

Let's Preserve



ACIDIFICATION

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 of bottled lemon juice or ¼ teaspoon of citric acid. Add sugar to offset acidic taste, if desired.

Tomatoes

Quality

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

Recommended Varieties

Slicing varieties are good choices for making juice and crushed and whole tomato products. Paste tomatoes are good for making sauce, ketchup, and purees. Yellow tomatoes are not really any lower in acid than red; they contain more sugar and, therefore, have a sweeter taste.

FREEZING PROCEDURE

Select firm, ripe tomatoes with deep-red color. Wash and dip in boiling water for 30 seconds to remove skins. Core and peel. Freeze whole or in pieces. Pack into containers, leaving 1-inch headspace. Seal and freeze. Use only for cooking or seasoning since tomatoes will not be solid when thawed. Note: Cooking or stewing tomatoes provides better texture and flavor.

JUICE

Wash, sort, and trim firm, vine-ripened tomatoes. Cut in quarters or eighths. Simmer for 5 to 10 minutes. Press through a sieve. If desired, season with 1 teaspoon of salt to each quart of juice. Pour into containers, leaving headspace. Seal and freeze.

STEWED TOMATOES

Remove stem ends and peel and quarter ripe tomatoes. Cover and cook until

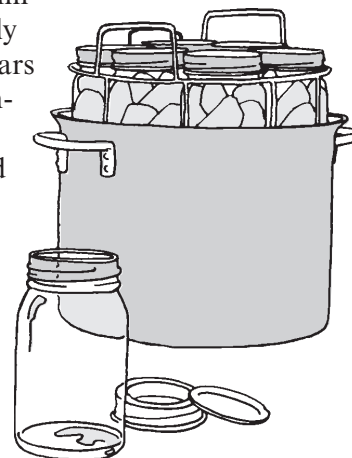
tender (10–20 minutes). Place pan containing tomatoes in cold water to cool. Pack into containers, leaving headspace. Seal and freeze.

CANNING PROCEDURE

Wash jars. Prepare lids according to manufacturer's instructions. Fill hot tomato products in jars. Remove air bubbles. Wipe sealing edge of jars with a clean, damp paper towel. Add lids and tighten screw bands. Process in a boiling water or pressure canner.

TO PROCESS IN A BOILING WATER CANNER

Fill canner halfway with water and preheat to 180°F for hot packs or 140°F for raw packs. Load sealed jars onto the canner rack and lower with handles, or load one jar at a time with a jar lifter onto rack in canner. Add water, if needed, to 1 inch above jars and add canner cover. When water boils vigorously, lower heat to maintain a gentle boil and process jars for the time given in Table 2. After processing is complete, remove the canner from heat and remove the canner lid. Wait 5 minutes, carefully remove the jars from the canner with a jar lifter, and place them on a towel or rack to air-dry.



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Table 1. Quantities of fresh tomatoes needed for tomato products.

PRODUCT	POUNDS OF FRESH TOMATOES NEEDED FOR A CANNER LOAD OF			
	1 QUART	1 PINT	7 QUARTS	9 PINTS
Juice	3¼	—	23	14
Juice-vegetable blend	3	1½	22	14
Whole, halved, crushed	3	1½	21	13
Tomatoes and okra or zucchini	—	—	12	7
Chili salsa	—	—	—	7
Standard sauce (thin)	5	2½	35	21
Standard sauce (thick)	6½	3	46	28
Spaghetti sauce	6⅓	3⅓	44	30
Hot barbecue sauce	6⅓	3⅓	44	30
Regular ketchup	7½	4	53	36
Western ketchup	7½	4	53	36
Blender ketchup	5	2⅔	35	24



Table 2. Recommended processing times in a boiling water canner.

PRODUCT	STYLE OF PACK	JAR SIZE	MINUTES OF PROCESSING TIME AT ALTITUDES OF			
			0–1,000 FT	1,001–3,000 FT	3,001–6,000 FT	ABOVE 6,000 FT
Tomato juice, tomato vegetable blend, and crushed tomatoes	Hot	Pints	35	40	45	50
		Quarts	45	50	55	60
Whole or halved tomatoes packed in water	Hot or raw	Pints	40	45	50	55
		Quarts	45	50	55	60
Whole or halved tomatoes packed in juice or without added liquid	Hot or raw	Pints or quarts	85	90	95	100
Chili salsa	Hot	Pints	15	20	20	25
			35	40	45	50
Standard tomato sauces (thin or thick)	Hot	Pints	35	40	45	50
		Quarts	40	45	50	55
All tomato ketchups	Hot	Pints	15	20	20	25

