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DEPARTMENT OF AGRICULTURE

OFFICE OF THE DAIRY COMMISSIONER.

OTTAWA, May 16, 1917.

The Manufacture of Cottage and Buttermilk Cheese.

COTTAGE CHEESE.

The contempt with which the majority of people regard skim milk is wholly undeserved. It is a nutritious and valuable human food. The waste which has occurred in this by-product of the dairy on account of the prejudice against it is a reproach to our intelligence.

Undoubtedly skim milk lacks in palatability and to overcome this objection, it can be treated in various ways or combined with other foods in cooking.

The manufacture of cottage cheese is one method of converting skim milk into a more attractive and appetizing form of food. Cottage cheese may be made in a small way in the home, as well as in a larger way in the creamery.

Several different methods of manufacture may be employed, but those most commonly used are (1) by the coagulation of the milk by souring, (2) by the coagulation of the milk by rennet.

Coagulation of the Milk by Souring.—In order to secure the best quality of cheese only fresh clean skimmed milk of good flavour should be used. If a pure culture of the lactic acid producing organisms or good clean-flavoured buttermilk is available the addition of 5 to 20 per cent of the same to the skimmed milk will usually improve the flavour of the cheese as well as shorten the process of manufacture. The milk should be thoroughly stirred after adding the culture or buttermilk. If no culture or clean-flavoured buttermilk is available the souring must proceed naturally. In either case the temperature of the skimmed milk, during the souring process, should be maintained at 70° F. to 75° F. This temperature is very favourable to the development of lactic acid (souring), and at higher temperatures undesirable flavours are more likely to develop. If no culture or buttermilk has been used curdling will not usually take place in less than twenty-four hours. If culture or buttermilk has been used the time required to produce curdling will be less, depending on the quantity of culture or buttermilk used.

As soon as the milk is firmly curdled, the mass is cut with a knife or broken with the hands or a stirring rod. The vessel containing the curdled milk is now surrounded with warm water and the temperature gradually raised to 90° F. to 95° F., the curd being kept gently stirred while warming. Thirty to forty minutes should be taken in raising the temperature. When the whey has separated clearly from the curd, which will usually be in fifteen to twenty minutes after heating is completed, it should be drained off and the curd gently stirred for a few minutes. The curd should then be further drained by placing it on cheese cloth on a rack, or in a perforated dish, or by

suspending it in a cheese cloth sack. After whey ceases to drip from the curd the mass of curd is carefully broken into fine particles and salted to suit the taste. Usually one and one-half ounces of salt to each ten pounds of curd will be sufficient. Whole milk is now mixed with the curd in sufficient quantity to leave it fairly moist, but not sufficiently moist to allow milk to drip from the curd.

The curd should now be packed in jars or shaped into balls or bricks and wrapped in parchment paper first and then in oiled or waxed paper.

Coagulation of the Milk by Rennet.—In using rennet to coagulate the milk, as well as in natural coagulation, it is preferable to use some pure culture or clean-flavoured buttermilk. The skimmed milk is kept at a temperature of 70° F. to 75° F. until it commences to taste and smell sour, when rennet extract is added in the proportion of one ounce of rennet to each one thousand pounds of milk. After thoroughly mixing the rennet with the milk, the milk is allowed to stand until coagulated, after which the process is as outlined above.

The flavour of good cottage cheese is a mild, clean, acid flavour, free from undesirable odours and resembling that of clean sour cream. If it is desired to make a cheese of richer flavour and higher nutritive value, sour cream may be used in soaking the curd instead of whole milk.

The texture of the cheese should be smooth and free from lumps and of the proper consistency to spread readily. If a temperature below 90° F. is used in heating the curd, it will not drain properly and will be soft and sticky. If on the other hand, a temperature much above 90° F. is employed the cheese may be too dry and crumbly. This defect may to a certain extent be overcome by using more milk or cream in soaking the curd, but by properly regulating the temperature and length of time of heating, a cheese of the proper consistency may always be produced.

The yield of cottage cheese obtained from a given quantity of skimmed milk will depend largely on the amount of moisture retained, which, as pointed out above, depends on the length of time and the temperature employed in heating.

Five to seven and one-half pounds (two to three quarts) of skimmed milk produces one pound of cheese, which contains as much protein as one pound of beef-steak.

BUTTERMILK CHEESE.

A cheese very similar to cottage cheese may be produced from buttermilk.

As soon as the buttermilk is drawn from the churn it is placed in a vessel surrounded by warm water and heated to 80° F. at which temperature it is left without stirring for one hour. The buttermilk is now heated to a temperature of 130° F. to 140° F., being only stirred slightly during the heating. It should now stand for one hour without stirring to allow separation of the curd. The whey is drawn off with as little agitation as possible. and the curd drained in the same manner as described in making cottage cheese. While draining, the curd should be stirred occasionally to facilitate the escape of moisture and to maintain an even distribution of the same throughout the curd. After the curd has drained sufficiently, which will usually require about twelve hours, the process is completed as in making cottage cheese.

Only buttermilk of fresh clean flavour is suitable for the manufacture of such cheese.

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