



# Cheese

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**Cheese** is a food derived from milk that is produced in a wide range of flavors, textures, and forms by coagulation of the milk protein casein. It comprises proteins and fat from milk, usually the milk of cows, buffalo, goats, or sheep. During production, the milk is usually acidified, and adding the enzyme rennet causes coagulation. The solids are separated and pressed into final form.<sup>[1]</sup> Some cheeses have molds on the rind or throughout. Most cheeses melt at cooking temperature.

Hundreds of types of cheese from various countries are produced. Their styles, textures and flavors depend on the origin of the milk (including the animal's diet), whether they have been pasteurized, the butterfat content, the bacteria and mold, the processing, and aging. Herbs, spices, or wood smoke may be used as flavoring agents. The yellow to red color of many cheeses, such as Red Leicester, is produced by adding annatto. Other ingredients may be added to some cheeses, such as black pepper, garlic, chives or cranberries.

For a few cheeses, the milk is curdled by adding acids such as vinegar or lemon juice. Most cheeses are acidified to a lesser degree by bacteria, which turn milk sugars into lactic acid, then the addition of rennet completes the curdling. Vegetarian alternatives to rennet are available; most are produced by fermentation of the fungus *Mucor miehei*, but others have been extracted from various species of the *Cynara* thistle family. Cheesemakers near a dairy region may benefit from fresher, lower-priced milk, and lower shipping costs.

Cheese is valued for its portability, long life, and high content of fat, protein, calcium, and phosphorus. Cheese is more compact and has a longer shelf life than milk, although how long a cheese will keep depends on the type of cheese; labels on packets of cheese often claim that a cheese should be consumed within three to five days of opening. Generally speaking, hard cheeses, such as parmesan last longer than soft cheeses, such as Brie or goat's milk cheese. The long storage life of some cheeses, especially when encased in a protective rind, allows selling when markets are favorable.

There is some debate as to the best way to store cheese, but some experts say that wrapping it in cheese paper provides optimal results. Cheese paper is coated in a porous plastic on the inside, and the outside has a layer of wax. This specific combination of plastic on the inside and wax on the outside protects the cheese by allowing condensation on the cheese to be wicked away while preventing moisture from within the cheese escaping.<sup>[2]</sup>

A specialist seller of cheese is sometimes known as a *cheesemonger*. Becoming an expert in this field requires some formal education and years of tasting and hands-on experience, much like becoming an expert in wine or cuisine. The cheesemonger is responsible for all aspects of the cheese inventory: selecting the cheese menu, purchasing, receiving, storage, and ripening.<sup>[3]</sup>



Coulommiers cheese



A platter with cheese and garnishes



A variety of cheeses

## Contents

- 1 Etymology
- 2 History
  - 2.1 Origins
  - 2.2 Ancient Greece and Rome
  - 2.3 Post-Roman Europe
  - 2.4 Modern era
- 3 Production

- 3.1 Consumption
- 4 Processing
  - 4.1 Curdling
  - 4.2 Curd processing
  - 4.3 Ripening
- 5 Types
- 6 Cooking and eating
- 7 Nutrition and health
  - 7.1 Neonatal infection and death
  - 7.2 Heart disease
  - 7.3 Pasteurization
- 8 Cultural attitudes
- 9 See also
- 10 References
- 11 Bibliography
- 12 Further reading
- 13 External links

## Etymology

The word *cheese* comes from Latin *caseus*,<sup>[4]</sup> from which the modern word casein is also derived. The earliest source is from the proto-Indo-European root *\*kwat-*, which means "to ferment, become sour".

More recently, *cheese* comes from *chese* (in Middle English) and *cīese* or *cēse* (in Old English). Similar words are shared by other West Germanic languages—West Frisian *tsiis*, Dutch *kaas*, German *Käse*, Old High German *chāsi*—all from the reconstructed West-Germanic form *\*kāsī*, which in turn is an early borrowing from Latin.

