

## PRESERVING PEAS AND BEANS

**V**EGETABLES need longer sterilising than fruit, and I do not think that any "short-cut methods" are advisable. From time to time I get letters telling of successful vegetable-preserving with only cold or hot water, and perhaps burying in the ground, which really means just excluding the air; but although this may frequently succeed with small fruits I can definitely advise against it for vegetables, and especially for peas and beans.

Much the safest way to preserve peas and beans is to sterilise them at boiling point for three hours altogether—two hours on one day and another hour either next day or the day after that. In South Africa they advise four hours. The reason for this is that although the bacteria (which are the cause of these vegetables going bad) are themselves killed by the first day's boiling, their spores or seeds retain their vitality, and upon cooling, will germinate. Therefore, the second boiling is necessary to kill them, also.

In preserving fruits you have only yeasts and moulds to kill, and these are much easier to deal with. The yeasts cause fermentation, and as is well known, yeast is easily killed by heat. When adding yeast to bread, or in the making of beer or wine, you know you must never put it into any liquid above blood-heat. Moulds need a higher temperature to put them out of action, but are killed at boiling point. Moulds develop from "spores" or seeds, which are always floating about in the air, and if one of these spores should settle on suitable food, it will germinate, provided there is sufficient warmth. Moulds thrive very well in darkness and dampness, but are not as injurious as yeasts or bacteria, and if they are discovered before they have penetrated too far they can be removed and the food used or re-sterilised. "Mouldy" food is not definitely spoiled.

Bacteria, however, are much more resistant to heat than either moulds or yeasts, and they grow fast and reproduce enormously. Just one bacterium can produce twenty millions in the course of 24 hours!

### Use of Acid

Bacteria, we know now, cannot grow in the presence of acid. Tomatoes contain a natural acid, and so are easy to preserve; but peas, beans, cauliflower, asparagus, sweet corn, and most green vegetables, have not this natural acid, and so it is wise to add a little vinegar or lemon juice to each jar of vegetable before sterilising.

This addition is claimed by some authorities to make it unnecessary to keep the jars up to the boiling point for so long, and that half an hour each day for two or three successive days, is sufficient, or even a little less. But for my

part I would be on the safe side, and keep up the usual time, which is three hours—two hours on the first day, and one on the next day or the day after. To a quart sized jar of peas or beans add a tablespoon of lemon juice or vinegar.

### Blanching

It is correct to "blanch" peas and beans before sterilising them in jars. This means to plunge them into a pan of boiling water (tied up in a piece of butter muslin, or a little bag, so that they are easily lifted out) for eight minutes, and then transfer them very quickly to a pan of very cold water (the colder the better), for nearly a minute. Then without any delay at all, pack them into the jars or bottles, cover them with the prepared liquid, which I will now describe, put the lids loosely on and put the jars in boiler or oven to sterilise. The cold dip causes the pulp to shrink, checks the cooling, and helps to fix the colouring matter.

### The Filling Liquid

This is the liquid which is to be poured over the peas or beans after they have been blanched and packed in the jars. To each quart of water allow half an ounce of salt, and one ounce of sugar. Boil these together for five minutes, and put aside to cool, covering with a clean piece of muslin to keep out dust. Use when cool.

### Peas

Do not use old peas; sterilising will not make them tender. Shell them, and cook or blanch 8 minutes in boiling water. If tied in muslin bag they are easily lifted out. Plunge them into cold water for nearly a minute, then pack them into sterilised jars not too tightly, shaking them down a little. Fill up with the cooled liquid just described, and add a tablespoon of lemon juice or vinegar to each quart jar.

### Beans (French or Scarlet Runner)

String tender beans and cut in the usual manner. Blanch in boiling water for 5 to 10 minutes according to size, then plunge into cold water for about a minute. Pack into jars. Fill up with the cooled liquid as for peas, and add a tablespoon of lemon juice or vinegar to each quart jar.

### Sterilising

This may be done either in the oven or in a water-bath. See that the jars do not touch each other. If using the oven it is well to place the jars in a large meat dish or pan containing just a little water. Any overflowing will thus not soil the oven. The "water-bath" may be a large boiler or saucepan, or a copper, or a benzine tin cut lengthwise. The jars must not stand on the bottom of the vessel but must be placed on folded cloths or a false bottom made of slats of wood, or anything at all that raises them off the bottom of the vessel. See that cloths or rags are placed between the jars so that they do not touch each other. The water need not come more

than halfway up the jars, or even less, provided that the lid fits properly and no steam is allowed to escape. If necessary bags or sacks can be placed over the copper lid—anything so long as all the steam is kept in, otherwise you must have the water covering completely over the tops of the jars, which will mean a great deal of fuel to heat so much water for so long. The oven is a much easier way.

Have the rubbers new and scalded, and screw on the lids loosely. Bring the water-bath to the boil, or the oven to 212 degrees. If yours is a gas oven the chart will tell you which Regulo number to use—about Regulo 1 at first, and then turned below that. You will see when the liquid in the jars reaches boiling point. Hold the temperature at that for two hours, then take the jars out, one by one, and tighten the lid. Stand upside down and see if it leaks. Put in again the next day, loosening the lid slightly to allow for expansion, and sterilise for one hour, then tighten the lid again and stand upside down till cold. If you find a jar is leaking at all you must re-sterilise. Store in a cool place, not the top shelf of the pantry, which is sure to be warm, as the heat rises.

Keep this page for future reference.

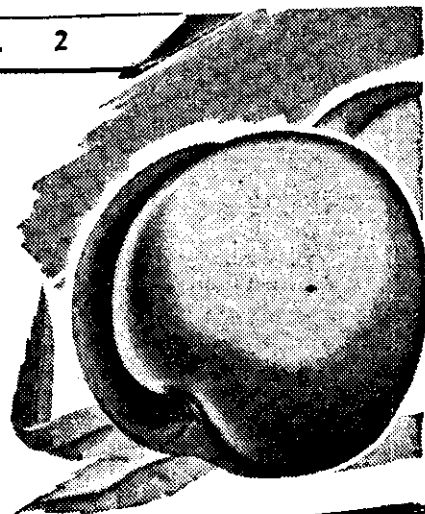
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