Dirt to Soil: One Family's Journey Into Regenerative Agriculture:
A Special Interview With Gabe Brown

By Dr. Joseph Mercola

JM: Dr. Joseph Mercola
GB: Gabe Brown

JM: Welcome, everyone. This is Dr. Mercola, helping you take control of your health. Today we have the privilege of talking with Gabe Brown, who's written a new book, *Dirt to Soil: One Family's Journey Into Regenerative Agriculture*, that you'll really enjoy.

You may recognize Gabe from a previous interview, when I visited him in his farm near Bismarck, North Dakota. That was one year ago. I remember that very well. It was like two days after my mom had just passed. It was actually on my birthday. It was a number of events connected, but I really enjoyed the visit there. His book really expands on some of the information we went on in the last interview. Welcome and thank you for joining us, Gabe.

GB: Thank you, Dr. Mercola. It's a pleasure to see you again.

JM: Yes, indeed. The opportunity was down at your farm. I visited not only you, but your family. Paul, who is the next generation, your son, has taken over. We'll talk a little bit about that. You've got a 5,000-acre ranch out there. Your wife, Shelly, who you farm with – You have an interesting story. Why don't you give us a brief summary? I think we reviewed a little bit on it the last time. But, really, you're an inspiration. You're such a leader in this field. You are one of the major leaders in regenerative agriculture in the United States in helping farmers understand how to do it the right way. We have such a desperate need for this knowledge.

We're really going to dig deep into that. I want to get an idea of your perspective of the percentage of farmers who don't understand this and the type of headway it's making. But before we get into that, if you're watching this, it's really important to understand that even though you may not be a farmer, I've realized you have a deep appreciation and importance of it.

But if you know someone who is farming, you've got to. You simply must get them into Gabe's work. He teaches all over the country, all over the world. I think he's home more than he's at his farm, teaching. But this information he has is really life-changing. It's going to be essential to continuing the transformation of back-to-healthy regenerative soil. Welcome and thank you for joining us, Gabe. Why don't you give us a brief summary that I tangented from?

GB: Thank you, Dr. Mercola. It's a pleasure to be with you. Briefly, a little bit of history. This ranch that my wife and I and son operate now was founded by my in-laws back in 1956. They've farmed it in the conventional type model, with tillage and all the synthetic fertilizers and herbicides and monocultures, from 1956 until 1991, when my wife and I purchased it from them.

Then what happened is – I grew up in town, so agriculture was new to me. I had a couple of degrees from North Dakota State University in animal science and agro-economics. I learned the industrialized, commoditized production model. My father-in-law, when we returned to the place here, he taught me those principles. Then what happened – It never made sense to me. It didn't make sense why in a dry environment, we'd be tilling the soil and would watch the top soil blow away.

I was always wanting. I couldn't learn enough. I studied and I read Allan Savory's work on Holistic Planned Grazing (HPG). I read about no-till. I went down the path of changing our grazing model. I bought a no-till drill. What really changed our lives were four years, 1995 through '98, when we lost three crops to devastating hail storms and one crop to a drought. We went four years of basically no cash grain income or no crops to harvest. That put us in pretty dire financial straits. The bank won't loan us any money anymore to buy all these expensive inputs.

I had to learn, "How do I take that dirt that I had at that time and make it into productive soil?" That set me on a 25 plus-year journey – I'm still on that journey – of converting dirt to soil. That's how the book came about. That got us to the point where we are today, where a group of us spend the majority of our time travelling around North America, trying to teach other producers to take their operations into their own hands and make a difference by producing truly nutrient-dense foods.

JM: Yes, indeed. Thank you for the brief summary. That's exactly what I was looking for. It reminds me to share with our audience that you are an amazing example. Most normal human beings would have quit after the first, or certainly the second disaster you had. But you went on after the third and continued after the fourth. I mean, it's just that normal human beings don't do that. I guess it's your strong faith that facilitated that process to continue in the phase of all these disasters that you had, which essentially would have ruined most families.

GB: That's right. The ironic thing is, of all my neighbors in close proximity, several of them had those devastations two years. One neighbor was hit three years with the result of those natural disasters. We were the only ones who got hit all four years. I really think God purposely led me down this path and said, "Okay. I'm showing you this to force you into a different type of production model." That's the model of regenerative agriculture. I tell people, "Those four years were the hardest thing we ever could have gone through, but it was absolutely the best thing that could happen to me, because I never would have went down this path, my family and I, if we had not been a subject to those natural disasters."

JM: Yeah. It's an amazing example of a philosophy that I really live my life by, which is pronoia, or being an inverse paranoid, in that it's inevitable. Every single one of us is going to go through catastrophes. There's no way of getting out of this life alive without going through them. The perspective is to tap the viewpoint that there's always some good coming out of it. You have a tremendous example of that good manifesting. There's no way you would have actually chosen to go down that path, but the benefits were tremendous. It changed your life.

GB: Right. That's right. While we were going down this path, I met a lot of individuals who taught me different things on regenerative agriculture and how soil functions. But I was attending a

conference in 1997. There was a rancher from Alberta, Canada there. His name is Don Campbell. He said this to me and it stuck with me ever since. He said, "If you want to make small changes, change the way you do things. But if you want to make major changes, change the way you see things."