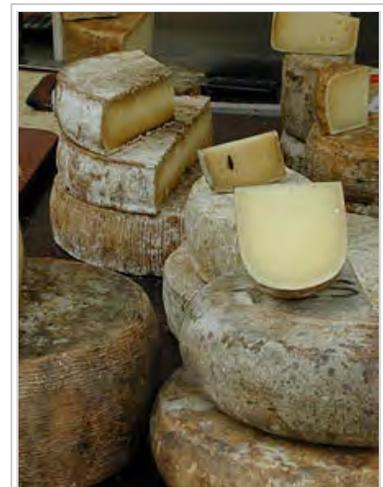
When the Romans began to make hard cheeses for their legionaries' supplies, a new word started to be used: *formaticum*, from *caseus formatus*, or "molded cheese" (as in "formed", not "moldy"). It is from this word that the French *fromage*, proper Italian *formaggio*, Catalan *formatge*, Breton *fourmaj*, and Provençal *furmo* are derived. Of the Romance languages, Spanish, Portuguese, Romanian, Tuscan and Southern Italian dialects use words derived from *caseus* (*queso*, *queijo*, *caș* and *caso* for example). The word *cheese* itself is occasionally employed in a sense that means "molded" or "formed". *Head cheese* uses the word in this sense.

## History

### Origins

Cheese is an ancient food whose origins predate recorded history. There is no conclusive evidence indicating where cheesemaking originated, either in Europe, Central Asia or the Middle East, but the practice had spread within Europe prior to Roman times and, according to Pliny the Elder, had become a sophisticated enterprise by the time the Roman Empire came into being.<sup>[5]</sup>

The earliest evidence of cheese-making in the archaeological record dates back to 5,500 BCE, in what is now Kujawy, Poland, where strainers with milk fats molecules have been found.<sup>[6]</sup> Earliest proposed dates for the origin of cheesemaking range from around 8000 BCE, when sheep were first domesticated. Since animal skins and inflated internal organs have, since ancient times, provided storage vessels for a range of foodstuffs, it is probable that the process of cheese making was discovered accidentally by storing milk



Cheese on market stand in Basel, Switzerland



A piece of soft curd cheese, oven-baked to increase longevity

in a container made from the stomach of an animal, resulting in the milk being turned to curd and whey by the rennet from the stomach. There is a legend – with variations – about the discovery of cheese by an Arab trader who used this method of storing milk.<sup>[7]</sup>

Cheesemaking may have begun independently of this by the pressing and salting of curdled milk to preserve it. Observation that the effect of making cheese in an animal stomach gave more solid and better-textured curds may have led to the deliberate addition of rennet.

Early archeological evidence of Egyptian cheese has been found in Egyptian tomb murals, dating to about 2000 BCE.<sup>[8]</sup> The earliest cheeses were likely to have been quite sour and salty, similar in texture to rustic cottage cheese or feta, a crumbly, flavorful Greek cheese.

Cheese produced in Europe, where climates are cooler than the Middle East, required less salt for preservation. With less salt and acidity, the cheese became a suitable environment for useful microbes and molds, giving aged cheeses their respective flavors.

The earliest ever discovered preserved cheese was found in the Taklamakan Desert in Xinjiang, China, and it dates back as early as 1615 BCE.<sup>[9]</sup>

### Ancient Greece and Rome

Ancient Greek mythology credited Aristaeus with the discovery of cheese. Homer's *Odyssey* (8th century BCE) describes the Cyclops making and storing sheep's and goats' milk cheese (translation by Samuel Butler):

We soon reached his cave, but he was out shepherding, so we went inside and took stock of all that we could see. His cheese-racks were loaded with cheeses, and he had more lambs and kids than his pens could hold...

When he had so done he sat down and milked his ewes and goats, all in due course, and then let each of them have her own young. He curdled half the milk and set it aside in wicker strainers.



Cheese in a market in Italy

By Roman times, cheese was an everyday food and cheesemaking a mature art. Columella's *De Re Rustica* (circa 65 CE) details a cheesemaking process involving rennet coagulation, pressing of the curd, salting, and aging. Pliny's *Natural History* (77 CE) devotes a chapter (XI, 97) to describing the diversity of cheeses enjoyed by Romans of the early Empire. He stated that the best cheeses came from the villages near Nîmes, but did not keep long and had to be eaten fresh. Cheeses of the Alps and Apennines were as remarkable for their variety then as now. A Ligurian cheese was noted for being made mostly from sheep's milk, and some cheeses produced nearby were stated to weigh as much as a thousand pounds each. Goats' milk cheese was a recent taste in Rome, improved over the "medicinal taste" of Gaul's similar cheeses by smoking. Of cheeses from overseas, Pliny preferred those of Bithynia in Asia Minor.

