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Narrator: Welcome to the Lawn and Garden podcasts with University of Wyoming extension specialists, Jeff Edwards, and co-host, Jerry Erschabeck, originally aired on KGOS and KERM in Torrington. Join Jeff, Jerry, and their special guests as they talk all things gardening in Wyoming. Our Lawn and Garden podcasts helps you improve your home garden or small acreage. [MUSIC]

Jeff: Well, good morning. This is the KGOS/KERM Lawn and Garden program. I'm Jeff Edwards and in studio with us today is Dr. Jerry Erschabeck, and we also have with us, Caitlin Youngquist, and we're going to be talking about soils today. So good morning all.

Caitlin: Good morning.

Jerry: Good morning, Jeff. Good morning, Caitlin.

Jeff: Interesting times, right? So, what we're going to do is we'll take a break and listen to our sponsors and we'll be back in a little bit.

[MUSIC] **Narrator:** You are listening to the Lawn and Garden podcasts presented by University of Wyoming extensions, extending the land-grant mission across the state of Wyoming with a wide variety of educational programs and services. Visit us at wyoextension.org. [MUSIC]

Jeff: We're back. This is Jeff Edwards, this is the KGOS/KERM Lawn and Garden program with Jerry Erschabeck and Caitlin Youngquist, and we'll be talking about soils and composting and all sorts of good things. So, Caitlin, I'm going to turn the floor over to you. What would you like to talk about today?

Caitlin: Starting to warm up, we got a little snow the other day, but it's starting to warm up again, which gets us all thinking about gardening, growing some of our own food, especially considering the upheaval in the food system right now. So, getting everyone out in the garden and getting some seeds in the ground and taking advantage of the spring weather that we're all thinking about here.

Jeff: Have your peas germinated?

Caitlin: No, not yet. We planted them and then it snowed and froze really hard, so I'm not sure, [LAUGHTER] We're going to go check on them. And we're supposed to get to more cold weather again. So, if we planted deep enough, they might just stay cozy down there till it warms up. [OVERLAPPING] Now, I have a little cold frame we built with some straw bales and small old windows, so we're going to plants some spinach in that pretty soon.

Jeff: Well, it does sound like it is supposed to snow or something again this weekend, unfortunately. [LAUGHTER]

Caitlin: Yeah.

Jeff: So, let's start with the new gardeners. I'm guessing that there are going to be more people this year thinking about gardening. What are some of the first steps that they should probably do in order to prepare a small garden space? Even if they're thinking about doing some type of gardening in containers, what's some of the first things they should be thinking about?

Caitlin: That's a good question. I think you made a good point that it's good to start small, especially if you're a new gardener. Start small, so that it stays [00:03:00] really fun and manageable, so you don't get halfway through summer and regret your choices. So, keeping it small and planting the things you know that you'd like to eat, then including a few flowers in there for fun.

Container gardens are a really great way to go and you can buy some potting soil at hardware store and some small containers and grow a few things on your patio or on your porch or your deck, that can work really well. You can also use straw bales. Straw bale gardening or hay bales can be a really affordable and simple way to start a garden at home.

Jeff: Time out, hold on, let me interrupt you. If you're doing straw bale gardening or hay bale gardening, how do you prep those. You can't just plant right into them, right?

Caitlin: Yeah. So basically, what you're doing is you're composting them for a couple of weeks in place. Straws, very high in carbon and it needs a nitrogen source, so you add some nitrogen fertilizer, some lawn fertilizer, and some water for a couple of weeks. It'll get hot and start to compost. It will get hot, you'll notice you put your hand inside the bale, it starts to get really hot. As it cools off again, then you're ready to transplant or plant into the straw bales. And there are a lot of great resources if you look it up— There is some good YouTube videos and there's some good extension bulletins from Washington State University on the topic as well, and it's a great way to start. Then at the end of the season, you have some nicely composted straw molts to put back over at the garden as well.

Jeff: I'm sorry, Jerry, I see you.

Jerry: Yeah. I was just going to pop in there. So, Caitlin, you have the straw bale, do you just put them in any particular pattern or you just go ahead and plant right into the straw bale?

Caitlin: Yeah.

Jerry. You put in any soil into the straw bale as well?

Caitlin: You can put a little bit of potting soil or compost in there— What happens, you put them on end, and so this strings on the side and the ends are stickiness [OVERLAPPING] sticking up. As it starts to compost and break down, it gets a little bit loose and so then when you transplant into it, you can fill those holes a little bit with some potting soil or compost and that helps. It does wonders for— potatoes do really well in it, tomatoes, peppers, eggplants, some of the smaller squash plants can do okay. You can plant some with seeds as well, if you put some spending soil or compost on the to, if you manage it well. But it works great for transplants.

