



# **HOME GROWN**

## **Food Summit**

**“ 7 Homemade Fertilizers: From Trash To Treasure ”**

**James Fry**

**\* FULL TRANSCRIPT \***

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## Home Grown Food Summit

### Transcript – James Fry - 7 Homemade Fertilizers: From Trash To Treasure

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Hello and welcome to the Home Grown Food Summit. This is Marjory Wildcraft and I'm the founder of The Grow Network, which is the premier community of people who are stopping the destruction of the earth via homegrown food. Yup. Commercial agriculture is the most destructive force on the planet. And of course, in the crazy days that we're living in growing your own food makes just a ton of sense for you personally without even worrying about the earth. It really is getting crazy, isn't it? My God, the changes that have happened just in the last four weeks are mind blowing and then I'm recording this now. The summit won't be airing for another four weeks or so. So, who knows what's going to happen in between now and then? One thing that is super crucial to having a successful garden is fertility. And soil fertility and having the right nutrients. And just like when you are malnourished, you tend to be sick and weak and prone to disease. Well, the same is true for your plants.

And when you are well nourished and strong and healthy, you just kind of cold just bounce off of you flus or whatever. So, the same is true for your plants. So, soil fertility is super important. And our next presentation is on seven homemade fertilizers that are awesome. And our presenter is James. James Fry. And the magic started for him when he was about four years old and his dad showed him how to plant the gardens. He's been doing this a while. And as he grew up, he was disturbed by the disharmony and destruction caused by the industrial world and he decided to do something about it. James is a humble student of permaculture. Traveled all the way to Australia to study with Bill Mollison and with Geoff Lawton. These guys are just amazing. They're like the old school permaculture founders. And he draws most of his inspiration from both of them. James' been invited several times here to teach his innovative growing method at the Earthship Biocure, which is a really cool earth friendly form of architecture that's based in Taos, New Mexico. I've been to that place. It's amazing.

And while James currently lives in Colorado, he secretly wishes he were back developing a remote permaculture retreat in Brazil, drinking coconut water and spending time with friends. I'm with you on that one James. Now James goes over seven homemade fertilizers from trash to treasure and I have used every one of these seven over the years and I will testify that these are the ones, these are the real ones. Almost everybody's going to have access to this. In fact, you create some of it. It's kind of a spoiler alert. But these are really, really powerful fertilizers and I just, James presents them so well and so appreciative of him doing this presentation.

Hey, it's James Fry here. Thank you so much for attending this talk. It's called trash into treasure. Super grateful to Marjory and the whole team at The Grow Network for allowing me to come and share this with you. I am super excited about this. Tell you a little bit about myself in a moment and why this is so important to me. And yeah, I've got some really interesting stuff in store for you. We're going to talking about transforming seven household wastes, "wastes" into fertilizers for prolific plant growth so you can get some amazing veggies growing at your house. So, let's dive in. Shall we? So here is what I'm serving up today. This is sort of the outline of what we're going to cover. Got some starters, some appetizers for you. We're going to talk about the confused cave man, the secret avatar person, and my crazy jungle garden. This is just an overview to get you excited and whet your appetite and kind of frame why these turning trash into treasure methods are so, so incredibly important. And I think you're going to really resonate with what we're talking about.

Then of course, we'll dive into the bulk of the content. The main course, which is how to transform these seven "wastes" into amazing treasure for your garden. We're going to do those countdown styles. So, we're going to start with sort of my least favorite and move into number one, which is the best and the most amazing one that I love so much. And that we all have got to be using as soon as humanly possible. And then I've got some free goodies for you for dessert. I'm going to share with you my nutrient infusion technique and also something called alchemic free fertilizer. And then I have a top secret mystery bonus that I think everyone is going to enjoy this. Something I discovered recently and I am super, super stoked about. It's a new development. So that, I'm going to share with you as well. So, let's get into stuff. Shall we? So, as I said, my name is James Fry. I am super grateful to be here today sharing this passion of mine with you. And give you a little background on myself so you know kind of where I'm coming from and why this is so important to me. So, I'm a certified permaculturist. I had the opportunity to study with Bill Mollison and Geoff Lawton out in Australia. And I learned so many incredible mind-blowing things. Also, I am an instructor at the Earthship Academy down in Taos New Mexico. If you've never heard of earthships, it's basically building sustainable homes, radically sustainable homes out of mostly garbage. Including tires and bottles and cans and all sorts of stuff like that. These are totally sustainable off-grid homes. And one of the things I bring to the table down there is helping people with the food production aspect and growing amazing vegetables and fruits and trees and all sorts of stuff and medicinal crops indoors, year-round in their greenhouses. So, it's one thing that I help them with. And I am also the founder of a little website called groweverywhere.com. I'll tell you a little bit about that in a second.

And also, I am a certified awesome dad according to my five-year-old son. So, I'm super proud about that and super proud to be sharing this stuff that I'm sharing with you today with him at a super young age. And going to encourage you to share all of this if you have children with your kids and the little ones. So, question is though, who am I really? Well, I am a cave man, trapped in some pretty freaky modern times. I don't know if you've seen Encino Man, it was one of Brendan Fresar's first movies. But brief story on how that went down. Basically, it's a college a high school student, and it's his senior prom and he wants to build a swimming pool so he can host an amazing party at the end of the year. And he's digging the swimming pool by hand and he taps into a big block of ice and he finds a caveman inside the ice and it's Brendan Fresar. And he's been basically cryogenically frozen for, several hundred years or millennia or whatever. And he looks around in LA and he is like, WTF, what is going on? And so, he freaks out. And so, I feel very similarly that I've woken up in a very, very strange time where, this is what we see. We have our, what I call our beloved wastelands where we've got disgusting smoke and all sorts of pollution going on. Burning coal and oil and all sorts of things causing terrible emissions that cause cancer and all sorts of other things. This is what a typical skyline in a city looks like these days. And so that's air that we breathe. And it's like, why did we do this? How did we get here? And we're going to talk a tiny bit about that before we talk about why these wastes are produced and how we can mitigate those wastes and use them for a much more valuable purpose. Oh, we also have an incredible problem with garbage and trash around the world. In some places they don't do as good a job as hiding it. In Western developed world, we are really good at hiding it.

