



PONDering Water Lilies as a Cut Flower

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Who among us has not sat on the edge of a garden pond filled with water lilies on a warm, sunny day and soaked in their luxuriousness? Who among us has not had the next thought, “I wonder how they would do as a cut flower?” Water lilies are not a common cut flower, but they are found now and again at wholesale houses or flower markets. Along with their striking, vibrant colors, some water lilies even have a great fragrance. You may be reluctant to try out this aquatic flower, but if you do, you are sure to have something unique to bring to market. We’ll provide a few production details, and results from a postharvest experiment we conducted here at North Carolina State.

Production

Production may be one of the easiest aspects of this crop if you already have a pond. We harvested our flowers from a naturally-occurring pond. Where they came from, how old they were, nutrition, and variety were all unknown, but they were free and plentiful! If you have a pond at your home or farm, all you have to do is make sure the water level is high enough to have long stems. Harvest the bounty all summer long.

If you’re interested in growing your own water lilies, you can start your crop using one of two methods. Purchase rhizomes from a big box store or online. Garden centers usually carry live plants throughout a typical growing season. Most will be selling hardy water lilies, which is what we used in our experiments. Avoid planting water lilies into an established natural ecosystem as they can spread rapidly. It is best to keep them contained in your own manmade pond or container.

Almost any container that holds water can be used. Depending on the scale you want to grow, a large washtub may support a plant or two. Plan for a water depth of 2 to 3 feet for long stems. Generally, the deeper you place your pots the longer your stems will be when the flowers are ready for harvest.

Water lilies are very easy to grow and maintain. If you purchase yours already potted, we recommend bumping up those plants to a larger container either right away or the following season. Shallow containers work best, but plants are not picky. From our experience, any clay-like soil or a mixture of sand, topsoil or clay works great. Stay away from peat and perlite, which will float out of the pot. Your pond or container should be in full sun. Fertilization is relatively easy. Purchase tablets of aquatic plant fertilizer online or from a garden center. Place one tablet into the soil near the crown of each plant when planting, and every month during the growing season. Depending on light levels and the age of plants, you will have multiple flowers in the first year, but plants will not start producing until the water temperatures are warm. Most hardy water lilies can be grown in Zones 4 to 11.

Overwintering can be done in place, if your pond is does not freeze solid. Otherwise, harvest rhizomes in the fall, wash off the soil, and put them in a cold dark place, surrounded with moist, not wet, sphagnum peat moss. Tropical water lilies have longer stems and come in a broader array of colors than hardy water lilies, but need to be kept at least 45F in the winter, which means that the tubers must be stored in protected areas for most of the U.S. and Canada.

Harvest

Harvesting stage can be tricky if you want to store or hold flowers for any length of time, but it is extremely important. Generally, most water lilies are open on the plant for 3 to 4 days, so you need to cut them at the right time to get maximum vase life. When buds are about to open, they will float on the surface of the water in the morning, and open as the sun rises. Many hardy water lilies are day bloomers, so they open in the early morning and close in the evening. Morning harvests will allow you to best identify new buds and flowers. Harvest at either stage 2, when buds have color showing between the sepals, or stage 3, when flowers are open their first day and have liquid in the bottom of the cup as seen in the title photo. See the diagram to identify bud stages for harvest and postharvest information based on results from our trials.

Flowers can be plucked from the rhizome by pulling, but stems may break or become flimsy. We recommend cutting the stems underwater. The photo on the top right shows our first beautiful harvest after we pulled the stems while sitting in kayaks. They were long, but very flimsy. Wearing waders and cutting stems produced a stronger, better quality stem. After harvest, keep the stems supported and as straight as possible.

Postharvest

We implemented our typical post-harvest trial test with both buds and first-day flowers. Flowers were placed in either a hydrator solution or water for 4 hours, and then placed into water or a holding solution for 2 days. Flowers were then placed in tap water for vase life evaluation. Neither the hydrator nor holding solution improved vase life. Using a holding solution reduced vase life of both buds and first-day flowers. Buds did not open faster when a hydrator or holding solution was used.



In just water, first-day flowers lasted 4.2 ± 0.7 days. Buds opened in 2.0 ± 0.7 days with a vase life of 5.0 ± 0.7 days. Second-day flowers lasted on average 2.0 ± 0.4 days. We used a hardy water lily, which is most likely what you will encounter in natural ponds and at garden centers. They were day bloomers. After being cut, flowers generally opened between 8:00 and 9:00 a.m., and closed between 3:00 and 4:00 p.m. Surprisingly, some flowers stayed open through the night. See photo below.




Recommendations

If water lilies are something you want to try, here are some recommendations based on our experiences:

- 1) Do your own vase life testing and determine when the flowers are going to open and close.
- 2) Harvest flowers when the sepals start to separate and show color.
- 3) Cut stems underwater and place into clean water.
- 4) Provide support when flowers are in buckets.
- 5) Do not use hydrator or holding solutions.



Water lily bud and flower stages		Harvest?	Vase life information	
	1	Unopened flower bud, no color showing	NO	Buds that opened: 20% Vase life = 5.0 days
	2	Unopened flower, color showing between sepals	YES	Buds that opened = 100% Days to open = 2.0 ± 0.7 days Vase life = 5.0 ± 0.7 days
	3	First day flower, liquid in bottom of receptacle cup, no pollen	YES	Vase life = 4.2 ± 0.7 days
	4	Second day flower, little to no liquid, pollen present	MAYBE	Vase life = 2.0 ± 0.4 days
	5	Third day flower, no nectar, pollen present, slight browning of anthers	NO	-
	6	Fourth or later flower, blackening of anthers, flower may start to close or not open fully in the morning	NO	-
	7	Flowers are mostly closed, stem may have curled and pulled flower underwater	NO	-
	8	Flower is mostly closed and underwater, stem is curled	NO	-

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