I've seen people do just two straw bales, I've seen people do whole gardens and probably 20 straw bales lined up in a garden. So it really depends on what you want, and it's a great option for a patio. Maybe you want something small or maybe you have some really, really poor soil, it's going to take you few years to build up your soil and you can start with this method until you build up your soil. It works really well with alfalfa as well, that's what we've done in the community garden and if you use alfalfa bales, you don't need to add fertilizer. If you use straw bales, you going to need to add a nitrogen fertilizer source.

Jeff: So could you use cornstalk bales?

Caitlin: Probably. I have never done that. I would like someone to try it and report back because I've never [00:06:00] tried cornstalk bales. I have also never tried a big bale, I've

only used small ones, and I think it'd be fun to try really big bale and you can plant on the side of it and on top of it. [LAUGHTER]

Jeff: I need a ladder to get on top of it.

Caitlin: Yeah, exactly.

Jeff: That would be interesting. We have quite a few cornstalk bales around here. I don't know if anybody does them in small bales, but we could probably find a large bale and [OVERLAPPING] play around with it a little bit. Yeah. Okay, all right.

So, Jerry, other thoughts about container gardening that you might have?

Jerry: Well, at one of our local feed stores they have a metal, they used to use a metal containers for those cow licks.

Jeff: Nutrient licks.

Jerry: So now, they're all into plastic. Well, the plastic ones make a really good gardening area, but also those old ones do because they have a rotted out metal bottom. You don't have to put any holes in it for drainage, so you fill it up with your favorite soils.

Jeff: Soils. Good choice of word.

Jerry: Thank you so much. And then go to town on it. [OVERLAPPING]

Jeff: Sorry. Caitlin, you mentioned using or purchasing potting soil, is it okay to just use your own native soil if you happen to have some things that are, you know, you might have a hole that you dug or pallets around, is it okay to use your native soil?

Caitlin: It is, but what tends to happen is it gets very dense when you try and put it in a container, it loses all of its structure, plus you don't have any clay on your soil at all it gets very dense and heavy and it doesn't drain well, and that struggling a little bit. So, if you have some decent soil at your place and you want to mix it, I would encourage you to mix it at least half and half with a compost or something organic, maybe a compost or a potting mix type, or even 25 percent native soil and 75 percent organic materials.

Experiment a little bit and find a mix that seems light and fluffy that the plants are going to do well in. In these containers and it gets wet and there's no structure to it anymore once you've dug it out of the soil and it just gets dense and the plant struggle. That's been my experience with it.

Jeff: Okay. All right. Well, I guess we need to transfer some worms with it when you use your native soil too, right? [LAUGHTER] Or stop by the store and pick up some bait and drop them in there.

[LAUGHTER]

Caitlin: A nice thing about using a potting soil is you could use it for more than one year. So, you don't need to throw out unless you have a disease issue in it. But while your plants have been healthy, you can use it again the next year or mix a little compost into it to add a boost of nutrients. So that's something that you can keep using for a long time.

Jerry: Some people say that they should bake their soil to make it sterile. Is that—

Caitlin: If you're going to be starting seedlings in the greenhouse [00:09:00] or a large quantity of seedlings, that's when you might become an issue with having sterile soil. But again, if you're buying a seed starting mix, a small bag of it at the garden center, then you should be fine with that. But if you're making your own compost and you're concerned about starting with [inaudible] sterilizing it would be a good idea.

Jeff: So, a solarization process would be enough to take care of that?

Caitlin: I think so. People do it in their oven. Sometimes if you need a small amount to start some seeds, you can put it in your oven. I would have to look it up. I don't know if the top of my head, what temperature you need to get to.

Jeff: Okay. In a previous life, I did a project where I compared black plastic to clear plastic. Clear plastic heated up a whole lot faster and longer than black plastic.

Caitlin: Did you find that it made some seeds germinate and then kill the weed seeds and then killed them, is that it's used for?

Jeff: Yeah. So, it actually forced them to germinate early and then we're able to kill them out, so it heated up the soil.

Jerry: Caitlin, I like your idea about the first-time gardeners because starting small, because I remember some of our first gardens, they became very weedy and over-weedy and we'd just go, "Okay," we throw our hands up in the air and go, "we're done, I'm done." It's one of those deals that you have to just stay after those weeds.

Caitlin: It's true and this is where I get to talk about my other favorite subject, which is mulch. [LAUGHTER] So keeping the soil covered both to protect the soil, feed the soil, and to slow down your weeds. That's where your old straw bales come in or leaves, some clean compost. You can even use cardboard and newspaper, grass clippings, all these make really great mulch materials, and that's doing, like I said, several things. That's feeding the soil, it's keeping them, it's conserving moisture, particularly in our really arid climate, it's great to conserve moisture. And it's really going to slow down your weed pressure.

Jerry: Now, with lawn clippings, we've talked about the one pound of nitrogen. If you compost or mulch your lawn, that approximately one pound goes back in through the season. So, if you're using lawn clippings, is that going to give you a little bit of nitrogen for your soils?

