

Dehydrating Fruits & Veggies

Dehydrating is one of the oldest methods of preserving food. The basic premise is to remove all the moisture from the food to make it inhospitable for bacteria and other pathogens. Once the moisture is removed, the remaining nutrients and solids become concentrated, leaving compact, nutritious and flavourful food. When properly dried and sealed, dehydrated food can be kept for months or even years.

Dehydrated food is great for travelling, camping, hiking, lunches, snacks, gifts and emergency food kits. It's light, compact and doesn't require refrigeration. While you can use the oven or a solar dehydrator to remove moisture, electric food dehydrators are an economical and efficient way to dehydrate food. They provide consistent low temperatures (95-155°F or 35-68°C), adequate air flow and convenient drying screens. And, they cost only one to two cents per hour to operate. They're a great choice for anyone interested in dehydrating on more than one occasion.

Nutritional Value of Dehydrated Food

As soon as fruits and veggies are harvested, they begin to lose nutritional value. The sooner they're processed, the better. Because dehydrating uses low temperatures, nutritional loss is less than other heat based processing methods. By controlling the heat, properly pre-treating, storing well and using rehydrating liquids, nutrient loss can be kept to a minimum. Here are some general guidelines:

- Calories – do not change, they're just concentrated into smaller portions
- Fibre – does not change
- Vitamin A – some loss, can be controlled by using low heat
- Vitamin C – loss occurs during blanching of veggies
- Thiamin, Riboflavin & Niacin – some loss during blanching – use rehydrating liquid
- Minerals – minimal loss – use rehydrating liquid

My First Dehydrating Experience

I made my first batch of dehydrated apple rings in the oven. As a frugal prairie girl, I wanted to ensure that my family would eat dried fruit before I spent money on a dehydrator.

I sliced the apples and placed them on a cooling rack in the oven at the lowest temperature possible with the door propped open slightly for four hours.

The apple rings were soft and chewy. It was clear that they still had moisture in them, so I was concerned that they wouldn't store very well. My worries quickly vanished as my family gobbled up two trays of apple rings within two hours. Storing them was not an issue!

I now use a 9 tray square Excalibur dehydrator (fact, not a paid endorsement) and thoroughly enjoy it.

Dehydrating Tips

- Dehydrating requires two key things
 - Heat – to draw out moisture (can be very low heat)
 - Air circulation – to carry the moisture away and evaporate it
- Use fresh, ripe, unblemished fruits and veggies for dehydrating. Flavor is intensified by drying food. Whatever it tastes like raw, it'll just be more intense once it's dried. If you don't love it raw, you won't love it dried.
- Embrace the fact that homemade dehydrated or dried food won't be the same as store bought dried food. Your apple rings will be different than store bought apple rings. Your fruit leather will taste different than fruit roll-ups in a package. Your tomato powder turned into tomato paste will be much more intense than any brand you buy. Why? Because you're making the real deal - no added preservatives and no overloading on salt or sugar - just awesome fruits and veggies with the ingredients you want. It's going to taste different than store bought - but that's a good thing!
- Keep your working area, your hands and all utensils and equipment clean throughout the process. It's just common sense and good practice.
- Flavours become concentrated when dehydrated so use added ingredients like sweeteners, salt, spices or extracts sparingly.
- Avoid adding sugar as it can crystalize during storage. Instead, use applesauce, pureed banana, pureed berries, stevia, coconut, raisins, fruit juice, honey, maple syrup, agave syrup or homemade jams and jellies.
- Slice food evenly to ensure even drying. If you do end up with uneven fruit slices, arrange them according to thickness so you can leave thicker slices in the dehydrator longer.
- Err on the side of over-drying rather than under-drying.
- Unless you're planning to store food in an underground bunker for years, you have trouble with insects getting into stored food or live in a very humid place, you don't need to use oxygen absorbers, mylar bags or vacuum sealers to store properly dehydrated food.
- If you have any doubt about whether or not your food is dry enough for long term storage, eat it right away, dry it some more or store it in the freezer.
- **Allow dehydrated food to cool completely before storing.** Any condensation at all can re-introduce moisture to your food and moisture leads to mold and spoilage.
- The more humid the air in your house or outside, the longer it will take to dry your food.

Dehydrating in the Oven

It is possible to dehydrate fruit in your home oven although it may be challenging to keep oven temperatures between 105° to 150° F (40° to 66°C).

Dehydrating foods at temperatures above 150° F (66°C) may cause “case hardening” - when a hard layer forms on the top of the fruit. This hard layer makes it difficult for moisture to escape from the center. Trapped moisture will reduce the shelf life of dried fruit and may lead to mold. If you're concerned about trapped moisture in your dehydrated food, store it in the freezer.

If your oven does not have a temperature setting for 150°F (66° C) or less, experiment with some of these options:

- Set your oven on the lowest setting, and turn it off and on throughout the process to adjust heat.
- Set your oven on its lowest setting and keep the oven door slightly open.
- Replace the interior oven light with a 100 watt incandescent light bulb. The heat from the bulb will provide sufficient heat to dehydrate fruit, although it may take a little longer.

