

FEEDING WORK HORSES AND COLTS

(Prepared for the Farmers' Institute System)

By W. C. EDWARDS, M.P., Rockland Ont.

Some years ago we adopted a method that was in a measure new to us, but it has proved highly satisfactory and profitable, and nothing would induce us to return to the old system. We employ, say forty horses about our mills here in the summer season. In the rear of our stable we have a feed-room where our cut straw for bedding and our cut hay, oats and ground feed are kept; and here we have two mixing-boxes where the rations for the horses are mixed before feeding. The cut hay is put into these boxes and is thoroughly soaked with water twelve hours before it is fed. The ground feed is mixed dry, and before feeding is thoroughly mixed with the wet hay. The ration we started out with was 4 pounds cut hay, 1/2 pound bran, and 5 pounds ground oats and barley to each horse night and morning, and 4 pounds dry oats only at noon. Our horses are generally of large size and are doing excessively hard work, and we found this ration too small for them, and we gradually increased it until we have settled down to this: 5 pounds hay, 5 pounds ground grain, and 1/2 pound bran to each horse morning and night, and 8 pounds dry oats only at noon (no hay), and this we find ample for the largest class of horses doing the most excessive work. Our saving is at least 10 pounds hay per day for each horse, and 6 pounds grain for each. Not only is this the case, but our horses are healthier and better in every way. Under the old system it was a common thing for us to lose from one to five horses every summer, and sometimes even more, with colic and inflammation; but in the past seven summers, under our new system, we have not lost as many horses altogether as we formerly lost in one season, and we have not had a sick horse. A much less ration than we feed would be ample for farm horses or for any horses doing ordinary work. We add also, that with this system of feeding hay, together with the free use of wheat bran and a little ground oats mixed with it, we find we can develop colts in a manner that we have never seen them developed before. The farming industry of Canada is truly passing through a most trying crisis. That our good farmers will survive all their difficulties, I have no doubt, but new and improved methods must be resorted to, and I can assure you that in the method of feeding horses that I have given you, as compared with the old and usual method, there is the difference between success and failure in the matter of raising colts for sale, and if what I have said is of assistance to any of our horse breeders or feeders, I shall be greatly gratified. Through the many agricultural journals and bulletins published in Canada and the United States, I am almost daily getting some new idea as to general farming or the care and management of stock. These ideas come not only from the editorial pens of the several papers, but many of them from practical and experienced farmers all over the land, and had I the time and capacity to do something in return it would give me very great pleasure to do so. I am a firm believer in reciprocity. If, in a national sense, we

cannot have this with our neighbors to the south of us, let us do the next best thing, and through the interchange of ideas among ourselves, build up a thoroughly advanced and progressive agricultural country. Our farm journals are doing much, and our Farmers' Institutes are also assisting; but there is much more to be done, and every Canadian who wishes well for his country should do what he can to promote the improvement and advancement of our agricultural interests. In them are the foundation and very backbone of our country, and with few exceptions, indeed, will all our other industries prosper just in proportion as our agricultural interests prosper.

WINTER DAIRYING.

By PROFESSOR H. H. DRAN, O.A.C. Guelph

(Prepared for the Department of Farmers' Institutes)

The following extract from a letter of a leading institute worker fairly describes the position of many farmers in reference to the winter dairy: "Many of our buttermakers are almost professionals in the summer, but in the winter we are almost beaten—sometimes we have to churn nearly all day, and then if the butter does come, it is of very poor quality. The cream gets bitter, and I do not like the butter myself. I feel ashamed to offer it on the market. Many others are in the same fix. Dairying all the year round has been strongly recommended at our meetings, but how to handle the cream and make the butter has been neglected." To meet these difficulties is the object of this paper. I will say at the beginning that it is difficult to tell another on paper how to do a practical operation such as churning. The most satisfactory way is to do the work under the guidance of a skillful operator. The hand then becomes the servant of the trained mind, and good results follow. To obtain this training I know of nothing better than the opportunities offered at our dairy schools. The Provincial school at Guelph will open January 4th, 1898, for both factory and home dairy classes. The home dairy course will be specially suitable for workers in the farm dairy. A lady instructor has been placed on the staff so that farmers' wives and daughters may feel more freedom in attending. Special instruction will be given to the home dairy class in poultry farming. The expense will be nothing but railway fare and board, which costs from \$2.50 to \$3.00 per week. However, if you cannot attend the dairy school, you may be able to obtain some useful hints in the various publications sent to the members of the Farmers' Institutes.

General Notes.

The average farmer of Ontario finds himself in about the following position: *Expenses which must be met all the year round: income but half the year.* Can this be improved upon? Yes, by a proper use of the winter dairy. There are two methods of conducting the winter dairy business—creamery and private dairy. We have no hesitation in recommending the creamery to all winter dairymen wherever it is at all practicable. It is not practicable in places where it is impossible to obtain at least 5,000 lbs. of milk every other day for four to six months. This milk

should be obtained within a radius of five miles from the creamery. The main advantages of the creamery are:

(1) A better and more uniform quality of butter can be made.

