

Jim Koan
Organic Apples – Mindset and Methods

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Jim Koan: When I first started growin' organic, it was not because it was safer for my customers. It was the safety of my children, and having to be exposed to this all the time. That was it.

But right behind that followed the idea of me proud that I was growing food that was safer for my customers... because I was growing the food and my customer base, I knew, and their children and everything, I had an obligation when I was takin' their money to give them the safest food I possibly could. That was my calling.

Cooley Ludtke: That's Jim Koan of Almar Orchards. It's one of the largest organic apple growers east of the Rocky Mountains and located in the Great Lakes area in Southeast Michigan. We were lucky to be introduced to Jim by Michigan farmer Ryan Poe, founder of The Hungry Locavore in Ann Arbor.

Ryan joined us for several in-depth interviews with Jim about everything apples, starting with why Almar transitioned to organic and how they did it.

Cliff Scholz: Whether you want to grow organic fruit commercially or in your own backyard, there's important information here.

Cooley Ludtke: This is the Farms for Tomorrow Podcast. I'm Cooley Ludtke

Cliff Scholz: And I'm Cliff Scholz.

Cooley Ludtke: Let's get into it.

[01:28]

Part 1: First Generation: the Pioneering Mindset | Length: 7:51

Cliff Scholz: Jim, you weren't always an organic apple grower. Why'd you switch?

Jim Koan: Most everything in my life, I did not make a decision to do. It worked out that way. It was opportunities that showed themselves, or it was something that I was exposed to that I didn't like and I wanted it to be better.

I always was a person that wanted to not follow the crowd, but to figure out why it worked and why it may not continue working. You know, I wanted to understand it. And so, when I started out as a conventional grower, that's because I didn't know anything else.

My education that I got out of college on doin' this was all conventional. But I also figured out that, with this IPM, and Integrated Pest Management, it gave me enough of a foundation because it was in its infancy then, also. And the only reason they were tryin' to figure it out is because they were sanitizing the orchard with these chemicals, and they had a big problem with European red mite. And it's a multigeneration a year: they make babies really fast. And, they're genetically able to give off a lotta mutation babies.

So there's always a few of 'em there that can become resistant to whatever chemical you put out there. So they were comin' up with all these different chemicals. But they didn't have a choice.

So all the farmers were using the same chemical. After three, or four, or five years, it wasn't working anymore because you had a resistance problem. So then they would come up with a new chemical, and the farmers would just get used to usin' it, and then that developed a resistance problem. So they recognized that coming up with chemicals

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wasn't the answer. They had to figure out other ways of attackin' this guy.

From there, they started looking at these other insects and thinkin', "Hey, maybe if we can understand our enemy better, we can figure out how to take him out." And so, when I was reading all this stuff and figuring this all out as a conventional grower, at that same time they started having to put labels on food that was the ingredients in it.

Never used to have to do that. And then there was this red dye number two in red pop that all of a sudden, they found out was a carcinogenic.

And for the first time ever, when I was going into these stores and delivering apples and walkin' around the store, lookin' for the produce manager to sign my bill or something, you'd see people studyin' these cans with the labels on 'em. And then a lotta people... the manufacturers were complaining, the cost of putting this stuff on the cans. And it was the beginning of reading labels and having concerns about what's in it.

And so, as I'm takin' these different classes, and they started puttin' labels on insecticides and everything, then I started learnin' more about it and being more concerned. But then I went to a class one time, and it was on sprayin'. And they were talkin' about how my pickup truck, the seat has all these different toxic pesticides on 'em. And I says, "Yeah..." I didn't think too much of it, you know? And I was bein' pretty careful because my sprayer that I had at that time was a little, 100-gallon PTO-driven sprayer. Here's a tractor seat, and it's right back there.

And I had no cab or anything. They didn't have cabs on tractors at that time. So when you get down to the end, and it wasn't powerful enough to spray if it was very windy, so you always had to spray in the evening, like, 9:00, 9:30, 10 o'clock at night, you'd go out. And you'd put your spray on. And you'd have to go down about three or four rows before you could go back in again because that would just be hanging in the air.

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And then, I'd put a suit on and stuff to put it in the sprayer, being really careful, too. And I thought I was bein' really careful. But my wife has got this nose like nobody else. And one of my favorite sprays was called Kolo-100. They don't make that anymore.

But it was cheap. It was, like, 90% sulfur. And it was 10% of this other chemical called Phygon, which was really deadly on apple scab. So it was a combination of these two, so you're not gonna get a resistance problem there to begin with, with that fungicide.