Caitlin: It is, yeah. It's going to give you nitrogen and a lot of other things too. It's going to give you some, a little bit of phosphorus and potassium and lot of micronutrients over time. So, it is going to provide some nutrients for the soil for sure. So again, weed control.

Jeff: So, Caitlin, you mentioned cardboard and I was thinking a container garden on my patio. Would it be a good idea to, I guess, cut a circular disc that matched the size of your [00:12:00] container garden out of cardboard and then poked holes through it where you planted? Or would that be a really good idea to eliminate weeds or reduce weeds? [OVERLAPPING] Or are you causing yourself more problems?

Caitlin: I think you could try it, and the thing of course, it's going to break down as it gets wet.

Jeff: Sure.

Caitlin: It's a short term biodegradable weed barrier. If you're doing a container garden and you have pretty clean soil, I mean, container gardens are very easy to manage weeds [OVERLAPPING] So that may not be as much of an issue. Now, I'm thinking about this beginner gardener thing. I guess I consider myself a little bit of a beginner gardener as well, as I'm learning and experimenting in the community garden. But here's how I think I would approach it.

I think if I was really starting from scratch and I've never garden much before, I think what I would do is start in a very small space with some recycled containers like Jerry, what you mentioned, what we have here in Worland is a Pepsi factory and so we can get these big plastic barrels you can cut in half, and they are of the same size. Those things, recycled containers, old water troughs or some straw bales, and start real small with that.

Then this summer, what I would do is I would start amending the soil in my garden bed for next year. So next year, pick a part of my yard that I was going to convert to a garden, start amending that soil, dig the grass out, put in some compost leaves, manure to keep it really wet, let it break down, and then by this fall or next spring, it will be ready to plant and be really beautiful weed free soil. That's I think how I would approach it, kinda stepwise. What you can do them with your cardboard is you can use the sheet mulching or the lasagna gardening method.

Again, there are a lot of resources out there if a person wants to do some looking on this. You just use the cardboard or thick layers of newspaper even on top of living grass, existing grass, you can do it or you can dig the grass out first, lay that down as a biodegradable weed barrier and then start layering it, compost in place, manure, leaves, grass clippings, maybe some old straw, pine needles, sawdust, coffee grounds, and food scraps, vegetable scraps, layer it. So, you're doing your greens and browns, layering it up several inches and keep it really wet all summer or moist, and then let it compost in place and break down, and then come this fall or next spring, you'll have a really beautiful patch.

Jeff: Okay. Then, so this is getting back to Jerry's favorite activity. [LAUGHTER] Do you go in and do your recreational rototilling at any point in time or you tell [LAUGHTER] Jerry to just put that rototiller away?

Caitlin: You could sell that rototiller, Jerry, and [LAUGHTER] use it to buy something like paper towels and toilet paper and cleaner, whatever you have to buy these days.

[LAUGHTER]

Jerry: That's a great idea, except there's some romantic, emotional contacts with that rototiller as well. When we got married, [00:15:00] my friends said, "Jerry, you need to buy your wife a string of pearls." And I said, "Okay Myrna, so this is what my friends say I need to do." She says, "You know, I'd really rather have a tiller." [LAUGHTER]

So, she says, "I'm not so much a pearl girl, but I really like to get in the dirt." So, there's an emotional component with that. I can't get rid of the tiller yet, and by the way, next weekend is the tiling event. So, I've been putting bagged manure, bagged compost, and I have a lawn mowing guy that's giving me the first cuttings, the clean up off of the lines. So, I know it's not enough, and I did a Haney soil test and I want to talk about that a little bit, but I'm getting ready to do my tilling.

Now, I did watch and I looked at some of your methods of using the giant pitchfork or rake.

Caitlin: The broad fork.

Jerry: The broad fork, and how you dig down, stomp, and then pull. You aren't really even lifting the soil. I think you're just breaking it up, is that correct?

Caitlin: Yeah. You're breaking it up, especially if you have a little bit of clay your soil or you have a hard pan, especially from years of tilling, or you're just trying to get, maybe you're starting a new garden and things are a little compacted. It really helps break that up and get some of that water and air moving through the soil.

Jerry: Now, at the end of last year, I had a guy with a small garden tractor, and I had procured a shank and he had a shank. So, he had a longer shank than I did and he says, "Jerry, I don't know, it doesn't feel like I'm pulling anything fairly hard." I agree with that rototiller pan, the same as a plow pan or a hard pan. I can see that, I can visualize that, I can understand that quite well. So, I had him shank my garden. I thought, well, that's a step forward.

Caitlin: Yeah. [LAUGHTER] [OVERLAPPING] It depends on what kind of soil you have too, and your tendency to get a sheer tiller layer there, plow pan, or compaction if you have a lot of clay in your soil versus if you have a very sandy soil.

Jerry: I'm very sandy.

Caitlin: Your sandy soil is much less likely to have compaction issues, although it does not hold water and nutrients as well, [Correct.] but it's adding a lot of organic matter which may help balance that out.