But we still have so much waste and if not more waste. We're going to talk a little about how we can reduce waste and the concept of waste and what that is and how to eliminate that. So back in the day where we evolved from, that was the era of zero waste. And the reason for that is that there was no waste. Right? When we were living in the forest and the jungle and the plains, there was no, a farmer I know calls it the away place. When you throw something away, you send it to the away place. And so, that didn't exist. There was no away place. Everything was recycled and reused and it was all integrated. And we are an integral part of this earth. And to create waste and to create trash is essentially to disconnect from the earth and from the place that we live in. So, a beautiful forest is a place where there is no waste. Waste isn't even a thing. It's not a word. And so, my vision for the world is individuals can live in a way that's completely free of waste, if we work towards it. And I know that so many people watching this are going to be very excited about this because you probably feel it deep in your bones that things are wrong and it just doesn't feel right to be out of harmony with the earth and with the natural systems. And so, we're going to talk about ways to reintegrate that and get closer to that. So, I'm going to be a nerd for a minute and mention the movie Avatar. Where these people, if

you haven't seen it, every being, every creature animal has these little connectors that come out of their hair or their body or somewhere and they can tap in and connect with other plants and other animals and beings. And that's basically just saying that, it's an analogy saying that we really are all connected and so there really is no such thing as waste. It all moves in a cycle.

And so, in modern times we've broken that cycle. And that is one reason for so many of the problems we face today. And so today we're going to show you seven ways on how to reintegrate that cycle, get back into balance and harmony with these cycles. So just to share you with you briefly, my life's mission and why I'm so excited to be here today is it's my mission to inspire, educate and equipped 1 million flamekeepers globally to harmonize and reintegrate with the earth. And briefly to tell you a flamekeeper, it's probably someone like you. Someone who sees the direction that the world is going and the direction modern society is going is destructive. And the people who are flamekeepers are the people who are keeping the old ways alive. The people who remember how to live on the earth. And so, I refer to those people as flamekeepers. And so, it's my job here. It's my mission in this life to foster and find and help and educate and inspire and equip 1 million of those flamekeepers. And you are probably one of them. So, I'm so glad that I can add you to my goal of 1 million and hopefully more. So welcome. One way I do that, and I want to mention this because this is where a lot of this information you're going to be getting today comes from, is something I developed called revolution garden. So just want to show you a couple of examples. So, on the left here we have some pictures of some finger radishes. You might have grown finger radishes before. As you can see, they get to be about the size of a finger. Now when you grow the same finger radishes in revolution garden, you get this. So, these are more like giant fingers. And that's my hand there, which I'm a six-foot two male. So, I've got like, and I'm pretty lanky. So, I've got some decent size hands. At least they're lanky hands. And so just to give you an idea of the size of those radishes that I'm pulling out of my garden. And you're going to get a little piece of how to do that today.

Also, these are mustard greens on the left there. And so, when I grow them in this system that I have been developing over the last few years, I got mustard greens this big. And I have some other pictures of the greens that are over my, they're covering my head and they're twice the size of my head. So that's pretty exciting. I also want to mention that it grows faster. So, revolution garden provides much faster yields. So, this is what it looks like about week one week after planting. So, the first week. Three weeks later, it's already growing like this. So, it's getting pretty robust already. And then six weeks later it is a thriving jungle of greens, mustard greens and radishes in there and all sorts of other stuff, all sorts of goodies there. So, you get much, much faster yields with revolution garden. And here's an example I was going to mention my student Shannon, who's in Oregon. She wanted to put it to the test and she's like, you know what? I'm going to grow some corn, which is a super heavy nitrogen feeder. I want to see if this is really going to work for this. The packet she used said that she should expect a harvest in 70 to 80 days. And using revolution garden, she got there in 44 days full harvest from seed to harvest in just 44 days and you can see the pictures there. She sent me pictures every week and so I could see it as it was happening in real time and it was so, so exciting to see that happening. So much bigger, much faster yields and it is pretty mind blowing. So that's my main work these days. That's why I'm focused on educating, inspiring and equipping people to grow more food and to reconnect and reharmonize with natures through my system called revolution garden. And the reason I mention it is because well, one way that you do that is with the, some of the liquid fertilizers that I create and that's the bulk of this presentation. So that's why I'm mentioning this because to get revolution garden to grow like that, about 50% of the results are based on the structure of how the garden is actually set up.

