POND ALGAE

harrogate aquatic
AQUARIUM & POND SPECIALISTS

Preventing and treating algae

Algae is something we all come to know (and hate!) at some point in the course of having a pond or water feature. It is basically a primitive version of a plant, and unless it completely takes over it is actually an important part of the ecosystem that helps to keep the water healthy. Of course you can have too much of a good thing, which can be harmful to wildlife and fish (not to mention your blood pressure!).

TYPES OF ALGAE There are three main families of algae:

GREEN WATER is caused by millions of unicellular algae (tiny single algae cells) that float around and make the water look green and murky. In low numbers you can't even see them and they don't affect water clarity, but they are a key part of the food chain for tiny water insects (like daphnia) which in turn feed larger insects and tadpoles etc.

THREAD ALGAE is the filamentous long strands or tufts of algae growing from the plants or sides of the pond that look hairy or fluffy. "Blanketweed" or "string algae" are common names for this type of algae but there are lots of other names. It is a vital source of food for pond snails, tadpoles (and young toads and newts). It also absorbs a lot of excess nutrients which would otherwise cause single-cell algae and green water.

BLUE-GREEN ALGAE is like a slimy blue-green layer that spreads on the surface or bottom of the pond like an alien-green custard-skin. It is actually a type of bacteria (cyanobacteria) that uses light for energy in the same way that algae does, and tends to occur most in stagnant ponds with a lot of sludge and decaying leaves. It is a sure sign your pond needs some sludge vacuuming out and better filtration! It is not harmful in itself but releases a toxin which can be poisonous to animals, so don't let pets drink from the pond and be sure to wash your hands if you've touched it.

DUCKWEED is not an algae (just a miniature floating plant) but it gets an honourable mention here as it can be just as annoying as algae! It covers the surface of the pond like thousands of tiny cress leaves and can block light to other plants and clog up filters and pumps. It is usually brought in by birds; either stuck to their feet or transferred in their faeces when they visit to bath/drink. It can also hitchhike on frogs, newts and toads.

IS IT BAD? In small amounts, none of the above are harmful and they are actually very important parts of the ecosystem. Algae only becomes harmful if you have too much of it because of the way it uses carbon dioxide (CO_2) and oxygen (O_2). Just like plants, algae uses energy from sunlight to photosynthesise, which means during daylight hours it is absorbing CO_2 and producing O_2, which is of course beneficial for wildlife and fish.

During the night, however, the process reverses so you can end up in a situation where all the O_2 is used up, which can mean all the fish and young amphibians relying on dissolved oxygen in the water can suffocate. It also means the pH balance of the water can change dramatically between night and day: in daytime, plants using up CO_2 cause the pH to become alkaline, and at night the release of CO_2 causes acidic water. You can guard against the risk of suffocation by running an extra air pump over night, but the dangerous swings in pH level can be fatal to fish and aquatic life.

Algae can out-compete plants in that it can stop light getting to oxygenating plants and hog nutrients the plants are relying on for growth. If you have high protein/ammonia levels in

the water, single-cell algae floating near the surface can form a skin on the surface which stops gas exchange from the surface. This can mean a build up of toxic nitrogen and a lack of oxygen, causing aquatic organisms to suffocate. Tangles of blanketweed can physically block up filter and pump inlets, which can affect the way water is filtered or even cause damage to the equipment.

COMBATING ALGAE There are several ways you can help solve an algae problem and (some actions that would actually make things worse!):

TOTALLY EMPTYING & REFILLING the pond is a definite NO! Aside from how stressful this would be for fish and wildlife, you would lose a lot of your mature bacteria and eco-system, which can cause knock-on effects with your water quality and fish health. Tap water is full of nutrients, so your pond would look good for a few days and then the algae would come right back.

CLEANING out the sludge at the bottom and giving it a PARTIAL water change will help. We hire out a Pondovac, which is a large vacuum cleaner designed to remove sludge and debris from the bottom of the pond without disturbing your fish. As you are not removing more than about 30% of the total volume of water, you will not be disrupting the chemical and biological balance of the pond.

SNAILS will help by eating blanketweed but can't help with green water or cyanobacteria. Make sure your water pH and hardness are safe for snails—they need stable alkaline conditions or their shells can dissolve.

DAPHNIA (water fleas) eat single-cell algae so a population can be added to clear the water and provide a valuable part of the natural food chain.

BARLEY STRAW is a natural remedy for algae. It works by releasing hydrogen peroxide as it decomposes, which inhibits algae growth. The bacteria that break it down need oxygen, so barley straw only works if you have well oxygenated water and good circulation.

GRASS CARP are a type of fish that eat blanketweed and duckweed, but they get quite big and of course add to the waste in the pond, so this is only an option of you have a large pond with good filtration.

MORE PLANTS! Plants feed on the same nutrients in the water as algae does, so your plants help to compete with and starve the algae. Any plants which grow loose in the water will help as the roots take the nutrients directly out of the water (whereas plants in pots will be getting their nutrients from the compost). Algae growth is stimulated by sunlight, so floating plants and lilies provide shade– ideally you should aim to have at least half of the surface of the pond covered in plants. This restricts the amount of light entering the water, and makes the pond look more attractive. Plants also help to use up fish waste by-products in the water, so they will improve your water quality.

ANTI– ALGAE PRODUCTS These products don't necessarily 'kill' the algae (decomposing algae in the pond would affect the water quality) but they should at least stop the algae growing back once you have manually removed as much as possible. In the case of unicellular algae, the algaecide damages the algae cells and makes them flocculate or 'clump together' so they are removed by the filter. Use algaecides as a last resort and try not to use them in spring when wildlife is relying on algae for food and protection.

ULTRA-VIOLET FILTRATION A filter is vital to keep your pond clean and clear and allows you to collect and remove the waste that would otherwise break down and cause algae. It reduces maintenance, improves the water quality for your fish and adding an Ultra Violet light unit will also remove the green suspended algae from your water.

SHADE Limiting the sunlight reaching the pond will really help—could you plant trees or shrubs, or install a pergola? Climbing plants like honeysuckle or clematis can be grown over trellis panels to make a very attractive natural screens.