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**BOYS' AND GIRLS' INDUSTRIAL CLUBS**  
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## OREGON AGRICULTURAL COLLEGE

EXTENSION SERVICE.

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### FEEDING AND CARE OF DAIRY COWS

by

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*Feeding.* When we speak of a dairy cow's feed we generally say ration. The proper ration is the one that is relished (palatable), is plentiful, contains succulence, and is cheap. The cow does her best work in the early summer when the grass is



Fig. 1. A Dairy Herd that pays for proper feeding and care.

best, for her ration at this time is Nature's ration; so the lesson we learn is that if the best results are expected, the dairy-

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man must imitate nature as nearly as possible, throughout the year.

As the summer advances and the pastures dry up, some green feed such as corn, alfalfa, roots, or silage should be fed to take the place of the succulence which the grass has lost. When winter feeding begins, the ration will be made up of feeds from two classes: the first class known as roughages, such as alfalfa, clover, or vetch hay, corn fodder, straw, kale, and silage; the second class known as concentrates, such as oats, corn, barley, bran, shorts, oil meal, etc. In all of the above named feeds we find protein, carbohydrates, and fat in larger or smaller amounts, and when a ration is balanced for a dairy cow, it is well to know what each feed contains.

*Balanced Ration.* By a balanced ration we mean one that contains one part of protein to five-and-a-half parts of carbohydrates. If the ration has more than this amount of protein it will as a rule be found expensive. The protein in the feed is used by the animal in the making of milk, in the formation of muscle, and in the growth of hair, horns, and hoofs. The Carbohydrates and fats each serve about the same purpose as the other and are used to keep the body warm, to furnish energy, and to make the fat on the body and in the milk.

Table showing pounds of protein, carbohydrates and fat in 100 lbs. of different feeds.

	Protein	Carbohydrates	Fat
Alfalfa hay.....	10.5 lbs.	40.5 lbs.	.9 lbs.
Clover hay.....	7.5	35.0	2.0
Vetch hay.....	11.9	40.7	1.6
Corn fodder.....	2.5	34.6	1.2
Straw (wheat).....	.8	35.2	.8
Straw (oat).....	1.3	39.5	.8
Kale .....	1.9	4.7	.3
Silage .....	1.4	14.2	.7
Oats .....	8.8	49.	4.3
Corn .....	7.8	66.8	4.3
Barley .....	8.4	65.3	1.6
Shorts .....	13.	45.7	4.5
Bran .....	11.9	42.	2.5
Oil Meal .....	31.5	35.7	2.4

An average size cow (1000 lbs.), giving each day 25 lbs. of milk testing 4%, would require about 2.5 lbs. of protein, 14 lbs. of carbohydrates, and .6 lbs. of fat. The following suggestive rations will be of value when calculating a ration:

Vetch hay, 15 lbs.  
 Corn silage, 35 lbs.  
 Bran, 3 lbs.  
 Oats, 5 lbs..

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Clover hay, 15 lbs.  
 Kale, 35 to 40 lbs.  
 Shorts, 3 lbs.  
 Barley, 5 lbs.

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Alfalfa hay, 20 lbs.  
 Mangels, 25 lbs.  
 Barley, 4 lbs.  
 Shorts, 2 lbs.

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For cows smaller or larger than the average these rations would have to be varied. A good rule to follow in feeding a dairy cow is to allow her all the roughage such as hay, that she cares for, and give her in addition one pound of grain for every  $3\frac{1}{2}$  or 4 lbs. of milk which she produces. When we feed a dairy cow it must be remembered that the cow first looks out for her body, and that if the food supply is not liberal she will not have any food left from which to manufacture milk after her body needs are cared for. We are only cheating ourselves when we expect to save by giving the cow only one-half of the feed she needs.

Properly to feed the cow, her feed should be weighed, for all feeds do not weigh the same. A gallon measure of one kind of feed may weigh 3 pounds, while the same measure of another kind of feed will weigh 5 pounds. If the cows stand in a row or rows in the barn, the process of feeding can be done easily and quickly by using some sort of feeding cart such as in Fig. 2. This cart can be pushed along in front of the cows, and by a simple arrangement for hanging the scales such as is shown in the figure, the feed for each cow can be weighed, and the feeding operation performed in a few minutes.

