



**“Harnessing Solar Energy on the Homestead”**

**Paul Munsen**

**\* FULL TRANSCRIPT \***

Hosted by Marjory Wildcraft  
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# “Harnessing Solar Energy on the Homestead”

## Paul Munsen

Marjory:

Hello and welcome to the Home Grown Food Summit.

My name is Marjory Wildcraft, and our next speaker is going to be Paul Munsen, who is the president of Sun Ovens International, and for the last 19 years, Paul has devoted his life to sharing fundamental Sun Oven cooking techniques with people all over the world. Paul's been involved with solar cooking projects and taught solar cooking on five continents, so he means it when he says he's been all over the world.

The Sun Ovens are made in the U.S.A., and the company is committing to helping people in the U.S. prepare for emergencies and save energy while using a portion of the proceeds that he earns from this to do the work that he does in developing countries. Paul's been doing this a long time, and he's addressed the United Nations Commission on sustainable development at the UN headquarters. He's the past president of the Illinois Society for International Development. He's a member of the Solar Cookers International, and the Illinois Solar Energy Association.

Now, I love to use Sun Ovens for cooking. I like to grow the crops that are known for the Americas, which is corn, beans, and squash, and I love to use the Sun Oven to cook these three. These three, especially in the summertime, they need a lot of long, slow heat, and I do not want that long, slow heat in my house, so having a Sun Oven out in the front yard makes it so much better, and so much easier to do.

And other than cooking, Paul's going to show us a lot about different ways that you can use the Sun Oven that you might not have thought of before: killing insects, dehydrating fruits and vegetables, or making jerky, pasteurizing water, boiling it, making sure it's absolutely safe, drying herbs; there's just a bunch more that you can do. Oh, and I'll tell you what my favorite use is, at the very end of this presentation. Let's get forward with Paul Munsen on Sun Ovens.

Paul:

Well thanks so much for joining us. I trust that this class will show you a whole lot of different things you can do with the sun. Obviously, we rely on the sun to provide the power and nutrients and light to make our gardens grow, but there's a lot of other ways that would be able to utilize the sun and I hope as we spend these next few minutes together, I'll be able to show you ways you can use the sun to do things you never even thought of. Did you know that the sun can be used to sterilize

potting soil? Or to enhance your winter sprouting? Or dehydrate foods? Even do dishes and kill bugs. We're going to cover quite a few different ways that you can harness the power of the sun, so I trust that you'll enjoy this time that we spend together.

As we move forward, just want to share a little more about my background. My wife and I live in a small homestead in rural Illinois, about 60 miles west of Chicago, and we grow a lot of our own food. We love playing in the dirt. We've got a small orchard, we raise chickens, and practice a lifestyle of trying to be self-sufficient as well as, I guess you'd call us, preppers. And we've been prepping now for about 19 years, but we've actually been preparing for eternity for a lot longer time than that. I've have the opportunity to teach Sun Oven cooking on five continents around the world, and traveling to different places has really given me an opportunity to see how people survive in harsh conditions, and it's helped us a lot on our own little homestead.

So, as we move forward with the class today, I want to share with you just a brief video. I'll be talking a lot about Sun Ovens, and it's a lot easier as I talk about it, if you understand it. So, I made a two-minute video that just explains what it is, and we'll show that first, and then we'll move on.

Hi, I'd like to invite you to learn more about the all-American Sun Oven. An all-American Sun Oven can bake, and boil, and steam foods just with the power of the sun. It also can be used as a solar dryer dehydrator, or to boil or pasteurize drinking water. The Sun Oven is designed so the whole thing just sets up in a matter of seconds. It's a simple one-piece construction. It has a leg built into the back that allows you to raise or lower it to be able to meet the sun wherever it is on the horizon. So, in the early morning, late afternoon, or winter, you'd have it raised up. In the summer, most of the time you have it pretty much sitting close to the ground. And setting up the oven is, as I say, it was very simple. You just open this glass door, you put your food in the oven's chamber, and then there's two latches that allow you to latch the glass door shut to trap the heat inside.

A Sun Oven will reach temperatures of between 360 on a perfect day, 400°F, and you can pretty much cook anything you want in it. The nice thing is, if you do realign it to follow the sun, your food isn't going to spill when you move it to full sun, because it has this leveling tray. It has a built-in thermometer so you can tell the temperature at a glance, at there's absolutely no hassle to figuring out when the Sun Oven's aligned. It comes with these easy track alignment cubes. You just point the Sun Oven towards the sun. There's two holes in each of the cubes. The sun shines through the top hole, when you have it centered over the bottom hole, then you know the Sun Oven is adjusted to exactly where it needs to be in the sunlight.

The Sun Oven ... you can take your food out of it, obviously I've only had this food in now for a matter of seconds, so there's nothing these [pats in 00:05:42] for a matter of seconds and not really hot, but you always would need to use oven mitts or hot pads if you were going to do it. But just fold it back up to store it. You just fold it like this. It carries like a suitcase. You can put it away until the next time you're ready to harness the power of the sun for your cooking needs.

