
Living Homegrown Podcast – Episode 153
Fermentation Basics & Real Pickles

Show Notes are at: www.LivingHomegrown.com/153

Theresa: This is the Living Homegrown podcast, episode 153.

Announcer: Welcome to the Living Homegrown podcast, where it's all about 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: Hey there, everybody. Welcome to the podcast. I'm your host, Theresa Loe, and this podcast is where we talk about living farm fresh without a farm. Now, that includes organic small space food gardening, canning and fermenting the harvest, and artisan food skills like baking your own bread. It's all about the different ways that we can live closer to our food and take small delicious steps towards living a more sustainable lifestyle. If you'd like to learn more about any of these topics, or my online courses, my coaching, or my Living Homegrown membership, then just visit my website, livinghomegrown.com.

Today we are going to learn how to ferment real pickles. Now, what do I mean by that? What do I mean by a real pickle? Well, I have talked many times on this podcast about how to make quick pickles. Now, a quick pickle is where you take a cucumber or some other vegetable and you simulate the old fashion pickle by using just vinegar and spices to steep that vegetable and make it turn into a pickle-like product. Now, a fermented pickle is usually what people are talking about when they talk about a real pickle. A fermented pickle is the old fashion type of pickle where you are allowing Mother Nature with a little bit of help from a saltwater brine, but you are allowing Mother Nature to create that pickle for you with beneficial bacteria.

So there's nothing wrong with a quick pickle. It's actually a really fun, delicious and quick way to make a pickle. But if you want the beneficial bacteria, the probiotics and everything that comes along with that, then you want to make the old fashioned or real pickle which can only come from fermenting the pickle with a saltwater brine. Now, this is something that a lot of people like to do, it's kind of fun, it's an artisan food craft, and it can be healthy as well.

So today what I'm doing, is I am bringing on one of my instructors from my Living Homegrown Institute, from my membership site. This is Karen Diggs, and she teaches all the fermentation classes inside the Institute. Now, Karen and I go way back. We met actually when she was having a Kickstarter for a

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fermentation tool that she created. She's the founder of Kraut Source, which is this really cool little tool that sits on top of a mason jar and sits on your countertop so that you can ferment in small batches. Now, I absolutely love the Kraut Source for many reasons, but this is not an infomercial for the Kraut Source. I just want you to understand that not only does Karen come from a culinary background, and I'll give you more information on her in a second, but she also really, really loves to ferment food and she knows it backwards and forwards because she has developed this tool.

Now, in today's interview, we talk a lot about the Kraut Source and why she developed it, but also she gives you a really simple way to ferment a pickle on your countertop without using any tools at all. So if you decide you want to just experiment with this and give it a shot, then absolutely you can do it without having to purchase anything special. And then if you decide you love fermenting and you want to get into it deeper, then there are many different fermentation tools out there, including the Kraut Source. So in the show notes for this episode, I will have the recipe for real pickles that Karen is going to walk us through, I will have information on Karen and other recipes that she has on her website, and I will have information on the Kraut Source and some other things that we talk about. There will be links to everything in the show notes. And to get to the show notes, you go to livinghomegrown.com/153.

Now, let me tell you a little bit about Karen Diggs. Karen is a classically trained chef, a certified nutritionist and a culinary instructor. But she's also the author of Happy Foods: Over 100 Mood Boosting Recipes, which is her latest book. Now, Karen got hooked on fermenting and became fascinated with traditional fermentation crocks, and this later to an innovative idea, fermenting in small batches in mason jars, and she created the Kraut Source. Now, Karen lives in California up near San Francisco, and she teaches fermentation classes all over the place, including inside my Living Homegrown Institute. And what she's going to talk about today is how to make a real pickle, but we are also going to dive into all the basics of fermentation, the safety, why you even want to ferment food, and exactly how it works. So I think you'll find it a super informative episode.

Now, before we dive into the interview, I want you to know that today's podcast episode is brought to you by my Living Homegrown Institute, which is my monthly membership site. And there you can access an entire library of monthly masterclasses that help you live a farm fresh lifestyle without the farm. In my membership, we cover everything from how to grow epic tomatoes, to raising chickens, to how to make your own cheese and fermented vegetables. Now, I believe that living an organic farm fresh lifestyle is really a journey in learning. And just as we learn different skills such as food fermentation, and food growing, and even critter keeping, there are three distinct stages of growth. We start out being curious, we go into experimentation, and eventually we grow into mastery of these different skills.

Now, if you're looking at a farm fresh lifestyle for yourself and you're curious where you may fall on the growth scale on all these different skills, well, I have a free resource for you. It's my Farm Fresh Success Path that my students use inside my Living Institute, and it will help you decide where you are on your own journey, the characteristics of that stage, and some action steps and information to help you go to the next level. To get the Success Path PDF, you can go to livinghomegrown.com/path, that's P-A-T-H, and you can download it there for free.

All right. So let's dive into my conversation with Karen Diggs of Kraut Source, all about the basics of fermentation and how to make a real cucumber pickle.

Hey, Karen, thanks so much for coming back on the show.

