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News from Your Extension Agent:

Rumen Disorders

Cattle belong to a group of animals known as ruminants. A ruminant is an animal with a 4-compartmented stomach. They have bacteria and papillae in the largest compartment, the rumen, to help break down feedstuffs that are not readily digestible. Ruminants regurgitate feedstuffs in a function known as “chewing the cud;” they chew their food again to aid in the breakdown process. The rumen is a unique organ, it is typically referred to as a fermentation vat. Fermentation is required to break down feedstuffs that are not readily digestible, such as lower quality hay or “roughage.” For the rumen to function properly, cattle should consume forage, roughage and sometimes supplemental feed (a ration that varies in digestibility) multiple times throughout the day. If animals are fed irregularly or consume too much or not enough supplement/ grain/ roughage, problems may arise.

The rumen contains gases, recently consumed feedstuffs (that need to be broken down) and yesterday’s consumed feedstuffs (that are ready to be digested). The balance of these three contents should be about 30% each. When these get off balance, it may cause the rumen to stop functioning or cause bloat, a buildup of gases. Recently consumed feedstuffs or roughage typically need to be broken down more before they can be digested- this is where the fermentation in the rumen and regurgitation comes in to play!

Rumen acidosis

Rumen acidosis may occur when these levels get off balance, other than a buildup of gases. Acidosis is characterized by a low rumen pH. When this happens in the rumen, it can be a direct result of what an animal has consumed or it can be a secondary reaction to a more serious problem. Acute rumen acidosis is characterized by consuming too many readily digestible carbohydrates (grain), without the appropriate roughage in the diet. The rumen pH will drop, slowing down the ruminating process. This relates back to the rumen containing essentially 3 different materials: gases, recently consumed feedstuffs and yesterday’s consumed feedstuffs. If an animal consumes too much readily digestible carbohydrates, it is like they are consuming too much of the “yesterday’s feedstuffs,” it sinks right to the bottom and the rumen does not have a job to do (it doesn’t need that extra fermentation or breaking down). When this happens, it causes the rumen to get off balance and if not detected soon enough, may cause the rumen to shut down entirely. When the rumen shuts down it causes problems in the rest of the animal such as dehydration, cardiovascular collapse, muscle weakness, shock and death. If caught early, there are a couple treatment options. One being, removing rumen contents and replacement with ingesta from a healthy animal. In less severe cases a warm-water mixture of magnesium hydroxide should be pumped into the rumen, sometimes this will kickstart the contents of the rumen into functioning.

There are many other diseases or problems that may occur in digestive process, but with bloat, acidosis or an imbalance of rumen contents, prevention is best. Don’t allow accidental overdose of concentrated feed or grain -anything that may be more readily digestible than their well-balance diet. Feedlot cattle should be introduced gradually to concentrate rations.



Please note cattle may get a well-balanced ration even when strictly “on pasture” due to the nature of them eating the entire plant part and plant variety. I don’t want anyone assuming that supplemental feed is always necessary. However, that topic is an article or entire textbook rather, for another day.

All data and recommendations are based on Texas A&M AgriLife Extension Resources, other Extension Resources and the Merck Veterinary Manual.

Sincerely,

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