

# Home **CANNING** *Fruits and Tomatoes*

Peggy Van Laanen  
Professor and Extension Nutrition Specialist  
The Texas A&M University System

**H**ome canning helps you preserve the natural goodness of foods and keeps the food from spoiling and becoming unsafe to eat. Foods spoil because of the action of yeasts, molds and bacteria. The enzymes in foods may also cause undesirable changes in color, texture and flavor.

Using the proper procedures during canning — such as processing foods at high enough temperatures for certain amounts of time — destroys the spoilage organisms and stops the enzyme action. Airtight seals are used to protect foods from contamination after processing.

The preparation methods, packing methods, processing times and temperatures vary for different kinds of foods. High-acid foods such as fruits and tomatoes can be processed safely with a boiling water canner (sometimes called a water bath canner in older publications).

## **Equipment** **Boiling water canner**

A boiling water canner processes food at the temperature of boiling water, which is 220 °F at sea level. At higher altitudes, water boils at less than 220 °F, so foods must be processed (heat treated) for longer periods. For altitude adjustments, see the chart on page 9.

The boiling water method is safe for canning fruits, fruit juices, tomatoes, tomato juice, jellies, jams, rhubarb and pickled vegetables. It is not safe for canning vegetables with low acid content.

To use this method, you may either buy a boiling water canner or use a big clean kettle or metal pot to process high-acid foods. The pot must be deep enough to hold the jars upright and permit the water to boil gently 1 or 2 inches over the top of them. Its diameter should be no more than 4 inches wider than the diameter of the burner on your range.

The pot also needs a tight-fitting lid and a metal rack that, when placed in the bottom of the pot, can keep the jars from resting on the bottom of the container. The rack also must leave spaces for water to circulate freely around the canning jars.

Some fruits and tomato products can also be processed in a pressure canner. For information on this process, contact your county Extension office or see Texas

Cooperative Extension publication B-6117,  
*Canning Vegetables at Home*.

## Jars and lids

Use only standard-make jars specifically designed for home canning. Check the tops of the jars for cracks, chips and dents, and discard those with defects that would prevent an airtight seal.

Wash the jars in hot, soapy water and rinse them well. You do not need to sterilize the jars if the foods placed in them will be processed for 10 minutes or more. However, to help prevent jar breakage, keep the jars hot until they are filled and placed in the canner. You can do this by washing them in the dishwasher and keeping them hot or placing them in the water heating in the canner.

Use a two-piece, self-sealing metal disk or lid and a screw-on closing ring. The lid seals itself as the jar cools after processing. The top of the jar must have a smooth edge to make a seal. Although the metal disk or lid can be used only once, the screw-on ring may be used more often if it is not rusty or dented.

Before using self-sealing lids, pretreat them according to the manufacturer's directions, which are included on the lid packaging.

## Jar packing and processing methods

### Packing methods

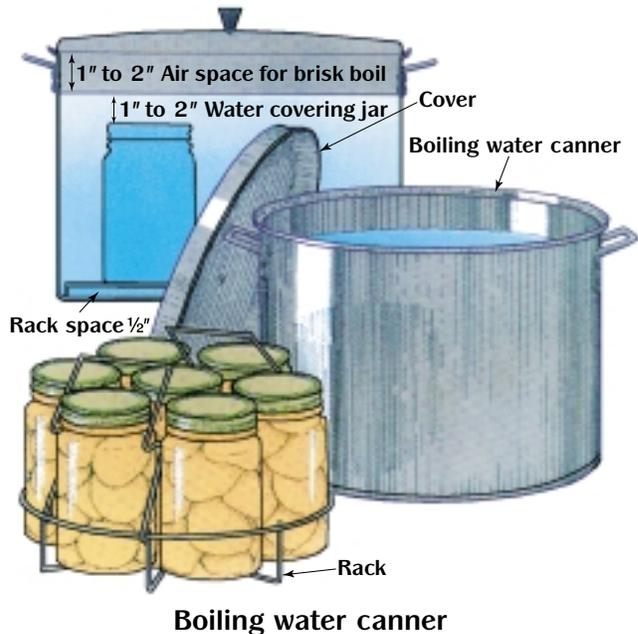
Two types of pack may be used, depending on the characteristics of the food:

**Hot pack:** Some foods are preheated in a pan before being packed into containers for processing. This is known as precooking. Hot-pack foods can be packed fairly loosely because some shrinkage has occurred during preheating. Use a slotted spoon to spoon preheated foods into hot jars.

