Blue-Green Algae: Plan to Monitor this Grazing Season

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Blue-green algae blooms (or Harmful Algal Blooms) are an issue that usually occurs during the spring and summer. Calm, sunny, dry, and hot days of summer create ideal conditions for blue-green algae to thrive in our livestock ponds. Blue-green algae occurrence is sporadic making its threat unpredictable. Despite its name, these blooms are not algae, but a cyanobacteria. Some (not all) of these cyanobacteria can produce and release dangerous toxins that are of major concern for our livestock.

These "cyanotoxins" typically show up as either neurotoxins, or hepatotoxins which means they can damage the nervous system or the liver function of animals. Typically, the first clinical sign noticed in pasture cattle that have consumed neurotoxins are dead cattle. If found early enough, cattle may have muscle tremors, difficulty breathing, seizures, slobbering, and diarrhea. Hepatotoxins can cause an acute death similar to neurotoxins or lead to delayed issues with liver failure. An example of this would be weight loss and photosensitization, which can be recognized by severe sun burns on areas of the body not covered with hair. Since there are several causes of acute death in pasture cattle, contact your local veterinarian for diagnosis. Unfortunately, there are no known antidotes to these cyanotoxins. So, understanding what to look for, and avoiding livestock exposure is important.

Blue-green algae blooms float at or just below the surface of the water. The appearance almost looks like paint in the water. Once the cyanobacteria die, it turns a blue color. The color can also vary to a grey to almost a red or brown color as well. Toxin concentrations in affected water can vary drastically. The wind can move these blooms and concentrate them in certain areas along the shorelines of ponds. These concentrations increase the lethality of the toxic blooms.

Since blooms can establish quickly, monitor ponds closely and be prepared to sample pond water if the green paint like consistency is observed or if acute animal deaths are found in the pasture. The water sample itself is a snapshot in time, so proper handling and methods of obtaining the sample helps deliver accurate results. The sample should be at least 500 mL (2.1 cups) of water (with scum included) held in a sealable plastic bottle or container. Sample the blue-green algae bloom just below the water surface along the shoreline. Remember, it will have the appearance of blue or green paint floating in the water not floating mats of moss or aquatic vegetation. Use care not to touch the blue-green algae with bare skin, as it can cause skin irritation in people. Once the sample is taken, it should be cooled and refrigerated, then shipped chilled with an ice pack. Samples can be sent to the Kansas State Veterinary Diagnostic Lab (KSVDL) for analysis.

Preventing exposure to blue-green algae toxins is very important during the summer months. There are some options for livestock producers if blue-green algae is suspected or has been identified. Of course, fencing off natural water sources and providing alternative water sources is the best option (well water, hauled water), but is typically financially limiting. Fencing off certain areas of the ponds (downwind portion of ponds) may help

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limit exposure. Improved watering areas, such as pipefed waterers, may also limit exposure as long as the water inlet is located in a low-risk area of the pond. A submerged inlet in the center of the pond is an area where the cyanobacteria are unlikely to concentrate. Improved water sources like this will also help increase other water quality attributes. Controlled access and tank waterers decrease sediment, nutrients and fecal coliform bacteria from building up in the water source. Treatment of the water source with copper sulfate has historically been recommended. However, the copper

accumulates in the pond, leading to other potential problems with plants and animals alike and is not recommended. Barley straw is also often discussed as a control measure. While the mechanism is unknown, barley straw may help reduce new blooms from forming but do not directly kill active blooms.

Monitoring of stock ponds during the summer months and having a plan in place to combat blue-green algae will help ensure the health and wellbeing of our herds. More information on water sampling can be found here: <u>https://bookstore.ksre.k-state.edu/pubs/identification-and-management-of-blue-green-algae-in-farm-ponds_MF3065.pdf</u>. Information regarding advisories, monitoring, and reporting of public waterway Harmful Algal Blooms within Kansas can be found here: <u>https://www.kdhe.ks.gov/777/Harmful-Algal-Blooms</u>

Thank you to Dr. A.J. Tarpoff, Beef Extension Veterinarian for the content of this article. If you suspect you may have an issue with Blue-Green Algae, please call your local extension office and I am happy come look at it and do a field test or send to KSVDL for confirmation.

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