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FEBRUARY 18, 1909

LOCATION OF THE MILKSTANDS WHERE shown in the illustration. It should be placed THE MILK WAS AERATED AND COOLED.

Lantern slides were used to illustrate the utensils used at the farm and the position of the The first slide showed Mr. Hyslop's milkstands. The first since showed and in the milkstands. To the right is the corner of the silkstand. To the right power the stand at the barn, the cow stable being nearer the stand at the end of this barn. This stand is 60 feet from the cow-stable door, and the space between is in grass, and fairly free from manure or dust. On the other side of the stand is the orchard and back yard of the house. The barnyard is on the opposite side of the stable. All the manure was hauled out early in the season. Fault may be found with the location of this stand. It is probably a little too close to the stable, and the buildings and orchard prevent getting the full benefit of the wind from all directions, yet it is better situated than hundreds of milkstands through the country. Everything around it was Notwithstanding the apkept clean and tidy. parently favorable location of this stand, 38 per cent. of the curd tests from milk dipped or run over an aerator here were gassy, and not clean in flavor.

The second slide showed the milkstand at Mr. Condie's. It is at the end of the woodshed, in the corner of which is stored the ice. A roadway runs between it and the house; the horse stable is about 40 feet distant, directly in front of the stand, and the barnyard and cow stable on the other side of this about 136 feet from the stand. A hogpen is situated 88 feet from the stand, a short distance from the other end of the woodshed. This stand may be considered in a good location, as there is good circulation of air and not much dust surrounding it, yet 61 per cent. of the curd tests from milk dipped or run over aerators here were gassy, and not clean in flavor

The third slide showed a splendid gas-producing situation, the wagon standing in the barnyard, not far from the hogpen door. Milk exposed to the air, or left open all night here, never failed to give gassy and floating curds in the curd test, as well as gassy flavors and gas holes in the curds.

The fourth slide showed the method of cooling the milk, without aeration, at the Hyslop The tub is part of a gasoline barrel which farm. cost \$1.25, and made a tub for each farm. The custom was to fill this tub with water from the well before milking commenced, and set the milk can in it, and as the cows were milked the milk was strained into the can. The investigators found that 180 to 200 pounds of water was all that was necessary to cool one-half of the milk This milk was not stirred or from 18 cows. dipped. The only agitation it received was to stir it with the thermometer to get the temperature, and, as soon as milking was finished, the cover was put on the can and left sitting in the water all night. The water used came from the well at 46 degrees temperature. The average temperature of the water in the tub when we left it (about five minutes after the milking was finished) was 59.6 degrees, and the milk at the same The average temperature time was 77.3 degrees. at the factory the following morning was 66.5 degrees, and only 6.6 per cent. of the curd tests irom milk so treated on this stand were slightly

gassy and not quite clean in flavor. The fifth slide showed where the milk was setting the milk can in a tub of water cooled by

THE FARMER'S ADVOCATE.

between the pump or water supply and the watering trough, and all the water used for watering the stock would pass through this tank, and The important cool the milk while doing so. point to observe in connection with such a tank is the overflow must be at or near the top of the tank, so that the water, which is warmed by the milk, may overflow into the watering trough. The warmer water is always at the top in a tank. Such an arrangement will practically guarantee sweet, clean-flavored milk, with a little or no time spent on it, which is quite a consideration



Bad Effect of Dipping Milk.

These two curds are from the same milk, divided into cans A and B. The curd on the left is from milk in can A, which was set in a tub of water, the milk receiving no aeration. The one on the right is from milk in can B, also set in a tub of water and cooled exactly the same as A, and dipped for about 15 minutes. Note gas holes in this curd and the flavor was not quite so nice as in the other.



Milk Divided into Cans A and B.

A-Milk cooled in a tub of water. No aeration. B-Milk put into rusty cans. No cooling.



Cooling versus Aeration.

The following table shows the defects in the curds and cheese in the different groups of experiments :

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It will be readily seen from the above figures that by far the best results were obtained from milk cooled by setting the milk cans in water and putting the covers on the cans immediately after milking was finished. This particular method of treating the milk was carried on during the very hottest weather in July and August last, and the milk arrived at the factory in practically the same condition every morning, sweet and clean in flavor. If all milk for cheesemaking was handled in this manner, and the milk cans and pails kept perfectly clean, I believe we would practically do away with all gassy curds. The cheesemakers would have shorter hours, they would make more cheese per hundred pounds of milk, and have very few, if any, bad-flavored cheese.