But it was also real cheap. Well, sulfur, as you know, is organic, right? The Phygon wasn't, and I'm a conventional sprayer at that time. But, it's a dust. So I was always being really careful.

But I would go home at night, and I would shower. And then I would go upstairs to bed. And I would wake my wife and kiss her, you know, and tell her goodnight. And, uh, "Ooh, get away. You stink. You've been sprayin' that stuff again."

And when I got home, I showered three, four times. And shampooed and you name it. And the times that I wasn't usin' it, she could smell that difference. And if I was bein' that careful, and bathing, and then she could still smell it, man, that was everywhere.

And there's a lotta poisons that weren't sulfur that was also a dust that were toxic, where sulfur, we have to have a little bit of sulfur. It's good for us. So that really got me thinkin' because then we started havin' children. And I'm bringin' 'em over to the orchard. And they're not goin' down in the orchard because I sprayed a couple of days ago. But they're in the truck, you know? In the cab of the truck.

And here, one of the things we know is that, children, because of their cell division and their growth and everything, the exposure to anything toxic is

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tenfold of what it is for us adults. And so it was the children, my concern of my children not... not living in the purest environment that they could, changed me.

When I first started growin' organic, it was not because it was safer for my customers. It was the safety of my children, and having to be exposed to this all the time. That was it.

But right behind that followed the idea of me proud that I was growing food that was safer for my customers. And if I was a conventional grower and I sold that to a packing shed and said goodbye to my apples and got my paycheck, like most of the conventional growers do now, I would've been able to do that, probably. Or it wouldn't bother me so much.

But because I was growing the food and my customer base, I knew, and their children and everything, I had an obligation when I was takin' their money to give them the safest food I possibly could. That was my calling.

[09:19]

Part 2: The Organic Apple Learning Curve | Length: 9:19

Cliff Scholz: So how long have you been doing this?

Jim Koan: How long I been growin' apples organically? Thirty...thirty years, whatever. I still haven't figured it out.

It's uh.. the more you know, the more you realize you don't know. Trial and error. Nobody was doing it before me. And the university people were doin' research on it, and they contribute a lot to helping me figure out the systems, because every year I was having three or four research projects being done on my farm because I was the "control".

This is what happens if they do this to it, and then I was the control, the

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standard that they're lookin' at, in terms of what happens if you didn't do this, to be able to compare 'em. So that was really beneficial.

And then everything I did, even though it wasn't experiment and research from a true scientific point, where you write the project up and then you have peer review of it, you know? But it was pretty much that same idea of having a standard to look at.

And so not only did I set this up myself and leave a small block that I didn't do that with for the control, but I was fortunate to have my uncle, and then cousin, right next door. They're on two sides of me, with conventional orchards.

So that was right there too, so I could compare and contrast what they were doing compared to what I was doing here on a large scale. So it wasn't leavin' ten trees at this one row as the standard, and try to compare that. And then the other part was ten acres of somethin' else. It was actually big samplings that you were doing that way.

My education was in psychology. If you're doin' chemical research, you can see it. You can observe it. You can measure it. But in psychology, you can't measure how much this stimulus actually affected the behavior, It's so complicated, you have to allow for that in your observation, in your thinking, in your studies.

Even though you have controls, it's never as accurately defined, the end results. You understand it a little bit, but there's still a lot more to be learned. And you're goin' to keep workin' on it

So it's a living science. And I see the apple industry that way today, now. The more we know, the less we know, and more we realize we don't know. One of the other reasons I changed from conventional to organic was because I was gettin' bored, conventional.

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It's all predictable. It got to the point it was predictable, because I was sterilizing everything. You didn't have any other biology interfering with the thing. And it was predictable. And if you had a problem, you could put a Band-Aid over it. You could fix it right away. You didn't have to be proactive and know that that was gonna be happening probably, and be ready for it and actually put something on that was going to cushion the effect of that.

So a lotta the research that Michigan State University's people were doin' was all specific things. None of 'em grew up on a farm, an ag farm, in apples, or peaches, or pear, or stone fruit, or anything like that.

They didn't have an agricultural background. And so they are all really super smart in very one specific area, but no common sense, and no ability to reintegrate that into a bigger picture. It was just, each one was different design.

And I was very interested in 'em, but their research really wasn't applicable to the real world of growing, except one little bit of it. But they had a lot of experience in that, so I could readily pick up a lot of information that then become more pertinent because of my background.