I trust that gives you a little better understanding of what a Sun Oven's all about. How it works is really pretty simple. It's the greenhouse effect. It's the same idea as if you go out to your car on a day when it's cold and sunny, and you get in the car and it's real warm inside. It's just the retained heat trapped inside your car.

Well, with the Sun Oven, 60% of the energy comes from the sunlight shining directly on the glass door of the oven. The other 40% comes from the sunlight that bounces off the reflectors. The Sun Oven's designed in a way that gets hot enough that it retains the heat, so you can use it for cooking as well as all the other things we're going to be talking about today.

The sun can be used to bring your potting soil back to its original sterile state. Sterilizing new soil from old planters can kill off the insect seeds, fungus, and bacteria that's built up in it.

If you do want to sterilize your soil, what you'll want to do is remove any kind of plant material ... roots ... from the soil, then take an old baking container and fill it with two to four inches of soil, spreading it out completely evenly. Then cover the baking pan with aluminum foil with the shiny side of the foil facing the food. Cover that with a dark dish towel, and then puncture a hole in it to insert a meat or candy thermometer. You want the tip to rest just about the middle of the potting soil. Bring it up to about a 180°F for about 30 minutes, and that will sterilize it. Make sure though, that you do allow the soil to cool thoroughly before planting in it.

As we continue down the list of ways you can harness the power of the sun, another important one is being able to dry or dehydrate foods. A Sun Oven makes a wonderful solar dryer dehydrator. If your garden was ever ready to be harvested at a point you couldn't use your electric dehydrator, or if you're living off-grid and just don't have the capacity for electric dehydrator, a Sun Oven is wonderful. In addition, though, a lot of people who have electricity like using their Sun Oven for things that smell like peppers or onions or jerky because they can keep the smell of it outside.

Most things that you dehydrate or dry, you want to dry at a temperature some place between 110 and 155°F. When you get up to a temperature of 180°, you're cooking. So, 110 to 155 for most things is

great. Herbs dry at a lower temperature, but we'll talk about that in a couple of minutes.

The sun drying has a real advantage in that many nutrients are heat-sensitive, so when you dry them with the slow, even temperatures of the sun, you don't lose a lot of the nutrients that you lose when you dry in a conventional electric dehydrator.

There's racks available for the Sun Oven that will allow you to dry four layers at the same time. They do come with a roll of parchment paper. Keep in mind that the thinner you slice things, the faster they're going to dry. And by the way, each piece of parchment paper can be reused six to twelve times. You don't have to throw it away after each use.

When you cook in the Sun Oven, there's two latches that latch the glass door shut, that trap the heat inside. To dry, what you do is turn one of the latches in towards the center of the Sun Oven, and set the glass on top of it. That allows moisture to escape and keeps the temperature in the chamber down. You line the Sun Oven where the sun currently is, and then you move it back the opposite direction that the sun's traveling. In the US, you just move it toward the East about six inches. And you do that two or three times a day and then you'll have a nice, even heat throughout the day, drying your food.

There's a number of advantages to sun drying your herbs. Keep in mind, you do want to do it at a little bit lower temperature; generally, between 95 and 100°F, allows the essential oils and vitamins to stay in the herbs. If you are going to pick the herbs, it's best to try to water them very well the night before you're going to pick them, and then pick them after the morning dew has evaporated off of the herbs, when they're in the flowering stage.

Once you've picked them, if you take bunches of them and you swish them in some cold water so that you can remove any dust or soil and then shake the water off of them, and then spread them out on the leveling racks inside the Sun Oven. You realign the Sun Oven pretty much the way we explained earlier, by lining the Sun Oven up where the sun is now, and then moving it back towards the East around 6 inches so that it's not in the direct sunlight, and then you test for drying by making sure the herbs crumble easily.

When the herbs are dry, they'll be safe from bacteria and yeast for six to twelve months.

If you enjoy tea, brewing sun tea allows you to get incredible tastes that you don't get brewing it in conventional ways. It's really pretty simple. Just use a glass jar. For each four cups of water, use five tea bags, or if you're going to be doing herbal teas, for each four cups of water, use

one cup of assorted herbs, and you'll be absolutely impressed with the taste as well as the many health benefits of brewing your tea in the sun.

Now the Sun Oven can be used year-round. The outside temperature really doesn't make any difference at all. The key is direct sunlight. As long as you have enough sun to cast a shadow, you're going to be able to cook in the Sun Oven. If it's overcast at a point where you can't see a shadow, then you're not going to be able to cook in the Sun Oven. But there are some differences between summer cooking and winter cooking. For example, in June you can use the Sun Oven 12 and a half, 13 hours a day. In December, you can use the Sun Oven probably five to six hours a day. The other difference between summer cooking and winter cooking is that normally, you can preheat a Sun Oven to 300° in about twenty minutes. But if it's really cold, the inner box of the Sun Oven is made of metal, so the preheating time can be about double that.

