

PRESERVING VEGETABLES, HERBS AND FRUIT AT HOME

This summary describes basic vegetable and fruit preservation and storage around the home using traditional methods of cellaring, basic herb drying and pickling. These are perhaps the most practical, simple and inexpensive ways of preserving food in reasonable quantities in the U.K. There are many recipe books for chutneys and jams. Cellaring can be as simple as storing onions and potatoes in a loft, to having a fully fledged root cellar with shelving, storage containers and vents for good airflow.

The principal methods of preservation are:-

1. Cellaring - the storage of vegetables and fruit in cool and usually moist conditions.
2. Drying - in bulk has limited scope in the U.K. without using artificial heating, but herb drying is straightforward.
3. Pickling and salting - the pickling of vegetables in vinegar, and storage in salt using large jars or crocks.
4. Bottling (chutneys, jams, etc.) - these can use up surplus vegetables or fruit, such as any late tomatoes too green to ripen. These are usually bottled in sealed jars or special hermetically sealed containers.

Preserving food is a satisfying and useful occupation. Using a combination of the above methods can provide a variety of high quality preserved food throughout the year, particularly in Winter. Note that not all varieties of apples, for example, will keep. Only consider mature (but not overripe) and unblemished produce for preservation, particularly when cellaring. Check all produce carefully for insects such as earwigs and carrot fly damage on carrots. Purchased produce can be stored provided it is a variety that will keep, such as Bramley cooking apples.

Any jars or bottles used for food storage must be sterilised immediately before use. Wash the containers thoroughly and rinse. Place in a cold oven which is then heated up to 110 degrees C (225F), and leave for about 20 minutes. Place plastic lids near the oven bottom. Remove the jars and allow to cool before using them for cold preserves.

CELLARING

Cellaring is like growing vegetables in that one can never be sure how well the vegetables will do. It is the most useful method for the inexpensive storage of small to large quantities of vegetables and fruit around the home. Different kinds of produce need different storage conditions (to be described later), and various odd places around the home can be utilised. Cellars, lofts, spaces under stairs, porches, sheds, garages or any unheated but frost free area can be used. It is important to keep a record of date, item and location of any preserved food; this will simplify the weekly check for spoilage. Do remember that it is easier to leave vegetables such as leeks in the ground than to cellar them. Unfortunately leeks are prone to attack by a recent arrival - leek moth. Their grubs damage the leaves, and can work their way into the bottom of the plant. The only protection seems to be covering them with fine plastic mesh.

To check whether potential storage spaces are suitable a MAX - MIN thermometer to record highest and lowest temperature, and a hygrometer will be required. A hygrometer measures relative humidity (RH) in % from zero to 100% - totally dry to saturated. These are not expensive and are easy to use. A RH of 50 to 60 % is the most comfortable for humans, and about right for the home.

The ideal storage cellar is cool and humid all year round, is dark to improve keeping, and has some means of ventilation. How the ventilation is arranged varies hugely, depending on the nature of the structure being ventilated. Depending on the size of the cellar, a number of mesh-covered pipe outlets 100 to 150mm (4 to 6 inches) can be fitted near the ceiling, the inner part of the pipe being flush with the cellar wall. Similar pieces of pipe can be run from outside to near the floor, thus ensuring airflow. Plugs or covers can be made to block or unblock the vents to help regulate the temperature.

Achieving the cold and very humid conditions required by some vegetables is not always possible, even in some cellars. Traditional cellars with an earth floor are more humid than those with a concrete floor. Potatoes seem to be quite tolerant of RH, but many roots will tend to shrivel and dry out if not kept very damp. However, if the ideal conditions are not met, it just means that the produce will not keep for so long. Bramley cooking apples and potatoes have been stored in a cold, unheated loft; the apples kept until the following February and the potatoes until late March.

RH level can be increased by covering the produce with old, damp carpet or other thick material, or by placing large, shallow containers of water on the floor. Root crops such as carrots and beetroot can be stored (not touching) in containers of clean sand or sawdust. Check weekly as they may need to be sprinkled with water from time to time. Plastic 45 litre (10 gallon) central heating header tanks with holes drilled in the bottoms for drainage are inexpensive and robust storage containers. When not in use over Summer, they can be used for container-growing small vegetables or other plants, after a thorough clean. At the end of the season they can again be cleaned and used for storage. Roots will keep in a plastic bag with holes cut into it to allow some ventilation to discourage mould - these will need weekly checking.

