

THE DAIRY

Better Butter is Wanted.

While the late season has been responsible for many drawbacks in production, it has had a contrary effect in milk and butter production throughout the country generally. The Elgin Dairy Report, after careful canvass of the situation, arrives at the conclusion that production and shipments will aggregate fully 10 per cent in excess of last year. The same authority speaking of the quality of product, voices a complaint which will be recognized and appreciated by the country at large. Continually and persistently we hear the same old story from the dealers and receivers of creamery butter, that the proportion of fancy to the amount received is not what they would like—is not as great as it ought to be; that it would be much easier for them to dispose of a thousand tubs of fancy, at full prices, than of under grades at lower prices. It would seem that, with all the information scattered about by the dairy schools, experiment stations and other means of information, the creamery men and buttermakers should have at hand knowledge that would help them, or in fact compel them to make more good goods. It is a well known economic fact that the surplus of any product determines the value of the whole output. So it is, the surplus of poor butter determines the value of the goods, and holds the price down to a lower level than it would be were it not for the surplus of this medium and lower grade product.

Feeding Separator Milk to Calves.

Professor T. L. Haecker, of the Minnesota agricultural college, out of the abundance of his experience, presents the following directions for the growing of good calves on separator milk. "I have made calf-rearing my business for over twenty years, and during the last fifteen years have placed my chief reliance on skim milk. For growing calves, I consider the separator milk at least equal to my whole milk, though calves will not lay on as much fat as they will when whole milk is fed, but they will make as much growth and be as thrifty on skim milk. There is nothing in butter fat that a calf can use in building body tissue. Butter fat can be converted into body heat and body fat, and nutriment for this purpose can be supplied more cheaply with flax meal, which contains 30 to 35 per cent more oil. My system of feeding is very uniform. When the calf is dropped, I let it suck once, and then remove it from the dam. If it is removed in the morning I give it no feed until the following morning. This is done so the calf will be hungry, and will drink the milk without the finger. I give from three to four pints of its mother's milk twice a day, immediately after milking the dam. A small calf gets three pints, and a large calf four pints. This I continue for about one week. Then for one week I give it whole milk half and skim milk half twice a day, giving it only from three to four pints. The third week I feed all separator skim milk, but put in the milk a teaspoon of ground flax. I gradually increase the skim milk and flax meal so that by the end of the fourth week it is receiving a heaping tablespoonful of flax meal and ten pints of skim milk twice a day. After the first month it has access to a little early cut hay, and a little whole oats and bran and shorts. The important points are strict regularity in time of feeding, quantity and temperature of milk.

"It has been the general opinion among farmers, that separator skim milk was not a strong or nutritious feed, and that a large mess must be given to make up in quantity what they supposed it lacked in quality, and the result was the calves were overfed

and indigestion was produced, which was followed by scours and bloat.

"If directions are strictly followed the calf will always act more hungry after taking its meal than before, but it is better thus than to give it a larger mess and then have a case of scours or bloat on your hands. The milk should be measured every time with a clean tin cup, or weighed with a balance scale. Each calf should be fed by itself out of a clean tin pail, which should be washed and scalded after each feeding, just as thoroughly and carefully as one does the milk pails. Place the calves in small stanchions while they are being fed, so they will not get into the habit of sucking each other. Have the little manger in front of them wide enough so an ordinary tin pail containing the mess of milk sets into it. Have partitions placed in the manger, and when it has taken the milk, take out the pail, and if the calf is old enough to eat oats or bran, throw in about a tablespoonful and it will get into the habit of chewing the oats as soon as it has taken the milk, for about that time it wants to do something, and if it is not confined in a stanchion or tied out of reach of another calf it will amuse itself by sucking its neighbor's ears. The bottom of the manger should be dressed board about ten inches wide, and should be so adjusted that it can be taken out once a week and scrubbed with hot water and soap, for the manger must be kept absolutely sweet and clean."

Pasteurized Butter from Whole Milk.

