



Live Farm Fresh Without the Farm™

Living Homegrown Podcast – Episode 50 Homemade Vinegar with Karla DeLong

Show Notes: www.LivingHomegrown.com/50

This is the Living Homegrown Podcast, episode #50.

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

Theresa: Hey there everybody! Welcome to The Living Homegrown podcast. I'm your host Teresa Loe and this is where we talk about living farm fresh without the farm. And that's through artisan food crafts like canning, fermenting and all sorts of preserving, growing your own organic food no matter how big or small your space, and just living a more sustainable lifestyle. If you'd like to learn more about any of these topics or my online canning courses just visit my website LivingHomegrown.com.

Today's episode is really fun. I have a very special guest that I asked to come on the show to talk about making homemade vinegar. Now I get asked about making vinegar a lot and I have made vinegar myself with wine and a mother where are you add a mother culture to red wine or white wine and let that ferment and turn into vinegar. And I've done that many times and it's a lot of fun. And I've even done episodes here on the podcast about how to flavor store-bought vinegars if you want to flavor them with herbs or fruit to create gifts, that sort of thing. And that was episode number 24.



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But what we're talking about today is making vinegar either with a mother or from fruit scraps. So making it from start to finish without a mother at all. So I wanted to bring someone on who does both types of vinegars all the time. So I contacted this place here in California called Mountain Feed & Farm Supply. It's a really cool store and they also have a website. Now today's guest from Mountain Feed is Karla Delong. and I think you're going to love her she's really sweet. She is just a bounty of information. And she's one of the teachers, one of the instructors at Mountain Feed.

Now what is Mountain Feed? Well Mountain Feed and Supply is really a homesteaders haven that is located just north of Santa Cruz. Now if you're not familiar with California, Santa Cruz is sort of between Monterey and San Francisco. So it's kind of in the area that transitions right from Central California up to the San Francisco Bay area. So it's right where you're transitioning from Central California into Northern California. It's a really really beautiful beautiful area.

And this Mountain Feed Store they actually also have an online version where they sell fermentation supplies, cheese making supplies, brewing supplies, all the things that you and I would just love. So I contacted them and I met up with Karla who is the instructor there. Now Karla is actually a certified natural chef and a food preservation expert. So as you can imagine we hit it off immediately. And she has told me that she really wants to inspire people to make the most nourishing food possible out of the best ingredients they can get their hands on. But she today is going to focus on just talking about how to make vinegar both with a mother and without a mother just using fruit scraps.

It's a really fun project that I hope you guys will want to take on. Now remember when you're listening that everything that she talks about will be included in the show notes for this episode. Every link that she mentions, every product that she mentions I will have links in the show notes where you can go to one central location and everything will be right there for you. The show notes for this episode are going to be at LivingHomegrown.com/50. So you can just go there and everything will be waiting for you.



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Now even if you don't think you'll ever want to make vinegar I hope you'll listen because it's a really an interesting process and Karla is like me she loves to get into all of the sciency stuff behind what's happening. So it's kind of an interesting conversation. So without further ado here's my interview with Karla DeLong of Mountain Feed & Farm Supply.

Theresa: Hey there Karla thanks so much for coming today.

Karla: Oh thanks so much for having me!

Theresa: I think so much I think this is going to be a really great talk. I've had a lot of people asked me to do a podcast episode on this so I'm really excited.

Karla: Me too, it's definitely a good jumping place.

Theresa: Excellent well I think we should start by having you tell everybody exactly what Mountain Feed & Farm Supply is.

Karla: I would love to. Mountain Feed & Farm Supply is a wonderful interesting place. It's actually just tucked into a tiny town called Ben Lomond that's in the Santa Cruz mountains. And we do everything you can think of to support homestead life. So what our goal is is to take people from planting a seed to canning a jam. Or from raising a chick to all the way to dinner or eggs that you're choice. And we do everything from infrastructure, and classes and support in every way. So feeding the soil, feeding the animals, feeding the people. To try and make it a little more accessible for people in modern lives to get back to some of our old food ways.

Theresa: Absolutely, yes. I think what I love is we're on the same weave length and you don't what I want everybody to know is that you don't have to live right next to you guys because you have a fantastic website. And then you also sell supplies online as well right?

