



SANCO INDUSTRIES, INC.

POND & LAKE MAINTENANCE

101

KNOWLEDGE IS POWER

A beautiful pond not only looks great, but showcases the natural balance achieved through diligent and regular maintenance.

If you want your pond to be a showpiece you can be proud of you are going to need these three essential keys:

Work - Knowledge - Power



WORK:

As a pond owner you are going to need to commit to regular monitoring of your pond. This will involve testing water quality and identifying plant species. Once you have committed to this, you will need to treat your pond with the appropriate products.

This process of monitoring may take as little as 1 or 2 times a month depending on the weather. It will need to be done more often in warmer weather as this encourages plant growth.

Working towards keeping a proper record of your pond's condition will ensure it stays healthy and vibrant throughout the year.

KNOWLEDGE:

A beautiful pond is a reflection of the owner's ability to become knowledgeable in three key areas.

Firstly, you will need to learn how to identify weeds and health issues associated with excessive growth.

Secondly, you should know which pond maintenance products to use to fix these issues and sustain a healthy balance.

Thirdly, you should know how and when to use them. Unwanted and unnecessary growth in any pond is a result of its capacity to collect fertilizer, livestock waste, septic run-off and leaves.

All of these things contribute to growth and, if not managed, they will choke the pond and kill fish stock.

Without this willingness to learn and gain knowledge the health of your pond will suffer.

POWER:

Having the power to maintain a beautiful pond comes from work combined with knowledge.

Being able to quickly identify a problem and knowing what products to use to manage it, will give the pond owner the power to stay on top of them and retain the pond's brilliance.

Combining these three – Work, Knowledge, & Power - will ensure your pond, not only looks beautiful, but is clean, balanced and safe for fish.

If you are not happy with how your pond looks (and smells) you are missing one of these key factors.

POND CARE MADE EASY

Sanco has been helping pond owners gain the knowledge they need to maintain beautiful ponds since 1991. While new pond owners may think looking after a pond is daunting and overwhelming, Sanco has discovered that the first step in ensuring our clients do have a beautiful pond is to manage their expectations.

Ponds are natural bodies of water that should support healthy growth and life. Unlike a swimming pool, a healthy pond needs to be able to sustain plant life, light, water and the right balance of nutrients. Growth, algae and weeds, is a sign the pond is healthy and should be managed not so much eradicated.

Swimming pools should be pristine and clear. Ponds, on the other hand, are a living capsule which, if kept in perfect balance, should allow healthy plant growth and lively wildlife stock.

Regular maintenance is the key to a healthy pond. The use of pond maintenance products, like pond dye and pond bacteria, will slow growth and make it more manageable.

These products should be used approximately every 30 days.

As soon as your pond shows signs of excessive growth, like algae or weeds, it should be correctly identified. You will then know which product is the best to manage it.

All ponds have growth. When it gets out of control, this causes your pond to become unhealthy and 'sick'.

To avoid this, use pond maintenance products at the beginning and end of the season, every 30 days and then every two weeks during the warmer months.

At Sanco, we have an extensive pond plant ID section to assist you with identifying algae and weeds.

Our expert team are also available to assist you. www.sancoind.com



POND SIZE

Whether you have built your own pond or have purchased a property with one in it, you should know what the size of your pond is.

You wouldn't purchase a property without knowing what size it is, the same knowledge will help you take proper care of your pond.

When you need to treat your pond, knowing the exact size is essential for applying the correct dosage of all pond maintenance products.

If you didn't build your pond, or it is 15 to 20 years old, then you are going to have to calculate your pond's size. While this may seem like an enormous task, it is vital and will guarantee you are well prepared to maintain and treat your pond to keep it healthy.