### Post-Roman Europe

As Romanized populations encountered unfamiliar newly settled neighbors, bringing their own cheese-making traditions, their own flocks and their own unrelated words for *cheese*, cheeses in Europe diversified further, with various locales developing their own distinctive traditions and products. As long-distance trade collapsed, only travelers would encounter unfamiliar cheeses: Charlemagne's first encounter with a white cheese that had an edible rind forms one of the constructed anecdotes of Notker's *Life* of the Emperor.

The British Cheese Board claims that Britain has approximately 700 distinct local cheeses,<sup>[10]</sup> France and Italy have perhaps 400 each. (A French proverb holds there is a different French cheese for every day of the year, and Charles de Gaulle once asked "how can you govern a country in which there are 246 kinds of cheese?")<sup>[11]</sup> Still, the advancement of the cheese art in Europe was slow during the centuries after Rome's fall. Many cheeses today were first recorded in the late Middle Ages or after—cheeses like Cheddar around 1500, Parmesan in 1597, Gouda in 1697, and Camembert in 1791.<sup>[12]</sup>

In 1546 *The Proverbs of John Heywood* claimed "the moon is made of a greene cheese." (*Greene* may refer here not to the color, as many now think, but to being new or unaged.)<sup>[13]</sup> Variations on this sentiment were long repeated and NASA exploited this myth for an April Fools' Day spoof announcement in 2006.<sup>[14]</sup>

## Modern era

Until its modern spread along with European culture, cheese was nearly unheard of in east Asian cultures, in the pre-Columbian Americas, and only had limited use in sub-Mediterranean Africa, mainly being widespread and popular only in Europe, the Middle East, the Indian subcontinent, and areas influenced by those cultures. But with the spread, first of European imperialism, and later of Euro-American culture and food, cheese has gradually become known and increasingly popular worldwide.

The first factory for the industrial production of cheese opened in Switzerland in 1815, but large-scale production first found real success in the United States. Credit usually goes to Jesse Williams, a dairy farmer from Rome, New York, who in 1851 started making cheese in an assembly-line fashion using the milk from neighboring farms. Within decades, hundreds of such dairy associations existed.<sup>[15]</sup>

The 1860s saw the beginnings of mass-produced rennet, and by the turn of the century scientists were producing pure microbial cultures. Before then, bacteria in cheesemaking had come from the environment or from recycling an earlier batch's whey; the pure cultures meant a more standardized cheese could be produced.<sup>[16]</sup>

Factory-made cheese overtook traditional cheesemaking in the World War II era, and factories have been the source of most cheese in America and Europe ever since.

## Production

In 2013, world production of cheese was 21.3 million tonnes, with the United States accounting for 25% (5.4 million tonnes) of the world total followed by Germany, France and Italy (table).<sup>[17]</sup>

During 2015, Germany, France, Netherlands and Italy exported 10-14% of their produced cheese.<sup>[18]</sup> The United States, the biggest world producer of cheese, is a marginal exporter (5.3% of total),<sup>[18]</sup> as most of its production is for the domestic market.

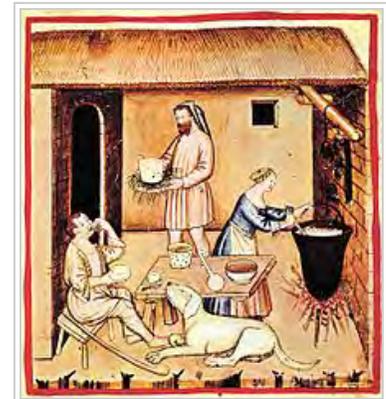
## Consumption

France, Iceland, Finland, Denmark and Germany were the highest consumers of cheese in 2014, averaging 25 kg (55 lb) per person.<sup>[19]</sup>

## Processing

### Curdling

A required step in cheesemaking is separating the milk into solid curds and liquid whey. Usually this is done by acidifying (souring) the milk and adding rennet. The acidification can be accomplished directly by the addition of an acid, such as vinegar, in a few cases (paneer, queso fresco). More commonly starter bacteria are employed instead which convert milk sugars into lactic acid. The same bacteria (and the enzymes they produce) also play a large role in the eventual flavor of aged cheeses. Most cheeses are made with starter bacteria from the *Lactococcus*, *Lactobacillus*, or *Streptococcus* families. Swiss starter cultures also include *Propionibacter shermani*, which produces carbon dioxide gas bubbles during aging, giving Swiss cheese or Emmental its holes (called "eyes").



