ALGAE
QUICK GUIDE

Four main factors determine the level of algae in a tank: light, healthy plant mass, maintenance routines, and biological maturity. Let's look at these in more detail.

Plant Health
To avoid algae in your tank, it's recommended to plant at least 70% of the available substrate with plants, preferably stems or fast growers. Tanks with less planted surface area are at a higher risk of developing algae, especially if they are running in a high-tech scenario.

Make sure your plants are healthy by ensuring their needs are met for light, nutrients, and CO2. Since plants have different needs, it's best to choose plants that are suitable for your specific tank. For instance, avoid using demanding plants in low-tech set-ups and expecting success.

Trimming old and overcrowded plants encourages new and healthy growth. Remove problematic plants and try another species. The goal is to have a strong army of plants that can out-compete algae.

Maturity
Organic waste is one of the key triggers for algae and therefore a strict maintenance routine is key.

In the early days of setting up an aquarium, plants may experience stress, while soil could be releasing excess nutrients. You may also be in the process of adjusting the lighting, all while diatoms are on the way! It can be a tricky balancing act but performing regular water changes is key to maintaining a healthy environment. Having a variety of healthy plants, and using floating plants as a short-term solution, can also be helpful. The ultimate goal is to achieve a biologically mature tank that is a well-balanced and stable environment.

Maintenance
It is important to perform weekly water changes in your aquarium. This helps to remove any excess waste and accumulated detritus, while also resetting the nutrient levels. If you are over-dosing the aquarium with fertilisers, this can be a good (but expensive) way to ensure your plants receive enough nutrients.
While filters are not always necessary, they can help remove waste from the tank and prevent build-up in certain dead zones. It is also crucial to maintain your filters every few months to ensure their proper functioning.

Avoid parameter swings to keep a stable environment so plants aren't constantly under stress trying to adapt to new conditions.

Another thing to consider is the impact of using certain chemicals, such as medication or algaecides, on the beneficial bacteria (or the microbiome) of the tank.
These chemicals can have adverse effects on the tank's ecosystem, and it is, therefore, recommended to reintroduce some good bacteria into the tank. This is similar to when you take antibiotics that harm the bacteria in your gut, and it is advised to take probiotics to restore the balance.

Lighting
Algae are photosynthetic organisms that require light for their growth and reproduction. When aquariums receive too much light or the light exposure is too long, it can create an ideal environment for algae to thrive.

The intensity, duration, and spectrum of light are significant factors that affect the growth of algae in an aquarium. Properly managing and controlling the lighting conditions in an aquarium is essential to prevent excessive algae growth and maintain a healthy aquatic environment. It's important to consider the needs of your aquatic plants, such as their requirements for high or low lighting, the stability of your tank, and whether they're receiving the necessary nutrients and CO2 to utilize the amount of light energy they're receiving.

RE scapes

Youtube: rescapes
Instagram: @re_scapes
rescapes.teemill.co.uk

Diatoms
Causes: Biologically immature tanks, in some cases, can be worsened by silicates and phosphates found in tap water and substrates.
Solution: Patience, water changes, Seachem Phosguard or charcoal.

Green Dust
Causes: High light and excess nutrient levels.
Solution: Adjust lighting, this algae is easily removed with a razor scraper.

String/Thread /Hair
Causes: Spikes in Ammonia, especially in new tanks, accelerated by high light and unhealthy plants due to nutrient deficiencies.
Solutions: Replant healthy tops and discard old bottoms.
Address nutrient deficiencies by fertilising or adding root tabs (properly buried in the substrate) check nitrates and phosphates

Staghorn
Causes: Spikes in ammonia and organic waste levels can cause stress in plants due to changes in tank conditions.
Solution. It's important to have a regular maintenance and water change schedule, fertilize regularly, maintain stable CO2 levels, and prune and replant healthy tops while discarding old growth.

BBA
Causes: Excessive flow with heavy CO2 misting, especially on slow-growing plants or hardscapes, potentially worsened by poor maintenance
Solution: Balancing the flow rate and evenly dispersing CO2 mist can be effective.
In addition, stabilising CO2 levels is also crucial. Generally, increasing CO2 injection rates creates more stable CO2 levels and is therefore recommended.

Chemicals are more often than not needed in extreme cases.

Personally, my go-to check when algae arises is the nutrients, followed by lighting. I check nitrates for deficiencies and phosphates for build-ups, remove poor plant growth, and adjust lighting. You will begin to know your tank and its issues and will be able to diagnose easier over time.

Tip: Invest in a complete water testing kit. Knowing your parameters is half the battle, it saves time on guess work!