

# Let's Preserve: Tomatoes and Tomato Products

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Several tomato plants can yield lots of fruit. Preserving tomatoes in various ways to serve throughout the year is an excellent way to use your harvest.

This publication provides procedures to safely process a variety of tomato products. The publication *Let's Preserve: Canning Basics*, (EC434) gives information on boiling-water and pressure canners, jar and lid selection, and preparation.

## Tomato Selection and Preparation

Select disease-free, preferably vine-ripened, firm tomatoes 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 recommendation in this publication.

For nine pints of canned tomato products, you need 13-14 pounds of tomatoes. Approximately 23 pounds are needed for seven quarts of canned product.

To prepare fruit, wash, remove stems, and trim bruised or discolored portions. To remove the peel, dip tomatoes in boiling water for 30 to 60 seconds until skins split. Dip into cold water and slip off skins.

## Acidification

Tomatoes usually are considered an acid food, although some varieties may have pH values above 4.6. To ensure proper acidity in tomatoes, add one of the following acids directly to each jar before filling with product:

Acid	Amount per:	
	Pint	Quart
Bottled lemon juice	1 tbsp	2 tbsp
Citric acid	1/4 tsp	1/2 tsp
Vinegar (5% acidity)	2 tbsp	4 tbsp



Photo courtesy of National Presto Industries, Inc.

Add sugar to offset acid taste, if desired. Vinegar may cause an undesirable flavor.

**NOTE:** Adding acid to over-ripe tomatoes will not increase the acid level enough to ensure a safe product.

Properly acidified tomatoes are acid foods and can be safely processed in a boiling-water canner. Using a pressure canner will result in higher quality canned tomato products. Refer to the publication *Let's Preserve: Canning Basics* (EC434).

## Canning Tomatoes with or Without Salt

Tomatoes can be canned with or without salt. If salt is desired, add 1/2 teaspoon to pints or 1 teaspoon to quarts before you put on the lid. Add salt substitutes, if desired, when serving.

## Determine Your Altitude

Water boils at 212°F at sea level. As the elevation increases, water boils at lower temperatures and foods take longer to cook. To ensure safely canned foods at altitudes above sea level, lengthen the processing time for

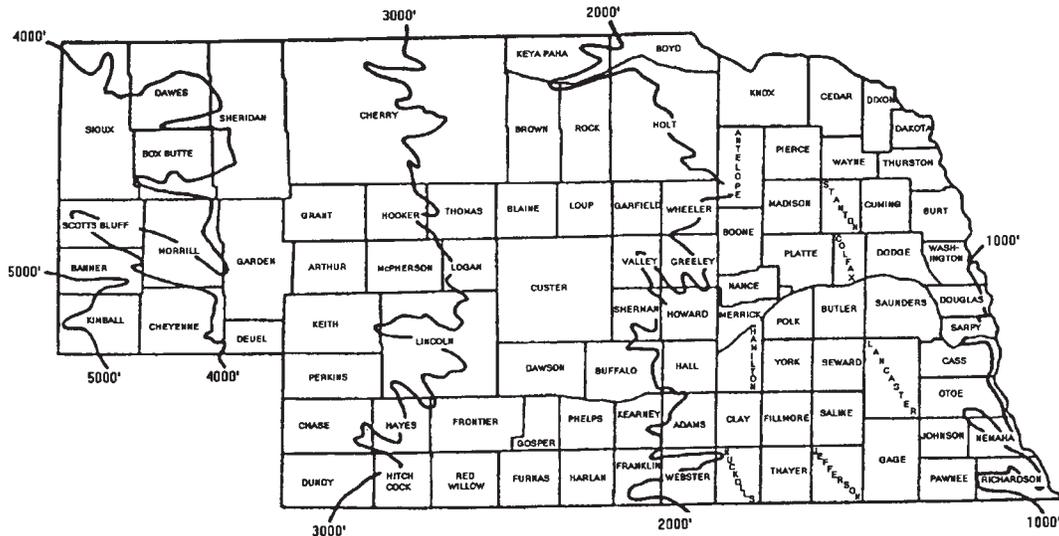


Figure 1. Altitude ranges in Nebraska.

