



July 2004

FN-2004-Harvest-02

Apricots

Ann E. Henderson, County Extension Family & Consumer Science Agent
and *Charlotte Brennand*, Food Preservation Specialist

Did you know?

- The apricot is a native of China and has been cultivated for over 4,000 years.
- Today, the United States produces close to 90% of the world's apricots, most being grown in California.
- Apricots are an excellent source of beta-carotene (vitamin A) and also provide vitamin C, iron, potassium, and fiber.



SELECTION and PREPARATION OF APRICOTS

Select firm, ripe apricots with deep yellow to orange color.

To prevent browning while preparing apricots for freezing, canning, or dehydrating, place apricots in a solution of 3 grams ascorbic acid to 1 gallon of cold water. Ascorbic acid is available in several forms:

Pure powdered form - seasonally available among canners' supplies in supermarkets. One level teaspoon of pure powder weighs about 3 grams. Use 1 teaspoon per gallon of water as a treatment solution.

Vitamin C tablets - economical and available year-round. Buy 500-milligram tablets; crush and dissolve six tablets per gallon of water as a treatment solution.

Commercial mixtures sold to control fruit browning. These contain ascorbic acid and are available in supermarkets. Sometimes citric acid powder is sold in supermarkets, but is not effective in controlling discoloration. Follow the manufacturer's directions when using these products.

FREEZING

Select fruit that is fully ripe, but still firm. Freeze the fruit as soon as possible after it is harvested. Wash, halve, pit. Peel and slice if desired. If apricots are not peeled, heat in boiling water for 1/2 minute to keep skins from toughening during freezing. Cool in cold water, drain. Treat to prevent darkening. (See directions above.) Prepare apricots for freezing using one of the following methods.

- Syrup Pack:** Prepare a heavy syrup (see table below) and add 3/4 teaspoon ascorbic acid per quart. Ladle 1/2 cup syrup into freezer containers. Pit fruit and slice into freezer containers, gently shaking to pack fruit. Leave 1/2-inch headspace. Add more syrup if needed. Seal, label and freeze.
- Sugar Pack:** Thoroughly mix 2/3 cup sugar and 1/4 teaspoon ascorbic acid and set aside. Pit peeled fruit and slice into a bowl. Sprinkle with sugar mixture and toss gently to coat fruit with sugar. Allow fruit to stand for 10 minutes or until sugar dissolves. Pack fruit into freezer containers leaving 1/2-inch headspace. Seal, label and freeze.
- Puree:** Pit and slice 1 pound of fruit. Add 2 tablespoons sugar and 1/4 teaspoon ascorbic acid. Place mixture in a food processor and puree. Pack puree in a freezer container leaving 1/2-inch headspace. Place a piece of freezer wrap over the top of puree to prevent discoloration. Seal, label and freeze.

Fruit may also be packed with no sugar added.

CANNING APRICOTS

- Quantity:** 16 pounds of apricots will fill approximately 7 quart jars
10 pounds of apricots will fill approximately 9 pints
A bushel weighs 50 pounds and yields 20 to 25 quarts
An average of 2-1/4 pounds of fruit are needed per quart.
- Quality:** Select firm, well-colored mature fruit of ideal quality for eating fresh.
- Procedure:** Apricots may be peeled before canning or canned with the skins on. To remove the skins dip the apricots in boiling water for 30-60 seconds until skins loosen. Then immerse the apricots in cold water and remove the skins. Cut the apricots in half and remove and discard the pits. To prevent darkening, place peeled fruit in an ascorbic acid solution (see directions above). Prepare and boil a very light, light or medium syrup (see chart below). Apple juice, pineapple juice, white grape juice or water may also be used as the syrup in canning apricots.

Hot packing produces the highest quality apricot, but apricots may also be raw packed.

Hot pack - In a large saucepan place drained fruit in syrup, juice or water and bring to boil. Fill jars with hot fruit and cooking liquid, leaving 1/2-inch headspace. Place halves in layers, cut side down.

Raw pack - Fill jars with raw fruit, cut side down, and add hot juice, syrup, or water, leaving 1/2-inch headspace.

