Growing Bulbs in Utah

Special Thanks to
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Utah State University
at Thanksgiving Gardens
Garden Guide at
Temple Square Gardens
2004 USU Advanced Master Gardeners

Regional Class
Thanksgiving Gardens
Utah County
Bulbs
• Bulbs are popular garden flowers. They are separated according to bloom time.
Spring blooming bulbs are usually winter hardy so they are planted in the fall.
Summer blooming bulbs are often tender, meaning they do not survive our winters. These are lifted and stored in a frost free area for the winter.
The term bulb defines a broad category of plants with fleshy underground stems and roots. They are dormant for much of the year and send up leaves and flowers during their blooming period.
The name bulb is used to refer to plants that grow from fleshy underground stems or roots. These include:

- True Bulbs
- Rhizomes
- Corms
- Tubers
Included in this category are:

- **Bulbs** - fleshy, underground scales with an embryonic plant inside. Tulips and alliums are true bulbs.
Included in this category are:

- **Corms** - modified stem tissue that is flattened on top. The original corms shrivel during growth and produce new corms. *Gladiolus* and *crocus* are examples of corms.
Included in this category are:

- **Rhizomes** – an underground stem with multiple tips. Bearded iris and cannas grow from rhizomes.
Included in this category are:

* Tubers - swollen stems that are covered with buds (or eyes). Tuberous begonias and potatoes grow from tubers.
Included in this category are:

- **Tuberous roots** - resemble tubers but are swollen roots. The buds are at the base of the old stem on the tuber. Dahlias and sweet potatoes grow from tuberous roots.
Like other plants, bulbs are tender or hardy.
• Hardy bulbs are may be left in the ground year-round, but most need a winter chill to break their dormancy cycle.
• Tender bulbs cannot survive freezing and are grown as annuals or dug up to be stored in a cool, dry place during the winter months.
The Following Are Hardy Spring Flowering Bulbs That Are Planted In the Fall
Bulb Species

- **Common Name**: Windflower
- **Latin Name**: Anemone
- **Common Colors**: pink, red, blue, white
- **Planting Depth**: 3-4
- **Spacing**: 2-3
- **Fragrance**: no
Bulb Species

- **Common Name** - Camass
- **Latin Name** - Camassia
- **Common Colors** – pink, white, blue
- **Planting Depth** - 3-4 inches
- **Spacing** - 3-6 inches
- **Fragrance** – no
Bulb Species

- Common Name - Glory-of-the-snow
- Latin Name - Chionodoxa
- Common Colors - pink, white, blue
- Planting Depth - 4 inches
- Spacing - 1-3 inches
- Fragrance – yes no
Bulb Species

• Common Name - Crocus
• Latin Name - Crocus
• Common Colors - orange, yellow, white, blue, purple
• Planting Depth – 4 inches
• Spacing – 2-6 inches
• Fragrance – no
Bulb Species

- **Common Name** – Hardy Cyclamen
- **Latin Name** - Cyclamen
- **Common Colors** - pink, red, white, lavender
- **Planting Depth** - 2 inches
- **Spacing** – 6-8 inches
- **Fragrance** – yes
Bulb Species

- Common Name - Eremurus
- Latin Name - Foxtail lily
- Common Colors - pink, yellow, white
- Planting Depth – 6 inches
- Spacing - 18-36 inches
- Fragrance – no
Bulb Species

- **Common Name** - Fritillaria
- **Latin Name** - Fritillary
- **Common Colors** - red, orange, yellow, white
- **Planting Depth** – 6-8 inches
- **Spacing** – 12 inches
- **Fragrance** – no
Bulb Species

- Common Name - Galanthus
- Latin Name - Snowdrop
- Common Colors - white
- Planting Depth - 4 inches
- Spacing - 2-4 inches
- Fragrance - yes
Bulb Species

- **Common Name** - Hyacinthus
- **Latin Name** - Hyacinth
- **Common Colors** - pink, yellow, white, blue
- **Planting Depth** – 6 inches
- **Spacing** – 4-6 inches
- **Fragrance** – yes
Bulb Species

- **Common Name** - Iris
- **Latin Name** - Iris
- **Common Colors** - many
- **Planting Depth** – 4 inches
- **Spacing** – 4 inches
- **Fragrance** – yes
Bulb Species

