

Lesson 1

The principles of food preservation can be broadly classified into two types:

- bactericidal method
- bacteriostatic method

bactericidal method: In these methods most of the micro-organisms are killed. Examples of bactericidal methods of preservations are cooking, canning, pasteurisation, sterilisation and irradiation.

bacteriostatic method: The principle of this method is preventing micro-organisms multiplying. This may be achieved by removing water, using acids, oil, or spices and by keeping them at low temperature. Examples of bacteriostatic methods are drying, freezing, pickling, salting, and smoking. A layer of oil on the surface of any food stops the growth of micro-organisms such as moulds and yeasts by preventing exposure to oxygen in the air. Spices like pepper and turmeric have little bacteriostatic effect.

Lesson 2

CCLRC Daresbury Laboratory

The food industry would love to be able to preserve food without the use of high temperatures or pressure because these methods can alter its flavour. The longer the shelf life of a food, the more it can be mass produced. Longer shelf lives mean that food companies save on transport and production costs.

Even when food has been preserved some bacterial spores still survive. These are called 'super-dormant' spores. Research is now being done to look at these spores and find out what triggers their germination. Researchers can then investigate ways of preventing bacterial growth so that preserved food lasts longer. They are using a special microscope called the Synchrotron Radiation for Confocal Optical Scanning (SYCLOPS) at the CCLRC Daresbury Laboratory.

Useful websites

For further information see

www.bawarchi.com/health/food-preserve1.html#food1

www.clrc.ac.uk/Activity/ACTIVITY=SRDAnnualReport9596;SECTION=451

www.clrc.ac.uk/Activity/ACTIVITY=Science&Technology:2;SECTION=243

http://srs.dl.ac.uk/Annual_Reports/AnRep94_95/Ch2/SYCLOPS.html