



Milk from A to Z

Additives

According to food laws and regulations, additives are substances that are added to foodstuffs in order to enhance their shelf life, stability, texture and consistency, appearance or flavour. They **must always be clearly marked on the packaging**.

Ageing

see **ripening**

Amino acids

Milk provides nearly all the essential amino acids your body needs.

Amino acids are an important part of the human body and the basic building block for **proteins**. There are about twenty standard amino acids that occur in nature. However, the human body cannot synthesize all of them, so **most of them must be obtained from food**. These are known as essential amino acids.

Best-before date

see **expiration date**

Biological value (BV)

The BV describes the makeup of the amino acids in protein and their **usability** for the human body (i.e. how much of the protein absorbed from food can be utilized)

Butter

To make butter, cream is first separated from milk and then churned (shaken) until the tiny globules of fat form **butter grains**. After the remaining liquid (buttermilk) has been drained off, these clumps are kneaded into **solid butter**.

Butterfat

Butterfat or milk fat is made up of over 400 different fatty acids and is an ideal blend of saturated and non-saturated fatty acids. These fats are especially valuable due to fat-soluble vitamins and **lecithin**.

The fat content of milk is usually somewhere between 3.2 and 6%. This number depends on the breed of cow, but is also influenced by how the animals are kept, what they are fed, and how healthy they are.

Buttermilk

Buttermilk is a by-product of butter churning and contains a **maximum of 1% fat**. No water may be added to pure buttermilk.



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Calcium

Calcium is the **mineral** found in the largest quantities in the human organism. Milk and dairy products are rich in the kind of calcium that can the human body can easily absorb.

Calcium is also what keeps milk from clotting when it boils.

Centrifuge

A centrifuge or cream separator is a device that uses rotation (spinning) to separate milk into cream (butterfat) and skim milk.

Cholesterol

Cholesterol is a lipidic substance that occurs naturally in all animal and human **tissues**. Most of the cholesterol found in human blood is actually produced by our body; only a small part is taken in through animal-source foods.

If you want to limit your cholesterol intake, switch to skim milk and **low-fat dairy products**.

Clarified butter

Clarified butter is produced by melting butter in order to separate the butterfat from the water and milk solids (e.g. protein). It has a **fat content** of **99.8 %**.

Clotting

see **coagulation**

Coagulation

Sometimes also called **clotting**, this is the process in which milk is made to **curdle** by adding rennet and lactic acid bacteria.

Cream

Cream is the part of milk with the higher butterfat content. In untreated milk it naturally rises to the top, or it can be separated from the skim milk in a centrifuge (separator).

Cultured milk

see **fermented milk**

Curd

In cheese-making, curd is a dairy product made by curdling (coagulating) milk with the help of rennet or lactic acid. The solid curds are broken up, and the remaining liquid (whey) is drained off.

The smaller these solid bits of curd are, the less water (and **the more dry mass**) the final product will contain.



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Curdling

see **coagulation**

Curing

see **ripening**

Dry mass

Dry mass is the mass that is left when all the water is removed from a cheese. It consists mostly of carbohydrates, fats, proteins and minerals.

The fat content of hard cheeses is customarily given as the percent of fat in dry mass (FDM).

Energy

The human body needs energy to maintain its **metabolism**. The energy consumed through food is measured in calories (**kcal**) or Joule (**kJ**).

Expiration date

Also known as best-before date or sell-by date. By law, this indicator of how long a product will keep must be clearly marked.

Fatty acids

Fatty acids are an important source of energy. There are three kinds of fatty acids:

- saturated
- monounsaturated
- polyunsaturated

FDM (fat in dry matter)

The fat content of a cheese is usually given as FDM or the percentage of **fat in dry matter**. Cheese is made up of dry matter and water. While the amount of water contained in a cheese decreases as it ripens, the fat content in the dry mass remains constant. The harder a cheese is, the higher its dry mass.

You can easily calculate the **absolute fat content** using this easy rule of thumb: simply multiply the FDM percentage by the following factor:

- fresh cheese: 0.3
- soft cheese: 0.4
- semi-hard cheese: 0.5
- hard cheese: 0.6

More simply put: the overall fat content (in percent) of a cheese is usually about half the FDM value, or about one-third in fresh cheese.

Fermented milk

Fermented milk, also known as **soured milk** or **cultured milk**, is milk that has been made to coagulate and thicken at room temperature by adding lactic acid bacteria.



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Fresh cheese

This type of cheese, sometimes also called cream cheese, includes cheeses that have not been ripened (cured). They are made by separating the curds of **cultured (thickened) milk** from the whey.

Fresh milk

see **pasteurised milk**

Heat treatment

Heat treatment is the collective word for processes that make milk less perishable by briefly heating it. These include **pasteurisation, ultra-high temperature processing (UHT)** and **sterilisation**. Our fresh milk is only subjected to gentle pasteurisation.

Homogenization

In untreated milk, the fatty components (cream) naturally rise to the top, where they can be skimmed off. To prevent this separation, milk is forced through tiny holes at high pressure, breaking the fat into very fine globules and distributing them evenly (homogenously) in the emulsion. The fat then no longer gathers in a layer on the surface.

Kefir

Much like yoghurt, kefir is a **product made from fermented milk**. It is usually made by adding kefir grains (a mixture of bacteria and yeast) to pasteurized milk. During this fermentation process, kefir becomes carbonated.

Lactose

Lactose is the type of sugar naturally contained in milk and dairy products. It aids the organism in absorbing calcium. As lactic acid bacteria break down lactose, they inhibit the growth of putrefying bacteria and encourage healthy bacteria.

Lactic acid

Lactic acid is a natural acid found in human metabolism. It is formed when lactose (milk sugar) is broken down.

