MANAGEMENT OF THE DAIRY HERD

By

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MANAGEMENT OF THE DAIRY HERD

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Many herds of dairy cattle have been and are being established in Colorado. The main essentials for the owners to consider are barns, feeds and care. It is waste of money to establish herds and then ignore these essentials.

BARNs

The dairy cow, to do her best and give satisfactory returns for the food consumed, must be properly sheltered from storms. They tend to lower the temperature of the body, which, if conditions are unfavorable, is maintained at the sacrifice of the milk flow.

Buildings need not be very expensive and can be constructed at very reasonable prices if the farmer possesses a little ingenuity. They may be made of straw or of lumber. Convenience, warmth, light and ventilation should be considered in their construction. Shelters made of straw may possess all of these qualities whether they be barns or straw sheds. They should be so constructed that during the coldest weather the temperature will not drop below 40° F.

Light is very important in a dairy barn. Sunlight is favorable to healthful conditions and is one of nature's best disinfectants. The window sash should be attached by hinges and swing in at the top. This admits plenty of fresh air and does away with the need of a special inlet for it. The opening may be regulated by a cord so as to let in the required amount of fresh air. The windows should be placed at a height sufficient to prevent breakage by workmen or by the animals. The escape of foul air is important. This can be drawn off in a flue which should extend from near the floor up the side of the building and along the rafters to the ridge pole. A flue 16" x 22" will care for the exhalations from twelve mature cows. For the ventilating system to work well the barn must be almost air-tight. It is of no value in a building having large openings or cracks. The construction must be such that the proper amount of fresh air will be admitted and all of the foul air drawn off without drafts.
Comfort and contentment are essential to successful dairy farming. Kindness is often as valuable as food.

The size of the stalls will depend upon the size of the cattle. For large animals the stalls should be 5 feet long and 3½ feet wide, and for small animals 4½ feet long and 3 feet wide, 4 feet 8 inches being the average length of the platform.

There are many makes of stanchions on the market, the movable ones being most satisfactory. They are suspended from the top by a chain and are attached below to the floor in the same way. The farmer with a little ingenuity can easily make stanchions for himself, using some kind of hard wood, such as oak or hickory, but to buy them already made is less expensive.

The mangers need be nothing more than a tight board floor, sloping slightly up and away from the cow's head. With this construction the feed can be easily given and the mangers thoroughly cleaned.

Floors may be made of cinders with planks under the cow's hind feed parallel with the gutter and sloping towards it. The gutter may be made of wood or cement, these being more sanitary than earth.

If the barn is to accommodate two rows of cattle their heads may be turned towards the center of it or towards the outside. The writer prefers the latter as the fresh air from the outside
A simple, cheap and satisfactory arrangement comes in beside the heads of the animals. With this arrangement the ventilating flues should be at the ends and center of the building.

**PASTURE**

Good pastures are a necessity and should be provided wherever possible. Cows that give a large flow of milk cannot produce at their best and travel over extensive areas. In high-class dairying, the food must be brought to the cow. In Colorado, permanent irrigated pastures are desirable and should be provided where there is water for such purposes. Brome grass, orchard grass, June grass, timothy, alfalfa and clover should be used in the mixture where it is known that they do well. For the dry farmers, alfalfa and brome grass can be used, as both plants are drought resistant to a considerable degree. The proportion of alfalfa should be light, as it causes bloat.

Prof. G. E. Morton, who has had considerable experience in Colorado with grass mixtures, recommends the following:

- Orchard Grass ........................................... 15 pounds
- Brome Grass ........................................... 15 pounds
- Tall Meadow Fescue.................................... 10 pounds
- Alsike Clover .......................................... 2 pounds
- Winter Vetch .......................................... 4 pounds
THE COLORADO AGRICULTURAL COLLEGE

White Clover ........................................ 1 pound
Yellow Sweet Clover .................................. 3 pounds

Total ..................................................... 50 pounds per acre

"This is a simple mixture that has been proven satisfactory at the College on a heavy clay soil. For very light sandy soils, Kentucky Blue Grass should be added if the pasture can be watered frequently. On low-lying, wet soils reduce the orchard grass and brome grass, adding some timothy and red top.

"For one who wishes the best possible pasture and is willing to fuss a little with it, four pounds of chickory and one pound of burnet (imported seeds) may be put in place of five pounds of the brome grass.

"In order to get a first-class pasture a perfect stand must be obtained, so take pains with it.

"Sow without a cover crop, and clip the weeds the first season. Take a crop of hay the second season to allow the grasses to become well rooted before pasturing."

**SOILING**

Under intensive dairying, the pastures should be supplemented with soiling crops. Fall rye, wheat, clover, alfalfa, oats, peas, sweet sorghum and other crops may be grown for this purpose. The spring crops should be sown on different dates to secure succession. The blossoming stage for clover and the milk to dough stage for oats, wheat and barley are the best times for cutting. Rye needs to be cut before blossoming, as it becomes woody and unpalatable after that stage of growth.

If soiling crops cannot be grown, a little good alfalfa or clover hay should take their place.

