

0:00:00 - Chloe

Hey guys, it's Dr Chloe and this is the Radical Remedy Podcast. I am so excited about today's conversation. It is with farmer Bob Quinn, who is truly a pioneer in regenerative farming and the cultivation of ancient grains. This episode is actually the first of a three-part mini-series in which we dive into glyphosate and some of the other environmental toxins that are found in our foods and how it's impacting not only the environment but our bodies and our health. And then the last episode, with Caroline Allen, is actually going to explore something that Remi and I do daily in order to help us detoxify and maintain our cellular function so that we can stay healthy.

So stay tuned, check this out. I know you're going to love farmer Bob Quinn as much as I do. He's really just such a lovely human and I'm so inspired by his work and I can't wait to hear what you guys have to say. All right, hi everybody. I'm so excited to be here with you today, and I've got the organic farmer, bob Quinn, here with me, and he is one of the original renegades of the organic farming game. Thank you so much for joining me, bob.

0:01:08 - Bob

It's great to be with you. It's a really great honor. I want you to know.

0:01:11 - Chloe

Thank you so much. So I mean, your story is just so fascinating. You've built such a wonderful company and you've done so much incredible work. I would love to just start out with a little bit of your wonderful storytelling. Could you let us know a little bit how you've got into organic farming from starting from the sort of traditional farming path that you are on?

0:01:33 - Bob

Well sure, I was raised in Wheaton-Cattle Ranch just southeast of Big Sandy, about 12 miles in Montana. Big Sandy is between Hammer, great Falls and northeast or north central part of the state, so we're just south of the Canadian border, about 16 miles, just straight south to where Alberta and Saskatchewan come together, and it's prairie. My grandfather started this place in 1920. My father was raised here and then I was raised here and my sister and then I raised my kids here. So when I was growing up I had two loves One was plants and the other was science. And so when I went to Montana State University I combined those two and studied botany and then I got masters in plant pathology and I was having so much fun I decided to just keep going and went to UC Davis in California for PhD in plant biochemistry. But to tell you the truth, I was a little bit disillusioned by the time I finished my work at Davis. The research was all a big competition game for grants and we weren't even allowed or we were told not to speak to competing laboratories doing similar work because they were going to be competing for the same grants. And I thought, wow, is that the way science is done? I thought, you know, I had to be naive, illusion of cooperation and pushing back the frontiers of knowledge and all this kind of stuff for the good of science. And it wasn't quite that way. So I bailed out of that and I started a small business of my own with a friend in California and then, after a couple of years of that, I decided to move my family back to Montana. That's where I wanted to raise my kids and not on a busy street in Woodland, that's where we were near Sacramento. And so I came back to the farm in 78. And our farm was about 2,400 acres at that time Farm in Ranch and that was just the right size. It was about average size. Montana was about 2,500, 2,600 acres average size farm in those days and it was about the right size for one family but not for two.

And so I had started down the road that I had been introduced to and that was the chemical road, because that's what everybody was doing and everybody said it was great, we're going to feed the world and the only thing that made sense, and on and on and on. And so that's what we did. But we couldn't make enough money to feed two families out of that. So I

decided, after trying several things that didn't work, which we don't have time to go into here but I found something that did work and that was some cellular grain directly to whole grain bakers in Southern California. They're willing to pay me a dollar of bushel more for my wheat, my high protein wheat, for their sprouted bread that they were making in the LA Basin area, and in those days we're getting about \$3 a bushel for our grain. So this is an increase of a third and it was pure profit. I just had to clean it and beg and they paid for that too and ship it off to California and I thought this was just the, the answer we've been praying for.

So, as they was going well, and then after about a year so this is about 83, we started this and 84, the owner called me up and he said hey, bobby says uh, he's on the phone. Hey, bobby says that you think you can find me some organic grain about the same kind of quality you've been sending me. And I said oh, yeah, well, sure, yeah, no problem, we'll have it down to you in a week or so. Oh, yep, okay, thank you, click. And I hung up the phone and I thought, oh, what did I just say? Because, even though it organic farmers, and and then I tell the truth, I didn't even believe in this organic stuff, because, you know, as I said, I've been taught all my life that a plant couldn't tell the difference between a molecule of nitrogen coming out of a newer file and one coming out of a bag of a morning sulphate or something in a chemical source. And so, however, uh so as not to let my prejudice stand into my way of, you know, uh, trying to satisfy my customer's needs, I went looking for organic farmers and in 84, there weren't very many in Montana, very many anywhere and I did find a few up in them, or one at least to start with, in the northeast corner of the state, and called him up and he said, oh sure, I've got some extra wheat. So I brought my truck up and filled it up, which took it back to Fort Bend, where a clean plant was, and cleaned it and bagged it and shipped to California. And a few weeks they called me up and he said Bob, that's fantastic, I've taken another load, and then another, then another.

I was really scouring the whole state looking for organic farmers and and, um, there is about a whole core of I don't know four or five or six maybe. Uh, and then they invited me to one of their get-togethers, you know, one of their kind of the um meetings, where they kind of just get together and and John, and talk about ideas and things they're doing. And you know, I've been used to going to farm real meetings and brain grower meetings where the main discussion was what was the other prices down the toilet and the the government programs aren't helping us with what we need, and on and on, and on and on, and it was pretty, um, it wasn't too up lifting. But I went to this organic meeting and they were completely different attitude. They didn't talk about any of that stuff. They talked about how they could walk across their field and the and the uh tails of the of the soil under their feet felt different. It was more soft and the ground wasn't so hard. They told me about how they could raise their own fertilizer. They told me how they could um get away from the use of um herbicides and pesticides by using crop rotations to break up disease cycles and insect cycles and and um, uh, pest cycles, and I was very intrigued with that.