Karla: Yeah we sell tons of supplies for all of the fun food preservation stuff that we like and we're also always putting up recipes all the time. And we write a monthly journal that's about new things we're trying and what's working and what's not working and what was the most fun. So it kind of brings people along on the farm journey I guess.

Theresa: Yes exactly and I'm going to make sure in the show notes for this episode I'm going to be linking to everything that we talked about so if everybody goes to the show notes will be able to get links to the website and to all the fermentation supplies and they can sign up for your newsletter or your journal and all of that good stuff. So it'll be great.

Now but I'd love you to tell us is how did you get involved with Mountain Feed?

Karla: well like a true kind of homestead story or community support story I was very busy living another life and then I lucked out and met a wonderful man got married and we moved to a new property that's very close to Mountain Feed, the actual store. And it's very big and has lots of work involved. And so Mountain Feed became kind of a perfect resource for me for putting in a garden, putting in an orchard, I have honey bees, I have chickens, I have pigs, I have dogs, you name it. I have everything. So I became very good friends with the owners of the store. And through that when we became very good friends they realized that my main goal in life was to make people happy by feeding them. And I have a tendency to hoard food a little bit. So my big hobbies all revolve around food preservation in general.

And so when they were ready to take the store not only from the livestock side and gardening side but all the way to helping people preserve food and make more delicious food they asked me to come on board and give them a hand designing and bringing the two together. So I really lucked out and it was quite fun and of course being a homesteader it was like I work full time on homestead so I only have this much time to give to you, five month period of time. And that was five and a half years ago [laughs].



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Where I still work with them with every project and we really have been able to bring this idea of helping people get more in contact with their food to fruition which has really been wonderful.

Theresa: And just so people understand how many acres do you have?

Karla: I have 10.

Theresa: And fruit trees, how many fruit trees?

Karla: I have about 60 fruit trees.

Theresa: Yeah this is not a small operation folks!

Karla: It's certainly a small operation in comparison to the farm or bigger farms or things.

Theresa: That's fantastic. Alright so you teach classes at Mountain Feed. What are some of the classes you guys have?

Karla: I do, we teach a lot of classes. And that's part of being a homesteader or being involved in food preservation is you get to be a generalist. And I teach everything from canning of jams and pickles, mustards, ketchup stuff like that. All the fermentation in terms of vegetables - sauerkraut, kimchi, pickles. The beverages so kefir both water and milk kefir, yogurt, cheese making. I mean you name it. Certainly the vinegar. And we do a ton of beekeeping classes too.

Theresa: Yeah you told me you have a lot of beekeeping classes. Is that becoming really popular?

Karla: Yes, bees are the new chickens for sure.

Theresa: We've noticed that with the TV show too that's why we did an episode last year on beekeeping so we've noticed that across the country. Definitely here in California.

Karla: Yeah well what's great about having chickens is you can have them in a backyard but bees you can have on a balcony or a roof. You can have them without having any land at all.

Theresa: Yes and we'll have to dive into that in another episode. I have looked into having bees here even in my little home in Los Angeles County and even in my little city you can, but it was funny you have to have the fire inspector come and you get a certificate to have them. And I think that's more so that they can try to keep an eye on you. But they want to see the pathway that they go to their water source from anyway. That's a whole other topic! But today we're going to talk about vinegar which I'm very excited about and I think we'll start off with talking about wine vinegar.

But I wanted to make sure everybody understood that there's really two vinegars that we're going to be talking about making here. There's the wine vinegar that you make with a mother. And then we're going to be talking about making fruit vinegar which is little bit is done a little bit differently using fruit scraps. So we'll start with the wine vinegar cause that is something that I think most people think of when they think of making vinegar. It's how I've made vinegar before but I was lucky enough that I had a friend that I could get the mother from. And I did that using wine and and the mother and water and it takes a couple months. And it was so absolutely delicious and it was so so easy. So I thought I'll have you start off by telling everybody how do you go about making vinegar using a mother?

Karla: Okay. And you really can make there are so many vinegars in the world and all of them are kind of the same process. And so to make vinegar the easiest way is to start with a liquid that has alcohol in it already. Like the red wine or the white wine or hard apple cider is where the apple cider vinegar comes from. And our happy bacteria that works for this fermentation is acetobacter. And luckily for us acetobacter is everywhere. It's all around us, it's on the fruit and it's even on the little feet of the fruit flies that come along so they help us make vinegar. It's very easy with the help of the acetobacter bacteria.



