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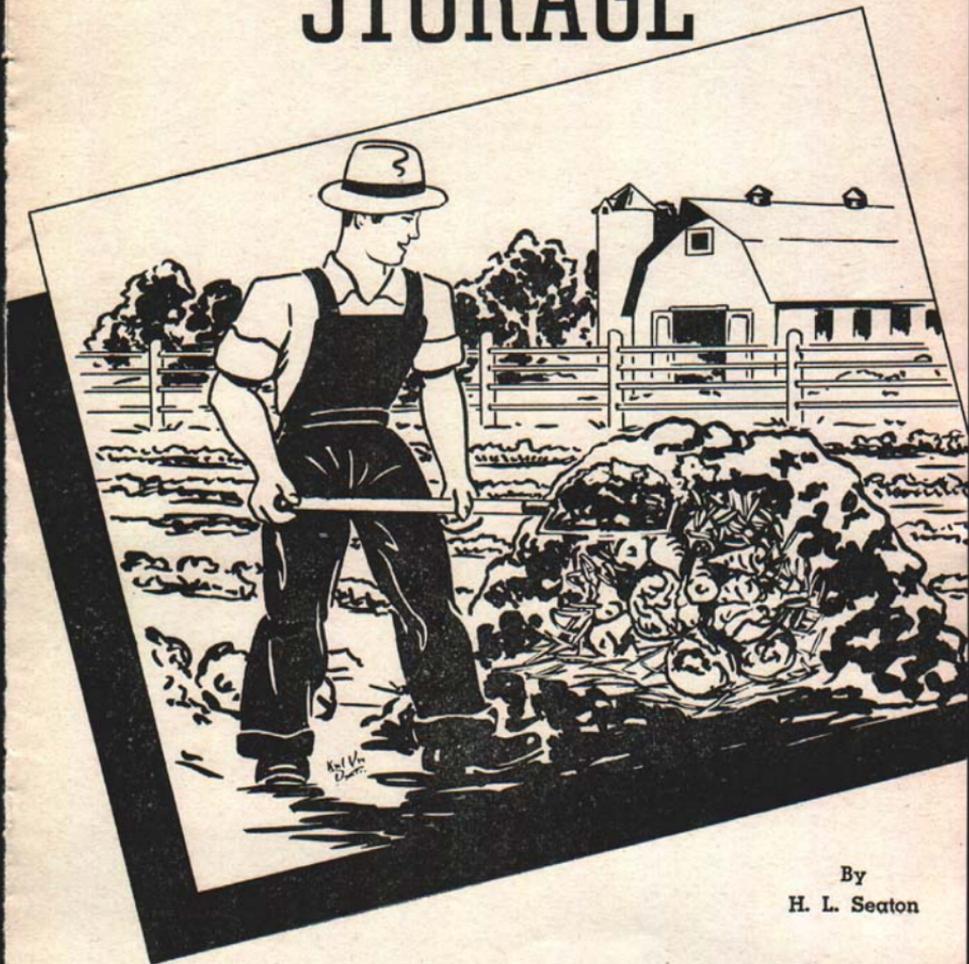
