

# VETERINARY CALL

by Bob Larson and Scott Fritz, Kansas State University

## Blue-green Algae

*With careful monitoring and preventative measures, the threat of blue-green algae to your cattle herd can be reduced.*

Ranchers in many parts of the United States have heard of cattle deaths due to drinking pond water contaminated with blue-green algae. These organisms are a type of bacteria that commonly live in water at relatively low populations, but can multiply rapidly (bloom) in nonmoving ponds and lakes when nitrogen and phosphorous levels are elevated due to fertilizer runoff, abundant sunlight from long summer days and water temperatures greater than 70° F.

Many species of blue-green algae float near the water surface. Therefore, the greatest concentrations tend to be pushed to the downwind side of a pond.

The bacteria produce toxins that attack the nervous system and the liver. Cows drinking water contaminated with a high concentration of nervous-system toxins can die within a few minutes. The toxins attacking the liver can also be deadly, but the cows may live long enough to show signs such as bloody diarrhea, yellow eyes or inability to rise. If cattle with liver damage survive, they often become susceptible to sunburn on lighter-skinned areas such as the teats and around the face.

Blue-green algae blooms have been

described as having the appearance of grass clippings, scum, floating mats or spilled paint. Frequently monitoring ponds during the summer for changing water appearance is important in order to remove cattle from high-risk situations and to prevent access to that pond until the water can be tested.

Water samples should be collected from the downwind side of the pond an inch or two below the surface in a one- to two-quart clean bottle, jar or other watertight container and refrigerated (but not frozen) as soon as possible. These toxins can be irritating to human skin, so it is important to wash your hands thoroughly after collecting a pond sample. Your veterinarian can identify a diagnostic laboratory with the capability to determine blue-green algae levels.


### Preventing toxic doses

Because we do not currently have an effective treatment if cattle drink toxic doses of blue-green algae, veterinarians and researchers are working to identify ways to prevent the bacteria from multiplying.

Fencing cattle away from standing water and piping water from lower levels of the pond into tanks can be an effective method to prevent drinking

surface water. Some producers will set up panels or fences to keep cattle away from the prevailing downwind side of a pond and force cattle to drink from safer areas.

Traditionally, treating ponds with copper sulfate has been recommended to prevent algal blooms. While this may be effective, it can result in excessive copper concentrations in the water that can lead to copper toxicity. Barley straw is also a traditional remedy, because the straw leaches hydrogen peroxide into the water, which prevents the algae from growing. Algaecides, solar-powered aerators or bubblers, and ultrasounds have also been used with varying degrees of success.

As we move into late summer and early fall, the risk of blue-green algae peaks. Cattle producers and veterinarians should actively monitor ponds for evidence of this important health risk, and be ready to move cattle away from high-risk water sources. 

*Editor's note: Robert L. Larson is a professor of production medicine and executive director of Veterinary Medicine Continuing Education at Kansas State University. Scott Fritz is a veterinarian and graduate student studying toxicology at Kansas State University.*