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### G74-149 Bloat Prevention and Treatment

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## Bloat Prevention and Treatment

This NebGuide discusses the types of bloat which may occur in cattle and methods to prevent and treat bloat.

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- [Preventing Pasture Bloat](#)
- [Managing Feedlot Bloat](#)
- [Managing Bloat That Follows Grub Treatment](#)
- [Treatment](#)

Bloat is a form of indigestion marked by an excessive accumulation of gas in the rumen. Immediately after cattle consume a meal, the digestive process creates gases in the rumen. Most of the gases are eliminated by eructation (belching). Gases that are trapped and not eructated may form a foam or froth in the rumen which further prevents their elimination. Froth formation can be caused by many factors resulting from interactions between the animal, rumen microorganisms, and differences in plant biochemistry. Causes of bloat include:

1. an inherited tendency for bloat,
2. certain proteins in forage,
3. the amount, rate of intake, and coarseness of the roughage,
4. the type of rumen microbial population,
5. host-parasite reaction following grub treatment,
6. choking, and
7. enlargement of the lymph-nodes between the lungs which compress the esophagus or interfere with the function of the vagus nerves.

Preventing bloat is desirable not only to reduce deaths, but also to reduce the negative effect of bloat on cattle performance. Pasture bloat usually occurs in animals grazing wheat pasture, lush legumes (alfalfa, Ladino, red clover) or fed green-chopped legumes. Feedlot bloat usually refers to bloat in cattle fed high-grain rations that may or may not contain legume forage.

Visual signs of bloated cattle include: distension of the left side of the animal, discomfort as indicated by stomping of feet or kicking of belly, labored breathing, frequent urination and defecation, and sudden collapse.

## **Preventing Pasture Bloat**

Many methods, such as gradual access to pastures, have been used to reduce the incidence of pasture bloat.

Chemical agents also have been developed to reduce bloat. Poloxalene is an anti-foaming agent which prevents pasture bloat for 12 hours if consumed in adequate amounts. Because Poloxalene prevents bloat for only a short period, it must be consumed (1-2 grams/100 lb of body weight) daily. Poloxalene can be fed as a top dressing on feed, in a grain mixture fed free-choice, in liquid supplements, or in molasses blocks.

Laureth-23, a detergent, also can be used to prevent bloat on pasture. Like Poloxalene, its success depends on daily consumption. Molasses blocks containing Laureth-23 are commercially available.

Bloat occurrences can be reduced through several pasture management methods:

1. Plant pastures so that no more than 50 percent of the forage mixture is alfalfa or clover. Consider planting non-bloating legumes.
2. Fill cattle on dry roughage or grass pastures before turning to legume pastures.
3. Provide grass pasture, hay, crop residue (cornstalks, milo stubble) or grain along with the legume or wheat pasture to reduce pasture intake.
4. Graze in a rotation using different grass and legume pastures.
5. Fertilize and graze to stimulate grasses in the grass-legume pastures.
6. Strip graze or rotational graze grass-legume pastures to force cattle to eat most of the plant material rather than just the succulent top growth.
7. Antibiotics have been used with moderate success to prevent pasture bloat (Oxytetracycline, 75 mg/head/day, Penicillin, 75 mg/head/day). A rotation of antibiotics appears to be more effective than the continued use of a single antibiotic. Antibiotics have most frequently been fed in a concentrate or in salt-mineral mixtures.
8. Once cattle are turned to pasture, don't remove them at the first signs of bloat. Mild bloat occurs frequently and repeatedly on alfalfa pasture. Cattle with greatly distended rumens should be removed immediately and treated.

## **Managing Feedlot Bloat**

Feedlot bloat occurs rather infrequently and 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 only a few cattle.

Poloxalene does not appear to be effective in preventing feedlot bloat even though foam (and often, slime) is involved. Ionophores (Rumensin®, Bovatec®, Cattlyst®) improve the feed efficiency of high-grain rations and may help reduce the incidence of grain bloat. Thus, the use of ionophores is highly recommended.

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

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

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

### **Managing Bloat That Follows Grub Treatment**

Sometimes bloat may occur 10-24 hours following grub treatment with organophosphate grubicide (pour-on, spray, or dip). The grubicide, if used late in the season, kills migrating grubs in the area of the esophagus, thus causing swelling in the area of the esophagus. The animal is unable to belch or swallow normally. Animals may try to eat, then spit out feed and saliva, followed by bloating and difficult breathing. If bloat occurs, do not feed the animal for a few hours and walk it slowly until the bloat goes down. If the animal is having trouble breathing, relieve the bloat with a trocar or large bloat needle. **Do not pass a stomach tube in the animals that bloat following grub treatment.** The esophagus may be damaged and permanent injury may result. Antihistamines and corticosteroids should be administered under a veterinarian's direction.

### **Treatment**

Acute bloat must be treated promptly. In the last stages of severe bloat, a few seconds delay may result in the animal's death.

Plan with your veterinarian for emergency treatment for bloat before the grazing season. Equipment needed includes:

1. good handling facilities,
2. a rubber hose about 3/4" to 1" in diameter and 8 to 10 feet long,
3. a supply of defoaming agent, and
4. a large trocar (and a sharp knife suitable for opening an incision into the rumen if the trocar fails to relieve the bloat).

In severe cases, a stomach tube can provide relief. If the tube does not provide immediate relief, the defoaming agent will frequently break the foam and permit removal of large amounts of gas through the tube or by belching. The antifoaming agents can be added through the tube or through a trocar or bloat needle. Never drench a bloated animal. When drenching, fluid is apt to be inhaled causing immediate death or pneumonia.

Large bloat needles may be adequate for relieving feedlot bloat. They are about 6" to 7" long and come with a wire stylet to unplug them if necessary. Insert the needle at a point halfway between the last rib and hookbone on the left side 3" to 4" below the edge of the loin.

If the needle will not relieve the problem, a trocar with a wide opening may be used. Open a hole in the rumen large enough to release the foamy, gas contents and insert the trocar. If the foam is so viscous that

the trocar opening is not large enough to give relief, as a last resort, use a sharp knife to make a slit about 3" long and then spread apart with your fingers. Keep 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.

Choking on foreign objects (esophageal obstruction) will prevent gas release, thus causing gas accumulation in the rumen. This should be relieved with a trocar or big needle, if possible. Then the obstruction should be gently removed from the esophagus. This is often difficult and may require help from a veterinarian.

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. Anatomical knowledge is a must and generally a professional should help perform this operation. The operation consists of making an opening through the skin and muscle high in the left flank. Then the rumen is sutured to the skin. A small opening about 3/4" in diameter is made in the rumen wall to form a temporary opening or fistula. The fistula is designed to remain open for one to two 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.

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