Map was prepared by Les Howard, cartographer, UNL School of Natural Resources

boiling-water canning methods. For the pressure canned method, increase the pressure to assure a safely canned product.

The map above shows Nebraska altitudes. Find your area and check the tables for the correct processing time and pressure for your altitude.

### Tomato Mixtures

Tomato mixtures may be canned for later use. With the addition of low-acid foods, these products must be processed in a pressure canner. Processing times and canner pressures are listed on Pages 7-8.

#### Spaghetti Sauce Without Meat

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

Yield: About 9 pints

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

**Procedure:** Wash tomatoes and dip them 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 tomatoes 20 minutes, uncovered, in large saucepan. Put through food mill or sieve. Saute onions, garlic, celery or peppers, and mushrooms (if desired) in vegetable oil until tender. Combine sauteed vegetables and tomatoes and add 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; leave 1-inch headspace.

For processing information, refer to Page 7.

#### Spaghetti Sauce With Meat

- |                                       |   |
|---------------------------------------|---|
| 30 lb tomatoes                        | 1 lb fresh mushrooms, sliced (optional) |
| 2 1/2 lb ground beef or sausage       | 4 1/2 tsp salt                          |
| 5 cloves garlic, minced               | 2 tbsp oregano                          |
| 1 cup chopped onions                  | 2 tbsp minced parsley                   |
| 1 cup chopped celery or green peppers | 2 tsp black pepper                      |
|                                       | 1/4 cup brown sugar                     |

Yield: About 9 pints

**Procedure:** To prepare tomatoes, follow directions for *Spaghetti Sauce Without Meat*. Saute beef or sausage until brown. Add garlic, onion, celery or green pepper, and mushrooms, if desired. Cook until vegetables are tender. Combine with tomato pulp in large saucepan. Add spices, salt, 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; leave 1-inch headspace.

For processing information, refer to Page 8.

#### Mexican Tomato Sauce

- |                             |                 |
|-----------------------------|-----------------|
| 2-1/2 to 3 lb chile peppers | 1 tbsp salt     |
| 18 lb tomatoes              | 1 tbsp oregano  |
| 3 cups chopped onions       | 1/2 cup vinegar |

Yield: About 7 quarts

**Caution: Wear plastic or rubber gloves and do not touch your face while handling or cutting hot peppers. If you do not wear gloves, wash hands thoroughly with soap and water before touching your face or eyes.**

**Procedure:** Wash and dry chiles. Slit each pepper on its side to allow steam to escape. Peel peppers by placing chiles in oven (400°F) or broiler for six to eight minutes until skins blister. Allow peppers to cool. Place in a pan and cover with a damp cloth. After several minutes, peel each pepper. Discard seeds and 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 large saucepan. Bring to a boil; cover and simmer 10 minutes. Fill jars; leave 1-inch headspace.

For processing information, refer to Page 8.

### Chile Salsa (Hot Tomato-Pepper Sauce)

5 lb tomatoes  
2 lb chile peppers  
1 lb onions  
1 cup vinegar (5 percent)  
3 tsp salt  
1/2 tsp pepper

Yield: 6 to 8 pints

**Caution:** Wear plastic or rubber gloves and do not touch your face while handling or cutting hot peppers. If you do not wear gloves, wash hands thoroughly with soap and water before touching your face or eyes.

Carefully measure all ingredients to ensure safe processing in a boiling-water canner.

Peel and prepare chile peppers as described in making Mexican Tomato Sauce. 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, onions, and remaining ingredients in a large saucepan. Heat to boil and simmer 10 minutes. Fill jars, leaving 1/2-inch headspace. Adjust lids and process according to the chart on Page 4.

## Ketchup

### Tomato Ketchup

24 lb ripe tomatoes	3 sticks cinnamon, crushed
3 cups chopped onions	1 1/2 tsp whole allspice
3/4 tsp ground red pepper (cayenne)	3 tbsp celery seeds
3 cups cider vinegar (5%)	1 1/2 cups sugar
4 tsp whole cloves	1/4 cup salt

Yield: 6 to 7 pints

**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. Quarter tomatoes into a large kettle. Add onions and red pepper. Bring to

boil and simmer 20 minutes, uncovered. Combine spices in a spice bag and add to vinegar in a two-quart saucepan. Bring to boil. Cover, turn off heat and let tomato mixture stand for 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 kettle. 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; leave 1/8-inch headspace.

