

The Digestive Tract

Develop, execute nutrition plan to reach objectives.

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Managing health is key to a successful cow-calf operation. Establishing and maintaining

a relationship with a veterinarian and developing a herd health protocol are essential. However, you also need to provide proper nutrition and understand the ramifications feeding practices and grazing conditions may have on health.

Bloat

One obvious digestive disorder that commonly comes to mind is

bloat. Bloat occurs when free gas or froth accumulates in the rumen.

Frothy bloat typically occurs when cattle consume high-legume diets or cereal grains.

Some diets, also those high in grain, can cause formation of free gas. Free-gas bloat may also be caused by a lack of rumen motility, which could be the result of pneumonia, acidosis or hardware disease.

The signs of bloat are clear, as the left side of the animal will be distended. Bloat can quickly become an emergency situation, as pressure on the diaphragm can cause the animal to



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experience difficulty breathing.

Treatment options include a stomach tube to let out the gas

and treating with mineral oil or an anti-bloat product to reduce

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foam in the rumen. In emergency cases, a trocar can be used to release pressure from the rumen.

I will never forget the day as a young boy when we had a heifer that was clearly suffocating as a result of severe bloat, and we didn't have a trocar. When the veterinarian arrived, he told me and my brother we should have used our pocketknife to provide relief. That was a hard lesson to learn, but one I have never forgotten.

Obviously, the preference would be to prevent these situations as they can escalate to emergency in a hurry. The best management practice to prevent bloat is to avoid excessive grain intake, make incremental diet changes, and use caution when introducing cattle to legumes or lush pastures.

A good practice is to always have cattle full before turning them out to a new pasture to avoid overconsumption on the first day.

Acidosis

Rumen acidosis is another digestive disorder that could cause significant health challenges to cattle. This is more common in growing and finishing cattle, as diets high in rapidly digestible carbohydrates are the greatest risk.

When cattle consume grain, especially if it is finely ground, rumen microbes rapidly ferment the carbohydrates. When cattle have been on a more forage-based diet and then switch to a grain-based diet, they are especially susceptible. The rapid fermentation causes a decrease in rumen pH, which kills off some of the rumen microbes. This can cause damage to the rumen epithelium and allow leakage of bacteria into the system.

Treatment includes removing or reducing the grain and, in some cases, administering intravenous fluids containing sodium bicarbonate.

Again, the best approach is to prevent this through proper feeding practices. Cattle should be slowly adapted and transitioned to increasing inclusions of grain so the rumen microbiome has time to adjust.

Mycotoxins

Another potential health risk is moldy hay or silage. Some years it is hard to get hay put up right. If hay is baled too wet, the risk is there for mold to develop.

Mold can certainly make hay less palatable and less desirable to the cattle; but the real risk is the potential of mycotoxins, which are caused by fungal molds. If silage is from a stressed crop or is put up in poor conditions, it can also have mycotoxin-producing molds.

Unfortunately, it is difficult to assess mold visually to determine the risk. If mold is suspected, you should send off samples for mold and mycotoxin screening. Depending on the severity of the mold/mycotoxins, inclusions of the hay or silage may need to be moderated.

Additionally, how much silage you are taking off the face of a silage stack can affect the risk of mold. Removing 6-12 inches (in.) off of the face is ideal.

Symptoms can vary greatly and can be difficult to pinpoint. Thus, testing and managing feeding and inclusion rates are the best management practices.

Grazing issues

The vast majority of cow-calf producers rely on grazing as the primary source of nutrition to the cow herd. Previous columns

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have focused on grazing management practices and supplementation strategies to ensure energy and protein requirements of the cows are being met. However, producers also need to be aware of additional management considerations in grazing operations. Prussic acid poisoning, grass tetany, nitrate poisoning, fescue toxicosis and ergot poisoning are a few concerns producers need to be aware of.

Prussic acid poisoning is a concern when grazing summer annuals. The greatest risk occurs in fresh, new growth (or regrowth) and following a frost. Prussic acid metabolizes to cyanide, and can lead to death.

To minimize risk, wait to graze summer annuals until the plants are at least 18-24 in. tall, avoid grazing regrowth, and wait seven-10 days following a frost to graze.

Nitrate poisoning is caused by high nitrate levels in stressed forage. One of the common occurrences is from drought-stressed corn silage. Nitrate accumulation is greater in the lower stalk of the plant.

If high nitrate levels are suspected, forages should be tested before feeding. The level of nitrate in the forage will determine what inclusions are safe to be fed. If levels are not excessively high, cattle can be acclimated to the high-nitrate feeds.

Grass tetany is a forage-related disorder that generally occurs in the spring. Cattle become deficient in magnesium when grazing lush forage high in potassium. Early signs include excitability with muscle twitching and a stiff gait, but grass tetany can often lead to sudden death.

Grass tetany can be easily

prevented by providing a high-magnesium mineral prior to grazing in the spring.

Fescue toxicosis is caused by endophyte fungus present in tall fescue. The endophyte fungus produces ergot alkaloids. Fescue toxicosis can result in low feed intake, reduced gain, rough hair coat, increased respiration, lameness and poor reproductive success.

Some cattle are more adapted to fescue and have a greater tolerance. Management practices for reducing severity of fescue toxicosis include adding legumes and clipping pastures.

Ergot poisoning is the result of a fungal infection of the seedhead of cool-season grasses and cereals. The ergot bodies also produce ergot alkaloids. Symptoms are similar to fescue toxicosis and often result in sloughing of tails, ear tips and hooves. You should examine pastures for presence of the fungus. It can be identified as dark-brown, purple or black bodies within the seedhead.

Unfortunately, there is no good, practical way of eliminating ergot from pastures. It is best to graze before seedheads develop or clip pasture before allowing cattle to graze.

Conclusions

Although there are many feed-, forage- and grazing-related health disorders, the vast majority can easily be prevented or mitigated through proper management. Being aware of potential risks and understanding best management practices will help you avoid and/or minimize production losses. **ABB**

Editor's note: "The Digestive Tract" is a regular column in the *Angus Beef Bulletin* focused on nutrition for the beef cattle life cycle. Dan Shike is associate professor in animal sciences at the University of Illinois.