



# Let's Preserve Tomatoes

## Recommended Varieties

Campbell 1327, Heinz 1350, Heinz 1370, Pik-Red, Supersonic, and late-season Ramapo are good choices for making juice, crushed, and whole tomato products. Italian and pear-type varieties are good for making sauce, ketchup, and purees.

## Quantity

Table 1. Quantities of Fresh Tomatoes Needed for Tomato Products

Product	Pounds of fresh tomatoes needed for			
	One quart	One pint	A canner load of 7 quarts	A canner load of 9 pints
Juice	3-1/4	–	23	14
Juice vegetable blend	3	1-1/2	22	14
Whole, halved, crushed	3	1-1/2	21	13
Tomatoes and okra or zucchini	–	–	12	7
Chili salsa	–	–	–	7
Standard sauce – thin	5	2-1/2	35	21
Standard sauce – thick	6-1/2	3	46	28
Spaghetti sauce	6-1/3	3-1/3	44	30
Hot barbecue sauce	6-1/3	3-1/3	44	30
Regular ketchup	7-1/2	4	53	36
Western ketchup	7-1/2	4	53	36
Blender ketchup	5	2-2/3	35	24

## 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.

## Acidification

To ensure safe acidity in whole, crushed, or juiced tomatoes, add 2 tablespoons of bottled lemon juice or 1/2 teaspoon of citric acid per quart of tomatoes. For pints, use 1 tablespoon of bottled lemon juice or 1/4 teaspoon citric acid. Sugar to taste may be added to offset acid taste.



## Process Times

**Table 2. Recommended Processing Times in a Boiling Water Canner**

Product	Pack	Jar size	Minutes of processing time at altitudes of			
			0-1000 ft.	1001-3000 ft.	3001-6000 ft.	Above 6000 ft.
Tomato juice, tomato vegetable juice 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 in juice or without added liquid	Hot or raw	Pints	85	90	95	100
		Quarts	85	90	95	100
Chili salsa	Hot	Pints	15	20	20	25
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

## Freezing

Freezing of tomato products is an acceptable practice but not recommended for these reasons. Frozen whole tomatoes become limp after thawing. Quality of canned products is very acceptable, and overall costs of preserving tomatoes favor canning.

## Canning Procedure

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

*To process in a boiling water canner, fill canner halfway with water and preheat to 180 degrees F for hot packs or 140 degrees 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 a level of 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 (below).*

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 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 (below).

When processing is complete, remove canner from heat. Air-cool canner until it is fully depressurized. Slowly remove weighted gauge or open petcock, wait 2 more minutes, and unfasten and carefully remove canner lid.

After processing is completed, remove jars from canner with a jar lifter and place on a towel or rack. Do not retighten screw bands. Air-cool jars 12 to 24 hours. Remove screw bands 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 1 year and safe as long as lids remain vacuum sealed.



**Table 3. Canner Processing Times and Pressures at Designated Altitudes**

Product	Style pack	Jar size	Process time (min)	Dial gauge canner				Weighted gauge	
				Canner gauge pressure at altitudes of					
				0-2000 ft. (lbs)	2001-4000 ft. (lbs)	4001-6000 ft. (lbs)	6001-8000 ft. (lbs)	0-1000 ft. (lbs)	Above 1000 ft. (lbs)
Tomato juice, tomato vegetable juice blend, and crushed tomatoes	Hot	Pint Quart	15	11	12	13	14	10	15
			15	11	12	13	14	10	15
Whole or halved tomatoes packed in water	Hot or raw	Pint Quart	10	11	12	13	14	10	15
			10	11	12	13	14	10	15
Whole or halved tomatoes packed in juice or without added liquid	Hot or raw	Pint Quart	25	11	12	13	14	10	15
			25	11	12	13	14	10	15
Tomatoes and okra or zucchini	Hot	Pint Quart	30	11	12	13	14	10	15
			35	11	12	13	14	10	15
Standard tomato sauces (thin or thick)	Hot	Pint Quart	15	11	12	13	14	10	15
			15	11	12	13	14	10	15
Spaghetti sauce with meat	Hot	Pint Quart	60	11	12	13	14	10	15
			70	11	12	13	14	10	15
Hot barbecue sauce	Hot	Pint Quart	20	11	12	13	14	10	15
			25	11	12	13	14	10	15

## Tomato Juice

### Quantity

See Table 1 (page 1) for guidelines.

### Procedure

Wash, remove stems, and trim off bruised or discolored portions. To prevent juice from separating, quickly cut about a 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 5 minutes after you add all the 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 2. Reheat juice to boiling. Add 1 teaspoon salt per quart, if desired. Fill jars with hot tomato juice, leaving 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 (page 1) for guidelines.

### Procedure

Crush and simmer tomatoes 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 each 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 bottled lemon juice or citric acid to jars; see acidification directions on page 1. Add 1 teaspoon salt per quart, if desired. Reheat tomato-vegetable juice blend to boiling and fill immediately

into jars, leaving 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 (page 1) for guidelines.

### Procedure

**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, page 1. Add 1 teaspoon of salt per quart if desired, and add enough hot cooking water to cover tomatoes, leaving 1/2-inch headspace. *Raw pack* – Fill jars with raw peeled tomatoes, add 1 teaspoon salt per quart, and add hot water to cover tomatoes, leaving 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. Fill jars with raw-packed tomatoes, leaving 1/2-inch headspace; or bring tomatoes to a boil in water or tomato juice and boil gently 5 minutes. Add 1 teaspoon of salt per quart, if desired. Fill jars with hot tomatoes, allowing 1/2-inch headspace. Cover tomatoes with hot juice or press tomatoes until spaces fill with juice, leaving 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 5 minutes. Add bottled lemon juice or citric acid to jars; see acidification directions on page 2. Add 1 teaspoon of salt per quart if desired. Fill jars immediately with quartered hot tomatoes, leaving 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 (page 1) for guidelines.