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Theresa: That's so interesting I didn't even know it was on the feet of the fruit flies.

Karla: It is and I'm wondering if you could even convince them to walk along a petri dish if it would leave like little foot prints. Might have to try this actually. Well I'm totally a science nerd so I do things like that and then look at them under the microscope so I might have to just to see. But from the very basics of I want to make vinegar and starting from an alcoholic beverage it's really, really easy. Everyone has a bottle of wine that they didn't finish and it's always so sad to just pour it out because it's a product. You don't want to waste any of our wonderful ingredients. And the great thing about making vinegar from something you already have you're not wasting something. You can use something that otherwise wouldn't get to be used. And so if you have the mother of vinegar you just inoculate your old wine with that mother of vinegar and a little bit of water to dilute it so it's not too strong. And it's just like you said you let it sit there for a couple of months just covered usually with a little towel. It likes to have oxygen exposure but it keeps those fruit flies out of there if you cover the top of your vessel with something.

Theresa: Yes. Their feet may come in handy but we don't want them floating along the top. [laughs]

Karla: Yes we don't want to have a fruit fly swimming pool.

Theresa: So when you say cover up with a cloth you're talking about like a cheesecloth or a tea towel and you would cover it up and secure it with a rubber band or string?

Karla: Exactly so the way that I would do it is I would, mason jars really are the favorite container of homesteaders in general. I mean they're American made, they're re-usable, they're recyclable, they're modular. They really are wonderful. And so they're also being glass inert. So using something with vinegar you definitely want to have a very non-reactive container and the glass is perfect. So if you have a mason jar you would

put your old wine, a little bit of water and your mother of vinegar all in the jar and then cover the mouth with a paper towel or cheesecloth that has a really fine weave not the rough one and then secure it with a rubberband. And then leave it on your counter for a couple of months and then lo and behold, it turns into vinegar.

Theresa: Now let's explain to everyone what exactly a mother is and just so everybody knows having a source for a mother if you don't have a friend who makes vinegar at home I'll have links in the show notes for where to get a mother because I want everyone to understand what a mother is. Because we're talking about it but they might not know what we mean.

Karla: Exactly, so it's very sweet term, the mother of vinegar. It's very nice. And it's really like a culture just like when you make yogurt you're inoculating the milk to have an outcome so that is what the mother of vinegar is. And technically it's called a scoby. And a scoby is actually an acronym which is a symbiotic culture of bacteria and yeast.

And what that means is you have all these bacteria in all these yeast that get along well. And when they do stuff it works out good for us. So it's it's very nice it's symbiotic not only for them but also for us. And it's also the same thing that's used for kombutcha is a scoby. And they look almost identical, a mother of vinegar scoby and a kombutcha scoby. And what it is is actually a bacterial mat that grows on the surface of the liquid right where it's in contact with the oxygen.

And as the bacteria and yeast work through the carbohydrate in the liquid which is usually sugar, is what's in these alcoholic drinks they eat and it and the produce a few things. Usually carbon dioxide that's why fermentation gets bubbles and then also some sort of acid. So with vinegar it's acetic acid which comes from the acetic bacteria. And then also they grow this wonderful mat that is the scoby and it's actually cellulose which is what that mat is made out of. So it's kind of almost like vegetable matter.



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Theresa: Yeah it's kind of squishy and it looks like an alien. I think a lot of people when they first see it are going what they heck is this? It can look a little scary but it's actually a by-product but it's also a piece of that carried on to another ferment will get it started even faster because you're adding that culture. It's kind of like you said with yogurt but it definitely has a very odd and look it can get very thick.

Karla: Oh yeah I have something that I call the mother ship. And it's actually because as both the vinegar and kombutcha they make these mothers, these scobys and they get bigger and bigger and the bigger they are the happier it means they are. So it's good you want them to grow this beautiful scary bacterial mats. But the mother ship that I have literally is in a big 2 gallon glass container and it's probably 8 inches thick.

Theresa: Whoah! That is like the mother of mothers!

Karla: Yes that's why it's called the mother ship it's very funny. But it really is a wonderful way to entertain your friends.

Theresa: Or freak them out!

