



*The Care and
Handling of* **Lilies**

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The Care and Handling of Lilies

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THE LILY (genus *Lilium*, or the True Lily) has been known and valued by man for very many years. Records show that it was cultivated from the first days of civilization. The 87 known species originated in the Northern Hemisphere and are now located on the great land masses of Asia, Europe, and North America. Lilies have been found as far north as the Arctic Circle, and as far south as the Philippine Islands.

The natural habitat of lilies is, in general, on sloping ground and in association with other plants which provide shade for the lily bulb and roots, and are themselves shaded by the tall lily flowers. Location descriptions by field botanists indicate that lilies grow successfully only where drainage is excellent.

The lily has tended to give the impression that it is delicate and very particular about where it will grow. This is not so. A number of species, and many colorful and exciting hybrids, are available for the garden, greenhouse, or living room.

IT'S EASY TO GROW LILIES:

1: SELECT GOOD BULBS

Unlike other bulbs, lilies are never completely dormant, and therefore must be handled with special care. Buy those packed in individual plastic bags with a shock absorber such as moist peatmoss or cedar shavings around the fleshy roots. Moisture is lost quickly, and withered roots and bulb scales will lead to poor growth and weak flowers. A damaged bulb gives ample opportunity for the entry of disease and pests.

Slightly withered or limp bulbs can be firmed by immersing in moist peatmoss or sand at a temperature of 40-50° F for a maximum period of 14 days. Lilies must be ordered well in advance so that your dealer can fulfill your requirements.

2: WHERE TO PLANT

Lilies are especially suited for use in a mixed border, in landscape groups, or for naturalizing. Good drainage is imperative, and the flowers look best against such backgrounds as evergreens, shrubs, or a wall. The background will serve to protect the somewhat brittle flower stems from strong winds. Plan where you will plant lilies so that you can prepare the soil before the bulbs arrive.

3: WHEN TO PLANT

Lily bulbs are lifted in the late summer and fall, and should be planted in your garden before the ground freezes. Late-lifted bulbs are stored by the growers, and are available for planting in the spring. As soon as your lilies arrive they must be planted. Spring-planted bulbs often flower in the same season, but lilies are better if they overwinter in the cold ground.

If your lily bulbs should arrive after the ground has frozen solid, they can be stored, in the original pack or in fresh, moist peatmoss or sand at a temperature of 32-38° F. If you have a greenhouse or similar growing structure, you can plant them in pots so that they will be growing before you plant them out in the spring.

SUMMARY OF REQUIREMENTS:

(a) Good drainage is a "must". Use a natural slope, or raise a portion of your garden to increase drainage.

(b) Heavy clay soils need soil additives such as peatmoss in order to produce excellent results.

(c) Lots of humus (peatmoss or other organic mulches) should be added each spring.

SOIL PREPARATION

This is done at least several days before planting the lily bulbs. Remove the topsoil to the depth of your spade, and place it to one side; incorporate humus into the lower soil at a rate of one part humus to two parts soil (more humus if soil is heavy). Sharp sand helps to improve drainage and can be added at the same rate as the humus. The best method of providing drainage in a heavy soil is by the use of agricultural tile.

Then replace the topsoil, mixing humus into it at the same rate as before, and adding a garden fertilizer with analysis 5-10-10 or 6-8-12 at the rate recommended by your dealer. Bone meal may also be added here with benefit to the plants. Suggested sources of humus are leafmold, compost, peatmoss or shredded sugar cane.

PLANTING

Make a hole in the prepared bed sufficiently large that the roots can be spread out well. If planting in groups, the hole can be made large enough for several

bulbs. Spacing is 12 inches apart for small to 18 inches for large lily bulbs.

A depth of two to three times the vertical thickness of the bulbs is a general rule for planting all lilies, excepting Madonna Lily (*L. candidum*.) This lily, which is one of the hardest to grow successfully, must not have more than 1 inch of soil covering the bulb. Other varieties will have from 4 inches to 6 inches covering the bulb (Figure 1).

Cut back any dead tips of root, and dust the bulbs with a powder fungicide.

Place each bulb in a natural position in the hole. Work fine soil under and around the roots to eliminate any large air pockets, and, holding the bulb with one hand, fill in around it to secure it in place. Cover and water immediately. Mark the bulbs with individual or group labels so that they will not get dug up before the shoots show you where they are. It is a good idea to plant a stake in position with each bulb, to avoid damage later when you need a support for the flowers. A short peg will be enough to mark the position, and you can remove it and replace with a stake in the same hole when necessary. After fall planting, leave the soil bare until it freezes, and then apply a winter mulch of leafmold, sawdust, pine needles, buckwheat hulls, or similar material.