HERE IS HOW TO MEASURE THE SIZE OF YOUR POND IN ACRES:

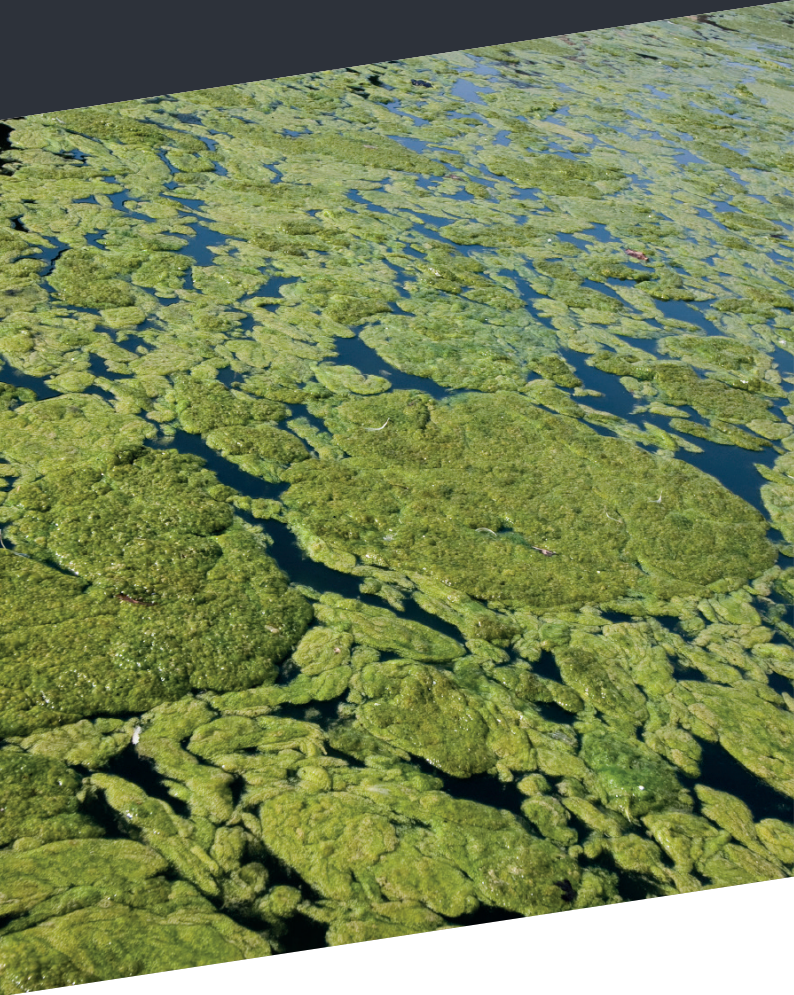
- Square or rectangle ponds – multiply length x width, then divide by 43,560
- Round ponds – multiply diameter x itself, then divide by 547,390

HOW TO MEASURE POND DEPTH:

1. Get a long piece of PVC pipe and mark 1 foot increments on it using a waterproof marker
2. Take depth measurements uniformly over the entire pond.
3. Add the measurements together and divide by the number of measurements taken.
4. This will give you're you the average depth in feet.

Did you know Sanco can calculate the size of your pond via satellite? If you wish to calculate your pond size in acres or you need any more assistance, please contact us - www.sancoind.com

PREVENTATIVE POND MAINTENANCE



The warmer months are a signal to all owners that there may be an increase in algae and weed growth in their ponds. It is important to keep on top of weeds and algae by using the correct pond maintenance products.

It is also important to manage and control this growth to prevent the algae and weeds from taking over.

Sanco Industries can give you valuable tips that will make pond maintenance easy in two simple steps.

STEP ONE

Adding pond dye:

As soon as the ice has thawed you should add pond dye to your pond. As well, you should be adding colorant if you notice it is fading at any time of the year.

Creating a healthy pond environment is all about inhibiting algae and weeds and slowing their growth down so that it is easier to manage.

Sanco has three pond dyes to choose from: Crystal Blue, Ocean Blue and Black Out.

STEP TWO

Adding beneficial pond bacteria:

This should be part of all preventative pond maintenance programs. It is an effective way of minimizing the food source for algae and weeds.

Sanco's Natural Pond Cleaner has good bacteria that will feed off the organic matter on the bottom of your pond floor.

POND BACTERIA

Good bacteria exists naturally in all bodies of water from small garden ponds up to lakes.

However, it only exists in small, limited numbers in most ponds. It can also take years for good bacteria to establish itself successfully, and then only after proper maintenance and treatment.

If the good beneficial bacteria exists in small numbers problems will occur.

