

Preserve with Dehydration



Preserving by dehydration goes back to Adam and Eve I'm sure. The simple process of extracting moisture from food items through air flow and low heat has helped humanity survive for generations.

However, with mass food production and prepackaged foods, many of us have been raised without any knowledge of dehydration or how to use dried foods. Our basic knowledge of dried foods are beans, nuts and raisins!

So where do we start? At the beginning, with fresh produce that needs preserving!

What Can Be Preserved?

Almost anything can be preserved through dehydration. Some food items preserve better than others by being dried, but nearly anything can be dehydrated. There is even dehydrated butter, sour cream, peanut butter and milk powders available!

To the right is a list of the most commonly dried fruits and vegetables. If you have ever eaten raisins, prunes, dried apricots, dried pineapple, banana chips, and other dried fruits then you know the flavor is retained and so are the nutrients. The only thing lost is moisture.

Dehydration allows the food to be stored without electricity—meaning it does not need to be refrigerated or frozen. Due to the water content in the item being reduced, the dehydrated item takes up less space than home canned foods.

In ancient times and thru the 1930's, cutting vegetables and fruits and allowing them to dry before stringing them together to hang from the rafters was not uncommon.

Three Most Common Ways to Dehydrate Foods

Solar or Sun Drying: drying outside using the sun's energy and heat.

Oven Drying: using the kitchen oven on low heat with the oven door propped open.

Electric Dehydrators: factory made dehydrators that use a heating element and fan to warm and circulate air to aid in the dehydration process.

Today's modern food conveniences have removed the need to dry foods. However, dried foods are more nutritious and if we have resources to accumulate the fruits and vegetables, it can be far cheaper than highly processed and factory prepared foods.

Whether you grow your own, are given an abundance from someone else or find an incredible sale at the local grocery store or farmer's market—learning how to dehydrate your produce can help stretch your food dollar and your family will be eating better too.

Some Basics Before Starting

Always start with fresh fruit and vegetables in good condition. Although the food will be dried and some shrinkage will occur, starting out with poor quality will end in less desirable dried foods. Don't use your old 'starting to spoil' leftovers or less than perfect foods, it *will* make a difference.

Know your limitations. How much can you dry in a reasonable amount of time? Based on your drying method, you may be able to dry bushels all at once, or only a few quarts.

Know your fruits and vegetables. Some contain much more water than others do and will take more time to dry. Some fruits and vegetables are more dense and again, will take longer to dry.

Commonly Dried Fruits

Apples
Grapes
Plums
Strawberries
Blueberries
Raspberries
Bananas
Apricots
Cherries
Peaches
Pears
Pineapple
Orange Slices
Lemon Slices
Kiwi
Currants

Commonly Dried Vegetables:

Green Beans
Shelled Beans
Corn
Celery
Carrot Slices
Carrot Dices
Potato Slices
Potato Dices
Onions
Mushrooms
Peppers
Tomatoes
Zucchini
Squashes
Pumpkin
Peas

How Dehydration Works

Dehydration is the process of removing moisture through continual air circulation and a low heat temperature. Both are necessary.

Low temperatures between 110 to 145 degrees allow moisture to be released, and air circulation allows the moisture to move away from the food item. Low heat also prevents bacteria from growing on the food item as well.

However, there is a balance between dehydrated foods and foods that have been TOO dried. If overly dried, foods become brittle and can lose flavor as well as nutrients. Fruit and meat should reach a point where they are pliable but not damp—this is what you are aiming for. With vegetables the consistency can vary. Some will be brittle and others pliable. There is a chart in this lesson to help you learn when your vegetables are ready.

Depending on the amount of water in your food item and the temperature they are being dried at, actual drying times can vary a great deal. It is usually best to start the drying process in the morning if you will be using a dehydrator or oven method. This allows you to check for moisture throughout the day and before going to bed at night.

If using the sun-drying method, your food items will remain outside for several days until dry, so they may be started at any point as long as the weather is hot and no rain is forecasted.

How to Start!

Choose your drying method. On the following pages are detailed directions for using each one, the pros and cons and basic drying times to expect with each method.

Once you have chosen your method you will need to prepare your fruit or vegetables. This is very similar to the prep work involved in canning or freezing them.

Prepping Fruits

Decide how you would like to cut your fruit. Apples for instance are best if they are peeled, quartered, have the core removed and are sliced thin. Peaches on the other hand are best if peeled, pit removed and either left as a half or quartered. Apricots and plums are best if cut in half, pit removed and dried as a half.