Low-fat milk

Sometimes also called **partly** or **partially-skimmed** milk, low-fat contains at least 1.5% and no more than 1.8% fat.

L-(+)-lactic acid

Lactic acid molecules occur in two forms which are optical isomers (mirror images) of each other. They can only be told apart by whether they rotate polarized light to the left (D-(-)-lactic acid) or to the right (L-(+)-lactic acid). L-(+)-Lactic acid is the biologically important isomer. In yoghurt production, great care is taken to select bacterial cultures containing a high percentage of microorganisms that will produce L-(+)-lactic acid.



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Maturing
see **ripening**

Milk fat
see **butterfat**

Milk sugar
See **lactose**

Milk protein

Milk proteins contain all the essential amino acids that the body cannot synthesize for itself and which must therefore be taken in with food.

Minerals

Milk contains several different minerals, mainly **calcium** and **phosphor**. Milk also plays an important role in providing the body with **iron, iodine, sodium, magnesium** and **zinc**.

Mixed milk drinks

These drinks are made by combining milk with other flavourful foods such as fruits, nuts or chocolate. They must contain **at least 70% milk** and no more than 30% non-milk ingredients.

Nutrient density

Nutrient density describes the ratio of nutrient content (in g/100g) to the total energy content (in kJ /100g). Nutrient density is an indicator of the quality of foodstuffs.

Partly skimmed milk, part-skim milk
see **low-fat milk**

Pasteurised milk (fresh milk)

To make fresh milk, raw milk is heated to **75° Celsius** (167° Fahrenheit) for 15 seconds and then quickly cooled down again. This process (**pasteurisation**) reduces the number of germs and increases the milk's shelf life while preserving as many nutrients as possible. After packaging, pasteurised milk will keep for **up to 6 days** in the refrigerator.

Probiotics

A probiotic is a dietary supplement that contains living microorganisms. The use of lactic acid bacteria is one of the oldest and most common forms of probiotics.

Protein

Proteins are a vital building block in the human body. They contain, among other things, essential amino acids that the body cannot synthesize for itself.



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Quark

Also called **Topfen** or **milk curd**. Quark is made from pasteurised skim milk, which is thickened by adding special lactic acid bacteria. Near the end of the production process, cream may be added for a higher fat content or for a more rich and creamy consistency. Quark is three-quarters water. The dry mass chiefly consists of milk protein and milk fat. **Quark is a low-fat dairy product.**

Raw milk

Is untreated milk fresh from the cow (that has not been pasteurised or homogenized)

Rennet

Rennet is a coagulating agent used to curdle (thicken) milk in cheese making. It curdles milk without souring it. This protein-splitting enzyme is produced naturally in the stomach of calves, where it helps to break down and digest the proteins in the mother cow's milk.

In South Tyrol, **only non-GM rennet** is used.

Ricotta

Ricotta is not the same as curd or quark. Instead, it is made by souring and heating whey. Both products contain **valuable proteins**: while the protein in quark is mostly casein, ricotta contains whey proteins. Ricotta is has a very light consistency and works well in combination with other foods.

Ripening

Sometimes also called cheese curing, aging or maturation. With the exception of fresh cheeses (such as cream cheese), cheese is ripened for days or weeks, depending on the type. During this ripening process, the cheese is monitored closely and checked regularly.

Maturation changes the proteins and fats contained in cheese. These are ultimately responsible for a cheese's **appearance, texture** and **flavour**.

Sell-by date

see **expiration date**

Separator

see **centrifuge**

Sour cream

Made by fermenting sweet (regular) cream with lactic acid bacteria.



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Soured milk

see also **fermented milk**.

Also known as fermented or cultured milk, not to be confused with spoiled milk. In former times, milk was left to ferment and thicken naturally in the household. Without refrigeration, microorganisms contained in the milk as well as in the air would sour the milk within a day or two. Nowadays, **soured milk** is produced by adding cultures of lactic acid bacteria to **pasteurised milk**.

Sterilisation

Sterilised milk is first packaged and then heated to **110-120° Celsius** (230-250° Fahrenheit) for 10-30 minutes. This milk is **germ-free** and will keep for up to a year if unopened.

Topfen

see **quark**

Trace elements

Milk is an important source of trace elements.

Trace elements can only be found in very small quantities in the human body. In fact, they only account for 0.01% of the body's mass, and our daily intake is normally less than 100mg. Trace elements include fluorine, iron, zinc, copper, iodine, manganese, cobalt, molybdenum, chromium and selenium. They play an important role in hormonal and enzymatic reactions and are contained in various proteins.

Ultra-heat treatment (UHT)

This process is also known as ultra-high temperature processing, ultra-pasteurisation or partial sterilisation. Milk can be ultra-heated (**min. 135°Celsius** / 275°F) for 1 to 4 seconds to give it a longer shelf life. UHT products can be kept unrefrigerated at room temperature for 6-8 weeks.

Vitamins

Dairy products are rich in a number of vitamins. In addition to the fat-soluble **vitamins A, D, E and K**, milk also contains large quantities of **B-vitamins**. Most vitamins contained in milk are fairly heat-resistant.

Whey

Also known as **milk plasma**, whey is a by-product of cheese making. It is the watery, greenish-yellow liquid that is drained off from the milk curd (solids). It consists of about 94% water and 4-5% lactose (milk sugar) and is **virtually fat free**. Whey contains proteins and many mineral nutrients, making it especially healthy.

Whole milk

The term designates the fat content. Whole milk must contain a minimum of 3.5% butterfat.



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Yoghurt

To make yoghurt, **lactic acid bacteria** are added to pasteurised milk, which then ferments at a temperature of 42°Celsius (108°F). The milk thickens and takes on its characteristic, slightly sour taste.



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