



Extension

TIPS FOR SAFE & SUCCESSFUL CANNING AT WYOMING'S HIGH ALTITUDES

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SPECIAL CONSIDERATIONS FOR CANNING IN WYOMING

ALTITUDE

Canning food in Wyoming differs from canning in many other locations because of the high altitudes found in our state. There is lower atmospheric pressure at high altitudes, which causes water to boil at lower temperatures. Consequently, altitude adjustments must be made when home canning.

KNOW YOUR ALTITUDE OR ELEVATION

Elevations vary in each county depending on each specific location. Please refer to the Altitude Chart found at the website below to find the altitude for the specific location you will be canning at to determine accurate canning recommendations.

<https://uwyoextension.org/uwnutrition/wp-content/uploads/2023/11/Altitude-Chart.pdf>

If your location is not included on the chart you can still find your specific altitude or elevation. Usually you can find your altitude at your local planning and zoning office, on a webpage about your town or county or by contacting your local Extension Office. There are also many online tools that will search for your specific altitude. When searching use the term "elevation" instead of "altitude". Here is one online site suggestion: <https://whatismyelevation.com/> Type in your street address, city and state in the "Enter Your Location" box. Select feet (ft.) as the unit of measure to use the processing tables.



The following guidelines have been established by the University of Wyoming Extension (UWE) and are recommended for all home canning in Wyoming.

HIGH ALTITUDE ADJUSTMENTS

Canning processes require altitude adjustments for all Wyoming locations. Processing times for boiling water canning must be increased, while pressure canning requires higher pressure. The United State Department of Agriculture (USDA) changed the processing times for many foods in 1988 with the publication of the Complete Guide to Home Canning. Additional revisions were made in 1994, 2009 and 2015. To ensure safe home canning it is critical to follow recipes with the most current processing times established by the USDA.

Recipes included in the Preserving Food in Wyoming canning book and the USDA Complete Guide to Home Canning include processing times with altitude adjustments for each of the specific products. Canning recipes from other approved sources are based on elevations at or below 1,000 feet above sea level. Make adjustments to those recipes

based on the specific altitude you are canning at. Utilize the following charts to adjust the approved recipe you are using.

Chart 1: Boiling water canner altitude adjustments for high-acid foods

Altitude in Feet	Increase in Processing Time
1,001-3,000	5 minutes
3,001-6,000	10 minutes
6,001-8,000	15 minutes
8,001-10,000	20 minutes

Chart 2: Pressure canner altitude adjustments for low-acid foods

Altitude in Feet	Weighted Gauge	Dial Gauge
0-1,000	10	11
1,001-2,000	15	11
2,001-4,000	15	12
4,001-6,000	15	13
6,001-8,000	15	14
8,001-10,000	15	15

Source of charts: *Ball Blue Book (2020). Fresh preserving: Recipes and techniques for today's home canning (37th edition)*

Only process foods for which you have an approved research-based recipe and processing time!

APPROVED FOOD PRESERVATION RECIPE SOURCES

- Preserving Food in Wyoming, 2024
- Complete Guide to Home Canning, USDA revised 2015
- Ball Blue Book Guide to Preserving, 37th edition, 2020
- Ball Complete Book of Home Preserving, 2020 edition
- Ball Canning Back to Basics, 2017
- The All-New Ball Book of Canning and Preserving, 2016
- So Easy to Preserve, 6th edition, 2020
- Commercial pectin recipes and manufacturer's directions
- and other up-to date Extension publications

Canning directions for preparation of food, pack and processing must be followed exactly!

- All canning should be done in standard mason canning jars and of the correct size for the recipe
- Measure headspace accurately- check each recipe for the correct headspace
- Only use approved lids to seal jars

INGREDIENTS

Do not personally create your own home-canning recipes. Do not add or change the ingredients or proportions in tested home-canning recipes unless using safe, tested and approved changes and substitutions allowed from an approved and reliable source. Doing so could compromise the safety of the product.

Safe changes or substitutions may be made to tested and approved canning recipes following the rules in the *Play it Safe! Safe Changes and Substitutions to Tested Canning Recipes* publication found at: <https://uwyoextension.org/uwnutrition/wp-content/uploads/2023/11/NDSU-play-it-safe-fn2102.pdf>

BOTULISM

Botulism is one challenge of high altitude food preservation. Reheating low-acid canned food as a margin of safety against botulism:

- Low-acid vegetables and meats may contain botulinum toxin without showing signs of spoilage.
- Correct, research-based recipes and canning practices for low-acid foods must be used.
- Before tasting or serving any home-canned, low-acid vegetables and meats, the jar should be opened and the contents boiled in an uncovered saucepan for 10 minutes plus 1 minute for each 1,000 feet above sea level.
- If food looks spoiled, foams, has an usual odor DISCARD.
- For instructions on how to detoxify questionable food jars, consult pages I-26 and I-27 of the 2015 edition of the USDA Complete Guide to Home Canning. <https://nchfp.uga.edu/publications/usda>

Reheating fish margin of safety recommendations against botulism:

The steps for oven-heating fish are:

- Correct, research-based recipes and canning practices for fish and seafood must be used.
- Open the jar of fish and examine it for spoilage. If spoilage is evident (looks spoiled, foams or has an unusual odor), detoxify the suspect food and DISCARD.
- Please refer to the USDA Complete Guide to Home Canning (2015) pages 1-26 and 1-27 for complete instructions on detoxifying suspect food. <https://nchfp.uga.edu/publications/usda>
- For canned fish- use a meat thermometer inserted in open jar of fish.
- Cover jar loosely with foil and heat in 350°F oven until the fish reaches 185°F.
- Let jar stand at room temperature for 30 minutes.
- Serve fish immediately or refrigerate.
- Bake seafood in a casserole at 350°F for time specified in recipe; internal temperature needs to reach 185°F.

Microwave heating of canned food is too uneven; therefore, it is not an acceptable substitute for the margin-of-safety heating processes for low-acid vegetables, meats, and fish described above.

It is important to note that margin-of-safety reheating is not intended to serve as a recommendation for consuming foods that are incorrectly processed. It is inherently dangerous to handle canned foods that may contain the botulinum toxin and should be avoided.

Sources of Information:

- Preserving Food In Wyoming 2024
- USDA Complete Guide to Home Canning www.uga/nchp/publications_usda.html
- Ball Blue Book Fresh preserving: Recipes and techniques for today's home canning (2020- 37th edition)
- "Find Your Altitude" National Center of Home Food Preservation Fact Sheet August 27, 2020 https://www.google.com/url?client=internal-element-cse&cx=011162308751179463004:iwwhlzmiavg&q=https://nchfp.uga.edu/how/general/find_altitude.html&sa=U&ved=2ahUKEwiy9Lr rzJSEAxUPPkQIHYNiAB4QFnoECAMQAQ&usg=AOvVaw0o3sa-GoY3-rjJn2NpHWHf
- Play it Safe! Safe Changes and Substitutions to Tested Canning Recipes, North Central Food Safety Extension Network, North Dakota State University Extension FN 2102 August 2023
- Fundamentals of Consumer Food Safety and Preservation: Master Handbook, Colorado State University Extension and Washington State University Extension, 2016



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