SEEDHEADS TRANSCRIPT

Episode 26: MATT SOLTYS
English

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STEPH BENOIT: Hey, and welcome to SeedHeads, the cross-pollinating podcast, where our Canadian seed heroes tell their stories, share their how-to tips, and talk about the seeds they love. I'm your host, Steph Benoit, coming to you from Ottawa, Ontario, on the traditional unceded territory of the Algonquin Anishinaabeg people.

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STEPH BENOIT: In today's episode, we're exploring a realm of plant breeding and seed saving. That's been really calling to me recently. It's mysterious, it's exciting, it's fruit trees. I recently had the pleasure of chatting with Matt Soltys. Matt runs the Urban Orchardist, a nursery and consulting business, specializing in fruit trees.

He lives in Guelph, Ontario on the traditional territory of the Attiwonderonk, Haudenosaunee, and Mississaugas of the Credit. We talked through the nuts and bolts of breeding long-lived perennials, like fruit trees, his vision for a bioregion-wide participatory fruit breeding network, how fruit harvesting is a great way to get to know your neighbours. the stories and traditions we pass down with fruit trees, and the best Canadian fruit you've probably never tried (and my current culinary obsession), the paw paw. I really hope you enjoy today's

episode and leave feeling inspired to try your hand at a bit of your own fruit growing. As always, thank you for listening.

STEPH BENOIT: Okay. Thank you so much for taking the time. To be here to sit down and chat with me for a little bit. I am so excited about all of these fruit tree questions because it's something that I'm dipping my toe into, but is, a little bit foreign and exciting for me still. So thank you so much for letting me pick your brain and just sharing some of your wisdom that you've accumulated over the years of doing this work. So, maybe to begin with, could you introduce yourself and just like, tell us a little bit about how you became involved with fruit trees?

MATT SOLTYS: Sure. Well, my name is Matt Soltys. I live in Guelph, and I've lived here since 2001, and I'm actually the fifth generation of my family to live in Guelph. And, um, love this land, love this area.

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Falling in Love with Fruit TreesFalling in Love with Fruit Trees
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MATT SOLTYS: I first fell in love with fruit trees in 2005, and an older friend, introduced me to a street side mulberry tree.

I had no idea about, you know, the invasive and native conversation around mulberries and their hybridization. I just thought what an incredible phenomenon that this tree can just, you know, be loaded with berries for an entire month of the summer.

And around the same time, I was learning about permaculture and I was growing trees from seed and having my first garden and making tea for my garden and making friends tea and all kinds of things related to plants. And I just kinda kept going, kept going and going. You know, I had a into edible and medicinal wild plant walks, and I started a little tree nursery of my own way back then too.

And then around 2019 I got hired on to, manage this community orchard at the Ignatius Jesuit Center at the north edge of Guelph. It had been going through neglect for a while, and I was hired on to kind of enter it into a new era. So I transitioned this apple orchard into more of a diverse, community orchard and started evolving volunteers and learning the craft of fruit tree horticulture and mentoring under the former orchardist Lauren Jameson.

And just kept going deeper and deeper into fruit horticulture itself. Recognizing how little I knew about. Apple disease management and stuff like that. It was really more complicated than I knew, but I kept going with it. And then after a few years, I just realized that, I couldn't really see any arborists in my area or anyone else focused on trees who were really focused on fruit tree horticulture for the homeowner or the fruit tree owner.

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Starting The Urban Orchardist
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MATT SOLTYS: And so I launched my own business in 2021 called The Urban Orchardist, focusing on all things related to fruit trees. So pruning and just consulting on, beginning a new little orchard in your front or backyard, orchard management, pest management, pathology, investigation, and also nursery.

I've my own nursery too, so I do a lot of, propagation by grafting and cuttings and seed, to be a, just a small scale, a regional nursery, providing good quality fruit trees and nut trees to people in my region.

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Fruit Trees and Community Food Security

STEPH BENOIT: where do you see yourself in the bigger conversation around community food security and what role do you think fruit trees can play in that?

MATT SOLTYS: I think about it in terms of regional food security and even like being in a bio region, and thinking about how we identify with our place and our land and where, you know, what defines our community. and I think fruit trees obviously aren't all that relates to, food security.

There's a lot more to food security than just fruit trees.

Mm-hmm. but obviously we need other parts of our diet than just fruit or nuts. Mm-hmm. but I think they could play a much larger role than they do currently play. you know, when you consider not only fresh fruit, but cider and juice, you can freeze or can, all the fruits you can dry for snacks all the way through the winter and spring, until the next season begins.

You talk about. jams and preserves and, desserts and like all this kind of stuff. it can be really quite fun and also an important part of a diet too. not everything, right? Mm-hmm. But I think that like, there could be such a larger role that fruit trees play.

And I guess since I was young, even a young kid, I always like, why aren't there fruit trees in the little centre of the cul-de-sac, you know, my friend's neighbourhood, or why aren't all of our boulevards planted with shrubs or fruit trees or whatever, and in parks and so on. And I understand a lot of cities have concerns about the neglected mess that a fruit tree would have, you know, because if no one's harvesting that fruit, then it'll just on the ground and attract bees, and then there's complaints and the tree gets cut down.

So I do think cities, and any urban area or town could have so much more fruit and local food being produced. but that has to go along with the change in culture too, where these fruit trees aren't being neglected. Where like other parts of the world, there's more of a involved food culture where we're all more involved in, Local food harvesting and production and sharing.

That's, connected to a much larger issue of, atomization or isolation in western culture that keeps people separate and busy and stressed and, barely knowing their neighbours and so on.

And so I love all things that bring people together. And I think community orchards are beautiful, not just for the food security, but for actually just bringing people together. I started a community food forest in the land at the end of my street, and I see that, more as a vehicle to bring people together and get neighbours meeting in the park than the food itself the medicine, the teas and whatever we harvest from the land.

STEPH BENOIT: Oh, so I agree with that.

MATT SOLTYS: Hundred percent.

STEPH BENOIT: Sorry not to cut you off.

MATT SOLTYS: So I just think there is, it's so related to cultural changes that we would be all, you know, that'd be good for us all to see happening in our neighbourhoods.

