

Vet Call

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Tips to minimize acidosis

Cow-calf producers, stockers and feeders commonly change their cattle's diets. Changing from one roughage source to another or from a concentrate to roughages usually is well-tolerated. But suddenly changing from a roughage diet to a concentrate diet can be accompanied by acidosis, a serious digestive problem in grain-fed animals.

Acidosis can occur following a large meal of feed rich in readily fermentable carbohydrates. Such a meal may cause the rate of lactic-acid production in the rumen to exceed its rate of fermentation.

Cereal grains, such as corn, wheat, barley, sorghum and (to a lesser extent) oats, and high-sugar or -starch fruits or roots (such as apples, potatoes and sugar beets) are associated with acidosis. Green,

unripe corn, corn or milo stubble fields, and byproduct feeds — such as bakery waste, elevator fines, “red dog” and brewer's grains — also are high in starch or simple sugars, putting cattle eating these feeds at risk for acidosis.

Feeds that are not likely to induce acidosis are hay, ensiled forages and fiber-type byproducts. Hay does not contribute to acidosis because the energy source is mostly cellulose rather than simple sugars and the large particle size resists rapid fermentation.

Ensilaged forages already have undergone fermentation, thereby decreasing their risk. Fiber-type byproduct feeds, such as soy hulls or corn gluten feed, are similar to hay in that the energy source is primarily cellulose with little starch or simple sugar present.

Fine grinding, rapid changes in diet composition or exhaustion of a primary feed source often are implicated in the disease. Weather and other factors that alter consistent intake may be involved.

Typical scenarios include the following:

“I just pulled this self-feeder into the pasture yesterday, and ...”

“They ran out of feed last Friday, and I didn't get a feed delivery until today (Monday) ...”

“I've been stepping up the ration pretty fast, and ...”

“It's been storming so bad that they haven't been coming up to eat much until today ...”

“They didn't like that last batch, so I had the mill (decrease salt content, add molasses, add soybean meal) for this batch ...”

In mild cases of acidosis, cattle will appear to have a full rumen; they may act colicky (uncomfortable due to a sore belly); they will have a decreased appetite; and they probably will have gray-green, pasty to soupy diarrhea.

In more severe cases, dehydration will be worse, the animal usually will be lying down, the abdomen will be distended markedly, and the animal will be noticeably

uncomfortable (groaning and grinding its teeth). Diarrhea is profuse and yellow-green, then progresses to watery, often foamy, with a pungent odor.

Death commonly follows severe cases. Cattle that recover from acidosis may develop liver abscesses, laminitis (founder) or other secondary diseases.

Treating clinical acidosis involves removing the problem feed and, for some individuals, siphoning off ruminal contents with a stomach tube or surgically opening the rumen and removing its contents. (Reinoculation with 10-15 liters of fresh rumen contents from a healthy animal will speed up recovery).

In addition, give large volumes of intravenous (IV) fluids. In this disease process, IV fluids must be used because fluids given by mouth (via a stomach tube) will not be absorbed from the rumen into the rest of the body. Oral antibiotics are commonly given to kill lactic-acid-producing bacteria in the rumen.

Feeding management that prevents a sudden increase in the intake of grain or other readily fermentable feeds controls acidosis. Therefore, if high levels of potentially acidosis-producing feeds are fed, cow-calf producers should introduce them gradually to keep the feed intake steady.

In feedlots, stepping up rations slowly helps control acidosis. Four diets routinely are used, and animals are on full feed by 30 days. Some producers step up rations more quickly (that is, over 21 or even 14 days); however, the incidence of acidosis will increase.

Inclusion of an ionophore in the ration helps to decrease the incidence and severity of acidosis, while dietary buffers (sodium bicarbonate) have not been shown to be a reliable control method.

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