

Rapid Hay Curing.

My experience in curing hay rapidly is, on the whole, quite satisfactory. I find that much depends upon the weather conditions. In handling clover, I find it better to allow about a quarter to one-third of the heads to turn brown before cutting, as it wilts much more rapidly than when it is cut in full bloom. I know that I sacrifice to some extent the digestibility of the plant, yet the greater surety of handling the hay in the mow without spoiling compensates for that loss. If the ground is dry the hay wilts rapidly, and, instead of putting up in coils the afternoon of the day in which it is cut, I leave it in the wind-row over night, unless, of course, it looks showery. Next forenoon I spread out the too-green parts some, and in the afternoon I put it into a large mow where considerable bulk is to be placed, and spread it around evenly in the mow. I find, if it is allowed to remain in a heap where dropped in the mow, it ferments too much and gets dusty. I expect such hay to sweat out in the mow, and it does sweat, but the hay comes out all right in the winter and spring. At first, when I found it sweating, I would pitch out the center and let the air in, and put some dry straw in to absorb the moisture. I find that was a big mistake, so that now I leave it alone and let it sweat out. It cools off after a while, and the stock relish and do well upon the hay. I also like the practice of putting a sprinkling of salt on the hay as it is mowed away. It is not essential to the keeping qualities of the hay, but does add to the palatability.

Of course, it will be understood that I avoid putting in any hay that has outside moisture on it, as when that is the case I find it gets more or less dusty and mouldy. When the ground is wet I find it better to cure clover in the coil, as well as that which is cut early when very green, with a view of getting a crop of clover seed.

When coiling green, wilted clover hay, I use the medium-sized coil, and leave it long enough to sweat well before opening up. It then cures green, and is a fine quality of hay.

T. G. RAYNOR.

DAIRY**The Feeding of Dairy Heifers.**

The opinion prevails among breeders of dairy cattle that generous feeding of heifers in calf-hood and before coming into use as milkers has a tendency to impair their milking propensities and to fix the disposition to produce beef rather than milk. While there may be some ground for this opinion, if whole milk and rich fat-producing grain rations are fed in the growing period, we are persuaded that going to the other extreme and practicing a system of semi-starvation, as too many do, may seriously handicap the animal as a worker in dairy production when she comes into use, and throughout her life. We are all agreed that the development of a strong and vigorous constitution is essential to the best results in a dairy cow, and the question arises, can a strong constitution be founded in a calf fed, as many are, on insufficient rations of skim milk with poor pasture, exposed to the extreme heat of the summer and the attacks of flies, with no grain feed to strengthen them and to help build up bone and muscle and to expand their lung capacity? In the desire to secure a big middle and a capacious stomach, we often see, as the result of such a system of feeding, a narrow chest, a ewe neck, a wasp waist and a drooping rump; in short, a dwarfed and imperfectly-developed cow, incapable of enduring heavy feeding or working up liberal rations into milk in large measure, but predisposed to indigestion and bloating, an easy prey to disease, lacking the power to cope with sickness, or to throw it off when it comes, and failing to fill the bill as a satisfactory and good-wearing cow.

There is, we are persuaded, a happy medium in feeding, midway between these extremes, by which a heifer born of healthy parents may be kept growing and thriving from birth until called upon as a milker, without being stunted at any period, and without being made unduly fat at any time. Skim milk, fed warm and in moderate quantity after the first three weeks, during which time whole milk fresh from the dam is given, is the ideal principal food of a dairy heifer, but should be supplemented by a liberal ration of bran and oats during the first eight months at least, and the calves should, during that time, be kept in clean, roomy boxes or sheds, and, if practicable, will be the better for access to a yard or pasture lot in summer, where, by free exercise, their muscles may be strengthened, and the animals better prepared to rustle for a living in the second and following summer of their lives. A liberal feeding of roots and nutritious roughage, of which clover hay, if available, is the best, will also tend to producing a vigorous and healthy cow, without impairing her usefulness as a milker, but rather developing her powers to the full in that direction. We have known many instances of a heifer liberally fed, and declared by

connoisseurs to be too much after the beef type, proving an extra milker, and later becoming satisfactorily refined and cowy in appearance as well, while her strong constitution, built up by generous feeding while young, made her a healthy and vigorous mother and milker throughout a long and successful life. On the other hand, the constitution of many a cow has been cramped and spoiled by careless feeding of the calf, cold milk being given irregularly in over supply, causing bloating and scours, checking growth, predisposing to attacks of indigestion and other disorders, and detracting from the usefulness of the cow as a breeder of healthy stock, and as a producer in the dairy, as well as shortening her life term.

The points it is desired to emphasize are that there is a great difference between fat and flesh; that flesh, which is lean meat or muscle, is a healthy, wholesome and natural quantity in either a dairy or a beef animal; that the feeding of an excess of fat-producing foods, such as corn, peas and oil meals, to young and growing animals is a mistake, and that muscle-producing foods, such as oats and bran, may safely and profitably be fed in liberal rations to either class of cattle at any period.



