HISTORY OF CHEESE

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Did cheese exist before humans started making it?

Yes, indeed it existed, infant mammal is a ready-made cheese factory, with everything, needed to make cheese.

The production of cheese pre-dates recorded history……

WHEN

HOW

WHO

WHERE

WHAT

The Word is CHEESE!

The word *cheese* comes from Latin *caseus*
West-Germanic form **kāsī*, which in turn is an early borrowing from Latin
Italian cacio, Spanish queso, Irish caise, Welsh caws
lSpanish, Portuguese, Romanian, Tuscan (*queso*, *queijo*, *caș* an d *caso*

that the word cheese is derived from a Latin word "caseus" which means to ferment? However, the more modern meaning comes from the word “chese” which is from the ancient English meaning “product derived from sour milk.”

What is Cheese……

Noun – the big cheese

Verb – to be cheesed off

Adjective – cheesy joke

Milk, culture and rennet……

rennet, which is an enzyme found in the fourth stomach lining of what are called ruminant mammals, usually calves or lambs (babies), and it's the enzyme that helps these animals digest milk. The key enzyme is one called chymosin. Rennet in the baby helps to digest the mother's milk but also keeps it in the baby longer (i.e., thickens it…making it more of a solid)

WHERE and WHEN

Evidence of Cheese
(pre-dates recorded history)

~5500 BC	Kuyavia, Poland	Evidence of cheese on pottery
~2900 BC	Egypt	In funeral meal in Egyptian tomb
~2000 BC	Southern Iraq	Cuneiform text
~2000 BC	Egypt	Tomb murals
~1615 BC	Xinjiang, China	Oldest cheese from China
~1200 BC	Egypt	Oldest cheese from Egypt
~2000 BC	Greece	Tablets with record inventory of cheese

Other Mentions of Cheese in History

~800 AD	Greek Mythology	Aristaeus, rustic god of cheesemaking

Middle Ages – when most cheeses initially recorded:

1500	Cheddar
1597	Parmesan
1697	Gouda
1791	Camembert

HOW

Origin is assumed to lie in the practice of transporting milk in bladders made of ruminants' stomachs

Milk was carried in bags made from the organs, primarily bladders and stomachs, of ruminant animals

Therefore, in reality, humans learned the art of cheesemaking right from the start from other mammals particularly suckling calves.

it is probable that the process of cheese making was discovered accidentally by storing milk in a container made from the stomach of a ruminant, resulting in the milk being turned to curd and whey by the rennet remaining in the stomach……. The leak-proof stomachs and other bladder-like organs of animals were often put to use to store and transport milk and other liquids. Without refrigeration, warm summer heat in combination with residual rennet in the stomach lining would have naturally curdled the milk to produce the earliest forms of cheese

First cheeses likely sour, curdled, cottage cheese

How con’t

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

prior to refrigeration, cheese became a way to preserve milk….. These milk curds were strained and salt was added for extra preservation, giving birth to what we now know as "cheese." Even with the addition of salt, warm climates meant that most cheeses were eaten fresh and made daily……. cheese gave early humans an abundant protein source that was easier to store and transport than milk. Plus, **cheese allowed humans to avoid slaughtering precious livestock for food**

MILK

- Milk was never meant to be exposed to air……from mother's breast/udder to baby mammal.
- Rennet – it's in the baby ruminant stomach…….serves to coagulate/thicken the mother's milk so that it is retained longer, absorbing the nutrients. The rennet enzyme is only in babies; it is lost or goes dormant with age, as it is no longer needed.
- Humans – we don't have rennet to coagulate our mother's milk but a different enzyme, pepsin. Chymosin (Rennin) and the Coagulation of Milk. Chymosin, known also as rennin, is a **proteolytic** enzyme related to **pepsin** that synthesized by chief cells in the stomach of some animals. Its role in digestion is to curdle or **coagulate** milk in the stomach, a process of considerable importance in the very young animal
- the major function of **rennin is** to curdle milk. **Rennin is**produced in large amounts, immediately after the birth. Its production gradually**decreases**, and it **is** replaced by a digestive enzyme called **pepsin**. **Rennet is** known to play an important role in coagulation and curdling of milk
- **Rennin**, also called chymosin, protein-digesting enzyme that curdles milk by transforming caseinogen into insoluble casein; it is found only in the fourth stomach of cud-chewing animals, such as cows. ... In animals that lack **rennin**, milk is coagulated by the action of pepsin as is the case in **humans**

