

and one upon which it is highly important the greatest amount of light should be thrown. This is my only apology for treating so fully on this point. The safest and best plan for ripening the milk before the addition of rennet, if the desired condition is not already reached, is to heat the milk a little higher than the setting temperature and leave it to stand—stirring occasionally to keep down the cream—until the desired stage of maturity is reached. The exact stage of maturity depends upon a combination of circumstances, some of which have been already indicated—notably, arising from the nature of the soil, feed, water, and period of lactation of the cow—so that the cheesemaker must use his own good sense and judgment. Again, if the milk exhibits any trace of taint, or what is known by most makers as “gassy milk,” I advise the development of a higher stage of maturity, as the presence of “taint” or “gas” is always opposed to the formation of “lactic acid.” I believe this is the best if not the only effectual means of treating what is known as “gassy milk.”

The more progressive and careful makers have for some years used what is known as the “rennet test” for determining the state of maturity of the milk before renneting. This is the best and surest test for acidity, at least for our purpose, I know of. A good deal can be done in judging the condition of the milk by smell and appearance, by any good maker familiar with the milk of his district. In factories, if the night's milk is “off” a little, it can easily be detected by the maker through commencing to display an old smell—*i.e.*, when the sweet smell of new milk exhibits a desire to disappear. When such is the case it is a sure indication of over-maturity. If the milk is kept by the suppliers over-night it is a good plan on arrival of milk at the factory, and before taking the lid off the carrying can, to surge the lid up and down, and thus force the odours eliminating from the milk up to the nostrils. If the makers are gifted with a keen sense of smell, they will by such means be able to detect any milk that is sour or tainted, and by such gain a good indication of the state of the raw material upon which they are called to exercise their skill, so that they may regulate their day's work accordingly. I have seen some makers resorting to the use of litmus paper as a test for maturity. The application of litmus paper may be used as a guide, but is not by any means a reliable or satisfactory test, and is very liable to lead astray.

The rennet test will supply any maker of ordinary intellect with an unerring indication as to the exact condition of his milk. This test is based upon the well-known fact that ripe milk will coagulate with less rennet in a given time than sweet milk. All that requires to be done is to use a tea-cup or other small vessel, and take from your milk-vat a given quantity of milk, say 6oz. Now introduce to this 6oz. of milk a given quantity of rennet, of which you know the strength, say for handiness a teaspoonful, or a fluid drachm, and note the time employed in coagulation. If solidification begins in, say, 15sec. or 20sec., add your rennet immediately, as it is a sure sign of a forward maturity; if in, say, 25sec. or 30sec., then it is obvious that the process of maturing (ripening) is not sufficiently advanced, and ought to be carried forward yet for some time by allowing the milk to stand at a temperature of, say, 90° or 92°, and thus bring about the desired condition naturally, and without the baleful practice of using sour whey as a whip to arouse dilatory Nature.

In the autumn, or late in the fall, when the nights are cold, and the milk arriving very sweet, I advise the use of a little old milk as being much preferable to whey.

The temperature at which the rennet is added is of no great moment, so far as I am aware. But for the saving of time, and convenience, I advocate setting at a temperature of 84° to 88° Fahr. I made several experiments during the year to determine the best setting temperature, and so far the conclusions lead me to believe that there exists no influence in the setting temperatures between 80° and 90° that will materially change the value of the cured cheese. In fact, for milk showing indications of much acid, I prefer a setting temperature of from 90° to 92°, as it allows me to keep the acid more under control by hurrying on the process of coagulation and heating of the curd. Setting at the lower temperatures of 80° to 82° seems to me a waste of time, for its only tendency is to retard the action of the rennet and formation of acidity, which is not desirable or beneficial when the milk is in proper form. My experience leads me to believe that in setting at a low temperature it inclines to produce a too soft curd, which requires extra careful handling in order to obviate a great waste in the whey. In setting over 90° you incline to produce a whitish whey, so that I prefer a setting temperature of from 84° to 88°.

By setting at 88° we save time thereby, for experience has shown us that in the manufacture of Cheddar cheese a temperature of 98° must be reached in order to produce sufficient contractility in the curd to expel the whey without undue bruising and waste. If we set at 80° we have a range of scalding temperature of 18°. If we set at 88° then we have only 10° to raise the temperature. Now, in setting at the lower temperature the curd is softer, and requires to be heated more slowly and carefully than at the higher temperature of 88°. Then, again, it must necessarily take longer to raise the temperature through 18° than 8°; and I believe, if anything, by setting at the lower temperature more waste will result. So far as my experience goes, I have not been able to detect any appreciable difference in the quality of the cheese made from the same milk but set at different temperatures. Therefore, I advocate setting at 84° to 88°, as being likely to produce the largest quantity of the finest goods.

Having been successful in attaining the proper degree of acidity and temperature of the milk, the next step is to add the rennet—presuming the colouring, if any, has been already added—which should just be sufficient to produce a nice straw colour. It is superfluous to say, seeing that rennet fulfils a somewhat important mission in the fabrication of all cheese, it is of the greatest importance that nothing but the best rennet should be used. By the use of rennet the cheesemaker reduces the bulk of his milk by fixing the caseine and fat into a consolidated body, and getting rid of the water and some of the other ingredients which go into the whey tank.

Now, as already stated, all makers will find that coagulation will be more perfect if the milk has been well aerated immediately after milking and straining. The contents of the vat should by no means be disturbed after the addition and thorough distribution of the rennet, or coagulation