

will be imperfect. Even the vibration of the floors of some of the factories I have worked in is detrimental to the best solidification of the milk. During the period of coagulation everything should be still.

The rennet extract should always be diluted with water to the extent of, say, one gallon to every 2oz., or largely enough to allow of the even distribution of the rennet globules through the whole mass of milk. In using a rennet extract of great strength, it is hard to get it properly mingled with the whole mass before it starts to act on the caseine of the milk. I claim that by diluting the extract it insures more reliable and exact work; and this in itself is no small matter, for much depends upon the condition of the curd at this stage. Now, as to the quantity of rennet to be used, much depends upon the condition of the milk, arising from a difference in soil, food, and water, and time after calving.

Newly-calved cow's milk is very difficult of perfect coagulation; so also milk from very succulent feed, such as in the early part of the spring. This is due to the want of tenacity in the solids of the milk at that time. For this reason the addition of more rennet is necessary in the early part of the season, say during September and part of October, than later. A higher degree of acidity is also necessary in the milk, to effect a proper structure in the curd during the early part of the season, but great care must be used in doing this, as milk sours very rapidly during the early period of lactation of the cow.

In the early part of the season, use enough rennet to induce coagulation in eight to ten minutes, and to have the curd fit for cutting in twenty to twenty-five minutes, with your milk at a temperature of 84° to 88°. This will produce a curd with a firmer body and better structure, and save a considerable loss in the whey, thereby producing more curd from a given quantity of milk.

Later in the season add enough rennet to produce coagulation in, say, from thirty to forty minutes, with the milk at a temperature of from 86° to 88°; and in the fall, say in April and May and later, add enough rennet to produce coagulation in from thirty-five to forty-five minutes, with the milk at a temperature of from 88° to 90°. These quantities and temperatures will produce the most curd of the best quality. Now before leaving this point, regarding the use of rennet, I wish to state that I do not think that rennet has much if any effect on the curing of cheese. I believe a large quantity may have a tendency to cause the curd to retain more moisture, and on that account to produce rapid curing. I believe some milks, as already indicated, require a larger quantity of rennet to make coagulation perfect than other milk, and that if too much is added it may tend to cause the curd to hold more moisture, and so lead to the faster decomposition of the cheese, unless means are taken to expel and counteract such surplus moisture.

Add only enough rennet, according to the season and other circumstances, to cause the perfect coagulation of the caseine. Any more is waste. I have heard it remarked that if rennet has no influence on the curing of the cheese, then the coagulation of the milk by any acid will fulfil the purpose. We well know that it will not. The milk must be coagulated with some natural substance, and so far nothing has proved effective but rennet. If care is taken in the treatment of the milk and curd no appreciable difference will be seen in the yield and quality of cheese made by the addition of an overdose of rennet. In fact, the use of a larger quantity of rennet in over-ripe milk is beneficial, as there will be a great difference in the time of coagulation, and this will allow of getting more ahead of the action of the lactic acid, and a better cheese invariably will result.

After coagulation is complete the cutting of the curd commences. The usual test for determining when the curd is ready to cut is when it will split clean over the finger, which is a very good indication, but cannot be strictly adhered to. Another way is to note the time taken to influence coagulation, and then, in time and half the time taken to induce coagulation the curd will be ready to cut. To illustrate: If coagulation commences in twenty minutes, then in twenty minutes and ten minutes more coagulation should be complete, and the curd fit for the knife. If in sixteen minutes coagulation commences, then in sixteen minutes and eight minutes more it should be ready to cut. When followed, with a little common sense this is a very good rule, but does not hold good in all cases.

In the early part of the season, and for over-ripe milk, the curd should be cut rather earlier, but very slowly and carefully, in order to prevent loss in the whey. By cutting early a quicker and more thorough separation of the whey from the cubes of curd is effected, which is highly desirable at the beginning of the season and in the case of over-ripe milk.

Always cut with a horizontal knife first, and by so doing you will prevent waste. If the perpendicular knife is used first, when the curd is so tender, more of the fat globules of the milk will rise to the surface, because they meet with less resistance in rising. By using the horizontal knife first the whey lies longer between the layers of the curd, and does not allow of the same freedom for the fat globules to ooze out of the pieces until on the surface of the curd a skin is formed which will prevent an undue waste of fat. I believe that by this simple act a saving of a few pounds of curd could be effected in a common vatful of milk. If the milk is rich, which it always is at the fall of the season, or if the curd or cured cheese inclines to be moist, or in the case of over-ripe milk, cut the curd a little finer. The force of this is evident, for the finer the cubes of curd the more quickly will the whey expel, and the more likely you will be to get rid of the surplus moisture.

After cutting with the horizontal knife, it is a good plan to allow the curd to settle until the whey rises over the whole surface. This will allow of the cubes of the curd having become sealed on the surface by the formation of a thin skin, and thus waste is prevented. Now cut with the perpendicular knife to desired size, and, immediately after cutting is finished, stir the mass carefully for a few minutes, and then gradually raise the heat until 98° Fahr. is reached. The heating process should occupy about forty to forty-five minutes. This will allow of the cubes of curd being gently heated over, and so allow for the free expulsion of the whey by contraction.

Now makers are all the time wondering at what exact state the whey should be drawn. It is more important to know how and when to have the whey out of the interior of the pieces of curd. Then, if that is effectual, the dipping of the curd is not of so much importance as the majority of us