**LIBERAL FEEDING**

Liberal feeding must be practiced if profit is expected. A large portion (50 to 75 percent) of the food given a cow is required for maintenance, the remainder being required for the manufacture of milk. With a scant feeding, the whole amount given may be used for maintenance, leaving nothing for milk production.

In feeding for large returns, a variety of foods gives better results than a single diet. Such a ration is better digested, relished longer, and is more likely to meet all the requirements of the body. Large consumption of food is important and this will be accomplished with a mixed diet. If certain needs of the body are not supplied, the animals will develop a depraved appetite, leading them to eat bones, leather, paper and similar materials to satisfy
the craving which arises because the ration is lacking in some particular nutrient.

Regularity in feeding is important. Animals know when feeding time arrives and irregularity in this respect will result in a decreased milk flow.

Good water should be provided at all times. It is a mistake to allow cows to drink tainted water, as it certainly impairs the health if it does not affect the quality of the milk.

Salt is necessary and the animals should have access to it at all times. A box containing the salt may be securely fastened in one corner of the pasture or yard.

These provisions and attentions, tho they may appear insignificant to the ordinary farmer, are nevertheless very important.

Cows are naturally affectionate animals and respond very quickly to kind treatment, therefore the attendant should not be rough or boisterous.

SELECTING DAIRY ANIMALS

There are four leading dairy breeds, the Jersey, Guernsey, Holstein and Ayrshire. There are many good Shorthorn cows and it may be advisable to start with such a breed. The farmer should select whichever one of these he likes that is adapted to his purpose. There are good and inferior animals in every breed. The main thing is to get a good, pure-bred sire with good individuality and strong dairy inheritance. Then, by rearing the heifer calves from the best cows, a large-producing herd will be secured in a few years. To ascertain the best individuals of the herd, the milk should be weighed and tested for butter fat three or four times
each month throughout the year. A single weighing or testing is not sufficient. There are some cows that are heavy milkers for a short time only, while on the other hand there are some that do not milk heavily at any time yet are very profitable producers. The weighing and testing should be continued throughout the entire lactation period.

**POINTS OF SELECTION**

Shorthorns are the best milkers among the beef breeds, but in selecting them it must be remembered that there are two types. One is broad and beefy, the other angular and lean when giving a full flow of milk. It is the latter kind that is desired in the dairy.

The first consideration in selecting any kind of dairy cow should be given to the udder; this should be large but not fleshy and should collapse to a considerable degree after the milk has been drawn. Second, the middle piece, or barrel, of the animal should be large, extending well out and dropping low. These are the most important points, but there are minor ones to be considered. The head should be long and lean, the neck thin, the shoulders spare fleshed, and the thighs thin and incurving.

A good dairy type. Note the large udder, big middle piece, full girth, long, lean neck, sharp shoulders, sharp, bare rump, and leanness. (Courtesy Woodcroft Farm, Pueblo, Colo.)

**HEALTH**

It makes no difference how wisely one may select, if disease is present the efforts will end in failure. Tuberculosis is common in cattle and the disease may be well developed even in robust
looking animals. All cows added to the dairy herd should be tuberculin tested and an expert should be employed for this purpose. While the test is reliable, it has been misused greatly by dishonest and incompetent people. Often it has been used to deceive, and therefore the integrity of the test should be determined. Abortion is another serious disease. There are two forms known, contagious and non-contagious. It is the former that must be avoided if possible by becoming familiar with the disease and then dealing only with honest owners of clean herds.

**FEEDING DAIRY COWS**

A balanced ration is one that meets the requirement of the animal. This is a relative term. A balanced ration for a cow is entirely different from that of a fat steer because their requirements are different. There are three groups of compounds in all foodstuffs that must be considered in making a mixture of feeds. They are known as protein, carbohydrates and fat. Protein includes those compounds containing nitrogen which enter into the composition of muscle, hair, skin, blood, milk, etc. The white of an egg is an example of protein. It is impossible to develop a young animal properly without a sufficient amount of protein. A cow cannot produce all the milk she is capable of producing unless she has a sufficient amount of protein. Alfalfa, clover, peas, oats and bran are especially valuable to the dairyman because they contain a large amount of protein. Cows that receive only timothy hay, corn fodder, beet pulp, roots, corn and barley do not produce to their capacity because they are not getting enough protein. No other substance can take the place of protein as a milk producer and a tissue builder. In addition to these uses, it also furnishes heat and energy to the body and may be changed into fat.