Jerry: So, let's talk about my soil test. It said on back side, it said that I have a high pH of eight, the respiration is low, and the soil health score is low. I need a cover crop to feed micronutrients and increase my soil life. [00:18:00] They recommended 50 percent legumes and 50 percent grass. So, do you have a favorite cover crop?

Caitlin: Back up a minute. When was this test taken?

Jerry: It was taken November 10th of last year.

Caitlin: I wonder too if you redid it during the peak season or when it's warmer, you'd have a higher respiration because that's somewhat dependent on temperature a little bit. Respiration is just looking at the amount of carbon dioxide that comes out of your soil when it's heated up and you add and water add moisture and temperature, because it just measures the amount of microbial activity in your soil. They're just breathing, right? So, I wonder if you did that when it was warmer, if you would see a little bit more microbial respiration, it's possible. Does it tell you how much your percent organic matter?

Jerry: Yes, it did.

Caitlin: That will be another interesting thing. On top of the soil tests, there are a lot of different types of soil tests. The typical lab test is mostly a chemistry analysis. So, it tells you nitrogen, phosphorus, potassium, and your micronutrients. It will also tell you typically your percent organic matter, your pH, maybe some issues with salts, and that's a really good baseline. For gardeners really, probably the two most important things to look at for most people is going to be your salts, to determine if you have excessive salts that are causing problems in your garden and the look at the organic matter and with the hope that your organic matter is increasing over time. That's a really [inaudible] indicator.

Jerry: So, it says percent LOI? Point O.

Caitlin: .0?

Jerry No, 2.0.

Caitlin: Oh, 2.0. LOI is lost on ignition, which means they basically burn it off and then they determine how much is there. So, two percent is not very high. A lot of our farm fields here in the Worland area are one percent or sometimes even lower. Our native soils in general are pretty low.

Jeff: Same as with Goshen County.

Caitlin: Yeah. So, if you can get up to three, or four, or five percent over the next few years, that would be really great. You're on the right track, you need to add organic matter. It has to come from somewhere. So, plant roots actually are very important for putting in carbon. So organic matter is about 50 percent carbon, so sometimes we use that term interchangeably. So, for putting carbon or organic matter into the soil, plant roots, cover crops are good for that. As is of course, compost manure, leaves, grass clippings, that sort of thing. Anything that was alive at some point.

Jerry: Do you have a favorite cover crop then? If they're—

Caitlin: It really depends on what you want. It depends on what your goals are. So, the thing about the legume, as most people probably are familiar with this, the legumes fix nitrogen. So, peas, and beans, and clovers, alfalfa, they take nitrogen out of the air and they put it into the soil. They fix it with the bacteria in their roots. So that's a benefit of legumes. Rye is a really great garden cover crop. It's called an allelopathic [00:21:00] which means it secretes compounds from its roots that make it harder for weeds to grow basically. So that's very, very competitive.

Jerry: Hey, wow cool.

Caitlin: So, rye is a great cover crop. Vetch is very great legume that you could use to put a lot of nitrogen and biomass there into the soil. The challenge with cover crops is that if you do not manage them well, they become weeds. So, the important thing is to terminate them in some way before they go to seed. One way is to till them into the soil or mow them and till them in. Then the other way is planting something in the fall or late in the summer that will freeze and die in the winter, and then it covers the soil, protects the soil, and then come spring, you can plant into that.

Jeff: I did notice you said tillage, Caitlin.

Caitlin: I did. I know. [LAUGHTER] Here's the thing about tillage. I am on this mission to get rid of all the road tillers in Washakie County.

So, here's the thing about tillage. It's a tool and there's a high cost to it, and I think a person does well to understand the benefits and the costs. I think in most cases, the costs outweigh the benefits. But there are times for sure when incorporating large quantities of organic matter or a cover crop can be a useful way to use it. I think what's important is to think about doing it.

Maybe it's a way to think about an herbicide. Herbicides are very useful tools, pesticides are very useful tools, but they need to be used with precision and fully understanding the implications of your management strategies. So, it's not just a free for all or something you just do for fun. I think that maybe with all rototiller, we can look at it in the same way. It can

be a very useful tool when used with precision and used for a very specific job at a specific time.

Jerry: I see your eyes burning right into my soul. [LAUGHTER]

Jeff: Not recreational, Jerry. So, on that note, we're about halfway through our program. Let's take a short commercial break and allow a word from our sponsors and we'll be back in a bit.

[MUSIC] **Narrator:** University of Wyoming extension events will not be held in person through May 15th, 2020. Our educators are hard at work planning virtual education and activities. We will continue with much of our programming digitally on our website and official Facebook pages. See what we're up to this week at wyoextension.org or visit your county Facebook page.

[MUSIC] Do you have questions about the Coronavirus or COVID-19? Go to uwyo.cnp.org/coronavirus/uw-extension to find reliable information, community resources, and recipes using the food in your pantry.

