



Preserving Tomatoes at Home

Guide E-306

Reviewed by Nancy C. Flores
Extension Food Technology Specialist

Cooperative Extension Service • College of Agriculture and Home Economics



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RECOMMENDED VARIETIES

Homestead 24, Heinz 1350, Red Cherry, Roma VF (pasta), and others that grow well in New Mexico are good choices for making juice as well as crushed and whole tomato products. Italian and pear-type varieties are good for making sauce, ketchup, and purees.

At altitude (ft)	Boil foods (minutes)
2,000–2,999	12
3,000–3,999	13
4,000–4,999	14
5,000–5,999	15
6,000–6,999	16
7,000–7,999	17
8,000–8,999	18
9,000–9,999	19

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 juice 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. **Do not reduce amounts of lemon juice or citric acid in any tomato products.** Tomato products not properly acidified can result in botulism, which can be deadly.

To prevent the risk of botulism, low-acid and tomato foods **not** canned according to the 1994 USDA recommendations in this guide should be boiled—even if no signs of spoilage are detected. Boil food for a full 10 minutes at altitudes below 1,000 feet. Add an additional minute of boiling time for each 1,000 feet of elevation. Boiling destroys botulism toxin. If in doubt, always boil foods before tasting.

RECOMMENDATION

For a more nutritious and higher quality tomato product, using a pressure canner is recommended. Both boiling water and pressure canning options are offered in this guide, following the USDA Complete Guide to Home Canning (1994). All steps in the preparation, including acidification, must be followed to ensure a safe product. Either boiling water canning or pressure canning are equivalent processes, which have been calculated with different time-temperature combinations.

GENERAL CANNING PROCEDURES

Use regular and wide-mouth Mason jars with self-sealing lids held in place by screw-on metal bands. The bands hold the lids in place during the processing and cooling periods.

Mason jars are made from tempered glass to resist high temperatures. Jars are available in 1/2 pint, pint, 1-1/2 pint, and quart sizes. Larger jars are not recommended for home canning.

Inspect jars carefully for cracks or chips and discard faulty ones. Wash jars in hot, soapy water and rinse thoroughly or in the dishwasher. Keep jars hot in the dishwasher, a sink of hot water, or in a warm oven until they are filled.

Check metal screw bands for signs of rust or dents. Discard badly corroded or dented bands. Use only new lids and follow manufacturer's directions for preparing lids for canning.

Ladle hot tomato products into jars. 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.

Follow These Steps for Successful Boiling-Water Canning

1. Fill the canner halfway with water.
2. Preheat water to 140°F for raw-packed foods and to 180°F for hot-packed foods.
3. Load filled jars, fitted with lids, into the canner rack and use the handles to lower the rack into the water; or fill the canner, one jar at a time, with a jar lifter.
4. If necessary, add more boiling water so the water level is at least 1 inch above jar tops.
5. Turn heat to its highest position until water boils vigorously.
6. Set a timer for the minutes required for processing the food.
7. Cover with the canner lid and lower the heat setting to maintain a gentle boil throughout the process schedule.
8. If necessary, add more boiling water to keep the water level above the jars.
9. When jars have been boiled for the recommended time, turn off the heat and remove the canner lid.
10. Using a jar lifter, remove the jars straight up without tipping and place them on a towel, leaving at least 1-inch spaces between the jars during cooling.

Do not touch lid or ring until completely cooled.

Follow These Steps for Successful Pressure Canning

1. Put 2–3 inches of hot water in the canner. Place filled jars on the rack using a jar lifter. Fasten canner lid securely.
2. Leave weight off vent port or open petcock. Heat at the highest setting until steam flows from the petcock or vent port.
3. Maintain high heat setting, exhaust steam 10 minutes, and then place weight on vent port or

close petcock. The canner will pressurize during the next 3–5 minutes.