Adjust lids and process using the processing times on the table below. Remember to use the processing time for local altitude (see chart below). Process either by boiling water bath or by pressure canning.

APRICOT NECTAR/APRICOT PUREE

Stem, wash, drain, peel, and remove pits if necessary. Measure fruit into large saucepan, crushing slightly if desired. Add 1 cup hot water for each quart of fruit. Cook slowly until fruit is soft, stirring frequently. Press through sieve or food mill. If desired for flavor, add sugar to taste. Return pulp to boil or heat until sugar dissolves. Fill clean jars, leaving 1/2 inch headspace. Adjust lids and process. Remember to use processing time for local altitude (see chart below). Process either by boiling water bath or by pressure canning.

Preparing and Using Syrups						
		Measures of Water and Sugar				
		For 9-Pint Load*		For 7-Quart Load		
Syrup Type	Approximate % Sugar	Cups Water	Cups Sugar	Cups Water	Cups Sugar	Fruits commonly packed in syrup**
Very Light	10	6 1/2	3/4	10 1/2	1 1/4	Approximates natural sugar level in most fruits and adds the fewest calories.
Light	20	5 3/4	1 1/2	9	2 1/4	Very sweet fruit. Try a small amount the first time to see if your family likes it.
Medium	30	5 1/4	2 1/4	8 1/4	3 3/4	Sweet apples, sweet cherries, berries, grapes.
Heavy**	40	5	3 1/4	7 3/4	5 1/4	Tart apples, apricots, sour cherries, gooseberries, nectarines, peaches, pears, plums.
Very Heavy	50	4 1/4	4 1/4	6 1/2	6 3/4	Very sour fruit. Try a small amount the first time to see if your family likes it.
Procedure: Heat water and sugar together. Bring to a boil and pour over raw fruits in jars. For hot packs, bring water and sugar to boil, add fruit, reheat to boil, and fill jars immediately.						

*This amount is also adequate for a 4-quart load.

** Many fruits that are typically packed in heavy syrup are excellent and tasteful products when packed in lighter syrups. It is recommended that lighter syrups be tried, since they contain fewer calories from added sugar.

Recommended processing times for apricot products in BOILING WATER canner					
APRICOT HALVES OR SLICES		Processing Time at Altitudes of			
Style of Pack	Jar Size	1-1,000 ft	1,001-3,000 ft	3,001-6,000 ft	Above 6,000 ft
Hot	Pints	20 min.	25	30	35
	Quarts	25	30	35	40
Raw	Pints	25	30	35	40
	Quarts	30	35	40	45
APRICOT PUREE / NECTAR					
Hot	Pints or Quarts	15 min.	20	20	25

Processing time for apricot products in DIAL GAUGE pressure canner and WEIGHTED GAUGE pressure canner									
APRICOT HALVES OR SLICES				DIAL GAUGE Canner Pressure (PSI) at Altitudes of:				WEIGHTED-GAUGE Canner Pressure (PSI) at Altitudes of:	
Type of Fruit	Style of Pack	Jar Size	Process Time (Min)	0-2,000 ft	2,001-4,000 ft	4,001-6,000 ft	6,001-8,000 ft	0-1,000 ft	Above 1,000 ft
Apricots	Hot or Raw	Pints or Quarts	10	6	7	8	9	5 lb	10 lb
APRICOT PUREE/NECTAR									
Apricot Puree	Hot	Pints or Quarts	8	6	7	8	9	5 lb	10 lb

JAMS, JELLY, PRESERVES

There are two basic methods of making jams and jellies. The standard method, which does not require added pectin, works best with fruits naturally high in pectin. The other method, which requires the use of commercial liquid or powdered pectin, is much quicker. Because the gelling ability of various pectins differs, be sure to follow the instruction on the package exactly.

When using either method, keep these tips in mind. Make one batch of jam or jelly at a time, following the instructions exactly. Remember that doubling the recipe may prevent proper gelling. Stir jams and jellies constantly while cooking to prevent burning. Process all jams and jellies in a boiling water canner to insure their safety. Jams and jellies canned in sterile jars should be processed for 5 minutes. Add one additional minute per 1,000 feet elevation to

processing times to adjust for higher elevations. Non-sterile jars may be used if the processing time is 10 minutes or more.

