

## Ask A Vet: Acidosis in Goats

*Sunday, September 8, 2013*

Dear Dr. Weldy's,

My neighbor's four year old goat got into duck feed and became very sick and went down. The feed contained no medication or growth additives. The vet said it was acidosis. Can you explain this condition to me?

Dear Reader,

Rumen acidosis as you mentioned occurs whenever an animal that is usually fed mostly hay or forages suddenly consumes large amounts of high concentrate feeds or grains. Remember ruminants are cows, goats, sheep, deer, buffalo, giraffes, oxen and yaks. If these highly digestible carbohydrates are eaten in large amounts especially if they are finely ground (as would be the case in duck feed) can result in this acidosis condition which is also sometimes known as grain overload. Due to the smaller grain size, the bacteria present in the rumen are able to ferment these carbohydrates more quickly. This same thing can happen even if the animal has already been on high grain diets and the amount is increased rapidly or drastically. It can also occur when an animal is not given grain for awhile due to weather conditions or stage of pregnancy/gestation or mixing errors as when buffering agents (antacids if you will) are omitted from the ration. With the change in rations, there is a shift in how and which bacteria digest the feedstuffs presented to the rumen. When those carbohydrates are digested it causes the pH of the ruminant stomach to decrease which increases the production of lactobacillus bacteria. These bacteria will produce more lactic acid which further lowers the pH. As pH drops, many protozoa that normally utilize lactate will die. With the increase in lactic acid, the changes in the stomach drives fluid into the stomach which causes even more dehydration and hypovolemic shock. This increased lactic acid in the stomach can be toxic to the lining of the stomach and subsequent other organ systems. Due to the damaged stomach lining, bacteria can now leak into the circulation creating either abscesses in the liver or laminitis (inflammation of the support structures in the hooves). This occurs more in sheep than goats. Clinical signs can occur within 12-36 hours of ingestion of the new or inadvertent ration. One can see anything from anorexia (no appetite), depression and weakness initially to dehydration, ataxia (staggering), diarrhea, head pressing, blindness, seizures and death. This is without question a veterinary emergency and should be corrected as soon as possible.

Diagnosis is based on history and clinical signs along with diagnostic tests of rumen pH, bloodwork and other lab tests such as fecals. Treatment is designed to correct the cardiovascular shock, dehydration and toxemia. It is usually done with intravenous fluids, oral fluids/drenches, antibiotics and antiinflammatories. We also know that thiamine is potentially destroyed by the toxic bacteria and hence may need to be supplemented as well. The best way to prevent this is to make feeding changes gradually so the transition between gut floras with differing rations is more suited to a healthy digestion.

-Dr. Wanda Schmeltz