



Cooperative Extension Service  
Institute of Food and Agricultural Sciences

## Pretreating Fruits for Drying<sup>1</sup>

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Pretreatments prevent fruits from darkening. Many light-colored fruits, such as apples, darken rapidly when cut and exposed to air. If not pretreated, these fruits will continue to darken after they're dried.

For long-term storage of dried fruit, sulfuring or using a sulfite dip are the best pretreatments. However, sulfites found in the food after either of these treatments have been found to cause asthmatic reactions in a small portion of the asthmatic population. Thus, some people may want to use the alternative shorter-term pretreatments. If home dried foods are eaten within a short time, there may be little difference in the long- and short-term pretreatments.

### SULFURING

Sulfuring is an old method of pretreating fruits. Sublimed sulfur is ignited and burned in an enclosed box with the fruit. The sulfur fumes penetrate the fruit and act as a pretreatment by retarding spoilage and darkening of the fruit. The sulfur fumes also reduce the loss of vitamins A

and C. Fruits must be sulfured out-of-doors where there is adequate air circulation. (For more information contact your county Extension office.)

### SULFITE DIP

Sulfite dips can achieve the same long-term anti-darkening effect as sulfuring, but more quickly and easily. Either sodium bisulfite, sodium sulfite or sodium meta-bisulfite that are USP (food grade) or Reagent grade (pure) can be used. To locate these, check with your local drugstores or hobby shops, where wine-making supplies are sold.

### Directions for Use

Dissolve  $\frac{3}{4}$  to 1  $\frac{1}{2}$  teaspoons sodium bisulfite per quart of water. (If using sodium sulfite, use 1  $\frac{1}{2}$  to 3 teaspoons. If using sodium meta-bisulfite, use 1 to 2 tablespoons.) Place the prepared fruit in the mixture and soak 5 minutes for slices, 15 minutes for halves. Remove fruit, rinse lightly under cold water and place on drying trays.

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Sulfited foods can be dried indoors or outdoors. (This solution can be used only once. Make a new one for the next batch.)

### **ASCORBIC ACID**

Ascorbic acid (vitamin C) mixed with water is a safe way to prevent fruit browning. However, its protection does not last as long as sulfuring of sulfiting. Ascorbic acid is available in the powdered or tablet form from drugstores or grocery stores. One teaspoon of powdered ascorbic acid is equal to 3000 mg of ascorbic acid in tablet form. (If you buy 500 mg tablets, this would be 6 tablets.)

#### **Directions for Use**

Mix 1 teaspoon of powdered ascorbic acid (or 3000 mg ascorbic acid tablets, crushed) in 2 cups water. Place the fruit in the solution for 3 to 5 minutes. Remove fruit, drain well and place on dryer trays. After this solution is used twice, add more ascorbic acid.

### **ASCORBIC ACID MIXTURES**

Ascorbic acid mixtures are a mixture of ascorbic acid and sugar, sold for use on fresh fruits and in canning or freezing. It is more expensive and not as effective as using pure ascorbic acid.

#### **Directions for Use**

Mix 1 ½ tablespoons of ascorbic acid mixture with one quart of water. Place the fruit in the mixture and soak 3 to 5 minutes. Drain the fruit well and place on dryer trays. After this solution is used twice, add more ascorbic acid mixture.

### **FRUIT JUICE DIP**

A fruit juice that is high in vitamin C can also be used as a pretreatment, though it is not as effective as pure ascorbic acid. Juices high in vitamin C include orange, lemon, pineapple, grape and cranberry. Each juice adds its own color and flavor to the fruit.

#### **Directions for Use**

Place enough juice to cover the fruit in a bowl. Add cut fruit. Soak 3 to 5 minutes, remove fruit, drain well and place on dryer trays. This solution may be used twice, before being replaced. (The used juice can be consumed.)

### **HONEY DIP**

Many store-bought dried fruits have been dipped in a honey solution. A similar dip can be made at home. Honey dipped fruit is much higher in calories.

#### **Directions for Use**

Mix ½ cup sugar with 1 ½ cups boiling water. Cool to lukewarm and add ½ cup honey. Place fruit in dip and soak 3 to 5 minutes. Remove fruit, drain well and place on dryer trays.

### **SYRUP BLANCHING**

Blanching fruit in syrup helps it retain color fairly well during drying and storage. The resulting product is similar to candied fruit. Fruits that can be syrup blanched include: apples, apricots, figs, nectarines, peaches, pears, plums, and prunes.

**Directions for Use**

Combine 1 cup sugar, 1 cup light corn syrup and 2 cups water in a pot. Bring to a boil. Add 1 pound of prepared fruit and simmer 10 minutes. Remove from heat and let fruit stand in hot syrup for 30 minutes. Lift fruit out of syrup, rinse lightly in cold water, drain on paper towels and place on dryer trays.

**STEAM BLANCHING**

Steam blanching also helps retain color and slow oxidation. However, the flavor and texture of the fruit is changed.

