

DATELINE : BEEF



What causes SDS in feedlot cattle?

Bloat often gets blamed for sudden deaths, but you usually need to look closer

Sudden Death Syndrome (SDS) is considered a major concern in feedlots because death frequently occurs in cattle nearing market weight. Because of the number of days these cattle have been on feed, mortality from any cause represents a greater relative economic loss to feedlot operators.

FAST FACTS

- **Many cattle are mistakenly diagnosed as dying from bloat, based solely on visual appearance**
- **Post mortems can help separate true feedlot death bloat from bloat that has occurred after death**
- **Necropsies help to prevent misuse of the “sudden death syndrome” diagnosis. Most feedlot cattle die from respiratory disease**
- **Feedlots should train staff to do basic post-mortem exams so that deaths can be assigned into categories**

SDS, however, is a “catch-all sometimes,” cautions Nebraska veterinary diagnostician David Steffen, DVM, PhD, ACVP.

“The fact that it’s sudden death doesn’t necessarily mean that it was sudden,” says Steffen, director of the University of Nebraska Veterinary Diagnostic Center, Lincoln.

“It just means that no cowboy was there to see any clinical signs that might have happened before the death,” he continues. “If they didn’t see any animals sick in the pen and they go out there and there is one that’s dead and everything else looks good and there weren’t any signs, this could end up being called a sudden death syndrome.”

BLOAT HAS MANY CAUSES

In many so-called SDS cases, bloat often gets blamed because it is frequently observed after death occurs. Bloat, however, may not be the actual cause of death.

“Bloat has many causes and will often occur in isolated animals without regard to management practices,” says Steffen.

“There are feedstuffs that predispose cattle to bloat, particularly those that create the frothy bloat that can be managed through elimination, feeding at low levels or feeding with other ingredients to minimize the froth.”

He notes that bloat can also occur due to poorly understood vagal nerve or eructation (expulsion of gas from the stomach) problems, and esophageal obstruction by rumen contents in recumbent animals.

“Occasionally, obese cattle will find themselves in awkward positions, unable to rise, and can suffer a fatal bloat event as a result. It is hard to control some of these, but pen slope, texture, and frequent observation can minimize occurrence and afford opportunity to assist the calf if noticed before bloat occurs,” the diagnostician says.

Steffen emphasizes that metabolic diseases that express themselves in bloat are complex.

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while standing, be very skeptical

of a bloat diagnosis.’

“Diet composition and intake contribute to health and disease in a big way,” he explains. “I suspect some would say if you don’t lose an occasional calf to SDS in a large feedlot, you are not pushing them hard enough.”

“I hope that is not true, but concentrate diets are unnatural for ruminants and to maximize average daily gain, we challenge the calf’s ability to handle concentrates and to adapt physiologically to the metabolites of those diets.

FEED INTAKE VARIATION

Feedlot cattle may also be predisposed to metabolic disorders by normal variations in feed intakes.

“Anything that causes variation in intake or fluctuations in formulation — such as incomplete mixing, which in effect varies concentrate intake — can result in metabolic deaths or SDS,” says Steffen.

“This is particularly true in calves pushed hard in the adaptation period and those on full feed with concentrate levels that push the edge of the animal’s adaptation ability.”

MISTAKEN DIAGNOSIS

Many cattle are mistakenly diagnosed as dying from bloat, based solely on visual appearance. Steffen cautions, however, that “if you don’t see them bloated while standing, be very skeptical of a bloat diagnosis. Cattle on high-concentrate diets generate a fair amount of metabolic heat from digestion and generally are carrying significant fat cover in mid- to late-feeding.

“These animals stay warm after death and the rumen microbes continue to produce significant amounts of gas in the early post-mortem period. It is usually the chronically ill calf that is off feed and perhaps has lost some fat cover that does not bloat rapidly in cooler weather. They all bloat fast in a Great Plains summer.”

Because concurrent disease can have a big impact on feed intake, it may also affect SDS in feedlot cattle, according to Steffen.

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Based on data taken from Loneragan et al., this graph compares the cause of death per thousand placements in feedlot cattle between 1994 and 1999. Notice that total mortalities tended to increase for the period studied as did deaths attributable to respiratory disorders. Experts report that this trend is continuing today.

Source: *Journal of the AVMA* (2001;219(8):1122-1127.)

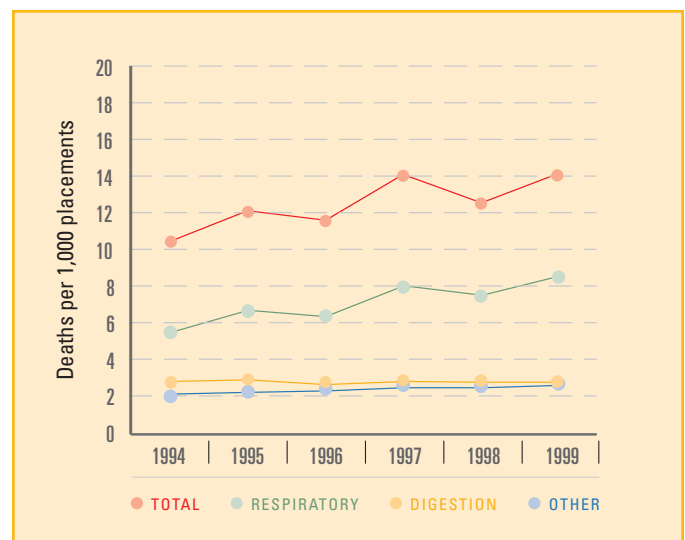


Figure 1. The cause of feedlot mortalities



BEING PROACTIVE WITH SDS AND BRD

Bovine respiratory disease (BRD) is on the rise and now accounts for two-thirds of all feedlot deaths, according to a 2006 report from USDA. And that's just the number of reported cases.

