

PLANT FILTER

by Chase Klinesteker SWAM, Mar-April 2010



Growing Hornwort on the surface and Anubias on the bottom reduces pollution

REDUCING POLLUTION

One key ingredient to raising healthy fish is doing sufficient water changes regularly. That is not always possible, so it is helpful to have an aid for reducing water pollution buildup. Plant filters are excellent at doing just that, but mostly the reference is to a separate aquarium full of plants with intense lighting that aquarium water flows through to be purified. We all recognize that live growing plants keep fish healthier but sometimes struggle with maintaining the balance between not enough or too many plants, which can lead to plants dying. With high intensity lighting, it is even harder to keep a balance because of fast growth and depletion of needed nutrients.

LOW LIGHT SETUP

My tanks are set up with low intensity lighting. 4 20-gallon long tanks are supplied with only one 40 watt 4 foot long florescent tube across the top in the middle. A clear plastic shield from florescent ceiling fixtures is used over the tanks to keep down the splash, increase the temperature, and keep in the fish. The lighting strip is laid directly on that, and the tanks are kept full of water within an inch of the top so the light is close to the water surface. They are on about 18 hours every day. Each tank is getting only about 10 watts, which is definitely low intensity, but because these tanks are short and the light is so close to the water surface, plants grow quite well in them. Several varieties of plants can be used, but I prefer Large Duckweed, Hornwort, or Water Lettuce on the surface. These plants are fast growing and easy to remove

with a net when thinning. Regular fine Duckweed is not recommended because it is so messy and difficult to eliminate. Water Lettuce is noted for its' need of high intensity lighting. In this setting it grows well, but the plants are only about 1 to 1 ½ inches in diameter. Some tanks grow one species better than the other, so a mix is helpful. These plants, especially Water Lettuce, are not eaten readily by most fish. The key to pollution reduction is to remove 2/3 of these plants when the surface gets nearly covered, which usually takes 1-2 weeks. Excess plant removal will take away pollution nutrients used up in their growth. Floating plants need room to grow laterally so if the excess plants are not removed, growth and pollution absorbing slows considerably. If the growth of these surface plants slows or stops, look into the need to replace the florescent bulb, as they lose intensity over time.

LOWER LAYERS

Also helpful can be other plants beneath the surface layer such as Najas grass. They provide hiding places for smaller fish and should be thinned regularly. This middle layer is not necessary if the fish need swimming room or you need to catch fish out of them often. I have mostly bare bottomed tanks and like to use Anubias for the lower level plants. There is plenty of light for them and they provide good cover for fish without pots or gravel. I weigh them down with a small stone that has a stainless steel wire attached. When siphoning out for water changes, these plants can be easily moved around to pick up the collected detritus, and their slow steady growth requires little maintenance. Another option is to use a plastic pot to plant rooted plants such as cryptocoryene, although they need to be removed when netting fish.

TANK BY TANK

Plant filters can be done in many different ways on a tank by tank basis without elaborate circulation systems. There are many different plants and equipment combinations that could be used to get healthy, growing plants. Removing detritus and polluting nutrients from the water is the key to keeping healthier fish and plants. By selecting proper plants, controlling their growth, and thinning them regularly, we can have a “plant filter” in each and every aquarium we have.



Water Lettuce on aquarium surface