

DISCLAIMER: Below are things I ran across while researching before building my new pond. I take no credit for the ideas, nor any of the responsibility. But maybe there is something here that you are looking for or will help you.

PLANT SOIL

■ Start with plain, river bottom topsoil. This is not the same as what is called "topsoil" and bagged at the Home Depot, for instance. That soil has far too much organic material in it to be good for water plants. What you are after is just dirt. It should have a slight clay content, some sand, but be basically dirt, with no wood, no compost, no additives such as sulfur, or ammonium nitrate, etc. Into this we add peat moss. This gives us some loaminess without contributing heavily organic materials such as manure or compost. The final mix should be no more than 25% peat, though, because it is acidic and will stain the water to some extent. Into this we add about 1/8 cup of 14-14-14 Osmocote, or its equivalent, per cubic foot of soil. Osmocote is a timed-release fertilizer. It takes a couple of months or more to leach out into the soil, making it available as the plant needs it, rather than all at once, before the plant is ready to use it. Also, we have found it good to add the same amount of Ironite to the soil. This helps the plants absorb and use nitrogen as most soils become depleted of iron at some point during the growing season, leading to yellowed leaves and weakened growth. We always moisten the soil when we mix it. Just enough to keep the dust down without increasing the weight too much, and to make it go into the pond more readily (dry soil tends to flip pots if they are not added to the pond carefully). The soil should be as nearly homogeneous as possible. There should be no lumps of topsoil larger than a walnut, and no chunks of fertilizer at all.

■ Try 1 part "Special Kitty" kitty litter (plain)
1 part sand
1-part soil (in a bag is fine).

■ This is for the bushel size only, cut back for smaller pots.

1. Use a good clay type garden soil.
2. Mix into the soil 1 cup of bone meal.
3. Mix into the soil 1 cup of granular fertilizer with a high middle number, such as 10-20-10. The larger middle number is for blooms.
4. I also add about 8 large Agriform fertilizer tablets around the edge of the container.
5. Mix into the soil 1 cup of dried blood.

make sure all is mixed well, say in a wheelbarrow.

Top all off with pea gravel or larger stone to keep the "kids" out.

Stand back and watch and "listen" to them grow. After about 3 weeks in the water, start a regular fertilizing schedule. Insert new tablets every 2 weeks.

Sounds like a lotta work, but it's worth it. They are heavy feeders, especially the lotus. If you cannot find Agriform tablets, use Jobe's Tomato Spikes (8-24-8), available at Home Depot.

TYPES OF PLANTS AND THEIR PREFERENCES

- Your water lilies will be "planted" from 8 to 16 inches below the water. Hardys need at least 4 hours of direct sunlight to do well, and can survive in full sun all day.
- Tropicals do best with at least 6 hours of full sun and planted 12 to 16 inches under water.
- Many iris varieties will love a wet environment. Umbrella palms, cannas, caladiums, spider lilies, lobelia, some of the palms, all will grow in water, and perhaps better than in your pot in your house or in your dry garden. A few you might not have heard of are papyrus, taro, arrowhead, lizard tail, sagittaria, pickerel plant, flags, there's even a water hibiscus. Some other bog plants have leaves and flowers that sit right on the water. Some of these are mosaic, water poppy, snowflake, and water clover. Another type of bog plant is the lotus.
- Lastly, are the floaters. These are water hyacinths and water lettuce. The plants float on the water and the roots hang down like a ponytail below.

When you buy any of your plants, it's best to buy them that have been in the pot for at least a year.

The dirt will stop about 2 inches from the edge of the pot and a layer of stones/gravel will go on top of that to keep your fish from digging in it.

You feed them using plant tabs. I feed hardy lilies once a month from April to September, 2 tabs for every gallon of soil. Tropicals and lotus get 2 tabs per gallon twice a month. Your bog plants can get by with one tab a gallon at the beginning of the summer unless they are heavy bloomers,

If you are in the far south, you might think about repotting your plants every year.

SPM is an organic material made for coconut fibers so breaks down with time. It comes in a large roll and is about 1 1/2 inch thick. What we do is cut it into squares that are slightly larger than the container. We then take a rooted water lily and wash the dirt from the roots. Then a few stones are placed in the bottom of the standard three holed nursery container. Over that we place a couple of layers of potting medium and finally on the upper layer we cut a slit to the center. After placing the plant in the container and spreading out the roots we put the last layer of potting medium around the plant so the center of the plant is more or less in the center of the pot. Lastly, we place a few stones on top of the last layer of potting medium so that the larger fish cannot get in and investigate our handiwork. Some plants receive enough nutrients from the water so they do fine with SPM. Others that are heavy feeders do not (or at least we have not been able to figure it out.)

QUESTIONS

■ My Lilies are not Blooming and Look Funny

* Lilies and other aquatic plants begin to go dormant about the first of September. If they stop blooming in the summer check fertilization schedules and amounts. If the leaves are getting smaller they are not getting enough fertilizer.

* A tropical water lily bloom lasts about three days until a new one takes its place. Pinch off the old flower and discard it. Do not let it rot in the pond.