After hearing that, I heard him right after our third year of natural disasters. I realized I have to change the way I look at our soils. You know, it's not just dirt. It truly is a living, functioning ecosystem. The problem is that most producers do not treat it as such. I learned if I would just focus on what does the soil need in order to thrive and in order to make all those nutrients available to the plants, I could truly produce nutrient-dense food.

JM: Yes, indeed. The title of your book is *Dirt to Soil.* I read another book, which I don't know if you've encountered before. It's called *Dirt: The Erosions of Civilizations* by David Montgomery. Are you familiar with that book?

GB: As a matter of fact, David and his wife, Anne, were just on my ranch 10 days ago. I'm very familiar about it. And then David spent 10 days on the ranch with me, when he wrote his book *Growing a Revolution: Bringing Our Soil Back to Life.*

JM: That's great.

GB: David and I are good friends. As a matter of fact, he and Anne were here because they're starting another book that's going to deal with nutrient density in foods. They asked me to collaborate with them on that one.

JM: You'll have to connect with him, because I definitely want to interview him for that book. The reason I bring that book up is he does a really nice job of outlining the disasters that we've had historically. It's not just in the 21st century. In his book – his figures are probably more current. I mean they're up-to-date, but there are millions of tons of topsoil that eroded every year, every year, into the Mississippi basin. That sounds like a lot, but it's like 4 billion tons of soil lost annually around the world, every year. I mean that's just crazy. It's such a precious resource.

We've been doing this for ages. In Europe, they would farm the land, use all the resources, and then move on. That's the historical precedent. There are very few cultures that really understood this regenerative agriculture principles. The United States is certainly not one of them. But you're leading the transition away from that. If you could expand on that, that would be great.

GB: You're exactly right. Dr. Montgomery, the subtitle of his book is *The Erosions of Civilizations*. It's how all the great civilizations in the world have risen and then fallen based on how they treat their soil.

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When my partners and I go around and teach regenerative agriculture, one of the quotes that we used is one of how, on the eastern seaboard, the soil was being depleted, so a westward expansion needed to be made. The gentleman who gave that quote was none other than George Washington.

Way back, the first president was telling the citizens of the newly formed country, "We have to move westward because we've depleted the soil."

Another interesting analogy that I like to give that puts it into perspective for all people is if you hold up a sheet of paper, just a newspaper or a book, the thickness of that thin sheet of paper is the equivalent of 1 ton of topsoil per acre. If we have a windy day, it's very easy. If you have bare-tilled soil, you're going to lose a ton of topsoil on an acre of land. Well, that's just unacceptable. Another thing we talk about a lot is how, look in the 1930's, we see all these visions of the great Dust Bowl. But here we are in 2018 and there is the same thing happening.

We were recently teaching a school in Oklahoma and they had to close the interstate in Oklahoma because of so much soil blowing that it caused reduced visibility. There are deaths in Nebraska this spring from blowing soil. Colorado. We're seeing it all over. What we're trying to enable all people to see is the fact that we can stop it. It's just a matter of following nature's principles. Let's work with nature to cover the soil, to have green, growing plants, to cycle that carbon out of the atmosphere and put it back in the soil in that cycle where it belongs. It will lead to the betterment of all society and all ecosystems.

JM: Sure. I'd like to get your take on the prevalence of the farmers who are really not listening to you or others like you in integrating this, and violating one of their first primary rules, which is "Virtually never have bare soil." You've always got to have something on the ground. If something's on the ground, you're not going to have a ton of topsoil blowing away on a windy day, which they wouldn't have had in Nebraska and Colorado that you described. What percentage of farms are you seeing on a national basis that are making the transition? Is it like 75 percent are not doing it? Where are we at?

GB: Unfortunately, Dr. Mercola, as hard as many people are working to change things, we need to be honest. It's less than 5 percent of the farmers and ranchers worldwide are adopting these practices. In saying that, there's a snowball that's starting to move downhill. There are more and more inquiries every day. Those of us who are out touting the benefits of regenerative agriculture are overwhelmed with producers who want to make a change.

You know, right now, there's a real crisis going on in rural America. Suicide rates are at an all-time high among farmers and ranchers. I've talked to several landers and certified public accountants (CPAs). Financially, ranchers and farmers are really strapped, stood at low commodity prices and an overproduction in a number of things, which all show us that the current production model is not working.

I just read an interesting quote on a flight home yesterday. It was by Wendell Berry. He was talking about the current production model of industrialized and commoditized high inputs is going to do the same thing to capitalism that it did to socialism. When you really think about it, that's kind of the path we're on. We're in this production model where it's all about pounds and yield, and it's not about producing truly nutrient-dense foods, in a way that can regenerate our ecosystem. We have to change this model.

JM: Yes. Part of the change to help address the suicides that are occurring, not only in the United States, but it's really pervasive in India too. It's the leading cause of death over there, because of the agricultural element. But part of the change is shifting their mindset from a conventional approach to more of an entrepreneurial approach, which is what you've done. I mean you've really integrated it, and there's an absolute market for that. Pretty much everyone watching this is part of your market who wants nutrient-dense, healthy food free of contamination.
GB: That's right.

