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Official Publication, - MassVet News, April 2011

Harmful Algae Blooms and Pet Health

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An emerging water quality issue that can affect both people and animals is the presence of harmful algae. In 2008, the Massachusetts Department of Public Health (MDPH) was awarded funds by the U.S. Centers for Disease Control and Prevention (CDC) to implement environmental and health surveillance efforts aimed at addressing health concerns associated with harmful algae blooms (HABs). HABs form when cyanobacteria (commonly called blue-green algae) undergo explosive growth and form a scum or mat on the water's surface. These occur mostly in the summer and fall, but can occur at any time during the year. HABs are capable of producing a variety of toxins. The overall goals of MDPH's efforts are to prevent exposures to HABs and to collect health surveillance data on any reported impacts on humans or animals.

For pets and farm animals, the primary concern is the ingestion of water containing blue-green algae or scum that has washed ashore or gotten onto their skin or fur. Toxins may be present within the algae cells or in the water. Of secondary concern are direct skin contact with the blue-green algae and inhalation of water droplets containing blue-green algae or toxins. Contact can cause skin and eye irritation, and inhalation can cause respiratory irritation and exacerbate pre-existing respiratory conditions. Toxins are not absorbed through the skin.

Ingestion of blue-green algae can cause acute gastrointestinal symptoms, such as vomiting and diarrhea. If the blue-green algae are producing toxin(s), the health effects can be more serious, especially for small pets due to their smaller body weights. Various species of blue-green algae are capable of producing a number of toxins but with no consistent trend; research conducted to date cannot explain why some algae occasionally produce toxins. Ingestion of the toxins can cause acute gastrointestinal distress and, depending on the specific toxin, can affect the functioning of the liver, kidneys, and/or neurological systems and in severe cases can result in death.

Symptoms in animals may include diarrhea, vomiting, weakness, salivation, staggering, difficulty breathing, or convulsions. These symptoms present themselves fairly quickly after exposure. Animals of most concern are dogs. They have been known to eat the scum that washes ashore and/or lick scum out of their fur. In Massachusetts and in many other states, canine fatalities have been observed due to the ingestion of harmful algae.

To prevent potential health impacts, people and pets should avoid contact with water in areas where algae blooms are present or where signs warn against contact with the water due to the presence of an algae bloom. Owners should rinse pets off immediately if they come into contact with an algae bloom.

If an outdoor pet brought to your office presents with the above symptoms, it may be beneficial to ask the owner about any recent visits to freshwater bodies and if they observed any algae in areas where the pet may have come into contact with the water.

Treatment for blue-green algae toxicity is non-specific. Interventions should be aimed at preventing any further ingestion and absorption of the toxin and if ingestion has occurred, alleviating any symptoms which will be specific to the particular cyanobacteria involved. Consultation with a veterinary toxicologist or a poison control center may be indicated. Staff in the MDPH Bureau of Environmental Health's Environmental Toxicology Program can also help answer any questions.

To expand awareness of HABs and associated health effects and to increase the reporting of potential HAB-related illnesses, in July 2010 MDPH sent a mailing to all veterinary offices in Massachusetts. Included in the mailing was a description of the MDPH project and what health information needs to be reported to MDPH for the HAB surveillance effort. An illness surveillance form developed by MDPH was enclosed with the mailing, along with a poster on HABs and pet safety.

If you have any questions about harmful algae in Massachusetts, would like a copy of the animal illness surveillance form, our educational brochure on HABs, or our pet safety poster, please contact MDPH's Bureau of Environmental Health at 617-624-5757 or visit us on the web at www.mass.gov/dph/environmental_health (click Environmental Exposure Topics).

MassVet News April 2011
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