STEPH BENOIT: I had a firsthand experience of that this past fall.

For the past couple years have been involved with a project called Hidden Harvest, which collects fruit from trees that otherwise might not get harvested around the city and redistributes that between the property owner and the volunteers who come to pick it. And, food banks and food sharing organizations.

I live, kind of where I live, it butts back to a, like seniors residence and they had these, plum trees and pear trees that were just like overflowing with fruit. And finally one day I was like, I'm just gonna knock on the front door and see what they would say about if I offered to harvest this and give them some of it.

It turned into like such a wonderful experience of getting people together to harvest that fruit. There's this older gentleman who came down and he was like, I haven't eaten fruit off the tree since I was a kid in my grandfather's orchard. It was like a moment for him to reminisce about that.

The volunteers were all chatting with each other and then the seniors home used some of the fruit from that to do, jam making session. and then I was eating that. I made apple and pear mixed, sort of sauce and I was eating it until like February. So just like that one little anecdote, I absolutely see the possibilities, for just people to like talk to their neighbours to come together over something like this.

And yeah, maybe the apple sauce wasn't the, backbone of my diet for six months. But it was a really, really nice treat and, sweetened by the memory of all those people coming together. Beautiful. the opportunities there.

MATT SOLTYS: Yep. That was part of my origin story too, a local project called the Guelph Fruit Tree Project, very similarly, yeah.

Harvesting unused fruit in people's yards and delivering it to food banks and shelters and stuff like that. And just, yeah, food and fruit has such a enormous, role in the quality of life that are in these intangible and also tangible ways.

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Challenges Facing Canadian Orchardists
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STEPH BENOIT: What do you see are the main challenges facing Canadian orchardists today when it comes to fruit tree diversity in particular?

MATT SOLTYS: Hmm. What's a good question, and I should also differentiate myself, from like conventional large scale orchardists who are running large orchards that are providing food to grocery stores and whatnot. And, the smaller orchardists that I interact with, because I can't really answer the question in a way that relates to all orchardists because I'm a small fry, compared to those growing hundreds of thousands of trees, in their nurseries or tens of thousands in their orchards.

Well, the biggest challenge for any orchardist, is often disease resistance or disease pressure, and also insect pressure too. And, you can't really breed for resistance to insects as much as you can resistance to disease.

So now, we are able to, reap the benefits of those who have launched breeding programs over the decades to develop, fruit trees with resistance to the common diseases like pears that are resistant to gap and firelight. And same with apples or, plums resistant to black knot and stuff like that.

We have some benefits we can reap from those who came before us. but that's still the biggest challenge, I think that's what leads to orchards or individual trees being cut down, is just succumbing to disease pressure. so breeding plays a big role in giving us just a better chance at having long lived trees.

And then another challenge, just simply access to better varieties, not just with resistance to disease, but also, better performance overall or better flavour sometimes. it's hard to find the varieties you want. There's only a handful of nursery specializing in a very diverse, fruit tree genetics.

When you think of a species like the paw paw for example, most of the named varieties are coming from Kentucky or somewhere southern states, south of the Great Lakes. And when you read up on the nursery catalogs, you know, you'll always have this caveat, you know, like these named cultivars.

Are more susceptible or more less cold, they're less cold, hardy, and they may die back in a really cold winter back to the graft union. Because the seedlings will be more cold hearty than these genetics that are coming from our southern adapted, germ plasm.

And so that's, for example, a lead into like why I want to get involved in paw paw breeding this side of the border because, we don't really have much access to, you know, improved varieties, this side of the border that are actually adapted to our winters.

Where seedlings do just great. And there are very few varieties developed, you know, in the north like this.

STEPH BENOIT: Mm-hmm. Okay. I tried paw paw for the first time this fall, and I absolutely fell in love, and now I'm, growing some from the seeds that I saved, from that one meal. so I am now a bit of a pawpaw evangelist, but for those who are uninitiated, could you describe it a little bit and talk about what makes it such a compelling candidate for breeding in Southern Ontario?

MATT SOLTYS: Sure. Yeah. The paw paw is, Some people, may think it's the papaya 'cause Papa is also another colloquial name for papaya, but it's, paw paw, P-A-W-P-A-W. And it's just a beautiful tree and a beautiful experience to eat one. And we're at the north edge of their growing range.

They're more, you know, they evolved more, in what's now southeastern us.

There's a good case to be made or a good argument to be made that, they've mainly, traveled north thanks to indigenous people, growing them in their orchards, throughout millennia. And that's possibly, or maybe likely why they're also, this side of Lake Erie too. so they've been involved in human culture for a long time here on this land and this continent.

So, they may have been more popular, you know, even a hundred years ago, 200 years ago, when they're more commonly grown in some people's orchards than they are now. But they're having a bit of a renaissance now, and a lot of people may have heard about them, but they still have this mythical status where people have heard about this subtropical food that can grow here.

Far fewer people have actually enjoyed eating one.

And they do have this really fascinating, flavour and texture that makes it an amazing experience to eat. it is like this hard to describe flavour experience. That's a mix of like mango, pear, banana, with a almost custardy texture, like a ike a wet ripe avocado or something like that. It's hard to explain. but very delicious. I love them a lot. And I'm fortunate to have a number of, you know, mature trees in my life that I can harvest from and, grow seed from. some friends of mine at Simpler Time Farm between Guelph and Hamilton, we've collaborated to host a fest, for three of the last four years.

And it's an amazing experience. People can come together and try themselves and see groves growing naturally there's also a big, cauldron of corn cooking and

there's often other foods there to eat and you can buy paw paw trees it's a fun gathering. We usually have an apple tasting contest too, and other artistic elements too.

That's my little introduction to the paw paw. It's a beautiful tree and I love growing them. you need to have two at least, in your growing area to have cross pollination. They don't self pollinate.

And they also are pollinated by flies, so they don't really pollinate very well sometimes themselves. And sometimes people might come across a grove of paw paws, but it may actually be a single plant that propagates itself by root suckers. And so those are actually, if they're the same plant from one Tree's roots, they're not really acquiring, genetic mixing in their cross pollination

Some people come across paw paws that barely ever set fruit. may need a different paw paw in that grove to get better fruit set.

