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Dairy Guidelines

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MAKING COTTAGE CHEESE IN THE HOME

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Cottage cheese is a nutritious and easily digested food product. If properly made and cared for, it is valued and relished by a large consuming public. Each person in the U.S. consumes an average 4.6 lbs. of cottage cheese per year. Made from skim milk, cottage cheese contains 16 to 20% protein and extremely small amounts of high-calorie fats and sugars. It, therefore, is quite popular and an excellent food for people who are dieting.

Rural homemakers, keeping 1 or 2 cows to supply milk for the family, are often faced by surpluses of skim milk during certain times of the year. Cottage cheese can be easily made in small batches and is an excellent way to use excess skim milk. Like most dairy products, cottage cheese is highly perishable. Therefore, it is best to make small batches frequently and maintain a fresh supply for the family table. This cheese can be made with equipment normally found in the home. Approximately 1-1/2 lbs. of cheese curd can be obtained from each 10 lbs. of skim milk.

Good Skim Milk Is Necessary

High-quality cottage cheese can only be made from skim milk obtained from clean, good-flavored milk. Good sanitary milking practices, rapid, thorough cooling of the milk, and the use of clean, sanitized milk utensils are important to the maintenance of quality in milk. It is best to obtain skim milk by mechanical separation. If this is not possible, the milk should be cooled and kept refrigerated while the cream is rising to the top for skimming. Skim the cream off thoroughly to prevent lost butterfat in the whey.

Cottage cheese made from raw skim milk is sometimes poor quality because of the growth of the wrong types of microorganisms which may have contaminated the raw milk. Pasteurizing the skim milk destroys most of these troublesome microorganisms. Either pasteurize the milk immediately after it is taken from the cow, or pasteurize the skim milk after separation. (See V.P.I. Circular 482, "How Safe Is Your Milk Supply," for instructions on pasteurizing milk in the home.)

Setting the Skim Milk

The coagulating (clabbering) process requires growth of certain types of bacteria with the ability to change lactose (milk sugar) into lactic acid, which is a sour compound. When enough lactic acid has been developed in the skim milk, it curdles

the casein, which is the main protein of milk. In order for the population of these acid-producing bacteria to be great enough to bring about proper coagulation in the skim milk, it is necessary to add 3 ounces of starter to each gallon of raw or pasteurized skim milk being set. This starter can be freshly made, cultured buttermilk sold by almost any dairy plant. Cultured buttermilk contains the desirable types of bacteria and is made under strict sanitary conditions to prevent contamination by other types of microorganisms. Mix the starter thoroughly in the skim milk by stirring at least 3 minutes.

Regulate the temperature of the skim milk at 68° to 74°F. This is the ideal growth temperature for these acid-producing bacteria. If temperatures are much too warm or too cold, growth of these bacteria is retarded, and growth of troublesome types which might be present may be encouraged.

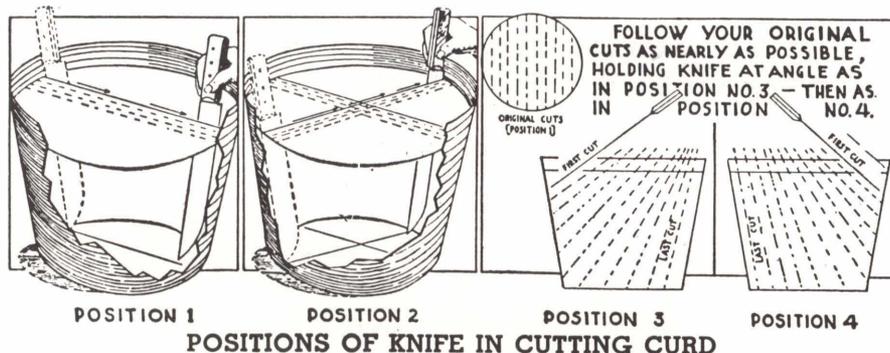
Skim milk, set with 3 ounces of starter for each gallon of skim milk, should be properly coagulated within 12 to 14 hours. Thus, it is ideal to set the milk in the evening and process the cheese the following morning. The coagulated mass should be firm and solid, and produce a sharp, smooth break as a finger or thermometer is inserted on a slant and lifted up slowly. The flavor should be clean and pleasantly sour at this time.