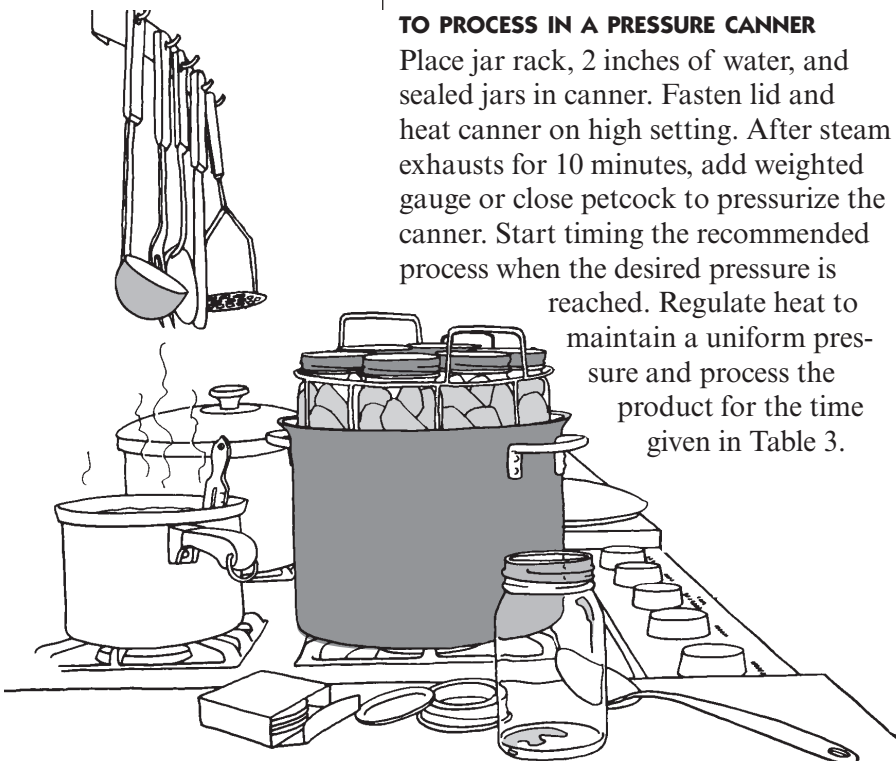
Table 3. Canner processing times and pressures at designated altitudes.

PRODUCT	STYLE OF PACK	JAR SIZE	PROCESS TIME (MIN)	CANNER GAUGE PRESSURE AT ALTITUDES OF					
				DIAL GAUGE				WEIGHTED GAUGE	
				0-2,000 FT (LBS)	2,001-4,000 FT (LBS)	4,001-6,000 FT (LBS)	6,001-8,000 FT (LBS)	0-1,000 FT (LBS)	ABOVE 1,000 FT (LBS)
Tomato juice, tomato-vegetable juice blend, or crushed tomatoes	Hot	Pints or quarts	15	11	12	13	14	10	15
Whole or halved tomatoes packed in water	Hot or raw	Pints or quarts	10	11	12	13	14	10	15
Whole or halved tomatoes packed in juice or without added liquid	Hot or raw	Pints or quarts	25	11	12	13	14	10	15
Tomatoes and okra or zucchini	Hot	Pints	30	11	12	13	14	10	15
	Hot	Quarts	35	11	12	13	14	10	15
Standard tomato sauces (thin or thick)	Hot	Pints or quarts	15	11	12	13	14	10	15
Spaghetti sauce without meat	Hot	Pints	20	11	12	13	14	10	15
	Hot	Quarts	25	11	12	13	14	10	15
Spaghetti sauce with meat	Hot	Pints	60	11	12	13	14	10	15
	Hot	Quarts	70	11	12	13	14	10	15
Hot barbecue sauce	Hot	Pints	20	11	12	13	14	10	15
	Hot	Quarts	25	11	12	13	14	10	15

TO PROCESS IN A PRESSURE CANNER

Place jar rack, 2 inches of water, and sealed jars in canner. Fasten lid and heat canner on high setting. After steam exhausts for 10 minutes, add weighted gauge or close petcock to pressurize the canner. Start timing the recommended process when the desired pressure is reached. Regulate heat to maintain a uniform pressure and process the product for the time given in Table 3.

