Koi Pond Filtration

Photo by: Jay Castor

Your filtration system is essential to providing your Blue Ridge Koi and Goldfish with proper water quality. The two main types of filtration are biological and mechanical.

Biological Filtration

Biological filtration is something every pond requires to maintain proper water quality and preserve the health of the fish. Beneficial bacteria break down waste products into less harmful substances by converting ammonia and nitrites into nitrates. These bacteria need surfaces they can attach to and will occur naturally on surfaces in your pond. However an ideal pond system will have a dedicated biofilter that acts as an optimized area for the beneficial bacteria to grow, maximizing the biological filtration available. Adding a mixture of the three basic types of aquatic plants to your pond also improves the nitrogen cycle and provides great biological filtration for your pond.

Photo by: Joshua J. Cotten

Floating Plants

- Water hyacinth
- Water lettuce
- Water lilies
- Lotus
- Water Poppy

Photo by: Steve Sharp

Shallow Water Marsh Plants:

- Water iris
- Horsetail

Submerged Plants:

- Fanwort
- Hornwort
- American waterweed
- Water purslane

Mechanical Filtration

Mechanical filtration separates and removes solid waste and debris from pond water by passing it over materials that capture small particles (such as synthetic foam or nylon fiber floss). Some mechanical filters also house beneficial bacteria, contributing to the pond's biological filtration.
Rapid water flow is key to good mechanical filtration. Setting the flow close to the maximum rate recommended by the manufacturer will often get the best results. Ideally, you want the volume of your pond to circulate through your filter every hour or two.

Types of Mechanical Filtration:

Settling chamber: removes solids from the water before it is sent to biological filtration.

Rotary drum: water flows from the pond to the filter, and then through a very fine screen in the filter.

Skimmer: collects debris and dirt from the surface of the water.

Vortex: collects large waste and debris that accumulate on the bottom of the pond.

Bead: cleans water by pumping it through a plastic, bead-filled chamber where bacteria grab and process particles.

Brush: bristles filter out suspended solids while providing ample surface area where the nitrifying bacteria can colonize and thrive.

Foam: fits over a pump cage to act as a pre-filter to extend the maintenance period.

Sieve: pumps water through a series of tiny wires that catch debris and remove it from the water before pushing it back into the pond.

Regular water testing and maintenance are important even with filtration systems in place. Remember, water that appears clear can still harbor harmful waste compounds.

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