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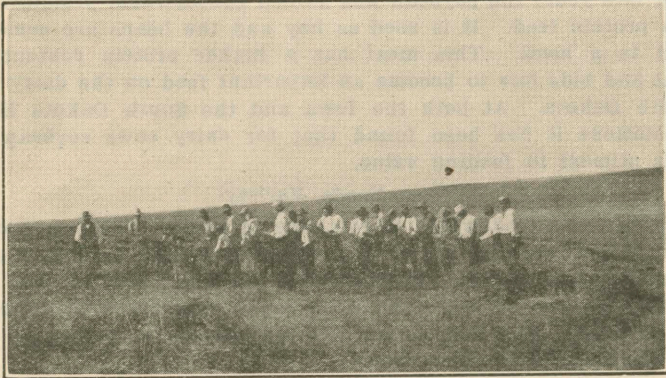
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TWO BASIC DAIRY FEEDS

By Horace M. Jones, Extension Dairy Specialist



Dairy cows need a leguminous roughage—alfalfa, sweet clover, soybeans or clover. A field of sweet clover in Stanley county.

Wherever the dairy industry has reached its greatest development we usually find that its success is due primarily to the use of farm grown feeds. In order to carry on dairying to advantage a farmer must have a succulent roughage and a leguminous roughage. Corn silage and alfalfa hay answer these two requirements. Hence we find them inseparably linked with economical dairy feeding.

Grow a Ration; Don't Buy It

Dairy profits are realized in direct proportion to the amount of farm grown feeds used. While it is true that with good cows and good markets a profit may be made by buying feed, there is no question but that the South Dakota farmer is better off to raise just as much of his feed as possible on his own farm. This necessitates a definite cropping system from year to year to provide the feeds needed, but it can be done and is being done successfully in hundreds of instances.

Leguminous Roughage Necessary

The ordinary farm grown feeds are usually deficient in one substance—protein. Protein is so essential for growth and for milk production that it must be supplied in the ration. If farm grown feeds do not supply it, then best results are not attained unless high protein feeds are bought, and too often this is not an economical

method of doing. Alfalfa hay furnishes as much protein as the same quantity of bran. It grows in practically all parts of South Dakota and deserves more of a place on the average farm than it now has. There are only about five acres of alfalfa on the average farm in South Dakota. Authorities agree that suitable rations for livestock cannot be supplied from farm feeds alone unless more leguminous crops, especially alfalfa, are grown.

Of late years the soybean has gained considerable prominence as a high protein feed. It is used as hay and the beans are sometimes ground to a meal. This meal has a higher protein content than oilmeal and bids fair to become an important feed on the dairy farms of South Dakota. At both the Iowa and the South Dakota Experiment stations it has been found that for dairy cows soybean meal exceeds oilmeal in feeding value.

Cow Needs Variety

There is no feed which is complete in itself. There is probably no feed which supplies all of the nutrients needed in just the proportion they are needed. Furthermore, the dairy cow relishes a variety of feeds and usually does better when supplied with more than just one kind. For this reason the leguminous crops are of more value when fed with other feeds.

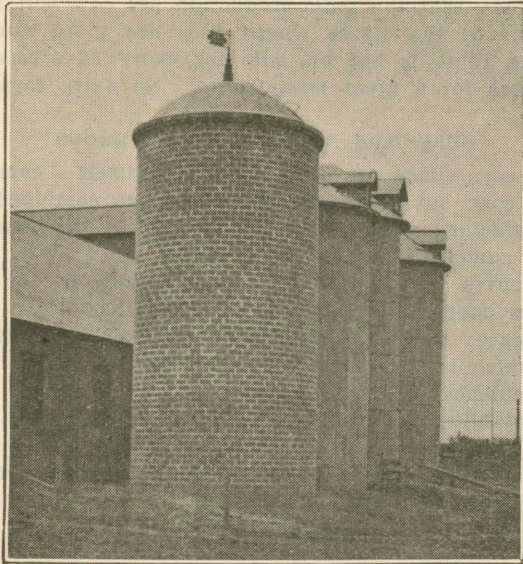
A Succulent Ration

The natural conditions which make for abundant and economical dairy production occur in the late spring and early summer months. With warm weather, good water, and plenty of tender, green grass, the dairy cows produce their maximum.