SPRING CARE OF LILIES

Leave on the winter mulch as long as possible, but remove it before the lily shoots grow too long. These young shoots are brittle and easily broken when the

winter protection is moved. Exposed shoots can be protected from late spring frosts by covering up at night with thick paper or other material.

Fertilizing

In their native habitats, lilies grow on poor shallow soil. Applications of fertilizer in your garden will more than repay you in the increased size and quality of flowers.

Nitrogen is needed in early growth, and phosphorus and potassium later on for bloom and bulb protection. Give a surface dressing of a general garden fertilizer, at the dealer's recommended rate. Do not allow the fertilizer to come into contact with lily leaves or stem. Water in the fertilizer. (If you dig it in, you will damage the stem roots which are growing near the surface).

SUMMER CARE OF LILIES

Mulching

A summer mulch around the base of the plant keeps the soil moist, cool and weedfree. Low-growing, shallow-rooted plants (for example, *Vinca minor*, *Phlox subulata*, *Iberis*, creeping *Veronicas*, *Myosotis*, *Violas*, *Primulas*) provide a more attractive "living mulch", but they also compete with your lilies for water and food.

Watering

Lilies benefit from an ample supply of water, for most varieties have stem roots near the soil surface.

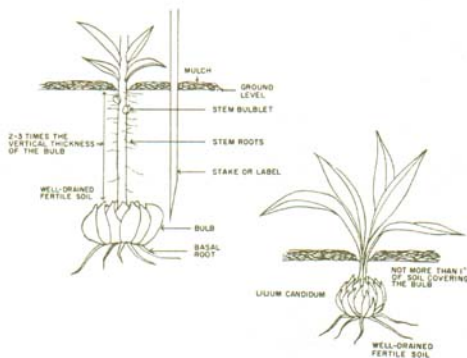


Fig. 1. Diagrammatic lily bulbs in ground, showing plant depth and vegetative structure.



Fig. 2. *Lilium auratum*.

Water generously at ground level to avoid wetting the leaves.

Staking

Tall varieties need to be staked. One stake per stem is usual; if stakes were not set when the bulbs were planted, they should be driven in with care to avoid damaging the bulbs. For tall varieties, tie the stem in several places but remember to keep it in a natural position.

AFTER FLOWERING

Remove flowers as they fade, unless you want the seed for propagation. When the foliage has died and the stems are dry, cut them off at ground level, or else pull them out. Do not cut the stems for the sake of neatness when the flowers are finished, or you will prevent the lily from building a store of food for next year's growth.

When freezing weather begins, take up the summer mulch and apply a fresh winter one like last year. To avoid disease, burn all debris from your lilies rather than adding it to your compost pile.

PREPARE FOR WINTER

Most lilies are hardy and are better left in the soil throughout the winter, even if it is frozen to a depth of several inches. Some people, however, will prefer to lift the bulbs and take them in to the basement for the winter. The best time to lift the bulbs is when the top foliage and stems are dead. Soil should be knocked carefully off the bulbs, which are placed in plastic bags with moist peatmoss. Close the bag lightly but do not seal it. Examine at intervals and add water if necessary to insure against drying out. Storage temperatures should not exceed 40° F. Lilies should not be stored dry like other bulbs.

REPLANTING

Replanting is necessary when flower stalks become so crowded that blooms are reduced in size and vigor. Lift the bulbs when the leaves have dried off in fall, separate the bulbs, and replant immediately unless you are storing them over winter.

LILIES FOR CUTTING

Cutting lilies with the portion of stem necessary for decoration purposes reduces the strength of the bulb and it may not flower as well next year. If you want lilies for cutting, grow some specifically for that purpose, taking flowers from different bulbs each year to give them an opportunity to recover.

GROWING LILIES IN POTS

Potted lilies are sometimes required indoors and out, for parties or everyday decor. Any garden variety will grow in a pot, (or several in a larger container),

and will flower in the normal season. Some lilies can be brought into flowering out of season, by a process called *forcing* (see below).

Pot lilies in later winter or early spring and grow in the greenhouse or out-of-doors with frost protection. Potting soil must be loose and porous, with an inch of gravel in the bottom of the pot to increase drainage. Plant bulbs at the correct depth, as in the garden, fill up with soil, and water thoroughly.

One advantage of growing lilies in pots is that in your greenhouse the young shoots begin to grow before the ground outside has thawed. Flowering may well be earlier when potted lilies have this start over those in the garden.

When the shoots appear, apply a liquid nitrogenous fertilizer at the recommended rate, and make a second application ten days later. After that, fertilize at ten-day intervals with a general liquid fertilizer.

