

North University Seed Library

“Plant, save & Share”



Newsletter

CANNING

This month we are going to take you down memory lane where you may have enjoyed your grandma's pickled cucumbers or your aunt's strawberry jams. For those of us who have had these childhood memories, those times are an indelible part of growing up. Now, with the Information that will be provided and with a bit more research, you can have delicious canned products of your own.

Canning and pickling are this month's pick.



Canning is a method of food preservation in which food is processed and sealed in an airtight container. This provides a shelf life that typically ranges from one to five years, although under specific circumstances, it can be a much longer time period. For example, a freeze-dried canned product, such as canned dried lentils, could last as long as 30 years in an edible state. Canning is an important and safe method to preserve food

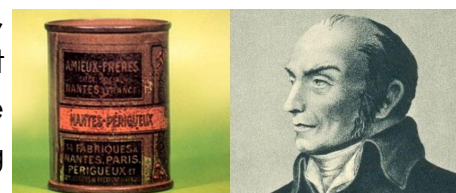
to prevent spoiling and to extend its shelf life.

Pickling is a process of preserving food using anaerobic fermentation in a brine mixture or immersed in vinegar. The high amount of salt and the high acid content inactivate the enzymes that can alter the food and stop microorganisms from reproducing. Foods typically treated this way are fruits, vegetables, meat, fish, dairy and eggs.



Piece of History

In the late 1700's, Napoleon Bonaparte was looking for something which preserves the food for his troops for a longer time period and offered a cash reward called the preservation prize (15,000 francs). After many experiments, a French cook, Nicolas Appert discovered the packing, heating and sealing techniques that we use today. Later, home canning became popular in the United States in the 1850's.



Botulism is a serious concern and can result from improperly canning low acid foods. *Clostridium botulinum*, the causative microbe, is killed by boiling water baths but the spores can survive and are activated by the low oxygen environment of the canning jar. These spores then produce a toxin that can cause serious food poisoning.

How to Can

Here are two techniques to preserve food.

Water Bath Canning

This is a lower temperature process and is utilized for high acid foods. The combination of time and heat destroy the mold,



yeast, bacteria and enzymes which spoils the food. This process is good for fruits and fruit juices, jam/jellies, chutney/salsa, pickles and tomatoes.

Pressure Canning



This method is the only one that reaches a high temperature (240 degrees) needed to safely preserve low-

acid food. It destroys food borne bacteria and prevents spoilage via a vacuum seal. It is ideal for preserving meat, poultry, vegetables, and chilies.

To learn more details about the above methods, please see our references.

Terminology

In standard usage, a “**jam**” is a softly gelled spread containing crushed or diced fruits; a “**preserve**” contains whole small fruits or large pieces of larger fruits in a thickish syrup that may or may not be gelled; a “**conservé**” usually contains nuts and/or dried fruits; A “**marmalade**” usually contains citrus zest or rind and pulp suspended in jelly; a fruit “**butter**” is smooth-textured and thick; and a “**jelly**” is firmly gelled

clear fruit juice. However frozen food and pickles are also considered a type of preserved food.

What is Pectin?

Pectin is the substance found in the cell walls of fruits, berries (and vegetables). When combined with sugar, it will make jellies, jams, preserves, and marmalades. The amount of pectin varies according to the species of fruit or berry, its degree of ripeness, and even growing conditions. A wet season produces juicy fruit with low pectin content. A dry season creates less juice but more pectin.

There are some fruits which are high in pectin and acid like apple, cranberries, grapefruit, grapes, lemons, plums and quinces.

What do you need ?

All you need is a **wide deep** pan--this is used to cook jam, jellies or other preserves. It should be wide so that liquid has maximum surface area for quick evaporation. A



Large big pot--this is for boiling water bath canning. It can be any pot which can hold 4-5 -pint jars and a rack which can prevent jars from getting heat directly. A **Wide mouth funnel**-- you can do without it, but it will make your canning experience brighter and more cheerful. A **Jar lifter**--this is another tool which can help you make your work easier and can be found in any canning supply store. Other tools that can be utilized are **measuring cups, wooden spatulas, jelly bags or very-fine-mesh sieves. Canning jars**- these jars are specifically designed for home canning and have flat dome-style lids.

What's the best time?

One of the best things about canning is that it can be done any time and there is always something to can. There are different foods that can be canned at various months of the year. If you are thinking about canning,

You can find an easy recipe for marmalade below.

Seed Library Pick-Plant-Cucumber



Cucumber (*Cucumis sativus*) is a widely-cultivated creeping vine plant that is usually give cylindrical fruits, which are used as culinary vegetables.

Considered an annual plant, there are three main varieties of cucumber slicing, pickling, and seedless—within which several cultivars have been created. The cucumber originated from South Asia, but now grows on most continents, as many different types of cucumber are traded on the global market.

Few facts about Cucumbers . Cucumbers can be up to 2 feet long. China produces 76% of cucumber and gherkin production in the world. A raw cucumber is actually 95% water. A whole cucumber is just 16 calories.

Seed Library Pick-Recipe

Mayer Lemon Marmalade

Makes 4(1-pint) jars

3 pounds Mayer Lemons

5 1/2 cups Granulated sugar



Wash the lemons in warm, soapy water and dry thoroughly. Using a sharp knife, cut both ends and then cut them into wedges remove the inner membrane and the seeds, reserve it to use later as a pectin source.

Take each trimmed wedge and cut in 1-inch pieces. Combine the lemon slices in a bowl and add 2 cups of sugar. Stir to help the sugar dissolve. Tie reserve seeds in a cheesecloth and put them in a container/bowl. Keep it in the refrigerator overnight. Prepare a boiling water bath for 4 regular mouth jars and lids.

After overnight rest, pour the macerated lemon bits with their juice and seed bundle into a pot. Add the remaining 3 1/2 cups of sugar and 6 cups

of water. Slowly bring to a boil over high heat, stirring regularly then check with a candy thermometer. When it reaches 220 degrees F, sustain this temperature for 1 minute and then remove the pot from the heat. Test the set of marmalade using a saucer that has been cooled in the freezer. Place a dollop of the jam onto the center of the frozen plate and return it to the freezer for 1-2 minutes. The goal is to speed up the cooling process to check the set of the marmalade. If it's not set, you can boil for 5 more minutes then check again. If it is set, remove the pot and stir for 1 more minute.

Ladle the marmalade into prepared jars. Wipe the rims, apply the lids and rings and process in a boiling water bath for 10 minutes.

References:

Krissoff. L (2010) Canning for a new generation: Published By Stewart, Tabori & Change

McClellan,M (2011) Food in Jars. Published By Running Press

There are multiple sources available at the Scripps Ranch Library that are not cited here.

We request that you share pictures of your garden and tell us about your experience, which can be helpful for other gardeners. Also, we invite you send in your garden related questions and we will answer them in next newsletter .

This newsletter composed by Ashu Agarwal & edited by Jeff Lash

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