

Different Plants

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By Scott Hieber

Q. I have a 90-gallon planted aquarium. After about a month, my aquatic plants seem to develop brown spots. My Anubias seems to be the healthiest. I have noticed the problem especially with Amazon and ocelot swords. Here are my conditions: 110-watt compact fluorescent half-blue actinic daylight, nitrates usually around 0-20 ppm, nitrites 0-5 ppm, pH 6.8-7.0, ammonia 0-.25 ppm, hardness 100 (KH). I also have a CO2 dispenser. My substrate is 50/50 Flourite/rocks, and I do a water change 25 percent every two weeks. Do I have enough light for plants? I am at a loss as to why my plants aren't doing well.

Scott Clifton

A. I think your swords are hungry for food and light. Aquatic plants from the fish store, especially when fresh from the aquatic nursery, are stocked with nutrients, and they can survive on these for several weeks before they use up these stores and become deficient in nutrients. Fast-growing plants like most commonly available swords, will use up their stores quickest, while ponderously slow-growing aquatic plants like Anubias will do so very quickly. In fact, because they grow so slowly, their nutritional needs are much lower than swords.

Rule-of-thumb targets (in parts per million) for potassium, nitrates, and phosphates are, respectively, 20, 10 and 1. In an aquatic garden with less than 2 watts per gallon of lighting and no added carbon dioxide, you could cut those levels in half, and most aquatic plants will do fine. If you do not want to test for nutrient levels, you can dose with commercially available products and do large weekly water changes to prevent accumulation of excess amounts.

About the Author

Scott Hieber has kept aquaria since he was 11 years old, "back in the metal frame days." He turned solely to planted aquariums about five years ago, maintaining about a dozen at his home and workplace. In his enjoyment of living aquaria, he balances his penchant for simple, easy-to-maintain setups with a lifelong interest in things electric and mechanical. He serves on the Board of the Aquatic Gardeners Association. He has traveled to the Amazon to see tropical fish and aquatic plants in their natural environs. Originally from southern California, Scott now resides near the New Jersey central coast. He says he went east "for the weather." If you have a lot of plants, not just a few aquatic plants here and there, then ammonia and nitrites should be virtually unreadable with most high-quality test kits. With low-quality test kits, the readings are not accurate enough to be useful in these ranges. But if your aquatic plants are hungry and their growth is stalled, these chemicals can reach higher levels.

I would prefer about twice the amount of light that you have and to run those for about 10 hours per day. Since you are adding carbon dioxide, you should have no problems going a little bit higher than 2 watts per gallon, but try for something at least close to 2. The Anubias plants, as you have found, are quite content at low light levels; they grow very slowly and don't have much use for high levels of light. But swords are naturally fast-growing aquatic plants that need more light to flourish than Anubias.

Also, unless you are fond of the coloring the actinic gives your garden, replace it with a broad-spectrum bulb intended for planted aquariums. Although aquatic plants can use a wide range of wavelengths, including much of what is emitted from actinic bulbs, these bulbs tend to put out less useful light for aquatic plants. They are designed to put out a relatively high amount of the very high energy wavelengths that reach down through several feet of ocean water to coral reefs. However, making a bulb that emits a relatively high amount of the far blue end of the spectrum usually means the bulb produces relatively less light overall that the aquatic plants can use.