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FIGHTING ALGAE IN AQUARIUMS

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Introduction

Believe it or not, algae is **not** easy to grow. There are literally thousands of scientists right now studying the best, most efficient ways to grow algae.

Algae is used as a Bio-diesel as an alternative fuel source, and these scientists work tirelessly trying to perfect their methods.

Algae is also essential to raising clams, oysters, and every other shellfish you can think of. To these shellfish culturists, trying to kill algae is blasphemy!



Fortunately for those of trying to merely provide a good home for our beloved reptiles, algae culture is not only unnecessary, it's downright unwanted. Before we learn how not to grow algae, it is very important to learn how **to** grow algae. There are basically two types of algae, green algae and brown algae.

There are many species of green algae, but they all have two things in common. – Light and Nutrients. Algae culturists will strive to maintain a sterile environment, so no unwanted organisms hinder the growth of their precious algae.

The only additive to these culture vessels will be a very carefully controlled nutrient as a food source. The vessels are then placed in front of a specific light source on a controlled 12 or 24-hour light cycle, depending on species.

The vessels are properly aerated with a mixture of oxygen and carbon dioxide to produce the perfect pH for that particular species. If any of these steps are not followed explicitly, the algae culture will stop growing, or worse, completely die off. So you see, if you don't give your precious algae culture exactly the right combination of water quality, nutrients, and light, it cannot thrive!

Common Types of Algae

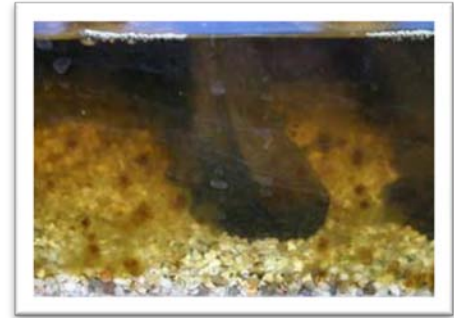
Brown Algae

Brown algae is generally found in newly setup aquariums. It can handle lower light levels than most, and is a diatom. A diatom is basically an algae with a shell, making it stronger, but also reliant on silica to maintain its shell.

Newly established aquariums and water supplies high in silica content tend to grow more brown algae the most. There are some types of glass that can actually leach silica into the water! Adding a phosphate sponge to the filtration compartment can control brown algae.

Most phosphate sponges also adsorb silicates. The nice thing about brown algae is that it is easy to remove.

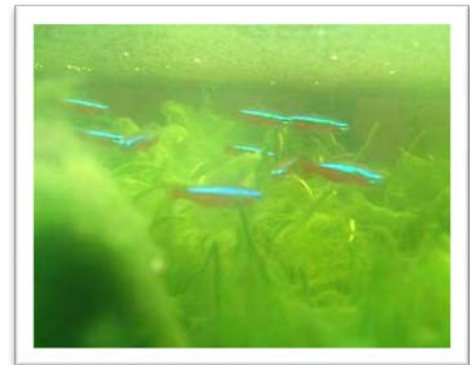
It will generally wipe away with a regular aquarium sponge, a toothbrush, or even your hand. Be sure to perform a water change soon after doing this, because the recently “removed” algae will just find a new place to grow if allowed to settle.



Green Algae

Green algae is generally the most common algae in the turtle aquarium. It is generally very easy to deal with and usually only grows in fairly good water conditions.

This is a very photosynthetic algae, meaning the more light you have, the more algae you’ll grow. Green algae is also an indicator of excess nutrient levels. It is easy to remove using an ordinary algae sponge, a toothbrush, or a razor blade.

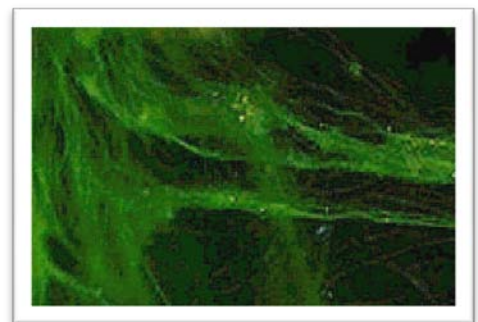


Hair Algae

Hair algae is identified by long filamentous strands growing on the rockwork, gravel, and to a lesser degree, on the glass. Algae destroyers targeting nutrient removal will do a very good job on this form of algae.

Hair Algae can be the toughest algae to remove, especially from the gravel bed. Infected gravel can be removed from the aquarium and placed in a bleach solution of 1 part bleach to 4 parts water overnight for easier removal.

Do not make this a regular habit, as this will also kill the good bacteria that live in the gravel.

