
Living Homegrown Podcast – Episode 123 Building Awesome Organic Soil

Show Notes are at: www.LivingHomegrown.com/123

Theresa Loe: This is the Living Homegrown Podcast, episode 123.

Announcer: Welcome to the Living Homegrown Podcast where it's all about how to live farm fresh without the farm, to help guide the way to a more flavorful and sustainable lifestyle is your host national PBS TV producer and canning expert, Theresa Loe.

Theresa Loe: Hey, there everybody. Welcome to the Living Homegrown Podcast. I'm your host, Theresa Loe, and this podcast is where we talk about living farm fresh without the farm. That can mean preserving the harvest, small space food growing, and just taking simple steps towards living a more sustainable lifestyle, all the different ways that we can live closer to our food even if we have little or no garden space at all. If you'd like to learn more about any of these topics or my online courses, or my membership, just visit livinghomegrown.com.

Today's episode is all about how we can build awesome organic soil. As organic gardeners, the soil is everything. It is the foundation of everything that we do outside, but if you've ever tried to learn a little bit about how your soil works so that you can be a better gardener, well, most of the books out there are very textbook, and they're very chemical, and they're a little bit boring. I have a real treat for you then, if you're at all interested in being a better organic gardener, then this is the episode for you.

I brought on Mark Highland, who is also known as the organic mechanic, because he has a company Organic Mechanic, and he is a go-to guy when it comes to organic soil and organic gardening. He just wrote a book called, "Practical organic gardening, the no nonsense guide to growing naturally." Now, yes, this is a book on organic gardening, but its foundation is all about understanding better how to protect and maintain our soil. That was why I wanted to have Mark on, because he takes a subject that can be a little intimidating for a lot of gardeners, especially new gardeners and he makes it very approachable and very easy to understand, which is so key.

Because if you understand how your soil works, then you understand

everything else that you're doing in the backyard to make it even better, which makes our gardens better and more productive, and more beautiful. Specifically, I asked Mark if he could help us become better stewards of our garden, and some things that we may be doing wrong, or that we could do better to make our soil better. That's what he's going to talk about today. Let me give you a little bit of a background on Mark. I'm going to read you his bio.

It was on a beautiful piece of Illinois farmland that Mark Highland first pushed a shovel into garden soil. When he grew up, Mark focused his M.S. degree studies in the Longwood Gardens Program on compost and potting soil. After the Longwood Graduate Program, Mark started The Organic Mechanics Soil Company in 2006. Mark has also served as a consultant for the EPA and the Institute for Local Self-Reliance, and recently received the Young Professional Award from the Perennial Plant Association.

Now, I'll let Mark explain everything that he does at the Organic Mechanic company, because it's cool what they're making and what they're doing. I wanted Mark to help us with our soils, and he gives some really solid information that we can apply right away in our own backyards. Now, as always, I always have in the show notes for every episode all the information that we talk about in the episode. If you'd like to go and get that information, anything that's mentioned, Mark's book, his website, and even where to get a soil test, I will have that all in the show notes. That is at livinghomegrown.com/123. Pretty easy to remember this week, because it's episode 123, so slash 123 and you'll have everything there for you.

With that, let's dive into my interview with Mark Highland, the Organic Mechanic. Hey Mark, thanks so much for coming on the show today.

Mark Highland: Absolutely. Thanks for having me, Theresa.

Theresa Loe: I just think this is a really important topic, because a lot of us don't always think about the soil. A lot of times when we're gardening, we're more concerned with maybe insect problems, or we're concerned with making sure that our plants are getting enough sunlight. I think people forget about the importance of the soil. That's why I'm so excited about your book, and I'm so excited to have you on the show. I guess before we dive into anything, I'd love for you to tell everybody a little bit about yourself. What is it that you do?

