## PISCES PET EMPORIUM

## **Ponds**

Ponds are a beautiful focal point to any landscaping project. With a bit of work and knowledge, anyone can create a natural ecosystem in their own backyard.



Photo by Pisces Pet Emporium

**Placement and Type:** Ponds can consist of rigid preform tubs or flexible liners. Preform tubs will need to have an exact size hole dug, and be back filled to prevent flex. Liner ponds allow for greater variance in shape and size, and are more suitable for over wintering fish. Be sure to locate the pond in a moderately sunny to part shade area for best plant growth, but avoid building in the lowest part of the yard to prevent unwanted runoff into the pond. **Pisces recommends: Flexible liner.** 

**Pumps:** The pump is the heart of the pond system. It circulates the water around the pond, through the filter and runs water features, such as spitters and waterfalls. Pumps should run 24hrs per day during the active season, and only be turned off for winter storage. Pump size is determined by volume of the pond, filter specifications, and waterfall width. The pump should circulate the entirety of the pond volume at least once per hour. The more circulation the better, as higher fish loads require higher flow rates for effective filtration. Flow rate for waterfalls is 75-100 gph per inch of width.

**Filtration:** All ponds require a filter to maintain water quality. Most filters are multi stage. The mechanical stage consists of materials such as sponges and/or filter floss to strain out debris accumulation. Mechanical media is only replaced once per year, usually in the early spring or late fall when the pond is dormant. The chemical stage consists of materials like carbon, zeo-lite, phosphate removers, and peat pellets. These products neutralize harmful substances in the water, and are generally replaced every 4 weeks. The biological stage is the most important! Materials such as Bio max, Bio balls or lava rock provide surface area for the growth of beneficial bacteria, which break down waste products. Bio media need only partial replacement once per year; excessive replacement or over cleaning will interfere with the pond's ability to cycle properly. By default, mechanical filtration materials and gravel will also support biological growth, and therefore should not be cleaned excessively. \*\*A new pond is biologically sterile when first set up, and can take 4-6 weeks to become fully established. **Pisces recommends: Pond Pro BioMax Media with nitrifiers** 

**Aeration:** Is recommended in ponds, and is essential in ponds that are deeper than 3 feet. A bubble unit or air pump can help move water and assist gas exchange in the pond.

Clarifiers and UV Sterilizers: One of the most effective means to control green water algae, these units "zap" free floating pathogens and algae spores that can cause issues in the pond. Some filter units have a UV sterilizer built in, while other units can be installed inline to existing pond hosing. Change the bulb every year for maximum spectrum strength. Another excellent product is the lonGen. These units improve water quality by electronically releasing ions into the water, and work well for controlling string algae and other forms of algae.

**Stocking of Fish and Plants:** For pond species, such as Comets and Koi, the stocking ratio is 3-5 gallons per inch of fish. Overstocking of fish can decrease water quality, and increase instances of disease. With a new pond, do not add more than 1/3 of the capacity for the first addition, and wait 1-2 weeks between additions of fish. If wintering fish inside, it is best to wait until late May before reintroducing fish to the pond.

Plants should cover at least 1/3 to 2/3 of the pond surface, as they will consume waste products, provide shade that reduces algae growth, and provide hiding/breeding spaces for the fish. A variety of floating, submersible and marginal plants will enhance the look of your pond and contribute to a healthy ecosystem. New plants will need to be transplanted into a bigger pot after purchase, and then repotted every spring as growth demands.

**Feeding:** Most adult fish only need a small feeding once per day, and can go for several days without food. Koi/Comets are scavengers, so they will also eat any vegetation and insects that are available in the pond. In spring and fall, or when temperatures are between 5 °C and 10 °C, feed wheat germ or spirulina formulas for easier digestion. Staple or color enhancing formulas can be fed when temperatures are above 10 °C. Excess feeding can result in a drastic reduction in water quality. Feed high quality pellet or stick foods to ensure an appropriate, balanced diet. Regular feeding also encourages your fish to interact with you more, and eventually they may become tame enough to be hand fed treats!

Water Conditioners and Supplements: Essential products for a healthy pond include tap water conditioner (to remove chlorine/chloramines/heavy metals and replenish fishes' slime coat); biological boosters (to provide enzymes encouraging bacteria growth and maintenance of the ecological cycle); and waste breakdown/algae reducers (which introduce bacteria that reduce solid waste build up, and compete for nutrients algae need to grow). For stubborn algae, Algae Pond Salt is also used as a tonic to boost fish health and prevent illness. Dosage is approximately 1 lb per 100 gallons for maintenance purposes, usually added in the spring. Do a partial water change before adding plants, as most will not tolerate higher salt levels. *Pisces recommends: Pond Pro Steps 1, 2 and 3, Clearview Clarifier, and Algae crusher.* 

## **Important Tips:**

- NEVER use chlorinated (tap) water to clean your filters during the active season, as this will destroy the
  ecological balance in the pond. Remove 10% of the pond water every 1-2 weeks, and replace with fresh
  treated water. Less frequent or larger changes (>50%) may disrupt the ecological balance. Full water
  changes should only be performed in early spring or late fall. Topping up for evaporation does not count
  as water replacement, as waste matter and organic debris still remain. Add biological/waste control
  supplements every week after pond water is replenished.
- Plecostomus, Ryukins, Orandas and other Fantails generally do not do well in our climate.
- Do not feed fish when water temperatures drop below 5 °C. Fish metabolism slows and food will not be digested, which can result in fish illness and death.
- pH levels in the outside pond may be different than those in indoor tanks. Acclimatize any new fish additions by adding water from the pond into the fish bag, as well as floating the bag to equalize water temperatures.
- Check with local bylaws and utilities before digging a pond, to ensure all safety protocols are being followed.

**Recommended Books:** This care sheet is designed to provide you with some basic information on your new pond. To learn more about how to care for your pond, Pisces recommends: *The Ecosystem Pond* by AquaScape Lifestyles Books.

## **Recommended Supplies:**

- □ Preform pond or pond liner
- Pond filter
- □ Pond pump
- UV Sterilizer
- □ Air Pump
- Water conditioners
- □ Food

**Your New Pond:** It is the responsibility of any water gardener to provide their pond with regular maintenance to ensure optimum water quality and to prevent fish illness or loss.

Should you experience any problems with your new pond, please contact staff at Pisces Pet Emporium. We will make every effort to assist you, but we cannot be held responsible for any fish or plant loss. A pond is a large responsibility and should not be purchased without due consideration. Fish, plants and invertebrates should be sufficiently contained in the pond to prevent accidental release into the wild.

- □ Filter media
- Pond vacuum
- Water change bucket
- □ Thermometer
- □ Fish Net
- Pond salt
- □ Plant substrate and fertilizer tabs



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