



**Centre for
Ecology & Hydrology**

NATURAL ENVIRONMENT RESEARCH COUNCIL

Centre for Aquatic Plant Management

Information Sheet Chemical Control of Algae

Chemicals should be used for the control of algae if a quick-fix solution is required. Often, the problem will re-occur when the chemical has been washed out of the system. Because most of the appropriate herbicides kill other plants they tend to remove a lot of the vegetation, leaving a bare habitat. The first plants to recolonise are usually algae and, often, the new problems will be worse than the problem which was treated. Some algae can become resistant to herbicides if they are used too often. The only solution in these situations is regular mechanical removal or treatment with barley straw. Long-term control of algae can be achieved by the use of barley straw. Use chemicals for algal control if you need to clear an area of water quickly and you are prepared to adopt their use as part of an on-going management system. They are also useful as the first part of an integrated management regime for algae. The problem can be removed quickly by the use of chemicals in the first instance, followed by environmental management techniques to reduce the potential for recolonisation by algae. Appropriate environmental methods include planting more submerged plants, more plants with floating leaves and by increasing shade or reducing nutrient concentrations in incoming water. There are several disadvantages to using chemicals. Professional herbicides which kill algae are non-selective and will kill other desirable vegetation. Amateur products (sold in garden centres) often contain copper compounds which can be harmful to fish if over-applied.

Control of filamentous and macrophytic algae

In Britain, there are three commercially available professional herbicides which can be used to control macrophytic algae. Filamentous algae are controlled by only two. Filamentous algae are characterised by their ability to form floating mats and to adhere to submerged structures. Commonly encountered species are *Cladophora glomerata* (Blanket Weed), *Vaucheria dichotoma* (Cott), *Enteromorpha*, *Spirogyra* and *Rhizoclonium* species. These types of algae often cause problems in newly dug ponds and ditches.

Terbutryn

This is a granular product containing 1% of terbutryn as the active ingredient. This product will kill most submerged vegetation, although water lilies are not usually affected. The granules should be spread evenly over the water surface. Susceptible algae should be treated at an application rate of 5kg product per 1000 cubic metres of water. Moderately resistant algae should be treated at a rate of 10kg per 1000 cubic metres of water. The product should be applied early in the spring as soon as the water temperature reaches 10°C. Growth ceases almost immediately but signs of death only usually occur after 24 weeks. Regrowth will not usually occur for at least 34 months after treatment. If dense weed growth is present only use the product on 400 m long stretches of watercourse separated by at least 400 m of untreated section, and on not more than one quarter of the total area of a lake or pond. Leave 14 days before re-treating each remaining section. Clarosan acts by inhibiting photosynthesis (production of oxygen) but does not inhibit respiration (consumption of oxygen). Levels of dissolved oxygen in treated areas will fall dramatically after treatment and may cause harm to fish and other animals in the area. It is very important not to treat the entire watercourse at one time to allow fish and invertebrates to find unaffected areas. It is, however, important that the whole system is treated within a 6-8 week period otherwise control may be reduced.

Clarasan is only effective in static water where the flow is less than 1 metre in 3 minutes (effectively static). If there is any observable water movement then the flow should be stopped for seven days. Water treated with this product may be used for irrigation and watering of livestock seven days after treatment.

Susceptible: <i>Cladophora glomerata</i> <i>Enteromorpha intestinalis</i> <i>Rhizoclonium</i> species <i>Spirogyra</i> species	Moderately resistant: <i>Vaucheria dichotoma</i>
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Dichlobenil -

Dichlobenil products are granular formulations and can be used in all types of water body. The only species of algae controlled are *Chara* species. All other filamentous algae are resistant. These products are claimed to control most submerged rooted plants. Do not plant replacement plants within 4 months of treatment.

Amateur products - the following products can be obtained from garden centres and similar retail outlets for treatment of filamentous algae in garden ponds.

Aquaplancton Blagdon Pool Clinic Algicide Interpret Pond Balance O'Clear TetraPond Algofin Plus	Bio-Claire Hozelock Pond Balance King British Green Algae Control Remanoid Aquaclear Waterlife Algizin P	Blanc-Kit Hydroperfect Algalit Lotus Pool Balance Sera Pond Water Peat
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Control of Unicellular Algae

This type of algae creates green water and pea soup like conditions. There are no professional herbicides available for the control of unicellular algae, although Clarosan 1FG and Reglone will both have a temporary effect. A product is available through garden centres for use in small garden ponds which is based on terbutryn called Algae-Kit.

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Algae-Kit Aquaplancton Bio-Claire Blagdon Pool Clinic Algae Clear Blagdon Pool Clinic Algicide Blanc-Kit Hozelock Pond Balance Hozelock Green Water Treatment	Hydroperfect Planktonit Interpret Pond Balance King British Green Water To Go King British Green Algae Control Lotus Green Water Treatment Lotus Pond Block Lotus Pool Balance Lotus Pool Balance	O'Clear Pond Care Accu-Clear Remanoid Aquaclear Sera Pond Water Peat TetraPond Algofin Plus TetraPond AlgoRem Waterlife Algizin A Waterlife Algizin P
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Unicellular algae can be flocculated and precipitated out of suspension by non-herbicidal mechanical means. The addition of aluminium sulphate to the water will remove algae from suspension. (O'Clear available from Aqua Company Ltd). This process is only effective in waters of pH above 7.5 Other flocculating products are based on the addition of chalk granules to the water. The removal of nutrients from the water is an environmental strategy for control of unicellular algae. Phosphate can be removed by precipitation with ferric sulphate and by causing the water source to flow over limestone chips. Significant removal of nutrients is possible using reed bed pre-filtration systems with sediment traps and vertical flow pathways. These strategies will produce a short-term, temporary reduction in the algal problem. If steps are not taken to eliminate some of the environmental factors stimulating unicellular growth then reapplication of these techniques and processes will always be necessary.