So the, the scientists in me kind of bubbled up to the top and I went home and I said, dan, we got to try this, we got to try this stuff. So we had about 20 acres of alfalfa. That was right next to one of our normal fields or chemical fields, and so we ripped that up and planted winter wheat and planted winter wheat right next to it. And then we did our self-test and I saw them out nitrogen in the alfalfa field, which is pretty high. Um, it was as much as we'd normally put on anyway. So we put a monium uh softener maybe you're re, I don't remember, it's a chemical nitrogen on the on the test field of the chemical field right next to it, to bring up the same level of nitrogen. And then at a harvest time the next year, um, we had almost the same. Yield was within a bushel or so, about 35, 36 bushel.

The protein was the other thing that we really worried about for uh in this country for our wheat, where quality was both almost the same. One was 15, five and the other was 14, three or something like that. So there's no statistical difference between the two and my father was

astounded here. Um, he'd been spending tens of thousands of dollars every year on chemical inputs. And this young whippersnapper son of his and come home from California and in one year had um equal. But he had been doing, at no input costs at all, um, just using the, the alfalfa that we've been growing, and I said, wow, my experiment had worked. I was so excited. I said, dad, look at this, let's go 50% organic next year. He said, oh, whoa, whoa, whoa. So we don't even know what we're doing. And, and that was true of course, but that never slowed me down, I didn't. I don't worry about not knowing what I'm doing, I'm just, you know, keep going until I figured out. And he said, how about 10%? And I said, hmm, how about 15? He said, okay, we sell them on 15. So he started converting 15% of the farm to next year, just cold-circuit organic. And the next year we had um a drought, it was an 88. Now we're up to about 88 now.

And then all this happened and, um, with a drought in Montana, we didn't know where to get grasshoppers and that's what we've had the last three years has been terrible, but that was just a one-year plague, but they were. They were coming in, uh, ferociously, and they eat everything. They eat the bark off the off the um lilac trees, uh, bushes, they eat all the leaves off of everything. And they were coming out of the pasture. So I knew what to do with my chemical fields. I just call them my buddy in town. Hey, Jake, I've got grasshoppers. Oh, don't worry, I'll be there in more beans. Or come to the plane and with melafine he sprays everything. Everything's dead in about a half an hour. And then he says to me now, bob. He says, uh, you can't go in that field for 24 hours. You know, uh, melafine, you know it's, it's a poison, you know. I say, yeah, well, I know.

So, anyway, it, the grasshoppers were gone, so I call them my organic friends. I said, wait, you're from grasshoppers. And I said, just, calm down, calm down. He said we can use a, a um little similar to CUSTA. It's a, it's a name of the product and it was a protozoa which is a little smaller than the bacteria. You put that on a wheat bran and you spread it around the edge of your field and when the grasshoppers started to come in, they eat that and they get sick and then all their friends come and eat them. It's just like politics in America today and I thought, okay, well, I'll try that. And so I did. And that's exactly what happened.

The grasshoppers ate in and ate the field down to nothing for about 20 or 30 feet and then they were gone and at harvest time um, there was almost no grasshoppers in the. In the rest of the field it was a great crop, it was a drought year after all. But across the, across the Cooley and my um chemical fields, after about 10 days the malathion dissipated and the next wave of grasshoppers came in and we couldn't afford to spray twice. It was a poor year anyway and it's quite expensive to spray um those um chemical insecticides on, and at harvest time I had about as many grasshoppers as there come on days I had grain and I went to my dad and I said, dad, I'll get here with this. This is the second year in a row that we've tried the organic um methods and the and they've worked uh completely, and the chemical uh is either been the same or let us down completely. I said I'm done with chemicals, I'm just going to go cold turkey into organic. They kind of first sat and he and he said, okay, um, and he supported me and I really appreciate that about him and go a lot of.

A lot of dads and folks that have been farming all their life would have um allowed such a heresy um to be portrayed um in uh in the in the neighbourhood Um. But we had just been to a food show the year before and October born 86, our food first big um organic and natural products food show in California, and thousands of people came by our booth thanking us for having um organic grain, even the bed bubble, and so he understood that there was a market then. So he didn't. He felt that lowered the risk and even though we didn't know exactly what we're doing for farming, he knew we could sell it because hundreds and hundreds of people have told him they'd buy it.

And so that was our start and I never looked back and had noise but easy. But we didn't make any big, big, big mistakes. It sunk the whole time. We started in slowly a couple of year transition and we just had some good breaks and good luck in the first few years and then we just kind of learned as we went, and so that's how we got started into this and while it's been a great trip, I had a lot of friends that helped me along the way. So that was really a big blessing. In North Dakota and Fred Krishnamen and Dave Vetter in Nebraska they were my main mentors and they Oyan here in Montana he'd been in and it was closest to me the longest and those folks really helped me along and so I really appreciated that. And so now that's why I try to do that my neighbours and anyone who cares to ask that's probably a long-winded answer of how we got started- I love it.

0:13:10 - Chloe

No, it's fantastic. One of the things I appreciate most about you is and it's something that I believe I share is the sort of idealistic vision that we can do well while doing good and we can have businesses that actually help support people and help support the ecology of the planet and pay farmers appropriate wages and provide food that's actually healthy for families, and do it all while doing good. So it's a rare, rare idea in business these days, but it is very essential and something that I think that hopefully more people will get involved in. That's why I have a business is because I think it can expand the reach of helping people.

