

FOOD PRESERVATION



Home Canning Meat

Poultry, Red Meats, Game and Seafood

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Poultry, red meats, game and seafoods are low-acid foods and must be processed in a pressure canner to assure their safety. Use the processing time and pressure that is specified for each type of product.

General Tips for High-quality Products

- Can only good-quality poultry, red meat, game and seafood.
- Chill home-produced meat soon after slaughter to 40 degrees Fahrenheit or lower to prevent spoilage.
- Keep all work areas sanitary and meat clean.
- If meat must be held for longer than a few days before canning, freeze it.
- Store frozen meat at 0 F or lower until canning time.
- Trim meat of gristle, bruised spots and fat before canning. Too much fat left on meat can lead to sealing failures.
- Have dial gauges on pressure canners checked annually.
- All pressure canners need to be vented for 10 minutes.



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General Procedures

Jars and Lids

Use Mason-type canning jars no larger than the size specified in the directions for the specific food being canned. Use two-piece, self-sealing lids. Buy only the quantity of lids that will be used in a year and follow the manufacturer's directions for preparing the lids.

Mayonnaise-type jars are not recommended for use with foods to be processed in a pressure canner because of excessive jar breakage.

Filling Jars

After filling jars with food, release air bubbles by inserting a flat plastic (not metal) spatula between the food and the inside surface of the jar. Slowly turn the jar and move the spatula up and down to allow air bubbles to escape.

Salt may be added if desired. When canning meat and seafoods, salt seasons the food but is not necessary to ensure safety.

Adjust the head space and then clean the jar rim (sealing surface) with a dampened paper towel. Place the lid, gasket down, onto the cleaned jar-sealing surface. Uncleaned jar-sealing surfaces may cause seal failures.

Then fit the metal screw band over the flat lid. To obtain a proper seal, closely follow the manufacturer's guidelines enclosed with or on the box for tightening the jar lids properly.

Using Pressure Canners

Follow these steps for successful pressure canning:

1. Put 2 to 3 inches of hot water in the canner. Place filled jars on the rack, using a jar lifter. Fasten the canner lid securely.
2. Leave weight off the vent port or open the petcock. Heat at the highest setting until steam flows from the petcock or vent port.
3. Maintain the high heat setting, exhaust steam for 10 minutes and then place weight on the vent port or close the petcock. The canner will pressurize during the next three to five 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 two or three times per minute. On Presto canners, they should rock slowly throughout the process.
6. When the timed process is completed, turn off the heat, remove the canner from the heat if possible and let the canner depressurize. Do not force-cool the canner. Forced cooling may result in food spoilage. Cooling the canner with cold running water or opening the vent port before the canner

Obtaining a Loose Pack

When filling jars with raw meat, do not tightly pack the jars. Filling the jar loosely is referred to as a loose pack. After placing raw meat in the jar and grasping the jar with one hand, firmly tap the bottom of the jar with the palm of your other hand. You also can place a folded dish towel or pot holder on your counter and firmly tap the jar on the towel or pot holder. Continue to add meat and tap the bottom of the jar until the desired head space is reached. Do not press the meat tightly into the jar.

is depressurized fully will cause loss of liquid from jars and seal failures. Force-cooling also may warp the canner lid of older model canners, causing steam leaks. Depressurization of older models should be timed. Standard-sized 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 two 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 and place them on a towel or cooling rack, if desired.

Do not retighten lids after processing jars.

Cooling jars

Cool the jars at room temperature for 12 to 24 hours. Jars may be cooled on racks or towels to minimize heat damage to counters. The food level and liquid volume of raw-packed jars will be noticeably lower after cooling. Air is exhausted during processing and food shrinks. If a jar loses excessive liquid during processing, do not open it to add more liquid. Check for seals, wash jars, label and store.

