



WATER
GARDENING
SERIES

Bio-Barrel Up-Flow Filtration System

We believe this to be the most cost-effective and efficient filter system available for a fish pond. One barrel filter will be sufficient for ponds in the 500 to 650 gallon range if using gravel as the media. If filtering with synthetic mat media, one barrel can effectively handle from 750 to 1000 gallon ponds. These pond size ratings can be doubled or tripled. The trade off is that not everything which is put into them is digested. They will require more frequent cleaning.

PRINCIPLES OF FILTRATION

1. Sedimentation

If properly sized water flow chamber is incorporated into the design, a large portion of the suspended particulate material will drop out before actually reaching the filtration media. This extends the time between required cleaning.

2. Entrapment

This refers to the ability of any filter material the "grab" and hang on to debris, removing it from the flow, and thus cleansing the water. The filter media chosen should have sufficient surface area to capture detritus and yet not be so dense as to get clogged easily.

3. Biological Digestion

If the filter is properly sized in relation to pond volume and pump flow rate, most of the organic material which is trapped will be digested as it passes through. What we are actually building is a miniature wastewater treatment plant. This lengthens the time between cleaning.

4. Aeration

If adequate oxygenation of the water is provided, the beneficial bacterial colonies, which inhabit the filter, function much more efficiently. This should be accomplished prior to the particulate capture and holding area.

5. Cleaning

The two most important factors to consider are the frequency required and degree of ease or difficulty involved. An up-flow system is easier to clean. Sedimentation takes place in the bottom. When cleaning time does come, merely open a drain valve in the bottom and gravity will flush it for you. Run unchlorinated water down the tower and shake the empty barrel back and forth to remove the bottom sediments. Every spring, all the media should be removed and rinsed out with water and bottom barrel drained to start the new season.

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