

MOZZARELLA

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Materials Needed

milk, low fat, 2%, 2 quarts (or 2 liters)
citric acid
rennet, tablet or liquid
sodium chloride, NaCl, canning or kosher salt (canning salt has no anti-caking additives)
hot plate
thermometer, 150°C
4 liter beaker or enameled or stainless steel pot (4 quart size)
stirrer
knife
colander
bowl, glass or stainless steel, 2 quart size
cheesecloth
spoon, large, either stainless steel or wood

Safety

Safety glasses or goggles must be worn in the laboratory at all times.

If this experiment is performed in a chemistry laboratory, all work surfaces must be cleaned and free from laboratory chemicals. It is advised to cover all work areas with aluminum foil or a food-grade paper covering.

All glassware or materials used in this experiment should be reserved for food purposes only. Materials must be stored away from any areas where contamination from laboratory chemicals may occur.

There are no safety hazards associated with the materials used in this experiment.

Disposal

Generally, all waste materials in this experiment can be disposed in the trash or poured down the drain with running water.

Procedure

Place 2 quarts of milk in a 4-liter beaker or a stainless steel or enamel pot.

Dissolve 4.0 g (1/2 plus 1/8 tsp.) of citric acid in 15 mL water. Add the citric acid solution to the milk. Stir.

Dissolve 1/4 of a rennet tablet (or 1/2 tsp. liquid) in 15 mL water. Place this on the side, *do not add it at this time.*

Heat the milk to 32°C (89°F) with constant stirring. Remove it from the heat, add the rennet solution and stir for 30 seconds. Allow the milk to remain still for 15 minutes while it coagulates.

Use a knife to cut the curd into 1 cm (or 1/2 inch) cubes. Allow the curds to remain undisturbed for 5 minutes as some of the whey drains out of them.

Slowly heat the mixture to 42°C (108°F), with occasional stirring. Then remove the mixture from the heat and continue to stir, slowly, for 20 minutes.

Line a colander with a double layer of cheesecloth. Place the colander in a sink (or in a large bowl or plastic tub if a sink is not available). Pour the mixture into the colander to separate the curds from the whey. Allow the curds to drip dry for 15 minutes.

Measure 17 g (1/8 cup) canning or kosher salt. Add the salt to 1 quart (or 1 liter) water. Heat to 77°C (170°F).

Pick up the cheesecloth in the colander by the corners. Transfer the curds to a bowl.

Pour approximately half of the hot salt water over the curds. Keep the remaining salt water warm.

Allow the cheese to soften for 1 minute. Use a large spoon to extract the lump of soft cheese from the bowl. (Note: If the cheese does not form into a lump, carefully decant off as much water as possible and carefully gather the cheese into a ball.)

Stretch the cheese, like taffy. Pull and twist it, then fold in half and pull and twist again. Continue this for 5 minutes. If the cheese gets too hard to stretch, dip it into the remaining hot salt water mixture for 30 seconds to soften it.

At the end of 5 minutes, knead the cheese, like bread, until it is firm.

Dip the cheese into cold water to harden.

The cheese is ready to eat OR wrap it in plastic wrap and refrigerate.

Explanation

This cheese involves a cooking step and salting to concentrate the curds. There is no aging step in the preparation of this cheese.

Activities

Compare this cheese to a packaged mozzarella obtained from a grocery store.

Make a pizza using this cheese. For ease of preparing a pizza, use a pizza crust, available from the grocery store, or refrigerated pizza dough and bake as directed on the package. Another alternative is to make mini-pizzas using bagels or English muffins in place of the pizza crust.

References

Hopping, Carol and the staff of the Rodale Food Center, *Stocking Up*, 3rd Ed., Simon & Schuster, 1986.