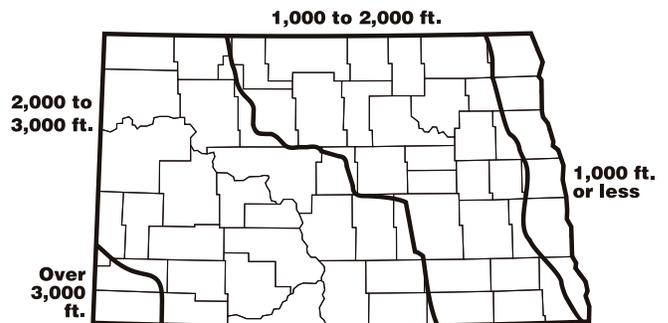
Reprocessing unsealed jars

If a lid fails to seal on a jar, remove the lid and check the jar-sealing surface for tiny nicks. If necessary, change the jar and add a new, properly prepared lid. Reprocess the jar within 24 hours using the same processing time. Head space in unsealed jars may be adjusted to 1½ inches, and jars could be frozen instead of reprocessed. Foods in single unsealed jars could be stored in the refrigerator and consumed within several days.

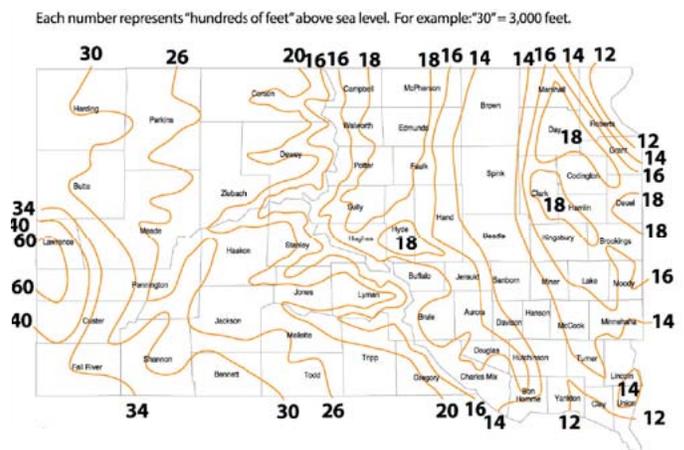
Adjust for Altitude

As altitudes increase, air becomes thinner, and this affects both pressures and boiling points in home canning. Using the water-bath process times for canning food at sea level may result in spoilage if you live at altitudes of 1,000 feet or more. Water boils at lower temperatures as altitude increases. Lower boiling temperatures are less effective for killing bacteria. Increasing the processing time or canner pressure compensates for lower boiling temperatures. Select the proper processing time and canner pressure for the altitude where you live.

The altitude in North Dakota varies from 800 feet above sea level in the east to 3,000 feet in the west. The map below shows the approximate altitude of areas of North Dakota.



The altitude in South Dakota varies from 1,200 feet to 6,000 feet above sea level. The map below shows the approximate altitude of areas in South Dakota.



For more specific information regarding altitude in your county, contact your county Extension office.

RECIPES

Chicken or Rabbit

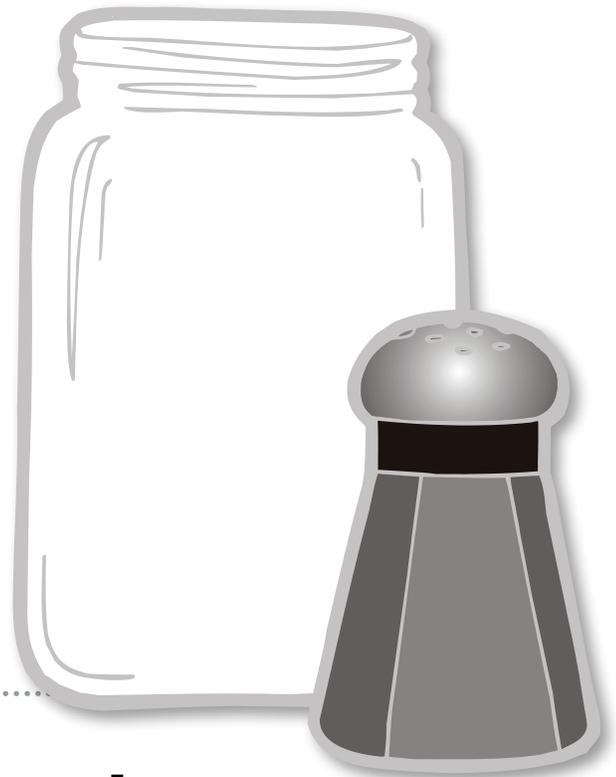
(duck, goose, turkey or game birds)