[MUSIC] [00:24:00] Looking for the best way to keep up with all the news from University of Wyoming extension, the College of Agriculture and Wyoming Ag experiment stations? The uwagnews.com website features real-time education, research, and extension events, and feature stories from across the state. Bookmark uwagnews.com today and subscribe to our monthly e-mail newsletter, uwagnews.com, growing people, knowledge, and communities. [MUSIC]

Jeff: So welcome back, everybody. This is Jeff Edwards. This is the KGOS/KERM Lawn and Garden Program. In studio today, I have Jerry Erschabeck with me and Caitlin Youngquist who is our soil specialist from Worland area for the University of Wyoming. We're just talking about what beginner gardeners can do to get themselves going and just start growing things for themselves. I think Caitlin would like to spend a little time talking about mulch, one of her favorite things.

Caitlin: Yes. Please keep your soil covered, protect your soil, think about tucking it in there under a little blanket in the fall, and the winter. And in the spring, planting into your garden area, and then tucking it in again under a blanket of mulch to keep the moisture in and to keep the soil cool, and give all the microbes in the soil and the worms something to eat and to slow the weeds down. Mulch, things can use to mulch, leaves, grass clippings. As long as you're not using a weed and feed product or have recently sprayed your lawn using grass clippings, leaves, sawdust, wood chips, pine needles, you can even use some cardboard and newspaper, any of these products. If they are really high in carbon, like a wood chips or sawdust, those types of products, don't incorporate them into the soil, but they do really well as a mulch on the surface of the soil.

Jeff: So, you mentioned pine needles. I've had several questions where recently, if you are using pine needle mulch, is it going to significantly change the pH of the soil? What are your thoughts on that?

Caitlin: I don't know what the research says on that. I don't know how much you'd have to use to change the pH, if it did, we have very alkaline soil here and pine needles, if they change it at all, might tend to make it more acidic, so I think it'd be a good thing. But again, I don't know what the research says in that. Do you know, Jeff?

Jeff: Yeah. So, some of the stuff that I've come across, or the information that I've come across is that it won't change the pH of the soil significantly. [00:27:00] As you said, Caitlin, because our pH is so high, eventually though, it'll normalize again and it won't stay around. So, if people have concerns about that, I think it's minimal in our state.

Like you mentioned, so if you are able to reduce the pH a little bit more, you're allowing things like iron to become more available to those plants. So, things that are heavy nitrogen users won't yellow as quickly, they'll perform a little bit better, those types of things.

Caitlin: It's really true. Like you mentioned, Jeff, we do have alkaline soils, means high pH soils, high seven up to eight or even higher sometimes. What that means is that there are certain nutrients that it's hard for the plants to take up out of the soil. Iron is one of them, phosphorus is another one of them. The other neat thing about adding lots of organic matter to your soil, whether that's through mulch or through compost or manure is that you add organic forms of some of those nutrients and you increase the microbial biological activity of the soil, both of which make some of those hard to access nutrients more available to the plants. By reducing your soil disturbance, you also [inaudible] those nutrients more available to the plants that would be otherwise hard for them to access in our alkaline soils.

Jeff: Okay.

Jerry: So, Caitlin, going back to that cover crop, would you plant back into something that had been killed over winter? Would you just plant back into it—

Caitlin: You certainly could.

Jerry: —and not till up the soil or not even disturb the soil?

Caitlin: Yeah, you certainly could. I think this comes down to finding a method that works for you and experimenting a little bit on your own place based on your own soil type, your own gardening system, and the crops you want to plant. So, oats is a good one, for example. Oats will not typically survive our winters, but it gives some good biomass so you could plant that late in the summer into the fall, grow up a little bit, and then it would winter kill, and maybe something else in there with it. Then winter kills lays down, you have a mulch mass that's left on the soil. Then depending on how you're managing that, you could transplant into that, where those oats have laid down or if you need to till a strip of it, perhaps, to get a planting area. I think it really depends on how you want to manage and you'll have to find a system that works well for you. I think there's really no right answer on that one.

Again, when you're transplanting, say you start your tomatoes and peppers earlier in the season and you're going to transplant them into your garden, they're a lot more accepting of maybe rougher beds, or more lumpy soil or thicker mulch, [00:30:00] or different things like that than when you're starting very small seeds, right? So, it may be that in certain parts of your yard and you're able to leave the soil less disturbed, and in others, you need to disturb with small area to get a really smooth, good seed soil contact, some of that as well.

Jerry: So, when you're composting, would you use lasagna method as well for composting?

Caitlin: You certainly can. So, there's different ways to do it. The thing about compost is that, those who have done a little composting know, you need water, food for the microbes, and air. So when you do the lasagna method, for example, what we use that

works pretty well is we make these wire hoops, almost like a barrel type shape out of woven wire fencing, and we have those lined up along the fence, and then we layer into some grass clippings and leaves. It's a very slow method, and we add some water, but it's tidy and it's an easy way to do it. You can even put some vegetable scraps in there, coffee grounds, whatever you have. And then add some water over time, and every once in a while, you lift those up and check them out and refill them and get some air back into that compost.

