

Water Garden

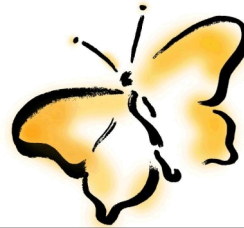
Campbell's

CULTIVATING IDEAS

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POOL SIZE AND DEPTH

Pools less than 12 to 15 inches deep are generally not used for fish and plant life, but they do make very nice reflecting pools.

Pools with the surface area up to 100 square feet should have a depth of at least 18 to 24 inches.

Pools with the surface area of 100 to 200 square feet should have a depth of at least 24 inches. Pools larger than 200 square feet do best if depth is 30 inches or more. The minimum depth should be 30" to overwinter plants and fish, however, 36" is better.

To determine the volume of a pond in gallons, use the following formula:

$$\text{Volume (Gal)} = \text{Length} \times \text{Width} \times \text{Height (feet)} \times 7.5 \text{ gal.}$$

Any size pond can be balanced if properly stocked and filtered.

TYPES OF POOLS

Fiberglass - generally used only as reflecting pools.

Molded Plastic - This type of pool has a shallow ledge and a deep area. They are designed to sustain both fish and plant life during the warm season, but not over winter. Water may be left in the pond as long as it is below ground level.

EPDM Liner - This is the most versatile pond material. Can be formed to any size, depth and shape. Carries a 20 year warranty and is probably the easiest pond to install. Water should always be left in this type of pond.

POND PLANTING FORMULA

Each pond is unique so these are only guidelines. Each pond should include each of the following elements.

Water lilies

Foliage should cover 60% of pond surface area.

Depending on the type, each lily covers approximately 5 to 6 square feet.

Start root in a 6 to 8 inch mum pot covered with around 1 inch of gravel. Crown should be at top of gravel.

Benefits pond by reducing algae growth, stabilizes water temperatures, and adds beauty to pool.

Top of container should be 6 to 10 inches below water surface.

Fertilize two times monthly.

Fish

Up to 1 inch for every 5 gallons of water, 1/2" per 5 gallons for Koi

Benefits pond by reducing insects and their larva. Also provides nutrients to plant material.

Feed no more than the fish will eat in five minutes.

Floating Aquatic Plants

Floats on surface of water, does not need to be potted.

One plant for every 4 to 8 square feet, shade 40-70% of pond surface.

Benefits pond by reducing algae, stabilizing water temperature, and can also be a food source for young fish as well as a place to hide.

Oxygenating Plants

Plant one bunch (8 stems) in either a 4 or 6 inch container.

Ponds need 1 bunch per square foot for ponds up to 100 square feet. 1 bunch per 2 square foot for ponds over 100 square feet.

Place in bottom of pond to a depth up to 30 inches.

Benefits pond by being the main controller of Algae. It is also a food source for fish.

Marginal (Bog) Plants

Plant in one-gallon containers.

Top of containers should be 3 to 6 inches below water surface.

Adds a vertical height to the pond as well as attractive foliage and flowers.

Fertilize once a month

The following is collection of plants that are examples of plant material needed to create a "balanced water garden".

For pool surface of 10 to 20 square feet:

1 Water lily

3 Bog plants

12 Bunches of Anacharis

For pool surface of 20 to 30 square feet:

2 Water lilies

5 Bog plants

18 Bunches of Anacharis

For pool surface of 30 to 45 square feet:

3 Water lilies

7 Bog plants

24 Bunches of Anacharis

For pool surface of 45 to 70 square feet:

4 Water lilies

9 Bog plants

48 bunches of Anacharis

For pool surface of 70 to 120 square feet:

5 Water lilies

12 Bog plants

72 bunches of Anacharis

For pool surface of 120 to 160 square feet:

6 Water lilies

14 Bog plants

100 Bunches of Anacharis

* Water Hyacinth, Water Lettuce and other floating plants can be used to shade the water surface.

* Each water lily can be substituted with 3 potted water poppies or 3 water clover.

Pump

Check specified filter flow rates.

Vertical lift (distance from pump to discharge point) reduces flow volume

To create a waterfall – each 100 gph produces ½” deep flow - 1” wide, or ¼” deep flow – 2” wide.

Pump and filter should re-circulate pond volume every 2-6 hrs depending upon filter specification.

Filters

Filters remove fish wastes, sediment, and algae, which help keep the pond balanced.

There are three types of filters: mechanical, biological, and a combination.

Filters with pumps (mechanical) may be used to run waterfalls and fountains.

Use only pond water to clean filters. Do not use soap or chemicals, as they can kill beneficial bacteria on the filter.

Chemicals

There are many chemicals that can be used to help establish a pond. Once the pond is in balance, you should only need to use them to control occasional problems.

Algae

Algae does not harm plant life or fish in your pond.

Algae can be controlled by properly balancing your pond with plants and fish.

It can take from 2 weeks to 2 months to eliminate the algae from your pond.

Seed the pond with beneficial bacteria in the spring using either Tetra Aquazyme or Aquacleaner Dry Bacteria to begin biological filtration. (Safe for plants & fish)

Use string algae buster to control unsightly string algae. (Safe for plants & fish)

References

For a more in depth study of Water Gardening:

1. Hobbyist Guide to Successful Koi Keeping by Dr. David Pool.
2. Keeping Koi by Nancy Cooper Wisner & Frederick Albert Simon.
3. Low Maintenance Water Garden by Helen Nash.
4. The Complete Pond Builder by Helen Nash.
5. The Pond Doctor by Helen Nash.
6. The Tetra Encyclopedia of Koi
7. Water in the Garden by James Allison.
8. Waterscaping by Judy Glattstein.