Prevention of Milk Fever.

As the season is approaching when the majority of cows will freshen, a word of precaution for the prevention of so-called milk fever may be sea-sonable and serviceable. In the first place, it may be said that the common name of the ailment is a misnomer, as there is practically no fever accompanying it. It is a partial paralysis, and is properly named parturient apoplexy, or parturient paresis, and is generally the result of milking the udder empty too soon after calving. It has been noticed that, in the case of cows calving on the range, where the calf does the milking from the first, and takes but a little at a time for the first few days, milk fever is unknown. The same is true, as a rule, in the case of the beel breeds, where the cows are allowed to nurse the calves. The content of the udder at calving is colos-trum, a very different substance from normal milk, a substance which is intended by nature for a specific purpose-the moving of the bowels of the calf-and this, if suddenly removed, causes a collapse of the tissues and glands, causing a paralysis of the system. In proof of the correctness of this theory, it is only necessary to recall that, in numerous cases, where the cows had been down, and unconscious for hours, and even days, the simple filling of the udder with air has restored them to health, without the help of any medicine. And in ordinary cases a complete cure has been effected within two or three hours. Prevention is, of course, better than cure, and if the calf is taken from the cow, to be raised by hand, the udder should be only partially milked out for the first three days. It is better for the calf that it be allowed to suck for that time, but not necessary if the dam's new milk be given it in small quantity, and warm. There is very little danger of the udder being spoiled by nature's provision for the occasion, the colostrum con-It will be noticed that, when in such tained. case the udder is very large and caked, it is cold, and gives no symptoms of fever, and, by oiling and rubbing it, the caked condition usually gives way in the course of a week or two. Furthermore, it is seldom, if ever, that milk fever occurs in the case of a caked udder. It rarely occurs in the case of a heifer with her first calf, and seldom in a cow younger than four years. The proper course, therefore, is to prevent the trouble. by partial milking for three or four days. And if this precaution has been neglected, and the allment occurs, a bicycle pump, or a rubber-bulb syringe with a teat tube, disinfected by immersion

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ed equally large, but losses in ry to do is we hope at Mr. Condie's. This platform is in the corner of the barnyard ; a corner of the horse stable is seen to the right. The cow stable is directly in front of this, though about 96 feet distant. All around this trough is bare ground, where the cows often stood both before and after milking, and in dry weather it was very dusty. The manure pile from the horse stable is about 52 feet from this platform.

The pump is situated behind the horse stable, 93 feet from the trough, and the water piped underground to the trough. A gas pipe was put into the upright pump-log to carry the water to the tub at the end of trough, and a spout put from the tub into the trough. All the water pumped for the stock had to pass through this tub, flowing out at the top into the trough. By this arrangement, not five minutes were required to take care of the milk, for, when enough water was pumped to water the cows, the milk was cooled enough to leave as soon as the milking was finished. This milk was not aerated in any way. The cover was put on the can as soon as milking The temperature of the milk and was finished. water was practically the same as at the other farm, and the curd tests from this milk showed the same results, also; only 6.6 per cent. were slightly gassy and not quite clean in flavor.

The curd tests from the milk aerated by dipping or running over an aerator at this platform gave 71 per cent. gassy and not clean in flavor, some of them floaters.

We did not go to very much expense in arranging to cool the milk as I have stated, but the results were so satisfactory that I would strongly recommend patrons of cheese factories who have a good water supply to construct such a tank as

B-Milk run over an aerator; temperature when milk ing was finished, 864 degrees.

A-Milk cooled to 861 degrees as soon as possible after milking was finished, without aeration. Covers put on both cans at the same time, about 15 minutes after milking was finished.



Tank for Cooling Milk in Cans.

during the busy summer months on the farm. When ice is used, the water in the tank should not be changed, as it would only waste ice.

A number of illustrations were given showing the condition of the curd tests and curds, from milk aerated, and aerated and cooled, compared with curds from the same milk cooled without acration. They all showed that the milk exposed to the air gave curds full of gassy openings, while those from the milk cooled with as little exposure to the air as possible were free from gas.