Karen: Thank you, Theresa. Always a pleasure to be with you.

Theresa: Oh, good. Well, we talk all the time and you help us out inside our membership area teaching fermentation. So it was funny when I finally realized that you hadn't been on the podcast for a while, because I feel like you've been teaching all this time, but you've been teaching in our membership area. And so-

Karen: Yes.

Theresa: ... I really wanted to bring you back on the podcast because I get a lot of questions from people who want to learn how to ferment food. So I'm really excited about diving into this. It's an area that I feel is so important and can be such an easy way to add nutrition and beneficial bacteria into our adored diets, but not in a super hard way. So we'll dive into all of that. But before we start, I would love to have you tell everybody a little bit about how you got interested in fermented veggies in the first place?

Karen: Yes, I'd be delighted to. So as you know, I've been a chef for over 20 years. And believe it or not, in my earlier cooking career, I never entertained the idea of fermented vegetables. Like sauerkraut and pickles were just not on the radar for me. But I got reconnected with this very traditional way of preserving vegetables and also fruits too when I went back to school to study nutrition. So in my nutritional studies, of course, we were talking about all the different dietary options that you can have to improve digestion, to strengthen your immune system, and we started learning about why people are beginning to make sauerkraut, or kimchi, or pickles again. And when I learned about the incredible health benefits, I was really so excited. And of course, it also rekindled my connection with fermented foods going back as a child because I grew up in Hong Kong, and although my mom was never a good cook ...

Theresa: Sorry, mom.

Karen: Sorry, mom. She did do some crazy fermented projects in our kitchen that I remembered as a child. And so it just sort of ... This reconnection and the learning about it in nutrition school just sort of sparked the fire, or you could say sparked the fermentation in me to just start experimenting. So I started just making vasts and vasts of things, some were great, some not so great, and some just downright weird. But once you get going, it's sort of like once you have the fermentation fever, it starts to become really, really fun. And for me as a chef with a trained palette, I also began to recognize what an incredible flavor profile fermented vegetables can deliver on the planet, so to speak, and it's a perfect complement to any food. And the bonus is, as I've mentioned, it helps digestion. So it's almost like, if you have a little fermented food with every meal, it will help you digest the other foods and the nutrients within that meal itself.

Theresa: That's a great answer. And I agree with you 100%, I think it is a lot of fun and it's also very flavorful. So you mentioned something there about ... a little bit about the health benefits. So I would love to talk about that, just in case someone doesn't realize how awesome it is to do, or to even eat or consume fermented foods. So let's talk about that a little bit. Why should people ferment food? Or what are some of the reasons why we want fermented food in our diet?

Karen: Well, the first one, and it's the most important one for me, and I already mentioned it, it's digestion. I also teach culinary classes. And as I jokingly tell my students, digestion, don't eat without it.

Theresa: I love that. That's so good.

Karen: And everybody laughs, but I mean, I'm very serious. If you have a meal, it could be the most fantastic meal ever, made by the most famous chef with all organic ingredients, for your body to fully appreciate and absorb the nutrients from that meal, you need to have robust digestion. And unfortunately, nowadays because we are subjected to so much stress and environmental toxins, our digestion is actually really taking a hit. And the other thing is also as you age, your digestion actually declines. So for these many reasons, whether you are a child, a teenager, or an adult, you need to have good digestion. So one of the major bonuses of eating fermented foods is that it does exactly that, it gives you the enzymes and nutrients to digest a meal properly.

Theresa: We know that makes so much sense and it's so important. Because so many people who are listeners or followers of this podcast, they're growing organic food, or they're shopping at farmers' markets, and maybe they're purchasing organic products that are a little more expensive. So the last thing you want to do is consume it and not absorb all those nutrients. It's like a waste of your money.

Karen: Exactly, exactly. I know that some of your listeners may be taking digestive enzymes to help with digestion or probiotic capsules. So think of a little serving of sauerkraut or pickles as having both components. It helps you with your digestion like digestive enzymes, and it has probiotics. So I'm not saying don't take digestive enzymes or probiotics if you're working with a nutritionist or doctors, those are certainly helpful, but here's another option that you can bring on to your eating regimen.

Theresa: Yes, and it's something that you can just add a little bit every day. When you and I were first talking and you had all these different things that you were fermenting, and we were talking about it, you have all different things so that it's not like, okay, you have to eat a spoonful of sauerkraut with every meal, which would get really boring very quickly. You can experiment with different things and always be changing it up. But also the flavor stuff, I want to talk about that, especially since you are a classically trained chef, you understand flavor. And that is something that can be so fun with the fermentation, adding a little spice in, adding a little heat, you can get these really unusual combinations. And when you do it in small batches, nothing's going to waste. Even if you end up not liking it, it can still go out in the compost pile and all those beneficial bacteria will do their work out there. So that's something that's kind of fun to consider, too. It's just that you can experiment and have fun with this.