Karla: Or have these conversation pieces. What are you making? Oh I'm making vinegar. Wait, what?! Very funny. Although I would like people to know that that wonderful bacterial squishy mat it does not like a lot of light or a lot of sun. So you'll see with traditional vinegar making small glass jars like we already have work great. But if you did get really into this you would want to find a really nice ceramic container because it would keep it even happier, even safer being tucked in a really dark space.

Theresa: Exactly. And when you set these on your countertop you want to make sure it's not sitting in direct sunlight because that can affect it as well. Usually in a cupboard in your pantry is a good spot for it. If you do have it on your countertop you want to keep it away from the window.

Karla: Exactly. It's nice when you can keep all fermentation projects out where you can see them because then you kind of see what happens



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along the way. And if something goes funny you know that way you can catch it quickly which is good.

Theresa: Yes, exactly. So after someone has started their vinegar with a mother and watched it for several months how do you suggest they figure out if it's finished, so-called finished?

Karla: First of all the vinegar that you make at home we do not recommend it's ever used for home canning. Because being at home it's not a controlled situation. And happy accidents happen. But without really really knowing specific acidity it's not a product we would ever recommend for home canning.

Theresa: And while we're on the topic of it the other reason why I tell people you can never use this for home canning is it's a little unstable. So even if you do test it with a pH strip, it can change. And it still could be fermenting and changing. So when we're talking about making vinegars we're not talking about then canning with it we're talking about using it with other things like drinking, eating, using salad dressing, things like that.

Karla: Yeah one of the best ones a big revival is a shrub which is a fruit vinegar thing you can make for your cocktails or your non-cocktails or for glazing meats and things. So how I test to see if things are done is one it's time. You want to really give them enough time to get going. And along the way you'll see bubbles starting to happen which gives you a really good idea that something is going on. Also the liquid will become cloudy. So if you started with wine either red or white wine it might be a kind of a clear tone to it and once it becomes vinegar it will be a little bit cloudy which is good because that's bacteria producing the acid we want. SO that's a good key something is happening with your fermentation is you get a color change.

My favorite way really to tell is first off smell it. Take that lid off take the paper off and smell it. It should smell like vinegar. It shouldn't smell rotten or foul in anyway. It should be a sour, bright fragrance. And what's great is

most of us have some vinegars around the house so if you're not sure if you have red wine vinegar smell it, then smell your own. You can have kind of a comparative factor. Oh it kind of smells like wine but it has this other sour smell. And then my other favorite way because I'm a bit of a science nerd is I like to pH test all of ferments to make sure that they've done their job. That I've invited the bacteria to do what they want to do and they have been working the way I want them to. So vinegars get very acidic. Usually around a 3 on the pH scale. And sometimes they're more acidic than that but you want them to be at least a 4. Really to be considered a vinegar you want them to have a pH of 4 or lower.

Theresa: And that's a great tip. And the reason we have a little leeway there is the pH strip that she's talking about and we'll have a link where you can get those you do sell those at Mountain Feed right?

Karla: Yes, absolutely. We recommend pH testing in everything. And it's really fun and it adds this kind of secondary is it done? Like wait a minute is it really done?

Theresa: Right especially if you've never done it before and it's a big guessing game. And there's no one there to tell you if it is or not.

Karla: Yes the funny one is always sauerkraut. Because that sauerkraut is fermented cabbage which by nature smells a little funny.

Theresa: It does, yes. And anytime you're fermenting veggies that have their own odor it can be a little scary. So by using the pH meter well the pH strip it's a very inexpensive way to test and by going for a 3 or a 4 you are well within the safety zone. So even if there's some discrepancy or it's not perfect accurate you're still totally fine in that zone. You said something about take the paper off and we had talked about using cheesecloth or a tea towel so I assume you're talking about if you were to use a coffee filter on top?

Karla: Yes. I actually use paper towels to cover my ferments because you can switch it out every week if you want and keep it very clean.



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Theresa: And it still works great with a rubber band or a string so you're still getting it on there tight. So we test and we're in the zone so now the next step is there any next step?

Karla: Yeah it depends on the size of the batch that you make and certainly with any fermentation I always recommend that people start out with small batches. Begin at the beginning. We want to make sure that we know what we're doing before we get into doing 5 gallon batches of anything which is how I decided to start learning this stuff. And I've thrown out very large batches so I've learnt the hard way so really start small. And if you have just a pint of vinegar or a quart of vinegar it's easy to use and you can use it up very quickly.