Without it there will be a buildup of sludge, organic matter, nutrients and harmful bacteria that will damage the health of your pond.

It's important to know and identify the "players" in the good bacterial "game". The first of these are the aerobic families. These bacteria live in colonies and thrive in high oxygen environments.

They aid in the digestion of organic waste, sludge and nutrients.

Due to the low oxygen environments that exist at the bottom of most ponds, aerobic bacteria only exists in small amounts. This is why it is essential to provide your pond with more by adding it in.

The second "players" are known as anaerobic because they do not require oxygen to survive.

The real "bad guys" are **E. coli** and **botulism** which are included in these families of bacteria.

While not all anaerobic bacteria are bad for your pond, however, these particular bacterium should be avoided because they are harmful to livestock, fish and birds.

Now, we have identified the "players" we can discuss what can be done to encourage the aerobic, beneficial bacteria and decrease the presence of the harmful ones.

Firstly, it is important to add beneficial bacteria to your pond. This can be done through adding active bacteria, bacterial spores and bacterial enzymes, for example.

These preparations come in dry and liquid form and can be added easily from the shoreline.

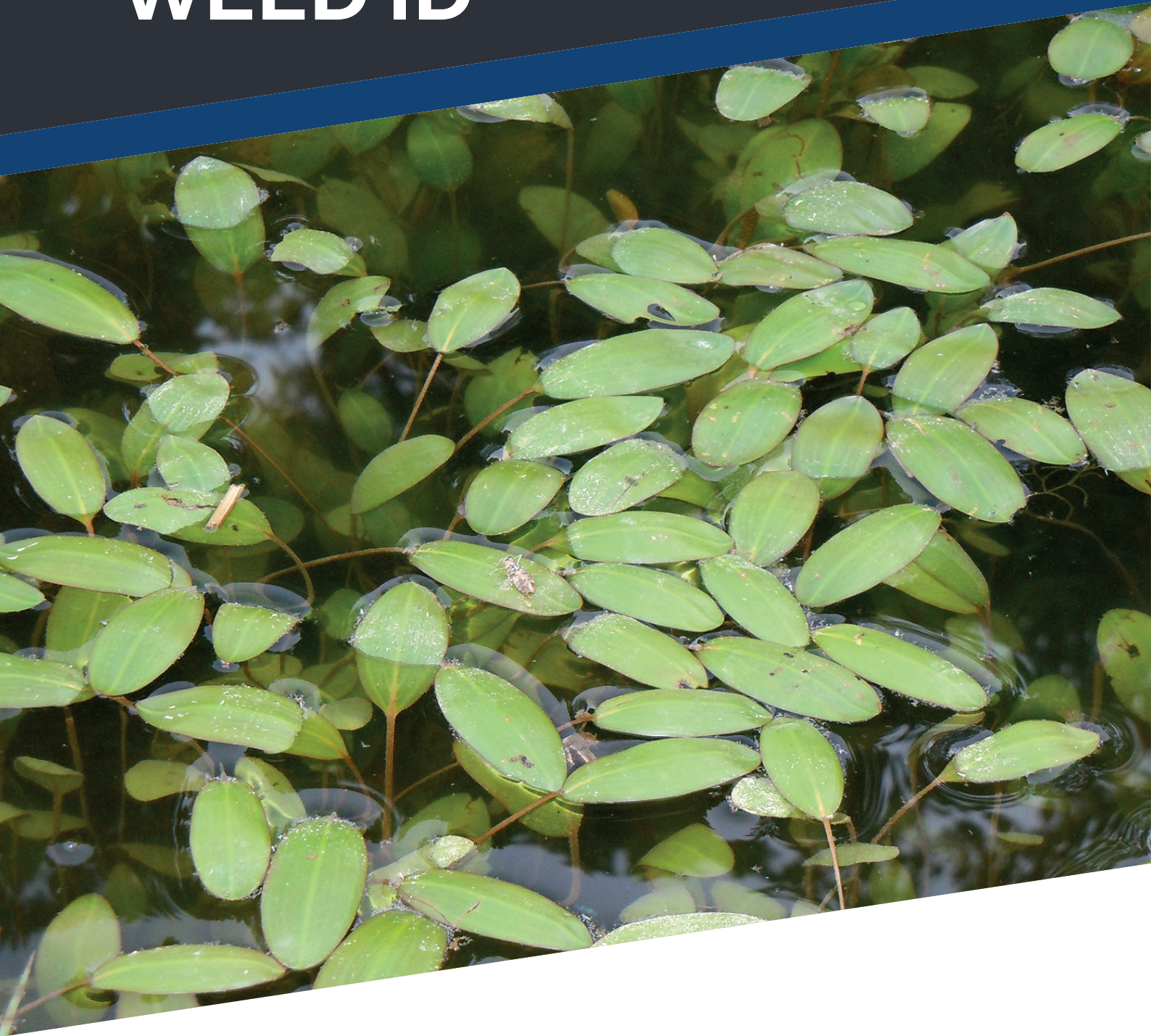
The second solution is to add aeration in the form of a bubbler unit that pumps oxygen into the pond via a pump and air diffuser. This assists the aerobic* bacteria to thrive.