Cheese, Tacuinum sanitatis Casanatensis (14th century)

Cheese production – 2013	
Country	Production (millions of tonnes)
 United States	5.4
 Germany	2.2
 France	1.9
 Italy	1.2
 Netherlands	0.8
<b>World</b>	<b>21.3</b>
Source: FAOSTAT of the United Nations <sup>[17]</sup>	

Some fresh cheeses are curdled only by acidity, but most cheeses also use rennet. Rennet sets the cheese into a strong and rubbery gel compared to the fragile curds produced by acidic coagulation alone. It also allows curdling at a lower acidity—important because flavor-making bacteria are inhibited in high-acidity environments. In general, softer, smaller, fresher cheeses are curdled with a greater proportion of acid to rennet than harder, larger, longer-aged varieties.

While rennet was traditionally produced via extraction from the inner mucosa of the fourth stomach chamber of slaughtered young, unweaned calves, most rennet used today in cheesemaking is produced recombinantly.<sup>[20]</sup> The majority of the applied chymosin is retained in the whey and, at most, may be present in cheese in trace quantities. In ripe cheese, the type and provenance of chymosin used in production cannot be determined.<sup>[20]</sup>

## Curd processing

At this point, the cheese has set into a very moist gel. Some soft cheeses are now essentially complete: they are drained, salted, and packaged. For most of the rest, the curd is cut into small cubes. This allows water to drain from the individual pieces of curd.

Some hard cheeses are then heated to temperatures in the range of 35–55 °C (95–131 °F). This forces more whey from the cut curd. It also changes the taste of the finished cheese, affecting both the bacterial culture and the milk chemistry. Cheeses that are heated to the higher temperatures are usually made with thermophilic starter bacteria that survive this step—either *Lactobacilli* or *Streptococci*.

Salt has roles in cheese besides adding a salty flavor. It preserves cheese from spoiling, draws moisture from the curd, and firms cheese's texture in an interaction with its proteins. Some cheeses are salted from the outside with dry salt or brine washes. Most cheeses have the salt mixed directly into the curds.

Other techniques influence a cheese's texture and flavor. Some examples are :

- **Stretching:** (Mozzarella, Provolone) The curd is stretched and kneaded in hot water, developing a stringy, fibrous body.
- **Cheddaring:** (Cheddar, other English cheeses) The cut curd is repeatedly piled up, pushing more moisture away. The curd is also mixed (or *milled*) for a long time, taking the sharp edges off the cut curd pieces and influencing the final product's texture.
- **Washing:** (Edam, Gouda, Colby) The curd is washed in warm water, lowering its acidity and making for a milder-tasting cheese.

Most cheeses achieve their final shape when the curds are pressed into a mold or form. The harder the cheese, the more pressure is applied. The pressure drives out moisture—the molds are designed to allow water to escape—and unifies the curds into a single solid body.

## Ripening

A newborn cheese is usually salty yet bland in flavor and, for harder varieties, rubbery in texture. These qualities are sometimes enjoyed—cheese curds are eaten on their own—but normally cheeses are left to rest under controlled conditions. This aging period (also called ripening, or, from the French, *affinage*) lasts from a few days to several years. As a cheese ages, microbes and enzymes transform texture and intensify flavor. This transformation is largely a result of the breakdown of casein proteins and milkfat into a complex mix of amino acids, amines, and fatty acids.

Some cheeses have additional bacteria or molds intentionally introduced before or during aging. In traditional cheesemaking, these microbes might be already present in the aging room; they are simply allowed to settle and grow on the stored cheeses. More



During industrial production of Emmentaler cheese, the as-yet-undrained curd is broken by rotating mixers.