So what we do is pour off most of the vinegar that you've made and if you like to keep it raw which is wonderful because it is align fermented product which does have active bacteria in it then you could put it in the fridge which would keep that bacteria more in that life cycle right where it is. Or you can pasteurize it if you want which would then kill off the bacteria and would make it more of a stable product. And if it was stable you could put it in like a clamp top jar kind of like a grolsch style bottle. And that's a really good one for gifts if you want to make this one for gifts. You really want to make sure that it is stable because if it's still continuing to ferment and you have it in a closed container it could still be making a little bit of that carbon dioxide and make the lid pop off.

Theresa: Yes, yes, well alright that's an excellent point. So basically what you're saying is that if you put it into the refrigerator it slows everything down. If you want to keep it raw and it shouldn't change too much over the amount of time it would take you to use it up. But if you want to bottle it so that you could store it either on your pantry or to give it away you should pasteurize it. So how would we do that?

Karla: And that's definitely my best advice for someone who is a beginner. You start here. And you certainly can make big batches of vinegar and keep them raw because this is a probiotic product which is great. But in the

beginning it is good to have that stable situation and so how you would pasteurize it is put it in a stainless steel stock pot so it's a pan that isn't reactive. Definitely not aluminum. And you would bring it all the way up to 185 and hold it for 10 minutes. And so what that means is you bring it up to 185. You don't want to boil it because you would be cooking off a lot of your acid it actually evaporates really fast at a boil. So you want to just bring it to 185 which is a really nice gentle kind of a simmer and hold it there for 10-15 minutes. And then turn off the heat and just let it cool down. And then move it into bottles or even mason jars that have been sterilized as well. Or at least washed in really hot soapy water.

Theresa: Yeah so you don't introduce any new bacteria and start something new.

Karla: Yes. To start something new though you would want to reserve the mother that you were using before and as you were making vinegar that mother will continue to grow and get more luscious so you would reserve that and at least a half cup of that vinegar. So that is what you would use to make your next vinegar.

Theresa: Right so you can keep this going for a long time and end up with a mother ship!

Karla: Yay! Well you think all of our great grandmothers they all had mother ships. And it was just part of life where you would have these cultures that came along with women when they were married and it was essentially part of their dowries. There are many many stories of vinegar but also I think the one most people know is for making sourdough bread is having your great grandmother's sourdough baby.

Theresa: Right and you're carrying on that lineage. It's a really cool way to pass on things down through the family. It's totally awesome. And the flavor, it's very different when you make a sourdough or in this case a vinegar using a mother. It just gets more refined and more refined because there is different bacteria that is added in and the flavor is so incredible. It makes fantastic salad dressing.



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Karla: Certainly more complex than anything you could buy. And the raw ones have a much more complex flavor than the pasteurized vinegars do because they're still alive, they're still working. And one question that I get that I want to tell people it's very interesting people are like okay a scoby that's weird and bizarre and interesting. Where did it come from? What is the origin? It's like, wait wait so you're telling me I can put this weird blobby thing in my old wine and it'll make vinegar so where did it come from?

And some of our other wonderful things of civilization like ceramics, soap, that historians believe it really was a happy accident where someone had a whole bunch of grapes and they were in this container and they sat there so long they got rained on and they got abandoned and over time one that's where wine came from was the yeast in the air just sort of inoculated the air and also the yeast on the skins of the grapes made the wine but if you leave it there long enough it just turns into vinegar. So it's really interesting that we get to work with these cultures that literally came from nature that just came from the air. And we literally have been using them for thousands of years.

Theresa: And it's a form of preservation. And so once people figured that out they started doing this so that they could preserve. They could take some of the fruits and grapes and different things they wanted to preserve for longer. So they realized once they put vinegar in with their cucumbers they could make them last longer. So it's this whole cycle but it's all related to food preservation and making things last longer.

Karla: Yeah and it's really only been modern life where we can kind of have whatever we want to eat whenever we want it. So it's really wonderful to be introducing some of these old ways into our lives again. Because it turns out they're actually pretty good for us too!

