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The Care of Milk and Cream

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The Care of Milk and Cream

The most serious problem confronting the dairy industry of Oregon today is the poor grade of cream delivered to the creameries. Cream is often two weeks old when delivered, and not infrequently is in a stale and even putrid condition. Good butter cannot be made from such cream.

A large amount of New Zealand butter is being imported to our markets, some of which is of very good quality. If the Oregon dairyman wishes to continue to receive the good price for butter fat that he has enjoyed in the past, he must deliver better cream to the creamery. The creamery will then be enabled to make a quality of butter much better than it is possible to import, since it requires from 60 to 90 days to put New Zealand butter on this market.

It is not necessary for the dairyman to purchase a lot of expensive equipment or hire additional labor in order to produce a high quality in cream or milk.

The purpose of this Bulletin is to set forth the more important facts in the care of milk and cream.

The care of milk really begins with the care that the cow receives. Cows that are in the best of health, surrounded by the best conditions, and receiving good feed, produce the best flavored milk. Strong flavored feeds, such as kale and turnips, if consumed by the cow shortly before milking, will produce the same flavors in the milk. If fed a number of hours before milking, preferably immediately after a milking, the flavors will probably be passed off by the cow. The condition of the cow will largely influence the amount of dirt and bacteria in the milk. When the cow's flanks and udder are covered with manure and dirt, some of it will fall into the milk pail.

Dusty and poorly ventilated stables cause a large percentage of the dust and bacteria in the milk, because the stable air becomes filled with dust and bacteria which fall into the milk pail. The same objection is to be made to feeding dusty feed, while milking, or even shortly before milking.

The ideal condition for the milking of a cow would be in an open field with a moist, clear air; the cow, of course, to be clean and healthy. This condition can be approached by having a clean stable, free from dust and by moistening the hair on the udder and flanks with a clean, moist cloth. This serves to make the hairs stick to one another and to retain the dust. The practice of wetting the hands with milk cannot be too strongly condemned. If anything is necessary to soften the teats, a little vaseline may be used.

The milk should be drawn into small top pails. Pails with small openings in the tops reduce the amount of exposure to the atmosphere, as may be seen by the accompanying sketch. Experiments have shown that the use of the small top pail reduces the bacterial content approxi-

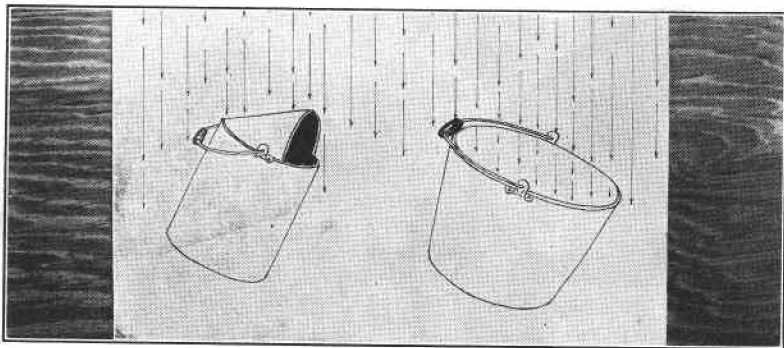


Fig. 1. THE RELATIVE AMOUNT OF EXPOSURE TO CONTAMINATION WITH COVERED AND OPEN MILK PAIL.

mately 50 per cent. Such pails are not expensive. It is also well to examine them when purchasing, to see that there are no crevices or unsoldered places to retain milk particles. Some milkers may find the small top pail a little awkward at first, but will soon find that all of the objections disappear.

The milk should be removed from the stable as soon as possible after being drawn. If it remains long in the stable, it is likely to take up stable odors.

Straining is done to remove dirt and occasional hairs, but it does not reduce the bacterial content of the milk. If the milking period is long, the strainer should be rinsed off with a little water to prevent its clogging up and to remove any dirt that might dissolve or break up and pass into the milk.

