

Bloat Prevention and Treatment in Cattle

Rick Rasby, Extension Beef Specialist
Lindsay Waechter-Mead—Livestock Educator
Daren Redfern—Pasture/Forage Specialist

This publication addresses causes, prevention and treatment of bloat in cattle.

Bloat in beef cattle is an excessive accumulation of gas in the rumen that cannot be eliminated by the animal using normal processes. Immediately after cattle consume a meal, the digestive process creates gases in the rumen. Most of the gases are eliminated by eructation (belching). Any interruption of this normal gas elimination process results in gas accumulation in the rumen referred to as bloat. Bloat can be caused by:

1. Certain forages when consumed at certain stages of growth; an example would be some legumes like alfalfa.
2. Certain proteins in forages.
3. The amount, rate of intake, rate of digestion, and coarseness of grains and some roughages—finely ground grains and forage in feedlot ration can be consumed and digested at a fast rate.
4. Failure to eructate due to obstruction outside the rumen, such as a foreign body blocking the esophagus or vagal nerve distribution.

Trapped gases that are not eructated can form a foam or froth in the rumen that prevents elimination of gases. Froth can be formed by many factors resulting from interactions among the rumen microorganisms and differences in plant biochemistry. During these interactions, gas builds up in a foam or froth above the liquid/semi-liquid fraction of the rumen contents and the normal belching is inhibited. Preventing bloat is desirable not only to reduce deaths but also to reduce the negative effect of bloat on cattle performance. Pasture (frothy) bloat can occur in animals grazing wheat pasture or lush legumes (alfalfa, ladino,



Figure 1. Bloat calf. Viewing the calf from the rear, left side distended indicating bloat.

white clover) or being fed green-chopped legumes. Feedlot (free gas) bloat, which is bloat with no evidence of froth, usually refers to bloat in cattle fed high-grain rations that may or may not contain legume forages. It often occurs secondary to acidosis and/or rumenitis. Cattle consuming feedlot diets may have bloat caused by the grain portion being ground too finely. Fine-ground grains are digested rapidly, causing rapid fermentation and gas production.

Visual signs of bloat in cattle include:

1. distension of the left side of the animal as the primary sign (*Figure 1*),
2. discomfort as indicated by stomping of feet or kicking at the belly, labored breathing,
3. frequent urination and defecation, and collapse.

Preventing Pasture (Frothy) Bloat

Type of forage, weather, time of day, mineral nutrition, animal characteristics (adapted to feeds/forages), and rumen conditions all influence the likelihood of animals

bloating. Alfalfa, forage rape, wheat, and many clovers (including white, ladino, sweet, and red) cause bloat more than grasses or other commonly grazed forages. Some animals, more selective in their grazing, may consume a diet higher in bloat-causing plants than other animals. Cooler than normal temperatures (especially at night) are usually associated with bloat. Reasons may include higher forage intake by animals during cool weather and that plants are digested more rapidly when grown at lower temperatures. Cattle also tend to bloat more frequently in the morning, because their biggest meal occurs at this time.

Bloat can be mitigated by purchasing and feeding anti-bloating supplements. Often, proper grazing management can reduce or eliminate bloat problems. Proper grazing management techniques involve providing a consistent and steady diet and controlling access to high bloat-potential plants, especially under moist or succulent conditions. When providing a consistent or gradual change in forage quality and plant species, a uniform rumen condition can be maintained that reduces the chance of hungry animals overeating. Livestock graze the highest-quality forage at the beginning of the grazing period and a lower quality at the end. Using rotational grazing (shorter grazing periods that leaves substantial residue) results in relatively uniform forage quality throughout the grazing period. In addition, the diet change from a grazed paddock to a fresh paddock is minimized.

Management Practices to Reduce the Incidence or Severity of Pasture (Frothy) Bloat

Pasture Establishment and Management

- Plant mixtures of legume and grass with legumes providing no more than 50 percent of the available forage.
- Observe plant growth rates and legume-grass proportions throughout the growing season. Plant non-bloating legumes like birdsfoot trefoil, cicer milkvetch, sainfoin, and lespedeza or lower-risk legumes like sweet clover and red clover.
- Avoid patches of palatable, high bloat-potential plants. Interseed these areas with grasses or use herbicides to reduce concentration of high bloat-potential plants.
- Fertilize grass/legume pastures with nitrogen to stimulate grass production.