So they were tremendous resource people. I had this one professor, Frank, used to come out all the time, and he never had any students with him, and I would chitty-chat with him. He grew up in New York, and his dad was a apple grower there. And he went to college, and he was gonna come back to the farm, but somethin' happened though, and he ended up getting his doctorate degree, and then got hired at Michigan State.

And I had these Red Delicious down there that he was interested, and he was doing thinning practice on, because you wanna grow big red delicious at that time because Washington was growin' all these Red Delicious, and Michigan wanted part of that market. And in Washington,

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the Red Delicious they grew had these five nodes on the bottom, you know, bumps on the bottom. Gives it that particular shape no other apple has. Well, they came up with a chemical called Promalin that you could spray on the trees at a certain time that would make that node. We couldn't do it in Michigan because our latitude isn't as high as Washington's.

So they get more daylight than we do, the state of Washington up there. They get maybe another 20 minutes more daylight. It's kinda like they're closer to the North Pole, where you get 23 hours of sunlight a day, right, up there?

And so, we could simulate that. So more people started puttin' in these Red Delicious, but they had to be big. So he was doin' this research on tryin' to predict the right number of apples to leave on this limb to get the maximum size on it. And you could give less, and you just cut your bushels per acre down. But you're tryin' to figure out that exact number here. So he was takin' and measuring the circumference of the trunk a foot above the ground, circumference of the scaffold limb goin' out, and then the spur that that was on, to figure out, you know, mathematically, how to maximize that yield for the perfect fruit and so on, and so forth.

And so I was talking with him about all these different things for about an hour, hour and a half. We're sittin' in the shade out back behind my dad's house. And he finally said, "You didn't go to Michigan State University?"

And I says, "No."

"You went to college?"

I said, "Yeah. And I told him, University of Michigan. My background was in psychology."

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He goes, "Ah. Okay. That makes sense," he says, "'cause you're very observant."

And I had to laugh because all my trees, especially my young ones, are kinda like people to me.

I have an attachment with 'em. I always did have. They weren't just a tree. It was almost personification. They were people. They each have their own personality. And whenever I talk about apple varieties or anything like that, it's all related back to people again.

I talk about, in an introduction to fruit growin', explain to 'em that we're not all much different than trees. We have more similarities than differences. And that, each variety has its own personality, no different than we do.

They have an immunity system, no different than we do. They communicate, no different than we do. They feel stress, no different than we do. The biggest difference between the tree and us, I said, is that where we get our energy and utilize it is in our gut, where we take in food and then our gut breaks it all down, the bacteria and the fungus is in our gut, and it breaks it all down into its simplest elements so that it goes out through the walls into our circulatory system. And trees, their food system is in the soil. It's outside of 'em, where ours is inside.

Basically, the same. And so when you're puttin' fungicide out there, you just destroyed the food chain. And herbicide, you just destroyed the food chain there. And that tree's basically starving to death. Then you gotta feed it all this stuff all the time because the food chain down there that's breaking all the organic material down into its simplest elements, is dead.

And people all of a sudden, they realize that. It makes sense to 'em. And it gets 'em thinkin' totally different, that the plant— they don't realize how close it is to us.

[18:38]

Part 3: Principles of Integrated Pest Management (IPM) | Length: 9:41

Cliff Scholz: So, there are some tradeoffs here. How did you start your transition to organic?

Jim Koan: I was interested in IPM, Integrated Pest Management, that was in its infancy. They had just learned to understand a little bit more about what was going on in the orchard, and the interaction between pest and predators.

And life cycles and what stage in that life cycle was each of these insects most vulnerable to intervention by a grower, and taking it outta the system if you thought it was going to do economic damage.

Well, back then, any time any bug or disease took out an apple, they considered, economic damage. You're supposed to try to grow perfect fruit, right? It's still that way today. I think that's one of the big points that need to be driven home is, that mindset has to change when you're gonna start doin' organic because you're not fighting Mother Nature.

You're not sterilizing the orchard with pesticides anymore and tryin' to grow 100% clean fruit. You're trying to bring back the food system that Mother Nature designed or evolved to, where the pests build up a lot of pressure, and they do a little bit of economic damage.

But you allow that, because then the predators come in afterwards and start takin' out the pests because that becomes the food source for them. And that interaction goes on all summer long here in Michigan. And then everybody goes to sleep. And everything is in balance, theoretically. And the next year, that cycle starts all over again.

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So you have to feed Mother Nature first in order to keep the food system balanced. And then you get what's left after that. So you have to accept a certain amount of damage here. And it shouldn't bother you, because it's valuable in the sense that it's feeding the food system.

