

place some of it in a larger portion of good skim milk, pasteurized as in Method No. 2. Remember to have every vessel used in making and keeping these ferments thoroughly steamed, so as to be sterilized.

#### HOW TO USE THE FERMENTS.

As soon as the cream is separated put it in a vessel and place in a pan of hot water. Keep it there for twenty minutes, stirring continually, until it has reached a temperature of 140 to 175 degrees F. Take it out and place immediately in iced or very cold water, cooling it down as fast as possible until the temperature of 50 degrees is reached. During this cooling process a rapid evaporation will take place, and all sorts of malodorous vapors will be sent off into the free air. When cool this cream should be pretty fairly pure, and should be kept at 50 degrees F. for three hours. It is now ready for the churn, which should be perfectly clean, and rinsed out with cold water. Pour the cream into the churn, and it will be ready for the ferment. When pouring in the latter be sure to take off the top of the curd to about an inch in depth, rejecting this part, and using what is beneath. Stir this portion well with a wooden stirrer, and strain through cheese-cloth into the churn. The churning should occupy about fifty minutes, and the rest of the work is carried on as in summer. In factories, the amount of ferment is referred to a certain standard, the amount of acidity in cream and ferment being ascertained by means of the acidimeter. In the farm dairy, however, a little experience will soon teach the proper amount to add to the bulk of cream to be churned.

#### Facts About Dairy Cows.

During the past year, Mr. H. B. Gurler, of DeKalb, Ill., who owns a herd of Jersey cows, has kept a careful record of the cost of producing butter. He found his herd of fifty cows produced on an average of 297.70 pounds of butter. This, at twenty cents per pound, is equal to \$59.54. The average amount of skim milk from each cow was 5,453 pounds, which, valued at twenty-five cents per cwt., is worth \$13.63, making a total of \$73.17. The grain fed was principally gluten meal and some distillery by-products, which was charged to the cows at market prices. The hay fed was charged at \$8.00 per ton, and corn silage at \$1.50 per ton. The feed for each cow (average for the fifty) amounted to \$41.06. The labor of caring for each animal he figures at \$12.50 per year, making a total cost of \$53.56 for keeping each cow. Therefore each animal brought in a net profit of \$19.61. The value of the manure and the calf are not considered in these figures. His four best cows in this herd netted him a profit of \$53.77, while the four poorest ones were kept at a loss of \$5.98 each; the former averaged 447 pounds of butter, while the latter produced only 166 pounds each. The latter incident shows the value of knowing what the cows are doing.

The dairy census has recently been taken through Hoard's Dairyman, in Granger County, by Mr. C. L. Poole, from whose reports we glean a few facts concerning grade Holstein cows. Six herds, averaging about nine cows each, principally grade Holsteins, averaged 5,944 pounds of milk per cow per year. The milk was sold to a cheese factory at an average price of about ninety cents per one hundred pounds, which brought a gross income per cow of \$53.50. The average cost of feed per cow, according to this report, was \$27.96, making a net return, less cost of labor, of \$25.54 per cow. Four other herds of eight cows each, some of which were grade Holsteins, but the majority poor animals of no particular breeding, averaged 3,320 pounds of milk per cow; this milk brought an average of eighty-six cents per one hundred pounds, or a total of \$28.55. The feed cost \$26.19 per animal; hence, each cow, exclusive of the work of caring for her, averaged a net profit of \$2.36 per head. The best herd of the six first mentioned, which was composed of three pure-bred Holsteins and four Holstein grades of excellent dairy type, netted their owner \$36.15 per cow, while the poorest herd in the last four named only netted a profit of forty-eight cents per head. Another herd of seven Holsteins and grade Holsteins of which we know, and which is located in Indiana, averaged 316.7 pounds of butter-fat during the past year, equivalent to 370 pounds of butter; at twenty cents per pound this brought \$74; the cost of the feed was \$30, showing a net profit of \$44 per cow.

The Connecticut College, a few years ago, published some results concerning cost of milk and butter production with a herd of seven grade Guernsey cows. These cows averaged 326 pounds of butter each; at twenty cents per pound this would amount to \$65.20; the cost of feed was rather high (prices being always higher in the east than in the central west), \$40 per cow; deducting the cost of the feed from the gross income, we have a net profit of \$25.20. The best cow in this lot yielded 472 pounds of butter, while the poorest produced only 165 pounds.

