



## William T. Kemper Center for Home Gardening

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### Flowering Bulbs

Hardy spring bulbs are some of the most colorful plants in the garden and among the earliest to flower. The season begins in February with snowdrops and winter aconites followed by crocuses, scillas, chionodoxas and daffodils in March; hyacinths and tulips in April.

Spring bulbs are readily available each fall in local garden centers or hardware stores. Many bulbs are also available through mail order suppliers, who send out catalogs in mid-summer. When selecting bulbs, study your needs, and know what types and cultivars are suited to your conditions. A good way to gather ideas for your own garden is by strolling through the Missouri Botanical Garden in the spring.

In addition to spring bulbs there are several different types of bulbous plants. Gladiolus and crocus are corms which are stems that are modified into a mass of storage tissue. Dahlias have tuberous roots with eyes or buds found either at the neck or at intervals on the surface. Tubers, such as caladiums, are a solid mass of enlarged stems. Cannas and many irises have rhizomes which are swollen horizontal stems at or just below the soil surface.

Commercial collecting of bulbs and bulbous plants from the wild has threatened to drive many species to extinction. To avoid purchasing plants that have been dug from the wild, gardeners should look for certification in catalogs and nurseries that all plants are nursery-propagated. Lady's slipper orchids (*Cypripedium* sp.), giant snowdrops (*Galanthus elwesii*), winter aconite (*Eranthis* sp.) and windflowers (*Anemone* sp.) are particularly susceptible to poaching from the wild.

### Planting Bulbs

Bulbs should be planted in drifts or groups of three or more to avoid a rigid look. They may be planted in full sun or partial shade. Bulbs do well when planted under deciduous trees, because they generally bloom before the trees leaf out. Before planting work an all purpose fertilizer such as 20-20-20 into the soil along with organic matter and sharp sand or calcined clay products such as Turface to provide good drainage.

Plant tulips and daffodils 7-8 inches deep, hyacinths 6 inches deep, and crocus and most small minor bulbs 3-4 inches deep. Daffodils and small bulbs are best planted by the end of October. Tulips can be planted up until the ground freezes. They need about ninety days from planting to the time they flower. After covering the bulbs with soil, mulch the area with 2-3 inches of shredded bark, leaf mold or other organic material and water to facilitate rapid root growth.

After the bulbs have bloomed, remove the spent flowers, but leave the foliage intact to die down naturally. This is called ripening. The foliage must be allowed to ripen in order for food reserves to be stored in the bulb. This food is used to produce next year's flowers.

## Care After Blooming

The first thing to recognize is what occurs between flowerings and when the foliage yellows in early to mid-summer determines the next seasons flower crop. This is the time to add nutrients to support healthy bulb growth. This can be done by broadcasting a granular fertilizer like 5-10-5 or 5-10-10 at the rate of 2 pounds per 100 square feet across the bed. If your plantings are scattered, this works out to about 1 to 2 tablespoons per plant sprinkled around the clump. Use the higher rate for old and larger clumps.

Removing the seed pods after the flowers fade will have a positive effect upon new bulb formation and bud set. This is especially true of daffodils and tulips. Failure to do this will result in smaller bulbs because the seed pods will continue to develop and set seed. This requires energy reserves which otherwise would go into bulb growth.

There is always a question of what to do with the foliage as it ripens. The temptation for many is to bunch the leaves with a rubber band or string into a nice tidy bundle. Alternatively, some people will cut the foliage back to the ground. Both of these practices will reduce bulb development and flower formation next season. Instead, the foliage should be allowed to sprawl out to collect as much sunlight as possible. Daffodils are sensitive to premature leaf removal and there should be at least 4 to 6 leaves per bunch to support bulb growth. So as long as you leave the bottom two leaves intact, new bulbs produced will develop to normal size. Generally, tulips can be cut back in mid-June while daffodils often take a month longer. At this time cut the leaves back to the ground level and compost the leaf material.

