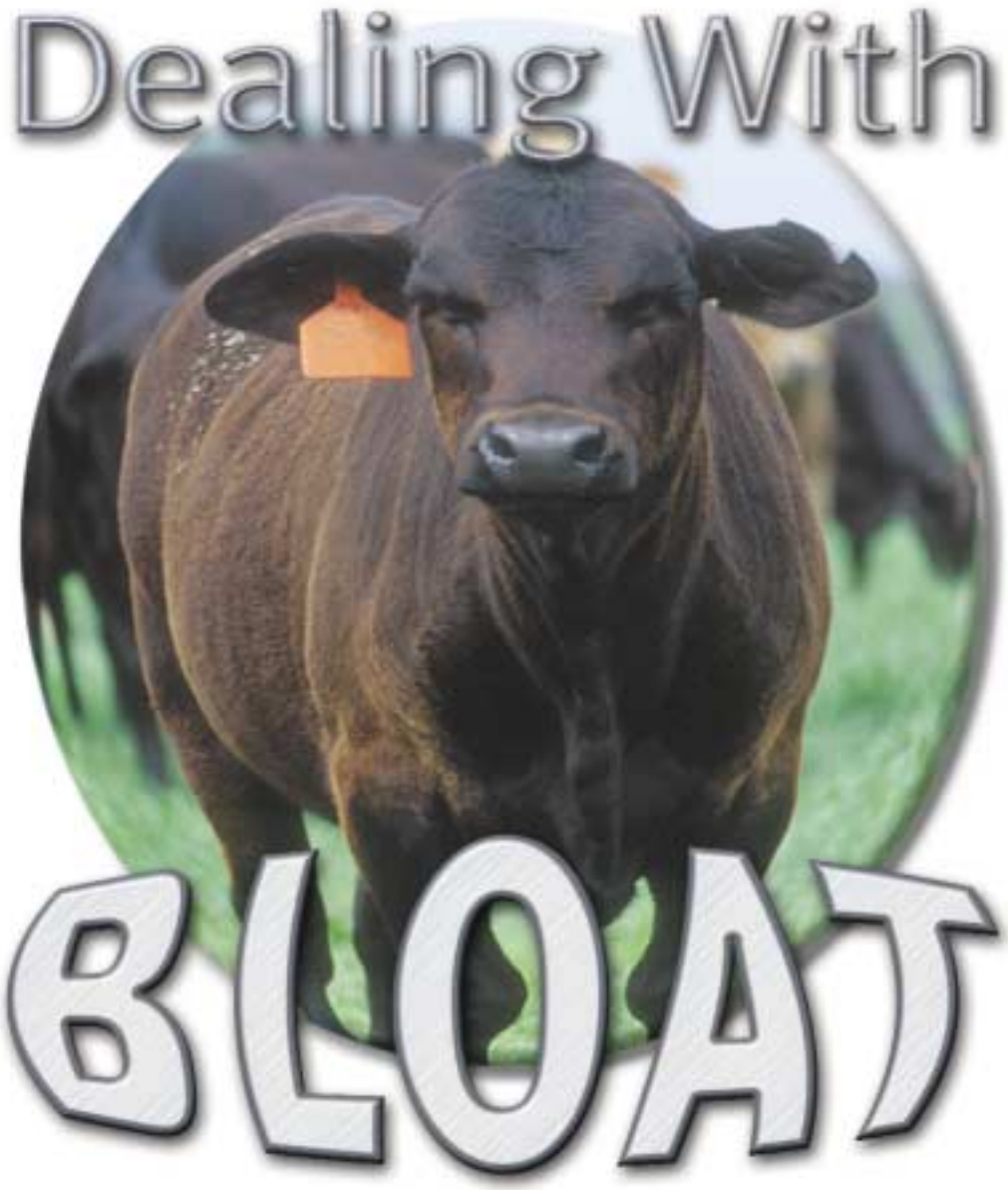
Dealing With BLOAT



A watchful eye and sound grazing strategies help reduce bloat.

by ***Troy Smith***

In some cultures, a resounding burp upon completion of a meal is considered mannerly and is accepted as a compliment to the host and the chef. In others, such behavior is considered rude and unacceptable. Polite society's rules of etiquette demand that such digestive emissions be controlled, or at least subdued.