MAKING JAM WITHOUT ADDED PECTIN

Wash and rinse all fruits thoroughly before cooking. Do not soak. For best flavor, use fully ripe fruit. Remove stems, skins, and pits from apricots. Cut fruit into pieces and crush.

Apricot Jam

4 - 4 1/2 cups crushed apricots

4 cups sugar

2 tablespoons lemon juice

Measure the crushed fruit into a large saucepan. Add sugar and bring to a boil while stirring rapidly and constantly. Continue to boil until mixture thickens. Use one of the tests below to determine when jams are ready. Remember to allow for thickening during cooling.

Remove from heat and skim off foam quickly. Fill sterile jars with jam using a measuring cup or ladle and a wide-mouthed funnel. Leave 1/4 inch headspace. Adjust lids and process for 5 minutes at elevations up to 1,000 feet and 10 minutes for elevations between 1,001 and 6000 feet. Jams processed for 10 minutes do not require pre-sterilized jars. Yield: 5-6 half-pints.

TESTING JELLY FOR DONENESS

Temperature Test

Use a jelly or candy thermometer to check the temperature of the boiling fruit mixture. Bring the mixture to the temperature indicated for your altitude.

Sea Level	1,000 ft.	2,000 ft.	3,000 ft.	4,000 ft.	5,000 ft.	6,000 ft.	7,000 ft.	8,000 ft.
220°	218°	216°	214°	212°	211°	209°	207°	205°

Sheet or Spoon Test

Dip a cool metal spoon into the boiling jelly mixture. Raise the spoon about 12 inches above the pan (out of the steam). Turn the spoon so the liquid runs off the side. The jelly is done when the syrup forms two drops that flow together and sheet or hang off the edge of the spoon.

MAKING JAMS AND JELLIES WITH ADDED PECTIN

Jams or jellies made with added pectin require less cooking and generally give a larger yield than products made without added pectin. These products also have a more natural fruit flavor. Another benefit of using added pectin is that it eliminates the need to test hot jellies and jams for proper gelling. The order in which the ingredients are combined will vary depending on the type of pectin used.

There are two types of pectin available on the market, regular pectin and modified pectin. Regular pectin can generally be used to make cooked jams and jellies or no-cook freezer jams and jellies. There is some variation in brands however so be sure to read the package to insure that the pectin you purchase is designed to make the type of jam you want.

There are two types of pectins sold for reduced sugar products. One type forms a gel with 1/3 less sugar and the other, a low-methoxyl pectin, requires a calcium source to form a gel. These pectins make it possible to reduce or eliminate sugar in jams and jellies. Like the regular pectins, be sure to read the instructions so the pectin will produce the type of jam you want.

Follow the instructions provided in the pectin package to make the apricot jam, apricot-pineapple jam, apricot butter, or apricot freezer jam.

DRYING

Apricots are one of the fruits best suited to drying. For best results, select firm, ripe apricots with deep yellow to orange color.

To prepare the fruit wash apricots, cut in half and remove pits.

Pretreat, if desired. Pre-treating fruits before drying produces a higher quality product. The most effective pretreatment for apricots is sulfuring. If you choose not to sulfur, another good alternative is syrup blanching. Apricots may also be pretreated by dipping the apricots in a solution made from crystalline ascorbic acid, vitamin C tablets, sulfite compounds, or fruit juice. Pre-treatment methods are described below.

Following pretreatment, the apricots should be arranged on the drying trays in a single layer. Pieces of similar size should be placed on the same tray because they will dry at a similar rate.

PRETREATMENT METHODS

Warning: persons with asthma should avoid the use of sulfur or bisulfite treated food. It can cause some asthmatics to have an asthma attack.

Sulphuring

Sulfuring has the advantage of producing an excellent quality product. Fruit treated with sulfur will maintain color, flavor, and vitamins A and C. Heat during drying and subsequent cooking will dissipate the sulfur. For instructions on sulphuring see USU Extension's *Home Drying of Food* (FN 330) available at <http://extension.usu.edu/files/foodpub/fn330.pdf> or *How to Dry Foods* by Deanna DeLong.

