Joe and Kay Scrimger, Narrators

Anneliese Abbott, Interviewer

July 26, 2021

Location: Joe and Kay Scrimger's home, Battle Creek, Michigan

JS=Joe Scrimger
KS=Kay Scrimger
AA=Anneliese Abbott

AA: All right. This is July 26, 2021, and this is Anneliese Abbott interviewing:

KS: Kay Scrimger

AA: And:

JS: Joe Scrimger.

AA: So thank you very much for doing this interview and for having me come over. So do you want to start with a little about your background in organic and sustainable agriculture and your specific connection to it?

JS: We started back in 1973, started farming in '72 on our own. We both grew up on dairy farms. But Kay's family farm was probably more instrumental in the start of organics than my dad's farm. Although we did pieces, but we were still sort of conventional. So if Kay can maybe give a little reason for why her farm had started organics in the '60s.

KS: Well, my parents had farmed all of their life. When my father came home from World War II, he had some health issues. I'm not sure what those were because they preceded me. So my mother was always a reader and a studier, and she wasn't getting any answers from conventional medical help. And so she started reading. And she read Rachel Carson and lots of other books that were available, *Plowman's Folly*. And she decided that they needed to pursue some homeopathic care. And eventually, organic agriculture. And they had, probably had by the time they were farming, I don't know how many acres, but they were milking about 50 cows. But they never pursued certification or marketing their milk as organically. They just did what they felt was best. And she treated most of the health problems in the house with homeopathy also. So then when we started farming, she definitely had an influence on Joe when she saw the first anhydrous ammonia tank in our yard.

JS: Yeah. So my dad had never used anhydrous ammonia, and I was just thinking about that this morning. So I experimented with it because that was what they were promoting at the time. And I was sort of, my dad had taught me certain things, so I was good at cultivating. He had taught me because we raised navy beans at home. There wasn't good herbicides in the '60s for beans. There was atrazine for corn. And he was conservative, so he band-sprayed, partially for cost and

maybe for environment, I don't know, but it cost a lot less if he band-sprayed and strip cultivated.

But I remember some of Kay's family pulling in when I was putting anhydrous ammonia on the field by the house. And they left. [Laughter] So I was using eptan on the beans, whatever, used his planter so we were banding it and cultivating. But conventional fertilizer back then, which was Sohigro, which at one time was Standard Oil and went on to be Sohigro, the fertilizer company.

We started the first field, partially because I was looking at pricing and I could see there was some demand for organic wheat, maybe we should be looking at that, because some of the commodity prices even in the early '70s weren't good. But they had a peak in '75, '76, prices went up but then they went right back down again. And I was selling farm equipment and doing custom harvesting at the time with my brother. One of my clients, my larger clients, thousand acres, a hundred cows, which was big back then in the '70s, because when the prices went up—this was a couple years in—because of commodity prices going up. Same thing's happening today, the price of fertilizer's starting to go up. And it went up three to four times. It was pretty cheap, but it went from $70 to $80 a ton up to $250 a ton. And you couldn't get it. My dad took a wagon behind a pickup 30 miles, 40 miles to where he found a load of fertilizer and brought it back.

Those customers, though, planted beans without any fertilizer. And they were one of my biggest accounts. I was selling equipment at the time, and I was a little concerned. But when I looked at these beans at the end of the year, they were some of the best beans that I'd seen all year. We were on a lot of farms. So we kept going ahead and converted the whole farm to organic, which at that time was 500 acres by '75, '76. (5:41)

AA: All right. So you were farming, and then you want to go on a little bit beyond that, like what else? How long did you farm, and what else were you involved in in the '70s?

JS: So we farmed, the farm was really the focus on into '87, say. And then we leased it out on shares. I'd have to go back to all those years. But by the time of the late '70s, we were working with the organic growers. And I was working, I was the purchasing chair. We got rail cars and stuff in together, like phosphate. And we'd get a load of gypsum and split it up, truckloads. As we were learning more, we were doing some soil testing. Initially I did soil testing and did the conventional recommendation. But by that time we were doing soil testing, but to find somebody to do organic recommendations was hard. So we hired a consultant, which back then was Phil Wheeler. He was in the central part of the state. I didn't always agree with Phil, but he was the only one that was, his information was really good, but he was a little high-pressure sale some days. But when I first met him I really wasn't in tune, but again he was the only person. And his information, his educational side was really good. And he put together a group, he had like maybe 15, 20 farmer-dealers in the state, and maybe 15 or 20 consultants in the state. I did both sides. In fact, I was one of the few that did both sides of that for a while. You were supposed to be separate. But I supplied. After the Organic Growers I bought a warehouse. And we had three different farm-barnyards and buildings we had rented out in the country, and stuff stored all over. And then we got a warehouse in town, rented it first and then bought that. Sort of got out of the equipment business and got into the fertilizer business while we were doing the farm, but the farm was still the focus. (8:12)

But then as it progressed, the fertilizer business took more time, or whatever. And we actually started doing soil testing. But we couldn't get anybody to supply fertilizer. So there was a backup, "Well, okay, I'll see if I can get that," you know what I mean. And so we sort of got into the bigger world of fertilizer. I had a 15,000 square foot warehouse, and we mixed primarily dry products, but we did liquid products and we did organic and biological. So we used some of the friendlier chemical fertilizers, like ammonium sulfate, monoammonium phosphate, sulfate of potash.

Probably one of the other deciding factors, I watched my dad die of cancer. That process started in '72, '73, and then by '76, he died somewhere in there, he didn't die of cancer, he died of complications with the cancer. His complication was that he starved to death because his stomach wouldn't work. And so I'm a little guy, my brothers and dad were bigger. And it sort of got my attention, but I didn't know really how it related. But over the years we've probably put those ties together. And yeah, colon cancer, you need better-quality fiber, and you want to focus on that. And you want to focus, most all cancer we feel starts in the gut.

So we spent a lot of years, no-chemical thing. And there were some chemicals that he used, there was a fly spray that worked pretty well. And my brothers and I, my younger brother and I, the older brother had left, were wanting to do more. And we said, "We'll spray the flies, you can leave." "Nah," he said. He'll spray the flies. Because this stuff works way too good. He says, "They might decide this causes cancer." And it was taken off the market for causing cancer. But there was a lot of other things. And white flour was a predominate deal. My sisters made really good bread. But it was basically with white flour. And so we don't do much white flour. Every once in a while we get caught, in a snack or whatever. But we prefer whole grain.

So that sort of put us on the way, but with a lot of questions. And then through Phil Wheeler—actually through Kay's mother I think got me a subscription to *Acres* magazine, and then I continued it, and went to a conference. (11:09)

KS: Oh my goodness, the girls were little.

JS: Yeah. So I don't—the first one, did we go together, or was that a later one?

KS: We went together.

JS: We went together. And that was because they had a speaker on cancer. And that's while my dad was still alive, so it would probably have been—

KS: No. The first one we went to, Deanna was about two or three. She was only 18 months when your dad died.

JS: Put a camper on the pickup and went to Kansas City.

KS: And my mother kept our little girls and milked cows.

JS: But through that, I remember running into, have you read much on Cary Reams, Dr. Cary Reams?

AA: Not a lot.

JS: Dan Scow? He passed away recently, too. He was a veterinarian from Fairmont, Minnesota who carried on the Reams program after Reams died in the late ’80s. But we schooled under him, partially because of Phil Wheeler, but when I first met him at the Acres conference, I was like, “I don’t think so.” I guess I was maybe too conservative, the way I was brought up. But again, Cary Reams was supplying answers. And he was into this thing a long ways. He had dealt with human health, but he was a biophysicist. But he finally came to the conclusion that the only way he could affect human health was to work with farmers. He had to affect soil health. And he put together a program for that time, the work wasn’t organic, was just a program that worked. And didn’t know as much about soil biology back then, but he knew how to make things work. His idea was that all degenerative disease is mineral deficiency. I questioned that, but over time I found him to be true. So the digestive issues create mineral deficiency. You need a good digestive system, whether it’s in the body or whether it’s in the soil. (13:13)

Along the way we were lucky enough, even when we were working out of the home office, we actually hired a doctor, doctor of [veterinary] medicine that worked with us. Her husband had passed away, and her job, the farm, it was a horse farm she was working for in Oakland County, because horses are really big there. There was an executive from Chrysler’s son who owned the farm, but he was an alcoholic and it fell apart. So she was between two jobs and she came to work with us. Worked with us for I think nine years. And it was really interesting. So we did some feed stuff to keep her busy, because she was into feed. She was a math major, but she was into animal health. Breeding, you know, she was really good at.

So we brought her down to KBS, that’s where that went. I can remember walking through the barn, and she’s pretty observant. Taught me to be observant. We were walking out of the barn, and this was when they’d just put in some composting. And they put in a new parlor, and they decided they were gonna do this dairy thing at KBS, where now they have the robotic milkers now. But this was preceding that. And she says, “They’re having problems in the barn.” And I’m thinking, “We didn’t even see anything.” We didn’t even see any cows yet. We saw the calves and the milk house. She said, “Well, did you look at the drains?” “No.” “You should look at the drains and see all the needles that are in the drains.” The last time they swept up they didn’t pick them up, they got into the drains. And she said, “Did you notice the calves, that their front legs are toed-in? And their color’s off. They’ve got a reddish tint.” That’s copper deficiency. And she was right. Then when I checked with them, we ended up, we worked for KBS and Michigan State on three or four projects. So we did testing down there.

I always remember where they were, they had a dogbane problem on the field. So they’d send the grad students out and spray Roundup, by hand. And they killed the dogbane, but they also killed the corn. No, they killed the corn, they didn’t kill the dogbane, they just knocked it back. It was still coming. Dogbane is hard to kill. So this *Acres* thing, weeds as indicators, which the *Acres* Primer was Chuck Walters, C. J. Fenzau, and one other writer who did those things. But C. J. Fenzau was really big. The weeds are indicators. You can have milkweed at the start of your compaction. But milkweed is easily controlled with herbicides. It knocks it right out. But dogbane comes next. And that’s a very similar plant, but very hard to control. And so you might rather have the milkweed. And we saw that at KBS back then. Along with some other things. (16:18)

Are we on section 2, or where are we at?

AA: Yeah, we can move on to anything else you want to say about your farming methods, and how you developed them. And you've already mentioned some of the people and publications, but any others you want to add to that.