Milk cont

- Humans learned to consume Milk with domestication of animals during the Neolithic Revolution, **~10,000 BC, when we changed from a hunter/gather culture to agriculture and settlement**……happened at different times around the world as early as 9000–7000 BC Southwest Asia to 3500–3000 BC in the Americas
- Milk, no surprise, is pretty nutritious. It's got protein, a bunch of micronutrients, lots of calcium and plenty of carbohydrates. For the ancient Neolithic farmer, it was like a superfood
- About 9,000 BC at least two aurochs domestication events occurred: one related to the Indian subspecies, leading to zebu cattle, and the other one related to the Eurasian subspecies, leading to taurine cattle. Other species of wild bovines were also domesticated, namely the wild water buffalo, gaur, wild yakand banteng. In modern cattle, numerous breeds share characteristics of the aurochs, such as a dark colour in the bulls with a light eel stripe along the back (the cows being lighter), or a typical aurochs-like horn shape
- To understand why, how, and when cows were domesticated, we must first understand where they came from. The wild ancestors of modern cows were called Aurochs. They once ranged throughout Asia, Europe and North Africa

Life restoration of an aurochs bull

Indian subspecies - Zebu Bull / Eurasian Subspecies - taurine

Milk con’t

- Most babies can digest milk without getting an upset stomach thanks to an enzyme called lactase. Up until several thousand years ago, that enzyme turned off once a person grew into adulthood — meaning most adults were lactose intolerant (or "lactase nonpersistent," as scientists call it).
- An estimated 65% of human adults (and most adult mammals) downregulate [decrease] the production of intestinal lactase after weaning. Lactase is necessary for the digestion of lactose, the main carbohydrate in milk, and without it, milk consumption can lead to bloating, flatulence, cramps and nausea. Continued production of lactase throughout adult life (lactase persistence, LP) is a genetically determined trait and is found at moderate to high frequencies in Europeans and some African, Middle Eastern and Southern Asian populations

MILK cont’

- Rather, it’s likely the the man in question — or men, it could’ve been any number of people — were starving. They could’ve witnessed the cow’s calf suckling on its mother’s teat for nourishment, and went to try it themselves. While it is still speculation, the most likely hypothesis is that desperation and starvation drove early farmers to cow’s milk; this is the most widely accepted theory in the historical farming community
- People would ahve observed animals suckling, and realised that animals produced milk just like human women do. And it would not take much working out to realise that a large animal like a cow or goat might produce milk that could be drunk by humans as well.

- scientists say that early Europeans — and other early milk-drinkers — were lactose intolerant. It was only later that humans slowly achieved the ability to digest milk through a genetic mutation, “lactase persistence.” This is the continued activity of the enzyme lactase throughout adulthood. The mutation occurred about 7,500 years ago, between 5000–4000 B.C.

- Cheese and butter have longer histories as universally consumed goods than drinking milk. For centuries, they've been a good way of preserving milk for later, since both last much longer than fresh milk does
- Even lactose-intolerant adults could have benefited from milk. Chemical evidence from ancient pots shows that these long-ago farmers learned to process the milk into cheese or yogurt, which removes some of the lactose.

Ethnicity / Geographic Region	% With Lactose Intolerance
1. East Asian	90-100%[1]
2. Indigenous (North America)	80-100%[3]
3. Central Asian	80%[1]
4. African American (North America)	75%[2]
5. African (Africa)	70-90%[1]
6. Indian (Southern India)	70%[1]
7. French (Southern France)	65%[1]
8. Ashkenazi Jew (North America)	60-80%[3]
9. Balkans Region	55%[1]

Ethnicity / Geographic Region	% With Lactose Intolerance
10. Latino/Hispanic (North America)	51%[2]
11. Indian (Northern India)	30%[1]
12. Anglo (North America)	21%[2]
13. Italian (Italy)	20-70%[1]
14. French (Northern France)	17%[1]
15. Finnish (Finland)	17%[1]
16. Austrian (Austria)	15-20%[1]
17. German (Germany)	15%[1]
18. British (U.K.)	5-15%[1]

Why eat/create Cheese? It was easier to digest for our adult ancestors than milk, especially since most were likely lactose intolerant.

However, lactase production normally declines in mammals after weaning and does not persist into adulthood. Therefore, when adult humans consume milk, the lactose remains undigested and disrupts the gut microflora, triggering a number of noteworthy side effects such as explosive diarrhea, flatulence, and bloating.

Curds, on the other hand, thanks to the separation and removal of the lactose (i.e., the whey), were easier to digest in modest amounts, and it probably didn't take long for our ancestors to realize it

For preservation purposes, cheese-making may have begun by the pressing and salting of curdled milk. Curdling milk in an animal's stomach made solid and better-textured curds, leading to the addition of rennet. Hard salted cheese is likely to have accompanied dairying from the outset. It is the only form in which milk can be kept in a hot climate.

Back to history of cheese

Survival food – hard cheeses lasted, preserved by age, rinds, smoking……poor people's food

Denmark has been producing cheese – predominantly of the cow's milk variety – for no less than 5,000 years. Vikings exported their cheeses and dairy know-how as early as the Middle Ages, and new production methods were later introduced by monastic orders. Early 13th-century historical documents reveal that cheese was given to the nobility and the Church as a form of tax payment

Hard cheese – high in protein, easier to transport than milk and lasts longer

Cheese produced in Europe, where climates are cooler than in 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 pronounced and interesting flavors.

