other times, we're introducing them to new things that they don't know about that could help them.

Olivia Fuller:

That's a great highlight for what extension does and it's important. So I didn't realize that the farmers were going to really listen and hang on to a lot of the things I was saying. And they were, I could tell, really intrigued when I would just make a simple comment like, "Oh yeah, you should prune this way." And they really were like, "Wait, now, say that again." And starting to write it down. I was like, "Wow, this is important. It makes me feel needed and gives me the encouragement to want to learn more so I can give them more information." Because-

Dr. Layne:

That's good.

Olivia Fuller:

... they're feeding us, so that's a pretty important thing to get them the correct information, and then the horticulture research that's happening in your department that we're taking to them.

Jacob Kelly:

Talking about research, we're doing all kinds of cutting edge research here at Auburn and all over the southeast. What are some of the most exciting research projects you're seeing come out of the department right now?

Dr. Layne:

One area that's brand new, we just started last, I guess, April of last year. So we have hired a new fruit breeder who's going to be working in developing cultivars of blueberries that are well suited for Alabama, that will be disease resistant, high quality. That could be grown outside, that could be grown in high tunnels, that could be grown organically. And basically getting that program growing from the ground up. And she's partnering with breeders from around the country. She's bringing all different kinds of blueberries into Alabama that can be tested and evaluated and starting to build a program. That's really exciting. Another area is-

Olivia Fuller:

To touch on that before you move off of-

Dr. Layne:

Sure.

Olivia Fuller:

... how important breeding new crops is. I did a talk last week about food waste and food loss. And that plays a major part in keeping food from being wasted because it can hold its integrity after being harvested. Post-harvest loss is so huge and that's where we lose a big percentage of food. And so if you can breed these plants that produce well and maintain their integrity and don't have to be thrown away as soon as they get to the consumer. I've realized what a big role that plays in preventing food waste.

Dr. Layne:

It's huge. And there're some estimates that in terms of the fresh produce industry, that food waste could be 30 to 40% of production. And that's a staggering number. And in some cases it's lost because of disease or insect damage or whatever. In some cases, the produce is graded out, when it goes to a packing facility, it doesn't meet the grade. So it gets graded out.

And frankly, there's a lot of waste. But then, like you said, post... So let's say it's a good quality product. Let's say for example, it's romaine lettuce that was harvested in the Salinas Valley of California. When it's harvested, it's premium, excellent quality stuff. It goes to a packing facility, it gets in a box, it gets shipped to the warehouses in

Atlanta, and then it comes over here to Auburn or Montgomery or whatever. By the time we get it may be three to seven or more days old.

And those outer leaves on that head of Romaine are already starting to wilt. That portion of the plant has to be discarded, so that's a waste of food. And then you've got the whole issue of food safety. So where there have been issues where there's been contamination of fresh produce because of animal waste and other things, if it's coming from far away in an environment where it could happen and it has happened, because everybody's heard about these Romaine lettuce recalls. Well, we can grow remain lettuce in Alabama. We don't necessarily have to ship it in from California. We can grow Romaine lettuce in a vertical farm or in a high tunnel, or even in the field where it's going to be fresh and safe and there isn't going to be any loss.

And if it's grown in a vertical farm, it's going to be food safe because it's not exposed to all those other things. But yeah, that food security piece is really important. And I think really, it's incumbent on us as a state and with our farming system to try and produce as much as we can throughout the year and to support our local markets because then we're less vulnerable from things that may be happening elsewhere that we can't control.

Olivia Fuller:

That's a great point. But I think I cut you off on the next thing you were going to say about-

Dr. Layne:

Oh yes. So we have a new organic farm that we are establishing at the EV Smith Research and Extension Center, brand new effort. We are transitioning 20 acres of land from conventional to organic production. We are actually in the process of planting fields right now, both in the ground and in high tunnels. Where we're going to be doing vegetable trials, we're going to be growing fruit and providing, ultimately, recommendations for farmers in Alabama on how they can grow produce organically, because that's just an added niche. It's another opportunity for farmers to grow.

And once it's a certified organic farm, they can get a premium price for it, which improves their bottom line. But technically, it's difficult to grow things organically in Alabama, especially if you're growing them outside, because of the rainfall, the humidity, the pressure from insects and disease. But part of that is variety selection, so what is best adapted, what can grow well? And then because we have high tunnels there that we can exclude insects from and that we can advance the crop, either earlier in the spring or later in the fall, we may be able to do things there that we couldn't do in the field, that we can advise our farmers about and they can say, "Aha, I can do this." And then we can teach them how to do it.

Olivia Fuller:

And it's sometimes more economical for them to grow organic and they can make more off of it.

Dr. Layne:

Yes.

Olivia Fuller:

It's just getting them equipped to do so.

Dr. Layne:

Right. And then they need to get certified to be able to do that, so we can train them on how to do that. We can train them on how to have good agricultural practices and food safety and all of the things that they need so they can have confidence in their product when it goes to market.

Olivia Fuller:

Well, this has been really informative and exciting. Thank you so much for joining us today. This is great. It is such an honor to have the Head of Department here talk about the things that Jacob and I do, talk about where it actually stems from, the research that we're taking to the growers. So thank you so much.

Dr. Layne:

Thank you. Thank you for doing this podcast. You guys are the future, so this is awesome.

Olivia Fuller:

Thank you.

Speaker 1:

This has been a production of Alabama Extension at Auburn University.