

**Methods of Making Butter of Quality**

BY LYNNE P. TOWNSEND.

OUR Pilgrim forefathers were prone to believe that troubles with the churning were caused by witches, but now we know that such troubles are caused, for the most part, by our own mismanagement. It requires some skill and a great amount of care to produce a high-grade butter, the kind that maintains its fine flavor when spread on hot griddle cakes or fresh baking powder biscuits. It is this kind of butter that brings the best returns and pays the highest profit and all extra work and care is more than paid for.

Butter of good quality cannot be made from cream produced or kept under unsanitary conditions. If the natural sweet, rich flavor of the cream is once lost it can never be restored and the finished butter will be lacking in quality. And it is an easy matter to permit deterioration.

Just a little laxity here or there and the damage is done. Pure, rich cream can only be produced by well managed healthy cows. The milkers must be cleanly and the utensils sterilized. The stable must be clean and airy and the milk room cool and sweet.

After the cream is produced it must be carefully handled until ready for the churn. It is just at this point that many butter makers fall down. The proper management of the cream is so important, and apparently so little understood that it is no wonder we have a final product so lacking in uniformity and so often inferior in quality.

**Cooling the Cream.**

As soon as the separating is done the cream should be cooled to a degree equaling that of previous skimmings which have been set aside for churning. Under no circumstances ought the fresh cream be added to the old until it has been cooled to the same temperature.

At 45 degrees there is little if any bacterial development and if the cream can be kept at this point, no trouble will result from the development of harmful bacteria, provided, of course, that it has been properly handled up to this time.

Twenty-four hours before time to churn, the cream should be allowed to gradually warm up to about 65 to 70 degrees at which point the bacteria of ferment will multiply with great rapidity.

It is a good plan to aid the ripening process by using a "starter" on the cream, especially if it has remained sweet while accumulating. The starter employed may be either a small amount of well soured cream, skim milk or buttermilk or a commercial culture in tablet form can be used. When the starter is applied the cream must be thoroughly stirred to insure uniform ripening.

The proper temperature of cream at churning varies with circumstances, 62 degrees being nearly correct under ideal conditions. This being the case, the cream should be cooled to about 60 degrees, prior to being placed in the churn. This allows for a slight rise in temperature, due to handling and the increased warmth caused by the friction of one particle of cream on another and on the sides and paddles of the churn during the operation. Under these conditions well kept cream of a good quality should granulate into butter in from 10 minutes to one-half hour. The amount of cream to be churned at one time should not exceed one-half the cubical contents of the churn.

**Churn Troubles.**

The principal troubles with churning are these—failure of the butter to come,

foaming of the cream, white flecks in the butter, soft white butter and cream wasted in the buttermilk. When the cream has been properly handled otherwise, failure of the butter to come is usually caused by too high or too low a temperature of the cream. The remedy for this condition is the addition of enough cold or warm water as the case may be to bring the churning to the proper temperature.

Cream from some cows seems to take longer to churn than that from others and it is said that cows well toward the end of the lactation period produce a cream, likely to take longer in churning. However this may be, when churning has been carried on well over half an hour without results, something is wrong and steps should be taken to remedy the condition.

Foaming of cream in the churn is likewise caused by too high or too low temperature, or by too slow or too fast a movement of the churning apparatus. Keeping cream too long before churning also has a tendency to produce this result and the explanation is quite simple.

The milk sugar in the product forms into alcohol by decomposition; the alcohol combines with the fat and the result is a soapy condition of the cream which on agitation foams or forms a suds. Stirring a teaspoonful of baking soda or saleratus in the cream 24 hours before churning will prevent this occurrence and this should always be done when there is reason to anticipate such trouble.

**Care Necessary.**

White specks in the butter are caused by keeping the cream in too warm a place and by too rapid ripening, also by not stirring the cream each time a new skimming is added. The steps necessary to prevent this complaint are obvious.

Soft white butter may result from a number of causes, but as far as handling the cream is concerned, this condition will result only from allowing it to freeze. The principal cause of this trouble with butter lies with the cows and their feed. An excessive amount of cottonseed meal in the ration will bring about this result. Large amounts of raw potatoes will do likewise. Certain cows have a tendency to produce butter of this class, and cows late in the lactation period occasionally do the same, although they may not do so ordinarily. Careful handling of the cream and proper attention to the ration will do much to eliminate the production of soft white butter. The appearance of this inferior product can be improved by the judicious application of coloring but there is no way to remedy the greasy consistency, once such butter has been produced.

There is a considerable loss of butterfat in many churnings, little of which is actually realized. Such loss may occur from mixing sweet cream with sour too soon before churning, or from not keeping the entire churning thoroughly and continually stirred until ripe and ready for the churn.

When the cream is turned into the



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churn, if the bottom is watery and has a sweet whey-like smell, that part will foam and form an emulsion during the churning and the fat contained therein will not mix with the butter and thus be lost in the buttermilk. This is purely a case of mismanagement of the cream and the condition need not occur if reasonable care is exercised.

It is a notable fact that consumers are coming more and more to realize that good butter can be had and they are insisting that they receive this brand. It would seem that with the high prices people are willing to pay for a superior product, more real butter and less of the low-grade stuff would be produced.

**Poland-China Prolificacy.**

The Poland-China breed has been unnecessarily accused of a deficiency in prolificacy. Upon inquiry to nearly 100 breeders of this breed, asking for the

average number of pigs farrowed per sow, in their herd, for a term of three years, the average was 9 3/4 pigs per sow. One herd had an average of 9 3/4 for a term of five years, from 40 head. Another had an average of 10 pigs from 25 sows for a term of five years. Others for terms of three and four years, gave averages of 8 1/2 to 10, with high litters of 15 to 18 pigs. This is a good performance, when it is considered that many of the sows making the above averages were just gilts with their first litters. From seven to nine pigs per litter is large enough for any sow, and they are usually strong and robust. If the sow farrows at season when nature will provide some of the warmth, she can be depended upon to rear the entire litter. Breeders can expect a heavy loss in the raising of pigs, as long as they insist on caring for them with the oil stove and lantern.

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