



<h1>Information Sheet</h1> <h2>“Mother Nature & Algae Control”</h2>

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NOW FOR MOTHER NATURE'S PRESCRIPTION FOR ALGAE CONTROL...

You see, Mother Nature's prescription for algae control is simple. She suggests that the solution to the algae problem, and almost every other conceivable problem in your water garden, is to make sure you have a balanced ecosystem. Problems are symptoms of imbalances. And problems are resolved by maintaining a balanced ecosystem. Some waste water treatment plants are starting to follow Mother Nature by using aquatic plants in the filtration process.

That is to say, instead of seeing your water garden as separate, independent, and unrelated parts all existing in the same environment, try to recognize it as a system, a series of interdependent, interrelated elements that all play a critical role in the functional success of your water garden. I mean we're talking teamwork here, synergism, cooperation, codependence (in a good way) and community.

THE FACTS OF AN ECOSYSTEM INCLUDE...

- A circulation system including a skimmer and biofilter
- Aquatic plants
- Aquatic animals
- Rock and gravel throughout the pond, including the bottom
- Good bacteria

All of these elements work together as a team, synergizing, cooperating, and effectively maintaining the pond naturally, without over-filtering, or sterilizing anything. Here's how it works.

THE CIRCULATION SYSTEM...

If you've ever noticed, there's a big difference between running water (moving) and stagnant (still) water in terms of algae. The purpose of the circulation system is to pump the water into the pond on one end (the BIOFALLS), and to suck it back out through a special filter (skimmer) on the other end. This combination effectively sweeps the surface of the water clean of all sorts of debris, including floating algae.

THE PLANTS...

Algae is a plant. As such, it requires nutrition to live and to grow. When you introduce desirable aquatic plants into your water garden, they compete with the algae for the available nutrition. And if there are enough plants, they'll naturally minimize the available nutrition and in the process, they'll control the algae for you...NATURALLY!

THE FISH...

The fish play a role too by eating the plants, including the algae, which helps to further keep the algae in check. Fish such as Koi over 10" in length, when not overfed with commercial fish food, will effectively graze on the algae in your pond.

AEROBIC BACTERIA...

When good, (aerobic) bacteria is introduced into your water garden, it competes with the algae for excess nutrients, and further helps to reduce, and effectively starve off the algae.

AND THE ROCKS AND GRAVEL...

The rocks and gravel not only cover up the ugly black liner; but also provide a home for the beneficial bacteria to reside. Plant debris, fish waste, and decaying organic that don't get swept into the skimmer will drop to the bottom of the pond and rest on top of the rocks and gravel. The bacteria living among the gravel can then go to work breaking down the waste debris.

Now if you take all 5 elements of an ecosystem and mix them up in the right proportions, your water will be naturally crystal clear without resorting to any artificial means to do it. Equally important, the time you spend maintaining your pond will be reduced to a bare minimum (5-10 minutes a week), while your relaxation time you have to spend with family and friends will be maximized. In this case Mother Nature does most of the work for you.

TYPES OF ALGAE: There are hundreds of types of algae throughout the world. However, the two types of algae that most water gardeners experience are suspended algae and filamentous (string) algae. Suspended algae consist of millions of microscopic algae floating throughout the water. This causes the water to turn green or "pea soup" color. Filamentous algae or string algae forms long and short hair-like strands. It attaches itself to rocks, gravel, plants or any surface area it can find in the pond. Both forms can be reduced by properly balancing your pond.

YEARLY CYCLE OF THE AVERAGE POND: Most ponds will notice a similar algae throughout the year. Colder temperatures, such as in early Spring and late Fall, are typically advantageous for algae growth. Do not be discouraged during the colder seasons if your pond turns "pea soup" green or you have string algae problems. Be patient in the spring when your pond wakes up from its winter slumber. The pond will need to balance itself out. During colder temperatures there is an abundance of nutrients in the pond. The bacteria and plants that once kept the nutrients in balance are now dormant. The algae is the first to take advantage of these nutrients. The algae will be reduced as the bacteria and plants reestablish themselves and start using their share of

the nutrients. Some ponds take longer than others do, but your pond will once again be crystal clear and string algae will noticeably diminishes the summer approaches.

