



Home Dried Fruit



Food Preservation

About Drying

It is always good to have a sweet taste during breakfast or in desserts. If it is a natural food full of nutrients, there is no guilty feeling associated with it. Drying foods – one of the oldest preservation methods – is safe, simple, and inexpensive. Dried fruits retain nutritional quality. They are especially popular now when people are wanting more antioxidants in their diet.

Advantages of Drying

Water allows microbes (bacteria, yeasts, and molds) to grow in a fruit and spoil it. Through the process of drying, moisture is removed, which helps stop the microbial growth, reduces the weight (lighter) and volume (smaller) of the fruit, and increases storage life without refrigeration. Another advantage of drying is that the action of enzymes slows down. Dried fruits can be stored and enjoyed year-round, and they can be reconstituted easily. Little space is required to store dried fruits.

Using Dried Fruit Snack or Ingredient in Other Foods Reconstitution

Dried fruit, just as it is, makes an excellent snack. It's good to take along when you are camping or hiking. You can use it in oatmeal, muffins, cakes, pies, and a variety of other foods. Most dried fruits need no extra sweetening.

Properly dried reconstituted fruits are a tasty addition to meals. They return to almost their original size, form, and appearance. About 1 to 2 cups of dried fruit will serve six people.

Procedure: Pour boiling water over dried fruit in a saucepan. Use just enough water to cover. Add more water if needed, rather than starting with too much and wasting nutrients. Simmer until tender – about 15 minutes.

Alternate/easy reconstitution method: Soak the fruit for a few hours before cooking but don't oversoak because fruit will get mushy and lose flavor. Cook fruit in water used for soaking. Sweeten to taste near the end of cooking or after taking pan from heat.

Minerals and many vitamins are water-soluble. That's why it's a good idea to find a use for any leftover water in which dried foods are soaked and cooked. You might use the liquids in gelatin salads and desserts, in fruit and vegetable juice drinks, and in soups.

Nutritive Value of Dried Fruits

Fruits in any form supply useful amounts of necessary fiber in your diet. Because of their high natural-sugar content, dried fruits are rich in food energy. Many are also rich in iron and other minerals.

Pretreatment Saves Nutrients

Factors Affecting Drying Are Humidity, Air Flow, and Temperature

Selecting Fruits to Dry at Home

Prevent Darkening with Pretreatments

Temporary Antidarkening Treatments Ascorbic-acid Coat

Drying destroys most of the vitamin C in unsulfured fruits. Much of the vitamin A is also destroyed, especially in sun-dried foods. Sulfuring does protect against the loss of vitamins C and A in fruits, but in the process it destroys thiamine; this doesn't matter much.

Humidity of the environment, air flow, and temperature of the heating source are important in the drying process. Moisture needs to move from fruits to the surrounding air to aid the drying process. Therefore, an air current (to pick up moisture) is required around the food being dried. Drying will be slowed down if the surrounding air is humid and stagnant.

Low humidity is the best for drying fruits indoors or outdoors. A windy day should be chosen if fruits are dried outdoors. For indoor drying, an exhaust fan is preferred to remove the moisture from the room and speed up the drying process.

Though optimum temperature for drying fruits is 140° F, you should follow the instructions given in your dehydrator manual. If higher temperatures are used, cooking occurs. This will lead to "case hardening," which happens when moisture gets trapped inside the fruit and the outside of the fruit is hardened. This helps microbes to grow inside and spoil the food. To avoid case hardening, slice or dice the vegetable into thin pieces, which will help transfer the heat from the surface. Also, be sure to allow enough time for the drying process without raising the temperature.

Select fresh, prime-quality fruits for drying. Fruits should be just ripe enough for good eating. Wash fruits thoroughly before preparing them for drying.

The following fruits are the easiest fruits to dry at home, but some might become sticky and fall apart (not firm) when handled:

apples	dates	peaches	pomegranates	coconut
blueberries	figs	pears	(if infused with	citrus peel
pitted cherries	grapes	pineapples	sugar or juice)	bananas
cranberries	papayas	plums	prune plums	nectarines
currants	cantaloupes	strawberries	rhubarb	

Several methods can be used to prevent darkening of fruit. An ascorbic-acid coat or salt-water-and-vinegar dip will hold the color of fruit temporarily as it is peeled, pitted, and sliced for drying. Following that, fruit can be sulfured or steam-blanching to prevent further darkening during drying and storage.

