

What is pond algae?

Whether you have a water garden, decorative pond, stock tank, golf course pond or lake....you probably have had slimy green water or scum on them!

What are Algae? One alga is microscopic; hundreds of millions of alga are called algae. There are more than 30,000 varieties of algae. Algae are plants, most making their food substance through photosynthesis using daylight, water and carbon dioxide. Algae also contains chlorophyll and produce oxygen.

Algae are essential to our waters natural ecosystem, without algae our waters would not sustain life.

Advantages of algae (yes, it does have advantages)!

Fish, microorganisms feed off algae, fish can spawn (on hair algae), absorbs ammonia nitratres and phosphates.

During the day algae will provide oxygen and shade.

However, very high densities (algal blooms) of uncontrolled algae growth can discolor water, lower oxygen levels, unpleasant odors and out-compete/poison other forms of life in the pond water.

Before you can make a plan for treating the algae, you have to know what type you are trying to treat.

For pond owners there are two main types of algae; Suspended Algae (green water) and Blanket Weed Algae (often commonly referred to simply as String Algae).

There is also a third kind, Chara Algae that pond owners who have large, natural ponds (earth ponds, farm ponds) may have an algae control problem with. This type of algae resembles submerged plants. (*see photos below*)



PLANKTONIC ALGAE



FILAMENTOUS ALGAE



Chara Algae

PLANKTONIC ALGAE --- Suspended Algae (the most common kind)

Chlamydomonas, Chlorella, Euglena, Closterium, Anacystis SPP.

Also known as: Blue Green Algae; Pea Soup; Scum; Water Bloom; Microscopic Algae.

Suspended algae is as the name suggests – a film of green algae suspended in the water.

Algae can float freely in water, coloring it green; this Planktonic algae are microscopic and when they start to bloom (usually takes place in summer months), they give ponds a pea soup coloration.

Planktonic algae can be green, brown or red in color.

They grow in nutrient-rich water. Nutrients can be produced by fish, heavy feeding of fish, even non-toxic runoff from the landscape can throw off the balance of a pond's ecosystem.

Algae will then take advantage of the imbalance and grow rapidly then die back when the nutrients are depleted.

Even after dying back they can sink to the bottom of your pond and form sludge.

FILAMENTOUS ALGAE --- Blanket Weed

Spirogyra; Cladophora

Also known as: Hair Algae; String Algae; Scum; Waternet; Frog Spittle; Moss

Blanket Weed Algae develops into long fibrous strands which will cling to pond edges, waterfalls and even other pond plants.

Filamentous algae begins growing in the early spring and is first noticed around the edges of the pond in shallow water. This algae look like strings or filaments, and are known as being green "hair" on rocks, sides or bottom of the pond.

As the clumps grow, they break loose from the bottom, side...and float to the top, forming dense, hair like mats on the water surface.

Chara Algae *Also known as: Muskgrass; Stonewort; Skunkweed; Sandgrass; Chara spp*

Chara looks like submerged weed but can be differentiated by its musky smell.

Muskgrass (Chara) is often mistaken for a vascular plant, but is actually a form of algae.

It grows most commonly in shallow water where the nutrient levels are high. Its rough texture and strong, musty odor, easily distinguishes it when pulled from the water.

Chara has stem-like branches with forked leaves, and 6 to 16 leaf-like structures that are whorled around the stem in fairly uniform intervals. Also look for little bumps or spots on the leaflets.

Chara will not grow to the surface and is often mistaken for submerged plants.



Pond Algae - Control

No two ponds are exactly the same, what works for one pond owner may not work for another.

Like all plants, algae require sunlight to photosynthesize and nutrients, such as nitrate and phosphates to grow and develop. The natural remedy for ridding the pond of *suspended algae* is to keep a good stock of pond plants to out compete the algae for nutrients. Adding shade to the pond with plants, a pergola, etc.

Fish:

Limit the amount of fish in your pond. No more than 1 inch of fish for every square foot of pond surface.

Pond fish typically need 10 gallons of water for every inch of their length, but keep in mind they will grow larger over the years.

Fish waste is a rich source of nutrients which is ideal for algae.

Aquatic Plants:

Add plants to the pond, they extract nutrients from the water. This means that they will naturally start to out-compete the algae for the nutrients causing the algae to starve.

Another benefit that plants provide, particularly water lilies, is that they shade the surface of the water, keeping it cool, all while cutting down on the growth of string algae and green water.

Keep the Pond Clean:

Even though plants are beneficial, if their dead leaves aren't trimmed they become a nutrient source for algae.