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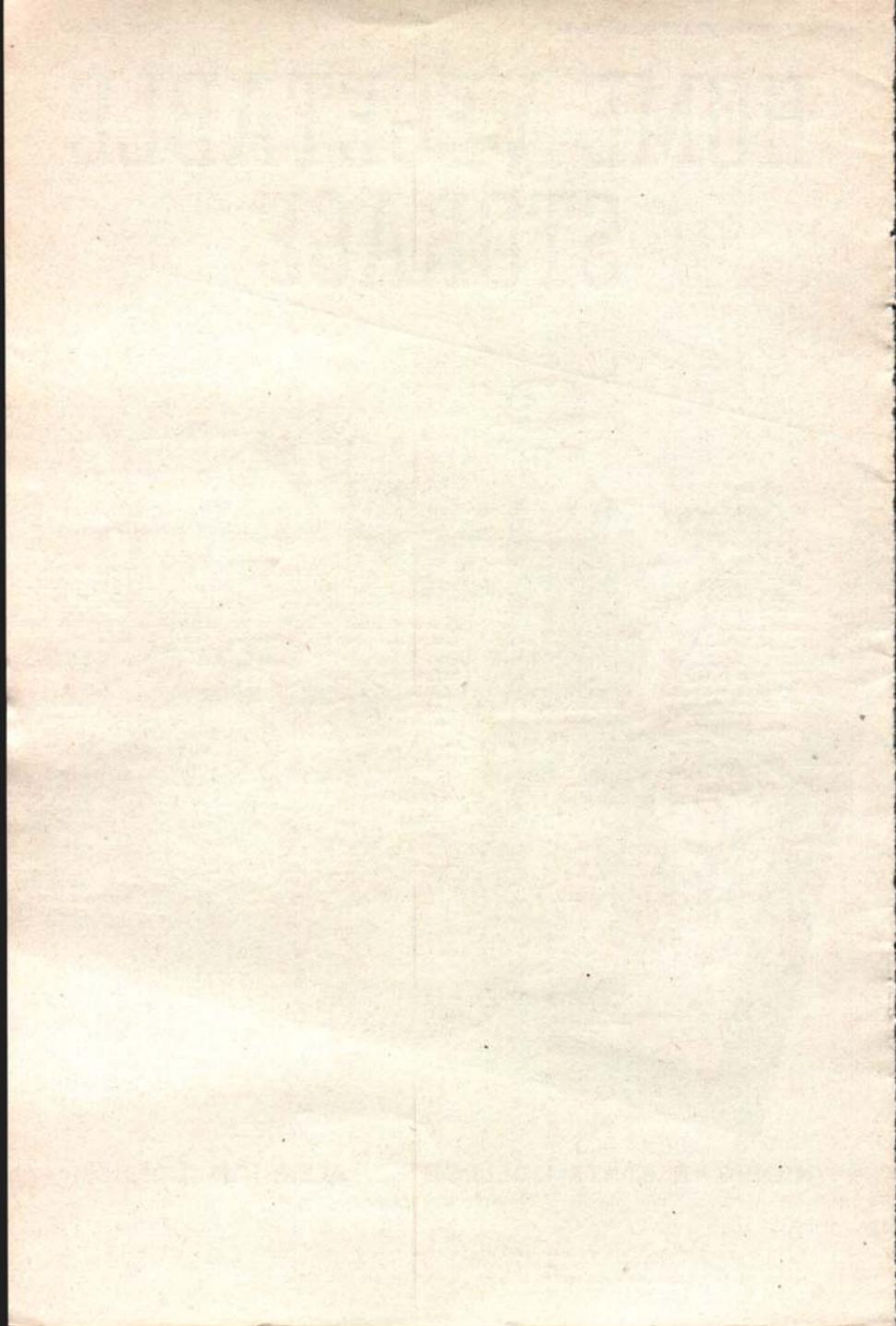
# HOME VEGETABLE STORAGE