Apples traditionally have not been pretreated in West Virginia. Pretreat them if you want a better tasting and more attractive product. Pitted cherries and berries need no antidarkening or other pretreatment before drying. Other fruit covered in this publication need some type of pretreatment before they are dried to prevent darkening, loss of color and nutrients, or undesirable changes in flavor and texture.

Supplies: Mix pure ascorbic acid or use a commercial ascorbic acid mixture. Follow package directions for fresh-cut fruit. You may also use six 500-milligram vitamin C tablets in 1 gallon of water.

Procedure: Sprinkle the solution over the fruit and turn the pieces over and over to coat each piece thoroughly.

Salt-water-and-vinegar Dip

Follow-up with Sulfuring to Help Prevent Gradual Darkening

Procedure: Mix 4 tablespoons of salt and 2 tablespoons of vinegar in 1 gallon of water. Drop the cut fruit into the solution as you prepare it for drying.

Without the follow-up of a sulfuring treatment, many fruits – especially apples, pears, and peaches – will gradually darken during drying and storage. Fruits may be dried without sulfuring, but this treatment decreases the loss of vitamins A and C and preserves color and flavor. Sulfuring also deters bugs and souring.

Supplies: You will need trays, a box to place over the fruit, and a place to work outdoors. You can buy refined pure sulfur (sublimed) at the drug store. You can also buy sulfur candles, but these take longer to burn than the pure sulfur.

Preparation for setup: Use 1 level teaspoon powdered sulfur for each pound of prepared fruit. A 2-ounce box of sulfur will treat 16 to 18 pounds of prepared fruit. Sulfur only the amount of fruit you can dry at one time. Use trays made of wood strips or a wood frame covered with a loosely woven cloth that will allow the fumes to circulate. Do not use metal trays or screening because sulfur will corrode them. Stack the trays one above the other, separating them with blocks of wood, bricks, or stones. The bottom tray should be 6 to 10 inches above the ground to allow space above the burning sulfur. Allow 2 to 3 inches of space between the rest of the trays. Leave a 6-inch space between the top tray and the top of the box used to cover the stacked trays. This box can be a large cardboard carton or a wooden crate covered with building paper. Make a small opening close to the bottom edge of the box, near one corner, to let air in so that the sulfur will burn. Make about a 1/2-inch hole near the top of the back of the box to create a draft.

Procedure:

- Follow instructions given for washing, peeling, and preparing individual fruit.
- Place fruit on trays. Don't crowd it. Stack trays as previously directed.
- Place sulfur in a clean, flat small dish or pan. Use a metal or enameled dish or a small aluminum pie tin, or shape a dish from a double thickness of aluminum foil.
- Roll sulfur loosely in a small piece of paper, twist the ends closed, and place it on the dish.
- Light the paper. As soon as the sulfur starts to burn, slide the dish under the bottom tray and put the sulfuring box over the stacked trays. Sulfur first melts at 240° F, becomes a pasty looking brown, and then burns with a clear blue flame. (The sulfur dioxide fumes you smell protect the fruit. Do not breathe the fumes because they will irritate your nose and eyes and could make you feel sick.)
- After the sulfur has finished burning, close the openings in the box with masking tape and start counting the sulfuring time. See directions for each fruit.
- When time is up, lift the box off, tilting it away from you so that fumes don't come up in your face. Remove trays carefully.
- Immediately start the drying process.

Procedure: Use 1 teaspoon sodium bisulfite for each gallon of water. Mix thoroughly. Soak prepared fruit in solution for 5 minutes; drain. Follow directions for drying fruit.

Steam-blanching

You can steam-blanch fruits, particularly if you plan to dry them in either an oven or dehydrator. Steam-blanching pick up moisture and take longer to dry.

Procedure: Put about 2 inches of water in a big kettle with a close-fitting lid. Bring water to a brisk boil. Put a layer of fruit no more than 2 or 3 inches deep into a wire basket, colander, or sieve that will fit into the kettle over boiling water. Place lid on kettle and start counting time given in step-by-step directions for each fruit. Remove from blancher when time is up. Start drying procedure.

