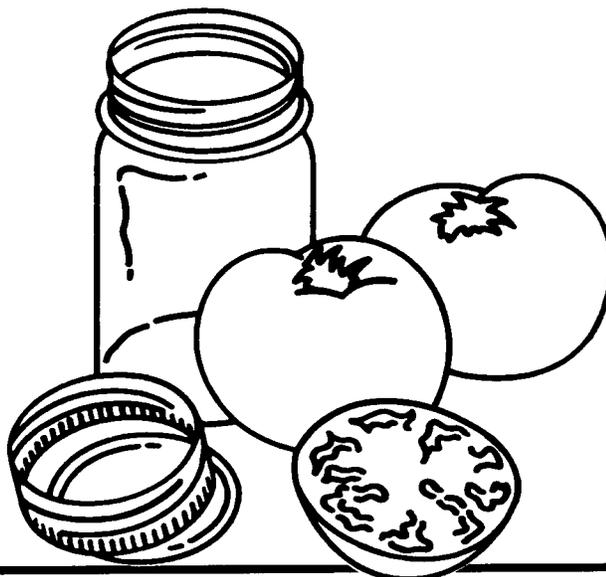




Selecting, Preparing & Canning Tomatoes & Tomato Products



**Featuring new, research-based
recommendations for safer and
better quality food at home**

Know Your Altitude

It is important to know your approximate elevation or altitude above sea level in order to determine a safe processing time for canned foods. Since the boiling temperature of liquid is lower at higher elevations, it is critical that additional time be given for the safe processing of foods at altitudes above sea level.

All towns and communities in Kentucky are below 2,000 feet. The processing times given in this canning guide are for altitudes up to 3,000 feet and are safe for all parts of our state.

DANGER!

Guard Against Food Poisoning

Pressure canning is the only recommended method for canning meat, poultry, seafood, and most vegetables. The bacterium *Clostridium botulinum* in low-acid foods is destroyed when they are processed at the correct time and pressure in pressure canners. Using boiling-water canners for these foods poses a real risk of botulism poisoning.

If these bacteria survive and grow inside a sealed jar of food, they can produce a poisonous toxin. Even a taste of food containing this toxin can be fatal. Low-acid foods should be boiled after their jars are opened, even if you detect no signs of spoilage and are certain the food has been properly processed. In Kentucky, boiling for 13 minutes destroys the toxin that causes poisoning.

This guide, containing up-to-date instructions for preparing safe home-canned foods, is based on research conducted at the Pennsylvania State University. It is adapted from the USDA *Complete Guide to Home Canning*.

Other publications in the home-canning series include:

- FCS3-121, *Canning Tomatoes and Tomato Juice*
- FCS3-325, *Principles of Home Canning*
- FCS3-326, *Selecting, Preparing, and Canning Fruit and Fruit Products*
- FCS3-328, *Selecting, Preparing, and Canning Vegetables and Vegetable Products*
- FCS3-329, *Preparing and Canning Poultry, Red Meat, and Fish*
- FCS3-330, *Preparing and Canning Fermented Foods and Pickled Vegetables*
- FCS3-331, *Preparing and Canning Jams and Jellies*

These publications are also available on our web site at:
<http://www.ca.uky.edu/agc/pubs/pubs.htm>

No product endorsement is implied, nor discrimination against similar products intended, by the mention of brand names in this publication.

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Introduction to the Complete Guide to Home Canning

Home canning has changed greatly in the 170 years since it was introduced as a way to preserve food. Scientists have found ways to produce safer, higher quality products. The first part of this series explains the scientific principles on which canning techniques are based, discusses canning equipment, and describes the proper use of jars and lids. It describes basic canning ingredients and procedures and how to use them to achieve safe, high-quality canned products.

The remaining publications in this series consist of canning guides for specific foods. These guides offer detailed directions for canning fruits and fruit products, tomatoes and tomato products, vegetables, red meats, poultry and fish, pickles and relishes, and jams and jellies. Handy guidelines for choosing the correct quantity and quality of raw foods accompany each set of directions for fruits, tomatoes, and vegetables. Most recipes are designed to yield a full canner load of pints or quarts.