Mark Highland: Sure. I do have a passion for soil. I started my business Organic Mechanics about 12 years ago. It's sort of organic potting soil, and soil amendment provider. I did that, because I love soil and I love gardening. In the '90s when I was in school, there wasn't a whole lot of organic options out there. The university professor stance at the time was, "Compost will never work.

It's too variable. You can't use it." I saw organic farmers in Gainesville using compost in their potting soils, in their fields, and I thought, "Well, there's got to be more to this." Soil's a passion and I just continued studying potting soil, and organic soils, and then finally launched the company in 2006 after spending some time at Longwood Gardens.

Theresa Loe: Tell everybody what it is that you do with Organic Mechanics. I wish you were right down the street. I would love to just go hang out at your place. Why don't you tell everybody what it is that you do?

Mark Highland: Sure. We make potting soil and soil amendments by getting in the raw materials to our warehouse. Then we treat the materials as needed, but essentially we blend different soils together, different recipes for different uses. Then after we blend and mix it together, then we bag it up, palatalize it, and ship it out to mom-and-pop garden centers, natural food stores. We deal with botanical gardens, and landscape architects, and all those types of things as well. We're making potting soils every day. A lot of people think, because we've asked this question before at trade shows that have special events that we do with the general public, general gardeners. A lot of people think soil just comes from the woods.

Joe, don't you just dig it up and put it in a bag? It's not the case, because soil, the soils that we work on in our gardens that's under our feet when we're in the landscape, that's true soil. Potting soil, which is what we make at Organic Mechanics, that's actually soil less media. There's no soil in it. Soil itself is like the sand silt and clay, those are mineral particles. Then also in soil, you have airspace, space for water holding capacity, and then there's a little bit of organic matter in there.

We don't make topsoil, which is again the stuff in our landscapes. If you call a landscape supply company and order a big pile of topsoil to get delivered, that stuff is pretty heavy. You use it for landscape installations, but potting soil is different, primarily designed for container gardening. Then some of the soil amendments we do, that's for in the ground amending, but when people say "potting soil," that's something very specific for container gardening.

Theresa Loe: Very good. I love that explanation. You guys also are very environmentally friendly. I know that you have, don't you have biofuel trucks and you try to use recycle your pallets and things like that?

Mark Highland: Exactly. Environmental sustainability has always been a core value here at Organic Mechanics. Yeah exactly that we use bio diesel for all of our equipment, wind power for the electric, every decision that we make at Organic Mechanics, we take environmental sustainability into account. It's one of the reasons why we chose to replace the perlite component of our

soils with rice hulls for example, just because rice hulls, the shell around the rice, it's a byproduct of agriculture here in the US, so it is sustainable. It's a hundred percent organic. It has some other benefits compared to perlite when you're using it in a media. We made that switch, because perlite is very energy intensive to make versus rice hulls being a byproduct, so we made that shift.

Whether it comes to production processes or the ingredients themselves, we're constantly trying to move to the most sustainable option to give gardeners the ability to choose that when they go to the store if they need a gardening product.

Theresa Loe: I love that. That's so cool. I wondered why you guys had the rice hulls in there. I saw that on one of your packages. What made you decide to write this book, because I really do love it. You can geek out in it, but doesn't go over your head. It really makes everything really approachable. What made you decide to want to write this book?

Mark Highland: I've always had this passion for sharing knowledge with others, being in the education world. When I got my master's degree and along with graduate program, I thought I was going to be the director of education somewhere. Then I found out, "Well, generally, they're policy makers not necessarily educators," and I didn't want to do that, because I really wanted to connect with gardeners. I really enjoyed the opportunity as I've had as the president of Organic Mechanics to give a lot of talks at garden clubs, and flower shows, and that thing.

When the option came up to write a book, I thought, "Okay, here's a way where I can connect with anyone at any time through this book. It's a great way to give people some base knowledge about organic gardening." Then people can take it from there based on their interest, even if all they ever did was just read this book, they're going to get a lot of benefits out of it. It's all about sharing the message the organic gardening makes your life easier as a gardener in my opinion. In the long run, it is incredibly better for the environment, for the animals that fly or in our gardens, it's better for the soil, it's better for water quality, tons of benefits.