JM: It's probably the majority of the population who understands and wants it, so the market is huge. It's just a matter of educating those farmers of how to do this. That's what you're in the process of doing. If you just farm the conventional way, even regenerative techniques, you still have to make that additional jump of providing it in an entrepreneurial fashion so that you can actually be successful and continue the enterprise.

GB: That's exactly right. One of the things – thanks to my son, Paul – that we've been able to concentrate on in our operation is "How do we not only produce, grow and raise those nutrient-dense products, but how do we offer them to consumers?" What we have decided to do is to market as much as possible of what we produce directly to the consumer. And then we let the consumers be the judge.

One of the things we do on our operation is we have an open-door policy, meaning any person can drive on our ranch at any time and look at anything they want. To me, that's the best. You can have all these labels and standards, but if people see it with their own eyes, if they get to know the farmer or rancher and see what we do, see how we care for our animals, see how we care for the soil, that builds trust. Once they taste the product and their bodies will be satiated – their bodies will know, "This is good. This is nutrient-dense. I want it" – then they're a customer for life.

JM: Yeah. That's a great model. Hopefully many of the people who you're lecturing are starting to adopt this, because we so desperately need these local resources that people can get food in their community that is healthy and free from toxins, so it's a major component.

We'll talk about the other principles that you have. But one of the values or benefits of that is that it will allow the soil to retain more moisture. When I was there at your farm last year, I think you had less than an inch. That was in July, middle of July or the beginning of July. I think you had less than an inch of rain that year. I think it was a little better this year.

GB: Yeah. It was a bit dry. We ended up last year with 5.6 inches of rainfall the entire year.

JM: Wow.

GB: Now, we did have a bit of snow last winter with that. We started out real dry this spring, but fortunately, the last couple of weeks, we've caught a couple of inches of rain, which has certainly helped matters.

But the thing of it is if we focus on growing plants – my business partner, Ray Archuleta, always says, "Plant and soil are one. We have to have healthy plants in order to have healthy soil. We

have to have healthy soil in order to have healthy plants." If we focus on that, the soil as an ecosystem, we're going to tremendously increase the water holding capacity of the soil.

This is good not only for farmers and ranchers, but also for gardeners and homeowners. If they focus on the healthy soil, we'll find we need much, much less moisture to produce crops and forage for livestock, etc. It's all an ecosystem working in tangent, working together. But we have to concentrate on what that soil needs first.

JM: Yeah. Absolutely. Maybe you can expand on the other principles because once those are applied, and they're just general principles. You can use in your garden or your community garden or on a large farm, like the 5,000-acre operation that you have, and certainly larger operations can use it.

GB: Yeah. There are five principles of a healthy soil ecosystem. No matter where I travel all over the world, these principles are the same. The tools used, you know, the type of equipment, the type of livestock, the varieties of crops, are different, but the principles are the same. Those five principles are simply these: least amount of mechanical or chemical disturbance possible. We don't want to be tilling the soil any more than we have to. We certainly don't want to be adding all of these synthetic fertilizers, pesticides, herbicides and fungicides. We need to keep that to a bare minimum, if at all. That's the first principle. Second principle –

JM: Let's stop at the first.

GB: Okay.

JM: Because that is in direct contradiction, at least from my understanding, to what's been taught as rock solid basic information for the last century or two. Is that right?

GB: Well, look. We've been tilling the soil for centuries. David Montgomery, in his book, *Dirt*, shows that the more we till, the faster the soil degrades and is destroyed. That's why people had to move. That caused the collapse of those civilizations.

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Now, from a synthetic input standpoint, after World War II, when they had all these factories that were making bombs, what were they going to do with all the nitrogen? "Well, let's put it on the soil." Well, what we're finding what really happened was, by adding synthetic nitrogen to the soil, that biology then, because everything has a carbon to nitrogen ratio, starts consuming the carbon in the soil aggregate and it starts destroying soil structure. No soil structure, no water infiltration and no water holding capacity. You're exactly right. It's indirectly antagonistic to what is needed in a healthy soil ecosystem.

JM: Okay, good. No till. I think that was one of the strategies that you use, and I guess you encourage other farmers to do too. It's to sell your equipment so you can't till. You can't go back. It's like burning the ships.

GB: Yeah. That's right. Back when I went down this path, the only way I could afford to buy the no-till drill, I had to sell my tillage equipment. But then I was all committed. I was all in. I had to make it work. I encourage other producers to do the same. Especially here in the Great Plains, in the Upper Midwest, no-till is common. Probably 70 plus percent of the producers use no-till. But they haven't adopted the other practices that are needed to make that soil ecosystem healthy.

JM: Yeah. Before you go into there, I want to emphasize a point. I mentioned at the beginning that you're in North Dakota. Some people who don't know U.S. geography may think that's part of the Midwest, which at one point had some of the best soil in the entire world. But it really is a pretty challenging environment to grow, probably one of the most challenging environments in the United States. The point being that if you can get these principles to work in Bismarck, North Dakota, they're going to work pretty much anywhere.

GB: That's right. As a matter of fact, Dr. Mercola, last week, my team and I were up in Manning, Alberta, which is six hours north of Edmonton. I mean it's up there.

JM: It's getting polar in the winter.