JS: So there was Lee Shephard in Hemlock and Ernie Forris in Merrill. And they'd been cash cropping organically. Lee was a dairy farmer and Ernie had worked for Dow Chemical. After he retired from Dow Chemical he farmed organically. And we traveled over to their farms with farm tours, a small group of us from the farm when we were just getting started. And what we saw was crops that you could drive right down the road and not tell them from the conventional ones. They were as good. But they were doing some hoeing and whatever. And they were on top of things. And so that inspired us more. And then on to organic grower meetings and farm tours. Lewis King came to one of the meetings, and he was from a little farther north. But he had been experimenting with organic farming and raising beans too.

Not everybody raised beans, but back then that was eatable beans, not soybeans. Soybeans were sort of new back in the late '60s, early '70s, to Michigan. They were big in Iowa. So we started raising eatable beans. And we looked at the wheat market. And I didn't have grain storage. The beans were easy to store, I could come up with a couple extra wagons and store them and then take them, clean them and bag them. And Louis King and I did a cleaning plant together. I bought the equipment and he supplied the shed. We cleaned and bagged beans in the winter.

And then we did some wheat. But the wheat was always a challenge. I remember one of the first years we had a contract with Eden Foods. And Eden Foods was really one of the leaders back then. I had a contract for the wheat, and we had a fair amount of wheat. And we were also custom harvesting on a smaller scale, and I was doing that with one of the neighbor dairy farmers. Two small combines. We got rained out on one job like 17 times. And we were all ready to go home and harvest wheat. But it never got dry enough. And they would have took it out of the field. Get it in wagons, and they'll send the truck and take it. And the wheat all sprouted, and we didn't get the contract. It was a bummer. It went for feed wheat, conventional.

So navy beans were still the key. They were the main crop. And then we started doing beef and freezer beef. And we couldn't meet all the requirements. I didn't have the cows. I was buying feeders. And initially that was approvable, and then OGM updated to where you had to raise them organic, and we were still buying them. So we just advertised "fed organic," not certified organic. But we were supplying meat to Franklin Street, just north of the Renaissance Center in Detroit, at the time of the Democratic national convention. That was a big deal. And we were supplying meat to Ann Arbor to some of the bigger organic stores. At that time—I forget the guy's name, the store's still there—they were like a small Whole Foods that was local. Pretty good store. Driving in the back of a small station wagon. I was delivering and Kay was delivering on the weekends.

Got harder and harder to get meat processed with the USDA processing. We went through three different processors. Each one was farther away from the farm. And the last one we worked with was fairly good. But it was up in Caro, it was probably 30 miles away.

So we kept doing it. And then we got the cows, and we had the cattle. Had the cattle until the girls got off to college. Because we thought we were probably, we knew when the girls left it was a time factor, because I was doing the business, so I never put in really big fences or water. So when the girls left we just sort of got out of cattle because it was too much. Too much when I was gone, and I was on the road a lot. One time I was out in Pennsylvania doing meetings, and

we had horses, too, and the horse got caught in the gate. Had to get the vet, and she handled all that.

That was in the ’80s. By that time we started doing educational programs, so that’s what I was doing in Pennsylvania. Don Schriefer, another guy I met and worked with, I think it was biological, never organic, but he understood tillage and he understood decay. No moldboard plowing; he even had Amish farmers doing surface tillage. So we got onto the tillage program that we felt we needed for organics. (21:49)

I think the one other thing as far as magazines and that, we subscribed to *New Farm* magazine. And actually they sent me *Organic Gardening*. And I sent them a letter back, “I subscribed to *New Farm*.” And then two months later, after two or three issues of *Organic Gardening*, they sent me *New Farm*. And this was on into the process by the late ’70s early ’80s. What I realized then was the things they were writing in *New Farm* I was already doing. The things they were writing about in *Organic Gardening* were really interesting. And we think farming should be no more than a large garden. If you’re doing it properly. If you’re raising food. If you’re raising commodities, whatever, it’s a different deal. They had an article about tricontinal, which was the active ingredient in alfalfa, that if you put just a handful of that over a tomato bed, you get a yield response. And I found that really interesting. Because we knew there was something in alfalfa that was more than nitrogen and whatever.

There were two or three other things. So I guess for a while I subscribed to both. Farmers were reading *New Farm*. It did well, but then it had its ups and downs. Rodale sometimes focused on organic, sometimes they focused on biological. *Acres* had it maybe better because they focused on both right from the start. And Chuck Walters was unique. Chuck Walters had an NFO background—do you know what I mean when I say NFO?

AA: The National Farmers Organization.

JS: There’s National Farmers Union, and then there’s NFO. National Farmers Union is still around; NFO might be someplace. But my dad, we dumped milk in the 1960s. Actually, one day we dumped it right down M-24, which is Telegraph that comes out of Detroit, because on weekends all the traffic would be going north up Telegraph, and then they would go to Saginaw way up north. But that didn’t really solve much; milk was still low-priced.

So we buy milk now from a young lady who lives over by Homer. She milks 12 cows, we get fresh milk, and we enjoy the trip over there. And we’ve worked at, we spent five years, this is getting ahead, but just to cover the milk quick, we spent five years going to once-a-month meetings with the Department of Ag so that we could do cow share programs. And we got a one-page policy. They have never done a one-page policy. And they weren’t going to do this, but they did it. But it took five years. And we got a 90-page report. Pretty good deal. But it was quite a few years ago.

So anyways. Philosophy? (24:52)

AA: Yeah. Anything you want to share about your philosophies, and maybe how they’ve changed, too, over time.

JS: Well, my dad’s death, I’ve mentioned. At first I was really focused on the chemical side and which ones were cancer-causing and which not. But I was really moving toward, it could have been minerals, too. In the end I’m more focused on minerals. Because if you challenge farmers

on chemicals, they're going to fight. At least in the past. There is some change going on now. And there's some are ready for it. But it's still a low percentage. But if you talk to them about minerals, you can make headway. But if they do the minerals right, they eventually won't need the chemicals as much. And it's a good progression. So I found that focusing on minerals. And some people would say that's fertilizer, and I would say, "We don't see fertilizer, we see soil amendments." We say, "Amend your process, get your rough balance, whatever your farm is doing, and then maintain it. Do the cover cropping. Do the recycling. Do composting." And you can maintain it pretty easy once you get it to the level you need. But if you don't have that level, that's the reason for amendments, to help you get there. You can do it without it, just it might take 10, 15 years. And the average farmer has about 35 crop-years in his lifetime, on average. You don't want to spend close to half of that just getting your system going. You want to keep that system up to that. And we didn't necessarily do that. I took the long approach and sold a lot of stuff on the conventional market. That doesn't economically add up really well.

So the philosophy in respect to cancer we focused on. And then this perspective of healthy soil, healthy plants, healthy animals, build healthy people. And we got onto that early on and we haven't changed on that at all. And I did hear a speaker at KBS two weeks ago from Indiana, farms 7000 acres. But he's starting to transition. He was doing no-till, but he's doing no-till organic. I haven't seen this yet, but he's actually no-tilling into alfalfa. No herbicide. And getting the corn by cutting things at the proper timing, getting the corn to dominate by using narrow rows and thick, high populations. And he's basically cut out, he's to the point of cutting out most fertilizers, too. But Indiana and Iowa always have higher soil tests. Sometimes in Michigan, we've got quite a range. We can have excess, but we can have some really low stuff, too. We can have the Kalkaska sand, it's lost all of its organic matter.

So that perspective hasn't changed. But along the way, actually in the late '70s I took part in the American Agriculture Movement. And parity prices, *Acres* was quite a pusher of parity prices. If your haircut went from $1 up to $11 now, or $12, or whatever, and the price of corn was a dollar back then, the price of corn ought to be $10 or $11 dollars a bushel now. No, the price of corn just went from $3 up to $5 or $6 just because of the recent surge and the roller-coaster ride of COVID and whatever. But it's a commodity jump. And I appreciate that the farmers are getting that; they need a break. But I don't have any faith that it will last. And I keep telling them, "You've got to do your marketing better than just being on the computer online and getting some broker to do it for you. You've got to invest in marketing. You've got to invest in quality first, and then marketing."

But again, the guys here are a little slow for that. Along the way we decided that that parity concept starts in the soil. Some people will focus more on minerals, some people will focus more on biology, some people will focus more on organic matter. I don't want to argue about that. They're all important. If we can go ahead, we can get this system really working. And a lot of organic farmers are doing it. Some aren't, some are just doing soybeans, and not enough cover cropping. I've seen that up in Saginaw Valley. But I've seen the ones that are doing enough cover crop. It's unique business-wise. I covered a four-hour radius from Marlette that went into Ontario, too. And so about a third of my clients were from Ontario, and then I was doing more in the Traverse City area, too. But along the way I did all the way across the state.

But I did that partially to give us some insulation on the weather patterns that we were having in the Thumb. We got excessive rains early on. And they'd usually start right before navy bean harvest. And navy beans you had to pull them and windrow them. You used to do them like hay. Now they have better headers and they cut them direct. But you had to pull them with a

knife on the ground on the tractor, you'd pull four rows, put eight rows together, and then combine them. But if you just pulled them and you got three inches of rain, that was a really bad deal for the beans. They'd discolor, and they wouldn't be marketable at a high price and may not even make the organic market. So we started to spread out to get beyond that.

Then one year I hired a guy from Zeeland. He works for Herbruck's now. Herbruck's, the poultry guys. Sells their manure. I hired him for testing. He wasn't that good at testing, but he was pretty good at selling stuff. So I eventually got him a job at Herbruck's. Our business was one of the first ones to sell Herbruck's manure commercially. And they were trying to compost it. It was only halfway composted. But we were the first ones to put that on large and conventional farms.

So when I hired Brian, and he was coming across the state—we joked about this, because he put on a program at KBS for Herbruck's, did the program and KBS helped, focused on organics—when I hired him, he only had two children. And then within 2 ½ years he had four and another one on the way. His wife says, "You're on the road too much." But along the way, we established a clientele across the state. And [very] diverse. We were trying to figure out, not just organics, we were doing conventional too, and biological, but I was trying to figure out with different things all the way to blueberries and cranberries, did organic work? We knew it worked with dairy farms. That's a no-brainer. And we knew you could raise eatable beans. And soybeans were really another no-brainer. They were so easy. After raising eatable beans, navy beans and black turtles and [pintos], azukis, etc., soybeans were like simple. But that actually hurt us though. Soybeans were so simple that all the big growers just wanted to raise soybeans.

