COW/CALF CORNER

The Newsletter
From the Oklahoma Cooperative Extension Service

July 18, 2008
In this issue:

As Summer Heats Up, So Do Water Toxicity Issues

By Dave Sparks D.V.M., OSU Food Animal Quality and Health Extension Specialist

Early summer rains provided for an excess of water in most of Eastern Oklahoma this year, but as things start to heat up and dry up we may be facing new livestock problems. Blue-green algae in dirty and drying ponds and flood overflow areas can cause fatal toxicity in all domestic animals that drink from these ponds.

The culprit is not really an algae and may not even be blue-green. The problem is caused by a group of organism know as cyanobacteria, or bacteria with photosynthesis capability. The colors range from blue to bright green but may also be red or purple. Often these organisms will show up like a paint scum on the surface of the water.

When these organisms are present in small to moderate numbers they don't present a problem. When the pond "blooms", however, they create toxins. Blooms occur when the right conditions are met, including warm water temperatures and the presence of large quantities of nutrients, especially nitrogen and phosphorous. Water temperature goes up as water volume goes down, due to consumption and dehydration. Water temperature also rises as air temperatures go up. Water temperature goes up much quicker and higher in shallow, stagnant sources. Water temperature goes up higher in bodies of water that have bare ground around them than in ponds that have grass and weeds up to the water. Nutrient levels in ponds rise due to fertilizer or manure run-off. Cattle spend more time standing in ponds as the air temperature increases. When cattle are allowed into the water, their urination and defecation contribute as a major source of nitrogen and phosphorous. Cattle grazing fescue pastures in the summer may also spend more time in the water because the endophyte on the fescue causes the cattle's body temperature to rise above normal. The result higher temperature and nutrient availability is that the pond blooms and the water goes from relatively clear to looking like green paint in just a few days due to the production of millions of bacterial bodies.
There are two toxins produced. The first is a neurotoxin that affects the central nervous system and causes very rapid death to the animal. Dead cattle are often found lying at or near the pond

where they drank. Deaths can occur in large numbers if the concentration of toxin is high. The second toxin is a hepatotoxin, or toxin that attacks the liver. This results in slower death and signs include jaundice and severe sun-burning. It is not as common as the sudden death syndrome. Once the animals have consumed the toxic water, there is no treatment. Often the wind pushes the organisms and the resulting toxins across the pond where they become concentrated. An early warning sign is the presence of dead mice, snakes, or other small animals on the downwind side of the pond.

When you have a suspicious water source you should collect a sample of water, preferable from the downwind side. If it looks clear there is very little chance of a toxicity problem. Only a relatively few organisms found in water cause toxicity, so if your sample is colored or murky, it should be sent to a veterinary diagnostic laboratory for examination. Your veterinarian or county extension educator can help you submit the sample. If in doubt, keep livestock away from the pond until you have an answer.

In the past ponds have been treated with copper sulfate to kill the organisms. This practice is, however, somewhat controversial. Livestock must be kept from treated ponds for two weeks because the chemical can also be toxic, and in this time usually the bloom is over and the water is safe anyway. Some toxicologists feel that when the bloom is killed by chemicals, more toxins are released. If sampling reveals that your pond is a potential danger, consider keeping all livestock off for two weeks and then retesting. The guidance of your local veterinarian is the best help in planning a course of action.
In summary blue-green algae may be a problem when ponds bloom. There is no treatment for poisoned animals. The problem can be at least partially prevented by avoiding fertilizer run-off, keeping animals out of ponds, submitting samples of questionable water, and providing alternative water sources when ponds are blooming.

Weaning Strategies Impact Feedlot Calf Health and Gain

By Glenn Selk, OSU Extension Cattle Reproduction Specialist

Weaning strategies are becoming an ever increasing topic of discussion for cow/calf operators and feedlot managers. Should the calves be weaned ahead of time at home before shipping? Should they be weaned on the truck on the way to the feedlot? Should the calves have fenceline contact with their mothers during the weaning process? Should calves be weaned in drylot or on pasture?

Ohio State University animal scientists conducted a trial to explore possible advantages of pasture-weaning calves with contact to their dams. Three weaning strategies were investigated: 1) weaned directly onto the truck, 2) weaned 30 days before trucking and confined in drylot, 3) weaned 30 days before trucking and pastured with fence-line contact with their dams. Steers from the drylot weaning strategy lost 1.32 lb/day the first week in the feedlot, whereas steers from the truck weaning and pasture–weaning treatments gained 1.1 lb/day and .88 lb/day, respectively. Body weight gain in the subsequent 3 weeks was similar among treatments. However, the differences in the first week upon arrival in the feedlot were enough to impact

overall gain of truck- and pasture-weaned calves compared to drylot-weaned calves during the entire 4-week feedlot arrival period. Weaning effects on incidence of calf sickness also were detected. Only 15% of the pasture weaned calves required treatment for respiratory disease. This incidence was doubled for truck- weaned calves and nearly 2.5 times greater for calves weaned in drylot. Pasture-weaning with calves having fence-line contact with their dams appears to be an acceptable method of weaning. Source: Boyles and co-workers. Professional Animal Scientist. 2007. Vol 23: pp 637-641.