

Sowing Connections Episode 7 • Soil, Seed, and Connection with Linley Dixon

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Linley Dixon

Life just gives off goo and that feeds other life. And that's how life evolved from the very beginning is on top of each other. And that's how multicellularity evolved. So that's, the soil is very much like that. It's just so complex.

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Melody Reese

A seed may look self-contained, but its story depends on everything around it. It depends on the soil it's planted in, the weather and conditions that it experiences and the people who carry it forward. In this featured episode of *Sowing Connections*, we'll sit down with farmer and scientist and Real Organic Project co-director Linley Dixon to explore what's happening beneath our feet. We'll talk about soil health and the connections between seed and place, and what those relationships can teach us about resilience.

Then we'll come back here to Heritage Farm. For some field notes from farm director Corbin, who will give us a behind the scenes look at what happens after a seed crop is harvested, and how those seeds are processed and dried for long term storage.

This is *Sowing Connections*. I'm Melody, and I'm so glad you're here.

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Mike Bollinger

Well, Linley, it's really great to sit down with you. I've been looking forward to this conversation, and I just have to say, I really respect, you know, the work that you're doing and the conversations that you're bringing to the table through the Real Organic Project.

I think you sit at a really interesting space. You know, both as a farmer and a scientist, and I think a lot of your work really gets at something that we talk about often but don't always fully understand, which is, I think the relationship between, you know, soil and plants and ultimately the seeds that come out of those systems. And so, I guess as I was thinking about this conversation.

I wanted to start at a place that feels simple, maybe on the surface, but, actually opens up quite a bit. And so I guess where I'd like to start is just, you know, that people often talk about healthy soil. But I'm not sure that, most of us actually know what that means. Where does that take your mind when you hear the term healthy soil?

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Linley Dixon

Yeah. You know, it's funny because farmers can't really define it either. When we were, when the Real Organic Project was coming together and the farmers were asked, well, why does soil

matter for organic production? And it was like, well, it's obvious, you know, but we didn't, we couldn't put words to it. What we experienced every day.

And so that's been sort of the journey of our podcast at the project. Well, why is soil so important? The farmers feel it in our bones, but it's really hard to explain to someone who's not out there working in it every day, to the eaters. You know, for them it's just dirt, right? It's like, oh, I got to go wash my carrots there's dirt on it. But for us it's central to everything.

So yeah, that's been a journey for me too personally. And of course it's so complex that it will never end. And that's the beauty of it. But for me, I think the simplest way to say it is that we are constantly trying to cycle the nutrients in our soil, and that is the most sustainable form of farming, is to create your fertility and keep it there in place.

And kind of the scientist side of me thinks of nutrients cycling but energy flowing. And so if you think of photosynthesis coming in and hitting those plants, that energy flows from the photons and then it, you know, is created into all these molecules and the plants, and then it gets exuded out the roots. And then there's all this life that feeds off of it.

So that's kind of a fun visual of thinking of that energy flow. And then even, you know, the cycling of the nutrients. It's not just when things die. It's everything that, you know, I hate to say poop, but like everything that life gives off, you know, you could think of our sweat and our saliva and our tears and, yeah, of course, our excrement.

But life just gives off goo and that feeds other life. And that's how life evolved from the very beginning is on top of each other. And that's how multicellularity evolved. So, the soil is very much like that. It's just so complex.

And, did you ever see the movie FernGully when you were a little kid?

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Mike Bollinger

No, I did not.

00:04:47:07

Linley Dixon

That was like, one of the first it was like, I don't know if it's from the 80s, but it was one of the first movies that, you know, showed all these trees knocking down and little fairies trying to save the forests. And there's a quote that I remember from it just kind of my whole life. And it was the first time I'd heard this concept as a little kid. And she, the fairy, goes, "There are worlds within worlds." And that is what's true about life, you know? And that is what's true about the soil. And so as farmers, we're just respecting the complexity of it and think it's easiest to think about it in the form of carbon. So if we're going to disturb that soil, we better be adding a lot of organic matter, which is carbon, to the soil, and keep the carbon cycling. And then you will have healthy soils.

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Mike Bollinger

No, that's great. And so if we're thinking about, you know, the fact that we can't, you know, drop our heads below the soil and see all of the activity and those interactions that are happening,

you know, underneath the soil, I guess I wonder how you think about how much of what we see above ground is, is a reflection of what is happening below it.