Where the milk is to be sold in bulk or bottled, it should be cooled as soon as possible after being drawn. There are several ways of cooling milk. The most common is to set the cans in a trough or barrel of cold water. Better results are obtained by having a continuous flow of water. While cooling, the milk should be kept well stirred in order to cause a more rapid cooling. Milk is a poor conductor of heat, and unless stirred occasionally, the milk near the center of the can will stay warm for some time after that near the sides are cooled. There are a number of devices on the market for cooling milk and cream. Most of them use running water which flows through the inside while the milk flows down over the outside surface. These contrivances produce rapid cooling, but use several times as much water as the volume of milk. In selecting a cooler of this type, do not forget to look for ease of cleaning.

If the cream alone is to be sold, the separating should be done before cooling down the milk, and the cream cooled immediately by one of the methods mentioned. A rich cream has better keeping qualities than a thin cream. Butterfat does not furnish food for bacteria. The bacteria that grow in cream derive their food from the skim milk present in the cream. A rich cream, therefore, testing from 35% to 40%, has better keeping qualities, because there is less food for bacteria. Stirring cream twice daily, if kept any length of time before

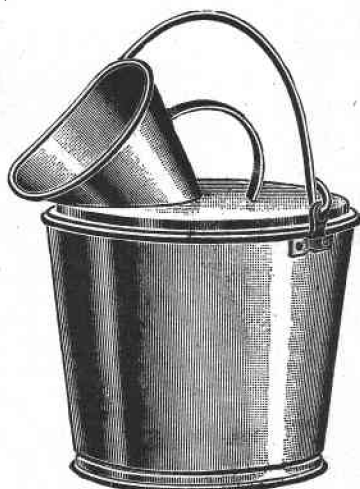
Fig. 2. TYPES OF SANITARY MILK PAILS.



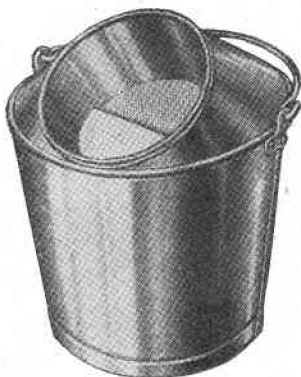
CHAMPION



GUERLER



BOSTWICK



STERILAC



PERFECTION

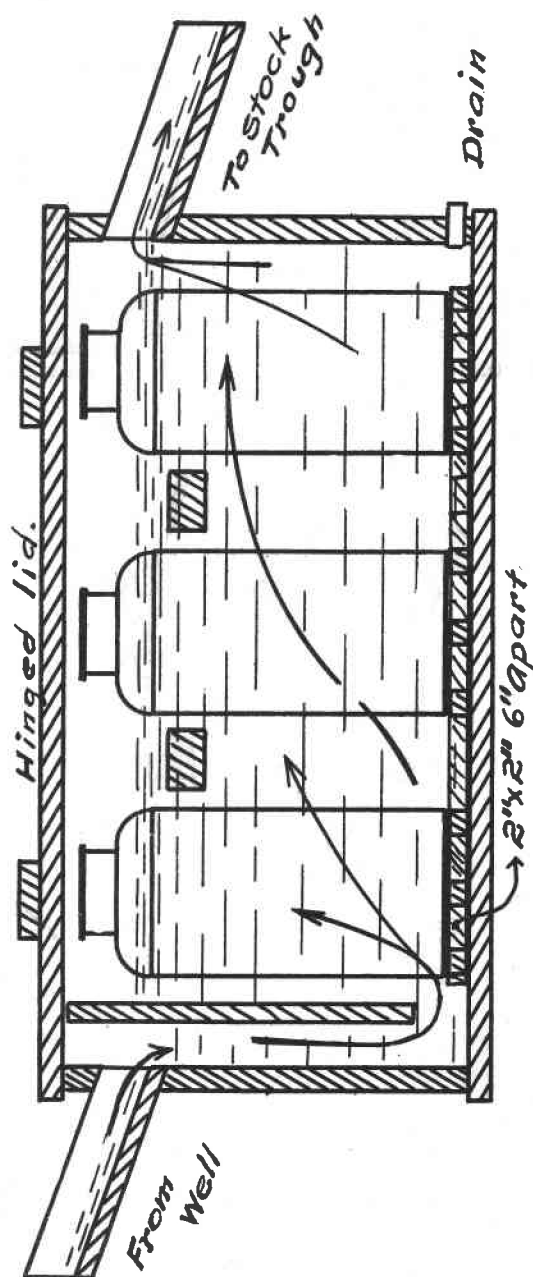


Fig. 3. TANK FOR COOLING MILK OR CREAM WITH WELL WATER.

