

Drs. Overview: Filtration

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Deciding what type of filtration your new or existing pond needs depends on the level of water quality you wish to achieve. Do you want clear water for your fountain display?

Or do you need to sustain the life of plants and koi for many years? At the very least, most pond keepers want clear, algae-free water. Koi enthusiasts demand more pristine water conditions with no ammonia or phosphate, and plenty of nitrifying bacteria to break down dangerous waste products into beneficial fertilizers.

Here's a quick overview of the most common filtration types available, and how they help improve the quality of the water in your pond:



Biological Filtration

Biological filters use nature's nitrogen cycle to detoxify organic waste products. A colony of ammonia-eating bacteria grows in the filter's biomedium (lava rock, plastic pin balls, foam, and so on) and breaks down decaying waste into less dangerous nutrients. Keeping your pond free from ammonia is essential for koi health, and bio-filters also help eliminate the waste products which lead to excessive algae growth.

Mechanical Filtration

Mechanical filters either strain or skim debris like leaves, stirred up muck, and free-floating algae out of your pond. This helps to prevent clogs in other pond equipment as well as reduce the amount of decaying materials from settling on the bottom. They do this by straining water through media of varying densities/thicknesses (typically sponges or pads). A specialized mechanical filter called a "[skimmer](#)" is designed to grab leaves off the surface of the water, whereas other mechanical filters generally strain out suspended particulates.



Chemical Filtration

Chemical filtration helps "clean" your pond by removing organic and inorganic pollutants with specialized media like carbons and resins. If your pond water

has high levels of ammonia from too many fish, a brown tinge from dissolved organic compounds, or a greenish hue from free-floating algae, adding the right chemical media to your filter or waterfall can help resolve the problem.

Combination Filters

Many filters combine multiple types of filtration for efficiency. For example, a multi-filter may include sponge media and an empty chamber. The sponge media provides both mechanical and biological filtration, as beneficial nitrifying bacteria grows on the sponge used to strain out debris. The empty chamber is available for you to add "tea bags" of chemical media to target specific problems with your water conditions.

For optimal long-term results, invest in the filtration system that best fits your budget, your comfort level, and your unique pond setup.

External or submersible filtration - which is right for me?

Not sure whether to implement a submersible (internal) or external pond filter? Consider the following...

Submersible filters are:

- installed directly in the pond
- intended for smaller ponds (typically less than 2,000 gallons)
- easier to plumb
- more difficult to access for maintenance
- easier to disguise

External filters are:

- installed outside of the pond
- intended for larger ponds (up to 21,000 gallons)
- more difficult to plumb
- easier to access for maintenance
- harder to disguise (large models often require housing to protect from the elements)

Filtration Quick Guide				
Filtration Type	Helps Eliminate:			
	Algae	Debris	Discoloration	Toxins
Biological	X			X
Mechanical		X		
Chemical	X		X	X