For processing information, refer to Page 4.

### Country Western Ketchup

24 lb ripe tomatoes	4 tsp paprika
5 chile peppers, sliced and seeded	4 tsp whole allspice
1/4 cup salt	4 tsp dry mustard
2 2/3 cups vinegar (5%)	1 tbsp whole peppercorns
1 1/4 cups sugar	1 tsp mustard seeds
1/2 tsp ground red pepper (cayenne)	1 tbsp crushed bay leaves

Yield: 6 to 7 pints

Follow procedure and processing time for regular tomato ketchup.

### Blender Ketchup

Use electric blender and eliminate need for pressing or sieving.

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



Photo courtesy of the United States Department of Agriculture (USDA)



## Recommended Processing Procedures for Tomatoes and Tomato Products in Boiling-water Canner

Tomato Product	Procedure	Pack	Jar Size	Process Time at Altitudes of		
				0-1,000 ft	1,001-3,000 ft	3,001-6,000 ft
Tomato Juice	To prevent juice from separating, quickly cut about 1 pound of fruit into quarters and put directly into sauce pan. 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 five 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 five minutes before juicing. Press both types of heated juice through a sieve or food mill to remove skins and seeds. <b>Add bottled lemon juice or citric acid to jars</b> (see acidification directions, Page 1). Heat juice to boiling again. Fill jars with hot tomato juice; leave 1/2-inch headspace.	Hot	Pints	35 min	40 min	45 min
			Quarts	40 min	45 min	50 min
Wait 5 minutes before removing jars from canner.						
Tomato and Vegetable Juice Blend	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. <b>Add bottled lemon juice or citric acid to jars</b> (see acidification directions, Page 1). Reheat tomato-vegetable juice blend to boiling and fill jars immediately; leave 1/2-inch headspace.	Hot	Pints	35 min	40 min	45 min
			Quarts	40 min	45 min	50 min
Wait 5 minutes before removing jars from canner.						
Tomatoes, crushed (with no liquid)	Heat one-sixth of the quarters quickly in a large pot, crushing them with a wooden mallet or spoon to exude juice. Continue heating the tomatoes, stir to prevent burning. Once the tomatoes are boiling, gradually add remaining quartered tomatoes, stirring constantly. Do not crush. They will soften with heating and stirring. Boil gently five minutes. <b>Add bottled lemon juice or citric acid to jars</b> (see acidification directions, Page 1). Fill jars immediately with hot tomatoes; leave 1/2-inch headspace.	Hot	Pints	35 min	40 min	45 min
			Quarts	45 min	50 min	55 min
Wait 5 minutes before removing jars from canner.						

Tomato Product	Procedure	Style of Pack	Jar Size	Process Time at Altitudes of		
				0-1,000 ft	1,001-3,000 ft	3,001-6,000 ft
Tomato Sauce	Prepare and press as for making tomato juice. Simmer in large 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. <b>Add bottled lemon juice or citric acid to jars</b> (see acidification directions, Page 1). Fill jars; leave 1/4-inch headspace.	Hot	Pints	35 min	40 min	45 min
			Quarts	40 min	45 min	50 min
Wait 5 minutes before removing jars from canner.						
Tomatoes, whole or halved (packed in water)	Leave whole or halve. <b>Add bottled lemon juice or citric acid</b> to jars (see acidification directions, Page 1). For hot-pack products, add enough water to cover the tomatoes and boil them gently for five minutes. Fill jars with hot tomatoes or with raw peeled tomatoes. Add hot cooking liquid to hot pack, or hot water for raw pack; leave 1/2-inch headspace.	Hot and Raw	Pints	40 min	45 min	50 min
			Quarts	45 min	50 min	55 min
Wait 5 minutes before removing jars from canner.						
Tomatoes Whole or Halved (packed in tomato juice)	Leave whole or halve. <b>Add bottled lemon juice or citric acid to jars</b> (see acidification directions, Page 1). <i>Raw Pack</i> — Heat tomato juice in a saucepan. Fill jars with raw tomatoes. Cover tomatoes in the jars with hot tomato juice; leave 1/2-inch headspace. <i>Hot Pack</i> — Put tomatoes in a large saucepan and add tomato juice to completely cover them. Boil gently for five minutes. Fill jars with hot tomatoes; leave 1/2-inch headspace. Add hot tomato juice to jars; leave 1/2-inch headspace.	Hot and Raw	Pints	85 min	90 min	95 min
			or Quarts			
Wait 5 minutes before removing jars from canner.						
Tomatoes, whole or halved (packed raw without added liquid)	Leave whole or halve. <b>Add bottled lemon juice or citric acid to jars</b> (see acidification directions, Page 1). Fill jars with raw tomatoes. Press tomatoes in the jars until spaces between them fill with juice; leave 1/2-inch headspace.	Raw	Pints	85 min	90 min	95 min
			or Quarts			
Wait 5 minutes before removing jars from canner.						

