

AGRICULTURAL GUIDE

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Food and Nutrition

SMALL FARM FAMILY PROGRAM SERIES

Homemade Cottage Cheese

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Use one gallon of skim milk

Weight - 8.7 pounds (3950 grams)

Volume - 4.0 quarts (3840 cc)

Makes about 1.3 pounds of cottage cheese (593 grams)

Guide for estimating cost: If milk costs \$1.00 per gallon, the cottage cheese curd will cost \$0.77 per pound.

EQUIPMENT NEEDED

1. Double-boiler, of stainless steel, if possible. To handle one gallon of milk, the inner pan of the double-boiler should have a capacity of at least 6 quarts. *Do not* use aluminum or iron utensils.
 2. Thin-blade stainless steel knife that is at least as long as the inner pan is deep.
 3. A top-reading metal thermometer (a) is best, but a floating dairy or candy thermometer is satisfactory.
 - (a) Weston #4200 thermometer, range from 0°F to 212°F with plastic lens. Cost, about \$15. Available from most dairy supply houses.
- Caution: Glass thermometers will break—so be careful if you use them.*
4. One or two long handled stainless steel spoons that will reach to the bottom of the double-boiler.
 5. A measuring cup that shows ounces or cc's. (One ounce is about 30 cc; four ounces is 120 cc.)
 6. A piece of open woven cotton material, such as cheese cloth, about 1 1/2 foot square.
 7. A large collander or wire strainer large enough to hold the cheese cloth and cheese while it drains. (Only stainless steel or smooth plastic should be used!)

8. A mixing bowl.

9. Covered containers for holding the cheese in storage. Clean, plastic refrigerator boxes for "left-overs" are good for this purpose.

HOW TO OBTAIN BUTTERMILK STARTER

There are two ways of obtaining cultured buttermilk (called "starter" by commercial cheese-makers):

Buy Commercial Buttermilk for Start

Fresh buttermilk purchased from the dairy case of a store is usually satisfactory for starting homemade cottage cheese.

If the buttermilk is very old, however, the lactic acid bacteria may have lost their ability to produce acid rapidly. In that case, the milk will neither sour nor develop a firm curd suitable for making cheese.



After a fresh carton of buttermilk is opened, it may be used for about one week to make more cheese. It must be kept *cold* and *clean* at all times.

Save From Previous Batch

About once a week, a fresh batch of buttermilk may be made from an older batch. Great care must be taken to prevent contamination during the re-inoculation process. Use the following procedure to make fresh buttermilk (starter):

1. Select a few pint jars with good lids.
2. Clean the jars and lids thoroughly, and let them dry without wiping.
3. Fill the jars about 2/3 full of *fresh, clean* skim milk, and screw the lids on loosely.
4. In a pressure cooker, heat the milk to 15 pounds for 10 minutes (the procedure is similar to canning foods).
5. Let the pressure cooker cool completely before opening.
6. Store the sterilized milk in a refrigerator until needed.

7. When fresh buttermilk is needed:

- (a) Warm one of the pint jars of milk to 72°F.
- (b) From a container of fresh buttermilk, carefully pour about one tablespoonful into the sterile 72°F milk. (Be Careful! It is at this point where most contamination takes place.) Use the remainder of the fresh buttermilk to make a batch of cheese or for drinking.
- (c) Cover the freshly made culture with a loose lid, rotate to mix without letting the milk touch the cloth or lid, and store at 72°F-75°F for 16-24 hours. At that time the buttermilk fermentation should be completed. Store the new buttermilk in the refrigerator until it is needed for further inoculation or use to make cheese.

Cultures may be carried successfully through many inoculations if care is taken. However, it is best to start with new buttermilk from the store after five or six inoculations.

PROCEDURE FOR MAKING COTTAGE CHEESE

There are two distinct procedures for making cottage cheese: (1) The "long-set" method produces a small curd, high acid cheese, and takes about 15 hours to complete. Long-set cheese is made without rennet. It may be called "acid curd", "country style," or "farmer's cheese."

(2) The "short-set" method produces a large curd, low-acid cheese. Short-set cheese is made with rennet and takes about five hours to complete. It may be called "sweet curd," "flake type," "rennet curd," or "popcorn cheese." The use of rennet shortens the making process, produces larger curds, and reduces the shattering of curd that leads to losses of cheese in the whey.

There are a few differences in the making procedures between long-set and short-set cottage cheeses. The two procedures are outlined below.

Under the most ideal conditions, cottage cheese made at home is not likely to be as good as that bought from the dairy shelf. On the other hand, making cheese at home can provide a high quality food at medium cost. It may be consumed alone or with any other food item.

Long-Set, Small Curd Method (15-24 hours)

Pasteurization

Heat the skim milk, with constant stirring, to 160°F in a double boiler. When the temperature reaches 160°F, remove the boiler from the heat and quickly cool the milk to 72°F. Use ice for cooling if available.

Important: From this point on until the curd is ready for cooking, which will be in about 15 hours, keep the milk at about 72°-75°F. Good cheese cannot be made if this is not done!

Short-Set, Large Curd (5-6 hours)

Pasteurization

Heat the skim milk the same way, but cool to 86°-88°F.

Keep milk at 86°-88°F until ready for cooking, which will be in about five hours.

Long-Set, Small Curd Method

Ripening the Milk

Add four tablespoons (1/4 cup) of starter (buttermilk from a store or previous batch) to the milk and stir for one minute.

Cover the milk with a loose lid or clean cloth, and *do not disturb* for 15-24 hours. The milk will develop into a soft curd.

