

The causes of improper separating are numerous; among the most prominent are low speed, scarcity of oil, gritty oil, dirty separators. The machines, whether steam turbines, belt power, or hand power, should be placed on a solid basement to prevent their being shaken & put out of gear. They create enough vibration by their high speed to do this if not firmly fixed. Enough oil must be kept in the lubricators to keep the bearings from heating. On the Alpha Laval separator, there are 4 lubricators.—1 in front to feed the top-bearing of the bowl spindle—1 to feed the base of the spindle, & 2 to feed the gear when the steam is driving the machine.

The effects of careless separating. The cream will not be properly separated if the separator is not run at a high enough speed.

The care of milk: (From milking to separating) The evening's milk should be kept cool over night. If possible, the morning's and night's milk should not be mixed till the time the milk is tempered, just before separating takes place. Milk should be kept in a place entirely free from all odours.

The man at the receiving platform of the creamery must be on the 'qui vive' for milk that is off flavour in the slightest degree; and should a patron object to having his milk returned, then heat a sample of his milk to 120 F. and ask him to smell it, and if he has a nose worth any thing he will detect the odour. Milk from a distance should be brought to the creamery on spring waggons or else the cream will churn in the cans. The weigh can must be situated so as to cause as little trouble and time as possible after the milk is hauled. When dealing out skim-milk, 80 percent is, as a rule, allowed to patrons.

A sample of milk is taken, every time separating takes place, at the weigh can. The samples are preserved in bottles & tested about once a week in most creameries.

The straining takes place after the milk leaves the weigh can and the milk is strained through a cheese cloth doubled.

The tempering takes place after the milk has left the receiving vat; it is heated to about 90° F, so as to warm all the milk from different patrons to a uniform degree, as it was taken from the cows. Separation is most perfect at this temperature.

The quality of cream to be taken depends on the time of year.

The breed of cattle will influence the quality of the milk and cream. This will change, also, according to feed and to the time of year.

The separators should be washed immediately separating is finished.

Every speck of dirt must be removed from all soiled utensils to prevent odours arising in cream, butter, and creamery.

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### *The Ripening of Cream.*

To perfect the ripening of cream, its temperature must be neither above nor below the given temperature that it is to be set at. The cream must be raised to a certain degree, that is 90° F, it must contain at least .02 per cent lactic acid to cause it to sour. The cream room should be as cool, and even cooler, if possible, than the cream. (1)

The causes of improper ripening are careless cooling or heating of the water surrounding the cream vat, and improper separating. Cream will ripen in a warm room, therefore care must be taken to keep the room cool. To ensure this, have the cream room as far from the boiler room & engine room as possible.

The effects of careless ripening are bad, evil smelling butter. The butter will have no good grain, the flavour will be bad also. In the best butter, about 8 per cent of casein is found. This is the objectionable substance that is in all butter and should be washed out in the butter-milk. Even in the very best butter casein is unavoidably present; but bad butter will have a distinct taste of casein.

(1) Unintelligible. Ed.