**Directions**

Place several inches of water in a large pot with a tight-fitting lid. Heat to boiling. Place fruit not more than 2 inches deep, in a steamer pan or wire basket over boiling water. Cover tightly with lid and begin timing immediately. See Table 1 on “Drying Fruits at Home” for blanching times. Check for even blanching, halfway through the blanching time. Some fruit may need to be stirred. When done, remove excess moisture using paper towels and place on dryer trays.

**Table 1.** Drying Fruits At Home

Fruit	Preparation	Pretreatment (Choose One)			Other	Drying Times Dehydrator (hours)*
		Sulfur (hours)	Blanch			
			Steam (minutes)	Syrup (minutes)		
Apples	Peel and core, cut into slices or rings about 1/8-inch thick.	¾	3-5 (depending on texture)	10	-ascorbic acid solution -ascorbic acid mixture -fruit juice dip -sulfite dip	6-12
Apricots	Pit and halve. May slice if desired.	2	3-4	10	-ascorbic acid solution -ascorbic acid mixture -fruit juice dip -sulfite dip	24-36**
Bananas	Use solid yellow or slightly brown-flecked bananas. Avoid bruised or overripe bananas. Peel and slice ¼-inch to 1/8-inch thick, crosswise or lengthwise.				-honey dip -ascorbic acid solution -ascorbic acid mixture -fruit juice dip -sulfite dip	8-10
Berries	Wash and drain berries.					
Firm:	With waxy coating - blueberries, cranberries, currants, gooseberries, huckleberries.				-Plunge into boiling water 15-30 seconds to "check" skins. Stop cooking action by placing fruit in ice water. Drain on paper towels.	24-36
Soft:	Boysenberries and strawberries				-No treatment necessary.	24-36
Cherries	Stem, wash, drain, and pit fully ripe cherries. Cut in half, chop or leave whole.			10 (for sour cherries)	-Whole:dip in boiling water 30 seconds or more to "check" skins. -Cut and pitted:no treatment necessary.	24-36

**Table 1.** Drying Fruits At Home

Fruit	Preparation	Pretreatment (Choose One)		Other	Drying Times Dehydrator (hours)*	
		Sulfur (hours)	Blanch			
			Steam (minutes)			Syrup (minutes)
Citrus peel	Peels of citron, grapefruit, kumquat, lime, lemon, tangelo and tangerine can be dried. Thick-skinned navel orange peel dries better than thin-skinned Valencia peel. Wash thoroughly. Remove outer 1/6-to 1/8-inch of peel. Avoid white bitter pith.			-No pretreatment	8-12	
Figs	Select fully ripe fruit. Immature fruit may sour before drying. Wash or clean whole fruit with damp cloth. Leave small fruit whole, otherwise cut in half.	1 (whole)		-Whole:Dip in boiling water 30 seconds or more to "check" skins. Plunge in ice water to stop further cooking. Drain on paper towels.	6-12**	
Grapes					12-20	
Seedless:	Leave whole			-Whole:Dip in boiling water 30 seconds or more to "check" skins. Plunge in ice water to stop further cooking. Drain on paper towels.		
With Seeds:	-Cut in half and remove seeds			-Halves:No treatment necessary.		
Nectarines and Peaches	When sulfuring, pit and halve; if desired, remove skins. For steam and syrup blanching, leave whole, then pit and halve. May also be sliced or quartered.	2-3 (halves) 1 (slices)	8	10	-ascorbic acid solution -ascorbic acid mixture -fruit juice dip -sulfiting	36-48**

**Table 1.** Drying Fruits At Home

Fruit	Preparation	Pretreatment (Choose One)			Other	Drying Times Dehydrator (hours)*
		Sulfur (hours)	Blanch			
			Steam (minutes)	Syrup (minutes)		
Pears	Cut in half and core. Peeling preferred. May also slice or quarter.	5 (halves) 2 (slices)	6 (halves)	10	-ascorbic acid solution -ascorbic acid mixture -fruit juice dip -sulfiting	24-36**
Persimmons	Use firm fruit of long, soft varieties or fully ripe fruit of round drier varieties. Peel and slice using stainless steel knife.				-may syrup blanch	12-15**
Pineapple	Use fully ripe, fresh pineapple. Wash, peel and remove thorny eyes. Slice lengthwise and remove core. Cut in ½-inch slices, crosswise.				-No treatment necessary	24-36
Plums (Prunes)	Leave whole or if sulfuring, halve the fruit.	1			-Sun drying:(whole) dip in boiling water 30 seconds or more to "check" skins. -Oven or dehydrator drying:rinse in hot tap water.	24-36**
* Because of variations in air circulation, drying times in conventional ovens could be up to twice as long. Drying times for sun drying could range from 2 to 6 days, depending on temperature and humidity. ** Drying times are shorter for slices and other cuts of fruit.						