



# Blue-green Algal Poisoning of Stock

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*Toxic blue-green algal blooms have the potential to kill large numbers of stock in a very short period of time. Low water levels, hot weather and the contamination of water supplies by nutrient rich soil and faeces combine to significantly increase the risk of toxic algal blooms occurring. Not all blue-green algal blooms are toxic to stock however, and the toxicity of a bloom may vary rapidly.*

## How do I know it is Blue-green Algae?

Blue-green algal blooms typically appear as surface scum (see Figure 1). Blooms are often described as looking like a suspension of green paint, or curdled green milk, however colour may range from pale green to dark brown. Often an “earthy” smell will accompany a blue-green algal bloom. In comparison, other algal blooms may look like green mats, and can be pulled from the dam in long strings. Usually there will be no smell.



*Figure 1 A toxic blue-green algal bloom*

## How are Livestock Affected?

Stock deaths due to toxic blue-green algal blooms have been recognised for more than a century. Deaths occur when stock drink toxins produced by the blue-green algae, usually when they are concentrated on the down-wind side of a water supply to form a dense, surface scum. Depending on the toxicity of the bloom, between one cup and many, many litres of water may need to be ingested before animals show signs of poisoning.

Animals that have consumed blue-green algal toxin will appear ill very rapidly. They will develop tremors and a staggery gait, become recumbent, then begin to convulse and die – typically within 24 hours. Few animals survive. Those that do not die immediately usually suffer severe liver damage. This may lead to the development of

jaundice (the “yellows”) or severe photosensitisation over the next few days. Those that recover from these ailments then suffer from chronic ill-thrift. There is no treatment for affected animals.

Blue-green algal poisoning should be suspected when animals are found dead and dying after access to an algal contaminated water source. Dead animals may have their mouths and nose stained green by algae, and feet and legs may also be stained due to wading in contaminated water. Laboratory testing of the water supply for the presence of blue-green algae, and a post-mortem examination of dead or sick animals by a veterinarian will confirm blue-green algal poisoning. Typical post-mortem findings include intact clumps of greenish algae in the oesophagus and stomach, together with severe liver damage and internal bleeding. Testing for the toxin in water is very expensive but is the most accurate method for determining the safety of a water supply. Samples for toxin testing must be collected and stored carefully to ensure accurate results are obtained.

## Prevention and Treatment

Avoiding toxic algal bloom formation by minimising nutrient run-off, and checking stock water supplies daily for blooms, remain the most effective ways of preventing stock deaths.

If a suspicious bloom is noticed, stock should be removed from the contaminated water source as quickly as possible. If this is the only water source available, stock should only be permitted to drink from areas of the dam where thick scums are not present. Accurate identification of algae should be obtained from your local water supplier.

Chemical water treatments that cause algal cells to break down or die **are not** recommended. These treatments allow the release of pre-formed toxins into the water. This potentially makes the water even more toxic to stock. Advice regarding the treatment of affected water supplies for stock use should be obtained from your local water supplier. If copper sulfate is used as a water treatment, and stock are returned to the water source, there is a significant risk of copper poisoning in sheep with damaged livers. The toxicity of algal blooms can vary from hour to hour and day to day. Water may remain toxic to stock even after a bloom has disappeared. Generally, stock should not be allowed access to affected water for at least ten days after a bloom has disappeared.

## Further Information

Further information can be obtained from Landcare Notes LC0098 “Has your dam got a blue-green algae problem” and LC0079 “Minimising algal growth in farm dams”, Animal Health staff at your nearest DPI office, or on the DPI website - <http://www.dpi.vic.gov.au/>

Large numbers of stock can die from other causes including anthrax, clostridial diseases and chemical or plant poisoning. If multiple, sudden or unexpected stock

deaths occur, immediately contact your local veterinarian or DPI Animal Health and Welfare staff.

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