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# COW SENSE CHRONICLE

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## BLUE-GREEN ALGAE POISONING IN CATTLE

Happy summer! As the days heat up, I'm hearing more about declining water quality across the state. This month, I'll provide an overview of blue-green algae poisoning.

Blue-green algae, or cyanobacteria, are photosynthetic bacteria that live and grow in aquatic environments. Many species exist: some are harmless, some produce neurotoxins that affect the nervous system, and others produce hepatotoxins that affect liver function. These toxins are known as cyanotoxins. Large blooms of cyanobacteria can occur when conditions are favorable, leading to elevated concentrations in water sources. When livestock or other animals ingest high concentrations of blue-green algae, death can occur within minutes or hours.

Poisoning usually does not occur unless there is a heavy bloom that forms a dense surface scum. Colonies may look like a skin or paint on or just below the water surface. Contributing factors to heavy blooms include nutrient-rich water (nitrogen and phosphorus, for example) and warm, sunny weather. Even a light wind can lead to very high (scum) concentrations of blue-green algae, especially downwind shoreline locations where livestock drink. Ruminants and birds are more sensitive to the toxins than monogastrics. Among domestic animals, dogs are most susceptible. Ranchers have reported dead birds and other wildlife along shorelines of affected water sources.

Signs of blue-green algae poisoning would include tremors and difficult breathing if affected by the neurotoxin. At high doses, the neurotoxic effects can take place within minutes. Often, ranchers report sudden collapse and death immediately after consumption of the affected water. The hepatotoxic effects would take longer (hours rather than minutes) after toxic water consumption to be observed. Water samples can be evaluated at a lab for the presence of toxic cyanobacteria and for analysis of cyanotoxin level. You can read more about human health concerns regarding cyanobacteria from the CDC at <http://www.cdc.gov/hab/cyanobacteria/pdfs/activities.pdf>

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