STEPH BENOIT: That is really interesting. Yeah, it's a really cool experience and sort of humbling in a way when you try something that grows in your area that you're, you know, in my case I'm almost 30 years old and I'm like, wow, there's not that many new fruits that I haven't tried that are from around here.

So it's, just such a lovely experience to have that element of like surprise almost to try something totally novel. Yeah. It was really wonderful.

MATT SOLTYS: And they can be used not just, as fresh. They can, they're not just enjoyed, eating fresh, but you can also use them as a banana replacement and baking.

So I think that's an amazing thing for like long-term regional food security, is you can like process their pulp and then instead of, you can make like paw paw chocolate chip loaf or whatever instead of banana bread or something like that, you know? Paw paw cheesecake, paw paw ice cream, all these kind of things can be grown right in your backyard.

STEPH BENOIT: Wow. Yeah. That is so wonderful.

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Growing Pawpaws from SeedGrowing Pawpaws from Seed
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STEPH BENOIT: can you share some tips for anyone trying to grow them from seed?

MATT SOLTYS: Paw paws require cold stratification, so they need mixed with some kind of soil medium, and then kept cold. Usually people do that in Ziplock bags in the fridge as opposed to outside where maybe squirrels can find your cache or something like that.

So they need a period of cold stratification and then a period of warm stratification before they'll sprout. In my experience, when I planted them outside in the spring, they may not even sprout until like July because they needed this, you know, from the time they leave cold stratification and get into a warm environment, they might need a couple months of that.

The sprout maybe at least one month. some people also just after a cold stratification will put them in a tray of soil on a heat mat to trigger their warmth, requirement.

They do have a pretty high germination rate, but they can't dry out. they're a certain type of seed that's called a recalcitrant seed as opposed an orthodox seed. they can't dry out and then be stored. If they dry out, they will not germinate. when you have fresh paw paw, you can separate the seeds out and put them right in a plastic bag or container in the fridge and keep them moist.

Or I put them right from that into a bag of soil myself.

STEPH BENOIT: Mm-hmm. Wonderful. we have, a shorter growing season here than down in Kentucky. do you have any sort of recommendations around getting them through their first winter or planting them in, establishing them in the place that you ultimately want to have that tree?

MATT SOLTYS: Mm-hmm. well, it would be, lemme think here. Well, first of all, just knowing like where you, what kind of climate zone you're in, and it's possible that in, you know, I'm in zone five B allegedly, in Guelph for example. And so even here sometimes I find young paw paws, will experience a bit of dieback.

Maybe the top quarter or third of their first year growth will die back after the winter. but you know, snow is good insulator. you could also wrap them in if need be, in like a little. quarter inch hardware cloth filled with leaves, and then that'll be a bit of insulation as well as snow.

You could do things like that. But I am kind of a fan of just letting them experience what they need to experience in order for them to survive in their location. So I'm not really huge, I don't really do that kind of babying of trees to kind of nurture them through that. I think if they're gonna grow here, they're gonna have to get through the first winter on their own.

And that's my approach. And then also, if you have, well, more than, you know, two prized paw paws, say if you have a handful, then the ones that experience less winter tieback are the ones you want to grow in your zone anyways. they have that, whatever genes they have for better cold tolerance.

STEPH BENOIT: Matt's coming with tough love for the paw paws. I think it makes a lot of sense though.

MATT SOLTYS: We develop, locally adapted, germ plasma or genetics. Right?

STEPH BENOIT: So in annual crops, we talk a lot about seed saving, but with perennials and fruit trees, propagation often means cuttings or graft, and can take many, many years to see new fruit. So how do you think about seed security in this context?

MATT SOLTYS: I think of it as both seed security, but also, the security of, the genetics itself too, right? Like a mature apple tree of a prized variety, that can be a source of seeds for potential future progeny that's even better than the parent.

But that tree itself is also, a source of genetics because that tree can be propagated by grafting, forever, for centuries. when we're talking about fruit trees, it's not just a source of seeds, but also germ plasma you can propagate.

So It's not just seeds as in, a annual or biennial, crop. and it's true, most fruit trees are relatively heterozygous. they're a mixed genome that will, you know, when they recombine in each new seed, there's a mixing of both ancestral or parental lines, right?

Whatever the pollen came from, and the female who hosts the fruit, that becomes the fruit. both those mix. just like us as humans, we are a representation of both of our parental lines. And two adult parents keep having

kids year for year, and each kid will be unique, but still a representation of their parental lines, right?

And that's the same with most out crossing trees like apples and pears and plums

There's this whole myth of, you know, you can grow apple seedlings out and you'll have a one in 10,000 chance of getting a tree worth eating. And that I really wanna debunk and other people that are working on debunking this too. just reading, from, a grassroots apple breeder I like a lot Steve at home who has his website called SkillCult and he's really popularizing grassroots apple breeding.

His first Apple variety he released is called BITE ME in all caps, which is a reference to bite me, Michael Pollan, who popularized in Botany of Desire. This whole story that, it's just not worth eating apples, from seed because you're gonna just wanna spit them out and they're gonna be sour and worthless and leave that to the professionals kind of thing.

Whereas it's true in conventional breeding programs. They may wade through 10,000 seedlings to get one that becomes released to the public. But that doesn't mean that that's the only one worth eating of those 10,000 seedlings, there could be half of those that are pretty darn good eating apples, you know?

But they've ultimately, they have very, very high standards, not just for, fruit quality, but also resistance to disease. the ability to hold up, through shipping and packing and atmospheric storage, and then look excellent on a grocery store shelf.

So there's a lot of things they're looking for for that one in 10,000 release, and that may take 20 years.

It's true. but at the same time, there's so many other, you know, possibilities in that bank of seedlings. Right. And so, where am I going with this? Oh, yeah. So that's just one thing is that yes, it is different when you're breeding or growing out seeds from out crossing species. but there's a lot of genetics worth exploring in there too.