PROCEDURE: Choose freshly killed and dressed healthy animals. Large chickens are more flavorful than fryers. Dressed chicken should be chilled for six to 12 hours before canning. Dressed rabbits should be soaked one hour in water containing 1 tablespoon of salt per quart and then rinsed. Remove excess fat. Cut the chicken or rabbit into suitable sizes for canning. Can with or without bones.

Hot pack — Boil, steam or bake meat until about two-thirds done. Add 1 teaspoon of salt per quart to the jar, if desired. Fill jars with pieces and hot broth, leaving 1¼ inches of head space.

Raw pack — Add 1 teaspoon of salt per quart, if desired. Fill jars loosely with raw meat pieces, leaving 1¼ inches of head space. Do not add liquid.

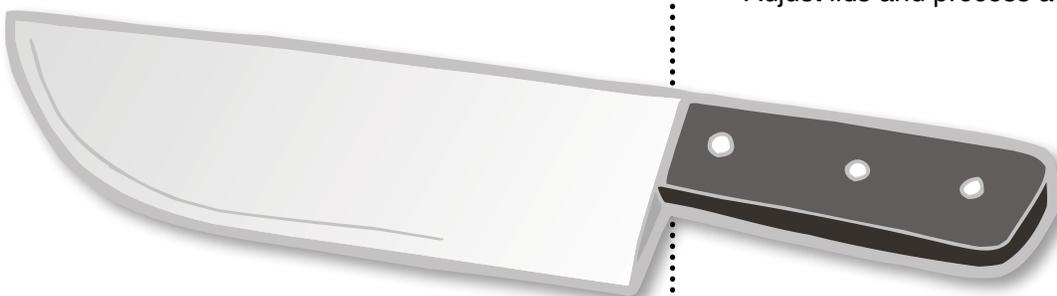
Adjust lids and process according to Table 1 or 2.



Ground or Chopped Meat

Bear, beef, lamb, pork, sausage, veal, venison

PROCEDURE: Choose fresh, chilled meat. With venison, add one part high-quality pork fat to three or four parts venison before grinding. Use freshly made sausage seasoned with salt and cayenne pepper (sage may cause a bitter off-flavor). Shape chopped meat into patties or balls or cut cased sausage into 3- to 4-inch links. Cook until lightly browned. Ground meat may be sauteed without shaping. Remove excess fat. Fill jars with pieces. Add boiling meat broth, tomato juice or water, leaving 1 inch of head space. Add 1 teaspoon of salt per quart to the jars, if desired. Adjust lids and process according to Table 1 or 2.



Meat Stock (Broth)

BEEF: Saw or crack fresh trimmed beef bones to enhance the extraction of flavor. Rinse the bones and place them in a large stockpot or kettle, cover the bones with water, add the pot cover and simmer three to four hours. Remove the bones, cool the broth and pick off the meat. Skim off fat, add the meat removed from the bones to the broth and reheat to boiling. Fill jars, leaving 1 inch of head space. Adjust lids and process according to Table 1 or 2.

CHICKEN OR TURKEY: Place large carcass bones in a large stockpot, add enough water to cover the bones, cover the pot and simmer 30 to 45 minutes or until meat easily can be stripped from the bones. Remove the bones, cool the broth, strip the meat from the bones, remove and discard excess fat, and return the meat to the broth. Reheat to boiling and fill the jars, leaving 1 inch of head space. Adjust lids and process according to Table 1 or 2.