So we had put together a marketing group called the OFM group, Organic Farmers of Michigan. We actually marketed for people in Ontario, Indiana, Minnesota, out of that group. And we put a representative in Japan. I was on the board of those founding people doing that. But we grew really big too fast and had some growing problems. So then there was five groups evolved out of that. We were eventually MTO, Michigan Thumb Organics, a small group that had in their bylaws a focus on local food. But it was hard to get the bean and grain growers to do it. We did some. We probably did more wheat for the local breweries in Detroit, though. That caught on almost better than the bread did. (33:38)

Organizations, along the way we were, because of the ties to Canada—which Canada had come to some of Phil Wheeler's programs. And he was doing programs in Lansing, started in Mt. Pleasant at Central and then moved to Lansing. And the programs were getting big as far as Ag programs. And then people from Canada showed up, and that's how we got started in Canada. But along the way then we overlapped in marketing. We got a call for a meeting, from the guys at the East Coast, to meet at Kellogg. Out on the dock at Kellogg in front of the old buildings, the old mansion. And I couldn't go, we were cultivating. So I called Lee Shepard had him take my place. That was the first meeting of what is now the Organic Trade Association and OCIA. They started both of those at that. They started the basis of that. Then I went to the meetings later on. We'd go to the food show out in LA, and that was a big trip for us, down in Mexico in meetings, and North Dakota, we got where we did a lot of meetings for a lot of years, a lot of traveling.

But I kept the focus more on Michigan. I tried not to get on too many committees. I supported them. But I only wanted to go so far. And there was something about the local thing I knew was important. But I didn't figure it out. Worked with a woman by the name of Laura DeLind. I didn't have her name down, I was just thinking of that. She was an anthropologist. And we'd been involved on some grant money coming into Michigan for Sustainable Ag. She

kept saying, "You've got to do local food." And I'm saying, "Laura, there is enough navy beans in our group to do the whole navy bean market for Michigan. We can't sell them all locally. I have to have some of this other market. But she was right, we had to have more local food. And when we got onto that, things worked differently. She was a good contact that came later on.

But Michigan State—I'm getting ahead of myself here—Michigan State came out in the early '70s actually, nothing about soils, it was sociology that came out and wanted to know about Organics. It was a social issue, I guess. And we were sort of skeptical, why do you even care? You haven't cared about anything in the past that we were doing, and you didn't really support us much. I couldn't get information from them because I was looking for it labeled "organic." But actually Eliot Coleman, we brought him into the university to speak on a program that used to be at Farmers' Week that I worked with Dr. Tom Edens. But Eliot would say, "Don't look for organics. Look for the pieces of organic. They're all here." And there's cover crop research, there's lime research, calcium research, there's mineral, individual mineral research that you can look at, get all the pieces to organic. Just Michigan State never put it all together. So when I took that attitude—I mean, Eliot was really good, and he's still out there and involved with the Real Organic Project. I took part in their online conference coming on here, online program, heard Eliot speak, and he's still really good. (37:27)

So Department of Sociology, Dr. Craig Harris come out. And we got to know Craig really well. I guess, starting out skeptical, he was serious. It's like Tom Edens, meeting with him, starting out skeptical, but Tom Edens was serious. And he was from resource development. He passed away recently. Really super guy. And then Dr. George Bird, the nematologist.

AA: Yes, I've actually already interviewed him.

JS: He's sort of neat. We in the past had this love-hate relationship. Started out hating, we were at each other—not directly, we were just on opposite sides of the pole. But that was in the late '70s, early '80s. I met him out on what's called the Imlay City muck. He worked with the carrot guys because of the root knot nematode. And I worked with some of them, they were carrot producers at that time. Just per chance, because I worked with them in the equipment business. And then when I started soil testing, I talked to them. I took care of them with the equipment, so they gave me a chance with the soils. And we actually had another guy was doing the testing, I was supplying the product on that farm to keep it separate, another one of Phil Wheeler's consultants that was a science teacher in Flint, Northwestern I think.

Anyways, we met George out there, and George was big on IPM. But it was more [that], IPM at that time was when to spray. Just don't spray when you don't need to, but still spray. But the nematodes ended up bringing us together, because George finally told me about, "Well, I've got this one nematode that's eating the other nematodes, and they tend to be eating the bad nematodes." And then he got farther, "Well, put on the right cover crop," and then you get more of these good nematodes. And then we got talking, and then George did a stint with the USDA, back when Garth Youngberg was the USDA's [Organic] representative. And he took a sabbatical and worked for the USDA in Washington, D.C., or whatever, the Beltsville region, I think. He came back sort of a reborn type guy. Dr. Harwood, have you heard that name? (39:47)

AA: Not sure.

JS: KBS just planted a tree, and he just passed away recently. But I worked with him quite a little bit. He had been at Rodale and a few others, and he started at Michigan State, part of his grad work. And then he worked for some big nonprofits, and he ran the farming overall at Rodale. There was a crop manager under him. And one of the companies I worked with, in Pennsylvania, was there when they started the long-term research. They were supplying fertilizer to some of the test plots that had gone on for 30 years that show that organics initially will start to work better in a dry year. First ten years. By 15 years, the weed control starts to come together, but by 20 years organic works better. These plots are in conventional and organic. And George was involved with them in later years because he was on the board at Rodale for a while. But after the 20-year point, organics will do better on the wet years, too. But it takes really good soil to get to that point. Rodale's got some really good [dirt]. And they do the no-till organic. That affected KBS a lot in how they look at no-till and cover crops. (41:07)

So George came a long ways. And along the way, George and I worked on a couple grant projects. And we'd have fun on programs. But George, when he speaks to the Soybean Association, he's—I mean, they still are working on plant breeding being an issue, breeding a resistant soybean. And I keep saying, "That's not the answer, George, and you know that. It's a soil quality issue." We did work down in Cassopolis on one of the farms that had went from 50 to 60-bushel-per-acre soybeans down to 15 because of nematodes. They had some of the worst nematode problem in the state. And this guy was part of the Soybean Association. So George hired me with the project to go down there and test. And they did all the conventional testing, and then they did our testing. And again, the guy had burned up all of his organic matter. You've got to get the organic matter back.

But the guy was into Peking variety soybeans, the Peking history, which takes it to China. And there were some that were resistant. Because China's done enough soybeans, they were way ahead on us. So this guy knew all the varieties, and he went way over my head, come to plant breeding. And plant breeding is an issue, a big issue, but not in respect to nematodes. And I just said, "No, that won't work. That'll last about six years." But they just laughed at me. And so he didn't go with the soil quality deal, he went with the breeding. Six years later, he's got nematodes back. His yield went right up. Six years later it went down.

And then he come back interested in soil quality. And so he started spreading peat out of some peat bogs that they dug up, trying to get to the calcium. Because he's burning up all of his organic matter—he's still using anhydrous ammonia on the corn. And I'm saying, "No, Tom, you've got to do something different than this. You no way can buffer that. Most farms can't buffer that, but you for sure can't buffer that." So I think he did switch to more 28%. But he did start to work on soil quality. Now Tom's still working at it. I don't deal with him directly. We took a break when I semi-retired and took a year off and traveled some. I ran into him on a program that was out of Kalamazoo, he was sitting up front. When he first started to ask questions I knew it was Tom. So he's still out there. He's up in age, like me. (43:52)

So Dr. Bird and I, over the years, it's sort of interesting. We had some money left over on a grant. I said, "George, can we go visit another farm?" "Yeah, where at?" I said, "I don't know." I said, "I want to find a farm that's changed their biology to the point, and mineral balance enough, that they're getting pest resistance where they didn't have it before." He said, "If you can find that, we can do that." So I got on the phone with the East Coast and found a farm on the West Coast that had a severe peach or pear scab, severe. They did compost. Part of Elaine Ingram's work was done there early on—you know *Soil Food Web* and Elaine Ingram? She's another big piece of the puzzle. But they switched their soil program, got their composting going.

And they over the years, their scab just sort of decreased. I heard they were the best. Ronnie and his sons. Columbia Gorge Organics.

So we got this trip lined up, got the budget, and we took Mark Whalon, who was another researcher at Michigan State, another person who retired, a friend of George's. We worked on the organic orchard at Clarksville and some research up at Suttons Bay. So George and Mark and I went to Oregon. We had two or three farms on a schedule. One was a Japanese farm, leftover Japanese from World War II. They'd kept this farm going, really neat. Three farms. Then we went to Columbia Gorge and we saw, but more importantly, when we got there, they offered us a peach. Over the years I buy peaches, but I only buy one. I buy them in Marlette sometimes on the way home. There was a farm market that eventually shifted to organic. But they were just conventional. And then sometimes you'd find a little organic downtown. Buy one peach. Half the time before you get home, you eat it, and it'd be fibrous and not much juice. I'd throw it out the window because I'm not going to take anything like that home. But if it was good, I'd go back and buy more the next day of that batch. So they gave me this peach. George and I. And I took a bite of this peach. And the juice drips down my cheek. And it reminded me of when I was a kid, picking the peaches off the tree at home back in the '60s. And I knew we were on the right farm. They had the flavor thing figured out, too. And they were doing juices, so it was real important to them, too.

But on the way out there, two days ahead of time, I called them and got it all arranged. Ronny [Sr.] died of a heart attack. And his wife, I'm like, this just happened. And she paused a little bit and said, "No, Ronnie Junior can do it." And they did it. And Mark and George. George really got another piece of the puzzle. Mark never did get it. Something, I don't know about some of the things that Michigan State did. You get so ingrained in certain things. It's sort of like cattle farmers getting ingrained, that they've got to feed grain. That's where that old statement about feeding grain, some things are hard. And Mark Whalon had a hard time. He'd say, "I don't understand what Joe's talking about." Even though he saw it, and he agreed for two or three days. But by two months he'd sort of forgotten. Back to his ways that he's got to work with the commodity groups, the cherry guys and the apple guys and whatever. And he was really involved. And he did fly fishing in the fall with the directors of the commodity groups. And then he represented the exception to the—in Michigan it was the Delaney clause, and I don't know what it's called—but you can't have cancer-causing chemicals in the food. But to get an exception for the cherry growers to continue spraying cancer-growing things, he'd go to Washington and Oregon after the commodity groups. And it was so much part of his deal. He could not make the switch, even though we put it right in front of him.