GB: Yeah. You'd almost think Arctic Circle. They're using these same practices up there.

JM: Wow. Are they working? Are you getting feedback from them?

GB: Yes. They are. We had a great group of producers up there, who are really starting to move down the regenerative path. We're excited about that. But it doesn't matter where you're at. We've taught these principles in Australia. We've been in Mexico. There are producers in South Africa, Germany, Russia and all over the world using these principles. They work anywhere.

JM: Yeah. I interrupted you. One is no-till. Maybe you can go into the armor next, keeping the soil covered at all times.

GB: Yeah. This is one that not only farmers and ranchers, but gardeners also need to pay attention to. It just baffles me why when I visit my urban friends, they're always tilling up the garden.

JM: Urban pro-tilling.

GB: It's like, my goodness, that's the worst thing that we can do. It's to till. What tillage does is it destroys soil aggregates. It destroys the mycorrhizal fungi, the home for all the biology. It's that network that transfers nutrients. We're not going to have truly nutrient-dense food unless we stop the tillage. And then we have to have the armor or the skin on the soil surface.

That skin, if you walk into a forest or into a prairie land, you don't see bare soil. You see that it's covered. That armor protects the soil. When it rains, those raindrops fall very fast, and they can erode the topsoil. When there are windy days, that wind, as we discussed earlier, can blow that top soil away. Also, that armor protects the soil from heating and cooling. What it's there for is to create the optimum environment or biology, so that that biology can live and thrive and produce the nutrients that are needed.

JM: Yeah. This is one of the principles that you kind of discovered by accident, I guess, in your four years of hardship and adversity, because you couldn't harvest the crops, so you just let them stay on the soil, and you covered the soil.

GB: That's right. When I look back at what was really occurring, it was a plan much greater than my own because I wouldn't have been smart enough to leave that. But those hail storms, they devastated the crop and put it all down on the soil's surface where I had no way to mechanically remove it. But that was the best thing that could have happened. Because through no-till and that armor, I was actually starting to grow topsoil.

JM: Yeah, yeah. Which was a major transition from the last 50 years. Your in-laws purchased the property in the '50s, right?

GB: That's correct.

JM: Okay. So going on from there, I guess the next step of the armor would be living roots, because that's sort of an extension. Because if you've got living roots growing, you've got the armor.

GB: Yeah. We have to understand how soil is formed. Soil is formed from growing plants, taking in carbon dioxide (CO_2) out of the atmosphere through photosynthesis. They produce all these amino acids and carbohydrates and then they pump, apart from that, what sometimes is referred to – what Dr. Christine Jones referred to – as liquid carbon. It's pumped out through the roots as root exudates into the soil.

You might ask, "Why would the plant pump out part of what it produces into the soil?" The answer is, "To attract biology, which provide all the nutrients the plants need to grow." We need a living root in the soil as long as possible throughout the year in order to feed that biology and cycle that carbon out of the atmosphere.

That's one of the reasons we're having this problem we're seeing globally today of too much carbon in the atmosphere. We need to grow more plants all the time as long as possible. The plants will do it. The plants will pull it out of the atmosphere and pump it into the soil, or it can be cycled via biology.

JM: You just met with David recently. Does he believe that the turning point has occurred, and this reversal can actually happen in our lifetimes before it's too late?

GB: I have the good fortune of meeting with many, many scientists and others who are well-versed in this problem we're seeing. All of them now believe that the key – Well, I should say this. The majority of them now believe that the key to mitigating the problems we're seeing are twofold.

Number one, we need to change the current production model and have a living root in the ground as long as possible. That means diversity in living plants. The second thing is we have to have animal integration. We have to take the animals out of the feed lots and out of confinement, where

they don't belong, and put them back out on the landscape. You hear a lot of people saying, "Cattle are causing global warming." Nothing could be further from the truth.

I give this analogy – Just imagine back what it must have been like centuries ago when we had the large herds of bison and elk moving. They were all over North America, moving. What was really happening was those ruminants were taking a bite out of that forage, that grass and those forbs, and then that plant, in order to regrow, had to pump more carbon into the soil. See, if we remove the animals from the ecosystem, we can grow a plant and we can pump some into the soil, but not near as much as if we would have animals grazing. That's the two keys: living plants, and then we have to integrate animals again.

JM: It's my understanding that some people may argue that cattle are part of the problem, but more specifically, it's conventionally raised cattle who are eating grains that they were never designed to eat. As a result, it changes the microbiome and eliminates methane, which is a pretty pernicious way to destroy ozone. It takes so much more food to raise them that way, as opposed to raising them the way you are and other regenerative agriculture farmers.

It's the model that they're being raised that's the problem. And then, of course, they're not recycling their nutrients back into the soil the way they were designed to. When the animals are grazing, they're automatically putting their urine and their feces back into the soil, not just some massive feed lot.

GB: That's exactly right. And then also, you never hear in this equation methanotrophs. Methanotrophs are organisms that feed on methane that livestock expel. As an animal's out grazing, these methanotrophs take care of that methane. Well, we don't have that in the feed lots and in confinement. There are no methanotrophs.