4. Start timing the process when the pressure reading on the dial gauge indicates that the recommended pressure has been reached, or when the weighted gauge begins to jiggle or rock.
5. Regulate heat under the canner to maintain a steady pressure at or slightly above the correct gauge pressure. Quick and large pressure variations during processing may cause unnecessary liquid losses from jars. Weighted gauges on Mirro canners should jiggle about 2 or 3 times per minute. Gauges on Presto canners should rock slowly throughout the process.
6. When the timed process is completed, turn off the heat, remove the canner from heat if possible, and let the canner depressurize. **Do not force-cool the canner.** Force cooling may result in food spoilage. Cooling the canner with cold running water or opening the vent port before the canner is fully depressurized will cause loss of liquid from jars and seal failures. Force-cooling may also warp the canner lid of older model canners, causing steam leaks. Depressurization of older models should be timed. Standard-size heavy-walled canners require about 30 minutes when loaded with pints and 45 minutes with quarts. Newer thin-walled canners cool more rapidly and are equipped with vent locks. These canners are depressurized when their vent lock piston drops to a normal position.
7. After the canner is depressurized, remove the weight from the vent port or open the petcock. Wait 2 minutes, unfasten the lid, and remove it carefully. Lift the lid away from you so that the steam does not burn your face.
8. Remove jars with a lifter straight up without tipping, and place on towel or cooling rack, if desired.

Do not touch lid or ring until completely cooled. Dial gauges on pressure canners should be checked annually to make sure they are accurate.

Test for Jar Seals

Remove screw bands when jars have cooled (12–24 hours) and test for vacuum seals by these methods:

- Press the lid center with finger. If the lid springs up when released, it is not sealed.
- Tap the lid with a teaspoon. A sealed jar lid will make a ringing sound.

- Hold the jar at eye level and look across the lid.
A sealed jar lid curves down slightly in the center.

Reprocessing Unsealed Jars

Remove lids from unsealed jars and discard. Check sealing surface of jar for tiny nicks or cracks. If jar has defects, discard it and replace with another jar. If not, add new lid and process for the same amount of time within 24 hours. Unsealed jars can be kept in the refrigerator and the food used within 3-4 days, or remove about an inch of the contents and freeze.

Storing Canned Food

Clean the outsides of sealed, cooled jars. Label with date and contents and store in a cool (50–70°F), dark, dry place away from sun, light, or dampness. Tomato products are best if eaten within one year.

Accidental Freezing

Freezing may cause food in jars to spoil if jars become unsealed. Freezing and thawing cause food to soften and lose eating quality. Protect jars from freezing by wrapping with layers of newspapers.

If Canned Food Spoils

Examine jars carefully before tasting contents. Check lids for a vacuum seal. **NEVER** taste food from an unsealed jar.

Signs of food spoilage are streaks and dried food at the top of the jar, swollen lids, broken jar seals, rising air bubbles, and any unnatural color. Other indicators include bad or unnatural odor; spurting liquid; white, blue, green, or black mold; or foaming.

Dispose of any food you suspect of being spoiled. For safety, spoiled canned food and containers may need to be detoxified before disposal. Contact your county Extension office for detoxification instructions.

Altitude Adjustments

All communities in New Mexico are above sea level, varying from 3,000 to 10,000 feet with differences even within a county.

Use the chart on the page 7 of this guide to determine the elevation of your community and then select safe processing times for canning your tomatoes. The boiling temperature of liquids is lower at higher elevations, therefore food must be processed longer at high altitudes.

RECIPES

Tomato Juice

Quantity: See table 1 for guidelines.

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 adding the remaining tomatoes. Simmer 5 minutes after adding all pieces.

Table 1. Quantities of fresh tomatoes needed for tomato products

Product	Pounds of fresh tomatoes needed for			
	One quart	One pint	7 quarts	9 pints
Juice	3-1/4	–	23	14
Juice blend	3	1-1/2	22	14
Whole, halved	3	1-1/2	21	13
Crushed	3	1-1/2	22	14
Tomatoes and okra or zucchini	–	–	12	7
Chile salsa	–	–	–	5*
Thin sauce	5	2-1/2	35	21
Thick sauce	6-1/2	3	46	28
Spaghetti sauce	6-1/3	3-1/3	44	30
Regular ketchup	–	–	–	24*
Western ketchup	–	–	–	24*

*Makes approximately 7 pints

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

Product	Pack	Jar size	Minutes of processing time at:	
			3,001–6,000 ft	Above 6,000 ft
Tomato juice or juice blend	Hot	Pints	45	50
		Quarts	50	55
Whole or halved tomatoes packed in water	Hot or raw	Pints	50	55
		Quarts	55	60
Whole or halved tomatoes packed in juice	Hot or raw	pints or quarts	95	100
Crushed tomatoes	Hot	Pints	45	50
		Quarts	55	60
Chile salsa	Hot	Pints	20	25
Standard tomato sauce	Hot	Pints	45	50
		Quarts	50	55
All tomato ketchups	Hot	Pints	20	25