Choosing a Drying Method

Successful drying depends on three things: heat, low humidity, and good air circulation. Choose your drying method according to your personal preferences, equipment, and weather conditions. Drying can take place outdoors naturally, or it can be done indoors in a dehydrator or oven. You can get information on constructing a home dehydrator from your county Extension office. Keep in mind the added cost of energy when foods are dried in a dehydrator or oven.

Outdoor Drying

Sun-drying

Precautions: Because of the weather in West Virginia, it may not be practical to depend solely on the sun. Dry in quantities that can be finished in the oven if rainy weather interrupts your sun-drying plans. Foods will sour or mold if they stay warm and damp too long. Choose a spot away from traffic exhaust, dust, people, birds, and animals. If you dry small quantities of fruits inside a car parked in the sun, keep windows open for ventilation.

Procedure: You can make drying trays from screens or from wood slats attached to a frame. Cover with clean cheesecloth or other thin cloth that will let the air circulate. After pretreatment, spread fruits on cloth-covered trays. Put a layer of cheesecloth or other thin material over food to help keep out dust and insects. Place loaded trays on a roof or other high surface to help keep animals and people from bothering them. Bring loaded trays into the house each night, or the dew will remoisten foods. Generally, fruits will dry in two to four days if conditions are right.

Indoor Drying

NOTE

Not Recommended: Drying food over furnace ducts and heat registers is not recommended because of problems with dust.

Oven-drying

Precautions and considerations: Oven-drying can take anywhere from 4 to 12 hours. Careful watching is a must. Dry no more than 4 to 6 pounds of prepared fruit at one time. Place fruit on trays that let the air circulate from below, as well as from the sides. Use trays made of screening or wood slats attached to a frame and covered with clean cheesecloth or other thin cloth. Do not use cookie trays or cake pans, because air cannot circulate through the food, making the drying time extremely long.

Procedure: Preheat oven to 140° F. If your oven thermostat cannot be set this low, put it at the lowest possible setting and use a thermometer inside the oven to check the temperature. Leave door propped open slightly to keep oven from getting too hot. You can use an electric fan, placed in front of the oven door, to create a continuous flow of air and speed up the drying. Turn foods over and stir every half-hour or so to keep foods from scorching. It's also a good idea to turn trays front-to-back and shift their positions in the oven to help foods dry evenly. If you stack two trays on each oven rack, use wood blocks at corners to separate them.

Other Important Procedures

Dryness Test

Dehydrator-drying

Follow the instructions of your dehydrator manual. Temperature must also be controlled when you dry food in a dehydrator. Start out between 140° F and 160° F and reduce the temperature as the food dries. It takes from 6 to 12 hours to dry fruits in a dehydrator. You can change the tray order (top tray goes to bottom and so on) and slightly turn the fruits at intervals to dry them evenly and speed up the drying process.

Check the instructions given under step-by-step directions for individual fruits to determine when they are ready.

Procedure: Test them by squeezing a handful. If no moisture is left on the hand and foods spring apart when you open your hand again, the product has reached a properly dried state. In general, fruits should be pliable when they are dried (should not be dried until they are brittle).

Conditioning

It's hard to dry fruits evenly, especially in an oven or dehydrator. Some pieces will be underdried and some will be overdried, depending on the size of food and its location on the trays.

Procedure: After drying, cool the fruit on trays and put into a large closed container, about two-thirds full, for conditioning. This should make the whole batch equally dry. Shake the fruit daily for two to four days.

Pasteurizing

Need: Pasteurize (heat-treat) sun-dried fruits to get rid of any insects or insect eggs. This is usually not necessary for fruits that have been sulfured. Foods that have been dried in the oven or dehydrator will be free of insects or eggs. However, if they are allowed to stand out in the air without protection for very long, they may also need pasteurizing.

Procedure: Put a thermometer in your oven to monitor the temperature; time each batch. Set the oven on the lowest temperature setting. Spread the fruit in a single layer on shallow pans or cookie sheets. Heat for 10 to 15 minutes at 175° F or for 30 minutes at 150° F. Remove each batch of dried food and spread out to cool on clean dish towels. Package when food reaches room temperature.

Cooling, Labeling, and Storing





Dried foods must be cooled to room temperature before storage. If they are too warm, they will sweat in the packages.





Label the packages with the name of the food, the date of drying, and the food preservation method (pretreatments and drying method).