Another 25% is I attribute to the specific soil blend that I have, which I am going to mention a little bit how that works in a little bit. And then another 25%, more or less, I attribute the success of it to the liquid fertilizer that I use and we're going to talk about that. At the end you'll be able to get my nutrient infusion technique and that is the liquid fertilizer and it is comprised of a variety of things that we are going to show you how to make in just a minute. So that was the reason for the explanation revolution garden. I hope it got you excited. I am super pumped about it. It is a big important piece of my life's work. And so, you're going to get to understand how to get similar yields in your garden,

whether you use the revolution garden system or you just want to keep doing your regular garden. Either way you can use the liquid fertilizer and start getting some crazy results. So, let's get to it. Without further ado, we're going to dive into the seven ways to transform all that trash into treasure. Ready? Let's get to it. So, the first one, which you have probably heard about is humanure, which is basically human manure or turning poo into plants. So, this is what I call the human poo tractor method. If you are into chicken cultivation or permaculture stuff, you might've heard of the chicken tractor method. And basically, what that is is you have a coop and it's got wheels on it and you let them manure this area and they're scratching it and they're manuring it. And then over time you pick this thing up and you move it and then they do their process again. They manure it, they scratch it up and basically, it's just a process for building soil. Then later you can go back and you can plant stuff on it and it's super aerated and fertilized and it's just really a smart way of doing it. So, you could do the same thing with humans. And I helped some friends of mine out in New Mexico do this.

Basically, you dig a hole that's about two and a half feet wide and about four feet deep. You can do deeper if you want it to last a little bit longer, have more deliveries as they're called. You want to have a higher number of deliveries over time. And or, yeah. Maybe have more people. So, you want to have it a little bit deeper than that. And you take an outhouse, just a classic outhouse that looks like this except the bottom part is open to that hole. So, you can sit on that or squat there and make your delivery, make your special delivery to the hole. And then you want to put some wood shavings over it. And then when you're when you've filled it up basically, you can top it with dirt and then you can take the outhouse itself and you can push it on skids. So, this is just an up-close picture of the outhouse and it's got skids on it. And you can just slide it over to the next place. And so that's what my friends are doing out in New Mexico. So, live in a very arid area that's just totally unfertile. And so, they're wanting to plant some trees out there and give them a really good head start. And so that's the purpose of this. And this is a rough drawing of what they're doing. So, it's this moveable latrine tractor. And basically, when you're done, you move it and you plant a tree and then you move it again and you plant a tree. And so, you keep doing that over and over again. And it's going to dramatically accelerate the growth of your trees on your property, especially if maybe you live in a place that's really desolate like they do. So that is the human poo tractor method. Then you've got the permanent poo factory method where you basically build the same thing except the difference is you can build this in a permanent structure. You could put it in your bathroom. I've seen a lot of people do this where the home has an existing toilet and they just build this alongside of it.

And it's perfect because you take a tote just like this one here and you put it underneath and you have a trap door behind it. And then when it's full, you just slide it out and you can go take it out into the compost pile that you have a designated compost pile for the manure. And then obviously, as I mentioned, you want to use wood shavings. For me, there's a local mill that has a lot of pine. And pine shavings aren't really good for too much of anything else. Maybe growing oyster mushrooms, but they're not a very, they're not a good hardwood for growing the mushrooms. So, it's a perfect waste product. "Waste product" to use for humanure. So that is how you do the poo factory method. Then you want to put it into its own designated compost pile and put, ideally you want to put a tarp over it, keep it away from animals and things like that, that might want to come and inspect it. And then one of the precautions is they say you want to ideally, I don't necessarily do this, but ideally you want to incubate it for at least two years to kill the pathogens that could be growing in it. Another precaution is if you're building a home and you're like, yeah. Doing a compost toilet would be so cool. I really recommend against these types of toilets that look like this. This is for an RV. You'll notice that they both have a chamber here that you can remove. And really what happens is it's just gross. It really doesn't compost well in place. It just is nasty and so I really wouldn't recommend it if you are building a new home and you want to have this, I really would recommend just to get around coding and permitting issues and stuff. Just build a regular toilet and then do the permanent poo factory like this alongside of it. Okay. So yeah. Don't bother with these kinds of things. All right. Moving onto the next one. Trash or treasure number six is my special root boosting powder.

This is how, one reason that I get the super massive root vegetables growing in my garden. So, if you can guess, there are three waste items that come from a kitchen that are attributing to this. So, the first one you probably can guess is banana peels. The second one is potato peels, potato skins. And the third one is the coffee grounds. So

normally, people take these and they just kind of put it all in the same compost pile. And just let it rock in a compost pile or whatever. I like to isolate these three specifically and put them into this process that I'm about to show you. So, I can have a very special root boosting powder. Let's play the guess that nutrient game. So, what nutrient do you think predominantly we're going to get out of those three ingredients? Well, if you guessed potassium then you won a fancy new car. Just kidding. The potato peels actually potato skins, the banana and also the coffee grounds have are very high in potassium. They also have magnesium. Coffee especially has a lot of magnesium in it. You're going to get calcium, some vitamin B and vitamin C as well. So those are good to add back into your soil. So, once you have those items that you've been collecting in a dish or your container or something then you want to take them outside and dry them out. So, some people will put these in an oven and put it at like 120 degrees or something. I prefer to not waste the energy so I can put them on a baking sheet and put a screen over them, an old window screen and take them outside in the sun and let them dry. And if you do that for a couple of days, they'll get all crispy like this. And they'll be nice and hard and basically ready to grind into a powder. So that's what we do. We take all that stuff super dry and put it into an old blender and break it down. Blend it into a nice powder, a pulp. And basically, all we're doing here, and we're going to talk about this in another method, is we're just helping nature speed the process along.