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Linley Dixon

That's totally true because grazers and I learned this, you know, by visiting farms with the Real Organic Project, because I'm a vegetable farmer. But they talk about how as soon as the grass gets eaten, you know, however much the animal took off, that's how much the roots die back. And that is your way of, like, pulsing that energy flow.

So those those roots die back, and it creates the ability for more life to kind of break that down. And then you don't necessarily want to put another animal back on that land until the, you know, new roots have grown down. And that's what's built our deep, you know, beautiful soils out here in the grasslands, over the millennia.

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Mike Bollinger

Right. And what about in your, what about in your garden? You've been farming for a long time too. Are there things that you have come to realize, when you're looking at plant health and maybe what's happening beneath the soil.

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Linley Dixon

It's so tricky. So we have plants that we grow outdoors, and it just kind of works out there. But we're also intensive greenhouse tomato growers year after year and really long season. So our you know, our plants are in there producing for eight months out of the year. And so to keep that going, we don't have to add any liquid fertility. And we do that. You know it is a nice sustainability principle because anywhere you look at that fertilizer, even if it's organically approved, it's fish emulsion or seaweed, there's a, you know, an extraction, a harvest that takes place. So if you really want to be sustainable, you're trying to add compost. And it's too much to front load a bed with that much compost to carry it, you know, for eight months of production. So we are sprinkling compost right on the drip lines. You know, at least once a month, very thin layers throughout the season because you don't want to add too much that will just kind of create a very hot zone where roots can't, you know, it's still composting and roots can't come in there. So it's kind of a light touch. But that's something that we are constantly we're not sure, you know, if the compost is constantly changing and you just kind of have to have a feel for whether it's working. Right. But over time, if you're adding liquid feed the carbon, the organic matter isn't coming with it. And that will create an unhealthy soil. So it's really important to make sure that that organic matter comes with the fertility.

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Mike Bollinger

Yeah, yeah. Yeah. Absolutely. And it's you know, it can be challenging to do in a, in a greenhouse environment. Right. I've been growing for a long time to and yeah.

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Linley Dixon

But totally possible. And we don't talk about it enough that actually that's the way to keep a healthier soil over time in a greenhouse.

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Mike Bollinger

Yeah for sure. You know, when we think about the term organic, I think a lot of people automatically think that it is an ecological and soil based reality. But, you know, I know through your work and the Real Organic Project that, that, you know, isn't the case, you know, where does that assumption break down?

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Linley Dixon

It's not the case anymore. It was for, you know, 50 years or longer if you look at the organic history of the organic movement. But as soon as there was, you know, kind of corporations got involved because there was money to be made, which isn't a problem. But when those corporations have so much power that they can redefine what organic means. And if you read the Organic Foods Production Act (OFPA), it is a social, you know, healthy soils law because the organic community did such a good job at being really actively involved in the creation of that and the writing of that, the original law and the implementation of the regulations, even too. And when you go back and we do this in our podcast and we talk to some of the people that were there at the beginning and they said, well, we didn't bring up hydroponics because we thought it was so far outside of what organic farming was that it didn't even need to be addressed.

So the organic community understands this. But when even people on the National Organic Standards Board over time were not farmers, they became less and less connected with the food production. And so they didn't really understand all that organic means. And, you know, we have this term regenerative now. And if you look back at OFPA, it's a very regenerative law. So we actually have the language in place to protect that, that form of organic farming. It's just that the corporations that have such an influence and what organic is now are the ones with the power, and they've been able to kind of redefine the history. I mean, if you listen to what the National Organic Program says, they'll say, well, hydroponics was allowed, you know, from the beginning, but it's because it was never even brought up as an issue. And it's only more recently that these new production methods have been in play. So it was about 2014 when the farmers of the project started to notice all these cheap tomatoes, cucumbers, peppers taking their markets. And they're like, where, where is this coming from? And then looked into and it's berries, you know, it's herbs, it's greens. It's starting to become more and more because it is cheaper and a lot of it is outside of our country.

And if you look at these production systems, it's the last thing you'd think of because you think of organic as a very sustainable way to produce food, but they're literally laser leveling valleys, putting down, you know, of acres, hundreds of acres probably should be careful at how much I overblow this, but it's massive scale, hundreds of acres of plastic.

