

HOME MADE CHEESE

There are two kinds of cheese: soft cheese and hard cheese. Soft cheese: which is hardened mixed rennet and acid with milk. Rennet is extracted from the fourth stomach of calves, which is already solid. When milk is added to rennet, it becomes curd. When separated from moisture of curd, it is called hoe. Curd granted in cotton bag will be hanged. And hoe will be discharge. Then will be made cheese. This cheese processed has to be added salt or herb due to no taste. However these cheeses are has no preservation. Cream cheese is added milk and cream so contains a high percentage of fat. Taste is mild.

Hard cheese: In general, Hard cheese had better be made by several cows' milk. And if milk been milking in the morning mixes that on the after noon, it will be easy to solidify because Lactobacilli active will prosper well. Hard cheese has plenty species more than 1,000.

How to make cheese

1)



2)



3)



1) Milk been milking in the after noon is kept overnight. In the morning, take a cream floated on the surface of the milk. After this, boil rested milk for 30 degrees. Then mix cream taken from this milk.

2) This milk will be mixed with that milking in this morning. If you use starter, add it this time. Boil slowly, at 32 degrees.

3) Add rennet 1 teaspoon to cold water. Stir milk by hand. Continue stirring until it is sticky.

4)



5)



6)

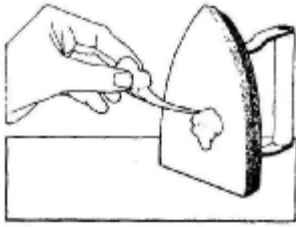


4) Stick down surface of milk by skimmer in the picture below. Then cream will not float on the surface of milk. Continue this action for 5 minutes.

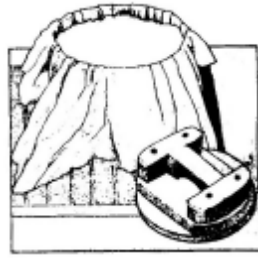
5) After keeping temperature for 50 minutes, curd will be congealed. Cut this curd uniformity by kitchen knife or curd knife. The size should be 1.5 cm cube.

6) Milk is separated with Curd & Hoe. So boil this curd slowly by going up temperature 0.5 degree for every 3 minutes by 38 degree. Stir milk by hands slowly due to not stick to hands in this time. Curd will shrink because of discharge Hoe.

7)



8)



9)

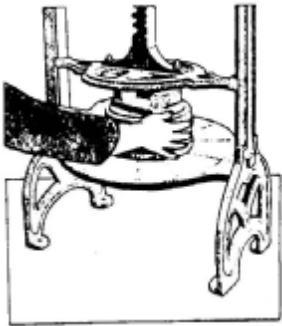


7) Acidity of Curd will go up for lactobacilli activity. In this time, take acidity of the Curd. In no measurement instrument case, you can use hand method for heated flat iron such as the picture below. If Curd can grow without break to about 1.5cm, it is perfect, so throw the Hoe. If it is not, just continue a few minutes.

8) Next, crush the Curd by cheese meal that is set roller. In no cheese meal case, crush the Curd for small by fingers. Walnut's size is better. As put Curd's size in order as you can. In this time, add 30g salt per 1.8kg Curd.

9) Put Curd in the cheese case laid cheesecloth. After covering with cheesecloth, put on weight.

10)



11)



10) If you have cheese press, you can use for presser. If no press, use above method such as picture. In that case, firstly in 6 hours, 9~14 kg weight is better. After this, turn cheese up side down. And press for 25kg weight.

After 1 day, turn cheese up side down again. Then press for 500kg weight. This process will be returned 2 times.

11) Spread flour dissolved with water surface of the cheese. And cover with clean cloth. Then keep cool place about 13~16 degrees. Turn the cheese up side down every day in first week. After this, turn that up side down twice a week.

Preparation and Testing of Rennet

Rennet is a liquid enzyme preparation extracted from the fresh or dried abomasum (manzamillo, bahay-asim or Cuba) of adult cattle or carabao.