**Raw pack:** Some foods can be packed raw into the hot jar. Boiling liquid is added and the jar is closed and processed. This method requires less time but is not appropriate for all foods. It may cause some foods to float upward after processing, leaving a large amount of liquid near the bottom of the jar.

## Processing foods using boiling water canners

Prepare and pack the foods according to the instructions given for each food product. Use enough boiling liquid to fill in around the food in the jar and to cover the food. Remove any air bubbles in the liquid by running a nonmetallic



spatula down the sides of the jar between the food and the jar to release the bubbles.

Check the amount of headspace (the space between the food and the top of the jar) recommended for each food. It is important to leave the proper amount of headspace to secure a good seal and to prevent foods from bubbling out of the container during processing.

After filling the jars, wipe off the rims with a clean, damp paper towel. Use lids that have been pretreated according to the package directions. Before processing, add the screw-on rings and tighten them according to the manufacturer's instructions.

Place the closed jars of food in the canner. To process high acid foods, use a boiling water canner. For successful boiling water canning, follow these steps:

1. Fill the canner half full with clean, warm water as you start preparing the food to be canned.
2. Place the canner on the burner and preheat the water to 140 °F for raw-packed foods and to 180 °F for hot-packed foods.
3. While the water in the canner is heating, prepare the food and liquids for canning in the jars. Keep the jars hot before filling by placing them in the heated water in the canner.
4. Once you have prepared the cooking syrup or liquid and the foods according to the directions, fill the jars according to the instructions for that food.

5. Once the jars are filled except for the recommended headspace, wipe the rims with a clean, damp paper towel. Cap the jars with the pretreated lids and rings.
6. Use a jar lifter to load the filled jars, fitted with lids, into the canner one at a time. Do not allow the jars to touch each other or the bottom of the canner.
7. If needed, add more boiling water to the canner so the water level is at least 1 inch above the jar tops. If the process times are more than 30 minutes, the water level should be 2 inches above the jars.
8. Turn the heat to its highest setting, cover the canner with its lid, and heat until the water boils vigorously.
9. After the water is boiling, set a timer for the number of minutes required to process the food. The processing time starts when all the jars are in the canner and the water in the canner is boiling.
10. Keep the canner covered for the process time. Adjust the heat to keep the water at a gentle but complete boil for the entire process time.
11. If needed, add more boiling water during the process to keep the water level above the jar tops. You can keep an extra pan or kettle of boiling water heating in case you need to add more water to the canner. Use only boiling water.

**If the water stops boiling at any time during the process, turn the heat on its highest setting, bring the water back to a vigorous boil, and restart the timing process using the total original process time.**

12. When the jars have been processed in boiling water for the recommended time, turn off the heat and remove the canner lid.
13. Using a jar lifter, remove the jars one at a time, being careful not to tilt them. Carefully place them directly onto a towel or cake cooling rack, leaving at least 1 inch of space between the jars during cooling. To avoid breakage, avoid placing the jars on a cold surface or in a cold draft.
14. Let the jars sit undisturbed while they cool, from 12 to 24 hours. Do not tighten the ring bands on the lids or push down on the center of the flat metal lid until the jar is completely cooled. A popping noise may sound when the jars seal.

## Checking jars after processing

When the canned product is thoroughly cool, remove the screw-on ring, if possible, without forcing it.

If the ring sticks, cover it with a hot, damp cloth for a minute or two to loosen it. To test the seal, tap the lid with a spoon or fork. If the seal is good, there will be a clear ringing sound. If the seal is poor, there will be a dull thud. Press the center of the lid. If it is down and will not move when pushed, the jar is sealed. If the products are not sealed and you discover this within 24 hours after processing, you may save them by:

- Refrigerating or freezing the food and using it within a reasonable storage period for the type of cold storage.
- Reprocessing the food by removing it from the unsealed jars, reheating and replacing it in clean, hot jars with new pretreated lids. Reprocess it using the same amount of time as used originally. Although the product may be overprocessed, it should be safe if it is properly sealed after reprocessing.

