OC0296

Michigan State University Extension-Oakland County

Storing Garden Vegetables in Michigan

Storing vegetables is perhaps the easiest and least expensive of all methods of food preservation. Many families prefer to store such things as carrots, beets and pumpkins rather than can them. Some vegetables such as turnips, rutabagas, salsify, parsnips, potatoes and onions are kept best without any kind of progressing before storing. For good results, you must have good storage conditions, whether you store in the basement or outdoors.

Although each family's needs vary, the amounts listed in Table 1 are about those needed by the average family of 5 people. The amount of each kind of vegetable to store will depend on your family's tastes and on the amount of canning you do.

Beets	1/2 to 1 bushel
Carrots	2 to 3 bushels
Turnips & Rutabagas	1 to 2 bushels
Salsify & Parsnips	1 to 2 bushels
Potatoes	12 to 20 bushels
Chinese cabbage, celery and Brussels Sprouts	Enough for a short time only
Onions	1 to 3 bushels
Cabbage	25 to 35 heads
Squash & Pumpkins	20 t0 25 fruits
Dry Beans	8 to 12 quarts
Tomatoes (green-mature)	1 to 2 bushels

Stored vegetables vary in their temperature and humidity needs. Carrots, beets, parsnips, salsify, rutabagas and turnips must be kept cool and moist. A humidity of 90 to 95% and temperature of 32º to 40º F are best. Naturally, this high humidity is very hard to achieve in an open basement storage room. Therefore, these vegetables are usually stored in moist sand or leaves so that the humidity can be kept high. If you store carrots in the basement, you can pack them in cans or similar containers with leaves or sand to keep a high humidity. Parsnips and salsify are often left in the ground over winter. With a mulch of straw or leaves over them, they will keep very well.

Potatoes, cabbage, cauliflower and Chinese cabbage need to be kept in cool and moderately moist air. A humidity of 80 to 90% and a temperature of 32º to 40º F. are suggested. These need not be stored in sand, since you can keep this humidity in the average basement storage room. Cabbage stored in the basement tends to "scent up" the house, so you may prefer to store it outdoors by one of the methods suggested later.

Onions, beans, peas and soybeans need a cool, dry storage. Do not pull onions until the tops have dried. Then spread them out in a well-ventilated place to dry for a week or 10 days before placing them in storage. A moist root cellar or basement storage room is not a good place to store onions. The attic or a cold dry room in the basement is best. Do not let them freeze. You can store them in slatted crates, coarse mesh bags, or on shelves in thin layers. Do not place them in deep layers of closed containers, or they may heat up and spoil. Store dry beans, soybeans and peas in closed containers, such as glass jars.

Pumpkins and squash need to be stored in a dry, warm place. Store them at about 40º to 50º F. in a dry room. They keep best if placed on shelves so that they do not touch each other.

Vegetable Storage

For every varying type of vegetable storage, there is one physical and one chemical breakdown in plant tissues, especially during the early storage period, that creates heat that cause gases to be given off. Also, because stored vegetables are merely dormant, not dead, they take in certain gases from the air while giving off others. To all for this process, there must be some sort of ventilation provided in any type of vegetable storage.

Basement Storage Construction

To build a well constructed basement vegetable storage using wood, build double walls and use insulating materials such as rock, wood, or redwood bark between them.

For storage room, pick a corner of the basement with a window. Make a framework of 2x2's or 2x4's to enclose the area, and cover the framework with waterproof building paper. Then sheet up the walls with lumber or wallboard. Fill the space between the ceiling and place 2 or 3" of the insulating material between the ceiling and the floor above. The door should fit well and should be insulated.

Next remove one pane of glass from the window and build a ventilating flue into the space. This flue should extend almost to the floor to serve as a cold air intake, and fixed so it can be closed in very cold weather. Fix one pane of glass in the window so it can be opened to let warm air out. Darken this and the other panes so the basement can be kept dark at all times. Cover both openings with wire screen or hardware cloth to keep mice out.

Build a slatted floor over 2 layers of about 3" of sand placed on the concrete basement floor; if sand is moistened, it will help to maintain proper humidity in the storage rom. Shelves can be built in the storage room to make more storage space. If shelves are wide, can place the sand on the floor under the shelves and pack vegetables in it. Then a slatted floor is not necessary. Storage bins for various kinds of vegetables are also a big help.

Outdoor Storage

Probably many home gardeners do not have suitable basement storage rooms or they find it convenient to build them. In that case you can store most vegetables outdoors by one of several methods.

In a very small storage pit (less than 1 bushel) dry straw or leaves lining the pit will probably provide all the ventilation needed. Add the straw or leaf covering gradually as the outdoor temperature drops. This gives better ventilation early in the storage period and avoids heating at that time. Always be sure to have plenty of covering to avoid freezing. In large pits, use a ventilator.

Crate Storage

Of all the methods of outdoor storage, crate storage is probably the best. You can place an assortment of vegetables in each of several slatted potato crates. Then take one crate into the house at a time during the winter.

Place the crates in a well-drained spot outdoors. They should have a layer of 3 to 4" of straw or leaves under them. Space them a few inches apart; that way, you can put enough straw between the crates so that when you remove one, the rest will not be exposed to the cold.

Then make intake ventilators from two pieces of lath. Nail them together and place them horizontally on top of the soil. Place one end in each crate and let other extend beyond the area to be covered with straw. Nail together four pieces of lath to act as outlet ventilators. Run the bottom ends of those ventilators to the center of each crate and let the tops stick up above the area to be covered with straw.

After this, cover the crates with a heavy layer of straw or leaves, as much as 2 or 3 feet. Cover this with a layer of 4 to 6" of soil, to protect the outer ends of the ventilator against rain, snow and mice.

When the outdoor temperature drops below the freezing point, you must plug the ventilators with straw or similar material.

Another method of outdoor storage that is easy and satisfactory, is to use and pack a barrel with vegetables. It is better to arrange several layers of vegetables divided with straw or leaf partitions. Pack a layer of assorted vegetables in the bottom, then a layer of straw, another layer of vegetables, etc. When you open the barrel during the winter and take out all of the vegetables in one layer, the straw below it protects the other vegetables from the cold.

Cover the barrel first with a good layer of straw, then with soil. Such a barrel should be ventilated to let gases escape, especially during the early storage periods. Ventilate by running a piece of perforated downspout into the center of the barrel. Protect the outer end of the ventilator pipes from

rain, snow and mice and plug it during very cold weather.

Cabbage and Celery Storage

Cabbage, Chinese cabbage and celery keep best if stored so air can move around. To store these crops, make a frame by driving four stakes into the ground. Leave about 18" of the stakes above the soil. Then, fasten sideboards to the outside of the stakes to enclose the area. Pull up the cabbage and celery plants with the roots and replant very close together inside the frame. Place boards or cornstalks over the top and use a heavy layer of straw or leaves to prevent freezing. Ventilate them with a piece of downspout or a wooden ventilator. Protect the exposed end from rain, snow and mice. Plug it in very cold weather. Cauliflower and Brussels sprouts can also be stored by this method.

Would you like additional information?

Additional information is available on-line. Please see MSU Extension-Oakland County's publications as well s MSU Extension's Bulletin Office on campus.

Reviewed by Robin Danto, Food & Nutrition Extension Educator, MSU Extension—Oakland County, April 2011.

Contact our Food Safety and Nutrition Hotline (248/858-0904) for questions regarding food safety, nutrition, food preservation and foods. The hotline is staffed Monday through Thursday 6:30 a.m.—4:30 p.m.

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