- **Common Name** - Grape hyacinth
- **Latin Name** - Muscari
- **Common Colors** - white, blue
- **Planting Depth** – 2 inches
- **Spacing** – 2-4 inches
- **Fragrance** – yes
Bulb Species

• Common Name – Daffodil, jonquil
• Latin Name - Narcissus
• Common Colors - yellow, white
• Planting Depth - 6 inches
• Spacing – 6-8 inches
• Fragrance – yes
Bulb Species

- **Common Name** - Adder's tongue, dog-tooth violet
- **Latin Name** - Erythronium
- **Common Colors** - pink, yellow, white, blue
- **Planting Depth** – 4 inches
- **Spacing** – 4-6 inches
- **Fragrance** – yes
Bulb Species

- **Common Name** - Spring star flower
- **Latin Name** - Ipheion uniflorum
- **Common Colors** - white, blue
- **Planting Depth** – 2 inches
- **Spacing** – 4-6 inches
- **Fragrance** – no
Bulb Species

- Common Name - Leucojum
- Latin Name - Snowflake
- Common Colors - pink, white
- Planting Depth – 4 inches
- Spacing – 4 inches
- Fragrance – no
Bulb Species

- Common Name - Puschkinia
- Latin Name - Puschkinia scilloides
- Common Colors - white, blue
- Planting Depth – 3 inches
- Spacing – 3-6 inches
- Fragrance – no
Bulb Species

- Common Name - Squill
- Latin Name - Scilla
- Common Colors - pink, white, blue
- Planting Depth – 5-6 inches
- Spacing – 8-10 inches
- Fragrance – yes
Bulb Species