Once the foods are properly processed and sealed, label the sealed jars with the contents and date. For best quality, store the canned foods in a cool, dry place away from direct light. When properly stored, canned foods should retain the best quality for about 1 year.

Before eating any canned products, always check them for signs of spoilage. A bulging lid or a leaking jar could mean spoilage. Spurting liquid, off-odor, mold or floating bubbles could also be signs of spoilage. Do not eat these foods. Discard them properly. It is better to be safe than sorry.

## General preparations for canning fruits

**Selection and preparation:** Use only fresh, ripe fruit. Do not use fruit if it is badly bruised or moldy. Prepare it according to the instructions for individual fruits as listed in this publication.

To can fruits, you will need some type of liquid — water, juice or a sweetened syrup. Select the type of liquid based on your preference. If needed, use an anti-darkening treatment for light-colored fruit.

**Selecting and preparing a canning liquid:** Canning fruit in a sweet syrup helps the product retain its flavor, color and shape. However, it is not necessary for safety if the food is processed properly.

Below are guidelines for preparing and using canning syrups for different types of fruit. Included are instructions for five types of syrups, in which the sugar content in each type is increased by about 10 percent. The “very light” syrup is similar in sweetness to the natural sugar content of many fruits.

**Preparing sweetened syrups:** Heat the water and sugar together; bring them to a boil. For raw pack, pour the hot syrup over the raw fruits in jars. For hot pack, after bringing water and sugar to boil, add the fruit, reheat it to boiling and fill it into jars immediately.

Because artificial sweeteners do not hold up well during heat processing, it is best to add them just before serving canned fruit, not before processing.

**Using liquids other than sweet syrup:** Commercial unsweetened juices such as apple, pineapple or white grape juice can be used as purchased or diluted with water to substitute for a sugar syrup pack. You can also extract juice from the fruit being canned to use as the canning liquid.

To extract the juice, thoroughly crush ripe, sound fruit. Heat it to a simmer over low heat. Strain it using cheesecloth or jelly bag. Keep any canning liquid hot until use in raw or hot pack method.

**Preventing fruits from darkening:** Many light-colored fruits, such as apples, apricots, pears, peaches and nectarines, may turn brown when peeled and exposed to air because of a natural process called enzymatic browning. To prevent this natural darkening process when preparing these fruits for canning, use an anti-darkening solution. While preparing peeled fruits or fruit pieces, hold them in a solution of 3 grams (3,000 milligrams) of ascorbic acid dissolved in a gallon of cold water.

You can buy ascorbic acid (also known as vitamin C) from commercial sources in various forms:

- **Pure powdered form:** This is sometimes available in the canning supplies section of supermarkets or pharmacies. One teaspoon of pure ascorbic acid powder equals 3,000 milligrams of ascorbic acid. Use 1 teaspoon per gallon of water as the treatment solution in which to hold peeled products before canning.
- **Vitamin C tablets:** These are economical and available year-round. Finely crush and dissolve necessary number of tablets per gallon of water to use as the treatment solution. Determine the number of tablets to use based on number of milligrams of ascorbic acid per tablet. For a more pure

Preparing and Using Syrups — Measures of Water and Sugar						
Syrup type	Approximate percentage of sugar	For 9-pint load*		For 7-quart load		Fruits commonly packed in syrup**
		Cups water	Cups sugar	Cups water	Cups sugar	
Very light	10	6 1/2	3/4	10 1/2	1 1/4	Approximates the 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.

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

\*\* Many fruits that are typically packed in heavy syrup taste good when packed in lighter syrups. Try lighter syrups — they contain fewer calories from added sugar.

ascorbic acid solution, buy tablets with fewer additives or coloring ingredients.

- **Commercially prepared mixes of ascorbic acid and citric acid:** Citric acid powder is sold in supermarkets but is less effective in controlling enzymatic browning than is pure ascorbic acid. If you choose one of these mixtures, follow the manufacturer's directions on the package.

## Processing specific fruit products

First read all the instructions. Then prepare the packing syrup, liquid or juice before preparing the fruit, especially if the fruit requires an anti-darkening treatment.

The processing times for various products at sea level and various altitudes above it are listed in a chart on page 9.

### Apples

**Preparation:** Wash, peel and core the apples; cut them into slices. Use an anti-darkening treatment to prevent discoloration. Then drain.