And that explains part of Michigan State. But George Bird made the switch. But when he talks to the soybean group, he's still back to, there's more money in selling a new variety, in seed, than there is in improving soil quality. So if you read the *Soybean Journal*, most of it will be about resistant seed. It will not be about improving soil quality because they don't want to admit that they have a soil quality problem. And they do. Point blank. That's where the problem starts. And so you get to the point of, once you understand that we have to quit waging war on pests and start managing beneficials, that philosophy can go a long ways. And I sort of keep, I've used that for many years, and that doesn't really fail me. Beyond agriculture. (49:14)

So—Dr. John Biernbaum, at Michigan State?

AA: I interviewed him also.

JS: Good friend. Met him, he was doing edible flowers. Really [a] horticulture guy. And we put on a program for Laura DeLind at her CSA, and John shows up. Laura told me, "Keep this basic, because these CSA people are all just getting started, and most of them are just consumers." But John was there, and I got it basic, and John started asking questions way beyond where this group was at. And I said, "John, you need to come to the next program." Bob Fogg, who was from Leslie, and I had Eliot Coleman come in and speak. And this was after we'd already him three or four times. But we got some grant money, told Eliot, "You need to come to this group with Laura and John." And once he heard Eliot, he got it. He got it. There's something about his background. And he went ahead. And he did such a good job Michigan State let him go. And you know that story if you've interviewed him. But he did too good of a job. And that [also] affected Mark Whalon. He was in charge of their pesticide and plant pest management division that he had changed the name of. He changed it to Integrated Plant Systems. But he brought organic speakers to the research center at Clarksville, put on an organic program a few years ahead of its time, I guess. And he lost that. He was the interim director. And they hired somebody else, and they put the name back to Pesticide and Plant Pest Management. It was no longer integrated. I don't know what it is now. (50:58)

So Mark in some ways knew that he could only move ahead to protect his job so fast. And I sort of respect that. But the culture of the university is different. It took me a while to learn that. So John Biernbaum's quite a treat. Jim Bingham retired a while ago, he worked with MOFFA in the later years. Really dedicated, super person. Had some health issues at the end and probably retired a little before. Dan Rossman was an extension agent that is now an organic inspector and farmer, organic farmer. He was working with a farm that I was working with up at Rosebush called Graham's Organics. Matt Graham now, it was Jim and Pat initially when I started working with them. They were conventional, and we were working with them biologically. And we got them started cultivating, they were no-till. And then Dan Rossman talked them back into no-till. They fired me and went all no-till. Then three years later they called me, "Something about what we did that we may want to do again." So we switched them back to biological and organics over the years, it took seven or eight years. They were 800 acres. They were milking cows. Built a new parlor and then had stray voltage problem. And Pat, the wife, milked the cows, and there was a big lawsuit over that, two lawsuits, actually. So they got out of the cow thing. What was the new milking parlor is now the meat processing plant.

But Dan Rossman, we ended up doing a meeting for him after that. And he knew the Grahams had switched. So we actually switched them from the no-till specialist extension agent to the organic agent, with the help of this Dr. Harwood. Dr. Harwood sent him to Europe in his place one day to see organics over there. And he came back totally changed. Some people can change. Dan did. Dan's done a lot of good work on some of the projects. But most of the money still goes to commodities. And they say they're addressing organics, and I say, "When you put most of the money to commodities, you're really not addressing organics." You're putting some money there, I don't question that. But it's not the amount that it should be. We are still finding, in our system, money still means a lot. I had to teach my girls that. That's why none of them farm. They could have. But I didn't have the market figured out. I didn't have the local food thing figured out until after they left. (53:48)

So one time I farmed 500 acres. Along the way I came up with the goal to farm 20 acres and gross and net more than I did on 500. I didn't quite do that. I got down to 130 acres. But I only really managed myself 20 or 30 acres and the rest of that I did on shares with the neighbors. And I did the hoop houses in Eliot Coleman. But I didn't have time to do all the Detroit

marketing, whatever needed to be done to accept the production. And my hoop house was bigger than it should have been. Should've done a small one. But I wanted the girls in the office to understand these hoop houses and understand this winter cycle with no auxiliary heat. It could be done. And they got really good at it.

So yeah. Eliot Coleman was a big deal in his program. And that along with Laura DeLind got me into local food. So at this stage of the game I feel equipped to do commodity agriculture, but I'm going to get them guys selling better quality food. Some of them will not be able to do local food. But they all can invest in the process for local food in their communities. And I'm geared to be able to talk to them about that. I'm sort of this hybrid in between. For that reason I say I won't last long. Hybrids only last seven, eight years. I've lasted longer than that. I'm just an interim piece to the puzzle. But I work well in that in-between area. Even though there was a time I told George Bird, "George, you're playing on both sides of the street here, and you've got to be very careful you don't get hit by a Mack truck when you're crossing the street." You're allowed to cross the street, everybody gets a chance to transition. What you don't get is a chance to go back and forth across the street. And he's still doing that. And we had some pretty heavy confrontations on that kind of stuff. But we enjoy each other [now]. (55:57)

So that's sort of the university context. Eliot Coleman recently wrote—I just brought this up to a guy by the name of Tim Boring, who was the vice president of the Michigan Agribusiness Association until recently. And he works with a group called Michigan Ag Advancement [now]. New group. Got some environmental thing and got KBS involved. But we got COVID too at the same time and it's been hard for him to do what he wanted to do with this new thing. But he put in the report—so I have this son-in-law thing. The son-in-law gets the guys putting fungicide on the corn with the airplane. And this year there really wasn't a need for it. But that's $8 an acre. A lot of people doing it because he's a good salesman. And he doesn't have to get paid by the farmers, BASF pays him really well to make sure all the large farmers are successful. Large farmers don't have to pay him a consulting fee. He doesn't sell the product, the dealers do. He just makes sure everything works for them. But he's got them applying the fungicide. And there's some things John and I just don't talk about. Better that way. He does a good job with the grandkids, I'm not going to question that. But his job, I hope he someday gets the opportunity to change.

So Tim Boring writes in one of his paragraphs of his bimonthly newsletter that these guys are spraying corn and there really isn't a need. But they're doing it because the neighbor sprayed the corn. Saw the airplanes going. So they hired them too. I saw that happen back in the '80s with spider mites. There was drift onto our farm from the airplanes. It wasn't drift; the guy made an extra pass right over our field to give that guy better coverage in his soybeans. Because they'll come in from the fence row, or come in from my alfalfa field. So he sprayed them. And we happened to be going down the road and saying, "What the heck?" But the neighbor didn't really have a severe problem with spider mites, either. He had some, I wouldn't question that. But what they were spraying was also killing the beneficials. And you've got to be very careful. (58:16)

I know you, I've read some of your soil testing stuff and talked to you on that. Eliot Coleman understands how the soil biology and minerals and organic matter work together, and we can get pest and disease resistance. I don't understand it as well as he does, but I grasp it. But I also grasp that the farmers, even this Rick Clark that spoke last week from Indiana, or two weeks ago at KBS, he's working on balance. And he knows farming's too bacterial dominated. Too much nitrogen focus. It needs to be more fungal dominated. Fungal organisms is what makes the phosphate work. And that's why most farms, a lot of farms calcium isn't working

even though they have a good pH. And a lot of farms the phosphate, if the calcium's not working phosphate's not working. And phosphate is one of the more quality ingredients. That's how you get taste and flavor and how you get pest resistance. And you've got to be building organic matter to get that to work. Most farms in Michigan aren't doing that yet. Some are. Organic and non-organic.

But if you're putting on fungicide, and the soil key is fungal organisms, most of the fungicide goes to the soil. It misses target, misses the pest or the disease, and goes in the soil. And that's the part I deal with it. And I'm saying, it becomes—my education is in mechanical engineering. All the soil stuff I had to piece together. But I understand math. And I'm not a great math student. I was good at drafting. That was my big thing. And I didn't want to spend my life at a drafting table. So I decided to step out of that right before I graduated. Because I was going to spend my life at a drafting table, I could tell. But what I've learned about agriculture—and I stepped out of it to be in the machinery business, and for a while I found that that didn't fit. Growing up on a farm, the machinery thing was big.

Another story, and I'll try not to lose track here, I sort of know where I was at. 1969 I'm co-oping at Western. I'm working for a machinery dealer and going back to school. And the guys were taking me to the farmers' market to buy some organic eggs. And I'm sitting in the back of the car, they were in the front. I'm going along and talking to them, and then I'm realizing, "I'm the only farmer in the car. That doesn't understand what the hell we're going to go get." Didn't know there was anything like an organic egg in 1969. But that was my introduction.

Back to now, Mark Whalon says he doesn't understand this pest thing. But Mark Whalon has focused on the wrong things. He spends too much time in Lansing getting exceptions—not Lansing, in Washington, DC, testifying to get exceptions so that cherry growers can still use cancer-causing chemicals because they have such a pest problem. I've done research with the cherry growers and showed them how to change the biology to reduce their pest per their experiment. Did they want to know more about that? Not necessarily. And I've got the book in there, I can show you. I have all the documents.

So Eliot Coleman's work does work. And our principles, Dr. Reams's principles work in some way even though back then you had to be a little bit of an extreme to get, in the '60s and '70s to talk about nutrition. Because it hasn't been about nutrition, it's been about how much volume we can produce. And agriculture's done that on a commodity basis so well that they've kept their prices very low because of the surplus. And we do this government program thing.

So—trends. Ask a question if I missed something on that last deal there. That's with the universities. So we have some really good contacts now. I always have to phrase that when I do a program. If I say, "the university," I usually mean Michigan State. I wish I meant U of M because they actually do better ecological stuff at U of M because they're not an Ag college. They can understand ecology. Michigan State has a hard time with it overall. But certain people do really well. But in John Biernbaum's case, he did too well. But in the long term, that puts him back at his farm, and it will maybe work out. He'll maybe be able to focus on the right things. He stopped at the office one day and told me about this happening. He'd just come back from the UP—have you been to the research farm in the UP?

AA: No, I haven't.

