
**COLORADO STATE UNIVERSITY EXTENSION
BOULDER COUNTY**

**BOULDER
COUNTY RURAL
LIVING
RESOURCE
GUIDE**

Home



**COLORADO STATE UNIVERSITY
EXTENSION**

INTRODUCTION HOME AND FOOD

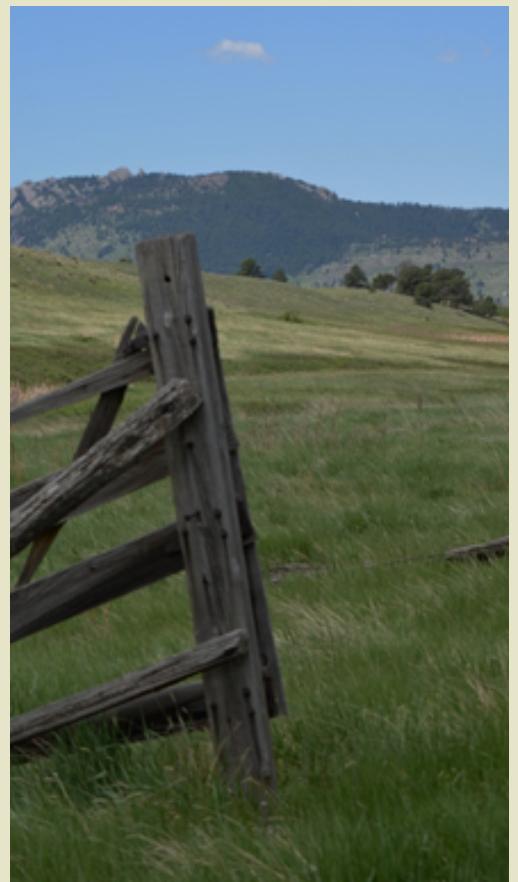
This section covers information for your home and the changes you need to make when preparing food at higher elevations.

Home

Firewood Insects

Food

Preservation, and Storage
High Altitude Food Preparation



HOME

Firewood Insects

If you rely solely or partially on firewood to heat your home, you may be bringing in some unwelcome insect guests. Fortunately, these shelter seekers mostly do not pose a danger to humans, our homes, or our furniture. They are either feeding directly on the wood, nesting in the wood, or are overwintering under the bark. Unfortunately, they do create a very visual nuisance crawling around your home or may infest your landscape trees.

Home insect invaders from firewood can be reduced by following these rules:

- Avoid stacking the wood directly on the ground. This keeps the wood from getting wet and reduces the chances for infestation by termites and ants.
- Don't stack firewood in or against the house or other buildings for long time periods. Termite or carpenter ant problems can develop and cause more serious problems. Plus, this is a wildfire hazard.
- Use the oldest wood first, as it is most likely to be infested. Avoid the tendency to stack new wood on top of old wood.
- Cover the wood during the summer and fall. This keeps it drier and exclude some creatures seeking overwintering sites.
- Shake, jar, or knock logs together sharply to dislodge insects and brush off any obvious structures such as webbing or cocoons before bringing it inside.
- Bring in small amounts of firewood that can be used up in a day or so and keep it stacked in a cool area (e.g., garage or porch) until it is burned. When wood warms up, the creatures in or on it become active.
- Do not treat firewood with insecticides. It is unnecessary and potentially dangerous due to fumes that may be produced when the insecticides burn.

Insects you might see:

- Carpenter ants: Wood that remains moist for an extended period is a likely candidate for infestation by carpenter ants. Carpenter ants hollow out galleries in the wood for nesting. Chances of these ants establishing a nest in your house are very slim.
- Termites: Wood that is stacked directly on the ground may be fed upon by termites. Termites brought into your home in firewood will not damage your home or furniture. If you feel you might have termites in your walls or floors, call a pest control company for advice. These termites enter through cracks in your foundation.

There are several groups of beetles that feed on wood and can accidentally be brought into your home in firewood. These beetles can be a nuisance if they emerge from firewood; however, none of these beetles harm your home or furniture.

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- Longhorned beetles: Attracted to dying, freshly cut, or recently killed trees. The larvae emerge from the eggs and burrow into the tree and spend 1-3 years tunneling through the wood.
- Metallic wood-boring beetles: Called flat-headed borers because they have a large, flattened head. They are like the longhorned beetles in that the larvae bore into wood, pupate, and adults can emerge from firewood.
- Bark beetles: One of the more common firewood insects found in dead trees. These beetles are small (less than 1/8 inch in length), brown or black and cylindrical. The adult beetles tend to attack wood in groups, so a log cut from a tree that they are feeding on can contain hundreds of individuals.

Resources:

CSU Extension Publications, Household Insect Fact Sheets

<https://extension.colostate.edu/topic-areas/insects/?target=publications#household>

FOOD

Preservation, Storage and High-Altitude Preparation of Foods

Many Colorado residents enjoy growing produce in their garden or purchasing locally grown produce for future consumption. It's possible to have delicious Palisade peaches, Cedaredge apples and San Luis Valley potatoes or homemade sauerkraut or pickles well into the winter. Good food storage practices preserve the food's quality, nutritional value and cuts down on spoilage while being safe to eat. Produce may be preserved by canning, pickling, freezing or dehydrating for longer storage.