Theresa: I could not agree more! Okay so we've told everyone now how they can make vinegar with a mother from start to finish. And the thing I was really excited about you talking about today was how to make apple cider vinegar from scraps or really any fruit you could use any fruit but



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we're going to talk about apple cider vinegar because that is the most common. I have a lot of apple trees also and I have never done this. I have heard about it and I have not done it this way so I wanted you to tell everybody how do we make apple cider vinegar without a mother and just using leftover scraps after we've made like apple pie or something.

Karla: Yeah, I'd love to because this one is really this is the epitome of let's use what we've got laying around to make something else that is really good for us. So a lot of times when you do recipes with apples one of the first steps is peel and core the apples. And so this is a way of making apple cider vinegar from all of those scraps. And we do a lot of dehydrated apple rings, certainly apple pie that's a favorite. And you do have all those parts left over and this method is doing a primary fermentation and then a secondary fermentation. So it's very fun so you get to do all of the steps to making an apple cider vinegar.

Theresa: And to make sure everyone understands in the first method we were starting with something that was already alcoholic. The wine had already gone through a primary. So in this one we're doing start to finish without any help. Doing it all by our lonesome which is the wild yeast so it's kind of exciting. Okay go ahead.

Karla: Okay so just to walk you through it straight through it. So I would start with homegrown or organic apples as they have a lot of the yeast and bacteria that we want on them already. Wash them and cut off any of the moldy spots or anything you might have along the way but you can use ones that are even a little older that you might not use. And you want to have all your stuff ready. So earlier I talked about a mason jar and that is a great beginning vessel for this. And you have all your fruit scraps and you make your pie. You have all of your skins and your peels and you put those in your container and then you cover them with fresh water. And you don't want water with chlorine or any other chemical additives because we're trying to grow bacteria and yeast. So you want fresh filtered water.

And the other thing you would need to think about is whether or not you want to add a little sugar to this. And how you would know this is whether

you are working with very tart apples or very sweet apples. So if you have a granny smith which is a very tart apple, adding a few tablespoons of just plain sugar, organic again, or even some molasses is a really fun sweetener to add because it has more minerals in it. So it gives you a more complex flavor at the end of your fermentation. So you add your water, your apple scraps, a little bit of sugar all in your jar. You want to make sure you leave some air in your jar though. So say you work with a half gallon mason jar which is a great size for this. And that'll hold maybe the scraps of a dozen maybe a dozen and a half apples. So it's probably about at least a pound of scraps maybe two pounds of scraps we'll say in a half gallon jar. With two quarts of water to have an actual recipe. And about a quarter cup of sugar.

Theresa: So you're leaving kind of a head space at the top you're not filling it all the way to the top because we don't want the apples to rise up above the liquid right?

Karla: Yes, exactly. So what head space is is the distance from top of liquid to the top of the jar and the jar you only want to have it $\frac{3}{4}$ of the way full. Because the vinegar as it starts to get made it wants access to the air and it will help the yeast that we want to grow start to take off. So we'll have the air space at the top. And again we're going to cover it either with a paper towel or tea towel to keep the fruit flies out of there so they don't cause you more trouble than they're worth and you just let it rest. And what's great about the vinegar is that it does love a warm temperature so you can set it kind of out of the way on top of your fridge or on a high shelf or even just on a counter somewhere near you. But room temperature or a little bit warmer is the ideal temperature.

Theresa: I have in my kitchen when it's really cold which is really only in the winter time but when it's really cold I have a dvd box or your cable box, anything like that it's just something that is on all the time and has just a little bit of warmth so if it's really cold in my kitchen I'll set things that I'm fermenting on top of there. And it's just slightly warm so you're not cooking it. It's warmer than other places in the kitchen. So just find a warm spot in the kitchen.

Karla: That is actually a great tip. Just make sure if you're like me and have a small child they don't get it. The other one that we use all the time is a seedling heat mat because they're waterproof and usually easy to access and you can just lay them flat on your counter. So if you keep your fruit scraps around 70 degrees or a little warmer that will keep them happy and you'll it's starting to do something when you start to see bubbles. And that's part of what makes fermentation so fun. As adults we don't get to play with bubbles that often. But this is such a wonderful thing because it's like I'm playing with my food.

Theresa: Yes it's a mad science experiment. Yes, yes we have bubbles.!