And then the plastic pots, and they actually lift the pots off the ground with plastic stands and then the plastic overhead. And so when it rains, it's like all that plastic is ushering the water and creating erosion. So it's just and then, you know, after 3 or 4 years, they're throwing all that out as the plastic breaks down and then starting it all over. And there's no recycling with that plastic. So it's just like when you hear about these systems, it's just so far from what organic is. It's overwhelming. And it's like we got to do something about it, you know.

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Mike Bollinger

Right. Yeah. And so I guess I, you know, would love for you to then, you know, dig a little deeper and think about, you know, what does that mean for soil and seeds when organic becomes more about the inputs in the, in those substitutions rather than, you know, than those biological relationships? I mean, what does that mean for. Yeah, the seeds in the soil. But also then for us is as humans that are consuming those those products.

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Linley Dixon

Mike, it's so directly related. I don't know if you know this, but this is kind of an industry secret that you can't produce seed hydroponically. It like reduces and viability over time and it creates these really weak seeds. Do you know this?

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Mike Bollinger

I do know this. Yes.

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Linley Dixon

Okay. So yeah, we heard about this from Vitalis, who's like a, you know, a tomato greenhouse seed. I think they've got, you know, peppers and cucumbers. And so a lot of these crops are hydroponic that they're producing seed for. So they thought, you know, great, let's try to produce it hydroponically and then they don't work. So the seed that is produced for hydroponic crops has to come from the soil. So the soil is essential.

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Mike Bollinger

Right. So that's telling us something loud and loud and clear as well. Right. If we can't even bring, you know, a product or bring a crop to something that has a viable seed, it says a lot about, you know, what the rest of it is as well, for sure.

Yeah. You know, part of this podcast for us is a kind of transition from Covid era virtual programing that we had done, and to be able to still kind of have conversations with folks that are outside of our organization so that we, you know, our community can learn from others. And I'm thinking about some of the educational programing and teachers and students that we've talked about or, you know, talked with and heard presentations from that are using kind of science-based education and food growing in those indoor models and vertical systems. You

know, how do you think about those systems when they're made, when they're when they make learning possible?

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Linley Dixon

Well, I totally get it, because summer is when the kids are gone, right? And so they're trying to grow things to understand why it happens. And, you know, it's funny, we had a, like a container that was hydroponic, that was being passed around, and it was one of our restaurants invested in it as kind of a cool thing. And anytime you look behind those systems there, somebody has put up, fronted the money for them. And that's true at the schools too. You know, they come from grants or and all this to say, it's expensive to put in all of those systems. And so for a farmer, as soon as it becomes that expensive, you kind of start to lose the democracy of it because you need big capital to invest in these hydroponic systems. And, that it's funny how you go down this road of like, well, why can't hydroponic be organic? And then it leads to consolidation in the industry. And, you know, so these are all the issues that hydroponics surprisingly touches on. And it's like this, you pull on this one thread and the whole world is connected to it.

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Mike Bollinger

Yeah, yeah. For sure. Awesome. Thank you for that. And thinking now about a little bit about seeds, and when we reached out to you and we're thinking about this, this podcast episode, you know, I think one of the phrases that we put together was "healthy seeds don't exist in isolation." When you hear that phrase, what does that mean to you both as a farmer and as a scientist?

00:15:38:05

Linley Dixon

So you put a seed in the ground and you know it. If it comes from far away, it's going to be exposed to all these, you know, here in Colorado, all of a sudden it's going to have dry weather if it comes from, you know, Portland or the East Coast or whatever. Seed to me is so intricately connected to place. So I think there's just so much, so much that happens that I don't think we're aware of. The weather is constantly changing and that resilience. From the seed experiencing all in that place is going to be so important into the future to especially as things start to change. So I, you know, it's hard to describe because so much of it is it seems woo woo, but the seed knows.