- Common Name - Tulip
- Latin Name - Tulipa
- Common Colors - all except blue
- Planting Depth – 6 inches
- Spacing – 8-10 inches
- Fragrance – no
Bulbs are among the most magical of all flowers. Dried shriveled, vegetation that bears a faint resemblance to old onions are dropped into the ground.
Once planted, they stay in the ground throughout the winter. Expecting them magically to come forth in the spring seems almost ludicrous.
• Creative gardeners solve the problem in two ways.
• **First orchestrate the blooms of the bulbs.** With careful planning, bulbs can be in bloom from snow melt until late spring. Careful selection and planting allows the planting emphasis to change.
For example, flower beds may start with predominately orange and purple crocuses, followed by daffodils.
• Early tulips, mid-season tulips, and late-season tulips and many other kinds of bulbs are added to these spectacular gardens so some bulbs are in bloom from the time the snow melts until the spring flowers are replaced in May.
• Bulbs do best if left in until the foliage dies down. Help solve the ugly bulb foliage problem by hiding it with other desirable plants.
Occasionally some gardeners want to plant their bulbs in the spring. Hardy, spring flowering bulbs are always planted in the fall. This is because of their built in survival mechanism.
• Because most bulbs are used to spending the summer in a warm, dry, dormant condition they survive well if you dig them up after they bloom. You can then replant them in the fall.
• In our gardens, almost all of the bulbs are removed each year. Leaving them in over the summer encourages decay and interferes with other garden operations.
Because color and design play such a major part in our gardens, new bulbs are planted in the most visible flower beds each season.
• The cost of labor is too high to justify sorting and saving the bulbs by type and color. These second-season bulbs are used in beds where the gardeners are not following the strict design criteria.
• Because we try to keep the beds looking their best, our bulbs do not stay in so as long as you might leave them in your own home garden.
To keep them looking good, most of our bulbs are lifted and stored out of sight. The foliage is left attached and allowed to die back before the bulbs are stored. In some cases the foliage is removed to keep the gardens well groomed.
• Ideally, in home flowerbeds, bulbs are best left until the foliage starts to turn yellow. It can then be cut back or the bulbs dug and stored. Leaving the foliage in place allows the bulb to store the maximum amount of energy to encourage return bloom the next year.
After the bulbs are dug and allowed to dry, they are separated before they are replanted. Discard shriveled, moldy or otherwise damaged bulbs. If there is evidence of insects and diseases treat bulbs with bulb dust to control the pests.
Buying Bulbs
• The size and number of blooms from bulbs usually diminish as they age because they grow under conditions that make the bulbs smaller each year. To keep the spring garden showy, buy and add new bulbs to your collection every season.
• Poor planting techniques directly affect bulb growth and survival. Plant bulbs about three times their diameter.
• Shallow planting causes bulb heaving because of alternate freezing and thawing. Deeper planting prevents frost heaving during the winter and protects the bulb if you plant annuals over the top of them during the summer.
• Plant tulip bulbs as soon as soils start to cool off. The tiny embryo plants are contained inside the bulb and must develop a good root system before the soil freezes solid.
• Early planting enables them to develop good healthy root systems which will in turn ensure larger, more attractive flowers next spring. Later planting delays the establishment of a root system and subsequent growth.
• **Bulbs tolerate a wide variety of soils and locations.** Bulbs adapt to rock gardens, shrub areas or flower beds.
• They look better if planted in clusters or groups rather than in single file rows.
They tolerate a wide variety of soil types and do well in most soils except for heavy clay soils with poor drainage.
• In those soils, mix large amounts of coarse organic matter to improve the drainage and aeration
• Fertilizing bulbs
According to the Netherlands Flower Bulb Information Center, “Bone meal was an excellent fertilizer, but times have changed! Most bone meal today has been literally boiled out. Spring flowering bulbs actually need no fertilizer for their first season of blooming.
“Healthy bulbs already contain all the food needed to support one spectacular season of growth. Bulbs that are left in the ground to naturalize will benefit from applications of rotted cow manure or special bulb fertilizer when the shoots first appear in the spring and again in the fall.”
• Bulbs have all of the energy stored they need to grow and bloom. Fertilizer stimulates growth for return bloom so fertilizing after flowering is more helpful than adding fertilizer at planting. Compost or other amendments are also beneficial.
• Well prepared garden soil that has been properly fertilized, may not need additional fertilizer at planting time.
For many years phosphorus has been highly promoted as bulb food, but recent research has shown that bulbs use as much or more nitrogen than phosphorus. Use a complete fertilizer if necessary when planting bulbs.
• Fertilize bulbs in the spring as new leaves are emerging.
• Bulbs do best in areas of full sun or moderate shade. They will not bloom well and the bulb gradually diminishes if planted in deep shade.
• Small selected divisions in the fall will fill in and bloom next spring as part of the blossom show. Some die back to the ground in the spring allowing you to plant right over the top of them.
• Yet as winter fades away the bulbs burst forth in all their glory. Interestingly enough almost all spring bulbs must go through the rigors of winter before they can bloom.
• In warmer climates they must be chilled in the refrigerator before they can be planted and expected to bloom.
• Spring bulbs are truly the harbingers of spring. Snow drops and crocuses are often seen poking their heads out from underneath the snow. A wide assortment of wonderful flowers of all sizes, shapes, colors and descriptions follows them.
• With proper planning it is possible that have spring bulbs in bloom for several months. While traditional annuals are yet waiting to be planted, the bulbs are blooming profusely, providing that welcome spring color.
• Good designers know that they cannot depend entirely on the bulbs to make the spring garden. As spectacular as they are, they need help from other plants to sustain them.
• These winter annuals, biennials, and perennials are selected for their spring bloom period and for their hardiness.
Most of these bulbs are originally from Mediterranean climate areas or from desert areas. These areas have dry summer conditions and get natural moisture in the winter or early spring.
• Their desert origins are why we plant them in the fall instead of the spring.
• To prevent them from growing prematurely, they must go through a mandatory chilling requirement. The bulbs do not have to freeze but most must remain at near freezing temperatures for two to three months.
In our gardens, we let nature take care of the problem for us.
The best way to ensure good, quality blooms from fall planted bulbs is to select high quality bulbs. Bulb size is directly proportional to the size of the bloom. Small bulbs often do not bloom the first year and disappointment many gardeners.
• Always compare the bulb sizes. Larger bulbs produce larger blooms. Small bulbs may not even bloom the year you plant them.
• Compare the size measurement. Some are measured by diameter, others by circumference. Compare the sizes on an equivalent basis. A bulb with a diameter of one inch is more than three times the size of one with a circumference of one inch.
Choose firm bulbs that are free from deep cuts or scars. Avoid bulbs that are badly molded or discolored.
• The paper covering called “the tunic” is not essential for growth, so even if it’s torn or missing it is of no concern.
• Watch out for inexpensive bulb collections. The advertisements promote hundreds of bulbs for a very low price. They include a few tulips, daffodils and other desirable bulbs but when you examine the contents, the best bulbs are only a small part of the total.
The bulk of these bulbs are usually grape hyacinths or Star of Bethlehem or other worthless bulbs. These low-priced bulbs cause further problems when they spread and become very weedy. They are almost impossible to remove.
Bulb Problems
• When growing in normal, well-drained soil bulbs have few problems with diseases.
Tulip Virus Diseases
• The beautiful tulips that grace your garden have an interesting historical past. Greed and speculation, mystery and intrigue and above all, the desire to have what no one else possessed fueled this fiasco.
• Tulips are not native to Holland but soon after their introduction they became wildly popular with no bounds as far as price or popularity. Each new type was purchased by a wild speculator, only to have another buy it at a more inflated price.
“Tulipmania” the speculation knew no limits. By 1624 the craze progressed to where one renowned white and maroon Rembrandt-type tulip, brought a price of 4,500 guilders ($2,250 U.S.), plus a horse and carriage. The modern-day equivalent of $44,000 per handful was paid for tulip bulbs.
A 17th century bill of sale recorded this for a single tulip bulb: 2 loads of wheat, 4 loads of rye, 4 fat oxen, 8 fat swine, 12 fat sheep, 2 hogsheads of wine, 4 barrels of beer, 2 barrels of butter, 1,000 pounds of cheese, a marriage bed with linens and a sizable wagon to haul it all away."