JS: They're doing a CSA out there now. But he went up and they were going to shut it down. Michigan State was going to shut that all down. And John was on the committee to shut it down.

This was a few years back. And John says, "You know, I got up there, and they said, "We want to show you something." So they took him through the old dairy farm that they established up there. And it was a smaller setup. But they had a new one, too. And they were ready to scrap the new one and focus on this old style, because the old style had a diversity component to it. And dairy wasn't the total focus. And they thought that would do UP farmers better, even though there's not many dairies left in the UP. But they were working on the CSA concept or whatever, and they felt that these old buildings were just the right size for local food. And John ended up getting that financed and keeping that station going. And they put out a couple—their farm managers don't stay long, though. In order to make it work the farm manager has to stay. Three or four years isn't enough. Six, seven years just to get this thing going. (1:04:38)

Clarksville research station, I did all the preliminary testing on the establishment of an organic orchard, because of what I did at Sutton's Bay. They didn't let us continue the Sutton's Bay thing. If we could have continued that, we could have really showed them something. I let that run out, start over again at Clarksville, and told me, "Oh, this is just great." And then they had 25 researchers working on this organic project, and I said, "How are you going to keep all those guys together?" "Oh, we can do this," and whatever. But no, that never happened. Everybody was always going different ways. And they had six different farm managers in seven years. And I'm saying, "That doesn't work in organics. You've got good soil—in fact, you've got too much nitrate."

I told them to put down some mulch. Got there the next time, and they were pretty good, they got it done. They put together really good second-cutting hay that would have been the best dairy feed for any dairy farm, and put it down as mulch! And I'm saying, "Guys, do you know what mulch hay is? Mulch hay is NOT expensive second-cutting alfalfa!" They said, "Well, that's what we had." "Sell that, and buy back cheaper stuff!" "Oh, we can't do all the paperwork on that." So all of a sudden the nitrogen level in the soil went to 120 pounds! Trees can't handle that, organic or conventional. "But we had to deal with the weed pressure." They bought a flamer and were trying to flame and were always playing catch-up because things would get ahead of them because it got too rich for a while. And we'd already cover cropped and set the stage and limed and put some minerals on. And they had a ways to go, but they were going in the right direction. And they eventually bulldozed the trees. (1:06:27)

And Mark Whalon got a lot of credit for establishing an organic orchard. Got a little experience. But it ended up, they couldn't get enough money because Gerber's changed vice presidents—you know, Gerber's baby food? They were one of the main sources of the money. Eden Foods supplied maybe a little bit. But Eden Foods isn't going to dump money into Michigan State because they know Michigan State won't hang in there. I wasn't in charge of the money, I was in charge of soil testing. I'm a dirt guy. And I learned you have to do the politics, too. I'm not really a political breed, but I can do work in that environment.

Also in Tim Boring's newsletter, I wrote him a note—I was supposed to meet with him on his farm coming up. And he's been putting it off because he doesn't really know me. But he knows the people at KBS, and he's tight with them. So I think we'll probably get there. But he also wrote about Pipeline Foods. Is that a name you've ever heard of?

AA: Not sure.

JS: Have you heard of Sunopta? If you'd marketed soybeans you'd know who Sunopta is. But before Sunopta there was Sunrich. There's been buyouts happening, venture capital money. But

Pipeline was the biggest. They wanted to be the pipeline for all organics to the big Cargills. They wanted to supply the big guys. So about three years ago they bought Sunopta. And this [the Pipeline Foods bankruptcy] just happened like last week. But it's an example that I think is where we're at today. Commodity people in the big box stores are buying in. They're buying in for money. They're not buying in to make people healthier. With organics, if you do the health side it keeps you focused. And there is a reason to invest in organics, and that's some of the last thing, and the younger generation, there's many opportunities in Ag, this is a great time to be a farmer. But don't try to compete with the commodity guys. There's a market for green beans, but don't try to compete with Jolly Green Giant. Don't grow what he grows. Grow something different. And it doesn't have to be organic. It can be local, it can be IPM, it can be whatever. Just don't do directly what Jolly Green Giant does. And you can be really successful. And especially with the appreciation now that there is for local food. (1:09:08)

And I've got to say there's some other factors, system factors, but probably one of the more important things that we need to understand, and I think I can get through to Tim Boring on, because he's enough of a farmer. But I don't know where he'll take it, so we'll hopefully find that out.

My dad sort of was negative that I was converting to organic even though he knows Kay's family farmed organically. And he had looked at the corn. He had looked at the health of the cows. I saw that their corn didn't get as big initially. But that wasn't my father-in-law's goal. My father-in-law's goal was the cattle. And he made money with 50 cows. He was a serious dairy guy. He knew animal husbandry probably better than my dad did. My dad knew how to raise navy beans. And my father-in-law, he tried that once, they were too much. But he went back to the cattle. He was a cattle guy.

The opportunity there is to understand local food and understand that that's a coming thing right now, probably as big as what organic was 25 years ago as far as the increase. But we also understand growth. I've seen a lot of guys go bankrupt when they got to double-digit increase. Seven, eight percent increase a year is really big business, and manageable. Fifteen percent, you don't think that's much more, but you start to get fifteen, and we had twenty percent back in the year, it's been 20 years ago, and it knocked some guys out of the thing. Steve Bays in specialty foods, he went bankrupt just because he was gambling ahead. Same thing just happened to Pipeline Foods. They bought some of ADM's elevators. They bought Sunopta. They bought [others].

Initially with our OFM, Organic Farmers of Michigan, we had a marketing rep that we were putting in Japan. She was good, but she wasn't that good, because she didn't know enough about eatable beans, her family raised soybeans. So she was big on soybeans. And Sunrich found that out. So they hired her away from us. But she'd already goofed up the group because we could fill a semi with twelve different varieties of eatable beans for an order. But by the time she worked with us, we were getting—we actually, as a group, moved the price of soybeans up when the price of conventional soybeans was going down. There was literally no connection between our price for soybeans and the commodity market. And we were pretty confident. But we did things to make that happen. It didn't just happen by chance. We were lucky. It wasn't perchance. But soybeans were so easy. And the market was huge. And the Pacific Rim was huge, too. And Eden Foods was huge. They were expanding their soy milk.

So we lost eatable bean acres, which was more local food than what soybeans were. Soybeans are this commodity. Then we ran into Healthy Traditions network—hear of them? Sally Fallon, she's one of the speakers at Acres over the years. Nutrient dense foods, she talks

about fats, whole fat, no skim milk, cheese, yogurt, and that you need the full-fat deal thing. It's not the fat that's bad, it's what's *in* the fat that's bad. Pesticides initially in the body, if you're gaining weight the pesticide goes to the fat. And you won't, it won't be in your system, it will go in the fat. But as soon as you lose weight, then it goes in your system. Then you need to cleanse to get that out of your system. But if your colon's compact, some of that gets into your system. If you're eliminating properly—this is the other big thing, and it relates to soil organic matter, too. But if your colon's functioning properly, your body will eliminate the pesticide before it will take it in, through the fat or the cell structure. It's like in the same way, if you've got adequate organic matter in the soil, the plant won't take it up either. But if you're compact, or low organic matter—and most soils are decreasing in organic matter in Michigan and in this region. And if you're on that recipe, the pesticide gets into the plant.

So what is the important thing? Not doing the pesticide or increasing the organic matter. Because of the water management and water quality issues, increasing organic matter's a big deal. We really want to focus on that while we're doing the minerals. Because we can get too much organic matter and get too much nitrogen, too, organically. We always have to control two things: nitrogen and potassium. Those are the only two nutrients a plant can't regulate. And agriculture, because they're going for volume, overdo both of those. Consequently, even if they had their phosphate working, high potassium overrides that and it doesn't go into the plant. So you end up with poor cell structure that is more susceptible to pests and disease. And people that consume that lose the ability to breed, no different than cattle. (1:14:40)

My wife, she can't take mosquitoes. I'm different, I can stand out in the field and there's mosquitoes all around and everybody's swatting them and they don't bother me much. But when she gets bit, she bruises. So we're really sensitive to how she does things. But when we found out that cattle, if you feed them a high-potassium ration—and KBS documented this—that they become more susceptible to mastitis from any lump. And mastitis is not always caused by a bug, it gets caused by a bump that creates a bad situation. Then the bugs take over. So a bug is indirectly in that equation, but not in all cases.

With high potassium, and there are some really good stories I could tell about that in the past that got me thinking. One was the Saginaw Elevator exploded when I was in college. That's the Farm Bureau elevator, and they bring the ships in and load the ships. But at that some time I'm in college and I'm out at the farm. But there was two or three explode on the Louisiana coast. And I finally realized, these weren't exploding in the past. Why are they exploding now? So when I went back to farming, the local elevator in Mayville, where Kay grew up, we knew that guy so we were taking up there because he would treat us well because he worked with my dad. But he had to put in all this dust control because of the explosion risk. "It's the dust, it's the dust." And I'm saying, "They always had dust. You don't handle grain without dust."

But Dr. Reams explained what was in the dust. And at that time everybody was using more fertilizer. And we found out that higher nitrogen get real—and we found out they were using 200 pounds of fertilizer, triple-12. Then they went to 200 pounds of anhydrous ammonia, 200 pounds of high-phosphate starter, and 200 pounds of potash, and maybe 300 pounds of potash. But that's 0-0-60. The high-phosphate starter is 50 percent concentrated. Anhydrous ammonia's 80 percent concentrated. Much different than 200 pounds of triple-12, you see what I'm saying? But the nitrogen and potassium override the rest of the system. So now you've got dust with nitrogen and potassium in it. What does that create? That's the basics for explosives. So they literally blew the top and killed people at the Saginaw Elevator. I did the research, took it to Farm Bureau. They wouldn't listen to me. But I have a different view. And because I'm

mechanical engineering, and again, I wasn't a great student. I almost failed at the start. I came from North Branch and Kalamazoo was a big shift for me from North Branch. But I got back on track. (1:17:49)

Dr. Reams said one time, "Well, you're playing with dynamite there." I never talked to him about the Saginaw thing. It's just that I went back and looked at that Saginaw Elevator thing. And we looked at the other terminal elevators—it was the big elevators that were handling a lot of volume that created enough dust to do this. And then the equipment would get worn, and there'd be a spark. But the equipment had already, I looked at the history of those elevators, the equipment had already worn out two or three times. So they'd had sparks before. But they didn't have excessive nitrogen or excessive potassium in the recipe for all their production. They might have had a couple high fields, but that wasn't enough to create the amount of dust that was needed.

