



## A guide to basic lily growing (for those who love lilies)

**Harris Howland** shares his experience of growing and propagating his favourite plants.

*L. mackliniae*

When I was talking to Lily Group members and others at the September 2010 RHS Wisley Flower Show, it became clear that they were looking for basic information to help them cultivate lilies more successfully. This general purpose guide to lily cultivation is my response to their requests.

Lilies grow in the wild in many different conditions in the northern hemisphere (none originate in the southern hemisphere) and some species require very special conditions and attention. Luckily, however, very many do not.

### Planting

The preferred time for planting lily bulbs is the autumn – the stems are dying down and the bulbs enter a

period of semi-dormancy but, unlike many bulbs, they are not totally dormant and are conserving their energy and establishing their root system in preparation for growth in the spring. A note of caution when purchasing new bulbs: many commercial suppliers list their lily bulbs for spring planting. This isn't the best time, though you may not be able to avoid it, so give these late purchases a little extra tender loving care, at least initially.

Many lilies, particularly hybrids and some species, are quite happy to grow in the open garden.

For a good planting position the old adage is still true – feet in the shade, head in the sun. Lilies require a

cool root run with good drainage, the latter probably the single most important factor. A site amongst other plants is recommended, as they will provide the shade for the lilies' roots and take moisture from the ground, while the lilies will grow above them and be in the sun.

Dig out the site, making sure not to create a sump hole which will restrict drainage, and fill the hole with compost. Fine grit and leaf mould are also beneficial. Never use animal manure! I tend to use slow-release granules at planting, and a liquid tomato fertiliser during the growing period. (A word of caution – in my experience, bonemeal attracts foxes which then dig up the bulbs.)

It's beneficial to dust or dip your bulbs in a fungicide before planting. Plant your

bulbs so that there is approximately 10cm between bulb tip and soil surface. The only exception is *L. candidum*, which should be planted with its nose barely under the surface. Next mark the site – lily stems just under the surface don't take kindly to having size nine boots on their heads!

### Watering and feeding

Lilies need watering and feeding once their stems begin to emerge and then throughout the growing period. Many lilies can grow quite tall so they may need staking, particularly if they're on a windy site.

You should aim to direct as much of the plant's energy as you can back into the bulb for the following year. If your stems develop seed capsules after flowering, and if you want seed, keep only two capsules – allowing more than two to develop depletes the strength of your bulb. This also applies when cutting flower stems. Cut only up to one third of the stem and never cut the entire stem until it has died right down and turned brown. Then the stem should be cut off as low as possible. Remember to burn everything you cut off, as this helps to keep viruses at bay.

### Growing lilies in pots

Lilies lend themselves to pot culture, but they don't like the higher temperature of the



A Ryrube hybrid

compost. One way to avoid this problem, particularly outdoors, is to grow hostas in pots and use their leaves to shade the lily pots.

I prefer Long Tom pots, because the bulbs can be high in the compost where it tends to be drier while the roots can probe down for moisture. I prefer clay pots although they need more watering, because the transition of moisture through the clay reduces the compost temperature.

### Pests

Lilies are not without their problems – the dreaded lily beetle is the worst. The beetles spend the winter in the soil, so extra vigilance is required in the spring when they emerge and can be caught, crushed or sprayed. They're easier to catch early in the season and early in the morning when they climb up

the lily stems to sun themselves before flying off.

Spraying is a more sure way of getting the little critters. I found Provado aerosol is very effective (although it was banned for a while, good old EU). There's also a water soluble preparation which can be applied to the lily plant and around its base, thus killing the beetles in the ground and being absorbed by the plant. This keeps the beetles and their sticky black grubs off your lilies, but make sure the plants are not treated when bees are present.

Vine weevils are also a problem, mainly in pots and greenhouses. There are effective biological controls or you can again use Provado.

### Diseases

The fungus *Botrytis elliptica* forms elliptical spots initially,



*L. primulinum*

and mainly, on the leaves. This disease is usually present in close, humid conditions. Fortunately the air is generally buoyant where I live, so botrytis is less of a problem for me and my lilies. If you're unable to control botrytis by ensuring good air circulation, fungicides are available.

### Propagation from seed

Growing from seed is the much preferred method of producing lilies, as seed does not transmit any diseases such as viruses carried by the parent plant. Lily seed is transparent and roughly ovate. The individual seeds are comprised of three elements: the outer section – wing; the inner section – endosperm; and the embryo.

The endosperm is the food package that sees the embryo through germination. The embryo is the little squiggly

line sitting in the endosperm. To check the viability of seed, look for the endosperm and embryo by holding the seed up to the light or placing it on a thin plain piece of white paper held over a torch – a process called 'candling' because originally candle light was used.