For damp cellars, rotproof containers and shelving are required. A useful size for the containers is about 400mm by 600mm (16 by 24 inches) and 100mm to 300mm (4 to 12 inches) deep. The sides of the containers need holes or slats, except when using sand or sawdust. Strong, preferably rotproof shelves or supports which are easy to clean, are required. Shelves and containers need to be cleaned and dried thoroughly every year. When fitting shelves there needs to be a gap of at least 75mm (3 inches) between the back of the shelves and the wall to encourage ventilation.

A small "cellar" can be dug in the garden. The hole could be lined with paving slabs or breeze blocks. A 75mm (3inch) layer of gravel, with a 150mm (6inch) layer of small rocks or hardcore on top, is needed on the bottom of the "cellar" for drainage. The top of the "cellar" should be just above ground level and provided with a strong, waterproof, animal-proof cover. During frosty weather bales of straw, or a generous quantity of insulating material of any sort can be placed over the cover to protect the produce inside. The food needs to be in mouse-and rat-proof containers. It has been known for an old refrigerator to be buried, door uppermost and with drainage as described above, for food storage. Ventilation will be required.

Some fruit, such as apples and pears, release ethylene gas during storage. In large quantities this can adversely affect produce stored nearby, although this is rarely a

problem. Keeping the temperature below about 8 degrees C (45F) will help. In any event, a small percentage of stored produce will spoil. If a large proportion spoils, overripe, damaged or diseased produce may be the problem. Check that the storage conditions are correct. All produce should be checked weekly and bad items removed and composted or thrown away.

It can be hard to decide whether to use the least sound vegetables first so the crop will last through Winter, or to compost or dispose of the worst to avoid constantly eating second-rate vegetables. If there is a surplus of a crop, the second course may be better. Should produce freeze in storage use them as quickly as possible, as they will deteriorate very quickly after thawing.

SUITABLE CROPS FOR CELLARING

Below are lists of vegetables and fruit, categorised according to their ideal storage requirements. Following the lists are instructions for storing what are perhaps the most practical crops for long term storage - a few months or over Winter. These are asterisked * in the lists and those which are better left to overwinter in the ground have two asterisks.

Cold and very moist - 0 to 5 degrees C (32 to 40F) and 90 to 95% RH. In many cellars this may not be easy to achieve. A frost free, damp outbuilding could be used until the weather starts warming up in early Spring

Carrots *	Winter radish
Beetroot, and other beets *	Kohlrabi
Parsnips *	Leeks **
Turnips *	Winter broccoli **
Celery	Brussels sprouts **
Chinese cabbage	Horseradish
Celeriac	Jerusalem artichoke **
Salsify	Swede *

Cold and moist - 3 to 10 degrees C (37 to 50 F) and 80 to 90% RH. Underground storage may be necessary to achieve these conditions; most cellars should be suitable or a frost-free outbuilding may suit.

Winter cabbage **	Apples *
Cauliflower	Pears *
Cucumber	Oranges
Potatoes *	Grapefruit
Ripe tomatoes	Capsicum peppers

Cool and dry - 5 to 12 degrees C (40 to 50 F) and 60 to 70% RH. An unheated room or loft may provide about the right conditions.

Onions *	Garlic *
Sweet potatoes	

All the vegetables described below are best harvested after dry weather if possible. They are in cleaner condition and may keep better. Check for insect attack and the presence of larvae, blemishes or other damage prior to storage. Folklore suggests harvesting

vegetables during the third or fourth quarter of the waning Moon - they are said to keep better.

BEETROOT, CARROTS AND TURNIPS. Harvest during mid or late October. Lift carefully and try not to bruise the roots. Twist off the leafy tops about 20mm (3/4 inch) above the root. If the required very damp conditions cannot be met, these crops can be stored in damp sand or sawdust in containers as described above. Sprinkle the surface with water if the sand or sawdust starts drying out, but do not "overwater".

PARSNIPS AND SWEDES. Harvest these hardy vegetables during December after the first few frosts and twist off the leaves as above. Remember parsnips can have long roots, so dig deep when harvesting a good crop. Store as for beetroot.

ONIONS AND GARLIC. These, once harvested, are perhaps the easiest of vegetables to store. Towards the end of August bend over the foliage at the top of the bulbs so that it lies on the ground. About two weeks later lift the bulbs so the roots are just above the surface of the soil. This will encourage the onions and garlic to ripen and improves keeping. Leave another week or two, depending on the weather, and store if dry. If they are wet, put the produce in a warm, airy place to dry. The stems can be braided together and the produce stored in a loft. This looks good, but the stems tend to break. An alternative is to hang them in old socks, or small string bags. Onions or garlic that have developed seed heads do not store well - use them first.