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

Product	Style of pack	Jar size	Process time (minutes)	2,001–4,000 ft	Dial gauge pressure at altitudes of		
					4,001–6,000 ft	6,001–8,000 ft	Above 8,000 ft
Tomato juice, tomato/vegetable juice blend, or crushed tomatoes	Hot	Pints or quarts	15	12	13	14	15
Whole or halved tomatoes packed in water	Hot or raw	Pints or quarts	10	12	13	14	15
Whole or halved tomatoes packed in juice	Hot or raw	Pints or quarts	25	12	13	14	15
Tomatoes and okra or zucchini	Hot	Pints	30	12	13	14	15
		Quarts	35	12	13	14	15
Standard tomato sauce	Hot	Pints or quarts	15	12	13	14	15
Spaghetti sauce without meat	Hot	Pints	20	12	13	14	15
		Quarts	25	12	13	14	15
Spaghetti sauce with meat	Hot	Pints	60	12	13	14	15
		Quarts	70	12	13	14	15
Mexican tomato sauce	Hot	Pints	20	12	13	14	15
		Quarts	25	12	13	14	15

*Weighted gauge pressure in New Mexico is 15 pounds at all altitudes.

If not concerned about juice separating, 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, using amount specified in the section “Acidification” (page 1).** 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 for guidelines.

Crush and simmer tomatoes as though making tomato juice. For each 22 pounds of tomatoes, add no more than 3 cups of any combination of finely chopped celery, onions, carrots, and peppers. 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 as specified in the section “Acidification” (page 1).** Add 1 teaspoon salt per quart, if desired. Reheat tomato-vegetable juice blend to boiling and pour immediately into jars, leaving 1/2-inch headspace. Adjust lids and process 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 30–60 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 as specified in the section “Acidification” (page 1).**

Hot pack—Cover tomatoes with water and bring to a boil. Boil gently 5 minutes. Fill jars with hot tomatoes. Add 1 teaspoon of salt per quart, if desired, and enough hot cooking water to cover tomatoes, leaving 1/2-inch headspace. Adjust lids and process jars as described in table 2 or 3.

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 juice and whole tomatoes: Prepare, peel, and acidify tomatoes as described for tomatoes packed in water. Add 1 teaspoon of salt per quart, if desired.

Raw pack—Fill jars with raw-packed tomatoes, leaving 1/2-inch headspace. Cover tomatoes with hot juice, leaving 1/2-inch headspace. Adjust lids and process jars as described in table 2 or 3.

Hot pack—For hot pack, cover tomatoes with tomato juice, bring to a boil and boil gently 5 minutes.

Fill jars with hot tomatoes, allowing 1/2-inch headspace. Cover tomatoes with hot 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 one-sixth of the quarters quickly in a large pot, crushing them with a wooden mallet or spoon as they are added to the pot. This will exude juice. 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. Boil gently 5 minutes. **Add bottled lemon juice or citric acid to jars as specified in the section “Acidification” (page 1).** Add 1 teaspoon salt per quart, if desired. Fill jars immediately with hot, crushed 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. 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 2-1/2 pounds of okra or zucchini is needed per canner load of 9 pints.

Wash tomatoes and okra or zucchini. Dip tomatoes in boiling water 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 or 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 in pressure canner as described in table 3.

Variation: Add 4 or 5 pearl onions, or 2 onion slices to each jar.

Standard Tomato Sauce

Quantity: See table 1 for guidelines

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 large 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 while adding remaining tomatoes. Simmer 5 minutes after all tomatoes are added. (If not concerned about sauce separating, simply slice or quarter tomatoes into a large saucepan. Crush, heat, and simmer for 5 minutes before processing.) 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 as specified in the section “Acidification” (page 1).** Fill jars, leaving 1/4-inch headspace. Adjust lids and process jars as described in table 2 or 3.