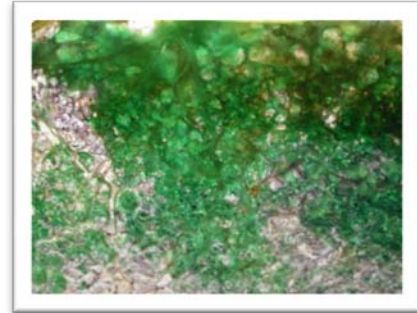




Be sure to use a dechlorinator before adding back to the aquarium as chlorine can cause several health problems. Hair algae is usually brought on by excessive feeding and infrequent water changes.

Blue-green or Red Algae

This type of algae is actually not an algae at all. It is a photosynthetic cyanobacteria. This is perhaps the worst of all algae, simply because it indicates poor water quality. Cyanobacteria will only grow in nutrient rich, oxygen poor conditions.



This is usually indicated by reddish brown or bluish green sheets that encompass the rockwork, glass or gravelbed. To compound the oxygen-poor conditions, cyano will suffocate any good bacteria that it grows over, causing a lingering negative effect.

For this reason, it should be promptly removed. Cyano can generally be siphoned out of the aquarium in sheets. Be sure to get as much out as possible as it will grow back quickly. The fact that it grew in the first place indicates you were lacking good waterflow, and that also needs to be corrected promptly.

Algae Destroyers - Good or Bad?

There are two common types of algae destroyers, one that aims at killing the algae, and one that tries to kill its food source. Algae killers are usually harsh chemicals that will actually kill the algae cell. At first glance, this would seem like a good bet to help with your algae problem; however, they are generally harsh chemicals that may kill more than your algae!

Copper is a very common ingredient in liquid algae destroyers, and it will kill not only algae cells, but also live plants, invertebrates, and most of your good bacteria population. This in turn will lead to poor water quality with more accumulated waste, which will end up growing even more algae!



What's even worse is that copper will never fully leave your system. It will cling to your gravel, rocks, and even the silicone in your tank. This means that you will NEVER be able to keep plants, snails, or any other invertebrate in your aquarium.



The other type of algae destroyer is actually quite safe to use. They are most often marketed for hair algae, but can also be successfully used for other types as well. They are specially formulated bacteria and enzymes designed specifically to break down food and waste before it becomes algae fertilizer.

They are usually quite effective and can be very helpful. The only downside to these is price. The good ones are quite pricey, and can quickly become cost prohibitive. To be effective, they need to be properly and regularly dosed in the aquarium to keep algae at bay.

To sum up, commercial algae destroyers can be an effective way to control algae, but you need to be very cautious in their use. Some of them contain harsh chemicals that can damage your biological system, or even harm or kill your turtle!

Before using any product, make sure it says specifically that it is "Turtle Safe." If necessary, check with your local veterinarian prior to use of any algae destroyer.

Biological Algae Control

There are also a number of biological controls that will help keep your tank algae-free. Each has its advantages and disadvantages, but when properly coordinated, each can help you control your algae.

Snails

Snails eat algae, leftover food, and pretty much anything else they can find. Depending on their size, they can get into tight areas, under rocks, and especially on your glass.

Snails create the famous "Snail Trails" that you'll recognize through algae covered areas on glass and rocks, and if populated properly, can make a big dent in your algae problem.



Snails do have some disadvantages. The biggest disadvantage is that they may become food for your turtles! Depending on their size, they do tend to make very good turtle food, so keep that in mind when purchasing. They are also invertebrates, making them susceptible to any copper based medication or algae destroyer.

Snails also require a fair amount of tank husbandry. They do not thrive in oxygen poor water. In fact, poor water conditions will often lead to the snails simply exiting the aquarium.



The last disadvantage is the aforementioned snail trails. Though they may be endearing to some, they arguably make the algae more conspicuous. In my opinion, snails can be a great addition to the turtle aquarium, but they cannot be counted on as a sole source of algae control.

Algae Eaters

Algae eaters are fish such as plecos, Chinese algae eaters, Siamese algae eaters, and Otto cats, just to name a few. They are extremely popular in freshwater fish aquariums due to their tendency to constantly forage for algae on plants, tank walls, gravel, and decorations.



Their biggest drawback in a turtle aquarium is that they resemble feeder fish to your turtle. In fact, they are much more of a challenge to catch for your turtle, resulting in quite the fun game for him.

Aside from being turtle food, algae eaters also have other disadvantages. The biggest mistake people make when purchasing algae eaters is expecting them to live off of algae! The algae in our aquariums is hardly nutritious enough to maintain these fish.

This means you'll have to provide specially formulated algae eater food. Algae is like junk food to them, they'll eat it if it's there, but they can hardly survive that way forever!