When your lily seed pods swell with ripe seed keep your eye on the pods. An indication of ripe seed is little slits appearing at the top of the pod. Harvested pods do not have to be opened immediately as the seed will continue to ripen if left in a warm, dry environment. Do keep a watch on any pods left on the plants, as I have had blue tits stealing the seed from pods – little darlings.

I sow seed in a proprietary potting compost mixed with very fine grit and to which I add a little charcoal. Having

filled a pot almost to the rim, I distribute the seed, cover it with a thin layer of compost, and cover that with a thin layer of fine compost to which I've added charcoal. Then I water the pot and keep my fingers crossed.

### Breeding lilies

Producing seed from a species lily, where both flowers are of similar size, should not present problems. When it comes to hybridizing one cannot be sure what one is going to get, which for some of us is part of the attraction. I'm particularly interested in the trumpet lilies and their perfume, but unfortunately many of the trumpets hold their flowers in an umbel, with all the pedicels adjoining the main stem in the same place, which detracts from their attractiveness. So, while I'm pursuing a well-spaced inflorescence, I am still aware of the importance of colour, shape and strength.

A further line of hybridising I am pursuing is with some of the American lilies, particularly the West Coast species. Much of my work on these lilies centres on *L. pardalinum* var. *giganteum* because it's a robust lily and does well in my garden. I am trying to retain the vigour but introduce different colours.

If you're going to hybridise have a clear goal, but remember that lilies are fickle and you never know what you'll get! I remember a

lovely misquote from Dr Arthur Evans: he told me to remember that when you begin hybridizing you have to kiss a lot of frogs before you get the princess.

When listing hybrid seed, the seed parent always comes first followed by the pollen parent. So we have: 'A' the lily from which the seed is derived x 'B' the lily which provided the pollen.

### Vegetative propagation

Amateurs use stem bulbils, bulblets and/or scaling. (There are other methods, such as micro-propagation, whereby lily bulb scales are cut into many small cubes and individually placed in test tubes on an agar growing medium to develop into bulbils. This requires strictly sterile conditions, not feasible at home.) All these vegetative methods of propagation produce material that is identical to the parent lily bulb – including any defects and diseases such as viruses.

Lily bulbils raised using tissue-culture micropropagation are available commercially but, while good garden plants, in all probability they will not cross with each other. They will probably cross with a different type of lily which would of course create a hybrid. To cross tissue-culture micropropagated bulbils one may have to try two different sources so that with a bit of luck one acquires material



*L. majoense*

from different micropropagated batches. I did exactly that when in 2010 I acquired some bulbils of *L. parryi*. I knew they were tissue-culture micropropagated and unlikely to produce seed, so I acquired more bulbils from another source and used the pollen

from the first purchase on the flowers of the second purchase. This did the trick and I got the seed I wanted.

**Stem bulbils** This is probably the easiest method. Stem bulbils form in the axil, where the leaf joins the main stem. Some bulbils will develop



A Richard Hyde hybrid 'Kushi Maya'



*L. leichtlinii*



*L. 'Peggy North'*

roots even while they're still attached to the parent plant. They can be carefully removed and potted up to be grown into mature bulbs.

*L. lancifolium* (syn. *L. tigrinum*), *L. sargentiae* and

*L. sulphureum* are three species lilies which produce stem bulbils.

**Bulblets** These are small bulbs produced on or below the surface of the ground on

the parent plant. They are usually larger than stem bulbils and usually have roots when a small size. More care is required when removing them but they can be potted on to grow to maturity.

**Scaling** This involves carefully removing a scale from the parent bulb and attempting to break it off as near as possible to the base plate of the bulb. The scales are lightly dusted with fungicide and together with a handful of slightly moistened (not wet) vermiculite put in a thin plastic bag which allows the passage of some air (a common sandwich bag is ideal) in an airing cupboard. Keep a regular check on the scales and hopefully you will see small white bulbs forming along the bottom edge where the scale was broken off from the base plate. When they develop into a manageable size they can be potted up.

Undoubtedly some seasoned lily growers will use different methods, but I hope these notes will help less experienced enthusiasts achieve greater success and more enjoyment of these delightful plants. 🌷

**Harris Howland** was chairman of the RHS Lily Group from 1990-94. He is one of the world's most respected authorities on the cultivation, propagation, and care of lilies, and regularly lectures on *Liliaceae*. He is co-author with Michael Jefferson-Brown of *The Gardener's Guide to Growing Lilies* (1995).

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