GMOs REVEALED

Episode 4
Transcript

Dr. Gentempo: Welcome to episode four of GMOs Revealed. I'm your host, Dr. Patrick Gentempo. Today's a great day. We start out with my interview with Dr. Toni Bark. Tony is a medical doctor who's also an activist in the area of GMOs. My interview with her, I think you'll find quite stimulating. What's also interesting about it is that in the next piece of episode four, we have an interview with Mark Kastel, and Dr. Toni Bark is conducting that interview in our behalf. Mark is the founder of Cornucopia Institute, which is industry watchdog over the organic industry, something that is very important because we can't have [inaudible 00:00:38] and malfeasance. We have to make sure that what we're putting into our bodies is what we think we're putting into our bodies. Check out that interview. I think you're gonna get a lot of great information and stimulation out of it.

Then lastly, we're gonna have a little bit of fun, but it's not uninformative fun. It's gonna be fun that's gonna teach you something. We're gonna be doing a walking tour of NoniLand, which is David Wolfe's farm out on the island of Kauai. I have to tell you that after I sat and did that interview with him, which was in episode three, we went out and did a walk, and it brought to life everything he was talking about during the episode. You're gonna enjoy that. It's informative. The landscape is just so beautiful, and you're gonna find out things about farming and growing healthy, clean, nutritious food that you probably have never learned before. Even if you don't farm or raise your own food yourself, you're still gonna learn something that's gonna teach you about what to look for when you go to the grocery store. Anyway, take that walking tour with us. You're gonna enjoy that. This episode is sure to please.

I've been very much looking forward to this interview. If you would just tell us your name and give us a brief bio sketch.

Dr. Toni Bark: Sure. As you know, my name is Toni. Toni Bark. I have a medical degree. I also have an environmental accreditation and I have a master's degree in medical science with a focus on disaster management. I don't know that I was interested in the environment until I got older and realized what was going on. Then I had a huge interest in the environment, big enough to go study for my lead accreditation. What's been

going on, we've been going in the wrong direction, progressively going in the wrong direction. The GMO thing wasn't even an issue. Pesticide's been an issue for decades, but it seems like the pesticides have become more of an issue with the onset of GMOs. Going back to my bio sketch, as things have gotten worse, I've kind of branched out learning into other things.

Dr. Gentempo: We were fortunate enough that you were able to conduct a lot of our interviews because you have such a wonderful knowledge base and have such a passion around this particular subject, so thank you for that. I believe is important is understanding all the interconnections and synergies amongst all these things, because I think one of the challenges is that too many people are trying to isolate small details and not seeing the so-called big picture. One of the things that you had said prior to the interview, which I think is worth talking about, is the implications that now they're proposing GMO trees and how that even widens the picture even more, so talk about please.

Dr. Toni Bark: Yeah. It really does. I think that trees are one of those plants that people look at and admire but don't really understand them as social beings. The trees communicate with each other. They communicate through their roots, they communicate through [inaudible 00:03:33] in the ground. Forests are highly interconnected. There's a reason that some trees are very slow growing, they're the baby trees and they can be really slow growing, and there's a reason for that, because the slower they grow, the longer they live. Part of that is controlled by the mother, by the parent tree. There's all that, and then there's show they reach out and touch each other, just what we can see visually, but also under the ground they actually are interconnected. If you kill one tree that's interconnected to another tree, often that other tree can die. They're much more complex than we know, and they're certainly highly adaptive.

The implication of a generically modified tree for a specific tree, is I'm assuming not taking into account, and I can assume that safely because I understand the GMO crops that have come before them. They haven't taken into account the holistic environment and the life cycle of everything around

those plants. We can assume that that's how these trees have been engineered as well. They're for specific traits. If it's for lumber, I'm assuming growing faster, or there could be any number of reasons. There's a lot of things that we're doing as humans that are disrupting the tree life cycle and their interconnectedness and that is causing them to be more vulnerable to infections.

Instead of doing the right thing, which is standing back, listening and studying trees and see what they really flourish and what they need in a long life cycle, because 80 years is a short life for a tree. We think of trees only living 80 to 120 years because they're cut down and lumber at that age, but the truth is that trees will live on to hundreds and hundreds of years. There's trees that are known to be thousands of years old. They obviously know what they're doing. They know what they're doing. They're living longer than we are.

Dr. Gentempo: We need to coexist with them, that's for sure.

Dr. Toni Bark: We absolutely need to coexist with them, because without the trees, we're really screwed. We need trees for oxygen.

Dr. Gentempo: The whole point here is that they're looking to now genetically modify trees. We get to a point we're like playing God with what's around us, but we don't have that omniscience to be able to do it.

Dr. Toni Bark: No only that, God, if you talk about God, whatever that means for you, it was an evolutionary long process with trial and error and all these other systems that adapted to each other. To think that we can just create different traits or better traits by bringing in DNA from other species, to think that we can do that and not affect everything else is wrong, and it's the mistake we've made with farming, and we're making the same mistake now with arborism, with trees. Really, what we needed to do was to go backwards. Monoculture hasn't worked. Monoculture breeds infection. Instead of saying, "Okay. We tried this, it's not working. Let's go back and try regular farming methods that we did years before that worked better." We're just gonna create more and more problems. The big issue is what happens when those genetically engineered trees get spread and now affects forests that we rely on for oxygen, for cleansing the

air, for cooling the earth's surface, and affects them negatively in ways we can't even predict. We have no idea. It's just one big experiment with no precautionary principle at all.

Dr. Gentempo: What got you interested in the GMO issue in the first place?

Dr. Toni Bark: Two things. The health issue. Pesticides are not healthy. When you have a plant that's, [00:07:05] say tolerant, that means you can pour glyphosate on it. That is actually what's being done. Who wants more pesticides? I understand, and these are herbicides as well. These are herbicides, they're actually antibiotics for the most part. They're disrupting anything that works through the shikimate pathway. People can say, that's not human cells, but it's actually all the bacteria that we rely on on our skin, in our gut, our gut's responsible for making our neuro transmitters, for our immunity, for digestion, for vitamin levels. Come on, how can you say that's not related?

That kind of got me into this whole GMO, but the other aspect is that this is being forced upon us. It's an experiment that's uncontrolled and unfettered. We have no idea what we're doing. Once you start getting the GMO seeds spread and infecting other people's crops that are supposedly organic or just commercial, regular non GMO, it's too late. It's contaminated. The contamination issue is huge. People don't realize that. If, for instance, it's a bad idea and now everything's contaminated, we're done. We have no way to go backwards. When you make it so everyone's been tainted with GMOs, or just, let's say, RoundUp, just glyphosate, it's in everyone. Now you can no longer say whether it's affecting people's health because we have no control group. That's another issue that, for me, it's just horrible. This is fascism. I don't want that. I don't want that in my environment. I don't want my children eating that. I don't want to eat it. I should have a right to say no.

Dr. Gentempo: You've interviewed a lot of experts about GMOs, some who are maybe pro GMO and many that are against GMO. Can you highlight some of the interviews in some of your experience?

Dr. Toni Bark: Yeah. I interviewed a Canadian. He was an agricultural financial advisor. He was a very ...

Dr. Gentempo: Agriculture financial meaning he consults with farmers?

Dr. Toni Bark: Yes, and how to make more money. Of course, that involved using GMOs. That was his argument and that it's great for the farmers and it's great for people and they're safe. This was his stance, and he was really ... I believe that he believed everything he said. I want you to know, I don't think he was a liar at all. I think this guy ...

Dr. Gentempo: He was sincere in his beliefs.

Dr. Toni Bark: Sincere in everything he said, but he didn't quite understand the concept of attributable risk, which that concept is that unless you compare an unexposed population to something you're studying, you cannot say there is zero risk. You cannot say anything about the risk unless you do that. They haven't done that, and I got him to admit that. He had never heard of attributable risk. He didn't know the concept, and I kept saying, well, if we don't have a controlled population where we have people who've not been touched by RoundUp, let's say, then we don't have a way to study its effects, because that's gold standard. You've gotta look at a controlled population, and if we don't have a controlled population anymore, we can never make that statement. That was a big problem for me with him.

Dr. Gentempo: He's obviously nonscientist, right?

Dr. Toni Bark: Right, and he said that.

Dr. Gentempo: You're gonna have confirmation bias. Somebody who's got a vested interest, wants to know the talking points to support their position, but when it comes down to the actual data, you're exactly right. We basically, this is an uncontrolled experiment that's released out into our environment. It is something that is highly disturbing, and there's the two dimensions of it I'd like to hear your view on both of them, one of which is GMOs themselves, in and of themselves separate from sprayed on. Then, of course, the RoundUp and other things that are sprayed on GMOs, what the effects of that is. Let's start with the GMOs in and of themselves. Some people, even in this program, some people said, "I'm not that concerned about GMOs in and of themselves. It's what's sprayed on that's a concern." How do you see it?

Dr. Toni Bark: Yeah, because we all equate pesticide with toxins, that's I think a [inaudible 00:11:30] reflex, and I agree with that and for most people, and I am concerned about the pesticides. BT toxin, let's talk about that. That's a gene that's been inserted in corn. It's a gene activator or gene suppressor. These fragmented DNA pieces that come from other species that are put in to turn on and turn off genes, do we know that they're not turning on and off genes in our cells? We don't know that. If they're turning on and off genes in pests, why couldn't they be turning on and off genes ... We're closely related. There's a lot in common with our DNA and our systems. To also create genetically engineered things that change a trait in that produce, in whatever it is, a tomato, do we know how that is gonna affect us when we ingest it? It's not been studied. It sounds like just in theory it could be a problem, like, "Oh, maybe it's a small problem," but we really don't know. That's the problem. We really don't know. While we do know that pesticides cause cancer, they kill our bacterial flora, which can create all kinds of problems. We know that they're scary. I think that's why most people say, "Well, I'm more concerned about the pesticides and less concerned about the GMO," because we don't know.

Dr. Gentempo: It's interesting that if there's something that is like this that, again, once the gene's out of the bottle, you can't put it back in. We don't know. Then it's something that should be known before we go into it, right?

Dr. Toni Bark: That's the precautionary principle.

Dr. Gentempo: That would make some sense.

Dr. Toni Bark: It would make sense to know what we're doing before we go do it unabated. I think it would make a lot of sense. To be honest, I don't think that is something we can know in one generation.