Karla: So I really like to let that get going and start bubbling and again this is your primary fermentation and our goal at this point is to let the yeast that is naturally on the skins of the apples react to the sugar that is in the apples and the little bit you added so it will produce what we want which at this stage is actually alcohol. And what's really good about this is alcohol itself is a rather safe fermentation method. If you are making alcohol it's going to kill off a lot of other bacteria you don't want in there.

So once it starts getting really bubbly I would give it maybe 2-3 weeks. And you know it's starting to make alcohol and you again can use your senses. You can smell it and it will smell much different at this point. And also it will start to get a little cloudy you'll see it is starting to change. So to make sure you get a good secondary fermentation it does count on that first one. So you want to let it bubble away for at least 2-3 things.

So at that point once of the best things is to strain off the liquid away from the fruit. So you know you take your covering off the top of the jar, strain it through a strainer again that is not reactive into another container. And if you have two half gallon jars this works really well. And what you can do at this point is inoculate your batch with a little unpasteurized apple cider vinegar and this will really speed up the process because you're inoculating the cider that you made which we didn't even say that but what you're making in your primary fermentation is hard apple cider.



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Theresa: Right and that's why we can call this cider vinegar, apple cider vinegar even though we're not starting with cider we're creating the cider in the process.

Karla: Yes and what cider is is yeast that has eaten the sugar in the apples to produce alcohol and that's how we are creating cider vinegar. So our primary fermentation is done. We've made apple cider, we don't recommend drinking it because it's been open to the air and there will be all sort of fun things in there. So if you really wanted to make hard apple cider vinegar we do have all that information on our website as well and we do teach classes on that too. So if anyone really is interested in making hard apple cider all of that information is on our website. And what's great is if you make a whole bunch of apple cider you can just then turn it into vinegar too which is really fun. So you have a lot of options in terms of I have all of these apples now what?

Theresa: So when we strained off the liquid would we just discard the like I would probably give that to my chickens so I could take the they would probably get drunk off of that!!

Karla: They might actually I have pigs and just give it to them and they love it.

Theresa: Maybe I would just put it in my compost.

Karla: Yes it's great for your compost.

Theresa: Yeah because it has all of that good bacteria. So I would take all the apples out and I can strain them out and get rid of them into the compost and we're just reserving the liquid and at this point we could inoculate it. What if we don't have any raw pasteurized apple cider which I know we can buy that at like a Whole Foods or a health food store we can get the unpasteurized raw organic vinegar is that what you're talking about inoculating it with? Because that's probably your best bet if you could just take a few tablespoons and add that in?



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Karla: So it's definitely insurance. So think of if you go with wild fermentation which is just inviting what is all around us all the time to do its job that certainly has been working for thousands of years for all of our ancestors. So it is a wonderful way to go. The one thing that culturing your cider does is it speeds up the process and it also assures that you get the end product that you really want.

Theresa: With the best flavor. You want good flavor.

Karla: With good flavor. So if you don't have any unpasteurized vinegar it really will make vinegar all by itself. So you have strained liquid and then you put it into another jar, you cover it again with the cloth and you leave it on the counter again. And I would give it another three weeks. You can think of even a wine if you just leave wine somewhere for a really long time it actually does get vinegar-y on its own. Because these liquids these alcohols they really do want to make vinegar because that's there next evolution. It's like where they are going is to turn into vinegar.

So if you do add the unpasteurized vinegar to the batch that you've made you do speed up the process and you gain yourself at least a couple weeks in the process. And so if you get to the end and again what is the end and what is finished is those little pH strips are going to come handy again. And I would test it and once you get to that 4 it's certainly ready to be used as a vinegar.

Theresa: Got it. So we could pick up some raw unfiltered, unpasteurized vinegar and add just a few tablespoons and we set it aside and just kind of smell it and do the pH test until we have a 4 and then we're good to go.

Karla: And you can let it go for a little bit longer it will get more acidic and so that way you can use a little bit less of it. So if you're using it for salad dressings you don't need as much and it makes your whole project very efficient because i mean a quart of vinegar goes a very long way!

Theresa: Yes, especially if it's very strong you would not need as much or you could water it down when you go to use it for things. So would you do the same thing for this one if you wanted to bottle it up you would pasteurize it?