Most bulbs flower very well in the first year regardless of where they are planted. This is because the storage reserves are already in place for the first year's growth. The second year will be a reflection of the condition of the new planting site. If flower production is poor in subsequent years, this may be due to age. Older clumps that have become overgrown will produce small flowers and stems because of crowding. Tulips fit this pattern more so than daffodils and it is recommended to divide tulip plantings every 3 to 4 years. If you have noticed a real decline in tulip flowers, it may be better to discard them and start over. Tulips have a tendency to be less showy after the first two years of growth. Daffodils can often go several years without much concern.

In either case, the remedy is to dig the clumps of bulbs and divide them. This is commonly done in the fall. However, the bulbs could be lifted from the soil anytime after the foliage has turned yellow. If you replant, take the time to improve the bed by adding organic matter such as leaf compost or aged manure at the rate of 2 to 3 bushels per 100 square feet. This should be tilled or worked into the soil to a depth of about 8 inches along with one pound of complete fertilizer. Bulbs set in this way will begin to develop a new root system through the summer, fall and winter. If you are not ready to prepare the bed immediately, the bulbs can be lifted and air dried in a cool, dry place like a garage or basement area until fall planting preferably prior to November 1.

## Minor Bulbs and Bulbous Plants

Anemones (*Anemone* sp.) are low growing members of the buttercup family. A very important cultural practice is to soak the tubers overnight in water in order to help break their dormancy before planting. These windflowers interplant well between the exquisite soft-yellow flowers of *Tulipa batalinii* 'Bright Gem' which reaches approximate 6 inches in height.

The large, diverse group of ornamental onions (*Allium* sp.) are cousins of the onions, chives, garlic and shallots. Perhaps the showiest is the ornamental giant onion (*Allium giganteum*) with its dramatic globular head of purple flowers. It is a sophisticated member of the onion family and may reach a height of 40 inches. However, the flower size and stem length will both diminish with passage of time. Plant the large

bulbs 8 inches deep. Excellent drainage, as with all bulbs, is mandatory.

Ease of culture, wide adaption and tendency to naturalize quickly make grape hyacinth (*Muscari* sp.) popular in gardens everywhere. Characteristic of the grape hyacinth is its hardy foliage which appears in mid-August and dies back in late spring after flowering. Grape hyacinths combine well with species tulips and daffodils. It is excellent when allowed to meander through a bulb garden.

Winter aconite (*Eranthis* sp.) is a low growing harbinger of spring with buttercup-like yellow flowers. Winter aconite has small tubers which should be soaked overnight before planting. An ideal location in the garden would be below deciduous trees, where it can complete most of its life-cycle prior to the trees leafing out.

Crocus (*Crocus* sp.), with their chalice shaped flowers, are inexpensive to buy, easy to grow, and perennialized with ease. Naturalize them in your lawn. Remember to let their foliage die down before giving the grass its initial cut. This will allow the corms to store food reserves ensuring next spring's display.

Many gardens are graced with plantings of the surprise lily (*Lycoris squamigera*) the flowers of which push through the soil in mid-summer after the leaves have already died down to the ground. A novel and very attractive way to display the soft, rose flowers is to interplant the bulbs with hosta. The hosta's have exquisitely scented flowers and the leaves will provide greenery for the lily flowers.

As the common name glory-of-the-snow (*Chionodoxa* sp.) suggests, this is a very hardy bulb and its brilliant light-blue flowers are a welcome sight in cold weather. Although only 5 inches in height, they are strong growers and like most of the small bulbs, should be planted in quantity to make a major statement. Plant them in a drift beneath the yellow flowers of a forsythia bush. This is a very easy plant to grow and has a self-propagating perennial bulb.