**Hot pack:** Boil the apples in syrup or water for 5 minutes, stirring as needed to prevent burning. Pack the hot fruit in hot jars, leaving  $\frac{1}{2}$  inch of headspace. Cover it with hot syrup or water, leaving  $\frac{1}{2}$  inch of headspace. Adjust the lids and process.

### Applesauce

**Preparation:** Wash, peel and core the apples. Cut them into small pieces and use the anti-darkening instructions to pretreat them to prevent discoloration.

Add 1 cup of boiling water to each gallon of apples. Cover the kettle and cook them for about 20 minutes, stirring as needed to prevent burning. Press them through a sieve or food mill. Add the sugar (about  $\frac{1}{8}$  cup per quart) and spices according to taste and heat to boiling.

**Hot pack:** Pack the hot fruit product into jars, leaving  $\frac{1}{2}$  inch of headspace. Adjust the lids and process.

### Apricots

Follow the instructions for peaches. Peeling may be omitted.

### Berries (except strawberries)

**Preparation:** Discard soft or moldy berries. Crush the smaller imperfect berries for juice. Berries may be canned in water, juice or syrup. Wash 1 or 2 quarts of berries at a time.

**Hot pack:** This method is used for blueberries, currants, elderberries, gooseberries and huckleberries. Heat about 1 gallon of water for each pound of berries. Blanch the berries in boiling water for 30 seconds and drain them. Put  $\frac{1}{2}$  cup of hot syrup, juice or water into each hot jar. Then pack the hot berries into the jars, leaving  $\frac{1}{2}$  inch of headspace.

Continue to fill the jars with hot syrup, juice or water, leaving  $\frac{1}{2}$  inch of headspace. Adjust the lids and process.

### Cherries (sweet or sour)

**Preparation:** Remove the stems and wash the cherries. Remove the pits, if desired. If pitted, use an anti-darkening treatment to prevent stem-end discoloration. If not pitted, prick the skins on opposite sides to prevent splitting. Cherries may be canned in water, apple juice, white grape juice or syrup. Remove the cherries from the anti-darkening treatment solution, if used, and drain them.

**Hot pack:** In a large saucepan, add the cherries and  $\frac{1}{2}$  cup of water, juice or syrup for each quart of fruit. Bring the mixture to a boil. Fill the hot jars with cherries and cooking liquid, leaving  $\frac{1}{2}$  inch of headspace. Adjust the lids and process.

**Raw pack:** Add  $\frac{1}{2}$  cup of hot water, juice or syrup to each hot jar. Fill the jars with the drained cherries, shaking down gently as you fill, to leave about  $\frac{1}{2}$  inch of headspace. Add more hot liquid, leaving  $\frac{1}{2}$  inch of headspace. Adjust the lids and process.

### Figs

**Preparation:** Use firm, ripe, uncracked figs. Wash the figs thoroughly and drain them. Do not remove the stems or peels. Cover with water and boil 2 minutes. Drain.

**Hot pack:** Gently boil the figs in light syrup for 5 minutes. Add to the hot jars 2 tablespoons of bottled lemon juice per quart, or 1 tablespoon per pint. (Or add  $\frac{1}{2}$  teaspoon of citric acid per quart or  $\frac{1}{4}$  teaspoon per pint jar for acidification.)

Fill the hot jars with the hot figs, leaving  $\frac{1}{2}$  inch of headspace. Add the cooking syrup to the jars, leaving  $\frac{1}{2}$  inch of headspace. Adjust the lids and process.

### Fruit puree

#### (Peach, apricot and pear)

**Preparation:** Stem, wash, drain, peel and remove the seeds and pits from the fruit. Measure the fruit into a large saucepan, crushing the fruit slightly if desired.

**Hot pack:** In a saucepan, add 1 cup of hot water for each quart of fruit. Cook it slowly until the fruit is soft, stirring frequently. Press it through sieve or food mill. If desired for flavor, add sugar to taste. Reheat the pulp to a boil or until the sugar dissolves, if added. Pack the hot puree into hot jars, leaving 1/4 inch of headspace. Adjust the lids and process.

### **Grapefruit and Orange sections**

**Note:** Canned oranges taste best if they are canned with another fruit. Orange sections are best if canned with equal parts of grapefruit.