Karen: Absolutely. Because when you are fermenting in a small batch, and here we're talking about using mason jars. I think most people have mason jars already in their homes, so it's easiest to use a wide mouth mason jar because of the opening. It just makes it more accessible putting ingredients in and taking them out. We also need to devise a way to keep everything submerged, but we'll talk about that maybe a little bit later. But the primary important thing to understand when you do a small batch, is that then you're not tied down to gallons and gallons of something. And if that big gallon of something goes wrong, then, one, you feel really sad.

Theresa: Yes.

Karen: Second, you've been waiting all that time and you might have been fermenting something that you harvested from your garden, and if it doesn't turn well, then it goes to the compost, but then you can enjoy it. So if you're doing it in a mason jar, it could be either a pint, or a quart, or half gallon, those are the most popular wide mouth mason jar sizes, then you have a manageable amount that you can experiment with. So if you are going chilies, or maybe you have some cucumbers in your garden, but not a whole lot, then making it in a small batch makes the most sense.

Theresa: Yes, and that's what's kind of fun about it if you are a gardener, because then you can be pulling things out. We all know if we garden, either everything comes on at once, or you get this little trickle of one cucumber, and then a few days later, another cucumber.

Karen: Yeah.

Theresa: So by doing the small batches, it lets us do something with it without having to like say, "Well, but I only got two cucumbers, there's nothing I can do." There actually is something you can do. So-

Karen: Yeah, actually, yes. And then as you said, you can feel more free to experiment with using different spices and herbs too.

Theresa: Yes, absolutely. Okay. So let's talk about the elephant in the room, which is that a lot of people get very nervous about fermenting. And whenever I've been talking to people, they're always like, "Well, wouldn't I poison my family if I do wrong?" And I'm like, "No, you don't understand. It's like such a safe thing to do." So let's talk about that. Why is fermenting food so safe?

Karen: Fermenting food, it's very safe because it does not create the environment with which a pathogen such as botulism can occur. And I think botulism is probably one of the primary fears that people sweat over when they think erroneously about fermented foods. And so the takeaway here is that fermented foods does not create the environment for botulism because primarily of the pH level. When something is fermenting, an acid ferments further and further, the pH will drop. So it is also anaerobic environment, so no oxygen, so, therefore, you cannot have the pathogen with which it spoils food.

So fermentation as a method of preserving food is one of the most ancient ways. And because of that preservation quality, it will not allow pathogens to develop, especially when it's done in a safe environment where the containers that you're using has been clean, and you're using a system that's preventing new oxygen from going in and allowing the carbon dioxide to escape. So it's very, very safe, and I can make an additional assurance by quoting [inaudible 00:17:33]. So for you, listeners, who are not familiar with [inaudible 00:17:36], he is the premier fermentation expert and he is my fermentation guru. He's written several best selling books on fermentation and I've taken classes with him, and he has assured thousands of people around the world over and over that fermentation is very safe and that the USDA has never had a report of someone being made ill from fermented foods.

Theresa: Yes, I agree with you and I also want to add to that, that the salt brine that we're going to talk about is such that anything that's all the bad bacteria is really kind of deterred because it's, like you said, it's not the proper environment for

the bad bacteria, and yet, that salt brine really encourages the good bacteria. So we have all the factors. We have the fact that we have this brine and we have everything pushed under the brine. There's nothing that can get in. We set it up in a way that critters can't get in there and we'll talk about that. But all of that is set up so that nothing can go wrong, but if something does go wrong with it, like it starts to spoil rather than preserve, you really do know right away because the odor starts right away, things start looking funky. It's just like food on your countertop if you didn't refrigerate it and you just let it sit there, you would know right away when something has spoiled. It's the same thing with fermented food.

Karen: Right, exactly. And I think it's one of these food crafts that will rekindle your common sense, you know? I think so many of us have gotten so divorced from having our hands on food. And even for many gardeners, like they garden but they don't come into the kitchen and cook, you know?

Theresa: Yes.

Karen: And so I think once you get back into the kitchen and you gain confidence in creating your own foods, whether it's through canning, or even just like baking, fermentation is the same thing. Once you start the process of it, a lot of the common sense will like kick into place and you'll know, like what once you've done a few batches, you know what's good. And once in a while, if a batch goes south, you will know too. Your nose would tell you, your palate would tell you. And like I said, the good thing about a jar of sauerkraut or pickles is that if it goes wrong, you can see it, you can smell it. And if you're still determined, like, "I think I'm going to taste this," well, if anything tastes bad to you, then give it up to the compost. Sometimes it may taste bad, but it may not necessarily be bad. So we can, I think, like I said, rekindle our common sense and just sort of sift through and know what's good for us, and what is not.

Theresa: Exactly, exactly. And so people won't have any fear, like, "Oh, is it okay to taste it?" Well, like we said, botulism is not an issue here, because we're not setting up an environment that botulism can grow and thrive and reproduce. So when you taste something out of your refrigerator to see if it's good, it's the same thing, we're at the same level of bacteria, like if you taste sour milk, and you're like, "Ick, this has gone bad and it's awful," you know right away and you don't drink the thing of sour thing.

Karen: Right, yeah. Exactly.