To keep your pond healthy, it is important to increase oxygen volume and aerobic bacteria colonies all year round.

**Not all anaerobic bacteria are bad. It is necessary to have healthy amounts of the right type of anaerobic bacteria too, because that is what breaks down the material on the pond floor.*

Once the good anaerobic bacteria have broken the material down, the fast moving aerobic bacteria consumes the muck.

WEED ID



At Sanco, we have had 100's of customers asking for advice on how to control pond weed growth.

However, providing the right answers is difficult as many customers aren't prepared for the questions we have to ask.

One of the most important steps to controlling pond growth is to identify the growth. If you don't know what is growing, how can you control it?

Identifying pond weeds is an art! The more details you can provide us with the better we will be able to help you.

KEEP THESE QUESTIONS IN MIND WHEN TRYING TO IDENTIFY YOUR POND WEEDS:

1. Where is the weed growing? Is it on the surface, under the water, or around the shoreline?

We always gladly accept photos to help you identify pond weeds.

2. Is the plant rooted or does it float freely moving around on the surface? You may have to pull at it to find out.

Please note, send at least three photos: one of the entire pond; one that shows the growth in the water; and the last one of growth close-up in your hand.

3. What color is the plant? Light green, dark green, or yellowish?

4. What is the texture and the structure of the growth? Is it a granular substance or a small leaflet floating on the surface? Does it have thick hair, slime like film, a crunchy feeling or is it more grass like?

This way we can see the details exactly without any unnecessary plants in the background.

5. Does it have an odor that is musky or does it have no scent at all?

So we can serve your query best please be sure the photos are clear.

6. What is the condition of your pond water? Is it extremely clear, muddy, or really green?

Please see our website or contact us for more details:

www.sancoind.com



AERATION

All pond plants need water and aeration is very important for the beautification of all ponds. While some bodies of water are aerated naturally, most ponds would benefit from mechanical aeration. This will help prevent three factors that will cause an imbalance in your pond's status. These are stratification, pond turnover and the death of fish stock.

Stratification

is the process in which cooler pond water collects at the pond floor and warmer water rises to the surface. As the cooler water lacks sunlight it therefore lacks the ability to sustain any plant life. It is also the settling place for all the dead weeds and algae.

This lack of growth and decomposing material leaves the water low in dissolved oxygen. At the same time the warmer water at the surface has plenty of light, plant growth, and subsequently, oxygen.

POND TURNOVER

occurs when the cooler, oxygen-deficient water mixes with the warmer oxygenated water that is closer to the surface. This usually happens when there is a drastic change in weather conditions and the warmer surface water will cool causing the layers to mix.

The mixing of the layers will create oxygen deficiency and toxic gases. One such gas is hydrogen sulfide. When this occurs the water can appear dirty and will most likely have a noxious smell.

Shortly after or during your pond turnover you will likely experience fish kill; the death of your pond's livestock.

Before the fish die it is worth learning to identify the signs they are struggling due to the lack of oxygen.

You will see fish collect around any place water is coming into the pond. You will also see them gasping at the surface for oxygen. Generally, the larger fish will appear first because they require more oxygen to stay alive.

Oxygen depletion is the single most common reason for a fish kill and these conditions will last a few days.