This publication contains many new research-based recommendations for canning safer and better quality food at home. It is an invaluable resource for persons who are canning for the first time. Experienced canners will find updated information to help them improve their canning practices.

About Canned Tomatoes

Select only disease-free, preferably vine-ripened, firm fruit for canning. Do not can tomatoes from dead or frost-killed vines because they may be low in acid. Green tomatoes are more acidic than ripened tomatoes and so can be canned safely using any of the methods described in this guide.

Acidification directions: To ensure safe acidity in whole, crushed, or juiced tomatoes, add 2 tablespoons of bottled lemon juice or ½ teaspoon of citric acid per quart of tomatoes. For pints, use 1 tablespoon bottled lemon juice or ¼ teaspoon citric acid. Acid can be added directly to the jars before filling with a product. Add sugar to offset acid taste, if desired. Four tablespoons of a 5 percent acidity vinegar per quart may be used instead of lemon juice or citric acid. However, vinegar may cause undesirable flavor changes.

Use of a pressure canner will result in higher quality and more nutritious canned tomato products.

boils constantly and vigorously while you add the remaining tomatoes. Simmer 5 minutes after you have added all the tomato pieces.

If you are not concerned about juice separation, simply slice or quarter tomatoes into a large saucepan. Crush, heat, and simmer for 5 minutes before juicing.

Press both types of heated juice through a sieve or food mill to remove skins and seeds. Add 2 tablespoons of bottled lemon juice per quart to the jar, following *acidification directions* in "About Canned Tomatoes." Heat juice again to boiling. Add 1 teaspoon of salt per quart to the jar, if desired. Fill jars with hot tomato juice, leaving ½-inch headspace. Adjust lids and process.

PROCESSING TIME:

- *Boiling-water Canner*—Hot Pack: process pints for 40 minutes; quarts, 45 minutes.
- *Dial-gauge Pressure Canner*—Hot Pack: process pints or quarts for 15 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Hot Pack: process pints or quarts for 15 minutes at 15 pounds of pressure.

Tomato Juice

QUANTITY:

An average of 23 pounds of tomatoes is needed per canner load of 7 quarts; an average of 14 pounds is needed per canner load of 9 pints. A bushel weighs 53 pounds and yields 15 to 18 quarts of juice—an average of 3¼ pounds per quart.

PROCEDURE:

Wash, remove stems, and trim off bruised or discolored portions. To prevent juice from separating, quickly cut about 1 pound of fruit into quarters and put directly into a saucepan. Heat immediately to boiling while crushing. Continue to slowly add and crush freshly cut tomato quarters. Make sure the mixture

Tomato & Vegetable Juice Blend

QUANTITY:

An average of 22 pounds of tomatoes is needed per canner load of 7 quarts. No more than 3 cups of other vegetables may be added for each 22 pounds of tomatoes.

PROCEDURE:

Crush and simmer tomatoes as for making "Tomato Juice." Add no more than 3 cups of any combination of finely chopped celery, onions, carrots, and peppers for 22 pounds of tomatoes. Simmer mixture 20 minutes. Press hot, cooked tomatoes and vegetables through a sieve or food mill to remove skins and

seeds. Add 2 tablespoons of bottled lemon juice per quart to the jar, following *acidification directions* in "About Canned Tomatoes" on page 4 of this guide. Add 1 teaspoon of salt per quart to the jar, if desired. Reheat juice blend to boiling, and fill immediately into jars, leaving ½-inch headspace. Adjust lids and process.

PROCESSING TIME:

- *Boiling-water Canner*—Hot Pack: process pints for 40 minutes; quarts, 45 minutes.
- *Dial-gauge Pressure Canner*—Hot Pack: process pints or quarts for 15 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Hot Pack: process pints or quarts for 15 minutes at 15 pounds of pressure.

Tomatoes, crushed (with no added liquid)

This recipe is similar to that formerly referred to as "Quartered Tomatoes," yielding a high-quality product ideally suited for use in soups, stews, and casseroles.

