

Dehydrating: A Beginner's Guide

If you are interested in dehydrating fruits and vegetables for long-term storage, please continue reading. If not, purchase prepared meals, freeze dried fruits and vegetables, and Meals Ready to Eat (MREs), at a much higher cost. By purchasing a dehydrator, you can save a ton of money. That is, if you are in it for the long haul.

After you grasp the fundamentals for long-term food storage, dehydrating foods is simple. Getting started can be challenging, but what is not challenging to us Preppers? We constantly debate which purchases to make, whether it is clothing, firearms, or outfitting our survival bag. And, it is no different when tackling your food storage plan. Do you purchase canned foods, prepared meals, dehydrated foods, or dehydrate and can foods yourself? The survival food manufacturers understand the complexities of doing it on your own, and they have built a comfortable profit margin into their pricing.

Finding a Dehydrator

The first rule of dehydrating is that all dehydrators were not created equal. There are two main types of dehydrators; vertical and horizontal airflow. Vertical dehydrators force air from either the top or the bottom of the machine. Horizontal dehydrators force air from the back of the machine. Most agree that horizontal dehydrators work more effectively at evenly drying foods, which is very important for long-term food storage. To store foods for long-term storage, you must ensure you have removed as much of the moisture as possible; a minimum of 95%.

Some also believe that since vertical dehydrators force air downwards/upwards from tray to tray, flavor mixing occurs if you are dehydrating more than one type of item at a time. Another consideration is the amount of produce you can dehydrate each cycle. I define a cycle as the amount of time required to successfully dehydrate items for long-term storage. This time period can range from 8 to 24 hours, depending on which types and sizes of foods you are dehydrating. Horizontal dehydrators usually have more dehydrating capacity. Drying capacity is determined by the number of trays your dehydrator has. The more trays, the more capacity.

For these reasons, I prefer horizontal dehydrators, such as the Excalibur. I use my Excalibur almost every day, and have run it consecutively for weeks at a time. The downside of the Excalibur, and other horizontal airflow dehydrators, is that they are usually more expensive. An Excalibur can cost 2-5 times more than the budget vertical dehydrator. After a year of dehydrating over 500 lbs. of fruits and vegetables, my Excalibur works the same as the first day I used it.

If you decide to purchase an Excalibur, it will set you back \$200 - \$250. A budget dehydrator can cost less than \$75. Whichever route you take, this is your first expense. For an expensive dehydrator to pay itself off, when compared to purchasing dehydrated and freeze dried foods, you have to use it and then continue to use it. After around 200lbs of dehydrating your own fruits and vegetables, it should pay for itself.

Recommendations: [Excalibur 3900](#) (9 Tray) or [Excalibur 3500](#) (5 Tray).



Packaging

After your items are dehydrated, the next step is packaging. Here you have to make the choice on which methods to use. The most common methods are vacuum sealer and bags, mason jars, and Mylar bags. I use a combination of all three methods when packaging my dehydrated foods. When packaging your items for long-term storage, you must ensure that they are oxygen and moisture free, and limit the exposure to light. Always wear gloves when handling dehydrated foods so that you do not transfer moisture and oils from your hands to the finished product.

Vacuum Sealer and Bags

This method requires a vacuum sealer, such as a [Food Saver](#). This is an additional cost when dehydrating your items. But, I consider this a general kitchen expense. A vacuum sealer can be used for more than your dehydrating packing, as it also extends the life of frozen meats and other foods. When purchasing vacuum bags, only purchase ones that are food safe. I like [Weston](#) vacuum bags, as they are decent quality and cheaper than other major brands. Vacuum bags do not provide a light barrier, so they must be placed in a container, or a Mylar bag. Additionally, I also use [oxygen absorbers](#) with my vacuum bags to remove any remaining oxygen.

Required items and recommendations: Vacuum Sealer ([Food Saver / Game Saver](#)), Vacuum bags ([Weston](#) brand), and oxygen absorbers (100cc – 300cc).

Mason Jars

I use Mason jars to store dry and dehydrated foods that will eventually be used in meal packs. While, the jars do not provide a light free environment, they are moisture and oxygen free. You can use a Mason jar with oxygen absorbers, or if you have a vacuum sealer you can purchase an [attachment](#) that will remove the oxygen from the jar, while locking the lid to the jar. Using the vacuum sealer and attachment method is very cost effective if you plan on building meal packs or use mason jars for temporary use. By using Mason jars, I do not waste money on excess packaging or oxygen absorbers, and do not have to replace them every time I need a cup of carrots for a specific recipe. I can simply break the seal on the Mason jar, remove the carrots, and use my vacuum sealer and attachment to remove the air from the jar.

Required items and recommendations: Mason jars ([Ball Wide Mouth Half Gallon](#)), and a [Vacuum sealer attachment](#) and/or oxygen absorbers (300cc).

Mylar Bags

Mylar bags provide an oxygen free environment, if used with oxygen absorbers, and are light and moisture resistant. Even if I use a vacuum bag, most of my vacuum bags end up packaged in a Mylar bag. Using two packing methods may sound like a waste of money, but I believe having two barriers is important for long-term food storage. If one fails, the other will hopefully work. When using Mylar bags, you need to have an iron, hair iron, or Mylar bag sealer. The [Mylar bag sealer](#) is expensive, but I believe it is the best sealing method.

Required items and recommendations: 3mil – 4mil Mylar bags (quart, gallon, 5 gallon), oxygen absorbers, and sealing method ([Mylar bag sealer](#)).