**Preparation:** With a sharp knife, cut slices from both ends of the unpeeled fruit, cutting into the flesh or segment. Then remove the rest of the peel and the white membrane in wide slices, cutting from one end to another. To prevent a bitter taste, remove all the white tissue. Run the blade of a paring knife between the segments and separate them from the rest of the membrane.

**Raw pack:** Fruit may be packed in water, citrus juice or selection of syrup (very light, light or medium — bring it to a boil). Fill the hot jars with fruit sections and selected liquid (hot water, juice or syrup), leaving 1/2 inch of headspace. Adjust the lids and process.

### **Mangoes, green**

**Preparation:** Select green, nonfibrous fruit. Caution: Handling green mangoes may irritate the skin of some people. A precaution is to wear plastic gloves while working with raw, green mango. Peel and slice the mangoes.

**Raw pack:** Place the peeled slices in hot (light or medium) syrup and bring them to a boil. Cook 2 minutes. Pack the hot fruit into hot jars, leaving 1/2 inch headspace. Fill the jars with hot liquid, leaving 1/2 inch of headspace. Adjust the lids and process.

### **Nectarines**

Follow the instructions for peaches.

### **Papaya**

**Preparation:** Peel firm, ripe fruit and remove the seeds. Cut the fruit into cubes.

**Hot pack:** Prepare medium or heavy syrup. Add 1/4 cup of lemon juice to each quart of syrup. Cook the papaya gently in hot (medium or heavy) syrup for 2 to 3 minutes. Pack the hot fruit into hot jars, leaving 1/2 inch of headspace. Add boiling cooking syrup to fill jar, leaving 1/2 inch of headspace. Adjust the lids and process.

### **Peaches**

**Preparation:** Peel or place fully ripe, firm fruits in a wire basket or cheesecloth and lower them into boiling water for 30 to 60 seconds or until the skins loosen. Plunge them into cold water quickly. Slip off the skins. Cut the fruit into halves and remove the seeds. Slice the fruit, if desired. To prevent darkening, use an anti-darkening treatment while preparing. Drain the anti-darkening solution from the cut and peeled fruit.

**Hot pack:** In a large saucepan, place the drained fruit in hot-prepared, very light, light or medium syrup, selected juice (apple or white grape) or water and bring it to a boil. Fill the hot jars with hot fruit, leaving 1/2 inch of headspace. Pack the fruit halves in jars with the cut side down. Add the hot cooking liquid to the jars, leaving 1/2 inch of headspace. Adjust the lids and process.

**Raw pack:** Pack the raw fruit into hot jars, leaving 1/2 inch of headspace. Fill jars with hot liquid, leaving 1/2 inch of headspace. Adjust the lids and process. Note: Raw packs usually make poor-quality peaches.

### **Pears**

**Preparation:** Can only ripe, mellow pears. Wash, peel, core and cut the fruit in halves. A melon baller or metal measuring spoon is suitable for coring pears. To prevent discoloration, use an anti-darkening treatment. Drain the anti-darkening treatment from the cut and peeled fruit.

**Hot pack:** In a large saucepan, place the drained fruit in the prepared syrup or in hot apple juice, white grape juice or water. Boil the drained pears for 5 minutes in the selected liquid. Fill the hot jars with hot fruit, leaving 1/2 inch of headspace. Add the cooking liquid to the jars, leaving 1/2 inch of headspace. Adjust the lids and process.

**Note:** Raw packs make poor quality pears, but if desired, follow the instructions for peaches.

### **Pineapple**

**Preparation:** Select firm, ripe fruit. Peel the fruit and remove the eyes and tough fiber. Slice or cube the fruit.

**Hot pack:** Pineapple may be packed using selected syrup (very light or medium) or juice (apple or white grape) or water. In a large saucepan, add the pineapple to the liquid and simmer for 10 minutes. Fill the jars with hot pieces, leaving 1/2 inch of headspace. Fill the jars with hot liquid, leaving 1/2 inch of headspace. Adjust the lids and process.

## Plums

**Preparation:** Select deep-colored, mature fruit of good eating quality. Remove the stems and wash the plums. To can them whole, prick the skin on two sides of each plum to prevent bursting. Freestone varieties may be halved and pitted.