0:13:57 - Bob

My philosophy is that everybody wins. That's the way I try to do business. Everybody wins, Because if everybody doesn't win, then you're only in business as long as you can coerce or fool or tell a better story that really has no substance than anybody else. But all those things are not sustainable and at some point they run out. You run out of money supporting the whole house of cards or whatever, or people find a different source and they don't want to deal with you. They don't have to, and they go somewhere else. So that's not sustainable when they can. So the whole win-lose thing is not sustainable, and to me it's not fun either. I mean, I don't get any joy out of it, but you're trying to pull a faster role. You're like you're giving people a lot.

0:14:48 - Chloe

Ha, ha ha. Well, and I think that that's something that's so important in terms of what you're seeing in terms of the ecology of the plants and the soil and what I see clinically as a doctor of Chinese medicine in terms of the ecology of the body. So one of the things that you talk about in your book and that you mentioned before is using the synthetic nitrogen for the plant. So technically it's supposed to be the same chemical, but what have you seen in terms of how it actually works with the plants? I know you talked a lot about how you shifted your focus from feeding the plants with these chemicals to feeding the soil. Could you talk a little bit about that? I really love that.

0:15:27 - Bob

Yeah, well, I think that's one of the main differences between organic systems and chemical systems. The chemical system is focused on feeding the plant, as you mentioned, as if it didn't even grow in soil. And then, with hydroponics and things like that, they aren't growing in soil and so it's a strictly feed the plant mentality, and so the idea is to grow as much as possible to feed the planet. I mean, this is the big war cry of the big chemical companies and the industrial egg complex in this country and in other Western developed countries where they think they can make a lot of money and shipping cheap food everywhere around the world. And so there's been two goals, and that is cheap food and a great abundance, and this can be achieved with this chemical program, and that's what we've been doing the last 50, 60 years and it's had a great success run.

But now a lot of wheels are starting to come off that bus and we have weeds that are resistant to about these chemicals like round up with life of state as its main thing. We're becoming

resistant. We have pests that are becoming resistant and sacrifice. We have plants that are requiring more and more chemical fertilizers to reach the same levels of production that they had in the past. And what's happening is we're really, while we're not paying any attention to it, we're killing the soil more and more. That supports those plants. So the plants need more and more crutches, and there's almost crutches you can supply and they only last so long. And so my goal for my farm is to throw away all those crutches and just focus on the soil, the way the good Lord made in the first place.

If you look around in nature whether it's forests and prairies, or streams or lakes or rivers or oceans or anything you never, never, see a monoculture. You see great diversity, and that great diversity helps keep the whole thing going, because all of those organisms that are in that system are giving and taking from that system in a way that keeps the whole thing rotating and recycling, I should say, and healthy. And it was designed that way and it's been that way for eons. And so the things that we can come and make an artificial monoculture and then treat it in a way that needs to be treated because it's artificial, it has to have artificial support. That's where you start to run into trouble, because these artificial things at some point start to break down and you don't see it right away, some that still have many and people are still not recognizing, or it's so subtle they think, well, it's a Band-Aid mentality, or we can just get another Band-Aid, or we can get a new pill using a medicine-type approach. Just get a new pill and they don't cure you, they help you feel better and that's the goal. So you don't die right away but you can keep buying pills. You see that way, but you can't. They're not selling sold, I'll tell you that much. Yeah, that's right and it's a great business, a multi-billion-dollar business. And the chemical agriculture is just the same thing. So you talked about combining medicine and ecology and all that kind of stuff. It's the same thing.

So the microbiome in our gut, all those bacteria that keep us healthy and strong because if we feed them right, is no different than the microbiome we don't really call it that in the soil. If we feed it right and keep it healthy and strong, it will support the plants, just as our gut supports the rest of our body, our brain and everything else that's going on. It's a very, very close analogy. And if you have healthy soils, you're going to have healthy plants. If you have a healthy gut microbiome, you're going to have a healthy body and so it just follows and one depends on the other. They're actually interrelated and they are linked together. When you eat, because you're eating the thing that links them, you're taking the product of one system and putting it in your body, which is the other system, and if both of those are in a safe or doing well, everything is going to be fine in most cases. I mean, it's not 100% Nothing, 100% of life, but a high, high 90s. I mean it's the way it's supposed to work. And if you're not doing that, then you are, my Lord, going to be driving to the bottom of your heart and hiding, reaping the whirlwind of the consequences, and you're going to be in that large percent that's chronically ill with something or another in this country.

So I'm not sure if I answered that. I answered your question. That's where I'm focusing on feeding and the soil and making sure the soil is healthy and then putting in good seed. That's the other thing. You know, people talk about healthy soils, healthy plants, healthy people, but I think we need to go one step before that and talk about putting in good seed. Seed it hasn't been altered and changed and producing negative effects, even in a great system, if you don't start with good seed, you're not going to end up with the greatest food, and we can talk about more of that later if you want. But anyway, that's also an important addition to that chain that is in the end system.

0:20:44 - Chloe

There are too many rabbit holes. I want to go down, bob, but since you just brought up seeds, let's go to that one. So many people have heard about GMOs and they're under the impression that this is something that's going to help increase yields and increase the amount of food that's available, whereas you've done some research and you've cited some research that

shows that some of the organic weeds and natural weeds that you've grown have higher nutritional values, higher mineral content. Can you talk a little bit about the difference between the genetically modified seeds and these traditional seeds which you've brilliantly trademarked in your business model, and I really think that's such a cool idea. But keep going.