Dr. Gentempo: There's little doubt in my mind, it's not even the distant future, but probably in the near future this is gonna look like lunacy. Literally lunacy.

Dr. Toni Bark: If there is a near future. I don't know how far our future's gonna go for mankind at the rate where we're going. Really. I'm not joking. In a nutshell, we know the dangers of

pesticides. I understand people saying pesticides concern them more.

Dr. Gentempo: And the herbicides.

Dr. Toni Bark: And the herbicides. We don't know the real risks fully about the genetic modifications and the genes and the splices of the genes that we're mixing with our food, and how that affects us. That's more on an unknown risk, I think that's why people are less [inaudible 00:14:02] to reflect, "Well, that concerns me as much as the herbicides or pesticides."

Dr. Gentempo: All of it is concerning. Some of the people that we interviewed did cite some studies in mice that were fed genetically modified then growing tumors, et cetera. There's at least some data that suggests, this could be a problem.

Dr. Toni Bark: Oh, yes. If you look at when they were introduced, like 97, 98, liver cancer, which used to be very rare and really just related to hepatitis B has exponentially climbed. Liver cancer is now ... everybody gets liver cancer. We are seeing cancer in people younger and younger. It's amazing how many stories I hear, 20 year olds diagnosed with colon cancer. The cancers we're seeing at such young ages is astounding and is absolutely brand new. It is the new normal for the younger generations training, it's the new normal for people in school, like in college. What's gonna happen is as we die off, it's the new normal. People think it's normal that it's always like that, but it wasn't. This is normal, yes, but it's the new normal because we're being poisoned on a daily basis.

Dr. Gentempo: Yeah. Now there's awareness around this, and it's very tragic situation that has untold effects that we're discovering more about every single day.

Dr. Toni Bark: Right.

Dr. Gentempo: Now you've got a mom at home with kids, family, et cetera, or anybody else ...

Dr. Toni Bark: Forget that. College kids going out to a Thai restaurant or the local pub or the local restaurant.

Dr. Gentempo: God forbid their school cafeteria.

Dr. Toni Bark: Yeah. Absolutely. Their school cafeteria. Can I tell you, it is amazing. I just went to visit my stepson, who was graduating at Madison. I'd visit my son up at McGill, and my son at McGill is hypervigilant, so he carries his own olive oil, coconut oil. He won't eat canola corn. He learned from me, but that means he can't go out to eat at a lot of restaurants. We don't as a family. We go to very few restaurants. I call ahead and ask what oils they use. If they say "olive oil," I always ask, "Is it extra virgin olive oil that hasn't been cut," because most of the time, it's 30% canola. People don't realize that.

Dr. Gentempo: Wow.

Dr. Toni Bark: People don't realize that. I feel like these kids are at colleges ...

Dr. Gentempo: Hold on for a second. These are the tips I want people to get.

Dr. Toni Bark: No, they need to know.

Dr. Gentempo: You're shopping at a store, you see, "Oh, this is extra virgin olive oil." What do they need to look for to make sure that's not cut with ...

Dr. Toni Bark: When they look at their olive oil and their avocado oil, in the stores, the extra virgin olive oil is not cut. In the restaurants, the stores that restaurateurs buy their restaurant suppliers, that's the norm to have it cut. They know that. It's cheaper. They pay a lot less. There's a little olive flavor. They can say it's cooked in olive oil, but it's usually cut with soy bean or canola oil, one or the other. When you go to the store and you buy avocado oil, you have to make sure whatever you buy that it does not say in small print on the bottom, "mixed with canola," or "mixed with soy bean oil," because that is common. It's the cheaper varieties.

People think when they buy ... Can I mention a store? People think when they buy prepared food at Whole Foods that it's not GMO, but you know what? They use canola oil on everything. Only a few times do I see organic canola oil mentioned. Most of the time it's canola oil. Every cake they make, at least in the Chicago area, the West Coast might be

a little different, like in LA or San Francisco where people demand different, every single cake or pastry made by them is made with GMO soy bean or canola oil.

Dr. Gentempo: For the average family, what's the low hanging fruit, the steps they can make that are massively leveraged that can make a difference, because you can take this to very finite levels, but as a start, saying, wow, you can gain a big chunk of advantage if you either did this or stopped doing that. What are the this's and that's?

Dr. Toni Bark: Throw out your canola oil. Throw out soy bean oil. Throw out corn oil. If it's organic, fine, and you want to cook with it. It's not the best oil. Vegetables oils aren't good for you anyway.

Dr. Gentempo: Organic can still be GMO.

Dr. Toni Bark: Well, theoretically, no. Theoretically, no, but we know that they're contaminated because we've seen studies. No. There's an advisory committee at the FDA about organics, labeling organics. If you own an organic firm, you can be on the committee. What we see is these large companies that are not organic-minded at all buying up smaller organic firms so they can put somebody on that committee. What they'd like to do is have GMO stand for "genetically modified organics." Yeah. They'd like to get genetically modified organisms without pesticides in that labeling. As far as I know, so far that has not happened. When you see "organic," it means no GMO, but is there contamination? Yes. Is a lot of canola oil contaminated? Organic canola? Yes. It is. That's a different issue, but vegetable oils are not good oils anyway, so just throw them out. That's not an oil you should be cooking with.

Use things like coconut oil or grape seed oil for high heats or sustainable palm oil for high heat, or organic [inaudible 00:19:11] butter if you want. Use things that can withstand high heat. Avocado oil stands high heat. For your salads, use your olive oil, extra virgin, not cut with anything else, or avocado or walnut oil. Those are safe oils. Tell your favorite restaurant, I'm not coming back unless you can cook my food in something that's not full of pesticides.

Dr. Gentempo: What you said is important, the fact that you ask about it or request it's, I think, those requests as they come in start to change the behaviors of restaurants and others. I can remember, I was talking about this in another interview, but I could remember there's no such thing as gluten-free options out in stores or restaurants very often. Now they're everywhere.

Dr. Toni Bark: Everywhere. People think it's really hard to do. It does require vigilance. It does. We need to demand better. We need to demand it, and if people don't, then it's not gonna happen for them.

Dr. Gentempo: Any other suggestions on the low hanging fruit side?

Dr. Toni Bark: Yeah. I think people have to think that when they eat farther up the food chain, meaning dairy and meat, that if they're not eating organically, because a lot of people think, "Well if I eat meat, it's better than eating this broccoli that's been sprayed, because I can't get organic broccoli." Actually, you're getting what we call bioaccumulation. If you're eating an animal that's been raised commercially, all the pesticide it's eaten over its lifetime is concentrated in its tissue. It's not better. You're better off having the broccoli. You're better off having the cauliflower that's been sprayed than having the meat or the dairy that's bioaccumulated all these pesticides.

Dr. Gentempo: You're making a really interesting point I haven't heard before, is that there is, as you're moving up the food chain, there's kind of another graph you can track basically saying that the more complex or the thing you're eating or higher up the food chain it is, the more downstream toxic stuff that might have floated up to it.

Dr. Toni Bark: Yeah. Think about it. The longer an animal's lived, the more food it's eaten, the more concentrated the herbicides and pesticides and chemicals and antibiotics will be. I can tell you that cruciferous vegetables are more protein per calorie than meat. People don't realize that. For your viewers, that's cauliflower, broccoli, brussels sprouts, cabbage, kale, arugula, collards. That whole family is highly [prognatious 00:21:32].

Dr. Gentempo: You basically alluded to this sort of potentially dark future and for obvious reasons. If you just follow the trail, you can see where it's gonna lead.

Dr. Toni Bark: Yeah. It's not a good place.

Dr. Gentempo: It's not a pretty thing.

Dr. Toni Bark: No.

Dr. Gentempo: Is there anything that you see that gives you hope that says that maybe we can recover from this. Maybe there's gonna be a consumer revolution that's gonna cause this ...

Dr. Toni Bark: Yeah. I think more people are waking up, and if more people are waking up and they're willing to make noise then maybe we have some hope. It's a big country with a lot of people, and there's a lot of people who aren't awake and a lot of people who don't have the time to be awake. That's a whole nother story, because they're struggling to make ends meet. That's a whole nother story. Those are the ones being poisoned the most usually.

Dr. Gentempo: Is that where you think the big corporate interest are counting on?

Dr. Toni Bark: Absolute- Look.

Dr. Gentempo: Ignorance is their friend.

Dr. Toni Bark: People say, well the government or the corporate interests will never want to make sick people. Really? Are you kidding me? It's in their benefit, because the food and pharma are so inextricably twined together at this point that they benefit. They sell you poison. You're eating poison and then you have a disease that you need to be on three medications for the rest of your life for. That's a perfect design. You couldn't come up with a better design.

Dr. Gentempo: Everybody's got to eat.

Dr. Toni Bark: Right.

Dr. Gentempo: If we can cause that behavior to lead to the use of another product, then you've got a pretty perfect combination.

Dr. Toni Bark: I wish I could say I have a lot of hope. I would say that the people are waking up. That's great. If people are waking up faster, it would be way better because we're at a critical point. We have to hold our politicians accountable. Again, a lot of it comes down to lax standards, what our government allows food producers to do, and they not in link with them, just like with the pharmaceutical producers. It's all in cahoots. We really need to rewire how this country is working and we need people to wake up and be vocal. It's happening, but I don't know if it's happening at a rate fast enough. I wish I could tell you, I know you were probably fishing for a brighter outlook.

Dr. Gentempo: No, actually I'm just seeing what you see and if there is one. If you were put in control and said, "Okay. Here's how we're gonna fix this thing. This is what we actually have to take right now."

Dr. Toni Bark: We need to teach kids starting at a young age. It needs to be in the curriculum, but that's not what's in the curriculum. It's the opposite. What I'm hearing form kids taking the ACT or the SAT questions on should GMO stand for genetically modified organics, you cannot believe what's seeping into curriculum.

Dr. Gentempo: I gotta tell you, I was at a big conference with about 6,000 gifted high school students who are looking for a career in medicine and medical research, and I'm backstage because it's my friend's event, and I met a Nobel laureate, he was shaking hands, talking a little bit who goes out to give his talk, and the central focus of his talk, and he says with great emphasis that don't let anybody tell you that GMOs are bad or GMOs are bad for humanity or let them scare you. Those people are wrong. I'm a Nobel laureate, and it's gonna solve the hunger crisis throughout the world. I'm sitting here saying, "My God." An otherwise very intelligent human being who obviously ...

Dr. Toni Bark: He might believe it.