By  
H. L. Seaton

MICHIGAN STATE COLLEGE :: EXTENSION DIVISION  
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# Home Vegetable Storage

By H. L. SEATON

A good garden should furnish a continuous supply of fresh vegetables and small fruits for the family during the growing season and provide adequate quantities for canning, quick-freezing and winter storage. Though all methods of preservation should be used, it is more desirable to store some of the products than to can them. Storage usually is cheaper and requires less labor than canning; also, the quantities handled are not limited; some of the crops are more nutritious, more opportunities are offered to vary the manner in which products are served when crops are stored rather than canned.

Though the storage requirements for the various groups of crops differ, suitable conditions may be provided for them about the home with little outlay of cash. An ample supply of stored products will greatly reduce the cash outlay for food and will aid materially in maintaining the health of the family.

## VALUE OF A FOOD BUDGET

The amounts of the various vegetables to be stored for an average family of four to five persons are suggested in the following budget. In order for this budget to meet the yearly dietary requirements for the family it must be supplemented with fresh produce and canned or quick-frozen products. Adjustments in the various items included will also be necessary to take care of personal likes and dislikes.

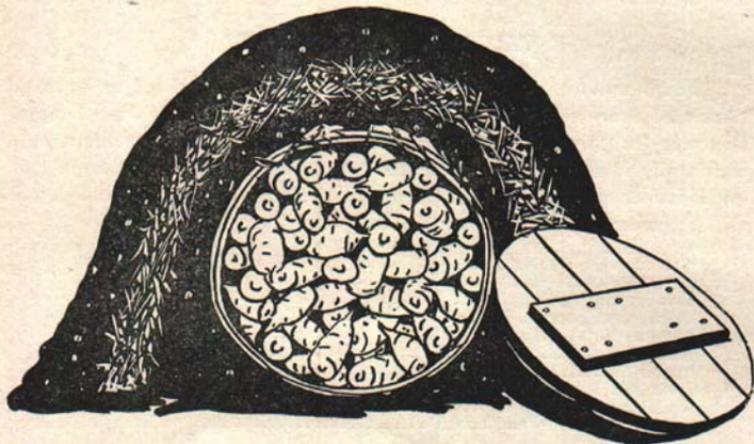
Carrots .....	2 to 3 bushels
Beets .....	1 to 2 bushels
Turnips and rutabagas .....	2 to 3 bushels
Salsify and parsnips .....	1 to 2 bushels
Potatoes .....	12 to 20 bushels
Onions .....	2 to 3 bushels
Apples .....	10 to 12 bushels
Cabbage .....	50 to 60 heads
Squash and pumpkins .....	20 to 25 fruits
Dry beans (navies and limas) .....	3 to 5 bushels
Tomatoes (green mature) .....	3 to 4 bushels
Celery, Chinese cabbage and brussels sprouts .....	Can be stored with roots in soil for short time

### CHECK STORAGE REQUIREMENTS

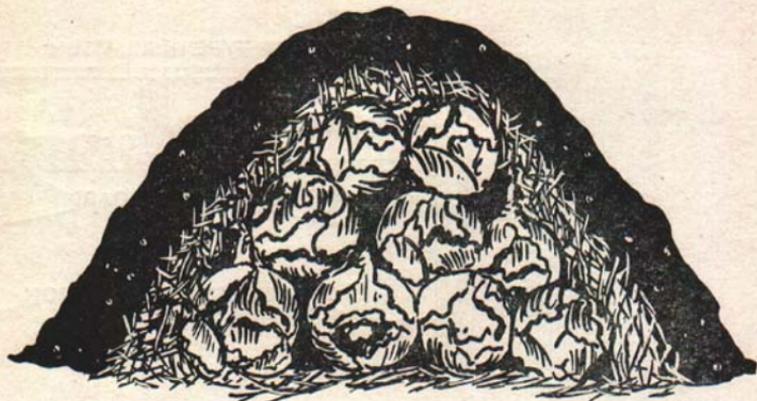
Most gardeners do not realize that the edible portions of the plants which are placed in storage are living plant parts, and while they have been stopped in their normal development, they are still functioning as live plants. Certain changes that take place in their tissues may be reduced greatly by proper storage conditions. Consideration must be given to such items as the adaptability of the variety for storage, the maturity and condition of the crop, the maintenance of satisfactory temperature, moisture, aeration and light conditions. Those conditions vary with the different crop groups.

#### Keep Root Crops Cool and Moist

Root crops include beets, carrots, turnips, rutabagas, salsify parsnips and winter radishes. As a whole, the crops are easily stored. They require cold, moist conditions with little air circulation. A temperature near 32° F. with a relative humidity of 90 to 95 per cent is recommended. It is desirable to make special plantings of these crops so that they will not be too large or over-mature, because they are likely to become tough, strong and woody. Neither should the roots be too small and immature, for they will dry out and shrivel badly in storage. The root crops may be stored in outdoor pits or mounds, in an outdoor root cellar, or in an especially constructed store room in the basement



*Fig. 1. A barrel, covered with soil, straw and more soil, makes an easily accessible outdoor storage for root crops.*



*Fig. 2. Cabbage pulled, stacked and covered with straw and soil will keep until late winter. The outer leaves provide good winter feed for poultry.*

of the dwelling. It is usually desirable to pile them on the floor or place them in boxes where they can be kept covered with moist earth. The tops should not be cut too close to the roots. With beets, about one-half inch of the tops should be left to prevent "bleeding". Rutabagas are generally more desirable for storage than are turnips. None of the root crops should be dug until just before freezing weather in late October or early November. Parsnips, salsify and horseradish are not injured by freezing and may be left in the ground all winter, or still better, may be dug, placed in mounds and covered with soil in the garden.