Spaghetti Sauce Without Meat

Yield: About 9 pints

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

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. Saute onions, garlic, celery, or peppers and mushrooms in vegetable oil until tender. Combine sauteed vegetables and tomatoes and add remainder of spices, salt, and sugar. Bring to a boil. Simmer and cook uncovered until thick. 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 in pressure canner as described in table 3.

Procedure for making sauce with meat: Saute 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 sauteed meat and vegetables with the tomato juice. Then follow the directions above for making sauce without meat.

Mexican Tomato Sauce

Yield: About 7 quarts

2-1/2 to 3 lb chile peppers	1 Tbsp salt
18 lb tomatoes	1 Tbsp oregano
3 cups onion, chopped	1/2 cup vinegar

CAUTION: Wear rubber gloves while handling chiles and wash hands thoroughly with soap and water before touching anyone. Wash and dry chiles. Slit the side of peppers and peel them using one of the following methods:

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

Allow peppers to cool. Place in a pan and cover with a damp cloth to make peeling the peppers easier. After several minutes, peel each pepper. Cool and slip off skins. 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 a large kettle. Bring to a boil. Cover. Simmer 10 minutes. Fill jars, leaving 1-inch headspace. Adjust lids and process as described in table 3.

Chile Salsa (hot pepper tomato dip)

Yield: about 7 pints

5 lb tomatoes, chopped	3 tsp salt
2 lb chile peppers, chopped	1/2 tsp pepper
1 lb onion, chopped	1 cup vinegar (5%)

Prepare hot peppers and tomatoes as described above in Mexican Tomato Sauce. Combine all ingredients in a large kettle. Bring to a boil and simmer 10 minutes. Fill jars, leaving 1/2-inch headspace. Adjust lids and process jars as described in table 2.

Standard Tomato Ketchup

Yield: 6 to 7 pints

24 lb ripe tomatoes	3 sticks cinnamon, crushed
3 cups onions, chopped	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

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. Cover, remove from burner, and let stand for 20 minutes. Combine spices in a spice bag and add vinegar in a 2-quart saucepan. Bring to boil. 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.

County Western Ketchup

Yield: 6 to 7 pints

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 bay leaves

Follow directions for standard tomato ketchup above.

Elevations of Cities and Towns in New Mexico

City/Town	Elevation (ft)	City/Town	Elevation (ft)
Alamogordo	4,350	Las Vegas	6,450
Albuquerque	5,000	Logan	3,830
Artesia	3,350	Lordsburg	4,250
Aztec	5,650	Los Alamos	7,400
Bayard	5,800	Los Ranchos de Albuquerque	4,950
Belen	4,800	Lovington	3,900
Bernalillo	5,050	Magdalena	6,556
Bosque Farms	4,864	Melrose	4,599
Carlsbad	3,100	Mora	7,200
Carrizozo	5,450	Mosquero	5,550
Chama	7,900	Mountainair	6,500
Cimarron	6,450	Portales	4,010
Clayton	5,050	Raton	6,650
Cloudcroft	8,650	Reserve	5,749
Clovis	4,300	Rio Rancho	5,290
Columbus	4,020	Roswell	3,600
Corona	6,664	Roy	5,900
Corrales	5,005	Ruidoso	7,000
Cuba	7,000	San Jon	4,200
Deming	4,300	Santa Fe	7,000
Dexter	3,500	Santa Rita	6,300
Eagle Nest	8,250	Santa Rosa	4,600
Elida	4,345	Silver City	5,900
Española	5,600	Socorro	4,600
Estancia	6,100	Springer	5,800
Farmington	5,400	Taos	7,000
Fort Sumner	4,050	Texico	4,150
Gallup	6,500	Tierra Amarilla	7,460
Grants	6,450	Truth or Consequences	4,250
Hobbs	3,650	Tucumcari	4,100
Hurley	5,700	Tularosa	4,500
Jemez Springs	6,200	Vaughn	5,950
Las Cruces	3,900	Wagon Mound	6,200

This publication is intended for use by individuals with a basic understanding of canning procedures. For more detailed information consult the *USDA Complete Guide to Home Canning*, which is available through your local county Extension office.

This publication was originally adapted for use in New Mexico from *Let's Preserve: Tomatoes*, which was developed by Penn State Cooperative Extension Service, U.S. Department of Agriculture.

Previously reviewed by Martha Archuleta, Extension Food and Nutrition Specialist

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