My friend and Fruit Share volunteer Chris MacKinnon wrote an informative article on how she uses a [lightbulb in her oven to dry food](http://www.fruitshare.ca/wp-content/uploads/2012/02/oven-dried-fruit.pdf). It's definitely worth a try if you don't have a dehydrator. (<http://www.fruitshare.ca/wp-content/uploads/2012/02/oven-dried-fruit.pdf>)



The Equipment

Dehydrators - There are a lot of options to choose from ranging from relatively inexpensive to very expensive. Before you buy, be sure to read reviews and get opinions from others. I've found that with dehydrators, you really do get what you pay for. If you think you're going to love dehydrating and are committed to doing it, buy a quality dehydrator. If you're unsure, see if you can borrow one or get one at a garage sale. If your only frustration is the awkwardness of the unit, uneven drying or small batches - a bigger, more expensive unit may be what you need.

Paraflex sheets - These are the sheets that come with or are sold with dehydrators. In their place you can also use parchment paper or plastic wrap. You CAN NOT use wax paper! If you do a lot of dehydrating its worth getting at least a couple of paraflex sheets.

Mandolin/slicer - Even slicing is important and a mandolin or the blade from a food processor is a great tool for making consistent slices.

Immersion Blender/Food Processor - Important for leathers and powders.

Scraper/ off-set spatula - Not critical, but nice to have for spreading out leathers, of course you can always make do with a large knife.

Preparation

Preparing your fruits and veggies for dehydrating varies. Some you just cut and dry, others require blanching or dipping in solutions to prevent oxidation or loss of flavour, texture, colour and nutrients. In the end of this booklet there are several links to specific recipes and recommendations for pretreatment. More are being added weekly, which will be sent to you as a blog subscriber.

Typical pretreatment include:

Dipping

- Dip food in lemon juice, ascorbic acid, or sodium bisulfite (form of sulfur)
- Apple slices, potatoes (after slicing, before blanching)

Blanching

- Potatoes, beans, carrots, parsnips

Cutting/Slicing

- Even thickness for consistent drying
- 1/8 to 1/4 inch thickness is typical, the thicker the longer the drying time
- Too thin, may make it too brittle



Carrots prepped for dehydrator

Drying

Temperature

- Exact temp varies depending on food, somewhere between 95-150° F (35-66°C). Generally, dry herbs at 95°F, vegetables at 125°F, fruit at 135°F and meats at 145°F.
- The maximum percent of water remaining in home dried food should be 10% for veggies and 20% for fruits.
- Follow specific recipes and how to tips at end of booklet.
- Check food in the dehydrator regularly rather than relying on a set time.
- Drying times can vary greatly depending on:
 - the dehydrator
 - the water content of the food
 - the thickness of the food
 - the temperature setting
 - the humidity in the air
 - how much food is in the dehydrator
 - air flow
 - room temperature

Interested in Raw/Living Food?

For foods that don't require blanching, it is possible to dehydrate food to the standards of a Raw Food diet in order to maintain all water soluble nutrients and natural food enzymes.

The Belief - If the internal temperature of food is higher than 118°F or 48°C for an extended time you start losing nutritional value and enzymes deteriorate. Therefore if dehydrating temperature is too high you may lose enzymes and nutrients and compromise the standards of the raw food/living food principles.

The Concern - If the dehydrating temperature is too low the drying time may be so long that there is a risk of bacteria growth and spoilage.

The Recommendation

- Food temperature is usually 20 - 30°F cooler than the air temperature and it takes some time to get to that temperature in dehydrator. So temp can be set at up to 140°F/60°C.
- Raw Food expert Viktoris Kuvinskis (considered the leader of the Raw Food Movement) recommends 145°F/63°C setting at initial dehydration and then down to 120°F/49°C. Prevents enzyme loss, prevents spoiling and shortens drying time.