QUANTITY:

An average of 22 pounds of tomatoes is needed per canner load of 7 quarts; an average of 14 pounds is needed per canner load of 9 pints. A bushel weighs 53 pounds and yields 17 to 20 quarts of crushed tomatoes—an average of 2¾ pounds per quart.

PROCEDURE:

Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split; dip in cold water. Slip off skins and remove cores. Trim off any bruised or discolored portions and quarter. Heat one-sixth of the quarters quickly in a large pot, crushing them with a wooden mallet or spoon as they are added so their juices are released. Continue

heating the tomatoes, stirring to prevent burning. Once the tomatoes are boiling, gradually add remaining quartered tomatoes, stirring constantly. These remaining tomatoes do not need to be crushed. They will soften with heating and stirring. Continue until all tomatoes are added, then boil gently for 5 minutes. Add 2 tablespoons of bottled lemon juice per quart to the jar, following *acidification directions* in "About Canned Tomatoes" on page 4 of this guide. Add 1 teaspoon of salt per quart to the jar, if desired. Fill jars immediately with hot tomatoes, leaving ½-inch headspace. Adjust lids and process.

PROCESSING TIME:

- *Boiling-water Canner*—Hot Pack: process pints for 40 minutes; quarts, 50 minutes.
- *Dial-gauge Pressure Canner*—Hot Pack: process pints or quarts for 15 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Hot Pack: process pints or quarts for 15 minutes at 15 pounds of pressure.

Standard Tomato Sauce

QUANTITY:

For a thin sauce, an average of 35 pounds of tomatoes is needed per canner load of 7 quarts; an average of 21 pounds is needed per canner load of 9 pints. A bushel weighs 53 pounds and yields 10 to 12 quarts of sauce—an average of 5 pounds per quart.

For a thick sauce, an average of 46 pounds of tomatoes is needed per canner load of 7 quarts; an average of 28 pounds is needed per canner load of 9 pints. A bushel weighs 53 pounds and yields 7 to 9 quarts of sauce—an average of 6½ pounds per quart.

PROCEDURE:

Prepare and press as for making "Tomato Juice" on page 4 of this guide. Simmer in large-diameter saucepan until sauce

reaches desired consistency. The volume should be reduced by about one-third for thin sauce or by one-half for thick sauce. Add 2 tablespoons of bottled lemon juice per quart to the jar, following *acidification directions* in "About Canned Tomatoes" on page 4 of this guide. Add 1 teaspoon of salt per quart to the jar, if desired. Fill jars with hot tomato sauce, leaving ¼-inch headspace. Adjust lids and process.

PROCESSING TIME:

- *Boiling-water Canner*—Hot Pack: process pints for 40 minutes; quarts, 45 minutes.
- *Dial-gauge Pressure Canner*—Hot Pack: process pints or quarts for 15 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Hot Pack: process pints or quarts for 15 minutes at 15 pounds of pressure.

Tomatoes, whole or halved (packed in water)

QUANTITY:

An average of 21 pounds of tomatoes is needed per canner load of 7 quarts; an average of 13 pounds is needed per canner load of 9 pints. A bushel weighs 53 pounds and yields 15 to 21 quarts—an average of 3 pounds per quart.

PROCEDURE:

Wash tomatoes. Dip in boiling water for 30 to 60 seconds or until skins split; dip in cold water. Slip off skins and remove cores. Leave whole or halve. Add 2 tablespoons of bottled lemon juice per quart to the jar, following *acidification directions* in "About Canned Tomatoes" on page 4 of this guide. Add 1 teaspoon of salt per quart to the jar, if desired.

Hot pack—Put tomatoes in a large saucepan. Add water to cover. Boil gently for 5 minutes. Fill jars with hot tomatoes; cover with the hot cooking liquid, leaving ½-inch headspace.

Raw pack—Fill jars with raw, peeled tomatoes. Add hot water to cover, leaving ½-inch headspace. Adjust lids and process.