This was about the price of a large house.
“Tulipmania” continued to spread and reached its zenith in 1637, in "The Foolish Tulip Trade" or "The Wild Tulip Speculation" that is sometimes compared with the stock market craze of the 1920's.
The tulip market crashed in 1637, bankrupting many. Like the same fate that seems to plague the high tech computer industry today, it crashed because of a virus.
It crashed because the bulbs contained a pathogen in the genetics of each bulb. The famous striped “Rembrandts,” admired by gardeners and painted by many Dutch masters were each unique because of the disease they carried.
The Beautiful and Deadly Virus
• The unique floral patterns created by the virus was fatal. The virus that caused the striping in the tulips caused the death of each infected bulb.
• Modern striped tulips varieties are free of the virus
If you dig and store your bulbs for the following year, discard any which show signs of diseases. Bulb diseases are usually serious if the area is badly overwatered.
Many gardeners complain that even though they plant many tulip bulbs each fall, the plants never come up in the spring. Most usually observe that the daffodils seem to do better under these conditions.
• If you are having this problem in your garden, it is likely due to rodents such as mice or squirrels or possibly even deer. The reason these animals destroy tulips and not daffodils is that daffodils are poisonous.
• There are really no safe, effective methods to keep these animals from destroying your bulb plantings. Deer also dig bulbs out of the ground and eat them if they are not planted deeply.
The End
Bulb Species

- **Common Name** - Meadow saffron
- **Latin Name** - Colchicum luteum
- **Common Colors** - cream
- **Planting Depth** – 4 inches
- **Spacing** – 1-3 inches
- **Fragrance** – yes
Bulb Species

- **Common Name** - Endymion
- **Latin Name** - Bluebell
- **Common Colors** - pink, white, blue
- **Planting Depth** – 3 inches
- **Spacing** – 8-12 inches
- **Fragrance** – no
Bulb Species

• Common Name – Chincherinchee, Star of Bethlehem
• Latin Name - Ornithogalum
• Common Colors - white
• Planting Depth - 3 inches
• Spacing – 3 inches
• Fragrance – yes
• All bulbs require good drainage so avoid heavy clay soils without drainage. Gardeners afflicted with heavy clay soils will want to plant the bulbs in raised beds or berms.
• In warmer areas of the country, spring flowering bulbs bloom only if they are stored in refrigerated storage for several weeks or months before planting.
• Biennials such as foxglove and monkshood spend the first year as small rosettes. The second season they send up spectacular flower stalks covered with spring blossoms.
Some spring perennials spend the summers in the garden as masses of foliage. These are content to act as backgrounds or fillers for the summer show. As they spread, they become too robust and need dividing to keep them attractive and in bounds.