## Recommended Process Times for Tomatoes and Tomato Products in a Pressure Canner

Type of Fruit	Style of Pack	Jar Size	Process Time	Recommended Pressure for Pressure Canner				
				Dial-Gauge			Weighted-Gauge	
				Canner Gauge Pressure (PSI) at Altitudes of			Canner Gauge Pressure (PSI) at Altitudes of	
				0-2,000 ft	2,001-4,000 ft	4,001-6,000 ft	0-1,000 ft	Above 1,000 ft
Tomato Juice	Hot	Pints	20 min	6 lb	7 lb	8 lb	5 lb	10 lb
		Quarts	15 min	11 lb	12 lb	13 lb	10 lb	15 lb
Tomato and Vegetable Juice Blend	Hot	Pints	20 min	6 lb	7 lb	8 lb	5 lb	10 lb
		Quarts	15 min	11 lb	12 lb	13 lb	10 lb	15 lb
Tomatoes, crushed (no added liquid)	Hot	Pints	20 min	6 lb	7 lb	8 lb	5 lb	10 lb
		Quarts	15 min	11 lb	12 lb	13 lb	10 lb	15 lb
Tomato Sauce	Hot	Pints	20 min	6 lb	7 lb	8 lb	5 lb	10 lb
		Quarts	15 min	11 lb	12 lb	13 lb	10 lb	15 lb
Tomatoes, whole or halved (packed in water)	Hot and Raw	Pints	15 min	6 lb	7 lb	8 lb	5 lb	10 lb
		Quarts	10 min	11 lb	12 lb	13 lb	10 lb	15 lb
Tomatoes, whole or halved (packed in tomato juice)	Hot and Raw	Pints	40 min	6 lb	7 lb	8 lb	5 lb	10 lb
		Quarts	25 min	11 lb	12 lb	13 lb	10 lb	15 lb
Tomatoes, whole or halved (packed raw without added liquid)	Raw	Pints	25 min	6 lb	7 lb	8 lb	5 lb	10 lb
		Quarts	40 min	11 lb	12 lb	13 lb	10 lb	15 lb
Spaghetti Sauce, without meat	Hot	Pints	20 min	11 lb	12 lb	13 lb	10 lb	15 lb
		Quarts	25 min	11 lb	12 lb	13 lb	10 lb	15 lb

## Recommended Pressure for Pressure Canner

Type of Fruit	Style of Pack	Jar Size	Process Time	Dial-Gauge					Weighted-Gauge	
				Canner Gauge Pressure (PSI) at Altitudes of			Canner Gauge Pressure (PSI) at Altitudes of		0-1,000 ft	Above 1,000 ft
				0-2,000 ft	2,001-4,000 ft	4,001-6,000 ft				
Spaghetti Sauce With Meat	Hot	Pints	60 min	11 lb	12 lb	13 lb	10 lb	15 lb		
		Quarts	70 min	11 lb	12 lb	13 lb	10 lb	15 lb		
Mexican Tomato Sauce	Hot	Pints	20 min	11 lb	12 lb	13 lb	10 lb	15 lb		
		Quarts	25 min	11 lb	12 lb	13 lb	10 lb	15 lb		

### Disclosure

Reference to commercial products or trade names is made with the understanding that no discrimination is intended of those not mentioned and no endorsement by University of Nebraska–Lincoln Extension is implied for those mentioned.

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