The proper curd development can be determined by sliding a thin knife down the vessel wall to the bottom and pulling the blade away from the side. The curd development is complete if the curd pulls cleanly from the wall. If the curd sticks to the wall, continue testing at two-hour intervals until a satisfactory test is obtained.

Cutting the Curd

The curd must be cut into cubes of about 1/4 inch square. See Figure 1.

Important: the curd has been held at 72-75°F for 16-24 hours. Cooking the curd will begin now. Good cheese cannot be made unless the cooking procedure is done correctly.

Cooking the Curd

Add 72°F water to the outer double-boiler until the water level is above the level of the curd in the inner boiler. Layer about two inches of the same temperature water on top of the freshly cut curd. Slowly and steadily heat the water so that the temperature of the curd increases about 1°F per minute. Let the temperature in the curds and whey rise to 100°F in 30-35 minutes. Gently stir the curd for one minute, at about five minute intervals. The curds will stick together if not stirred sufficiently.

When the whey temperature reaches 100°F, increase the rate of heating to 2°F per minute. Stir the curd at two minute intervals. In 10-15 minutes the temperature of the whey should be 115-120°F, at which point the heat should be turned off. Hold the curd at this point for 15-20 minutes, using additional heat when necessary to maintain the temperature. Stir carefully to keep the curd separated and heating evenly.

The rising acidity produced by the lactic bacteria, plus the heat from cooking, causes the curds to lose whey and become smaller and tougher. With a little experience, the cheese-maker can determine the processing conditions that give the best cheese. A test for proper amount of cooking is to drop a curd onto a pan on the floor. A properly cooked curd will

Short-Set, Large Curd Method

Ripening the Milk

Use eight tablespoons (1/2 cup) of starter (cultured buttermilk from store or previous batch). Follow other directions stated in long-set method.

After the starter has been in for one-half hour, add *rennet* and stir. (*Rennet is a natural substance that aids in the curdling of milk for cheesemaking. It is available from most stores under the name of "Junket."*)

Use one-fourth (1/4) tablet of Junket per one gallon of milk. Dissolve the Junket in two tablespoons of water just before adding it to the milk. The rennet aids in producing a firm curd and preventing matting of the curd during heating.

Cutting the Curd

Cut the curd into cubes of about 5/8 inch size. See Figure I.

Test the curd for firmness as in the long-set method.

Cooking Curd

In the outer pan of the double boiler add enough 115°F water to reach a level about two inches higher than the level of the curd in the inner pan. Layer two inches of 115°F water on top of the curd in the inner pan. Slowly heat the cheese with careful stirring, at a rate of about 3°F each 10 minutes, until the temperature reaches 115°-118°F. Leave the curd at this temperature for 15-20 minutes. The curd should be firm enough at this point to drain the whey.

Long-Set, Small Curd Method

bounce without shattering into pieces. At that point the cooking should be stopped.

Draining the Whey and Cooling the Curd

Quickly dip most of the whey off the curd. Pour the curd and remaining whey onto a cheese cloth spread over a colander. Let the curd drain for 3 to 4 minutes.

Lift the cheese in the cloth from the colander and submerge it in cold water. Dip the curd in and out of the water several times to rinse out the whey, and to cool and separate the particles of curd. Repeat the dipping process in fresh, cold water (ice water is best). Repeat the dipping if the curd is still not cold.

Put the bag of cold curd back in the colander to drain until dry. Complete the draining in the refrigerator. If the curds are firm, the cheese will not mat together, even if left overnight.

The dry curd may be packed in a clean plastic or glass container until used. The curd may be salted by adding salt to taste and stirring in a clean bowl. Store the salted curd in a refrigerator until used.

The whey makes excellent hog or chicken feed when mixed with grain.

Making Creamed Cottage Cheese

To make "creamed" cottage cheese, stir six tablespoons of sweet cream or half-and-half into the cottage cheese. The cream should be added to the cheese after the curds have been chilled in the refrigerator.

Properly made cottage cheese will remain good for one to two weeks if kept cold. But it will quickly become acid, develop off flavors, or mold and yeast will grow in it if it is allowed to warm up.

Short-Set, Large Curd Method

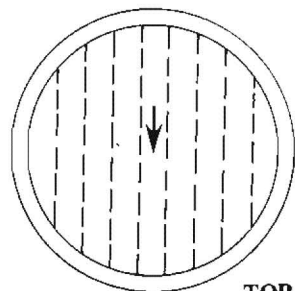
Follow directions as in the long-set method.

Follow directions as in long-set method.

How to Cut Cottage Cheese Curd With a Knife

FIRST CUT

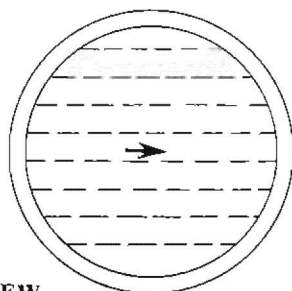
Knife cuts (1/4 inch apart)



TOP VIEW

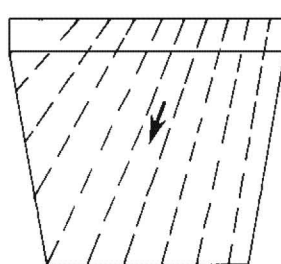
SECOND CUT

Knife cuts (1/4 inch apart)



THIRD CUT

Knife cuts (1/4 inch apart)



SIDE VIEW

FOURTH CUT

Knife cuts (1/4 inch apart)