Small fruits such as grapes, raspberries, blueberries and currants can be dried without any prep work other than prewashing them.

Kiwi and pineapple are best if skinned. Slice the kiwi thin, $\frac{1}{8}$ " to $\frac{1}{4}$ " thick either in large round circles or in half circles. Pineapple can be cut in multiple ways: round circles with the center core removed, half slices, quarter slices and nuggets. Make sure you remove the core of the pineapple prior to drying.

For pineapple, the thicker the slices the longer the drying time. How you will use them should determine how thickly you slice them.

Fruits that will need to be soaked in lemon juice and water to prevent browning will still need to be soaked. These fruits can include apples, peaches, bananas and pears. Even with soaking, some browning happens naturally—this does not mean your food is spoiled, it simply means oxidation occurred during the drying process.

Even citrus fruits such as lemons, oranges, pineapple and Kiwi can turn brown after being cut with a metal knife. If you find your citrus fruits are turning brownish, consider soaking future ones in a lemon juice solution as well to counteract what the metal knife has done.

A simple solution of 2 Tbsp lemon juice to 1 quart of water or store bought Ascorbic Acid (vitamin C powder) works well. Allow the fruit to soak for up to 5 minutes before removing, patting dry with a clean lint-free cloth or paper towel.



How to Reconstitute Dried Fruit

Soak fruit in cool water for an hour to soften and rehydrate. Then use as desired. If you will be using the fruit in a cobbler or dessert where you will need a syrup, use the soak water to help make your syrup.

Dried fruit can be eaten as is as a snack or in trail mix. Dried fruits often have a stronger flavor due to the concentration after the water has been removed. Sugar content can also be higher in dried fruit than fresh. However, Vitamin C is often lost due to the heat involved.

Prepping Vegetables

Prewash your vegetables and make sure any dirt, grit or bad areas are cut out.

Nearly all vegetables will need to be blanched prior to dehydrating. *Onions, peppers, tomatoes and mushrooms do not need to be blanched.*

Blanching is easy and should always be used to keep vegetables crisp and tender for the freezing process. With dehydration we use the same method to help retain the color of the vegetable as well as to ever-so-slightly precook the vegetable for easier drying and easier usage after drying.

How to Blanch Vegetables

Blanching is easy and you don't need any special equipment that is not already found in your kitchen. Gather together a large pot, slotted spoon and a large bowl—a colander comes in handy too.

Bring the pot of water to a boil. Fill your bowl 1/2 full of ice and fill with water until the bowl is 3/4 full.

Cut your vegetables into the desired size you wish—do not pre-cut your vegetables until your water is boiling and your ice water is ready. This helps prevent oxidation or browning of your vegetables as they sit and wait. Cut only the amount that will fit into your pot and bowl during one processing.

When your vegetables are ready, place them into the boiling water. Boil for several minutes depending on the type of vegetable and the size you have cut them into. Your goal is to have the vegetables barely cooked through but still tender. If you aren't sure how long to cook them, every minute after placing them into the hot water, take one out and plunge it into the icy water. Eat it. You will quickly know when your vegetable is done.

When you have confirmed your vegetables are done, very quickly drain the vegetables and then plunge them into the icy water to cool down almost instantly. Normally when vegetables are cooked with heat, they continue to 'cook' even after being removed from heat—this can cause the vegetables to become mushy and overcooked. You want to catch your vegetables early and plunge them into the cold water to completely stop the cooking process.

After your vegetables are cold, drain and begin your dehydrating method. If you will not be drying them soon, you may pat them dry with a lint-free towel or paper towel and place in baggies to store in the freezer for instant use in cooking later. By removing the water prior to placing them in plastic baggies or containers, you are preventing the water from becoming ice and freezing all the vegetables together into one lump. This also helps to prevent freezer burn too.

When you re-use your blanched frozen vegetables, always remember to put them into what you are cooking at the last minute. You want them to get 'hot' but not to 'cook.' By becoming hot they will finish the small amount of cooking time they need to be completely cooked without turning into mush.



(Dried Roma Tomato Halves)

How to Prepare Tomatoes, Mushrooms, Onions and Peppers for Drying

TOMATOES: These are very simple and easy to do. Dip your tomato into boiling water for less than a minute—remove and place in icy water. The easiest way to do this is to have a large slotted spoon. Place the tomato on your spoon and dip the entire tomato into the water while the tomato still rests on your spoon. Then remove from the boiling water, place the tomato into the icy water and you can easily peel the skin right off. Once the skin has been removed, you may slice, quarter or half the tomatoes.