PROCESSING TIME:

- *Boiling-water Canner*—Hot or Raw Pack: process pints for 45 minutes; quarts, 50 minutes.
- *Dial-gauge Pressure Canner*—Hot or Raw Pack: process pints or quarts for 10 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Hot or Raw Pack: process pints or quarts for 10 minutes at 15 pounds of pressure.

Tomatoes, whole or halved (packed in tomato juice)

QUANTITY:

See directions for "Tomatoes, whole or halved (packed in water)."

PROCEDURE:

Wash tomatoes. Dip in boiling water for 30 to 60 seconds or until skins split; dip in cold water. Slip off skins and remove cores. Leave whole or halve. Add 2 tablespoons of bottled lemon juice per quart to the jar, following *acidification directions* in "About Canned Tomatoes" on page 4 of this guide. Add 1 teaspoon of salt per quart to the jar, if desired.

Hot pack—Put tomatoes in a large saucepan. Add tomato juice to cover. Boil tomatoes and juice gently for 5 minutes. Fill jars with hot tomatoes, leaving ½-inch headspace. Add hot tomato juice to the jars to cover the tomatoes, leaving ½-inch headspace.

Raw pack—Heat tomato juice in a saucepan. Fill jars with raw tomatoes, leaving ½-inch headspace. Cover tomatoes in the jars with hot tomato juice, leaving ½-inch headspace. Adjust lids and process.

PROCESSING TIME:

- *Boiling-water Canner*—Hot or Raw Pack: process pints or quarts for 90 minutes.
- *Dial-gauge Pressure Canner*—Hot or Raw Pack: process pints or quarts for 25 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Hot or Raw Pack: process pints or quarts for 25 minutes at 15 pounds of pressure.

Tomatoes, whole or halved (packed raw without added liquid)

QUANTITY:

See directions for “Tomatoes, whole or halved (packed in water)” on page 6 of this guide.

PROCEDURE:

Wash tomatoes. Dip in boiling water for 30 to 60 seconds or until skins split; dip in cold water. Slip off skins and remove cores. Leave whole or halve. Add 2 tablespoons of bottled lemon juice per quart to the jar, following *acidification directions* in “About Canned Tomatoes” on page 4 of this guide. Add 1 teaspoon of salt per quart to the jar, if desired. Fill jars with raw tomatoes, leaving ½-inch headspace. Press tomatoes in the jars until spaces between them fill with juice, leaving ½-inch headspace. Adjust lids and process.

PROCESSING TIME:

- *Boiling-water Canner*—Raw Pack: process pints or quarts for 90 minutes.
- *Dial-gauge Pressure Canner*—Raw Pack: process pints or quarts for 25 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Raw Pack: process pints or quarts for 25 minutes at 15 pounds of pressure.

Tomatoes with Okra or Zucchini

QUANTITY:

An average of 12 pounds of tomatoes and 4 pounds of okra or zucchini is needed per canner load of 7 quarts; an average of 7 pounds of tomatoes and 2½ pounds of okra or zucchini is needed per canner load of 9 pints.

PROCEDURE: Wash tomatoes and okra or zucchini. Dip tomatoes in boiling water for 30 to 60 seconds or until skins split; dip in cold water. Slip off skins, remove cores, and quarter. Trim stems from okra and slice into 1-inch pieces or leave whole; slice or cube zucchini. Bring tomatoes to a boil and simmer 10 minutes. Add okra or zucchini and boil gently for 5 minutes. Add 1 teaspoon of salt for each quart to the jar, if desired. Fill jars with mixture, leaving 1-inch headspace. Adjust lids and process.

If desired, add 4 or 5 pearl onions or 2 onion slices to each jar.

PROCESSING TIME:

- *Dial-gauge Pressure Canner*—Hot pack: process pints for 30 minutes or quarts for 35 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Hot Pack: process pints for 30 minutes or quarts for 35 minutes at 15 pounds of pressure.

Spaghetti Sauce without Meat

30 pounds tomatoes
1 cup chopped onions
5 cloves garlic, minced
1 cup chopped celery or green pepper
**1 pound fresh mushrooms, sliced
(optional)**
¼ cup vegetable oil
2 tablespoons salt
2 tablespoons oregano
4 tablespoons minced parsley
2 teaspoons black pepper
¼ cup brown sugar

YIELD:
About 9 pints.