Theresa: So it's the same thing here. So we're talking about a very safe thing to do. So I just wanted to clear the air with that, because I know that is the biggest hurdle for a lot of people. So now that we know that it's all safe, what are some of the things that we can ferment?

Karen: Really, theoretically, the sky's the limit. But obviously, there are some traditional vegetables that people across the world have found to be particularly easy for fermentation. So first off, and I'm sure many of you, listeners, already know that, or might even grow them, are vegetables in the cruciferous family, so cabbage, different types of cabbages work really well, the very traditional German style, just using the green cabbage, but you can use purple cabbage, kimchi is actually using the Asian cabbage or napa cabbage, you can use a savoy cabbage. So all the vegetables in the cruciferous family works really well. Cauliflower works great. I love using cauliflower with some carrots and onions and garlic, and you can use spices and herbs to your liking. Cucumbers, we are now coming into cucumber season, works great. And you know what's a really, really fun one to do are those little tiny ones that look like they're miniature watermelons?

Theresa: Yes.

Karen: Yeah. What are they called? Like Mexican gherkins? I think it's one name for it. There're many different names for it. In fact, I still have a jar sitting in my refrigerator that was fermented last summer.

Theresa: Oh, that's awesome. Yeah, I will link in the show notes to where you can get seeds for those because they are really fun. Especially if you have kids, it's a fun thing to grow.

Karen: Yeah, those are fun and they taste really delicious, become like really crunchy and you're just like popping into your mouth.

Theresa: Yep.

Karen: Yeah. So cucumbers work really well, and radishes work well. And as we've talked about in the past, some fruits can do really well too. Blueberries work well if you want to venture into the fruit category. But to be honest with you, I'm kind of like a traditionalist at heart. I just love sauerkraut in the many, many different forms. And when you start doing it at home, you can be the creator of unusual blends. Like one of my favorite right now is using just good old fashioned green cabbage with organic rose buds and vanilla.

Theresa: Ooh, that sounds really good.

Karen: Yep, thank you.

Theresa: That's fun.

Karen: Yeah. And actually, it not only sounds good, because people have tried it, because in the mind it feels like strange, well, what a strange combination, but many, many people have tried this combination and they really love it.

Theresa: Ah, that's fantastic. Well, what we're going to talk about today for a recipe is making true pickles using cucumbers, and that's where you're actually fermenting them. So the difference between a fermented pickle and what we call a quick pickle, or a vinegar pickle, is when you make a quick pickle or a vinegar pickle, there's no fermentation going on at all. You are just putting it into a vinegar brine with some spices, you let it sit and it absorbs some of that flavor and you get a pickle like product. But what we're talking about doing today is actually fermenting the cucumbers so that it becomes a real pickle, what we call a real pickle.

Karen: A real pickle, yes.

Theresa: Yeah. And it tastes just as wonderful and you get all the probiotics with it. So that'll be really fun to dive into. But before we do, I want to talk about containers. So you are the Kraut Source lady, and when I first met you, that's actually how we met, was because you were having a Kickstarter with your Kraut Source. And what I loved about it was that it was small batches that we could do on our countertop, and I loved the idea of using my mason jars, sitting out on the counter. So it looked really awesome and I could enjoy it and visualize, I could see through. Because before that, I had been fermenting in a crock where it's dark, and it's ceramic, and you can't really see what's going on on the inside. Plus a lot of those crocks are ginormous, so you asked to like make, like you said, big batches, and if something goes wrong, you end up throwing a lot of way.

So let's talk a little bit about the Kraut Source. How did you come up with this idea for doing this little tool that goes on top of a mason jar?

Karen: Okay, great. Well, Teresa, I'm glad you enjoy using Kraut Source, and I always love to share how I came up with the idea because, I, like yourself, started fermenting using big crocks, and I still have many crocks here. So with crocks, you have the open system where it's just like a straight side of crock, and then you have to devise a way to keep all the vegetables pressed underneath the brine, and then throwing a towel over it and just monitoring it day after day to make sure that little critters don't get in and that your brine is still covering all the vegetables. And I've also used crocks where there's a cover on it and there's a weight that comes with it.

So all of these different styles, they do work. But I find that for most modern cooks in the kitchen, the sheer size is kind of a deterrent because even for an average crock, you would need about eight to 10 heads of cabbage to fill it

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properly. And if you're talking about cucumbers, you probably need like six, seven pounds to fill a crock. So it's a lot of work for many people, and then you end up with a lot of fermented stuff. And if you're trying to introduce it to your family, the last thing they want is like a big crock that starts to smell as it ferments. And don't take the smell part wrong. I mean, to me now, the smell of pickles fermenting is like heaven. It smells so great. But for the initiates, when that smell starts to produce into your kitchen, it may be a little strange.

Theresa: Yeah, right, exactly.