Cattle are oblivious to these rules of conduct. Belching is basic to the bovine beast.

In more scientific terms, it's called eructation, and it's absolutely necessary for cattle and all ruminant animals. Fermentation of feed in the stomach's first chamber (rumen) produces an abundance of gas. If not released through eructation, an excessive accumulation of gas results in bloat. Common among both pasture and feedlot cattle, the condition disrupts digestion, interferes with breathing and may cause death. In severe cases, death may occur within an hour.

Most authorities agree that overproduction of gas is not the specific cause of bloat. Rather it is the failure to belch. That can happen if solid objects such as corncobs, turnips or apples become lodged in the animal's throat, blocking the esophagus and preventing the release of rumen gas. The obvious remedy is removal of the blockage.

Passing a stomach tube to release rumen gas might be required in some cases, such as when a feedlot animal bloats after overeating to the point that rumen contents obstruct the opening to the esophagus. A similar blockage can result from an animal's lying on its side on irregular ground or between the rows in a cornstalk field. Once bloating has occurred, the animal may be unable to get up or even to roll onto its chest to belch.

Such cases involve failure to expel free gas from the rumen, but frothy bloat is a more complex issue that may be affected by a variety of factors.

Frothy bloat

T.G. Nagaraja, of the Kansas State University (K-State) College of Veterinary Medicine, says frothy bloat most often occurs when highly digestible feeds are degraded and fermented rapidly. A thick froth or foam traps rumen fermentation gas and hinders the affected animal's eructation mechanism.

"Some animals are chronic bloaters, and we don't know the exact reasons. Maybe they have unusual rumen microbe populations, exhibit abnormal rumen contractions or don't eructate normally. There's probably some physiological or anatomical defect, because some animals will bloat on almost any diet," Nagaraja says. "But certain forages are definitely more likely to contribute to frothy bloat. It's usually a bigger problem when animals are grazing lush cereal-grain pastures or pastures where legumes, like alfalfa and clovers, are dominant."

Nagaraja says bloat-provoking pastures usually contain rapidly growing forage species with high levels of soluble protein and low levels of fiber. Rapid utilization of nutrients by rumen microbes leads to rapid gas production and formation of the gas-trapping foam. Harvested legumes are less likely to present bloat problems because of lower digestibility, but producers should not discount the possibility of bloat when feeding very high-quality legume hay such as fine-stemmed, leafy alfalfa or hay that has been ground very fine.

Frothy bloat occurs in the feedlot, too, and is not uncommon when rations contain highly digestible grains. Nagaraja says primary offenders are wheat and barley, while corn presents fewer problems and sorghum the least. Mixing ground alfalfa with grains can increase the chances of bloat in the feedlot, but good management helps reduce the risks.

Management strategies

"I think most good feedlot nutritionists can be complimented for reducing feedlot losses from bloat," offers veterinarian Robert Smith of Oklahoma State University

(OSU). "Monitoring fineness of grind, uniform ration mixing and timely delivery of feed to the bunk are important factors in maintaining consistent feed intake. And *inconsistent* feed intake can set the stage for bloat.

"During a long, bad blizzard, for example, cattle will stand humped up, tails to the wind, instead of going to the bunk. When the storm's over, they want to fill up on feed," Smith says. "And high winds can affect what cattle consume because roughage may actually be blown away. Bunk management is important."

Another consideration, according to Smith, is the level of ionophore used in a ration. Ionophores (such as Rumensin® and Bovatec®) have been shown to reduce bloat occurrence and severity. However, some controversy exists regarding which ionophores might be most effective. Nor do the experts agree on the effects of mineral supplementation. In some studies, imbalances of calcium, magnesium and potassium have been associated with increased incidence of bloat.

University of Wyoming Extension beef specialist Steve Paisley believes mineral content, along with high levels of soluble protein and low levels of fiber, may contribute to bloat problems among animals grazing cereal-grain pastures. Paisley says that wheat pastures normally are low in calcium and magnesium — minerals believed to affect rumen motility. And winter wheat is commonly grazed during the spring when animals crave green grass, so the rate and volume of consumption may contribute to bloat problems, too.