* Your lily will be happiest if the top of the pot is at least 6" below the surface of the water....deeper if you can. I place them on the bottom of the pond (18").

* Water lilies like to be fed every 10 - 14 days with Pondtabbs or other aquatic plant fertilizer. They also like to have the tops of their pots at least 6" below the surface of the water and are happier even deeper. And remember, the outer ring of leaves gets yellow and needs to be pinched off periodically so the new leaves can grow. Same with the flowers.

PLANTING HARDY WATERLILIES

Use a wide, shallow pot. You don't need a deep pot for a hardy water lily. Its tuber grows straight across the width of the pot rather than downward toward the bottom.

For a standard hardy water lily, use a pot that holds about 2 gallons of soil, that's 2 feet or so wide and several inches deep. Miniature water lilies can be potted in smaller pots, and very large water lilies (with a leaf spread of 10 feet or more) can be planted in large pots that hold 5 gallons or more of soil.

To plant a hardy water lily, fill the pot with soil to within 2 inches of the top of the pot. Set the water lily tuber on top of the soil, spreading the roots over the surface. Cover the roots and tuber with about an inch of soil. It's better to plant the tuber too deep rather than too shallow.

Push in fertilizer tablets, one tablet for every gallon of soil, as far as they will go with your finger (about 2 inches). Then cover the soil with a thin layer of pea gravel. Submerge the pot in the pond, to a depth of at least 6 inches below the water surface.

PLANTING TROPICAL WATERLILIES

Use a pot that's just as wide as it is deep. Tropical water lilies tubers grow upward rather than across the pot. For the lily to grow to a good size, the pot should hold at least 2 gallons of soil. Large tropical water lilies (with a leaf spread of 8 or 10 feet or more) can be planted in pots that hold 5 gallons or more of soil.

To plant the tuber, fill the container with soil to within 3 inches of the top of the pot. Set the rhizome on top of the soil and spread the roots over the soil surface. Cover the roots with 2 inches or so of soil. Make sure not to cover the crown (the growing tip) of the plant with any dirt. It is better to plant the rhizome slightly out of the soil rather than slightly below the soil surface.

Add fertilizer tablets, one for every gallon of soil, as far as they will go with your finger (about 2 inches into the soil). If you want you can cover the soil (but not the growing tip) with a thin layer of pea gravel. Submerge the pot in the pond to a depth of about 6 inches below the water surface.

What happens if you plant the tropical water lily too deep, so that the crown is under the soil surface? The plant will think that it's time to make new sprouts for spring. It won't bother to grow any more. It will stop blooming. New plantlets will sprout at the soil surface. They will be very small and may not bloom the first year. Your large tropical water lily will stop blooming for several weeks, and may not flower at all for the rest of the summer. Better to make sure that you plant it so the crown of the lily is exposed and not covered by soil. .

PLANTING MARGINAL WATER PLANTS

Aquatic plants for the edge of the pond come in wide array of shapes and sizes. Despite their variety, they share many requirements for planting and care.

Most plants that will grow more than a few inches in height do best if potted in at least a one-gallon container. Some tall marginals, such as Cattails and Cannas, are better planted in even larger pots, so they don't fall over in the breeze.

To plant a marginal, fill the pot with soil to within 2" of the top of the container. Set the plant on top of the soil and spread the roots over the soil surface. Cover the roots with 1" of soil, but don't cover the crown of the plant with any dirt. Push in fertilizer tablets, 1 tablet for every gallon of soil, as far as they will go with your finger (about 2").

It's always wise to use pea gravel on top of the soil, to prevent the dirt from washing away and keep curious koi at bay. Don't use pea gravel for the Water Clovers (*Marsilea* spp.) or Pennyworts (*Hydrocotyle* spp.), though. They like to crawl across the soil surface and don't grow well if they are covered with pea gravel.

PLANTING WATERLILY-LIKE PLANTS

Plants such as Water Poppy and Water Hawthorne are easy to pot up.

First, use a pot that's shallow and wide. Most water lily-like plants grow across the pot and then send up floating runners that grow and flower. Water Hawthorne grows upward rather than across the pot, and so can be planted in the same pot that you'd use for a standard marginal (a one-gallon pot).

To plant, fill the pot with soil to within 2" of the top of the container. Set the plant on top of the soil and spread the roots over the soil surface. Cover the roots with an inch or so of soil, but don't cover the crown of the plant with any soil. You can cover the soil with a thin layer of pea gravel.

Push in fertilizer tablets, 1 tablet for every gallon of soil, as far as they will go with your finger (about 2").

PLANTING SUBMERGED WATER PLANTS

Water plants that grow underwater (sometimes called 'oxygenators') are often sold bare root and rubber-banded together in a bunch. Some are sold with a lead weight so that the plants will simply sink to the bottom of the pond. There they will often root into pond muck and grow for the summer. Although you don't have to, we recommend that submerged plants be potted in a pot and fertilized regularly. They grow better if potted up and given regular feedings. Often the colder selections will over winter in the pond if they have been potted and fertilized for the summer.