Karen: So these open crock systems can literally make your house smell too, you know. And so when I started fermenting, I was doing in the big crocks, but then eventually I thought, there has to be an easy way, and that's where the chef part of me kicked in and I thought, "Okay, well, if I have a hard time fermenting using big crocks, how is the average home cook? How would they be incentified to make fermented products, which is what I really want people to do?" I wanted people to just like start not fearing the process of fermentation and start to enjoy it. So I thought, "Great, well, if we can shrink down a traditional fermentation system to fit onto a mason jar, that might be a good way to go."

So in fact, I got the idea for Kraut Source using the traditional European crocks, where on the very top, instead of just like a simple opening, there's a little moat or well, like it sits on top of the crock, and then when you put the cover on, you fill the moat with tap water, and that becomes a water seal. So this water seal will prevent oxygen from going in, but while the ingredients are fermenting, oxygen can escape. So I was looking at my ... I think the jar that I was using was about eight gallons with the cover and the moat or well. So I'm like, "Great, let's take that and shrink it down. And so that's how I came up with the idea of Kraut Source, so the same concept, but I shrank everything down, including devising a weight that has a spring attached to it. And all the pieces are manufactured in high quality stainless steel so that there's no worry of it interacting with the acidity of the brine or low pH, and it's also dishwasher safe, and it fits universally onto any wide mouth mason jar.

Theresa: Yes, and that's the part that I love the best, because I do have some vintage jars and this does fit because it's the standard thread.

Karen: That's great.

Theresa: Yeah. Now, some of my really old, old jars have a different thread system, but some of the in between age one that are maybe like 50 years old, they still had a standard thread. So I've been able to set out my pretty jars and still use the Kraut Source. But what I love about it, though, is that little water moat. And so I want to make sure everyone understands that if you are doing a fermentation with the big giant crocks, they would have the big moat as well, and it would

keep things from flying in, or crawling in. But as you're fermenting, the gases are coming out, so it would still let the gas come out.

So what's cool about when you use this on a mason jar, you have the clear glass. If you have kids, especially, you can see the little bubbles happening inside and you can see things changing, and you can see that everything's working, and it just makes it, especially if you're a first timer, it makes it so it's not so mysterious because you're watching the whole process instead of it just magically happening in the dark crock. You do want to keep it out of the sun, like, I keep mine on the counter, but it's in a dark corner, it's not like on the windowsill or anything.

Karen: Right.

Theresa: Yeah.

Karen: Yeah, and that's the beauty of using a glass jar, you see the transformation. The first couple of days, there's a lot of carbon dioxide action happening as the microbes transform. And after four or five days, it sort of settles down a little bit. And one really fun thing to do, I talked about doing cauliflower. If you get white cauliflower and you get some of these beautiful heirloom carrots that are purple, over time, the cauliflower gets tinted pink.

Theresa: Oh, cool.

Karen: And then the purple gets drawn out from the heirloom carrots, and then they look like your normal carrot color. It's really fun. That's one of the really fun fermentation project that you can do with kids. And then the same thing goes for fermenting cucumbers, you'll also see the transformation, they'll become less vibrant green as the days go by. And then at the end of maybe seven or 10 days, then you have what looks classically like a pickle.

Theresa: Yes, yes. Okay, very cool. I love the idea of doing this with kids too because we know that if kids are involved with the cooking process or even the growing process, they're more likely to eat what they are working on.

Karen: Yes.

Theresa: So, really important, yes. Now, one of the things you talk about also, it's just so everyone knows, like you don't have to have a Kraut Source just to do fermentation. I love mine and we're talking about it, and we're making everybody want one, [inaudible 00:31:43] talking about how awesome they are. But you do have a jar in jar method. So I want to touch on that. So if someone wants to just test this out for the first time before they make any sort of

investment in any kind of equipment, you can actually ferment with just a big jar and a little jar. So could you explain how that would work.

Karen: Yeah, absolutely. So my favorite type of mason jar to use with this purpose is the quart sized jar. The half gallon, you can also use, but a quart sized jar works well for experimenting. So you get your jar and you fill it up with whatever vegetables you choose to ferment. If you're using sauerkraut, then a lot of natural liquid will be drawn out from the cabbage, so you should have enough brine. If you were doing a solid vegetable such as cucumbers or cauliflower, then you make a brine. But in either case, the brine that is produced needs to sit above the top of the vegetables by about an inch. So you pack your vegetables into your quart sized mason jar, and then you allow the liquid to settle. And with the cabbage, you would need to use a back of a rolling pin, or an actual sauerkraut pounder to compact the vegetables tightly into the jar. So the vegetables will reach the shoulder of the jar, and then the brine should reach about an inch above.

So at this stage, if you don't want to purchase any kind of fermentation device, then you want to get a smaller size mason jar, one that fits into the opening, but one that doesn't get stuck, okay?

Theresa: Yeah.

Karen: And in this glass jar, you can put in some maybe dry beans or pebbles. The idea is to create a weight. So after you filled in your vegetables and there's enough brine covering the vegetables, then you carefully lower this smaller jar into your big jar, and the weight of this jar will keep all of the vegetables submerged underneath the brine. So that's the idea of the jar in a jar method.

