

Making Cheese In Perugia

Cheese is a fantastic dairy product invented by pastoralists who needed a way to store calories to be transported and eaten later. Cheese is one tenth the volume of the milk used to make it, so it's perfect for preserving milk. Milk is a suspension of fats, proteins (primarily one called casein), and milk sugar (lactose) in water. Warm from milking, it quickly "sours," as bacteria begin to eat the lactose and convert it to carbon dioxide and lactic acid. If left to cool to room temperature, other bacteria make it go bad, but if the right conditions are created for *Lactococcus cremoris* and *Streptococcus thermophilus* (temperatures of around 110°F or 40°C), these beneficial bacteria will lower the pH of the milk as they convert more lactose to lactic acid. After about an hour the pH is such the milk is ready to be curdled – this means the separation of the curds (fat in a protein matrix) and whey (the watery liquid that remains).

Many substances can be used to curdle the milk – fig sap, nettles, thistle flowers, vinegar – but surely the most effective is rennet. Rennet has been known since before the Romans; it's a substance that occurs in the fourth stomach of calves and it contains rennin, an enzyme that interferes with the casein proteins structure causing it to unravel and tangle – think of balls of yarn coming unravelled and then getting tangled. The milk is gently heated with the rennin in it and the curds come together (because the strings of casein trap the fat globules) and separate out. At this point Little Miss Muffet uses a ladle with holes in it to scoop out the curds and put them in to (guess what) cheesecloth. Salt is added to wick out more moisture and solidify the curds, which are put under pressure in a press, to force out even more of the watery whey.

Further curing depends on the type of cheese being made. For feta, for instance, the cheese is put into a brine, which gives it its distinctive salty flavor. Other cheeses are salted heavily to make them harden up (Parmesan, for instance), or have certain molds added to them (Brie or Gorgonzola).

To make your own cheese, you need the following:

4 liters of whole milk	three wooden spatulas
½ cup of yoghurt	a large spoon with holes in it
powdered rennet	cheesecloth
two large pots	two cutting boards
3 spoons of salt	

1. Pour the milk into the smaller of the large pots. Put 3cm of water in the larger pot, then set the milk-filled pot in it to create a double-boiler. The bottom of the milk-filled pot should not sit on the bottom of the other pot. Use two wooden spatulas under the handles as spacers. The water in the first pot should come 2/3 of the way up the sides of the milk-filled pot. Turn on the heat and heat until the milk in the first pot feels like a warm bath, about 30°C. You may want to buy a dairy thermometer - they run about €28 at the housewares place in Via Bartolo.

2. half an hour later, pour in the half cup of yoghurt (make sure it says, *con culture vive*, "with live cultures" on it) and stir well. Leave the milk alone for ninety minutes, occasionally turning on the heat to maintain the temperature around 30°C.

3. Rennet (*caglio* in Italian) can be purchased in pharmacies in Italy (in Perugia, try Farmacia Lemi in Corso Vannucci). Get the €4 bottle of *caglio in polvere* and for four liters use one quarter of one gram. You probably can't measure it accurately, but don't worry, just use a little bit. Mix well then leave the milk alone again for half an hour.

4. The curds will now be formed. Gently, using a long knife, cut mass of curds into 3cm square pieces, like a checkerboard. Your pot should look somewhat like this. Turn the heat back on and raise to 38°C. and gently jiggle the pot to move the jello-like curd pieces a bit. Do this for twenty minutes.



5. Now you'll need the cheesecloth. In Perugia this can be purchased at Conti on Piazza Matteotti - ask for a half meter of *garza per fare il formaggio*. With your spoon with holes in it, scoop out the curd pieces and dump into the cheesecloth in a colander. Sprinkle 3 tablespoons of fine salt over them, mix gently, and close the cheesecloth. Put down a cutting board so it angles into your sink, put the cheesecloth mass down, and put another cutting board on top. Add weights so the whey is pressed out and runs into your sink.

6. The next day you will have a very spreadable "fresh cheese." If you like this, spoon it into a little jar, keep it in the fridge, and eat it within a few days. If you want to try to make harder cheese, rig up a press with some sort of plastic container. Poke lots of holes in the bottom, put the cheesecloth bag in, put a plate on top, and put lots of weights on. Press for several days until somewhat firm, then put in your fridge.