



Solar Ovens

Additional Resources

On this episode of Living Essentials we talk about solar ovens. We all know we need to have food storage set aside in the event of an emergency or natural disaster, but the reality is that we may not have electricity to cook the food. So today we'll talk about an alternative solution - solar ovens. We'll discuss how to use a solar cooker to prepare a complete meal or even to purify water. We'll also learn about the different kinds of solar ovens out there for purchase or those we can make ourselves.

Wendy DeWitt - a food storage specialist

More recently, people have become aware that solar ovens are clean, they use no fuel, they keep the heat out of your kitchen, the food is delicious and, best of all, you're using a free source of energy-- the sun.

Solar oven is not for everyone and the determining factor is the region you live in. The oven will work in Alaska because even though the temperature is low, but the sun is shining. Regions where there're a lot of clouds should look into alternative sources of heat.

There are three different kinds of solar ovens:

1. The simple box cooker— it's a box lined with the aluminum foil. You put the pot inside and sun cooks it. Pro's- can make it yourself. Con's- doesn't create much heat and is good for warming up hot dogs, but not to prepare a meal. This cooker would cost you about \$20-\$25.
2. The parabolic cooker— a fairly complicated circle of reflectors. It has 8 sides with mirrors and a place in the center where you put the pot. It gets very hot— 600-700 degrees. Almost like cooking on an open fire. Pro's- good to fry foods and you can boil water. Con's- impossible to bake, it needs close supervision and constant adjustments.
3. The panel cooker— has reflector panels that surround the box. Pro's- you can bake, cook and boil water. Con's- you can't fry. This solar oven costs about \$200.

A good solar oven should reach about 350 degrees. In order to obtain the best temperatures you have to face and tilt the oven directly at the sun so there is little or no shadow inside. The temperature gauge is going to be your best indicator of whether or not you've got the best angle. If you're oven doesn't have a built in temperature gauge or you're building one yourself then you can just buy a gauge and place it inside.

Generally speaking, it takes about twice as long for foods to cook in a solar oven. Rice on the stove takes 25 min, when you're cooking with the solar oven expect it to cook for 40 min. Cooking time depends on how your oven is placed, the time of day, cloud cover and even how



much food you have in your oven. If you do have larger amounts of food, divide it up and put it into smaller pots to cook it faster. Also, if you cut the food into smaller pieces, it will cook faster.

To preheat an oven leave the glass doors ajar a little bit and put the winglet underneath it, so that there is a little bit of air. But if you'll put it in a cooking position and put it outside without anything inside it can ruin the finish of your oven.

When cooking with solar ovens you need to check your food every hour or so. Mostly, what you're checking for is that the oven is still facing in the direction that will give you the highest temperatures.

Depending on the day different cookware works best.

- If it's a bright sunny day, the best cookware is going to be a dark, shallow, thin metal pot with a tight fitting lid. This is something that will heat up quickly. Smoked glass is also works well on sunny days and it allows you see your food without opening the lid.
- When you have a slightly cloudy day with intermittent sun, you'll want to use the Dutch oven type cookware. Cast iron heats up slowly but the thick metal retains the heat longer. This means when the clouds come and your oven cools down, your food will still stay hot. This is the kind of day where you'll want to cook foods that just need a gentle simmer, like soups or stews.

The cookware we don't want to use is stainless steel or shiny aluminum pans because they reflect the heat instead of retaining it. If that's all you have, you can put your food in a shiny pan and then cover everything with a dark cloth.

Wendy says the tight fitting lid is important when cooking with sun. It keeps your oven from steaming up, cooks the food faster and you won't need to stir it as often. Having to stir your food can be a real problem because every time you open the oven, the temperature can drop by 50 to 100 degrees in just seconds.

The general safety rule when using a solar oven:

- Germs can't grow in the temperature above 120 degrees, you can pasteurize water at 150 degrees, foods will cook at 180 degrees and water boils at 212 degrees. It's important to remember, no matter how you plan to cook, some foods left at temperatures between 50 and 120 degrees for 3 or more hours can grow harmful bacteria and carry a risk of food poisoning.