Cheese factory in the Netherlands



Parmigiano-Reggiano in a modern factory

often today, prepared cultures are used, giving more consistent results and putting fewer constraints on the environment where the cheese ages. These cheeses include soft ripened cheeses such as Brie and Camembert, blue cheeses such as Roquefort, Stilton, Gorgonzola, and rind-washed cheeses such as Limburger.

## Types

There are many types of cheese, with around 500 different varieties recognized by the International Dairy Federation,<sup>[21]</sup> more than 400 identified by Walter and Hargrove, more than 500 by Burkhalter, and more than 1,000 by Sandine and Elliker.<sup>[22]</sup> The varieties may be grouped or classified into types according to criteria such as length of ageing, texture, methods of making, fat content, animal milk, country or region of origin, etc.—with these criteria either being used singly or in combination,<sup>[23]</sup> but with no single method being universally used.<sup>[24]</sup> The method most commonly and traditionally used is based on moisture content, which is then further discriminated by fat content and curing or ripening methods.<sup>[21][25]</sup> Some attempts have been made to rationalise the classification of cheese—a scheme was proposed by Pieter Walstra which uses the primary and secondary starter combined with moisture content, and Walter and Hargrove suggested classifying by production methods which produces 18 types, which are then further grouped by moisture content.<sup>[21]</sup>

### Moisture content (soft to hard)

Categorizing cheeses by firmness is a common but inexact practice. The lines between "soft", "semi-soft", "semi-hard", and "hard" are arbitrary, and many types of cheese are made in softer or firmer variations. The main factor that controls cheese hardness is moisture content, which depends largely on the pressure with which it is packed into molds, and on aging time.

### Fresh, whey and stretched curd cheeses

The main factor in the categorization of these cheeses is their age. Fresh cheeses without additional preservatives can spoil in a matter of days.

### Content (double cream, goat, ewe and water buffalo)

Some cheeses are categorized by the source of the milk used to produce them or by the added fat content of the milk from which they are produced. While most of the world's commercially available cheese is made from cows' milk, many parts of the world also produce cheese from goats and sheep. Double cream cheeses are soft cheeses of cows' milk enriched with cream so that their fat content is 60% or, in the case of triple creams, 75%. The use of the terms "double" or "triple" is not meant to give a quantitative reference to the change in fat content, since the fat content of whole cows' milk is 3%–4%.

### Soft-ripened and blue-vein

There are at least three main categories of cheese in which the presence of mold is a significant feature: soft ripened cheeses, washed rind cheeses and blue cheeses.

### Processed cheeses

Processed cheese is made from traditional cheese and emulsifying salts, often with the addition of milk, more salt, preservatives, and food coloring. It is inexpensive, consistent, and melts smoothly. It is sold packaged and either pre-sliced or unsliced, in a number of varieties. It is also available in aerosol cans in some countries.

## Cooking and eating



Feta from Greece



Local cheese at an open-air market in Peru.



Emmental

At refrigerator temperatures, the fat in a piece of cheese is as hard as unsoftened butter, and its protein structure is stiff as well. Flavor and odor compounds are less easily liberated when cold. For improvements in flavor and texture, it is widely advised that cheeses be allowed to warm up to room temperature before eating. If the cheese is further warmed, to 26–32 °C (79–90 °F), the fats will begin to "sweat out" as they go beyond soft to fully liquid.<sup>[26]</sup>

Above room temperatures, most hard cheeses melt. Rennet-curdled cheeses have a gel-like protein matrix that is broken down by heat. When enough protein bonds are broken, the cheese itself turns from a solid to a viscous liquid. Soft, high-moisture cheeses will melt at around 55 °C (131 °F), while hard, low-moisture cheeses such as Parmesan remain solid until they reach about 82 °C (180 °F).<sup>[26]</sup> Acid-set cheeses, including halloumi, paneer, some whey cheeses and many varieties of fresh goat cheese, have a protein structure that remains intact at high temperatures. When cooked, these cheeses just get firmer as water evaporates.