## Procedure

Wash tomatoes and 4 pounds of okra or zucchini if making a 7 quart batch and 2.5 pounds if you are making a 9 pint batch. These ratios have been tested for safety and altering them is not recommended. 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 10 minutes. Add okra and zucchini and boil gently 5 minutes. Add 1 teaspoon salt to each quart, if desired. Fill jars with mixture, leaving 1-inch headspace. Adjust lids and process jars as described in Table 3.

*Variation:* You may add four or five pearl onions or two onion slices to each jar.

# Standard Tomato Sauce

## Procedure

Wash, 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 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 a 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 1/4-inch headspace. Adjust lids and process jars as described in Table 2 (page 2) or Table 3 (page 3).

## Spaghetti Sauce without Meat

### Ingredients

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

### 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 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 as described in Table 3 (page 3).

**Procedure for making sauce with meat.** Sauté 2-1/2 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.

*Yield: about 9 pints*



## Chili Salsa (Hot Pepper - Tomato Dip)

### Ingredients

7 lbs. tomatoes, chopped  
1-2 lbs. chili peppers, chopped  
1 lb. onion, chopped  
1 cup vinegar or 1/2 cup bottled  
lemon juice  
1 tbsp. salt  
1/2 tsp. pepper

### Procedure

Prepare hot peppers and tomatoes as described on pages 5-6 for use in making hot barbecue sauce. Combine all ingredients in a large kettle. Bring to a boil and simmer ten minutes. Fill jars, leaving 1/2-inch headspace. Adjust lids and process jars as described in Table 2 (page 2).

*Yield: about 9 pints*



## Hot Barbecue Sauce

### Ingredients

2-1/2 to 3 lbs. chili peppers  
30 lbs. tomatoes  
3 cups onions, chopped  
1 tbsp. salt  
1 tbsp. oregano  
1/2 cup vinegar (5%)

### Procedure

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

**Oven or broiler method:** Place chilis in oven (400 degrees F) or broiler 6-8 minutes until skins blister.

**Range top method:** Cover hot burner, either gas or electric, with heavy wire mesh. Place chilis 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, 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 as described in Table 3 (page 3).

*Yield: about 9 pints*



## Standard Tomato Ketchup

### Ingredients

24 lbs. ripe tomatoes  
3 cups onions, chopped  
3/4 tsp. ground red pepper  
(cayenne)  
3 cups cider vinegar (5%)  
4 tsp. whole cloves  
3 sticks cinnamon, crushed  
1-1/2 tsp. whole allspice  
3 tbsp. celery seeds  
1-1/2 cups sugar  
1/4 cup 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 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 let stand 20 minutes. Then, remove 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, and stir frequently until volume is reduced by one-half or until mixture rounds up on spoon without separation. Fill pint jars, leaving 1/8-inch headspace. Adjust lids and process jars as described in Table 2 (page 2).



## Blender Ketchup

### Ingredients

24 lbs. ripe tomatoes  
2 lbs. onions  
1 lb. sweet red peppers  
1 lb. sweet green peppers  
9 cups vinegar (5%)  
9 cups sugar  
1/4 cup canning or pickling salt  
3 tbsp. dry mustard  
1-1/2 tbsp. ground red pepper  
1-1/2 tsp. whole allspice  
1-1/2 tsp. whole cloves  
3 three-inch sticks of cinnamon

*Yield: 9 pints*

### Procedure

**Uses electric blender, eliminating need for pressing or sieving.**

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 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 1/8-inch headspace. Adjust lids and process jars as described in Table 2 (page 2).



# Country Western Ketchup

## Ingredients

24 lbs. ripe tomatoes  
 5 chili peppers, sliced and seeded  
 1/4 cup salt  
 2-2/3 cups vinegar (5%)  
 1-1/4 cups sugar  
 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 seed  
 1 tbsp. bay leaves

## Procedure

Follow directions for standard tomato ketchup on page 7.

*Yield: 6 to 7 pints*



## Nutritional Information

### Average Content of a 1/2 Cup Serving (4 to 4.4 oz.) of Tomato Products

	Raw		Canned		
	Tomato unpeeled	Tomato peeled	Tomato juice	Whole or crushed salted	Whole or crushed unsalted
Calories	10	10	23	25	25
Carbohydrates, g	2	2	5	5	5
Fats, g	0.1	0.1	0.1	0.3	0.3
Protein, g	0.5	0.5	1.1	1.2	1.2
Sodium, mg	1.5	1.5	243	156	7
Riboflavin*	2	—	2	2	2
Thiamine*	2	—	4	4	4
Vitamin A*	8	8	20	20	20
Vitamin C*	15	15	30	30	30

\*Expressed as percentage of the U.S. Recommended Daily Allowances (US RDA). Other vitamins contained at insignificant levels.

*Developed by Penn State Cooperative Extension with special project funds from Extension Service, U.S. Department of Agriculture.*

*A Member of the University of Maine System*

Published and distributed in furtherance of Acts of Congress of May 8 and June 30, 1914, by the University of Maine Cooperative Extension, the Land Grant University of the state of Maine and the U.S. Department of Agriculture cooperating. Cooperative Extension and other agencies of the U.S.D.A. provide equal opportunities in programs and employment. 9/11