You wanna get what's left. So if you do a good job of growing and keeping it in balance, you take your share at the end.

And that's a mindset that needs to be emphasized right away. It took me a while to learn to figure that out. I was just taking the number two stuff, and I was makin' cider out of it, you know? So it was still getting used. But I hated to see it because that meant that that cider didn't generate as much revenue for me as the number one stuff did.

But at least I was using it. Wasn't until later that I figured out that, "Hey, I'm thinkin' this backwards." So they have to understand that first. And then they can come back and realize you're doin' an IPM program conventionally, okay? And you're picking and choosing your chemistries that are soft so that you're going to least damage the environment.

And also, you're using soft chemistries because if you understand where the vulnerability is here for that particular insect that you think is gonna do you too much economic damage, that's when you put that in there. You go at it at its most vulnerable spot. And you can get it out with softer chemicals and damage the system less.

Perfect example would be our moth, Lepidoptera insects. They're gonna start at the adult stage, I mean, 'cause that's what we see, right?

And they're flying around and so on and so forth. Okay. So, every codlin' moth female that gets mated, she lays 200 eggs, Most people go after them 'cause they're flyin', they put a spray out there to try to kill her.

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And that takes a powerful poison to kill this big moth, right? And she's two generations a year, she has babies. So twice a year, you're goin' out there and putting this terrible poison out there, terrible in terms of strong poison that's gonna be able to kill her.

But you can stop that egg laying of most of 'em by mating disruption. So when she's ready to mate, she's in the top of the tree, and she's giving off this plume of scent that the males are trying to find because they can't see a quarter mile away or an eighth of a mile away, or actually up to two miles away.

The males are flyin' around, lookin' for females. She's up in the top one third of the tree, and she's sittin' there, and she's gettin' this scent comin' out. So the male, he picks up this smell. So he goes here, and it becomes less. And he comes over here, and it becomes less. So he comes over here and goes this way again.

And they do one of these patterns like that. So he's flying a lot, right? To find the female. He's gettin' pretty tired. But he's also cuin' in on this female.

So finally, he finds her and he mates. Well, she's gonna lay 200 eggs, fertile eggs. And she lays 'em within about an inch, inch and a half of an apple, She'll lay an egg there, and when that hatches, that worm makes it way to the apple and crawls up the twig, and the stem, takes a bite outta the apple, spits it out. So if it's a weak poison you don't get the worm because he spits that first one out, and then goes into the apple, and then starts tunneling through, goes down into the seed to get nitrogen. The seeds are high in nitrogen so it could make protein to keep growin'.

And finally after three or four weeks, it's going to come back outta the apple, and it goes out another hole, falls down on the ground or goes down the limb, finds a crevice, and pupates.

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And then when it's finished its pupation cycle, it comes back as an adult, right?

So the two places that you can knock this down then is you can put this pheromone out in the orchard on these little plastic ties that's impregnated with the female hormone. So when that moth is flying there's no plume anymore 'cause it's just everywhere. And he's flyin' around, and he gets so tired after awhile, he is not interested in girls anymore. And he just doesn't move.

And so you can knock out, like, 80–90% of 'em, okay? And there's no insecticide at all used. Then, we know how many degree days that it takes from the time that egg is laid, until it hatches. And a degree day is the base that the moth is not in hibernating anymore.

So, for apple trees it's 42°F. Anything above 42°F, it's moving and everything is going, on it. And the leaves are startin' to expand, or so on, so forth. For a codling moth, it's 50°F. Anything above 50°F you got activity going on. And then for a oriental fruit moth, which is a cousin to that, it's 45°F.

And so, every one is a little different base. Because codling moth is 50°F, and oriental fruit moth is 45°F, within the summer, oriental fruit moth, its cousin, will get three generations. Codling moth, only two.

That's not that important, other than, you can't go by the calendar. Because temperatures are different, daytime-nighttime temperatures. And some bugs can be active, and others can't.

So there's a computer system that you can use, or you can figure it out with a pencil. And you can take the high and low of the day, add 'em together, divide by two, and that'll tell ya how many degree days. So you know how many days it is from the time that she laid the eggs, until that

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egg is gonna hatch. And that's 250 degree days. So what you do is, you know with a chicken egg if you don't want it to hatch, you can dip it in water that has a little a film of oil on it, like vegetable oil.

And it fills all the pores of that shell up so that embryo in there can't breathe, and it suffocates and dies. The same systems worked for the moth eggs. So we can go and we can spray a very light, light oil, mineral oil, on the trees at about 200 degree days because that worm in the egg there, that larvae is gettin' pretty big, and it needs a lot of oxygen.

