

## Fish Pond: Green Water

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*By Stephen M. Meyer*

Q. During the winter months, the water in my pond turns "pea-soup" green. Is there a way to prevent this from happening?

A. This problem is one of the chronic plagues of pondkeepers. The pea-soup water color is the result of planktonic algae blooming in the water. Algae spores can be found in all water sources, and they also float in the air, so there is no way to keep algae out of your pond. When conditions are right, algae will suddenly bloom, turning the water deep green and making everything an inch below the surface of the water invisible.

If your pond has a good aeration system, such as a cascading waterfall or spa jets, then the algae is just an aesthetic nuisance. If the pond is poorly aerated, however, then the green water can pose a serious problem to your fish. Algae, like all common plants, gives off oxygen during the day as part of the process of photosynthesis. After the sun goes down, however, the algae reverses respiration, taking in oxygen and giving off carbon dioxide. In waters with rich planktonic algae growth, the algae can consume so much oxygen that by early morning the amount of dissolved oxygen in the water can drop below critical levels for the fish.

Two things are important in controlling algae: nutrients in the water and sunlight. Planktonic algae uses ammonia (not nitrates) in the water as a nutrient. Installing a biological filter and a pump that turns the pond water over about 18 times per day should eliminate the ammonia and cause the algae to die off. If the pond holds less than 1000 gallons of water, you can make a simple biological filter by putting gravel in a 30-gallon garbage pail and pumping pond water through it at a rate of 800 gallons per hour.

Of course, you may already have a biological filter operating in the pond and still have algae in the winter. This is because the filter is less efficient at colder temperatures. Try raising the flow rate through the filter, and consider adding a liquid bacterial product, such as Clearpond, to your filter bed. Once the water temperature begins to rise in the spring, the filter will regain its capacity to remove ammonia.

Algae blooms are also aided by phosphates in the water. There is little you can do about this other than waiting for the algae to consume the available phosphates and then allowing it to die off. For this reason, it is a mistake to change the pond water in an attempt to control the algae. You are only replenishing nutrients that sustain the algae bloom.

Algae also requires sufficient light. If your pond receives several hours of sun each day, you might consider shading it. Keep in mind that as the angle of the sun changes with the seasons, the way the sunlight falls on the water changes as well. Often, canopies set up for summer shading allow significant amounts of sunlight to reach the water in the winter, resulting in an algae bloom. Reducing the amount of sunlight will cut back on the algae, although not as effectively as a good biological filter.

Frequently, the algae will die off as suddenly as it appeared. A huge algae bloom simply consumes all of the nutrients in the water and then collapses. It's important to vacuum out as much of the dead algae from the pond floor as possible. Otherwise, this organic material will consume substantial amounts of dissolved oxygen from the water as it decays.