Water Gardening in Containers

Kentucky GROW

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The goals of this module are:

To learn how to construct and maintain container water gardens.

What you need:

- Container. Half whiskey barrels work well, but any container that holds water or can be made to hold water 12 to 36 inches deep will work. Some ideas include horse troughs, clay pots, plastic pots, old cast-iron bathtubs, and satellite dishes. Be imaginative.
- If the container does not hold water, buy pond liner and silicone glue to line the interior. Containers that need only a hole plugged can be made water tight with a rubber stopper and silicone glue.
- Plants (see below).
- Water. De-chlorinated is best (let tap water sit overnight).
- Optional: Fish, water fountain, decorative statuary.

Time needed:

A simple container water garden can be put together in 20 minutes or less. Discussion of how to take care of it and of the choices in design can add another 40 minutes.

How to prepare:

This is probably not going to be a make-and-take project for participants. Transporting a completed water garden home intact can be quite a challenge. Instead, this is an opportunity to have a water garden at your site that participants can have a hand in building.

It might be helpful to have a container ready to go at the start of the program, i.e., all holes plugged and a liner in place if needed, as the glue will need to dry before adding water.

If your water source uses chloramine as a disinfectant (call the water supplier to find out), dechlorinate before adding fish.

The program:

Water gardening is a facet of gardening has just exploded in popularity in the past five years. It can be intimidating as well, once the talk gets around to water chemistry, plumbing, and exotic fish. The best way to get your feet wet is to start small, with a water garden in a container.

Depending on the size of the container, you can have beautiful plants, fish, and fountains without spending a lot of money or destroying the back yard.

Selecting a Container

Anything that can hold water can be used, provided it is 12 to 36 inches deep and did not contain toxic materials at one time (nix the old oil drum). Suggested ideas include half whiskey barrels, large plastic or clay pots (this can be a good use for a cracked pot), deck planters, wash tubs, a claw-foot tub, a horse trough, or the kitchen sink. Anything that has holes or cracks should be lined with 45-mil EPDM pond liner (ask at a pond supply store if they have any remnants for sale) and the edges sealed with silicone glue. Do not bring the liner all the way to the top, but instead stop about 2 inches from the top so that you cannot see the liner when the container is filled with water. Porous containers should be sealed with a non-toxic water-sealant paint, and holes plugged with silicone. Whiskey barrels will hold water if they are soaked for a week in water to allow the wood to swell, or pre-formed plastic liners may be used.

The Site

Filled containers are quite heavy, so select the site ahead of time. Just as with soil-filled containers, select a spot where the pot and the plants will complement the surrounding surfaces and plants. Keep in mind that water will occasionally be spilled or may need to be transported to the site.

Most aquatic plants need at least 4 to 6 hours of sun per day to thrive. Be aware that all-day sun in a southwestern exposure can heat up the water to temperatures dangerous to fish.

Filling and planting

Planting in water containers is very easy. Just fill with water and set the plants in. You can fill the bottom with soil and plant directly in it, but it is far easier to leave plants in their pots and set them at their optimum depths in the water. For plants that need to be in shallower water, set them on piled up bricks or overturned clay pots. Aim to have 60 to 75 percent of the water surface covered with foliage to keep the water cool and to reduce the growth of algae.

water clover

Water plants are typically grouped by their water needs or how they grow, and a combination of types keeps the water garden healthy.

Floaters sometimes require no soil and tend to be the speedy reproducers in a water garden. They include such popular plants as water lettuce, water hyacinth, duckweed, water four-leaf clover, and water lilies.

Marginal plants like shallow water, and are useful for camouflaging pond edges with their architectural looks. Popular marginal plants include horsetail, corkscrew rush, umbrella plant, canna, arrowhead, pickerel weed, taro, and water iris.

water hyacinth

Oxygenating plants are submersed completely in the water. They promote better water quality (especially if you have fish) and provide protected niches for fish to hide in. Good oxygenating plants are parrot's feather, anacharis, and moneywort.

Egyptian papyrus

Some floaters also add oxygen to the water. Lotus plants, considered either floaters or marginal plants, should have the container all to themselves, as they are robust divas and will crowd out any other plant.

Fish can be added to a container, with a few caveats. Koi – beautiful exotic carp – need lots of room and deep pools, so it is best to start with goldfish, mollies, guppies, platys, or gambezi, adding one inch of fish per 10 gallons of water. In larger ponds, fish can subsist on algae and mosquito larvae, but in containers, they need to be fed. Do not overfeed, as the uneaten food will foul the water. Give only the amount that they can eat in 5 minutes.

