

## **Bloat On Legume Pastures**

Bloat is a condition that develops in ruminant animals and is marked by an abnormal distension of the rumen caused by accumulated gas. The rumen microflora produce a large quantity of gases during the fermentation (digestion) process. These gases are normally eructated or "belched" by the animal. During bloat, the animal is unable to eliminate these gases. They continue to build up causing severe distention of the abdomen, compression of the heart and lungs, and eventually death.

There are many possible contributing factors for bloat. These include an inherited tendency for bloat, certain proteins in forage (usually associated with pure stands of alfalfa and clovers), the amount and rate of roughage intake, the coarseness of the roughage, the rumen microbial population, and enlargement of the lymph nodes located between the lungs (this enlargement can interfere with the function of the vagus nerves or compress the esophagus preventing eructation).

There are basically two kinds of bloat — gas and frothy. Frothy-type bloat is usually observed on pastures or when animals are fed green chop or hay. It is also most often a herd problem. In frothy bloat, the gases normally produced in the rumen are mixed in with the rumen contents, forming a stable foam. This foam cannot be eructated.

On pastures, frothy bloat develops in ruminants grazing immature, lush legumes including alfalfa, Ladino clover, and red clover. Pastures will appear to be in excellent condition with rapidly growing forage. The condition can develop so rapidly that unless animals are closely watched the first indicator of trouble on new pasture may be dead or dying cows. Without emergency aid, animals can die.

Animals in the early stages of bloat will show signs of abdominal pain. Symptoms include restlessness and kicking at the belly. The left side of the animal may appear distended and swollen. In advanced cases severe distension of the abdominal cavity will be evident. Animals may show difficult open-mouthed breathing. In many cases, the animals will be down. Death can occur rapidly at this stage. Preventive management is best but in advanced emergency cases relief may be obtained by puncturing the rumen (See section on Treatment). In less severe cases, dosing the animals with bland oils, detergents, or Poloxalene may be effective.

Dry gas bloat is produced by interference with the normal eructation process, as with vagus nerve damage or esophageal blockage. In gas bloat, a tube placed into the rumen will allow

the immediate release of the built up gasses. This is not true with frothy bloat although some foam may pass through the tube. Dry gas bloat usually involves only an individual animal. This type of bloat is mostly associated with feedlot conditions that lead to chronic bloat problems.

## Preventing Pasture Bloat

Pasture or frothy-type bloat is generally worse during wet, cloudy periods in early spring when legumes are growing at a rapid rate. Animals should be turned out on legume pastures late in the mornings after the dew has dried and the animals have assuaged their hunger with a roughage such as hay or silage or fresh grass.

One of the most effective methods to reduce the incidence of pasture bloat is the use of an antifoaming agent such as Poloxalene. Poloxalene prevents frothy bloat for up to 12 hours, if fed in adequate amounts (see management option below for methods of administration). The challenge with each administration method is to get an adequate intake of Poloxalene by each animal each day to prevent bloat.

The use of Poloxalene for bloat prevention may seem expensive. It has, however, been shown to be cost-effective when compared to the improved gains of cattle grazing improved alfalfa/clover pastures as compared to grazing pure grass pastures. Since a precise dose of Poloxalene is difficult to obtain, a combination of bloat management methods should be used whenever possible.

To reduce the chance of suffering losses from pasture bloat, a bloat management program should be designed and followed. Possible management options available for use in such a program are listed.

- Feeding synthetic, water-soluble, detergent-type compounds such as polox-alene can be effective in reducing the incidence of pasture bloat. Poloxalene can be provide in a concentrate mix or pellets, topdressed on grain supplements, or incorporated into salt-molasses blocks.
- Start animals on legume pastures gradually rather than suddenly.
- Manage legume:grass pastures to maintain a mixture of 50 percent or greater grass to legume.
- Provide animals with ready access to water while grazing.
- Cull chronic bloaters from your herd.
- Use legumes such as birdsfoot trefoil, sainfoin, and crownvetch as they cause less bloat.
- Bloat is worse during wet, cloudy periods in early spring when legumes are making their most rapid growth. Extra caution is warranted at this time.
- Minimize bloat by initially turning animals onto alfalfa that has reached the bloom stage.
- Do not allow cattle to get hungry as they may overeat and bloat when they gain access to fresh pasture.
- Turn cattle out during mid-morning when the dew has dried and after filling cattle with another roughage such as hay or corn silage. This helps prevent them from overeating the first day.
- Once established on legume pastures, leave the cattle on the pasture constantly even at night.

- During drought periods, alfalfa may quickly reach the late bloom to early pod stage and there will be less danger from bloat. [**Note, forage quality declines with increasing maturity**].

Pure legume pastures can be seeded with grasses using no-till pasture renovation techniques. In particular, late summer or early fall seedings of orchardgrass, tetraploid or perennial ryegrass, timothy, tall fescue, or reed canarygrass in pure stands of legumes can be of significant value in reducing the risk of pasture bloat in subsequent years. Mixed grass and legume pastures should be managed to maintain 50 percent or more of the herbage as grass. Please refer to the University of Delaware Cooperative Extension fact sheet AF-8 for more information on pasture renovation.

## Treatment

Acute cases of bloat must be treated immediately to prevent death. In the late stages of severe bloat, a few seconds delay may result in death.

The key to success is to plan ahead of the pasture season with your veterinarian for emergency bloat treatment. You will need the following:

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

Also, you'll need to learn how to pass the hose through the mouth, down the esophagus, and into the rumen; how to use an antifoaming agent; and how to safely puncture the rumen.

In moderate cases, the hose should be used to provide relief, although with frothy bloat this may not be enough. If the tube does not provide quick relief, administration of an antifoaming agent will frequently break down the foam and permit passage of large amounts of gas through the hose or, if the hose has been removed, by belching. The antifoaming agent can be administered through a hose or by intra-ruminal injection. Drenching is not advised since it is more likely to result in inhalation causing immediate death or pneumonia.

In severe cases, the use of a large gauge needle may provide additional time for treatment. Insert the needle at a point halfway between the last rib and hookbone on the **LEFT** side 3 to 4 inches below the edge of the loin. If the foam is so viscous that the needle opening is not large enough to give relief, and if the animal is in severe distress, a large opening must be made into the rumen as a last resort. Using a sharp knife, open a slit about 3 to 4 inches long and spread it apart with your fingers. It is **critical** to 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.

In dry gas bloat, large bloat needles alone is usually adequate for relieving the pressure. These needles are 6 to 7 inches long and come with a wire stylet to unplug them if they

become clogged. The needle should be inserted high on the left side, the same as the needle in frothy bloat.

Chronic bloat, which is caused by an enlargement of the pulmonary lymph nodes, can be treated by having your veterinarian make a rumen fistula. In this procedure, an opening is made through the skin and muscle high in the left flank. The rumen is then sutured (stitched) to the skin before it is cut open to release the accumulated gas. A rumen fistula is designed to remain open for 1 to 2 months. Over this period, the lymph nodes should decrease in size and normal belching can resume. In most cases, natural healing will close the fistula. If not, the veterinarian can surgically repair the opening. Often the best way to eliminate problems from chronic bloaters is to send them to slaughter, particularly if they weigh 700 pounds or more.

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