**Hot pack:** Add the prepared plums to the prepared hot syrup (very light, light or medium) or water and boil for 2 minutes. Cover the saucepan and let the mixture stand for 20 to 30 minutes. Fill the hot jars with hot plums, leaving  $\frac{1}{2}$  inch of headspace. Add the cooking liquid, leaving  $\frac{1}{2}$  inch of headspace. Adjust the lids and process.

**Raw pack:** Pack raw plums firmly into hot jars, leaving  $\frac{1}{2}$  inch of headspace. Fill the jars with prepared syrup or hot water, leaving  $\frac{1}{2}$  of headspace. Adjust the lids and process.

## Rhubarb (stewed)

**Preparation:** Select young, tender, well-colored stalks. Remove the leaves. Wash the stalks and cut them into  $\frac{1}{2}$ - to 1-inch pieces.

**Hot pack:** In a large saucepan, add  $\frac{1}{2}$  cup of sugar for each quart of rhubarb. Let the mixture stand until juice appears. Heat it gently to boiling. Fill hot jars with the rhubarb mixture without delay, leaving  $\frac{1}{2}$  inch of headspace. Adjust the lids and process.

## Preparing tomatoes and tomato products

Select only disease-free, preferably vine-ripened, firm tomatoes for canning. Caution: Do not can tomatoes from dead or frost-killed vines. Green tomatoes are more acidic than ripened produce and can be canned safely with any of the following recommendations.

**Acidification:** To ensure adequate and therefore safe acidity in whole, crushed or juiced tomatoes, add 2 tablespoons of bottled lemon juice or  $\frac{1}{2}$  teaspoon of citric acid per quart of tomatoes canned. For pints, use 1 tablespoon of bottled lemon juice or  $\frac{1}{4}$  teaspoon of citric acid. Add the acid directly to the jars before filling them with the tomato product.

## Tomato juice

**Preparation:** Wash the tomatoes, remove the stems, and trim off the bruised or discolored portions.

**Hot pack:** To prevent the juice from separating, begin by quickly cutting about 1 pound of produce into quarters and putting them directly into a

saucepan. Heat them immediately to boiling while crushing them. Continue to slowly add and crush freshly cut tomato quarters in the boiling mixture. Make sure the mixture boils constantly and vigorously while adding the remaining tomatoes. Simmer it for 5 minutes after adding all the pieces.

If you are not concerned about the juice separating after canning, you can instead slice or quarter the tomatoes into a large saucepan and crush, heat and simmer them for 5 minutes before juicing. Whatever method you use, press the heated juice from the tomato pieces through a sieve or food mill to remove skins and seeds. Add bottled lemon juice or citric acid to the hot jars as per the instructions above. Heat the juice again to boiling. If desired for flavoring, add 1 teaspoon of salt per quart or  $\frac{1}{2}$  teaspoon per pint to jars before filling. Fill the hot jars with hot tomato juice, leaving  $\frac{1}{2}$  inch of headspace. Adjust the lids and process.

## Tomatoes (crushed)

**Preparation:** Wash the tomatoes and dip them in boiling water for 30 seconds or until the skins split. Immediately dip them in cold water, slip off the skins and remove the cores. Trim off any bruised or discolored portions and quarter the tomatoes.

**Hot pack:** Heat about 1 pound of the quarters quickly in a large pot, crushing them with a wooden mallet or spoon as you add them to the pot to draw juice. Continue heating the tomatoes, stirring them to prevent burning. When the tomatoes are boiling, gradually add the remaining quartered tomatoes, stirring constantly. (These tomatoes will not need to be crushed — they will soften with heating and stirring.) Continue the process of adding quartered tomatoes until all are added. Boil the mixture gently for 5 minutes. Add bottled lemon juice or citric acid to the hot prepared jars. If desired for flavoring, add 1 teaspoon of salt per quart or  $\frac{1}{2}$  teaspoon of salt per pint to the jars. Fill the hot jars immediately with hot tomatoes, leaving  $\frac{1}{2}$  inch of headspace. Adjust the lids and process.