So it broke the elevator in Mayville, they actually went out of business and I had to find another elevator to deal with for my conventional side. Which was luckily, I started to sell most of it into the organic deal, so we didn't, we used the little Clifford Elevator that eventually went out of business as my backup. And they were old-time feed deal. They'd buy corn from me because, they didn't care it was organic, but they'd pay me a premium because it was local to them and they knew me. They weren't big enough to compete in the long term. (1:19:08)

So that deal in the cell structure in plants is huge. And that's a major issue. The taste and flavor. We buy sweet corn, and I buy from some of the conventional guys and I compare. But I keep looking. And then I'll go buy some organic guy's. And I'll compare. And I'm trying to get these conventional guys so they'll listen. And you can't speak at them, you've got to talk with them when they start asking questions. And that takes time. So it'll take a while. But some of the sweet corn's not good. And when you get extra rain, it really gets big ears, but it dilutes the flavor. After you work with the wine guys, you really get in tune to taste and flavor. And right now I don't do much road work. But Kay likes to go to Traverse City. She likes to camp out up there. So I can still work with the wineries—not all of them, I work with a certain percentage of the wineries up there. And then I work with some cherry guys. But cherry guys are like the corn guys, they're just commodity. They don't really appreciate a better-tasting cherry. Some of them do.

Jim Bardenhagen, retired extension agent who I met up there. But he farms. I met him doing the research at the Sutton's Bay research center. And he was one of the main extension agents other than they had four or five having to do with the research center. He was one that would talk to me. The guy that run the deal, Jim Nugent which was a big name, he'd talk professionally. But he didn't really talk to me. Jim [B.] would. But Jim [B.] couldn't do business with me because he's an extension agent. But Jim [B.] retired. As soon as he retired, he hired me. And before that his son had hired me to do some work. His son now is a lawyer. But he works on local food issues, too. He was on the board of MOFFA. They're still conventional growers, but Jim [B.] would work with [me]. And he's a cherry grower, too. But he has diversity in a small farm. Plus he's well-known. And he goes to Washington, DC regularly. He's very well connected. And he's working on improving his soil quality. But he's still spraying. And he has a hard time. (1:21:23)

We had a hard time finding the right IPM person. We're working on that. They can get him to take a risk on one block that is testing better, that shows better nutrition better. Lighten up, here. But don't risk the farm. But lighten up on that one part. But it's hard to find the right guy to work with on IPM approach. And they all hire an IPM guy. Very few of them hire a soil

guy. And I'm only part-time with him now. I was full-time back when we were doing—that's sidetracking.

The commodity thing is big. Meijer's, Wal-Mart, Family Fare, they're all into organic. But most of them are not in—it's sort of like Kroger's initially were the one that really got into organics. But they have an organic section. They don't really sell organic food. If they really sold organic food, it would make their conventional section look bad, and they can't do that because most of their money comes from the conventional. And that's the way Michigan State is, too. Most of their money comes in the conventional stream. They can't contaminate that.

So local and regional foods is still my best bet that that's the way we straighten up the system. And what I was trying to get at in that long deal was that I, my dad was disappointed in me. On a couple different occasions. And he appreciated some of them, so that worked out. So I found this herbicide ad that was made for the garden back in the mid-70s and took it to him one night. He looked at it, and he looked at me, and I could see that disappointed look again. He says, "We wouldn't use herbicide on our garden because that's our—" and then he stopped. He was going to say, "That's our food." But then he realized, and I could just look at him and tell. He'd use it on the field, because that's the stuff we're shipping off to never-neverland. Commodities. And he finally realized he wasn't growing food. We never talked about that again. I won that argument. It wasn't an argument. But he got it. But he was already dying of cancer.

And this change from raising food to raising commodities, that system changes. When you get back to raising food, I theorize that the farmers do it right, they have a different thinking. That'll even make a difference in water quality. And again, some of these big guys, they're not going to do growing food. But if we can get at them right, they will invest for their food and buy their food. And still do it. They're too big to make a switch in the short term. Around here they average about five thousand acres. A thousand-acre guy is easy. (1:24:28)

We sold the farm, we got down to 130 acres. And I tried to sell it organic myself. I have a brother in the real estate business. He doesn't understand it. I farmed organically, but he doesn't understand it. He doesn't really care about it. He buys from Kroger. He likes that. Gets more gas, too, the more food he buys. So I had it listed for two years. I could have sold it organically if I had 500 acres. 130 acres, the guys were not going to drive for 130 acres. The big guys all wanted it. They just wanted more land with it. I tried to finagle more acres to put with it. They're not complaining about prices. It's just, we're not going to drive from Saginaw Valley to your farm unless we have 500 acres. And I come close to putting that together. But then it just, there was only so much time. I should have had my brother working on that and just guided him better. My brother's older than me. Kay would say we're both pretty stubborn. She's right on him; I guess she's probably right on me too. I knew I couldn't change my brother's thinking. He's good in real estate. He's retirement age, but he still does it some.

So I did an auction, a real estate auction, because I seen one company that was doing them and I went to a sale up in the Thumb that sold 150 acres for $10,000 an acre. And one of the largest farms bought it because it was 20 miles closer than we were from Saginaw Valley. And they paid $10,000 for conventional land. I was only trying to get $5500, but we were in a vacuum. We were north enough from housing, we were on the edge of that. We were south enough from the heavier farming. So to get, we had big guys, but they didn't want to pay the price locally. To get one of the guys to come organically, we didn't have any big enough guys organically close by. And it was too big for small farmers. I would have had to split it up three or four places. And I didn't really want to do that. But I could have. But again, it's just another job. Then you've got three times as much to sell, really, even though it's smaller parcels.

So I had this auction. And we didn't get top dollar, but we did get top dollar to all the conventional. We sold it for more than anything else was selling. And I knew the conventional guys would want it, hopefully. And they did, and it went to what was one of my customers from way back when bought it. And he, two miles down the road, you can see his grain system from there. He just farmed it all one field.

So the grandkids found out we were going to move. The older ones I knew weren't, the older one was on his way to U of M for computer technology. He was a Lego guy. He knew nothing about farming. The younger ones, in Ohio and then local here, they were like, "You're going to move the pond, aren't you?" Of all the farm, we had dug a pond right in the middle of it, and it was a nice get-together spot. That was the one thing that they liked—I'd sort of like to buy the lot across the road. It's not quite big enough for a pond. I'd almost have to buy two. The one on the left is more expensive. The one on the right's cheap because it's a corner. And I've got to get figured out if I can dig a pond there. I tried to find land close to my son-in-laws, and there's too many big farms. As soon as you get to the other side of that woods, everything—

Borsen Farms, have you heard of that? Borsen Farms is based out of Zeeland, Michigan, up by Grand Rapids. They peaked out at just over 100,000 acres. And they went bankrupt recently. But that bankruptcy is in process right now. They just made the front page of *Farm Bureau News*. But when I go to my son-in-law's place, they control two-thirds of the land. It's pretty hard to get in. I talked to them. I know the guys that do their testing. They're actually from Northridge. But I don't like to work with them. Sometimes I have to work with some larger ones just for cash flow. But I don't have to do cash flow anymore, so I don't have to do that. But, if you're going to work with any land near here, you've got to know Borsen's. But now, I don't think there's anybody in their shop today. They planted, but they're closing up. And they've lost half of it going into the season. The fertilizer company, the land companies, whatever. But again, one farm controlling 100,000 acres in Michigan. That's the peak. And they're bankrupt, too, just like Pipeline Foods, even though Pipeline Foods was an organic company. But they were venturing into this process.

And Borsen Farms would have never existed if it wasn't for Roundup Ready beans and corn. Roundup Ready beans and corn is how they could do this. And the market was paying them. The year 2000 it didn't. The year 2000, this thing was going to change. And I'd been waiting, you know what I do, waiting for the right time. McDonald's stock was going down, and Monsanto stock was going down. Monsanto was going down because people weren't accepting GMO foods. And then something happened. They got through. McDonald's got back on track, and Monsanto got back on track. Then Monsanto got bought by Bayer and that, but they got big money. And now Bayer has issues. And that's the bigger world, I don't mean to bore you with that. But you know, Acres writes a lot about that. But I try to keep attuned to what's happening. Act locally but learn globally, or whatever that statement is. You have to know what's going on around you, and you have to let some of it not bother you. But you don't deal with agriculture in this area. Two years ago, when I moved down here, if you don't touch with Borsen, it's like, so I touched base with Borsen and tried to find out where their poor ground is. Because I know. (1:31:05)

I'll say one thing. We talked on the phone to KBS. I tried to find that long-term soil testing research, and I went to the library and I could not find it. But Kalkaska sand is some of the poorer ground in the state. But if you take history and go back to the 1800s, some of the best dairy farms per USDA report and USDA books were located on Kalkaska sand. But it's very fragile. It did very well in the late 1800s when they were pasturing. And the grass would do well,

even though this was sand. They weren't doing alfalfa back then. They were doing some clovers. So we went more to alfalfa because as the ground got poorer the alfalfa makes some nitrogen. But they were doing grass, and grass was much better feed than alfalfa. Much better nutritional balance. And my doctor of veterinary medicine didn't agree with that until she researched it. I asked her that question back in the 1980s after I'd come from a program out East.

But we've taken Kalkaska sand that was blow sand, and the farmers quit trying to grow anything on it. Saginaw Valley—well, this wasn't Kalkaska sand, this was sand like Kalkaska sand. Saginaw Valley all has these knolls of blow sand that sometimes we'd just cover crop and go around them. Down in our area in the Columbiaville area the Saginaw Valley was coming down and renting land. Because they can't, it's too competitive up there, it costs too much. So they drive, and with a big enough block they'll rent it. So they rented Don Brockriede's farm and they farmed it all, and then they just, the sand they just quit. They said, "We don't want that anymore. It won't produce." And it was right by his house. He just let that go to sod. And then he eventually started farming for raising deer feed. But he eventually started farming and became a bean and grain grower, too.

