

Important principles in processing

Pasteurisation

Raw milk often contains pathogenic micro-organisms (germs that make one sick). It can also have micro-organisms that can spoil the milk. It is therefore very important that milk is pasteurised. Pasteurisation is a heat treatment that kills germs and reduces the number of micro-organisms that can make milk sour or rotten. Pasteurisation can take place at a low temperature for a long time (at 62°C for 30 minutes) or at a high temperature for a short time (at 72°C for 15 seconds).

Pasteurisation process

- The pasteuriser must be sanitised before use. Use water from the balance tank.
- Steam is opened and hot water (above 85°C) is circulated through the pasteuriser for more than 20 minutes.
- Cold water valves are opened, so that the equipment can be cooled to operating temperature.
- Water is replaced with milk.
- The milk is heated to pasteurisation temperature (for the specified time).
- The milk is cooled to storage temperature.

Fat separation

Cream contains about 40% milk fat (butterfat). Cream is separated from milk in a separator. The purpose is to remove some or all of the fat and sludge, and standardise the fat in milk.


Fat separation process

- Hot milk is pumped from the pasteuriser into the bowl of the separator.
- The cream and the skimmed milk leave the separator at the top.
- Removal of the sludge is called clarification.

Homogenisation

The fat in milk is in the form of big and small droplets that float in the liquid. The fat droplets rise to the surface and form a cream layer. Bigger droplets rise faster. Milk is homogenised to prevent the forming of a layer of cream on top of the milk.

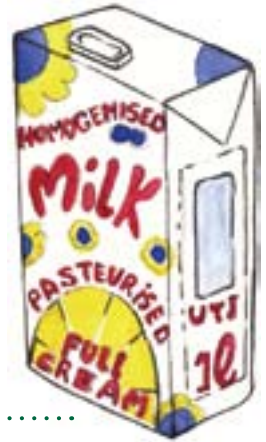
Homogenisation process

- Milk is pumped through small openings at high pressure.
- Fat droplets are broken up into smaller droplets which are more or less the same small size and float evenly throughout the milk. 

Processing of milk

Raw milk is processed to give it a better shelf-life and comply with specific standards.

- **Pasteurisation:** Milk is heated to a specific temperature and cooled down quickly to kill any germs.
- **Fat separation:** Cream is separated from milk to remove some of the fat and standardise the fat content in milk.
- **Homogenisation:** Milk is homogenised to prevent a layer of cream from forming on the milk.



Verwerking van melk

Rou melk word verwerk sodat dit 'n beter raklewe kan hê en aan sekere standaarde voldoen.

- **Pasteurisasie:** Melk word tot 'n sekere temperatuur verhit en dan vinnig afgekoel om kieme dood te maak.
- **Vet-afskeiding:** Room word van die melk afgeskei om van die vet te verwyder en om die vet-inhoud van die melk te standaardiseer.
- **Homogenisering:** Melk word gehomogeniseer om te keer dat 'n laag room bo-op die melk vorm.

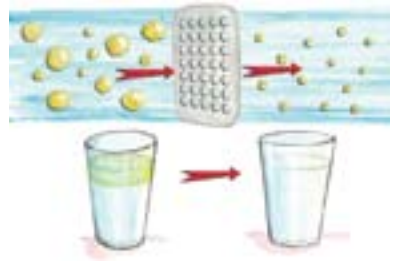
Ukulungiswa kobisi

Ubisi olungenziwanga nto luyalungiswa ukulunika ubomi baseshelfini obungcono nokuba luhambelane nemigangatho ethile.

- **Ukucocwa:** Ubisi lutshiswa ngobushushu obuthile luze lupholiswe ngokukhawuleza, ukubulala naziphi na iintsholongwane ezikhoyo.
- **Ukususwa kwamafutha:** Ikhrimu iyasuswa elubisini ukwenzela ukususa amafutha athile nokuqiniseka ngomgangatho wamafutha aselubisini.
- **Ukulungelelaniswa:** Ubisi luyalungelelaniswa ukunqanda ukuba ubisi lungabinacwambu ngaphezulu elubisini.

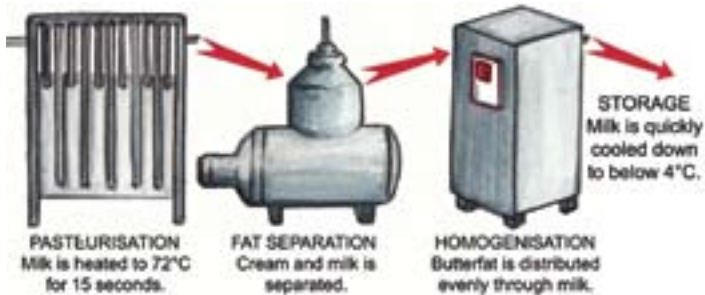
Ukusetshenzwa kobisi

Ubisi olungakahlungwa (raw) lusetshenzwa ngenjongo yokulwenza lube sesimweni sokuphila kangcono emashalofini futhi luvumelane nezindinganiso ezithile.



Homogenisation

- **Ukubilisa ubisi ukuze kufe amagciwane (Pasteurisation):** Ubisi luyashiswa lufinyelele ezingeni elithile lokushisa bese luyapholiswa ngokushesha ukuze kubulawe wonke amagciwane.
- **Ukuhlukaniswa kwamafutha:** Ukhilimu uyahlukaniswa obisini ukuze kususwe amafutha athile futhi kushiye isilinganiso esifanele (standardize) samafutha obisini.
- **Ukufananisa (homogenisation):** Ubisi lwenziwa lufane ukuze kugwenywe ukwakheka komlalela kakhilimu phezulu obisini.



Ho sebetsa ka lebeso

Lebeso le sa etswang letho le sebetswa hore le dule nako e telele dirakeng le ho kgema le melao e behilweng.

- **Ho bolaya dikokwanahloko ka motjheso:** Lebeso le futhumatswa ho fihla thempereitjhareng e itseng le ho tlohellwa hore le fole kapele ho bolaya dikokwanahloko dife kapa dife.
- **Ho arola mafura:** Lebejana le arolwa lebeseng ho tlosa mafura a itseng le ho tsitsisa mafura lebeseng.
- **Motswako o tshwanang:** Lebeso le etswa hore le be le motswako o tshwanang ho qoba hore moalo wa lebejana o se bopehe bokahodimong ba lebeso. **UMI**