Excerpt from “EVERYTHING UNDER THE SUN”
Putting the Foods You Love Into Food Storage
by Wendy DeWitt

EQUIVALENCY INFORMATION

APPLESAUCE	16 Tb / c	4 c / qt
APPLE SLICES	10 c in a #10 can = 1 ¼ #	1 c dry + ½ c water = 2 c fresh
BAKING POWDER	32 Tb = 1#	
BAKING SODA	32 Tb = 1#	
BEANS	1 # = 2 ½ c dry = 6 c cooked	12 c in a #10 can
CARROTS	12 c in a #10 can = 2 ½ #	½ c dry = 1 c hydrated carrots
CELERY	2 oz = 1 c	12 c in #10 can ½ c dry = 1 c hydrated celery
CHEESE POWDER	4 c in 1 # of powder	96 Tb = 1 # 1 Tb per 1 c cooked macaroni
COCOA	90 Tb = 1#	20+ years shelf life. Store in jars. Don't vacuum pack
CORNMEAL	4 c = 1 #	
CORNSTARCH	45 Tb = 1#	
EGGS (powdered)	32 eggs = 1#	2 eggs = 1 oz
FLOUR	19 c = 5#	12 c in a #10 can
GELATIN (Knox)	1 oz unflavored gelatin = 12 tsp of gelatin = 12 “eggs”	1# gelatin = 192 “eggs”
	egg substitute)	1 tsp gelatin + 3 Tb cold water + 2 Tb hot water = 1 “egg”
HONEY	20 Tb = 1 c	13 oz = 1 c 6 c = 5#
HOT CHOCOLATE	12 c in a #10 can	#10 can = 56 liquid c
MACARONI	12 c in a #10 can	4 c = 1 # 2 c dry = 5 c cooked
MALT-O-MEAL	¼ c dry = 1 c cooked	1 28 oz box = 4 ½ c dry or 18 c cooked
MEATS	1 pint bottle holds 1# of meat	1 qt bottle holds 2#
MILK	1/4 c dry milk + 1 c water = 1 c milk	12 13 c powder in a #10 can
	about 1/3 # dry = 1 c dry	a #10 can = 58 liquid c
MUSHROOMS	4 c dehydrated = 3 oz	20 c = 1 #
NOODLES	4 c = 8 oz	2 c dry = 2 c cooked
REGULAR OATS	12 13 c in a #10 can	1 c = 4 oz
ONION	½ onion = 2 – 3 Tb dry	16 Tb dry = 1 c 12 c = #10 can = 192 Tb
PARSLEY	30 Tb = 1 oz	
PEPPER	6 Tb = 1 oz	
PIZZA SPICE	42 Tb = 1#	
POPCORN	12 c in a #10 can	1 c popcorn = 16 c popped
POTATOES (instant)	12 c in a # 10 can	1 ½ c flakes + 1 ½ c water = 2 c potatoes
PUDDING MIX	12 13 c mix in a #10 can	
RAISINS	4 c = 1#	



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RICE 12 c in a #10 can 2 1/3 c=1# 1 c raw=3 c cooked
SALT 1 1/2 Tb=1 oz 1 container=26 oz = 39 Tb=117 tsp
SHORTENING 227 Tb=6# can 17 Tb =1 c 2 1/4 c=1# 1 c shortening + 6 tsp water=1 c butter
SOUP BASE 1/8 - 1/4 c dry makes 6 c broth
SPAGHETTI 4 5 # in a #10 can 8 oz=4 c cooked
SPICES 1 c=4 oz=16 Tb 64 Tb=approx. 1#
SUGAR (white) 12 c in a # 10 can 2 c=1# 1#= 32 Tb = 96 tsp
SUGAR (brown) 1 1/3 c=1#
TAPIOCA 40 Tb=1# 1 Tb=1 c cooked
TOMATO POWDER 1 c powder + 2 c water=2 c tomato sauce
WHEAT # 10 can=5.8 # =12 c=18 c flour when ground
1 c wheat = 1 1/2 c flour, 1#=2 1/4 c wheat=3.37 c flour
YEAST 1# compressed=8 oz=24 Tb Shelf life: indefinite in freezer..1 year out of freezer

BREADS

The question most often asked about solar cooked bread is, "Does it brown?" The answer is yes. It bakes and browns beautifully. As with all other foods, breads take almost twice as long to cook in a solar oven. They will bake in a cooler oven (200) but hotter ovens are best. Cooking times and temperatures will always depend on how hot your solar oven is. Pint references are connected to cooking in pint jars.

Cinnamon and Raisin Bread Makes 1 loaf or 3-4 pints.