(2) All the butter is got from the milk by the use of a separator, whereas by setting the milk nearly one-quarter of the cream is lost.

(3) The skim-milk may be returned to the farm in a warm, sweet condition.

(4) More money is obtained for the labor and feed given to the cows.

The extra butter got from the milk by means of the separator will nearly, if not quite, pay the cost of manufacturing (which is usually 3c. per lb. of butter). The extra price obtained for creamery butter will leave a handsome profit on the winter's work. The extra quality of the skim milk will about pay for hauling. The labor saved at the farm house will add to the peace and comfort of the home.

Winter Butter-Making in the Private Dairy.

Whether the winter dairy be private or co-operative there is need of a certain number of fresh cows, which enables the maker to cream the milk easier and to get the butter with less trouble. There is also more profit in feeding fresh cows than "strippers." The feed should be of a succulent or juicy nature. Mangolds or carrots or silage are all good for a winter flow of milk. We feed at the dairy stables of the Ontario Agricultural College both mangolds and silage. Swede turnips should not be fed if a fine quality of butter is desired. To make a success of the winter dairy the cows and stables should be kept clean. The hind-quarters, udder and tail should be clipped in the fall. Use plenty of bedding under the cows. Sawdust makes excellent bedding and keeps the stalls and cows cleaner than straw unless it is cut. The udder should be brushed before commencing to milk. The milk should then be strained, and either be set in pans or in deep pails, or creamers, or be run through a separator. If ten to twenty cows are milked it will pay to use a cream separator. This separator may be put in a convenient place at or in the stable, and be run with tread power furnished by horse or bull.

Shallow pan setting needs much space, pure air, a moderate to cool temperature, and skimming at from 24 to 48 hours—before the milk becomes thick.

For deep setting it is important to cool the milk to a temperature of 45° or below, before skimming. Skim at the end of 24 to 36 hours in winter. The cans may be submerged, or surrounded by water as high as the milk in the cans. They may be skimmed from top or bottom. Where the separator is used, have the temperature of the milk from 85° to 95°, the speed of the machine full and constant, and the feed regular. Test the skim-milk and note if there is any loss of fat. Secure the cream quite thick, and cool immediately to about 50°. Keep all cream at about this temperature until sufficient is obtained for churning, then warm to ripening temperature by means of a water bath. Stir the cream while it is being warmed by the use of a tin stirrer. Heating the cream to 160° F. for twenty minutes is a good plan in winter as it drives off stable

and feed flavors. Use a starter to ripen the cream.

RIPENING CREAM—The ripening temperature will vary with the seasons, cows, and kind of cream. The temperature should be such that the cream will ripen in 24 hours with or without a "starter." A "starter" may be made by heating some skim-milk from a fresh cow to 90° the day before the cream is ready to be set to ripen. Throw away the top portion of the thick skim milk and add to the cream from 2 to 10 per cent. of the finely broken starter. Stir it well into the cream, and leave it undisturbed until 20 to 24 hours after, when it should be ready to churn. The buttermilk may be used for a "starter" so long as it is of good flavor. Give the cream a good stirring before putting it in the churn.

CHURNING.—A simple box or barrel churn we find the best. To prepare it for churning, first scald and then cool. Strain the cream into the churn and it will prevent white specks in the butter. If coloring is used, it should be put in the cream before commencing to churn. The churning temperature will vary a great deal. Thick separator cream may be churned at 50°. Thinner cream may be churned at 56° to 60° in summer, and higher, up to 70° as the season advances. Have the temperature such that the butter will come "firm" in from 30 to 40 minutes. Close covered churns must be ventilated two or three times during the first ten minutes of churning. When the butter "breaks" add a quart or more of water to the churning for each pail of cream. The temperature of the water added at this stage should be varied according to season—cold in hot weather and warmer in cool weather. The object is to assist separation of butter from the buttermilk, and to temper the granules of butter. If the water is too cold in winter, it will prevent the grains from forming the proper size. The churn should be stopped when the grains of butter are about the size of small wheat kernels. The buttermilk may then be drawn off through a strainer, or the granular butter may be dipped out of the buttermilk by means of a sieve, which is the Danish practice.

MY BUTTER DOES NOT COME.—The chief reasons are:

1. The temperature is not right—usually the cream is too cold in the churn.
2. The cream may have been kept too long.
3. The cream of a "farrow" or "stripper" cow may be causing the trouble.
4. The cream may be too thin—get rid of some of the skim-milk.
5. The cream may be too thick—add a little skim milk or water.
6. The churn is too full.
7. The maker is incompetent.

The process of churning is the packing together of tiny fat globules, and anything which hinders this tends to prevent churning.

WASHING BUTTER—Where a highly-flavored, short-keeping butter is wanted do not wash at all. For prints to be eaten in a week or two, wash once, and for tub butter, to ensure keeping quality, washing twice or until the water comes away "clear," is a safer practice. Do not leave the butter standing too long in the water as it will spoil the flavor.