

Suzy's World

How does grass get turned into milk?

Fact

- Grass contains a mixture of ingredients that get recombined inside a cow to make a new mixture that we call milk.
- To get the nutrients from the grass the cow first has to swallow the grass, whole, into her first stomach – the rumin.
- When the rumin is full the cow rests and regurgitates the grass back up, a mouthful at a time to chew it.
- The chewed grass gets swallowed into the cows second stomach – the reticulum – which also catches all the strange things a cow might swallow when eating grass.
- From the reticulum the mushed up grass goes into the cows third stomach the Omasum, which breaks the grass down even more.
- Then it goes into the Abomasum, which works like our stomach – it adds acid to the grass to break it down until the bits are small enough to be absorbed into our bloodstream.
- When the cow is pregnant its mammary glands get ready to make milk for its calf.
- The cows udder has mammary glands that collect the right mixture of ingredients from the cows blood and turn it into milk.



Do you know

- A cow eats about 100 litres of grass and can chew 41,600 times a day.
- One cow can produce 25 litres of milk but it takes 400 litres of blood to pass through the udder for that much milk.
- A cow is a mammal and all female mammals make milk for their young this way.

Experiments you can do

Do some investigation yourself and see if you can find out how butter is made.

Other Investigations

Make milk buttons (you can't eat these – they're plastic!)

What you need:

The help of an adult

1/3 cup of milk

4 tsp of vinegar

A small pot (for the stove) or microwave and microwave proof dish

A spoon

A plate



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Continued... How does grass get turned into milk?

What you do:

Get an adult to help you because you need to be very careful around the stove. Gently heat the milk in the pot on the stove until it begins to steam and small bubbles start to appear around the sides. Or heat the milk in the microwave for 20 seconds, check it then if it needs more heat it for another 10 seconds and so on.

Add the vinegar a teaspoon at a time, stirring the milk quickly. Lumps will start to form. When the milk solids have formed a big rubbery lump pour off all the liquid and tip the lump out onto a plate. While it is still warm carefully shape the lump then leave it to dry overnight.

You have just made casein plastic!

Jokes

Knock, Knock

Who's there?

Cow go

Cow go, who?

Cow go moo not who