

GREENWATER.IPPCA.COM



So, you've got a case of **Green Water Syndrome**? Cheer up, it's not as bad as you think! With a little thought, education (which we're supplying here) and detective work, your obviously complete **ammonia-nitrate cycle** can be put to use to give you **clear water**.

Why is the **water green**? Whenever there is a surplus of available plant food (nitrate), Mother Nature steps in and supplies something to use it, in an attempt to achieve "Balance". Balance is the key to clean, **clear water**. With-in normal **pond water Ph** parameters (6.8 – 8.0), having enough "regular" plants to take up the excess nutrients is usually all that's required to achieve balance. Your **water is green** because of an explosive growth of small **algae** and **phyto-** and **zoo-planktons**. In a **balanced pond**, they are still there, just under control and not multiplying until the **water is "green"**. These small nutrient consumers can TRIPLE their numbers in one day during summer type conditions.

SOLUTION: There are several things to check, but it boils down to having something growing, ie "real plants" to consume this food (Lilys, marginals, floating plants) and starve the **green stuff** back to its balance point. **NO, CHEMICALS AREN'T THE SOLUTION!!!!!!**

THINGS TO CHECK:

- 1) **OVER FEEDING FISH:** How much are you feeding your fish? Think of each handful of food as being a handful of fertilizer thrown out on your lawn. The more fertilizer, the more lawn it needs to be spread over. Excessive fish food = excessive fertilizer = not enough plants to use it = **green water**. With a **green water problem**, the recommendation would be to stop or radically reduce the amount of food given to fish until you've reached balance. Once you've balanced, you can slowly increase your food amounts. Maybe not back to pre-balance levels if your water starts to green up again, but you'll find your balance point usually within 10-14 days after stopping the food to the fish AND adding sufficient plants to make up the difference. Your fish will not starve to death in this amount of time, and will benefit tremendously from the **clearer water** by having more oxygen available to consume. (See #5 also).
- 2) **TOO MANY FISH:** If you have **too many fish** in too small of an environment, you may have to **thin them out**, or enlarge their environment to handle all the fertilizer they produce. In nature, they are spread out over thousands of cubic feet of water per fish. With good circulation and filtration of a **pond**, we can get away with a denser population, within certain limits. The more fish, the more oxygen they require, thus more frequently circulated and oxygenated water. A waterfall or fountain nozzle radically increases the amount of available oxygen in water versus un-circulated, **stagnant water** that has a low level of oxygen. There is still a balance point involved (See #5). Once crossed, bad things start to happen, to your fish and to your **water quality** and clarity, not to mention your enjoyment of the **pond** and fish.
- 3) **NOT FEEDING FISH- WATER STILL GREEN:** If you're not feeding your fish, but your **water is green**, you either have **too many fish**, or not enough plants to achieve balance. Also think about the circulation rate of your pump compared to the volume of water your **pond** holds. On a **pond** under 5000 gallons of volume, your pump should be moving the total volume of water of the entire **pond** (called "turnover") through a filter and over a waterfall or through a fountain nozzle at least one or more times per hour. The smaller the **pond**, the more frequently you can economically "turnover" the water. This keeps your oxygen levels high, thus making it easier to achieve balance (see #5 also).

- 4) **NO FISH-GREEN WATER:** Having no fish in a pond doesn't mean the fertilizer isn't still going to happen. Any organics, like tree leaves, plant stems and dead flowers all start to break down the second they die. This is part of the circle of life. As they break down, they convert eventually into, you guessed it, plant food. See #5. Having good circulation and adding oxygen to the water will help the existing plants optimize their nutrient intake, as well as it possibly being necessary to add even more plants to achieve balance.
- 5) **BENEFICIAL BACTERIAS:** Adding a **bacteria** blended to eat and convert these organics can't hurt, and usually helps. A liquid blend, like **Aqua-one™** will get into action faster than a powdered form that is usually a freeze-dried blend. Liquid goes to work immediately, while powdered takes 3-5 days to get "resurrected". Powdered has a longer shelf life. Liquid should be used with-in a year of packaging, not purchase, (**Aqua-one™** date stamps their product to expire 9 months after packaging, so you know how fresh it is. I know of no one else who does this) while dry may last 2-3 years.
- 6) **UV CLARIFIERS:** Some people swear by **Ultra Violet clarifiers**. That you'll never have **clear water** without one. I disagree. With **BALANCE**, (plants-moving, oxygenated water- **beneficial bacterias** and **adequate filtration**) you'll have **clear water** every time. **GREEN WATER ONLY OCCURS IN AN UN-BALANCED POND!!!** A UV might help clean up a **green water problem** initially, but long term, with out balance, it's just a band-aid™ or crutch. Learn and establish **BALANCE**, and Mother Nature **GIVES** you that **clear water** for **FREE**. **UV clarifiers** (the term **sterilizer** is often incorrectly used) will damage the cell wall of the **green-water** causing organisms that pass through its exposure chamber. As long as you don't pump the water through too fast, and the bulb is new enough to maintain the proper spectrum of light necessary to do this. Even if still glowing, after 6-8 months, the bulb degrades, and is no longer giving off light in the proper spectrum to do its job. This necessitates a bulb change every year. When it does function properly, it damages the organisms passing through it enough to prohibit their ability to reproduce, causing them to eventually mature and die, without reproducing. The down side, if not trapped in a **proper filtration** system that is frequently cleaned, the dead **algae** lay there and rapidly decompose, releasing their nutrients into the water to feed more **algae**, or create a rapidly degrading **water quality**, that while possibly clear, may be sucking oxygen out of the water faster than you can replace it. I prefer **BALANCE** for a **pond**, feeling that **UVs** do have their place in specialized **Aquaculture**, not in a properly balanced and maintained **pond** or **watergarden**. A **UV clarifier** could be used to assist with balance, but should not take its place. Thus a **balanced pond** doesn't really need one.

CONCLUSION:

These are the primary clues and reasons of classic **green water syndrome**. I hope the information you found here helps you to resolve your problem, and as a result, increase your enjoyment of your **pond** or **watergarden**. **REMEMBER**, it takes time to achieve **balance**. Be patient, and let nature and knowledge take over.

Be sure to check out the rest of the "IN" websites (**IPPCA Internet Information Network**). With any specialized additional problems, call the **IPPCA Pond Hobbyists Hotline** at (770) 592-9790.) A **pond and watergarden specialist** will be able to help you.

Dave Jones, 2-26-06

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