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Mike Bollinger

This just makes me think about conference that I was at, the Organic Seed Alliance conference last year. And there was a presentation that was being given by a woman from a farmer from Florida, and she was showing tomatoes growing in a high tunnel. Right. And she was like, here is a variety that is an open pollinated variety that has been grown in this part of Florida, you know, for the last x number of decades. Right? And right next to it, it's here's the hybrid variety that we brought in that were supposed to have all of these traits. And of course, you know, the

open pollinated variety that was familiar with that place was thriving, you know, the hybrid sitting right next to it. Not that this is always the case or making a, you know, a kind of a blanket statement about hybrids, but that one had already dried up, right? I mean, it was that those conditions were outside of the parameters, probably from which, you know, that that tomato variety was bred. And so, yeah, I thinking about, you know, the, you know, the, the climate context, right, of, of where those things have been saved and grown and cared for and selected over time. You know, the more able they were able to, to adjust with, yeah, with that environment.

Yeah. So we're thinking about, you know, that again. So let's put that in context right there. All of the, you know, the material that is embedded in that seed. So then if we are to bring soil back into that conversation, you know, how much does the life in the soil determine, you know, what that plant can become and, and express what is already in that seed? What's the role that soil plays?

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Linley Dixon

Yeah, you can see when it goes so well. And then when it goes wrong too. Gosh, we have even learned now that there's all these endophytes. These are, you know, little things that live on the surface of seeds, and, or, you know, all over the plant too, you know, we think about the life and the soil, but even, you know, the leaves are coated with their own microbiome and the stems and the flowers, everything has its own life, and the seed does too.

And so if you get the endophytes, you know the life that comes with that seed from a different location. You know, maybe that's not going to help you out that much in the place that you're planting it, if you think about the biology of it. So, of course, you know, once the seed gets planted, that radical is going to be exposed to your soil and, you know, bring on the life that's that's there. But it could get a nice head start if the endophytes on that, come with the seed, match the soil. So and you know there's examples of it. But it's, it's so vast that we just, we don't even know what we're messing with and how much more. I think the word is resilience because, you know, some years, like you said, the hybrid could look really good and, you know, years maybe where there's an extreme drought or too much moisture, whatever's going on in that place, that's when the, locally adapted seed, you know, comes ahead.

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Mike Bollinger

Yeah, yeah. So, you know, a lot of our audience are people growing, you know, smaller gardens, right? Or they're growing food on a smaller scale. And so when we're thinking about this in practical terms, right. What are the things that actually make the biggest difference when you're thinking about building soil life? What are the, what are some practical steps that home gardeners or small acreage growers should be thinking about?

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Linley Dixon

Yeah, I don't I like to just think of okay. And I've been obsessed with this my whole life. So I feel like other people probably are too. But just think about what is available organic matter-wise in

your area and start composting it. And we actually got hurt by that. There were some residual herbicides that were in a lot of the manure in my area when we first got started, and had to kind of figure out what that was and overcome it. These are herbicides that they're called persistent and they last for, especially in dry climates like mine, you know, up to decades. So you have to be a little careful with it. But I would recommend, obviously start composting in your own home. And it doesn't have to be fancy. I mean, you could just start digging and, you know, putting stuff in the ground.

Ruth Stout is one of my heroes. She was this woman who, like, you know, she had this idea of and I think she actually accomplished it of a work-free garden where you just apply 6 to 8 in of, she used mostly hay mulch, but she would take her scraps out from the kitchen and just put it right on top of the hay, you know, so it doesn't have to be this fancy composting system. And you can read all about, like, pipes creating aeration and when to stir it. And it doesn't have to be like that, you know, you could just start piling it up. Of course, you want to make sure you can keep the animals out and things like that. But all of that is cycling too. So if you don't mind, you know, the snakes and the rodents that are around in a garden, that's what, you know, comes from playing around with your compost pile. So, you know, as long as it doesn't get to out of whack. It's kind of a fun thing to do, you know, see what kind of life you can bring by getting all that cycling happening.

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Mike Bollinger

You know, I'm curious about, you know, again, in, in your farming experience, you know, are there things that you stopped doing on your farm or in your gardens because you realize they were kind of working against those relationships?