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The other thing is, look at fossil fuel usage to produce all of the grains, and then you've got the harvest the grains, and then haul them into the feed lots or into – it's not only beef cattle. It's also hogs that are in confinement. It's poultry that's in confinement. It's a tremendous fossil fuel usage that we can get away from if we switch to a more regenerative production model.

JM: Yeah. You've got some really innovative ways to reduce that fuel usage even more. I mean, in your brutal winters, you have to feed the cows. Most people think that it's like impossible to raise a grass fed cow in the winter, especially in North Dakota, but nothing could be further from the truth. You've devised ways to put the food out there, so you don't have to haul it out every day. Why don't you talk about that? Because it's a pretty clever trick you guys developed.

GB: One of the things or misconceptions that people have is that, "Oh, you can't do this everywhere. We've got to stay in the current production model, so we can get food everywhere." Nothing could be further from the truth. Animals are adaptive. They will adapt to the environment. Our cattle graze for the majority of the year. In fact, some winters, we're able to literally graze through the whole year without feeding any processed feeds.

Now, we do get some major blizzards here. At those times, what we've done is we're prepared. We do put up some forage and hay bales, but we leave them out on the land, where that forage was growing. And then our cattle grazed on those bales at such time when they can't physically graze grass.

By leaving those hay bales out there, the cattle are grazing there. They leave their manure there. The nutrients from the bale are left right there. It's a process that keeps that land healthy. Also, the animals get exercise. I tell people, many people say, "The animals are better off in a feed lot." I said, "Really? They don't want to stand on their own feces all day and lay in it. They want to be out. That's how they evolved over time."

JM: Yes, indeed. It's interesting too, when they finish feeding them those bales of hay – I've seen last July where those hay bales were – there's this massive new growth. It's like a fertilizer there that occurs. You get incredible growth when the bales are gone.

GB: That's right. What's happening is it's carbon. The animals feed there, so through the manure and through any parts of the hay bale that they don't eat, it's adding carbon to the ecosystem. Well, everything's comprised of carbon. We are. Biology is. Plants are. Animals are. Carbon is the most limiting factor in production agriculture today.

Well, because of that extra carbon that was put there from the animals consuming that bale, now we have this tremendous lush of forage. It's not uncommon to triple or quadruple the forage biomass production where that hay was. We're accelerating the regeneration of our ecosystems while allowing the animals to lead the kind of lifestyle that they would prefer to lead.

JM: Yeah. One of the points I want to get back to is the microbial diversity that you refer to. And a really interesting statistic that you cite in your book, which is not intuitively obvious, is that 95 percent of the life living on the land is in the soil. It's not the rabbits and the squirrels or the insects. It's in the soil.

GB: That's right. It's been said by several soil microbiologists that there are more microorganisms in a teaspoon full of healthy soil than there are people living on this world. Think about that. I challenge farmers and ranchers and gardeners, "How many of you out there have thought about feeding the life in the soil?" We think about feeding plants. We think about feeding humans. We think about feeding animals, but we don't think of all this biology in the soil. That's one of the reasons I wrote the book. It was to just get people thinking, "How do I take dirt and convert it to healthy soil that's teeming with life?"

That leads into one of the other principles, which is the principle of diversity. We want many different species of plants, animals, insects and, especially, soil life. Today's production model is all about monocultures. You know, you travel and all you see is corn, soybeans, spring wheat and cotton. You don't see these very diverse ecosystems that our native prairies once were. You don't see all the animals and insects. And then, of course, many times with our naked eye, we can't see the microorganisms in the soil. But we need all those things to create a healthy ecosystem, which, in turn, will give that plant the nutrients it needs to nourish our bodies.

JM: Why don't you comment on the magnificent transition that occurred on your ranch after you made this movement towards regenerative agriculture, with respect to the wildlife that was there, and the diversity of the wildlife? Which is just extraordinary. It really is quite in contrast to the wildlife present in your neighbor's properties.

GB: Well, that's true. When I first moved here, my wife and I, in 1983, after we graduated from college, we moved back here to be a part of this ranch. I tell people I would never see a deer. I would never see a pheasant. Rarely would I see grouse. You'd see a few songbirds, but very rarely. I talk in my book about how never once did I see my father-in-law take a spade and put it in the soil to see what the soil looked like, or check for earthworm.

Over time, this transition, this pathway I've gone on, now, I mean, I can sit on my front porch any evening and count 50 to 100 deer grazing. In the evening, we see pheasants, hawks, owls, grouse, partridge and a myriad of songbirds.

As a matter of fact, the Audobon society was doing bird surveys on our land just a year ago. They found nesting piping plover, which is an endangered or listed species. They said, "Well, that's impossible. The river is 10 miles away. There has to be a river for them to nest." Well, evidently not. We have them nesting on our properties. It's kind of a thing that if you build it, they will come. These animals, insects and birds, they all know what's healthy. They know what they need as far as habitat and food to survive. It's a wonderful thing to be able to see all that life on one's farm or ranch.

JM: Yeah. The downside is, because there's a downside for everything, but I think you relayed to me that the deer that you had mentioned, they don't feed on your neighbor's land. They come to your land to eat. They want the nutrient-dense food. They don't want the dead monocrop garbage.

