



Milk - What happens to milk after it comes out of the cow?

Fact

- The words on the side of a milk carton explain what happens to the milk after it comes out of the cow. Pasteurised, Standardised and Homogenised. Ah, but what do they mean? :o)
- The milking machine draws the milk out of the cow and holds it in a huge tank. A milk tanker (a huge truck with a tank on it) pumps the milk onboard and then takes the milk to the nearest milk factory.
- The first thing that happens to the milk is that it's pasteurised – it's heated up to destroy any micro-organisms (like bacteria that might be harmful to us).
- Then the milk is separated into two parts – cream and skim milk. Then the two parts are mixed together again but in even amounts so that the milk has a standard combination of cream and milk. That's called Standardising.
- When the milk is Homogenised, it mixes the milk up so that the cream gets broken up into tiny little bits so it doesn't separate out of the milk and float on the top of the container.

Do you know

- Louis Pasteur is the scientist that discovered the process of heating the milk to kill the micro-organisms (that's why it's called Pasteurisation).
- When the milk is Pasteurised, it's heated to 72 degrees Celsius for 15 seconds and then cooled.
- The milk factory uses a centrifuge system which is like the spin cycle of a washing machine. It makes the cream separate out from the milk and rise to the top.
- Cows throughout New Zealand produce over 1000 million kilograms of milk a year

Experiments you can do

Make a centrifuge

What you need:

A bucket with a handle

Water

A place outside that doesn't matter if it gets wet

What you do:

Quarter full the bucket with water and take it outside. Put it on the ground and stand with your arm straight out in front of you. Swing it round and round along the side of your body so that your arm swings past your ear and your leg. Then grip the handle of the bucket and start swinging your arm round again. You don't have to go very fast. You're making a centrifuge and the force of the bucket swinging around pushes the water to the bottom of the bucket, so it won't fall out.

The trick is stopping the bucket without spilling the water everywhere and all over you!

Other Investigations

Have a look at the side of a milk container for the words Pasteurised, Standardised and Homogenised. Explain to an adult what those words mean and what it does to the milk.

Jokes

Why is milk the fastest thing in the world?
Because it's pasteurised before you see it.
From Bayley Moor

Can you drop a full glass and spill no water?
Yes, when the glass is full of milk
From Kate

A definition of "Laughing stock": cattle with a sense of humour.
From Ben Helleur