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Linley Dixon

We use very, very little plastic mulch. We haven't figured out how to get rid of it for our onions. That is still one row where we'll put that down because it's just so weedy. One thing that we do that we're constantly questioning is we have a living mulch in our aisles, and it brings in a lot of into our beds, things like bindweed and Canadian thistle that's like a rhizome. And we have a lot of the grass that spreads by rhizomes. So it's a constant battle between the aisles just trying to take over our beds. And so it's something that we're doing out of principle because, I mean, man, it's pretty awesome. If you look out on our beds, you know, half of it is photosynthesizing year round, you know? So we've just got this perennial aisle situation and the tractor tires go in the same place so that, you know, under living roots that are pretty hardy. But, it's something that we're, we're constantly questioning. We spend a lot of time on our hands and knees weeding. And, you know, I look at the JM Fortier model with all the tarps and I'm just kind of jealous of how, like, pristine, you know, I have a very weedy farm because of this desire to keep the aisles alive. So anyway, we're constantly exploring whether this is possible. And, you know, I think a lot of others are playing with this, too, like trying to figure out, well, maybe once every 5 to 7 years we have to re-till and then plant again in our aisles. And so yeah, I think at first when we got started, it was working against us to have the living aisles because there wasn't enough fertility cycling, and it took maybe three years. I actually

think that the aisles were robbing the beds of nutrients, but once we really got the system cycling, I think just because, you know, it had been left dry, it's we're in southwest Colorado here we get maybe, I don't know, 10 to 14in of rain. So it's pretty dry soils that aren't alive. But you know, once we started farming, everything just started cycling faster. And those first three years. So I guess I would say don't give up either. Like, things are working now better than they were when we first got started. And I feel good about it, you know, try try to get rid of that plastic mulch if you can.

And, you know, if you have to use the tarps. I think there's trade-offs with everything. You know, JM's methods are to, like, tarp, the cover crop, and then it dies underneath, and then you're actually not tilling it much deeper than maybe two inches. So, it's a great way to have kind of more shallow tillage. So there's. Yeah. Trade offs with everything.

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Mike Bollinger

Yeah. Are there specific crops that you planted in those walkways, or is that just letting the, you know, the native seedbed grow up and then managing because you're talking about bindweed and this on some of those things.

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Linley Dixon

Yeah. Yeah. I mean it's, it's what was there, but it was, it was a pasture. So there's, clovers and there was kind of a nice mix. But I noticed that the second that you till anything what likes to come in are these, healers really. The soil healers are the bindweed and the thistles, these deep rooted things that, you know, get rid of compaction patterns. So. Yeah. Yeah. So, like, my big fear when we wrestle with whether we should keep doing it, it's like, well, if we till everything, then we're just going to be constantly battling bindweed and thistle. At least now we've got some sort of control of it a little bit, you know?

But yeah, I think there are much smarter farmers than I am who've been doing this a long time out in California. I've talked to who have similar weed pressure that we do. You know, because they're in the arid West as well, and they know how to get rid of bindweed, you know, with like, those kind of, you can you can just take a really kind of skinny harrow or I don't know, the right term. I'm not a tractor farmer. And, and just get rid of the compaction in the soil and that that, brings up some of those roots. Yeah. And then over time, you're able to get rid of them. But I kind of like what we're doing. It's.

You feel like you're doing something wrong because you go to farms and you're like, oh my gosh, no one else is doing this. But we find each other. You know, I opened our podcast and you can see the fields behind us, and then someone will write me and say, you're doing this too, you know, I felt like the only one. So, it's kind of cool that we're experimenting with it. It feels right, you know, it feels healthy. And on a muddy day when it rains, you know, we can run out there and we don't get money because we're just on the pasture in the aisle.

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Mike Bollinger

Yeah, yeah, I know, that's great. You know, in your, your podcast has been, you know, such an incredible resource. I mean, you've had the opportunity to talk with so many people over the years. You know, I've learned a tremendous amount. I'm sure your audience is significant and learning all the time, too. So kudos to, you know, to you and your your team on that.

I'm wondering in either in your personal experience or through the conversations that you've had, you know, with others, you know. Do you ever, does anybody ever talk about or have you heard examples that stick out to you about how, this shift in climate or that climate stress shows up differently and, you know, biologically active soils versus ones that are, you know, compacted or depleted.