Really, it was to share my experiences as an organic gardener and also the summation of what other people have shared with me over the years, over the decades. A lot of what I know today is accumulative result of what other people have shared with me about organic gardening. This was a vehicle to get that word out so that people want to learn more. "Hey, here's a pretty simple book." Like you said, I appreciate that that I try very much to take complex ideas, a scientific results, and translate that into something that's a bit more easily understood and digestible for the average gardener.

Theresa Loe: I think you absolutely did that, because I've taken soil science classes in college, and they could be dry and boring. I did not find this boring at all. It was absolutely fascinating actually to read, even though I knew bits and pieces of this just from my own education, you really tie it all together and bring it all together. One of the things you said in your book was that you really feel that organic gardeners need to shift their thinking to consider the big picture. I feel like that to me is the key to everything that you talk about in the book. Could you talk about that, about how we really have to pay attention to everything that we do, and be looking at the big picture?

Mark Highland: Sure. As an organic gardener, if you look at one corner of the garden, one aspect of what you're doing, you might miss that bigger picture aspect. Just one example would be, let's say you have an insect problem and let's say you go to the local mom-and-pop garden center, you bring a little clip of the plant, and question, and it's in a plastic bag, and then you show it to them, you say, "Look, I have bugs." Of course, their response is going to be, "Okay, here's the bottle and that here's the product you need. Go home, spray those bugs and they'll kill that." Even if it says organic on the label, just because it's organic, doesn't mean that it won't affect other things.

Pesticides, whether organic or conventional, sometimes they have the unintended results of harming another class of insects that is not your pest bug, but it's still going to be harmed by the pesticide. In that case, the best organic solution might have then, well actually, if you just leave it alone for another week or two, keep watching and look for this insect, that'll probably come along to eat the bad bug. That's a little piece of it. Just because there's so many things in the garden that if you're not thinking about the bigger picture, how your actions will then affect the greater environment, the insects that visit our gardens. That goes right up at the food chain, right?

If for any reason, you're applying pesticides that are killing caterpillars, well, caterpillars are the number one food source for birds. If you like birds, maybe you live with a few caterpillars here and there. Instead of spraying, maybe you pick off the caterpillars by hand, which I know doesn't, some people are squeamish, but hey get a pair of gloves, right and you don't have to have them crawling on your hand. I love to get them, get a little handful of them, and then toss them in an area that I know the bird's frequent like my bird feeder. Then they're landing all the time, and they'll see it moving, grab it, take it to the babies.

Then we're feeding wildlife versus just spraying stuff to kill things. Also, your fingers, it doesn't cost you anything. If you go to the store and buy something at a jug, that can cost you money, and it might actually cost the environment too.

Theresa Loe: Yes. Yeah, very good point. We just need to always be thinking about the consequences of some of the things that we do. You go into that in just about every area in the book. I definitely, it was an overall theme that I thought was important. You mentioned organic versus conventional. Let's address that, because I think most of my listeners are organic gardeners, but if someone is new to the gardening world, they may not really understand the difference, because a hundred years ago, everybody was an organic gardener, but that shifted and now there's conventional and organic. Could you describe the difference for everybody?

Mark Highland: Sure. I'll do it in a context of the book and the context of general thoughts on what is conventional versus organic gardening as we see it today. If we look at organic gardening, what does that mean? Organic gardening is a little different than organic farming. I make that point in the book, because if you look at a certified organic farm, one that's producing certified organic milk, or apples, or whatever it is has that USDA sealed that we see at the grocery store, right? Those folks cannot use anything genetically modified, can't use sewage sludge, can't use anything irradiated. It also means that you're only using fertilizers and pesticides that are within certain classes.

