Freshwater Aquarium Algae Control

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Actually, the title of this article is a bit misleading. We can never "control" algae; we can only try to keep it "under control." Algae tends to show up uninvited, settle in on glass, driftwood, and plants, stubbornly spreading despite our best efforts. The key to preventing algae from taking over is understanding what conditions invite algae in the first place - light and nutrients - and how to avoid making your aquarium a tempting home.

Light

Light is one of the more perplexing components to algae control, as algae will thrive under low OR high intensities. Without aquatic plants, low light conditions will favor the growth of algae, since there is no competition for the light or other nutrients.

In freshwater planted aquariums, the use of full spectrum lighting will promote the growth of plants, which will restrict the growth of algae. If these bulbs are over 1 year old, loss of intensity might promote algae. If you notice this, replace the bulbs.

- **Keep light under control.** Place your aquarium out of direct sun and only keep lights on 10-14 hours per day for planted aquariums, 6-10 for ornamental setups.
- **Only use aquarium lamps.** The limited spectrum of "office" fluorescents invites undesirable forms of algae. Use aquarium lamps designed specifically for plant growth.
- **Change bulbs frequently.** Even aquarium bulbs lose their spectrum and intensity as they age. As the spectrum changes, the light will likely encourage algae growth.

Nutrients

Almost all invasive algae growth is caused by excessive nutrients, and will be more difficult to restrict if nutrient levels are too high. The two principal nutrients we need to control are nitrate and phosphate. Both of these are end-products of the fish and bacterial digestion of foods. Obviously, the less food we feed, the fewer nitrates and phosphate will accumulate in the aquarium. Since fish do need to eat, we need to take other approaches of control.

In freshwater aquariums, the presence of true aquatic plants will make better use of the nutrients, "starving" the algae. This is particularly true when we can keep the pH level between 6.5 and 7.0, where the plants will utilize the ammonium as a nitrogen source, but the excess ammonium will NOT be toxic to the fish.

We can use phosphate removing pads or resins to help control the phosphate. The pads are used for a 72-hour period to reduce built-up levels, while the resins can be

placed in the filter system for long-term control. To control nitrate, we must control the digestion of extra proteins in the water. In saltwater aquariums, we can utilize a protein skimmer to remove the proteins BEFORE they are digested. For most freshwater applications, this is not a practical solution. Another option is the use of protein-adsorbing resins which effectively prevent digestion of the proteins. As the resins become saturated, they will need to be replaced or recharged. Specialized De-Nitrators can also be used to "eat" the nitrate.

- **Remove phosphate.** Keep algae's favorite nutrient out of your aquarium with phosphate controlling media and biological boosters for your filtration system.
- **Feed fish sparingly.** Overfeeding or overcrowding both lead to an abundance of nutrients on which algae thrive. Feeding once daily and avoiding overpopulating will help control algae growth.
- **Give algae some competition with plants.** The more plants in your aquarium, the less chance algae has of taking over. Plants compete directly with algae for light and nutrients, and most often win if given proper conditions.

Hair algae

Perhaps one of the greatest scourges is hair algae. Some success has been reported using Glass (Ghost) Shrimp to control hair algae. If you develop "brush" or "beard" algae on the leaves in your freshwater aquarium, the best method of control is to prune the affected leaves before it spreads. It has been reported that higher levels of CO2 will help control these algae, perhaps by making the true plants healthier and less likely to allow attachment of the algae to their leaves. When all is said and done, prevention is the best method of control.

By making your aquarium conditions unwelcome to unwanted green, you're helping prevent algae before it can get a foot in the door.