## Tomato sauce (unseasoned)

**Preparation and hot pack:** Prepare and press the tomatoes as for making tomato juice. After pressing the heated juice through a sieve to remove skins and seed, simmer the liquid in a large-diameter saucepan until the juice reduces in liquid consistency to sauce. Boil it until the volume is reduced by about one-third for thin sauce or by one-half for thick sauce. Add bottled lemon juice

or citric acid to the hot prepared jars. If desired for flavoring, add 1 teaspoon of salt per quart or 1/2 teaspoon per pint to the jars. Fill the hot jars with the tomato sauce mixture, leaving 1/4 inch of headspace. Adjust the lids and process.

### **Tomatoes (whole or halved) (no added liquid)**

**Preparation:** Wash the tomatoes and dip them in boiling water for 30 to 60 seconds, until the skins split. Immediately dip them in cold water, slip off the skins and remove the cores. Leave the peeled tomatoes whole or cut them in half.

**Raw pack:** Add bottled lemon juice or citric acid to the hot prepared jars. If desired for flavoring, add 1 teaspoon of salt per quart or 1/2 teaspoon salt per pint to the prepared jars. Fill the hot jars with raw tomatoes, pressing the tomatoes with a spatula or nonmetal spoon until the spaces between the tomatoes fill with juice. Leave 1/2 inch of headspace. Adjust the lids and process.

### **Tomatoes (whole or halved) (packed in tomato juice)**

**Preparation:** Wash the tomatoes. Dip them in boiling water for 30 to 60 seconds until the skins split. Immediately dip them in cold water, slip off the skins and remove the cores. Leave the peeled tomatoes whole or cut them in half. Add bottled lemon juice or citric acid to hot, prepared jars. If desired for flavoring, add 1 teaspoon of salt per quart or 1/2 teaspoon of salt per pint to the hot prepared jars.

**Raw pack:** Heat the prepared tomato juice in a saucepan (see instructions for making tomato juice). Pack raw tomatoes in hot prepared jars, leaving 1/2 inch of headspace. Continue filling the jars with hot tomato juice, leaving 1/2 inch of headspace. Adjust the lids and process.

**Hot pack:** Put the tomatoes in a large saucepan and add enough prepared tomato juice (see

previous instructions for making tomato juice) to cover them. Boil the tomatoes and juice gently for 5 minutes. Fill the hot prepared jars with tomato pieces, leaving 1/2 inch of headspace. Add hot tomato juice to the jars to cover the tomatoes, leaving 1/2 inch of headspace. Adjust the lids and process.

### **Tomatoes (whole or halved) (packed in water)**

**Preparation:** Wash the tomatoes and dip them in boiling water for 30 to 60 seconds until the skins split. Immediately dip them in cold water, slip off the skins and remove the cores. Leave the peeled tomatoes whole or cut them in half. Add bottled lemon juice or citric acid to the hot prepared jars. If desired for flavoring, add 1 teaspoon of salt per quart or 1/2 teaspoon of salt per pint to the hot prepared jars.

**Raw pack:** Heat the water for packing to a boil. Pack the prepared tomatoes into the hot jars. Leave 1/2 inch of headspace. Add boiling water to leave 1/2 inch of headspace. Adjust the lids and process.

**Hot pack:** Place the skinned and prepared tomatoes in a saucepan and cover them with water. Bring it to a boil and boil gently for 5 minutes. Pack the hot tomatoes into jars leaving 1/2 inch of headspace. Fill them with cooking liquid, to 1/2 inch of headspace. Adjust the lids and process.

### **For more information**

*Complete Guide to Home Canning*, 1994. U.S. Department of Agriculture. Based on research at the Extension Service Center for Excellence in Home Food Preservation, Pennsylvania State University.

*So Easy to Preserve*. 1999. Andress, E.A., and Harrison, J.A. Cooperative Extension Service. The University of Georgia/Athens. College of Family and Consumer Sciences, College of Agricultural and Environmental Sciences.