If you were to throw all this stuff, bury it in a hole or put it in a compost pile, nature's going to break it down over time. It's just going to take a lot longer. Right? So, all we're doing here is speeding that process up so that once we get it into the soil the microbes can help break it down even further and much faster. And then you're going to have your plants are going to have access to it much sooner. So that's the purpose of using the blender. It is an extra step. But it is most certainly worth it because when you are done, you have a really fantastic soil amendment that looks like this. So, the way I use this is I'll set it aside and put it in a dish or something or an old yogurt container. And when I'm doing a new garden or when it's going into maybe the fall, or want to grow some root vegetables. I will add about three tablespoons of this per four square feet of garden and then till it in gently into the first four or five inches of soil. So that is how I use that. That's the root boosting powder. So next is a fascinating one that is gaining surprising amount of popularity, which is blood. Menstrual blood. And this is for ladies only. So, gentlemen, take a break or just share this with your partner. And ladies listen up. So, this is something that my partner is doing. And so, I was very inspired by it, so I wanted to share. So, the why and how. So, it has, I said it has NPK nitrogen, phosphorus and potassium. It has iron and it has micronutrients. Another thing just to bring about the question of waste and reducing waste and ways to do that. Apparently, I did some research and the average American woman will produce about 300 pounds of tampons or pads in a year. And I did some math. It's 166 million American women roughly. And that's like 49 billion pounds of used feminine products per year. So obviously as a guy, I want to be sensitive to the issue of, I'm not telling you to change your habits tomorrow and that you're wrong if you're not doing that stuff, right?

So, if this is something you'd be open to, just know that you can produce some waste and add some amazing fertilizer to your garden. One way to do that. For those who aren't familiar, this is what my partner is using. It's I think this is called diva cups. This a menstrual cup. And it's a fantastic way to do this. And apparently it saves money too. So that's pretty cool. So, gentlemen back on board. Moving on to number four, which is one I like to call fermented goo. Because when I make it, it turns out really thick like goo. You might have seen this product, it's called EM-1. It's a soil conditioner. Basically the way it's made is by adding molasses and all sorts of weird stuff to special microbes and making a fermented liquid that you can then add to your soil, you can water again even use it as a foliar spray and it really boosts the microbial activity in your garden. Now, I found a lot of these products to be kind of expensive and I was like, hey, why would I buy it when I can make it myself? We're spending some time doing some permaculture stuff in Brazil and we were making all sorts of weird fermented goes. So, let's talk about how to do that. So, this is kind of what it looks like after you've blended it with a big spoon and after it's done fermenting, you'll see these really nice, this nice foam, this bubbles on top. That's a really good sign because you know that it's full of all sorts of microbes. That's just basically microbial activity dead body parts of cells of old microbial cells. That's essentially what this foam stuff is. So that's a really good sign. Like when you see sea foam at the ocean, that's what that is and that's a super good sign. That's just so,

so good for your plants and for your soil. So basically, similar to the root powder, where we're just breaking it down. We're using a blender to speed nature's process along. We can just make it a lot faster.

So we're rapidly accelerating nature's composting process by fermenting it and we use little fermenting the microbes that are responsible for fermentation to break that stuff down super rapidly because it's consuming it basically the yeast is consuming and breaking down the parts and leaving it available much more available for our plants. So, the results of using this are you're going to get crazy growth, much faster growth, robust growth, greener growth, and also, you'll notice an increase in pest resistance. So, the plants are going to be just overall, generally healthier and less susceptible to pests. So how do we do it? So, this the picture on the left there is a bucket full of nettles. So there a lot of different things you can use. You can use pretty much any organic, healthy organic material. You want to shy away from anything that might be diseased because you definitely don't want that to proliferate in your garden. But a lot of people will use rotting fruits and maybe stuff that didn't get eaten. Got hidden in the fridge, didn't make quite make it to the table. Maybe stuff that if you're doing some market gardening or farming and you have some stuff that just didn't, wasn't good enough for sale and you don't want to eat it either and you got a surplus, that's a fantastic thing to use because the fruits have a high sugar content, which helps the fermentation process. Also, people like to use weeds, things that we would not normally call weeds like dandelion, nettles, comfrey. These are things that typically are really high in nutrients and you want those to be in your brew, so in your fermented goo so that you can get those into your plants. Right? One thing we use in the tropics, which I found really interesting that is super high in all sorts of interesting micronutrients is banana flour. So if you do live in somewhere, if you're in the US, you're in Florida or somewhere that's Texas maybe a little more tropical, you can pull off growing some bananas at least the flowers, that is a fantastic thing that you can add to your fermented goo.

So, the second step is you want to either blend or shred the organic material that you harvested. And this picture on the left there with the nettles I definitely would have shredded that a lot more. That's a little too thick. Because it's just going to speed up the process that much more if you blend it or shred it up. And then you want to put it into a container and add some sugar, some sort of sugar like maybe molasses. You can use brown sugar you can use; you could use honey. Honey is pretty valuable though. So maybe not. I used to be able to get access to agave nectar tubs that were spent and they had a little bit in the bottom you could scrape out. So, I used to use that for this process. And then you want to add just a handful of some good compost or good soil some of the best soil that you have access to on your property because you're going to get all the microbes in there that you want and have those present. And then you also want to do something to add, give it a little boost of little kickstart of fermentation. So, some people will add half a half a bottle of beer. Some people will add even a half a bottle of a kombucha or something like that. Because that is going to have yeast in there that is going to help with the fermentation process. The other thing you want to do, you want to make sure you do and I think a lot of people skip this part and we definitely were doing it in Brazil. Probably because a lot of things we're using were very high sugar content. So, you want to safely incubate it. And the way you do that is you can go online and you can get these little devices that essentially allow CO<sub>2</sub> to escape from the bottle. So that way it doesn't explode or crack the bottle and or if you open it and it explodes, you want to avoid that.

