

for so doing. Special care should be taken to milk in a clean place and in as clean a manner as possible; for particles of dirt which fall into the milk at milking time are laden with organisms which produce the worst flavors with which we have to contend, and while thus harmful at any time, are doubly so under the cream-gathering creamery system where the cream is held for some time before it is sent to the factory. The milk should be creamed as soon as possible after milking, and for this purpose we strongly favor the use of a hand separator over any method of setting the milk, as it provides the most efficient and thorough method of creaming the milk, it enables us to make a cream of any desired richness—we recommend making a cream testing about 30 per cent.—the quantity to be cooled is greatly reduced, and the cream if properly cooled, will be one of superior quality. Care should be taken to set the separator in a clean place and to stand it on a floor that can be kept clean and not on an earth or ground floor which is sure to get into bad condition sooner or later through milk being spilled upon and soaking into it, and thus causing bad odors. We would again admonish those who have hand separators to keep them thoroughly clean. We have met more separators than one in such a condition that they themselves would contaminate milk put through them. The separator bowl and its parts should not only look clean but should have a clean smell as well. If giving off any bad odors, examine all tubes and crevices about the bowl, for this is evidence in itself that there is dirt being harbored somewhere.

So much for cleanliness. This is in order to keep the milk and cream as free as possible from the organisms which work so much mischief. The next step is to cool the cream as soon as possible after it comes from the separator in order to prevent the development of those organisms that do gain access to it, for be as careful as we may milk and cream are never free of germ life. The warm cream should be put into a vessel by itself and thoroughly cooled before being added to the cold cream. The three most common mistakes made in handling and cooling cream are, that warm cream is mixed with the cold, the cream is frequently left too long before being cooled, and it is not cooled to and held at a low enough temperature. Cool it below 50 degrees as soon as possible after it comes from the separator and hold it well under that temperature until sent to the creamery. Send it to the creamery both sweet and clean in flavor.

STORING OF ICE.

With but rare exceptions, the storing of ice for cooling the cream is an absolute necessity, and any substitute is at best little more than a make-shift. Ice may be stored in a cheaply constructed building, and a small lean-to, with a tank for holding ice and water will provide an efficient means of cooling the cream. Some farmers who formerly stored ice for use in creaming their milk have given up doing so since purchasing hand separators. This is a serious mistake. While a good separator will cream milk more efficiently than will any method of setting, yet it exercises no hypnotic influence over the organisms that cause the souring of the cream or that bring about other undesirable changes. We must store ice for cooling the cream and holding it at a low temperature, so as to numb these organisms and prevent or check their growth.

At the present time the great majority of our creamery patrons have not the facilities for properly cooling their cream, and the cream does not arrive at the creamery sufficiently sweet and clean in flavor for making butter of the finest quality, as it is frequently over-ripe and over-fermented. Since we have decided to adopt the cream-gathering creamery system, on account of the many substantial advantages it has to offer, let our patrons pay the price demanded for these advantages and so get the full benefit of the system. The chief demand is that they provide facilities for caring for their cream, that is, that they store ice to properly cool it. The managers of our creameries have a great missionary work before them in the training of their patrons, and they must grapple with it in earnest. They

might begin by getting their best patrons to adopt the best system of caring for their cream and use these as a means of leavening the whole lump.

DELIVERY OF CREAM.

The cream should be collected and delivered sufficiently often to insure its arrival at the creamery in good condition. This should not be less than three times per week during the greater portion of the season. Frequently cream is seriously injured in delivering it to the creamery. We have even seen collectors using ordinary milk cans in summer for this purpose. Cream received from the patron in the best condition would not, under such circumstances, reach the creamery in a condition fit for making good butter. The tanks or cans should be well insulated, and where the latter, in particular, are used they should be protected from the sun by means of a good canvas cover over the wagon. One of the most disagreeable flavors imparted to cream is that due to the sun's rays striking directly upon and heating the walls of a can, and this flavor is invariably passed on to the butter. Where the cream is delivered by individual patrons the can should be covered with a blanket.

Provision should be made for properly caring for the cream at the creamery, and in this connection we would specially mention the importance of having suitable vats, vats with plenty of space at the sides and end for water and ice for quickly cooling the cream in warm weather. We should like to see our butter-makers make freer use of the acidimeter than they have been making in the past, and in ripening the cream we would advise them to err on the safe side, shat it, to under-ripen rather than over-ripen it. For a 30 per cent. cream .5 (5-10) per cent. of acid is quite sufficient.

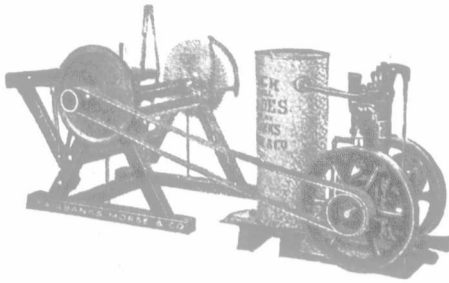
SAMPLING AND TESTING CREAM.

Too great care cannot be exercised in the sampling of cream and the testing of it. It is much more difficult to obtain a representative sample of cream than of milk, and it is equally so to prepare and test the composite samples. We do not favor the idea of sending the composite sample bottles around with the cream collector. There is danger of the bottle getting broken, the samples may become partially churned, and through frequent heating in summer weather they are likely to get into a very bad condition, a condition unfit for insuring a thoroughly reliable test. It is much better to keep the composite samples in a suitable place in the creamery and supply separate bottles for the cream-collector to bring samples of cream to the creamery in. This plan possesses the double advantage of affording the butter-maker an opportunity of examining each patron's cream and of enabling him to keep his composite samples in good condition.

Some makers meet with considerable difficulty in testing their composite samples, on account of the mould that forms on and in them. A few drops of formalin—say four or five drops—put into the composite sample bottle at the beginning of the test period will prevent this trouble. We had this tried as an experiment last summer, in a creamery where they were troubled with mould in the samples, and the trouble disappeared.

The composite samples should be kept in as cool a place as possible in order that they be in good condition for testing.

In some sparsely populated districts where they are now making dairy butter in considerable quantity, and in more thickly settled districts where the herds are small and it would take a large area to support a factory, cream-gathering creameries could be established to the decided advantage of the people of the community and of our dairy industry. Where butter is made in sufficient quantities that quite an amount of it must go onto the market, it is much better that it be made in a creamery where a large quantity of butter of uniformly good quality can be manufactured. Creamery and not home dairy butter-making is what we must depend upon to build up the butter side of our dairy industry. We are making too much dairy butter where creamery butter could be made in its stead.—J. W. MITCHELL, B. A. before Ontario Dairyman's Association



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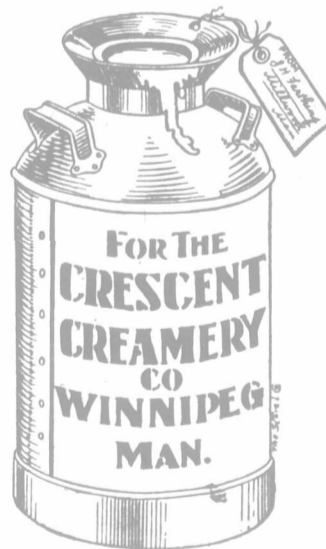
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