MUSHROOMS: Brush off, do not wash or get wet. You may slice, quarter or half the mushrooms.

ONIONS: Slice 1/4" thick. You can separate the rings or leave them together.



(Dried Yellow Onions)

Dehydrating Methods

The basics have been explained on how to choose and prepare your fruits and vegetables for dehydrating, now comes the actual dehydrating process. Included below are the three different methods, how they work and what to expect for drying times. *You do not need to have a dehydrator in order to dry fruits and vegetables!!!*

Remember that food is preserved by the lack of moisture and that having food too dry is better than having it too moist. When your food items are stored and they are too moist, mold will begin to grow and ruin your dried foods. So remember to test the dryness of each item before stopping the dehydrating process. This is fully explained with each method below.

Solar or Sun Dehydrating:

Your local climate can affect solar drying. The ideal climate is one of bright, strong sunshine and low humidity—like my own area in our high desert. If you live in a rainy or humid area, it may be more difficult to dry outdoors and drying times may be quite long. Consider using your oven instead.

There are many ways to set up your solar drying area. I have used multiple ways myself all with varying drying times. What you need is an area in direct sunlight for most of the daylight hours. Sunlight provides the heat necessary to dry your food items just like an oven or an electric dehydrator would.

When you have chosen your area, you need to set up a support to place an old clean sheet over. I have used sliding glass door screens propped up on sawhorses with 2 x 4's to help support the middle section. I have used a full sheet of plywood placed over sawhorses. I have even used the hood and roof of our cars! If your husband is hand with woodworking, he can make frames to stretch screen or hardware cloth over for specific drying racks. I have even known a little old lady who used her clothesline and clothespins to dry apples with!!! Whatever you have handy will work. So think it through, use your imagination and get your area and supports set up.

Wash the support you will be using if possible. Allow to dry completely. Spread your clean sheet over the support area. It is okay if the sheet hangs down, you can deal with that later. Take your prepared fruit or vegetables and lay them close together, but not touching over your entire support area. The solar method allows you to dehydrate large amounts of produce easily instead of in small batches in your oven or electric dehydrator. Make the best of this opportunity!

When your produce has been laid out, carefully place another sheet on top of the layer of produce. If your produce is sticky or very moist as in tomatoes, peaches or other foods, consider using something to lift the top sheet up and prevent it from making direct contact with the food items. Placing 2 x 4's on their side works very well. I have also use bricks, stones and my son's toy trucks. Use what you have at hand!

After you have your top sheet in place, you will notice the edges hang off either slightly or a great deal—depending on the size of your sheet and the size of your support. Begin rolling both edges of the sheets together and placing clothespins at frequent intervals to keep the rolled edges in place and to prevent them from unrolling. This also helps prevent the top sheet from blowing away and from insects gaining entrance to your produce. If it is very windy where you are, consider placing something on the top sheet or on the corners of your supports to hold the sheet down.

Allow the produce to dry one complete 24 hour day before peeking. After the first 24 hours test it for dryness. For most fruits it should be pliable, bendable and when torn in half it should be soft without any beads of moisture showing. If you see beads of moisture, it needs to dry more. For vegetables, most should be brittle and crisp when you break them in half. If your produce is not ready to be removed yet, turn over each piece and allow to dry either half the day or another full day. If you use a car hood or roof, the heat of the metal reflecting back through the sheets often speeds up the drying process so check at least twice a day if use this type of support (make sure no one needs to drive the car for 2-3 days to be on the safe side!)

Most fruits tend to need 2-3 days to dry, though I have had fruits out drying for up to 6 days at a time. Vegetables vary depending on type and thickness but can take 12 hours to 5 days. Have a routine of checking each morning, noon and night until they are dry enough to remove and store.

The amount of sunlight and its strength in your particular area can vary and drying times can be vastly different. Never sun dry if you expect rain or low temperatures. If you experience a sudden drop in temperature or have an enormous amount of produce to dry outside, you can speed up the process by using aluminum foil beneath the bottom sheet or placing a glass window or glass pane over the top sheet (it should not sit on the sheet but be suspended above it.) The heat is reflected or caught and the area is hotter than surrounding areas allowing your produce to dry out quicker.

Oven Dehydrating:

There are many ways and means to dehydrate in your oven. It can be as simple as placing your prepared food items on cookie sheets and placing in the oven or as elaborate as making wood frames that fit into your oven with either cheesecloth or muslin stretch across the frames to place the food items on. Although I would like to have the wood frames, my husband is a bit busy and hasn't been able to find time to make them for me. What I have done instead is to place food items on the wire racks I use for placing hot cookies on to cool and either placing the cooling racks on cookie sheets to go into the oven or placing them directly onto the oven rack. This allows the air to circulate around the food item for faster drying time.