The pasteurizing of cream for butter making is not generally practised, but it is gaining in favor and the prediction is made that in ten years from now it will be a regular adjunct in the art of butter making. The tendency is toward a general increase of the system and the subject is an important one. There is not much data to be had on the subject. One fact that stands out paramount is the necessity of bacteriological cleanliness in creameries where pasteurization is practised. It is hardly necessary to remind our readers of the principle of pasteurization further than that its object is to free the milk and cream from all accidental germ infection and to place the control of its bacterial content as far as possible in the hands of the buttermaker; manifestly, therefore the success of the system depends upon the ability to prevent interference with such control through further accidental infection in the creamery; and this depends upon the utmost cleanliness of surroundings—not only as to the grosser forms of "dirt," but as to the air itself, the water used in washing and every other thing that comes in contact with the butter.

Making butter from pasteurized cream raises buttermaking from an art to a science if it is done properly, and makes the buttermaker deal intelligently with organisms the properties and functions of which were scarcely suspected thirty-five years ago. It adds an interest to the occupation which is very attractive to educated and cultured men, and raises the standing, as it should make the requirement of capacity and the remuneration of the buttermaker's occupation. The details as practised by makers actually following the system are valuable when published and given out to the great mass of progressive buttermakers who read dairy literature. This is being done by the New York Produce Review, and we take the liberty of republishing three articles found in a recent issue of that publication. Those who practise pasteurization were asked to describe in detail how they made pasteurized cream butter in a whole milk creamery. One Iowa buttermaker said:

"We have no pasteurizer where I am working at present, but will answer and give method of work when I have a machine. As I have not used an intermittent (Potts) machine for

about four years, I will describe work with continuous pasteurizer. I would pasteurize cream and skim milk rather than whole milk, the reason being better results with less injury to separators may be obtained. The cream is run directly to pasteurizer and pasteurized as fast as separated. Where pasteurizer is of too large capacity to do this, the cream is held until enough is collected to enable us to keep pasteurizer going until separators are through work. The pasteurizing temperature varies in proportion to fat per cent of cream and style of machine used. Some machines will run higher without producing mealy butter. I vary temperature from 160 to 180 degs. F., cool to ripening temperature about 68 degs. F., add 15 to 20 per cent of starter (controlling ferment) ripened to 32 c. c. Manns' acidimeter or .57 per cent Farrington's. The amount of controlling ferment depends on the kind of bacterial culture used, and time allowed for ripening. The time allowed for cooling depends upon facilities for cooling and holding cream after ripened. When sufficient acid has developed so that cream will contain .58 per cent acid at time of churning, cream is cooled to 48 degs. F., and allowed to warm up to 50 degs. by churning time. The cream should stand for some time at this low temperature—not less than 2 to 3 hours. Different locations may necessitate a change in churning temperature, but the difference will not be so great as with unpasteurized cream. The churn and room temperature must be such that the temperature of the cream will not be raised above 52 degs. F. I would have buttermilk to come from churn at 52 degs. F. Churn butter to fair sized ragged edged granules. The butter is washed once in water pumped direct from deep well (where pasteurized water is not obtainable) and tempered to 56 to 58 degs. by using steam. Churn is given 3 or 4 revolutions and water is run off, salt is added before butter is drained. The salt is mixed by revolving churn before rollers are put in gear, the rollers are put in gear and churn is given two revolutions. The churn is then let stand 10 to 20 minutes, if time permits, and the working finished."

A New York buttermaker said: "My experience in making pasteurized cream butter has all been gained in Denmark, and as I have not made any in this country, I can only describe



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the method I used there. The milk is examined very carefully, and any tainted and off-flavored milk rejected. The factory and all apparatus is kept very clean. The milk is heated in the tempering vat to 85 degs., and the cream is run from the separators into the cream elevator, and elevated by same so as to run into a continuous pasteurizer in which the cream is heated to 185 to 190 degs. F., and as the cream leaves the pasteurizer it runs over a cooler and is cooled at

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