

Food Preservation

Why preserve food.

Because if trying to be self sufficient: you will starve if you don't preserve food.
Saves waste in Gluts
Its Fun.

Dangers to fresh food.

Enzymes: Present naturally in fresh food and in the body. Control processes like digestion. You must denature them by heat or stop them working by cold/ changing their environment.

Bacteria: Present in the atmosphere, soil, unsterilized jars, your hands, fucking everywhere. They multiply rapidly when they can and are the commonest cause of food poisoning. You can kill them with extreme heat, or stop them multiplying by freezing or making their environment unfavorable e.g salt, acid etc.

Yeast: Present in the atmosphere. Can be our friends mmm beer. Are destroyed by heat and slowed down by cold.

Fungi: Reproduce by microscopic spores found in the atmosphere. This is what makes food mouldy. You can stop it by freezing, making the environment unfavourable, or by the stopping the spores reaching the veg by clamping etc.

Methods of preservation.

Keeping vegetables as they are:

Hanging – e.g onion ropes.

Clamping - storing veg outside in the ground

Dry Storage – carrots in sand, pumpkins in a cool dry place

etc.

Changing their nature but still veg:

Freezing: Produce will keep until defrosted and then deteriorate.

Drying: Will keep preserved for ever, add water to eat.

Bottling: Heating produce and then stopping nasties getting in.

Salting: Adding Salt (mainly meat but also cabbage)

Metamorphosing the produce:

Jams: A mixture of fruit, glucose and pectin

Chutney/Pickles: A mixture of produce, vinegar, sugar salt and spices.

Brewing: Turning produce into drinkable stuff

Vinegar: Continuing the oxidization process from beer.

Politics of some of these methods:

Freezing: Cooling is one of the most energy intensive things you can do. It takes much less energy to heat than to cool below ambient room temperature.

A freezer is a high technology device, whilst you can cool using funky low tech stuff (pots in side pots etc.) you can't freeze without industrial western technology.

However it can be much less energy intensive than buying food from supermarkets, grown using

industrial agriculture

Sugar: Don't get me started. Sugar is either from canes grown in plantations on the other side of the world or from beets which require a massive energy intensive process to turn it into crystalline sugar.

However there are alternatives.

Beet: To turn beet into sugar crystals requires huge furnaces and centrifuges. To turn it into a slightly bitter sugary syrup in your house is cool.

Wash, brush and peel the sugar beets, cut them into small cubes or slices. Boil in only as much water as absolutely needed until cooked.

Place on muslin and squeeze out thoroughly. Pour the juice into the pot again and boil the juice at medium heat on stirring all the time until its consistency is honey-like.

Bottle. **This is glucose.**

Tree Sap: Everyone knows about Maple syrup, but what about Birch Sap and Sycamore Sap closer to home.

To tap a tree:

A Tree should be at least 10 inches in diameter and 4 ½ feet off the ground before tapping. Tap in spring when the sap is rising. Drill a hole the size of your tap and 1 ½ inches deep. Knock in your tap hand tight, place bucket underneath.

Then add sap to a pan and boil, as it boils down keep adding more sap, keep the sap above 1 ½ inches in the pan. Bottle while hot. **This is a Glucose/ Fructose/ Sucrose combo.**

Honey: There are lots of ethical issues with honey. Animal Rights with bee treatment. The spread of disease from domestic to wild bees e.g. varroa mite. Do all wild bees now have varroa mite and need to be managed? I leave you to decide. However it can be a local well managed source of sugar. **This is a glucose/ fructose combo.**

Concentrated Apple Juice: This is made by freezing apple juice. Then as it melts pour off the melt fluid whilst the ice remains. This is because apple juice freezes at a lower temperature than water. **This is fructose.**

Apples and pears in general:

Apples (pears as well) are the preserves friend. Not only do some varieties store well, but they are used in jams and chutneys as pectin. Sweetener in chutney (as apples or as juice concentrate see above). And cider vinegar for chutneys and pickles. And Cider mmmmmmm Not only that but apple trees grow well in this climate and are extremely prolific. If you want to start preserving find yourself a good source of apples (or even better plant a myriad of apple trees).

To make cider (or pear) vinegar.

Method 1: Press the fruit into a fermentation bin and leave for a year.