You can use a fish net to collect leaves from the bottom and cover the pond with a net in the Autumn before the trees lose their leaves.

Getting Rid of Sludge: Aquatic plant, tree leaves, uneaten fish food and the Planktonic algae that died and sank to the bottom, all forming sludge.

There are numerous products available for [removing sludge from ponds](#).

Aeration: ~~ Oxygenation

The warmer the weather, the less oxygen there will be in your pond water.

More movement and splashing in your pond will create more oxygen as the rippling and bubbles create a larger surface area, which produces more oxygen as it contacts with the air at the water's surface. Therefore, waterfalls and fountains can be a big help.

Decomposing waste, excess fish food, etc. also produces a nutrient called phosphate. It is considered a nutrient and is beneficial to soil, it is **NOT** very beneficial to ponds.

Phosphate is a primary reason behind algae growth.
The excess phosphate and nitrogen can quickly cause algal bloom.
Dissolved oxygen is nature's primary way to combat nitrogen and phosphate.

Increased dissolved oxygen levels will help the pond bacteria thrive and improve the reduction of ammonia, nitrites and nitrate, which fuel algae growth. (will also help fish digest and convert food to energy).

There are all types of aeration such as diffused aeration (Air Pump) will force air through air stones (porous stone blocks or balls containing tiny holes), creating bubbles which add oxygen to the pond as they break the surface.
also, fountains, waterfalls, windmills, paddle wheels....

UV Clarifier/Sterilizers:

For Suspended Algae (**green water algae**) the most efficient prevention method is to use a UV Light and Filter.
They work by exposing the suspended algae cells to very high levels of UV light which has the effect of destroying their ability to reproduce.
The light will also kill the existing algae cells and cause them to clump together. These clumps are large enough to be removed by a filter system.
Basically water enters through a clarifier's inlet and travels all around the UV light, which causes the suspended algae to clump.
The water containing these clumps then travels through your mechanical and/or biological filter (which removes the clumps) and exits the system as clear water.

A UV (Ultraviolet) unit should be installed between the pump and the filter to eliminate up-to 99% of the pond's green water.

The UV light kills algae bloom (Planktonic Algae) and disease causing microorganisms.

UV Clarifier/Sterilizers will **Not** have any effect on hair algae Filamentous Algae (blanketweed algae).

Blanketweed/String algae (Filamentous Algae)

Equipment: Ionizers...

These highly effective units will rid your pond of algae and blanketweed within a matter of weeks or even days.

The technology works by releasing copper ions, which are toxic to algae cells, into the water.

Position inline between your pump and filter or can be placed in an area with good circulation such as your skimmer and you'll see results fast.

The control unit allows you to regulate the amount of copper ions released which make this a highly versatile method that can rid ponds of even the most stubborn algae and blanketweed problems.

Add Bacteria:

Beneficial bacteria breaks down organic matter that leads to algae problems.

There are multiple brands of pond bacteria additives that can come in different varieties like liquid, powder, packets and gels.

You can add the bacteria directly to the filter media to establish a strong colony in the filter or simply add the product directly to the pond, which allow the bacteria to colonize all over the pond and begin consuming the available nutrients in the water, starving the algae and breaking down waste.

Color the Water:

Water colorants will tint the water blue (black also available) which inhibits algae growth by reducing sunlight in the water.

Chemical-Free:

Barley Straw

A common method to control algae is Barley Straw Bales, Balls, Pellets, Flakes.....as the straw decomposes, it releases a natural algal inhibitor. Also available are the products of liquid Barley Straw Extract with the same benefits of barley straw.

Microbial Algae Clean is the first *bacterial* algaecide that controls Green Water algae.

It's effective not only as an algaecide, but also helps break down sludge and debris.

Chemicals: There are numerous chemical products ([water treatments](#)) available for algae control.

Chemical Treatment For Suspended Algae: Microbe-Lift Algaway 5.4 or other liquid chemicals will be your best bet for green water issues.

Chemical treatment for filamentous (string, blanket weed) algae: products with a granular form such as Green Clean, is better since it will make better contact with the algae.

Chemical Treatment for Chara (muskgrass) algae: Chelated Copper, Copper Sulfate, Hydrothol...

The best way to keep your pond clear of green water on a long term to permanent basis is to try to mimic as much as possible what would be found in nature.

In natural environments plants absorb the nutrients produced for them by fish, so there is little left for algae.

In a garden pond there is often insufficient plant life to achieve this natural balance.

No pond is likely to be 100% free from algae but a balanced environment will effectively keep it at bay.

Use an appropriate treatment for the type of algae present....

Content copyright 2006 - Aqua Garden Supplies. All rights reserved.