Karla: I would or I would make sure the pH is a minimum of a 3. If you want to keep it raw and put it in the clamp top bottle for it to be shelf stable it would need to be at least a 3.

Theresa: And if you did that I would probably come back and check it after a week just to make sure it doesn't when you open it up if it goes pssshht you know it's still fermenting.

Karla: This is the beauty of wild fermentation is fun things happen!

Theresa: And that's the thing I want to make sure everyone knows. When you're working with a fermentation project sometimes things go wrong and it's okay. That's why she's saying to do it in a small batch so if it's not working or something funky goes on or it starts smelling really off or bad using your nose is a great tip because if it smells really bad and does not smell appetizing then just throw it out. You've only done a small batch. But if you if it smells like vinegar then you know you're headed in the write direction.

Karla: Absolutely. And we have sort of our grandmas old adage which is when in doubt throw it out.

Theresa: Correct.

Karla: And they were right. Our ancestors knew if something was not appetizing to you that is your instincts telling you you shouldn't put it in your mouth. So don't [laughs]

Theresa: Exactly. And the pH strips we're talking about they're really inexpensive and you get a ton of them in a package and it's kind of fun when I first started using those years ago I was having fun testing



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everything like what's orange juice and what's my lemon. It's kind of fun. It's like a science.

Karla: It's very fun. And then it's well what happens when I mix the lemon juice over here with the baking soda [laughs]

Theresa: Yes my boys were always doing things like that when they were little.

Karla: So what happens when we put these together. Yes, that's called food chemistry isn't it wonderful [laughs]

Theresa: Well I think this is a really fun thing to do and just so everybody knows you can do it with other fruits right. You can do it with like peaches.

Karla: My favorite batch this year a friend of ours got married and we made jam for all of her wedding favors and so as we were trimming out all of this fruit we had strawberries and berries and lemons and you name it just really we did a peach, we did a nectarine. We made 200 jars of jam for this wedding and we threw all of the scraps into a big 2 gallon fermentation vessel. And it's bubbled away and did its thing. And then we just inoculated it with a little bit of vinegar and it made one of the best vinegars I've ever had. It's really beautiful. It's just really fun and it really was just a waste product. All that little bits of fruit well my chickens wouldn't say it was about waste product.

Theresa: So it was a mix. You made a mix.

Karla: Yes and really in the beginning and I know fermentation is so wonderful and it's really, really having this renaissance revival right now. And what's wonderful about all of the fruit vinegars and the scrap for scrap vinegar is that you really can do this without buying anything. And you can do feel good about knowing that it is wild fermentation but it's probably the safest one of all of them because you're outcome is going to be very, very acidic which is an environment that most un-beneficial bacteria can't live in.



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Theresa: Exactly. You're starting off with something that is fruit is already in the safe zone and you're just making it safe by making it more acidic. And that's why this is such a great beginner project and it's so simple and so easy and you're using waste product. And I know vinegar in the store is not expensive if you just go buy apple cider vinegar it's like 5 bucks for a jar but the flavor is so different and it's such a fun thing to make it yourself. So I hope people try it.

Karla: Yes, me too it would make me very happy!

Theresa: Well I'm so happy that you were able to come on with me today and I'm so appreciative of you going through all the steps for making both types of vinegar. Thank you very very much.

Karla: Oh you're very welcome. I had a very good time. And I hope people if they have more questions come to our website because it is laid out nice and clearly and there's pictures of what I'm talking about it's getting cloudy and you know what is a scoby. If you've never seen one really I invite people to come and check it out because it's very fun.

Theresa: Yes, I'm going to have a lot of links in the show notes for this episode and everybody can go and check out everything we've talked about plus you have all of the supplies which is so nice. Even things like weights that you can weight down the apples, the scraps if you need to. You guys have all of that one your website. So thank you thank you so much Karla!

Karla: Yes Theresa, thank you so much!

Theresa: So there you have it. That was my interview with Karla Delong of Mountain Feed & Farm Supply. Now remember, everything that she talked about is going to be in the shownotes for this episode. All you have to do is go to LivingHomegrown.com/50. And everything will be right there for you.



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Thank you so much for joining me today. I know how busy you are and I really appreciate that you took time out of your busy day to listen to this podcast. And I hope you might try making vinegar on your own. Until next time, just keep working towards living a little bit more local, seasonal and homegrown.

Take care!

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