0:21:30 - Bob

Okay, well, we had come across an ancient wheat, which is a long story. I think it's chapter three in my book *Rain by Green*, putting a selfless plug for our book.

0:21:42 - Chloe

So anyway, oh, it'll be linked in everything. I love that.

0:21:46 - Bob

Well, we ran into getting to hold that whole story. I'll just jump to the middle of it, where we found that people who had trouble eating water wheat could eat this ancient grain without any trouble. And in fact, the first case that we found that that was true, the lady said not only could she eat it, but she felt better after she did eat it. And she said you know, I've got a sister who has lots of sensitivities with many different foods, including wheat, because I have her try this and so we sent it. So I said sure, we'll send you a whole box full of pasta. Then we sent a box of pasta to her and after she'd eaten that for several weeks, she contacted us and she said you know, not only could I eat it and I am feeling better, but I'm now less sensitive to other foods, so it's actually healing her body against other troubles she was having. I said wow when we heard that, because we had been selling this grain as a novelty, you know, found in King Tut's 2 and all that kind of stuff which we found. That wasn't true anyway. But so anyway, when I found that out, then we started taking this really serious. I said this is, you know like a gift from the Lord or something. This is to help people heal. And and what has happened? So we decided to register a trademark to a tribute.

Trademark is a true. This is an ancient Egyptian word for wheat and since the ancient Egyptian language isn't in common use anymore, we're able to register that as a trademark. And a trademark is a way to make guarantees to your customers. It doesn't mean you own the grain. We don't own the grain. The grain is free to anyone who wants to grow it. But if they want to use the tribute trademark then they have to be part of our quality control program, which means that the grain is always organically grown, but regenerative, organic grown, and in fact we require people to be growing soil building crops a year before they plant the grain crop. It only grows best in Montana, Alberta, Saskatchewan, a little bit of the Western decoders, because it doesn't have any resistance to black tip. That comes with rain. If you can have enough rain to grow corn, then we try to grow this grain against a disease. So we stay in the arid upper great plains, the northern great plains of North America, and they have good luck there.

So we decided to do some research. I wanted to do some research to see if we could figure out why this grain didn't give people trouble that Monterey Wheat does. And we designed studies in Italy. That was the only place we could find that was really willing to work with us. In America they felt like there wasn't any problem with our wheat, everything's fine because it's a product of great American ingenuity in science. And on and on and on. And if people were having trouble it must be in their head, it must be having a mental problem with this. And of course we know that's not true. But in Italy they took it much more serious. And if you can't eat pasta in Italy, folks just don't run down to the corner store looking for wheat gluten free. They want to know what's the matter and how to fix it. And so we had some very interested folks in the University of Bologna and the University Research Medical Hospital in Florence and we said I have clinical trials.

It took probably 10 years worth of clinical trials, very rob-cheek. Each one was \$60,000 to \$80,000. And that's how we used a lot of the money that we couldn't put into. Well, a new boat for me. But I don't have a new boat, but I have 36 peer-reviewed journal articles that go into detail about the difference between modern wheat and ancient wheat and the biggest difference was actually the inflammation that modern wheat causes inflammation in small levels and this ancient grain is anti-inflammatory and the difference was 30 or 40%. It was huge. You can't get that kind of thing with pills, with medicine. Even so, we followed that through with studying clinical or sorry, chronic disease, because all chronic disease is tied to inflammation. So we studied cardiovascular disease, diabetes, irritable bowel syndrome, non-alcoholic fatty liver syndrome, fibromyalgia and C-eol I think those are the main ones and all the results were the same.

We did double-blind crossover studies, that is, the people in the studies all have these diseases and they didn't know what they were eating. They told them not to eat any wheat, only what we gave them. We gave them flour and crackers and cookies and bread and pasta and they could make whatever they wanted, but they couldn't eat by any wheat up in the store and they would eat one diet or the other for six weeks and then they had a six-week clean-up for eight weeks, whatever they were doing on the trial, and then they switched over. So they would eat the other diet for six or eight weeks and then we tested beginning and the beach of those periods so we could see the effect of those diets and it was very, very interesting. It was very consistent. For the diabetes folks they had a lowering of blood sugar, a lowering of insulin, insulin resistance and all the tests we had a lowering of cholesterol.

Even with the people in the heart disease, cardiovascular disease trials, they all had at least one heart attack in the heart. And the scientists told me later and actually they took my money and everything and we kind of decided to experiment together. They said we didn't think we'd see anything because all these people because of their heart attack they're all on these drugs trying to prevent a second heart attack and cholesterol reducing drugs, all this stuff. And they said we didn't think we'd see anything, but they did. So this is actually in a completely different way. We don't understand the board of action. But it was further reducing cholesterol, it was further helping their health and lowering inflammation and inflammation markers. And so the researchers were just astounded. It was so consistent. We had a hard time publishing, getting the first ones published because it was sort of against the dogmen who wouldn't see this before in wheat. And after the fourth or fifth one then it became quite easy.