Some cheeses, like raclette, melt smoothly; many tend to become stringy or suffer from a separation of their fats. Many of these can be coaxied into melting smoothly in the presence of acids or starch. Fondue, with wine providing the acidity, is a good example of a smoothly melted cheese dish.<sup>[26]</sup> Elastic stringiness is a quality that is sometimes enjoyed, in dishes including pizza and Welsh rarebit. Even a melted cheese eventually turns solid again, after enough moisture is cooked off. The saying "you can't melt cheese twice" (meaning "some things can only be done once") refers to the fact that oils leach out during the first melting and are gone, leaving the non-meltable solids behind.

As its temperature continues to rise, cheese will brown and eventually burn. Browned, partially burned cheese has a particular distinct flavor of its own and is frequently used in cooking (e.g., sprinkling atop items before baking them).

## Nutrition and health

The nutritional value of cheese varies widely. Cottage cheese may consist of 4% fat and 11% protein while some whey cheeses are 15% fat and 11% protein, and triple-crème cheeses are 36% fat and 7% protein.<sup>[27]</sup> In general, cheese is a rich source (20% or more of the Daily Value, DV) of calcium, protein, phosphorus, sodium and saturated fat. A 28-gram (0.99 oz) (one ounce) serving of cheddar cheese contains about 7 grams (0.25 oz) of protein and 202 milligrams of calcium.<sup>[27]</sup> Nutritionally, cheese is essentially concentrated milk: it takes about 200 grams (7.1 oz) of milk to provide that much protein, and 150 grams (5.3 oz) to equal the calcium.<sup>[27]</sup>

### MacroNutrients (grams) of common cheeses per 100gm

Cheese	Water	Protein	Fat	Carbs
Swiss	37.1	26.9	27.8	5.4
Feta	55.2	14.2	21.3	4.1
Cheddar	36.8	24.9	33.1	1.3
Mozarella	50	22.2	22.4	2.2
Cottage	80	11.1	4.3	3.4



Zigerbrüt, cheese grated onto bread through a mill, from the Canton of Glarus in Switzerland.



Saganaki, lit on fire, served in Chicago.



Mozarella



A number of food safety agencies around the world have warned of the risks of raw-milk cheeses. The U.S. Food and Drug Administration states that soft raw-milk cheeses can cause "serious infectious diseases including listeriosis, brucellosis, salmonellosis and tuberculosis".<sup>[31]</sup> It is U.S. law since 1944 that all raw-milk cheeses (including imports since 1951) must be aged at least 60 days. Australia has a wide ban on raw-milk cheeses as well, though in recent years exceptions have been made for Swiss Gruyère, Emmental and Sbrinz, and for French Roquefort.<sup>[32]</sup> There is a trend for cheeses to be pasteurized even when not required by law.

Pregnant women may face an additional risk from cheese; the U.S. Centers for Disease Control has warned pregnant women against eating soft-ripened cheeses and blue-veined cheeses, due to the listeria risk, which can cause miscarriage or harm the fetus.<sup>[33]</sup>

## Cultural attitudes



A cheese merchant in a French market

Although cheese is a vital source of nutrition in many regions of the world and is extensively consumed in others, its use is not universal.

Cheese is rarely found in East Asian cuisines, presumably for historical reasons. However, East Asian sentiment against cheese is not universal. In Nepal, the Dairy Development Corporation commercially manufactures cheese made from yak milk and a hard cheese made from either cow or yak milk known as chhurpi. The national dish of Bhutan, *ema datsi*, is made

from homemade yak or mare milk cheese and hot peppers. In Yunnan China, several ethnic minority groups produce Rushan and Rubing from cow's milk. Cheese consumption may be increasing in China, with annual sales doubling from 1996 to 2003 (to a still small 30 million U.S. dollars a year).<sup>[34]</sup> Certain kinds of Chinese preserved bean curd are sometimes misleadingly referred to in English as "Chinese cheese" because of their texture and strong flavor.

Strict followers of the dietary laws of Islam and Judaism must avoid cheeses made with rennet from animals not slaughtered in a manner adhering to halal or kosher laws.<sup>[35]</sup> Both faiths allow cheese made with vegetable-based rennet or with rennet made from animals that were processed in a halal or kosher manner. Many less orthodox Jews also believe that rennet undergoes enough processing to change its nature entirely and do not consider it to ever violate kosher law. (See *Cheese and kashrut*.) As cheese is a dairy food, under kosher rules it cannot be eaten in the same meal with any meat.