When you talk about organic gardening, you're talking about more natural ways of fertilizing. Instead of reaching for the blue chemical 10-10-10 or whatever it is, with organic fertilizers, you're looking for more natural things. Things like kelp meal, alfalfa meal, naturally occurring things that are processed in the soil amendments, because they have fertilizer value. At the root of every organic garden should be a compost pile. If you live in an area where you can't have a compost pile, well, at least you can still go to the mom-and-pop garden center and get compost.

With organic gardening, you are in the soil, especially you're feeding the soil, you're encouraging natural systems. You're encouraging the microbes that live in soil. In organic garden, you're encouraging insects to come in, because you want all the beneficial insects that will help protect your plants, that's why people plant pollinator gardens and other things like that, even organic farmers, because they want to get the beneficials in.

One example would be in conventional gardening, you're going to spray to treat a pest where in organic gardening, you might just wait until the beneficials come in to take care of the pest problem. There's philosophical differences in the products that you're using, but also in how you respond to problems in the garden.

Theresa Loe: Yes, absolutely. Now, you mentioned the synthetic fertilizers, and there's two things about them that really I guess bother me the most. One is that with synthetic like the 10-10-10 that you're talking about, when you use

that, it seems to just really shock the plant versus when it's organic, it seems more slowly absorbed. It's not such a shock, because it's more naturally absorbed through the plant. The second thing is the salt factor. I'd love for you to talk a little bit about how salt affect our soil, because a lot of people use these things, the conventional fertilizers and don't realize that they're really making a change to the soil that's long-term.

Mark Highland: Sure. All fertilizers have what's known as "salts." The conventional fertilizers are primarily salt. That's what they are. They're designed to go into solution quickly generally speaking, and these are fertilizers that were developed after World War 2 by enlarge. When we discovered we had a surplus of these things that were used to make other things, and they found out, "Oh, actually, these are the same things that plants need. Nitrogen, phosphorous, potassium, so let's just package them into water soil or fertilizers that can be used by the masses."

When you get that chemical fertilizer home, mix it up and pour it on your plants. That's it. You're putting a very high concentration of salt in the ground, and yes in many cases it's very immediately available for uptake by the plants. However, it immediately impacts the soil biology as well, because there are many populations within the soil biology that cannot deal with the high salt level that's present when you mix up a water soluble 10-10-10 and apply it. You begin to select for the populations of biology in your soil, and so it starts to limit the diversity of the soil microbiology.

In an organic garden, we don't want to limit that diversity. We want to encourage that diversity and grow that diversity by using different sources of organic matter, different fertilizer types. Because it's when you have that broad community of microbiology, you get the most benefit in your soil. Meaning you get the most amount of disease suppression, you get the most amount of nutrient breakdown, you get the most amount of tolerance to extreme conditions in soil. Meaning if you go through three weeks of drought and then three weeks of rain, when you have a diverse thriving soil biological population, the plant can respond better versus if you keep on using these conventional fertilizers over and over again, the salt content will permanently change the microbial community in the soil, which will limit the ability of the plant to fight off diseases, et cetera, because there's just not a thriving diverse community there.

That's a big part of it, and then it also can shift nutrient availability in soils as well over time. There's multiple reasons why the conventional salt-based fertilizer is not preferred, especially in an organic garden, a vegetable garden. If you're working with nature and using naturally occurring soil amendments, they're broken down more slowly by the microbes in soil. The nutrients are then available in the soil solution so the plant can take up what it needs when it needs it. With organic gardening, you're leaving it up

to the plant to decide what if ... As long as the nutrients are there and they can take up what they want when they need it versus conventional gardening where you're throwing it at the plant saying, "Here, take this now. You need it." Right?

Theresa Loe: Right.