And here's another in a series of scientific studies looking at moderate wheat and nation wheat. And what we have come to understand is that with wheat it's not even a GMO question, because the GMOs have not been accepted by the customers in well, especially in Asia, and that's where our biggest markets are for wheat, and so the GMO perpetrators have kind of pulled back on the GMO wheat. We don't have a GMO wheat, but we have wheat that's vastly different from what we started with, this pre-World War II, which now we call those grains, heirloom grains or even going further back to ancient weeks. And what they have done is focused on increasing yields, not only on the farm but also even in the bakery. And in the farm they've made the grains shorter, they've made them more these resistance and able better to respond to higher artificial nitrogen applications, so that everything is focused on higher and higher yields. And these ancient grains do have quite a bit lower yields than what we have now. So the yield thing and we talked about that earlier that was a goal and that's really been achieved.

And the bakers wanted more yield too. They wanted to make more bread with less flour, less grain, less wheat, less flour, and they were able to do that by making, changing the gluten and making the gluten stronger so it would hold air. So the way bread rises is the yeast, and the yeast that they add the fast rising yeast now that they're using predominantly turn the sugar into carbon dioxide and that gas is trapped in the little cells of the dough and it causes the

whole loaf to rise, and that's how you get more of that big, fluffy American white air bread we call it. And so imagine if you're a baker and you got to sell air for the prices of bread. You know that's a great deal. So the more air they get put in their loaf and they're selling it by the loaf the more bread they are making, and so they love this.

But what no one anticipated, and so it wasn't done on purpose, it wasn't done, you know, in the try to hurt anybody, but a completely unintended consequence of this was that many people have trouble digesting this improved gluten and improved as far as this air trapping ability. But it wasn't so easily digested and the fast rising yeast that the bakers are using only had time to break down the sugar that they added to the bread and change that to carbon dioxide and it didn't have time to start digesting the protein or the starch, the complex starch that's in the wheat and then the dough. At that point, and if you contrast that with sourdough that takes at least overnight and sometimes a couple days that people are using, if you ferment with sourdough using bacteria and viscer bacteria in yeast we're saying 40 hours, for example about over 90% of your gluten is gone, it's broken down and so you're eating stuff that's pre digested. So it really is a big help to those that have trouble with wheat gluten or other things. In the wheat. Things are broken down and pre digested. You don't have any other trouble.

So that's just a couple of things that are going on with moderate wheat compared to ancient wheat, and that's what I do best. But I would be suspicious of any other seed development that has changed the nature of the seed radically. And looking at only one thing like yield, and what we should be looking at is nutrient density, and also I mean yield is also important. We can't have, you know, we have to have a harvest. But we can also look just as seriously at nutrient density as we do yield and put those two together and not just sacrifice one for the other. We don't have to do that. We can work together and have something that helps everybody.

0:32:04 - Chloe

Yeah, well, I feel like whenever we're looking at a one single action you know, or one pathway you know and we see this a lot with like pharmaceuticals it's like, okay, so you have antibiotic and you want to get rid of this, or you have, you want to lower your cholesterol, but we need cholesterol and we need healthy fats and we need, you know, biodiversity in our guts. It's like if you're looking at this one outcome, you're missing the whole array of life and sort of short changing the whole system. So I love the idea of you know, finding a grain that's, you know, helpful for the planet, helpful for reducing inflammation, I think. What is it about?

Six out of 10 Americans have a chronic health disorder and four out of 10 American adults have two. And then, you know, 50% of children now have a chronic health disorder, and that's really like. One of the main reasons I'm doing this podcast is because, you know, 54% of our kids having a chronic health disorder sets them up not only for a lifetime of potentially ill health, but a lifetime where they're then on pharmaceuticals as well, which have also other implications in terms of their long term health, because most pharmaceuticals are only researched for short term use.

0:33:17 - Bob

That's exactly right. And then I just read an article here a few weeks ago that said 77% of young men I think they delivered to the young men, maybe the whole youth from 17 to 24 or 17 to 28, that are military service going to the military service are not passing their physical. 77% they're ill their physical in the military because of obesity or ill health and some kind. That's terrific. That's a terrific number. I mean we are really going the wrong direction. And that 60% you mentioned, and the 50, whatever it was, for the kids, and the 40% with two of our chronic diseases, that's only getting worse and worse and worse. And how bad does it have to get before we maybe think we're going in the wrong direction?

You know, for our health, and this is the basic thing and we have a lot of debate in Congress about, you know, healthcare problem. It really should be called sick care. But anyway, the healthcare programs, you know what? It doesn't make any difference in the world what kind of healthcare program you end up with if the vast majority of your people are sick. We can't afford it. No matter what we have, we're going to go bust. And so it's not only a terrible tragedy in terms of human health. It's a tragedy for the economy and at that point we will be able to sustain that and the whole thing would come down. We just can't sustain that.

0:34:39 - Chloe

What? So what do you actually think would be the best way for people like me to support farmers and to support the mission that you're working on in terms of particularly organic and sustainably, sustainably grown foods? You know I go to the farmers market and whatnot, but are there other ways that we can support farmers?

0:34:58 - Bob

Well, that's a really, really good question. I love that question and if you want to change the world, I tell all the people that listen to me if they will. I'd say, if they want to change the world, if they want to change, so, the world of pollutions, if they want to change the world of health in the whole country, but even in your own family and you have a very poignant example right that you live with every day but everybody has that, but it's in less degrees and they don't notice it. So if they take it seriously, like you're taking it seriously, because it's like critical they would, they would prevent so many things coming in the future. That will certainly come. If you want to help your own communities be viable economically, if you want to help your farmers be viable economically and also have a chance for a happy family and a decent livelihood, one thing you can do is, every time you go in the store you're still buying out of the store. Buy one more, put one more thing in your basket organic than you did the time before or the month before or the year before. Just do one thing at a time, just a little increment. If everybody did a little increment, then we could push the whole thing on Right now.

