

Windmill Vets - Pet Advice Notes

Blue-green algae/Cyanobacteria toxicity

There are more than 40 toxic species of blue-green algae. They are found in fresh, brackish and marine water sources and more than one species can exist in any location. When the weather is sunny, the water temperature warm and water nutrients are plentiful; the algae may form massive growths or blooms. These occur in the late spring, summer and early autumn and are either floating ('planktonic'), or bottom-dwelling ('benthic'). Normally blue-green algae can regulate their own buoyancy to remain at the depth of optimum growth conditions. However, under rapidly changing environmental conditions (such as strong winds or if the water is disturbed) they lose this ability and float to the surface or sink to the bottom forming scums varying in colour from green to blue-green, but also red, brown or black. Under suboptimal conditions of light, nutrients or temperature, the cells die and release their toxins. Winds will blow the algal scums to the shore and concentrate them, therefore increasing the toxicity and risk of exposure to animals.

The onset of toxic effects may be within 15 minutes of exposure, and is usually within an hour. Deaths can occur in as little as 10-30 minutes after the onset of signs of toxicity and often within 24 hours of the original exposure. Different species produce different toxins but gastrointestinal upset is usually the primary presenting sign irrespective of the species involved. This can include vomiting, abdominal pain and diarrhoea (which may be bloody). Other features include excessive salivation, pale gums, lethargy, weakness and inco-ordination, collapse, tremors, convulsions, difficulty breathing with subsequent progression to death. Some species produce less acute-manifesting but equally severe toxins that can affect the liver, kidneys and central nervous system. Some of the liver toxins are also potent tumour promoters which may have implications for animals which survive the initial exposure.

The degree of toxicity is dependent on the dose ingested as well as the stage of decompensation of the algae. Exposures usually occur after swimming in affected locations, drinking contaminated water and grooming after skin exposures. Treatment for suspected exposure should be undertaken immediately and includes induction of vomiting, administration of adsorbents to reduce the uptake of toxins and further supportive treatments such as intravenous fluids and anticonvulsants. Blue-green algae can sometimes be identified in the residual scum on the animal's coat or in the vomit to confirm exposure. If a pet is suspected of blue-green algae exposure, veterinary treatment should be sought without delay.