Mark Highland: Like I said, the growth rate is a little more even keel with organic versus conventional if you throw a bunch of fertilizer at it, it can grow too fast. Also, there's research out there that shows that plants that have higher salt contents from conventional fertilizers are more preferential for bugs and everyone's garden pest deer, and other rabbits and groundhogs, because basically to think about it is that when there's high salts in the plant, the plant tastes saltier. Anyone who goes out to eat ever in those, I mean, they put a lot of salt in your food when you go out to eat and there's a good reason for that, because it makes the food taste better.

Theresa Loe: Yeah, oh no.

Mark Highland: That can also affect plants and the bugs that affects them.

Theresa Loe: I didn't even know about that part. That makes a lot of sense. I always wondered about that, because when you have a big shoot of growth, that's always what gets attacked by the insects, and by predators like deer. That makes a lot of sense. Also, the way we need to have a broad diet, it's the same thing with the plants. You want to have a little bit of everything there available and having what they need when they need it, letting them be the ones to decide. That makes a lot of sense, absolutely.

Now, something that you also have mentioned is organic matter. I think when I was in school, this was something that surprise me when I realize that in soil, there's actually a very low percentage of actual organic matter. People always think, "We're adding compost or my soil is probably 75% organic matter." That's not the case at all. Could you talk a little bit about how much organic matter is really in our soil?

Mark Highland: Sure. Organic matter is the organic part of soil, and right and you made reference to it. It's like adding compost. That's the most common source of organic matter that we have available to add to our landscapes. If you look at that, what's the right amount. If you get soil test, which I always recommend you should start with a soil test on any project, whether it's a new home or a house you've had for a while and just putting in some new beds. That would be a new project. Get a soil test. Then from there, if it's amylc three type test, and the book goes in a more detail about soil testing, but that should have organic matter percent as one of the results, as one of what they will report back.

If you don't see it on the form or if you don't see it on the website, you're looking at to do your test, just call them and ask to make sure it's on there, because then you'll know. By enlarge, 5% organic matter in soil is good, okay? Most textbooks will tell you 5% is the average. In a good soil, something that is very high in organic matter like say the vegetable garden that's had tons of compost added year after year, after year. That might be upwards near 10% organic matter. Then if you look at traditional new construction, right? Brand new homes where the topsoil is ripped off the field, the builders come in and build the houses, then if you're lucky, you get some topsoil spread back over it.

When it's done, generally in that situation it's lower quality topsoil and the organic matter content could be as low as 1%, 2%, and it's important because the higher the percent of organic matter you have, the more water that that soil can hold, meaning, if we had a period of drought, if your soil has 5% organic matter, your plants are going to look better or longer even if they only have 1% organic matter in the soil. That's the range. You can always improve it by adding more. If you find out that you already are at 5%, then again, with that soil test you can start to dial your soil in by looking at maybe some of the nutrients that might be slightly unavailable in your particular soil situation.

Theresa Loe: Yes, the soil test is so important. I did a soil test when we very first bought our house. It was a real eye opener, because it was really high in salt, and that's why I wanted to ask you about that, because when I got that back, I was just learning. I was a beginner gardener, and I had to go back and say, "Why is the salt ..." Because they made a comment even about the high salt, and it was because the previous owner had been using synthetic fertilizers. It took me a longtime to get my soil back to where it was organic and very viable, and you could stick your hand in it, and it would crumble, and all of that, but it took a lot of work.

The main thing I did was I was composting like crazy and adding that. That is absolutely almost the most important thing I think to do, but I would love to talk to you about one of the things that you have in the book where you talk about respecting the soil versus working the soil. You have several different things that we can do to respect our soil and to help built it like what I had to do when I first moved here. I would love to go through that. Would you list adding compost as one of the top things to do to respect your soil?

