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Profitable Dairy Feeding

R. A. Cave

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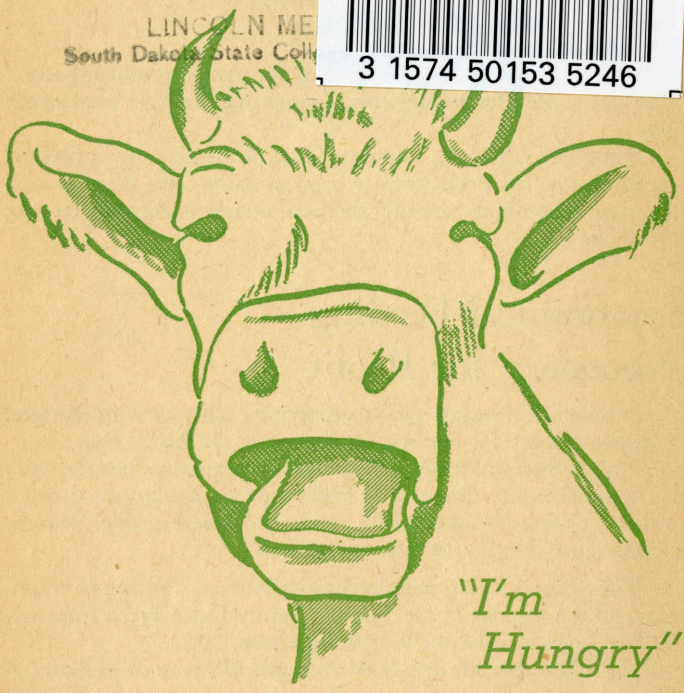

Most S. D. Milk Cows Are

"**Not enough milk-producing-feed** is the greatest single cause for low production in thousands of dairy cows."—R. A. Cave.

This Leaflet is one of the
PROFITABLE DAIRYING SERIES
on Practical Points for
South Dakota Dairy Farmers

AGRICULTURAL EXTENSION SERVICE
South Dakota State College ⋄ Brookings
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PROFITABLE
DAIRY FEEDING

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Feed is the greatest single item of expense in producing milk. The cost of feed for a dairy cow is more than half her total yearly cost.

Since feed is such an important part of the expense in producing milk, the net profit from a herd of dairy cows depends to a large extent on how carefully the herd owner studies the feeding of his cows.

Economical Feeding Necessary for Profit

Economical feeding means supplying each cow with the food nutrients needed for her best production at the lowest cost.

It takes thought, study and careful observation to feed the dairy herd economically. Some dairy herds are over fed but the greatest number of South Dakota milk cows are limited in their production because they do not get enough feed.

The greatest variation in feeding dairy cows is shown in a summary of the records of the Turner County Dairy Herd Improvement Association, for the year ending June, 1947.

The highest producing herd averaged 438 pounds of butterfat per cow for the year and the yearly feed cost per cow was $123.00.

The lowest producing herd, as well as the herd with the lowest feed cost per cow, averaged 205 pounds of butterfat per cow with a per cow feed cost of $66.00.

The herd owner with the highest feed cost, feed his cows $184.00 worth of feed and they averaged 309 pounds of butterfat per cow.

Feed According To Production

It is **poor practice** and **wasteful** to give every cow the same amount of grain regardless of how much milk she produces. When horses were used for farm work, those that were worked the hardest were fed the most. Now that tractors are used, the one doing the most work gets the most gas. **Cows are no different.**

If all the cows in the herd are fed the same amount of grain, the low milkers get more than they need and the high producers less than they need. The low producers get fat, while the high producers get thin and drop in their milk flow.

Records furnish the key to a sound feeding program. One day's milk from each cow should be weighed every month as a guide for grain feeding. Dairymen who belong to a dairy herd improvement association keep these records.

Good Roughage Cheapest

Roughage includes pasture, silage and hay or other fodder. It must be understood, however, that roughage is **not** cheap feed for milk production unless it is of high quality. Pasture must be green, tender and succulent. Silage should be cut at the right time and preserved without mold. Hay must be cut early and cured leafy and green.