So, because we only turn it and add air maybe every two weeks or a month or so, it's a slow process. If a person wanted to make compost a lot faster, they could get their materials mixed up, add water, and turn it every few [inaudible] introduce that oxygen, and get it turned really quickly, get a product down a lot faster. So, you can do it in a number of ways, the lasagna method, for sure, the layering method is a great way to start. It's simple and it works. It just might be a little slower.

Jerry: Yeah. Have you ever used wheat as a cover crop?

Caitlin: I have not used wheat as a cover crop, but it would work. I would just make sure—

Well, it depends on how you want to do it. So, if you use a winter wheat, plant it late in the summer and then it's going to overwinter and then it's not going to die, and you'll have it going in the spring. So what some people do on a larger scale is you maybe split your garden into two, or three, or four sections, and you fallow one section or you'll put a cover crop or leave it and not plant in that section for a year, and then maybe use a cover crop.

Then in the next year, you'd move that section over and grow a cover crop in a different section. So that's one way to do that for people who have maybe a larger garden or managing it that way. For those of us who maybe have a smaller space and don't want to give up some of our production for a cover crop, then we have to grow cover crops around our food crops, or our primary crops. So that can be done with relay cropping or inter-cropping, in some ways, people do that too, where they'll plant some cover crop seeds right underneath the vegetable crops that are growing, and when those crops are harvested, the cover crops can grow up underneath them and they'll plant in the walkways.

Maybe you plant an early spring crop, maybe you're planting radish, and spinach, and lettuce right now, and then those come out and maybe you plant a short season summer cover crop, and then maybe go back in the fall and plant your fall crops. There are a lot of ways a person can manage it.

Jeff: So, I've used both oats and wheat as cover crops. Of course, the [00:33:00] main thing that me personally want to avoid is those things going to seed. Oats, of course, would not overwinter. So that's part of the strategy. If they looked like they were getting ready to head out, I would mow them. Then the same thing with wheat, I would mow them before I incorporated them, however means that was.

[LAUGHTER]

Jerry: Some people spray their wheat and kill it.

Jeff: I've also used soybeans is a cover crop too.

Caitlin: How did that do?

Jeff: I think it worked fairly well. So, I would plant soybeans in the spring as I normally would, and then as they matured and just before they their pods I would go out and I would either mow them or direct rototill them in. But usually, I would mow them first to try to keep them for regrowing if I didn't get them fully incorporated. But it worked fairly well.

Caitlin: Being a warm season, they would not overwinter. The other one you might think about is buckwheat, really great for pollinators. Also, helps pull phosphorous out of the soil and make it more available to the plants, and does not handle frost. So, it also would not overwinter.

Jeff: So, buckwheat. Is buckwheat a grass, is buckwheat a legume? What is buckwheat?

Caitlin: Buckwheat would be a broad leaf, not legume. [Right.] It's not a grass. [Okay.] It's not a true grain. It's got a flower on it. We do eat the seeds. You can eat the seeds and it's got a pretty white flower on it. So broadleaf category, I guess.

Jeff. Okay, yeah.

Caitlin: I'm a soil scientist, I don't know. [LAUGHS]

Jeff: I've seen buckwheat advertised as a cover crop, but I'm not familiar with it. I've never used it.

Caitlin: Yeah. Kind of tall, but it has— Yeah, it's not a grain.

Jeff: But it's a good pollinator attractor, right?

Caitlin: Yeah. It's really good for pulling phosphorous out of the soil for some reason. Whatever is going on there, it pulls phosphorus out and releases it, makes it more available to the other plants.

Jeff: So, you would want to use buckwheat prior to planting tomatoes, right?

Caitlin: Perhaps. Now, that would be a good experiment. Maybe someone's done that. Yes. I don't know. [LAUGHTER] Plant it around your tomatoes.

Jeff: Pardon me.

Caitlin: Well, plant it around your tomatoes.

Jeff: Yeah, yeah.

Jerry: I thought of planning that white Dutch clover around my tomatoes.

Caitlin: Yeah.

Jeff: Yes. Jerry and I have talked about New Zealand white clover. Caitlin, are you familiar with New Zealand white clover?

Caitlin: No. Is that one that won't overwinter?

Jeff: No, it will overwinter. It will get to be about three feet tall if you don't mow it or manage it. But [00:36:00] it can be planted in between spaces in your garden, and it would make a really nice cover crop.

Jerry: So then, all you do is we use the weed eater to calm it down?

Jeff: Sure. Groom it.

Caitlin: Right.