I have also placed muslin or 100% cotton fabric over my oven racks, sewn a few stitches on the fabric corners over the wire of the oven rack to keep the fabric in place, and turned my oven racks into temporary drying frames (see more on page **PUT PAGE NUMBER HERE**). When done, I snip off the few stitches, toss the fabric panel into the washer and I have my oven back! When I am ready to dehydrate in the oven again, I re-stitch the fabric panel in place and use again.

As you can see, there are many ways to use your oven and the items you have available to you to dehydrate your foods without any additional expense. So if you have an abundance of produce, there's really no excuse for not giving dehydration a try!

Once you have whatever set up you will be using ready, turn your oven on warm and place an oven thermometer in the center of your oven. Allow to remain for 30 minutes. Check the temperature reading. If it is above 150 degrees, use a wooden spoon placed in the oven door to allow the oven to cool slightly. If you place the spoon at the top of the oven you will have a small opening to allow air movement and reduce temperature. If you place the spoon towards the middle or bottom of the oven door, you will have a wider opening. You can adjust the amount of air movement and your temperature based on where you place your wooden spoon. Allow your oven to remain on warm while you adjust the internal temperature reading by spoon placement. Once you move your spoon, allow 10 minutes for your oven to adjust before reading the thermometer. You are aiming for a temperature between 130–150 degrees. The higher the temperature, the quicker the drying time but it can also cause the food items to be cooked instead of dehydrated. Aim for 130–140 if possible but be willing to settle for 150 degrees if that is the closest you can reach. Most oven temperature settings on warm will register at 200 degrees.

When the oven is ready, place your prepared fruit or vegetables on whatever trays or racks you have prepared—place them close together but do not let them touch. Place into your oven and put the spoon back in its place. Depending on the type of fruit or vegetables and the thickness, you have anywhere from 1 hour up to 24 hours for the food to be dried in—generally 4-12 hours is the norm. (If you are concerned about going to bed and leaving the oven on or your food may be too dry by morning, you can simply turn off your oven when you go to bed and restart it again in the morning.) When the oven is on, it is best to check every 2 hours to see how the food items are doing. When they begin to dry you may need to check every 30 minutes to an hour so they are not overly dried.

When your food is ready, remove from the trays and allow to cool completely before storing. As long as the food is warm it will continue to put out moisture. Moisture in your storage containers or bags will result in moldy food!!! Take this last extra step to allow your food items to cool completely so you won't waste what you have just dehydrated.

Electric Dehydrating:

This is probably easiest method because it is all done for you. The trays are set up and ready to be used, the heating element is set at a specific temperature (usually 140 degrees) and there is a built in fan that forces air movement. Electric dehydrators are much easier to use and generally dry foods quicker. The dehydrator trays are usually dishwasher safe and wash up quickly if done by hand. They also have special trays designed for making fruit leather (also known as fruit roll-ups). Overall, many prefer purchasing a dehydrator because of how easy it is to use.

To dehydrate using an electric dehydrator, wash and dry the trays. Place the prepared food items on the trays—place close together but not touching. Place the trays—tray by tray in a tall stack—onto the base of the dehydrator. Place the top of the dehydrator on top of the stack of trays. Plug in the dehydrator and it automatically turns on and continues to work until it is unplugged. These tend to get quite hot, keep away from little hands. We keep ours along the back of the counter.

Until just recently, most electric dehydrators available on the market were round with the heating element at the bottom, a semi-airtight layer of drying trays and adjustable slots at the top to allow moisture and temperature control. The problem with this older design was if the food items began to drip slightly as they dried, the drippings would land on the heating element and begin burning. It was also difficult to impossible to clean the bottom area of the dehydrator and over time a sticky crumb filled layer would build up.

The newer versions that are now coming out (one is shown to the right) have an open bottom area that can be washed in the sink or dishwasher. They also have slotted openings where the trays stack on top of each other to allow more air circulation. The top is now the heating element with a strong fan forcing air downward and out through the openings. I have both and the models with the heating element at the top is much easier to use, dries quicker and clean up is easy.



You can purchase an average quality dehydrator for \$40 on up and purchase additional dehydrating trays as well. Any dehydrator under \$300 will be plastic. Those over \$300 are usually stainless steel. Generally there is a limit of 6 trays that can be used at any given time on the round versions, depending on the make and model you choose. The more expensive models have 6–8 trays.