Dr. Gentempo: There's no doubt he believed it, but he couldn't have been more wrong.

Dr. Toni Bark: Poverty is what's causing the hunger crisis and drought. It's a geopolitical issue.

Dr. Gentempo: A distribution issue. We export food out of this country. To see that now there's all those young minds and that's what he's saying. It's the opposite. I believe also that through projects like this with millennials and the way they consume things online that they're gonna hear this message and they're gonna share it with their friends. There could be this sort of uprising that would initiate some paths to change, which I think are desperately needed right now. For the people who are watching this, especially the young people, what do you think they can do to be a force for change here?

Dr. Toni Bark: I think if millennials watch this, take the time to watch it, they'll start asking questions and looking on the internet for answers from places that don't belong to the industry that are funded by the industry, and that they start talking about it. In some ways, even though poor health is common now, if they can learn that this wasn't always the way it was, that over half of the pediatric and millennial 1920-something population wasn't on medication 40 years ago, or 30 years ago, that this is new, then maybe it will start them to ask questions. I hope so. I hope that everybody sees this and asks questions and decides they're not gonna take this sitting down and that they're gonna demand better and demand changes. That's all I can hope for.

Dr. Gentempo: With your hope, I want to say that I appreciate, and not only coming and having this interview, but all the work that you're doing out there ein the world, traveling as much as you do. I know that you're speaking out as much as you can possibly do.

Dr. Toni Bark: Which is a lot.

Dr. Gentempo: It's a lot, but I guess it's what you feel like you're here to do.

Dr. Toni Bark: Yeah, I guess.

Dr. Gentempo: Very much appreciate your time and sharing your wisdom with us.

Dr. Toni Bark: Thank you. It was an honor.

Mark, I'd like to start out with you telling me who you are, what your background is, and what institute you work for.

Mark Kastel: My name's Mark Kastel. I work for the Cornucopia Institute. We're based in Cornucopia, Wisconsin. We're a farm policy research group. We look at farming and food issues and act as organic industry watchdogs.

Dr. Toni Bark: Organic industry watchdogs. That's interesting. Organic industry watchdogs as opposed to food industry watchdogs, which means there's some issues possibly with what's labeled or certified organic? Is that correct?

Mark Kastel: Organic agriculture's been around for a long time, in fact, before the 1950s. Before the 1950s, really all farmers were organic farmers. It wasn't until after World War II that the agrochemicals became widely available. Starting in about 1980, we saw the commercialization of the organic sector where consumers wanted to opt out of industrial food. They wanted food that was growing in a more environmentally sensitive manner. They were concerned about agrochemicals, they were concerned about drug residues, they were concerned about the humane treatment of animals, and they were willing to compensate farmers more fairly so that economic justice was really built into that organic price. As the industries become more and more lucrative, it's not over a $30 billion food sector here in the United States, it's gotten very attractive to the multinational agribusiness that control most of conventional food. They've gobbled up many of the pioneering organic brands. Our job at Cornucopia is to protect the livelihoods of family scale organic producers and the authenticity of the food that people are so hungry for.

Dr. Toni Bark: Very interesting. That, and I want to make sure I really understand the implication of that, if food is labeled organic, it still is grown organically even if the parent company might be a very conventional or a company that uses GMOs. That still means that the food is grown organically, correct? Is the certification still valid?

Mark Kastel: That's the theory. In general, we can trust the organic label, but there are people pushing the limits both in terms of the spirit of the law and the letter of the law. The question is, can you produce organic milk on a 10,000 cow factory farm?

Can you produce organic eggs in a henhouse with 100,000 birds that never go outside?

Dr. Toni Bark: 100,000 birds.

Mark Kastel: 100,000 birds. Forget about the fact that the organic foods production act mandates that animals get treated in a certain manner. One of the requirements is that all organic livestock have access to the outdoors. That all organic ruminants, so dairy cows, beef cattle, sheep, have access to pasture. God created these creatures to graze on grass, not sit in front of the feed trough in a CAFO, in a concentrated animal feeding operation. We have large corporations, large food manufactures pushing the limits of what truly is organic and lawyering up and hiring lobbyists and playing the same games in Washington that they played with in the conventional food sector. The other factor we look at is imports. We don't even trust a Chinese for ingredients in our dog and cat food any longer after the melamine scandal. Why would we trust them for the supply of ingredients in our organic food that we're feeding our children?

Dr. Toni Bark: Is that the case?

Mark Kastel: We've seen an exponential increase in imports from countries like China, India, Central and South America, the former eastern block, former soviet block, eastern European states. Many of these states, like China, have endemic levels of commercial fraud. Counterfeit name brand goods, intellectual property rights, piracy. There is documentation of fraud within the domestic Chinese media in the organic industry. Why would we trust these people? The USDA has not been doing a judicious job as mandated by Congress to make sure that our organic food is beyond rapport.

Dr. Toni Bark: At the FDA, I'm assuming there's gotta be a committee, like an advisory committee, some kind of committee on organic food, what constitutes organic food in terms of who dictates what's labeled and how things are labeled. There must be a committee.

Mark Kastel: At the USDA.

Dr. Toni Bark: It's at the USDA not FDA. Okay. At the USDA ...

Mark Kastel: The law that charged the USDA to oversee organics is a very good law. Congress passed the organic foods production act of 1990, and one of its elements was creating a advisory panel, the National Organics Standards Board. It's a broad-based panel of stakeholders. There are four farmers, there's a conservationist, there's an organic certifier, there are organic handlers or manufacturers. All the different stakeholders. They did two things. One, they loaded it up with a public interest representative and independent farmers so that agribusiness could not dominate this panel in theory.

Dr. Toni Bark: In theory?

Mark Kastel: In theory.

Dr. Toni Bark: What are you implying?

Mark Kastel: Both during the Bush administration and the current Obama administration they appointed a number of corporate shills, if you will, into these spots that were reserved by Congress for independent stakeholders in the organic community. The most egregious example of that was during the Bush administration, I wish I was making this up, they appointed an executive of General Mills to sit in the public interest or the consumer spot.

Dr. Toni Bark: What?

Mark Kastel: There was such an uproar led by Consumers Union, publisher of Consumer Reports magazine, one of our allies in fighting to maintain the integrity of organics, that they withdrew her name and later appointed her, if she was a food scientist, in the one seat set aside for a scientist. Now, I'm sure Congress did not envision putting just one more corporate executive on the board in the scientist spot. They probably thought they were gonna put an academic or someone with an independent voice there. We have two farmers on the board today, as an example, quote farmers. One is a full time employee of Organic Valley, which is a farmer-owned cooperative, but it's a billion dollar business enterprise. The federal law says to qualify in that slot you need to own or operate an organic farm. She did not own or operate an organic farm when the USDA appointed her.

There's another farmer on that board appointed by the Obama administration who works for Driscoll's, I think the world's largest dairy producer. They don't grow organic strawberries. She is not an owner or operator of an organic farm, but when we did a freedom of information request, we found out that just a couple weeks or literally days before she was appointed to this board, Driscoll's became certified to produced the nursery stock, the plants that organic growers would use. Whether they're actually producing organic nursery stock or that's just on paper so she could qualify, I can't really testify to. Unfortunately, there were a number of highly experienced and qualified organic farmers who wanted to be on that board, who had been nominated or applied to be on that board who were passed over so that these corporate representatives could sit in these seats reserved for independent farmers.

Dr. Toni Bark: This is the board at the USDA that oversees organic certification.

Mark Kastel: This is the board that sets the rules. Most federal advisory boards or FACA boards are really just that, advisory. Congress actually gave this body statutory authority to do two things. One, advise the secretary on policy issues. When you're deciding how much a cow has to graze to really qualify for being organic, this board helps determine that. The other is, anytime a synthetic is used in organics or anytime a nonorganic agricultural product is used in organic food ... Let's say it's not available in an organic form, it has to be reviewed, vetted and recommended for use by the NOSB, the National Organic Standards Board, before the secretary could put this on the list of approved substances. This was the buffer that Congress created.

Dr. Toni Bark: If we have so many large conventional food producers buying up these smaller organic businesses, now we have General Mills or Kellogg or Clorox owning organic companies, companies that produce organic produce, organic food or organic other issues, other items, if the large parent companies have their own self-interest now representing the consumer and the scientist on this FACA, this Federal Advisory Committee, that actually has statutory rights, it's gonna dilute down what's truly organic, right?

Mark Kastel: It has the potential to do that, and it is. When I talk about synthetics and organics, we can probably all agree that organic cupcakes are good. I like organic cupcakes. To make an organic cupcake, you need baking powder. There's no such thing as organic baking powder. That had to be reviewed and checked to see that, A, it wasn't deleterious to human health, B, it didn't injure the environment by its use, that it was compatible with organic systems, and finally, that it's essential for use in organics. In other words, you can't make a cupcake without baking powder. If you could, you can't approve that synthetic. Now we have a board that's looking at all kinds of gimmicky nutraceuticals and food contact chemicals, and they're saying, "We use those in conventional. We need to be competitive in organic food. We need these approved."

Here's where the conspiracy comes in. There's a report on the Cornucopia website entitled, "The Organic Watergate." This was the wake-up call for us. We started looking at how the materials were reviewed. Not only do we have a board that's been stacked with agribusiness friendly representatives, the board is not a scientific body. Again, there's only scientist out of 15 members. It's a lay body of very experienced stakeholders in the organic community. Congress knew that when they set it up, so they enabled the board to go out and hire technical advice, scientific advisors to do what's called technical reviews of all these materials. When we took a look at who was doing the reviews, their corporate executives and consultants to the agribusiness industry.

We found a number of materials that has no business being in organics, like carrageenan, a product that can cause severe gastrointestinal inflammation and health problems, even tumor formation. One of our jobs at the Cornucopia Institute is to out this duplicity and to put pressure on our regulators, either through the regulatory rule-making process, or if necessary, in court. The other way that we could create pressure is to empower organic consumers. If you go in our website, we rate every organic dairy brand, so you can figure out which ones come from that 10,000 cow factory farm and which brands come from family farmers whose cows have names, not numbers. Likewise, you can take a look at which

brands of organic soy milk or chocolate milk or sour cream have carrageenan in there and which brands don't. Just by virtue of the fact that there's for every organic product, there's someone manufacturing it without carrageenan proves that it's not essential, which means not legal to use in organics.

