

Do your cows need a complete dairy ration?

COLLEGE PARK, Md. — Regardless of the type of feeding program used, the goal of any dairy farmer is to offer each animal a ration that will encourage maximum economical production, says Tony Rickard, professor of dairy science at the University of Maryland.

To meet this goal, a ration should meet the animals nutritional requirements and contribute to the animal's health. The ration also should be economical and acceptable to the animal.

When dairy cows are housed in stanchion barns, it is possible to feed the nutrients required by each individual. But an increasing number of producers are switching

to loose housing or free stalls, which reduces the chance to individually feed, Rickard reports.

In the loose housing system, hay and silage are normally fed in separate feed boxes. A problem with this procedure of feeding roughages free-choice, and concentrates individually according to feeding guides, is not being able to tell how much any one cow has eaten, even if an average intake is known.

Due to individual preference, there are large variations in amounts of forages eaten by different cows. In a Cornell study, Holstein cows with free-choice access to alfalfa hay and corn silage, exhibited large variations

in forage preference.

This was the case whether the forages were offered simultaneously, or when the choice was limited to one forage in the morning and another in the evening. As an example, voluntary intake of corn silage ranged from 24 percent to 78 percent of the total roughage dry matter consumed.

Since concentrate mixtures are normally formulated to supplement the average forage consumption of the herd, serious feeding imbalances may develop due to wide variations in individual forage preference. Cows eating mostly corn silage receive too little protein and calcium, while those consuming predominately alfalfa hay receive too much.

Feeding a complete dairy ration offers an alternative to these

limitations. A complete feed is one in which the forages, grains, protein, mineral and vitamin supplements are thoroughly mixed and formulated to specific nutrient concentrations. They are offered free-choice and every mouthful consumed by the cow provides the correct balance of nutrients she requires. Since all ingredients are blended into one feed, the animals do not have the opportunity to select for their preference.

Such a system has performed successfully in both research trials and on dairy farms. Grouping cows according to production allows the formulation of complete feeds to be more precise. Milking animals should be divided into at least three groups according to production and stage of lactation and fed different roughage to concentrate ratios to maximize feed efficiency and reduce nutrition related problems. Dry cows should be fed and managed as a separate group.

There are numerous advantages and disadvantages of the system. Rickard urges producers to evaluate the following points before deciding on the best system for their farms.

Advantages of Complete Rations

- ✓ No individual preference is allowed. Each bite consumed is a uniform and balanced diet.
- ✓ Concentrate feeding is not required in the parlor, reducing construction and maintenance costs.
- ✓ Free-choice mineral feeding is not required since the ration is formulated to contain recommended levels. This eliminates the

inherent errors in feeding minerals choice-free.

✓ Fewer digestive upsets occur in early lactation because the nutrient-rich concentrate is diluted by the roughage. This reduces the amount of concentrate that can be consumed at one time under ad libitum feeding.

✓ Nonprotein nitrogen, such as urea, is utilized more efficiently when small amounts are consumed several times a day rather than the large amounts in the concentrates fed twice a day at milking. The average cow consuming complete feeds will normally eat about 10 meals a day.

✓ Unpalatable ingredients, such as urea, may be masked by other ingredients, particularly if silage or molasses is a part of the ration.

Disadvantages of Complete Feeds

- ✓ Hay must be shredded or chopped before it can be incorporated into a complete feed.
- ✓ Mixer wagons required to thoroughly blend ingredients are expensive. Electronic load cells for weighing ingredients are needed to increase the accuracy of ration formulated, but also are expensive.

✓ Complete feeds are most easily adapted to fairly large herds (100 cows or more).

✓ Cows should be grouped according to production. Many dairymen will probably find this difficult with existing facilities.



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