00:27:11:17

Linley Dixon

Oh, yeah. A lot of stories of like complete crop failure on the conventional neighbors, surviving you know, and then our organic farmers surviving the drought just because there's so much more organic matter. And, you know, one of the best lines, you know, that it's kind of spreading now, but people say, "Eell, how much rain did you get last night?" And then they'll say, "All of it." You know, it's because their soils, just like they soak it in, you know, instead of having a piece of compacted that it runs off. And that's so true when you go look, you know, I'd be driving across the country and if it was a dry summer, which it usually is out here, and I would, you know, be looking for this farm, and then I would just see green, I'd be like, oh, there it is. You know, so, the, the biodiversity and the way they're managing the soils usually just makes these places really stand out. And you know that there's resilience there.

00:28:03:07

Mike Bollinger

Yeah. For sure. Okay. Maybe. So pulling off our or your gardening hat and thinking about folks that aren't necessarily gardeners or growing their own food, but are advocates and of course, eaters, you know, how do, how do folks, how do folks fit into this, as participants in eaters? If they're not growing and kind of fighting the good fight?

00:28:29:07

Linley Dixon

Yeah. I mean, if they're not if they're not growing their own food, it's like, yeah, at least figure figure that out. Right. Just one little thing, get started on it. So I think I think there's kind of an urge for most people. I mean, we have house plants and like get some herbs going or something, you know, and so most people are growing something so they can relate to the farmer stories. Most people are curious about, like how do I take my kitchen scraps and turn it into food and the composting process? A lot of people are starting to go to their farmers markets and connecting with their farms and starting to like what questions do I ask of the farmers? You know, maybe they're not certified organic. They're just getting started, or they don't need any wholesale markets, so they don't need it. Then it's like, well, what do I ask them in order to find out their practices? And so the podcast is such a great way to just get educated about the food system.

And, you know, what can they do? Well, they can, educate themselves and then like start to start talking about it with their friends. So I think there's so much community in it. And that that is our hope is that, you know, really, we can celebrate the farmers that have these great practices, whether they're certified with us or not, and that the eaters can start understanding the right questions to ask them.

And and then it's just like this celebration of good food, because once you have these carrots or, you know, berries, it's like there's no going back. I haven't bought a berry from the grocery store in 15 years. And that's because I just won't do it. They taste so bad. I would rather freeze all the berries in season and then eat those throughout the winter. So once you figure that out, you know, it's just so delicious. You'll never go back to the plastic food, right?

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Mike Bollinger

Yeah. And I think, you know, that's, again, part of the conversation that I think that you're bringing to the table with an add-on, you know, certification right through the Real Organic Project as somebody sees that, and they're like, Real Organic Project, what's that? It's an add-on label to the organic label. Well, why do we need that? What is you know, I mean, just really, you know, if somebody is curious and they see, you know, that there's an opportunity for learning there to say it's not all the same. Right? And here are the standards that we've said as an add-on label that allow us to be able to talk about and, and we visit the farms. Right. And we observe the practices and we ask the questions, right, to be able to say, you know, yes, you know, you fit the, you know, the parameters of, you know, being a Real Organic Project, you know, certified farm. But I think it just, it really does broaden the conversation by being and I know this has happened in other places in Europe, right, for much longer. And it's very new, you know, it's very new here.

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Linley Dixon

The add-on label concept. Yeah.

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Mike Bollinger

The add on label concept. Yeah. So, you know, I think that that's, you know, that's helping to take a step back from the science. You know, what have, you know, seeds and soil and plants taught you about things like patience and care and responsibility.

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Linley Dixon

I'll be honest, Mike, I know how difficult seed saving is that I've been afraid to go into it because I have so much respect for how much knowledge it takes to do it well, and I've sort of, I it is something that now that I'm later in my farming career, I'm wanting to do. But when I first got started, I just felt, with, with the other things I was interested in, you know, I really wanted to be a good tomato grower for some reason. That was my calling. And, So, so. Okay, I feel like I've gotten that down. You know, what else can I explore? And seed saving is really calling me.

I have a neighbor who's been saving this 'Weisnicht' tomato. You know, big beefsteak, pink, gorgeous, tasty, tomato. And it's very, like, cold tolerant, high altitude, all the stuff that we have going on here. And I want to carry that on. You know, she's not going to be around doing it forever. I would like to just get really good at that, you know. And so I think, you know, farmers might make the mistake. It's like I got to do it all. And I believe in seed saving, but I, I just couldn't. I couldn't do it all at the beginning. And you kind of have to choose. And there's incredible beginning farmers that take on seed saving as something that, that, you know, they really want to specialize in. So it's a huge responsibility to, to save seed for someone whose business depends on it. And, and I kind of knew that and respected it, but yeah. Hope to go down that road soon.

