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Ross Mosteller
District Extension Agent, Livestock & Natural Resources

Blue-Green Algae or Bacteria?

Summer is upon us and there are many signals that point to this. Longer days, increased heat and humidity, busy swimming pools and warning signs at public waterbodies warning of toxic Blue-Green algae blooms. Maybe the last point isn't something you would naturally think about, but for anyone using waterbodies for drinking water or recreation, this has become an increasingly problematic situation in summer and honestly throughout the year. Let's look at this issue and why it is important to heed warnings seriously.

When the temperature rises and sunlight hours/intensity peak, the risk of Blue-Green algae reaching toxic levels increases. Blue-Green algae are not algae, but rather cyanobacteria, or bacteria that live off the sunlight and nutrients in the water. These bacteria can be toxic to livestock, dogs and people. Cyanobacteria can build up in a waterbody and form into distinct blooms of bacteria, often looking like paint slime floating in the water. This paint-like texture of cyanobacteria is what differentiates it from non-harmful pond weeds. The harmful cyanobacteria can look green or dark green, but can turn more into a bluish tint, thus leading to its more common name as Blue-Green algae (BGA). It is not uncommon for the color to turn into an almost reddish brown or gray. All those color variations are possible, but the one consistent aspect is that the blooms look a lot like paint mixing with water floating around on the water's surface. As the cyanobacteria die, they release toxins and that is the problematic part of a Blue-Green algae bloom.

Cyanobacteria can release two types of toxins: neurotoxins, which affect an animals' nervous system; and hepatotoxins, which affect the liver function. Both toxins can cause death. Unfortunately, with livestock, animal death near a pond is often the first indication of an issue with Blue-Green algae in the water source. If a dangerous level of cyanobacteria is suspected, it's important to keep animals and people out of the area. Testing should be conducted to confirm if the toxic issue is present.

A simple and somewhat quick test that can be conducted is to collect a water sample into a jar or bottle, including the suspected Blue-Green algae, and let it sit in a refrigerator overnight. If there is a clear ring of separation with the suspected Blue-Green algae floating on the top, likely this is BGA. To further confirm, about 500 milliliters of water should be collected in a sealed container, sample be refrigerated, and shipping it with an ice pack to a testing facility. Care should be taken to not get direct expose of suspected BGA on your skin when collecting the sample. The K-State Veterinary Diagnostic Lab in Manhattan conducts reliable testing for cyanobacteria. The lab can be reached online at http://www.ksvdl.org or toll-free at 866-512-5650. Extension offices can help with this collection and identification process as well.

From a livestock perspective, fencing off ponds, providing alternative water sources and/or pulling water from the center of ponds with suspected BGA issues can all be considered to manage the drinking water situation. These blooms pop up quickly and monitoring water sources is critical during these hot summer months. It is best to let this situation run its course versus treatment to kill the bacteria. The toxins will increase rapidly with rapid bacterial death, creating a more dangerous situation. To learn more visit the K-State Bookstore and review *"Identification and Management of Blue-Green Algae in Farm Ponds – MF3065"*.