

How to Preserve Safely

Whether the food you wish to preserve is for kitchen class consumption, provision to parents of Kitchen Garden students or for sale* as a sure-fire fundraiser at your local school fair, it is imperative that you follow some simple but effective steps. This resource spells out the basics of responsible and safe preserving to ensure that the hard work of your students lasts well beyond the season.

* Please check any state-based food handling restrictions regarding the sale of prepared food items.

What *is* preserving?

Preserving with heat is the art of cooking fruit or vegetables at a very high temperature using sugar, vinegar or salt (and sometimes all three) to break down the ingredients in order to make sure they last for a long time.

The point of preserving is to eliminate bacteria and the conditions they need to grow, including air and moisture.

Jams, marmalades, chutneys, pickles, relishes and sauces are all types of preserves.

Of course, you can explore with your students many other effective preserving methods including drying, dry-salting, smoking, and pickling in salt solutions.

Home-grown talent!

The best thing about making your own preserves is that they are so much more delicious than those produced in high volumes in factories.

When you cook your own preserves, you can enjoy using the produce from your garden and orchard as well as ensuring that only natural ingredients go into the pot, avoiding extra colours, stabilisers and flavourings. Commercial manufacturers use these type of additives to make their products last even longer on the supermarket shelves.

Preserves allow you to enjoy the bountiful produce from your garden weeks and months after the season has passed. If done correctly, preserving can ensure that the produce tastes just as beautiful as it did when you put it in the jar.

How to preserve fruit

The following points outline best-practice procedures that the home-cook and kitchen class student can follow to successfully preserve fruit:

1. Use dry, barely ripe or slightly under-ripe fruit. Under-ripe fruit contains higher pectin and acid levels than fully-ripe fruit. Pectin is what helps the fruit set while acid helps prevent the growth of bacteria.
2. Use a large, wide saucepan or a specialty preserving pan. This ensures that the preserving mixture only reaches halfway up the sides of the pan, so when the content boils rapidly it doesn't spill over onto your heat source.
3. Gently simmer until the fruit is soft.
4. Warm the sugar before it is added – this allows the sugar to dissolve more quickly and avoids lowering the temperature of the preserve.
5. Once the sugar has been added and dissolved, bring the mixture to the boil.

6. As the mixture comes to the boil use a large spoon to skim off the foam that appears and place this in a bowl to be discarded. Skimming off these impurities will prevent your preserve from going cloudy. Please note, the preserve should only be skimmed at the beginning of the boil after which you should stir the preserve regularly to stop it burning. For example, skim for ten minutes then stir regularly.
7. After skimming the preserve, a rapid boil should be maintained until the setting point is reached. The setting point can be tested after ten minutes on full boil.
8. To test the setting point place two saucers in the freezer before you start cooking the fruit. When your fruit is boiling and the bubbles seem to have increased in size and burst with a heavy 'plop', get one of the saucers out of the freezer, dip a clean, long-handled spoon into the preserve and drizzle a puddle of it on the saucer. Return the saucer to the freezer for one minute. Take it out and run your finger in a straight line through the puddle. If the preserve wrinkles in front of your finger, creating a line through the puddle which doesn't immediately refill with liquid, it's at setting point. If not, continue to boil the preserve for another three minutes before testing again.
9. Pour the preserve into warm dry sterilised jars. The preserve should be as hot as possible (above 90 degrees) as this temperature will help prevent any mould growing.
10. Make sure the preserve reaches to the neck of the jars. Leaving less room for air at the top will decrease the risk of mould.
11. Wipe any spilled preserve from the jar with clean paper towel, paying particular attention to the opening of the jar.
12. Seal the poured preserve immediately.
13. Place the lid tightly on the jar and turn upside down. The heat of the preserve will help ensure that the lid is sterilised. Turn the bottled preserve up the right way after a few minutes so the contents doesn't set upside down.