Mark Highland: Yeah, that's definitely, aside from getting a soil test to know what you're starting with to then act appropriately, yeah, compost is the number one soil amendment in my book, because it's generally locally made, whether it's made in your backyard. Even if you get it at the mom-and-pop garden

center, it's generally locally made. It's full of beneficial biology, which is fantastic, because we need that in our soil for a living healthy soil. Organic matter can increase moisture holding capacity. It also increases nutrient holding capacity, so that when you do apply your organic fertilizers, they'll stay in the root zone and you won't lose it down with groundwater. Yeah, organic matter is key to building a healthy soil.

Theresa Loe: Perfect. Okay. Now, what would be one of the other things that we should do to respect or take care of our soil? What would be number two on your list?

Mark Highland: Number two, to respect the soil is beware the tiller.

Theresa Loe: Yes.

Mark Highland: They've been used forever. I'm sure tons of your listeners probably have tillers and probably use them every year to prepare the vegetable garden space, because they are very convenient. They're going to knock down all the weeds and leave you with a nice fluffy soil bed. They certainly do have their uses. I talk about in the book how especially the first time you're taking over a landscape area. If you're going to go through until one time, well, the first time is the time to do it and you should do everything you want to do in that timeframe. Till it once to basically turn all the weeds under.

Because you've had a soil test in this area and you know what you need, then you layout all your amendments, and go ahead and till them in. After that, I really encourage people to use the tiller as little as possible. The reason for that is that when we till the soil, you are breaking up all of the valuable soil structure that's there. The soil structure that's been built up over years by microbial activity, the activity of earthworms in soil, the other larger things that we can see. If you're tilling too much, you can do a number of things to your soil area.

The first thing you can do is to set up what's referred to as a hard pan underneath the tilled area, because your tiller gets depending on what tiller you're using. You're going anywhere from four to maybe eight inches deep, and the tiller gets down and does get that area. A lot of plants are fine growing in that top eight inches, but what happens is you make a hard pan underneath that where the water just won't breakthrough. It's very hard for roots to breakthrough. That can affect drainage patterns in the garden and on your property, your landscape. That's important that you don't want to set up that hard pan, because it'll start to mess with you in the long-term in terms of water holding capacity and the soil, et cetera.

Also, if we're tilling to the point where the soil looks like a beach when

you're done, all uniform, particle size, tiny grains, that reduces the porosity of the soil, and it's the porosity, the pore space that can hold air or hold water. When you reduce that down to tiny particle size, it'll hold water really well. However, there's no place for oxygen in that scenario. Plant roots need to breathe, just like us, and so if the plant roots can't breathe, they go anaerobic, anaerobic meaning no oxygen. If there's no oxygen that generally can lead to plant diseases, and rots, and that thing, and I'm sure there's people that might be listening saying, "I've tilled every year for the past 30 years and I've never had that problem work."

In that case, I would say most likely, they're probably doing lots of the other things as an organic gardener. They're adding organic matter each year and then they're tilling it in. When you add organic matter, you're adding these particles that are uneven. When they get in the soil, they can make some of the pore space. The bottom line of what I'm saying is that if you go to no till, you will get better yields as time goes on, because you're not breaking down that soil structure every single year.

Yeah, you've been gardening and things have been good, but things can be better. You don't till, and you'll eventually see you'll get more yields. If you've treated your garden well and you've added organic matter, eventually, it will get to the point where all you have to do is slide in your tool of choice, pull it to the side, put your plug in, you'll move it away and that's it. The tilling of your soil can be left to the worms in the soil. They'll move plenty of things in. It's mainly to preserve the structure, the soil structure because that takes a longtime to build up.

Soil with a healthy structure can hold more water than a soil with a pore structure that provides for a better growing conditions for plants and plant roots. Those are some reasons to avoid. Plus, if you're not tilling, you're not spending time or money on the tiller, on fuel, et cetera. Then you're becoming more sustainable in the garden since you don't necessarily need a tiller, and you can just do it by hand when you're planting.

