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Farm Dairying



Jersey Cow Double Time

IX.—Milk, Cheese and Cream.

By LAURA ROSE,

Demonstrator and Lecturer in Dairying at the Ontario Agricultural College, Guelph, Canada

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WHILE it is necessary for the patron supplying milk or cream for buttermaking purposes to send a first class quality, a still greater responsibility rests on the patron of the cheese factory. For buttermaking pasteurization may be and is resorted to to check objectionable bacterial growth and drive off food flavors, but this is impossible in cheesemaking. The cheesemaking process is one which lends itself to the multiplication of evils if they have already a beginning in the milk. A can of bad milk will spoil all that of fifty other patrons, lower the price of the cheese and injure the reputation of the maker.

Special provision should be made on the farm for quickly cooling the milk to 65 degrees F. or lower and keeping it at that temperature overnight and for lowering it to 50 degrees F. and sustaining that temperature when it is held over Sunday. Depend on nothing but a correct thermometer for ascertaining temperatures. Ice is almost a necessity in order to care properly for Saturday night's and Sunday's milk.

Milk intended for cheesemaking should not have over 20 per cent of acid when delivered to the factory. It usually does not smell or taste sour until it contains from .30 to .35 per cent, and then it is quite unfit for cheesemaking. The cheesemaker uses the acidimeter, and we should abide by his decision.

The Milk House.

The dairy farm should have a milk house. It may be built of wood or of cement. In it should be a tank large and deep enough to hold cans containing at least two milkings and a six inch space around them for water. There should be an outlet pipe near the top to allow the water as it becomes warm to be carried away in order to keep down the temperature of the milk. An outlet at the bottom is necessary that the tank may occasionally be emptied and cleaned.

If there is a windmill at the well a large tank should be provided, and from it piping should be laid to supply the smaller tank with water. If there is no windmill the milk house should be built near the well. Be sure to make a proper drain to carry away the surplus water. Keep everything tidy.

A windlass is convenient to raise and lower the cans into the tank. Also have some contrivance to do the lifting at the milk stand. Have a track laid from the milk house to the stand and a car or truck for carrying cans.

Warm milk should not be mixed with that already cooled, if it can be avoided. If at all possible it should be sent in separate cans. If it is necessary to mix night's and morning's milk the best plan is to cool the morning's milk also. If there be not time to do this the evening's milk should be cooled to at least 60 degrees. It is quite possible to have excellent milk delivered by this last method where cleanliness is observed and the night's milk well cooled.

Cooling the milk immediately after or during milking with as little exposure to the air as possible and putting the lids on the cans is recommended.

Where ice or cold water cannot be obtained or where a can of milk has to be left in a place where water and ice cannot be conveniently used, a wet cloth—preferably flannel—wrapped around the can is an aid in keeping the milk cool. Have one end of the cloth immersed in a pail of water.

Under no condition should chemicals be used for preserving the milk. They completely upset the process of cheesemaking.

They should not be returned in the cans unless it has been heated to 155 degrees F. in the factory tanks.

The cans going to and from the factory should be covered with canvas to keep out the dust and heat. Needless to say the cans must be well washed and scalded.

Remember, the better the milk is cared for on the farm, the less milk it takes at the factory to make a pound of cheese and superior will be the quality of the cheese.

There are two general methods of obtaining cream from milk—the gravity system, making use of the shallow pan or the deep can, and the centrifugal system, employing the cream separator. The former is the older and is now little used.

Where the creaming is carefully done the skim milk from pans will not contain over 3 per cent butter fat, but usually it tests much higher. The cream may contain from 15 per cent to 40 per cent fat.

Many farmhouses have no suitable

room in which to set milk. It is often put in a cellar which is close and musty and serves as a storage place for roots, fruit, etc., or is kept in the pantry off the kitchen and absorbs odors.

Pans should be set in a clean, well ventilated room where the temperature ranges from 50 to 60 degrees.

Avoid having the milk close to the wall or in a strong draft, so as not to have a leathery coat form, due to rapid evaporation. The pans are better covered with heavy, clean paper, if possible, after the milk has cooled.

The milk should stand from twenty-four to forty-eight hours before being skimmed, but should not be coagulated.

How to Skim Milk.

To skim loosen the cream from the sides of the pan with a thin bladed knife. Lift the pan to the edge of the cream can, tilt it to allow a little of the skim milk to wet the edge of the pan, then with the aid of the knife quickly glide the sheet of cream into the cream can. Do not use the old fashioned perforated skimmer.

This system has many disadvantages—a great surface of the milk exposed to atmospheric contamination; the milk liable to become too acid for domestic and feeding purposes; the cream clotted and overripe; the creaming incomplete; a large space necessary for the pans and much labor involved.

Deep Cans.—A water tight box or barrel for holding the deep cans will do as effective work as an expensive cabinet creamer, but there should be room for plenty of ice. It is economy to have ice always in the water and just as necessary to use it in winter as in summer. To do good creaming the water should not be above 45 per cent in summer, and it is better to have it still lower in winter. To maintain this temperature it is necessary to put in a good supply of ice unless one is fortunate in having a very cold running spring handy.

The warm milk should be immediately strained into the cans and the cans lowered into the water, which should reach as far up as the milk.

The cans usually are eighteen to twenty inches high and eight inches in diameter. We prefer a slant bottom can with a tap to draw off the milk. The slant carries away any sediment and permits the removal of all the skim milk.

Cans without a tap—called the shotgun cans—should be skimmed with a funnel shaped dipper, having a long, straight handle and no wire around the rim. It is best to loosen the cream from the sides of the can with a knife, then wet the dipper in milk or water and lower it point first into the can, allowing the cream to flow evenly into



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[Gave in six months 17,688.8 pounds milk; in one day, 110.2 pounds milk; average for 182 days, 11.6 gallons.]

the dipper. Repeat until all the cream is removed, being careful not to take too much skim milk with it.

Deep Setting System.

Milk should always set twenty-four hours before the skim milk is drawn, and thirty-six hours in winter is better. Milk allowed to stand only twelve hours before skimming will yield a larger volume of cream, but it will test low (from 15 to 20 per cent), while the skim milk may test as high as from 6 to 1 per cent and over, especially if the water has not been cold. In twelve hours the smallest of the fat globules have not had time to rise to the top and so pass off in the skim milk and become, like the prodigal son of old, feeders of swine. When the milk is allowed to stand twenty-four hours the cream will test from 18 to 25 per cent and the skim milk from .2 to .4 per cent, or, in other words, we have in the case of the longer setting a richer cream and less loss of fat in the skim milk, two desirable results in creaming milk.

Butter made from cream from the deep setting system is usually of good quality, as the cream is always at a low temperature, which is unfavorable for the development of bad flavors.

The disadvantages are the heavy lifting of the cans, the storing and handling of ice and the heating of the skim milk for the young stock.

The only time water may be advantageously added to milk is when the cows have been a long time in milk and the milk is viscous and rich in solids. Then a small amount of hot water will help. If the milk has a strong food flavor, such as turnips give, a pint of boiling water put in the shallow pan as the milk is strained in helps to some extent to drive off the flavor.

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