One drawback to using an electric dehydrator is the noise. They tend to be fairly loud due to the blowing fan—similar to the fan in the hood of your stovetop. With the larger, more expensive models, these are usually quieter as the fan is subdued inside the box and you double or triple the amount of drying space compared to the smaller round versions. These are the Excalibur and Sausage Maker brands. Both have a boxed shape with slide-out trays and the heating element and fan at the back. The Excalibur is plastic and runs between \$149–250. The Sausage Maker is all stainless steel and starts at \$325. The Excalibur and Sausage Maker allow you to adjust the temperature used.

Drying times vary a great deal between dehydrators as the design and heating element control the temperature and air circulation differently. However, most food items will dry within 1– 4 hours. Also with electric dehydrators, the food items closest to the heating element will dry quicker than the rest. So keep an eye on those areas. With stackable trays you can move the trays around if you wish to prevent the ones closest to the heating element from drying too quickly.

When your food is ready, remove from the trays and allow to cool completely before storing.

How to Tell When Your Food Items are Dry Enough

I have given hints throughout on checking to see if your food items are dry enough. Now we get down the actual chart that explains it in detail. The more experience you gain with drying foods the easier it will be to decide when your foods are done. Just as a cook can tell when to flip a pancake by the dry edges and the popping bubbles in the center, little signs on your dried foods will give away tips that they are finished.

Always remember to dry as thoroughly as you can without compromising the quality and loss of vitamin content. If you aren't sure whether your food items are dry enough, allow them to cool completely and then place in a ziplock plastic baggie and seal. If condensation occurs over the next several hours, your food items are not dry enough. You can place them back into the dehydrator and dry a bit longer.

Chart for Food Drying Times for Oven or Electric Dehydration

Vegetable Guide	Estimated Dry Time—Hours	Notes & Tips <small>(Remember to cut, slice or dice before blanching—'blanch' is listed first to let you know the food item needs to be blanched.)</small>
Beans—dried	6–12 hrs	Do not blanch. Dried beans should be hard, outside skin should be tough and brittle.
Beans—green	6–12 hrs	Blanch. Best if dried in 1-2 inch pieces. Done when brittle and the bean snaps when broken in half.
Beets	3–10 hrs	Blanch beets, remove skin. Slice 1/4 inch thick. Should be leathery when done.
Broccoli	4–10 hrs	Blanch. Cut into desired pieces. Outer areas will dry and become brittle before stalks are finished. Consider separating the broccoli tufts from the stalks so you can remove them separately as they finish drying.
Carrot Dices	6 hrs	Blanch. Dice to 1/4 or 1/2 inch size. Should be hard, brittle when done.
Carrot Slices	3–6 hrs	Blanch. Slice 1/4 inch thin or thinner. Should snap when bent in half, not bend.
Carrots—whole baby	6–20 hrs	Blanch. Should be nearly brittle when done, snap in half and not bend. Drying time depends on size and thickness of the baby carrots.
Cauliflower	6–14 hrs	Blanch. Should be brittle. Do not dry overly large sizes. Thumb size is perfect.
Celery	6–10 hrs	Blanch. Dice or slice. Consider drying the celery leaves as well for soups and stews. Should be brittle when done.
Corn—on the cob	6–18+ hrs	Blanch corn first. Should be brittle and pop off of the cob when done. Popcorn can also be dried this way. Grits are made from the inside of the cob after it has been dried.
Corn—loose	3–9 hrs	Blanch corn first, then cut off the cob. Should be brittle and hard when done. Corn kernels become indented when dried.
Mushrooms	4–10 hrs	Brush, do not wash. Slice, halve or quarter. Should be brittle when done.
Onions	2–12 hrs	Skin first, then slice or quarter. Dry until crisp and flaky.
Peas	5–15 hrs	Blanch first. Place loose peas onto cheesecloth so they will not fall through your trays. Peas also indent when dried.
Peppers—spicy	4–12 hrs	These can be dried different ways depending on the variety of pepper. Dry whole; slice in half and remove seeds; cut open, remove seeds and slice in strips. These should be crisp and snap when broken in half.
Peppers—sweet	4–12 hrs	Slice in strips, remove all seeds. You may also dice them. They should be brittle and snap in half when broken.
Potato Dices	8–14 hrs	Blanch 3-6 minutes in boiling water, then plunge into icy water for 15 minutes. Dice to 1/4 or 1/2 inch thick. Should be hard and brittle when done.
Potato Slices	2–8 hrs	See above for blanching. Slice 1/8 inch thick. Should be crisp and snap when broken in half.
Potato—shredded	2–8 hrs	Shred potatoes first. Blanch for only SECONDS—works best if you have them in a colander that fits into the pot of boiling water then dunk quickly in the icy water bath. Spread over cookie sheets for the oven or a non-stick solid dehydrator tray for electric dehydration. Should be stiff, brittle and crack when broken in two.