## Processing Time

Fruit	Jar Size	Boiling-Water Canner Process Time at Different Altitudes*			
		0-1,000 ft	1,001-3,000 ft	3,001-6,000 ft	Over 6,000 ft
<b>Apples</b>					
Hot pack	Pints or quarts	20 minutes	25 minutes	30 minutes	35 minutes
<b>Applesauce</b>					
Hot pack	Pints	15 minutes	20 minutes	20 minutes	25 minutes
	Quarts	20 minutes	25 minutes	30 minutes	35 minutes
<b>Apricots</b>					
	See peaches				
<b>Berries (except strawberries)</b>					
Hot pack	Pints	15 minutes	20 minutes	20 minutes	25 minutes
	Quarts	15 minutes	20 minutes	20 minutes	25 minutes
<b>Cherries</b>					
Hot pack	Pints	15 minutes	20 minutes	20 minutes	25 minutes
	Quarts	20 minutes	25 minutes	30 minutes	35 minutes
Raw pack	Pints or quarts	25 minutes	30 minutes	35 minutes	40 minutes
<b>Figs</b>					
Hot pack	Pints	45 minutes	50 minutes	55 minutes	60 minutes
	Quarts	50 minutes	55 minutes	60 minutes	65 minutes
<b>Fruit Puree</b>					
Hot pack	Pints or quarts	15 minutes	20 minutes	20 minutes	25 minutes
<b>Grapefruit and Orange Sections</b>					
Raw pack	Pints or quarts	10 minutes	15 minutes	15 minutes	20 minutes
<b>Mangoes, Green</b>					
Raw pack	Pints	15 minutes	20 minutes	20 minutes	25 minutes
	Quarts	20 minutes	25 minutes	30 minutes	35 minutes
<b>Nectarines</b>					
	See Peaches				
<b>Papaya</b>					
Hot pack	Pints	15 minutes	20 minutes	20 minutes	25 minutes
	Quarts	20 minutes	25 minutes	30 minutes	35 minutes
<b>Peaches</b>					
Hot pack	Pints	20 minutes	25 minutes	30 minutes	35 minutes
	Quarts	25 minutes	30 minutes	35 minutes	40 minutes
Raw pack	Pints	25 minutes	30 minutes	35 minutes	40 minutes
	Quarts	30 minutes	35 minutes	40 minutes	45 minutes
<b>Pears</b>					
Hot pack	Pints	20 minutes	25 minutes	30 minutes	35 minutes
	Quarts	25 minutes	30 minutes	35 minutes	40 minutes
<b>Pineapple</b>					
Hot pack	Pints	15 minutes	20 minutes	20 minutes	25 minutes
	Quarts	20 minutes	25 minutes	30 minutes	35 minutes
<b>Plums</b>					
Hot or raw pack	Pints	20 minutes	25 minutes	30 minutes	35 minutes
	Quarts	25 minutes	30 minutes	35 minutes	40 minutes
<b>Rhubarb-Stewed</b>					
Hot pack	Pints or quarts	15 minutes	20 minutes	20 minutes	25 minutes
<b>Tomato Juice</b>					
Hot pack	Pints	35 minutes	40 minutes	45 minutes	50 minutes
	Quarts	40 minutes	45 minutes	50 minutes	55 minutes
<b>Tomatoes-Crushed</b>					
Hot pack	Pints	35 minutes	40 minutes	45 minutes	50 minutes
	Quarts	45 minutes	50 minutes	55 minutes	60 minutes
<b>Tomato Sauce-Unseasoned</b>					
Hot pack	Pints	35 minutes	40 minutes	45 minutes	50 minutes
	Quarts	40 minutes	45 minutes	50 minutes	55 minutes
<b>Tomatoes-Whole or Halved</b>					
(no added liquid)					
Raw pack	Pints or quarts	85 minutes	90 minutes	95 minutes	100 minutes
(in tomato juice)					
Hot or raw packed	Pints or quarts	85 minutes	90 minutes	95 minutes	100 minutes
(in water)					
Hot or raw packed	Pints	40 minutes	45 minutes	50 minutes	55 minutes
	Quarts	45 minutes	50 minutes	55 minutes	60 minutes

\*Note the importance of adjusting times for altitude.

Produced by Agricultural Communications, The Texas A&M University System  
 Extension publications can be found on the Web at: <http://tcebookstore.org>

Educational programs of Texas Cooperative Extension are open to all people without regard to race, color, sex, disability, religion, age or national origin.

Issued in furtherance of Cooperative Extension Work in Agriculture and Home Economics, Acts of Congress of May 8, 1914, as amended, and June 30, 1914, in cooperation with the United States Department of Agriculture. Chester P. Fehlis, Director, Texas Cooperative Extension, The Texas A&M University System.

Revised