Storage

It is possible to store foods for extended time periods in spaces that are temperature and humidity controlled. Storage can be done on a small scale, with a limited investment. Basements, insulated garages, and porches can be good options or alternatives to a root cellar. Unfortunately, storage only works for certain fruits and vegetables, and the amount of time any product can be stored varies. Although some produce may be kept at the same storage temperatures, it's not always advisable to store all produce together. Some items, such as onions, can give an off-flavor to other items or gas given off by apples can cause problems with other produce. For best results, store fruits and vegetables separately.

Timing of Storage

A frequent cause of early spoilage occurs when fruits and vegetables are placed in storage before cold weather begins in the fall. One of the most difficult steps in successful storage is to keep the produce in prime condition from the time of optimum maturity until the night time temperature is low enough to cool the storage facility (root cellar). The most complete nutrient retention are achieved if the produce can be stored under the proper conditions immediately at harvest. Use fruits and vegetables quickly after taking them out of cold storage as they do not keep as long as freshly-harvested produce. Before spoilage begins in earnest, stored produce can be preserved by canning or freezing. It is best to use the highest quality produce possible for canning or freezing.

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How successfully your produce keeps depends on maturity, quality, storage temperature and humidity. Late-maturing produce varieties are best-suited for storage (i.e. potatoes, squash, carrots, beets, pumpkins, onions, cabbage and apples). Products should be harvested at the peak of maturity or close to maturity. Crops should be harvested during dry weather. Do not wash root crops before storing; a thin dry soil crust of dry helps prevent shriveling. Leave an inch or more of stem on most vegetables to reduce water loss and prevent infection. Crops should be as free as possible from skin breaks, bruises or decay. Bruises and skin breaks greatly increase moisture loss. The inclusion of one diseased or damaged specimen can start decay that will rapidly destroy other stored food, or that will taint flavors with mustiness.

The Best Conditions for Storage

Temperature and Humidity

Many fruits and vegetables can be stored for extended time periods, provided they are stored under the proper temperature and moisture conditions that does not allow them to freeze or slows their natural decomposition cycle. Crops held in storage are living plants that are made dormant by their environment.



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Products suited to storage can be grouped according to the best conditions for each:

- Cold (32 to 40 degrees Fahrenheit) and very moist (90 to 95 percent relative humidity);
- Cold (32 to 40 degrees Fahrenheit) and moist (80 to 90 percent relative humidity);
- Warm (50 to 55 degrees Fahrenheit) and dry (60 to 75 percent relative humidity); and
- Cool (32 to 50 degrees Fahrenheit) and dry (60 to 70 percent relative humidity).

The following is a list of temperature and humidity requirement for fruits and vegetables grown in Colorado that are suitable for longer term storage (temp. in degrees Fahrenheit):

Apples: 30-32 degrees F; Moist; 2 to 6 months
Garlic: 32 degrees F; Dry; 6 to 7 months
Beets: 32 degrees F; Very Moist; 3 to 5 months
Onions: 32 degrees F; Dry; 6 to 7 months
Cabbage: 32 degrees F; Very Moist; 3 to 4 months
Peppers, hot: 50 degrees F; Dry; 6 months
Carrots: 32 degrees F; Very Moist; 4 to 5 months
Pumpkins: 50-55 degrees F; Dry; 2 to 3 months
Pears: 32 degrees F; Very Moist; 2 to 7 months
Squash, winter: 50-55 degrees F; Dry; 2 to 6 months
Potatoes: 40 degrees F; Very Moist; 4 to 9 months
Sweet Potatoes: 55-60 degrees F; Dry; 4 to 6 months

Packing Materials

Packing materials used in storage perform several functions:

- (1) insulation against fluctuating temperatures and freezing;
- (2) moisture retention; and
- (3) reduction of disease transmission. Use these materials only once, since they may become contaminated with fungi spores or bacteria. Produce moisture retention is very important, be sure to maintain circulation and prevent condensation. Individual wrapping of produce with newspaper aids moisture retention and reduces the possibility of cross-transfer of odors and disease.

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High Altitude Food Preparation

Ever since early pioneers pushed westward into the Rocky Mountain area, cooks have found problems with food preparation at higher elevations. Staple items, such as potatoes and beans, do not cook in the same time as at low elevations, and favorite cake or cookie recipes fail dismally. Even today, people moving from lower elevations to Colorado or other mountainous regions are puzzled by high-altitude cooking and baking problems. In addition, standard cookbooks and periodical recipes are generally written for low altitude baking and cooking. Baking and cooking difficulties are due to differences in atmospheric pressure. Air pressure is greatest at sea level and becomes less as the elevation increases. Generally, there is no need to make recipe adjustments up to 3000 feet. As the elevation increases, however, the challenges increase. The decrease in atmospheric pressure affects baked products, sugar cookery, jelly and puddings, deep fat frying, and canning procedures. Decreases in atmospheric pressure permit faster water and other liquids evaporation, greater expansion of leavening gases, and lower boiling points, all of which affect food preparation.

