



REDUCING DEATH AND PERFORMANCE LOSSES IN FEEDLOT CATTLE

A CONVERSATION WITH
MARK BRANINE, PHD AND
DENNY HAUSMANN, DVM
ALPHARMA ANIMAL HEALTH

It's been said a well-explained cattle death is worth more than a misunderstood recovery. Do you agree?

DH: Absolutely. From a health standpoint, we always want to cure sick animals and make them productive. There are times, however, when losing an animal and identifying the cause of death is more valuable to the total welfare and performance of the feedlot. It allows you to make important adjustments in your health and nutrition program.

MB: You can't base your decisions on circumstantial evidence, however. Just because an animal is bloated, for example, doesn't mean the problem is classic free-gas or frothy bloat. You need to necropsy animals and also look at statistics. When animals die in a feedlot, the odds are often good that it was associated with bovine respiratory disease (BRD).

BRD can cause bloat?

MB: Probably not directly. But BRD can compromise an animal's overall health and may make it more susceptible to other problems, including metabolic disorders such as acidosis, bloat and endotoxemia. In fact, a previous history of BRD can most likely predispose cattle to sudden death syndrome (SDS).

Still, aren't bloat and other metabolic diseases fairly common in feed yards?

DH: It's been reported that metabolic disorders account for more than 25 percent of all feedlot deaths (Smith, 1998) — and that's a pretty big percentage.

If incidence of bloat is that high, isn't it reasonable to assume that bloated cattle died from bloat?

MB: No, because the appearance of bloat in a dead animal can be very misleading. There are many factors that contribute to a true case of bloat. There are management practices, as

well as predisposing factors within an individual animal that are probably not very well understood that can also contribute to bloat.

Metabolic disease — particularly acidosis, both clinical and subclinical — can be triggered in individual animals by abrupt or short-term disruptions in their feed-consumption pattern. For example, feed calls are usually made on a per-head basis, but the feed is delivered to the entire pen. Mistakes in either feed calls or feed delivery may therefore predispose cattle to acidosis or bloat.

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Likewise, certain feeds or physical characteristics of feeds — things like grain type or small particle size, for instance — can be predisposing factors that make animals more prone to acidosis or bloat. Sudden death in feedlot cattle is a complex problem with no simple answers.



DH: The perception is that if an animal dies in the pen and looks bloated, it must have died from bloat. In reality, studies show that 90 percent of cattle with SDS were found bloated (Steffen, 2004), but bloat wasn't necessarily the cause of death. Bloat may also indicate rumen metabolism or heat *after* death, but not specific etiologic information.

'We also know that cattle that have been treated and recovered from BRD may be more susceptible to bloat...'

MB: In my experience, based on post-mortem examinations of many cattle found dead in their home pen, the presence of BRD lesions may have been the primary or at least a contributing factor in many pen deaths in our feed yard. According to a report issued by USDA in 2006, mortality from BRD is still increasing and now accounts for two-thirds of all feedlot deaths. When determining the cause of SDS, the relationship between metabolic diseases, especially a suspected bloat, and BRD must be considered.

Wouldn't a necropsy solve this mystery?

MB: In many cases, yes — and it is certainly more informative than no necropsy at all. A thorough postmortem examination can help determine the actual cause of death by evaluating whether the animal actually died of a true feedlot bloat or whether the bloat occurred postmortem. However, the findings can still be ambiguous.

Ruminal frothiness can diminish between death and necropsy. Also, postmortem ruminal fermentation and gas production can continue for an extended time after the animal actually dies — a process that often complicates the necropsy results.

DH: According to the latest data from National Animal Health Monitoring System (1999), less than half of cattle that die in feedlots are subjected to necropsy. We therefore have to look at numbers from dead cattle that were necropsied. Once again, statistics point to a high prevalence of BRD. While BRD and metabolic disease affect different organ systems, the correlation between the two conditions and sudden death syndrome cannot be overlooked.

How can metabolic disease impact BRD?

MB: We also know that cattle that have been treated and recovered from BRD may be more susceptible to bloat or other metabolic problems due to changes in feeding-behavior patterns, as well as possible compromised lung capacity due to the presence of pneumonic lesions.

Is it fair to say that BRD can go undiagnosed as well?

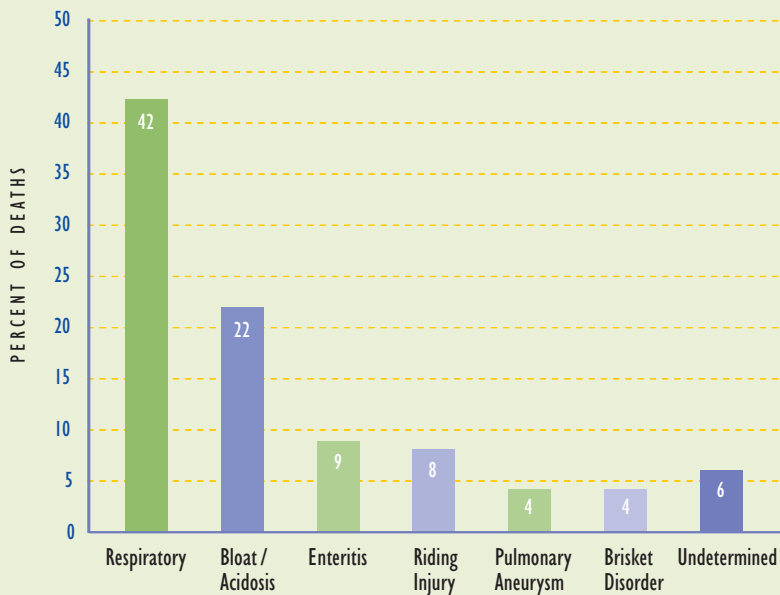
DH: Yes. Historical data suggest that 47 percent of SDS may be due to undiagnosed respiratory disease — more than twice the number that die from bloat and acidosis (Figure 1). Unfortunately, cattle succumbing to undiagnosed BRD — those that we find dead in pens — will show visible signs of bloat and throw diagnostic efforts off the trail. In a lot of these cases, bloat developed after the animal died.