Theresa Loe: Yeah, it's the big picture thing all over again and looking at the big picture. You also talk about in there, that once you have started this and you have your air pockets and everything, because like you said, if you have something that's ... Let's say you've added organic matter, as it decomposes, it will create air pockets, and spaces for the roots, and the worms. Once you've done this, I noticed that one of the other things you talked about in there was not walking through that area as little as possible. Let's have you talk about that a little bit about the benefits of not re-compacting your soil.

Mark Highland: Sure. Anybody who has ever tilled knows that when you step back on that area, it creates a pretty deep footprint right away. In that case, there's no

structure, so when your foot goes on, it immediately compacts all of the air space out. If you think for a moment about walking in an area that's been landscaped a long time, or you're walking at a garden path in the woods in springtime or fall, and you can feel a little bit of give underneath your feet, a little bit of sponginess. That is normal and a healthy soil with good soil structure. It has a resiliency to bounce back, but when you destroy the soil structure after tilling and you walk in the beds, you're compacting that soil, you're reducing the amount of air space even further, not good.

The same thing goes if you're trying to work in a perennial garden or any other landscape bed that you have. When you walk in it, even if you haven't tilled there in years, you're going to compress and compact the soil down, which reduces the amount of air space, which is just not good for plants, or the microbes that live in soil. It's best to either make defined walkways, so I like to dig out my walkways, because hey that's valuable soil underneath your feet. Go ahead and move that top soil to the bed and make the bed a little bit bigger, taller, because multiple good reasons for doing that.

It gives you a defined space for you to walk if you have four-legged friends in the garden, it gives them a place to walk. Friends when they come over, they know where to walk. Because otherwise, dogs, friends, they can walk all over stuff real quick and nobody wants to be the nagging gardener friend, "Hey, don't step in my beds over there."

Theresa Loe: Yeah.

Mark Highland: Stepping stones are good for that, but even just if you're using something to designate the beds like, "I put down straw in my vegetable garden beds," or whatever it is depending on where you are. Shredded leaves from your backyard, that's a good thing for ... Some people will put wood chips down as walkway mulch in a vegetable garden, which is fine if that's a permanent walkway. You wouldn't want to till in a fresh round of wood chips into your garden each year. The result is that the wood is not broken down. It's carbon. Carbon requires nitrogen to break down into organic matter, and to further and further smaller pieces of organic matter.

If you till in a bunch of wood chips, you're going to rob the soil of nitrogen and all plants. It's the number one thing they need to grow and thrive, and to be green. Not walking in the planting beds is important, because it compacts the air space that we need and it destroys soil structure. If you can use stepping stones, or walk very carefully. Another thing that I do Theresa is that the trees that are around, I'll make a designated, I'm going to step in this spot right here, but I'll break up little twigs that fall into smaller pieces. I throw them down where my foot's going to go, and then I'm stepping out a whole bunch of twigs on the surface of the soil.

Theresa Loe: Good idea.

Mark Highland: Which spreads out footprint a little bit. It doesn't put as much pressure on one spot.

Theresa Loe: That's a really good idea. I love that one. Yeah, that's great. Now, what would you say is another important thing that we should do for respecting our soil?

Mark Highland: There is another thing to consider that, so for example, when you talk about the garden, hey, one of the necessary tasks is weeding, especially in organic garden because you're not spraying something to kill weeds. Number one, the best time to get them is when they're little. I know that's hard to be disciplined to do that, but you'll think yourself a thousand times over doing a whole season of just calling little weeds as opposed to waiting until they're big and they're pain to pull out, and throw their seed around et cetera. The best time to weed is after a rain. The soil is loose, they're easier to pull, you get the whole root. There's a bevy of reasons to do it after that.

However, I would like to remind gardeners that you don't want to work in your garden when it's saturated. When the soil is saturated, we don't want to work in our gardens, because when we do, you really destroy soil structure and can turn it into a clay block. The same goes for when the soil's extremely dry. When it's bone dry, you don't want to work in it either, because you'll just be turning the soil into dust. When you have a pile of dust, there's really no air space in there, whatsoever. It's great to weed when the soil is moist, but if you get a rainstorm for two days, you wouldn't want to go out as soon as the rain stops and start weeding, just because your footsteps in those areas will actually compact the soil a lot more.

