



Storing Food

In Utah most fruits and vegetables cannot be grown year-round. However, storing food during the winter months from our gardens or from farmers markets allows us to maintain our commitment to local food all year long. Before the advent of refrigerators and the long distance transportation system, food storage techniques were essential. People native to this region and early pioneers were masters at subsisting on locally harvested food and were skilled food preservers. However, due to modern technological ‘advances,’ food storage skills are scarcely utilized and are disappearing with our elders’ generation. As a result modern city dwellers have become dependent on an environmentally destructive and energy-intensive long distance food system. By eating locally we reduce the distance between our food and the negative impacts associated with the unsustainable system that produce it. In addition, storing food allows urban gardeners to reach a more complete level of self-reliance and food security, while providing an outlet for surplus food when the garden is most prolific. (See WCG’s *Eating Locally and Organic* handout for more on the local food movement).

Food can be preserved in a variety of ways specific to the type of fruits or vegetables one is trying to store. The main food storage methods include: freezing, dehydrating, canning, cold storage, jamming and pickling. This handout will focus on the first four.

Freezing

Freezing is likely the most common food storage technique utilized today as most people own their own freezers and most of our food is stored in giant freezers in centralized distribution warehouses before it arrives at the market. Freezing slows or stops the natural decomposition process by stopping chemical breakdown and killing decomposer microorganism, thus preserving the food. Most produce requires blanching (heating vegetables in boiling water or with steam, then submerging them in ice water for cooling) before they are frozen. Peppers, tomatoes, winter squash (cook then freeze), onions and most fruit do not require blanching. Blanching helps preserve color and nutrients in frozen veggies and blanching time is specific to each type. A general rule is that when produce color intensifies, it is ready to be removed from the boiling water or steam. Some fruits will darken when frozen. This can be prevented by dipping fruit in an antioxidant mixture (ascorbic acid) before freezing. Try chopping fresh herbs and then freeze with water in ice-cube trays. For tomatoes, cook down to a sauce and freeze. Frozen produce will generally last at least 12 months and often times much longer. Always use airtight containers to prevent moisture loss and freezer burn. When freezing produce, like all other food storage methods, always save the most impeccable produce for optimal storage length and decreased incidence of rot. Pros to freezing are that it is simple and retains much of the flavor and vitamins. The drawbacks are that freezing is energy-intensive and in the case of power outages, food will spoil. For more information on freezing see the “Resources” section at the end of this handout.

Dehydration

One benefit of this method is that dried food takes up less space than frozen, canned or stored produce. Also, if drying in the sun, this method uses the least amount of energy. Similar to other preservation methods, dehydrating fruits and vegetables slows down the chemical and micro-biotic decomposition processes. Perhaps the oldest food preservation technique, dehydration can be accomplished using electric or solar powered food dehydrators, ovens and most simply by laying food out to dry under the sun. Using electric dehydrators is the fastest method of drying vegetables and fruits, taking 6 or more hours before it’s ready to store. Apricots, peaches, grapes, plums, apples, cherries, currants, bananas, mangos, peppers, tomatoes and shell peas and beans are among the most popular fruits and vegetables to dry. Most veggies need to be blanched (above) before dried and you may want to dip fruit in an ascorbic acid syrup to preserve color. Chop the produce in uniform pieces for uniform drying rates. Fruits and veggies can be eaten in their dry state (ex. raisins, apricots) or rehydrated for cooking (ex. peppers). Dehydrated food will store from 6 to 32 months depending on the type. Freeze dried produce for a few days to kill any bugs or larva than may have hidden in your fruit.

Shell varieties of beans and peas are easy to dry without any special equipment. Let pods dry out and become brown on the plants. Pick pods before they crack and beans (or peas) fall out. If it looks like frost is imminent, pick the peas and beans and finish drying them off the plant. Freeze for 2-3 days to assure all bugs and their larva have been killed. Then store them in a jar in a cool, dry place for up to 1 year.

Other simply drying methods that you can try if you don’t have an electric dehydrator include: laying out apricots or blanched tomatoes on a cheesecloth stretched inside a wooden frame, and then covered with an additional layer of cheesecloth to protect against bugs (drying will take 2-4 days); Hang herbs and peppers to dry from their stems outside in the shade or in a room with good circulation. Store peppers in dry conditions for 6+ months. For more information on dehydrating food check the references listed below.

Canning

Tomatoes, tomato sauces, salsas, peppers, peaches and pears are the most commonly canned foods. Out of all the food preservation techniques, canning requires the most equipment and most particular process. There are two main methods for canning: water bath canning for high acidity foods (ph of 4.6 or lower) and pressure canning for low acidity foods. Boiling the jars both pressure seals and kills bacteria. The difference is that for low acidity foods, a temperature of 240 degrees F (well above boiling) is required to kill any dangerous microorganisms. Both methods require large pots (or a pressure canner for the latter), canning jars, rings and lids, and jar lifter tongs. Store canned foods at 50-70 degrees F in a dry and dark place. Canning will provide delicious home grown food all winter long. For more information on canning, refer to our "Resources" section below.