This system is functional but not the best, because there isn't a really good way to keep the oxygen from going in. The CO2 will naturally escape because there's a little gap between the two jars. So the last thing you want to do once you've set up your smaller jar into your bigger jar, is to cover it with a clean kitchen towel or cheesecloth, and then I would also secure it with a rubber band or with a string so that little creatures don't fly into your fermentation.

Theresa: Yes, we don't want that.

Karen: We don't want that. With this method though, you have to be very diligent and keep an eye on it because the brine can dry out. And if the brine dries out, then the very top of the vegetables will come into contact with air, and whatever comes into contact with air will start to spoil.

Theresa: Got it.

Karen: So that way ... I mean, I don't deter anyone from trying it and I definitely did that myself, but the only caveat is just you just have to be diligent and keep your eyes on it.

Theresa: Perfect. Yes. And so it gives someone a way to give this a shot before they actually purchase any type of vessel that would be a fragmentation vessel. So I like that. So it's just something you can just have two jars and give it a shot. So, very cool.

Karen: Right. And a big caution here is, of course, don't use anything that's plastic.

Theresa: Right.

Karen: And do not use anything, including the container that you're fermenting in, that is made from mixed metal. There's a difference between stainless steel and sort of mixed metals. So if you have a container where you're not sure of what it is ... If it looks stainless steel, doesn't necessarily mean that it is stainless steel. So be careful with the initial fermentation vessel. And also if you're doing the jar in the jar method, glass is the safest option.

Theresa: Absolutely, yes. Glass is so good because nothing can absorb or will be absorbed into your brine. So-

Karen: Right.

Theresa: Yeah. Plastic, you definitely want to avoid that. Perfect.

Karen: Yeah, yeah.

Theresa: Okay, awesome. So let's dive into a pickle recipe.

Karen: Yes.

Theresa: What would you like to share with us for today?

Karen: Yeah. As we're talking here, I actually have a half gallon jar of pickles fermenting right in front of me. And you know, I drink a little shot of pickle brine, probably like about three, four times a week.

Theresa: Oh, that's good.

Karen: Yeah, yeah. So with making real pickles, it's basically the same concept, so you're taking a solid vegetable. And with cucumbers, depending on the type that you get, it could be those mini Persian cucumbers, it could be [kirbys 00:36:26], it could be ... Right now is a great time for those Persian cucumbers

that are very exotic, or serpentine cucumbers. So it really doesn't matter what kind of cucumbers you use. So let's say you are going to do them in a quart sized jar, so you want to fit them in again to the shoulder of the jar. And with cucumbers, the classic way is to use dill, and garlic, and juniper berries, or you can also use a pickling spice plan. That's also good too. With real pickles though, you do need to make a brine because you are not going to extract any kind of natural liquid from the cucumbers like cabbage.

Theresa: Okay.

Karen: So a good ratio for fermenting your cucumbers is one tablespoon of sea salt to one cup of filtered water. If you are someone who does ... simply you just like don't want a lot of salt, you can lower that to as low as one teaspoon. But in my experience, using one tablespoon to one cup of water is better for making really delicious real pickles.

Theresa: Yes, because it will give it a more of a crispness-

Karen: Yes, exactly.

Theresa: ... and it will ferment really quickly using the high salt. Now, let us talk about salt real quick here. So you recommend sea salt and the reason for that is?

Karen: Because your conventional table salt is really stripped of all nutrients, really, and so there are no minerals in it. And on top of that, it's just pure sodium chloride, and that's the stuff that will give you hypertension. And it also may have preservatives or anticaking agents in the traditional table salt. So for all of those reasons, you don't want to use conventional salt. You really want to purchase a good quality sea salt, or the Himalayan pink salt works really well, too.

Theresa: Great. Okay, good. I wanted to make sure we mentioned that so people wouldn't think "Oh, I'll just use the iodide anticaking agent salt." So that's covered. So, yeah.

Karen: Yeah.

Theresa: And sea salt, there's some wonderful sea salts out there, so we can link to that too. Oh, and I should mention, we're going to have a link in the show notes to this recipe, so people don't have to try and write this all down. They'll be able to just read the recipe online. Okay, perfect. All right. So we have our salt and our filtered water, which you always talk about, is so we don't have the chlorine that's in there, or anything else that might inhibit our fermentation.

Karen: Right.

Theresa: So we have that, so what do we do now? We have our our ingredients, our salt and our water.

Karen: Okay. So then for me, the simplest one when I started making real pickles is I just got some mustard seeds, and as I mentioned, garlic and dill. You can also add in a few slivers of onions if you like that, and then you have your brine ready to go, and you pack in your cucumbers however it will fit into the jar. So you need to do some maneuvering usually, to make them fit. And again, they should reach the shoulder of the jar. When you're doing pickles though, I would suggest that before you pack in your cucumbers, when you have spices that are small, you should put those first into the bottom of the jar. They always have a tendency to float up.

Theresa: Right.

Karen: So it helps to put them at the bottom of a jar. Oh, and by the way, if you like it spicy, you can also add in some chili flakes.

Theresa: Ah, okay.