In the last 35 years we have gone from near zero organic in this country to 6% of all the production, all the food that we eat, everything that's sold in the store. 1% is organic at the current rate of growth. In the next 35 years it will be 100 if we keep going. And we can only keep going if people keep buying and you don't have to buy. You don't have to go to 100%, but just go and increment. Just a little improvement. Everybody did a little. It would be huge and that's what I encourage that everybody can do that and certainly within everybody's budget. I mean, look for sales. Buy their organic stuff when it's on sale, if you want, or in season, or buy the, as I said before, buy the potatoes or the raw grain or the raw vegetables that you prepare yourself. When you get those home they're cheaper. They're much cheaper than the canned stuff that's even not organic, and so you can be saving yourself money doing that actually, and you're making a big difference in so many aspects of the troubles that we have.

I mean climate. We have been talking about climate change, but that's another thing being certainly accelerated by modern, chemical, industrial farming. The making of chemical nitrogen is a huge addition to the greenhouse gases. And then the way we're farming until in the ground, so much that we're losing organic matter. Organic, particularly in the genitive organic, reverses all of that. Not only do we stop using organic nitrogen fertilizer, which is adding to the problem, but we are adding more organic matter back to soil by the sequestration of carbon, which is being part of the solution to the problem. So we're working at both ends of it. We're reducing the creation of it and we're working on the solution of the problem that exists today.

You can't say that with too many systems this you can say, and in climate change it's just one of many. Pollution problems is another thing. You've got a dead zone in the Gulf of Mexico the size of New Jersey because of chemical fertilizers. How big does it have to get before we think

we might have a problem, maybe going the wrong direction? How many wells in the iron wall have to be contaminated with nitrate so that kids can't even drink out of them before we think that maybe we're going in the wrong direction?

And this is what I keep harping on. I just plead with people to help us out, and everybody can help us out by buying organic in the grocery store, because that naturally drives us. If you think you're going to go up against Monsanto or bear now, you might have a pretty big check book because they have billions and billions of billions of dollars that they're making off of all these things Now in both sides of the chemical, industrial things and the pharmaceuticals. And if you think they want to see anything change in Congress, well, guess what. They like it just the way it is. But they cannot have control over what you do in the grocery store. They have no control over that. They have great control over Washington DC and what we can do there is limited. But what we can do in the grocery store is out of their control, even though it's an incremental thing.

It's not just a sensation of the production of flavocene, but if you don't buy anything that's not organic, that means that all that has not had glad to say sprayed on it and eventually that will cause glad to say to not be profitable for them anymore and as soon as it's not profitable they will stop making it. There's no question about that. They'll jump onto something regenerative, organic that they can make and sell and claim it was their idea in the first place. That's how they do, but the quicker we can reach that day, the better it's going to be for everybody. I'm not saying I don't wish everybody to lose money.

It's a monocentral or a bear stockholder right now. But tell your boss to go in a different direction and you'll avoid the. Imagine that if you could avoid all the glyphosate lawsuits now by not making glyphosate anymore or anything like it. We just don't substitute one bad thing for another bad thing. But what different direction. Be part of the solution rather than part of the problem and it's a lot more fun. You can make money at that and it's very satisfying to your own self and your family.

0:40:27 - Chloe

Yeah, it's pretty hard to imagine how some of these people can sleep at night, especially as more and more information comes out about how detrimental glyphosate and a lot of these other chemicals are to our health and what they're doing to the health of our societies. I can't even tell a white lie. I don't really know how they can go about that. One thing that we started talking about before is the fact that glyphosate is now in the rain. You were starting to tell me before we started recording about how you're doing some experiments.

I'm trying to figure out where that's coming into the farm and how that's working. I mean, I think everybody listening should really think about the fact that we're using so much of this chemical that it's literally now in the rain. So it's very hard to avoid it at all, even if you're buying organic, although organic is the way to go because it's still significantly less and still tested and grown in ways that are respectful, so that we're not getting more glyphosate pumped into the environment. But I'd love to hear more about the experiments that you're doing. I'd love that you have such an experimenter's mind and scientific mind when it comes to all of these things it's so fun to hear about.

0:41:50 - Bob

Well, we started running into trouble in Italy when they started testing glyphosate at a level of 10 parts per billion. I mean, this 10 parts per billion is just a. You know it's a and that on the fly it's almost nothing, but still it became measurable. We were always testing our. We spent about half a million dollars a year on testing. We should send that bill to Monsanto and the guys that are polluting us. But we're spending it, we're having to pay for it and then the customer has to pay for it. That's buying the products. But anyway, we can guarantee that we were free from all

those. At the limits we were testing, we never saw one glyphosate contamination exceeding 50 parts per billion, but when we started getting tested at 10, then we saw some. And so we hired an independent research group from Germany to come over to Canada and well, Montana, Alberta, Saskatchewan, our area of production and figure out where the damage is coming from, because it was so low. Well, we knew that none of our farmers were spraying at night or anything else, and it was so low that it had to be some kind of a contamination to the neighbourhood or something. And so they came over and they spent all summer looking at everything, taking all kinds of tests, and what they concluded? That most of the contamination was not from drift, because it's not much drift like glyphosate, but it was coming in the rain and we were astounded by that. We never even imagined that, and so I started doing experiments on liphor to see to say that more, because our farm was one that was affected.