Shut the oxygen off, and it dies. And yet, that oil only suffocates out eggs. Doesn't kill any other beneficials or anything else. And if there was other eggs there from mites and something like that just right then, it would take them out. But we're not targeting them. And it's doing very little damage, anyplace else, that oil.

So you're using a two-fold attack on those things. And then you can drop 'em down. You use one to take out most of your enemies. You come back and ferret out the rest of 'em.

This is IPM. You know, this is true IPM, that conventional people, most of them don't really understand this.

[28:19]

Part 4: Long-Range Thinking: Plans A, B and C | Length: 4:26

Cliff Scholz: Sounds like to do what you're talking about requires a pretty high risk tolerance.

Jim Koan: Farmers have a really big problem in the past because they didn't understand the systems, so that was anxiety-provoking.

And it's very complex, especially fruit growing. And you could get wiped

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out any time. And we're a creature that wants security and predictability. And so what happens is, if it worked last year, they're gonna do it again this year, even though it may not work.

And they don't wanna think about it. They want everything nice and cozy and comfortable. So they don't plan too far ahead, because it can change anyhow. And that takes energy to plan far ahead. And you need a plan A, a plan B, and a plan C.

And the farmers, not fruit growers I'm talkin' about, but other farmers, they've had that feeling of security because they're gonna do what they did last year, till it's too late, you know?

There's this big society in Grand Rapids that comes in, every year they had it the first part of December. And it was all for apple growers and peach growers and perennials and like that, crops.

It was, a three and a half day of educational sessions and vendors bring in all the newest equipment and stuff like that that you could order. And they would have, all the chemicals and all the equipment, packaging equipment and stuff like that too, you know? Everything was there.

Everybody went to that because they offered deals, too, if you pre-order this stuff for the next year, pre-order your chemicals, and so on.

And so it was a big event. All the ladies did their Christmas shopping in all the stores around there and everything. It was, it's huge. I went there for four, five, six years. And met a lotta different people when I was first getting in the business

So they did exactly the same thing in January for all the vegetable people. And I never went to that one 'cause it was kinda expensive. You had to stay there for a couple days with your wife, two, three days, and— and

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buy the food and everything.

But the education side, I need it, 'cause I didn't know anything about growin' apples or anything. And one time, I decided we're gonna grow pumpkins, and they offered these classes on growing pumpkins. So it's, "Okay, we're gonna go there." This is the middle of January.

So I walked in. It was the same hotel. Everything was the same, you know? Different professors, and different farmers. So I'm talkin' to these these vegetable growers, and get information from them.

They were a different people. They had a different mindset. The fruit growers were more visionary. And they had a plan A, plan B, and plan C. And the vegetable growers, well, one year they grew tomatoes. The next year, uh, maybe they thought cucumbers were gonna make 'em more money, so they planted cucumbers. And the next year, "Well, beets might be it this year," and they plant beets.

In simplistic terms, I could not believe that there would be that much difference in these people, in their attitudes, in their opinions, and everything else. It blew my mind. And it wasn't till later that I was digesting it and I says, "Well, yeah, they're a little bit more short-sighted because they can be."

I'm not saying that they have it any easier. It's just a different mindset. And I don't think a vegetable grower would be easily transitioned to a fruit grower, and vice versa. It takes a different kind of person that has intrinsic rewards that come from different things.

Perennial crops. Right. Those you plant, and it's five, six, seven years, eight years before you make a profit on 'em. But you're putting a lotta work into 'em to get 'em there.

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And then by that time, maybe that particular plum or crop or raspberry is obsolete. And somethin' else is already replacing it. You know? And you gotta tear it all out and redo the ground again and put somethin' else in. It's a long-term project. You have to have patience before you get return on your investment.

[32:45]

Part 5: Observations on Going Organic | Length: 2:02

Cooley Ludtke: Jim, it seems like a lot of this is about mindset. Staying alert and responsive. And maybe even enjoying it?

Jim Koan: It's a journey with open eyes, open mind. The goal is the journey itself.

And I laugh because most everything I know is by mistakes. And a lot of people, that would bother them, but not me, because the glass is either half full or half empty. And for me, it's half full. I learned from that mistake, not half empty that I didn't get a full glass out of it.

I never really tried to understand the soil that much, because from understanding what I can see above, and I know that the same thing's happening in the soil in, a more of a microscopic scale. But every time I tried to do somethin' up here, if I tried to do too much, I got pushed back.