1 recipe wheat bread (use white wheat if possible) 1/8 c butter, 2 tsp cinnamon, 2 Tb sugar, 1/4 c raisins.

Make the bread recipe and before you roll it into a loaf, spread the butter on the dough, sprinkle on raisins and a mixture of sugar and cinnamon. Roll it up, place in loaf pan and bake until browned.

Whole Wheat Bread Makes one loaf or 3-4 pints.

2 tsp yeast, 1 c water, 3 c wheat flour, 1 1/2 tsp salt, 2 Tb applesauce or shortening, 1/4 c sugar or honey.

Solar oven: Warm 1/4 c of the water, stir in the yeast and set aside. Mix 2 c of the flour, the melted shortening, sugar, salt and the rest of the water in a large bowl. A little at a time, add enough of the rest of the flour, kneading until smooth and elastic. Cover the bread and let it rise until doubled in size. Punch down the dough, shape it into a loaf, place into a greased pan, cover and let it rise again until doubled. Bake for 45-60 minutes or until browned. For a regular oven, bake at 350 for 25-30 min.

365 Loaves of Bread White wheat bread - 1 loaf per day Total for One Year

2 c white wheat (3 c flour) x 365=730 c (12 c / #10 can) 61 #10 cans white wheat

1 c water x 365 = 365 c (16 c / gal) 23 gal of water

1 1/2 tsp salt x 365=547 tsp (117 tsp/container) 4 2/3 containers of salt



2 Tb melted shortening x 365=730 Tb (17 Tb/c, 2 ¼ c/#) 19 # shortening
¼ c sugar x 365=91 c (2 c=1#) 46# of sugar
(or honey=91 c (13 oz=1c=74# honey) (or 74 # honey)
2 tsp yeast x 365=730 tsp=243 Tb (48 Tb/#) 5# of yeast
Follow instructions for whole wheat bread.

CEREALS

You will need to add the separate serving of ½ c water + 1/8 c dry milk and 1 Tb sugar to your totals.

Granola Makes 5 cups or 3 pint jars.

3 c oats, 1/3 c honey, 1 c sliced almonds, 1 tsp cinnamon, ¼ c shortening, ½ tsp salt, ½ c raisins.

Melt the shortening. Place all the ingredients (except raisins) in a large bowl and mix well. Spread onto a shallow pan (or put into 3 uncovered pint jars) and bake until browned (60 minutes or longer). It shouldn't have to be stirred but you can turn the jars half way through. Watch it closely so it doesn't burn. For jars, add the raisins and place a lid and ring on the jar as soon as you remove it from the oven. The jar will seal and keep the granola fresh for weeks. For pans, let it cool, add the raisins and store in airtight containers.

Grape Nuts Makes 4 cups.

6 c whole wheat flour (4 c wheat), 1 c brown sugar, 2 c buttermilk (2 c water + 2/3 c powdered milk + 2 Tb vinegar or lemon juice.) 1 tsp baking soda, 1 tsp salt

Mix everything in a bowl, press onto 2 cookie sheets and bake until dry (1-2 hours) Grind with a meat grinder to the size of grape nuts and bake again until golden brown. Cool and store in airtight container.

Oatmeal Makes 1 cup.

½ c rolled oats (or quick), 1 c water, pinch of salt.

Place salted water and oats in separate canning jars or covered pots and heat. When heated, add warmed oats to hot water and cook to desired consistency. Serve with milk and sugar. Add raisins or dried apples.

Wheat Cereal Makes 1 ¼ cups.

½ c wheat + 1 c water. Soak overnight. (1 or 2 more c of water will be needed to cook). Place water, soaked wheat and pinch of salt in a jar or pot with tight fitting lid. Cook 2 hours. Add water as needed.

MAIN DISHES

Beef and Beans Makes 8 cups. Start early....beans take a long time.



1 pound washed pinto beans (2 ½ c) 7 c water, 1 pint bottled beef (undrained), 2 tsp salt, 2-3 Tb dried onion, ½ tsp thyme, ¼ tsp garlic powder, ¼ tsp basil, 1 tsp parsley, ¼ tsp pepper, 1 bay leaf.

Place water in covered pot and heat to as close to boiling as possible. Add beans. Cover and soak out of the oven for 1 hour. Do not drain. Add all other ingredients and simmer 4 -5 hours or until done.

Beef Soup Makes 12 cups.