Nearly all of the dog-tooth-violets are native to North American woodlands and meadows. These very appealing small bulbs resemble a dog's tooth in shape and require shade and fertile soil. Lilac, pure white and deep purple with white heart hybrids are available. Their reflexed petals add a touch of beauty and uncommonness to the flowers. These plants take time to establish so patience is necessary.

Planting depth is a confusing and frequently asked question. You should consult a bulb planting guide before beginning. It is helpful to know that many bulbous plants have contractile roots. These roots will pull the bulbs down to their required depth if they are planted too shallow.

## **Hardy Lilies**

One of the virtues of lilies is their tremendous selection of colors; new blends, bicolors and pastels. In addition, lilies can be enjoyed all season. Some lilies are known for their early blooms in May. This would include the easy-to-grow Asiatic lilies famous for their rainbow of colors. Favorites are the raspberry pinks, 'Corsica' and 'Crete' and yellow selections 'Sunray' and 'Connecticut King'. Oriental lilies provide a later season bloom that follow the Asiatics and are quite fragrant. Some good cultivars are 'Casa Blanca', a splendid white form and 'Star Gazer', a pink beauty. Of course, one cannot forget the all time standard lilies, the tiger lily and the Madonna lily, named for its sweet scent and purity.

Lilies are known for their height, some of which exceed 5 feet and require staking. The more recent development of dwarf hybrids called Pixies, standing only 18 inches or less, offer the chance to move lilies closer to the garden edge. They may be intermixed with other flowering plants and used in containers. Pixies are more difficult to find but should be more available in coming years.

Lily bulbs are typically offered for fall planting. There is nothing very difficult about growing lilies. The one requirement is a well-drained bed, so take extra time to amend the soil with peat and compost. A recommended planting depth is 6 to 8 inches, spacing plants at least one foot apart. From here on, you can enjoy many years of good performance with little more than an application of 5-10-5 fertilizer in early May and a layer of mulch in early June to keep the roots cool. As with daffodils, new bulbs are produced each year and when the plant becomes too crowded, flowering will drop off. If this happens, in August before the leaves yellow, dig the bulbs, divide and replant or store the bulbs in a cool, dry place until spring.

## Dahlias

Dahlias surpass many flowers in their beauty. They not only make a splendid border plant, but are an excellent long-lasting cut flower as well. Their showy flowers range in size from the one inch dwarf dahlia to the more than ten inch decorative dahlia. There are more varieties of dahlias to choose from including Decorative, Cactus, Anemone and Pom Pom.

Dahlias should be planted in a well drained, open, sunny location. Tubers should be laid horizontally at a planting depth of six inches and approximately eighteen to twenty-four inches apart. Planting times in St. Louis are generally April through May when the soil warms. When fertilizing, a good commercial mix of 5-10-10 or 10-20-20 is preferred. Fertilize when plants are three to ten inches high. Avoid high nitrogen fertilizers as they promote weak stems and small blooms.

Tubers can be divided in the fall or spring, If you are a novice, spring is the best time to divide because you can see the eyes when the sprouts begin to form. Each tuber must have an eye to sprout a new plant. If it is impossible to see the eyes, divide the clumps in half or quarters.

One possible shortcoming of growing dahlias is the need to dig them up in the fall. Two weeks after a hard frost, cut the flower stock off to about six inches, then gently lift tubers from the soil with a spade or pitch fork. Allow tubers to dry overnight. Store the tubers in crates or boxes covered with sand, peatmoss or dry sawdust. Storage in a cool, dry area is preferred, with temperatures ideally at 40 to 45 degrees.