And if you're starting with good parents, you know, like. A pollen donor from great eating apple and then you're pollinating the flower of a tree. That's great eating apple too. If you're starting with good parents and a known cross, you're

gonna get some pretty good chance of getting some trees worth eating or worth maybe pressing at least in the slider out of a block of even a hundred seedlings, you know?

So that's one aspect of it is that they're out crossing species. But also there's a generation time too. That was part of your question is like, yeah, there are long lived species and they have this whole period of IL where they're not reproductive, until at least five years of age, or even 10 years of age sometimes too.

But there are things you can do, whether that a shortened generation time, a lot of it comes down to just a good planting site. So if the tree is in poor soil or in half shade and has not been watered very well through times of drought, yeah, it's gonna take longer to reach reproductive age and start flowering and fruiting.

But if that tree is well cared for and in good full sun and actually has adequate nutrition in the soil, it'll do a lot better. You can train down branches, to a bit more of a horizontal angle. And that kind of shifts the tree, towards, reproductive age sooner in its life, it kind of induces precocity.

So it's very common for me in my orchard and my yard, where I grew fruit trees to have pears or plums or apples, fruiting after three years of planting. Wow. usually when people are breeding apples, for example, they're growing out the first seedlings and then.

Say that summer, they're bud grafting those apples onto established root stock or even, the next year, grafting them onto established trees orchard. when you're grafting onto a root stock, they're gonna reproduce sooner, if they're just left alone as a seedling.

There are things you can do to reduce generation time, but yeah, it's still obviously longer than, a vegetable.

STEPH BENOIT: Yeah. I'm unfamiliar with, what you were talking about, about training the lower, branches down. How do you actually do that?

MATT SOLTYS: In high density orchards where they have infrastructure, like a, they're playing them on a row and there's, you know, wires and whatnot, then there's that kinda infrastructure you can just tie them down to, in my orchards with freestanding trees, I just use string and rocks, honestly. It could be bricks, it could be whatever I have around. It's very easy.

Some people use branch spreaders, like wooden branch spreaders. or metal branch spreaders, they prop into, branch junctions and kind of prop them open more.

But it's very easy to kind of tie them down. You can put a stake in the ground and tie multiple to that stake, but there are things you can do that are pretty accessible and easy.

STEPH BENOIT: So it seems that there are some existing challenges and opportunities with fruit trees being longer lived and having, a bit more time between every generation to assess, different characteristics that you're looking for.

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Climate Change and Fruit Production
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STEPH BENOIT: And then thrown into the mix is climate change. providing its own set of, selection criteria that can change a lot from year to year. So how, would you say climate change is affecting fruit production and some of your breeding and selection work?

MATT SOLTYS: Well, I think climate change is affecting fruit production in the same way it's affecting any kind of farming in that

There's greater unpredictability in weather. There could be a super wet spring one year and super dry spring in the next year. There could be a long drought here and there in the summer or not. Or there could be prolonged drought, it's like in certain parts of the continent. and there could be, you know, it could be last winter we just had was an excellent winter.

It's a great deep cold and the previous winter there's barely any snow. Mm-hmm. and. I think maybe the milder winter and the wet spring we had in 2024 led to higher rates of fungal disease. You know, for example. whereas this deeper winter, I'm hoping will lead to, maybe a lower rate of disease pressuring.

So there's climate change as a whole mix of things that I just see as like a is basis is kind of unpredictability. Mm-hmm. And I think with regards to, what we should see with our fruit options, let's say for orchardists. I think we just need more diversity. More diversity is really the key.

'Cause it's not one genome, one, one set of genes. That'll be like, that'll hold the key to, you know, climate change resiliency. But it's gonna take diversity. And if we have, you know, greater genetic diversity, then we'll find that some trees do do better after extreme cold and some trees don't, or some trees, fare better and with higher rates of disease pressure and some trees don't.

But I think ultimately comes down to greater diversity and that relates to, very prized 'cause they have this cool story behind them and they come from a, you know, some past era and they have a story and history and people like that.

That's a really amazing thing about fruit trees is they hold stories to the past and they connect us to previous generations or previous places or other places. but at the same time, an heirloom is like, you know, one specific set of genes from one place and one time that we've propagated for centuries sometimes.

You know, like I was just reading about the Bartlett for example. which was just like found in someone's yard several hundred years ago and has been cloned ever since then. And it's like one of the world's most famous And so. It's a really cool story and each tree has its own story like that.

But still it represents, you know, it came from one time and in one place. And if we're breeding, for regional food security and regional climate resilience, that involves just making new crosses and growing up new seedlings that are growing in our individual places, and then we can find trees that are a better fit for our place and our time.

The more we have adapted germ plasm to our region, then more we'll continually find trees that are just a better fit to our region and with greater disease resistance and, more of a fit to whatever things climate change throws at us.

STEPH BENOIT: Mm-hmm.

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Participatory Plant BreedingParticipatory Plant Breeding
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STEPH BENOIT: Well, I feel like that's a great segue into your work with participatory plant breeding.

MATT SOLTYS: Mm-hmm.

My work just leads me to meeting all sorts of people that have really neat orchard projects and whether it's like a couple old apple trees that their grandfather brought over from Europe or they're just trying out new, you know, weird things like American persimmon and paw paws and other, species that are kind of like, you know, they're trying to bring and adapt more to the north, for example.

So I'm just constantly being in touch with people who are involved in all kinds of cool projects. And I'm also, involved in groups like the North American Fruit Explorers and, getting more involved with Seeds of Diversity and the Ecological Farmers Association of Ontario. So there's all kinds of neat organizations with memberships that are, in love with biodiversity and agrobiodiversity and wanna get their hands on, you know, wanna be involved in like, hands-on work. I guess I'm starting to look at the, the landscape as a gene bank. I have this map in my mind and on my computer of like all these places where all these fruit trees are growing and I just, we have this potential to collect data, from growers and seeing who's growing what and how is it performing each year.

And so I'm starting a project, where I wanna solicit people to contribute this kind of data. just build more of a database in our region, you know, who's growing, what, how is it doing? And then, come to understand, what a breeding program could look like, for certain goals adapted to our region using the trees that are already growing here as parents.