As cheese making spread to the cooler climates of Northern Europe, less salt was needed for preservation, which led to creamier, milder varieties of cheese. These cooler climates also saw the invention of aged, ripened, and blue cheeses. Many of the cheeses that we are familiar with today (cheddar, gouda, parmesan, camembert) were first produced in Europe during the Middle-Ages.

The earliest cheeses were sour and salty and similar in texture to rustic cottage cheese or present-day feta

the advancement of cheese art in Europe was slow during the centuries after Rome's fall. It became a staple of long-distance commerce,[30]was disregarded as peasant fare,[31] inappropriate on a noble table, and even harmful to one's health through the Middle Ages

History con’t

Cheese-making in manor and monastery intensified local characteristics imparted by local bacterial flora while the identification of monks with cheese is sustained through modern marketing labels

Cheeses diversified in Europe with locales developing their own traditions and products

Until its modern spread, along with European culture, cheese was nearly unheard of in Asian cultures and in the pre-Columbian Americas. It had limited use in sub-Mediterranean Africa. Although it is rarely considered a part of local ethnic cuisines outside Europe, the Middle East, and the Americas, cheese has become popular worldwide through the spread of European Imperialism and Euro-American culture

The first factory for the industrial production of cheese opened in Switzerland in 1815. However, the large-scale production found real success in the United States. Credit goes to Jesse Williams, a dairy farmer from Rome, New York. Williams began making cheese in an assembly-line fashion using the milk from neighboring farms in 1851.

Mass-produced rennet began in the 1860s. By the turn of the century, scientists were producing pure microbial cultures. Previously, bacteria in cheese was derived from the environment or from recycling an earlier batch's whey. Pure cultures meant a standardized cheese could be produced. The mass production of cheese made it readily available to the poorer classes. Therefore, simple cost-effective storage solutions for cheese gained popularity. Ceramic cheese dishes, or cheese bells, became one of the most common ways to prolong the life of cheese in the home. It remained popular in most households until the introduction of the home refrigerator in 1913.[35]

Before mid-1970 all the enzyme Rennet was made from the stomach of the suckling calves.

Factory-made cheese overtook traditional cheese-making during the World War II era. Since then, factories have been the source of most cheese in America and Europe. Today, Americans buy more processed cheese than "real", factory-made cheese

New Directions with Cheese

Handmade artisan cheese is making a comeback in a major way. Classic cheesemaking methods are being adopted by small farmers and creameries across the United States. Specialty cheese shops, which were once dominated by imported artisan cheese, are now filling up with locally made and handcrafted cheeses.

Today, Britain has 15 protected cheeses from approximately 40 types listed by the British Cheese Board. The British Cheese Board claims a total number of about 700 different products (including similar cheeses produced by different companies).[26] France has 50 protected cheeses, Italy 46, and Spain 26. France also has at least 1,800 raw milk cheese products[27] and probably more than 2,000 when including pasteurized cheese.[

What Country is the Top Cheese Consumer?

Surprise! It's not France

Country	Kg/person/year	Country	Kg/person/year
Denmark	28.1	Austria	21.1
Iceland	27.7	Sweden	20.5
Finland	27.3	Estonia	20.0
France	27.2	Norway	19.8
Cyprus	26.7	Israel	18.9
Germany	24.7	USA	16.8
Switzerland	22.2	◦ 1. Wisconsin ◦ 2. California ◦ 3. Idaho	
Netherlands	21.6	…….	
Italy	21.5	……..China	0.1

Why these Countries?

Easier to preserve cheese in cooler climates

Higher protein for colder weather

Look back at history……..northern Europeans have longer history of genetic mutation to be able to consume milk products (?)

Naming of Cheese

Origin/Country – ex. Cheddar

"THE MOON IS MADE OF GREEN CHEESE"

- original formulation as a proverb and metaphor for credulity with roots in fable, this refers to the perception of a simpleton who sees a reflection of the Moon in water and mistakes it for a round cheese wheel.
- It was typically used as an example of extreme credulity, a meaning that was clear and commonly understood as early as 1638.

DAIRY CRACK, ARE YOU A CHEESE AHOLIC , NEED CA?

- Cheese happens to be especially addictive because of an ingredient called casein, a protein found in all milk products. During digestion, casein releases opiates called casomorphins
- "Casomorphins attach to the brain's opiate receptors to cause a calming effect in much the same way heroin and morphine do,"
- cheese can be as much of an addiction as hard drugs
- There's a recent study that's just come out, that mentions that cheese can be as much of an addiction as hard drugs. Well, we all knew that now, didn't we?

The word *cheese* comes from Latin *caseus*

West-Germanic form **kāsī*, which in turn is an early borrowing from Latin

Italian cacio, Spanish queso, Irish caise, Welsh caws

lSpanish, Portuguese, Romanian, Tuscan (*queso*, *queijo*, *caș* and *caso*