We'll move on now to talk about cooking, which of course is the main reason people get a Sun Oven. Keep in mind that even though we call it an oven, you can bake and boil and steam foods. So pretty much anything that you cook on your stove top or your regular oven can be cooked in the Sun Oven, with the exception of fried foods.

Now there's two ways to cook in the Sun Oven. Let's say that you were going to make a three-pound chicken. If you preheat a Sun Oven, and you put a three-pound chicken in a pot in the Sun Oven and then you realign it every thirty minutes to follow the sun, you can cook a three pound chicken in an hour and a half.

Or you can take a frozen chicken, put it in the Sun Oven in the morning, just set it facing South, leave for the day, and come back at dinner time and have a cooked roast. If you preheat the Sun Oven and realign it every thirty minutes on a clear day, your cooking times are only going to be fifteen minutes longer than they would be on your stove top or your regular oven for each time you open the door of the Sun Oven.

Or you could slow cook. For example, you could put your dinner in, if you know you want to eat at five o'clock, at one in the afternoon, you could put your dinner in. Just set the Sun Oven facing Southwest, where the sun is going to be at three o'clock, and come back at dinner time and your roast will be done.

Probably the most amazing thing about cooking in the sun is that nothing burns and nothing dries out. There's an even, gentle cooking temperature which prevents burning. When you have a pot of food inside the Sun Oven, the pot itself, the food inside the pot, and the air around the pot are all exactly the same temperature, so nothing burns. When you compare that, for example, to cooking on your stove top, where you transfer the heat from the stove burner to the pot, from the pot to the food, and of course if you don't stir it, it burns. In the Sun

Oven, because the pot never gets hotter than the food, the food doesn't burn.

In addition to that, when you're cooking in the sun, all you're doing is heating the air in the oven's chamber, but there's no movement of air. So consequently, food doesn't dry out. So when you make a roast, they are really moist and succulent. When you bake bread, you get an absolutely incredible taste and texture.

The Sun Oven gets hot enough to allow you to use pretty much any kind of pot or pan that's oven-safe. However, there are some differences in pots and pans. You want to keep in mind that because of the even heat of the Sun Oven, the more mass that's in the oven's chamber, the longer it's going to take to cook. I mentioned earlier that you could make a three-pound chicken in an hour and a half. If you did that, you'd want to use something like an enamelware pot. Enamelware pots are steel that's coated with enamel, but they're very lightweight, and they're dark. So, they absorb the heat very well, and because they're thin, they don't take a lot of energy to heat up.

I also mentioned you could put a frozen chicken in the Sun Oven in the morning, and just slow cook it all day. If you're going to slow cook, we suggest you use a cast iron dutch oven. Now, a dutch oven's going to take an hour and a half longer to come up to temperature than an enamelware pot will. The advantage though of the dutch oven is that, let's say you put food in the Sun Oven in the morning, and you know it's going to be sunny, but then it gets overcast in the afternoon, once the dutch oven has come up to temperature inside the well-insulated Sun Oven, your food will finish cooking even if it's gets totally overcast.

But you can use glassware like Corningware or Pyrex, that works real well. Our [viewers 00:16:20] like using silicone bread pans and muffin pans because they can stuff a whole bunch of them into the oven. The only kind of pot or pan you want to be really careful of is using something like a stainless-steel pot that's shiny. That reflects the light out of the Sun Oven, and that will reduce the temperature. You can still use a stainless-steel pot. What you want to do is put a dark dish towel on top of it to keep the light from reflecting out of it. It's important to note that anything you cook in the Sun Oven, with the exception of bakery goods, you do cook in a pot or a pan with a lid on it or a sealed baking bag, to trap the moisture inside of the pot or bag.

Sun Ovens are great for vegetarian cooking. You'll find that if you are a vegetarian, that the dishes come out sweet and nutritious when they're cooked in the sun. The even heat really makes things like grains and vegetable-based dishes taste delicious. On our website, we have over 150 vegetarian recipes.

I want to talk about baking bread in the sun. You'll be really impressed with the taste and texture of bread when you make it in the sun. It's

important when you bake bread in the Sun Oven that you preheat your oven just like you would in your conventional oven. But there are some things you do differently.

One is that when you proof your bread, you just let it raise until it's about a half to three-quarters of an inch below the top of the bread pan. You don't raise it to the same height that you would when you're going to bake it in your conventional oven. The reason for that is the even heat of the Sun Oven. Let's say you preheat the Sun Oven to 325°; you put two loaves of bread inside of it. The bread is at the ambient temperature, so when you close the door to the Sun Oven, you're going to see the temperature in the oven's chamber drop 50 to 75 degrees, and then gradually start to come back up again.

Well, if you've already proofed your bread to its full height, when that temperature drops and then comes back up, there's a good chance your bread could over raise and fall. But if you just let it raise until it's a half an inch or so below the top of the bread pan, then you'll find it'll come out perfect. Another thing that you'll want to keep in mind when you bake bread in the Sun Oven is, if you have a spray bottle and you spray a light mist of water on the dough just before putting it in the Sun Oven, then you'll find your bread will brown, even at a very low temperature. Then nice thing about ... you can make white bread, or wheat bread, or gluten-free bread, or sourdough breads in the Sun Oven. All of them come out fine.

