Ulcers

By Lark L. Burnham
Ruminant nutrition

Livestock species, as well as humans, suffer from stomach or rumen ulcers. Although the actual location within the organ may vary from species to species, most of the time, both the cause and end results are very similar.

When an animal experiences stress, a number of things happen, some almost instantaneously. A series of hormones rapidly re-direct energy from the gut to the muscles during what is often called "the flight or fight" syndrome. Stressed animals also stop eating. Both the re-direction of energy and the attenuation of energy intake can kill large numbers of beneficial gut microorganisms.

This is important because the very same organisms protect the host from opportunistic pathogens. They are the first line of defense and a very important part of the immune response.

Without the protection of those beneficial microbes, opportunistic pathogens already in the system, but in small numbers, start to proliferate. Many of these pathogens secrete toxins which irritate and erode stomach and intestinal lining, called ulceration. Although the term 'ulcer' is often meant to describe erosion of the rumen or stomach, ulcers can occur all along the gut, from stomach to rectum. Ulcers, no matter where they occur, are serious business and need to be treated as soon as they are identified.

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The role of probiotics

Probiotic microorganisms are good competitors. When they are introduced into the system in large enough quantities, they compete with opportunistic pathogens for available nutrients and living space. An array of both chemical and physical weapons are used for this.

Pathogens, especially the opportunistic kind, are not good competitors. They must wait for the animal to become stressed before they can proliferate and cause disease. They are normally kept under control by indigenous beneficial microbes. Probiotic microbes are "stand-ins" for beneficial microorganisms killed by stress.

Prevention is better than treatment

If a concentrated probiotic such as a paste or drench is given prior to, during, and/or after a stressful event such as a show, they can help stop the proliferation of opportunistic pathogens and the development of ulcers and other diseases. Prevention minimizes loss of productivity and fewer vet bills.

Probiotics also help animals recover from an already developing ulcer. The same situation that allowed the ulcer to develop in the first place, proliferation of opportunistic pathogens due to stress, is still in place. Depending on the sever-

ity of the stress, beneficial microbes may need a month or more to recover. The ulcer may take even longer than that to heal.

The gastrointestinal tract has a tremendous ability for self-renewal. It replaces itself approximately every three days. This is necessary because digestion and feedstuffs are damaging to the lining. Hydrochloric acid is secreted in the stomach/abomasums/C3, and hay can be abrasive.

If the opportunistic pathogens are removed from the scenario, the stomach/rumen can repair itself in most cases. However, if the lining is perforated, it can lead to death. Ulcers must penetrate several layers of epithelium to get to this point. This takes time. Be aware of any symptoms such as kicking at the belly and poor appetite.

There has been much confusion about causes of ulcers in both livestock and people. Like many common, non-genetic diseases, they are caused directly or indirectly by stress. Preventive use of probiotics is an inexpensive way to avoid many of these diseases, or at the very least, limit the extent of the damage.

About the Author:

Lark Burnham received a B.S. in Animal Science (1979) from Kansas State University and an M.S. in non-ruminant nutrition (1995) from Kansas State University, Manhattan, and a Ph.D. Doctorate in ruminant nutrition (2004) from Texas Tech University, Lubbock. Her special interests are comparative nutrition, the role of the micro flora in all mammals, fiber digestion, and probiotics. Lark currently works for Natur's Way, Inc., Horton, KS which produces MSE probiotics.