Wait until it drains. Depending on where you are in the country, if you're near the coast and you have very sandy soil, well, you probably could wait for hours and then get out there, just because how fast your soil drains. If you're in the Midwest or the South and you have more clay soils, you might want to wait 24 hours, because you know that soil is still going to have some moisture in it 24 hours later, but then you're not working in it while it's completely saturated.

Theresa Loe: Very good. Yes, that's a really good point. Here, I live at the beach, so I usually can go out pretty quickly, but we also have property up in Northern California where it's a lot more clay soil. I definitely can see a difference, that yes I have to wait a lot longer before I would ever go out there. Plus, I think if it's too wet, it really isn't easy like it should be. I think that's a really good point. I guess I would love to just ask you as a closing question, what

would you say to anyone who gets a little intimidated by the whole idea of understanding their soil? Because I think it's really important. What do you say to people to get them to really want to dive in and understand how their soil works?

Mark Highland: Yeah, the foundation of any garden is the soil. It pays to get it right from the beginning when you talk about a new garden, a new space. Upfront, it might seem a little daunting and complicated to understand all that there is about soil, because you're right, that textbook about soil is pretty thick and can be pretty boring. I try to lay it out in the book that there's things to learn about gardening. You have to start somewhere. It's okay to not know everything at the beginning. I've been gardening couple decades now, and I don't know everything about gardening, and that's okay.

The joy about gardening is that we learn, we trial, we grow, we learn again, we repeat or we change based on what we learn. For soil, the main things are get yourself a good soil test. Use that soil test results to guide what you put into the garden in terms of nutrients, soil amendments. You can never go wrong adding compost to a new garden bed to add some organic matter in there. Also, knowing your plants is important, because certain plants like different soil conditions, but thankfully for all of us, we can either get online and do some digging, whether it's podcasts gone by from your podcast. I'm sure there's tons of stories in there about plant types, whether it's planting blueberries and what they need. There's lots of good info out there, and it's just a matter of looking for it.

For soil, it's really get a soil test, do some amending. Then follow some simple things like, hey don't overwork it. Don't walk on it if you don't have to. Then just doing some simple things will result and your garden show you how much better of it is, because it's just it'll have better soil structure and also be able to hold more water, more nutrients. It really does pay to work on the soil a little bit and geek out a little bit about soil, because your plants will look that much better, perform that much better, yield that much higher for investing a little bit of time learning about soil, and how soil, and nutrients, and plants, all interact with each other.

Theresa Loe: Yeah, that harking back to what you said at the beginning, it makes our job easier. It really does, so I appreciate that so much. Mark, I can't thank you enough for coming on the show. Thank you very, very much. I will have in the show notes below this episode everything about your website and your book and everything that you're doing. I just wanted to thank you for coming on the show. Thank you very much.

Mark Highland: Absolutely. Thanks for all you do Theresa, and it was fun being on the show today.



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Theresa Loe: I hope you enjoyed that interview with Mark Highland, the organic mechanic, who's the author of, "Practical organic gardening, the no nonsense guide to growing naturally." Now, as always, everything that we talked about in today's episode will be listed in the show notes. To get to the show notes, you just go to livinghomegrown.com/123, and I'll have everything there for you. Thank you so much for taking time out of your busy day today to listen to this podcast. Until next time. Just try to live a little more local, seasonal, and homegrown.

Announcer: That's all for this episode of the Living Homegrown Podcast. Visit livinghomegrown.com to download Theresa's free canning resource guide and find more tips on how to live farm fresh without the farm. Be sure to join Theresa Loe next time on the Living Homegrown Podcast.