Normally I can make one loaf of white bread or wheat bread in about 45 minutes. Two loaves take an hour, an hour and 10 minutes. And they really come out delicious, but there's times when it's partly cloudy, or there's things obscuring the sun, that I've baked bread at temperatures as low as 250 degrees. It takes a little bit longer, but it doesn't affect the quality of the bread. So, baking bread in the Sun Oven is a really forgiving process, but you'll be very impressed with the taste and texture of the bread.

Another great thing to make in the Sun Oven is beans. You're going to find that there's no better way to make beans. There's flavors that come out of sun-cooked beans that are really delicious. I mentioned earlier when I talked about making a chicken that you could make it in almost the same time, and the same thing applies to beans. If you realign the Sun Oven every 30 minutes, you'll keep them boiling, and they'll cook in the same time as they would on your stove top boiling. Or you can slowly simmer them all day with the sun, but you're going to find flavors that are really delicious and your beans are going to come out soft and yummy when they're sun-cooked.

Another delicious thing to make in the Sun Oven is turkey. You can actually make up to a 21-pound turkey in the Sun Oven. If you take the leveling rack, you fold it up and you set it in the bottom of the Sun Oven, and you can put up to a 21-pound turkey in a baking bag. If you

do that, you want to keep in mind that the instructions on the baking bag will tell you that you should cut slits in the baking bag, but you don't want to do that when you put it in the Sun Oven. You want to tie the baking bag tight to trap the moisture inside the bag. But if you rub some butter or olive oil, or sprinkle some paprika on the skin, you'll get a golden brown turkey. And the amazing thing about a turkey is, any time I have ever made it, anybody who has eaten it has said light meat turkey comes out a lot more moist than any dark meat turkey they've ever had. So turkeys are really delicious when they're made in the s-

Many people store food for a long period of time, but storing fuel can be very expensive and downright dangerous. As a matter of fact, if you are storing things like butane or propane, you do need to keep in mind that the seals on the canisters are only good for five years, so if you have something that's been stored for a long period of time, there's a good chance that eventually the gas is going to leak out of it.

By the way, if you are storing propane and you do live in a city or a town or a community, it's really important to know how much propane you can legally store. Most people don't realize that there's fine print in just about every homeowner's insurance policy that says that if you have more ... something like propane stored, than what the local ordinance allowed and you ever had a fire, it could void your homeowner's insurance or your fire insurance policy. In most cities, by the way, that's only two of the 20 pound canisters that you'd exchange at a local hardware store or gas station.

If the power grid went down for any extended period of time, how would you plan to cook? Of course, we think the best solution comes up every morning, which is the sun. I'd like to talk a little bit more about how you can use the power of the sun to be better prepared for emergencies while you save money.

As I have talked to people about their emergency preparedness plans, very few people have a plan for hot water. People have a plan for drinking water, but they often times don't think about the need for hot water. The average American household uses more energy every day to heat water than they do to cook. Think about the number of times each day you turn on a hot water faucet for personal hygiene or doing the dishes or doing laundry, and there is always the need for hot water, which is a very energy-intensive thing to have. So when you can use the sun to heat your water, then that means that you don't have to use other sources of fuel to have hot water available.

Let's talk about using the sun to have drinking water. You can boil or pasteurize water with the power of the sun. Both of them kill the biological contaminants in the water. Of course, at most altitudes, water boils at 212°F, but you can actually kill the same contaminants by pasteurizing water. Water pasteurizes by bringing it to a temperature above 150°F for six minutes. That will kill the same biological

contaminants will the boiling will. Of course the advantage of the boiling, when you can see the bubbles to know that the water has been boiled, but there's also something that's available that's called a Water Pasteurizing Indicator or a WAPI. And that just floats on the top of a pot or a pan or a mason jar and it has a plastic tube that has a green wax in it. When the wax melts goes to the bottom of the tube, then the water is pasteurized. You can take the WAPI out of the water, the wax will re-harden in less than two minutes, and you can flip it over and you can use it hundreds of times.

Boiling and pasteurizing both kill the same germs, it's just that pasteurizing is two to three times faster than boiling. Some people do keep a piece of cheesecloth with their Sun Oven, and that way if they've gathered water from a roof or stream, they can pour the water through the cheesecloth; that will filter any solid impurities out of it, and then they could boil or pasteurize it with the sun.

My wife and I are preppers and we've got a fair amount of emergency preparedness foods stored. One of the real benefits of having the Sun Oven is, it's by far the most energy-efficient way to rehydrate prepackaged preparedness foods. When you look on the cans or the packages, there's instructions on them that will say something like, "Boil four cups of water for each cup of whatever it is you want to rehydrate, and then pour the boiling water over the food." Well, in the Sun Oven, you don't have to boil the water first. All you do is put the amount of food that you plan to rehydrate into a pot, and then whatever the package tells you to do, use 25% less water. So if it says "Boil four cups of water," just put three cups of water in the pot at the ambient temperature, stir it, mix it thoroughly, put a lid on the pot, and put it in the Sun Oven. And the foods will rehydrate without boiling the water first.