When processing is complete, remove canner from heat. Air-cool canner until it is fully depressurized. Slowly remove the weighted gauge or open petcock and allow the canner to cool at room temperature for 10 more minutes. Then, unfasten and carefully remove the canner lid, remove the jars with a jar lifter, and place them on a towel or rack to cool for 12 to 24 hours. Do not retighten the screw bands. Remove screw bands from the cooled jars and check lid seals. If the center of the lid is indented, wash, dry, label, and store jars in a clean, cool, dark place. If the lid is unsealed, examine and replace jar if defective, use new lids, and reprocess as before. Wash screw bands and store separately. Tomato products are best if eaten within one year and are safe as long as lids remain vacuum sealed.



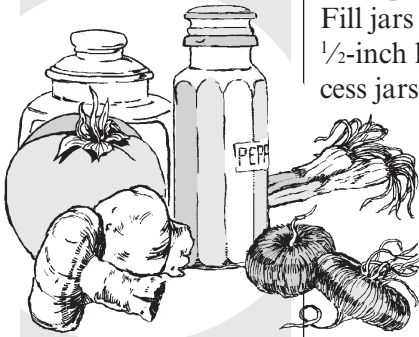


Tomato Juice

QUANTITY. See Table 1 for guidelines.

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 saucepan. Heat immediately to boiling while crushing. Continue to slowly add and crush freshly cut tomato quarters to the boiling mixture. Make sure the mixture boils constantly and vigorously while you add the remaining tomatoes. Simmer for 5 minutes after you add all 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 bottled lemon juice or citric acid to jars (see acidification instructions on page 1). Reheat juice to boiling. Add 1 teaspoon of salt per quart, if desired. Fill jars with hot tomato juice, leaving $\frac{1}{2}$ -inch headspace. Adjust lids and process jars as described in Table 2 or 3.



Tomato and Vegetable Juice Blend

QUANTITY. See Table 1 for guidelines.

PROCEDURE. Crush and simmer tomatoes the same as for making tomato juice. To make 7 quarts, use 22 pounds of tomatoes, and add no more than 3 cups of any combination of finely chopped celery, onions, carrots, and peppers for every 22 pounds of tomatoes. Simmer mixture for 20 minutes. Press hot, cooked tomatoes and vegetables through a sieve or food mill to remove skins and seeds. Add bottled lemon juice or citric acid to jars (see acidification directions on page 1). Add 1 teaspoon of salt per quart, if desired. Reheat tomato-vegetable juice blend to boiling and fill immediately into jars, leaving $\frac{1}{2}$ -inch headspace. Adjust lids and process jars as described in Table 2 or 3.

Whole, Halved, or Crushed Tomatoes

QUANTITY. See Table 1 for guidelines.

PROCEDURE. For whole or halved tomatoes packed in water: Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split. Then dip in cold water, slip off skins, and remove cores. Leave whole or halve. Add bottled lemon juice or citric acid to jars (see acidification directions on page 1).

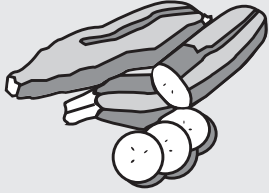
- *Hot pack:* Place prepared tomatoes in saucepan and cover with water. Bring tomatoes to a boil in water and boil gently for 5 minutes. Fill jars with hot tomatoes. Add 1 teaspoon of salt per quart if desired, and add enough hot cooking water to cover tomatoes, leaving $\frac{1}{2}$ -inch headspace.
- *Raw pack:* Fill jars with raw, peeled tomatoes, add 1 teaspoon of salt per quart, and add hot water to cover tomatoes, leaving $\frac{1}{2}$ -inch headspace. Adjust lids and process jars as described in Table 2 or 3.

PROCEDURE. For whole or halved tomatoes packed with tomato juice or filled without added liquids: Prepare, peel, and acidify tomatoes as described for tomatoes packed in water. Add 1 teaspoon of salt per quart, if desired.

- *Raw pack with no added liquid:* Fill jars with raw-packed tomatoes, pressing until spaces between them fill with juice. Leave $\frac{1}{2}$ -inch headspace.
- *Raw pack in tomato juice:* Pack raw tomatoes in jars, leaving $\frac{1}{2}$ -inch headspace. Cover tomatoes in the jars with hot tomato juice, leaving $\frac{1}{2}$ -inch headspace.
- *Hot pack in tomato juice:* Bring tomatoes to a boil in tomato juice and boil gently for 5 minutes. Fill jars with hot tomatoes, allowing $\frac{1}{2}$ -inch headspace. Cover tomatoes with hot juice, leaving $\frac{1}{2}$ -inch headspace. Adjust lids and process jars as described in Table 2 or 3.