You can nudge Mother Nature a little bit, but you can't dominate her. You gotta respect her. So if you don't know what you're doin', don't do anything, basically. And I could see for the first ten years, I could see, a significant difference each year in my tree growth, the health of the tree, the crop load that I got, and how it finished up, and so on, and so forth.

From that, my soil's changed, more clovers came in, dandelions. When I was a conventional grower, every year you went in and sprayed 2,4-D,

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you know? Because this time of year, the soil would just be yellow dandelions.

If you went out there on a bright, sunny day, you'd have to wear sunglasses because of all that reflection, comin' back in your face. And that's the changes I'm talkin' about, you could be seeing in the soil. Less perennials, no thistles. The persistent weeds. And it was taken over by grasses and clovers and legumes.

[34:47]

Part 6: Evaluating an Apple Variety | Length: 8:36

Cooley Ludtke: You mentioned that your family has been growing apples here since the mid-1800s. Apples have history in here in Michigan.

Jim Koan: In the Detroit area they were started growin' a lot of apple trees. The French actually brought the first apple trees into North America, the French fur traders, and it was Snow Apple.

And the real name for it is Fameuse, the French name for it. And it's the only apple of all the apple varieties that is true-to-parent, which means that you can plant a Snow Apple seed, and you'll get a Snow Apple tree. It's not a hybrid.

So as they came up Saint Lawrence, they would scatter these seeds wherever they thought would be good spots to have orchards started, knowin' that when they're gonna come back in a year or two, or three or four, whatever it was, or their kids would be comin' back, there would be apple trees here for 'em to have if they stayed all winter, you know?

And then cider, they could make for the alcohol, and so on and so forth. So that's what first started, was the Snow Apple. And the "Fameuse" was actually a parent of the McIntosh.

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Every farm had Snow Apples on it, that had apple trees. And I never could figure out why. In the beginning it kind of intrigued me because I always like to connect dots to try to make sense of stuff.

My dad had four trees of his original 120 trees, which was about four acres. My grandpa planted his orchard at 36 foot square, on center. And my dad planted his at 24. He thought he was really pushin' 'em in closer together. Where now we plant about 1,200 trees to an acre, and some guys have pushed it up to 2,000 trees an acre, 3,000 trees an acre, just about like corn, almost.

Anyhow, they ripen really early, like the first part of October, the last of September. Not like a lotta the varieties that were Spies and stuff, Winesap and stuff, that ripen later.

And I didn't think they were that great an apple. But I couldn't figure out also why they were so popular, because they get soft real easy. And it took me a while to figure out that most older people back then didn't have teeth. And they cooked down fast too, because they were softer.

So the first thing I did was I cut 'em down, because they always get fire blight disease in 'em, and never kill the tree, but I was always havin' to do a lot of surgery on the trees. So I went and, uh, cut 'em down. And we didn't have any kids yet, so my wife worked here seven days a week, waiting on the customers.

I live a couple miles away, so she'd come over in the morning and wait on customers all day, and then we'd go home at night and have supper and work on our house that I was building. And so she was always on my case because all these older people were comin' in and they wanted the Snow Apple, and they were really kinda angry because we didn't have Snow Apples anymore.

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One time in my weakness, I promised her I would plant some more snow apple trees, but she had to do all the work. She had to plant 'em. She had to prune 'em. You make arrangements for picking, and so on, so forth. And you sort 'em.

Kinda the little story about the hen chicken, you know, and all the cows and the pigs and everything are watchin' her, laughing. But then they all wanted some of the bread, I kinda made that joke with her. So I put 100 trees in across the road. And they grew up to gettin' a crop. And, by that time, most of the old people died off.

There wasn't the demand for it. And you had these other varieties that people were really more... and we didn't have that much, elderly trade. And then what I discovered was that they were a nasty apple because they get fire blight really easily.

They got fire blight in the big, old standard trees, But it's only out on the tips where they grow the apples and the blossoms and stuff. It never would make it to the trunk to kill a tree out. But when you start putting 'em in on dwarfing rootstock instead of the limb being out there 12 feet it's not gonna ever get to the trunk by that growing season.

But when you've got smaller trees, only a four- or five-foot limb on it, it gets to the trunk and it'd kill the tree out. So you're out there all summer long amputating that fire blight, kinda like you would, some skin disease, or something like that, you know? Gangrene or something when you're gonna amputate.