Strips, Cubes or Chunks of Meat

Bear, beef, lamb, pork, veal, venison

PROCEDURE: Choose good-quality chilled meat. Remove excess fat. Soak strong-flavored wild meats for one hour in brine water containing 1 tablespoon of salt per quart of water. Rinse. Remove large bones.

Hot pack — Precook meat until rare by roasting, stewing or browning in a small amount of fat. Add 1 teaspoon of salt per quart ($\frac{1}{2}$ teaspoon of salt per pint) to the jar, if desired. Fill jars with pieces and add boiling broth, meat drippings and water or tomato juice (especially with wild game), leaving 1 inch of head space.

Raw pack — Add 1 teaspoon of salt per quart to the jar, if desired. Fill jars with raw meat pieces, leaving 1 inch of head space. Do not add liquid.

Adjust lids and process according to Table 1 or 2.



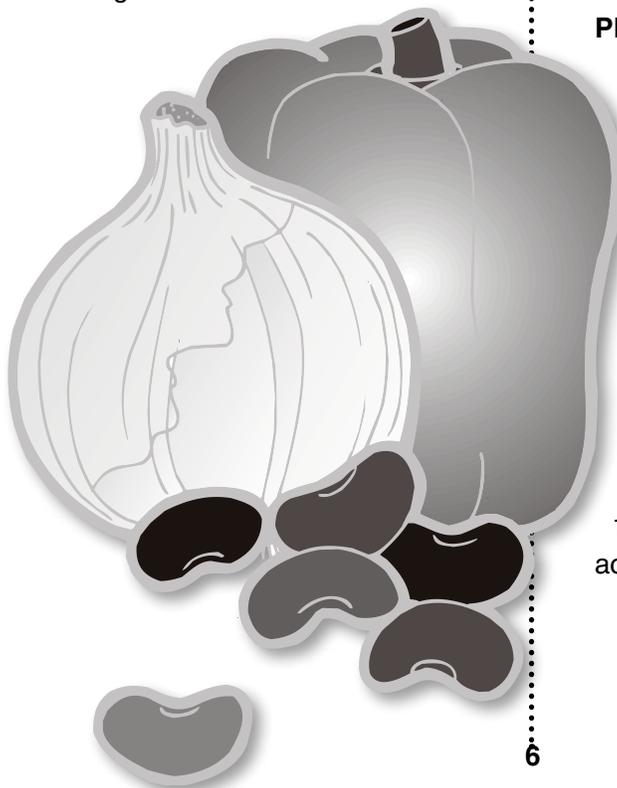
Chili Con Carne

3 cups dried pinto or red kidney beans
5½ cups water
5 teaspoons salt (separated)
3 pounds ground beef
1½ cups chopped onions
1 cup chopped peppers of your choice (optional)
1 teaspoon black pepper
3 to 6 tablespoons chili powder
2 quarts crushed or whole tomatoes

YIELD: 9 pints

PROCEDURE: Wash beans thoroughly and place them in a 2-quart saucepan. Add cold water to a level of 2 to 3 inches above the beans and soak 12 to 18 hours. Drain and discard water. Combine beans with 5½ cups of fresh water and 2 teaspoons of salt. Bring to a boil. Reduce heat and simmer 30 minutes. Drain and discard water. Brown ground beef, chopped onions and peppers, if desired, in a skillet. Drain off fat and add 3 teaspoons of salt, pepper, chili powder, tomatoes and drained cooked beans. Simmer five minutes.

CAUTION: Do not thicken. Fill jars, leaving 1 inch of head space. Adjust lids and process according to Table 1 or 2.



Fish

Blue, mackerel, salmon, steelhead, trout and other fatty fish except tuna

CAUTION: Eviscerate fish within two hours after they are caught. Keep cleaned fish on ice until ready to can.

NOTE: Glasslike crystals of magnesium ammonium phosphate sometimes form in canned salmon. The home canner has no way to prevent these crystals from forming, but they usually dissolve when heated and are safe to eat.

