



**DAIRY FARM
MANAGEMENT
BASICS**

A Farm Management Course by
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Feeding and Nutrition - Article 11

The first ten articles in this series focused primarily on the personal and business side of dairying -- goals, benchmarking, farm investments, costs of production, number crunching, etc. Cows are the heart of the dairy business. The big question is how can we manage them so they have an opportunity to help us meet our personal and business goals. So, the next group of articles will focus on some key areas of herd management, such as feeding and nutrition, cow comfort and behavior, genetics and reproduction, herd health, culling and merchandising cattle, and herd replacements. Let's start with feeding and nutrition.

Feeding is one of the most important areas of herd management because it affects so many things, the most obvious of which is milk production. It also affects a cow's health, her immune status and her conception rates. And, feed-related costs represent 50% or more of the total cost of producing milk.

Some general goals in feeding cows are:

- Maximize rumen activity
- Maximize the production of microbial protein by the rumen
- Meet the nutrient needs of ALL groups of cattle on the farm
- Maximize dry matter intake (DMI)
- Control, not minimize, feed costs

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Maximizing Rumen Activity

Some goals for maximizing rumen activity are:

- Establish the maximum number of the right kinds of microbes in the rumen
- Provide rumen microbes the kind of environment and the kinds of nutrients they need
- Sustain peak rumen function 24 hours a day with no slack off times

1 Benefits of a highly functional rumen

- The rumen feeds the cow, so the cow is only as good as her rumen
- Feeds are utilized more efficiently when the rumen is functioning well. That means the feeds are better utilized, more of the feed nutrients end up as milk in the tank and flesh on the cow's back, rather than in the gutter as wasted nutrients and expensive fertilizer.
- Dry matter intake improves when feeds are digested thoroughly and move out of the digestive tract rapidly. More room is freed up for additional feed intake. Thus it is beneficial to keep microbes working at peak activity 24 hours a day.
- More microbial protein is produced. This is a high quality bypass protein that is available to the cow -- and at no cost. The more microbes there are that grow in the rumen, and the more feed that passes from the rumen into the small intestine, the more microbes there are that also get digested as microbial protein. This is very high quality, amino acid rich protein, and it is FREE. If the rumen is functioning well, it can produce about 7 lb of microbial protein per day. This is a very significant part of the cow's total daily need.
- Cows maintain more normal levels of fat tests, even at high levels of milk production.

2 To function well, the rumen needs:

- Good working environment, which means a properly buffered rumen that remains at a proper pH level (not too acid)
- Good quality fiber for microbes to attach to and digest. The forages a cow consumes provide the fiber the microbes need, and it forms a floating, fibrous mat in the rumen. This fiber also encourages cows to chew their cud. As cows chew their cuds, they produce gallons and gallons of saliva which is an excellent quality buffer for the rumen, and it's a buffer that has no palatability problems and it is FREE.
- Continual supply of other nutrients, such as soluble protein and soluble carbohydrates, as well as vitamins and minerals.



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