Chart for Food Drying Times for Oven or Electric Dehydration

Vegetable Guide	Estimated Dry Time—Hours	Notes & Tips (Remember to cut, slice or dice before blanching—'blanch' is listed first to let you know the food item needs to be blanched.)
Pumpkin Slices	2–10 hrs	Blanch by steaming, not immersion for 3-6 minutes. Slice pumpkin into thin strips. Pumpkin should be crisp when done and snap when done.
Pumpkin Cubes	8–24 hrs	Blanch by steam, not immersion, for 3-6 minutes. Cubes should be 1 inch in diameter.
Squash	8–24 hrs	No blanching needed. Cut into desired shapes. Squash should be brittle and crisp when done.
Tomato—halved	6–12 hrs	Dip in boiling water, then ice water to remove skins. Small tomatoes cut in half will work well. Large tomatoes are best sliced. For reconstituting, tomatoes should be leathery and pliable but have no beads of moisture should remain. For crushing into a powder, tomatoes should be dried until brittle.
Tomato—quartered	6–12 hrs	Same as above only quarter the tomatoes.
Tomato—circular sliced	2—6 hrs	Same as above, only slice the tomatoes 1/4 inch thick.
Zucchini	5—10 hrs	No blanching needed. Cut into desired shapes. Zucchini should be brittle when done.

Making Your Own Veggie Powders & Salts

Why buy garlic and onion powder or celery salt when you can make your own cheaply and without chemicals or preservatives added? Super simple and yummy too! Never run out again! If you have dried veggies on hand, you have powders and salts available!

Tomato

Celery

Onion

Garlic

Squash

Zucchini

Hot Peppers

Sweet Peppers

Broccoli

Eggplant

Potato

And MORE!

POWDERS: To make your own, dry your veggies until they are crisp and brittle. Place them into a blender and blend into a powder. You can strain through a sifter if you would like fine powder and minced veggies. Use to the powders to flavor your cooking or add minced veggies to soups, stews, pizzas, breads, rolls, egg dishes and anything else you can think of.

This is an excellent way to slip squash, eggplant, beets or any other vegetables your finicky eaters might object to into their meals. Even if they see you adding powder or minced, dried veggies into the food, they won't know what it originally was so how can they object? Easy way to add vitamins to their diet without their ever knowing.

SALTS: To make your own seasoning salts, dry your veggies until they are crisp and brittle. Place them into a blender and blend into a powder. You can sift if you like or use as is. For each part veggie powder add 1/3 to 1/2 salt. Mix well and store in a plastic baggie or used and washed spice jar.

TOMATO POWDER: This is one of my all time *favorite* powders to use!!! I have bought tomato powder in large #10 cans but prefer to make it whenever possible. Follow the steps above and use like you would tomato paste or canned tomatoes. If you need tomato paste, simply add a little water and a few drops of olive oil and mix into a paste—*presto!* Instant tomato paste!

