It's Blue-Green Algae Time Again

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Blue-green algae, properly called Cyanobacteria, occur naturally in many farm ponds throughout the Midwest. As the name implies, it is not truly an algae but a bacteria that contains chlorophyll and can convert sunlight to energy for its replication. For most of the year, the concentrations are low and the organism causes no problems, but under the hot dry conditions of late summer reproduction of the organisms is very rapid resulting in high concentrations called blooms. These blooms are usually visible as a scum or paint on the surface of the water. Under normal conditions the organisms are homogenously suspended in the water, but as they multiply rapidly, large numbers of dead organisms float to the surface. Wind action causes them to be concentrated on the downwind side of the pond so that concentrations can become extremely high in certain areas. This is not the algae that grow in mats of plant material along the shorelines. When disturbed, the blue-green algae disperse in the water and do not hang together.

Problems occur when livestock of any type, or wildlife, consume water from a bloom area. The Cyanobacteria produce several different toxins, but the two main ones affect the nervous system and the liver. Livestock affected by the nervous system toxin can present signs such as muscle tremors, difficult breathing, and convulsions. In actual cases it is common to find dead animals in or near the pond that have not had time to show any symptoms other than collapse and death. Animals affected by the liver toxin show weakness, pale membranes, bloody diarrhea and usually death. If both types of toxins are present, the nervous system toxins usually kill the animal before the signs of the liver toxin can be manifested.

The signs above can help with the diagnosis, but most of the time death is sudden and the animals are found dead before the producer can observe any signs. Dead animals in or near the water certainly suggest blue-green algae toxicity. Since these toxins are lethal to almost all animals, carcasses of small animals may be found along the shore, especially on the downwind side of the water. Water samples can be submitted for examination to the Oklahoma Animal Disease Diagnostic Laboratory at Stillwater. They suggest a sample size ranging from a pint to a quart of water containing at least some of the scum present on the surface. This should be submitted in an unbreakable container such as a plastic water bottle. It should not be frozen but if it is shipped, provisions should be taken to keep it cool and out of sunlight. The cost for this test is $16.00. The lab can be contacted at 405-744-6623 for more information.

Treatment of blue-green algae toxicity is seldom attempted and almost never successful. The key to minimizing livestock losses is in preventative management. The following are practices that will prove helpful. Check ponds for algae blooms in hot weather. Fence off downwind drinking areas. Pump water from deep in the pond to a nearby livestock tank. Use other water sources, if available, when temperatures rise to high levels and algae blooms are observed. Copper sulfate has been used to

prevent algae blooms but it is difficult to calculate dosages, difficult to distribute evenly over the pond, and results are short lived.

While Cyanobacteria present a significant toxicity potential in late summer, proper monitoring and management can minimize or eliminate the problem. The potential for problems occurs about the time many producers are winding up their hay season or preparing for planting fall crops. Don't delay checking your pastures until you get an unwanted surprise.