Rennet derived from animal slaughter, and thus cheese made with animal-derived rennet, is not vegetarian. Most widely available vegetarian cheeses are made using rennet produced by fermentation of the fungus *Mucor miehei*.<sup>[36]</sup> Vegans and other dairy-avoiding vegetarians do not eat conventional cheese, but some vegetable-based cheese substitutes (soy or almond) are used as substitutes.<sup>[36]</sup>

Even in cultures with long cheese traditions, consumers may perceive some cheeses that are especially pungent-smelling or mold-bearing varieties such as Limburger or Roquefort, as unpalatable. Such cheeses are an acquired taste because they are processed using molds or microbiological cultures,<sup>[37]</sup> allowing odor and flavor molecules to resemble those in rotten foods. One author stated: "An aversion to the odor of decay has the obvious biological value of steering us away from possible food poisoning, so it is no wonder that an animal food that gives off whiffs of shoes and soil and the stable takes some getting used to."<sup>[26]</sup>

Collecting cheese labels is called "tyrosemiophilia".<sup>[38]</sup>

## See also

- Dutch cheese markets
- List of cheeses



A traditional Polish sheep's cheese market in Zakopane, Poland

- List of cheese dishes
- List of dairy products
- List of microorganisms used in food and beverage preparation
- Sheep milk cheese