So in America you can have a glyphosate in any chemical can be sold as organic. It's 5% of the EPA tolerance levels. So we don't live in a, we live in a contaminated world now. So even if you're organic is a systems promise. It's not a promise of zero contamination, but we promise we don't use it to grow your food, and so the levels of contamination are normally a thousand times less, if they're any at all, and sometimes there are at least non-detected in some chemicals, but others, if there are any at all, they're normally a thousand times, a hundred to a thousand times less than what the chemical farm researchers are having in their food.

0:44:18 - Chloe

Well, we also know that the farmers that are farming the food are not adding more chemicals to the environment to just continue the cycle.

0:44:26 - Bob

Yeah, because what goes?

on the plant is a very small percent of what is sprayed on the field, so that environmental contamination is way more than the food contamination actually. And so what we started doing on our farm is measuring glyphosate in the rain. We started measuring on our farm and then and then we found it in the rain over the course of a year low amounts, very low amounts, but we saw it in not every rainstorm, but most of during the summer. We did see, and then we, the next year, we compared that with a friend of mine that lives about 30 miles away, and his, his rates were four or five times higher than mine, and so then I thought well, that can't be. If it's coming from far away in the rain cloud, it should all be the same. The same storm should produce the same contamination, but it wasn't.

So now I'm thinking and this now we're going to be testing this hypothesis this year that perhaps it's being blown up in the dust that precedes a lot of these big thunderstorms. It's usually a big wind in front of them, blowing the dust up out of the fields nearby, and then the rain is raining it at dust back down on the ground, and that's the way we're going to look at. This year I'm going to be checking something pasture that's surrounded by grass for 10 miles and would have any, let me say, sprayed in that nearby with the my farm that's half surrounded by chemical farms and the other half is by mountains and and the river breaks. But and then comparing that with the farm that's completely surrounded for, say, 10 miles in every direction with chemical farms. So that's where we are in our experiments.

But the fact that it's being used so highly most farms chemical farms are spraying it four or five times during the fall year, and sometimes at least once, and sometimes twice normally during the growing year, right before they grow the crop and right after they finish harvesting it, unless they're growing GMO crops there's not many GMO crops in our area but then they spray it four or five times during their several times during the growing season. So it's, it's a chemical, it's the most widely used chemical in the whole world now and it's everywhere. It's contaminating everything and there it was thought it'd be safe and, you know, benign.

0:46:42 - Chloe

Why do they spray it during the fall year just?

0:46:44 - Bob

to keep all the weeds been growing to kill all the weeds. So the weeds won't be taken, the moisture out of the ground.

0:46:51 - Chloe

And do you know what the half-life of the life is like? How long does it take for this to break down? Does it ever break down?

0:46:57 - Bob

Well that Monsanto, who introduced it before I hear about them, said don't worry, it breaks down almost immediately in the presence of sunlight and that combines with soil.

It's a chelating agent, so it very tightly binds with any minerals in the soil. So that's why they say it doesn't go anywhere. And the lessons going on the back, writing on the back of a soil particle, that's what we're going to be testing this year. But the fact that they said it breaks down in sunlight isn't true. So we don't really know what the half-life is, because it's way longer than what they claim, which is almost nothing. So they haven't told the truth about anything regarding this party and that's why they're lawsuits now, because they haven't told the truth and they've known way more than they've told, and you've referenced some of the people writing books about that. So it's just the dark side of business that we have to deal with in some way, but as hard as I told you before, because the million dollars that's being made with this it's the most popular chemical, it's the biggest moneymaker they have, for sure.

0:48:03 - Chloe

Oh yeah, I mean, I was in the Home Depot the other day and it was like right up front and I was like, oh, there, it is lovely, even older Colorado, you've got a big old shelf of it here. Yeah, it's pretty terrifying how pervasive it is, and it's one of those things where it's just overwhelming to think about the Goliath on the other side.

0:48:32 - Bob

So remember what happened to Goliath, so just remember how it ended. Well, this is the scary story, but remember the ending and that's what we have hope for. We're going to have hope for, really, that's what we're going to have hope for. They'll have the same ending, for sure.

0:48:47 - Chloe

Yeah Well, and that's why I love talking with people like you who are just so hopeful about the reality that if we all take individual accountability and take these imperfect steps, I always say something's better than nothing. Don't look at health or life as like a. You know you're going to take a 90 degree turn like take incremental steps in the direction of your dreams. You know which? My dream is organic food. Eat organic food. People Take herbs, don't take farms. But it's like you know, like if we can you know, as you said add one more organic vegetable or fruit or whatever to your cart. You know if we can all just keep doing that and keep moving in that direction, you know we actually have a hope of making, you know, some serious change in this world and helping things shift in the direction that's going to be healthier and happier for all of us. It is wild, though. I know that you have sort of stepped away from farming and moved that into the hands of some of your mentees. What are you working on these days?

0:49:54 - Bob

Well, I, after 40 years, I thought I had my turn and I thought it should be the next generation. It's time to get a turn to a farm, at least the last I've done. I'd rented out my farm five years ago.

Five years ago I started a three year retirement program and it took me five years to complete it. But I have now sold all my businesses I had started in conjunction with the farm.