churning or shipping, will prevent a hard layer forming at the top and the skim milk settling at the bottom. Before two lots of milk or cream are to be mixed, both should be cooled to the same temperature. If one lot is warmer than the other, rapid souring will likely be the result.

The cream containers should be kept covered after the cream has been cooled. When exposed to the air, cream forms a leathery layer over the top, and unless in very clean air and surroundings, it may also become contaminated with dust. Deliver the cream often, not less than three times a week in summer and twice a week in winter. Even though kept under the very best conditions, it will develop staleness if kept too long. If the can is to be hauled any distance in the sun, cover it with a blanket or burlap, saturated with water. The moisture evaporating from the cover will keep the temperature of the cream from rising rapidly.

The Utensils. The mistake of purchasing cheap utensils is too often made. The cheapest means of improving the output of the dairy is the purchase of good utensils. Cheap utensils are poorly tinned, and the seams and crevices not thoroughly flushed with solder.

Every article that comes in contact with milk or cream should be rinsed with cold or lukewarm water before being washed. The washing is to be done by brushing the surface of each article with hot water containing washing powder. Cloths are not as good as brushes for cleaning tinware or any utensil with square corners, because they will not reach into the corners and crevices. A good washing powder for milk utensils may be made by mixing sal soda and saleratus (sodium bicarbonate). It is not necessary that the washing compound form a suds. There are a number of compounds put on the market by dairy supply houses that are especially compounded for washing dairy utensils. Soap is likely to form a thin film over the surface of the utensil, and unless thoroughly rinsed off before scalding, may dry on. No utensil should be considered clean until it has been brushed. No amount of sloshing or whirling in the wash water will thoroughly remove the thin film of milk that adheres to the surface.

In washing the separator, the bowl parts and tinware may be put in the supply can, covered with cold or lukewarm water, and allowed to drain off. The parts may then be taken out, washed in hot water, returned to the supply can, rinsed and then scalded. The separator should be washed and scalded after each run. If no hot water is available, it should be washed with cold water after one run, and after the second run thoroughly washed and scalded.

The most thorough scalding is done with live steam. Boiling water is satisfactory if the temperature can be maintained long enough to accomplish sterilization. The chief benefit derived from pouring scalding water on the utensils is that the utensil is heated and dries quickly. Bacteria do not thrive in dry surroundings, and care should be taken to keep the utensils dry when not in use. If the utensil becomes dusty before using, it should be rinsed with pure water.

SUMMARY

Brush the cow and sponge off flanks and udder before milking.

Use small top pail.

Do not feed strongly flavored feeds till after milking is completed.

Do not feed hay or other dusty feeds till after milking.

Remove milk from barn immediately after milking.

Cool milk to 50 degrees F., or below, as soon after milking as possible. Where cream is to be sold, separate as soon as possible after milking, and cool the cream to 50 degrees F., or below.

Cool down cream before mixing with cream already cooled.

If cans are set in tanks of cold water for cooling, stir frequently.

Keep cans in cold water till delivered.

Separate cream, testing from 35 to 40 per cent. Such cream will keep better than thinner cream, besides leaving more skim milk at home for feeding, and lessening the expense charges on a given amount of fat.

Keep the cream cans covered after cream is cooled.

When cream is hauled any distance in the sun, keep covered with blanket or burlap saturated in water.

Deliver cream often, not less than three times a week in summer and twice a week in winter.

In washing utensils, first rinse them in lukewarm water or cold water, then brush them thoroughly in hot water to which has been added some good washing powder, and, last of all, sterilize by pouring boiling water over them, or better, by holding over live steam. Use utensils that are well tinned, and in which the seams and corners are flushed and smoothly rounded with solder.