One great fault with rations commonly fed to dairy cows is that there are no succulent feeds given, such as silage, kale, turnips, mangels, sugar beets, or other green feeds. A succulent feed in the ration helps to keep the digestive organs in better condition, increases the appetite of the animal, and stimulates the milk flow. In feeding a dairy herd, it must be remembered that every cow is a different individual and that all cows cannot be fed alike any more than can a group of men or boys. The dairyman must watch his herd and try to feed each

cow to the best advantage. Some cows can have their rations increased and will gain in their flow of milk, while others will only lay on fat and the extra feed is lost. Of course a cow

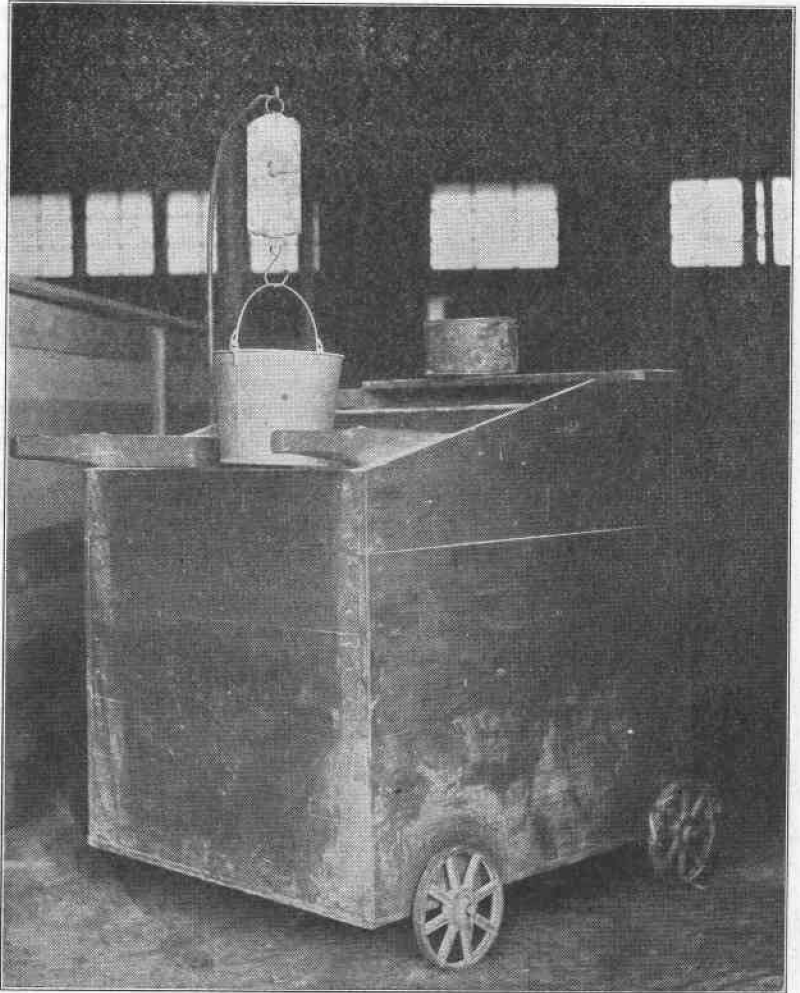


Fig. 2. A handy home-made feeding box.

should be kept in good working condition but there is no advantage in fattening the dairy cow while she is giving milk

## CARE OF THE COW.

*Regularity.* In feeding and milking strict regularity should be observed, for the cow is a creature of habit. If the feeding or milking is delayed, the process of milk manufacture is interrupted and the flow lessened. The work should be done in such a way that the cow will get the greatest possible satisfaction from the semi-daily events

*Exercise.* The frolics that the cow indulged in when a calf almost cease when she becomes a milk producer, the exercise she gets in going to and from the pasture being enough for her. Running the cow, or causing her unnecessary excitement, should at all times be prevented. For the winter season, the cows should have a sheltered place such as a shed in which to exercise.

*Water and Salt Requirements.* Cows giving milk need a large amount of fresh pure water each day, because the milk itself contains a great deal of water and large amounts are used in digesting the feeds eaten. Cows as a rule will drink from 60 to 80 pounds of water each day, while some of the world's record cows have drunk 270 pounds in a day, as shown by actual weight. The best supply of water comes from a deep well or from a spring. Ponds into which drainage comes from various sources are not satisfactory, because of the dangers of disease, and also because the cow, on account of disrelish will not drink as much as she should

Cows as a rule will consume quite an amount of salt and should have about an ounce each day. It may be fed with the feed, or rock salt may be placed where the cow can use it as her appetite calls for it. One experiment carried on at the Wisconsin Agricultural College where salt was not fed, showed that the cows soon began to lose their vitality, their hair became rough, and finally they broke down.