Avoiding fermentation when preserving

Occasionally a jar will ferment. This is when the contents bubble or fizz, which is especially noticeable when the lid is removed. The lid may also be raised prior to opening. Fermentation can be attributed to:

- 🍅 the jars not being suitably sterilised
- 🍅 using wet fruit which will have spores of mould on it
- 🍅 undercooking the jam, allowing bacteria to remain
- 🍅 low acidity of the pickling liquid. When a product is being pickled in batches, for example mushrooms in a vinegar solution, the vinegar solution risks being diluted if a second batch is pickled using the same solution. It is safer to pickle in small batches and to use a fresh vinegar solution each time.

It is best if the person supervising the making of the jam, chutney or pickle has experience with the recipe.

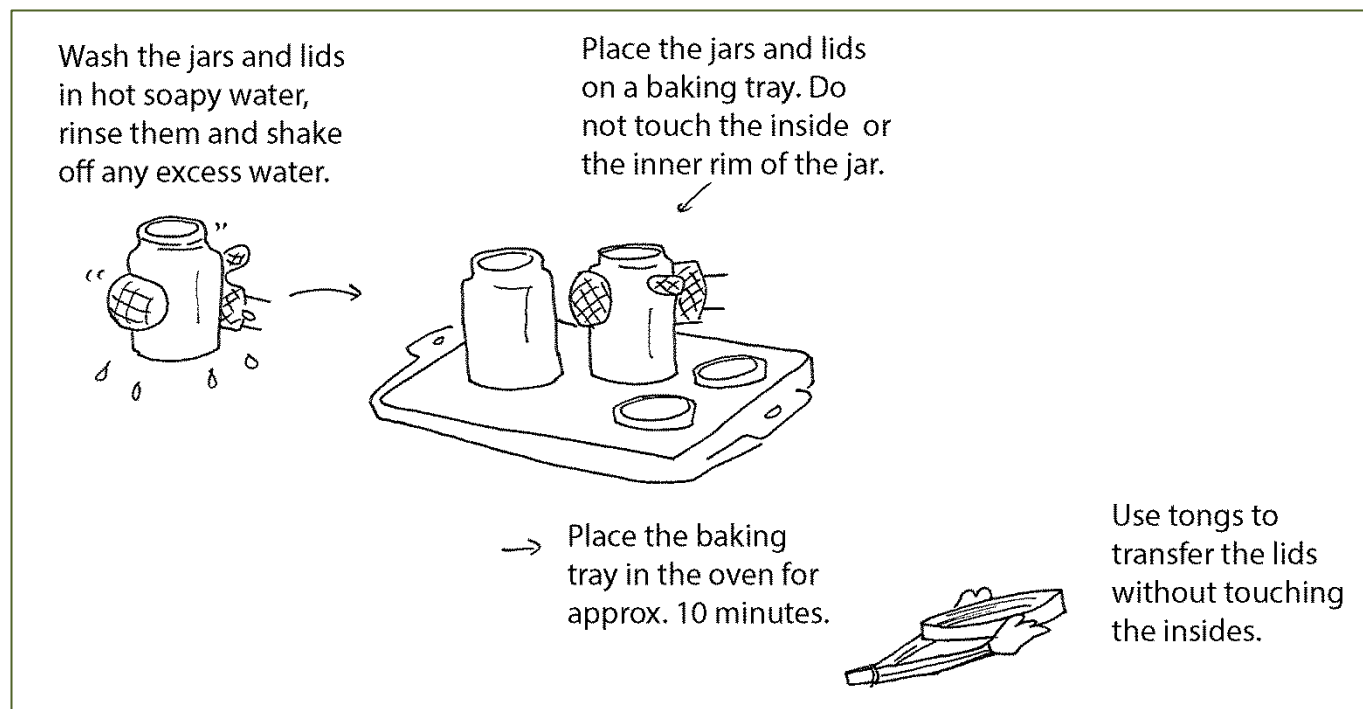
How to sterilise jars

A clean sterilised jar is essential to the success and long life of the preserves that you have prepared.

