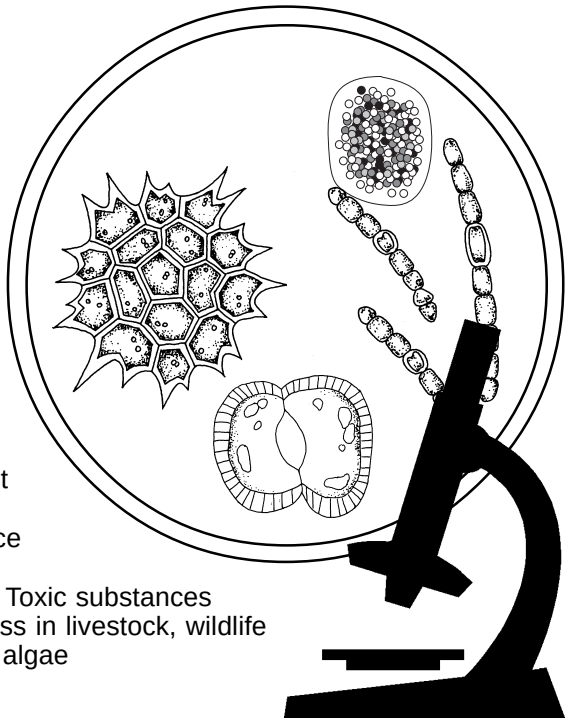
Aquatic Plant Management
South Carolina Department of Natural Resources

PLANKTONIC ALGAE



Common Name
Blue-green algae/micro-algae

Distribution and Habitat
Numerous species of microscopic, single-celled algae may be found in ponds throughout the state. Most of these alga make up the phytoplankton or periphyton and are considered a beneficial component of the food chain. One of the most common nuisance algae belongs to a group known as the blue-green algae. Species of this group will tolerate a wide range of habitats but thrive during warmer months in nutrient rich waters. These microscopic algae are suspended in the upper reaches of the water column and under favorable conditions produce dense blooms. Such situations may produce an unsightly surface scum, foul odors in the water and sometimes off flavor in fish flesh. Toxic substances produced by some blue-green algae have been attributed to sickness in livestock, wildlife and even humans. Oxygen depletions due to die-offs of blue-green algae may cause fish kills.

Description
Microscopic examination of individual cells of blue-green algae is usually required to identify the species. These cells may be spherical or elongate and may occur singularly but more often form aggregate clumps or flakes suspended within the water column. At this stage the bloom becomes easily visible to the eye and may give the water an overall pea soup green or brownish appearance. Thick surface accumulations have been be described as resembling green or blue-green paint on the water. Temporary dispersal of the algal blooms is often triggered by cooling of surface water temperatures due to rain events or frontal passages.

Recommended Control Methods
1. Chelated Copper
Active Ingredients: Elemental copper from copper triethanolamine
Product Names: K-Tea / Cutrine / Cutrine Plus
Approximate Cost: $18.00-$30.00/gallon
Application Rates: Dependent upon acreage to be treated and desired concentration (See Below). Most planktonic algae can be controlled by chelated copper concentrations between 0.2 ppm-1.0 ppm (parts per million)

Depth of Water (Feet)	Gallons of Chelated Copper per surface acre to achieve desired concentration in parts per million (ppm)	
	0.20ppm	0.50ppm
1	0.70	1.70
2	1.40	3.40
3	2.00	5.10

Application Methods and Tips: Control of blue-green algae is best achieved when the algaecide is applied at the first signs of algal bloom. Water temperatures should be a least 65˚.

Even distribution of the algaecide over the pond is desired. This may be accomplished by mixing the material with water and applying over the pond as a spray solution or simply pouring the mixture throughout the pond using a boat. Care should be exercised when treating ponds with dense growths of algae to prevent oxygen depletions due to the decomposing plants. No more than one-third of the pond should be treated at any one time, allowing a 7 day interval between applications. Additional product directions and precautionary statements are listed on the herbicide container. **READ AND FOLLOW THE HERBICIDE LABEL**

2. Copper Sulfate-Bluestone
Active Ingredients: Copper Sulfate (Pentahydrate)
Product Name: Copper Sulfate
Approximate Cost: $10.00-$15.00/5lbs.
Application Rates: 0.8 lbs-1.75lbs /acre foot* Exact dosage rates are dependent upon acreage to be treated and desired concentration of the product. This should be carefully calculated at the time of treatment as directed on the product label.
* One acre foot=one surface acre x one foot of depth

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NOTE:
Extreme care should be exercised when using these products in acid or soft waters (water hardness less than 50 ppm) due to increased toxicity to fish under these conditions.
DO NOT EXCEED RECOMMENDED RATES.

This information is intended for educational purposes only. References to commercial products or trade names is made with the understanding that no discrimination is intended of other products which may be available. Any herbicides recommended herein for the treatment of aquatic vegetation have been registered by the Environmental Protection Agency for use in the manner described. The registration and use of a particular product may change, therefore the information provided here may not remain current indefinitely. It is the responsibility of the user to read and follow the manufacturers label to prevent misuse of the product.

South Carolina Department of Natural Resources
Freshwater Fisheries Section

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