So, these are a couple of bucks on Amazon and they're there for brewing and fermenting or you can go like a home brewing store and you can pick a couple of these up. I highly recommend it, especially if you want to make the process go faster by adding more sugar. You really want to have one of those so you don't, it doesn't explode on you. So, the application process to when you want to apply it, it's really strong stuff. It's super, super strong because you basically just took a ton of organic material and essentially compressed it by allowing nature to work 100 times faster on warp drive, breaking all that stuff down through the fermentation process to make those nutrients and micronutrients available. So, it's very potent. So, what I do, is I like to dilute it one to 20. To put one to 20 into perspective that usually looks like a five-gallon bucket with about an inch of this stuff at the bottom and then the rest filled with fresh water. So that is my rough one to 20 ratio. If you apply it and you find that it burns your plants and they get overloaded by it, then you might want to go down to one to 50. It really depends on how strong you've made your goo. You can add it to your

watering can directly, and you can go and you could go around watering your plants. You can also use it as a foliar spray, which I've started experimenting with a little bit and I find that that helps. Some plants can uptake the nutrients through the leaves and also it can help deter pests. So those are two ways that you can apply it in your garden. So, let's move on to trash and treasure. Trash and treasure number three. Everybody wants to know, what do I do with these silly egg cartons? You probably have seen dozens blog posts on how do I get rid of egg cartons? People try and start seeds in them and that doesn't really work. And they're basically mostly glue and a little bit of fiberboard.

They're basically like the end of the line for recycling, which is why you can't recycle them. They can't really be repurposed. So, what do you do with that? And then thanks so much Amazon for sending us stuff all the time at our doorstep. It's such an exciting feeling, but what do we do with all of the cardboard? Not to mention that half the box is always empty or filled with packing paper. One of my many frustrations. But anyway, we have a solution to get rid of all of these Amazon boxes and all of these egg cartons. And it's a really cool one. And so, the way to do it is to create yourself some farm fresh cricket poop. And basically, this is a fantastic way to make crickets really happy and to get a really cool fertilizer soil amendment out of it as well. So, let's talk about how this is done. So first of all, why are we using cricket poop or cricket frass? Well, there's some really interesting reasons. The first one is that it's high in chitin, which is basically the exoskeleton of bugs. And what's really interesting is if you put chitin on plants, or you put it in the soil next to your plants and the plants are like, oh, there's a lot of chitin in here. That must mean there's a lot of bugs. Well, guess what? They start producing an enzyme called chitinase, which breaks down the chitin, which basically if you're a plant that's like your immune response. So, it's a catalyst for causing the plants to produce chitinase. And we'll talk about why that's cool in a minute. Also, it is a protein rich feed. You can feed it to chickens. Some people will eat the crickets or they can make a protein meal out of the crickets. This company makes chocolate chirp cookies which I personally have no interest in eating. I would much rather feed that to some animal like a chicken or some sort of, if you're into reptiles you could feed them to iguanas or snakes or whatever. And that's another fantastic use for crickets. You can also fish with crickets. You can use them as bait.

So, there's quite a lot of uses for your crickets once you're growing them. So, you'll be getting multiple products here out of this process. And like I said, it's the ultimate bug defense. So, let's talk about how that works. So, your plants once they know that there's they detect so much chitin in the soil, they start producing chitinase which breaks down chitin. So, if a bug lands on the leaves of your plants, they're like, oh-oh, what have I done? Because it starts to basically start to burn their legs and they're like, I'm melting. And they're like the wicked witch of the West and they're like, their legs are melting off. And so, they do not hang out very long on the leaves and they bail and they peace out and they're not interested in hanging out on your plants. So that's what the cricket frass is really good for. As a soil amendment, you can basically just mix it in, kind of top dress it, top dress your soil or mix it into your soil mix once or twice a season. I think there's other micronutrients and other good stuff in there too. But for the most part it is to give your plants a major boost against pests. And I think that is so cool because basically it came from trash, egg cartons and Amazon boxes, cardboard that we weren't going to do anything with anyway. So, I think it's pretty cool. So how do you do it? How do you set up a basic cricket farm? Well, you just need a couple things. You need a tote first. So that's what this blue box is you can find it in a dumpster or something or find an old one. And then you want to get paper or cardboard. The reason the egg cartons are popular is because the crickets like all these little nooks and crannies and stuff. They like little places to hide. That's why if you live in a warm climate and you know that crickets like to hide under stuff and in between things, that's where you're going to find crickets.

So that's one reason to use the egg cartons. If you're using cardboard, you want to fold that up into a matrix that's kind of like a zigzag sort of matrix or make a bunch of folds in it. And sort of just kind of replicate what it would look like if you're using egg cartons. Make all these little nooks and crannies for them to hide in. They will start eating the egg cartons and they'll start eating the cardboard. And also, they're going to need a water source and possibly a vegetable. So, people like to put a dish of water and maybe a couple of cucumbers or some lettuce in there. Mostly they're going to be getting water out of the cucumber, but also a little bit of just a little bit of extra nutrition for them.

And then you want to have this in a warm environment. 80 to 90 degrees Fahrenheit is ideal. If you get it down to 75, that's actually too cold for them. They're not going to thrive and apparently, they'll even start killing each other and eating each other. So, you don't want to do that. You want to put it in a warm place. If you want to leave it in the sun, that's cool. If you live in a colder climate, you might put it [inaudible] by a heater or something. You might put it a heating pad under it if you need to, but you definitely want to keep them warm if you want to get good production. So, and then of course, at the very bottom over time they will break this stuff down. And so probably in about a month, you're going to notice there's going to be a sort of whitish residue like powder at the bottom. And that is your chitinase. Your frass. The stuff that you want to apply to the garden. You might even at the very bottom of this, when you set this up, put a couple inches of soil down there and that way you have soil that is rich in the frass and you can just kind of mix that in with your existing soil. So that is how I recommend farming yourself some crickets. Right.