Livestock Diet Supplements

- Feed anti-foaming chemicals like poloxalene, which prevents pasture bloat, before grazing grasses known to

potentially cause bloat. Begin feeding two to five days before turning onto pasture. Poloxalene can be fed as a topdressing on feed, in a grain mixture, in liquid supplements, or in molasses blocks.

- Provide supplements that has an ionophore (example: Rumensin[®]).
- Provide mineral supplements with adequate sodium (salt) and avoid excessive potassium, calcium, and magnesium.
- Allow livestock free-choice access to baled forage for several days prior to grazing or allow animals access to dry-grass hay, grain, or crop residues while grazing lush, high bloat-potential plants.

Grazing Management

- Never turn hungry livestock into a pasture containing a high proportion of bloat-causing plants.
- Fill animals with dry hay or grass pasture before grazing high bloat-potential pastures.
- Avoid turning animals onto fresh, high bloat-potential pasture that is moist with dew, rain, or irrigation water. Both rate of intake and initial rate of digestion are higher for moist plants, causing more rapid digestion.
- Make paddock rotations mid-day or later to help minimize moisture and increase plant carbohydrate concentration.
- Observe livestock closely the first several hours and days and remove any “chronic bloating” animals.
- For legume pastures, avoid grazing legumes before they begin to bloom. This may not be possible if spring grazing or if grazing season-long. Make closer observations for bloat when many plants are at a younger growth stage.
- Manage grazing to encourage livestock to consume low- or non-bloating plants and plant parts rather than just succulent top growth. For example, use daily strip grazing or use high stock density in multiple paddock systems rather than continuous stocking.
- Never allow animals grazing high bloat-potential pasture to get so hungry that they consume too much in one feeding. Always have sufficient feed available.
- Once grazing begins, don't remove animals from pasture or make frequent, major changes in the type of pasture being grazed unless animals have greatly distended rumens. Mild bloat is common on high

bloat-potential pastures. Frequent diet changes prevent rumen microbes and animals from adapting to bloat pastures.

- If an animal bloats or get sick while grazing a pasture and does not graze for a couple of days, remove this animal from the pasture, allow time for recovery, and offer dry forage to fill before returning it to the pasture.
- Be extra observant for cattle bloat when high bloat plants show a rapid flush of growth such as during cloudy, wet periods in the spring and after a plant stress event such as hail or drought.
- Delay grazing high bloat-potential plants for three to five days after freeze damage.

Managing Feedlot (Free gas) Bloat

Feedlot bloat is most frequently associated with digestive upsets related to acidosis. Death losses are minimal in well-managed feedlots. Most cases are “subacute” rather than “acute.” In acute cases, distress symptoms such as frequent urination and defecation, labored breathing, and restless movements are evident. In some feedlot cattle, bloat is chronic, occurring repeatedly in a few cattle. Poloxalene does not appear to be effective in preventing feedlot bloat even though foam (and often, slime) is involved. Ionophores (examples: Rumensin , Bovatec , Cattlyst) improve the feed efficiency of high-grain rations and help reduce overeating and the incidence of bloat. Thus, the use of ionophores is recommended.

Following are some changes that may prove effective in reducing the frequency and severity of feedlot bloat:

1. Coarsely chop the hay and mix with grain.
2. Increase hay to 15 percent of ration dry matter.
3. Use a coarser grind on corn and grain sorghum.
4. Feed 50 percent or more coarsely rolled corn or whole corn.
5. Substitute low-quality legume or non-legume roughage for alfalfa hay. (Adjust the protein, vitamin, and mineral supplement appropriately.)
6. Feed the recommended level of the ionophore.

Feedlot bloat that occurs on high-concentrate rations usually can be reduced by providing 10 percent to 15 percent of the ration as coarsely chopped roughage. When separation of the grain or supplement from roughage seems to be involved, change the ration or improve mixing to minimize ration sorting.