Aerators usually consist of a pump, airline, and a disk diffuser. The disk diffuser will sit on the bottom of the pond, while the pump forces air through the airline.

The air creates thousands of small oxygenated bubbles that will push the cooler, oxygen deficient water up to mix with the warmer oxygenated surface water. This provides a stable, consistent environment in which the fish can flourish.

Simply put, an aerator prevents stratification that can lead to pond turnover and fish kill. Aerators come in many different designs and capacities. You may have seen them working in small fish tanks at your local aquarium or you may have one in your own fish tank. Having the correct one for your pond is a slightly more complicated matter.

Here at Sanco, we can provide you with the details of our aerators so you can make an informed decision about which one is best for your pond.

POND ALGAE CONTROL

*Let's look at the common algaecides used in to control week growth and how they are used effectively. One of the oldest and most effective algaecides available is **copper sulfate**.*

Copper Sulfate

comes in several forms ranging from a fine powder to sugar sized granules all the way up to marble sized granules. The size of the granules is important to consider when it comes to dosage and success of its use.

Smaller granules dissolve faster and broadcast over a larger area. While, larger granules dissolve slower and stay in a tighter area.

If the granules are produced as a fine dust they are too small and powdery. They may be blown by the wind and this will lead to irritation to the lungs and eyes.

For the best results use a sugar sized granule that is dissolved with warm water in a spray solution. It can be sprayed directly on algae or 2 pounds can be weighted in a burlap bag and towed behind a boat.

Be sure to follow all the instructions on the label when applying copper sulfate.

Sanco offers a sugar sized granular form called Crystal Blue Copper Sulfate available in 5 pound container.

Keep in mind that all copper products can be lethal to fish, especially trout and koi, if used at greater than 1 part per million.

Crystal Plex

is a liquid product available from Sanco. Alternatives to copper based algaecides include endothal salts and hydrogen peroxide.

Endothal salts are effective, but tend to have long water restriction times and need to be used by a skilled applicator to avoid problems.

Alternatively, hydrogen peroxide is quite expensive although it does work well and is fish friendly.

POND WEED CONTROL

Weeds come in two forms. Namely those which are submerged (or below water) and those which are emergent (above water).

Emergent weeds are predominantly controlled by either removing them yourself, one by one (ugh!), or by treating them with an environmentally friendly chemical.

Emergent weeds include cattails, reeds, sedges and grasses that extend above the water line.

Catt Plex,

an aquatic grade glyphosate, is very effective in containing emergent weeds. It will only kill the weeds you spray and takes about seven to ten days to work. You should have at least 8 hours with no rain in order to have the best results.



PLEX MATE

Catt Plex is even more effective if it is mixed with Plex Mate. Plex Mate is a non-ionic surfactant that helps other products stick to the plant's surface. This ensures only the weeds you want to be killed are killed and eliminated thoroughly.

Submerged weeds can also be removed manually, again lots of hard work, or treated chemically.



NATURAL POND CLEANER

Avoid backbreaking work!

It is worth noting that there are other preventative strategies that will help to reduce submerged weed growth.

The use of bacteria aids is an important key to reducing unwanted weed growth and nutrients.

Using bacteria like Natural Pond Cleaner will aid in reducing nutrients that are available to weeds which they use for growth.



TSUNAMI DQ

Chemically treating the remaining weeds with Tsunami DQ (diquat dibromide) will aid in effectively controlling submerged weed growth.

Keeping weed growth under control in and around a pond now is a little easier once you understand which products control which weeds.



Pond Dye... The Truth

Many people use pond dyes and colorants to suppress or inhibit weed and algae growth in ponds and lakes.

Whether the product is registered with the EPA or not, some companies are not clear about what their products actually do. They either deliberately or accidentally confuse their products capabilities of suppression with being able to kill the algae or aquatic weeds.

The vast majority of pond dyes and pond colorants are made from blue dyes. The primary ingredient is acid blue #9. Some companies blend yellow dye which results in the water having a greenish tint.

While these products are registered with the EPA, consumers should note that some states restrict the use of EPA registered products.

Crystal Blue colorant can be used in any state as it is NOT RESTRICTED. It is clearly labeled and doesn't make any claims stating or implying other than that which it was designed for.