GB: You know, it was interesting here. A few years ago, I had one field. It was 30 acres of corn, but it was non-genetically modified (GMO) corn, open-pollinated, no synthetics on it, no pesticides, because we just don't use any of that. My neighbor had 600-acres of corn right next to me. Well, every evening, I would watch and there were literally up to 75 deer. Every evening, they would walk out of his corn, where they have bedded during the day, walked all the way over half a mile to my field, and that's where they would eat. If that doesn't tell you something, I don't know what does.

JM: Deer aren't stupid. It's hard to confuse an animal.

GB: That's right.

JM: Now, with those 40 acres of corn you were growing, I think you grow other crops in there too. It's not a monocrop, right? Why don't you describe that process? Because it's unusual. It's something that typically farmers don't do.

GB: Yeah. The principle of diversity is you have to have diversity. You look at how native ecosystems perform. They don't just have a grass plant. They always have legumes and forbs.

What are we doing in production agriculture today? I don't care if it's large-scale industrial agro or garden. We're planting just monoculture.

Well, what I'll do with my corn friends is we will go on and we'll plant corn, but then along with the corn, there will be vetches, clovers and understory growing underneath that corn. We're not only feeding the soil microorganisms from the root exudates of that corn plant, but also from all these legumes. And then the legumes are helping take atmospheric nitrogen and provide it to the corn plant, so when the deer come to eat, they have a smorgasbord of different species.

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And really, people think, "Well, but those other plants are going to compete with your corn crop." Nature doesn't work that way. Nature is much more collaborative than competitive. That's how it is. We do the same thing in our garden. We will have a row of sweet corn, but right next to it, we'll have a row of peas, and on the other side, a row of beans. The row may be a monoculture crop, but growing together are all these different species and flowering species attracting all the pollinators and the predator insects. We haven't used pesticide on our ranch in over 20 years. The reason is there's no need to. We have the predator insects that keep the pests in balance.

JM: Yeah. Yes, indeed. I forget the statistics, but for every pest insect, there's like 600 or 700 beneficial insects.

GB: Yeah. It's actually 1,700.

JM: Seventeen hundred.

GB: There are 1,700 for every one that's a pest.

JM: Yeah. That's crazy. I'd like to get your insights as an insider, because we just described this process where nature is collaborative, not competitive. But that doesn't exist with the humans. You're an insider in the agriculture industry. I think in your book you mention only three companies control over 75 percent of the agrochemical industry. There are probably other monopolies. Why don't you summarize, as an insider, what the conventional farmers are up against if he decides to make the transition to regenerative agriculture?

GB: Yeah. I often say the biggest hang-up or issue producers have in moving down the regenerative path, unfortunately, is the United States Department of Agriculture (USDA) and the current farm program. Because the current farm program offers what's called revenue insurance or crop insurance to farmers. It's highly subsidized by the federal government.

Now, my ranch, our family, we chose to bow out of that. We just don't take part in that. I think it's ridiculous that nobody is subsidizing Ma and Pa's Restaurant on Main Street, you know? Right? If they don't get clients showing up, well, why should I be subsidized? If I can't make a living farming or ranching without these subsidies, I shouldn't be doing it.

But the current production model, the vast majority, well over 95 percent of the farmers and ranchers in this country, are getting those forms as subsidies, but there are strings attached. Those

strings are you have to produce in the current production model. You have to produce monocultures. It's focused totally on yield or pounds, in the case of animals, not on nutrient density. We're not looking at what harm it may or may not be causing to the ecosystem.

The farmers can't go get a loan from the lending institution unless they take part in that program. Well, the program's going to dictate which crops will give them the greatest revenue insurance. In other words, guarantee them a certain price. Well, what happens is the farmers aren't stupid. They're going to gravitate to whichever crop – and it's corn, soybeans, cotton and spring wheat – that offer them the greatest return. What you have then is you have more and more farmers producing these same crops, driving the prices down even further, while at the same time degrading our soil resources. It's this vortex farmers and ranchers are in. They're stuck in a hamster wheel going nowhere.

The whole point of my book, I just wanted to share, it's just the story of our journey and what we did to get out of that trap, what we did to take control of our own destiny. Instead of relying on the government to dictate these things, let's be a price maker instead of a price taker. Let's do it in a way that we can regenerate our resources, so that future generations have the opportunity to be sustainable.

JM: Yeah. Go ahead. Sorry.

GB: I get really tired that the mantra lately for many people in many companies is, "Sustainable, sustainable. We want to be sustainable." I tell farmers and ranchers, "Why in the world would we want to sustain a degraded resource?" That makes no sense to me. We can't afford to be sustainable. We have to be regenerative. The five principles I share in this book are those that will empower people to be regenerative.

JM: Yeah. Yes, indeed. I'm quite familiar with the challenges that Big Pharma and, really, Big Food and now the telecommunications industry have on influencing federal legislation and federal regulatory agencies. I've come to the conclusion that it's virtually impossible to change those policies. You've got to go from the ground up and teach people other alternatives, because these powerful industries really control the federal government.

I believe firmly that the federal government isn't good or bad. It's just a tool, like a gun isn't good or bad. It's just how you use it. Unfortunately, it's controlled by these industries. From your take – I don't understand this industry like you do – is that the same position we're in in this? Is there ever any hope of changing these USDA policies that incentivize the farmers to do this? Or you've got to get it from the ground up, like we're doing with the other strategies?

