Planting and Care For Lilies
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Physical characteristics of lily bulbs

Lily bulbs occur as five five different types: concentric, rhizomatous, sub-rhizomatous, stoloniferous and stolinform. Most of the commerically available bulbs are concentric, meaning they are roughly circular with the growing point near the center.

The bulb consists of a solid basal plate which is actually a modified stem, and bulb scales which grow upward from the basal plate. Bulb scales are modified leave which are sites of nutrient storage. The bulb scales are loosely arranged in an overlapping pattern and do not have a papery covering like an onion or tulip bulb.

The basal plate produces roots and buds for new growth. Lilies produce two types of roots: basal and feeder or stem roots. The basal roots grow downward as the plant grows. Feeder roots grow both from the basal plate and the underground portion of the stem as the plant grows.

The feeder roots which grow out from the underground portion of the main stem are an annual - they die when the foliage dies back. The basal roots are long-lived, thicker or wrinkly-looking.

Cultural requirements

The physical characteristics of the lily bulb give use indicators of how to treat it in storage and in planting. These bulbs do not have a period of complete dormancy like tulips, does not have a protective outer covering, and long-lived basal roots, one should not let the bulbs dry out during storage.

It is also important not to store bulbs in conditions which are too damp as this may lead to problems with disease. This is why you will often see bulbs packed in peat moss and placed in plastic bags. For long term storage cool temperatures are necessary.

Because the bulbs will probably remain in the same place in the garden for several years, proper soil preparation is essential: perennial weeds should be eradicated, and soil should be worked to a depth about 12 inches or to 20 inches if practical.

Good drainge is absolutely essential for the health of lily bulbs.

The addition of organic matter to the soil is a good way to improve the tilth of the soil, to improve drainage and to improve soil fertility. Peat moss and compost are good organic additives, however, well rotted manure must be used with caution as there is some evidence that it can promote disease if it comes in contact with lily bulbs. Well rotted manure workd well as a top dressing for the soil around lilies.

Lilies prefer cool roots; mulch or shallow ground cover is benficial in moderating soil temperature.

Fertilizer

Consider the fertility of your soil; light sandy soil is often highly leached and will have low fertility. Heavier soils may be more fertile but those with a high clay content often suffer from nutrient unavailability caused (by several factors, one of which is) anaerobic conditions. The addition of organic matter to the soil will improve the structure of all soils. When organic matter which is not completely composted is added to the soil, the soil micro-organisms use nitrogen in the process of breaking down this material; nitrogen deficiency may occur.

Soil acidity, alkalinity and salinity all may influence the availability of nutrients for plant use, if you are unsure of the soil fertility, have a soil test done.

When choosing a fertilizer to use for lilies, consider that if you are planting in the fall there will be no green growth until spring, so nitrogen added at fall planting time will not be usable to the plant until spring by which time it may be lost in gaseous form or by leaching.

Bone meal or bone meal plus fertilzer such as 2-14-0 with a high second number (phosphorous) will encourage root growth.

High nitrogen fertilizer is not recommended for lilies as this promotes fast, weak growth of foliage and bulbs; weak growth makes the lily more susceptible to disease.

General Planting Guidelines

In general the size of the bulb determines the planting depth; plant so the top of the bulb is under the soil at a depth of two to two and one half time the height of the bulb. It's okay to plant a bit on the shallow side of these guidelines, as the contractile roots will pull the bulb down to its desired depth.

In light sandy soil plant deeper than in heavy soil; plant martagons deeper than Asiatics

Raised beds or planting on a slope will help to provide the necessary drainage in heavier soils.

A layer of mulch will help keep the soil from heaving in late fall and early winter, protect against those late frosts in the spring and keep the soil cool in the heat of summer. Basal rot is a serious fungal disease which affects lilies. It is caused by the fungus Fusarium oxysporum var. liii which thrives in warm, wet soil. Because this pathogen can remain alive in the soil for at least three years without a host, it is important not to plant lilies where lilies [with disease] have previously been grown.

Most lilies require full sun for several hours each day, with the exception of martagons and some species lilies which will grow in light shade.

Choose an area which has good air circulation, this is important in reducing the impact of the fungal disease botrytis. Botrytis is particularly troublesome in wet weather, or when foliage remains wet for an extended time. Good air circulation allows foliage to dry faster, reducing conditions which favour the development of boyrytis. Avoid using overhead watering methods as this will wet the foliage and may lead to problems.

Lilies are quite drought-tolerant, but will benefit from irrigation during hot weather. Be sure to water newly planted bulbs thoroughly to ensure vigorous growth before the ground freezes.

Lilies are affected by several viral diseases: TBV or tulip breaking virus and CMV or cucumber mosiac virus show as streaking patterns or mottling of leaves and as streaking of colour on the petals. Control of aphids is crucial in preventing the spread of virus as aphids carry virus from plant to plant on their stylets.