To pot up a bare-root submerged plant, use a pot that's wide and shallow. Fill the pot slightly more than half full of soil. Set the plant on top of the soil and spread the roots over the soil surface. Cover the roots with soil, but don't cover the crown of the plant with any dirt.

If the plant doesn't have any roots, fill the pot with soil, wet it thoroughly, and then poke a hole about 1 inch deep in the middle of the pot. Place the bare-root clump in the hole and push the soil back around the plant. It will root from the stems and quickly put on new growth.

You can add pea gravel, if you'd like, making a thin layer on the soil. Remember to add fertilizer tablets, 1 tablet for every gallon of soil, as far as they will go with your finger (about 2").

POTTING NEW LILY TUBERS

Remove any damaged or dead leaves and any soft or rotten portions of the tuber. Sections of the tuber with no active growth can be trimmed back. Trim off the white anchoring roots and open leaves.

For potting material, you can use pea gravel, aquatic potting soil or heavy garden soil (like moles bring to the surface when burrowing). Use no-hole Lerio pots or mesh baskets. When using fine soil in mesh baskets you will need to line them with burlap. Do not use amended soil or potting soils as they will float. We use rinsed pea gravel as it allows more air space and is less likely to dirty the pond water.

If you are using granular Pond Pearls transplanting fertilizer, blend it into your media before potting. Fill the pot three-quarters full of dampened potting material. Place the cut edge of the tuber against the sidewall of the container. Tilt the rootstock at a 45-degree angle so that the growing tip is above the anticipated soil level and near the center of the pot. Carefully add more potting material around the tuber to secure it in place, taking care not to bury the growing tip. If you did not use transplanting fertilizer, place one time-release Aquatic-Tab fertilizer pellet into the potting material on each side of the tuber.

If you are using garden soil, add a shallow layer of river or decorative rock on the surface to keep the soil in place. If you have large Koi, river rocks will help protect the tuber from being disturbed. Again, however, do not bury the growing tip.

Once you have potted your water lily, place it in an area of the pond that receives full sunlight. Carefully tilt the pot and slowly lower it into the pond. This allows the air bubbles within the pot to escape without dislodging the tuber. Placing a medium size rock on top of the tuber (do not cover growing tip) will also secure it in place temporarily. Remove the rock in a few weeks when the tuber is well rooted.

Start young plants near the water surface, allowing only 6-10 inches of water over the crown. Lower them gradually as leaf stems lengthen. Keep a majority of the foliage at the surface when determining the depth of placement. Newly planted lily tubers may not flower for 6-8 weeks as they slowly develops roots. Flowering will also depend on the amount of sunlight and warmth received. In successive seasons blooms will become larger and more plentiful.

FERTILIZING YOUR LILIES

Water lilies are exceptionally heavy feeders. Fertilize monthly with Aquatic-Tab tablets during the spring and summer months. Or use the new Aquatic-Tab Spikes once in the spring to gradually release nutrients for the full season. Yellow leaves, infrequent blooms or slow growth usually indicate inadequate fertilization.

TRANSPLANTING MATURE WATER LILIES

Mature water lilies like to be somewhat crowded in their pots. However, if your lily has grown out over the side of its container and has roots dangling in the water, it is time to move it up one pot size. Use wide shallow water plant containers by Lerio, which have no holes, or European mesh baskets.

Lilies can be transplanted any time they are actively growing. Carefully remove the lily from the pot. The less you disturb the root-mass, the more quickly your lily will re-establish in the new container. Trim away any damaged or dead leaves. Use a knife to cut away any soft or rotted portions of the tuber. Sections of the tuber with no active growth can also be trimmed off.

Place the lily in a new container. If the new pot is deeper, add potting material under the lily to raise it to its original planting level. Continue filling in around the lily taking care not to bury the growing tip. For potting material selection and fertilizer instructions, see "Potting New Lily Tubers"

PROPAGATION & DIVISION OF TUBERS

Water lilies can be expensive to buy. If you have a mature specimen that is starting to out grow the pot, you may wish to propagate new plants from the old rootstock. Spring is the best time to divide lilies, as this gives the new plants plenty of time to establish themselves.

Propagation of the "Eyes"

Carefully remove the lily from the pot. Wash away the potting material from the tuber so that you can see it clearly. Some lilies produce small protruding bulbs or "eyes" with active growing tips along the body of the tuber. If your lily has developed eyes, these can be pulled or cut off and placed in small, no-hole pots or trays to grow and develop. They will need adequate light and warmth, so a greenhouse is the best place to grow the eyes until they are large enough to transplant as tubers. Otherwise you can leave them attached to the tuber to mature naturally and divide the main tuber as follows.

Division of the Tuber

Large lily tubers with multiple growing tips can be divided into sections. Each section must have both a strong growing tip and slender dark feeding roots. Wear gloves when handling lily roots, as some species can stain your hands. Using a sharp knife, cut the tuber into sections. Remove the long white anchor roots from the new divisions, making a clean cut close to the tuber. Leave the smaller feeding roots intact.

Trim away all large open leaves in the same manner. If left on they will make the newly planted tuber too buoyant. Do leave attached young foliage, which has not yet unfurled. Follow this procedure on each new section. Now you are ready to pot the divided tubers.