#### **STORED CABBAGE IS RICH IN MINERALS AND VITAMINS**

Only the late storage varieties of cabbage, such as Danish Ballhead and Hollander should be stored, and the heads should be mature, firm, free from any insect or disease injury and handled carefully to prevent bruising. The storage requirements of cabbage are similar to those for root crops with the exception of slightly lower humidity. If stored in the same room with root crops, the trimmed heads should be placed on shelves where the air will circulate freely around them or these plants may be pulled and reset in soil on the floor of the storage room.

Cabbage may be stored in various types of outdoor pits, trenches or mounds. A common method is to dig a trench 6 to 8 inches deep and wide enough for three heads. The plants are pulled, some of the

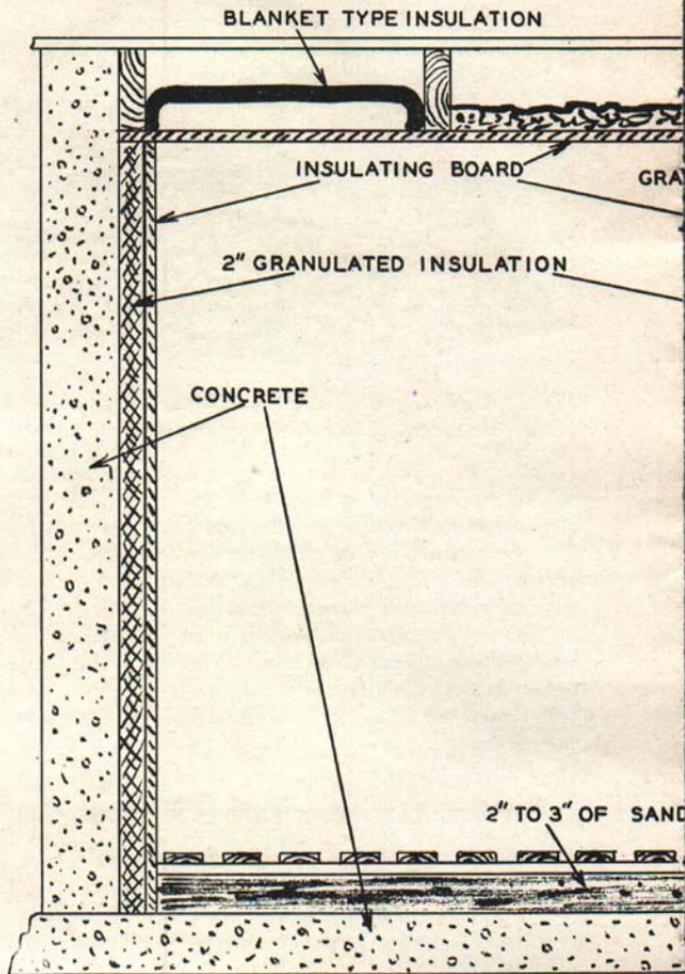
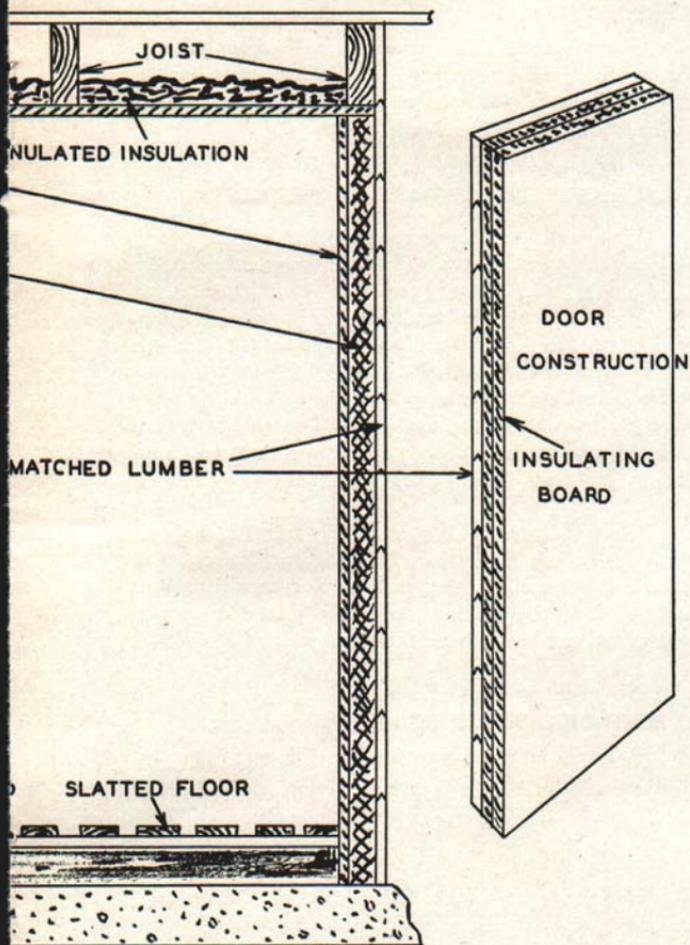