Method 2: (This works for all vinegars) Have a pot which you pour into the top, with a tap at the bottom. Fill with a medium (Beech wood shavings work particularly well). Inoculate either with old vinegar or fresh cider plus a vinegar mother (Mother of vinegar is a slime composed of a form of cellulose and acetic acid bacteria). Add alcohol to the top, when the mother starts to fall. Take vinegar from bottom. Takes about 1 month.

General Guidelines for preserving :

Harvest produce for storage in its peak condition.

Harvest produce carefully: bruised produce will rot quicker.
Remember some varieties store better than others, eat the ones that don't first.
Check your stored produce regularly and remove any rotting.

Hanging – Used for hanging onions, squashes and garlic.. Hang in a dry cool airy place without hard frosts.

Onions/ Garlic. Hang when dry. Take four onion stalks together. Then tie to string. Add more onions by tying stalks to string. If already destalked you can sew them on to string. Then hang from roof of store.

Squashes. Hang in nets, with barriers between fruit.

Clamping - For storing large amounts of root veg outside. Its a pile of veg with straw and earth on top.

Chose an unwaterlogged site.

Dry your veg a couple of hours.

Add a layer of straw.

Add your veg in a pyramid shape.

Cover with straw and leave for a day or two (more if it rains)

Add 15cm of dry earth. Leave tunnels of straw for air circulation.

Pat down the sides for ease of rain runoff.

Make several smaller clamps rather than one big one.

Dry Storage : Used for roots, squashes, apples and pears etc.

For Roots store in sand.

Put a container in a frost free place.

Add alternate layers of veg and sand, making sure the veg don't touch.

Use sand that is only just moist (dry in the sun if necessary)

Squashes:

Store squashes in a cool dry space, in nets or on shelves with no contact between fruit.

Apples and Pears etc.

Use late ripening fruit and discard any damaged fruit. Wrap in newspaper and place on a cool, dark and not too dry shelf.

Freezing: Most fresh produce and some cooked (e.g. Stewed apples, tomato puree) can be frozen. Although remember freezing doesn't kill micro organisms and you will have to use as soon as possible after freezing.

To Freeze.

Freeze as soon as possible after harvesting

then
Blanche your vegetables by immersing them in boiling water for two minutes and immediately immersing in cold water.

Leave to cool completely.

Place in labeled storage containers (e.g ice cream tubs)

Place in freezer. Don't place new items next to old items as the heat will help the old items defrost.

Drying: All produce can be dried although not so popular these days.

Peas and Beans, and Chestnuts etc. are best dried whole.

Apples (and other fruit), root veg (well more parsnips than tatoes) and mushrooms are best dried sliced thinly.

Herbs should be blanched before drying.

To dry either hang on a string or place on a tray, in a warm dry place, like airing cupboard or oven on a very low heat.

Place in an airtight container after drying.

Bottling: Best used for fruit, but anything could be bottled, sugared cabbage anyone..?. You

kill all bacteria and then bottle in sterilized jars at heat so there is no introduction of bacteria.
 Using sterilized airtight jars (either clip or screw top)
 Fill with fruit.
 Then either fill with hot water (60 + degrees) or with hot syrup (a sugary water)
 Add loose lids place in pan and cover in warm water.
 Simmer for a while (between 30 mins or an hour depending on the fruit).
 Tighten lids and leave to cool.

Salting: A form of dehydration. Mainly used for meat on long journeys, but heavily salting produces environment preserves all things, but it may not be that nice. Exceptions like Sour kraut and Olives aside.

Sourkraut:

5 lbs shredded white cabbage
 2 oz salt

Shred cabbage finely, put it in a large pan. Mix cabbage and salt with your hands. Pack gently with hands or potato masher. Repeat until crock (Al uses a 6 gal plastic bucket) is nearly full. Cover with cloth, plate and clean rock or something heavy. During the curing process, kraut needs daily attention. Remove scum as it forms and wash and scald cloth often to keep it free from scum and mold. At room temperature, fermentation will be complete in 10 to 12 days. Pack into jars adding enough juice to fill jars. Often there is not enough juice. If this happens, make a weak brine by dissolving 2 tablespoons of salt to a quart of water. Screw bottle lids on tight and process in a boiling water bath for 15 minutes. After bottles are cool be sure they have sealed before putting them away.