Jerry: Grooming. [LAUGHTER]

Caitlin: I'd love to see people getting more creative with a certain level of diversity and messiness in the garden in terms of plants that are growing together. Maybe you have some cover crops growing, your clover growing under your tomatoes, the various things like this, and flowers planted among. There are a few weeds that we have to work really hard to stay ahead of, bindweed, Canada thistle. A few of those things that once they get started, just are so hard to get rid of, and be very vigilant with those. But a lot of other things, it's really not hard to manage if you can keep ahead of them, and mulching can make a huge difference in terms of keeping ahead of the really small weeds that have pretty weak seedlings anyway to come up through that. Then also, when you reduce your tillage, you're not storing up lot of the seed bank that's down there anyway. You're not leaving that soil bare where they just are the first thing to germinate.

The other thing we do is use a drip line system. So then you're only watering the plants that are right in a row instead of having a sprinkler system where you're watering everything including all the weeds. We're so dry here in the Worland area that without irrigation, not much grows. A few weeds, but not very much. So that's the other things to think about.

Jeff: That's the same for us. In our garden, we use drip irrigation lines right over the top of the crop, and then we're not irrigating in-between the rows, and it's really easy to manage the weeds in-between time. So, that works out really well for us. If it's not being watered, it won't grow.

Caitlin: Yeah.

Jerry: So, the grasses for cover crop, did we cover that?

Caitlin: I wouldn't put the grains in the same category as grasses, the oats or wheat. You can use annual rye grass which is another one that's a thick, doesn't get tall like a grain, but it's got a thick coverage and it's highly competitive. Those are some good ones. There are a lot of different options for cover crops and a lot of them are edible. Really, cover crops, anything you grow to build the soil that you're not necessarily going to eat, but sometimes even if you just have some leftover seed at the end of the season and you have some bare soil, throw all that seed out there and let it grow. If it grows up and some of it covers the soil, provides some carbon, feeds the microbes, maybe it dies back, and then next spring, you've at least kept your soil covered all winter. So, you can get pretty creative with it, I think.

Jerry: Well, that sounds exciting. I'm getting more excited about gardening. The weather is going nicely. [OVERLAPPING]

Jeff: Wait a minute, Jerry. Just because next weekend is your rototiller weekend, [LAUGHTER] your annual rototiller weekend, doesn't mean that you couldn't have started gardening already. What have you been doing?

[00:39:00] **Jerry:** Well, [LAUGHTER] as a matter of fact, I planted an elephant ear in the garden, in the garage anyway, and I've planted a few cannas in the garage.

Jeff: Okay.

Jerry: So, I've got a few things started, but nothing really too much.

Jeff: Caitlin, other than your peas, have you planted things? I

Caitlin: I've got some peas, and radish, and kale in new ground. We'll see what happens. We have some spinach that's really short, we're going to transplant that underneath the cold frame and try— The community garden is really a giant laboratory [LAUGHTER] for Caitlin to [LAUGHTER]

So, with the side benefit of giving away a couple thousand pounds of foods every year to the community. Anyway, I would encourage anybody listening, if you're in Worland, please get a hold of us at the extension office and come down and visit our community garden, come check out what we're doing, share some ideas. I would encourage folks to visit.

So, we will do a little bit of transplanting, I think, and we have this cold frame and [OVERLAPPING].

Jeff: You will have a geodesic dome before the end of the summer, right?

Caitlin: We will in June. Yeah.

Jeff: Yeah.

Caitlin: I'm very excited about that.

Jeff: So, we will be doing a geodesic dome workhouse— Workshop, misspeaking again, at the Worland community garden in June.

Jerry: So Jeff, is that where you actually go and build a geodesic dome?

Jeff: Yes. So, my intention is to make it a three-day workshop and show everybody from start to finish what we need to do in order to get all the parts and pieces prepped, and then build the whole thing. If that doesn't work out, I'll be ready to just show up and build it. [LAUGHTER]

Caitlin: Sounds good. We're excited. The other thing, I'd like to put another pitch in while we're talking about classes. I have an online garden class for beginners on April 9th at seven o'clock. [Okay.] We'll be using Zoom. If people are interested, they can call the extension office here, [307] 347-3431, to get the information on that. We're actually doing a series; we'll do [inaudible] gardening, we'll do composting, and then we'll do good growing cut flowers.

Jeff: So, I hate to share the bad news but by the time this airs, that will be over. [LAUGHTER]

Caitlin: Oh, okay. Well edit that out. [LAUGHTER] We'll have more coming up— We'll have a compost class then.

Jeff: Okay, well let's see. So, we're airing on Friday.

Caitlin: Okay.

Jeff: Okay. So, what's the next thing coming up that you would like to talk about?

Caitlin: So, we have a compost class coming up on Thursday.

Jeff: On Thursday, what day?

Caitlin: Whatever that Thursday. You better edit this, Jeff. Move on.

[LAUGHTER] **Jeff:** Ryan is the editor. He'll take care of all of that.

Jeff: That's next Thursday, right?

Caitlin: Yes. That would be Thursday, April 16th at 7:00 PM. It will be a virtual class, and anybody who'd like to participate, please call office here at [307] 347-3431.