Cooking

With lower atmospheric pressure, the temperature required for water to boil is lower. Therefore, cooking food in boiling water at this lower temperature takes longer. An increase in cooking time is needed for vegetables such as green and wax beans, beets, cauliflower, and onions. To preserve the bright green color in green vegetables such as asparagus, broccoli, Brussel sprouts and green beans, cook them for a few minutes with the lid off, and then cover tightly for the remainder of the cooking time. Acids that could affect the color escape from the pan at the beginning of the cooking period. Spinach is an exception, it should be covered throughout cooking and cooked for only a short time, just until the leaves are wilted and the ribs are tender.

Baking Bread

High altitude has its most pronounced effect on the rising of bread dough. Dough doubles in size faster at higher altitudes than at lower altitudes. The higher the altitude, the shorter the time required for dough to double its size. However, bread needs to rise in the bowl (ferment allow for gluten development) for a certain length of time to develop a good "nut-like" flavor and a light, tender texture. For this reason, it's best to allow the full bowl-rising time given in your recipe. Another hint on bread baking at high altitudes: flours tend to be drier and thus able to absorb more liquid in high, dry climates. Therefore, you may need less flour to get the proper dough consistency.

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Breadmakers

Since most recipes for breadmakers are not written for high altitude, some adjustments are necessary so over-fermentation does not occur. Try reducing yeast to 1-1/2 teaspoons per 3 cups of flour, increase salt to 1-1/2 teaspoons, increase liquid to 1-1/2 cups + 1 tablespoon per 3 cups of flour, add 1-1/2 teaspoons gluten. Research shows that using the sweet dough cycle is best for white bread to control fermentation and allow more gluten to develop.

Biscuits, Muffins and Quick Breads

Although the cell structure is firm enough to withstand the increased internal pressure at high altitudes without adjustment, a bitter or alkaline flavor may result from inadequate neutralization of the baking soda or powder. When this occurs, reducing the baking soda or powder slightly usually improves results. Rich quick breads with a cake-like texture are more delicately balanced and usually benefit from adjustments for altitude. A quick bread that adjusted properly for altitude has a light reduction in the proportion of leavening agents, fat, and sugar, and/or a slight increase in the proportion of eggs or liquid ingredients. Using smaller pans and increasing the baking temperature 15 to 25 degrees F may also help them from falling.

Cakes

In cakes, too much rising stretches the cells, making the texture coarse, or breaks the cells, causing the cake to fall. If rising occurs too quickly, the cake batter may even spill over the top of the pan. Fill pans only two-thirds full. When problems do occur with cakes made with shortening or other fat, they can usually be corrected by decreasing the baking powder or soda. Increasing the baking temperature 15-25 degrees F “sets” the batter before cells formed by leavening gases expand too much. Consider decreasing sugar in the recipe and/or increase liquid. You may need to reduce the amount of shortening or fat or add an extra egg to help strengthen the cell structure. Don’t assume that all sea-level recipes will fail, make only one adjustment at a time in a recipe until you find the right combination of corrections.

Cookies

Modifications may include a slight increase in baking temperature, a slight decrease in baking powder or soda, fat, and/or sugar, and/or a slight increase in liquid ingredients and flour. Many cookie recipes contain a higher proportion of sugar and fat than necessary.

FOOD

Canning

High Altitude canning

Water boils furiously at lower temperatures in high altitudes thus the processing time must be increased for boiling water bath canning. For pressure canning, the pressure is increased. See below.

Boiling water bath – Add these many minutes to your processing time

3001 – 6000'	10 min.
6001 – 8000'	15 min.
8001 – 10,000'	20 min.

Pressure canning	Weight gauge	Dial gauge
4001 – 6000'	15	13
6001 – 8000'	15	14
8001 – 10,000'	15	15

Resources::

Storage of Home-Grown Vegetables. CSU Ex. Fact Sheet 7.601

www.ext.colostate.edu/pubs/garden/07601.html

Storage Guidelines for Fruits and Vegetables, Cornell Cooperative Extension

www.gardening.cornell.edu/factsheets/vegetables/storage.pdf

Storing Fruits and Vegetables from the Home Garden, U. of Wisconsin Ext. Fact Sheet A3823

<http://learningstore.uwex.edu/assets/pdfs/A3823.pdf>

Food Storage for Safety and Quality. CSU Ext. Fact Sheet 9.310

www.ext.colostate.edu/pubs/foodnut/09310.pdf

Food Safety and Inspection Service, Safe Food Handling. USDA

www.fsis.usda.gov/PDF/Freezing_and_Food_Safety.pdf

If Your Freezer Stops. CSU Ext. Fact Sheet 9.357

www.ext.colostate.edu/pubs/foodnut/09357.pdf

Ball Blue Book Guide to Preserving - available online

So Easy to Preserve, Cooperative Extension Service The University of Georgia, sixth edition,

<https://extension.uga.edu/publications/detail.html?number=B989&title=So%20Easy%20To%20Preserve>