Plants

Plants are the ultimate algae destroyer. The biggest reason algae grows is because there is nothing else to use the nutrients naturally found in your aquarium.



Growing live plants will easily take care of this. Plants are higher up on the food chain, and, as such, will out compete the algae for the available food.

Plants will also improve water quality, oxygenating it, and filtering your turtle's tank naturally. The only downside to live plants is that turtles eat them! They seemingly enjoy uprooting and ripping apart your carefully planned, meticulously planted aquatic garden!

Aquatic and semi-aquatic turtles are generally omnivores, and actually benefit nutritionally from eating the plants. It's actually a good idea to feed the plants to your turtles, but you must be sure to clean up after him. Any decaying plant matter left over will decompose into algae fertilizer.



This is why aquarium plants have the negative stigma of creating algae. Just remember, live plants don't cause algae, dead plants do!

Recommended Algae Cleaners

Pro Scraper Aquarium Tool (24 inch) - \$17.89

Clean that tough algae off your glass or acrylic aquarium with the Kent Pro Scraper.

This well-made, durable scraper will even remove the algae from old scratches. The 23 in. long handle has a super-long reach - great for deep tanks.



Replaceable blade. Plastic for glass or acrylic aquariums. Steel for glass only.

[Click here to buy from 'That Fish Place'](#)

Algae Magnet Cleaner (Extra Large) - \$17.59

The Algae Magnet Cleaner from Hagen quickly and easily removes pesky algae from the walls of your aquarium, without getting your arms wet. Strong magnet will not scratch aquarium glass.



Simply place one part of the magnet inside the aquarium and the other half on the outside.

The magnetic power will work through the aquarium glass leaving you move the cleaner around the glass without getting your fingers wet – removing all traces of algae in the process!

[Click here to buy from 'That Fish Place'](#)



How to keep an Algae-Free Turtle Tank

Now that we've learned how to grow algae and how to kill algae, let's go over how **not** to grow algae. As we've learned so far, algae needs light and nutrients to grow.

To keep the light in check, be sure to keep the aquarium away from any windows. Direct sunlight is the best way to grow algae, so keeping this away is a good start. You should also be aware of your turtles' lighting requirements.



Depending on the species, your turtle will need full spectrum and UVB light. Be sure to know the light specifications, because you do not want to give your turtle too little light, and you don't want to give your algae too much light!

The most overlooked piece of equipment for turtle care is the ordinary light timer. It doesn't have to be anything fancy, merely capable of turning the lights on and off. Not only will keeping the lights on a strict schedule keep your algae in check, but think of all the money you'll save on your electric bill!

The other major growth factor is nutrients. It is impossible to run a completely nutrient-free turtle aquarium. To do so would not only be cost-prohibitive, but also very time consuming. The object is to keep the nutrient level from becoming excessive. Excessive nutrient levels will grow excessive, unsightly algae.

Nutrients come from your water source and the food you feed your turtles. It can even come from your rocks, gravel, decorations, or even the very glass of your aquarium!

Do Not Overfeed Your Turtle

The most controllable nutrient source is the food. Turtles can only digest so much food. Everything else they consume will simply pass through their system and be expelled as turtle waste. Turtle waste is just a fancy way of saying algae fertilizer!

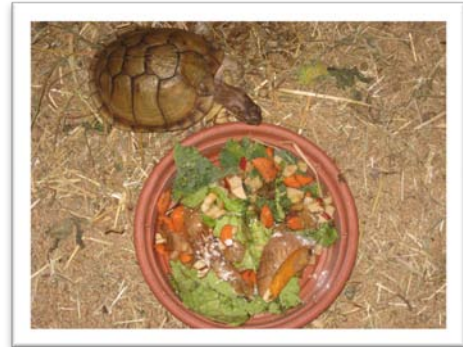
You also have control over the water source. Tap water is loaded with nutrients, from silica to phosphorous, iron, and even nitrogen. All of these will happily be used as a food source by nuisance algae.



To cut down on the amount of nutrient you add to the aquarium voluntarily, you can pre-filter your water. You can filter your water before adding it to the aquarium in a number of ways.

The most popular and effective combine some form of RO, or reverse osmosis, and DI, or deionization. RO filters your water by passing the water through a very fine membrane.

The membrane is so fine, that only the water molecule can pass through it, sending the pure water through as usable, and rejecting the impurity-laden wastewater down the drain.



DI involves passing the water through a chamber containing media that adsorbs impurities while passing by it. This also results in pure, usable water, with the added bonus of no wastewater creation.

The cost of filtering with RO/DI can be great. Although very necessary for keeping very delicate, very expensive corals in a reef aquarium, RO/DI is not cost effective for turtles. There are certainly other, more affordable methods of purifying your turtle water.