1 pint bottled beef (undrained) 8 c water, 4-8 tsp (according to taste) beef soup base, 1 c dehydrated diced potatoes, 1 c dried carrots, ½ c dried celery, 2 - 3 Tb dried onion, 1-2 tsp salt, 1 tsp pepper, 1 bay leaf, ½ - 1 tsp thyme.

Mix all ingredients in large covered pot and simmer for several hours.

Beef Stew Makes 8 cups Creamy or Tomato style. 1 pint bottled beef, 1 recipe cream of mushroom soup (using beef soup base instead of chicken soup base) (Tomato style: 1 c tomato powder + 2 c water=2 c tomato sauce) 1 c dried carrots, 2 Tb dried onion, ½ tsp salt, ¼ tsp pepper, 1 bay leaf, 1 tsp thyme, 1 c diced potatoes. Use the beef juices and water to make the cream of mushroom soup. (Or make the tomato sauce). Place all ingredients in large covered dish and simmer in solar oven for several hours.

Chicken Alfredo Makes 10 cups.

1 recipe Alfredo sauce, 1 pint bottled chicken (drained) 1 pound spaghetti noodles, 8 c water, 1 - 2 Tb parsley, ½ - 1 tsp garlic powder, 1 tsp salt, ½ tsp salt, 1/8 tsp pepper.

Make the Alfredo sauce. Heat salted water and spaghetti in separate large covered pots (or canning jars w lids). Add warmed spaghetti to hot water, cook 15 - 20 min. and drain. Stir noodles, sauce, parsley, garlic, salt, pepper and chicken together gently and return to oven for 20 min. or until hot.

Chicken Creole Makes 10 cups.

1 ½ c rice + 3 c water + ½ tsp salt (5 c cooked rice) 1 pint bottled chicken (drained) ¼ c dried celery,

¼ c dried carrots, 1 bay leaf, 1 c tomato powder + 2 c water, 2 Tb dried onion, ½ tsp sugar, ½ tsp seasoning salt, ¼ tsp pepper, 4 tsp Worcestershire sauce, 3 Tb cornstarch, 1 c water, ¼ c dried parsley optional: ½ c dried mushrooms. Split the 3 c water, ½ tsp salt and 1 ½ c rice between 2 canning jars, cover and cook about 40 min. Hydrate vegetables. In a large covered pot, put vegetables, tomato sauce, bay leaf, sugar, salt, pepper, and Worcestershire. Cook 30 - 45 min. Put the 1 c water or broth and cornstarch in another jar and shake until smooth. Add chicken and cornstarch mixture to vegetable mixture and cook uncovered until thickened. Serve over the rice.

Chicken Delight Makes 9 cups.

1 ½ c rice, 2 Tb beef soup base, 3 Tb dried onion, ½ recipe cream mushroom soup, ½ tsp salt, ¼ tsp pepper,

2 c water, 1 pint bottled chicken. Optional: ½ c dehydrated mushrooms.



(May use broth and water to equal the 2 cups liquid.) Mix all ingredients in a large covered pot. Cook in solar oven for 4 hours or until rice is cooked. Remove lid and cook another ½ hour or until browned.

Chicken Fricassee Makes 6 cups of broth and 8 cups of potatoes.

4 tsp chicken soup base + 4 cups water, 4 tsp dry onion, 1 tsp salt, ½ tsp pepper, ½ c white flour and water as needed, 1 pint bottled chicken (undrained) 6 c instant potatoes + 4-6 c water. Combine the 4 cups of water, soup base, undrained chicken, onion, salt and pepper in a large covered pot. Place the 5 ½ c of water in another covered pot (or jars) and heat both pots in solar oven until hot. Take out the broth and slowly add flour and water mixture. Return to the oven to thicken. Take out the pot of hot water and stir in instant potatoes. (Make sure they're nice and thick) Place the potatoes on a plate, scoop the center to the sides, making a "bowl" and spoon the chicken and broth mixture into the "bowl".

Chicken and Rice Casserole Makes about 12 cups.

1 recipe cream of mushroom soup, 1 Tb lemon juice, ½ tsp salt, 2 c rice, 4 c water +1 tsp salt (Don't add salt if broth is used) 2 Tb dried onion, 1 pint undrained bottled chicken, ¼ tsp pepper, 1/3 tsp paprika

Optional: 1/3 c dried celery and ½ c sliced toasted almonds.