Chart for Food Drying Times for Oven or Electric Dehydration

Fruit Guide	Estimated Dry Time—Hours	Notes & Tips (Remember to cut, slice or dice before blanching—'blanch' is listed first to let you know the food item needs to be blanched.)
Apple Slices	6–12 hrs	Peel or leave the peel on and slice into 1/4 inch slices or core the middle and slice into rings. Soak for 1-5 minutes in a lemon water solution—if you don't you will have brown slices. Dry when pliable and leathery.
Apricot Halves	8–20 hrs	Cut in half, soak for 1-5 minutes in a lemon water solution. The larger and thicker the apricot, the longer drying time. Dry when pliable but no moisture drops are seen when the fruit is torn in half.
Banana Slices	8–20 hrs	Slice into 1/4 inch slices and briefly soak in lemon water solution. You may need to lightly oil the surface you will be placing the bananas on to prevent sticking. Place bananas flat. Dry when brittle.
Blueberries	8–20 hrs	Wash and air dry. If blueberries fall through your trays, use cheesecloth over your tray to hold blueberries in place. Blueberries will shrink and pucker as they dry. Blueberries should be leathery when dry and if squeezed they should smear and not ooze or pop open.
Cherries	16–24+ hrs	Cherries are dense so their drying times are often longer. Pit cherries or cut in half and remove pit. Place cut side up originally to prevent sticking. Turn over after several hours. Dry when slightly sticky and leathery.
Currants	12–24 hrs	You can dry as is, or you can 'craze' the currants (see below). Currants are dry when they are shrunken, leather and slightly sticky. Can also be dried until brittle and used in powders.
Grapes - Whole (Raisins)	12–24 hrs	To dry whole grapes properly, you need to blanch them slightly—only with grapes it is called 'crazing'. Bring a pot of water to boil, drop grapes into boiling water for 2-3 minutes, then remove and place on your trays. By 'crazing' the skins of the grapes, it allows them to dry—be prepared, they will swell slightly after the crazing before they begin to dry out. Grapes are dry when they are shrunken and sticky to the touch without any moisture showing when squeezed or torn open.
Grapes—Halved	6–10 hrs	Slice grapes in half lengthwise. Place on trays and dry until sticky but no sign of moisture shows.
Kiwi Slices	3–8 hrs	Peel, slice into 1/4 inch slices. Place on trays. Dry when leathery but no moisture is seen. Can also be dried until crisp and used in powders.
Lemon Slices	3–6 hrs	Slice rings with or without rind on to 1/4 inch thick. You can also use half slices. Place on trays and dry until crisp. Best is slow dried, too high of a temperature can cause browning.
Orange Slices	3–6 hrs	Slice rings with or without rind on to 1/4 inch thick. You can also use half slices. Place on trays and dry until crisp. Best is slow dried, too high of a temperature can cause browning.
Peach Slices	6–10 hrs	Peel, pit and slice into 1/2 inch or wider slices. Soak in lemon water solution for 3-5 minutes. Place on trays (you may need to lightly oil trays). Dry when leathery and pliable.
Peach Quarters	8–24 hrs	Peel, pit and quarter. Place in lemon water solution for 3-5 minutes. Place on trays (you may need to lightly oil trays). These are thicker and will take longer to dry. Dry when leathery and pliable. Turn over every few hours.
Peach Halves	12–24 hrs	Peel, pit and halve. Place in lemon water solution for 3-5 minutes. Place on trays (you may need to lightly oil trays). These are thick and will take longer to dry. Dry when leather and pliable. Turn over every few hours.

Chart for Food Drying Times for Oven or Electric Dehydration

Fruit Guide	Estimated Dry Time—Hours	Notes & Tips (Remember to cut, slice or dice before blanching—'blanch' is listed first to let you know the food item needs to be blanched.)
Pear Slices	6–10 hrs	Peel or leave peel on, slice in rings and remove core or slice in strips. Soak in lemon water solution for 1-5 minutes. Place on trays. Dry when leathery and pliable.
Pineapple Circle Slices	4–16 hrs	Cut off outer skin, core and slice into 1/4 inch thick slices. I suggest you soak in a lemon water solution, though you can dry without this step. Fruit is dry when leathery and pliable. Consider drying some until brittle to use in powders.
Pineapple Chunks	10–18 hrs	Cut off outer skin, core and cut into 1 inch cubes. I suggest you soak in a lemon water solution, though you can dry without this step. Fruit is dry when leathery and pliable. Consider drying some until brittle to use in powders.
Plums	10–14 hrs	Plums are dense and take longer to dry. Leave skin on and halve the fruit to remove the pit. Slice into 1/4 to 1/2 inch slices and place on trays. Dry when leathery and pliable. Dried plums are also called prunes.
Raspberries	4–10 hrs	Place clean raspberries on trays or on cheesecloth on trays if they fall through. Fruit is dry when it is almost crisp. May be slightly sticky but should not have beads of moisture showing when squeezed or torn open.
Strawberries	6–16 hrs	Depending on size, half the strawberries or cut into 1/4 inch slices. Fruit is dry when pliable and nearly crisp.

Making Your Own Veggie Powders & Salts

Add dried fruit powders to ice cream, oatmeal, smoothies, breads and more! Dried fruit has a strong flavor as the flavors are concentrated and are slightly sweeter as the sugars are concentrated. EASILY done and yummy too!

POWDERS: To make your own fruit powders to use in a variety of ways, dry your fruit until it is crisp and brittle. Grind in a blender or coffee grinder until it is a fine powder. You can sift the powder if you want only fine powder or use as is and have little minced dried fruit in whatever you use it for. Both are wonderful!

Consider adding a few spoonfuls to tea or coffee, sprinkle over oatmeal, use in breads, add to fruit smoothies, mix in ice cream or sprinkle on top of ice cream... the possibilities are quite endless. Your children will enjoy experimenting and they will be eating their daily quota of fruit without even knowing it!