That does save an incredible amount of energy, but in addition to that, then you need less water. In a preparedness situation, people are always concerned about having enough potable water, and if you use 25% less of your water for cooking, then that's that much less water that you have to have treated.

Another real benefit is the taste. You'll be absolutely amazed at how much better food tastes when you cook it in the Sun Oven without boiling the water first, than when you use the conventional method of cooking your preparedness foods.

The Sun Oven can also be used to sterilize medical instruments, which could be a real important factor in emergency preparedness. A number of organizations that take short-term medical missions trips internationally take Sun Ovens with them. They heat the water in the Sun Oven, clean the instruments fairly thoroughly, and then they use the Sun Oven like an autoclave to basically steam the medical instruments to make sure they're completely sterile.

You'll be impressed with how quickly a Sun Oven will pay for itself. It pays for itself somewhat in what you save in cooking fuel costs. The average American household spends about 14% of their annual utility budget on cooking fuel. However, depending on where you live, there's a good chance that you spend a lot more than that to cool your house. So if you do your cooking and baking outdoors, and you don't have your oven working against your cooling, it can really reduce your utility bills. Many people find they pay for a Sun Oven in a matter of months, just by using it on a regular basis.

When you make hard-boiled eggs in the Sun Oven, you don't even use water. If you just take and put the eggs in the Sun Oven, they'll hard-boil perfectly without water. When I'm in developing countries and I'm trying to get women to understand the even heat of the Sun Oven, I'll preheat a Sun Oven, and have someone bring me an egg, put the egg on the shelf of the Sun Oven, and in about 35 minutes, I have a perfect hard-boiled egg without water. And if you think of the principal of boiling an egg, you bring water to a boil, you put the egg in, and of course you have the even heat of the hot water all the way around the egg shell. Well in the Sun Oven, we're doing the same thing with air, whether we're going to be making hard-boiled eggs or anything else we're going to cook.

The real advantage, though, of the hard-boiled eggs without water is that you can take a fresh egg, you can hard-boil it in the sun, and the membrane that normally is there between the eggshell and the egg white completely disappears. We raise chickens and I have taken eggs within 20 minutes of dropping out of a chicken, hard-boiled them without water, and they peel instantly. So there's a real advantage in being able to do that, especially if you're in a situation where you couldn't refrigerate eggs to store them until you're ready to boil, because you don't have to worry about it. Now if you have several eggs, and you put them into a pot, anywhere the eggs touch each other, you're going to get a brown spot on the white of the egg. However, if you take cardboard egg cartons and you rip the lids off of them, you can then keep them separated and do two dozen eggs at the same time.

I'm going to do a couple dozen eggs in the Sun Oven, generally I'll preheat it, I'll put the eggs in the cardboard egg cartons, and set them into the Sun Oven, and then leave them in about an hour. And after an hour, I'll open the door as quickly as I can, take one egg out, put it on a flat surface like a table, and spin it, and if it spins nice and evenly like a top, then I know it's done. If it's wobbly, then I put it back in for another 10 minutes or so.

By the way, it's important that if you are going to do eggs in the Sun Oven and you have refrigerated them, that you take them out of the refrigerator for at least 30 minutes before you put them in the Sun Oven. You'll find that eggs at the ambient temperature will come out much better than if you start with eggs that are cold.

I wanted to mention that Sun Ovens are made in the United States, and they're proudly made in Elburn, Illinois, about 40 miles west of Chicago, and all of the parts that go into making the Sun Oven, except for the thermometer, are made in the United States. We're very committed to keeping this a U.S.-made product.

Oftentimes people ask us what kind of parts go into making the Sun Oven. The most important component part of the Sun Oven is the gasket. There's a gasket that forms an airtight seal that traps the air inside the Sun Oven. That gasket accounts for the reason the Sun Oven will always be 75 degrees hotter, sitting side-by-side ... than home made solar cookers or some of the knock-offs for the Sun Oven that are out there.

Now the reflectors are made of a highly polished, anodized aluminum. They're 86% reflective, but they're never going to oxidize, rust, or corrode, and they clean just like glass. So to clean the reflectors, you use Windex or vinegar water, or any kind of a glass cleaner. By the way, the reflectors never get hot, so you never have to worry about burning yourself when you take food in or out of the Sun Oven, and they're very safe. Now, the outer box of the Sun Oven is made from ABS plastic, but then there's an inner shell, or an inner box that's made of a black anodized aluminum, and between the aluminum inner box and the plastic outer box, there's a very thick pad of a non-toxic, food-grade, fiberglass insulation. So it can be 400 degrees inside the Sun Oven, and you can touch anywhere on the outer box and not feel any heat; it's all trapped inside the oven's chamber.