But we took this sand that wouldn't produce, in a four or five year period we made it produce better than the black sand that the beef farmers were farming close by in a drought year and better than the irrigated one. And we did that with using amendments, minerals, compost, cover crops, and tillage. And a lot of the systems say right now tillage is bad, the regenerative guys, Gabe Brown, and even Rick Clark expressed tillage is bad. I'm saying, well, if tillage is bad, how did we take blow sand, with tillage, organically, raise crops—but we had it in clover for two or three years, had some cattle. No cattle on the land. Brought compost back. We put this back into production, and not only put it back into production, it produced better than the area around. And we did that in six, seven years. And we have all the tests documented. And pictures. And that's supposed to be mathematically impossible, you're not supposed to be able to do that. But an old-timer told me one time. I said to him, he said to me, "You guys have Kalkaska sand." He was from New Mexico. "Well, that's good soil." I'm saying, "Mr. Taylor, you're deer hunting a different farm than I'm deer hunting up north, because that stuff's shit poor." He said, "No, you're wrong time period. You've got to drop back to the late 1800s." He says, "It is poor now because it's fragile ground. You have to take care of it."

So it's very easy to deplete, but it's very easy to build back up. Heavy ground is harder to deplete, and it takes longer to build back. Sand is really fun. And it's really fun organically. And so all this irrigation and stuff down here—so right now in the Thumb heavy ground, they do a lot of tile. Build the organic matter, you don't need as much tile. You can actually have less runoff when an organic farm is functioning properly than the farmer across the road that's been tiling three times. In a three-inch rain. But down here, you can raise a better crop once you built the soil without irrigation than you can with irrigation. And I understand the math, too. The only other farmers that it's easy to talk about the math on that are Amish guys. They understand math. They also understand economics. And when I mentioned that, they get on it. The conventional guy, he'll start drifting off. If I'm speaking to them, they want irrigation.

So one guy over here, one of the larger farms that's not Borsen's, he's just over by the casino. And I stopped to see him. The son represents for a chemical company just like my son-in-law does. And the son is nowhere on the operation, working a full-time outside job. They farm three or four thousand acres, one of the biggest names locally. So they don't participate in the crop insurance world. What they decided a long time ago, they take their crop insurance money, what they would pay for premium, and they buy another irrigation unit. But some of their farms

they can't irrigate because they can't get the water. They can't get a permit to do a well. Those are the farms I want to work with. I'm trying. I've got to go back and see him. Because I told him I'd do it right now, but we had all this rain. Even the non-irrigated ground looks good. But I'm supposed to get a chance to test their [poorer soil]. So that's sort of where we're at locally. (1:37:03)

But back to the important thing that you ended on, the younger generation. We've got to have more farmers. In the conventional consolidation model, we're not getting that. In the local food model we're getting that. The middle-sized farms are really good organic, if you're 500 acres. 500 acres isn't enough to do conventional. 500 acres organically, you can make money in corn and beans. You can go up to 1000, if you've got two or three family members you can handle it pretty well. And you can use GPS and autosteer for cultivating so you don't have to have—we used to always hire a young little lady for cultivating because they were better than a young man. They cared more about the crop. They really would be good cultivators. And we had one lady that worked for us, I see her family on Facebook now. And I hired her while she was in high school. But my neighbors would hire her, my neighbors that were transitioning to organic would hire her to run their tractors to cultivate because she was good. But the guys, especially on Saturday morning after Friday night, wouldn't be worth a shit. They couldn't stay awake or hold the tractor on the row because of their activities.

So this younger generation has to be brought in. Focusing on quality food and focusing on local markets that you can see, we can start somewhere. We're not against shipping some stuff off. We just shouldn't get up Monday morning and be playing the commodity market. Monday morning we do local food. And if we're big enough that we have to do commodities, we do that at the end of the week. But Monday morning we need to get these farms going with local food, or at least thinking about it. For right now, they're doing commodities. They don't even know about local food. If we can change that, Lake Erie toxic algae problem would get better. Because farmers treat things differently. And that's what I got through to my dad on. But I wasn't really able to deal with that out there with other farmers. Some organic farmers I could really see it. But part of the reason we went into semi-retirement was because I was spending so much time on the road. Trying to be on the phone and talking or whatever while I was doing it, trying not to waste time. But I just didn't have enough time to spend on local food. And now I do. (1:39:30)

Bear Creek Farms. Just outside of Marshall. I did a meeting there for most of the local guys in the area, and they all supply another farm just north that going into COVID was 350 CSA families. After we hit COVID, he has 700 families now. And they're supplying him, along with Battle Creek market, Marshall market, and others. So we've done a meeting for those guys, and we buy from those guys, and it's pretty good. But I still buy from the conventional guys because the organic guys and the small guys know where they're going. It's the conventional guys that are lost. And it's the conventional system that, Michigan State still wants to spend more money for test plots to solve the problem in Lake Erie. We don't need to spend ten more years testing to solve our problem in Lake Erie. We need to utilize what we know today, make the change, get those people's water straightened up, and I can go back to fishing on Lake Erie. (1:40:32)

Hope that makes sense.

AA: Yeah, it does. Thank you very much for sharing that. We're to an hour and 40 minutes now. Is there anything you want to end with to wrap up?

JS: I have a couple books that I just want to show you so you can reference. There's some pictures, there's too many of those, but I'll pull a couple out. Just to document to you that I could raise crops. And I did do the farming cycle for 25 years. But then I rented it out and tried to teach the young guys. And I really had, I think I mentioned, the neighbor who I, when we moved there, he wasn't born yet. I had him taking over the farm. And he was third year in, doing really good, and making money organically. Still didn't have a fertilizer budget, but he was building up. And I understood that. We all have to start some place. But the farm was still in need of something. And he knew it. But then one spring he didn't show up. Going through a divorce. Then I had two or three other people work it after that. Just couldn't find the right guy. We ended up having some obscene weed pressure get started because the guys, you've got to be sharp at the cultivating. Jason got sharp. We'd already worked with him some on their farm. They were conventional. But we got their attention. His dad was my best neighbor, and I'll show you that. So I'll get that stuff and come back. (1:42:20)

[Looking at photos of his farm and barns] It had a cement floor, but it was a Michigan basement. You get a heavy rain, it was an issue. We were on really heavy ground, where here it's on sandy gravel. Really heavy ground. We eventually, a wind storm took down four barns in the area, so we lost that barn. We had the largest barn on Barnes Road. It used to be a 30-cow dairy before. And we knew the people from that back in the '60s. That was back when I still had a little bit of the orchard left. Actually, those trees got old, and I pastured the trees. Shouldn't have did that. That was early on. Put the heifers out on the orchard. It's like, they've got to be very small, only there for a couple days and out. I'd be off to work and had them there for two weeks. That doesn't work.

That little corner out there, that year I did potatoes with mulch there. So I broadcast the potatoes with the spreader actually and then broadcast mulch on top of them and then just pulled the mulch back to harvest the potatoes. Experimented with that. Ended up, we had cattle, but we sold a fair amount of hay. Again, we didn't have grain storage or round bale [storage]. This was the bridge barn, and it just was old. We stored hay in it, round bales, but you really had to double-plank to get the loader in to lift up a 2000 pound bale. And we were using a big baler back then. Later on we did try the small bales.

Anyway, you can see a little bit of the rotation. We had a six, seven crop rotation. We always kept some alfalfa, even when we were heavy on beans and grains. One of the years we didn't do any beans and grains. The American Agriculture Movement, I don't think we touched on that. Actually, when my dad was dying of cancer, I was off in Washington, DC with the farmers. They did a tractorcade. Just to document that. And I ended up with a belt buckle. But we were focusing on parity. But that's when I decided parity starts in the soil. But I come back, and they were on strike. And I set most of the farm aside the next year. But I knew that that wasn't the answer. But I had to do something. I committed to this group. But I came back committed to 25 years of Organic Growers meetings that I did.

That was the tractor we farmed with. But that's after a friend of mine redid it. The barns of Old Mission Peninsula are really neat. That's a really neat book. I had some friends that died in Vietnam. But what I wanted to show you, are you familiar with this? There was a series of these done by Dr. Harwood. And we participated in a couple. The first one was about stewardship and ecology. They're all extension bulletins. I do have a list on them in the computer that I can forward to you, reference books. But he documented our test plot with fruit. I worked with fruit over on Fruit Ridge in Sparta, with conventional guys. They wanted an organic

consultant to do a test plot. They had 14 different plots going. So they hired me out there. I had done some work up there. But the research station hired me for this long-term, it was a five-year test. So we had two years to prepare, and then they started testing. They tested mites above ground and nematodes below ground. (1:45:54)

So conventional—there was 14 plots, this was only 5 of them. Conventional cover crop mulch, compost, and then our system, the biosystem. They gave us a weed cover, we had just weeds, we didn't have any cover crop. And this plot had 35, this was George's plot. George Bird. He used 35 tons of compost on that plot. We used one to two tons of compost, but we used minerals. But this is the beneficial nematode count. And we had the highest. But if you look at that, that looks like 35. If you go back to the research, anything—this was three beneficials compared to plant feeders. Any time you get over an 8:1 beneficial-to-unbeneficial you're probably out of trouble. Get over 10:1 you're pretty good. But if you're 7:1 you've got plant feeders. George worked, that's George's ratio. And he was the first doctor of nematology in the United States. Ours was actually 80:1. It was off this chart.

And then mites—the guy called me up, I knew the guy that was planning the farm for the plots. He has since passed away. He calls me one day, says, "You're screwing up the graphs. We don't have enough mites in your plot to even count them." And then the next year they had the worst breakout of mites. And we had more mites. But we were still the lowest of the 14 plots and below any threshold to start with. So we had more mites. But we didn't have enough to spray. They weren't going to do damage. They were just there. Which, in Eliot Coleman's terms, if you get it right, you'll have enough resistance. It's not odd to have a pest, it's odd to have a pest doing damage. And you've got that balance, which even this Rick Clark, the no-tiller from Indiana, with seven thousand acres, understands this balance. You've not only got bacterial, you've got something happening mineralwise. He doesn't understand the mineral, but he understands the bacterial and fungal. And they've got more organic matter out there to start with than what we have here in a lot of cases.

Although it's not all about organic matter. On the Imlay City muck we're dealing with 50-60 percent organic matter. And they've maybe even lost 20 percent of it. They've still got 40 percent organic matter. It's not about organic matter. It's about the state of the organic matter. And Rick Clark is on to that.