Dr. Toni Bark: Interesting. I'm curious, GMOs come up a lot, and I know that's not something that your organization really looks at. However, do you think because this advisory body now is so coopted, do you think that we'll be finding GMO, genetically modified foods in things labeled organic?

Mark Kastel: Yes and now, but I should clarify, we do look at GMOs.

Dr. Toni Bark: You do? Okay.

Mark Kastel: We have our own little niche where we look at the economics and the politics. There are lots of groups looking at the health implications, which is very difficult to do because the biotechnology industry, Monsanto and others, actually have in their contracts with farmers the technology agreement that prohibits the farmers from using any of their crop for research other than agronomic research and yield research. They can't partner with a physician or a medical researcher to take a look at the impact on human health or the impact on laboratory animals. They really impeded our ability to understand whether GMOs are safe.

Dr. Toni Bark: I want to go over what you just said, because if I'm understanding it correctly, it's astounding. I know there's a paper recently that's just been retracted or about to be retracted, [inaudible 00:42:07] work, and I think there's a Doctor Swanson who's done some work. Are you telling me it's ...

Mark Kastel: I don't think that paper was retracted. I think it was not retracted by its authors.

Dr. Toni Bark: No.

Mark Kastel: There was a lobbying campaign to cause the publication to retract its publication.

Dr. Toni Bark: Exactly.

Mark Kastel: It doesn't mean necessarily that that material is invalid.

Dr. Toni Bark: Exactly. Oh no. I wasn't implying at all that it was invalid, but thank you for clarifying that.

Mark Kastel: Sure.

Dr. Toni Bark: What I'm trying to find out is that, are you telling me that's illegal, the biotech industry has made it ... they've dictated somehow that no one can really do research on their seeds?

Mark Kastel: Research without their blessing.

Dr. Toni Bark: Without their blessing. Who are they giving the blessing to?

Mark Kastel: True. That's the question. We have a very limited amount of research happening in terms of research on laboratory animals. Most of these studies last 30, 60, 90 days. There aren't lifetime studies generally being done. The real big study that's being currently conducted are on 300 million-plus guinea pigs, the American population. We will find out in subsequent generations what impacts these have. The few animal studies and studies on livestock that have been done show some pretty disturbing evidence of problems in terms of organ development, in terms of their impact on our gastrointestinal flora. We now know that the pesticide genes are inserted, and one of the types of Monsanto corn products is fining its way into mothers' bloodstreams and the bloodstreams that are feeding our fetuses. What impacts they'll have are somewhat unknown, but we feel, in the organic community, much more comfortable operating under what we call the precautionary principle, which what really governs the regulatory approach in Europe that first we prove that it's safe, then we introduce it into the human food system. How many products have we introduced whether its sodium saccharin or a whole list of other synthetics that we find ...

Dr. Toni Bark: Aspartame.

Mark Kastel: Aspartame.

Dr. Toni Bark: Acesulphame.

Mark Kastel: Aspartame is still on the market. How many materials have we introduced that were perfectly safe what we've subsequently decided or patent drugs that we subsequently have decided really destroy human health and are highly dangerous and then removed after a lot of damage is done. The philosophy of the organics is that we don't take those risks, that we depend on truly natural food production, and that if we're going to introduce anything else that it'd be very, very carefully studied before we start putting it in the plates of our children.

Dr. Toni Bark: The mere fact of the biotech industry has to approve who's gonna be allowed to do research on their seeds or on their new products. Yet, what you hear proponents of the industry say, one, that if you question the safety of GMOs and some of these pesticides that you are antiscience or that you ... TED Talks don't even allows you to question the safety of GMOs on their site.

Mark Kastel: Don't worry. Be happy.

Dr. Toni Bark: Yeah. We can go into that too, but my question is, their side, the proponents of synthetic food production say that, "Well, there's no proof that GMOs aren't safe. There's no proof that these things aren't safe." Yet, then they're impeding the research that could show it.

Mark Kastel: Jesse Jackson once said, "If you want the right answers, you have to ask the right questions." These people don't want to know, and they've made it very hard to find out. There's a lot of pressure in the research arena at for instance, the land-grant universities, that we have more and more of our research at public institutions being funded by corporate agribusiness and corporate biotechnology interests. If you're an independent researcher and you want to study some of these problems or potential problems you run up against a culture that says, "Are you sure you want to that? Even though you might have access to public funding, you're going to endanger our relationship to our biggest private funders. Do you want a future at this institution? Do you want a future in this profession?" People are intimidated and back off. They've also seen how independent scientists that do research are victimized and intimidated when they do publish or attempt to publish research that does shine light

on some of the problems. There's a piling on and a ganging up. It's really unprecedented in the scientific community that there would be so much peer pressure to shut up.

Dr. Toni Bark: Wow.

Mark Kastel: How many chemicals have been introduced commercially and later withdraw because we find out they cause cancer or some other deleterious health impact, like sodium saccharin? That's not an exception. It's common. There's a lot of pressure on scientists at our land-grant public universities to shut up. There's a lot of pressure, even though they might have independent funding since such a preponderance of our funding for agricultural research is coming from the biotechnology sector, coming from corporate agribusiness, that the message to these independent scientists all too often is, "Are you sure you really want to do this? Are you sure you want to potentially alienate our largest donors? Do you want a future at this university or in this department?" The message is clear. Be quite. Get along.

Dr. Toni Bark: What if they're tenured? Is there is still pressure on them to not ...

Mark Kastel: You know, there is pressure because they're all interested in funding, so they could end up being ostracized. Certainly, out in the marketplace of ideas, there's been a piling up, if you will, on scientists that have a relationship with the biotechnology sector ganging up on those that would dare challenge its propriety.

Dr. Toni Bark: We see this in pharma as well.

Mark Kastel: Absolutely. It's the same players in many cases.

Dr. Toni Bark: It is the same players, isn't it? Can you tell me just a little bit about that, because I'm aware of some of the players being the same.

Mark Kastel: Many companies are making patented drugs and agrochemicals like pesticides and genetically engineered seed. The interest and the crossover, the same scientists work for different firms. There's this revolving door between these chemical and genetics companies and drug companies

and the FDA, and even when they aren't passing through that revolving door, they've many times gone to the same university programs and belonged to the same country clubs. They're not rubbing shoulders with farmers. They're not rubbing shoulders with consumers who have a real concern about what's in their food. There's really almost a mindset in terms of kneeling down and worshiping at the altar of this scientific approach and really discounting what we've learned through many thousands of years of agricultural stewardship. That's what we're trying to apply in the organic sector.

Dr. Toni Bark: There was a study that Stanford published, and it had made some claims that there was really no difference between organic produce raised and nonorganic. My question, I know I've interviewed other people who claim that some of the pesticides, certainly the glyphosate, I'm not sure about the neonics, but some of the other pesticides or herbicides [kelaid 00:50:18] out the minerals from the soil. If that's the case and we know that and that's factual, that's easily enough tested I would assume, then how can there be no difference between produce raised organically and nonorganically? If the soil has minerals then you're gonna get more minerals in the produce. There has to be a difference. I was quite confused over that. I don't know if you know that study, if you want to talk about it.

Mark Kastel: I am familiar with that study. I always say, follow the money. Right when they released the study, they were very clear by saying, "We didn't take any agribusiness money. This was all supported independently by funds we had at Stanford." We decided to look at where Stanford's independent money was coming from, and it came form corporate agribusiness and biotechnology. That was a big surprise. Some of the researchers that worked on that were researchers that worked with the tobacco industry that also decided that tobacco maybe wasn't so dangerous for your health. It's really difficult.

There had been other studies that have looked at the nutritional benefit of our food conducted by Consumers Union, an independent non-profit, conducted by the USDA, that have found higher nutrient values in organic foods. The

[inaudible 00:51:40] lower levels of agrochemical contamination. How did Stanford come up with different numbers? I can't really tell you what their approach was, but I can also tell you that Stanford is the home of the Hoover Institution, which has been an ardent opponent of adopting organic agricultural practices along with the Hudson Institute and the Heartland Institute and many other very conservative, some might say ultraconservative think tanks that also get money from corporate interests.

Dr. Toni Bark: That was a question I was just gonna ask you. It sounds like these institutes are fronts for ... exactly. I know this isn't your field, but I want to ask you your opinion on the health of our nation. If these small independent organic companies, the start out small and independent and are truly organic, then they get bought out for lots of money by these larger conglomerates, these food processing companies, Kellogg, General Mills, Nabisco, all these companies, and if those companies have control of this advisory committee, then are we gonna start seeing GMOs leaking into organics?

Mark Kastel: Well, the answer to that is yes and no. In general, the answer is no, because part of the bill that Congress passed is GMOs are explicitly banned in organics.

Dr. Toni Bark: That's good.

Mark Kastel: Organic seed can't be GMO, the crops that we feed our animals can't be GMO, the beets that you put on your table can't be GMO. For folks who want to assure that GMOs are not part of their diet, organics is the gold standard. The problem is that some of these gimmicky ingredients that they want to add might be GMO. As an example, a company called Martek Biosciences, it's a part of a Dutch conglomerate called DSM. It's a $12 billion company, the same size as Monsanto. They make a algae oil that they started putting in as a nutritional supplement in infant formula. Even though it's hexane extracted, hexane is a solvent byproduct of gasoline refinement explicitly banned in organics, they were putting that in. The Obama administration and the Bush administration were looking the other way. Now, that's illegal, and we're pursuing that.

We found out by looking at the patents when they applied for use in organics that this is manufactured, these strains of algae were created through a process called "classic neurogenesis." That's where they take the genome of a plant and bombard it with either radiation or very harsh chemicals to change its genetic make up. By accident, the hope is that they will end up with traits that have more commercial value, in this case, algae that would create a higher omega-3 oil content. They're sneaking these into organics. These products are now in Horizon organic milk. These products are in some of the brands of infant formula, even organic infant formula. That's where our job as a watchdog over the National Standard Organic Board is so important so that they don't compromise ... They can't compromise on the crop production being GMO, but are they going to find sub ingredients that they can do a fancy song and dance with their lawyers and lobbyists and somehow get through.

Dr. Toni Bark: Question, is the DHA food, eggs, the organic eggs that hae DHA added to them, is that from that product?

Mark Kastel: No. Eggs that are labeled higher omega-3's or DHA are that way because the food that the chickens are eating are a little different. They feed them flax seed, which is high in omega-3 content. They feed them organic flax seeds. That's not some gimmicky material that was made in a laboratory. That was something that was grown on an organic farm.