Add broth and water to make 4 cups. Add the rice to the liquid and cook in solar oven about 40 minutes or until done. In a large covered dish, mix the cream of mushroom soup, lemon juice, onion, paprika, pepper, salt, chicken and cooked rice. (And optional celery and almonds) Cover and bake until done.

Chicken Soup Makes 12-14 cups.

8 tsp chicken soup base + 8 c water, 4 tsp dried onion, 1 c dried carrots, ½ tsp salt, ¼ tsp pepper

1 pint bottled chicken (undrained) ½ c dried celery, ½ c dry rice. Mix all ingredients and simmer.

Chili-Mac Makes 10 cups (add more water or broth if it's too dry)

2 c macaroni, 2 Tb dried onion, ¼ tsp garlic powder, 2 Tb chili powder, 1 ½ c tomato powder + 3 c water

(3 c tomato sauce) ½ tsp salt, ¼ tsp pepper, 1 pint bottled ground beef.

Add beef broth and water to equal 3 cups of liquid. Add water and tomato powder to make tomato sauce. Add liquid, tomato sauce, macaroni, garlic, chili powder, salt, pepper and ground beef. Cook until macaroni is done.

Goulash Makes 14 cups.

3 c macaroni, 6 c water, 2 c tomato powder + 6 c water (6 c tomato juice) 2 tsp dried onion, ¼ tsp garlic powder, 1 tsp salt, ½ tsp pepper, 1 pint ground beef (undrained) 1 can of corn (undrained.)

Heat the 2 c water and salt in solar oven until very hot. Cook the macaroni in the water about 20 min or until done. Do not rinse. Add rest of the ingredients to the macaroni, return to oven and cook until done.

Macaroni and Cheese Makes 10 cups.



4 c macaroni, 8 c water, 10 Tb mac + cheese powder, 1 tsp salt, 1/3 c dry milk + 1 ½ c water, 2 Tb butter, ½ tsp salt, 1/8 tsp pepper.

Heat the 8 c of salted water and the macaroni in separate containers. When the water is hot, add the macaroni and cook for 15 - 20 min or until done. Drain. Add butter, cheese powder, salt, pepper and milk.

Shepherd's Pie Makes 12 cups.

1 can corn (drained) 1 can green beans (drained) ½ recipe tomato soup, 2 Tb dried onion, 1 tsp salt,

¼ tsp pepper, 1 pint bottled ground beef (drained), 3 c instant potatoes + 3 c water (4 c potatoes)

Make the tomato soup. Heat 4 c water in jars or covered pot until very hot. Mix the ground beef, corn, green beans, tomato soup, onions, salt and pepper into a covered pot. Take the water out of the oven and wrap it in a dark cloth to keep it hot. Place the meat mixture in the oven and bake 45 min. or until hot. When it's done, mix the instant potatoes and the hot water and spread on top of the meat mixture.

Spaghetti Makes 10 cups.

1 pound spaghetti noodles, 1 recipe marinara sauce, 1 pint bottled ground beef or sausage (drained) 4 c water, 1 tsp salt.

Make marinara sauce and add drained meat. Heat salted water and spaghetti in separate covered pots (or use canning jars) add spaghetti to hot water and cook 15 - 20 min. Mix sauce and noodles.

Sweet and Sour Chicken Makes 7 - 8 cups.

1 pint chicken, 1 1/3 c rice, 2 2/3 c water, 1 can pineapple, 2/3 c vinegar, 1 1/3 c sugar, 4 Tb cornstarch,

4 Tb soy sauce, 1 tsp Molasses, 1 Tb. dried onion. (opt. ½ c sliced almonds, ¼ c dehyd. celery.)

Heat the rice and water in separate jars. When hot, combine and cook until done. (Heat bottled chicken at the same time.) Put the pineapple juice, vinegar, sugar, cornstarch, soy and molasses into a qt jar. Shake well and cook in solar oven. Cook and shake this sauce repeatedly until thickened. On the bed of cooked rice place the heated chicken, almonds, pineapple, and hydrated celery. Pour sauce over the top.

Taco Soup Makes 12 cups.

1 pint bottled ground beef or sausage, 1 can corn, 1 can kidney beans, 1 29 oz. can stewed tomatoes, 2 c water (OR 1 c water and 1 c tomato sauce) 2 - 3 Tb taco seasoning, 2 Tb onion, ¼ tsp garlic.

