



What is in Your Pond's Water?

✓ Ammonia

– is a by-product of fish waste and decomposing organic matter. Usually found in new ponds with high PH. This is the number one problem with fish death. Do to adding the fish too soon before getting the pond seasoned. Adding a bio filter and plants at least two weeks before adding fish will help keep ammonia down. Add dry bacteria like **Microbe-Lift Spring Summer Cleaner** to help jump-start your pond. It reduces buildup of dead leaves and residual organic material.

✓ Nitrites

–part of the nitrification process. They will show up when fish are introduced to new ponds. This can also kill fish. Every pond will experience high nitrites as part of the seasoning process. Adding wet bacteria like **Microbe-Lift PL** will help create a healthy environment and will reduce both the ammonia and nitrogen levels. Adding plants will help use up nitrites also. If high nitrites are found (more than .5ppm) an immediate 1/3rd water change is advised.

Ammonia and nitrites are the main cause for pea soup (new pond syndrome) and string algae (moss).

✓ Chlorine

– Added to city water to make it safe for humans. Toxic to fish. Always keep a supply of “**De-chlorinator**” on hand. Add any time the water is changed or topped off. If the pond has an auto fill try to add every 3 to 4 days or more often when temperatures are high and the pond will evaporate more.

✓ Beneficial Microbes

– These good Bacteria and enzymes. They feed on ammonia and micro debris. These have been added to the pond from the **Microbe-Lift** products both dry and liquid. Some bacteria occur naturally and may take 2 to 3 years to establish a good colony. All these microbes require lots of aeration. Make sure to recirculate the volume of the water every 2 hours. Aerate with an air pump and stone especially in the winter.

✓ Pathogens

– Unwanted diseases, bacteria's and parasites cannot survive in a well-aerated pond. They thrive in stagnant boggy areas with lots of muck (sludge). Use **Microbe-Lift Sludge Away** to help reduce excessive sludge. Non-iodized Salt added to the water will help control a lot of bad bacteria's and parasites.

✓ Fish

– Can have a great impact on the ponds general health. Maximum stock is 1” of fish for every 3gallons of water. Consider the total length the fish will grow. An average Gold Fish will grow to be 8 to 10” in length (1 fish for every 30 gallons of water) or Koi can reach about 20” or longer (1 Koi for every 60 gallons of water). Beneficial microbes rely on the ammonia from fish waist as a food source. Before adding the fish



make sure to add either a shading compound **Microbe-Lift Bio Blue** or Mother Nature's shade **Plants** to the pond so that the fish have a place to hide and stay out of the sun.

✓ **Plants**

– will shade the pond and control algae problems by reducing Nitrogen and Ammonia naturally. The goal is to cover 60% of the water surface Use this recipe to help control algae. For up to every 400 gallons of water the pond will need: *1 Water Lily (Nymphaea), * 2 Bog or Marginal Plants (Cattails etc.) *2 Floaters (tropical Water Hyacinth or Lettuce) and *1 oxygenator (Elodea or Parrot's Feather) for every square foot of water surface.

✓ **Brown Water**

– (orange or brown stain) Tea colored water is caused by Dirt and Tannic Acid from decaying leaves. A 1/3rd water change can help. If persists **Carbon Filtration** will help clear the water up.

✓ **Suspended particles**

– cloudy water caused by particulates (everything from decaying matter, algae and dust) by adding a flocculent **Microbe-Lift_PL** to the water this will help congeal the particles and allow them to get caught in a mechanical filter.

✓ **Algae**

– Both single celled (Pea Soup or New Pond Syndrome) and filamentous algae (String Algae) are naturally accruing plants that will grow in the pond and are considered beneficial. In ponds that are less than two years old pea soup can be a problem. Contamination of either too much fish food or adding fish too early before getting the pond established will also be a cause. Use **Microbe-Lift PL** to help congeal the suspended particulates. **String Algae is your Friend** and is found in ponds that are established and have a perfect eco system. String Algae will grow on everything below the water surface. It first looks like green moss and then continues to string out. If the plant has a lot of light and heat, it will grow even better, especially on waterfalls and streams. Use **Barley Straw** to help control the algae in the deep parts of the pond and use **GreenClean** on the shallows (waterfalls and streams) to keep it in check. When you get tired of fighting it, you will learn to live with it and it will seem to go away all on its own, in time.

✓ **KH and PH**

– KH is the hardness or buffering capacity of your water. It enables your pond to control wide pH swings. Colorado's water has natural hardness and usually doesn't need much buffering agents. PH is usually found on the high side between 7.5 and 8.5 this is ok, above 9 can be toxic to fish. Our goal is to reach between 6.5 and 7.5 this will fluctuate especially with new ponds and time of day. This can be very stressful for fish and they shouldn't be added until the pH has come down slightly and stabilized. Using a **pH down with buffers** will help accelerate the time so you can add your fish sooner.