F. M. Logan, B. S. A.



A. Leitch, B. S. A.

A Question of Cows for Profit.

To the Editor "Farmer's Advocate":

In your issue of June 15th appeared a very interesting article under the heading, "A Cheese Experiment," which, while very helpful to the dairyman would, I think, have been more helpful had it given the number of cows and pounds milk from each cow in the different tests. Here is a statement from our factory, which may be of interest to your readers: From our last sale report I find that A delivered to factory from May 18th to June 13th, from five cows, 2,772 pounds of milk, testing 4 per cent. fat; and B in the same time sent, from eight cows, 2,317 pounds of milk, testing 5 per cent. fat. Report also shows that A's milk gave 110.88 pounds fat, and after expenses at \$17.25, he received \$19.02; and B's milk gave 115.85 pounds fat, and after expenses of \$17.25, he received \$19.98. A's milk is worth 68.91 cents per hundred pounds, and B's worth 86.23 cents per hundred pounds, showing an advance for B of 17.32 cents per hundred

pounds milk. A delivered to factory daily from each cow 20.58 pounds milk, and B delivered 10.72 pounds from each cow. Now the question arises, which lot of cows is the most profitable to the dairyman? Will someone competent, please answer through the "Farmer's Advocate."

R. G. D.

"Gassy" Milk.

The value of milk for the manufacture of butter and cheese is largely influenced by the care it receives previous to delivery. As, during the warm summer months, dairymen will be face to face with the important problem of how to avoid "gassy" milk, a few hints on the subject may be considered timely. Although much has been said and written on the matter, it is evident that many continue to produce a very indifferent quality of milk, not so much because of intentional neglect as the lack of clearly understanding the fundamental principles that should be observed.

Milk is an ideal medium for almost any species of bacteria, and ordinarily contains large numbers, ranging from a few hundred to many millions in a single drop, according to the surrounding conditions. For practical purposes they may be classified as harmless, useful, and harmful. Passing over the first, the second class is very necessary to dairy operations, but must be kept under control, while the third is directly important to the farmer who is trying to deliver good, pure milk. Gassy milk being one of the most frequent troubles in this connection, we will mention the gas-producing bacteria particularly as a type of that class. The species is technically known as the Colon Bacillus, because it is found in large numbers in the large intestine of the animal body, the great colon. It is always associated with filth in some form or other. Investigations at the Ontario Agricultural College show that the ratio of gas-producing germs to other species in some seventeen examinations of manure was as 250 to 1. Flies were found to be a very prolific source of these undesirable bacteria, 20,000 having been frequently obtained from a single fly. Watering troughs, dairy utensils, the hairy coats and udders of the cows, all proved to be the means by which milk was contaminated. It should be noted that there are three essentials effecting bacterial growth, viz., food, warmth and moisture. Antagonistic to their development are light, lack of food, extremes of temperature and dryness. When properly used, these may become effectual weapons in checking the increase of undesirable germs, and reducing the same, under ordinary circumstances, over 95 per cent. Care should be taken to have the flanks and udders of the cows well brushed before milking, so as to avoid particles of manure, dried mud, hair, etc., dropping into the milk pail along with the innumerable bacteria adhering to them. As the bacterium is susceptible to moisture, it is well to use a damp cloth for this work, the germs being unable to leave a wet surface.

Bacteria thrive best in milk at about 90 degrees F., the rate of their multiplication decreasing with both the rise and fall of temperature. Hence, as soon as milking is done, the can should be set in cold water, and the milk thoroughly stirred until the temperature has been reduced to about 60 degrees. It is very important that cooling is not delayed, or these micro-organisms develop very rapidly. An experiment is reported in which a difference of 18 degrees in the temperature of two samples of milk caused in 15 hours a difference of almost 75,000,000 bacteria per cubic centimeter, a quantity equal to half a thimbleful.

If patrons realized the direct financial loss they sustain in allowing their milk to become "gassy," there is reason to believe the trouble would soon cease. As it takes from one to three pounds more of this milk to make a pound of cheese, it is evident that, at a factory receiving 10,000 pounds per day, if three or four cans of milk are affected in this way, the loss would be considerable. Adding to this the decrease in price for an inferior quality of cheese, the profits are still further reduced. In conclusion, it cannot be too strongly emphasized that the production and care of milk is the foundation of the dairy industry, and that eternal vigilance is the price of success.

J. H. M.

Good for the Merchant.

Although I have given up farming, and am in general-store keeping, I would not like to be without the "Farmer's Advocate and Home Magazine." I am trying to get up a subscription list for your valuable paper.

M. A. HOLMES.

IF YOU HAVE A FARM FOR SALE OR WANT A SITUATION, PUT AN ADVERTISEMENT UNDER THE HEADING OF "WANT AND FOR SALE" IN THE "FARMER'S ADVOCATE."