And I like this to be participatory in nature. I think there's amazing power and great inspiration in, a grassroots project that involves people who are keeners and have access to land who can actually grow out certain things and trial them.

So imagine going out, say there's, you know, I'm developing my own, breeding orchard of pears, for example, and I'm continually curating, genes that I want in this orchard. And then like from that orchard, I can be developing, seeds that are either open pollinated or from my own crosses.

I like to have different locations to grow these seeds out in my own orchard. But then what about trial? Trialing them in a place that has a high, fire blight pressure. For example, if someone has an orchard that already has a lot of fire blight, they can grow these seedlings out. And then just, it's like a natural inoculation to see which pair of seedlings will actually be resistant to this disease that's endemic in our area.

So I think there's great power and potential in, this being like a bio regionwide participatory program that anyone can take part in if they want to, whether that's contributing their own trees they have on their property that they're so proud of or excited about to share as, contributing to a breeding orchard or sharing their seeds.

Or as a host for growing out, you know, seedling trials too.

And then from this network, I really believe there's a great appetite for just increasing, a general region-wide competence in these kind of necessary skills. How to graft, how to grow a tree from seed, how to care for a tree and encourage and get it to produce fruit within five to five to seven years.

Say, how to hand pollinate a fruit tree and like, that's a technical skill, but anyone can do it. Mm-hmm. So I see this also as like a avenue for, sign exchanges and for workshops too. Mm-hmm.

STEPH BENOIT: I agree. I see a lot of opportunity for some of that general knowledge around this, because for some reason once you get into grafting or anything like that, it just is so much more intimidating than just starting, things from seed, in my opinion.

So, but I think there's a lot of opportunity to demystify it. 'cause I imagine it's not actually as intimidating as it seems once you know a little bit more.

MATT SOLTYS: It's true. It's very fun and very empowering. anyone with dexterity in their hands can do it, you know? It's really not complicated and it's really amazing.

It's an amazing way to propagate a tree you love and give it a new life and a new place. and there's just, there's so many, so many, applications of it.

STEPH BENOIT: I also just think it's fundamentally cool that trees can be grafted as a concept. It's exciting.

MATT SOLTYS: is amazing.

STEPH BENOIT: So, how do you see your work with fruit trees fitting into a larger vision of farmer led breeding or sort of seed

MATT SOLTYS: Well, just more, most broadly I envision a culture where we all are more in touch with the land that we live on. I envision a culture where we're

all a lot more in touch with landscapes around us that provide us food and medicine and other materials of our lives and more in touch with ecosystems around us and being a part of, growing healthy ecosystems and also more in touch with the regional food culture and more in touch with each other.

So that's kind of how I see that drives all this work, is this kind of vision of what could be better. And so I think a big part of it is just really like, there are a lot of people out there doing all kinds of cool work. And I think what I'm talking about is, bringing people together and being a bit more organized with our work and kind of

Taking it to another level of, you know, what could be. And so, I'm interested in being a part of networks where we get to know each other more and get to learn about who's growing what, where we're touring each other's orchards and where we're, sharing orchards too, where we're aware of what each other has and who, just like, seeds of Diversity, for example, has like a, a membership seed database that you can request seeds from and trade.

And it's like a, people are growing out these seeds, keeping 'em alive in their own gardens. I think we can do the exact same thing with fruit trees too. so, and I think if we have just a basic level of competency around growing things out from seed and also grafting, then any of us, anyone involved in this network can have a role in preserving genetic diversity worth growing and worth breeding from for the future.

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Getting Involved and Future Plans
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STEPH BENOIT: Just to circle back there for a second, what stage did you say you're at with this participatory sort of work? is it in the sort of dream stage or has this sort of been embodied yet?

MATT SOLTYS: It is, just beginning. I'm actually this fall starting a master's at the University of Waterloo to develop this into a tangible project.

So I've been, actively cultivating a network through membership meetups with the North American Food Explorers and the Pawpaw Fest and, workshop series that are done on my orchard and different workshops I take part in and lead. Part of a network in the region of people who are tuned into similar things.

And so it's advancing from the dream state into advanced conversations and then, think I'll begin making crosses and growing things out this year and next year and into the future.

STEPH BENOIT: Wonderful. So if people want to get involved in that, what's the best way for them to reach out, connect.

MATT SOLTYS: Mm-hmm. at the moment to contact me over email at matt@theurbanorchardist.com. This will come, soon enough to have its own, website we can find and learn more how to plug in.

STEPH BENOIT: Yeah. When it goes live, let us know.

MATT SOLTYS: Great.

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Exploring Agro Biodiversity
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STEPH BENOIT: What does agro biodiversity mean to you? Beyond the actual genetics of the plants?

MATT SOLTYS: Mm-hmm. agri biodiversity to me is about, well, diversity not just of genetics and species, but diversity of lands that things are being grown on and ecosystems and diversity of ways. People are involved with the land, diversity of culture, diversity of, flavours and growing methods and recipes and stories and histories and diversity of community involved and all this growing.

Mm-hmm. I think everyone, no matter where they're from, comes with, their own ancestral stories of how their people before them grew and loved and celebrated, food and fruit in particular in this context. And so, yeah, Biodiversity I think is so much more than just the genetics, but it's about, the people involved in it especially.

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Stories of Family and Food Traditions
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STEPH BENOIT: Have you encountered any good stories from, growers or just from people that you interact with about family trees or memories attached to trees or sort of food traditions?

MATT SOLTYS: So many, so many. I think a lot about, the times I've been fortunate to travel in Europe and countries like, well, any country, mostly in Europe, where they have such.

So fiercely proud of their, food culture, right? Like this particular land has this particular recipe and this piece is celebrated by a festival this time of year. And in some ways I feel we're really impoverished here in Canada with a great lack of that kind of regional food culture.

