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# Home Canning Meat, Poultry and Fish

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This MontGuide lists canning pressures for specific elevations throughout Montana and recommended processing times for various meats. It includes a checklist for safe preparation and storage of home-canned foods, and instructions for canning meat, poultry and fish.

**S**afety is the top priority for the United States Department of Agriculture's home canning guidelines, and the USDA guidelines included in this MontGuide are based on extensive research on safe processing pressures and times. Among the safety factors, the USDA's primary goal is the prevention of botulism, a potentially deadly foodborne illness caused by a spore of the bacteria *C. botulism*, one of the most deadly poisons. *C. botulism* can grow and reproduce in improperly processed home canned foods.

The guidelines presented here will also help prevent foodborne illnesses caused by other bacteria, molds and yeast, and will help prevent food spoilage in your home canned products.

## A Question of Safety

Before beginning your home canning, ask yourself:

### 1. What is my elevation?

In order to decrease your risk of food-related illness and death, you must determine the correct home-canning processing times and pressures for your level of elevation. While water boils at 212° F at sea level, it boils at a much lower temperature at higher elevations. Consequently, home canned foods must be processed for longer times or at a higher pressure at higher altitudes.

## Elevations of County Seats in Montana and Pounds of Pressure To Use

County Seat	Elevation	Lbs. Pressure
Anaconda	5288	13
Baker	2945	12
Big Timber	4075	13
Billings	3117	12
Boulder	4904	13
Bozeman	4753	13
Broadus	3029	12
Butte	5767	13
Chester	3132	12
Chinook	2429	12
Choteau	3810	12
Circle	2449	12
Columbus	3584	12
Conrad	3511	12
Cut Bank	3751	12
Deer Lodge	4520	13
Dillon	5097	13
Ekalaka	3427	12
Forsyth	2521	12
Fort Benton	2749	12
Glasgow	2093	12
Glendive	2076	12
Great Falls	3330	12
Hamilton	3571	12
Hardin	2900	12
Harlowton	4162	13
Havre	2489	12
Helena	4009	13

County Seat	Elevation	Lbs. Pressure
Hysham	2653	12
Jordan	2595	12
Kalispell	2956	12
Lewistown	3912	12
Libby	2065	12
Livingston	4499	13
Malta	2258	12
Miles City	2371	12
Missoula	3208	12
Phillipsburg	5163	13
Plentywood	2044	12
Polson	2935	12
Red Lodge	5554	13
Roundup	3186	12
Ryegate	3638	12
Scobey	2475	12
Shelby	3283	12
Sidney	1931	11
Stanford	4259	13
Superior	2759	12
Terry	2246	12
Thompson Falls	2473	12
Townsend	3828	12
Virginia City	5822	13
W. Sulphur Sp.	5100	13
Wibaux	2661	12
Winnett	2958	12
Wolf Point	2009	12

## Other Resources

This guide provides information on processing times and temperatures with additional tips on key safety points for home canning. It is not meant to provide all the safety information and directions needed for canning. The following resource is available for more safety information and instructions for home canning:

*Ball Blue Book*, 1995. Home Canners Catalog, Alltrista Corp., P.O. Box 2005, Muncie, IN 47307. \$4.95 + \$1 S&H.

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## Preparation and storage checklist

Following are several critical checkpoints in the safe preparation and storage of home canned foods:

### Packing

- **Style of pack:** Follow directions for packing either hot or raw pack.
- **Jar size:** Follow directions for packing in either 1/2 pint, pint or quart jars.  
(NOTE: Not all foods can be safely processed in quart jars. Therefore, not all foods will have quart directions.)
- **Head space:** Follow directions for specific foods.

### Processing

- NOTE: Do not use micro-canners, steam canners, open kettle, oven canning or preservatives for processing.
- Use a pressure canner for meats, poultry and fish.
  - Test your dial gauge at least once per year. Weighted gauges do not need testing.
  - Canners must be vented for 10 minutes to exhaust air. Excess air will keep the canner pressure and temperature too low for safe processing.
  - Start processing time when pressure reaches 10 pounds for weighted gauge; 11 pounds for dial gauge canners, or necessary pounds with altitude adjustment.
  - Adjust pressure and times for altitude.

### Cooling

- **Pressure canner:** Remove canner from stove, cool at room temperature until pressure returns to zero, then promptly remove jars. Do not attempt to cool more quickly.
- Place jars on rack or cloth so air can circulate. Do not expose to draft or cover with towels.

### Sealing

- Cooled jars should have the center of the lid popped down and not moveable when pressed.
- Jars that have not sealed should be repacked and reprocessed within a 24-hour period for the original processing pressure and time. If not reprocessed, foods may also be refrigerated or frozen.

### Consuming

- If you are uncertain about the safety of home-canned foods, follow the advice “**When in doubt, throw it out.**”
- Botulism and other deadly foodborne illness causes are undetectable in food by sight, smell and taste. Foods may show no sign of spoilage! If a canned food looks spoiled, foams or even has an “off” odor, destroy it. To be sure foods are safe from botulism, boil them at the proper time for your elevation. At elevations above 1,000 feet, **start with 10 minutes and add one additional minute per 1,000 feet of elevation.**

## CHICKEN OR RABBIT

**Procedure:** Choose freshly killed and dressed, healthy animals. Dressed chicken should be chilled for 6 to 12 hours before canning. Dressed rabbits should be soaked 1 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 salt per quart to the jar, if desired. Fill jars with pieces and hot broth, leaving 1-1/4 inch headspace.