GB: Dr. Mercola, I agree with you 100 percent. I wrote a chapter in my book on what I see through my eyes as the fallacies of the current production model. I agree with you. We're not going to change that.

The only way things are going to change are two-fold. One, if the farmers or ranchers themselves decide to make a change. Because let's face it, farmers go out there and they go to spray a chemical on a crop, they know that's not a good thing. But they're just in this model. How do they get out

of it? Well, they have to want to change. That's why myself and my partners at Soil Health Consultants have formed this Soil Health Academy where we travel around teaching these principles so people can take control of their own destiny.

The main way, though, that this model is going to change is if the consumer demands it. No one knows better than you the health problems that are occurring worldwide due to this industrialized, commoditized production model, which is just producing empty calories. It's not producing nutrient-dense foods.

My own family and my business partners have taken it upon ourselves to tout the things you're touting. We need nutrient-dense foods. How do we get nutrient-dense foods? The only way is through healthy soil. The consumers, through their buying dollars, can vote and say, "Hey, I'm only going to spend my buying dollar at those farms and ranches that are producing nutrient-dense food." When consumers are educated enough to spend their money that way, that will truly change production agriculture.

JM: Yeah. There's no question about it. It's been my professional training as a physician. Any physician or healthcare professional who is serious about integrating natural health principles, in my mind, eventually, eventually has to come to the soil, whether they're gardening themselves or seeking out people who are using principles like you're teaching in regenerative agriculture to produce nutrient-dense foods. That's the conclusion. That's the inevitable path. If you haven't reached that yet, you're going to reach it if you continue on your journey.

GB: Yeah.

JM: I mean it's just inevitable. That's one of our strategies. We realized early on that we can't change these federal policies. It's literally impossible. I mean nothing's impossible, but it's close to it.

GB: Right.

JM: We have to go up from the ground up. That's doable, and we are making changes.

GB: Yup.

JM: I'd like to get your insights and comment on the historical perspective, because we've got this history of many, many centuries, thousands of years, historically, where humans have been using foolish – and that's being kind – agriculture principles. They've really ignored the regenerative principles. I'm wondering what your perspective and take on this. Are there any cultures that stand out as being exemplary in understanding these principles and applying them?

GB: Well, two things come to my mind right away. First, this path and journey I went on, one of the things – I realized this before the internet was prevalent. I was spending time in the library trying to research, "Okay. How did they keep producing profitable crops in abundance without all these synthetic inputs?"

I came across Thomas Jefferson's old journals, what he was doing in Monticello. He was growing turnips, vetches, and these different crops in order to help build the soil health up, so he could keep producing his cash crops. I thought, "Well, if he can do it, so can I." I started applying those principles back in the mid-'90s.

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The other place I found real interest was what the Native Americans were doing. There was a book written called *Buffalo Bird Woman's Garden*. It was about a Native American and what she was planting along the Missouri River centuries ago. It was the three sisters: corn, bean and squash. She planted them together. That's the principle of diversity. She was doing it in a way where she wasn't cultivating the garden. She was simply removing a little bit of that armor and putting the seeds in. I thought, "This isn't rocket science. This is just using those types of principles."

They are the reason those indigenous people all over the world, who have lived in the same ecosystem for centuries, were doing a good job. But the current industrial model and the mindset of man is we're trying to impose our will on nature. Well, that's just isn't going to work. Nature will win every time.

JM: Yes, indeed. Let's talk about the future. You mentioned earlier at the beginning that you believe about 5 percent of the farms are using regenerative agricultural principles. You've been teaching these for 15 years now, these principles. You're out in the trenches with these farmers who are doing this. I'm wondering as to the observation of the trend. Is it like doubling every year? Do we have an exponential increase? Even though the numbers are small initially, if you continue at that rate, it's going to be big eventually. What are your projections as to when we might hit a tipping point?

GB: I think, right now, it's less than 5 percent, but it has easily been doubling every year.

JM: That is exponential growth. That is exponential growth.

GB: It is. It's exciting. I will say I'm excited. Our partnership of Soil Health Consultants, we're being approached now by some of the big players.

JM: Alright.

GB: The big players in the food industry, big players in production agriculture, asking us can we come and teach either their employees or their producers, these regenerative practices. There is zero doubt in my mind that exponential growth is going to increase. In fact, we really think it's going to accelerate. We can't even begin to keep up right now with the number of requests that we're getting.

I'm not going to mention names right here, but I will say that it is the big players in the food industry in the United States. They're taking note. They realize their client, who are the consumers, telling them, "We want change. We want nutrient-dense food." They know the only way they're going to get it is through healthy soil.

Now, I'm just going to make a prediction. I talk about the principle of diversity and how people have been growing monoculture cash crops. We're seeing some very exciting things occurring right now with what's called "polyculture cash crops." A farmer would go out and he wouldn't just plant one crop in his field – for instance, like barley – but he'll add two. He'll add peas and canola, and maybe wheat. He'll plant several species together.

What that's doing is that's creating these synergies, feeding soil biology, cycling more carbon from the atmosphere into the soil, and it's increasing the profitability for the farmer. You know, people always ask, and one of the question we always get asked is, "Well, you can't feed the world with regenerative agriculture." I just laugh. I say, "Okay, let's think about it."