Our readers should gather from these figures that there are good and poor individuals in nearly all herds, that success in the dairy business does not depend so much upon what dairy breed one chooses as it does upon the individuality of the animals one selects, and upon the constant care in weeding out the poor cows from the herd. Cows of the dairy type, however, should always be chosen.—[Successful Farming]

#### Air Treatment for Milk Fever.

To the Editor "Farmer's Advocate":

Some time ago you invited those who had experience with milk fever to report the result of remedies used. Having been in the milk delivery business some time, and milking some twenty-five to thirty cows the year round, we naturally had some experience with milk fever. The cows were Jerseys and grades, and we were unfortunate enough to lose a couple of fine cows from milk fever. A few weeks ago a neighbor came to our place to 'phone for the vet. I asked her what was the matter, and she said the cow had calved the day before and was now lying down and moaning, and had been nearly all night. She asked me if I could do anything. I said I would wait for the vet. and go with him. As the vet. did not come in three hours, I went to see the cow, taking an ordinary bicycle pump. On arriving, the cow looked to me past recovery with milk fever. Before I got there they had drenched her, and were steaming her with hot blankets. We at once injected the udder as full of air as possible with the pump, and rubbed the udder and milk veins well. In three hours she was struggling to get up; soon after she was helped to get on her feet, and six hours after she was chewing her cud, quite contented. The method we used was simple and satisfactory, being quickly done with the ordinary pump; one person held the nozzle of the tube on the teat while the other pumped. It would not be necessary to have a tube to put into the teat, only to hold the nozzle directly over opening in the teat.

I would like to have the opinion of the editor of the Veterinary Department about the drenching and heating as was done before or just when I undertook this case. I should not have done it, yet I believe it was beneficial. We injected air every couple of hours and milked some each time that night. The calf was with her.

Nanaimo, B. C.

[Ed. Note.—In the practice of a firm of veterinarians in Ontario over fifty cows were promptly cured by means of the injection of oxygen into the udder, and only one died. No medicine was given in any case by the V. S., and the only cases that were at all troublesome were those in which medicines had been given by the owner previous to calling the doctor. In the experience of others, while the cow responded to the air treatment, the effect of medicine given previously brought on pneumonia, which caused death. In many cases of milk fever the muscles of the throat are paralyzed, the cow having no power to swallow, and the medicine given goes into the bronchial tubes and the lungs, setting up inflammation that is almost sure to prove fatal. Experience has shown that no dosing is needed before or after.]

#### Autumn Care of Dairy Cows.

At this season of the year, when farmers are extremely busy preparing for winter, the dairy cows are apt to be neglected. Frequently they are left to pick a scanty living from bare pastures and the fence-corners of grain fields, exposed to all the inclemencies of the autumn weather. The highly organized dairy cow is very sensitive to sudden and extreme changes in the weather, and nothing could be more detrimental to economical milk production. The flow of milk is often so materially lessened that it cannot be brought back to the normal standard during the winter. Exposure to storms, and lying on the cold, damp ground at night, not only lead to a decreased flow of milk, but they are very apt to cause udder troubles, rheumatism and other diseases, and in some cases even death. It is, therefore, advisable to see that the cows get a sufficient supply of suitable food during this critical period, and that they are protected from storms during the day and comfortably stabled at night. That eminent dairy authority, Prof. Haecker, of the Minnesota Experiment Station, has given considerable attention to this subject, and some of his experiments and conclusions are well worthy of consideration by owners of cows. In the course of an article on the fall care of cows, he says:

"One night, or even a few hours of cold rain, causes an enormous shrinkage of milk. Food, comfort and contentment are the prime factors in successful dairying, and it is not too much to say that comfort is the prime factor. To feed well but disregard the bodily comfort of the cow, is to court and insure disappointment. A cow will fail to elaborate a full mess of milk if she is wet or shivering from cold, no matter how generously she is fed."

Autumn is a more critical period for a cow fresh in milk than winter. Cold rains and raw winds are fruitful causes of decreasing milk. The first makes inactive the muscular system, while the latter so disturbs the nervous system that it fails to perform its work. Cows should, therefore, not be exposed to fall rains, left out during cold nights, or confined in muddy or wet yards at any time.

The proof of this theory was clearly demonstrated by the Minnesota Station herd two years ago. Some changes were being made in the cow-barn which made it inconvenient to stable the cows for a few days, and just then a cold, rainy spell set in, to which the cows were exposed. There was not only a marked shrinkage in milk and butter-fat at once, but they failed to recover during the winter, though the feed was liberal and the care the best that could be given. The cows gave 16.11 pounds of milk and .8 pounds butter-fat a day during the winter. It was known when the

shrinkage took place and why, but the attempt to recover it failed. The next year such an experience was guarded against, and the same herd gave a daily average of 28.4 pounds milk and 1.2 pounds fat.