Karen: Yeah. But now I will share with your listeners, My great secret to making really crunchy and delicious cucumbers-

Theresa: Okay.

Karen: ... or cucumbers turning into pickles. I use a very high quality tea leaf.

Theresa: Oh.

Karen: Yeah, because the tannin in the tea leaf will keep your pickles crunchy.

Theresa: Okay, so how much do we add in?

Karen: For a quart size, I use a level teaspoon of tea leaves. Now, it doesn't have to be a specific type. You can use black tea leaves, you can use green tea leaves. I personally use a Dragon Well organic tea leaf. And that's just me because I also love drinking tea, and I think it's important that it's also organic. Just know that if you use a dark tea leaf, the brine will turn darker in color, but that's totally fine. That's because of the nature of the tea leaf.

Theresa: Okay, okay. Awesome. Yeah, that's a really good tip. Yeah.

Karen: Other things that you can use if you just don't want to use tea leaves, you can use horseradish root traditionally that was used, and also grape leaves as well.

But with the grape leaves, again, you want to make sure that it is organic because they do absorb a lot of pesticide.

Theresa: Oh, right. Okay, good point. Okay, so we mix up our brine of the sea salt and water, and we pour it in over our spices and our cucumbers, and then either we do the jar in jar method, or we use a kraut source or whatever tool we're using to hold everything down under the water, and then we just set it on our counter. So how long do we typically ferment this?

Karen: Okay, so with fermentation in general, you want to let it go for at least six to seven days, because this will ensure that there are lactobacilli strains, or what we also know as probiotics in your fermentation. If you do it for less, one, it doesn't really ferment properly, and second, you're not getting the healthful probiotics. So in any kind of fermentation, you want a minimum of six to seven days in general. Specifically for cucumbers, I like to let it go between eight to 10 days.

Theresa: Okay.

Karen: But I've definitely let it go for longer. I mean, provided that you have a good system going, whatever system you're using, you can let it go for as long as two weeks.

Theresa: Wow, okay.

Karen: Right.

Theresa: Yeah.

Karen: But like I said, my preference is to let it go between eight to 10 days. And something that I've also discovered since I do so many batches of pickles, is that once you're done fermenting at room temperature, when the pickles are stored in the refrigerator for three, four days, they improve.

Theresa: Ah, okay. They-

Karen: This does improve in flavor.

Theresa: Fantastic. Okay, well, that's good to know. Yeah.

Karen: Yeah. I mean, they're good from the get go, but if you can stand it to let it sit there for a few more days, they just sort of improve, and the brine also improves in flavor.

Theresa: Okay, great. So anyone who's never done this before, they're probably thinking to themselves, "No, wait a minute, all I do is I just set it on the counter? How does this ferment?" So explain how there is the bacteria already on the vegetables and that's what causes the fermentation, right?

Karen: Yeah. So we're going to get a little technical here, but stick with us.

Theresa: Okay.

Karen: It's actually very, very simple. So naturally occurring on all vegetables and fruit is something called lactic acid bacteria. And again, don't let the word bacteria scare you because there's actually far more good beneficial bacteria than there are pathogens or bad bacteria, because nature is great. So lactic acid bacteria is naturally occurring on vegetables. So we rely on them to actually do the preservation and to provide the probiotics. So the first three or four days when you have created this environment to ferment your vegetables, there's actually a strain that starts to develop and it's called Leuconostoc mesenteroides.

Theresa: That sounds so fancy.

Karen: I know, I know, doesn't it? Or I call them LMs, okay?

Theresa: Okay, yes.

Karen: So these LMs or Leuconostoc mesenteroides will start the fermentation, but they don't belong to the lactobacilli strain. So they start the fermentation and they actually start to kill off the pathogens that will spoil things. Once they start developing and the pH starts to drop, then the lactobacilli strains will come into play and they will start to develop. And once you get the lactobacilli strains happening, that's when your fermentation is stable, and that's when you know that there are probiotics there as well. And there'll be different strains that come into play over the period of time, but basically what's happening after the first few days is you have these beneficial strains and they're doing their job, continually warding off the other bacteria that might cause spoilage and stabilizing your fermentation. So biologically in the microscopic world, that's what's happening. And it's really, really incredible when you think about it. So basically, we are using bacteria as our allies to preserve food, and they are using us as their allies to replicate themselves.

Theresa: Yes.

Karen: And these same bacteria are the ones that started life on Earth as we know it. So even on an existential level is mind boggling to me that they are helping us to thrive, and we are keeping them alive by fermenting.

Theresa: Yes, letting them multiply. And the thing that I find really fascinating is how the water becomes acidic and just like a regular pickle is tart and has the acid, and it just happens magically, it feels so magical because we can't see all the microscopic things happening, but you can see things changing, so that's how you know it's working, and you can taste the difference.

Karen: Right.

Theresa: So once it gets to the point that we want to stop the fermentation, or I guess we really never stop it, we can just slow it down, then we take our vessel and we can put it into the refrigerator. We can take off the moat and just put a lid on it and put it into the refrigerator, and that will greatly slow it down. So with a cucumber pickle, like what we're talking about, a real pickle, how long will something like that store in the refrigerator?