And so I pushed them back out again. She planted 'em. I drilled the hole with a big auger, and she came out and put the tree in it and everything like that. But that was it. She never took care of it after that. And I didn't pressure her on it.

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Fire blight's a bacteria that you only get it in the springtime during bloom, because you've gotta have a lotta moisture for it to take off.

And it needs a wound in order to spread, because the tree has a protective immunity system. So how the tree gets it is, in the springtime the pollen is real sticky. And you have bacteria growing on the outside of the tree, and the rain washes it around and into the blossom. And the bees will turn around and spread that from tree, to tree, to tree.

And when the temperature's above 80–85°, you get a lotta cell division going on there, multiplying itself. And at high enough numbers, the immunity system won't shut it down. And then it'll spread through the xylem layer throughout the tree, and down in the trunk.

So you can control it in the springtime with antibiotics, conventionally, or with copper or lime sulfur, which is highly caustic for us if we spray it on during bloom. If ya time it just right you gotta have it on just a few hours before you're gonna get a rain with an infection in it.

And there's actually a computer program now that measures the temperature and the humidity and the rainfall. And also figures out if it's actually dormant yet for the winter, or whether it's just comin' out of that dormancy. And that blossom is highly susceptible to that.

So you can get this, and it takes about a week and a half before the tree can express that problem that it has in it. It's called fire blight because it looks like you took a torch and ran that around that blossom and that succulent wood right there.

So in the summertime when we're sprayin' everything else, the trees that are fire blight susceptible, we make sure that we get a spray on if we think we got a fire blight potential there.

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But what happens is that Snow Apple blooms again in October. Never seen any other tree do that. But after battling that for three or four years, and I kept thinkin', "How in the heck did I get that fire blight?" And then as I'm pruning that three in the winter, because I was small orchard, and so I was doin' all the work. If you hired people to do that, they wouldn't see it. I'd notice that there'd be a little spur, little tender spur that was dead. And it was crunchy dead. About the size of a pencil lead.

And there was a blossom on the end of that, it looked like. And there would be a live fire blight bacteria on the end of it. It had died back, but where there was still food source for it, it was still a small amount of inoculum right there.

So then I started looking in the fall, and I'm walkin' to the orchards. And here's a blossom here in that tree, and the next tree had two or three blossom, next tree had two or three blossoms.

And it was perfect weather conditions, just like in the spring, where you had a 75–80° day with a little bit of rain, you know, wetting it. And then the next two or three days would be 65–70°, ideal for that bacteria to start makin' a bunch of babies.

So that's why the Snow Apple was so susceptible: You got it in the fall, it went to sleep, and then in the springtime, it woke up. And so you had all this source all over the place. So they all got the chainsaw.

Course, I didn't tell my wife about it, and she didn't figure it out for a couple years. Somebody finally come in and wanted Snow apples, and by that time we were having children and she wasn't working here that much.

[43:23]

Part 7: Peaches and Brown Rot | Length: 1:57

Cliff Scholz: Have you tried growing another other fruits, organically?

Jim Koan: I tried a lotta things. I grew peaches. I had three, four acres of peaches. Very successful growing peaches as a conventional grower. I had peaches for probably all 20 years.

My dad grew peaches right here where we are right now. Where this building is now was a peach orchard at one time, 'cause he had air drainage goin' down to the west. And somewhat sandy soils right here, which is what they have to have for air drainage.

But when I changed from conventional to organic, I couldn't raise them anymore. Couldn't grow 'em because of brown rot. There's no fungicide that you can put on 'em organically, that will stop the brown rot. So that means when the people buy 'em and they take 'em home and they're kinda firm, but they're tree-ripened, within three days, just about the time that they get ripe enough that you're gonna eat 'em, they start having rotten spots on 'em. They're not really ripe yet. And so they get really mad at ya. They don't understand that you've gotta eat 'em before they get ripe. Before they get real ripe.

I fooled around with 'em for three or four years, and I was able to control all the different insects, but not the brown rot. The same thing happened with plums. I used to grow a lotta plums. Methleys and Shiros, mostly. But, brown rot was a major problem with them. Same thing with prunes, prune plums.

We get a lot of rain and moisture and humidity here. So it's a direct relationship between humidity, moisture, and the fungus.

I could probably do it now if I came in with some new fungicide chemistries: O₃, Ozonator, stuff like that. Peroxide. Stuff like that, that you

could spray on the trees.

[45:20]

Part 8: First Generation: the Pioneering Mindset I Length: 4:32

Cooley Ludtke: Jim, looking down the road – who is going to be able to take up this work?