Crystal Blue is 100% non-toxic and there are no swimming or irrigations restrictions associated with its use.

If you need to kill algae or aquatic weeds we suggest you combine **Crystal Blue** pond dyes and colorants with our EPA registered products.

If you need to control algae then combine **Crystal Blue Lake & Pond** with **Crystal Plex Algae Control**. **Crystal Plex Algae Control** is 100% non-toxic and is safe for swimming and irrigation.

Use **Tsunami DQ** to eliminate aquatic weeds, in particular floating weeds. Follow directions for proper use.

Catt Plex kills cattail and other weeds down to the root. Use as weeds are emerging and follow directions for proper use.

These products are registered and are safe to use as per the direction on the labels.



POND PRODUCTS & THE ENVIRONMENT

Do not throw debris into the pond

All excess debris floating in the pond will sink and become muck and organic material on the pond floor. This material will become a food source for algae and weeds.

Always mow grass away from the pond so the mower doesn't throw grass clippings on the pond's surface. As well, do not deposit lawn clippings, weeds or Christmas trees into your pond.

Take care fertilizing around your pond

Fertilizing your lawn ensures it will be lush and green. The same fertilizer that turns your lawn green will turn your pond green, too. This is because excessive amounts of fertilizer entering a pond will accelerate algae and weed growth and will be very difficult to manage and eliminate. When fertilizing your lawn, keep 5 to 10 feet away from your pond's shoreline. As well, try to use low phosphorous or no phosphorous fertilizer near or around your pond.

Proper shoreline maintenance

Maintaining the area 5 feet around the shoreline of your pond is crucial to keeping your pond healthy. Reduced mowing will keep the grass longer and this will help filter any run-off that may contain fertilizers or other harmful waste products. To be exact, shorelines should have grass at least 4 inches tall along with rocks and additional vegetation. This will filter any harmful products from the pond and will reduce erosion of its banks substantially.

Use the right product for the job

In today's world, responsible environmental care is much needed. Obviously, we all want to use products that are effective, but we also want to keep our environment clean and usable. Using some of our most effective products accomplishes both with ease.

The use of Sanco's preventative products is encouraged simply because they are effective, environmentally friendly, and inexpensive. Our preventative products include **Crystal Blue** and **Natural Pond Cleaner**.



CRYSTAL BLUE

A very effective food grade dye. This means that it is actually used in foods that people and animals consume.

This is one of the most environmentally neutral products that you can use.

NATURAL POND CLEANER

A mixture of naturally occurring pond bacteria that specifically targets muck and nutrients in the water column. This limits the availability of these nutrients to plants and algae, restricting any excessive growth.

The bonus is that these 'good' bacteria are targeted at the decomposition of dead organic matter, not living fish, snails or turtles! This is another product that works extremely well, and does not have an adverse effect on your pond.



CRYSTAL PLEX

An algaecide that targets all forms of algae and some forms of submerged weeds.

Due to its lower volume of copper and its chelated form, Crystal Plex is a much more effective and much more environmentally friendly form of copper used to control algae and weeds.

It is suspended in the water column and taken up by algae and plants rather than sinking into the clay at the bottom of the pond. It is yet another product that is engineered to be effective, and is much more environmentally sound than its predecessor, copper sulfate, which tends to build up in clay and silt on the bottom of the pond.



POND BOOSTER

Pond Booster super charges naturally occurring bacteria that consumes micro nutrients to ensure a healthy pond environment.

Natural Pond Cleaner and Muck Doctor safely break down muck and dead vegetation.



MOSQUITO DENIAL

Adjusting the surface tension of your pond will help reduce unwanted insect colonies. **Mosquito Denial** reduces the water tension making it more difficult for mosquitos to land and lay their eggs. It also makes it difficult for existing eggs to remain on the surface.

Pond Glass cleans the surface of the pond by reducing the water tension. As well, it will sink pollen, dust and other floating particles.



We at Sanco strive to formulate products that are effective at controlling weeds and algae, but do not endanger the natural environment. The right products and how to use them successfully can be found on our website. We look forward to helping you maintain a beautiful pond you will be proud of.

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