Fish in containers will not survive the winter, so make plans ahead of time to bring their containers inside or to house them in an aquarium until spring. As mentioned above, water that is too hot can also be fatal (mainly due to lack of dissolved oxygen). Add a few ice cubes or replace some of the water with cooler water for a short-term solution, add more surface-shielding plants or move the container for a permanent solution.

Fountains add movement and sound to a garden, but they are really not suitable for small container gardens. Fountains increase water loss, and wind can push the spray out of the pot. Fountain pumps may not be able to slow down enough to keep the spray at a reasonable height, and restricting the flow strains the pump. Another factor to consider is that water lilies do not flourish in moving water.

There are small, floating, solar-powered fountains available that might be appropriate for larger containers.

Maintenance

Because the scale is small, maintenance of water gardens is very simple. Pull out any dead foliage before it decays. Add fertilizer (tablet inserted into the soil, not liquid) to water lilies and lotuses on a regular basis. Top off with water as needed.

For the winter, sink the plants to the bottom of the container and move the container to a frost-free spot. Plants may also be treated as annuals or stored in an indoor water garden set by a sunny window.

With luck, floaters may survive potting up in a moist, soilless medium. Set a loose-fitting plastic bag over the top if necessary to keep moisture levels high. Add diluted fertilizer regularly. When the air temperatures are consistently 65 degrees or more, place tropical plants back into your outdoor container.

Hardy water lilies can be over-wintered out of the water garden in a heated garage or basement. After the plant goes dormant, prune all of the foliage off the plant (there may some small new leaves – remove them as well) and cover the soil with damp newspaper. Place the entire container in a sealed plastic bag and store. Once a week, check for soil moistness and open the bag for 24 hours. Hardy water lilies can return to your container in the spring when it is ice-free in the afternoons.

To keep mosquito larvae out of your container, add fish or *Bacillus thuringiensis* (Bt) rings to the water.

Accommodations for this program:

By their nature, container water gardens should be created in areas that are accessible to people to enjoy. Height of containers should be considered. Containers that are very tall may not be accessible to children or those who are seated. As with all Kentucky GROW programs, providing needed accommodations is an individualized process. Below are some ideas to get you started, but the best route to take is to listen to the person, as he or she will usually have the best ideas of all!

For those with mobility impairments, ensure that the containers are neither too tall to see into nor too short to allow easy reach. Ensure that all materials are placed at an accessible height and reach. Provide chairs for those who are unable to stand or bend for long periods. This will enable easy access to the container, plants, fish, and maintenance tools. As with other gardening modules, tools can be adapted to increase the gardeners reach and efficiency. See Kentucky GROW tool examples for meeting individual needs.

For those who have cognitive impairments, consider working as a team for this module. Use photos or pictures to demonstrate each step of creating or maintaining the water garden. Provide opportunities for choice in this activity. Some participants may not enjoy constructing the garden but prefer to feed and care for the fish. Utilize individual strengths and personal preferences to maximize enjoyment of water gardening.

For those with learning disabilities, provide the information in this module in a variety of methods. Some individuals learn best by hearing the instructions, others will prefer to see the step by step procedure in writing with pictures or photos, or to have the instructions given on tape. Written instructions will also be helpful for those with hearing impairments.

For individuals with visual impairments, review placement of the needed materials. Don't move items without informing the person. Keep tools and materials out of pathways where they may create a tripping hazard. Ensure that the area is well lit. A magnifying glass can make materials easier to see. Provide any written instructions in large print and other alternative formats as requested.

Where to go from here:

Garden Pools, Fountains, and Waterfalls, Sunset Publishing, 1989.

The Complete Pond Builder, Helen Nash, Sterling Publishing Co., 1996.

Water Gardening in Containers: Small Ponds Indoors and Out, Helen Nash et al., Sterling Publications, 1999.

American Horticulture Society Complete Guide to Water Gardening, Peter Robinson, 1997.

Quick and Easy Container Water Gardens: Simple-To-Make Water Features and Fountains for Indoor and Outdoor Gardens, Philip Swindells, Storey Books, 1998.

Container Water Gardens, Philip Swindells, Barrons Educational Series, 2001.

This material is available in alternate formats. Contact Kentucky GROW for more information.