Trash to treasure number two. We are coming down the home stretch here. We are getting to my favorite top two. I am so, so excited about soothing warm, worm tea. I'm just kidding. I've never drank worm tea and I wouldn't recommend it. But whenever I'm brewing it, I'm always thinking that I'm making tea. So, a lot of people on here listening probably have experienced worm farming before or done sort of have some sort of experience with worms. As you probably know, these are red wrigglers on the left and this is their rich, rich castings. Worm castings as you probably already know, are amazing for growing plants. They have all sorts of goodies in them. And today we're going to talk about how to, the best way to make a tea out of it. And so, I'm very excited about that. And I'll show you also how I use this in my nutrient infusion technique as one of the base ingredients. So why worm tea? Well, it has all the good stuff that we can't get out of some of my other favorite fertilizer. So, it's got a lot of calcium, has a lot of magnesium, it has potassium and phosphorus as well. And it is super, super ultra-activated with microbial life. And the tea process, the tea brewing process helps with that. You'll notice again, the bubbles here. That is from my understanding, basically created by the dead bodies of dead microbes that have been feasting on each other. So that's what you get there when you're doing a brew of worm tea and it's going well. So, this is a good thing, this foam. And don't get rid of it. Don't scrape it off. You want to keep it in there and you want to use it. So that is a very good sign and it's a sign of microbial activity. So how do we do this? What is the best way to create worm castings so you can create worm tea? Well, you've probably seen these before. Some aluminum companies make these they're fantastic. They're great. A friend of mine gifted me one years ago and it's still rocking probably like geez, seven years ago and it's still rocking. I still use it today.

It's so good for just doing the layering where you put all your organic material on the top and you then take that bottom layer move it on top and you just kind of work each layer down as you go. Hopefully that's clear. But there's instructions on how to use one of these. I highly recommend having one of these if you don't already. Let's talk about kind of what we put in there. And also, some do's and don'ts. So, you've probably seen these on one of those like DIY blogs or something, or you can make your own with totes. I'm not very excited about this mostly because if you go and buy the totes, you're going to end up spending more money than if you get one of these containers depending on how many totes you buy. So, if you get, if you have old ones and you've found them in the dump or something like that, then that's great. You can use these; you could drill holes in the bottom and you can basically make a similar system to this. But personally, these things work so well. I just, I really just prefer to use the systems that are made for the job. There's something that's called leachate which is the stuff, there's like a little spout at the bottom of these you'll notice. And when you open the spout, this liquid comes out. That stuff I actually don't use. I used to use it before, but I did a lot of research and I did some experimentation on my own. And there's just like not, it's just not good. It smells funky and it's basically just mostly the water from when these organic materials like your lettuce and your cucumbers and stuff like that. It's getting broken down and it's just kind of the water's just kind of coming out. And so, it makes kind of a light tea but not really. It's not a very well brewed tea. It's just called leachate. You can certainly use it if you'd like, but it's not what I focus on. I focus on using the castings themselves to make the tea.

So that stuff I typically just throw out in the garden or the yard or something and maybe it makes some plants grow out a notch, check it out. So how do you do it? What do you put in there? How do you get some really good casting

so you can make some awesome tea? Well, you can put almost any organic material in there. I know there's a lot of people who say like, they have this list of do's and don'ts. Don't put this in, do put that in, don't do that. I don't listen to any of that. I just put everything in there. I put also like for another "waste product" that you might want to get rid of. In modern society we use tissues. A lot of people try to use handkerchiefs more, but you use tissues and you blow your nose into it. I save those and I use those in the worm composter. They eat that stuff and that goes in there too. Okay? So that's okay. Egg shells, you definitely do want to make sure you have eggshells in there that give for one, that gives the worms something to chew on. It goes into their digestive system and it helps them break down the food. Also gives them a source of calcium, which helps them actually secrete carbon dioxide. That's how they secrete carbon dioxide instead of breathing. It's kind of interesting. They need the calcium to do that. And so basically if you've ever done this before, you know you've got to have wet materials and dry materials. What that basically means is food scraps like lettuce and carrot tips and stuff that's wet material. Dry material is like paper and shredded cardboard and maybe newspaper and things like that. Leaves. I personally, I will go around town and I will collect people's leaves in their leaf bags in the fall and I will save those.

And that is what I use in my system. So, I primarily really recommend the use of leaves because they're coming from trees and I know they're super clean. So that is what my preferred method, you can also use newspaper, why not? You can use computer paper, shredded paper, paper shreds. I don't know. It's a great way to get rid of waste. But then with this, the question is making tea out of it. So, I don't know what's in there, maybe some contaminants, chemicals and stuff. So, I tend to just straight compost that stuff. Because I want my tea super clean. So, when it's done at the very bottom here, when the worms have gone up and down and up and down and they've eaten everything, they, you get this fantastic black gold. It's the worm castings at the very bottom, and that is what you're going to use as the base for your tea. So, let's see how we do that. Oh, first I want to hits some pro tips. So, if you want to grow worms and feed them to say chickens or some sort of livestock and you want to get like fatter worms and you want them to grow faster, you can give them bread. Moldy bread is a fantastic thing to give worms to get them to grow out really fast and big. They just turn the carbohydrates really rapidly into protein. So moldy bread is definitely a good thing to save and pick up from bakeries and stuff like that if you want to farm and grow worms and get the worms big. So that's that. Also, people say not to add meats and greases and oils and things like that to the composter. I definitely do. I find that they eat it, they eat it all up and they don't care. And the system is healthy.