*Care When Dry* During the eight or ten weeks that cows go dry, their food should be chiefly roughage. A daily allowance of two pounds of bran or oats or a mixture of 2 parts each of bran and oats, and one part of oil meal, makes a proper feed for a cow near freshening. Some roots, cabbage, pumpkins, or squashes are also very good. Roughage, such as straw and corn stalks, is not good at this particular time; for such feeds, together with cold water, cold drafts, or lying out at night on damp or frozen ground, are the chief causes of caked udder or garget.

Just before freshening the cow should be kept in a comfortable box-stall in which there is no manger. The feed should be given in a box which should be removed after the feed

is taken. The coarse feed may be put in the corner, and no more should be given than the cow will eat.

The first feed for the cow after freshening should be about half a pail of whole or ground oats, which has been allowed to stand covered for half an hour after pouring hot water over the feed.

*Diseases.* Indigestion is one of the most common troubles with dairy cows; it is caused by over-eating, spoiled feeds, or

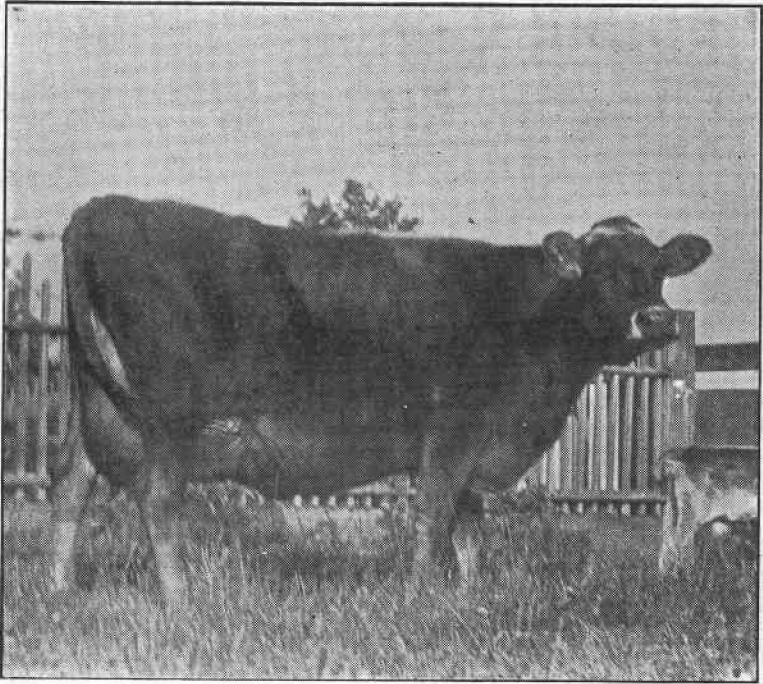


Fig. 3. "LADY GLOW,"  
609 Pounds, 18 Ounces, Butter in One Year.  
A cow that keeps her owner.

too much dry roughage with no succulent feeds. The best treatment is, first reduce the feed, then give 1 to 1½ pounds of epsom salts. If the cow is very sick, a veterinarian should be called. When you begin to feed the cow again, feed gradually and give such feeds as bran mashes or oats soaked half an hour in warm water.

Garget is inflammation of the udder; it may be mild or severe. The causes are generally exposure in bad weather,



heavy grain feeding, or bruises to the udder. The grain should be reduced, and the cow well protected. A physic should be given, and an ounce of salt peter should be given each day for two or three days; moreover, the cow should be milked three or four times daily. It will also help to massage the udder, dissolving two tablespoonfuls of gum camphor in a cup of melted lard, and rubbing this vigorously into the surface of the udder.

Bloating comes from pasturing cows on clover or alfalfa, as a rule, but may occur from sudden change in feeds or from eating frozen feeds. A great amount of gas is formed in the paunch, and if relief is not given, the animal dies from suffocation due to pressure on the lungs. In mild cases, driving the cow rapidly may bring relief, but where the bloat is very bad, it will be best to stick the cow, using an instrument called a trocar with sheath. In a spot between the last rib and the hip bone, cut the skin about an inch, then thrust in the trocar, leaving the sheath as long as gas escapes.

The health of the dairy herd is of vital importance. Neglect may cause the ruin of the entire herd by disease. The prime factors in keeping the herd healthy are shelter, light, fresh air, pure water, and clean food. Though the owner does his best to protect the herd, there will be some loss from accident and disease. It is best to have always at hand a milk fever outfit, a trocar and sheath, a quart bottle for drenching, and a clinical thermometer; also about five pounds of epsom salts, 1 gallon of linseed oil, carbolized vaseline and some disinfectant such as creolin. In case of severe sickness, other instruments and other medicines will be needed, but at those times it will be better to call a veterinarian to treat the animal.

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