

Creamery Department

Butter Makers are invited to send contributions to this department, to ask questions on matters relating to better making and to suggest subjects for discussion. Address your letters to the Creamery Department.

Five Years Experience in Making Butter for Exhibitions

W. M. Waddell, O. A. C., Guelph, Ont.

During the last five years I have practised the following method in making butter for show purposes and I credit my success at the different exhibitions to do so:

About one week before the exhibition date, the butter-maker should be on the alert for a nice cool night. If the necessary precautions have been taken in caring for the milk, the raw material delivered to the creamery the succeeding morning will be of superior quality.

Every bit of machinery through or over which the milk has to run must be thoroughly cleaned and be germ free. It is advisable to start the separators and skim for eight or ten minutes before the cream is allowed to run into the vat for exhibition purposes. The separators should skim a 35 or 40 per cent. cream for the best results. The flushing should be allowed to run into the exhibition cream.

Immediately after skimming pasteurization should be commenced. The cream should be heated to 160 or 175 degrees F. and kept at this temperature for 20 minutes. During the pasteurization, the cream should be gently agitated so as to prevent a layer of nitrogenous matter from forming over the cream, also to secure a uniform pasteurization and no cooked flavor.

This process of butter-making may be successfully followed in a creamery where there is neither a pasteurizer nor a cooler. The pasteurization and cooling may take place in the cream vat. Steam connections can easily be made to the cream vat by the aid of a steam hose. Cooling may be effected by the addition of plenty of ice (around the cream) and constant stirring. Ice should never be put into the cream.

When pasteurization is completed, the hot water should be run off, and pulverized or finely broken ice and cold water should be put in its place. A little salt placed upon the ice mill will quicken the cooling process. The cream ought to be cooled to 44 or 46 degrees F. Stirring should be continued so that the cream will be of a uniform thickness and temperature. After the cream has stood at a low temperature for three or four hours, or even over night, churning operations may be started.

Before transferring the cream from the vat to the churn about 20 per cent. of a good clean flavoring culture, showing an acidity anywhere from .5 to .75 should be added. This insures the desired flavor and aroma.

The temperature of the cream will be 45 or 50 degrees F. after the addition of the culture which ought to be within the range of 60 and 65 degrees F. The churning should be finished within 30 or 45 minutes, all depending

upon the speed of the churn; the temperature and richness of the cream and the season of the year.

Just at that point when "breaking" begins it is well to add a pail of cold brine, which helps the particles of butter to adhere.

The churn should never be allowed to revolve after the granules are the size of wheat grains. The butter-milk should be drawn off immediately and the butter permitted to drain for 10 minutes. The butter should now be sprayed with fresh well-water at a temperature about 20 degrees higher than the churning temperature. When the spray runs off fairly clear the top should be closed and more water than there is butter-milk should be added. To wash the butter the churn should be revolved at high speed from eight to fourteen times. As soon as washed the wash water should be allowed to run off and the butter permitted to drain again for 10 or 15 minutes.

Salting and working are the next steps. If the butter is for a saltless exhibit, it should be salted. Success is combined churn and worker will be sufficient. If the butter is to be salted it should be worked anywhere from 15 to 25 minutes as judgment demands. 7 minutes as judgment demands.

The packages in which the exhibit is to be made should be neat, clean and as attractive as possible. If the prize list calls for a solid package the firkin, crock or box should be filled as near to the top as possible. Points are taken off when a box is improperly packed. Double linings should always be used. All box-linings should be soaked in a strong brine solution for at least 12 hours.

The butter should be placed in cold storage as soon as possible after manufacturing. It is best to arrange the date of mailing so as to have not more than one week between manufacturing and scoring.

NOTE.—It might be well to point out that one has not a very successful competitor in butter exhibitions in this and other countries. For three years previous to going to the O. A. C. and Western Dairyman's Association Exhibitions. He has taken first and second prizes at Toronto, London, and Ottawa and Toronto this year his butter scored only one-quarter of a point below the butter that won the trophy. In point of fact Mr. Waddell's butter was of a higher quality, but through some cause the box was broken on top and the judge scored the butter down on finish. In 1907, Mr. Waddell won the gold medal at Ottawa. This year he entered the lists with American makers at the New York State Fair at Syracuse. There were seven entries in the class. Mr. Waddell's butter was the only Canadian exhibit and won the first prize of \$30. At Syracuse also, the class was very close, but, showing in the winners' class and carried off the first and second prizes. Canadian butter-makers evidently are capable of holding their own with the best.

