AgriLIFE EXTENSION
Texas A&M System

Pasture Bloat

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Foamy or frothy bloat reduces performance and can potentially lead to death of cattle. Frothy bloat occurs when the gases normally produced during ruminal fermentation cannot be expelled from the rumen by eructation (belching). At the onset of bloat, cattle may cease eating and the bloat may dissipate. As the severity of bloat increases, the rumen becomes more distended and the level of discomfort increases. If no intervention occurs, death can result from respiratory distress and heart failure.

Anytime cattle are consuming highly digestible feedstuffs and forages the potential for frothy bloat exists. Carbohydrates and soluble proteins from these feeds are rapidly degraded and fermented in the rumen. Slime-producing bacteria that degrade soluble proteins and small feed particles produce a slime that can develop into a stable, proteinaceous foam. Mineral composition of the forage may also affect the stability (surface tension) of the foam. Bloat occurs when the gases produced by the fermentation become trapped in this foam and cannot be expelled.

Frothy bloat on pasture is usually associated with actively growing, highly digestible forages that contain low fiber and relatively high crude protein (and soluble protein) levels. Among these forages are small grains forages and legumes such as alfalfa and red and white clover.

The occurrence of bloat is affected by a number of factors – soil fertility, climatic conditions, stage of plant development, grazing management, and animal predisposition – among others. Because of the multiple factors, reducing or preventing bloat may require multiple management approaches on a single operation and, the success, or lack thereof, of a preventative measure can vary from year-to-year and operation-to-operation.

Soil fertility practices may influence the incidence of bloat on small grains pastures. Work in the Rolling Plains suggests that high, single applications of N on wheat increases the potential for bloat. This and management history on fields may partially explain why bloat outbreaks may occur on some fields but not on others in the locale.

Stage of plant development affects the concentration of carbohydrates and soluble proteins that can provoke bloat. This again may partially explain why bloat outbreaks may occur on some fields but not on others in the locale. The forage may be at different stages of development as influenced by planting dates, moisture conditions and other factors affecting growth.

Small grains bloat is typically a problem in the late winter/early spring when the forage is coming out of winter dormancy. Occasionally fall/winter bloat can be a problem. With legumes, bloat risk changes with stage of plant development. For

instance, bloat risk on alfalfa decreases as the plant matures and blooms. Knowing when bloat risk increases and subsides during the grazing season aids the timely application of prevention practices.

For pastures containing bloat-provocative legumes, it is recommended that the legumes comprise no more than 50% of the forage mix. An alternative is to plant adapted legumes that are less bloat provocative.

Grazing programs should focus on turn-out practices and forage availability. Prior to turning cattle onto pasture ensure that the cattle are full. This will tend to limit immediate grazing activity and forage consumption. Likewise, if cattle are managed under a rotational grazing scheme, judiciously manage forage availability. Moving cattle from pastures with a limited forage supply (and hence limited consumption) to fresh paddocks with an abundant supply (and hence increased consumption) may predispose the cattle to bloat. Adjust the rotation so cattle are not rotated from a limited forage supply to an abundant forage supply.

During bloat risk periods, providing access to hay or other forages may reduce the occurrence of bloat. Assuming the cattle will consume the hay/forage, consumption of the bloat-provocative forage may be reduced and hence reduce the risk of bloat.

Poloxalene (Bloatguard) is a mild detergent that reduces the foam in the rumen and hence can reduce the incidence of bloat. The product is available in different forms – blocks, mineral supplements, liquids, top dresses. To be effective, the cattle must consume a sufficient amount of poloxalene daily. Poloxalene in a self-fed form will probably never totally prevent bloat because of the variation in daily consumption by individual animals. Handfeeding poloxalene in a larger volume of feed will increase the consistency of daily intake.

Surfactants, anti-foaming agents, have been used successfully in some grazing situations. In order for surfactants to be effective, they must be consumed on a daily basis. Water treatments are effective as long as the treated water is the only source of water and the surfactant concentrations are maintained.

Ionophore feed additives may also aid in bloat prevention. Microbial gas production in the rumen is reduced by ionophore consumption. Studies on irrigated wheat in New Mexico demonstrated that Rumensin dramatically reduced the incidence and severity of bloat. Ionophores can be delivered in blocks, mineral supplements, pelleted supplements and mixed feeds. As noted with poloxalene, these feed additives will not totally eliminate bloat. In addition to aiding with bloat prevention, the ionophores will improve daily weight gain.

Anecdotal data suggests that salt (sodium) consumption may reduce incidence of bloat. A survey of Oklahoma producers indicated that bloat incidence was lower when salt was available to cattle. *Remember* that complete mineral supplements for cattle contain salt. Oklahoma data has also shown that cattle grazing wheat and consuming a complete mineral balanced for wheat pasture gain more rapidly than cattle consuming salt alone and inclusion of Rumensin further improved gains. So offering a mineral supplement provides a means of delivering salt as well as an ionophore, both of which may help reduce bloat prevalence, as well as improving performance.

Some cattle are predisposed to bloat. This may reflect physiological differences, differences in ruminal microbial populations, differences in forage selection and forage

intake, or other factors. If animals are chronic bloaters, the best approach is to remove them from the group.

The only 100% effective means of stopping bloat is to remove the cattle from the bloat provocative pasture.

Several factors, acting in combination or individually, can lead to a bloat problem. No one single management practice will be completely effective all of the time. Knowledge of when bloat occurs and why it occurs can help in developing and implementing a management plan to reduce the occurrence.