JM: It's the only option. It's the only pragmatic option.

GB: Well, first of all, the figures I had from the World Food Bank in 2017, we produced enough food to feed well over 10 billion people. We're already producing enough food. The problem is it's not nutrient-dense, healthy food, and we're not getting it distributed. And then you look at how regenerative farms stack production models. They're not just producing just a monoculture of corn or soybeans. They're producing those crops, but then also all the livestock, fruits, vegetables, poultry and many different species. They're producing many more calories in its nutrient-dense calories per acre. It's not this blank carbohydrates that we're producing now.

JM: Yeah, yeah.

GB: I think there are exciting things coming up. I think it's going to grow very quickly. It can't happen soon enough in my book.

JM: Yeah. Let me just make a few comments, first on exponential growth. At the very beginning of exponential growth, you cannot notice the difference. It's just imperceptible for the first five, six, seven doublings. But after a while, it becomes impressive. It's pretty similar to the solar industry. You're actually increasing at a faster rate than the solar industry, which is another encouraging move.

But this has been one of the most inspiring and exciting interviews, because it shows positive hope that we are making a change and really want to emphasize here to everyone watching this that you, you specifically, can be part of that change. No, you don't have to go out and integrate regenerative agriculture principles. It's great if you do, but you don't have to. All you need to do is vote with your dollars. That is the most powerful influence that big industry, that federal regulatory agencies have no way to regulate or control. They cannot control the way you spend your dollars. They're trying to, but they can't. You can accelerate this change.

It's a very empowering message that you're providing. I'm wondering to continue this exponential growth or even accelerate it even a bit faster, if those people watching would like more information, or know someone, a farmer or the farmers at their farmers market, [who wants] to learn and understand this better, how would they get this information?

GB: Yeah.

JM: Aside from your book, *Dirt to Soil.*

GB: I agree. I agree with what you just said. What I would really like is I would like people all over the world to start supporting local. Buy local. Get to know your farmer or rancher. All you have to do if you want to find out more, if you have access to the internet, just google "soil health." It's as simple as that.

Our group is Soul Health Consultants. We'll be launching a new website, of which there will be a lot of information on regenerative agriculture. You can go to SoilHealthConsultants.com, or google soil health. We'll show up there. There are many, many YouTube videos on regenerative agriculture principles. And most importantly, there are people using these practices in every country all over the world. Seek them out. And then as you said, vote with your buying dollar.

JM: Yeah. And then you can continue to catalyze this change, and not only impact you and your future generations, but also the planet. I mean the planet needs this, probably even more than we do.

GB: Yeah.

JM: It really is a tragic crime on what humanity has done to the planet, through the ignorance of these types of principles. I mean to have billions of tons of topsoil lost every year. It's inexcusable. This is inexcusable.

GB: Yeah. One of the things we like to teach people is that this has multiple ramifications. I mean we will take carbon out of the atmosphere using regenerative agriculture principles. We will hold nutrients on the farms and ranches, instead of having them look at the dead zone in the gulf and look at the problems with the drinking water in the Great Lakes, the shortage of water in the Southwestern United States. We can heal the water cycle. We can heal the nutrient cycle. We're going to produce more nutrient-dense food. We're going to have a healthier society because of this. This has ramifications across many fronts. We're not talking about simply farmers, ranchers and gardeners here. We're talking about all society.

JM: Absolutely. I think we've done a pretty good job of covering the book and the important principles, but is there anything else you'd like to add before we leave?

GB: I just encourage people to take it upon themselves. I end my book with a chapter about a story about a lady in the inner city who called me, [asking] what she can do to produce healthy, nutrient-dense food for the children in the inner city. I challenged the readers who are reading my book to do something. Just do something. If you're a consumer, vote with your buying dollar. If you're a farmer or a rancher or a gardener, do something in the practices you use to produce nutrient-dense food. But all of us can make a difference.

JM: Yes, indeed. I'm just emphasizing the point again. That's true from the regenerative agriculture farmers to the consumers. Probably you as a consumer have even more powerful influence, because you collectively far outnumber them and can force the big companies, the big

players that Gabe is not disclosing, who's consulting with him, but this is a beyond exciting change, because that's where the change needs to occur. Yes, we need these local farmers, but we need to change at the top levels. It's so exciting to hear this happening.

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GB: That's right.

JM: Alright. You keep up the great work. You're one of the main leaders in the world in this. You're doing a magnificent job. It's going to be quite a legacy that you're leaving behind.

GB: Thank you.

JM: To have been a major catalyst in the transition back to healthy, regenerative agriculture principles, I mean that's just incredible.

GB: Well, it's not me. It's all of us together. I thank you for the work that you're doing. It's been a real pleasure being interviewed by you. It was a great pleasure hosting you on our ranch.

JM: Yeah, yeah. It was good. Alright. The book again is *Dirt to Soil: One Family's Journey Into Regenerative Agriculture*. It's available on Amazon. Pick up a copy if you have any interest in this. Obviously, Gabe elaborates much more in detail on some of the points we discussed in the interview. Thank you for what you're doing.

[END]