I turned the Camus project over to my sister's son, my nephew, and so he's doing that, and so now I'm focusing on some fun things like a sub trading greenhouse where I can grow oranges and lemons and grapefruit in Montana, and they have a greenhouse six feet below the surface of the ground. I bought a kit from the greenhouse in the snow if you want to go online and look at it in Nebraska, and it's quite fun. I started, I mean, just in my first year, so I don't really know how it's going to work in every aspect, but we went through five days of minus 20 degrees below zero as a high and minus 30 at night right before Christmas, and my greenhouse didn't freeze and the only heat source is geothermal air that's coming in from fans that are blowing through long tubes 10 feet under the ground, bringing in 50 degree air, and that's what's keeping it from freezing and it helps reduce the heat in the summertime too. So that's part of my fun thing. And then I want to take all seven or 800 acres out to the middle of my farm and create a regenerative organic research, education and health institute where we can show farmers how they can convert to regenerative organic and be safe about it and know what to do and answer some of their questions. And those that are in it have been in it for a while. They should be able to stay in it by answering some of their challenges or helping them figure out their challenges, like some perennial weeds that are bad, and then education part of trying to help farmers do that. But also help non-farmers plant and grow gardens successively and harvest them, and have a like to have a culinary portion where we'd have chefs to teach, have a teaching kitchen to teach people how.

What's the do of the turnip other gardener or a zucchini or stuff that a lot of people don't even know what to do with it and so they don't buy it. But if they knew what to do with it, it's not only fun but economically and then very much higher in nutrition. And then we'd like to have a healthcare provider on the staff that focuses particularly in chronic disease and prescribes not pills from the pharmacy but foods from the farm as an answer to that, and some of the things, too, that you were talking about as far as herbal remedies. And so then we'd have the whole picture. We'd have the whole picture from the beginning, of the plant to seed to the end, of how it can help your health, even if you don't have good health at the end, all with the same focus in mind, and that's to reach anti-organic program. That's my long term for the rest of my life. I'll be working on that.

0:52:44 - Chloe

I love that. No, it's so essential. I mean, you know, I know that a lot of farmers have had a difficult time making that conversion successfully and you know, a lot of people really just do not know how to cook vegetables and fruits. Just a quick tip I mean, I cook everything in ghee for the most part, but like some oil, some ghee, some sea salt, saute it, throw some garlic in there, put it in a pan, roast it. It's going to be delicious, it's not. You know, people are often scared of salt and fats and you know those make vegetables delicious, it's not. Cooking is very, very easy once you get the fundamentals. So I love that you're going to work on that and I'd love to have you back so we can nerd out on that and how we can help people.

0:53:32 - Bob

No, that'd be good, but I also want to add to that preservation. So at harvest time you can preserve those foods with fermentation, with making sauerkraut, for example, or pickling, or drying, or canning or any of those freezing, any of those kinds of things that you could then eat out of your garden a whole year around.

0:53:49 - Chloe

No.

0:53:50 - Bob

Or a root cellar. We have a root cellar that we can store our potatoes and we can eat potatoes year round. Because this is what we store with a last till July when the new potatoes start, and we can eat fresh potatoes out of the garden until October when the harvest is in, and then eat out of the root cellar for the rest of the year. We can do that also with carrots and things like turnips also root crops. We can do that and there's almost no cost to a root cellar. I mean, if you have, maybe you have a community root cellar, I don't know, because you have to have a little space, big one, and have one. But we could do that so cheaply. And I think the other key to success is growing our food closer to home and cutting down these food miles, and then you're supporting your rural communities because you're keeping the money right in the community from the very time you pay the farmer, then to the processor, to the store.

Everything could be within 100 miles or 50 even in some areas, and that to me is back to the future, because we had that in the beginning and in the whole set days everybody grew a lot of their old food and they didn't bring in stuff.

We can still have a banana once in a while from Central America as a treat. I don't have a problem with that, but when we bring in staples, we're bringing in. Now we had our 60% of our sunflower, or sunflowers, were grown in Ukraine. Well, that really turned out good, because what's happening there and but this is just an example we shouldn't grow depend on other countries because we can get it cheaper than what we can grow in our old backyard and support our old people. This is a backwards idea of how we should spend our money. So, anyway, I was going to say I put in another one last plug. If you got any of your listeners that really have a tax problem and looking for something to donate to, I would love to visit with them about our research institute, because it doesn't. Research doesn't make money, it costs money, but in the end it provides great information that can help a lot of people, and that's the goal.

0:55:49 - Chloe

Well, I will nerd out with you about some ways to help you guys get some money, because I think I think we can play with some things. But but yeah, it is I, you know, if you're listening and you can put your money where your mouth is. You know, Bob is the real deal. He's been doing this for quite a long time and, you know, truly one of my heroes. I could not, I could not respect you more and the work that you're doing and the advocacy that you're doing. I think it's so exciting and it's so essential and again, I'm super grateful for your time and I look forward to nerding out with you some more. Very, maybe the barman harass you up there.

0:56:30 - Bob

That is fine. Come up sometime to see us. I really appreciate what you're doing because I can sit here and big standing one time with population of 600 and say all I want and we got the whole country that needs to hear this message, and a lot of people are saying it in a lot of different places, but so often they're isolated and so many people don't have any clue in the world why they should even support this organic stuff or even what it is, and yet it is the answer to so many problems of beset us, and people like you can help make the connection between what some people are doing to solve the problem and the rest of the people. That could actually be part of the solution, and just their buying habits could be so much. If they understood the potential they have in their pocketbook. That's, that's what we need to explain to them how much good could be done with so little and just constantly, at a little at a time. So thank you.

0:57:23 - Chloe

Yeah, little by little. No, it's, it's, it is, it is so true. We just need to take step by step, all right, well, thank you so much, I'm going to stop recording.