There's also nitrogen cycle here, graphs. Anyway, the extension bulletin, but I'll try to get you the list. There was an article that the Lapeer Press did on us in 1985. I've reprinted the article and used it after that, because we're still doing the same thing. But at that time we were selling fertilizer. We don't sell any fertilizer. We help farmers buy things they need at competitive prices, but I don't deal in products. And again, we use it as an amendment. Fertilizer is something you do every year. Amending is something you do to get your balance. And then after that you maintain it. It's very doable. I wrote up in Acres back in 1990, spoke at Acres a few times. But that's a bigger arena. I'm more focused on the Great Lakes. I can't speak in Kansas City or wherever and hit everybody because I don't know all those states. And I understand that. You've got to be from the region. I'm not really a fit in the Acres deal, that's too big of a deal.

Some of my crops back in the '80s. Here I'll just say, that's corn after corn organically, surface tillage. Use a little bit of the organic fertilizer, 300 pounds, 350 pounds of a 4-2-4. We were trying to see whether we'd have rootworm problems, which everybody else did. We didn't have any rootworm problems. And the weed control, you can see the color, there's a few weeds on the lane, but there wasn't any weeds in the field. We had competitive yields, even back in the

’80s. That’s when I was farming full-time. Composting back then, we were dealing with this farm up north that really got us manure and composting. I had already decided before he got to me that composting didn’t work in Michigan because we had too many failures. We’d just get it started and then we’d get a three-inch rain. We didn’t have enough carbon, so the pile would go to mush. But then we were working with liquid deals, and then we worked with this—pigs in the pit. And actually a dairy farmer figured this out, I didn’t. He had a housing over here for them. And he had an underground line from the registered cattle, fifty of them, and the manure came out in the center. But he used a lot of bedding because they were registered show cattle. So he kept these cattle very clean. So there was a lot of carbon. But then he’d sprinkled corn in the gutter, so there’d be corn coming out in this manure. Then the pigs would go after the corn in the manure. And there’s other farmers have come up with other ways to do that. But he was one of the first. And we showed that slide all over the United States actually. And we got other farmers to do this.

Transitions with some farms in Canada, 850 acres of crops. Transitioned 400 head of beef cattle, transitioned to organic. And they split the farm up to the sons. They went from one commodity farm to a dairy farm, to a chicken farm, to a vegetable farm, over a period of eight, nine years. And in Canada it’s much easier to do. There’s a difference over there.

This was a vegetable farm. Size is a detriment to it. Last time I worked for them I went to Florida with some of the farms they had down there. Through a conventional grower they work with up there, in New Hamburg, Ontario. But they were 70 acres of vegetables, 300 acres of field crops when I started working with them. These guys are German. They still have a German accent, they’ve come across. They’re now 500 acres of vegetables and still 300 acres of row crops. Because of demand. And they buy from other growers, but most of the growers even in Canada are making enough money on organic soybeans they don’t want to do vegetables. Because vegetables are more work. These guys have a huge crew. And I’ve had them in to speak at the Michigan vegetable program in [Grand Rapids]. I was in charge of getting the speaker for that and got them to speak. (1:52:40)

One of the nicest vegetable farms I’ve worked with, and one of the highest-grossing. And I’ve worked with a lot of thousand, two thousand-acre farms. This guy’s 35 acres. But he has multiple houses. Very well known in Canada.

This is one of the composting operations in Michigan. Unique little dairy that I worked with in Canada. He hired me because he had a manure problem, and we did it all over the phone initially. Then I was on his farm once every quarter. Milked 60 cows on 80 acres, kept two families full-time jobs. And good livelihood. But over there, that wasn’t selling organic milk, that’s just because they have a quota system for milk, have a stable price. Not a high price, a stable price. They can budget. On 80 acres, and he always bought two semi-loads of feed. He just knew that. He didn’t want to rent land, he just bought two semi-loads of feed. But then he converted to organic. And he had liquid manure, and he said, “I’ve got a problem with manure.” I talked to him.

And in Michigan I worked with growers that had a manure problem. And if they were a dairy farm they wouldn’t spend any money on a manure pit. They would say, “We’re not going to piss away money into the pit” with additives or aeration or whatever. I talked with him two times on the phone. Before I got there he had aeration in the pit to make the pit more aerobic versus anaerobic digestion. And that totally changed his farm. And he’d been dealing with this pit for 25 years. He put one of the first ones out over there. And he knew there was a problem. But finally through the guy that redid that tractor, and he had a grain, this guy was big in

marketing grains, and he had a tractor like that one time he sold. And I decided I didn't want to farm anymore, I called him to buy my tractor. I says, "If you buy my tractor, I'll quit farming. And I need to quit farming for a little bit. I've got other things I need to do." I bought another one back. But for a while I didn't want a big tractor just so I wouldn't be able to do it. And then he redid it just for shows. (1:54:51)

Rosebush Farm [our farm] did the IFOAM tour, which is the International Federation of Organic Agriculture Movements tour back in '82. Louis King's farm tours, from OGM.

A case study tracking organic matter and phosphate solubility. And we test phosphate differently. Conventional testing you can't pick up the fact that the phosphate isn't becoming soluble. They estimate that it is, but you have to know. So Reams developed a test to test that. Very simple, easy test. Cheap test to do. So we were tracking this with a cherry orchard up in Traverse City. Initially for a period of three or four years the organic matter was coming down. But as phosphate started to go up, and sort of peaked and went down—and this was just getting the system going. This was while we were transitioning the bacterial and fungal change, getting the minerals there. And then when we got them functioning, which was 1, 2, 3, 4, 5, 6th year, he started going up in organic matter and phosphate release. And his problems all started to change. But he also retired at the same time, too. He's 60, no he's 70 years old. And he sold the farm.

But if you can picture, Michigan State will do a long term test plot, Clarksville, Sutton's Bay, five years is long term for them. It takes 1, 2, 3, 4, 5, years, 6, years, took 7 years to really get that changing. And the other thing we say, we've seen so many depleted cherry orchards. They're all no-till. So we have this regenerative ag, Gabe Brown is saying, I like Gabe Brown, but he's saying, "Tillage is bad!" Go talk to the cherry guys up north. They're all no-till, and they lost their organic matter too. Too much nitrogen is bad. And they used to dump it on cherries. Because yield. That's what they wanted. Tons per acre.

What I'm saying here, I had a geologist working for me the last few years. She picked up on this. She got studying the numbers, and she says, "I think that's graphable." And she went back and researched all those years—all those test books are downstairs—but she took his book and went back all those years and started to track the change and then put it on a graph. Then we have one page that's showing all her analysis of that, too.

Anyways, that's pretty much it. Eatable beans, eatable beans are there. If you can see the headlands are one row. And that's an organic field. And they are the hardest to control weeds in. These are soybeans. This is some of the corn, back in '85, that we raised organically. And that was a transitional farm. It was solid quackgrass when we took it over. Converted it to organic and raised that type of corn. When I was farming full-time. And doing outside business, but it was secondary. It was a support job to the farm. And then by the late '80s I switched and the farm becomes secondary and the business become what I focused on in the morning.

On the Saginaw Valley farms, all the big equipment, all the GPS. We worked with one of the first thousand-acre farms up there. They were 1400 acres. Converted them. Their neighbors were like vultures, telling all their rental people that they were renting from—they only owned about 400 acres, and everything else was rented, because all those farms are still owned by families up there, and there are a lot of them—and the neighbors were all saying, "These guys are going to fail." These guys made it, and now there's 10,000 acres of organic all contiguous. And it's still growing. The largest contiguous organic block of multiple farms in the Midwest. But I only worked with two or three of the guys.

And even these guys, they're doing some of Gabe Brown's stuff, too, they found out they weren't doing enough cover crops. I'd recommend cover crops, but they just, "We don't have

time, it's too wet after bean harvest." They had all the big equipment, but they just didn't have time because they were leasing and buying new equipment and had to do more acres to pay for the equipment. I'm saying, "Why don't you just buy a used tractor?" They, "Well, it won't work for all our acres!" "You're not that big. You've got a shed. Take care of it, and don't get hooked into this leasing and cash flow and"—but all their neighbors are.

And all these guys supply Herbruck's corn. They take corn over, take chicken manure back. And they all put chicken manure on, that's their main fertilizer. You can do that for two or three years. And after that, you get disease in the beans, and you get too much bacteria in the corn. It eats up your organic matter, and their soil gets hard. They admit that now. After 25 years of doing it—and they don't work with me, they did for ten years, but they quit because they had Brian Geerlings selling them chicken manure. And Brian's good at that. But they finally realized when they went off to pull soil tests on some of their best land they couldn't get the probe in the ground. They were still moldboard plowing. I had them doing surface tillage, they went back to moldboard plowing and just using chicken manure. And the crops got big and green, and it's impressive, and all the guys did it. But it doesn't work. It's too bacterial-dominated. (2:00:39)

AA: Well thank you! I'm going to turn off the recording now.

JS: Well, that's given you. There's another researcher from Canada called Dr. Stuart Hill, he's since retired. He's in Australia now. He did a lot of his research on bat guano in the bat caves. But in the end he liked the bats better than dealing with conventional agriculture. Tom Edens and I brought him in to Michigan State as a speaker. So he comes in. But he's been committed to organic for quite a few years. And he knew the difference just like Eliot Coleman knows the difference. So he's starting out his presentation, Tom Edens and I were sitting, we had a really good turnout. And then he stops. And don't take this wrong, but he stops and says, "I've got one thing I've got to say here before I go on." And he just stood up there, and he says, "Fuck you Michigan State!"

Now [that] he [had] got that over with, he could go on. Because they had discredited all of his research. On the fact that organics does work. And I'm not saying everybody has to farm organically. It will work, though, if you do it right. And conventional farmers can learn from that. They don't need to do it all, but they can do pieces. And it will help them. They do need to lower their chemical use. And he knew it. But he'd been insulted enough times. Tom Edens and I both look at each other, we're thinking, "What just happened?" And he went right on with his program and did a good job, and he got the crowd all right back on track. So you get some of those surprises sometimes. But if you look him up, he's such a fluent writer. And he's still well-known. But he'll probably do more poetry now. And he was on one of the computer sessions from Australia recently. Technology's neat. I mean, as an organic farmer, I'm not against technology. I learned a long time ago there are certain things that are really neat.

AA: All right, thank you so much! (2:02:50)