Jim Koan: I see the younger people are gonna be more successful than other generations in doin' this because they're choosing to do it. Not because they had to do it. They had given this some thought and they're makin' the choice.

Old farmers always had these folklores that were coined in observation. And the saying was, the first generation works their tail off and, at the end of their life, they've paid off the farm.

And then the second generation, they come along, and they already had that boost. They own the farm. And then they improve it and you got extra outbuildings, and you've got fencing, and flowers around the house. And everybody admires that farmer. He's highly successful, and he's seen as highly successful. He would go out and get involved in politics and township government, and so on, because he had a little bit of time, and he had that interest. And he didn't have to keep his nose to the grindstone. And he wanted to give back to the community a little bit.

Third generation, 'scuse the phrase, but third generation pisses it against the wall. And that's because every couple square miles, there would be a tavern. This is before TV and radio, right? And so people, when they got their chores done at night, they a lotta time would gravitate to this pub and they would play Cribbage and Euchre, and have a few beers and socialize.

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It was a socialization thing. They didn't go there to drink, per se. It was more social, and the wives would go sometimes, sit back in the corner and talk. But the point was, the third generation had it too easy, and took too much for granted. And drank too much, 'cause he didn't have to work so hard to keep it goin'.

And so, when I was first comin' into the business and I was looking at all these other orchards on the other side of the state, you could see that in them. In the orchards, where it's a long-term endeavor to begin with, you could see this first, second, third generation. A tremendous amount of third generations went under from that.

My dad bought this farm and started it from scratch. It was a 50-acre farm, no buildings on it. There were some apple trees right along the road here that went all the way to Beecher Road, two or three rows of old, old apple trees. He cut 'em down and burned 'em up for heat.

Then it wasn't till a couple years later that he started plantin' younger trees down in the far end of the 50, right next to my grandpa's. So I'm basically second-generation. And then Zach, he's the third. So he's the one that's under the gun there, under pressure.

My point here was that when I put my kids through school, I didn't want any of 'em to take over the farm. I wanted 'em to go out in the real world and, just like I did, leave farmin', focus on another career.

Then, if you decide to come back to the farm, without realizing it, you made a commitment. Nobody expected... nobody was pushing you back to the farm. You made the commitment. You're gonna come back and you're gonna be successful.

Then you have a higher probability of makin' it. But those kids that just went to high school, got outta high school and just started workin' at the

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farm because it was easy, never went out in the real world and dipped their toe in it, I don't think they're gonna have as high a probability of makin' it.

So when you get these younger people that already went to college, or tried somethin' else, and they don't even know anything farmin', right? But they have this vision of being close to Mother Nature, and I would bet that they're gonna make it one way or another.

If they don't, they're gonna be good people as an adult later on, anyhow, because they've been humbled. They've been humbled by trying to make it, and realizing how difficult it was. Even though they maybe weren't successful, they'll be better because of it.

[49:52]

Part 9: Hungarian Bacon Fry | Length: 1:39

Cliff Scholz: Jim, before we close, you told us about your mother's famous Hungarian bacon-fry recipe and it and it stuck in my mind. We think it's absolutely worth sharing and it might be fun to hear about.

Jim Koan: So the 4th of July, it was hotter than Hades that day and we quit at noon. And we were gonna have a bacon fry Hungarian, where you take jowl bacon, which has a thick skin on it, and some fat about that thick on the neck right there. And there's a little bit of meat in there. And the Hungarians that never had any money much, they would take a piece of that meat. It'd be about that big, like that, that fat. And you'd put a stick through it, willow stick through it. And then you'd dice that, both directions, about a quarter inch apart, though sliced quite thick. And then you would go to an open fire, and, you would have a tray of rye bread with thick onions on it, and paprika.

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And you would put that over the flame, that meat, and you would sit there and spin that so that fat didn't run into the fire. Kinda tricky to learn to do that just right. You wanna keep that fat in there, not runnin'.

And then when it started runnin' too much, you quick put it over and you soak that bread with that fat. Then you would put a tomato on top and a little bit of salt. And somebody would start eatin' that.

And you'd do another one again. And you'd eat, like, three, four, five of those, right? And then along with a couple of beers. And then when that fat started caramelizing, you'd cut that off. And then it tasted really, really bacony, you know?

[51:31]

Cooley Ludtke: That was Jim Koan of Almar Orchards, located in Flushing Michigan. If you get out there, say hi for us. For more podcasts and videos, visit FarmsForTomorrow.org and find us on Instagram, Facebook and X.

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