Forcing Lilies

Lily bulbs taken out of the soil in early fall will not flower properly when forced indoors. Bulbs must be precooled before planting in the pot.

Some dealers will be able to get precooled bulbs for you to force your own. If you desire you may prepare the bulbs at home by placing them in moist peatmoss inside a loosely closed plastic bag. This is put into the refrigerator at 40° F. (NOT the deep freeze) for a minimum of six weeks before potting. Mid-Century hybrids are most commonly used among colored lilies, and the Easter Lily (*L. longiflorum*) is an excellent white species which will flower before Easter, if forced.

Forcing Schedule for Mid-Century Hybrids

Date of Potting	Approximate Flowering Date
Nov. 25	Feb. 15
Dec. 10	Mar. 1
Jan. 1	Mar. 16
Jan. 15	Mar. 28
Feb. 1	Apr. 13
Feb. 15	Apr. 24
Feb. 26	May 4
Mar. 15	May 20
Apr. 1	June 5

Do not forget that you must count at least six weeks *backwards* from the potting date if you are precooling your own bulbs.

Treat forcing lilies as above for potting and feeding, and give a minimum temperature of 60° F. at night, and 65° F. during the day. Humidity and plenty of light are required.

Treatment of forced lilies after flowering

If you have a pot of lilies which you have raised yourself or bought from the florist, do not throw it away when the flowers are dead. The bulbs can be

kept and will flower in subsequent years, either in your garden or in pots. Without cutting off the leaves or the stem, store the pot in the basement until days are warm and nights are frostfree.

Knock the plant out of the pot and plunge the whole undisturbed rootball into the ground. Most lilies will not flower in the summer of the same year. It is best not to force the same bulbs year after year, but give them a couple of seasons in which to recover.

PEST AND DISEASE CONTROL

A regular application (about once a month during summer) of an all-purpose garden spray, will protect your lilies against diseases and pests. To mix an all-purpose spray, to 1 gallon of water add 50% DDT wettable powder, 2 tablespoons; captan 50%, emulsifiable concentration, 1½ tablespoons; and malathion 50% emulsion, 2 teaspoons. All of the above materials may be obtained from your nursery or seedhouse. Insect pests will rarely bother you if you spray your lilies when you treat the rest of your garden with insecticidal sprays.

Lilies are attacked by few diseases that are severe, and only three of these are likely to trouble you in your garden.

Mosaic—This virus disease affects the whole of the plant. The leaves die back prematurely, and the top growth is stunted. Early infection can be diagnosed in springtime, by the patchy leaf color, and a mottled or striped appearance when a leaf is held up to the light. (Note: A similar appearance is caused by mineral deficiency; check to see that the plants growing nearby are healthy).

The only cure is to dig out the whole plant and burn it, before other lilies can be infected from the diseased plant.

Botrytis Blight—Early symptoms of this fungus disease are orange-brown spots on the leaves. Ten days or so later, a grayish mold will develop, and this will spread over the whole aerial portion of the plant if not checked.

Spray with captan at the recommended strength before botrytis shows up. Ensure that all surfaces are well covered, and botrytis attack will be prevented.

Basal Rot—Attacks roots and bulbs of lilies before affecting the remainder of the plants. Shoots may never appear in spring if the bulb is infected. Partially infected bulbs can be cleaned by cutting away the diseased parts and dipping the clean bulb in powder or liquid fungicide before replanting in clean soil.

PROPAGATION

Natural division—Lily bulbs divide by themselves, and the resultant clump will need splitting up every few years.

Stem bulblets—These form on the underground part of the stem. If you pull up the dead flower stalks in the fall, they come up too. Plant the bulblets in fresh positions, and you will have flowers in a year or two.

Bulbils—Black bulbils develop in the axils of the leaves of some lily varieties. Pick these off when they are ripe, and sow in furrows 1 to 2 inches deep.

Seeds—Seed taken from one capsule of garden hybrid lilies will give you a variety of different colors. Species lilies will breed pure if other pollinator lilies do not contaminate them. Some lilies will flower in a short time—18 months from seed; e.g., *L. formosanum*.