I just make sure to drain off the leachate, pretty frequently so they don't get any meat juices built up in there too long. But otherwise it's totally clear in my opinion, in my experience to put meats in there. Also, I have gotten rid of clothing in the worm composter. I've put pairs of pants and socks in there and they eat that. And the only thing left over is the buttons and the elastic. So, another fantastic way to get rid of yet one more item and rapidly. So that is that. Now it's time for the tea. This is the exciting part. So, you might have seen other composting tea systems and equipment out there and a lot of times they'll use these air stones or they'll use little devices that create these little tiny bubbles and you don't want to do that. Ideally, you want to have a system that creates lot of thick, large bubbles. And the reason for that is that you kind of want to have a violent action going on inside the inside the tea brewer where you're knocking the components, the microbes and the nutrients and stuff off of the castings. Mostly you're just trying to knock the, basically knock the microbes off of the solid material and break it up into finer parts. And so, a small stream of bubbles isn't really going to do that. And so here is what I like to do. So, this is your standard aquatic pump. For those who are interested, this is an EcoPlus 296 pump. And so, you take that, you put that at the bottom. It comes with some standard fittings that you can use to connect it to a PVC manifold and you'll see in this image here it's just pumping it up and then down and shooting the water back in. You can do this in a variety of ways. You could take a tube and just kind of funnel it back into the top.

But you want to have a pretty steady strong stream of water just blasting down into the service and that's going to turn it up. Make a lot of thick bub bubbles and a lot of violent action. There's other ways you can also buy a compost tea vortexer that spins it, really agitates it a lot. So that is what you want to do. Don't really bother with the ones that

produce the small streams of bubbles and just kind of gently bubble that doesn't really get you the result you want. So, when you do this, you want to apply it rather quickly. I read some studies that say that the maximum time you want to brew it for is four hours before you apply it. So, any time after that the microbes start to die off and you won't get as much of the benefit. So, you want to do this within, maybe two to four hours of brewing. You want to be applying it. When you do go to make your brew, if you're doing this in a five-gallon bucket, I would put roughly two cups of the castings into a five-gallon bucket. And that's going to give you a nice, a dark colored tea like this. And then you can use it as liquid fertilizer like I said, or you can use it as a foliar spray. You can also use it in the nutrient infusion technique as a, it's one of the base items that I put in that technique in that blend. And you're going to learn about that really soon. So, are you ready to join my secret fertilizer club? Well, the bar of entry is really low. Congrats. Urine in is my absolute number one favorite for the win. It is a fantastic fertilizer. We're going to dive into that and give you all a bunch of amazing information on using your urine as fertilizer. I just pulled this picture off the internet says my pee kills poison Oak a 100% human urine. You certainly can use it to kill plants. That's why you got to dilute it. We'll talk about that. Urine is incredible. It's an incredible fertilizer. I'm so excited about it. So, the question is why is urine so amazing?

It is ultra-high nitrogen and so many plants as you know, are heavy nitrogen feeders. The more nitrogen you give a plant, the greener it's going to get, the faster it's going to grow. That vegetative growth, it's going to get really big. Corn is a heavy nitrogen feeder and a lot of people struggle with getting good nitrogen into their soil. And so, farmers, conventional farmers, they're buying mostly nitrogen. They're buying, a lot of times it comes from fossil fuels and petroleum and it's made in a factory and they're just trying to get nitrogen. We can go into how that was that came about during World War II and all that stuff. But we won't go there right now. But basically, the reason why your urine is so high nitrogen is because you breathe mostly nitrogen during the day and you need some way to get rid of that supply of nitrogen, extra supply of nitrogen. So, the body intelligently excretes it in the urine. So as an NPK value, it has so N-P-K. So, it's 11 in nitrogen, which is extremely high. That's basically like store-bought fertilizer. So, there's no longer any need to buy fertilizer. It also has a [inaudible] here that's a trace mineral. It has quite a bit of trace minerals in your urine. And a good amount of small amount of phosphorus and potassium as well. After you pee in a bottle or you incubate your urine source, it turns into pure ammonia. Pure ammonia is also a cleaning product. This here is a industrial cleaning product that is just clear, pure ammonia. And urine is basically the same thing. Ammonia kills all sorts of microbes and pathogens and ancient people used boiled and boiled down urine as antiseptic to treat animals who are sick and they use it for cleaning and all sorts of things. So, there's no reason, the reason I say this is because there's no reason to be grossed out by urine because it actually is a sterile.

Right when it comes out at sterile. And then if you let it sit, it becomes a powerful cleaning agent. So, there's no reason to be grossed out by urine. One adult produces enough fertilizer from their urine in one year to grow all the vegetables for that one adult. Isn't that funny how that works out? Nature knows what the requirements are. Right? So that's pretty amazing. And so, another fun fact is a family of four produce enough urine alone in a year to equal a 1000-kilogram bag of ammonia-based fertilizer. So basically, this is, has the potential to put chemical companies out of business because there's just simply no need to be buying fertilizer out there. Okay? And I know a lot of people watching are going to be super open to this and I don't need to preach it to the choir. But this is really something that has the power to take the power away from the big companies that are taking money unnecessarily away from people in the developing world. So, here's a picture of a system that people are using in Africa where they're harvesting and letting urine incubate and then utilizing it in the fields and it's extremely effective. There's a study that was done on beets and I believe this is a study from India. And they were comparing a combination of urine and wood ashes versus conventional fertilizer. And they did a trial of three acres each, of beet production over a normal growing season. And lo and behold, they got a 20% increased yield from the urine and wood ash versus the conventional fertilizer. So that is simply amazing really. And it has really amazing implications for people in the developing world because fertilizer is expensive. And it's so funny because it's just totally unnecessary. We produce this stuff every day, multiple times a day. And gentlemen, you have a omnidirectional applicator for this amazing fertilizer. Okay? So how do you do it?