The aim of year around dairying then should be to duplicate summer conditions as nearly as possible. A cow does not usually do her best on dry roughage alone. Since milk consists of about 87 per-



An excellent field of corn for silage



A battery of silos at the State college dairy barn

cent water, the milk cow needs a liberal allowance of water and also a succulent or juicy feed such as is supplied by fresh, green grass. The nearest approach to such a feed came with the discovery of silage. Silage fills the need, can be produced and stored on almost every farm, and during the past 30 years thousands of silos have been built.

Silos and successful dairying go hand in hand. On farms where dairying has become a specialty the silo is indispensable. It furnishes a green, succulent feed for winter dairying. It is valuable even to the farmer who is keeping only a few cows as a side line. The more silos a state has the more importance it assumes as a dairy state. With few exceptions, the number of cows per silo is in inverse ratio to the average annual milk production per cow as shown by the following data:

STATE	Number of Cows	Number of Silos	Cows per Silo	Milk Production per Cow
Wisconsin	2,202,000	82,000	27	4016
New York	1,695,000	50,000	34	4317
Minnesota	1,578,000	30,000	53	3044
Iowa	1,093,000	25,000	44	2709
South Dakota	417,000	3,500	119	2339
United States	24,028,000	456,000	53	3412

When South Dakota approaches the point where she has a silo for every 20 cows instead of one for every 119 cows as at present,

it is safe to say that the milk production per cow will more nearly approach that of the states where silos are more numerous. In South Dakota there is but one silo for every 22 farms. There is room and need for a great many more. No dairy farm should be without one.

Silage and Alfalfa a Perfect Ration

Neither corn silage nor alfalfa hay is in itself a complete ration for a dairy cow, but when the two feeds are combined they form a most satisfactory ration, and provide all of the essentials of a good ration, namely:

1. Nutritive value: protein supplied largely by the alfalfa and carbohydrates supplied largely by the silage.
2. Balance: these feeds combine to give a nutritive ratio of about 1:6 which is very satisfactory.
3. Succulence: silage is a succulent feed.
4. Palatability: cows like both of these feeds.
5. Bulk: they are not too concentrated.
6. Adaptability: these feeds are being grown successfully in nearly every part of South Dakota.

Amount to Feed

In feeding roughage, the appetite of the cow is usually the best guide. As a rule, cows will use all of these rough feeds that they can eat. Unless a cow gets all the feed she can handle she is not being run to capacity. An ordinary cow (say one weighing 1,100 pounds) producing 40 pounds of average milk per day will eat about 40 pounds of silage and from 10 to 15 pounds of alfalfa hay. In addition to this she will need about 10 pounds of ground oats and corn. This makes a very satisfactory ration and is economical. Cows producing less than 25 pounds of milk per day seldom need any grain if they have silage and alfalfa.

Summary

Farm grown feeds are as a rule too low in protein for a satisfactory dairy ration. The use of alfalfa hay corrects this deficiency. A cow does her best only when a part of her ration consists of a juicy or succulent feed. Corn silage fills this want. An economical ration is one which provides protein and carbohydrates in the right proportion. Corn silage and alfalfa hay when fed together fulfill this requirement. These two feeds are being grown on farms in every part of the state, but silos and alfalfa fields are not nearly so numerous as they should be. There is but one silo for each 119 cows and only five acres of alfalfa per farm. South Dakota will forge ahead most rapidly along dairy lines only when her dairymen make further use of these two important dairy feeds.

**A SILO AND ALFALFA SHOULD BE FOUND ON EVERY
DAIRY FARM**