

## 10 Gallon Planted Tank Setup

### Is this a good 10 gallon planted tank setup?

By Karen Randall

Q. I recently converted my 10-gallon fish-only aquarium to a planted aquarium. The only fish in there are a 1-inch long *Otocinclus affinis*, a 2½-inch pleco of some species, a 5/8-inch *Chanda ranga* (glassfish) and a 2-inch *Trichogaster trichopterus*. My plants include Java ferns, *Bacopa*, water sprite, *Cryptocoryne*, a banana plant and a couple of bulbs listed as "apon" bulbs. They have long, thin, wiry stems with a jagged, heart-shaped leaf at the top. Could you tell me about this apon bulb plant and its name?

I also have the aquarium set up with a 50-watt compact heater, a mini power filter, and one full-spectrum, 5000 to 5500 K, 15-watt fluorescent lamp. (My crypt hasn't been as green since I switched to fluorescent light.) The substrate is a layer of 1½ inches of cleaned and boiled beach sand and a thin layer of gravel on top of that. I also have a pop bottle carbon dioxide reactor set up so that it is bubbled into the intake of the power filter. I used to do 30-percent water changes every other week, but am stepping it up to 25 percent weekly.

My water source is from the tap and runs through a basic carbon ice maker filter first. In my area the water is very hard, with a pH of about 8.0 to 8.2. Supplemental carbon dioxide brings the pH down to 7.0 to 6.8. I don't test for anything else.

First, is this a good setup? Also, are my light, nutrients and carbon dioxide in proper proportions? I also have algae problems with (I believe) black plaque algae. It grows on the edges of my aquatic plant leaves and rocks and is a thin blanket. I also have some green spot algae I got when I introduced the *Bacopa*, but it has now receded to about nothing. One other algae is green algae that is only on the gravel. I never really have a major algae problem, but I still dislike it. Could you tell me if this algae is a problem I should fix? Nothing I've tried has worked. I think there might be phosphate in the tap water, but I don't know how to fix it.

A. The aquatic plant you describe does not sound like an *Aponogeton*, which is the aquatic plant you would expect to find sold under the name of "apon bulb." Although quite variable, *Aponogeton* have long slender leaves with stems of varying lengths. Some have floating leaves, but these are not heart-shaped.

I suspect your aquatic plant is a *Nymphaea* of some sort — a plant in the water lily family. Some of these can be very decorative in the aquarium, but they are at their best when encouraged to produce submersed growth rather than floating leaves. This can be done by diligently removing all floaters before they break the water surface. If this is done consistently, the plant will begin to produce mostly foliage.

Your aquarium setup will support moderate growth of hardy aquatic plants. If you were setting the aquarium up from scratch, I would suggest you use laterite in the bottom half of the substrate. But, because your aquarium was running as a fish-only aquarium before you decided to switch to a planted aquarium, it is likely you have built up enough nutrients in the form of mulm in the substrate to support the growth of many types of plants. Your substrate is also a little shallow, even for a 10-gallon aquarium. You will find that your aquatic plants are better able to take root if the substrate is at least 2 inches deep. (A minimum of 3 inches is better in a larger aquarium.)

The problem with a nutrient buildup is that while some nutrients are necessary for proper plant growth, in a fish-only aquarium you can quickly build up too many. If you then improve your lighting for better aquatic plant growth, excess algae can be the result. You are on the right track by increasing the amount of water you are changing. You can easily increase your water changes to 50 percent twice a week until the algae problems abate. In a 10-gallon aquarium, such water changes are still not too onerous!

You can check with your water department to find out for sure whether you have phosphate in your tap water, but unless the level is quite high, I would still suspect nutrients generated within the system as the primary cause of your algae problems. If you test your aquarium water and find that the phosphate level is higher than that of the tap water, your best bet is still to do water changes until they are equal. Only if you still have phosphate problems at that point should you consider other methods to lower the phosphate level in the aquarium.

The light level in an aquarium this small is adequate for all but those species with intense light requirements. In any larger aquarium 1.5 watts per gallon would probably only support low light-tolerant species. Even with a 10-gallon

aquarium, you should plan on replacing the tube at least annually to maintain as high a lumen output as possible.

Whether your aquatic plants will need trace element supplementation or not is hard to say. If the leaves are becoming pale or small, it would probably be a good idea to add a balanced trace element supplement. It is entirely possible that the reason your crypts have become pale is that the faster growing species, like water sprite and Bacopa, are taking advantage of the increased lighting and are out-competing the slower growing crypts for nutrients.

Finally, I'd like to say a word about your fish population. Both blue gouramis (*Trichogaster trichopterus*) and most "pleco" species get too large and too boisterous for a 10-gallon aquarium. They will also do some damage to aquatic plants. The amount of damage probably would not be noticed in a larger aquarium with fast growth, but could be a problem in a smaller aquarium. I would consider trading both fish in for something more appropriate. A *Peckoltia* species would be a good replacement for your "pleco," while a pair of dwarf gouramis (*Colisa lalia*) would be a better choice than your blue gourami and might even spawn in your aquarium.

Glassfish are a schooling species and should never be kept as solitary specimens. They might survive under these conditions, but they will be under constant stress and live a very unhappy existence. Schooling fish should be kept in groups of no less than five or six, if at all possible. You will be amazed at how much more lively and beautiful they will be under these conditions.