CAUTION: Do NOT increase the proportion of onions, peppers, or mushrooms.

PROCEDURE:
Wash tomatoes. Dip in boiling water for 30 to 60 seconds or until skins split; dip in cold water. Slip off skins, remove cores, and quarter. Boil 20 minutes, uncovered, in large saucepan. Put through food mill or sieve. Saute onions, garlic, celery or green pepper, and mushrooms in vegetable oil until tender. Combine sauteed vegetables and tomatoes; add salt, spices, and sugar. Bring to a boil. Simmer, uncovered, until thick enough for serving. At this time the initial volume will have been reduced by nearly one-half. Stir frequently to avoid burning. Fill jars, leaving 1 inch of headspace. Adjust lids and process.

PROCESSING TIME:
- *Dial-gauge Pressure Canner*—Hot Pack: process pints for 20 minutes or quarts for 25 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Hot Pack: process pints for 20 minutes or quarts for 25 minutes at 15 pounds of pressure.

Spaghetti Sauce with Meat

30 pounds tomatoes
2½ pounds ground beef or sausage
5 cloves garlic, minced
1 cup chopped onions
1 cup chopped celery or green peppers
**1 pound fresh mushrooms, sliced
(optional)**
2 tablespoons salt
2 tablespoons oregano
4 tablespoons minced parsley
2 teaspoons black pepper
¼ cup brown sugar

YIELD:
About 9 pints.

PROCEDURE: To prepare tomatoes, follow directions for “Spaghetti Sauce without Meat” on page 7 of this guide. Saute beef or sausage until brown. Add garlic, onion, celery or green pepper, and mushrooms. Cook until vegetables are tender. Combine with tomato pulp in large saucepan. Add salt, spices, and sugar. Bring to a boil. Simmer, uncovered, until thick enough for serving. At this time initial volume will have been reduced by nearly one-half. Stir frequently to avoid burning. Fill jars, leaving 1 inch of headspace. Adjust lids and process.

PROCESSING TIME:
- *Dial-gauge Pressure Canner*—Hot Pack: process pints for 60 minutes or quarts for 70 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Hot Pack: process pints for 60 minutes or quarts for 70 minutes at 15 pounds of pressure.

Mexican Tomato Sauce

2½ to 3 pounds chile peppers

18 pounds tomatoes

3 cups chopped onions

1 tablespoon salt

1 tablespoon oregano

½ cup vinegar

YIELD:

About 7 quarts.

CAUTION: Wear rubber gloves while handling chilies or wash hands thoroughly with soap and water before touching your face.

PROCEDURE:

Wash and dry chilies. Slit each pepper down its side to allow steam to escape. Peel peppers using one of the following methods:

Oven or broiler method—Place chilies in 400°F oven or under broiler for 6 to 8 minutes until skins blister.

Range-top method—Cover hot gas or electric burner with heavy wire mesh. Place chilies on burner for several minutes until skins blister.

Place peppers in a pan and cover with a damp cloth. This will make peeling the peppers easier. Allow to cool and then slip off skins. Discard seeds and chop peppers. Wash tomatoes. Dip in boiling water for 30 to 60 seconds or until skins split; dip in cold water. Slip off skins and remove cores. Coarsely chop tomatoes and combine with chopped peppers and remaining ingredients in large saucepan. Bring to a boil. Cover. Simmer 10 minutes. Fill jars, leaving 1 inch of headspace. Adjust lids and process.

PROCESSING TIME:

- *Dial-gauge Pressure Canner*—Hot Pack: process pints for 20 minutes or quarts for 25 minutes at 12 pounds of pressure.
- *Weighted-gauge Pressure Canner*—Hot Pack: process pints for 20 minutes or quarts for 25 minutes at 15 pounds of pressure.

Tomato Ketchup

24 pounds ripe tomatoes

3 cups chopped onions

¾ teaspoon ground red pepper (cayenne)

3 cups cider vinegar (5 percent)

4 teaspoons whole cloves

3 sticks cinnamon, crushed

1½ teaspoons whole allspice

3 tablespoons celery seeds

1½ cups sugar

2 tablespoons salt

YIELD:

6 to 7 pints.

