

Phuket Pool Laboratory

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ALGAE

What causes Algae problems?

Algae spores constantly enter the pool, brought in by wind, rain or even contaminated swimsuits or pool cleaning tools. When conditions are right, an algae bloom can occur in a matter of hours. These conditions include out of balance water, warm temperatures, sunlight and presence of nitrates, phosphates and/or carbon dioxide. A lack of good circulation, filtration and sanitation is usually a contributing or the primary cause of pool algae.

Algae are a living aquatic creature that multiplies rapidly on warm, sunny days. Containing chlorophyll, algae utilizes photosynthesis to grow. That is, they take in carbon dioxide and expend oxygen as a byproduct. Algae can grow in the shade or sun, but most pool algae strains need some light to grow.

Algae need food to survive, and in a swimming pool, there is no shortage of tasty food for algae. Nearly every contaminant or windblown speck of dust can feed pool algae. In pools with high bather count, or pools with high levels of debris or dissolved solids, algae has a smorgasbord of nutritious food. Even the dead cellular remains of previous algae blooms provide sustenance to future generations of pool algae.

Algae are always present in swimming pools, even clean and blue pools, at a microscopic size. It waits patiently for the opportunity to bloom – when the chlorine level dips and the pH rises or the pump or filter is not operating effectively.

What problems can Algae cause?

The first noticeable problem is that no one seems to want to go swimming. The second problem is that it requires effort and money to rid the water completely of algae. Third, once you experience a large algae bloom, it becomes easier for future algae blooms to occur. It is therefore best to use preventative pool algae chemicals and techniques to constantly control algae and prevent a bloom from occurring.

Algae can cloud and color the water, making rescue attempts difficult and reducing depth perception of a diver. Algae is not harmful to swimmers per se, but pools with algae may also be a safe harbor for pathogens like E-coli bacteria.

In addition to clogging up sanitation pathways in the water, algae also clogs up the pores in a pool filter, decreasing filter effectiveness and requiring more backwashing or filter media replacement. It can hide deep in the crevices of a filter or in rough spots on pool plaster and tile, or behind the pool light and under the ladder treads. Some strains of pool algae will send roots into the plaster, and slowly degrade and stain pool surfaces. Algae can even grow under vinyl pool liners, on the walls or floor beneath the liner. Algae create a chlorine demand in the water for itself, consuming chlorine that should be working on other contaminants. As it expels carbon dioxide, the pH level of pool water can rise.

Algae are kind of like weeds in your garden. Unsightly, unwanted space takers that create more work for the gardener, and sap up nutrients and resources from the flora we wish to grow.

What types of Algae are there?

There are over 21,000 known varieties of algae! In the pool business we avoid all of the complication by classifying algae by the color they exhibit.

• Green Algae:

• The most common variety, green algae will usually rear its ugly head immediately following a hazy condition in the water from insufficient filtration and/or sanitation. It is frequently found free floating in the water, although it also will cling to the walls. It reduces water clarity and is thereby distinguished from severe copper precipitation, which will impart a clear, green color to the water. Varieties of green algae also appear as "spots" on surfaces, particularly rough areas, or places where circulation is low. They also show up as "sheets", where large wall sections or even the entire pool is coated in green slime...UGH!

• Yellow Algae:

• A wall clinging variety, also called mustard algae, is usually found on the shady side of the pool. It is sheet forming, and can be difficult to eradicate completely. Once begun, a pool owner could spend the entire season fighting yellow algae.

Reinfection is common, as small pockets of yellow algae may survive treatment on pool toys, floats, cleaning equipment, swimsuits or within the pool filter. This variety is resistant to normal chlorine levels and must be dealt with firmly. Hit it hard!

• Black Algae:

• Perhaps the most aggravating strain of algae, it can be extremely difficult to eradicate completely. This is not entirely accurate, but the difficulty in removing it fully is due to the strong roots and protective layers over top of the black algae plant. Black algae will appear as dark black or blue/green spots, usually the size of a pencil eraser tip, up to the size of a quarter. Their roots extend into the pool plaster or tile grout, and unless the roots are destroyed, a new head will grow back in the same place.

The heads also contain protective layers to keep cell destroying algae treatment chemicals from entering the organism. Like yellow algae, black algae can bloom even in the presence of normal sanitizing levels and proper filtration. This form of algae commonly enters a pool inside the swimsuit of a person who's recently been to the ocean, or from contaminated pool cleaning equipment, introduced by a traveling pool guy.

How is Algae prevented?

Proper chemical balance and sanitizer levels will prevent many opportunities for algae to bloom. High pH and low chlorine (or other sanitizer) can give algae a great start.

Using cyanuric acid (stabilizer or conditioner) to protect your chlorine from the sun has the added effect of suppressing chlorine activity, giving algae opportunity to bloom, unless chlorine levels are increased.

General cleanliness of the pool is also important. Organic material and bacteria contribute to algae growth. Regular brushing of seemingly clean pools is not only good exercise for you, but prevents dirt from harboring in the pores of the plaster, which is a good start for an algae colony. "Proper Filtration" is a term we throw around a lot, and it refers to the quantity and quality of filtration.

Most pool filters should run for a minimum of 12 hours per day, or longer if the pool filter is undersized or the filter media (sand or cartridge) is old and not as effective as it once was. Poor circulation can also play a role, especially for larger pools with inadequate plumbing or pump size. Using an automatic pool cleaner can help circulation immensely. Using specialty chemicals or algaecides is recommended to provide a back up to normal sanitation and filtration processes and is necessary for many pools.