

The Ancient History of CHEESE

9,000 BC

Domestication of sheep and goats first takes place in the Upper Euphrates and Tigris River Valleys* ^{7, 15, 22, 27, 28}.

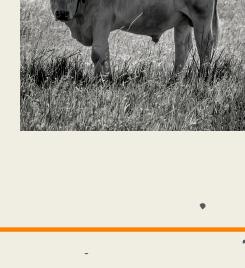
*Modern-day Turkey



8,500 BC

Domestication of cattle first takes place in the Middle Euphrates and Tigris River Valleys* ^{2, 12, 27, 28}.

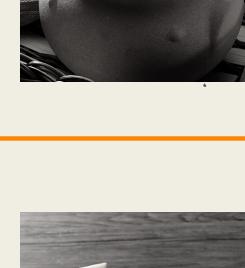
*Modern-day Iraq and Syria



6,500 BC

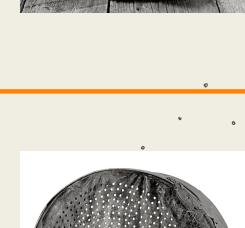
People first use jars and pots to store milk products in Western Anatolia* ^{12, 26}. Shards of pots were found to have high levels of milk fat and protein residues and minimal lactose residue, suggesting products such as cheese or butter¹⁹.

*Modern-day Turkey



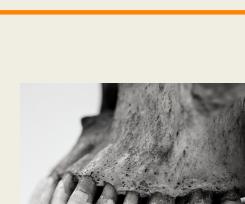
5,500 BC

Lactose tolerance became prevalent among European adults ^{9, 17, 20}. Before this point, dairy products may have been harvested exclusively for infants and toddlers or to make low-lactose products, like cheese and butter^{4, 19}.



5,000 BC

Peoples in North and Central Europe, Central Italy, the Balkans, and Pakistan use sieves for dairy processing, most likely to separate curds from whey to make cheese ^{1, 13, 23, 24, 25}.



4,000 BC

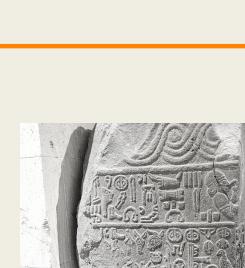
Earliest definitive proof of adult milk consumption. Proven by finding traces of milk proteins in a British farmer's dental tartar⁶.



3,500 BC

The Sumerians of Uruk, Mesopotamia* use cuneiform tablets to write history's first accounts of cheesemaking ^{10, 11, 14, 18}.

*Modern-day Iraq



1,500 BC

Hittites provide definitive evidence of rennet and rennet coagulated cheese in Anatolia* ^{16, 21, 29}. They use language modifiers to differentiate cheese flavor, texture, and size and become the first to use cheese as military rations; a practice that will carry on for centuries^{3, 5, 15, 19}.

*Modern-day Turkey



1,200 BC - 500 AD

Hittite civilization falls, classical Greek civilization, Roman Empire, and the Celtic culture rise. Each group develops its distinct cheesemaking culture and helps to spread it across Europe and Asia^{18, 19}.



References:

1. Bogucki, P. I. 1984. Ceramic sieves of the Linear Pottery Culture and their economic implications. *oxford Journal of archaeology* 3(1):15-30.
2. Bollongino, R., J. Burger, A. Powell, M. Mashkour, J.-D. Vigne, and M. G. Thomas. 2012. Modern Taurine Cattle Descended from Small Number of Near-Eastern Founders. *Molecular Biology and Evolution* 29(9):2101-2104.
3. Bottéro, J. 1985. The cuisine of ancient Mesopotamia. *The Biblical Archaeologist* 48(1):36-47.
4. Burger, J., M. Kirchner, B. Bramanti, W. Haak, and M. G. Thomas. 2007. Absence of the lactase-persistence-associated allele in early Neolithic Europeans. *Proceedings of the National Academy of Sciences* 104(10):3736-3741.
5. Carter, C. 1985. Hittite ḥašhaš. *Journal of Near Eastern Studies* 44(2):139-141.
6. Charlton, S., A. Ramsøe, M. Collins, O. E. Craig, R. Fischer, M. Alexander, and C. F. Speller. 2019. New insights into Neolithic milk consumption through proteomic analysis of dental calculus. *Archaeological and Anthropological Sciences* 11(11):6183-6196.
7. Chessa, B., F. Pereira, F. Arnaud, A. Amorim, F. Goyache, I. Mainland, R. R. Kao, J. M. Pemberton, D. Beraldi, M. J. Stear, A. Alberti, M. Pittau, L. Iannuzzi, M. H. Banabazi, R. R. Kazwala, Y.-P. Zhang, J. J. Arranz, B. A. Ali, Z. Wang, M. Uzun, M. M. Dione, I. Olsaker, L.-E. Holm, U. Saarma, S. Ahmad, N. Marzanov, E. Eythorsdottir, M. J. Holland, P. Ajmone-Marsan, M. W. Bruford, J. Kantanen, T. E. Spencer, and M. Palmarini. 2009. Revealing the History of Sheep Domestication Using Retrovirus Integrations. *Science* 324(5926):532-536.
8. Copley, M., R. Berstan, S. Dudd, S. Aillaud, A. Mukherjee, V. Straker, S. Payne, and R. Evershed. 2005. Processing of milk products in pottery vessels through British prehistory. *antiquity* 79(306):895-908.
9. Curry, A. 2013. Archaeology: The milk revolution. *Nature News* 500(7460):20.
10. Englund, R. K. 1991. Archaic dairy metrology. *Iraq* 53:101-104.
11. Englund, R. K. 1995. Late Uruk period cattle and dairy products: Evidence from proto-cuneiform sources. *Bulletin of Sumerian Agriculture* 8(2):33-48.
12. Evershed, R. P., S. Payne, A. G. Sherratt, M. S. Copley, J. Coolidge, D. Urem-Kotsu, K. Kotsakis, M. Özdoğan, A. E. Özdoğan, and O. Nieuwenhuyse. 2008. Earliest date for milk use in the Near East and southeastern Europe linked to cattle herding. *Nature* 455(7212):528-531.
13. Gouin, P. 1997. Ancient oriental dairy techniques derived from archaeological evidence. *Food and Foodways* 7(3):157-188.
14. Green, M. W. 1980. Animal husbandry at Uruk in the Archaic period. *Journal of Near Eastern Studies* 39(1):1-35.
15. Helmer, D., L. Gourichon, and E. Vila. 2007. The development of the exploitation of products from *Capra* and *Ovis* (meat, milk and fleece) from the PPNB to the Early Bronze in the northern Near East (8700 to 2000 BC cal.). *Anthropozoologica* 42(2):41-69.
16. Hoffner, H. A. 1966. A Native Akkadian Cognate to West Semitic* GBN" Cheese"? *Journal of the American Oriental Society* 86(1):27-31.
17. Itan, Y., A. Powell, M. A. Beaumont, J. Burger, and M. G. Thomas. 2009. The origins of lactase persistence in Europe. *PLoS computational biology* 5(8):e1000491.
18. Kindstedt, P. 2012. Cheese and culture: a history of cheese and its place in western civilization. Chelsea Green Publishing.
19. Kindstedt, P. S. 2018. The history of cheese. *Global Cheesemaking Technology*:3.
20. Leonardi, M., P. Gerbault, M. G. Thomas, and J. Burger. 2012. The evolution of lactase persistence in Europe. A synthesis of archaeological and genetic evidence. *International Dairy Journal* 22(2):88-97.
21. McCormick, F. 2012. Cows, milk and religion: the use of dairy produce in early societies. *Anthropozoologica* 47(2):101-113.
22. Nomura, K., T. Yonezawa, S. Mano, S. Kawakami, A. M. Shedlock, M. Hasegawa, and T. Amano. 2013. Domestication Process of the Goat Revealed by an Analysis of the Nearly Complete Mitochondrial Protein-Encoding Genes. *PLoS ONE* 8(8):e67775.
23. Salque, M., P. I. Bogucki, J. Pyzel, I. Sobkowiak-Tabaka, R. Grygiel, M. Szmyt, and R. P. Evershed. 2013. Earliest evidence for cheese making in the sixth millennium BC in northern Europe. *Nature* 493(7433):522-525.
24. Salque, M., G. Radi, A. Tagliacozzo, B. P. Uria, S. Wolfram, I. Hohle, H. Stäuble, D. Hofmann, A. Whittle, and J. Pechtl. 2012. New insights into the Early Neolithic economy and management of animals in Southern and Central Europe revealed using lipid residue analyses of pottery vessels. *Anthropozoologica* 47(2):45-62.
25. Sullivan, J. 2013. Clay pot fragments reveal ealy start to cheese-making, a marker for civilization. Princeton University, Princeton, NJ.
26. Thissen, L., H. Özbal, A. T. Büyk, F. Gerritsen, and R. Özbal. 2010. 1 THE LAND OF MILK? APPROACHING, DIETARY PREFERENCES OR LATE NEOLITHIC COMMUNITIES IN NW ANATOLIA. *Anatolia. Leiden J. Pottery Stud* 26:157-172.
27. Vigne, J.-D. 2011. The origins of animal domestication and husbandry: a major change in the history of humanity and the biosphere. *Comptes rendus biologies* 334(3):171-181.
28. Vigne, J.-D. and D. Helmer. 2007. Was milk a "secondary product" in the Old World Neolithisation process? Its role in the domestication of cattle, sheep and goats. *Anthropozoologica* 42(2):9-40.
29. Wainwright, G. A. 1959. The Teresh, the Etruscans and Asia Minor. *Anatolian studies* 9:197-213.