Sterilising jars is a really simple thing to do, but there are some key steps that must never be overlooked.

- 🍅 Wash the jars well in hot soapy water.
- 🍅 Rinse the jars carefully, shaking off the excess water.
- 🍅 Do not dry the jars with a tea towel and be careful not to touch the inside of the jar or the neck.
- 🍅 Place the washed and rinsed jars on a baking tray with the opening facing upwards (it's safer).

- 🔥 Place the baking tray in an oven set on a low heat (100 degrees) for approximately 10 minutes (or until completely dry).
- 🔥 Make sure that you treat the lids in the same way, and remember not to touch the inside of the lids.



An equally easy and effective method for sterilisation is to place the washed jars and lids in a saucepan of cold water. Bring the water to the boil. Hold at a continuous rolling boil for a full 10 minutes.

Some people report that it is just as effective to run the jars through a wash cycle in an otherwise empty dishwasher; however there are risks with monitoring the temperature of the dishwasher accurately, so we do not recommend this method.

Regardless of which method you prefer, remember to complete the process by covering the hot jars with a clean tea towel and using promptly.

It is prudent to maintain clean hands when sterilising and preserving, and it is good practice to handle sterilised jars with clean tongs.

Testing the pH levels of your preserve recipes

A fun and purposeful activity that you can try with your students is to test and verify the pH levels of the preserves you have prepared in your kitchen classes.

A pH meter is the most reliable way to check the acidity of your preserves; these are readily available from outlets that sell scientific instruments or from good kitchen retailers.

1. Prepare your preserve according to the recipe.
2. Test and record the pH level of the preserve using the pH meter.
3. The recommended pH range is 3.2–3.5. A product registering a pH level within this range will have stability and an increased shelf life.
4. If your recipes give this result, the product should remain stable, provided that sufficient heat treatment occurred during the cooking stage.

Students may like to record a list of ingredients found in the preserve recipe that would affect the acidity (pH level) of the finished product. You may like students to source recipes from other books and online collections to compare acidity sources and volumes.

Students will be interested to learn that sugar is a natural inhibitor of mould. If mould has occurred with a recipe used in the past, then increasing the sugar level may help.

Preserve storage

A preserve that has been opened for some time may be prone to fermentation, due to bacteria in the air making contact with the preserve. As a rule, Kitchen Garden Program Schools should avoid serving or using any preserve that has visible signs of fermentation.

We recommend that each preserve made is clearly labelled with the date of preparation. Putting an additional instruction on the label to use within two months of preparation date will ensure the enjoyment of the homemade preserve.

If you want to make low sugar preserves, bear in mind this will decrease their shelf life and they are probably best kept in the fridge and consumed within three to four weeks.

A few tips to prevent mould occurring include always using a clean spoon or knife in the jar (bread crumbs and butter tend to get the mould started) and keeping open jars refrigerated, especially in warmer months.

If a jar looks as if it is fermenting (the lid is bowing out) or the liquid in the contents is fizzing or bubbling, then a more dangerous contamination has occurred and you should dispose of the contents. Several factors could have contributed to this: the jars were not properly sealed; the contents were jarred at a temperature that was too low; or the ingredients were not prepared correctly. Happily, this is fairly rare.

Recipe selection

As a point of discussion with your students in a kitchen class or in the classroom, you may like to raise the topic of where and how you select recipes that you trust. Recipes that have been an integral part of a cultural tradition spanning generations (in a family or a community) are often popular because they follow processes and use ingredients that truly work together. They may also contain helpful commentary through additional tips and reminders.

Placing trust in well-loved and tried recipes is useful when you are attempting a cooking method for the first time, or when care must be taken with a process (such as preserving). Suitable recipe selection ensures success – something that encourages both Specialists and students back into the kitchen!

Thanks go to Stephanie Alexander and Caroline from Cunliffe and Waters for their advice on preserving, which helped inform this resource.