## References

- Fankhauser, David B. (2007). "Fankhauser's Cheese Page". Retrieved September 23, 2007.
- "Cheese Paper: How It Saves Your Cheese".
- "*Conversation with a Cheese Monger*".
- Simpson, D. P. (1979). *Cassell's Latin Dictionary* (5th ed.). London: Cassell Ltd. p. 883. ISBN 0-304-52257-0.
- "The History Of Cheese: From An Ancient Nomad's Horseback To Today's Luxury Cheese Cart". *The Nibble*. Lifestyle Direct, Inc. Retrieved October 8, 2009.
- "Art of cheese-making is 7,500 years old". *Nature*. December 12, 2012.
- Jenny Ridgwell, Judy Ridgway, *Food around the World*, (1986) Oxford University Press, ISBN 0-19-832728-5
- "History of Cheese". *www.gol27.com*. Retrieved December 23, 2014.
- "Oldest Cheese Found". Retrieved February 25, 2015.
- "British Cheese homepage". British Cheese Board. 2007. Retrieved July 13, 2007.
- Quoted in Newsweek, October 1, 1962 according to *The Columbia Dictionary of Quotations* (Columbia University Press, 1993 ISBN 0-231-07194-9, p. 345). Numbers besides 246 are often cited in very similar quotes; whether these are misquotes or whether de Gaulle repeated the same quote with different numbers is unclear.
- Smith, John H. (1995). *Cheesemaking in Scotland – A History*. The Scottish Dairy Association. ISBN 0-9525323-0-1.. Full text (Archived link) (<https://web.archive.org/web/20060629152534/http://www.ebs.1> Chapter with cheese timetable (Archived link) (<https://web.archive.org/web/20061006045337/http://www.ebs.1>
- Cecil Adams (1999). "Straight Dope: How did the moon=green cheese myth start?". (<http://www.straightdope.com/classics/a990723a.html>). Retrieved October 15, 2005.
- Nemiroff, R.; Bonnell, J., eds. (April 1, 2006). "Hubble Resolves Expiration Date For Green Cheese Moon". *Astronomy Picture of the Day*. NASA. Retrieved October 8, 2009.
- Thom, Charles (1918). *The Book of Cheese*. New York: The Macmillan company.
- "History of Cheese". *traditionalfrenchfood.com*.
- "World production of cheese (all kinds) in 2013; Browse Data/Livestock Processed/World". United Nations Food and Agriculture Organization, Statistics Division (FAOSTAT). 2015. Retrieved 2 June 2016.
- Workman D (12 April 2016). "Cheese Exports by Country in 2015". World's Top Exports. Retrieved 2 June 2016.
- "Cheese Consumption – Kilograms per Capita". Canadian Dairy Information Centre. Retrieved 2 June 2016.
- "Chymosin". *GMO Compass*. Retrieved March 3, 2011.
- Patrick F. Fox; P. F. Fox (2000). *Fundamentals of cheese science*. Springer, 2000. p. 388. ISBN 9780834212602. Retrieved March 21, 2011.
- Patrick F. Fox; P. F. Fox (1999-02-28). *Cheese: chemistry, physics and microbiology, Volume 1*. Springer, 1999. p. 1. ISBN 9780834213388. Retrieved March 23, 2011.
- "Classification of cheese types using calcium and pH". [www.dairyscience.info](http://www.dairyscience.info). Retrieved March 23, 2011.
- Barbara Ensrud, (1981) *The Pocket Guide to Cheese*, Lansdowne Press/Quarto Marketing Ltd., ISBN 0-7018-1483-7
- "Classification of Cheese". [www.egr.msu.edu](http://www.egr.msu.edu). Archived from the original on November 24, 2011. Retrieved March 23, 2011.
- McGee, Harold (2004). *On Food and Cooking: The Science and Lore of the Kitchen*. Scribner. ISBN 9780684800011.
- "Nutrition facts for various cheeses per 100 g". *Nutritiondata.com*. Conde Nast; republished from the USDA National Nutrient Database, version SR-21. 2014. Retrieved 1 June 2016.
- <http://nutritiondata.self.com>
- "Listeria (Listeriosis)". Centers for Disease Control and Prevention. 22 October 2015. Retrieved 2015-12-23.
- Huth PJ, Park KM. (2012) Influence of dairy product and milk fat consumption on cardiovascular disease risk: a review of the evidence (<http://www.ncbi.nlm.nih.gov/pubmed/22585901>). *Adv Nutr*. 1;3(3):266-85.
- FDA Warns About Soft Cheese Health Risk" ([http://www.consumeraffairs.com/news04/2005/fda\\_che](http://www.consumeraffairs.com/news04/2005/fda_che) Consumer Affairs. Retrieved October 15, 2005.
- Chris Mercer (September 23, 2005). "Australia lifts Roquefort cheese safety ban". [ap-foodtechnology.com](http://ap-foodtechnology.com). Archived from the original on June 27, 2006. Retrieved October 22, 2005.
- Listeria and Pregnancy. (<http://www.americanpregnancy.org/pregnancycomplications/> Retrieved February 28, 2006.
- Rebecca Buckman (2003). "Let Them Eat Cheese". *Far Eastern Economic Review*. 166. n. 49: 41. Full text (<http://www.globalpolicy.org/globaliz/cultural/2003/1211china>
- "Frequently Asked Questions about Halal Foods". Toronto Public Health. Archived from the original on November 24, 2005. Retrieved October 15, 2005.
- Mauseth, James D (2012). *Plants and People*. Jones & Bartlett Publishers. p. 432.
- Hui YH, Meunier-Goddik L, Josephsen J, Nip WK, Stanfield PS (2004). *Handbook of Food and Beverage Fermentation Technology: Food Science and Technology (Marcel Dekker), Vol 134*. CRC Press. pp. 392–3. ISBN 9780824751227.
- "Cheese label". [Virtualroom.de](http://Virtualroom.de). Archived from the original on April 4, 2009. Retrieved May 1, 2010.

## Bibliography

- Ensrud, Barbara (1981). *The Pocket Guide to Cheese*. Sydney: Lansdowne Press. ISBN 0-7018-1483-7.
- Jenkins, Steven (1996). *Cheese Primer*. Workman Publishing Company. ISBN 0894807625.

- Mellgren, James (2003). "2003 Specialty Cheese Manual, Part II: Knowing the Family of Cheese". Retrieved October 12, 2005.

## Further reading

- Layton, T. A. (1967) *The ... Guide to Cheese and Cheese Cookery*. London: Wine and Food Society (reissued by the Cookery Book Club, 1971)

## External links

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- *The Complete Book of Cheese* at Project Gutenberg
- Cheese.com (<http://www.cheese.com/>) – includes an extensive database of different types of cheese.
- Classification of cheese (<http://www.dairyscience.info/cheese-manufacture/114-classification-of-cheese-type.html>) – why is one cheese type different from another?

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