Fig. 3. Construction details for a basement vegetable storage room be insulated as illustrated. Either the blanket or fill type of insulated floor will aid materially in maintaining proper moisture cond



m. Both outside and inside walls as well as ceiling and door should  
 tion may be used for the ceiling. The moist sand covered with the  
 itions. Products may be stored in crates or slatted bins.

larger outer leaves are removed, the heads placed down in the trench lined with straw and are then covered with more straw and soil. As colder weather approaches, more soil is added. Still another method is to pull the plants, remove some of the outer leaves, and replant close together in a trench or cold frame, which is covered with straw and soil. Inasmuch as cabbage is such a good source of minerals and vitamins in the winter diet, sufficient quantities should be stored.

### **PLAN FOR PLENTY OF POTATOES AND APPLES**

Potatoes for storage should be mature, sound and free from bruises, and blemishes. The quality is better and shrinkage is much less if they are harvested after, rather than before, the vines have matured and died. After digging, the tubers should be allowed to dry in the sun for an hour or two before they are picked up. The storage should be moderately moist with a temperature between 34° and 40° F. Potatoes may be stored in the same room with root crops, but they should be placed in slatted crates, raised from the floor, and stacked in such a manner that air circulates freely around them. Darkness of the storage is essential if the potatoes are to retain their natural flavor and not develop a green color.

If apples are purchased in the Fall for winter storage, it is not advisable to try to keep them later than February or March. Only sound, clean fruits of the winter varieties such as Northern Spy, Baldwin, Stayman, Delicious and Steele Red, should be placed in storage. The storage requirements are essentially the same as those given for potatoes.

### **KEEP ONIONS DRY AND COOL**

After the tops of the onions have dried, they should be pulled and cured by spreading the bulbs in thin layers in a dry, well-ventilated place for a week or more. After curing, the tops are cut off, being careful not to cut too near to the bulb. Slatted crates make ideal storage containers. Onions require a cool, dry, well-ventilated storage, where the bulbs will not freeze. Root cellars are not satisfactory. Often the attic of the house or a dry cool basement affords a good place to keep onions.

### **SQUASH AND PUMPKINS ARE EASILY STORED**

These fruits should be well-matured and harvested before frost if they are to be stored. Green fruits with soft, immature rinds or frosted fruit will not keep even under the best conditions. In harvesting squash

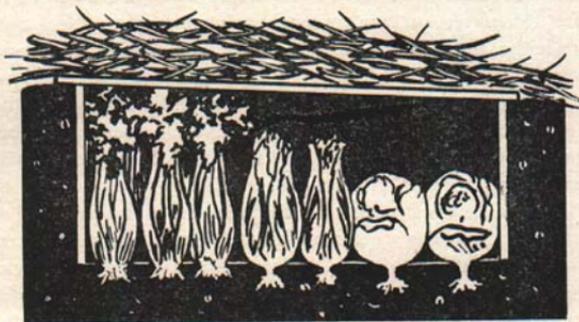
and pumpkins, the stem should be left attached to the fruit and care taken to avoid bruising. In order to harden the rind, the fruits should be cured the same as onions. The fruits may be placed on shelves in a warm dry room (40° to 50° F.) in such a manner that the individual fruits do not touch. Frequently, a suitable storage space may be found in the basement.

### TOMATOES FOR CHRISTMAS

Green-mature tomatoes, free of cracks and bruises, may be picked just before the first killing frost. If placed on shelves where the temperature is from 50° to 60° F., they will ripen over a six- or eight-week period and furnish fresh fruit. It is **not advisable** to wrap the individual fruits in paper as off-flavors develop. Some gardeners pull the entire plants and hang them from the joists of the basement or storeroom.