But at the same time, there is so much alive here too, and I have so many stories of people who, you know, growing things out that are important to them. And that's where that qualitative aspect we talked about earlier, that intangible aspect of what trees mean to us comes in where it just kind of fills a certain space inside people,

And it's more of a quality of life thing that connects them to who they are and relates to their identity, as to their people, their family, their homeland, whatever it is. whether it's someone from, like, I've had someone reach out to me, from a certain region of Turkey that was so excited to find out that I grow and sell quince trees.

That they just had such a hard time finding them and it just means so much to them to grow quince out, for example. Or, a friend who is like extremely important to them, to be growing a cherry tree that was important to their family from their own homeland. I encounter this all the time though, and that's why people often come to a nursery 'cause they're excited to have found someone who's growing out this or that heirloom variety or species.

STEPH BENOIT: Mm-hmm. I had a nice moment with that actually. last summer I was talking to my grandma about her childhood.

She's 92 now. And she was talking about her grandfather. So my great great grandfather, one of her favourite stories from being a kid and visiting him is that they had this great apple orchard and her and her two older brothers loved to sneak out into the orchard and steal some of the apples.

One day he had this big bear skin rug, and he put the bear skin rug over himself. And went out to the apple orchard and hid. when he saw them getting the apples, he jumped out pretending it was a black bear and totally terrified them. which I just think is, funny this is actually the only thing I know about this man,

my great, great grandfather that he grew apples and had a good sense of humour.

But it is funny how those things can become the backbones of stories that we pass down. and just like the childish joy of going into an apple orchard and getting some delightful fresh fruits.

MATT SOLTYS: Reminds me of my partner's grandparents were fruit farmers in Hungary. Oh really?

And, her grandmother has a story of her dad, who was an apple orchardist who would peel individual apples with different trees and then slice them all the different varieties of apples and then try to get his kids, my wife's grandmother to, name the varieties of the apples with no skin or other indication what they were, except the flavour. I thought that was a cool story she passed on.

STEPH BENOIT: Wow. that would be impressive. How do you see your. Work with participatory breeding into this network that you're developing, weaving together science and culture and public engagement.

STEPH BENOIT: and why is that important to you?

MATT SOLTYS: That's a great question.

Scientific Literacy in Fruit GrowingScientific Literacy in Fruit Growing

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MATT SOLTYS: I did a undergrad in, biology and philosophy in my thirties. It's not that long ago. And mainly I went back to school for biology and increasing my own scientific literacy, in biology and plant science. And the more I learned, the more I'd realized.

It's such a classic cliche, but the more I learned, the more I realized how little I know or knew when I thought I knew a lot. so I'm a huge fan of scientific literacy. And that doesn't mean that's a very different thing from adherence to dogma at all.

There's so many aspects of our lives where I think a lot of people, all of us, could really stand to have a lot greater scientific literacy, to not be swayed by junk science or pseudoscience or whatever. Trends are popular and I see this a lot in

fruit growing actually, where you can type a search term into Google and you can find the whole wild west of information.

And it'll conflict with other sources. And it's ambiguous. It's not very detailed or it's not even accurate. And some of it's pretty good. But, one tip for any listener out there is I almost always, when I'm searching for something to do with my growing, I'll add into, a search, site, colon dot edu.

And that site colon just a search tool to bring back only search results with whatever website you're searching for. So if it was site colon.ca, you're only gonna get Canadian websites, but I do edu 'cause then you're getting, like agriculture extensions, in the states, basically affiliated with universities that are.

Sharing much higher quality, Content, based on quality research aimed at people, who are serious growers and their researchers kinda invested in, being better quality than what you're gonna get from this or that person's YouTube channel

STEPH BENOIT: think that's just one tip for improving our own scientific literacy I just think, that kind of scientific literacy is really having,

MATT SOLTYS: being more scientifically literate is very important for being a competent and successful orchardist because, you're not just playing hit and miss with a bunch of random ideas or experiments. You're actually basing it on, things that have proven the test of time.

And there's constantly ongoing information too we can plug ourselves into. And, there are some good resources out there, for growers, if they are aimed at conventional orchardists. There's still so much information, organic growers can apply or can gain from the professional resources out there.

STEPH BENOIT: Mm-hmm.

MATT SOLTYS: is that a bit of an answer to your question?

STEPH BENOIT: I think the only other part about that, that maybe if you wanted to elaborate on is just, sort of like that public engagement.

MATT SOLTYS: yes.

STEPH BENOIT: And sort of like what inspires you to keep this work open source and collaborative

MATT SOLTYS: well on one hand, like whenever I go do all these pruning jobs and home consults and orchard consults, I really love, Just helping the person I'm doing work for, just understand what their trees are doing, you know, what are they're seeing right in front of them, how to make sense of it and how to be a better, tender of a tree.

Because like a lot of skills, you know, fruit tree horticulture, skip the generation or two where, you know, maybe a couple generations ago, a lot of people knew how to tend the tree, deal with this or that disease, harvest it, prune it, whatever it was in graft too. but very few people know anything about this kind of stuff now.

So I feel part of my work, I'm just working on just raising more broadly the level of, fruit tree skills in our region by doing workshops and educational stuff. I just think it's important for anyone who wants to grow fruit or any kind of food in their backyard to have, better competence with certain skills.

More specifically, those who want to, grow, whether it's small scale commercial or get involved in reading work. I just think we should also be learning from each other, how to actually pull this off. Well, we need to have forums to share our results and share information and not just go to the internet all the time.

Yeah. And so I just think it's really important to be part of networks in our region. whether that's the groups I listed earlier, like North American Food Explorers, EFAs, seed of Diversity, and there's many others. but we need to be involved in networks to be basically consulting with each other, learning, you know, what's working for other people.

And then, you know, being part of a community that's generally raising our skills together.

STEPH BENOIT: Mm-hmm. I guess, so it sounds like this fall you're gonna be heading back to school, so you will be in a little bit more of a conventional institutional setting while still doing a little bit more of participatory work,

MATT SOLTYS: mm-hmm.

STEPH BENOIT: I'm wondering what are some of the creative or sort of like practical challenges of doing this work outside of an institutional setting?

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Challenges of Non-Institutional BreedingChallenges of Non-Institutional Breeding
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MATT SOLTYS: The challenges of doing this work outside institutional setting. Well, one great challenge is access to land. You know, that's an enormous barrier just having a place to grow things.