Dr. Toni Bark: Wonderful. Thank you for that information.

Mark Kastel: There was just a study out that proved that organic milk has much higher levels of omega-3 fatty acids than conventional milk. Why is that? Because organic cows are mandated to graze on fresh, green grass. Conventional cows are usually in a building confined their whole lives while they're being milked, and they don't have the sunshine, they don't have that wonderful, fresh feed. They have stored highly concentrated feed, and it produces healthier cows with way healthier milk.

Dr. Toni Bark: You mean the grass-fed.

Mark Kastel: Grass-fed.

Dr. Toni Bark: Grass has omega-3. Any green grown plants are gonna have high omega-3.

Mark Kastel: The cows' multiple stomachs are designed to digest grass. God created these creates to eat grass. We can't eat grass, so they can take these marginal lands that might be erodible that wouldn't be suitable for raising crops on, they can convert that to really dense, nutritional food for us.

Dr. Toni Bark: I want to ask you another question, and I know it's not your area of expertise, but you look at food all day, so you do know something about food and nutritional quality and you do believe in the precautionary principle and you know the health of our nation has really declined dramatically in the last 20, 30 years, especially in the last 15 years. We've seen an exponential rise in autoimmune disease, autism, behavioral problems, especially focus attention deficit, but we also have colitis and Crohn's diseases that we're seeing now, especially in children. I'm wondering, and I know you can't say with any certainty, but is there an opinion that you have on that in terms of its relationship to possibly the introduction of ... because that was around the time that we introduced GMOs to the food chain, and I'm wondering what your opinion is about this.

Mark Kastel: Well, I'll tell you two things. One is that from a policy standpoint, we create cheap food in this country. 40 years ago or so, we were spending about 16% of our incomes on food and about 8% on healthcare. Those numbers have almost completely inverted. We have the cheapest food bar none in the world, and bar none the most expensive healthcare. The outcomes are abysmal. In terms of longevity, chronic diseases, infant mortality, premature birth. If you compare us to any other industrial country, we are going backwards. A lot of that has to do with this very highly processed diet filled with synthetics and the way our food is grown. Food and exercise are really the key to life. If we're sitting in front of the TVs and small screens all day, eating Cheetos, eating fast food, what's that going to do to our metabolism?

The relationship to GMOs is a little less clear, but there's circumstantial evidence that might cause us to ask some serious questions. One is that we know that some of these

products, not only the GMOs, but the wide spread use of glysophate herbicide, these crops are resistant. Normally the herbicide would will corn or kill soy beans. We've ramped up the use of these toxic chemicals, it's changed the microflora in the soil and it's changed the microflora in our digestive tracts. We're just beginning to learn more and more about how our bodies are really made up of billions of microbes and little bacteria, lots of the little critters that are not dangerous, they're actually adding to our health and our nutritional wellbeing. Whether it's a broad spectrum antibiotic use or residues of antibiotics in our foods or synthetic dyes, synthetic preservatives, agrochemical residues, all these things have an impact on our wellbeing.

We're also learning that the way we've measured the impacts of agrochemicals in our diets, on our health, is a bit outdated. Yes, we want to look at what levels are toxic, and we want to look at the cancerogenic properties of these chemicals, but we're learning more and more that in their most minute doses, many of these synthetic compounds act as endocrine mimickers, or endocrine disruptors. If they're present at very critical junctures of development in utero or in very young children's diets, in mothers' milk, in infant formula or in food and during developmental periods, specially in the development of sexual organs, they're very sensitive to these chemical triggers, these hormonal triggers, and some of these can cause lifetime catastrophic impacts.

Dr. Toni Bark: If they're acting as endocrine mimickers, then they could theoretically increase breast cancer, any hormone-related cancer would increase if something was sitting on the estrogen or unbinding estrogen if it's an endocrine mimicker, it certainly could affect estrogen levels and estrogen metabolism. I would imagine that could be maybe one of the reasons that we're seeing such a large increase in breast cancer rates these days as well.

Mark Kastel: Not just breast cancer, but I would testify that probably the human mammary gland is one of the most sensitive organs in our specie to chemical compounds that have a tendency to bind and accumulate in fatty tissue. Just as we know the amphibians that we share this planet with are the coal mine canaries in the rural environment. We're seeing problems

with the other nonhuman species that we share the earth with. We should be listening to them and their impacts, their lifespans are shorter, their metabolism is different. These warning signals are being ignored.

Dr. Toni Bark: Right. The bioaccumulation is gonna take a shorter time period. You're gonna see it moving through generations. That's a good point. That brings me to, and maybe I'm wrong, but wasn't one of the reason that PCBs were removed from the market was because we were seeing amphibians with really weird genetic defects?

Mark Kastel: That was one of the problems, and the bioaccumulation, and the fact that these are extremely persistent chemicals. We've soiled our own bed. There are PCBs and dioxins in the mothers' milk and sperm of mammals in Antarctica. We've never spread them up there. Again, we're dialing back to the precautionary principle, we should know what we're doing before we spread millions of pounds worth of toxic chemicals in our environment. Remember that most of these compounds are biocides. They're designed to kill life. Why are we so surprised when they get into our bloodstream that they end up killing us.

Dr. Toni Bark: It's a really good point, and you're not the first person to bring that exact point up. It is something that scares me, and I am scared for the young generation right now and people that are in grade school right now, when they're having children, what are we gonna see? One of the things I want to ask you is ...

Mark Kastel: Let me just interject for a second. The whole question about GMOs, they have been in our food system for such a minute blip in terms of human evolution. Not even a full generation. We really don't know what longterm impacts we're gonna see.

Dr. Toni Bark: Thank you for bringing that up, because I have to ask you another question. I've heard proponents of the industry also claim that GMOs have been around for hundreds of years and often nectarines as used as the example, and they'll talk about that we've been modifying our food and hybridizing our food and there's not difference between that and a

genetically modified organism. I'm wondering if you want to just take us through that briefly.

Mark Kastel: That's a species argument, because we have been manipulating plants for many generations. We don't insert genes from other species into those plants cultivars. We do cross plants that are related to each other. We don't put fish genes into tomatoes. We don't use viruses as a transporting vector. We don't use antibiotic resistant bacteria in the process. Part of the problem is the particular genes that they insert, but they rearrange the genome and they create unintended consequences in terms of the genetic makeup of some of these plants. We really even don't know. The impacts in totality on the genetic makeup of some of these food items that we're eating are unknown, but plant breeding has been around for as long as we've been an agricultural species.

Dr. Toni Bark: Let me ask you about feeding the world, because this is something that we all hear again, that if we question the safety of GMOs and if we want GMOs labeled even, then that makes somebody mean and insensitive and they don't care about poor starving children. I've heard serious people say that. Are we feeding more people with genetically modified organisms? Does it increase our yield? Have we alleviated starvation around the planet with our genetically modified food?

Mark Kastel: We haven't done that yet, have we? I don't know of any plant that's been genetically modified that has increased yield and had a benefit in terms of producing more food. Most of the yield increases we've had during the period of time that GMOs have been in the marketplace happens in the traditional plant breeding that are being done in conjunction with the genetic modification. It's the traditional, not the GMO manipulation of the genetics that's causing yields to increase. Quite frankly, we can't feed as many people as they're forecasting. Instead of scientists trying to figure out how to manipulate agricultural production, we should start to think about how to more smartly manage population on this planet, because there is gonna be a carrying capacity, a finite carrying capacity. It might not be food. It might not be oil, it might be peak water. We don't know what factor will

cause a population collapse, but at some juncture, we will have that population collapse and our species and many other species that can't be replicated, and what impacts that will have on future generations is a grand experiment that we're willing to risk right now.

Dr. Toni Bark: My final question to you is, if we haven't tested these foods, we haven't tested the GMO movement. As you said, everything was raised organically until like 1935?

Mark Kastel: I say 1950. We were using synthetic fertilizers before that, but most of the pesticides and insecticides and synthetic fungicides, none of them were around.

Dr. Toni Bark: None of them were around. Okay. It's fairly new. Our health has clearly declined. It's hard to not admit that. I think everybody would admit that the health of the average North American has really declined, especially citizens of the United States. We have a lousy outcome in terms of our healthcare and in terms of infant mortality. All the things that you talked about and certainly all our diseases are on the rise. Obesity, childhood diabetes, type 2, not even type 1. Even though type 1 is on the rise, but type 2.

Mark Kastel: There's also a real increase in a lot of behavioral problems in children and adults. Some of these can be tied to synthetic additives in our foods, where our food is processed. It's not just physical maladies that we're dealing with. Really, we have kind of a synergy here between the chemical industry and the pharmaceutical industry because we have this medical industrial complex that we're living a lot longer than we did 70 years ago, but now how are we doing that and what is our quality of life and what are the impacts on how well we're living.

Dr. Toni Bark: Why is the USDA, why is the FDA, and even in some cases the EPA, in some cases these foods are ... the jurisdiction is the EPA.

Mark Kastel: The chemicals are.

Dr. Toni Bark: I know just from the genetically modified potato, which is not in the market now, but when it was, in Michael Palmer's book, he talked about how he called the FDA and asked

about the safety, and they said it's under the jurisdiction of the EPA.

Mark Kastel: That's because the food is actually licensed as a pesticide.

Dr. Toni Bark: That's what I'm saying, but why is it that our government ...

Mark Kastel: Let's eat pesticides.

Dr. Toni Bark: Why is it that our government is turning a blind eye to all of this kind of, call it shenanigans going on. Okay, this food's not gonna be under our jurisdiction because now we're gonna say it's a pesticide, so we've washed our hands of it. Then the EPA says, "Well, we've had this pesticide on the market for years, so we don't really care if it's in a potato or corn or whatever. We've had it, so we'll let it go on the market." We see the health failing and we see our healthcare costs skyrocketing.

Mark Kastel: Don't worry about those levels of contamination, because they're under the safety threshold that the government regulators have set. When they're not, we'll just change the level of concern. They just doubled the level of residues that are legally acceptable from glysophate in our food, the most widely-used herbicide in the United States.

Dr. Toni Bark: Mark, what do you see as the solution to this? You're involved with policy, farming policy, food policy, what's the plan? What's the game plan? How are we gonna correct this?

Mark Kastel: My mantra is "Don't panic. Go organic."

Dr. Toni Bark: That's good.

