



VEGETABLE STORAGE

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Storing vegetables is a means of prolonging the supply of fresh produce during the winter months. Fifteen or more kinds of vegetables can be kept successfully in storage, and methods of storing important crops are discussed in this publication.

Vegetables that are put into storage should be sound, in the proper stage of development, and free from blemishes such as cracks, cuts, bruises or injuries of one kind or another. Crops should be carefully handled and inspected previous to storage. In this way no diseased or injured specimens will be stored.

Storage places. Vegetables can be stored in the cellar or basement, in outdoor pits or banks of soil, special houses built for storage such as onion houses, or in outdoor cellars. A cellar or basement containing a furnace is usually too warm and dry for most vegetables, but a room can be partitioned off with at least one screened inlet of cold air provided for ventilation and regulation of temperature. Such a room, already built for canned fruits and vegetables, will be satisfactory for potatoes and onions, tomatoes, peppers, squash, and pumpkins. In this room, shelves or racks are useful for holding squash, pumpkins, peppers, tomatoes, onions and sweet potatoes. Bins are oftentimes used for holding potatoes and should be raised a few inches from the floor to permit free circulation of air and prevent the bins from becoming nesting places for mice or rats.

The construction of outdoor earth banks is discussed in the paragraphs concerning root crops. Special houses are built for onions, squash, and potatoes when they are grown on a commercial scale.

In parts of the state where winters are dry, an outdoor cellar can be made by digging a hole in the ground, boarding up the sides and having a hinged hatchway and a ladder for entrance.

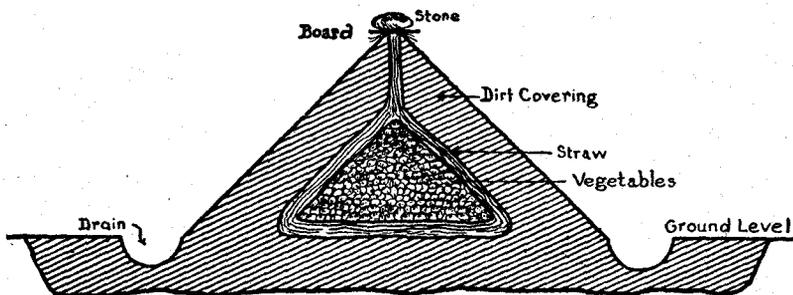


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Beans and peas. As soon as the dry seed is threshed it should be fumigated with carbon bisulphide to kill weevils. The dosage is from 5 to 8 pounds to 100 bushels of seed. For small lots use a half gallon jar of threshed seed and pour one tablespoon of carbon bisulphide over the seeds and tightly close, leaving it for 48 hours. The temperature of the fumigation room should be above 60° F. Dried peas or beans for table use should be well aerated after fumigation before being used for food. (See Extension Bulletin 551.)

Beets, carrots, parsnips, salsify, turnips, and rutabagas. It is possible to keep roots in the ground from being frosted by cutting off the tops fairly close to the roots and throwing soil from between the rows over the roots. A sufficient amount of soil should be used to protect the roots from freezing. Parsnips and salsify are the hardiest of all roots, and in many places may be satisfactorily stored by being left in the ground all winter. Because roots shrivel quite readily after they are dug from the ground it is undesirable to store them in bins like potatoes. They should be surrounded by moist earth or sand.

Outdoor banks are often used for protecting roots. They are constructed by digging a shallow excavation about 6 inches deep and of suitable diameter to hold the amount of roots stored. The bank should be in a well-drained place and is usually lined with straw, the roots being heaped into a cone-shaped pile. The covering material consists of alternate layers of straw and soil, according to the severity of the weather. When finished, the pile is usually 3 to 4 feet high above ground level. Too much covering in the early part of the storage may induce heating of the roots and premature growth.



In severe weather there should be enough covering of straw and soil to protect the roots. A shallow trench around the base of the bank will carry off excess water. If a large quantity of roots is to be stored they will keep better in small banks than in large ones.

Ventilation may be obtained by extending a hollow tile, pipe or flue of rough lumber through the middle of the pile, starting a few

inches above the bottom of the pit and extending several inches above the surface of the pit, being capped to keep out rain.