That black anodized aluminum is very easy to clean. If you spill anything inside of it, you can just wipe it off with a dish rag or spray it with a garden hose, and it cleans really nicely. The door of the Sun Oven is made of a low-iron tempered glass, and by taking and reducing the iron content in the glass, it allows more sunlight to get in the chamber, and allows it to get very hot. The low-iron glass frankly is very expensive, but it really enhances the cooking.

Now the only part of the Sun Oven that's exposed that gets hot is the glass. If it's 350 degrees inside the Sun Oven, and the outside temperature of the glass will be about 155°F. Which will sting if you touch it. It's very hot, but it's not going to burn you. There is actually an advantage though, to the glass getting hot, and that is it'll keep your neighbor's dog from eating your pot roast. Any animal that's out in the daytime will sense the heat and will stay away from the Sun Oven. There's a lot of animals out at night that of course wouldn't sense the heat and stay away from the Sun Oven, but most people don't do a lot of solar cooking at night, so you don't have to worry about that.

The Sun Oven has a frame or bezel that's made of a wood. It's a kiln-dried poplar wood, and the only maintenance we suggest that you do to the Sun Oven, other than cleaning it, is if every five years or so you treat

the wood with some linseed oil or exterior wood stain, then you'll find that the wood will last a lifetime.

I want to briefly mention that the Sun Oven is warrantied. The reflectors are warrantied for 15 years, to remain reflective and not oxidize, rust, or corrode. The gasket's warrantied for fifteen years against any kind of failure or cracking, and there's also a 30-day satisfaction guarantee. So if you got a Sun Oven and for any reason you weren't completely satisfied with it, you could return it any time in the first 30 days and get a full refund of your money.

Please let me share with you a little bit of why we're so passionate about cooking with the sun, and what we do internationally.

You know there's still over 2.5 billion people in the world who cook with wood or charcoal or animal dung as their primary cooking fuel. And when a woman cooks over a wood or charcoal fire, she inhales the same amount of smoke as smoking three packs of cigarettes a day. Each year in the continent of Africa alone, 1.6 million children under the age of five die of respiratory diseases, primarily from the indoor air pollution of cooking fires. In more than half the African countries, more children under the age of five die of respiratory diseases than they do from HIV/AIDS and malaria, combined.

Also, as deforestation has gotten worse and worse around the world, women and girls are the ones who are usually assigned the task of gathering wood, and they have to go farther and farther from their homes to find wood to cook with, and oftentimes that makes them very susceptible to rape and attack. So when we can replace that wood or charcoal with the sun, it has a huge effect on the wellbeing and the health of women and children around the world.

We have a pretty simple business model. Our goal is to help people in the U.S. save energy and prepare for emergencies, and then we use a portion of the proceeds from that to work internationally. We think there's an awful lot to be said that taking a private sector approach to solving problems that most people think should only be solved by governments or non-profits, so we don't solicit money for projects or actually even accept donations for project. Our goal is to try to create more entrepreneurial self-sufficient projects.

As an example, on the screen you'll see one of our large Villager Sun Ovens. Now a Villager Sun Oven can make 1,200 meals in an eight hour day, or 28 loaves of bread an hour, just with the power of the sun, and we have those in about 55 countries around the world. And we are now really concentrating our efforts on trying to get as many Villager Sun Ovens into orphanages as possible. Now if an orphanage has 100 children, they only need 200 meals a day. They don't need the 1,200 that the oven has the capacity for, so when we ship it, we'll ship a whole bakery package that has 150 different pots and pans and insect-proof

flour containers, and everything that's needed for a total turnkey bakery. In the hours when they're not cooking, then they can bake bread, sell the bread, and have a source of generating income to be more self-reliant.

Many of us who are concerned about being prepared are worried about the U.S. economy, and not sure it's going to hold out forever. Well the U.S. has been a very generous donor to orphans and orphanages around the world, but if our economy goes south, there's a good chance that donations to orphanages will drop off. So if there's a way, then, the orphanage can continue to generate some income through the sale of bread, hopefully they'll be able to continue to feed and house additional orphans. Also, particularly in Africa, where normally a child would learn a trade from their parents, it's not uncommon for a child to age out of the orphanage without a job skill. If they've learned to bake bread while they're in the orphanage, they've got a very usable job skill that they can take to a bakery or a restaurant.

So those who have Sun Ovens, I want to thank you, because that's how we fund our work. We think it can be real win-win if we can help you and your family save energy, and you can help us do what we're really passionate about around the world.

In the winter, you can also use the Sun Oven to enhance your winter sprouting. Sprouting loves temperatures between 75 to 80°F, and of course often times ... don't have a room in the house in the winter that's at that temperature, so sprouting slows down. But when you're not using your Sun Oven for cooking, if you take your sprouting and you put it inside the Sun Oven chamber, and then you take the lever that would normally latch the glass door shut when you cook, and you turn it in towards the center of the Sun Oven, and just set the glass on top of it, if you put a long-burning candle in the chamber with your sprouting, you'll find your sprouting will thrive. It will just go crazy. You do rehydrate the sprouting the same as you would in the summertime, and it's not going to hurt anything to take the sprouting out and use the Sun Oven for cooking, and oftentimes if you look at dollar stores, you can find long-burning candles, a whole box of them for a dollar. And you'll find it's a wonderful way to improve your winter sprouting, at a time that your Sun Oven wouldn't be working to do your cooking.