Mark Kastel: Now, I ask the operative question, who owns the organic label? We do. Farmers and consumers and people who are interested in better food. We really have to work together. Unfortunately, farmers have no [inaudible 01:11:03]. There's less than 2% of our nation still involved in production agriculture. It used to be to win federal office, you had to be concerned with the farm vote, or statewide office in many states. Now, when the presidential candidates get done kissing the rear end of the ethanol lobbyists in Iowa every four years, you'll never hear about food and farming again. We have a secret weapon at the Cornucopia Institute, and

we have one in the organic community, and that's the organic consumer.

There are millions of consumers who passionately give a damn about the pedigree of their food. They want authenticity. They want to support the true heroes in this business, the farmers and their business partners that provide wonderful nutritious and safe food for our families. They're willing to stand up. We need to work together. That's why we encourage people to visit the Cornucopia Institute website and not just blindly go to the store. We've published scorecards that empower consumers to vote in the marketplace for rewarding those farmers that are really walking the talk and those corporate brands that they can really believe in, and sending a really important message to the agribusiness executives that are exploiting the goodwill of the organic consumers, that we're not gonna give you our precious money if you're not gonna respect our values.

Dr. Toni Bark: That's a great answer.

Mark Kastel: It's a shame we have to do this, because the organic seal should be the Cliffs Notes version of doing your food research, and we want to get back to that point. In the meantime, astute organic consumers have to educate themselves a little bit because the good news is there's wonderful organic food out there, you just need to decode the different brands in the marketplace to make sure you're providing your family with the very best.

Dr. Toni Bark: Thank you so much. It was really informative. Another question that I had for you that you may or may not be able to answer is an opinion on food isn't the only thing that's genetically engineered or modified. We have viruses that are, and they're used in vaccinations. We've certainly seen very similar modus operandi in terms of the industry and how it studies the safety of vaccinations. I don't even think that most people are aware that these viruses are genetically engineered. I don't know if you have an opinion. Again, it's not your field, your field of expertise, but do you ever see any crossover in terms of the [inaudible 01:13:36] of the business and do you have an opinion on also all the vaccines. When you and I were little, we each got probably six vaccinations. By age one ...

Mark Kastel: Now they have hundreds.

Dr. Toni Bark: Yeah. By age one, babies have had 24 vaccinations. By age 18, in some states it's 53 and growing. I'm curious what your opinion is in terms of how that's impacting our health.

Mark Kastel: You're right. I'm not qualified to answer that question. The only thing I'll tell you is there is a difference. When we get involved in crop production with GMOs, we're releasing these novel organisms that have never existed on earth before into the environment. We can't call them back if there's a problem. If we release genetically engineered salmon and they escape from their farms, which they're gonna do.

Dr. Toni Bark: Absolutely.

Mark Kastel: Breed with our wild stock, does anybody remember the Irish potato famine?

Dr. Toni Bark: Yes.

Mark Kastel: You get very narrow ranges of genetics and then you have diseases wipe them out. We could end up with no wild salmon. The difference between that and medical applications of GMO is at least we're not on a wholesale basis releasing those. Is the problem vaccinations in themselves? Is the problem some of the ancillary chemicals that are used to preserve those? Is the problems with GMOs themselves? I don't know, but are there any scientists looking at this?

Dr. Toni Bark: There are. To answer your question, that actually does cause antigenic shift and antigenic drift when you vaccinate. If you vaccinate against a certain of a virus, you might see that decline, but then another strain that has been dormant that we've never seen that's more potent or more lethal, now ...

Mark Kastel: It's gonna evolve.

Dr. Toni Bark: It's gonna evolve. Instead of bordatella pertussis, we see Pera pertussis. There is that antigenic shifting with vaccinations.

Mark Kastel: The other question with all patent drugs is who's looking at the interaction between these different treatment modalities. We're evolving into a species that lives in a

chemical soup. A myriad of chemicals that are present in our food, either intentionally as synthetic ingredients, or unintentionally as drug and agrochemical residues in our food. Then we combine those with the number of prescription drugs and off-the-counter drugs that people are taking, and how many people are taking 6, 10, 12 different drugs in addition to these other chemicals? We test them individually. We never test this chemical cocktail that now exists in our bloodstreams.

Dr. Toni Bark: In our waters.

Mark Kastel: In our water, right. Absolutely.

Dr. Toni Bark: Thank you. It's been incredibly informative and you're doing amazing work at the institute. I want to thank you personally for doing what you do.

Mark Kastel: Thanks for your kind words. Good luck on your project.

Dr. Toni Bark: Thank you.

David Wolfe: Up here, we can see we've got a hive, a very vigorous hive. This is a wall of my house. It's been there forever. It's been there for over 10 years. That hive is really bustling. We are a bee sanctuary because this is a chemical-free zone. We have no neonicotinoid type of chemicals. The tobacco concentrates, the nicotine concentrates, can damage bees. I grow tobacco here. A tobacco plant can catch a bee and dissolve it right on its leaf, because tobacco is an insect-eating plant. That just was now finally put into botany books about two year ago, they finally stated that. If you grow tobacco, you know that, you see it, because it just absorbs insects right through it. When you're concentrating these tobacco alkaloids, like they do in these neonicotinoid type of pesticides, then you can actually very seriously damage the bee population. I think that's one of the major contributors, amongst the other chemicals that are being sprayed.

Dr. Gentempo: That creates a colony, what they call colony collapse. We're losing bee colonies over this type of farming.

David Wolfe: What's happening is your weakening the bee, then they'll be more susceptible to the varroa mite, the beetle, and the

other predators that are in the hive. In some of the islands, like here, we have a very easy situation, but on the big island, there are so many predators. If those bees are weakened, then all the colony collapses. That's what's also happening on the mainland. We keep them happy and we keep them healthy and we keep them in the walls of the house right here. What's interesting is if I stand here for awhile, eventually one of the will come, one of the guard bees will go buzz and be hanging out right here, then it will hit me. Just crash into you.

Dr. Gentempo: Like a warning?

David Wolfe: Yeah, warning you, like punch you.

Dr. Gentempo: I got bee infestation [crosstalk 01:18:08] wanted to eradicate them, but you're saying, "Hey, just let them live here. I can live with it in the house.

David Wolfe: Absolutely. That's important too, is this whole thing of man against nature, what was that story? What a nightmare that's been.

Dr. Gentempo: No kidding.

David Wolfe: Just live in harmony with nature. We want the bees on our wall. They're putting comb in that wall. They're making it into a fractal pattern. Houses are straight lines. It's not really natural. When an animal like a bee comes in and gives that fractal pattern and adds the magic of the honey in the wall, we want that.

Dr. Gentempo: That's awesome.

David Wolfe: That's a great vigorous hive. It's pollinating all these fruit trees over here. Let's go check out what we've got. This right here is a favorite cacao tree. Originally, this variety came from Maui, and it's a tremendous producer. These are the young cacao pods. This is eventually gonna produce cacao beans or chocolate beans that are gonna develop inside here. There's about 30 to 40 cacao beans, will develop in here. That gives you about three or four chocolate bars. Dark chocolate bars.

Dr. Gentempo: Nice.

David Wolfe: If you're gonna thin it out, then you can make more, but these are dark chocolate bars. What you see in here, what I like to do, see how it's doing. I've got a little orchid in there. Let's see how that orchid is doing. You can see its roots. See thee little roots coming down there? I like to put orchids in my trees. It's hanging out the back side now. It's over here. I'll show you a better example. You can see it's just hanging on that side. It'll flower and send flowers, orchid flowers out. We'll either in our cacao trees put orchids, vanilla, or both.

Dr. Gentempo: Nice.

David Wolfe: This tree right here, this is one of my favorite cacao trees. That's why I put it right next to the house. I brought this seed originally from Costa Rica. It is an absolutely gorgeous original creole dainty cacao. What that means to me is it gives you a wonderful light, fluffy flavor. Let me just show you the pods. Let's have a look. The pods here, they've got a nipple on and it's just amazing.

Dr. Gentempo: Oh, wow.

David Wolfe: You can see it right here. See this guy right there?

Dr. Gentempo: Oh, yeah.

David Wolfe: You can see it. They get this little like thing, like a little pattern. This tree, you'll see the vanilla on it. This is the vanilla right here. See the vanilla?

Dr. Gentempo: Yeah.

David Wolfe: This vanilla, when this tree sprouted, I put it in the ground right here, which is not what I normally do. If it's a really good variety, I'll do that. Normally I'll let them get a little bigger in the nursery and then I put a vanilla in with it right at the beginning. This vanilla and cacao have been living together from the time they were planted.

Dr. Gentempo: Wow. That's awesome.

David Wolfe: They're intertwined with each other. What an amazing thing to get the vanilla beans from a cacao that they've lived together. That's like Romeo and Juliet for real. Okay. Let me

show you something else over here. This is one of my favorite cacaos. This is a Honduras cacao. This is a Tahitian vanilla, which doesn't do really well around here. You can see the Tahitian vanilla's right here. Just a small piece. See that piece right there? It's just getting going. It's got a little root going. We do also have this orchid in there, which is a beautiful flower. We do that together, and then at the same time, you can see right over here, boom, there's our cacao pods, and these are ready.

Dr. Gentempo: Wow. Yes.

David Wolfe: Those are ready, so we're gonna probably do those. The way you can tell is you just scratch it. If you scratch it and it's just yellow underneath ... See, I'm scratching, you can't even see a difference in color, that means it's ready. If I scratch it and it's green under there, it's not ripe yet. This is a Honduras mountain creole variety. It's like that other one ever there, but a little bit more jungly. Like [inaudible 01:21:29]. This comes from the mountains of Honduras where the Congrajal River, it goes from 0 to 8,000 meters or whatever. 0 to 8,000 feet, sorry, in like, right out of the ocean. Yeah. Let's keep going this way.

Dr. Gentempo: It's like you're a painter and these are your pallets, the trees, the things you're blending together. It's amazing.

David Wolfe: It's an original art form. Farming is an original art form.

Dr. Gentempo: This is art.

David Wolfe: This is an orchid here sitting in this guy. Because these aren't really great producers, these two trees, we decided to graft them with our really good variety just for fun, because it's close to the house. We got a nice graft happening here. You can see this thing is developing nicely. There's another one down there. Then over on this side, you can see the development of these grafts right there. Eventually what'll happen is we'll cut this tree back and let the grafts come in stronger, then we'll have three different varieties of cacao on one tree.

