



Maintaining Water Quality

Water quality is the most important aspect of a healthy pond, especially when fish are involved. The best way to maintain your pond is to follow a regular regime of water changes, always looking for changes in your fish's behavior, and acting fast once you have established that a problem exists. The best and least expensive insurance policy you can buy for your pond is a water quality test kit such as the *Laborett Test Kit*. This kit includes all of the tests that you need to ensure good water quality, along with a comprehensive beginners guide to understanding the aspects of water quality, and how they affect your fish, as well as how they can be corrected.

Why treat your water?

If problems with water quality arise there are ways to deal with them. Understanding how and why problems exist is necessary in order to deal with them effectively.

Algae - can be a filamentous colony, or a single cell plant. It requires two factors to thrive:

- 1) Food
- 2) The ability to process the food (photosynthesis)

Decaying fish waste and rotting plant material provide the food in the form of nitrates. Sunlight provides the energy required for photosynthesis, the ability to process the food. If there is an abundance of decaying material or an influx of ammonia in runoff from surface water into the pond, coupled with ample sunlight on an exposed pond surface, then algae can be a problem.

In a situation where there is an abundance of single cell algae, the water will appear green, sometimes even "pea soup" –like. When the algae are alive, they are a source of danger to fish, irritating fish skin and delicate gills. If an algae 'bloom' is followed by a significant algae die-off, oxygen is stripped from the water and used in the decomposition process by detritus-eating bacteria. When the oxygen is depleted, the fish suffer, and in extreme cases, they can die.

Filamentous algae or blanket weed in a pond, shows as the green fuzz on the sides of the pond. In ponds where excess nutrients are a problem, this algae develops into long strands of “hair” and/or carpets of unsightly goo, wrapping itself around beautiful pond plants. This type of algae can prove harmful to fish if it gets caught in the gills of the fish causing irritation or blockages. As with large amounts of single cell algae, significant die-offs of filamentous algae can also cause oxygen depleted waters.

The best way to control algae problems is with preventative measures. The following measure should greatly reduce occurrences of algae problems:

- ✓ Adequate biological filtration for the volume of water of the pond and use *Sera nitrivec biostarter*.
- ✓ Provide 60-70% plant coverage on the surface of the pond to limit the amount of sunlight allowed into the water column.
- ✓ Use a *U.V. Clarifier*.
- ✓ To control blanket weed, use *Barley straw*, *interpet pond balance* or *sera pondclear* and *sera bio peat*.
- ✓ Perform regularly scheduled water changes.
- ✓ Monitor changes in ammonia levels.
- ✓ In early spring and in fall, tint your water to block sunlight when plants are not as abundant.

Ammonia Build-up – High ammonia is usually the result of too many fish in the pond, not enough filtration, improper water maintenance, runoff of ground surface water containing nitrates (perhaps from a fertilized garden), or any combination of the above. Increased nitrate levels can cause algae blooms. High ammonia levels are harmful and potentially lethal to fish. In the case of severe ammonia problems, a series of 4 water changes spaced 48 hours apart will usually fix things. Use *Tetra-Aquazyme* or *Microb-lift* to break down debris and *Tetra AquaSafe* or *sera aquapond* as an added aid in reducing these levels as quickly as possible. 25-30% water changes are recommended.

Silt Loads – Silt can muddy your pond after a heavy rain, churning the aquatic potting soil in potted marginal plants or from plants accidentally upset or overturned by animal pests or excited, happy pond fish. The suspended silt which is very lightweight, can hang in the water for several days and cause irritation to fish gills, exposing them to bacterial infection. As a remedy, water changes will help, and you can also use *Tetra AquaRem* or *Interpet clearpond* to coagulate the silt, making it heavy enough to fall out of suspension, then vacuum the silt off of the bottom.

Note*If you have a U.V. Clarifier, it must be turned OFF.