

Feed Management and the Rumen

The ruminant's digestive system is very complex, with the rumen being the most intricate and sensitive part of the system. The ability of the rumen to facilitate the breakdown (digestion) of relatively indigestible materials (cellulose) is amazing. However, this remarkable organ can be a nightmare when mismanaged.

Maintain the Rumen Environment

To get the most out of your sheep and cattle at minimum cost, you must be prepared to supply a consistent ration every day of your animal's life. This does not mean one day you feed brewers grain and corn the next day and then a little bit of dairy ration on the third day. Generally, supplying the same type of hay and grain will provide the consistency that is required for efficient digestion. This is important because in order for the microbes to be productive, rumen pH must hover around 6 or 7. If the rumen becomes more acidic, then these bugs will slow down and digestion of forage and grain will be reduced.

Some Feeding Guidelines

- To ensure that your animals have healthy, productive rumens, use the following guidelines:
- The ruminant has been designed to consume and digest forage effectively, so feed lots of it. A minimum amount of forage at 1.5 per cent of body weight should be fed to promote good conditions in the rumen. For example, if you have a 130 lb ewe, then a minimum of $(130 \times 1.5/100)$ 1.95 lbs of hay should be fed along with the recommended amount of grain.
- Feed hay before grain to ensure that grain is not digested too quickly. Feeding forage creates a fibrous mat in the rumen which traps the grain and increases its digestion time. Cud chewing stimulated by forage also improves rumen environment by increasing flow of saliva which reduces acidity.
- Do not feed large quantities of grain to your animals at one time. Large amounts of grain will promote the growth of lactic acid bacteria (starch digesting) which increases the acidity in the rumen (lactic acid is a much stronger acid than acetate or propionate) and slows down the digestive processes. It is recommended that no more than 6 or 7 pounds of grain be given to dairy cows at each feeding. If you are feeding 30 lbs. of grain per day then the grain ration should be divided into five separate feedings. The significance of this recommendation to sheep or beef will be minimal since large quantities of grain are not generally fed.
- Do not feed large quantities of finely ground grains. Fine grinding of grain increases the rate of digestion and fermentation and will increase acidity of the rumen, resulting in reduced feed intake.

Rations should not be changed abruptly. A sudden change in the type of forages in the ration will also have negative effects. You should consider a 1 to 2 week period to gradually change feeds in your rations. The rumen bugs require this time for adaptation.

Rumen Mismanagement - The Consequences

The computer feeder and total mixed rations have improved the management of the rumen dramatically. Farmers have said that they now have very few animal digestive upsets on the farm. Multiple feeding (at least six per day) have notably improved the rumen environment, but problems still occur. These digestive upsets are not necessarily the result of grain over feeding; it is the abrupt change in forage that seems to be causing more problems. The symptoms are very clear, including reduced feed intakes, loose manure verging on diarrhea, and a significant drop in milk. A change in forage requires an adjustment period so the rumen bugs can adapt. Forages are often different in quality and in the species.

The effects of abrupt ration changes in dairy cattle can be seen quickly because of the impact on milk production. The economic loss can be significant. If your herd produces 100 litres less milk per day for a week, this will reduce cash flow by almost \$600. Also, annual milk production will be affected. High producing dairy cows need a uniform feeding schedule and a consistent daily ration.