Dr. Gentempo: Oh, nice.

David Wolfe: Yeah. That's fun experimental stuff that we like to do. We love Osiris. This is our cat. This cat is a predator.

Dr. Gentempo: Are you Egyptian?

David Wolfe: Cats get rats, as we like to say. Dogs for hogs, and cats for rats in Hawaii. This guy right here can get birds, big rats huge ones. The Polynesian rat is amazing, because they eat noni and coconut. They actually are cute, but they are a problem. They get in our house. The dig into stuff. They get to your food. We need a cat to get them, and that's our cat.

Dr. Gentempo: Beautiful.

David Wolfe: I'm gonna take you up to the old Hawaiian road here on the landing. This is a very neat spot. Very unusual on Hawaii to have a place like this that has the old road in it. I've learned a lot from living next to this road about the way the Hawaiians lived here and about how they understood nature. I'm gonna show you, it's just fascinating. You can use the stairs, a little easier to grip. The reason why I picked this lot is because I've been looking in Hawaii for years, like 10 years. I was staying with a friend of mine on the street, and I had a dream one day, like a daydream. Woke up and I was, "Oh, this is it. This is the street." I called my friend up. I said, get me a listing of every place on this street. First one came up was this place. We came over here. I walked up at the bottom of the house. I looked around, and it was a scene from a dream, a repeating dream that I had my whole life, and I knew, that's it. This is it. The real estate agent was like, "No. We've got to look at other places." I'm like, "No, we don't. This is it. It's clear." So that was it. It just happened like that.

Dr. Gentempo: When you know, you know.

David Wolfe: I didn't even know that this place was a wild noni grove. This originally, when the Hawaiians were here, this was the old Hawaiian road that we're standing on right now.

Dr. Gentempo: Oh, wow. Okay.

David Wolfe: What it is is it consists of small rocks like this, see that rock right there?

Dr. Gentempo: Yup.

David Wolfe: They dug a trench into the ground, probably two meters, but it might even be deeper. I've dug four feet into it. It's still this kind of rock, and they just put little rocks, smaller than my fist, piled up, piled up. Eventually, you have a road and trees won't grow on it because they can't get into it. Trees do not like a road that is just basically filled with rocks and has all those hollow, empty spaces in it, and it's just easy to maintain because of that. They figure that out whatever, a thousand years ago. This is the old Hawaiian road that separates that [foreign language 01:24:42], which is that drainage over there. If we go up to the fence, that field and all the way down is another district, and then this starts a new district right here. They just put the road just underneath so you can't see it from that [foreign language 01:24:53] right there.

Dr. Gentempo: How old do you think this road is?

David Wolfe: It's hundreds of years old. It might even be a thousand years old.

Dr. Gentempo: Wow.

David Wolfe: You can see it's still here.

Dr. Gentempo: Yeah. Clearly.

David Wolfe: Yeah. It's impressive in that regard and very difficult to plant anything into it because any tree, once it gets deep enough, like even these tulips right here, this African tulip, they put their roots out sideways. They can't get into it because that hollow space down deep in the earth is something that trees do not like.

Dr. Gentempo: Right.

David Wolfe: You can see we've got cacaos here. Look at our avocados here. Look at this one. Last year produced its first fruit, and this year, it's coming with everything. Great variety and just a wonderful avocado right here. You can see that avocados here, they perform to their genetic capacity. This is the ideal environment for an avocado, and ideal soil conditions.

Dr. Gentempo: Nice.

David Wolfe: That's great. I'm gonna show you up here to the fence. I'm gonna show you what's behind. This is a ranch behind this, and with a sacred site on it.

Dr. Gentempo: Oh, really?

David Wolfe: I always wanted to be butted up against a wild environment, so I could go all the way into the wilderness without any road in the way. We just did this yesterday, and you can see we've got his [inaudible 01:25:59] over here where we've got guava. This is guava right here, and then we've also got some passion fruit. We'll come over here too. We had to cut it back because it gets a little aggressive. This one right here, this little archway that we just did yesterday is for the sacha inchi nut.

Dr. Gentempo: I never heard of that.

David Wolfe: That's a amazing omega-3 fatty acid source from Peru.

Dr. Gentempo: Really?

David Wolfe: Yeah.

Dr. Gentempo: Sachi Inchi?

David Wolfe: It's widely eaten there. Sachi inchi. Inchi, like an inch with an "i" at the end. These are soursops. We grow a lot of soursops here. They do really well here. Basically the national fruit of the Caribbean. Very well grown in Jamaica. You can see it's a young fruit.

Dr. Gentempo: Yup.

David Wolfe: This is one of our Halley's up here. This tree right here, let me show you this. I'm an avocado connoisseur.

Dr. Gentempo: Yeah.

David Wolfe: I've been growing avocados since I was seven. This is a very unusual phenomenon, so I gave it a good spot up here. This avocado tree, when it broke out of the seed, when the seed splits and the avocado comes out?

Dr. Gentempo: Uh-huh.

David Wolfe: Came out as a three.

Dr. Gentempo: Oh, wow.

David Wolfe: That's like 1 in 10,000.

Dr. Gentempo: Really?

David Wolfe: Yup.

Dr. Gentempo: No kidding.

David Wolfe: I gave it a spot here, and I was like, "Okay. Boom. This is gonna be your spot where you can grow and become what you're supposed to be." This thing's just about to reach maturity. It might have a few avocados on it this year, and next year it'll be mega amounts. That's just what happens the first year, but then next year, it's gonna be 100. Next after that it'll be 300 right here.

Dr. Gentempo: Wow.

David Wolfe: This is a very interesting variety. Because it was so special when it sprouted, I gave it this spot.

Dr. Gentempo: [inaudible 01:27:30]

David Wolfe: That's the three right there, yeah. Unusual. This is cassava, which is one of the most widely eaten foods in the world. It's in the top 15 foods eaten in the world. The root of this is the jungle potato. It's a jungle potato. Widely eaten throughout the Amazon. It's the main Amazonian source of carbohydrates. We've heard about it maybe as tapioca root or maniac root.

Dr. Gentempo: Right.

David Wolfe: Great consistency. Great product. Great for farming, because no creature eats it. Only humans eat it. Over here is our fire pit. Let's have a look a this. This is where we do kind of sacred fire. Any kind of sacred ceremony happens here. This is ayahuasca right there, this vine.

Dr. Gentempo: That vine?

David Wolfe: Yeah. This vine right here.

Dr. Gentempo: Wow.

David Wolfe: It's going up into this tree. This thing's about eight years old this guys. Maybe nine.

Dr. Gentempo: Amazing.

David Wolfe: There's this thing about growing the food and how it affects you nutritionally.

Dr. Gentempo: Right.

David Wolfe: That story has never been told correctly. When you grow the food you get something and you get something nutritionally from it, just form growing it. There's definitely an interaction there. Same with ayahuasa. Just from growing it, you get something from it. I don't need to drink it. I can just be with it and I get that. It's not like, yeah, just having it is enough. It's energetic.

Dr. Gentempo: It's like when my Italian mother cooks. It's got a special something.

David Wolfe: Very important nutrient for the soil right there. Biochar charcoal. You talk about remediating a toxic pesticide-laden environment right there in ourselves and in the earth. Charcoal. Charcoal is one of the most important ... Oh, pretty good. Charcoal's one of the antitoxic substances there is, maybe the most antitoxic thing there is. We take this whenever I'm putting a nutrient. I'll take bits and bits of charcoal. That goes in the bottom. Then I put a half of a coconut in there with a bowl up. Put that in there. Then I put the tree in that bowl with the soil then put the soil in on top. In that way, we get a catch mitt for water, we get the sponge of the coconut husk itself, and then we have the charcoal all there.

Dr. Gentempo: Awesome.

David Wolfe: Okay. Let's see if we can peek up here and check this out. This is a yopo tree from Ecuador. Look at this guy. Hi.

Dr. Gentempo: Oh, yeah.

David Wolfe: This is the most gorgeous plant. See how small the leaf is?

Dr. Gentempo: Oh, yeah.

David Wolfe: The leaf to size of tree ratio is the best in the world. It has the smallest leaf, the biggest sized tree. Eventually, this'll become a huge tree like that. Massive.

Dr. Gentempo: Oh, really?

David Wolfe: Yeah. The history of this plant, the shamanic history of this plant is one of the most interesting in all of botany to me. Almost all the literature on this plant is in the Spanish language.

Dr. Gentempo: Really?

David Wolfe: Yup. Very little of it is in the English language, or even English-speaking people don't really know much about it at all. Here's another yopo tree. This guy, it's the seed of this is used [shamatically 01:30:28] and has been for 7,000 years.

Dr. Gentempo: Wow.

David Wolfe: This tree has a very interesting connection with the human race. I just love the beauty of it. I'm absolutely in love with it. That's the kapok tree. The Mayan world tree. We gave that the position at the top of the whole property. That thing will eventually get up and become a massive tree, this thing right here. You can see how it has chlorophyll in the bark. That allows it to survive even in desert environments, so it can grow all the way from the desert all the way into the tropics. The seed of this has a parachute kind of thing like dandelion has, and was probably the inspiration for the floating seeds in Avatar. It's the kapok tree, and if you know about ... you're a chiropractor.

Dr. Gentempo: Yes.

David Wolfe: You've got to know about pillows, right?

Dr. Gentempo: Yes, of course.

David Wolfe: The kapok pillow. Look up that one.

Dr. Gentempo: I will.

David Wolfe: Kapok. K-A-P-O-K.

Female: Okay.

David Wolfe: Kapok pillow. They use the feather, the parachute of this seed to stuff pillows with.

Dr. Gentempo: Oh, wow.

David Wolfe: Yeah. It's the best. Ever. Anyway, this is more sacred to the Mayan people than cacao is.

Dr. Gentempo: Really?

David Wolfe: This is the tree that's even higher. Yeah. It's the tree of soul, that's why we put it right here at the top. We grew this from a seed. We sprouted this thing here. Keep going?

Dr. Gentempo: Yeah.

David Wolfe: This is tulsi or holy basil. This is the great Ayurvedic adaptogen. This is number one herb in Ayurvedic medicine.

Dr. Gentempo: Is it really?

Female: I take that.

David Wolfe: You take tulsi? Yeah. It's an adaptogen, so it helps you to adapt to all environmental changes, traveling, if you're in a situation where you're like, I need my immune system to go up, it can help you go up. If you need your immune system to come down, it's adaptogen, so it's a dual directional adaptogen. Brings your immune system down. Anti autoimmune is what that means.