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,” says Denny Hausmann, DVM of Alpharma. “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.”

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

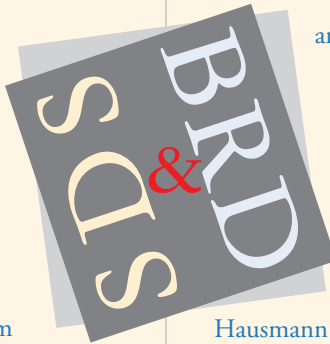
acidosis, Hausmann says. “Unfortunately, cattle succumbing to undiagnosed BRD — those that we find dead in pens — will show visible signs of bloat and throw diagnostic efforts off the trail,” he adds.

“In a lot of these cases, bloat developed *after* the animal died.”

Being more proactive with BRD management might go a long way toward reducing losses from SDS.

Hausmann notes that a new FDA clearance allows the use of Aureomycin® (chlortetracycline) and Bovatec® (lasalocid) in the same feed — a simple way to manage respiratory and enteric disease while optimizing growth.

“The combination is a major development in BRD management because it allows cattle producers to take advantage of Aureomycin’s broad spectrum without pulling an ionophore from the feed,” adds Alpharma nutritionist Mark Branine, PhD.





"I expect this would be more true in the recovery phase, when they come back to the bunk rather than when they're not eating," he adds. "If you take them from hay in a hospital pen and put them back on the regular ration, it could be a problem. Also, it seems that cattle getting pushed on concentrates can start to break with respiratory disease, so it goes both ways."

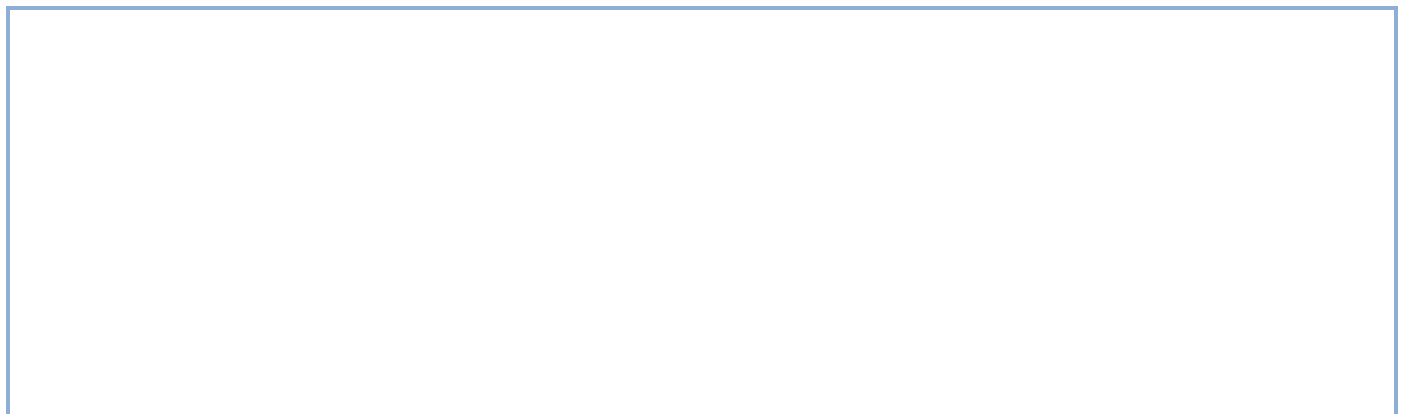
Steffen says that post mortems can help separate true feedlot death bloat from bloat that has occurred after death, in addition to helping to distinguish deaths related to respiratory disease and other causes. He recommends that feedlots, where mortalities are anticipated on a daily or weekly basis, train staff to do basic post-mortem exams so that deaths can be assigned into categories. This would help manage disease more appropriately, he says. It would also help determine the need for further diagnostic investigation and help to recognize the need for changes in treatment of disease.

IMPROVING ACCURACY

These gross necropsies improve classification of what appear to be sudden deaths and ensure that these deaths are not misdiagnosed, according to Steffen.

The necropsies help to prevent "just calling some things sudden death and meanwhile missing the early recognition of a respiratory disease outbreak or missing that there are some kind of feeding errors and they are dying from rumenitis or something like that," says Steffen.

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At a minimum, he says, it's a good practice to have somebody qualified to open the dead cattle and look at the lungs to determine if the death is related to respiratory or non-respiratory causes.

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on concentrates can start to break

with respiratory disease'

"Also look at the rumen and see whether the contents are normal or whether there is rumen inflammation. These would be the big things to really help narrow down the causes of death," says Steffen.

"The majority of feedlot cattle deaths are going to be respiratory related and the second large group would be related to rumenitis and rumen inflammation (Figure 1). Then you would have a group of 'others' that would include the Sudden Death Syndrome animals which would probably be a significant part of those," Steffen concludes.

For more information about the new Aureomycin-Bovatec combination, producers should contact their feed supplier or Alpharma representative. Producers may also call [1.800.645.4216](tel:18006454216) or go to www.AlpharmaCattle.com.

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