I won't talk about olives, but if you manage to grow a glut of them come and find me.

Jams: This is the mixing of Fruit, Glucose and Pectin. Bacteria are killed by heat and are prevented from reentering the fruit by the high sugar content. The setting of the jam is a reaction between Pectin, Acid and Sugar. Some fruits are naturally high in pectin, to others it is essential to add pectin (in the form of apples) and usually acid (in the form of lemon juice).

High Pectin

Black and Redcurrants
 cooking apples
 damsons
 gooseberries
 plums
 quince

Medium Pectin

apricots
 early blackberries
 greengages
 loganberries
 raspberries

Low Pectin

late blackberries
 cherries
 elderberries
 medlars
 pears
 rhubarb
 strawberries

The sugar required is glucose and so use beet or tree sap. If you use honey tis a conserve (thick syrup with fruit in). The amount of sugar is important, the more sugar the thicker and better set. To little sugar will be runny. Experiment, I have got jam to set using half the sugar indicated in the recipe by adding lots of pectin.

To Make Jam:

Use just ripened fruit.

Heat in a pan with the minimum amount of water until mushy

Test for pectin: Take a tea spoon of the juice and mix in a jar with a tablespoon of meths. If a large jelly like clot forms – high pectin, if lots of clots – medium pectin, if no clots – low pectin.

Add apples and lemon juice if required.

Add sugar (amounts vary but usually about 60% by weight, remember you can get away with a lot less.

Once dissolved, bring as quickly as you can to setting point, 105 C. To test without jam thermometer. Put a teaspoon of jam onto a cold saucer. Allow to cool for 1 min. Push the surface gently with you finger tip. If it wrinkles, rock and roll, if not bring jam back up to the boil.
Bottle immediately in sterilized jars.

Chutney/Pickles: A pickle is pieces of fruit/ veg stored in vinegar. A chutney is fruit/veg cooked in vinegar.
This preserves by killing the bacteria by heat and making an unfavourable environment for their reintroduction, using vinegar, spices, salt and sugar. Spiced vinegar can be used for both. To make place 1oz whole spices in 2pt bottle of vinegar (25g/1Ltr), after removing a little of the vinegar to make room for the spices. Screw the top back on and leave for 6-8 weeks.

Pickles

Use young fresh veg.

Cut to size.

Soak in brine (100g salt to 1ltr water) for 24 hours

If a hard veg like beetroot, cook before pickling.

Pack into sterilized jars and cover by at least 1cm with vinegar.

Chutneys

First rule is to experiment, its fun and you can develop a whole variety of interesting flavours.

A good chutney should be slow cooked (can take days) and left to mature for at least 6 weeks. This makes it mellow.

Its best to use whole spices in chutney as ground can give a muddy colour to the chutney.

Don't use metal spoons or iron or copper pans, as the vinegar and slow cooking corrodes and you have metallic tasting chutney, mmm!

You need The veg (usually plus onions and apples although not essential), vinegar (the stronger the better), salt, sugar and spices.

The ratio is approx (although experiment) 4k veg, 20 g salt, 400g sugar and between ½ – 1ltr vinegar. If unsure always add more vinegar it just takes longer to cook that way.

Chop veg and place in a pan with half the vinegar. Cook until veg is soft. (Unless something like parsnips/turnips/potatoes where you boil in water until soft, drain and then mash)

Add the remainder of the vinegar, salt, sugar and spice, and cook slowly for at least 3 hours.

To test consistency drag a wooden spoon through the chutney. It should leave a clean path with no liquid showing.

Place when still hot into sterilized jars.

If chutney shrinks in the jar, the cover isn't airtight.

If a layer of moisture collects on top, it wasn't cooked enough. You maybe able to rescue it by re cooking and resealing.

Sterilization process: You need to basically heat the glass to kill all bacteria so when the clean food is placed in them and sealed airtight no bacteria are in there.

You can sterilize jars by placing them in a hot oven (At Least 160 C) for 10 minutes, or

Boiling them in water for 10 minutes.

However if find both of these methods difficult due to handling lots of

hot glass. So I.

Fill jars with boiling water and leave for 5 minutes, pour water back in kettle and reboil. Add to Jars and leave for another 5 minutes, pour water back in kettle and reboil and fill and empty straight away. Immediately fill with hot produce and seal.