



Giving Milk the Treatment

Fact file

Liquid cows' milk is the milk most commonly consumed by New Zealanders. Because it will spoil easily (is perishable), milk is treated to help it keep longer.

Pasteurisation

All milk in New Zealand is pasteurised, generally by the method known as "high temperature short time" (HTST). The milk is heated at 72 degrees Celsius for 15 seconds.

Rapid heating for short times at high temperatures, plus subsequent cooling, don't have too much effect on the nutrients in the milk, but pasteurising kills some of the microbes in the milk that cause it to go bad. Pasteurised milk keeps longer than raw milk but is still highly perishable and needs to be kept in the refrigerator. The storage life of pasteurised milk at 4 degrees Celsius is between 3 and 10 days.

UHT treatment

Ultra high temperature (UHT) treatment of milk creates a product that doesn't need refrigeration when packed in sterile packaging. Sealed UHT milk can be stored at room temperature for about five months but does need to be refrigerated once it is opened. UHT treatment heats milk to 144 degrees Celsius for two seconds.

UHT treatment changes the flavour and nutritional quality of the milk slightly. The paper cartons used to package UHT products keep out both oxygen and light. Bacteria are killed by the UHT treatment, and the sterile packaging protects the milk from contamination until the UHT milk has been opened.

UHT milks are especially useful for holidaymakers, people with outdoor hobbies, and people who live in remote areas.

Dried milk

Preserving food by drying it, and therefore depriving the bacteria of the water they need for growth, has been around for centuries. Dried milk products are made by removing nearly all the water from liquid milk. Drying has very little effect on the milk flavour and nutrients.

Many dried milks are "instantised" to make these easier to mix with water. Instantising is done by adding small amounts of lecithin to coat and separate the powder particles. Lecithin is contained naturally in many foods, including milk, soy, and eggs, and adding it does not change the nutrients in the milk.

Dried milks can be used for baking, confectionery, and sauce making and to replace milk after adding water (reconstitution).



Sweetened condensed milk

Sweetened condensed milk is made by evaporating water from milk and adding a large amount of sugar. The sugar helps the condensed milk keep longer because it slows down the growth of bacteria.

Sweetened condensed milk is used in baking and cooking and for making mayonnaise.



Evaporated milk

Evaporated milk is made from double-strength milk that is heated slowly without sugar until it is creamy. It is tinned to stop bacteria growing.

Water can be added to evaporated milk to replace standard milk.

Homogenisation

If whole milk is left to stand, the fat globules in it will rise to the surface of the milk, creating a layer of "top milk" or cream. To make the milk consistent in flavour and texture, the fat is dispersed throughout the milk by a process called homogenisation.

At high pressure, milk is forced through a plate with small holes. This process breaks the large fat globules into smaller ones that don't clump together. Nearly all carton milk is homogenised.