The most popular method of replacement water filtration is the trash can design. An ordinary trashcan (be sure no chemicals or algacides are used), a small pump, and a small filter are all that are necessary. Add carbon to remove the chlorine and other impurities, and a phosphate sponge to remove phosphorous and silicates to the filtration chamber.

Just fill the trashcan with regular tap water, and you will have ready-made, purified replacement water whenever you need it. Some people even automate the process with a float valve, ensuring that there will be a perpetual supply of make-up water.

The Freshwater Refugium – Algae’s Arch Nemesis

Perhaps the most effective and interesting way of keeping algae in check is the freshwater refugium. Just now becoming popular in freshwater and turtle care, the refugium has long been a staple of the marine fish hobby.



A refugium is simply an aquarium or container located remotely from the main display. It can hang on the back, sit underneath, and be pretty much anything that holds water.

The idea behind it is simple; create a safe, controlled environment to grow things not possible in the main display. This is an invaluable place to grow plants or keep injured or baby turtles.

A refugium can be as basic or elaborate as you'd like. In fact, some people have even created separate display aquariums, fully stocked with tropical fish and plants right next to the turtle tank. This aquarium can be as beautiful as it functional.

Hang on the back refugiums are generally available at your local pet shop. They are very easy to setup and install. Building your own can be challenging, but very rewarding.



To do so, you need a drilled main display aquarium. This can be purchased, or done at home. Most glass shops will also drill aquariums for a very reasonable fee.

You'll need a bulkhead fitting to act as your drain. This is installed in the pre-drilled hole, and can be attached to PVC pipe, or flexible hosing to flow into your refugium. Water is returned from the refugium to the main display by a pump.

The pump will sit in the refugium and send water back into the display through PVC or Flexible hose. The outlet can even be made into a waterfall! You don't need to be a plumber to do this, and your local pet shop should be able to guide you if you run into any trouble.

Once the refugium is setup, you need to add some gravel or sand and a light. It's now ready to add plants! Check with your local legislation first, due to its recent regulations, but Anacharis makes a wonderful refugium plant.

It grows quickly, utilizes a lot of nutrients, and makes a wonderful turtle food for your pet. Most bunch plants, such as Cabomba, hornwort, and parrot's feather also make wonderful refugium additions.

In the end, it's up to you to decide how much or how little you'd like to do to care for your algae problem. With good filtration, proper lighting, and the right amount of turtle food, you should be well on your way to a healthy, algae free aquarium. If you do run into some algae problems, there are plenty of ways to attack it. Just remember, if you have success growing algae, there will be a lot of jealous shellfish culturists out there!



F.A.Q.

Q - My tank has a lot of algae, will that kill my turtle?

A – Probably not. Some Algae is a perfectly normal occurrence in turtle aquariums. It can, however, signify the start of some trouble. Be sure to carefully monitor your water conditions, and keep up with your aquarium husbandry, and you shouldn't have any trouble.

Q - Why is algae growing? I keep my tank clean...

A – 2 reasons. Light and nutrients. You might keep your tank clean, but overfeeding is the most common cause of algae. Be aware of how much light the tank is getting, and remember that just because a turtle eats all the food, doesn't mean he is digesting it. Also, keep in mind that algae will hold usable nutrients from the tank water. Just because they don't show up on a test kit doesn't mean they're not there!

Q - I bought an algae eater, but he disappeared. Where'd he go?

A – Either he jumped out, or your turtle ate him. Turtles enjoy eating algae eaters almost as much as algae eaters love jumping out of aquariums, even tightly covered ones!

Q - How do I get rid of my algae problem?

A – Good aquatic husbandry. Keeping the water clean will be your first step. There are a few supplements out there that will help, but these are usually more of a band-aid than a true fix.

Q - Turtles like sun right? Should I put his tank next to the window?

A – No! Not only can windows be drafty and affect your turtle's health, but sunlight is the best way to grow algae!



Algae Quiz

Questions

1. What two things do algae need to grow?
2. What is a refugium?
3. True or False. Live plants cause algae growth.
4. What type of algae is worse – Brown, Green, Hair, or Red?
5. What is the best way to grown live plants in a turtle aquarium?

Answers

1. Light and Nutrients
2. A safe place outside of the main display to grow plants and other animals
3. False – Dead plants cause algae to grow. Live Plants keep algae from growing
4. Red. Cyanobacteria signify poorly oxygenated, dirty water. Filthy water leads to turtle disease. Most other species of algae will grow in otherwise healthy water conditions.
5. In a refugium. This will allow the plants to grow without the constant harassment of your turtles.



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