This is probably the most unpleasant thing we talk about in the class, but if you find that bugs have invaded your food storage or dried grains, you don't have to throw them away. If you take any bug-infested foods and you put it in the Sun Oven, you bring the temperature up to 140 degrees for 10 minutes, that's not only going to kill the live bugs, but it's going to kill the bugs off in any form of development that they're in. If it's something that you're going to boil, of course, then when you boil it, the bugs will float to the top and you can skim them off the top. So you don't have to throw away bug-infested foods; you can use the sun to salvage it.

On days when it's overcast and you're not able to cook in the Sun Oven, you can also use it like a wonder box or wonder basket or a retain heat cooker. If you're familiar with the concept of retain heat cooking, basically all you do is get your food more than half-cooked using a conventional fuel source, and then put inside a very well-insulated box or basket.

Well, the Sun Oven is so well-insulated that on days when you can't use it for cooking because it's overcast, or raining, what you can do is get your food started using a conventional fuel source, then transfer it to the Sun Oven, leave the Sun Oven in the house, latch the glass door to the Sun Oven shut, set the reflectors down on top of it, and your food will finish cooking like a slow cooker or crock pot. So it's a wonderful way to cook at least half of your food, even on days when it's overcast.

If you're considering getting a Sun Oven, you should be aware that we did put together a really special package for this year's Food Summit. And it's at a big savings, \$140 off, and I'm going to go through all the different things that are included in the package, but if you do decide you want to get one, this would be an ideal time, because with this savings, the total price for everything is only \$319.

I'm going to briefly run through all the items that are included in the package. It does include stackable pots. These are enamelware pots, which I mentioned are the most efficient way to cook in the Sun Oven. They are made in the United States, actually by Graniteware Columbian Home Products, a company that's been making these for more than 100 years, and they custom make them for us in that they indent the base on them so they can stack two high in the Sun Oven, and they come with two lids. One's a glass lid and one's a dome lid. Now, keep in mind there's enough room in the Sun Oven that you could be cooking in the two stackable pots and cook two things, and then you could also take two quart-size mason jars and put it right next to it, and cook side dishes. So you cook four different things at the same time.

People oftentimes ask me, "When do you use the dome lid? When do you use the glass lid?" I pretty much use the glass lid for just about everything, other than roasts; they need the extra height of the dome lid. They're interchangeable and you can use whichever one you think is going to fit your cooking needs be-

Package also includes a multi-fuel water pasteurizing indicator or WAPI. And the reason we call it a multi-fuel WAPI is that most WAPIs can only be used with the solar oven, but you can use this with wood or charcoal or butane or propane, so it can be used with any type of fuel, and basically it floats on the top of a pot or a mason jar, and the WAPI has a plastic tube that has a green wax, and the green wax melts and goes to the bottom, then you know the water is safe to drink. You can take it out of the water; the wax will re-harden in less than two minutes, and

then you just flip the plastic tube over, and you can reuse it hundreds of times.

The package also includes a set of two bread pans that you can use for baking two loaves of bread at the same time.

Another item that's included is the multilevel dehydrating and baking rack set. There's three racks, so with the original tray in the Sun Oven, it gives you four layers that you can dry or dehydrate, and it comes with a roll of parchment paper, and you can use it for dehydrating as well as for baking. You can bake things like cookies, or flatbreads, or quiches, on multiple levels.

Now I do want to mention, in the interest of full disclosure, earlier I said nothing burns in the Sun Oven. That's not quite true. Cookies will burn, but they burn perfectly evenly. In all seriousness, if you do make cookies in the Sun Oven, if you leave them in 15 or 20 minutes too long, you're not going to notice the difference. Leave them in an hour too long, and they eventually turn black, but they turn black evenly, and believe me I know a lot about making cookies. We actually held the Guinness record for cooking the largest number of cookies that had ever been cooked in one hour, and we did it all in Sun Ovens. We did it in Miami, Florida, to raise money to send Sun Ovens to Haiti.

So these racks are really handy for dehydrating as well as for baking.

There's an incredible computer CD that comes with the Sun Oven that's got over 600 recipes in a state-of-the-art recipe software called Cook'n, and the amazing thing about the Cook'n software is, if we have a recipe for four people, and you plan to cook for seven, you just change the number of servings, and it adjusts the ingredients automatically. You can sort by anything that you want to include or exclude, and then you can print out recipe cards or notebook pages that have the recipes that you've adjusted to cook for the things that you want to have, and if you go to the Cook'n website, the Cook'n software alone sells for \$79, and that's included with the package.