Cabbage keeps best at temperatures approaching 32° to 40° F. Leave the heads in the field as long as there is no severe freezing. They can be protected as they stand in the rows by putting a few of the large, thick, outer leaves over the top of the heads. Where it is desirable to store cabbage through the winter to keep it from being frozen or to remove it from low ground that may be overflowed, the heads may be put in a trench plowed out sufficiently deep to cover both stems and heads. The entire plant is taken up from the row and placed in the trench, taking particular care to cover the stem and the base of the head which is the most susceptible part of the plant to freezing. The heads should be solid and the outer leaves should be left on.

Celery. Protection of this vegetable from cold weather can be obtained by banking the plants with boards, soil, or both. Boards should not be up against the plants for longer than three weeks or so, otherwise there is liable to be a breakdown of the stalks. Celery will freeze in the field at a temperature of about 28° or 29° F. Plants not fully matured or blanched in the field can be dug up with the roots on and placed in moist sand or soil in a frostproof cellar or outhouse. In such a place water should be provided to keep the plants growing slightly.

Onions. Previous to putting onions in storage the bulbs should be well cured in the field. The tops and bulbs should be dry when hauled into the storage house. In a commercial storage house the onions are piled on racks from 12-18 inches deep, or topped and put into open-meshed sacks or ventilated crates. A temperature of 36° to 45° F. is desirable to keep onions from early sprouting.

The relative humidity of the storage place should be about 60 per cent. The onions should not be handled in storage while frozen, but should be allowed to thaw out gradually if they have been subjected to temperatures below 30° F. There should be a circulation of cool air in any place where onions are stored. Certain varieties of onions do not keep in storage, such as Bermudas. Yellow Danvers keep well for a long time.

Peppers. Green or red peppers may be stored for a few weeks without much shrinkage provided the temperature is at 50° F. or below. The thick meated peppers, such as the California Wonder, are most suitable for storage. The fruits should be sound and unblemished by bruises. During periods of light frost the plants in the garden can be covered with burlap and fruits thus may be harvested for a longer season in the fall.

Potatoes. The best storage temperature for table or seed potatoes is one high enough for the first few days to permit of callousing of wound injuries, preferably 60° to 65° F. After this, the tubers are best kept at as nearly 34° to 38° F. as possible. Light should be excluded; and while a fairly high degree of humidity is desirable, there should be ample aeration. Potatoes should be dried off and sorted carefully before the tubers are stored permanently. Those potatoes damaged in digging are unlikely to keep as long as the sound tubers. Types of potato storage houses including outside pitting, dugouts, or cellars as well as insulated structures are fully discussed in U. S. D. A. Farmers' Bulletin 847.

Pumpkin and squash. Considerable decay of these vegetables often occurs in storage, but this may be largely prevented if the fruits are fully matured in the field, are carefully handled when being harvested and brought into the storage place, and are not subjected to any freezing temperatures before they are brought in to be stored. Skin bruises and abrasions must be avoided if the squash are to be kept for any length of time.

After the squash have been cut from the vines with at least two inches of the stem on the fruit, they may be left in the field in groups, but not piles, for a couple of weeks or so if the weather is favorable. It is undesirable, however, for squash and pumpkins to be exposed to frosts; otherwise, their keeping quality is impaired.

The fruits should be stored one deep on racks or shelves in a well-ventilated, dry store house where the humidity is relatively low and the temperature is between 50° and 60° F. A slightly higher temperature should be maintained during the early part of the storage so as to dry off some of the excess moisture in the rinds of the squash when they are first brought in. A cool, moist storage place for squash induces mold, especially if there has not been much care used in preventing exterior abrasions or bruises.

Tomatoes. Fruits that are in the mature green stage or beginning to show a very slight amount of color when picked will ripen normally when stored at 55° to 60° F. The lowest temperature at which full ripening with good color and flavor will develop is about 50° to 55° F. At this point the rate of ripening is comparatively slow, but there is no decay or breakdown. It is not necessary to wrap tomatoes or to keep them in the dark when they are put into storage. If the ripening fruits are chilled to 36° to 40° F. they may be expected to break down rather readily when brought to higher temperatures. All tomatoes for storage should be carefully handled and the fruit itself should be sound and without bruises.