What's the best way to protect cattle from BRD?

DH: There's no blanket program that's right for all feedlots. But when you consider that BRD is behind 67 percent of the deaths of feedlot cattle (Loneragan, 2004) and that nearly half of those go undiagnosed, you need to be proactive.

2 REDUCING DEATH AND PERFORMANCE LOSSES IN FEEDLOT CATTLE

Figure 1. Cause of death of cattle found dead in the home pen (SDS) and subjected to post-mortem examination*



Pierson, 1976

* 238 total head classified as sudden death

Are metaphylactic programs a good option to consider?

DH: Yes, but that approach can also be expensive. You're looking at the cost of the drug, plus the labor to run the cattle through the chute to inject them. That procedure can also stress the animals, particularly when there are extremes in the weather.

MB: Based on previous experience with certain sources or types of cattle being received into the feedlot, I'd say using an injectable metaphylaxis program during the receiving period is a viable management practice. With other types of cattle, trying to assess

the extent and overall risk of BRD at arrival, plus determining whether a particular injectable metaphylactic program will be a good investment, is more difficult. The primary goal should be to ensure that cattle remain healthy and get off to a good start during the receiving period, because this will be critical to their overall productivity throughout the entire feeding period.

What other options are available for managing BRD?

DH: Adding a broad-spectrum antibiotic such as Aureomycin® (chlortetracycline) to the feed is a good approach. Feeding an antibiotic

can reduce the number of cattle that are pulled and have to make the trip through the chute to get a costly injection.

With BRD, it's important to understand that it's not a question of using an injectable or an in-feed antibiotic. Cattle that are very sick need individual help, so injectables play an important role in BRD management. Depending on the injectable, a number of cattle might start breaking with BRD the day after the duration of therapy for the injectable. A feed antibiotic provides a strong base for protection.

Do pen riders need to be more aggressive identifying sick cattle?

DH: That depends. When dealing with high-risk cattle, the prevailing attitude in feedlots has been to remove not only those cattle that are obviously sick, but also those cattle exhibiting questionable signs of illness. "Pull deep and pull hard" and "when in doubt, pull them out" are themes many pen riders employ. The problem with extremely aggressive pen riding is that you run the risk of pulling and treating cattle that did not need therapy with injectable antibiotics. And that can be expensive. We know that subclinical



2 REDUCING DEATH AND PERFORMANCE LOSSES IN FEEDLOT CATTLE

BRD can be costly also, so it becomes a balancing act.

MB: The issue is how to identify those animals that are truly sick or in the process of becoming sick with BRD. This is not an easy thing, even for experienced pen riders, because cattle have an instinct for hiding disease or injury.

For certain groups of cattle during the critical time of the feeding period, having Aureomycin in the feed can help reduce the incidence and severity of both clinical and subclinical BRD. While not a substitute for a good pen rider, the use of Aureomycin can help reduce the overall respiratory pathogen load and help minimize the impact of respiratory disease on the animal's overall health and well being. We know that if the incidence and severity of BRD can be minimized, cattle will be healthier and respond with improvements in weight gain and feed efficiency.

What dose rate do you recommend for Aureomycin?

DH: We recommend feeding Aureomycin at 10 mg per pound of bodyweight, which translates to

1 gram per 100 pounds, for the first 5 days. You can then go to 350 mg per head per day, regardless of weight of the cattle, on through the feeding period. Keep in mind that when the cattle are on 350 mg/head/day, you have the option of increasing the dose to 10 mg/head/day if the need arises. There is no withdrawal time for Aureomycin when used at approved dosages and indications.

That sounds like a sensible strategy, but feedlots are also concerned about coccidiosis — a disease that also can be managed through the feed. Can you feed Aureomycin with any anticoccidials?

DH: Yes. In 2006, FDA cleared the way for producers to feed Aureomycin in combination with Bovatec® (lasalocid), a safe, highly palatable anticoccidial that also improves rate of gain. In fact, Bovatec is the only ionophore approved for use with Aureomycin.

MB: The combination is a major development in BRD management because it allows cattle producers to take advantage of feeding both Aureomycin and Bovatec in a single ration or supplement.

Studies show Bovatec can increase gain, but some feedlot operators think that some ionophores have a greater impact on metabolic disorders. Is there a difference?

DH: Perception is not reality. The fact is, Bovatec is more palatable than monensin, which leads to better feed intake and growth during the receiving period. It also means that a higher level of the anticoccidial gets into the cattle's system. From a performance standpoint, Bovatec is clearly the better product. Feedlot managers simply need to adjust management practices to accommodate the superior intake.

Another option is to feed Aureomycin in combination with Deccox® (decoquinate), a powerful anticoccidial that works directly in the small intestine to halt the two most economically significant coccidia in cattle (*Eimeria bovis* and *Eimeria zuernii*). Between Bovatec and Deccox, feedlot managers using Aureomycin have a lot of flexibility for coccidiosis and BRD management.

For more information about managing BRD, go to www.AlphaPharmaCattle.com.

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