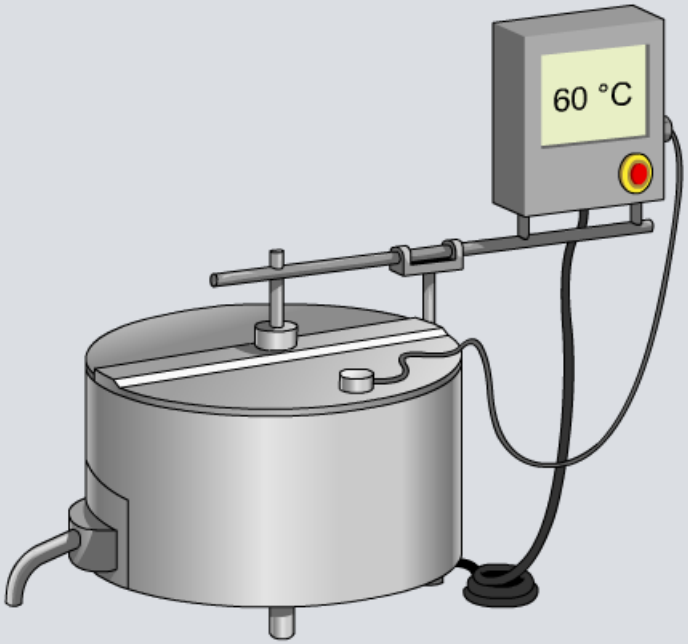
Pasteurization



The discovery of the origins of micro-organisms

In the 18th century many people believed that living things were produced by non-living things. Scientists believed that micro-organisms 'originated' from gravy. This is called **spontaneous generation**. Several scientists helped to disprove this theory, showing that organisms could only arise from other living things – a theory called **biogenesis**.

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start

The work of Louis Pasteur

Whilst investigating why wine went sour, Pasteur discovered that yeast caused **fermentation**, and bacteria caused the wine to go off. People found these results surprising, as they didn't realize that bacteria could cause chemical changes.

Pasteur suggested that micro-organisms can cause disease, forming the basis of the **germ theory of disease**.

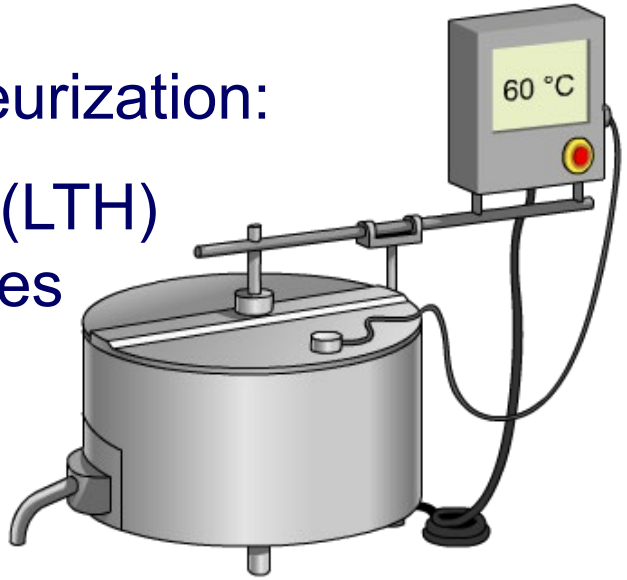
Pasteur discovered that by heating the grapes to a high temperature before fermentation, the wine did not go sour, as the bacteria had been killed. This technique is called **pasteurization**.

Pasteurization

Pasteurization is now widely used in food and drink production to prevent unwanted (and potentially harmful) micro-organisms from growing.

There are several different types of pasteurization:

- conventional low temperature holding (LTH)
  – liquid is heated to 60 °C for 40 minutes
- ultra-high temperature (UHT)
  – 140 °C for 2 seconds.



Pasteurization using a higher temperature will kill off a wider range of micro-organisms. In order to prevent contamination it's also important that the equipment used at each stage of food production is sterilized.