Use moisture-vapor-proof containers with tight-fitting lids, such as glass jars, coffee cans, plastic boxes, or plastic frozen-food bags that can be fastened tightly with a twist-tie. Small packages may be stored in a larger container with a tight-fitting lid in a dry, cool place.

Once you open a package of dried food, store it in the refrigerator. If you have enough space in your freezer, you can keep dried foods there.

Step-by-Step Drying Directions by Fruit

Fruit	Preparation	Pretreatment	Drying
<p>Apples</p> 	<p>Use fall or winter cooking apples. Wash, peel, core. Trim out blemishes. Cut into slices or rings about 1/8-inch thick. Slice into salt-water-and-vinegar or ascorbic-acid solution. Drain.</p>	<p>Sulfur 60 minutes, or steam-blanch 5 minutes and sulfur 30 minutes. (Apples may be dried without any pretreatment, but they will be darker and have a different flavor).</p>	<p>Spread one layer deep on trays. Dryness test: should be leathery, with no moisture when cut and squeezed. Condition, package, and store. If sun-dried, pasteurize. Cool, package, and store.</p>
<p>Berries</p> 	<p>Wash, leave whole, or cut strawberries in half.</p>	<p>No treatment necessary. Blanch in steam 1/2 to 1 minute, if desired.</p>	<p>Spread one layer deep on cloth-covered tray to prevent sticking. Dryness test: berries should not show moisture when crushed between fingers. They should rattle. Condition, package, and store. If sun-dried, pasteurize. Cool, package, and store.</p>
<p>Cherries</p> 	<p>Wash and pit, halve, or leave whole.</p>	<p>If cherries are not pitted, blanch in boiling water 30 seconds, or steam-blanch 1 minute. <i>(This is necessary to break skin so drying will penetrate cherries.)</i> Cool at once and drain.</p>	<p>Spread one layer deep on trays. If oven drying, reduce heat near end of drying time to prevent scorching. Dryness test: should be leathery, but not sticky. Condition, package, and store. If sun-dried, pasteurize. Cool, package, and store.</p>
<p>Grapes</p> 	<p>Use seedless grapes. Wash and leave whole. Remove stems.</p>	<p>Blanch in boiling water 15 to 30 seconds to crack skin. Cool at once and drain.</p>	<p>Same as for cherries. Dryness test: should be pliable and leathery.</p>

Fruit	Preparation	Pretreatment	Drying
<p>Peaches</p> 	<p>Wash fully ripe freestone peaches. Loosen skins by dipping each peach in boiling water for 30 seconds. Cool quickly and peel. Slice into anti-darkening solution. Drain.</p>	<p>Sulfur 1 hour or blanch in steam 7 or 8 minutes.</p>	<p>Spread one layer deep on trays. If oven-drying, lower temperature near end of drying time to prevent scorching. Dryness test: should be leathery. Condition, package, and store. If sun dried, pasteurize. Cool, package, and store.</p>
<p>Pears</p> 	<p>Wash. Peel, cut in half, core. Slice 1/8- to 1/4-inch thick. You can leave skin on, if desired. Slice into antidarkening solution. Drain.</p>	<p>Sulfur 1 hour or blanch in steam 5 minutes and sulfur 30 minutes.</p>	<p>Spread one layer deep on trays. Dryness test: should be springy, but no moisture when cut. Condition, package, and store. If sun-dried, pasteurize. Cool, package, and store.</p>
<p>Persimmons</p> 	<p>Wash. Force through a strainer to remove seeds and stems.</p>	<p>To each quart of pulp, add 1 teaspoon ascorbic acid and mix well.</p>	<p>Spread very thin on aluminum foil-covered cookie sheet. Dryness test: should be flaky, with no moisture when broken. Condition, package, and store.</p>
<p>Plums</p> 	<p>Wash. Remove seeds and slice.</p>	<p>Sulfur 1 hour.</p>	<p>Same as for peaches. Dryness test: should be leathery and limber. Condition, package, and store. If sun-dried, pasteurize. Cool, package, and store.</p>

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For More Information

Credits

Reviewed and revised by Litha Sivanandan, Food Safety and Food Preservation Specialist

Contact Litha Sivanandan, 304-293-7684 or email at *Litha.Sivanandan@mail.wvu.edu*

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