Sulfite Solutions

Purchase U.S.P. (food grade) or Reagent Grade sodium sulfite, sodium bisulfite or sodium metabisulfite at pharmacies or where winemaking supplies are sold. Do not use bisulfate or products of Practical Grade.

Prepare a solution using one of the following formulas:

Sodium bisulfite:	1 tablespoon per gallon water (3/4 teaspoon/quart)
Sodium sulfite:	2 tablespoons per gallon water (1 1/2 teaspoons/quart)
Sodium metabisulfite:	4 tablespoons per gallon water (1 tablespoon/quart)

Soak fruit 5-15 minutes depending on size. Drain; rinse lightly under tap water; spread on clean cloth or paper towels to remove excess moisture and dry.

Syrup Blanching

Prepare a sugar syrup by mixing 1 cup sugar, 1 cup white corn syrup and 2 cups water. Bring the mixture to a boil. Add 1-1/2 pounds of prepared fruit. Simmer for 10 minutes. Remove fruit from heat and leave fruit in the hot syrup 30-45 minutes. Drain the fruit and rinse it lightly with cold water before placing it on dryer trays.

Crystalline Ascorbic Acid

Pure crystalline ascorbic acid is a good antioxidant, but sometimes difficult to find. It is available through drugstores or chemical companies. For apricots dissolve 1 teaspoon of ascorbic acid in each cup of cold water. One cup of solution will treat about 5 quarts of cut fruit. As the

fruit is prepared place it into a large (1 gallon) plastic bag. Add the ascorbic acid solution. Shake thoroughly so that all parts of the fruit are coated with the ascorbic acid solution. Drain well.

Vitamin C Tablets

Crush to a powder and mix 1 teaspoon of 500 mg vitamin C tablets with 1 quart of water. Vitamin C tablets contain carriers that do not dissolve as well as pure crystalline ascorbic acid and may result in harmless white particles floating on the solution. Soak the fruit in the solution for 3-5 minutes.

Fruit Juice Dips

Soaking fruits in fruit juices naturally containing ascorbic acid will help keep the natural color and prevent darkening. These will also add their flavor to the product. Soak the fruit pieces for 3-5 minutes in orange, grapefruit, lemon, lime or pineapple juice. Remove and drain well. Only use the juice twice before replacing.

DEHYDRATING METHODS

Apricots may be dried in a dehydrator, in the sun or in the oven.

Dehydrator

Dehydrators are the most efficient way to dehydrate foods. Because they have a controlled heat source and a fan to circulate and remove the moist air they are able to dehydrate more quickly. When purchasing a dehydrator look for these features. The average drying time for apricot halves in a dehydrator is 18-24 hours.

Sun

To be successful, sun-drying demands low humidity, sunshine and temperatures above 98 degrees. Care must be taken to protect foods from tipping accidents, insects, pets, and children. Place trays in an area that receives direct sun for as many hours as possible. Arrange the trays so air can circulate above and below the fruit. Cover trays with cheesecloth or screen suspended above the food to protect the fruit from insects, leaves, dust, etc. Table legs can be set in cans of water to avoid earwigs crawling onto drying table. Sun drying is relatively slow, because the sun does not cause rapid evaporation of moisture. Reduced drying times may be achieved by using a solar dryer. See *How to Dry Foods* by Deanna DeLong for instructions on building a solar dehydrator. The average drying time for apricot halves in the sun is 2-4 days.

Oven

Oven drying is harder to control than drying with a dehydrator. However, some products can be successfully dried in the oven. It typically takes two to three times longer to dry food in an oven than it does in a dehydrator. For this reason oven drying is more expensive because it uses more energy.

When drying foods in the oven set the temperature at the lowest setting, preferably 150° or less. Leave the oven door open 2-3 inches (block open if necessary). Place a small fan to the side of the oven door blowing inward to help remove the moist air. **Using this method in a home with small children may be hazardous.** The average drying time for apricots in the oven is 24-36 hours.