PROCEDURE:

Wash tomatoes. Dip in boiling water for 30 to 60 seconds or until skins split; dip in cold water. Slip off skins and remove cores. Quarter tomatoes into a 4-gallon stockpot or a large kettle. Add onions and red pepper. Bring to boil and simmer, uncovered, 20 minutes. Meanwhile, combine remaining spices in a spice bag and add to vinegar in a 2-quart saucepan. Bring to boil. Cover and turn off heat. Hold tomato mixture 20 minutes. Then discard spice bag and combine vinegar and tomato mixture. Boil about 30 minutes. Put boiled mixture through a food mill or sieve. Return to pot. Add sugar and salt. Boil gently, stirring frequently, until volume is reduced by one-half or until mixture rounds up on a spoon without separation. Fill pint jars, leaving ¼-inch headspace. Adjust lids and process.

PROCESSING TIME:

- *Boiling-water Canner*—Hot Pack: process pints for 20 minutes.

Country Western Ketchup

24 pounds ripe tomatoes
5 chile peppers, sliced and seeded
2 tablespoons salt
2²/₃ cups vinegar (5 percent)
1¹/₄ cups sugar
½ teaspoon ground red pepper (cayenne)
4 teaspoons paprika
4 teaspoons whole allspice
4 teaspoons dry mustard
1 tablespoon whole peppercorns
1 teaspoon mustard seeds
1 tablespoon bay leaves

YIELD:
6 to 7 pints.

PROCEDURE:
Follow directions and processing time for “Tomato Ketchup” on page 9 of this guide.

Blender Ketchup

Using an electric blender eliminates the need for pressing or sieving.

24 pounds ripe tomatoes
1 pound sweet red peppers
1 pound sweet green peppers
2 pounds onions
9 cups vinegar (5 percent)
9 cups sugar
¼ cup canning or pickling salt
3 tablespoons dry mustard
1½ tablespoons ground red pepper
1½ teaspoons whole allspice
1½ tablespoons whole cloves
3 sticks cinnamon

YIELD:
About 9 pints.

PROCEDURE:
Wash tomatoes. Dip in boiling water for 30 to 60 seconds or until skins split; dip in cold water. Slip off skins, core, and

quarter. Remove seeds from peppers and slice into strips. Peel and quarter onions. Blend tomatoes, peppers, and onions at high speed for 5 seconds in electric blender. Pour into a 3- to 4-gallon stockpot or large kettle and heat. Boil gently 60 minutes, stirring frequently. Add vinegar, sugar, salt, and a spice bag containing dry mustard, red pepper, and other spices. Continue boiling and stirring until volume is reduced one-half or ketchup rounds up on a spoon with no separation of liquid and solid. Remove spice bag and fill jars, leaving 1/8-inch headspace. Adjust lids and process.

PROCESSING TIME:
- *Boiling-water Canner*—Hot Pack:
process pints for 20 minutes.

Chile Salsa (Hot Tomato-Pepper Sauce)

2 pounds chile peppers
5 pounds tomatoes
1 pound onions
1 cup vinegar (5 percent)
3 teaspoons salt
½ teaspoon pepper

YIELD:
6 to 8 pints.

CAUTION: Wear rubber gloves while handling chilies or wash hands thoroughly with soap and water before touching your face.

PROCEDURE:
Peel and prepare chile peppers as described in making “Mexican Tomato Sauce” on page 8 of this guide. Wash tomatoes. Dip in boiling water for 30 to 60 seconds or until skins split; dip in cold water. Slip off skins and remove cores. Coarsely chop tomatoes and combine with chopped onions, peppers, and remaining ingredients in a large saucepan. Heat to boiling. Reduce heat and simmer 10 minutes. Fill jars, leaving 1/2-inch headspace. Adjust lids and process.

PROCESSING TIME:
- *Boiling-water Canner*—Hot Pack:
process pints for 20 minutes.