Cold Storage

Much of the produce from your garden will keep for quite a long time if harvested at the right time and stored correctly. In most instances, do not wash the fruits and vegetables before you store them. Store only mature, damage free vegetables. The following list is taken from Home Food Systems, edited by Roger B. Yepsen, Jr. (Rodale Press, Emmaus, Pennsylvania, 1981).

Apples. Store tree-ripened fruit, and leave stems on. Keep in shallow baskets or boxes, since fruit bruise easily. Requirements: 32 to 40 degrees F, 80-90% humidity. Life: 4 to 6 months.

Beets. Pick mature vegetables before first killing frost. Pack in layers of damp sawdust or sand. Requirements: 32-40 degrees F, 90-95% humidity. Life: 4-6 months.

Cabbage. Pick firm, solid heads, and trim off loose outer leaves. Place heads on shelves, string them up by the roots, or wrap in newspaper and store in boxes or bins. (Beware: cabbage emits a strong odor during storage.) Requirements: 32 - 40 degrees F, 80-90% humidity. Life: 2 to 4 months.

Cantaloupe. Pick just before maturity. (Fully ripe cantaloupe will keep only 1-2 weeks.) Store on shelves or in boxes or baskets. Requirements: 40 to 50 degrees F, 85-95% humidity. Life: 4-6 weeks.

Carrots. Dig before any hard freezes. Store in cartons of sawdust, sand, or leaves. Requirements: 32-40 degrees F, 90-95% humidity. Life: 6 to 8 months.

Garlic. After curing (clip leaves off and leave out of direct sun 5-7 days), store in paper bags, or braid into strings and hang from rafters. Requirements: 35-40 degrees F, 60-70% humidity. Life: 6 to 8 months.

Grapes. Store only fall ripening grapes. Keep bunches in trays or baskets one layer deep, or hang in bunches. Requirements: 32 to 40 degrees F, 80 to 90% humidity. Life: 1 to 2 months.

Onions. After curing (leave in sun 5-7 days), remove tops and store in bins or string bags, or braid and hang from rafters. Requirements: 35-40 degrees F, 60-70% humidity. Life: 4 to 6 months.

Parsnips. Mulch in ground or store in damp sawdust, sand, or leaves. Requirements: 32-40 degrees F, 90-95% humidity. Life: 4 to 6 months.

Pears. Pick mature—but not fully ripe—pears. Wrap individually and store in shallow layers in boxes or baskets. Requirements: 32 to 40 degrees F, 80-90% humidity. Life: 2 to 3 months.

Potatoes, white. Late potatoes store best. After curing (expose to 60-75 degree air for 7-10 days out of sun), pack in baskets or boxes. Don't store near apples, which give off a gas that promotes sprouting. Requirements: 32-40 degrees F, 80-90% humidity.; Life: 4 to 6 months.

Pumpkins. After curing (expose to sun and air 10-14 days), place on shelves or in boxes. Requirements: 50-60 degrees F, 60-70% humidity. Life: 4-6 months.

Squash, winter. After curing (expose to sun and air for 10-14 days), pack on shelves or in boxes. Requirements: 50-60 degrees F, 60-70% humidity. Life: 4-6 months.

Tomatoes, green. Pick mature green fruits before frost. They will gradually ripen at 55-70 degrees F. Requirements: 50-60 degrees F, 60-70% humidity. Life: 4-6 weeks.

Turnips. Harvest before a heavy freeze. Store like carrots. Requirements: 32-40 degrees F, 90-95% humidity. Life: 2-4 months.

Following the temperature and humidity requirements is critical. Keeping things cool is essential. Select a cool spot in your basement or other unheated space which does not freeze. A root cellar is ideal and not difficult to construct. *Home Food Systems* has instructions for one that was built in Salt Lake City. Ask relatives who grew up in the country how they stored their food.

Resources:

Home Food Systems, edited by Roger B. Yepsen, Jr. (Rodale Press, Emmaus, Pennsylvania, 1981)

The Big Book of Preserving the Harvest, Carol W. Costenbader (Storey Books, Massachusetts, 2002)

From Asparagus to Zucchini: A Guide to Farm-Fresh Seasonal Produce, Madison Area Community

Supported Agriculture Coalition, (Monona, Wisconsin, 1996)

Utah State University Cooperative Extensions Service: <http://extension.usu.edu/cooperative/index.cfm/cid.256/>

The Busy Person's Guide to Preserving Food, Janet Chadwick, Garden Way Publishing, 1995