And then there's things with fruits in particular with, grafting. You need a root stock to graft onto. most root stock is imported from the states actually. And that's what I also do too. And so there's a bit of a challenge is how can people this side of the border, be more self-sufficient with root stock, whether that's, people who are working on developing their own clonal root stock propagation or through seedling propagation too.

But that's the barrier is just getting better access to root stock. and yeah, because otherwise it involves importing, which is a whole big headache, but is still possible. I do it.

And another challenge to growing outside of an institutional setting is just knowing what to do. Is knowing like what makes a good potential parent for a cross? and where can you get that parent? Or are there better sources of genetics than what is going around you and how do you acquire them?

And, people who are involved in breeding networks, associated with institutions, have access to networks around the world. And then gene banks in their own country, they can access, you know, so the US for example, has the USDA Germplasm Repository Information Network, where they have this whole database that's living collection of, fruit trees that you can access.

But that's only available to scientists and researchers. So it's not really available to the lay person, which I think is why even more so, it points back to having a network of people that are actually organized and can connect with each other to know who's growing what in one's region.

So just accessing root germplasm to breed with, and then just the knowhow to know how to do things well, how to prevent this or that disease, from ruining your experiment or your seedling block. And then how to graft too.

STEPH BENOIT: How well do you find that orchardists, specifically organic ones are supported in Canada?

MATT SOLTYS: Definitely, the resources, like in Ontario for example, OMAFRA has lost our resources, but it's dedicated or oriented more towards commercial growers. Who are generally conventional and not organic, but at the same time, their resources are incredibly useful to organic growers as well.

They host regular integrated pest management workshops and the resources are, they make those available for free to anyone who wants them. and they have a great newsletter. And so I just think there are resources out there, and even though they are aimed at conventional growers, they actually have great value to organic growers as well.

It's up to any individual to try sourcing their own information. In the Northeast States, for example, there's a network called the Holistic Orchard Network, anyone can use their website, but they still have in-person gatherings, you know, in the states.

Nothing's really quite like that in Canada, but I'm working on changing that. Every organic grower I know generally tries to go to the same limited source of books out there. Often it's like Michael Phillips and the Holistic Orchardist. He's a popular author. But yeah, there's really not any good collection or easy go-to source for organic growers. It's kind of the wild west out there.

STEPH BENOIT: I'm wondering, so we've kind of covered a decent chunk of this and we're coming up to an hour.

MATT SOLTYS: Mm-hmm.

STEPH BENOIT: There could be a few more things if you wanted to talk about, maybe something like quince or persimmon, like some of your favorite species that you're working with. I'd like to hear more about Quince,

MATT SOLTYS: yeah, that sounds good.

STEPH BENOIT: Give us the, the quince summary.

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Quince: The Forgotten FruitQuince: The Forgotten Fruit
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STEPH BENOIT: So what the heck is quince? What's going on with quince?

MATT SOLTYS: Well, quince is the actual scientific name of it. It's not to be confused with, this different, Japanese flowering quince that some people have as an ornamental tree or shrub in their yard.

It's like a spiny shrub with beautiful magenta kind of flowers and these hard still edible, quince fruits, but that's a different genus, different species. And I'm talking really about the, the yellowish, you know, lumping apple-like fruit that's often kind of fuzzy and is generally from like. kind of like same place apples are from, as far as I understand, like Iran, Georgia, Azerbaijan, that kind of area.

That's kinda the centre of origin and it's kinda made its way through Mediterranean. And a lot of people in Europe and around Mediterranean have a long, long history of quince, you know, like sedia, that genus it's part of comes from, it's named after the city of Hania,

Which is spelled C-H-A-N-I-A. It's a different spelling, but it comes from this long history to do with Crete and it spread into Europe from the Middle East. And you know, even the word marmalade comes from, as far as I understand, the Portuguese word for quince, Marlo or marmalade. I forget actually which one off the top of my head, but it's, you know, like there's a long association people have with quince, but in North America, people don't know much about it.

It's kinda been lost, you know, a lost species for a lot of people. But it's a beautiful tree. I keep falling more in love with the tree. it's full religious, beautiful, the way it's shrunk. And branches grow is often kind of curvy and bendy in this beautiful way. It takes on a beautiful shape as a mid mature tree.

It's flowers are gorgeous, big, kind of white, pink laced flowers, and its fruit is beautiful. And when you cook it. The smell is so fragrant and flowery and just amazing. And then it makes all these delicious, foods you can make with it, whether it's mixing with apples to make a really flavourful sauce or chutney or jam. I went to Quince Fest out in Portland, Oregon last fall, put on by the Culinary Breeding Network.

There was all kinds of distilled quince liquors and quince cider, I should say. all kinds of stuff happening with quince out there. And so there's an enormous, you know, and infinite range application for quince.

It's a really delicious fruit. I didn't think you could eat it raw until I went to the Quince Fest and we were being served slices of different varieties raw you can

eat them raw actually sometimes, certain varieties, maybe a peak ripeness. they're very flavourful.

It's a species I've been getting to know more and falling in love with. It grows relatively true to type as far as I know, and it's also self fertile. So you can have just one quince tree in a yard and you can get fruit from that tree. the seedlings can grow quite well, relatively true to type with some, like, there's variation in the ceilings, but much less variation than apple, say repairs.

It's a tree that, is beautiful, will do well for most people, has a wide range of application and can be grown from seed. As far as I know, there has not been a quince breeding program in Canada, and so I'm quite excited to start.

The first breeding program here, for Quince, and I've been working on acquiring a diverse range of seedling germ plasm. I plan on acquiring through that same germ plasm repository network in states, I plan on acquiring, more germ plasm to graft onto my own seedlings and create my own breeding orchard with quince, and then start making my own crosses and, develop my own seedling progeny and then test them out and see what happens because there's so much experimentation to happen with that.

STEPH BENOIT: Mm-hmm. what is quince's cold tolerance? Like is it limited to Southern Ontario or sort of BC in Canada, or can we start to see it a little bit further north?