Careful feed records were kept on a herd in a dairy herd improvement association which averaged 8818 pounds of 3.7 milk per cow in a year. The cost of the grain fed was 44.6 percent of the total feed cost for the year, but it furnished only 21.5 percent of the feed nutrients needed.

Pasture furnished 37.5 percent of the feed nutrients at only 12.2 percent of the yearly feed cost. Silage provided 20.5 percent of the food nutrients and cost 19.3 percent of the total feed cost, while hay contributed 20.5 percent of the food nutrients at a cost of 23.2 percent of the annual feed bill.

These records show that the key to low feed cost in milk production is high quality pasture, silage and hay.

Hay and Fodder Not Enough

The man who expects his cows to keep up their milk flow on hay, fodder or silage alone without grain, will be disappointed unless he has a large supply of good alfalfa hay. A cow producing 12 quarts of 4 percent milk a day will need nearly two pounds of digestible protein a day. To get that much protein she would have to eat 52 pounds of corn fodder, 61 pounds of sorghum fodder, or 70 pounds of prairie hay. Since the cow cannot eat that much of any of those roughages in a day, she will have to be fed some grain if she is to keep up her milk flow.

Winter Feeding

1. Feed each cow giving milk a pound (1 qt.) of ground feed for each three to four pounds of milk produced per day.

2. Give all cows 6 weeks rest before freshening and feed 5 pounds of ground farm grains per day during that period.

3. Feed 2-year-old heifers 5 pounds of ground farm grains per day for 6 weeks or longer before freshening.

4. Feed yearlings liberally for good growth and have them in good condition when they freshen at two years.

5. With cows of the dairy breeds and good producing cows of the non-dairy breeds, it usually will pay to add a pound of protein concentrate (linseed meal, soybean meal or cottonseed meal) to each 3 pounds of farm grains in the feed mixture where no alfalfa hay is available.

6. Two pounds of steam bone meal and one pound of salt should be added to each 100 pounds of the grain mixture.

7. Plenty of good water at a temperature cows will drink should be provided where they can get it comfortably.

8. Comfortable stables, free from drafts, and well bedded will add to milk production.

9. Cornstalk fields as a winter range for milk cows are unprofitable.

Feed Requirements of 1000-lb. cow producing 30 lbs. of 3.8 percent Milk per Day.

S. D. Exp. Bul. 231, pp. 61 and 62

	Protein	T.D.N.
Body Maintenance	.700	7,925
30 lbs. 3.8% milk	1.560	9,810
Total	2,260	17,735

*Rations that will furnish the above nutrients.

No alfalfa or silage

Prairie Hay	10 lbs.
Sorghum Fodder	10 lbs.
Grain Mixture	10 lbs.

(Equal parts corn cob meal, gr. oats, barley, soybean oilmeal)

Alfalfa but no silage

Alfalfa	10 lbs.
Sorghum	10 lbs.
Grain Mixture	10 lbs.

(Equal parts corn and cob meal, gr. oats, gr. barley)

Silage but no alfalfa

Prairie Hay	5 lbs.
Sorghum Fodder	5 lbs.
Silage	30 lbs.
Grain Mixture	10 lbs.

(Equal parts gr. corn, gr. oats, gr. barley, soybean oilmeal.)

Alfalfa and Silage

Alfalfa	10 lbs.
Silage	30 lbs.
Grain Mixture	10 lbs.

(Equal parts gr. corn, gr. oats and gr. barley)

*Corn and Cob meal, ground oats and barley can be substituted one for the other. Brome hay, wheat grass hay and other non-legume hay can be substituted for prairie hay and sorghum fodder. Linseed meal and cottonseed meal can replace soybean meal.

Spring and Summer Feeding

Good pasture is the cheapest and most healthful feed that can be supplied to the milk cow. Milk can be produced on good pasture at less than one-half the cost of its production under winter feeding conditions.

It should be emphasized that only good or excellent pastures furnish cheap feed. Weedy, over-grazed, dried up pastures are expensive. A good or excellent pasture for the milk cows throughout the season is a challenge to the skill and perservance of the best farmers.

A cow giving 40 pounds of milk a day will need about 120 pounds of grass a day. She will not eat that much grass unless it is abundant, palatable and succulent.