But there's also a whole preparedness for life program, which is an emergency preparedness planning program and that sells on the Cook'n website for \$29. So that all comes downloaded with several videos ... how-to videos for using the Sun Oven, and then the computer CD really makes it so much easier to use your Sun Oven.

Well, if you've been keeping track while I was talking, I actually covered 13 different ways that you could use the Sun Oven. So we thought we'd add a baker's dozen or 13 items to the Home Grown Food Summit package to make it a little more interesting and more exciting.

So we're going to be including a backup for the Sun Oven; something you can use on cloudy days, which we call a Cloudy Day Cube Stove. It's a little light-weight stove, it's great for backpacking, but you can use it to cook whole meals with, and it can be used with pretty much any kind of a fuel. It can be used with twigs or sticks or wood or charcoal briquette or [sow food 00:45:22] tablets, or Cloudy Day fuel disks, so it gives you a vast variety of things that you can cook, and it's a really handy item to have for days when it is overcast and you're not able to use the Sun Oven.

The package also includes 12 of the cloudy day fuel disk fire starters. These are amazing. They can bring water to a boil in six minutes, or each disk can cook a whole meal, or you can break each disk into five pieces, and start five fires with it. I have a wood stove in my garage; used to use a lot of newspaper to get it going. Now I just take a small piece of this fire starter, and it just gets it going really quickly. So there's a total of the 12 disks as well as the Cloudy Day Cube Stove.

So this entire package is available at \$140 savings, a discount of 30% if you want to take advantage of it. And by the way, it does include shipping everywhere in the contiguous 48 United States. And unless you're in the state of Illinois, you're not going to pay any sales tax, so the total price is \$319 including sales tax for everywhere but Illinois, and shipping within the continental US.

I'd like to take this opportunity to thank those of you who have Sun Ovens, for helping us with the work that we really are passionate about all over the world. If it wasn't for people in the US who got Sun Ovens and told their friends about them, frankly we wouldn't be able to do a lot of what we do around the world.

The picture you see on the screen was a project that I did in Sri Lanka after the tsunami, where we installed hundreds of the family-sized global Sun Ovens in homes that were built to replace homes lost during the tsunami, and some of the Villager Sun Ovens in community centers, and we couldn't do work like that if it wasn't for people in the US, supporting us by using their Sun Ovens and telling their friends about it.

I also wanted to mention some other free resources you might find helpful. If you're interested in learning more about a lot of the topics I covered today, we do have how-to videos on almost everything that I talked about, and if you go to [sunoven.com](http://sunoven.com), and you just click the button that says, "How To Use", it'll take you to a page that's got videos on everything. It's also got the frequently asked questions, copies of the owner's manual for the All American Sun Oven, and quite a bit more information. So that's all available free, just go to [sunoven.com](http://sunoven.com), click the "How To Use" button.

In addition to that, if you click the button at [sunoven.com](http://sunoven.com) that says "Recipes", then you'll be able to see recipes for cooking in the sun, and

you can download or print them if you choose to, and they're available there as well. Now if you do want to order, you can call us toll-free to order. Our office hours are Monday through Friday from 9:00 a.m. to 5:00 p.m., Central time, and our toll-free number is 800-408-7919, or you can just click the button below; that'll take you right to the webpage where you can order, and take advantage of this huge savings with the package we put together.

By the way, the first 100 people to order will also receive a free hanging turkey roasting rack. That sells on our website for \$35, and that's going to be for the first 100 people. If you're wondering if you get the turkey rack, as long as you click the link and it says "turkey rack", then you'll know that you're still included in getting the turkey rack free, so feel free to order the package, either by clicking the link that will take you to the Sun Oven website to order, or by calling us toll-free at 800-408-7919.

Well thank you so much for your interest in spending this time with us. I really enjoy talking about all the different ways you can use the sun, and I appreciate all of you who have gone with me through this entire class. Thank you very much. Have a great day, and God bless.

Marjory:

So I told you at the beginning that I'd tell you what my favorite use of ... and I just love what he's presented here, and that is to take a dozen eggs that are absolutely fresh eggs, cook them in the Sun Oven, and then you can peel them easily. I go to a lot of pot lucks and parties, and deviled eggs and egg salad is a perennial favorite, and of course with your home made eggs, it adds that other little twist to it. So people are excited to eat what I bring, and I don't often have anything but fresh eggs, so finding a way to peel them easily is a big boon to me.

Paul has put together a big package here for us, with the Sun Oven, and some extra bits and pieces, useful parts, I think the package normally runs around \$450, and he's offering it to folks that are watching the Home Grown Food Summit for \$320 I believe it is, or \$319. Anyway it's a really good deal on this. I encourage you to get one; they're just really useful devices for cooking without using any energy, and then also all these other uses that he's brought forward here.

Personally, I hope you don't have to sterilize suturing instruments.

Okay, that's Paul Munsen, click the button on the right to get in touch with him. This is Marjory Wildcraft, and we will see you on another presentation here at the Home Grown Food Summit.



For more information about growing your own food and medicine, please [visit our website.](#)