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Mike Bollinger

Yeah. And you know, when we're all learning all the time, I think about I mean, I've only been the executive director of Seed Savers Exchange for, you know, about three years. And, you know, when you look back into the history, this organization has been around for 50 years. Well, Kent and Diane, the co-founders, you know, weren't farmers either, right? I mean, they had seeds that had come to them from, you know, from Diane's family. And that was what then started this journey of what has become, you know, this organization over time.

And so, so it's yeah, it's okay to be an amateur, right? It's okay to make mistakes. You know, we got to learn to be humble and not have all the answers. And, but just keep our eyes open, right. And and learn from the experiences and the people and plants around us for sure.

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Linley Dixon

Well, and the other thing I want to say to is that, you know, it might seem like we're having these debates within organic about what it is, and that is just, you know, the, these corporations are kind of coming in and trying to redefine it. We're not having a debate internally in the organic movement about hydroponics. Right. You know, they might be at the NOP (National Organic Program). Or they're actually not having a debate either. They're like, we want the money to come in, you know? So the my point is, I guess, you know, we have a lot that we're up against all the time. And the more that we can come together around the principles that we share, the stronger will be, because there's always these forces that are, you know, trying to co-opt constantly, no matter whether it's a USDA program or not. And it's, you know, the word regenerative and we're all, you know, like, well, what does that mean in the grocery store and trying to define that. So I think you no matter what route you choose, whether it's certification or not, you're constantly worrying about people co-opting these great ideas. And so it just as a movement, I think it's important for us to come together and, and share because there's so much to learn and know and bring us together around.

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Mike Bollinger

Yeah. For sure. Well, Lindley, I appreciate your time so much. Taking the time, you know, you're you said you were out, you know, out on the farm today and you came in and, you know, dirty

and all of those things. So thank you for making the time in the space for, you know, us to be able to, you know, be here today, just, I guess one last question to leave you with that we're trying to to kind of leave all of the folks that we're speaking to with is, you know, what's giving you hope right now? What are you, what are you thinking about that's brightening your day and is something that we can focus on for the future?

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Linley Dixon

You know, it's the cross-generational matchmaking that seems to be happening right now.

"Radical generosity" is what I've been calling it, where farmers are retiring and they want to see their land in a farm, and they're either lowering the price of the land, you know, advising the next round of farmers, you know, for several years beyond even the Real Organic Project is kind of the founders of the organic movement saying we built something, you know, it's it's being attacked, but we want to pass the torch on to the next generation. And so it's the blending of all of those voices together. I'm really moved by these acts of radical generosity in our good food movement.

A lot of times if you're struggling, it's so hard to make it work as a farmer, if you just put out into the world what you're struggling with your community, there's a lot of stories of your community coming together and helping you out. Whether it's land access or I have too much of this, you know, can you help me figure out how to preserve it and sell it later?

We got hailed on really early in our, maybe it's like year three or something like that. And we were on rented land, and it was when our CSA pickup was on the farm, and everybody came that day because it was going to rot. You know, in 24 hours that crop was going to rot. And we had all of these paste tomatoes on the field, and we separated green and red. And then someone opened up their freezer, and then they paid us a dollar a pound throughout the year as they used up all of that stuff. So stories like this and there's a million of them, you know, CSA members coming together to buy a farm for a farmer. And then that farmer kind of slowly buying the shares back, right where we just need to share these stories. Because as hard as it is, and there's so many farms that farmers that try and don't make it, we need to talk about, you know, what has made it so that some farms do succeed. Why was that? And it's never because they did it alone.

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Mike Bollinger

Well, thank you for sharing your story with us, Linley. Again, I look forward to a time when our paths cross again. Hopefully it's not too long from now,

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Linley Dixon

I think so. All right. Thanks, Mike.

00:37:48:02

Melody Reese

Linley talked about seeds as being deeply connected to place: to the soil, weather and growing conditions that they experience, but also to the people who care for them. And that care doesn't end once a seed crop is harvested. Here at Heritage Farm, harvested seeds still have many steps to go until they're ready for long term storage, and how they're cleaned, dried, and handled along the way can help protect their viability for years to come. In this episode's, Field Notes, farm director Corbin takes us inside the dry seed processing room to show us what happens next.