MATT SOLTYS: That's something for us to experiment with. We gotta figure that ourselves, because I don't know anyone growing it, in a zone colder than 5A.

I know of a bunch of trees growing in Guelph, Hamilton, Cambridge, Stratford, but I just haven't yet met someone growing it in a colder zone. And I'm not sure off the top of my head how great cold tolerance is. but that's for us to determine.

STEPH BENOIT: Nice.

MATT SOLTYS: Hmm.

STEPH BENOIT: And maybe one day start breeding a cold tolerant quince.

MATT SOLTYS: Absolutely.

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The Magic of Growing from SeedThe Magic of Growing from Seed
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STEPH BENOIT: What questions keep you up at night or get you excited for tomorrow?

MATT SOLTYS: Hmm.For me it comes down to seeds and how much excitement I have.

Growing things from seed. You know, anyone who's grown something from seed, whether it's a vegetable in your garden, or an herb, or even a tree. You know, there's just so much excitement about seeing a seed sprout and then. What got me into this work, you know, is like growing a tree from seed is like that excitement magnified so much because you can grow a tree from seed and that tree could grow for a hundred years.

You can have people who aren't even born for another 50 years or 80 years climbing that tree a century from now. I just love, I love how long term it is. Mm-hmm. And it's, so, has all this long term, you know, legacy you can leave behind with each seed of a tree you grow. But also there's that, all that mystery and excitement that each tree holds being its own unique, representation of its ancestral lines.

You know, what new genotype is it, what, you know, phenotype will it be, what will it, how will it grow there's just so much mystery and excitement in each single seed. And so I just, I love that. That makes me excited and I'm.

I just think even if you're not part of some breeding network, more people should just try and have fun just growing seeds out. You have a good apple. You got from the farmer's market, well at least you know the female parent. You know what that female parent or the tree was? Say it's the ambrosia from the farmer's market.

That's a good tree worth growing out. You know, at least half this germplasm that maybe it got pollinated by a crab apple or another tree in that orchard. It's worth growing out. Try it out in your yard, grow five seeds out and maybe five or 10 years later you'll have some tree that's pretty darn good and you grew it yourself.

There's just so much excitement there for me. And then you take that excitement and then combine that with all the potential that comes with working with other people in community, growing things out. And you can scale up the pace of discovery and the depth and breadth of discovery too.

So I think a lot about what we can do now in my lifetime, but I also just think about what we're leaving behind for future generations. What new, regionally adapted, fruit genetics we can be leaving for people who come in, future generations to breed from too.

STEPH BENOIT: Oh that's so fun.

MATT SOLTYS: I have a client who, I've pruned her apple orchard and she has this cluster of old pear trees, maybe half dozen or so. And I kid you not, are like 60 or 70 feet tall at least. They're gigantic huge pear trees.

STEPH BENOIT: Oh my gosh.

MATT SOLTYS: Every year they rain down these small, bit bigger than a golf ball size pears. And they don't taste that good. They're quite as stringent. but I showed them to my friend Tarek, who runs Revel Cider in Guelph, and he is really excited to have this dry astringent pear.

And we harvested them together, last fall. And he just released through Revel Cider, an amazing cider based in Guelph. just released the cider, pressed and fermented from these and it's fantastic and an amazing drink. This bubbly, fermented, alcoholic cider or perry that came from these pears otherwise aren't really worth eating.

But are these beautiful, majestic, huge trees, that now get turned into a drink that can be shared across the continent. I just think that's just an exciting story for me and that was just a seedling. Those are just seedlings. Surely they weren't grafted as Perry Pears.

They're just seedlings that popped up in Little Grove, maybe from someone's compost bin 120 years ago. and now people are drinking their cider. I just think, that's a really cool story for me that I'm happy to be a part of.

STEPH BENOIT: Oh, that's beautiful.

MATT SOLTYS: Mm-hmm.

STEPH BENOIT: I also wanna see a 60 foot pear tree.

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Building a Community of OrchardistsBuilding a Community of Orchardists
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STEPH BENOIT: So where can people learn more about your work or get involved if this is their interest?

MATT SOLTYS: you can check out my website, the urban orchardist.com and be in touch with me through there. You can read about some of my work. but I will admit that it's not as much a repository of my work that I like it to be. I get really easily caught up in all the work of running a business and working for people and growing trees.

But it is gradually becoming more of a repository of writings and resources. but that's the way to get in touch with me. And, there will be a lot more about the breeding network I've talked about on there, in the months to come as well.

STEPH BENOIT: Wonderful. And we can link all of that into the show notes as well. So if people wanna just follow that link, they can find out a lot more. And what season does Paw Paw Fest happen in? Because I'm personally interested in attending that.

MATT SOLTYS: Paw Paw Fest happens in October sometimes. Okay. Usually early to mid October, depending on the year and how early

Some paw paws rip by late September or so, but then some are not ripe until mid-October or so.

STEPH BENOIT: Okay. That's good to have on the horizon.

MATT SOLTYS: I am slowly developing like a network of, southern Ontario orchardists. And, last year I hosted through the North American Fruit Explorers the first, meetup of members on this side of the border in almost a decade. Another member is gonna host another meetup this coming summer.

And so through the North American Fruit Explorers, there is a bit of a network developing of fruit tree enthusiasts. And then, there will be other avenues too to be involved in, workshops I'm hosting, my orchard, I'll be hosting a propagation workshop, grafting workshop in August. And also like a kind of soil science workshop in May, so that's sooner.

And that'll be on my website as well. And so I guess there are multiple avenues to be involved in the network that I'm solely developing with other people too, in Ontario.

STEPH BENOIT: Wonderful. That's awesome. Well thank you so, so much Matt. This was really interesting. I definitely feel inspired to go, I don't know, maybe chuck some apple seeds in the backyard and see what happens, or take a little bit more of a, methodical approach to it. But this conversation has really inspired me to, try my hand in a few more fruit trees, and maybe learn a thing with you about grafting. So thank you, so much for sharing your knowledge, and I'm very excited to see where your network goes in these next few years.

MATT SOLTYS: Thank you so much. I really appreciate it.

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