

GRAVITY CREAMING.

FRED L. KENT.

We are often asked how much loss there is in setting milk in cans or pans as is customary with farmers in general who have but few cows or are at a considerable distance from a creamery. Many experiments of this sort have been made and we will only add our testimony to what has already been written. The table below is the average result of four separate trials, made with the best of farm conditions, viz.: Ice water in which to set the milk, a place where the milk would be undisturbed, and setting of the milk soon after being drawn from the cow.

The trials were made October 17 to 20 with a portion of the mixed milk from the cows on the college farm, most of them being well along in the period of lactation. Two cans were set each time, both containing the same quantity of milk. One of these cans was skimmed in about fifteen hours, the other allowed to stand about twenty-four hours. Cooley creamery cans were used and the skim-milk and cream separated by drawing off the skim-milk from the bottom of the cans with the siphons made for that purpose. One inch of skim-milk was left with the cream in each case:

	SET 15 HRS.	SET 24 HRS.
Temperature of milk when set—degrees.....	87	87
Temperature of water—degrees.....	40	40
Per cent of fat in whole milk	3.25	3.25
Per cent of fat in first inch skim-milk drawn...	.45	.31
Per cent of fat in third inch below cream64	.60
Per cent of fat in second inch below cream.76	.71
Per cent of fat in whole skim57	.52

These results indicate that there is very little gain from setting milk more than twelve to fifteen hours when ice is used.

Had the milk been set before cooling to 87 degrees it is probable that the loss of fat in the skim-milk would have been less. As it was, the loss in these cases will seem to be about one-sixth of the original amount of fat in the milk.

By the table it will be seen that a considerable less quantity of fat is found in the skim-milk from the bottom of the can

than from that near the cream. Hence the practice of many dairymen of skimming off the cream only is wasteful. The first inch below the cream line in these trials was taken with the cream, and hence was not tested, but other tests have shown that this first inch contains from two to four per cent of fat. Therefore when the skimming is done so as to take as little milk as possible there is a considerable loss which might be avoided by taking more of the milk. I would advise taking not less than one inch of milk with the cream, and if the whole milk is quite rich when set so that there will be considerable cream to remove, it would be well to take one and a half to two inches of the skim-milk in the skimming.

As already stated these trials were made under the best possible farm conditions, except that the temperature fell somewhat before the milk was set. This and the fact that the cows were well along in the period of lactation may account for the loss in the skim-milk being greater than has been found at some other stations.

In proportion to the absence of favorable conditions will both increase in the loss of fat. Milk set in running water at a temperature of 60 degrees will show a loss in the skim-milk of about twice that given in the table, while in cases where the milk is allowed to stand in the same water all day or perhaps longer, the loss may be three and some times four times as much as under the most favorable conditions. I have tested samples of skim milk from farms where only a few cows were kept which showed over two per cent of fat, a loss of fully one-half the fat originally present in the milk.

REMARKS.—From the above it will be seen that the loss of fat in creaming by gravity is very heavy if many cans are kept. It should also be remembered that the above conditions are much more favorable for thorough creaming than those on the average farm. With the “Baby” separator which we use in the dairy building we can save all but the slightest trace of fat in the skim-milk. There is no question but that where many cows are milked, money spent for one of these small separators is well invested. After having been at the expense of producing fat the dairy farmer should strive to save the greatest possible amount of it. Butter fat is too costly to feed to calves and pigs; good results can be secured by the substitution of cheaper fats.

HENRY C. WALLACE.