If you want more information on packaging or practical packaging, please read our [Packaging Food Storage Items](#) article.

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Helpful Packaging Tips

1. I do not like storing foods items in bulk (the 5 gallon pail method), because if something contaminates the food, it will spread to everything in the container. Instead, I like to package foods based on my meal plan. For instance, if I know my family eats 1 lb. of vegetables per meal, I will package a 1 lb. equivalent per bag. I will have a lot of little bags, and the cost of packaging will increase, but I am protecting against cross contamination. If one package goes bad, it will not spread to the others.
2. Determine a food's raw weight and dehydrated weight. A good guideline is a 1 cup of dehydrated product, equals 1 lb. of raw product. This is not always the case with Asparagus, Beans, and Broccoli. In some cases, I may increase to 1 ¼ cups of dehydrated product.
3. I generally package larger quantities of items like Potatoes and Tomatoes. I may package 5 lbs. equivalent dehydrated product per bag. This is because we usually cook larger meals with these types of foods, and the 1 lb. packaging method doesn't really apply.
4. Always use an oxygen absorber.
5. Always wear powder free gloves when handling dehydrated foods.

Processing Foods

The next critical thing that you must understand is that each type of food you dehydrate needs to be processed, or purchase items that have already been processed. I define processing as taking the raw form of a fruit or vegetable and washing, cutting, cooking, and any treatments before it is ready to be dehydrated. All produce should be cleaned prior to dehydration to remove any dirt, fertilizer, and chemicals. Some items need to be skinned prior to dehydrating and/or cutting. Lastly some food items need to be cut before you cook/blanch them.

Frozen fruits and vegetables that are purchased from a grocery store, have already undergone all necessary processing. You can simply open the package, and place the frozen produce directly on your dehydrating trays. You do not need to thaw the produce; the dehydrator will do that for you. One recommendation is to separate any items that are frozen together. You can do this by running water over the clumps for a few seconds. Then try to pry apart.

Blanching

Blanching is a cooking process where produce is put into boiling water for a few minutes, then removed and placed into cold water to halt the cooking process. Blanching is often used to remove the skins from Tomatoes and Peaches, but is also used to soften the skin of Grapes, Blueberries, Plums, Cherries, Cranberries, Squash, and Zucchini.

Steaming

Steaming vegetables is required for all low acid foods, which include Asparagus, Beans, Beets, Broccoli, Cabbage, Carrots, Cauliflower, Corn, Peas, Potatoes, and Pumpkin. Steaming the item allows it to dehydrate faster, but will also help retain its color. For instance, potatoes that are not steamed will usually turn black after they are dehydrated. By steaming your potatoes, it will remove most of the starch.

Cutting

Cutting, or slicing, your produce drastically decreases drying time. You will have to figure out which size works best for your items, but here is my general guide:

Tomatoes: sliced ¼ to 3/8 inch

Potatoes: Diced or sliced (1/8 inch)

Squash/Zucchini: sliced 1/8 inch

Most fruits: sliced 1/8 inch

Berries: leave whole.

To ensure even drying, it is recommended to cut your produce to the same size. I use an [electric food slicer](#) and also a [vegetable chopper](#). While these items increase the cost for dehydrating your foods, they ensure your produce is cut to the same size, and drastically decrease the amount of time cutting foods.

Recommended items: [Chief's Choice 609 Electric Food Slicer](#), [Norpro Big Mouth Chopper](#), and/or a Mandoline type slicer.

Vitamin C Replacement

Low acid foods can lose most if not all of their Vitamin C, and other nutrients, during the cooking and dehydrating process. So to give your produce a supplement of Vitamin C, you can use Lemon juice or Ascorbic Acid (Vitamin C crystals). If you are using Lemon juice, purchase any 100% Lemon juice and spray your produce. You can also soak your produce in Lemon juice, but keep in mind that most of your foods may have a strong Lemon flavor. [Ascorbic Acid](#) is more effective than Lemon juice, and you usually do not taste it. Mix 1 tablespoon of Ascorbic Acid, to 1 quart of water (4 cups). Soak your produce for 3 minutes, remove from the liquid, and place on your dehydrator trays.

Foods to treat with Lemon juice / Ascorbic Acid: Apples, Apricots, Bananas, Carrots, Pears, and Strawberries.

Temperature and Drying Times

For vegetables, set your dehydrator to 125 degrees. For fruits, set it to 135 degrees. There are many factors that determine drying times. Some foods dehydrate much faster than others. Berries and grapes usually take the longest, while squash, potatoes, and celery dry relatively fast. You can look up recommend time guides, but at best they are an estimate. The humidity level in your home also impacts how long it will take dry your produce. Your dehydrator will have to also dehydrate the oxygen in your house, so humid conditions add a significant amount of time to your drying cycle. If you are like me, you do not want to wait for the fall and winter months to dehydrate. I dehydrate all year long. To decrease the humidity in your home, you can use a dehumidifier, or run your air conditioner when dehydrating.

Instead of establishing a set time, I generally conduct 24 hour cycles. Working a full time job, I do not have the ability to monitor the dehydrator. I will usually put a load in the dehydrator after dinner, and then check it after I get off of work. The drying cycle can last from 18 to 24 hours. This may seem excessive, but you need to package your dehydrator foods shortly after you remove them from the dehydrator. I do not have the time to package in the morning before work. This is what works best for me and it helps me to remove as much moisture as possible.