Well, it's really simple. You can pretty much pee in a bottle. That's one way to do it. You can also get this is a sort of a portable urinal. Has a wide opening, holds about a liter or something. It has a handle on it. You can get something like that and make things a little more or more professional, a little more easy. And then you want to incubate it for two weeks. That's because when it comes out, it's urea and it needs to denature a little bit and break down into ammonia. So that it can be used by nitrifying bacteria, which will break it down into these perspective parts of ammonia. So that are of nitrogen rather so the plants can use it. Okay. So, there's a little bit of a process there, a little bit of a waiting period. And then when you're ready to use it you can dilute it. One to 20, urine to water. Like I said, my rough way of doing that is about an inch of the urine at the bottom of a five-gallon bucket, fill the rest with fresh water. And that's essentially your ratio, your simple ratio. So, another thing is don't gross people out, right? Don't leave it lying around the house or under in a cabinet, under the sink or whatever. Treat it like a fertilizer. Put a label on it. Put it in a designated bottle, take it into the garage put it with your other gardening equipment and fertilizers, right? Be professional about it. There's already so much stigma around this stuff because it's gross and it comes from our bodies. Make it professional, make it cool. Don't gross out your family. I'll always get precautions and questions around this. Well first one is pharmaceuticals. If you do take pharmaceutical drugs that is something that will pass through your urine. It will be present. Trace elements of it will be there. So, you want to keep that in mind. Maybe if you do happen to take a lot of medication, maybe try and find another donor of urine to use it.

Or if you're not concerned, you're taking the medication anyway. Heck, using your garden. It's going to be very small amounts. But you just want to be aware of that. Another question I got let is salts. People concerned with the buildup of salts from using urine fertilizer. And if that's going to salt their soil and make their soil less productive? What comes in must go out, right? So, if you do eat a lot of salts, typically that's processed salts. Stuff that's in processed foods. I going to assume that most people watching this don't really do that. So that's the only thing you want to keep in mind. And also keep in mind that you're diluting it, right? So read several studies and I haven't seen anyone talking about the salts being an issue. Another question is diseases. If there are any sort of diseases that you or anyone in your family or community might have, look into if those are transmittable by urine. This is a question that I've gotten before and I don't know the answer to. So, I just wanted to put that out there and just research it similar to the pharmaceuticals thing. So that is urine. That is the best fertilizer that I'm so excited about that can transform the way we do agriculture as we know it. Now I wanted to just go into some of the bonus material, some of the dessert for the day. You saw what revolution garden can do. I'm super excited about sharing that with the world and basically the brews are how to take some of the things that we discussed today, plus a couple of other ingredients that I add and how to mix those together to create that liquid fertilizer that gets this kind of crazy growth. So here is how I want to get that to you. So first is my alchemic free fertilizer training. This is basically how I make a specific compost tea that has a whole lot of different things in it and it just makes plants go ballistic. It's so cool and so fun to make. And so, I walk you through exactly how I do that now and all the different ingredients.

That is normally something that is for sale in my eCommerce store, but I'm offering it to you as a Grow Network member and participant today for free. And so, I also have my nutrient infusion technique training that comes from inside the revolution garden training. And it is super fun, super cool. It's the secret to getting that crazy growth that I've been getting. And it does involve using some of the things that you've learned how to make here today and blending them together along with a couple of other good things that are amazing for plants. Also, I wanted to share with you a top-secret mystery bonus. I literally just found this just the other day, I didn't really have time to include it into this presentation. So, I just wanted to send that to you as well as a really interesting new development that I am super excited about. So, I'm going to send that to you as well. So, if you want to get your hands on that stuff, you can, there should be a image somewhere on this page that is alchemic free fertilizer. You can click that and go over to the page, type in your email and I will send this right over to you. Or you can go to, there's a link at the bottom there. It's my site [groweverywhere.com/GN2020](http://groweverywhere.com/GN2020). That's for Grow Network 2020, so you can do one or the other. Cool. Well, I am super, super stoked to have shared this with you today. Thank you so much for your attention and your time. I really, really am excited about just thinking about you going out and using these fertilizers, transforming these wastes into things that

they don't need to be waste anymore. So, click the banner on the side the alchemic free fertilizer banner, or you can go to groweverywhere.com/GN 2020. So, thanks so much. Again, my name's James Fry. It's been such a pleasure.

Marjory Wildcraft: Well, there are seven amazing fertilizers and as James mentioned, that button over there to the right is how you can get, it looks like he's got that. I wonder what that mystery bonus is. He didn't even tell me. I can't wait. I'm wondering if he just made that up. Anyway, click on that button to the right. Definitely the eBook and the free training. Free fertilizers it's the way to go. It's how we're going to be going actually. And yeah. He's got, James is really clearly a great presenter, big heart and doing the right thing and walking the right path. So, click on that button to the right, pick up his free resources, get involved with James. I haven't tried his growing system, but that looks amazing. I'm thinking about, I love trying all kinds of stuff. I'm thinking about getting one of those to try it out. And then of course, you can own this presentation and all the presentations here at the Home Grown Food Summit by putting your name I'm sorry, by clicking on the button down below. I'm getting my calls to action mixed.

Click on the button down below and that will give you the whole summit pass. And you will have all these presentations. You can download directly to your computer. I think right now, as of now, the internet has not gone down, but I suspect that that's going to be something that's going to happen pretty soon. So, you're going to want to have this stuff. Okay. This is Marjory Wildcraft. And come join me on another summit presentation. We can learn how to grow your own food.