YOUR DAILY DAIRY

The process of heat treating milk

An Initiative by the
Consumer Education Project of Milk SA

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Milk and other dairy products

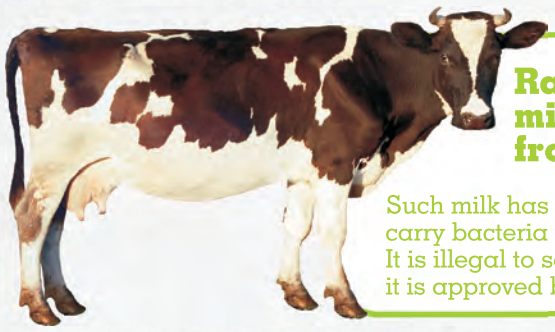
have long been enjoyed as part of our diets.

As one of the five core food groups, dairy plays a key role in a balanced diet.
This fact sheet explains the heat treatments that make milk and other dairy products safe for consumption. Heat treatment is used for many different food types.
Appropriate heat treatment limits harmful bacteria that may be present in food and ensures that food is safe to consume.
Milk can be heat treated by four different methods:

- ***Pasteurisation**
- ***Ultra pasteurisation**
- ***Ultra high temperature (UHT)** treatment to produce long-life milk
- ***Sterilisation (long-life milk)**

The label on the milk container will indicate what type of heat treatment has been applied.

THE IMPORTANCE OF HEAT TREATING MILK



Raw milk is untreated milk, exactly as it comes from the cow.

Such milk has not been heat treated and may carry bacteria that can have serious health risks. It is illegal to sell raw milk in South Africa unless it is approved by the health authorities.

*Pasteurisation

In 1868, a French scientist, Louis Pasteur, discovered that heating milk to a high temperature, followed by rapid cooling, kills harmful micro-organisms that may be present in raw milk. This heat treatment was aptly named pasteurisation.

Raw milk → Heated to 72 °C → Cooled to 4 °C → Pasteurised milk is also used to make other dairy products, such as cheese, amasi and yoghurt.

This process ensures that the milk is safe for human consumption and extends its shelf life. Remember that pasteurised milk always requires refrigeration.

Rediscover dairy ...

*Ultra pasteurisation (extended shelf life)

Extended shelf life (ESL) milk involves treatment at a higher temperature than required for pasteurisation and claims a shelf life of more than 14 days if kept refrigerated at 4 °C or lower.
To achieve this longer shelf life, the milk has typically been exposed to pasteurisation and bactofugation (spinning to remove bacteria) or ultra pasteurisation.

*Ultra high temperature treatment

Ultra high temperature (UHT) treatment involves heating milk to between 135 °C and 150 °C for up to two to four seconds and then cooling it to 4 °C or lower. This treatment is used to produce milk with a long shelf life. When packaged in sterile containers under strict hygiene control, UHT-treated milk can be stored unrefrigerated for extended periods of time. This is called long-life milk. Long-life milk must be refrigerated once the package is opened. UHT treatment does not reduce the nutritional goodness of milk; long-life milk is just as good as fresh milk.

*Sterilisation

Typically, filled bottles are carried on a conveyor belt through a steam chamber where they are heated to a temperature of 110 °C - 130 °C, for approximately 10 - 30 minutes. Then they are cooled with cold water either in a tank or using sprays or, in some cases, atmospheric air. The filled bottles are then crated.
Unopened bottles of sterilised milk keep for a long time without the need for refrigeration. Once opened, it must be treated as fresh milk, kept refrigerated and used within five days.

Remember that nothing is added to milk to make it last longer. The various heat treatments allow milk to have a longer shelf life.

a note on Homogenisation

Homogenisation is not a heat treatment, but a quality treatment, as it improves fat distribution. During homogenisation, the milk fat is forced through a very small nozzle at high speed, which breaks the fat drops into smaller droplets that are evenly distributed in the milk. This prevents a cream layer from forming on top.

dairy™ 3-A-DAY EVERY DAY

The nutrients in dairy give your body not only enough energy for the day but also many nutrients it needs to function at its best.

Milk 250 ml

+

Yoghurt/Maas 200 ml

+

Cheese 40g

3

Three servings of dairy every day will give you all the benefits of these nutrients.