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## Harvesting and Storing Vegetables

Harvesting fresh vegetables from your home garden is a very rewarding experience. The home-grown flavor and freshness cannot be rivaled by store bought produce. Harvesting some crops at peak ripeness can be tricky. Improper handling and storage can cause harvested vegetables to spoil more quickly. This information is designed to help you get the most out of your vegetable harvest.

Proper storage of vegetable crops requires the proper combination of temperature and humidity. Some crops, such as winter squash and pumpkins, prefer cool and dry conditions (50-60°F and 60% relative humidity). Onions and garlic will stay fresh longest when kept cold and dry (32-40°F and 65% relative humidity). Cold and dry conditions are found in refrigerators. Green leafy vegetable and root crops prefer cold and moist conditions (32-40°F and 95% relative humidity). Cold and moist conditions are not easy to maintain (most refrigerators are too dry). Cucumbers, peppers, tomatoes, eggplant, summer squash, and other summer vegetable “fruits” require cool (55°F) and moist storage.

When harvesting vegetables, be careful not to break, nick, or bruise them. Handling harvested vegetables generally decreases their shelf-life. Harvest only vegetables of high quality. Rotting produce cannot be stored for very long, and could spread decay organisms to other stored vegetables. Several common crops are listed below with their harvesting and storage requirements.

**Asparagus:** not harvested until the third year after planting, store cool and moist, will last longer if stored upright.

**Beets:** harvest when they are 1¼ to 3 inches in diameter, remove tops, store cold and moist, can last up to 5 months.

**Cabbage:** harvest when heads are compact and firm, store cold and moist, can last up to 5 months.

**Cantaloupe:** harvest when fruits are firm, netting is even, and they slip off the vine easily. They can be stored for one week if kept cold and moist.

**Carrots:** harvest when tops are one inch across, remove tops, store cold and moist, can last up to 8 months.

**Cucumbers:** harvest for slicing when 6 inches long, store cool in perforated plastic bags. Do not store with apples or tomatoes as they produce ethylene gas which hastens ripening and will cause cucumbers and other vegetable “fruits” to spoil faster.

**Eggplant:** harvest while fruit still feels “waxy” and before the color becomes dull. Store like cucumbers.

**Green beans:** harvest when seeds are immature (2-3 weeks after bloom), can last one week if stored cold and moist.

**Onions:** harvest when necks are tight and scales are dry. They should be cured at room temperature for 2-4 weeks then store cold and dry.

**Potatoes:** harvest when vines die back, stored cold and moist, keep away from light, cured at 50-60°F or 14 days before storage, will sweeten below 38°F.

**Peppers:** harvest when fruits are desired size and/or color, store like cucumbers, can last for two weeks.

**Pumpkins and winter squash:** harvest when shells harden, before frost, store cool and dry, and will store for at least 2 months (depending on variety).

**Summer squash:** harvest when 4 to 6 inches long, store like cucumbers, can last for one week.

**Sweet corn:** harvest when the silks are dry and brown and kernels are milky, and if stored cold and moist can stay very fresh for 5 days.

**Tomatoes:** harvest when fruits are desired size and/or color, store like cucumbers, can last for 5 days.

**Watermelon:** harvest when underside turns from white to yellow or produces dull sound when slapped, store cool and moist, can last for two weeks.

## Preserving Foods

**Freezing** is often the quickest food preservation method for small quantities. Start with fresh, tender vegetables. Wash them and cut them into desired sizes. Blanch (heat) vegetables before freezing to inactivate enzymes. This will prevent color and flavor loss. Blanching is done by boiling, steaming, or microwaving the prepared vegetables. The thicker the pieces, the longer they should be blanched. For example, peas should be blanched for 1 to 2 minutes while whole ears of corn may take 10 minutes. Blanched food should be chilled quickly, drained, and then put into waterproof containers before freezing. This is the easiest way to preserve green chiles, but, rather than blanching, they are roasted. Advantages: quick and safe. Disadvantages: requires freezer space and energy inputs (electricity or propane).

**Canning** is the old reliable food preservation method. Today, most of us rely on others to do our canning (Del Monte, Green Giant, etc). The topic of canning is complex and adherence to food safety practices is critical. Many reference guides are readily available where canning supplies are sold and on the Internet. An excellent web resource is the USDA Guide 1, Principles of Home Canning available from the Utah State University web site. Canning preserves food by inhibiting the growth of microorganisms (molds, bacteria, and yeasts), denaturing enzymes, limiting exposure to oxygen, and limiting moisture loss. The canning process may involve all or part of the following steps: selecting, washing, and peeling (some crops) the crop, hot packing, adding acids (lemon juice or vinegar), using sound jars and new self-sealing lids, processing in boiling water or a pressure cooker for a specified amount of time. Advantages: food lasts a long time and no refrigeration required. Disadvantages: time intensive and must adhere strictly to processing and safety instructions.

**Dehydration** is the world's oldest method of food preservation. Dehydration preserves food by removing most of the water and thereby severely limiting the ability of microorganisms to utilize the food as an energy source. Exposure to sunlight can cause some nutrients such as vitamin C to be lost. Blanching before dehydration will help preserve vitamin A and vitamin B losses are moderate during dehydration. Because dehydration removes water, the food decreases in size and weight. Yields of dehydrated food are directly related to the water content of the original product. Heat for dehydration is supplied by the sun or other heat source (electrical or wood fire). Foods should be dehydrated as fast as possible. However, if dried too fast, the outer cell layer may become hardened leading to uneven drying and decreased quality. Food should have good air circulation and be only one layer deep while drying. Dehydrated foods are good for backpacking and camping and homemade beef jerky is delicious. Food dehydrators consist of an enclosed cabinet, a controlled heat source, and a method of circulating the air to remove moisture. Dehydrators can be purchased commercially or home built. Advantages: less space is needed to store food and convenient to transport. Disadvantages: foods may lose some nutrients or become tough and water may be required to rehydrate.

**Storage Areas** should be kept above 32 and below 70 degrees F. The cooler the area, the longer the shelf life of the stored food. The storage area should also be kept below 15% relative humidity and adequately ventilated to prevent condensation of moisture on containers.

**Storage Life** varies with method of food preservation and storage area conditions. When food is stored too long, two things may happen: 1) color, flavor, aroma, texture, or appearance is deteriorate to a level where people will not consume the food, and 2) nutrient deterioration may be severe enough to render the food an unreliable source of nutrients. Stored food may deteriorate from natural decomposition processes (metabolic activity), infection with microorganisms, insects or rodents, contamination with non-food materials or off-flavors from containers, or chemical changes due to light exposure or oxidation.

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Adapted from original Backyard Gardener publications by Jeff Schalau, Agent, Agriculture & Natural Resources, University of Arizona Cooperative Extension, Yavapai County

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