Treatment

Acute bloat must be treated promptly. In the last stages of severe bloat, delay in taking action may result in the animal's death. Plan with your veterinarian for emergency treatment for bloat before the grazing season. Suggested equipment needed may include good handling facilities, a stomach tube or rubber hose about 3/4 to 1 inch in diameter and 8 to 10 feet long, a supply of defoaming agent, and a large trocar. Antifoaming agents would include emulsified oil (mineral oil), or an oil containing an approved detergent such as dioctyl sodium sulfosuccinate. If the trocar fails to relieve the bloat, you will also need a sharp knife suitable for incising the skin and making an opening into the rumen. In severe cases, a stomach tube can provide relief. If the tube doesn't provide immediate relief, the defoaming agent will frequently break down the foam and allow large amounts of gas to release through the tube or by belching. The antifoaming agent can be added through the tube or through a trocar and bloat needle. Never drench a bloated animal. Fluid is apt to be inhaled during drenching, causing immediate death or pneumonia. Large bloat needles may be adequate for relieving feedlot bloat. They are about 6 to 7 inches long and come with a wire stylet to unplug them, if necessary. Insert the needle at a point halfway between the last rib and hook-bone on the left side, 3 to 4 inches below the edge of the loin (*Figure 2*). If the needle does not relieve the problem, a trocar fitted with a cannula (*Figure 3*) can be used. The end of the trocar is sharp, much like a knife. Push the trocar through the muscle and rumen wall. Then remove the trocar from the cannula and gas should begin flowing from the cannula that remains.

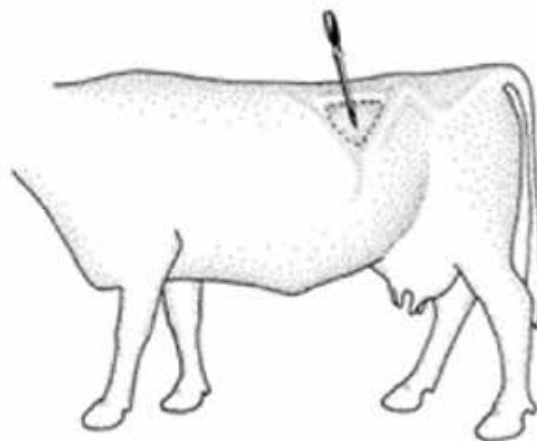


Figure 2. Insertion point for needle or trocar fitted with a cannula. Dotted triangle is the left paralumbar fossa where the “hollow” of the flank is found. (Photo Credit: Belinda Walker, courtesy Government of Alberta, Canada)

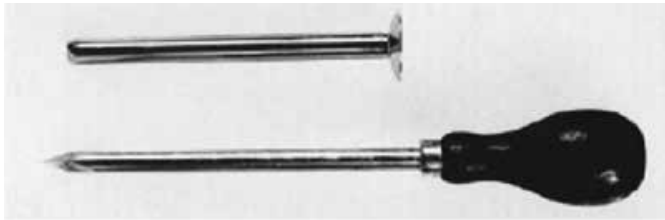


Figure 3. Trocar (bottom) and cannula. (Photo Credit: Belinda Walker, courtesy Government of Alberta, Canada)

If foam is present and is so viscous that the trocar opening is not large enough to give relief, **as a last resort**, use a sharp knife to open a slit about 3 inches long and then spread apart with your fingers. Insert at least one finger through the incision until the bloat is fully relieved. Otherwise, the rumen may move, causing the opening in the rumen to shift away from the opening through the belly wall and skin. Prompt veterinary attention is needed in these cases to deal with potential complicating factors, especially with leakage of rumen contents into the abdomen.

Chronic bloat caused by pressure on the esophagus due to muscle paralysis or other tissue pressure on the

esophagus can be corrected by making a ruminal fistula. A veterinarian can surgically create a ruminal fistula in the left flank area to release excess rumen gases. Generally, these openings are about 3/4 inch in diameter. The fistula is designed to remain open for 1 to 2 months. During this time the swollen tissues should decrease in size and normal belching can resume. Normally, natural healing will close the fistula. If not, a veterinarian can surgically repair it.

Finally, some animals are chronic bloaters. It may be best to remove these animals from grazing.

This publication has been peer reviewed.

Disclaimer: Reference to commercial products or trade names is made with the understanding that no discrimination is intended of those not mentioned and no endorsement by University of Nebraska–Lincoln Extension is implied for those mentioned.

**Index: Beef
Feeding and Nutrition
Issued November 2024**



This publication has been peer reviewed.

Nebraska Extension publications are available online at <http://extensionpubs.unl.edu>.

Extension is a Division of the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln cooperating with the Counties and the United States Department of Agriculture. Nebraska Extension educational programs abide with the nondiscrimination policies of the University of Nebraska–Lincoln and the United States Department of Agriculture. © 2024, The Board of Regents of the University of Nebraska on behalf of the University of Nebraska–Lincoln Extension. All rights reserved.