PROCEDURE. For crushed tomatoes: Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split. Then dip

in cold water, slip off skins, and remove cores. Trim off any bruised or discolored portions and quarter. Heat quarters quickly in a large pot, stirring to prevent burning. Boil gently for 5 minutes. Add bottled lemon juice or citric acid to jars (see acidification directions on page 1). Add 1 teaspoon of salt per quart, if desired. Fill jars immediately with quartered hot tomatoes, leaving $\frac{1}{2}$ -inch headspace. Adjust lids and process jars as described in Table 2 or 3.



Tomatoes and Okra or Tomatoes and Zucchini

QUANTITY. See Table 1 for guidelines.

PROCEDURE. Wash tomatoes and 4 pounds of okra or zucchini. Dip tomatoes in boiling water for 30 to 60 seconds or until skins split. Then 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 if used. Bring tomatoes to a boil and simmer for 10 minutes. Add okra or zucchini and boil gently 5 minutes. Add 1 teaspoon of salt to each quart, if desired. Fill jars with mixture, leaving 1-inch headspace. Adjust lids and process jars using a pressure canner as described in Table 3.

VARIATION. You may add four or five pearl onions or two onion slices to each jar.



Chili Salsa (Hot Pepper-Tomato Dip)

7 lbs tomatoes, chopped
1–2 lbs chili peppers, chopped
1 lb onion, chopped
1 cup vinegar or $\frac{1}{2}$ cup bottled lemon juice
1 tbsp salt
 $\frac{1}{2}$ tsp pepper

Yields approx. 9 pints

PROCEDURE. Prepare hot peppers and tomatoes as described on next page for use in making hot barbecue sauce. Combine all ingredients in a large kettle. Bring to a boil and simmer for 10 minutes. Fill jars, leaving $\frac{1}{2}$ -inch headspace. Adjust lids and process jars as described in Table 2.

Standard Tomato Sauce

PROCEDURE. Italian or pear-type varieties are good for making sauce. Wash tomatoes, remove stems, and trim off bruised or discolored portions. To prevent sauce from separating, quickly cut about 1 pound of tomatoes into quarters and put directly into saucepan. Heat immediately to boiling while crushing. Continue to slowly add and crush freshly cut tomato quarters to the boiling mixture. Make sure the mixture boils constantly and vigorously while you add remaining tomatoes. Simmer for 5 minutes after all tomatoes are added. If you are not concerned about sauce separating, simply slice or quarter tomatoes into a large saucepan. Crush, heat, and simmer for 5 minutes before pressing. Press either type of heated juice through sieve or food mill to remove skins and seeds. Heat juice again to boiling. Simmer in a large-diameter saucepan until sauce reaches desired consistency. Boil until 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 jars (see acidification directions on page 1). Fill jars, leaving $\frac{1}{4}$ -inch headspace. Adjust lids and process jars as described in Table 2 or 3.

Spaghetti Sauce without Meat

30 lbs tomatoes
1 cup onions, chopped
5 cloves garlic, minced
1 cup celery or green pepper, chopped
1 lb fresh mushrooms, sliced (optional)
4½ tsp salt
2 tbsp oregano
4 tbsp parsley, minced
2 tsp black pepper
¼ cup brown sugar
¼ cup vegetable oil
Yields approx. 9 pints

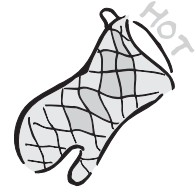
PROCEDURE. Do not increase the proportion of onions, peppers, or mushrooms. Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split. Dip in cold water and slip off skins. Remove cores and quarter tomatoes. Boil for 20 minutes uncovered in large saucepan. Squeeze out juice with a food mill or sieve. Sauté onions, garlic, celery or peppers, and mushrooms (if desired) in vegetable oil until tender. Combine sautéed vegetables and tomatoes and add remainder of spices, salt, 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 headspace. Adjust lids and process jars using a pressure canner as described in Table 3.

PROCEDURE. *For making sauce with meat:* sauté 2½ pounds of ground beef or sausage until brown. Using the recipe for making sauce without meat, add the quantities specified for garlic, onion, celery or green pepper, and mushrooms. Cook until vegetables are tender. Combine sautéed meat and vegetables with the tomato juice. Then follow the directions above for making sauce without meat. Process in a pressure canner as directed in Table 3.