Dr. Gentempo: Wow.

David Wolfe: Look, see, there's the bees. Our honey has so much tulsi in it, it's not even funny. Look at soursop here. This is graviola. You've probably heard of it. It's anticancer.

Dr. Gentempo: Yeah.

David Wolfe: The cancer-fighting element is present in the fruit, but it's also very prevalent in the young sprouted leaves right here like this size. Here. That one right there, here, you can taste it. Like, okay. If this thing ferments on you ... All fruits come with their natural fermenting bacteria or yeast on them. This one has a fermenting yeast that gives a strong alcohol quick. This, when it's fermented with coconut water, sometimes you just sip on that and it's like, "Wow, that is full on," because the bacteria or yeast have parched up the medical compounds and made it more available, so it drives it in. You just sip on it, like, whoa. "I'm gonna sip that one." That's really cool like that. It's a very versatile fruit. Soursop or graviola or guanabana.

Dr. Gentempo: Guanabana.

David Wolfe: It's an Annonna family.

Dr. Gentempo: Yeah. Nice.

David Wolfe: Let's keep going this way so you guys know the little section of the farm here. This is egg fruit, or lucuma. Noni right there. This is still young. It hasn't fruited yet, but it's coming. Here's a really healthy happy grouping of avocados, these guy right here. This guys a little behind, but this guy probably next year we'll get a fruit off of it. Maybe the year after. This is the thing to watch out for. The Java plum, this guy right here, they can come down form high up above, so you gotta keep these things out of the way. This is a typical type of pioneer planting. Avocado above loaded, you see how loaded those avocados are. Loaded. Then cacao below.

Dr. Gentempo: What do you mean by "pioneer planting"?

David Wolfe: This was basically a dried out, overrun with weed trees no ... Look at that.

Dr. Gentempo: Oh, wow.

David Wolfe: Boom. Overrun with weed trees, unusable eating environment. What we did is we came in here, we too the big tres and we burned them, then took all that biochar and put it underneath the avocados. Then once the avocados get up there and they put the shade up, then the cacaos go in

underneath. Otherwise, the cacaos wouldn't make it here because there's just too much wind and too much debris. There just wasn't enough space. We have to watch out. You could see how productive these avocados are, so every time I'm up here, I have to kind of go through. There's a sprouted avocado.

Dr. Gentempo: Oh, wow.

David Wolfe: There's sprouted avocado here. The one I was telling you about up there had a three come out of here instead of just one. Then what we have to do to kill that is just crack it like that and then you feed it to the plant. That's called the chop and drop. You come in, you just break it like that and you feed it to the tree. This one isn't edible. Who wants a bite?

Male: [inaudible 01:35:13]

David Wolfe: Yeah. Get that thing down. Then I go through and I'll make sure that these avocados they're not taking over my cacaos. I'll feed it to them instead, like that. Weeding is a discipline. It's something that you just do automatically. You don't think about, oh, I'm gonna go weed. It's just an automatic reaction. That's how we think about it. Then we use that as food. That's a chop and drop. Using the forest to feed your plants. Anyway, this whole forest is loaded with all these goodies. Put that over there. There's a path down here. We put a coconut in right there a few years ago. Getting that thing going. What else do we got here? There's an ackee fruit right there. All soursops are in here. This whole stretch right there. Right here, so you could see we're on solar. You cold see the view we've got.

Dr. Gentempo: Gorgeous.

David Wolfe: All the North Shore right there. Right here, this is a [pardiarco 01:36:30] tree. Right there is a great antifungal, so the bark of that's used. You could see the fruits right there. Morinda citrifolia, in my opinion, of all tropical trees, this is the most medicinal. The bark is medicinal. The leaves are medicinal. The root is crazy medicinal. The fruit is medicinal. The flower is medicinal. If we just get up here, one of these flowers, look at that. See these? Gonna need those. Here, you try one. The bees love it, then you get the

fruit and the fruit ripens like that, you can eat it. It's very intense. We like to blend them and pulp them and then strain out the seed particles, then you get the omega-3 from the seed. You get the [inaudible 01:37:13] from the seed. Within two weeks, you can see your fingers and nails and everything, your skin shining, your nails are growing. It's crazy. Hard nails. It has very powerful effect on beauty. It's interesting because its signature is it stinks. It smells like a rotten shoe or something.

Female: Yeah. Rotten cheese.

David Wolfe: Yeah. Like rotten cheese. Blue cheese dressing, basically. It has thing thing of like you have to pay to play, and nature does that a lot. Wipe yourself off and you just use a papaya.

Dr. Gentempo: [inaudible 01:37:46]

David Wolfe: Oh, really?

Female: Yeah.

David Wolfe: Wild papayas. That's great. That's why we always have a bag for collecting food as we go. Anyway, let's talk about the noni here real quick. Again, you can see right here ... Let's get a fruit down. I want to show you guys a really good one. This one right here, let's look at this. There's the fruit. That's perfectly ripe for picking. What we're gonna do is we're gonna pick that. I can throw that into a jar. I do that quite a bit, where I have a big jar where all the nonis melt down and turn it into a vinegar. That's sold as noni juice. It's not noni juice, it's a noni vinegar is what it is. That's a really good way to do this product because it's toned down a little bit. If you do noni pulp everyday, you're gonna be jacked up out of your mind. In two weeks, you'll feel like Superman, actually. It's a little bit too much yang and it's too powerful, but the noni juice is a good way to do it everyday as a tonic. Slide them out. That's our answer to apple cider vinegar in the tropics. Instead of apple cider vinegar, we do noni juice, or noni vinegar.

Dr. Gentempo: Nice. Beautiful. Thank you.

David Wolfe: Okay, we've got to see some vanilla real quick. This is Tahitian vanilla. You can see that it's kind of smaller.

Dr. Gentempo: Oh, yeah. The beans. Yeah. Beautiful.

David Wolfe: You can see right there, look at that. You ever seen vanillas like that?

Dr. Gentempo: No.

David Wolfe: Look at the size of that, fat.

Dr. Gentempo: Crazy.

David Wolfe: Vanilla pompona right there. The vanilla and the cacao live together, and that's one of the things we pioneered in permaculture. I was thinking, God, where am I gonna plant vanilla? It's gotta be a natural, and then I thought, well, put it in the cacao. We've grown cacao and vanilla together for 10 years, and it's been an absolutely magical experience. There's more vanilla right there. Look at that. Isn't that great? When you have all our food products right here on the table and it's a dipping contest where you take the cacao bean and you dip into the vanilla, then into the honey and then into the coconut, it goes coo-coo.

Dr. Gentempo: It's gotta be some synergistic effect with them coexisting and growing together.

David Wolfe: They say that the cacao picks up the flavors of the things it grows with. I have definitely had people tell me that they tasted vanilla and noni in our cacao when there is no vanilla and noni in that cacao. I get this all the time. People suddenly snap out of it and they become aware, like, "Oh my God. We've been eating genetically modified food. We've been eating sprayed food. We want to go organic. We want to go natural. What do we do? My husband has the beginning of Parkinson's disease." First recommendation is this food right here, which is mucuna, the mucuna bean. We are mucuna growers. There's a mucuna bean right there. Mucuna is the number one anti-Parkinson's food ever found and it works to correct the shikimate pathway. When there's been a disturbance due to glysophate in the shikimate pathway, there is a food that corrects it. It's called mucuna. It's a

pioneer. It's this plant right here. It's the one with all these wonderful trios of leaves, this one. It is the jack in the beanstalk plant in my opinion. It's all in there.

Now you're thinking, "Oh, my God. Our cacao trees are getting overwhelmed by this." No, because it'll do that for six months then it completely dies back and all of that debris, that nitrogen goes back into the soil and the cacao goes, "Oh yeah. This is good." We're synergistically with the plants, the fruit trees, because it's driving that nitrogen, it's creating nitrogen debris, plus it's producing for us one of the most powerful medicinal substances called mucuna. Mucuna and cacao have been eaten together longer than vanilla and cacao have been eaten together in Central America and where these plants are from. One thing else I want to say about this is mucuna is the plant and the food that you need if you've had a long life of taking drugs and stimulants, specially when people are coming off of like drug addiction, heroin addicts, that kind of stuff. We get them onto the mucuna powder.

Dr. Gentempo: Nice.

David Wolfe: We say, "Mucuna matata means no worries." It's with an 'M.'

Dr. Gentempo: Dude, this has been a spectacular tour. I've never been on a property that's got so much dynamic to it, and it's beautiful.

David Wolfe: Thank you.

Dr. Gentempo: From the views to the ocean ...

David Wolfe: Thank you.

Dr. Gentempo: ... all the up to the sacred grounds on the top and everything in between. Anyway. Thank you for inviting us into your world and what a special world it is.

David Wolfe: Really appreciate what you're doing and good luck with the GMO projects. Let's get the word out there and let's help people get happy again.

Dr. Gentempo: Yeah. We're gonna do that.

David Wolfe: Fantastic. Thank you.

Dr. Gentempo: Wasn't that walk with David Wolfe a lot of fun? I really hope you enjoyed that episode, and tomorrow is a big day. We have two powerful interviews that we made a couple of trips for in our production, which was quite a magic carpet ride, I have to tell you, going to all these places. We go to Florida and we interview Sayer Ji. Sayer Ji and his website, Green Med Info, let me tell you, they're one of the most powerful activists on the anti-GMO issue. Sayer is very articulate. He's a lovely human being. Just watch that interview. It's gonna give you chills and it's gonna thrill you.

Then we go to Texas and we interview the health ranger himself, Mike Adams. Mike Adams is quite a figure in the activism with healthcare and all the thins that re going on, especially with the malfeasance and the fraud and the deception that's going on. I gotta tell you, he was like an encyclopedia with all the knowledge in his head around all the things that were going on. We have our interview with Mike Adams tomorrow also. Between Sayer Ji and Mike Adams, it's a big day. Not only get there to watch the interview, but make sure that you're alert and undistracted. You're gonna want to see what these guys have to say.

Again, share this information, even though we're partway into this series now, it's not too late for people to join and get this for free. There's a share button here. Click that share button. Get it to your friends and loved ones. Let more and more people know about GMOs Revealed, because the world needs to know about GMOs Revealed. Again, thanks for being with us and I look forward to being with you again tomorrow.

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