Flavor your breads by adding banana powder, pineapple powder or orange powder. Cakes and muffins can be spruced up with peach, kiwi, currents, blueberries or any dried fruit.

Mexican cooking tastes wonderful with lime juice—try powdered lime and see how the tangy flavor is increased!

Fruit powders make wonderful gifts—very unique and healthy too!

Tips & Tricks for Easier Dehydrating

Never use cheesecloth if the food item will stick to the cloth—this causes the cheesecloth to become embedded into the food and it is very difficult to impossible to remove after the food has dried around the cheesecloth fibers. Instead, lightly oil the trays you are using with cooking spray or oil and you shouldn't have any trouble.

Grapes, currants, cherries, peas, dried beans and other small foods can be placed on cheesecloth so they will not fall through the trays—however, if there is a wet sticky side, do not place that side against the cheesecloth!

Change your lemon soaking water or your Ascorbic Acid soaking water frequently for best results.

Consider sprinkling sugar, coconut, finely chopped nuts, seeds and fruit powders over your moist fruit before dehydrating to add taste, texture and visual appeal.

Dehydrate any leftover produce you may have in your refrigerator that you won't be using before it spoils. I routinely dry the centers and leaves of celery to use in soups and stews later, especially in the winter months when fresh celery in the store is more expensive.



Green, Red and Purple Grapes—Now Raisins!

Dry the center of your cabbages until crisp, turn into powder and add to soups and stir-fry's to add flavor, vitamin content and use up your whole cabbage purchase. (Why throw it away when you can turn it into a useable product?)

If you will be unable to attend your dehydrator or oven for several hours, simply turn them off and

restart when you are able to keep an eye on the foods. Fruits and vegetables will not go bad and they will continue to slowly dry out while they wait for you to return.

If your dehydrator trays are too large for your sink, soak and scrub them in your bathtub!

If you find a can't-pass-it-up sale on produce, try experimenting with dehydration! It's the perfect opportunity to learn and you'll be saving money too.

Try adding fruit powders to jelly or jam you are making to add in a new flavor. If you add in dried apple peels you are increasing the pectin content naturally!

Teach your children the basics of dehydrating so they can take over for you when you're busy and have excess on hand. This is simple enough even for children to do!

Storing & Using Your Dried Goodies

Storing Your Goodies

Remember to check every few days when you first store your dried foods to see if any condensation is occurring. If it is, re-dry your foods for several more hours and allow to cool completely before storing.

Canning jars and used lids make excellent see-thru containers. So do plastic sealing baggies. Plastic containers also work well.

Store out of direct sunlight in a cool place away from moisture.

Most dehydrated foods can be stored for several years.

Using your dried foods is easy and fun. Before using your dried foods in recipes you will need to presoak them.

Most vegetables require a soak time of ½ to 1½ hours of soaking and then a light simmering. This would be done if you were using your dried vegetables for casseroles or in some form where they would not have sufficient water content to rehydrate while cooking. MOST vegetables can be rehydrated while cooking, in soup for example, if there is enough liquid.

Fruits are soaked for 1–2 hours and the simmered in the water they soak in. Wait until the fruit becomes soft again before adding sugar. Just as adding salt to dried beans before the outer shells are softened from cooking will harden them and make them inedible—adding sugar to fruits before they have become soft causes the outside layer of fruit to become tough.

To cook dried vegetables, add boiling water to the bowl they are placed in. Add double or triple as much boiling water as dried vegetables. If you notice the water is soaked up before the vegetable are softened and rehydrated, you will need to add additional boiling water.

To cook fruits, first add warm to hot water to cover the fruit in the bowl—again about double or triple the amount of water to fruit.

Apple Pie Filling: 4 cups dried apples, 2½ cups water, ½ cup brown sugar, ½ cup white sugar, 1 tsp cinnamon, 1–2 Tbsp corn starch or flour to thicken. Boil apples in water until soft, add sugar and stir until dissolved, add remaining ingredients and cook until slightly thickened.

Peach Filling for Pie or Cobbler: 3½ cups dried peaches, 4 cups boiling water, ¾ cup flour, 1¼ cups sugar, 1½ tsp cinnamon, ¼ tsp nutmeg, 1 tsp vanilla is optional. Pour boiling water over fruit in a cooking pot and allow to soak for 30 minutes, then bring to a low simmer. Add sugar, flour and spices. Simmer until thickened, stir constantly. Use for peach pie with a crust or for a peach cobbler.