Hot Barbecue Sauce

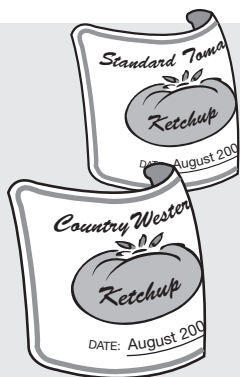
2½–3 lbs chili peppers
30 pounds of tomatoes
3 cups onions, chopped
1 tbsp salt
1 tbsp oregano
½ cup vinegar (5%)
Yields approx. 9 pints



PROCEDURE. Wear rubber gloves while handling chili peppers or wash hands thoroughly with soap and water before touching your face. Wash and dry chili peppers. Slit the sides of peppers and peel them using one of the following methods:

- *Oven or broiler method:* Place chili peppers in oven (400°F) or broiler for 6 to 8 minutes until skins blister.
- *Range-top method:* Cover hot burner, either gas or electric, with heavy wire mesh. Place chili peppers on burner for several minutes until skins blister.

Allow peppers to cool. Place in a pan and cover with a damp cloth. This will make peeling the peppers easier. After several minutes, peel each pepper. Cool and slip off skins. Discard seeds and chop peppers. If desired, leave skins on and grind or coarsely chop peppers. 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. Coarsely chop tomatoes and combine chopped peppers and remaining ingredients in a large kettle. Bring to a boil. Simmer uncovered for 2 to 3 hours or until the initial volume is reduced by one-third to one-half. Stir frequently to avoid burning. Fill jars, leaving 1-inch headspace. Adjust lids and process using a pressure canner as described in Table 3.



Standard Tomato Ketchup

- 24 lbs ripe tomatoes
- 3 cups onions, chopped
- $\frac{3}{4}$ tsp ground red pepper (cayenne)
- 3 cups cider vinegar (5%)
- 4 tsp whole cloves
- 3 sticks cinnamon, crushed
- $1\frac{1}{2}$ tsp whole allspice
- 3 tbsp celery seeds
- $1\frac{1}{2}$ cups sugar
- $\frac{1}{4}$ cup salt

Yields 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 stock pot or a large kettle. Add onions and red peppers. Bring to a boil and simmer uncovered for 20 minutes. Combine spices in a spice bag and add vinegar in a 2-quart saucepan. Bring to boil. Cover, turn off heat, and hold tomato mixture for 20 minutes. Then remove spice bag and combine vinegar and tomato mixture. Boil for about 30 minutes. Put boiled mixture through a food mill or sieve. Return to pot. Add sugar and salt, boil gently, and stir frequently until volume is reduced by one-half or until mixture rounds up on spoon without separation. Fill pint jars, leaving $\frac{1}{8}$ -inch headspace. Adjust lids and process jars as described in Table 2.

Country Western Ketchup

- 24 lbs ripe tomatoes
- 5 chili peppers, sliced and seeded
- $\frac{1}{4}$ cup salt
- $2\frac{2}{3}$ cups vinegar (5%)
- $1\frac{1}{4}$ cups sugar
- $\frac{1}{2}$ tsp ground red pepper (cayenne)
- 4 tsp paprika
- 4 tsp whole allspice
- 4 tsp dry mustard
- 1 tbsp whole peppercorns
- 1 tsp mustard seeds
- 1 tbsp bay leaves

Yields 6 to 7 pints

PROCEDURE. Follow directions for standard tomato ketchup above.



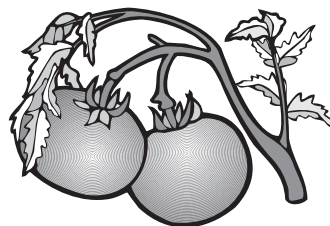
Blender Ketchup

Use an electric blender to eliminate the need for pressing or sieving.

24 lbs ripe tomatoes
2 lbs onions
1 lb sweet red peppers
1 lb sweet green peppers
9 cups vinegar (5%)
9 cups sugar
¼ cup canning or pickling salt
3 tbsp dry mustard
1½ tbsp ground red pepper
1½ tbsp whole allspice
1½ tbsp whole cloves
3 three-inch sticks of cinnamon

Yields 9 pints

PROCEDURE. Wash tomatoes and dip in boiling water for 30 to 60 seconds or until skins split. Then 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 stock pot or large kettle and heat. Boil gently for 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 and ketchup rounds up on a spoon with no separation of liquid and solids. Remove spice bag and fill jars, leaving ⅛-inch headspace. Adjust lids and process jars as described in Table 2.



For additional information about food preservation, visit the Penn State Food Safety Web site at foodsafety.cas.psu.edu and select the Home Food Preservation Web site, or contact Penn State Cooperative Extension in your county.

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