Editor.

Making Prize Creamery Butter

Ed., The Dairyman and Farming World.—Before I began making the butter which won the 2nd prize in creamery prints at the Toronto Exhibition this year, I sent out instructions to my patrons, and the cream-haulers, stating that we were going to make butter for the show, and asking them to take every precaution and to send in as sweet cream as possible. These instructions were carried out very well by the patrons, but the weather being very warm, the cream arrived in a rather poor condition.

Upon arrival at the factory the cream was pasteurized at 160 degrees and immediately cooled to 56 degrees. About 20 per cent. of good culture was at once added to the cream kept over the night at the above temperature. The cream was churned at 54 degrees and

the butter came in about 30 minutes. The butter was washed once with water at 50 degrees and then worked and salted in the usual manner.

I might say that the same method was adopted last year when I captured the trophy with a score of 97½ points. My score this year was 96½.

—R. M. Player, Bruce Co., Ont.

The Skimming Station System Advocated

The Editor Dairyman and Farming World.—There is no reason why the skimming station system could not be adopted and carried out successfully in some parts of the 3,745,574 square miles of Canada. With a view to improvement in quality, it must be admitted by all that this is the system to be preferred. No doubt the cream gathering system could be made just as good if the farmers would take a little more care of their cream. In many instances, the cream is delivered every second day only, or two or three times a week. The result is that when it reaches the factory it is found to be inferior in quality and in my opinion, it is impossible to make it so good as to be able to make a sound-keeping butter. Of course, in districts where the roads are in a bad condition, or where the distance from the factory or skimming station is too great for the hauling of milk, farmers are justified in adopting the principle of home separation.

The skimming station system is an important factor in the production of butter in New Zealand, some parts of Australia, and in the Republic of Argentina. I may point out, however, that none of these countries are pasteurizing their cream; they owe much of their success to the freezing principle. For the success of both systems a factory of modern description is required. The proper application of scientific and modern equipment, and also practical and scientific management. Therefore, I take this opportunity to impress upon those who are engaged in the dairy industry, the importance of starting all new business, if possible, on the skimming station system.—Geo. Nielson, York Co., Ont.

How the "Trophy" Butter was Made

Ed., The Dairyman and Farming World.—I exhibited at the Toronto Exhibition this year and won several prizes, among them the silver cup trophy, awarded for the highest scoring butter. The butter exhibited was made from whole milk, but by two different processes for the different sections. The butter made by each process scored an equal number of points.

In the first process the milk of the previous night was brought into the factory with the morning's milk and separated, giving me a cream testing about 50 per cent. fat. The cream was at once pasteurized to 145 degrees and immediately cooled to below 50 degrees. Sufficient pure culture ferment was added to bring it to an acidity of .35 in 24 hours, when it was churned. Churning occupied about one hour. Two per cent. of salt was used.

In the second process the butter was made by the sweet cream method formulated by J. D. Leclair, General Inspector of Syndicated Creameries in Quebec, and Superintendent of the Provincial Dairy School at St. Hyacinthe. The milk was separated giving a cream with 52 per cent. butter fat and pasteurized at 140 degrees. The cream was cooled at once to 45 degrees and churned at 140 degrees after reaching that temperature. The acidity of the cream at churning was .11. Pure culture ferment was added to the cream in the churning, and the following formula: Acidity of pure culture, 1; acidity of cream,

If you should ask prize Butter-Makers what salt they use—they would say, "Windsor."

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Windsor Dairy Salt

14; percentage of pure culture used, 2. The temperature of the cream after adding the pure culture and at the commencement of churning was 45 degrees. The time of churning was 45 minutes and 2 per cent. of salt was used.

The latter process makes a very mild butter, less pronounced in flavor than that made by the former one. It is also of better keeping quality.—J. H. Leclair, Foster, Que.

Can you suggest a new and better name for The Canadian Dairyman and Farming World? If so, do so and win a prize. Notice our announcement on Page 3.

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THE WINTER FAIR GUELPH, ONT.

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