Processing the Curd

The manner in which the curd is handled from this point depends on the type of cheese desired.

Schmierkase If a smooth, finely grained cheese, commonly called Schmierkase (also known as pot cheese, Dutch cheese, or bakers cheese) is desired, the coagulated curd is simply stirred until smooth, heated slowly to between 110° and 120°F., and then ladled or poured into tightly seamed muslin bags. The bags are then hung in a cool place until enough whey has drained from the curd to produce a smooth, pasty-bodied cheese. Add salt at the rate of 1 teaspoon to each pound of curd and mix well. Light cream may also be added to suit the taste.

Cottage Cheese Cut the curd into cubes. Nowadays, most curd is cut, and the finished cheese resembles kernels of popcorn. The size of the finished curd particles depends on the size of cut. Large curd particles result when the curd has been cut into 3/4" cubes or larger. Small curd (country style) particles require a curd cut of 1/2" to 1/4". Regardless of the size curd desired, the coagulated mass should be cut into fairly uniform cubes, because variable size curd particles will "cook out" at different speeds. Cut the curd with a long bladed knife as illustrated below.



Cook the curd. As soon as the curd is cut, clear whey will begin to appear between the curd particles. Allow the curd to set quietly for 10 minutes. During this time enough free whey will be expelled from the curd to make stirring easier. Freshly cut curd is fragile and will break easily if stirred excessively, particularly when not enough liquid is present. Adding 1" to 2" of warm water (120° to 125°F.) poured down the sides of the container onto the top of the curd while the cut curd is setting idle will aid subsequent stirring.

Heat makes the whey separate rapidly and aids in developing a firm body in the curd. If a relatively small container of curd is being processed, set the container in another vessel of warm water. Apply heat to the water and gradually increase the temperature of the curd and whey within a period of 1 hour to about 120° to 130°F. If a large container is being used, and direct heat is being applied to the bottom of the container, be careful to apply the heat slowly, making sure that the curd does not stick to the sides and bottom. Stir slowly at first with a spoon or cake turner. As more whey is expelled and the curd becomes more firm, there is less likelihood that it will be broken by stirring. Stir often enough to prevent the curd particles from settling to the bottom and matting together. If properly heated and stirred, the curd particles will retain their original shapes. Increasing the heat slowly during the cooking process is important for the removal of whey from the center of the cubes of curd. Too rapid heating will cause the surface to toughen and prevent passage of whey from the inside.

To determine when the curd is sufficiently cooked, drop a few cubes into a cup of ice water. When they cool and are firm and meaty, the cooking process is complete.

Draining and Washing the Curd. Remove the container from the heat and allow the curd to settle. Pour off the whey, leaving only enough to float the curd. Add cold tap water to equal the volume of whey removed. Stir the curd in this first wash water for 10 minutes. Allow to settle, and pour off most of the water. Again, add cold water (ice water is preferred if it is available) until the contents are equal to the original volume. Stir for 10 minutes and allow the curd to settle. Pour off the second wash water, and drain in a colander or through cheesecloth until the water stops dripping freely--usually 20 to 30 minutes.

Cream and Salt the Curd. Empty the curd into a bowl and add sweet cream and salt to taste. Usually 4 to 5 ounces of light cream and 1 teaspoon of salt to each pound is sufficient. Mix the cream and salt thoroughly into the curd, cover the bowl, and keep refrigerated until used. If good sanitary precautions are used throughout the manufacturing process, the cheese should keep under refrigeration for 1 to 2 weeks without spoilage.

Uses of Cottage Cheese

Cottage cheese is a delicious food when served "as is" and is adaptable to many food combinations. Recipes for using cottage cheese in appetizers, breads, sandwiches, salads and salad dressings, main dishes, and desserts are available in V.P.I. Bulletin 249, entitled "Recipes for Cottage Cheese Dishes." Obtain a copy of this publication through your Cooperative Extension Agent, Home Economics, or write to the V.P.I. Extension Supply Room, Blacksburg, Virginia 24061.