POTATOES. Maincrop, rather than "first early" varieties, are best for cellaring, although I've successfully stored "second earlies". Harvest the potatoes when the top growth turns yellowish in September or October. Lift carefully with a fork, impaling as few as possible; use these first. Potatoes can be bought in bulk and stored, but ensure that they are a keeping variety. Ideally, they need to be kept in a very moist environment, but seemed to keep well when stored in an unheated loft with a RH of some 60 to 75% until the following March. When potatoes begin to sprout, use them up as they will shrivel as the sprouts grow.

APPLES AND PEARS. As a rule these need more care in storage than vegetables. Apples are best harvested at maturity and pears just before. Leave the stems in the fruit and handle carefully to avoid bruising. Store in clean containers one layer deep to facilitate checking, and preferably without touching each other. Store only varieties that keep, such as Cox and Bramley apples, and Worcester Black pears. Lightly bruised, bug free windfalls can usually be kept for a few weeks.

DRYING HERBS

Drying and preserving the leaves and flowers of culinary or medicinal herbs is easy. In fact many culinary herbs have medicinal properties. Hanging herbs up or spreading them out are the most widely used methods of drying. They need to be dried within about 48 hours in order to minimise deterioration of the qualities of the herb. Whole plants are best hung up. Drying trays or racks are more suitable for separate leaves or flowers. This method is perhaps preferable as the herbs tend to dry out more quickly when off the plant. For gathering herbs such as chamomile it can be easier to gather the flowers rather than handle a lot of plant material; it is also more eco-friendly. Another advantage of tray-drying is that the herbs need to be stored as soon as possible after drying and there is no additional processing. A drying tray can be made by making a

wooden frame about 500mm (20 inches) by 800mm (32 inches), or of a size to suit, with cheesecloth, muslin or plain net curtain attached to the bottom.

Herbs are best gathered on a dry day well after any dew has evaporated. Select plants that are unblemished and insect-free. Whether hanging or on trays, the herbs need to be dried in a warm, dark, dry and well ventilated place at 20 to 32 degrees C (68 to 90F). Keep well spread out to encourage air circulation. They are ready for storage when the herbs crumble when crushed, but are not too brittle. Sterilise the storage containers as described above and pack the herbs in to exclude as much air as possible. Label and date the containers. Marmite jars are ideal, as the glass is dark and the plastic lids seem to seal well - the 500g size holds a useful quantity. Store the jars in a cool, dark and dry place; the herbs should keep for at least a year.

BASIC PICKLING

Pickling vegetables is easy and inexpensive, and a wide variety of vegetables can be pickled. Small produce such as pickling onions can be pickled whole once peeled; larger items can be sliced or chopped. Strictly speaking the produce should be stored in purpose-made resealable jars, but coffee jars work well. Avoid metal lids as the vinegar tends to corrode them. The simplest method for pickling vegetables will be described here. It can be used for pickling vegetables such as onions, carrots, cauliflower florets, etc. These can all be pickled together or separately. Beetroot is best pickled on its own owing to its strong colouration, and needs to be cooked first.

Once the vegetables have been prepared they are "brined" to draw out the moisture and improve keeping. A 10% solution is used; this requires 50g (2oz) of salt for every 600ml (1 pint) of water. Make up sufficient to completely cover the vegetables. Dissolve the salt in warm water and allow to cool. Place the vegetables in a bowl and pour in the brine. Put a plate or saucer slightly smaller than the inside diameter of the bowl on top of the vegetables to completely submerge them and allow to stand for 24 hours. Tip the vegetables into a strainer or colander to drain, then rinse well in cold water. Drain again and pat dry. Pack them into the sterilised jars and cover completely with spiced vinegar. Note that buying vinegar in 5 litre or 1 gallon containers is much cheaper than buying it in 1litre bottles. Any left over will keep for over a year. Tap the jars to release any air bubbles and lid the jars. Store in a cool, dark and dry place for at least 6 weeks before eating, and use within a year.

BIBLIOGRAPHY

Root Cellaring by Mike and Nancy Bubel
Pub:- Rodale Press ISBN 0 87857 277 5
Self-Sufficiency by John and Sally Seymour
Pub:- Faber and Faber ISBN 0 09954 571 8
Managing Your Personal Food Supply by Ray Wolf
Pub:- Rodale Press ISBN 0 87857 121 3