

The quantity of starter used varies according to the ripeness of the milk, the time allowed for the cream to ripen and the temperature at which it is ripened. Less starter is required in summer than in winter.

As soon as the cream commences to thicken (which should be in about four hours after the starter is added) be ready to cool quickly to at least 55° temperature before leaving it at night. The sweet flavor of the butter may be injured by over-ripening, if the cream is allowed to stand at higher temperature over night. At high temperatures the cream can be well ripened and properly cooled in time for churning any hour the next morning. While equally good and sometimes better results in flavor can be had by ripening at lower temperatures than those here recommended, the high ripening temperatures are possibly best adapted for creamery work.

If the cream is to be held for two days before it is churned, use five to eight lbs. of starter for each 1,000 lbs. of milk; to ripen the cream cool quickly to about 52° and hold at this temperature until churned. The cream in this case should coagulate in about 24 hours after it is separated.

When the cream is cooled quickly to 60° to ripen, use more starter than when ripening at higher temperatures.

Sufficient lactic acid should develop in the cream to cause it to coagulate in at least six to eight hours before it is churned. Always stir the cream frequently while ripening it, to ripen it more uniformly and improve the flavor.

Properly ripened cream will have a smooth, glossy, mirror-like surface. It will pour like thick molasses, and have a sharp but pleasant acid taste and smell, and will show about .65 per cent. of lactic acid by the alkaline test.

Starters.

A good starter will show its strength by causing rapid and uniform coagulation of the cream from day to day. It is important that the starter have a good flavor. If it go wrong from some cause, a fresh culture may be had from the buttermilk of a lot of cream that has ripened by natural souring and produced good flavored butter. It may be had from a neighboring creamery or private dairy; from fresh milk or skim-milk that has been allowed to sour; or from some of the commercial cultures. Sometimes it is difficult to get the right flavor in the starter, even when the commercial cultures are used.

Butter-makers can co-operate with mutual advantage by passing from one creamery to another a small quantity of a choice starter that may be found in some one creamery as a culture, to make fresh starters in the others.

Churning.

In a warm room, prepare the churn with cold water only. If the churn is not in daily use rinse it with hot water, and then cool it with plenty of cold water. In a cold room, or if the cream is a little too cold, scald the churn and do not cool it. If there is more than one churning all that is necessary to prepare the churn for the next lot of cream is to rinse down the inside of the churn with cold water to remove any butter that may be sticking to the sides.

Strive to have the cream at the proper churning temperature at least two hours before it is churned in order to secure a firmer body and better texture in the butter. Churn at 52° to 54° in the fall and winter months, and at 48° to 52-

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