Carbohydrates include the fibre, the starch and the sugar of the feeds. They also, as well as protein, provide the body with fat, heat and energy. Paper is an example of fibre, while starch and sugar are familiar to everybody. The fats in the food produce heat, energy and fat in the body. Linseed and cottonseed oils are examples of plant fats. One pound of fat produces about 2.2 times as much heat as 1 pound of protein or of carbohydrates. Only part of the protein, carbohydrates and fat given in the food can be digested and used by the body, the rest passing away in the excrement. Only the digested compounds benefit the animal. The non-digestible compounds that pass away in the excrement have no value. Non-digestible fibre has no value and an excess of it is an injury to a cow, as energy is required to get rid of it. This is particularly true of straw and shows why straw should not form
An ideal udder. Lay emphasis on it when selecting. (Courtesy American Jersey Cattle Club)

a large part of the ration. If a cow eats 100 pounds of clover hay, she digests 7.1 pounds of protein, 37.8 pounds of carbohydrates and 1.8 pounds of fat; 53.3 pounds passes from the body and is of no value as food. A large portion of the nutritive compounds are soluble in water and when hay or other foods are wet by rains or improperly cured their food value is decreased.

Special attention should be given by the dairyman to the preparation and combination of his feeds and especially to the curing of his forage. When giving a large flow of milk on dry feed, cows generally require considerable grain to maintain the milk yield. The amount of grain given with the ration should be gauged by the milk flow. A good rule is to give 1 pound of grain per day to every 3 or 4 pounds of milk produced per day or give as many pounds of grain per day as pounds of butter fat produced per week.

The following suggestive rations are for cows weighing 1,000 to 1,200 pounds, allowing as much of the forage as will be eaten
up clean twice a day. When clover and alfalfa hay are fed, less grain is required than when prairie hay or the like is used.

<table>
<thead>
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<th>Ingredient</th>
<th>Amount</th>
<th>Ingredient</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Alfalfa</td>
<td>20 pounds</td>
<td>Prairie hay</td>
<td>20 pounds</td>
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<tr>
<td>Beet pulp</td>
<td>40 pounds</td>
<td>Bran</td>
<td>10 pounds</td>
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<tr>
<td>Barley</td>
<td>6 pounds</td>
<td>Oats</td>
<td>4 pounds</td>
</tr>
<tr>
<td>Clover</td>
<td>25 pounds</td>
<td>Clover</td>
<td>20 pounds</td>
</tr>
<tr>
<td>Bran</td>
<td>3 pounds</td>
<td>Timothy</td>
<td>5 pounds</td>
</tr>
<tr>
<td>Barley</td>
<td>3 pounds</td>
<td>Bran</td>
<td>2 pounds</td>
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<td></td>
<td></td>
<td>Oats</td>
<td>2 pounds</td>
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<tr>
<td>Corn silage</td>
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<td>30 pounds</td>
</tr>
<tr>
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<tr>
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<td>4 pounds</td>
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<td>Oats</td>
<td>4 pounds</td>
<td>Corn</td>
<td>6 pounds</td>
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<tr>
<td></td>
<td></td>
<td>Wheat bran</td>
<td>2 pounds</td>
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</table>
RAISING THE DAIRY CALF

In dairying, the farmer should raise his own calves. Many farmers are not successful in raising them on skim milk. Whole milk may produce the best calf but not necessarily the best cow. As good an animal can be produced on skim milk as can be produced on whole milk, but greater care and attention is required in producing the former.

The calf should nurse its mother for the first few days, after which it should be removed and fed by hand. Whole milk, warm and fresh from the mother, should be given for ten days or two weeks at least. Ten to twelve pounds per day in two or three feeds should be given at first, and the length of time that it should be continued depends upon the strength of the calf. Ordinarily ten days to two weeks will be required to make the change from whole milk to skim milk. Gradually substitute skim milk for whole milk, increasing the former until the whole milk is entirely replaced. This may be a week or it may be a month. Skim milk should be warm and sweet when fed, as cold sour skim milk is the greatest cause of scours. It may be fed for six or seven months, depending mainly upon the supply. It should be given until 5 months of age at least.

As soon as a calf will eat, hay or grain should be given. The calves should be fed in stanchions so that each one will get its proper share. Calves not so fastened sometimes learn to suck each other and this is undesirable. After feeding the milk, place in the manger a box containing a small amount of grain, preferably oats and bran in equal parts, increasing the amount to correspond with the appetite until the animals are large and well developed. All the hay they will eat should be given, using preferably a mixture of clover, or alfalfa, and some kind of grass hay. The feeder must be guided entirely by the condition of the calf in determining how much of any one food shall be given. While ill results may come from feeding too much, the aim should be to feed sufficiently well to secure large daily gains. If properly fed and taken care of, the skim milk-fed calf should weigh from 500 to 800 pounds at one year of age.

AGE AT WHICH TO BREED HEIFERS

In order that heifers may be bred young and begin milking at an early date, they should be well developed. This is important. Cows that acquire considerable age and become mature before beginning to milk will not usually make as deep and persistent milkers as cows that are bred at a comparatively early age and begin to milk before they are mature. The aim is to get the system of
Ten daughters of Sir Korndyke Hengerveld Canary, 53825, senior herd bull, Colorado Agricultural College. This shows the value of good breeding.

...the animal into the habit of producing milk at as early an age as possible. Therefore the heifer should be well fed and cared for from birth.

If the heifer is well developed she should be bred at 15 to 18 months of age, otherwise she should not be bred until 18 to 20 months of age.

For further information write to the Agricultural College, Fort Collins, Colo.