Place all ingredients in covered dish and let simmer.

Tamale Pie Makes 10 cups.

1 pint bottled beef or ground beef (drained) 1 c tomato powder + 2 c water = 2 c tomato sauce ½ pound (1 ¼ c) washed pinto beans + 3 c water + 1 tsp salt (3 c cooked beans) 2 Tb dried onion, ½ tsp salt, 1 tsp garlic powder, 1 tsp oregano, 2 Tb chili powder, ¼ tsp pepper.



Topping: 1 2/3 c cornmeal, 1 2/3 c white flour, 2/3 c sugar, 2 “eggs”, 5 tsp baking powder, ½ c dry milk + 1 c water, 1/3 c melted shortening, 1 tsp salt.

In large covered pot, heat 3 c water as close to boiling as possible. Add beans. Cover and soak out of oven 1 hour. Add 1 tsp salt to beans and cook in oven 4 -5 hours or until done. Melt the 1/3 c shortening and set aside in the sun. Put the beef, tomato sauce, cooked beans, onion, garlic, oregano and chili powder in a covered baking dish and bake 20 - 30 min. While it's cooking, make the topping by stirring together the flour, sugar baking powder and salt. Stir in the cornmeal until well blended. Add “eggs” and milk and stir to a smooth batter. Fold in the melted shortening just until blended. When meat mixture is done, remove from oven, spoon topping over meat and bake again about 30 - 40 min. or until cornbread is done.

Tomato Soup (Condensed) Makes 2 cups.

1 c tomato powder + 2 c water = 2 c tomato sauce, 2 Tb dried onion, 3 Tb melted shortening, 6 Tb white flour, ¼ tsp pepper, milk if needed, ½ tsp seasoned salt, ½ tsp soda, 2 tsp sugar. Melt 3 Tb shortening in a canning jar in the solar oven. Place the flour, milk, salt and pepper together in another jar, shake to mix well (no lumps!) and heat. Add heated flour mixture to the melted shortening and stir or shake well. Heat another 10 -15 min. Continue to shake and cook until thickened. Add the onion, soda and sugar to the tomato sauce and slowly blend the two sauces together. Add milk if needed to attain consistency of condensed tomato soup. Return to solar oven and gently heat. Do not boil. (For soup, add 3-4 cups of milk then stir and heat.)

COOKING PASTAS

To keep pasta from getting pasty, use 2 pots with lids or jars with lids. Heat the dry pasta with a little oil or shortening in one; heat the salted water in another. When the water is hot, combine the two.

Macaroni Makes 5 c cooked.

2 c macaroni, 2 - 3 c water ½ tsp salt.

Heat water and salt until very hot. Add heated macaroni to the water and cook for 15 to 20 minutes.

Spaghetti Makes 4 c cooked.

½ pound spaghetti (break noodles to fit cookware) + 1-2 tsp shortening, 3-4 c water, ½ tsp salt. Heat water and salt until very hot. Add heated spaghetti and cook 15 to 20 minutes.

SAUCES

Alfredo Sauce...almost Makes 2 ½ cups.

½ c water + 1/3 c dry milk = ½ c evaporated milk, 3/4 c Parmesan cheese, 1/8 tsp white or black pepper,

pinch of nutmeg, ½ c dry milk + 2 c water (2 c skim milk.)

Place 2 cups of milk in a canning jar and cook until hot (20 min). Place the ½ c evaporated milk, pepper, Parmesan, and nutmeg in another canning jar and shake to mix. Slowly add a little of the evaporated milk mixture to the hot milk and shake. Repeat until it's all mixed together.



Return the jar to oven for 15 to 20 min. to thicken. (You may have to add 1 Tb cornstarch and 1 Tb of water if it doesn't thicken.)

Cream of Mushroom Soup (without the mushrooms) Makes 4 cups.

½ c dry milk + 2 c water, 1 c white flour, 3 Tb shortening, ¾ tsp seasoning salt, 1/8 tsp pepper, ¼ tsp onion powder, ½ tsp thyme, ¼ tsp garlic powder, 2 tsp chicken soup base + 1 ½ c water. Melt the shortening in a canning jar, add the milk and heat. Heat flour and seasonings in a second jar. Combine the two and shake well. Put soup base in a jar and place both jars in the solar oven. After 10 min. take the milk jar out and shake it well. Return to the oven for another 10 minutes. Repeat until thickened. Remove both jars from the oven and slowly begin to add the hot broth to the thickened milk mixture, stirring or shaking until you have the consistency that you desire...either condensed or as soup.