Checking for Dryness

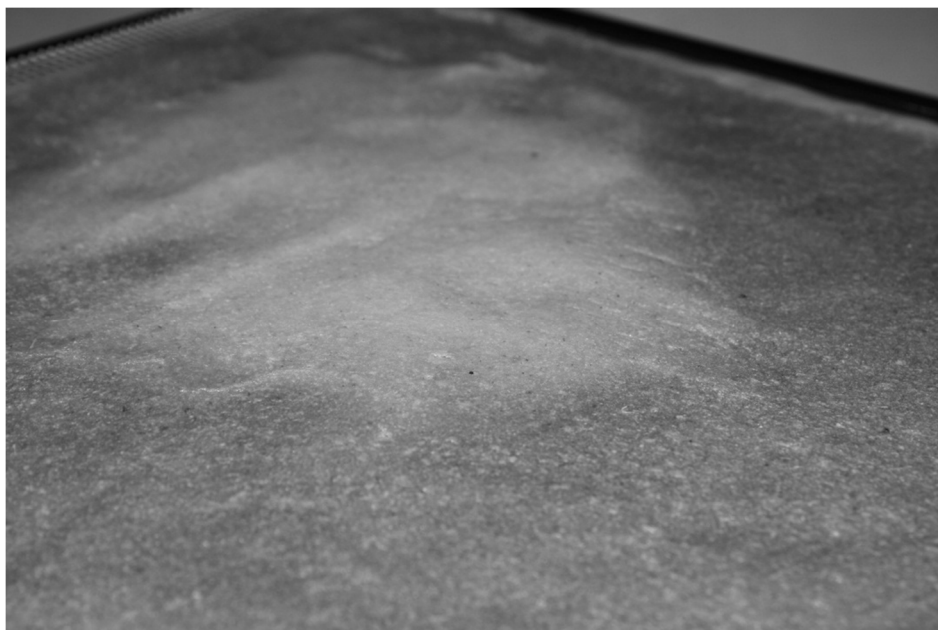
In order to successfully store dehydrated food for long periods it is important that it is dried thoroughly. Food dries from the outside in, so be sure to check the middle and not just the outer edges. Look for:

- **Dark or Light spots** Color variations often indicate different moisture levels (see photo below).
- **Tackiness** If you feel any spots that are still tacky, the fruit is not dry enough.
- **Moisture beads** Tear the thickest part of the fruit in half; if any moisture beads form on the tear, it is not dry enough.
- **Softness** Press a finger into fruit leather. When no indentation is left, but the leather is soft not crispy, the leather is ready.
- **Pliability** Peel the fruit off the parchment paper. If it peels off easily, does not leave any pieces behind, feels leathery and is still pliable, the fruit is ready.

Too Soft? - keep dehydrating

Lost Crispiness? - put back in dehydrator to re-crisp

Too Hard? - add humidity. Put a cloth or piece of wet paper towel on an empty tray in the dehydrator with the food overnight. You don't even need to turn the dehydrator on, the food will absorb some of the moisture in the air.



Can you see the wet spot in this fruit leather?

Storing Dehydrated Food

After your food is sufficiently dried here's how to store it so it will last for a year or more.

- **Tightly Sealed** Glass jars with tight fitting lid, plastic container or even freezer bags that seal well will work.
- **Dry and Dark** Keep color, flavor, texture, nutrient content at its peak by avoiding light. A dry spot will help avoid any moisture getting back into the food.
- **Multiple Containers** Keep a working jar for short term, everyday use and a storing jar for long term storage. For example keep a small jar of dried herbs in your spice cupboard and keep extras in a basement. That way the dried food in the "storing jar" won't be exposed to light or moist air conditions every time you need just a little bit.
- **When in Doubt Eat or Freeze** If you have any doubts about the dryness of your food, consider storing it in the fridge or freezer for maximum shelf life. Or, put it back in the dehydrator and dry it some more.
- **Child Proof** I love that my kids enjoy helping themselves to homemade fruit leather and dried fruits. But, I can't always count on them to put the lids back on and store things properly - so, I put out small containers of dried food for them. Even if they accidently take the container into the tub with them - it's no big deal.



I reuse old jars I can't use for canning to store most of my goods.

Give it a Try!

Start dehydrating today, go ahead give it a try!

I'd love to hear how you're doing and what you're drying, please leave a comment on any one of the blog posts to share your experiences. Or if you have a specific request, you might inspire me to experiment with something new!

If you're interested in learning more how about a workshop, a dehydrating party with friends or setting up a one-on-one learning session? I'd love to share my skills and experience with you in a fun, informative session either in person or on the phone. Just email me at [getty \(@\) gettystewart.com](mailto:getty@gettystewart.com) and we'll work out the arrangements.

Dehydrating Recipes and How To's on GettyStewart.com

[How to Dehydrate Potatoes](#)

[How to Dehydrate Onions](#)

[YouTube Video - How to Dehydrate Onions](#)

[How to Dehydrate Leeks](#)

[How to Make Kale Chips in the Dehydrator](#)

[How to Make Homemade Seasoning Blends](#)

[How to Make Your Own Soup Mixes](#)

[How to Make Rhubarb Fruit Leather](#)

[How to Make Homemade Apple Rings in the Dehydrator](#)

[How to Make Homemade Apple Rings in the Oven](#)

[How to Make Beet Powder](#)

[How to Dehydrate Green, Yellow & Burgundy Beans](#)

[How to Make Pumpkin and Apple Pie Fruit Leather](#)

[YouTube Video – Homemade Fruit Leather](#)

[YouTube Video – If your Fruit Leather is Too Dry](#)

[YouTube Video – How to Tell if Your Fruit Leather is Ready](#)

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How to Dehydrate Carrots

How to Dehydrate Parsnips

How to Dehydrate Tomatoes

How to Dehydrate Tomato Sauce

How to Make Tomato Powder and What to Do With It

How to Dehydrate Sweet Potatoes

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