Readings for further and more detailed information

The Complete Book of Bulbs, Chapter 15, Rockwell and Grayson. The American Garden Guild and Doubleday and Co., Inc. 1953

The Complete Book of Lilies, Rockwell, Grayson and deGraff. The American Garden Guild and Doubleday and Co., Inc. 1961

Garden Lilies, Leeburn, M. E. Colingridge, London, 1963
Lilies and their Cultivation, Fogg. St. Martin's Press, New York, 1962

Bulb and seed companies where catalogs may be obtained:
The Wayside Gardens Co., Mentor, Ohio
Walter Mark Gardens, Boing, Oregon

SOME LILIES YOU WILL ENJOY GROWING *

SPECIES	COLOR	HEIGHT IN FEET	ORIGIN
1. Those flowering from May — (natural flowering time in temperate regions) Asiatic hybrids (earlies) e.g., Enchantment, Golden Chalice, Rainbow hybrids.			
<i>L. concolor</i>	Scarlet	1½ - 2½	China
<i>L. concolor</i> var. <i>coridon</i>	Yellow	1½ - 2½	China
<i>L. pumilum</i>	Scarlet	1½ - 2½	E. China
<i>L. pumilum</i> var. <i>Golden Gleam</i>	Golden	1 - 2½	E. China
<i>L. pumilum</i> var. <i>Yellow Bunting</i>	Gold-yellow	1 - 2	E. China
2. Those flowering from June — Asiatic hybrids, e.g., Prosperity, Paprika, Valencia, (outward-facing flowers) Fiesta and Harlequin strains, Tiger lily hybrids (pendant flowers); Martagon hybrids; American hybrids, e.g., Bellingham hybrids, Shuskan, Buttercup.			
<i>L. amabile</i>	Grenadine red	2 - 5	Korea
<i>L. amabile luteum</i>	Yellow	2 - 2½	Korea
<i>L. amabile</i> var. <i>unicolor</i>	Orange-red	2	Korea
<i>L. formosanum</i> , <i>Price's variety</i>	White	1½	Formosa
<i>L. martagon</i>	Pink	3 - 5	Europe/Asia
<i>L. martagon</i> var. <i>album</i>	White	3 - 4	Europe/Asia
<i>L. monadelphum</i>	Yellow	2½ - 3½	Caucasus
<i>L. parryi</i>	Soft yellow	2 - 5	California
<i>L. pitkinense</i>	Scarlet	3 - 6	California
<i>L. regale</i> (Regal lily)	White	3 - 5	W. China
<i>L. rubellum</i>	Pink	1 - 1½	Japan
<i>L. tsingtauense</i>	Orange	2 - 3	E. China, Korea
3. Those flowering from July — Trumpet hybrids, e.g., Limelight, Damson, Olympic hybrids (Chinese trumpets) Hearts Desire, New Era (bowl-shaped flowers), Golden showers hybrids (pendant flowers)			
ff <i>L. cernuum</i>	Pink	2 - 3	Korea
<i>L. formosanum</i> <i>Wallace's variety</i>	White	2½ - 4	Formosa
<i>L. Kelloggii</i>	Pink	2 - 3	W. coast U.S.A.
f <i>L. lankongense</i>	Soft pink	3 - 6	W. China
f <i>L. longiflorum</i> (Easter lily)	White	1	
f <i>L. longiflorum tetraplot</i>	White	1 - 1½	
<i>L. martagon</i> var. <i>dalmaticum</i>	Deep wine purple	3 - 5	Balcans
<i>L. napalense</i> var. <i>robustum</i>	Soft green, maroon center	1½ - 2½	N. India
<i>L. polyphyllum</i>	Marble white	2½ - 4	N. India
f <i>L. taliense</i>	White, spotted purple	2 - 6	W. China
<i>L. wilsonii</i> var. <i>flavum</i>	Lemon yellow	1 - 1½	Japan
4. August flowering lilies — Oriental hybrids, e.g., Empress of India (bowl-shaped flowers), Jillian Wallace (flat-faced flowers), Jamboree hybrids (recurved flowers).			
f <i>L. auratum</i> var. <i>platyphyllum</i>	White	4 - 6	Japan
<i>L. auratum</i> var. <i>virginale</i>	White	4 - 6	Japan
<i>L. callosum</i> var. <i>flaviflorum</i>	Lemon-yellow	2 - 3	Okinawa
<i>L. formosanum</i> <i>Wilson's variety</i>	White	3 - 6	Formosa
<i>L. papilliferum</i>	Dark Maroon	1 - 1½	N. W. Yunnan
<i>L. speciosum</i> <i>Red Champion strain</i>	Pink and white	2½ - 3½	Japan
<i>L. speciosum</i> <i>Superstar strain</i>	Crimson and white	3 - 5	Japan
<i>L. speciosum</i> <i>White champion</i>	White	2½ - 4	Japan
<i>L. wardii</i>	Pink	2 - 5	S. E. Tibet
5. Flowering in September			
<i>L. brownii</i> var. <i>australe</i>	White	5 - 7	Hong Kong

*Consult your dealer for complete list of available varieties.

ff — noted for fragrance