

## Making Altitude Adjustments When Canning

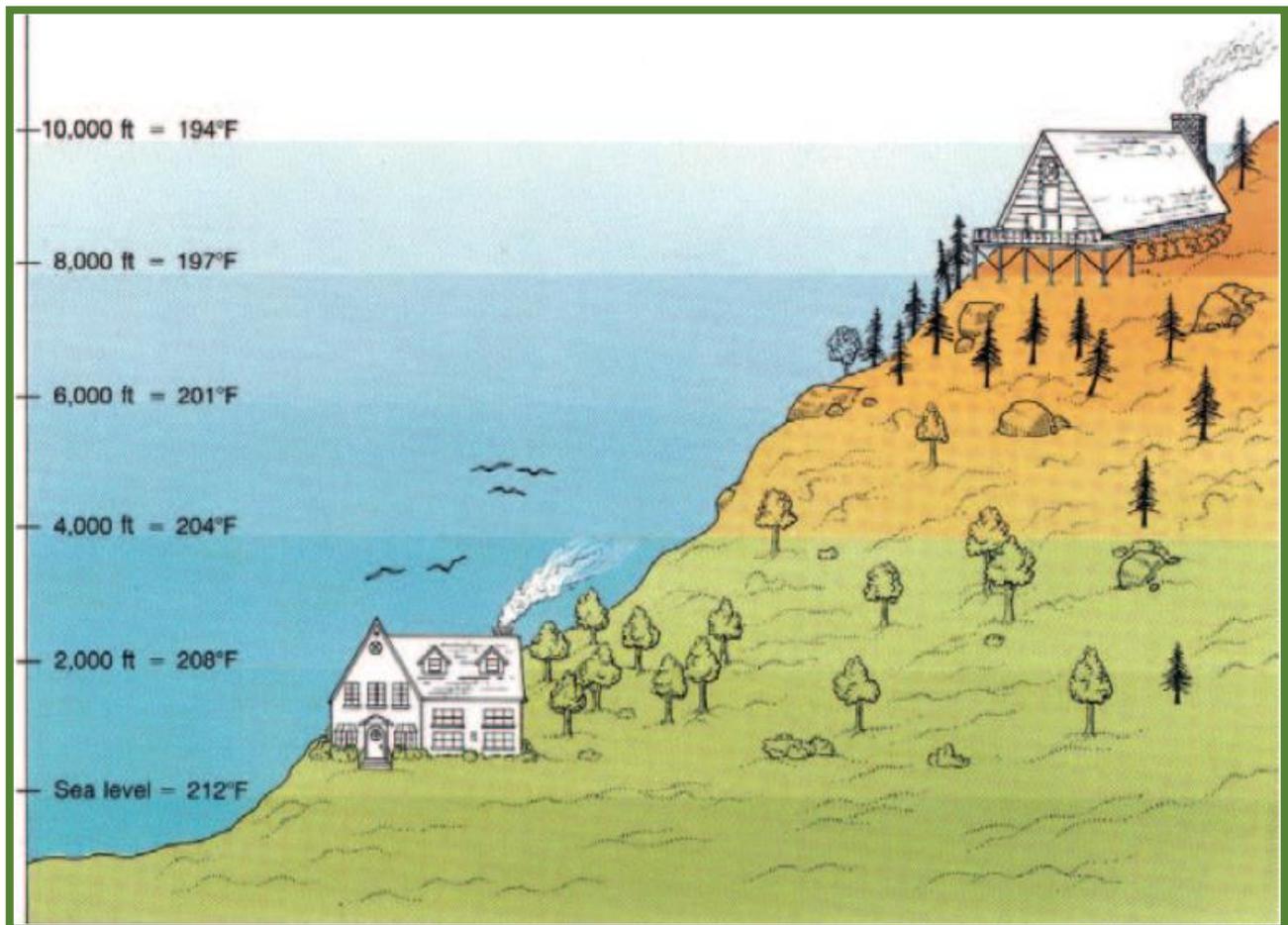
### BACKGROUND

Water boils when the individual water molecules have enough energy (heat energy from the electric unit or gas burner) to escape into the atmosphere. Atmospheric pressure is less at high altitudes. Less atmospheric pressure pushing down on the top surface of water means less energy will be required on the part of the water molecules to escape into the air as a vapor. Thus water boils at lower temperatures as altitude increases. In other words, as altitude increases, boiling point decreases.

### ADJUST ALTITUDE FOR SAFETY

Recommended processing times and canning methods for home canning are research-based. They depend on many factors. The heat-process must be sufficient to destroy harmful microorganisms. Water will boil furiously at temperatures well below 212°F at altitudes greater than 1,000 feet above sea level (see figure below). That means adjustments in processing must be made with both the water bath canner and pressure canners. With the water bath method, additional processing time must be added. With the pressure canner method, additional pressure is required.

### BOILING WATER TEMPERATURE AT DIFFERENT ALTITUDES



## HOW TO ADJUST FOR ALTITUDE

Both the PNW (Pacific Northwest) and the United States Department of Agriculture (USDA) food preservation publications include specific information on making altitude adjustments. Refer to them first. For additional information, see the altitude charts below for making processing changes for water bath and pressure canning at various altitudes.

### WATER BATH CANNING – ALTITUDE CHART

If you are preserving at an altitude higher than 1,000 feet above sea level, adjust boiling water *processing time* as indicated.

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

### PRESSURE CANNING – ALTITUDE CHART

If you are preserving at an altitude higher than 1,000 feet above sea level, adjust *pressure pounds* as indicated.

Altitude 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

### RESOURCES TO FIND YOUR ALTITUDE

- Google Earth is a free download program in which you enter your location (city or town, state) in the “Fly to” box, then place the cursor over your location; the elevations are shown at the bottom of the Google Earth page.
- Veloroutes.org provides an elevation at any address. Go to <http://veloroutes.org/elevation/> and enter the street address.
- Another source of elevation information is your local county Extension office.

For further information, please contact:  
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