Karen: Okay, so let's backtrack a little bit. So when we say fermenting at room temperature, definitely not all kitchens have the same ambient temperature.

Theresa: Right.

Karen: So for some listeners, their summer temperature in the kitchen could be 75, and four other listeners, it could go up to 100. So this is the point where you have to kind of be the creator here and just know that when the temperature is warmer, things are going to ferment faster. If it's cooler, it'll be a little bit slower. So when I say I like my cucumbers between eight to 10 days, my kitchen ambient temperature is usually around 70 to 75. So listeners should keep that in mind. But once it's done fermenting at room temperature, then you remove whatever system that you're using on top of the jar, and you want to get your standard mason jar lid and ring, you know, uncover the jar, and then store it in the refrigerator. Once it's in the refrigerator, there's still fermentation going on, but just think that. At room temperature, these good bacteria are jumping around, they're having a party and they're fermenting. They're very, very active, and that's how we want them to be.

Once they're in the refrigerator it's like they're going into hibernation, but they don't really die. They're still there being beneficial to us, it's just like they go into slow motion. And so once in the refrigerator, it can store for a very long time. But as I will always tell my people that I teach fermentation, the idea is not to create a jar and just let it sit in your refrigerator.

Theresa: Right.

Karen: It does you no good. The whole idea is that you, your family and friends can enjoy the benefit of this incredibly delicious jar of preserved vegetables that you just created. So once it's inside the refrigerator, it's pretty stable, but you should

be eating a little bit of it with each meal to reap the health benefits of which we had just talked about at the beginning.

Theresa: Right. Okay, perfect. Yeah. And I like that you explain that it kind of goes into hibernation. So yeah, we just slow it down. So if you do have a very warm kitchen, then it might ferment faster for you than it does like in your kitchen, Karen, where it maybe takes eight to 10 days. If it's very, very warm, it may only take six to seven days.

Karen: Right.

Theresa: And you can tell when it gets to the point that you like it and you don't want it to go any further, that's when you can quick throw it in the refrigerator so it slows down and you can enjoy it at that stage without it continuing to change flavor and texture and everything.

Karen: Right, absolutely. Yeah.

Theresa: Well, this is awesome. I really love that you shared a real pickle recipe. I know a lot of people-

Karen: Okay, good.

Theresa: ... are curious about how that's ... I mean, this is the old fashioned pickles that maybe our grandparents grew up making all the time, and we kind of went away from it for a long time because commercial pickles and quick pickles became the norm. But this is something that's been done for so long. From our ancestors, from way back, this is how they would make something last longer, or preserve it, or extend its shelf life-

Karen: Absolutely, yeah.

Theresa: ... is by doing fermentation. So, awesome. Well, Karen, thank you so much for sharing all this information. This is really great. So what would you say, in closing, to someone who's even like, maybe they're like, "Huh, maybe I'll try fermentation." What would you say to encourage them?

Karen: I would say that, for listeners who think they want to be creative and are creative people, and you want to be a maverick, and you want to do something that's really unique, fermentation is your thing, even if you've never tried it, because no two jars of fermented foods will be the same because there are so many variables. But just know that when something is fermented it's very, very delicious for one. Second, it is your way of producing a super food at home. You control the spices that you want, the herbs that you want. If you're growing vegetables, it's such a great way to preserve it in addition to canning. And for

me, it is, as we've talked about, it is a magical transformation, both in seeing how the food is preserved. And over time, I promise, promise you, if you eat fermented foods consistently, you will see the health benefits. It's very, very subtle at first, but it's something that after maybe about a year of eating fermented foods consistently, I just suddenly thought, "You know, overall, I really feel great. I feel so much better." Yeah.

So for those of you who are also interested in health, but doing it in a way that's very organic and very easy and right in your kitchen, then I would say, yeah, go for fermentation, don't be fearful of it, and just have fun.

Theresa: Yeah, great. Well, thank you. Thanks for coming on today.

Karen: Oh, Theresa, as always, it's been a real pleasure. And anytime that you allow me to talk about fermentation, I am just like overjoyed. So thank you so much.

Theresa: Well, I hope you enjoyed that conversation all about the basics of fermentation and how to make a real cucumber pickle. Now, as promised, the recipe and all the information that we talked about including information about Karen and the Kraut Source, and even those little cucumbers we were talking about, will all be in the show notes for today's episode. And to get to the show notes, you just go to livinghomegrown.com/153. And as a reminder, today's podcast episode was brought to you by my Living Homegrown Membership. And if you'd like the free PDF Success Path that my students use inside my membership, then just go to livinghomegrown.com/path, and I'll have it right there for you for free.

That's it for today's episode. I hope you enjoyed it. And I hope you try your hand at real cucumber pickles. So until next time, just try to live a little more local, seasonal and home grown. Take care, everybody.

Announcer: That's all for this episode of the Living Homegrown podcast. Visit livinghomegrown.com to download Theresa's spring 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.