**Raw pack-** Add 1 teaspoon salt per quart, if desired. Fill jars loosely with raw meat pieces, leaving 1-1/4 inch headspace. Do not add liquid. Adjust lids and process.

## 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 headspace. Add 1 teaspoon of salt per quart to the jars, if desired. Adjust lids and process.

## STRIPS, CUBES, OR CHUNKS OF MEAT

*Bear, beef, lamb, pork, veal, venison*

**Procedure:** Choose quality chilled meat. Remove excess fat. Soak strong-flavored wild meats for 1 hour in brine water containing 1 tablespoon of salt per quart. 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 to the jar, if desired. Fill jars with pieces and add boiling broth, meat drippings, water, or tomato juice (especially with wild game), leaving 1-inch headspace.

**Raw pack-** Add 1 teaspoon of salt per quart to the jar, if desired. Fill jars with raw meat pieces, leaving 1-inch headspace. Do not add liquid. Adjust lids and process.

## FISH

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

**Caution:** Eviscerate fish within 2 hours after they are caught. Keep cleaned fish on ice until ready to can.

**Note:** Glass-like crystals of magnesium ammonium phosphate sometimes form in canned salmon. There is no way for the home canner to prevent these crystals from forming, but they usually dissolve when heated and are safe to eat.

**Procedure:** Remove head, tail, fins, and scales. Wash and remove all blood. Split fish lengthwise, if desired. Cut cleaned fish into 3-1/2-inch lengths. Fill pint jars, skin side next to glass, leaving 1-inch headspace. Add 1 teaspoon of salt per pint, if desired. Do not add liquids. Adjust lids and process.

## SMOKED FISH

**Caution:** Safe processing times for other smoked seafoods have not been determined, and they should be frozen. Smoking of fish should be done by tested methods. Lightly smoked fish is recommended for canning. However, because it has not yet been cooked, do not taste lightly smoked fish before canning.

Follow these recommended canning instructions carefully. Use a 16 to 22 quart pressure canner for this procedure; do not use smaller pressure saucepans. Safe processing times haven't been determined. Do not use quart jars or tin cans. Half-pints could be safely processed for the same length of time as pints, but the quality of the product may be less acceptable.

**Procedure:** If smoked fish has been frozen, thaw in the refrigerator until no ice crystals remain before canning. If not done prior to smoking, cut fish into pieces that will fit vertically into pint canning jars, leaving 1-inch headspace. Measure 4 quarts (16 cups) of cool tap water and pour into the pressure canner. (Note: The water level probably will reach the screwbands of pint jars.) Do not decrease the amount of water or heat the water before processing begins. Pack smoked fish vertically into jars, leaving 1-inch headspace between the pieces and the top of the jar. The fish may be packed either loosely or tightly. Clean jar rims with a clean, damp paper towel. Do not add liquid to the jars. Adjust lids and process.

Recommended process times for meats in a dial-gauge pressure canner							
	Style of Pack	Jar*	Process Time	0-2000 ft	2001-4000 ft	4001-6000 ft	6001-8000 ft
Chicken or Rabbit (no bones)	Hot and Raw	Pints	75 min.	11 lb	12 lb	13 lb	14 lb
		Quarts	90 min.	11 lb	12 lb	13 lb	14 lb
with bones		Pints	65 min.	11 lb	12 lb	13 lb	14 lb
		Quarts	75 min.	11 lb	12 lb	13 lb	14 lb
Ground or chopped meat	Hot	Pints	75 min.	11 lb	12 lb	13 lb	14 lb
		Quarts	90 min.	11 lb	12 lb	13 lb	14 lb
Strips, cubes or chunks of meat	Hot and Raw	Pints	75 min.	11 lb	12 lb	13 lb	14 lb
		Quarts	90 min.	11 lb	12 lb	13 lb	14 lb
Fish	Raw	Pints	100 min.	11 lb	12 lb	13 lb	14 lb
		Quarts**	NO**				
Smoked fish		Pints	110 min.	11 lb	12 lb	13 lb	14 lb
		Quarts**	NO**				
*If processing with half pints, use same processing time as with pints.							
** These foods cannot be processed safely in quart jars.							

Recommended process times for meats in a weighted-gauge pressure canner					
	Style of Pack	Jar*	Process Time	0-1000 ft.	Above 1000 ft.
Chicken or Rabbit (no bones)	Hot and Raw	Pints	75 min.	10 lb	15 lb
		Quarts	90 min.	10 lb	15 lb
With bones		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 of meat	Hot and Raw	Pints	75 min.	10 lb	15 lb
		Quarts	90 min.	10 lb	15 lb
Fish	Raw	Pints	100 min.	10 lb	15 lb
		Quarts**	NO**		
Smoked Fish		Pints	110 min.	11 lb	15 lb
		Quarts**	NO**		
*If processing with half pints, use same processing time as with pints.					
** These foods cannot be processed safely in quart jars.					



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