## Recommended Bulbs for the St. Louis Area

### Fall Blooming

Common name	Scientific name	Type	Depth	Spacing	Color
Autumn Crocus	<i>Colchicums</i> sp.	hardy corm	3-4"	6-9"	pink, white
Crocus	<i>Crocus</i> sp.	hardy corm	5"	2-3"	white, blue, purple, yellow
Madonna lily	<i>Lilium candidum</i>	hardy bulb	1-2"	12"	white
Resurrection lily	<i>Lycoris squamigera</i>	hardy bulb	5-6"	6-8"	rose-lilac, pink

### Spring Blooming

Common name	Scientific name	Type	Depth	Spacing	Color
Onion	<i>Allium</i> sp.	hardy bulbs	variable	variable	white, pink, blue, purple,
Windflower	<i>Anemone blanda</i>	hardy bulb	3"	3-4"	white, pink, blue
Spring Meadow Saffron	<i>Bulbocodium vernum</i>	hardy corm	4-8"	3-4"	rose-violet
Quamash	<i>Camassia</i> sp.	hardy bulb	4-5"	3-4"	blue, white
Glory-of-the-snow	<i>Chionodoxa luciliae</i>	hardy bulb	3-4"	3-4"	blue, pink, white
Crocus	<i>Crocus</i> sp.	hardy bulb	3-4"	3-4"	white, yellow, pink,

Winter Aconite	<i>Eranthis hyemalis</i>	hardy bulb	3"	3-4"	puple, blue yellow
Foxtail lily	<i>Eremurus</i> sp.	hardy tuber	4-6"	3-5"	yellow, pink, white
Dog-tooth violet	<i>Erythronium</i> sp.	hardy corm	6"	3-5"	yellow, pink, rose, white
Fritillaria	<i>Fritillaria</i> sp.	hardy bulb	4-6"	variable	checkered bronze, purple, white
Giant Snowdrop	<i>Galanthus elwesii</i>	hardy bulb	3"	3"	white with green
Garden Hyacinth	<i>Hyacinthus orientalis</i>	hardy bulb	5-6"	6"	white, pink, blue
Spring Starflower	<i>Ipheion uniflorum</i>	hardy bulb	3"	6"	white to blue
Iris	<i>Iris danfordiae</i>	hardy bulb	4"	4"	yellow
Iris	<i>Iris reticulata</i>	hardy bulb	4"	4"	purple
Snowflakes	<i>Leucojum</i> sp.	hardy bulb	4-5"	4"	white with green
Grape Hyacinth	<i>Muscari</i> sp.	hardy bulb	3-4"	3-4"	purple, white, blue
Daffodil (small)	<i>Narcissus</i> sp.	hardy bulb	3-4"	6-8"	yellow, white,
Daffodil (large)	<i>Narcissus</i> sp.	hardy bulb	6-8"	6-8"	peach, pink
Ornithogalum	<i>Ornithogalum</i> sp.	hardy bulb	3-4"	6"	white with green
Stripped Squill	<i>Puschkinia scilloides</i>	hardy bulb	3"	3"	whitish blue
Squill	<i>Scilla</i> sp.	hardy bulb	3-4"	3-4"	blue, white, pink
Tulip	<i>Tulipa</i> sp.	hardy bulb	4-6"	4-8"	many colors

### Summer Blooming

Common name	Scientific name	Type	Depth	Spacing	Color
Caladium	<i>Caladium x hortulanum</i>	tender tuber	plant with tuber partially exposed	12-14"	multi-colored
Canna	<i>Canna x generalis</i>	tender rhizome	5 - 6"	12 -14"	many colored
Elephant's Ear	<i>Colocasia esculenta</i>	tender tuber	5-6"	18-24"	green
Dahlia	<i>Dahlia pinnata</i>	tender	4-6"	3-4'	many colors
	hybrids	tuberous roots			
Gladiolus	<i>Gladiolus</i> sp.	tender corm	2-3"	9-12"	many colors
Lily	<i>Lilium</i> sp.	hardy bulb	6-8"	12-18"	many colors
Tuberose	<i>Polianthes tuberosa</i>	tender	2-4"	6-8"	white
		tuberous roots			
Calla lily	<i>Zantedeschia aethiopica</i>	tender rhizome	plant with top of rhizome partially exposed	8-12"	white, yellow, pink, green