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Corbin Scholz

Hi, I'm Corbin Scholz, I'm the farm director here at Seed Savers Exchange. I am in what's called the dry seed processing room. This is the room where we bring in all of our seeds to dry down, so that we can continue to process them moving forward. It's really important that we have a space like this to dry our seeds in a really, in really stable conditions. We are harvesting about three days a week right now and everything is, we're getting a really good harvest on a lot of things, which is really exciting. In this room right now. We've got beans, Lima beans, cow peas. We have some tobacco, flax, radishes, brassicas, lettuce. We've got a whole bunch of different things in the room right now.

So the the crops will dry down on screens. We have usually, the screens are raised up. Everything has a tag for what crop and variety they are. And we have a harvest date on the tag. The tags will follow the crops from the field all the way to the finish. So we'll see. You know every single tag for this variety. We'll consolidate the information.

We've got fans blowing on everything to make sure that drying down happens really quickly. If we can shorten the amount of time it takes to get crops from the field into really stable drying conditions. It really helps the life, the lifespan or the yield of these seeds in long term storage. So that's our goal, is to have really viable seeds going in long term storage. If we kind of wait to get the, the pods off the plants or we aren't harvesting as quickly or processing as quickly, what can happen is, you know, there's a lot of moisture in the air when the nighttime temperature and daytime temperatures are so different. And so, as the seeds are drying down, you know, there can be sprouting seeds or mold that can happen within the pods. And we really want to avoid all of that. So we try our best to, you know, bring things in, dry them down as quickly as possible, and keep them in stable condition until we're able to get them processed enough to put into storage.

So the first step in dry seed processing is called threshing. Threshing is basically the term that, kind of identifies the separating of the chaff or pod from the seed. At home, gardeners can do this by, you know, crunching with your hands. You can stomp on things with your feet to kind of remove the seed from the lighter chaff. But since we have a lot of different lots of beans that we're working with and a lot and larger quantities of beans, we like to use what's called a belt thresher. This has two belts that run kind of parallel to each other, and we can calibrate it depending on the size of the bean or pea that we're running through the machine. It basically squeezes and separates the chaff, which goes out to one end, and the seed, which then comes out the bottom into a bucket.

So this is our wet seed processing machine. It doesn't hit all of our crop types, but we are able to use it for tomatoes, peppers, and eggplant. This saves us kind of the biggest step in wet seed

processing, which is extracting the seeds from the the pulp, the fruit. And so at home, usually this step would be if you were stomping tomatoes or, you know, squeezing or scooping, scooping out the seeds from a pepper or maybe putting, you know, a really woody eggplant into a food processor with a dull blade, kind of those steps, those first serious steps in extracting the seed from the fruit. That is what this machine helps us do on a larger scale.

So how we do that is the fruit goes into this hopper up top. We slowly feed it down this shoot. There are a bunch of really thick blades in here that will chop up the fruit. Every piece of the fruit and seeds then come out of this red chute onto this white screen. Right below and attached to the white screen is a metal tray. And out of here these two hoses comes, pretty heavy water pressure. As they fall onto this sheet, it actually vibrates or shakes pretty hard back and forth, which then separates the seeds further as the water is coming down and as it's shaking, the seeds are sliding off into the first bucket and the rest of the fruit matter is being shaken off of the metal sheet into our composting bucket.

This is our drying room. We have the conditions set at about 60°F and about 16% humidity. This keeps the seeds that we have brought in between 5 and 8% moisture, and that is the perfect moisture percentage to get the seeds to, to put into storage for long-term to keep them viable. So the seeds that are in here are about 80 to 90% processed already. We are just keeping them in these conditions so that one we can continue to manage in the field, do our wet seed processing process our dry stuff and get it down to a moisture level that we're cool with, and then we bring them in here to kind of sit until we can address them, clean them further to 100%, and get them back to our preservation department.

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Melody Reese

From the life within the soil to the work that happens after harvest. There's a lot involved in caring for a seed, but each of those steps plays an important part in keeping a variety healthy and available for the future. We'll see you again in two weeks on *Sowing Connections*. Until then, thanks for joining us. We'll see you soon.