

Neolithic Europeans Made Cheese, Yogurt

Not surprising but it's good to be able find out by isotopic analysis.

Discovery News
January 24, 2006

Dirty cooking pots dating to nearly 8,000 years ago reveal that some of Europe's earliest farming communities produced dairy products, such as cheese and yogurt.

Two separate studies indicate that Neolithic dairying took place in what are now Romania, Hungary and Switzerland.

The discoveries suggest people in these regions might have originally learned how to process milk-based foods from Asian farmers.

"From a diffusionist perspective, these findings lend support to the idea that the antiquity of dairying lies with the origins of animal domestication in southwest Asia some two millennia earlier, prior to its transmission to Europe in the seventh millennium B.C., rather than it being a later and entirely European innovation," wrote Oliver Craig, a scientist at Tor Vergata University in Rome, and colleagues in the first study published in the journal *Antiquity*.

Craig and his team studied fatty residues stuck on ceramic cooking vessels found at the left bank of the Danube near Romania and at the Great Hungarian Plain. The dirty pots date from 5,950–5500 B.C. Analysis of the fats suggests they belonged to goat or sheep milk.

Jorge Spangenberg, a geochemist at the University of Lausanne in Switzerland, indicated to Discovery News that he agreed early dairying took place.

In another paper published in the current *Journal of Archaeological Science*, Spangenberg and his team conducted a similar study on dirty cooking pot shards found at a site called Arbon Bleiche 3 on the southwestern shore of Lake Constance in Switzerland. The shards date to 3384–3370 B.C.

The Swiss scientists compared the carbon and nitrogen isotope signatures of the residues with those of fats found in today's organic milks and cheeses. The residue signatures closely matched those for cow, goat and sheep milk.

Since the pots have darkened, sooty undersides from apparent placement over fires, the researchers believe the milk was cooked and otherwise processed to keep it fresh and consumable.

"Freshly milked milk has a short life," Spangenberg explained. "After leaving the ruminant (grazing animal) udder, milk quickly becomes colonized with bacteria, mainly lactobacilli. We therefore speculate that the Neolithic settlers at Arbon were consuming fermented milks and making relatively long-life milk products from fermented milks, such as today's buttermilk, yogurt, butter and cheese, which could be stored and consumed at much later dates."

The researchers theorized that the cheese would have been similar to modern fresh goat cheese and farmer's cheese. Sour cream also likely was produced.

Bones that belonged to domestic cows, pigs, goats, sheep and dogs also were found at the Swiss site where numerous individual family farms appear to have been located around 6,000 years ago.

Stefanie Jacomet, a professor in the Institute for Prehistory and Archaeological Science at Basel University in Switzerland, worked with Spangenberg and J rge Schibler on the study.

She told Discovery News that the early Europeans likely did not sell or trade their dairy products with outside groups, but instead made them for their own families and communities.

"Based on the herd size, we suggest that this was a subsistence economy, and that the village was not able to produce surplus," she said.

The villagers seemed to have eaten well, however. In addition to the animal bones, several fish bones also were excavated at the site, along with evidence for hazelnuts, strawberries, blackberries, raspberries, crab apples and sloe plums.

In terms of dairying, little seems to have changed. Spangenberg said, "Currently there are still approximately 24,000 farms in the Lake Constance region, most of them with dairy cows."