Dryness Test

The final dryness of the apricots can be determined by touch or by calculation to a desired water content. The calculation method will result in a product closer to commercially dried apricots.

To determine when apricots are dry by touch, remove a piece of fruit and allow it to cool. The apricot should be pliable and no moisture should be visible when a cut edge is pressed.

To calculate the desired final weight of the apricots:

1. Weigh container for fresh and dried fruit on a scale. Note weight or adjust scale to "0" if that is an option.
2. Weigh apricots. Subtract weight if scales cannot be zeroed out.
3. Calculate desired final weight.
(Fresh apricot weight) times (.175) = desired weight of dried apricots
4. Add calculated desired final weight and weight of container (unless scale zeroed out).
When apricots are dried to this final weight, they are ready.
5. To control mold growth either freeze or vacuum pack the dried apricots. To vacuum pack, place in canning jars, attach lids loosely and place in a 325 degree oven for 15 minutes. At the end of the 15 minutes, remove and tighten lids.

NUTRITION INFORMATION

Apricots are an excellent source of vitamin A and also provide vitamin C, iron, potassium, and fiber.

	KCAL	Vitamin A IU	Vitamin C mg	Iron mg	Sodium mg	Calcium mg
Raw, 3 medium	51	2769	11	.57	1	15
Frozen, sweetened 1/2 cup	119	2033	11	1.09	5	12
Canned in light syrup						
3 halves	54	1124	2	.33	3	9
6 halves	108	2248	4	.66	6	18
Canned in heavy syrup						
4 halves	75	1107	3	.27	4	8
6 halves	112.5	1659	4.5	.41	6	12
Dried, sulfured						
10 halves	83	2534	1	1.65	4	16
6 halves	49.8	1520	.6	.99	2.4	9.6

STORAGE

Store fresh apricots in the refrigerator for up to 3 weeks. Canned apricots and apricot nectar can be stored up to 48 months at 40°F, 24 months at 70°F, or 12 months at 90°F. Dried apricots can be stored up to 24 months at 40°F, 3 months at 70°F, or 1 month at 90°F.

Savor the Season All Year Long!

References

- Ball Blue Book. The Complete Guide to Home Canning and Freezing.* 1995. Alltrista Corporation. Muncie, Indiana.
- Bowes, Anna DePlanter, Church, Charles, Church, Helen Nichols, Pennington, Carmella Genee, & Pennington, Jean A. T. *Bowes & Church's Food Value of Portions Commonly Used.* 1998. Lippincott-Raven Publishers. Philadelphia, Pennsylvania.
- Brennand, Charlotte. *Home Drying of Food.* 1994. Utah State University Extension. Logan, Utah. <http://extension.usu.edu/coop/food/foodpub.htm>.
- Complete Guide to Home Canning* (Agriculture Information Bulletin No. 539). 1988. USDA & Extension Service. <http://extension.usu.edu/coop/food/foodpub.htm>
- DeLong, Deanna. *How to Dry Foods.* 1979. HP Books, Tucson, Arizona.
- Lauritzen, Georgia. *Fruit Freezing Methods (FN 215).* Utah State University Extension. Logan, Utah. <http://extension.usu.edu/coop/food/foodpub.htm>.
- Section 5. Subsistence. Department Of Defense 4145.19-R-1, 1979.
-

Utah State University is committed to providing an environment free from harassment and other forms of illegal discrimination based on race, color, religion, sex, national origin, age (40 and older), disability, and veteran's status. USU's policy also prohibits discrimination on the basis of sexual orientation in employment and academic related practices and decisions.

Utah State University employees and students cannot, because of race, color, religion, sex, national origin, age, disability, or veteran's status, refuse to hire; discharge; promote; demote; terminate; discriminate in compensation; or discriminate regarding terms, privileges, or conditions of employment, against any person otherwise qualified. Employees and students also cannot discriminate in the classroom, residence halls, or in on/off campus, USU-sponsored events and activities.

This publication is issued in furtherance of Cooperative Extension work. Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Jack M. Payne, Vice President and Director, Cooperative Extension Service, Utah State University.