Marinara Sauce Makes 4 cups.

2 c tomato paste + 4 c water (4 c tomato sauce) 1 tsp garlic powder, 1-2 Tb dried onion, 1 ½ tsp dried basil, ½ tsp oregano, ¼ tsp salt, ¼ tsp crushed red pepper, 1 tsp sugar. Or use 2 - 3 tsp Italian seasoning in place of other spices. Mix all ingredients in 1 or 2 canning jars and let it simmer.

SNACKS AND DESSERTS

Apple Crisp Makes (1) 9x12 pan.

2 c dry apples , 3 c water, 2 Tb + 1 tsp cornstarch, ¾ c sugar, 1/3 tsp salt, 1 tsp cinnamon, 1/3 tsp nutmeg,
2 Tb lemon juice.

Topping: 1 c rolled oats, 1 c brown sugar, 1 c flour, ¼ tsp salt, 1/3 tsp baking powder, ½ c shortening.

Mix dry ingredients for apple crisp in large covered pot, add water and lemon juice; mix well. Bake in covered dish 1 - 2 hours or until done. Mix the topping with pastry blender or fork, spread over cooked apples and return to oven for 30 - 40 min (uncovered) until browned.

Frosting:

6 Tb shortening, 6 Tb cocoa, 2 Tb corn syrup, 1 tsp vanilla, 2 c powdered sugar, 2-4 Tb milk.

Chocolate Cake Makes (1) 9x12 pan or 6 pints.

3 ¼ c white flour, 2 tsp baking soda, 1 tsp salt, 1 ½ c sugar, ½ c cocoa, ½ tsp baking powder, 2 c water,

2Tb vinegar, 2/3 c melted shortening, 5 tsp vanilla. ½ c chocolate chips, ½ cup walnuts.

Melt shortening. Combine dry ingredients in large bowl. Mix together melted shortening, water, vinegar and vanilla and stir into the dry mixture until smooth. Pour into 9x12 greased and floured pan and bake for 30 - 40 min or until done.

Chocolate Pudding or Pie Makes 7 cups.

3 c pudding mix, 5 1/3 c water (1/4 to 1/3 ratio)



In a container with a tight lid, combine mix and water and shake until blended. Let sit for 5 - 10 min until set. Use as a pudding or make a graham cracker crust and have pie.

To make a pie crust, crumble enough crackers to equal 1 cup of crumbs. Add 1/3 c brown sugar and 1/4 cup melted butter and press into a pie pan. Use as is or you can bake the crust in the oven until browned.

Graham Crackers

1 ½ c white flour, ¾ c wheat flour, ½ tsp salt, 1/3 c brown sugar, 1/3 c shortening, 1/3 c honey, 3 Tb water, 2 tsp cinnamon, 2 tsp sugar.

Combine all dry ingredients except cinnamon and sugar. Cut in shortening to consistency of cornmeal. Stir the honey and water into dry ingredients. Divide in half and roll each half out onto ungreased cookie sheet to ¼" thickness. Cut into squares and prick with a fork. Sprinkle with cinnamon and sugar and bake 15 - 25 min. Store in airtight container.

Grapefruit and Oranges - Bottled 1 pint holds 1#, 1 Qt holds 2# of fruit.

Boil water and sugar at a 6 to 1 ratio to make a syrup. (6 water to 1 sugar) Cut fruit from the peel. Tightly pack grapefruit and oranges OR grapefruit only (don't do oranges alone) into canning jar. Pour syrup (1 - 1 ½ c per qt) over fruit to ½" from top. Exhaust 10 min. Cook@ 10# pressure - 8 minutes.

Wheat Thins

½ c wheat flour, ½ c white flour, ½ tsp salt, ¼ c shortening, 1 Tb dry milk + ¼ c water, 1 tsp molasses.

Melt shortening. Mix dry ingredients in large bowl. Combine milk and molasses and stir into dry mixture. Place a ball of dough the size of a tennis ball in the middle of a greased cookie sheet and cover with a sheet of waxed paper. Roll out thinly, covering sheet. Peel off the waxed paper and cut with pizza cutter into desired shapes. Bake 30 - 40 min or until browned. Salt while hot.