Blue grass and native pasture will provide good grazing for the milk cows for only two or three weeks in the spring. A pasture mixture of alfalfa with brome grass, crested wheat or Ree wheat grass, divided into several fields and not grazed closer than five or six inches, will come the nearest to supplying good or excellent pasture for the milking herd throughout the pasture season. Even with these pastures it is good practice to provide a field of sudan grass (about one acre per milk cow) for the driest and hottest period of the summer.

Hot Summer Months Most Difficult

The most difficult period in which to keep up the milk flow is during the hot summer months of July and August. Permanent pastures dry up, harvesting occupies the attention of the herd owner, and the cows are often neglected.

Production of cows in South Dakota cow testing associations dropped from an average of 866 pounds of milk per cow for June to 549 pounds per cow in October.

Sudan Grass To The Rescue

Sudan grass sown the last of May is the outstanding pasture crop for the above period in South Dakota. It is well liked by milk cows, will provide a large amount of forage on a small acreage and is at its best when other grasses are dried up. More South Dakota farmers are using it each year as a pasture crop. See Leaflet-59, "Good Pastures," available at the county extension office.

Grain On Pasture

Even on good pasture, cows producing more than 20 pounds of milk a day will need some grain if they are to keep up their milk flow. This grain can consist of the common farm grains such as corn, oats and barley.

Starting with 21 pounds of 3.5 percent milk a cow on good pasture should receive 2 pounds of grain a day. For each increase of 5 pounds in milk production above 21 pounds the grain ration should be increased 2 pounds. A cow giving 26 pounds of milk a day would require 4 pounds of grain, one giving 31 pounds a day 6 pounds of grain, etc. If the pasture starts to deteriorate, grain or other supplementary feeding will have to be increased in order to prevent a drop in milk flow.

Rotating Pastures

Dividing the pasture into several fields and grazing one field while another gets a rest is a good practice as it usually results in more forage, greater palatability and increased milk flow. Where several fields are available the cows in milk can be pastured a few days on each field followed by the dry cows and young stock.

Hay and Silage

High quality, home grown hay provides the next-lowest-cost feed for milk cows after good pasture. A program to supply two or three tons of such hay per cow will contribute greatly to low cost milk production in winter and it also is a good practice to provide a free-serve rack of new hay when the pastures deteriorate in the summer.

Well-cured, leafy, green alfalfa takes first rank as a hay for milk cows, followed by red clover, sweet clover and soy bean hay. The wheat grasses and other native prairie grasses make good quality hay when cut at about the time of heading, but are not equal in feeding value to good legume hay for dairy cows.

Silage Increases Food Value

The food nutrients obtained per acre from corn and the sorghums when they are made into silage are nearly doubled as compared to feeding them as dry fodder.

Silage is a valuable feed for milk cows and usually will enable them to produce more milk. This is especially true where the hay or fodder is not of good quality. Cows like silage and it has a beneficial effect on the digestive system.

Sweet clover has possibilities as silage to be used for supplementing short pastures in the summer.

Alfalfa silage is growing in favor among dairymen further east. South Dakota dairymen might well consider handling the

first cutting in that manner. It would result in a much more uniform quality of feed as compared with alfalfa hay, some of which is usually damaged by rain.

It is estimated that the losses during the curing and harvesting of alfalfa hay amount to 15 to 20 percent of the dry matter and 25 to 30 percent of the protein under fairly favorable conditions. In rainy weather the losses would be greater. Alfalfa silage also contains two or three times as much carotene as the hay.

Feeding experiments conducted by the Bureau of Dairy Industry comparing alfalfa silage and alfalfa hay showed that the cows getting the silage produced as much milk and gained more in weight than those getting the alfalfa hay.

Alfalfa silage can be made either by the wilting method or the use of preservatives, such as corn-and-cob-meal or molasses. New improved field choppers will greatly reduce the labor of putting up the silage.

Summary

Milk cow owners can reduce their annual feed cost and increase their net profits by carefully planning a feeding program that includes:

1. **Feeding more home grown farm grains.**
2. **Planning a pasture program that will supply good pasture from early spring to late fall.**
3. **Planning a crops program that will provide at least two to three tons of high quality home-grown hay per cow for winter feeding.**
4. **Providing good silage.**

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