Heightened producer interest in year-round grazing systems has led to increased planting of cool-season grass pastures, as well as increased grazing of alfalfa and other legumes. Paisley reminds producers that prevention of bloat while utilizing these resources also requires consideration of climatic conditions, forage maturity and grazing management.

"Possible management techniques include maintaining no more than 50% alfalfa or clover, and selecting varieties with less potential for causing bloat," Paisley says. "It's a good idea to fill cattle on grass hay or dry roughage before turning them onto bloat-susceptible pastures. Try to delay turnout until midday, after the dew is gone and the forage is dry. If possible, acclimate cattle to the new pasture by turning them out for just a few hours a day at first."

To help prevent bloat in grazing cattle, some producers use mild household detergent as a surfactant or antifoaming agent. A surfactant reduces the surface tension of the foam, allowing the animal to expel rumen gas. In highly controlled grazing systems involving small paddocks, surfactants have been sprayed directly on the forage. Perhaps more common is the addition of detergent to drinking water.

"An effective commercial product, poloxalene, is available in blocks, liquid feeds, top-dress products or in mineral supplements. The blocks are probably most common, but any products offered free-choice might give producers a false sense of security," Paisley warns. "They're only effective if cattle consume adequate amounts of poloxalene on a regular basis."

Smith warns that bloat prevention definitely constitutes an "off-label" use of laundry soap, and agrees that poloxalene is preferable. It's also available in a treatment dose form best delivered by esophageal tube. He agrees that, as a preventative, maintaining daily consumption can be a challenge.

"Frothy bloat in pasture cattle can be frustrating and difficult to manage. I've found that cattle often don't consume enough poloxalene every day, from blocks or when it's included in a mineral mix. You can have the same problem with ionophores included with the mineral supplement," Smith adds. "The surest way to deliver a daily dose is through a grain package. Of course, feeding grain to pasture cattle is not something a lot of producers want to do."

Growing interest in grazing legumes, new or increased grazing of cereal grains or development of pastures for high yields, through irrigation and fertilization, could mean increased chances for bloat. A watchful eye and consideration of grazing management and supplementation strategies are advised. Like it or not, prevention or timely treatment of bloat requires close and careful management.

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Bloat in show cattle

Oregon veterinarian Dave Barno has lost count of the bloat cases he has observed in practice. And while accompanying daughters Lindsey and Haley to junior Angus activities for several years, he has seen bloat affect plenty of show cattle.

"I do see it quite often, and it's usually feed-related," Barno says. "It's fairly common when animals are being pushed pretty hard on a ration that's high in grain. And the animals are kept confined and tied up much of the time, or they're being hauled down the road, so their feed consumption might be irregular."

When designing a ration, Barno recommends avoiding finely ground grains or fine particulate protein ingredients. He says adequate intake of roughage is important to stimulate rumen motility. However, Barno warns that alfalfa should be fed with care.

Ohio veterinarian Chris Gilbert agrees.

"We might not see much bloat in these cattle if people would remember that a cow is more like a silo than a grain bin," Gilbert says. "A lot of these show cattle just don't get enough hay. But I'd advise against feeding straight alfalfa."

Gilbert's daughter, Jenna, and son, Jordan, also follow the Angus show circuit, with little sister Janelle eager to join in. Their cattle are fed a ration of which the main ingredient is oats, because of the relatively high fiber content. And the hayrack is never empty.

"It doesn't have to be premium quality, but I think hay should always be available. If you're feeding alfalfa, feed prairie hay with it. Alfalfa is a good source of protein, but it can contribute to bloat problems, especially later cuttings that are finer-stemmed and higher in protein," Gilbert advises.

"As an added precaution, I recommend vaccination for clostridia, types C and D (overeating disease). And particularly when cattle are being hauled a lot, I encourage regular use of probiotic products to maintain rumen microflora."

Before heading down the road with show cattle, Barno suggests packing a stomach tube and mineral (or vegetable) oil in the show box. Should bloat occur, the tube can be used to relieve pressure from gas in the rumen. An oral speculum also might come in handy for keeping the animal's mouth open while administering the tube. Following up with a mineral-oil drench will encourage movement of rumen contents through the digestive tract.

"In worst-case situations, a trocar might be needed to puncture the rumen to relieve the pressure," Barno says, "but that's better handled by a professional. In an emergency, seek the aid and advice of a veterinarian."