Jeff: Okay. Perfect. Fantastic. So, Jerry, I'm going [00:42:00] to give you a little time, you're getting ready. Are we having a great pumpkin contest this year?

Jerry: Yes, we are. In the midst of all this craziness, we need to have some normality.

[LAUGHTER] So giant pumpkins, and Caitlin, I think that you have a couple of people around your area as well, but I [OVERLAPPING].

Jeff: Wait a minute. Before you start, giant pumpkins are not normal. I'm just going to throw that out.

Jerry: Now, wait a minute. [LAUGHTER] This year, Myrna found [OVERLAPPING].

Caitlin: Growing giant pumpkin are not normally either.

[LAUGHTER]

Now, Myrna found a white, it's like a Howden. Although...no, not a Howden. ... It's like a white pumpkin and those are called something.

Jeff: Ghost pumpkins? [LAUGHTER]

Jerry: Luna.

Jeff: A Luna? Okay.

Jerry: A Luna. White Luna.

Jeff: Sure.

Jerry: We're editing, editing, editing. [LAUGHTER] So, it'll be a giant show king, [LAUGHTER] and it's a white one, and it can grow up to 1,000 pounds. So, we're hopeful that that will come in and do real well. Then we have a French one, Musquee de Provence squash. So, they're just fun stuff.

Jeff: Your French is as bad as good as mine, Jerry. [LAUGHTER]

Jerry: Thank you so much. [LAUGHTER] So anyway, we're meeting with the giant pumpkin committee, and hammering out the details, and seeing how we're going to proceed forward. But everyone should start thinking about getting a giant pumpkin seed here in the near future because if you put it into the soil and germinate it and come up to the first cotyledons, and the first true leaves, you can tell which way your vine is going to grow because it goes opposite of the first cotyledon that goes to one side. So, you can identify which way your vine is going to grow and that's kind of important if you're placing your pumpkin.

Jeff: Interesting.

Jerry: Then we need to think about amending your soil and getting that pumpkin ready to grow, and maybe some cold framing so that we can protect that seed.

Jeff: So, that's really why you're interested in cover crops, isn't it? You want to have the best soil for this giant pumpkin, don't you?

Jerry: Maybe plant inside of that cover crop as a protection from the [OVERLAPPING].

Jeff: From the wind? [LAUGHTER]

Jerry: The wind, and possibly, if you put a tarp over the top, [00:45:00] then you're not smothering the actual pumpkin itself, you're just smothering the cover crop, and well, who cares about the cover crop?

Jeff: Yeah. Right.

Jerry: We really care about that pumpkin.

Caitlin: That's really a good idea. I think we could grow a wall of wheat or oats around it.

Jerry: Absolutely.

Caitlin: That's a good idea.

Jerry: So, I'm thinking that that might be one of those things. Jeff had showed me another cover crop. It was called something like saffron, but it wasn't saffron. It's in Birds and Blooms or Backyards and Gardens?

Jeff: Now, you put me on the spot. Sainfoin. Was that it?

Jerry: It has a real nice pink flower?

Jeff: Yeah. Sainfoin.

Jerry: Sampoint?

Jeff: Sainfoin.

Jerry: Sainfoin. Yeah.

Jeff: I'd spell it for you, but it has a funny spelling. So, I [LAUGHTER] can't of it. I would spell it incorrectly on the air, I'm sure.

[LAUGHTER]

Jerry: Sainfoin. Okay. Anyway, so I was thinking about doing some of those as well for the bloom and bringing in pollinators and that sort of thing. Because as we all know, pumpkins need their own pollination. The bees will come around and pollinate for us, or you can self-pollinate. But generally, what you want to do is let nature take its course and go from there.

Jeff: Have somebody else do the job for you.

Jerry: Yeah, absolutely. Yeah. Provide water, pollination, and good growing conditions, and you should develop a fairly good pumpkin.

Jeff: Okay.

Jerry: So, we're still going to have the contest and I think I will relay the date at that time. [Sure.] But we all just need to elevate our ideas to obtaining a pumpkin seed.

Jeff: All right. Sounds good. I think that we've probably hit the max for our time today. I want to thank everybody for joining us and participating. Thank you, Caitlin, for talking with us about soils, and mulching, and beginner gardening. We appreciate it immensely.

Caitlin: Thank you. Always a pleasure.

Jeff: Okay. Fantastic. We're just happy to have a guest and hope that everybody enjoys what we have to provide today. So, Jerry, thank you very much. We'll see you next week. We'll be in touch scheduling the next program.

Jerry: Thank you very much. Bye now.

Jeff: Thanks a lot.

Narrator: You've been listening to [MUSIC] Lawn and Garden with the University of Wyoming Extension specialist Jeff Edwards, and co-host Jerry Erschabeck. Presented by KGOS and KERM Radio in Torrington, and by University of Wyoming Extension: growing people, knowledge, and communities.

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