I. Preparation of Rennet

A. Fresh extraction method

Material: Fresh abomasum, Glacial acetic acid or vinegar, Table salt, Brown bottle.

Procedure:

1. Clean the fresh abomasum and remove all fatty or adipose tissues.
2. Cut into strips of fresh abomasum and 2-4 inches long. Weigh.
3. Place the strips of fresh abomasum in either of the following extraction solutions prepared as follows:
 - i. Dissolve 1/2 to 2/3 cup of table salt in 1 liter of vinegar.
 - ii. Prepare 2-2.5% glacial acetic acid solution by adding 22 to 27ml of pure glacial acetic acid in 1 liter of water. Add 1/2- 3/4 cup of table salt for every liter of glacial acetic acid solution.
4. Leave the abomasum in solution for 3-5 days at room temperature, stirring the solution dairy for a few seconds. Keep covered in a brown bottle.
5. After 3 or 5 days. Filter the solution with clean cheese cloth and discard the used abomasum.
6. Keep the rennet in brown bottles and store in the refrigerator.

B. Dry extraction method (IFS-6 method)

Materials: measuring cups and spoons, sharp knife, Wide-mouth bottle, Bamboo sticks, 1 fresh unbalanced abomasum, 3 tablespoons table salt, 1 tablespoon del Monte vinegar, Fine wire, Nylon cloth and strainer, Plastic bag, carbon paper

Procedure:

1. Wash abomasum thoroughly and remove fatty tissue.
2. Stretch and spread the abomasum out with bamboo sticks and tie a fine wire at the center. With the abomasol folds ganging, dry the abomasum under the sun for 1 to 3 days.
3. Cut the dried abomasal into 1cm squares and set aside 1/4 cup of this for extraction. The rest may be packed in a plastic bag and stored at room temperature or refrigerated for future use.
4. Mix 1 tablespoon vinegar with 1/4 cup water in a wide-mouthed bottle or jar and dissolve 3 tablespoons table salt in this mixture.
5. Add the 1/4 cup dried, cut abomasum, cover and shake thoroughly. Let the mixture stand for 4 days at room temperature in the dark or the bottle may be wrapped with black cloth or carbon paper. Shake the bottle once dairy.
6. On the fifth day, filter the extract through nylon or cheesecloth, then discard the abomasal tissues.
7. Store in a cool, dark place.

II. Testing the strength of Rennet

Materials: Rennet, Pasteurized milk, Beaker-250ml, Pipette-1ml, Thermometer, Graduated cylinder-100ml, Water bath-40°C, Fine wire or coconut midrib 3-4 inches long, Timer.

Procedure:

1. Measure 100ml of milk into a 250ml beaker.
2. Place the beaker of milk in a 40°C water bath.
3. Add 1 ml of rennet while stirring the milk. Record the time.
4. Every minute, pass across the milk the fine wire or coconut midrib, held very lightly between the thumb and index finger. Try to feel any resistance encountered while doing this.
5. Record the time when resistance is felt.
6. Determine the strength of rennet (RV) by:

$$\text{Rennet value (RV)} = A (100) / R_v T_o$$

Where: RV = parts of milk at 40 degrees that can be coagulated in (A) minutes by 1 part of rennet

A= desired time in minutes for the rennet to coagulate the milk.

Rv= volume of rennet used (ml)

To= time in minutes it took the milk to coagulate using Rv rennet

Example:

What is the strength of rennet if test shows that it took 3 minutes to coagulate 100 ml of pasteurized milk (40 degrees) by 1 ml of rennet? The descried coagulation time is 15 minutes. If this rennet will be used to make cheese, approximately how many ml of rennet will be request for every liter of milk.

$$\text{Solution: } RV = A (100) / R_v T_o = 15(100) / 1 \times 3 = 1500 / 3 = 500$$

Therefore, the amount of rennet that may be used per liter of milk (40 degrees) is 1

$$1000\text{ml} \times 1 / 500\text{ml} = 2 \text{ ml}$$