It may be asked what the cows did with their food, since they were fed liberally during the winter. They made beef or fat with it, for each gained an average of nearly half a pound a day, a gain that did neither the cows nor the owner any good. During the two winters the herd was composed of the same cows, fed the same rations, and received in every way the same careful attention, and yet because of that mishap the herd failed by just fifty per cent. of doing its normal or possible work. Please think of this, and do not lose money by needlessly exposing cows in the autumn.

W. A. CLEMONS.

#### The Dairy Test at St. Louis.

Following are the results of the eleventh ten-day period of the St. Louis cow demonstration, September 24th to October 3rd:

| Breed.     | Cows in test. | Av. yield cow per day. |             | Av. tests.      |              |                 |  |
|------------|---------------|------------------------|-------------|-----------------|--------------|-----------------|--|
|            |               | Milk.                  | Butter-fat. | Solids not fat. | Per ct. fat. | Solids not fat. |  |
| B. Swiss   | 5             | 37.4                   | 1.416       | 3.447           | 3.79         | 9.23            |  |
| H. Fries'n | 15            | 48.7                   | 1.713       | 4.044           | 3.52         | 8.31            |  |
| Jersey     | 25            | 35.6                   | 1.875       | 3.261           | 5.26         | 9.15            |  |
| S. Horn    | 24            | 29.7                   | 1.151       | 2.632           | 3.87         | 8.85            |  |

#### GARDEN AND ORCHARD.

##### The Trees in October.

Often, when going along a "bush" or swamp road at this season of the year one is struck by the exceptional beauty of a certain tree which stands out with a distinctiveness—one had almost said personality—of its own. Perhaps the whole tree, or the half of it, or a single branch, burns in a blaze of crimson, while all about are trees of the same species clad uniformly in the pale yellows and umbers which are so prevalent in the autumn woods. Sometimes, too, the leaves show peculiar individual markings, streaks of crimson and blotches of green appearing on the more conventional yellow background; and occasionally purple tints appear.

The peculiar thing about it is that in many of these trees the same characteristics are exhibited year after year, so that before long one learns to watch out for the "burning bush" on the hill-side or the coppery beauty of the swamp as one would for the familiar face of a friend who makes an appearance once in every year. We have in mind a soft maple which grew in a marshy place beside a public highway, and which exhibited so peculiarly rich a shade of purple during each autumn that it came to be a landmark for the neighborhood. Even in early summer, it was not surprising to hear someone say, "We were just about opposite that purple tree, you know, when such-and-such happened."

Everyone admires the beauty of the autumn foliage, at least everyone who has enough sensibility or fineness of taste to raise his eyes above the rim of a bank account or the steam of a roast turkey at Thanksgiving, and few there are who would not like to see some of these marvelously colored trees clustered about the homes at which the farmers of the land must needs spend the greater part of their days. The question then arises, if it might not be possible, by careful selection and propagation, to increase the number of these queens of the forest, and so make the multiplication of them about lawns and home-steads an easy matter. Of course, the peculiar coloring of a branch or portion of a tree may be due, in many cases, to some local influence, the decrease of the ascending sap, for instance, because of an abrasion of the wood, but reference is made to those trees in which, after careful examination, no such condition, apparently, is found to exist. The experiment would, at least, be interesting, and might be productive of surprising results.

##### A Grafted Tree.

We have an apple tree (St. Lawrence!) on one-third of which are grafted Peach apples, and every year since I can remember it has been that way until this year; it is all St. Lawrence, the tree being loaded, and the apples tasting and looking like St. Lawrences, but some are shaped like Peaches. Tell me the reason how it came to change.

H. W. O.

Ans.—Without being able to see the tree and fruit, I cannot satisfactorily explain the change in the fruit on your tree; but I may say that the fruit on wood grown from scions always come more or less true to type to which the scions belong, or, in other words, the stock does not materially affect the character of the fruit on the scion. If part of your St. Lawrence tree was grafted with the Peach apple, such parts would bear Peach apples, no matter what might be growing on the rest of the tree. Could it be possible that all of the grafted wood has been removed in any way by pruning? In such a case the tree would, of course, bear nothing but St. Lawrence apples.

Ontario Agricultural College.

H. L. HUTT