### SALAD CROPS NEED SPECIAL CARE

Even under the best of conditions, celery, brussels sprouts and Chinese cabbage can be kept for only a few weeks. They require cool, moist conditions and a good circulation of air. Only well-developed, disease-free plants should be dug with most of their roots and re-planted close together in soil or sand on the cellar floor or in large boxes. When the soil becomes dry, water is applied with a short piece



*Fig. 4. Celery, Chinese cabbage, cabbage and similar crops may be kept crisp and fresh by planting in the hotbed or cold frame. The bed should be left open until advent of freezing weather when it may be covered with straw or leaves and soil.*

of hose attached to the spout of the sprinkling can. Keep the foliage dry.

Celery and Chinese cabbage may be stored in a trench 15 to 18 inches wide and deep enough so that the tops reach the surface of the soil. The tops of the trenches should be left uncovered, except in extreme weather. A few plants of parsley and chives may be dug and potted. If set in the basement windows, they will provide flavoring and garnishing material throughout the winter.

### WHERE TO STORE VEGETABLES

Around the dwelling and garden, three places may be utilized for storage—namely, an especially constructed storeroom in the basement, an outdoor root cellar and temporary pits or mounds in the garden.

#### **Build a Basement Storeroom**

In houses heated with a furnace, it is necessary that a special storeroom be partitioned-off and insulated from the rest of the basement if satisfactory temperature and humidity conditions are to be provided. Suggested construction details for a corner basement storage are given in Fig. 3. Contrary to common opinion, the outside concrete walls of a basement have a low insulation value and should be treated as shown in the illustration. Pieces of 2-inch furring are placed next to the concrete wall and 1-inch insulating board such as "Cellotex," is nailed to these. The 2-inch space between the two walls is filled with granular or fill-type insulation such as "Rock Wool," "Zonolite," red wood bark, granulated cork, or balsam wool. The inside walls are made of matched lumber for the outer surface and insulating board to the inside. The 2-inch space between the boards may be filled with the granulated insulating material. The ceiling should not be overlooked. It may be insulated by tacking the blanket type of insulation between the joists and using insulating board for the ceiling. Still another method is to put on the insulating board ceiling and then pack 2 to 3 inches of granulated insulation on top. A suitable door may be made of one-inch matched lumber covered with two thicknesses of insulating board.

A dirt floor provides better moisture conditions than a concrete. A layer of 2 to 4 inches of sand may be spread over the concrete and a false floor of slatted construction placed over it, so that the sand will not be scattered to other parts of the house. The sand should be sprinkled occasionally to maintain the humidity in the storeroom.

It is desirable to locate the room so that an outside window may be utilized to provide ventilation and a means of controlling the temperature. One pane of glass may be replaced by a ventilating flue extending down to the floor. It is also desirable to provide for an outlet of the

warm air by replacing another pane with a small door. The openings should be screened to keep out flies and rodents. Darkness in the storage is recommended; therefore, the remaining glass should be shaded. On cool nights, the intake flue and the air outlet are opened and on warm days closed. By manipulating the ventilation in this manner, the temperature may be maintained at the desired level.

### MAKE USE OF THE OUTDOOR ROOT CELLAR

On many farms, outdoor root cellars provide an excellent place to store root crops, potatoes, apples and cabbage. These cellars may be built in a hillside and covered with 3 feet of earth except at the entrance. Good natural drainage is essential, and drainage tiles should be placed around the outside walls and under the floor. The walls and roof should be properly reinforced to support the earth covering. Ventilation is provided by means of a large ventilator shaft through the roof and cold air intakes at the sides or under the floor. The entrance should be a double-door vestibule. Earth floors give a uniform humidity in the storage. The management is much the same as the basement storage room.

### MANY CROPS CAN BE STORED IN MOUNDS AND TRENCHES

Many gardeners find pits, trenches, mounds and converted cold-frames and hot beds provide good storage places for certain crops. Various types are shown in the illustrations. They should be located in well-drained places. For pits and trenches, a shallow excavation usually not more than one foot deep is made. This is lined with straw, the vegetables are piled in a conical pile, more straw placed over them, and a covering of 3 to 4 inches of earth. As cold weather approaches, more soil is added. Small pits with a variety of crops are usually better than large pits as it is difficult to reseal them when the ground is frozen. Various modifications such as buried barrels or boxes may be used.



*Fig. 5. Celery will keep well if stored in a trench in the garden. As freezing weather approaches, more soil is built up along the sides. The tops should be covered with straw during zero weather.*