TOP TEN ALGAE CONTROL METHODS

Beneficial Bacteria Enzymes:

Bacteria and enzymes play an enormous role in balancing the pond and providing a low maintenance water garden and should be added to the pond throughout the season. Bacteria will compete with the algae in the pond for excess nutrients, essentially starving off the algae.

Clean the BIOFILTER no more than once a year:

The BIOFILTER is designed to be cleaned once a year, typically in the spring. The debris and sediment that builds up in the BIOFILTER is natural and should be left as is. Routinely cleaning the BIOFILTER may actually cause more algae by greatly reducing the beneficial bacteria growing on the filter mats and lava rocks.

SLUDGE AWAY: This is formulated to help reduce pond maintenance and promote the growth of beneficial bacteria and enzymes. Sludge Away will assist in the breakdown and reduction of string algae in the stream, waterfalls, and pond. It works by adjusting the micro-nutrients in the water of the pond resulting in conditions that are unfavorable for string algae.

PLANTS: Plants since they directly compete with algae for nutrients and sunlight, are probably the most important addition to your pond. Add a wide variety of plants to your pond, this not only creates a natural look, but also will help reduce the algae in different ways of your pond.

- Place water hyacinth and water lettuce in your BIOFALLS. These floating plants reproduce rapidly using up enormous amounts of nutrients. A monofilament fishing line or long stick placed across the front of the BIOFALLS will prevent the plants from floaters when they start to over-run your BIOFALLS. The discarded floaters make great nutrient rich compost for you garden.
- Plenty of bog and marginal plants should be added to the pond. Plants such as cattails and iris take up large quantities of nutrients. They are hardy and will be back each spring to help you balance your pond.
- Cover the water surface of the pond by planting lilies. Lily pads float on the top of the pond soaking up the warm sunlight. The lily pads will reduce algae by preventing sunlight from reaching the deeper portions of the pond.
- Don't overlook oxygenators! They soak up nutrients and sunlight directly through their leaves. Think of them as nutrient sponges.

PHYSICAL REMOVAL: Physically remove clumps of string algae if it begins to over take the pond. Pull or cut away the algae where it is attached. Think of it as "weeding the pond."

KOI: Adding Koi over 10" in length will greatly reduce string algae. The Koi, if not overfed on commercial food, will graze on the string algae attached to the rocks in the pond.

DON'T OVER-FEED FISH: Only feed the fish amounts that they consume within a few minutes. Fish food that is not eaten by fish will decompose in the pond and increase nutrient levels. Reduce or eliminate feeding fish if excessive algae conditions exist. You can then begin feeding fish once the algae is under control.

FIX LEAKS: Tap water can have an abundant amount of nutrients in it. Continually adding large quantities of tap water to compensate for a leak can actually promote algae growth. Fix water leaks when they are discovered.

CONTROL RUN-OFF: Never use lawn fertilizer or insecticides on trees around your pond or on areas of your property that will drain towards your pond. Lawn fertilizer and insecticides will cause large blooms, as weak as severely threaten the aquatic life style in your pond.

REMOVE DEBRIS: Keep your pond free of debris. Don't let the skimmer net overflow with leaves. Decaying leaves and seeds in the skimmer leads to unwanted nutrients.

NEW PONDS NEED TO MATURE:

Patience, patience, patience!! It takes time for a pond to evolve into a living balanced ecosystem. Like a fine wine, ponds get bigger with age. Don't be surprised if your new pond begins to grow algae. It is important, once the pond is installed, to start establishing the ecosystem by seeding the bacteria, planting aquatic plants, and gradually introducing fish. You should notice less and less algae and a decreased amount of routine maintenance as the pond matures from year to year,

GIVE THE BACTERIA SOME TIME: It takes time for the bacteria to establish in numbers where it will actually start helping the water quality and reducing maintenance. In general a new pond can take 2-6 weeks for bacteria populations to reach effective proportions. Also, bacteria populations will be greatly reduced when water temperature increasing the water temperature starts to drop below 45-50 degrees Fahrenheit. We recommend increasing the bacteria dosage during colder temperature to keep the numbers of bacteria as high as possible. The bacteria will be completely ineffective when the water temperature is consistently below 50 degrees Fahrenheit, such as in the winter. Follow the winter guidelines for information of taking care of your pond in the winter.