PROCEDURE: Remove the head, tail, fins and scales. Wash and remove all blood. Split fish lengthwise, if desired. Cut cleaned fish into 3½-inch lengths. Fill pint jars, skin side next to the glass, leaving 1 inch of head space. Add 1 teaspoon of salt per pint, if desired. Do not add liquid. Adjust lids and process according to Table 1 or 2.

Soups

Vegetable Poultry
Meat Seafoods
Dried bean or pea

PROCEDURE: Select, wash and prepare vegetables, meat and seafoods as described for the specific foods. Cover meat with water and cook until tender. Cool meat and remove bones. Cook vegetables. For each cup of dried beans or peas, add 3 cups of water, boil two minutes, remove from heat, soak one hour and heat to boiling. Drain and add meat broth, tomatoes or water until covered. Boil five minutes.

CAUTION: Do not thicken. Salt to taste, if desired. Fill jars halfway with solid mixture. Add remaining liquid, leaving 1 inch of head space. Adjust lids and process according to Table 1 or 2.

Table 1

Recommended process times in a dial-gauge pressure canner.

	Style of Pack	Jar Size	Process Time	Canner Pressure (PSI) at Altitudes of		
				0-2,000 ft.	2,001-4,000 ft.	4,001-6,000 ft.
Chicken or Rabbit	Without bones:					
	Hot and Raw	Pints	75 min	11 lb	12 lb	13 lb
		Quarts	90 min	11 lb	12 lb	13 lb
	With bones:					
	Hot and Raw	Pints	65 min	11 lb	12 lb	13 lb
		Quarts	75 min	11 lb	12 lb	13 lb
Ground or Chopped Meat	Hot	Pints	75 min	11 lb	12 lb	13 lb
		Quarts	90 min	11 lb	12 lb	13 lb
Strips, Cubes or Chunks	Hot and Raw	Pints	75 min	11 lb	12 lb	13 lb
		Quarts	90 min	11 lb	12 lb	13 lb
Meat Stock, (Broth)	Hot	Pints	20 min	11 lb	12 lb	13 lb
		Quarts	25 min	11 lb	12 lb	13 lb
Chili Con Carne	Hot	Pints	75 min	11 lb	12 lb	13 lb
Fish	Raw	Pints	100 min	11 lb	12 lb	13 lb
Soups*	Hot	Pints	60 min	11 lb	12 lb	13 lb
		Quarts	75 min	11 lb	12 lb	13 lb

***Caution:** Process 100 minutes if soup contains seafood.**Table 2**

Recommended process times in a weighted-gauge pressure canner.

	Style of Pack	Jar Size	Process Time	Canner Pressure (PSI) at Altitudes of	
				0-1,000 ft.	Above 1,000 ft.
Chicken or Rabbit	Without bones:				
	Hot and Raw	Pints	75 min	10 lb	15 lb
		Quarts	90 min	10 lb	15 lb
	With bones:				
	Hot and Raw	Pints	65 min	10 lb	15 lb
		Quarts	75 min	10 lb	15 lb
Ground or Chopped Meat	Hot	Pints	75 min	10 lb	15 lb
		Quarts	90 min	10 lb	15 lb
Strips, Cubes or Chunks	Hot and Raw	Pints	75 min	10 lb	15 lb
		Quarts	90 min	10 lb	15 lb
Meat Stock, (Broth)	Hot	Pints	20 min	10 lb	15 lb
		Quarts	25 min	10 lb	15 lb
Chili Con Carne	Hot	Pints	75 min	10 lb	15 lb
Fish	Raw	Pints	100 min	10 lb	15 lb
Soups*	Hot	Pints	60 min	10 lb	15 lb
		Quarts	75 min	10 lb	15 lb

***Caution:** Process 100 minutes if soup contains seafood.



For more information on this and other topics, see **www.ag.ndsu.edu**.
(Click on “Nutrition, Food Safety and Health” then “Food Preservation and Storage”)

Source: Based on “Complete Guide to Home Canning,” Agriculture Information Bulletin 539, 2006 revision, and information from the National Center for Home Food Preservation, University of Georgia, Athens, Ga.: www.uga.edu/nchfp/

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