

Dairy Department

By Prof. A. B. Nystrom, Dairy Instructor State College, Pullman, Wash.
(For Any Information Regarding This Department, Write Above.)

Butter Making on the Farm.

There is perhaps no person living on a farm today who does not believe that butter made in the old fashioned way is the best that can be obtained. Such is the case where the proper methods are employed, but a look into a country store where ranch butter is for sale will convince anyone that there certainly is room for improvement in the article that is sold for "first class country butter."

Good butter is a delicacy sought by nearly every person living. What constitutes good butter? An average of a number of analysis of butter gives the following composition: Fat, 85 per cent; water, 12 per cent; salt, two per cent and curd, etc., one per cent. But the fact that these constituents are present in the proportions mentioned does not insure perfect butter. There is something more, something that cannot be detected by chemical analysis. Yet it is something that can be controlled, but in many cases is not controlled, and as a result we have poor butter.

Butter is judged commercially on a scale of points as follows: Flavor, 45; body, (texture), 25; color, 15; salt, 10 and package 5. In most of the eastern critical markets butter is very carefully scored and sold on its merits, and it is only by such means that the standard of quality can be raised.

On the farm where we make only enough for home use the quality is good to fair because the butter is generally consumed before it has a chance to show signs of abnormal fermentation. It is on this account that the methods employed on the farm are not as a rule up to standard and because of this we also find a large supply of very poor ranch butter on the markets in the flush of the season.

Creameries must necessarily make a product that will keep well for a comparatively long period and consequently the most scientific methods must be employed. Now if we could apply these good methods on the farm, we should be able to produce a product that cannot possibly be surpassed by a creamery. Poor butter means that undesirable fermentation has taken place at some stage in the production, and if all possibility of contamination was under the control of one man as it would be on the farm, first class butter would be produced. A creamery must make a good product out of whatever cream is received. A dairyman needs only to be a little careful in producing the milk in order to have the best cream from which to make his butter.

It must be remembered that cream is a perishable product, that germs develop in it as they do in milk although not as fast. The first fermentation that takes place is the

lactic, where the germs act on the sugar in the milk, changing it into lactic acid, and we call it sour. If then the sugar is not there, there would be little chance for the germs to grow, and since the fat is the last substance that is worked on it follows that the richer the cream, or in other words, the higher in fat we have the cream the longer it will keep sweet. That is one reason for not wanting thin cream. Another is that under most conditions it is easier to churn a cream of from 30 to 35 per cent fat, and a better grade of butter can be made.

If perfectly sweet butter is desired it would of course be necessary to churn at least three times a week. However, this is not necessary in order to get good butter, for we find that most of the good butter that is on the market today is made from cream that is stored from four days to nearly a week.

It is in the storing of cream where most of the bad flavors in butter are produced. The undesirable germs may have gained entrance at some other time, but if the proper precautions are taken in storing, the fermentation can be checked, while if no care is taken, absolutely rancid butter is sure to be produced. Cream will absorb odors easily, so it is imperative that it is not stored with vegetables or victuals that are odorous. A clean, cool place should be used for storing cream.

The abnormal fermentations that are sometimes attributed to the cow are: Bitter milk, ropy milk and colored milk. These are all caused by germs that gain entrance through various sources, but can be checked by proper methods of cooling and storing.

Butter made from sweet cream is relished by some, but the majority of butter eaters want a quick flavor that is brought out by the ripening process. Sour cream is easier to churn, and there is less loss of fat than from sweet cream. To prepare cream for churning, a few suggestions may be given as follows: Mix all the cream into one vessel the day before you wish to churn, and let it stand at a temperature of from 65 to 70 degrees F. for from four to eight hours. The sweeter the cream and the lower the temperature the longer it will need to stand before cooling. This is what is called the ripening process and while we can get, as has been stated, good butter from sweet cream, it lacks the aroma characteristic of sour cream butter and for that reason practically all the commercial butter is made from sour cream.

The ripening, or souring, is done by little bacteria which live on the sugar in the milk or cream and break it down into lactic acid. The more

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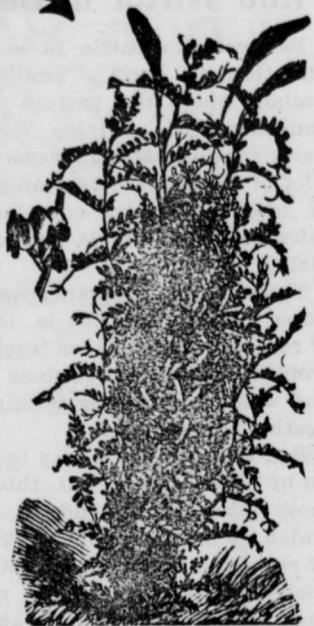
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germs that are present and the more favorable the temperature the quicker the cream will sour.

All germs good or bad grow well at the blood heat (98 degrees F.), a very few germs grow well at 50 degrees F., and at 65 and 70 degrees F. the lactic acid (souring) germ grows very well while the undesirable ones do not grow so well. Then by having the cream at the latter temperature, it gives the desirable germ a chance to gain control and crowd the others out. Very frequently we find that in winter time milk will turn bitter before it will sour. The reason for that is, that the germ which causes bitter milk will grow well at low temperatures while the souring germ will not grow at all. If that same milk had been heated to 70 degrees F. soon after it was milked, it probably would have had a clean acid flavor.

In the ripening of cream it is necessary to keep the souring germ to get control if we are to expect the best butter. We can generally do this by allowing the cream to stand at the temperature which is desirable to the growth of these germs (65 to 70 degrees F.), but even then, if a large supply of bad germs are present it may not suffice to insure good flavor. The next resort is to use a starter. What is a starter?

A starter is simply a mass of the desirable souring germs in active form, growing generally in some milk medium and may be made as is shown below. The natural starters are the ones mostly used on the farm. They are made by selecting some pure milk produced under sanitary conditions and divided into a number of sterile jars. These are set away at a temperature of 70 degrees F. so as to encourage the growth of the lactic acid germ and until the milk thickens. As soon as the milk thickens it is ready for use, for at that time the germs are the most active, and then also is the flavor the best. The jars are all examined and the best one is used as a mother starter. When a quantity is needed for putting in the cream a small amount of mother starter is used to inoculate a large canful of scalded and cooled skim milk, and this is added to the cream before

the ripening process begins. Various mediums, such as buttermilk, whey, whole milk and skim milk are used as starters, but the last named is much to be preferred because the absence of fat seems to aid in the rapid development of the lactic acid germ.

The amount of starter to be added to the cream will depend upon the temperature of the starter and cream, and upon the length of time the ripening is to continue. Usually about 20 per cent is what is used.

If a pure culture can be obtained, the directions found on the package are to be followed in making the good butter into a poor package and lose trade.

The best policy to follow in marketing butter is to sell nothing that is not first class. Then the label will soon be recognized as standing for

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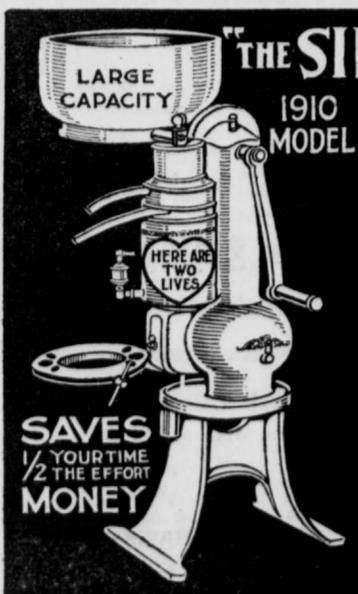
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