

SPRING BLOOMING BULBS

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Few plants are as eagerly anticipated as the flowers that bloom in the spring! Daffodils, tulips, crocus, and the other early bulbs are a welcome change from winter dreariness. To be able to enjoy these blooms next spring, fall is the time to prepare.

TYPES OF BULBS

These five different structures are all storage organs for both spring and summer blooming plants that vary slightly in origin or components. For simplicity they will all be referred to as “bulbs” except when discussing planting depth or propagation.

- **True bulb** (enlarged, vertical, modified bud): tulip, narcissus, hyacinth, lily, allium
- **Corm** (vertical stem swollen with food -storage tissue): crocus, gladiolus, freesia, montbretia
- **Tuber** (underground, horizontal, food-storing stem): anemone, tuberous begonia (tuberous stem)
- **Tuberous root** (roots with fleshy food-storing parts): dahlia, ranunculus
- **Rhizome** (horizontal stem, roots from lower side and stems or leaves from the tip): iris, lily-of-the-valley

BULB SELECTION CONSIDERATIONS

1. **Height:** Keep low plants to the front of the bed. Taller plants form the background.
2. **Color:** Experiment with the wide range of colors available. Use just one color (such as a mass of red tulips), a subtle blend of tones or a wild splash of color.
3. **Animal Resistance:** Deer, rabbits, and other animals eat the foliage, flowers, and bulbs of some plants. Narcissus (daffodils) are poisonous and left alone by animals.
4. **Time of bloom:** Select a variety of bulbs that will flower throughout the spring.

SITE SELECTION

For most bulbs select an area that has well-drained soil and full sun to light shade. To increase their visual impact, especially of the smaller bulbs, plant them where they can be easily seen. Plant large numbers (200 or more) if the planting area is more than 30 feet from where people walk or from a window. Some possible areas are: next to entry ways, under deciduous trees, in front of evergreens, in open flower beds, and among ground covers and perennials that will hide yellowing bulb foliage later in the season.

When conditions are not ideal, bulbs may be planted in containers and raised beds. Bulbs to be **naturalized** (planted outside bed areas) should be planted where mowing is not required until late spring.

PREPARATION

1. Order bulbs from mail order suppliers as soon as fall catalogs arrive. When buying from local suppliers, purchase bulbs as soon as they come into the store, if possible. Not only will there be a better selection, but it will be less likely that bulbs in open display boxes will have been mixed by careless shoppers. Store the bulbs in a cool, dark area until ready to plant.
2. Have a soil test run to determine soil reaction (pH) and nutrient levels. A pH of 6.0 to 7.0 is desirable for most bulbs. Add limestone or wood ash to the soil to raise pH, if required.

3. Remove and compost grass covering the area and dig out stumps, large roots, and other obstructions. Spread 2-3" of compost, leaf mold, or other **organic matter** over the bed area. Add sand to improve texture of heavy clay soils.
4. Fertilize using the soil test results (best) or one or more of the following:
 - Bone meal** (1-11-0 to 4-12-0) Apply up to 5-6 lbs./100 sq. ft. when used as the only fertilizer. For bulbs planted individually, the rate is 1 teaspoon per hole for minor (small) bulbs, and 1 tablespoon per hole for major (large) bulbs. Be sure to mix into soil thoroughly so the bulb does not have direct contact with the bone meal.
 - 5-10-5** or similar fertilizer. Apply 3 lbs./100 sq. ft. or rate determined by soil test.
 - Dehydrated or well-rotted **manure** (1-1-1). Spread a 1-inch layer over planting bed.
 - Specially-formulated **bulb fertilizers**: Follow label directions.
5. Spade or rototill needed amounts of lime, organic matter, fertilizer, and sand into the soil to a depth of 8 to 12 inches. (This depth allows at least 3" of improved soil below the bulb for root development.) Rake smooth.

PLANTING

1. Plant as soon as bulbs are purchased or received from the supplier to prevent drying out, or plant as soon as conditions permit. The ideal time is **September and October**, but bulbs can be planted until the ground freezes. Bulbs found in a forgotten bag can be kept in cold storage, and then planted during a mid-winter thaw, but this is not ideal. Spring-blooming bulbs are planted in fall so they will have time to form strong roots before the ground freezes.
2. **Depth of planting** is usually 2 1/2 to 3 times the diameter of the bulb measured to the bulb's shoulder; deeper in sandy soil, shallower in heavy soils. Recommendations for individual tubers, tuberous roots, and rhizomes do not follow this rule of thumb.
3. Plant in clumps, not lines; in groupings, not as individuals for the best display.
4. Planting large numbers of bulbs of the same size is easier if an area is excavated to the proper depth, bulbs are laid out, and then improved soil is filled in around them. Bulbs planted among other plants and groups of bulbs of different sizes are better planted individually.
5. **Water thoroughly**. It takes a lot of water to reach bulbs planted 6 to 8 inches deep. Do not allow the soil to dry out during dry periods in fall and early winter since this is the time the roots are forming.

AFTER PLANTING CARE:

Mulching

Spring blooming bulbs are hardy and do not require protection from the cold. A mulch could be applied after the ground is frozen to a depth of 2" to protect from heaving caused by alternate freezing and thawing and to prevent premature emergence during warm spells in winter. (Do not be concerned if grape hyacinth, spring starflower, or Star of Bethlehem foliage emerges in fall. This is normal.) Mulches during the growing season are useful for weed suppression, moisture retention, and soil temperature moderation.

"Deadheading"

Spent, withered flowers should be removed to prevent the bulb from putting its energy into seed production instead of bulb development for the next spring. Do not remove the seedheads of winter aconite, chionodoxa, scilla, puschkinia, or other small bulbs if naturalizing by reseeding is desired.

Foliage Removal: Cut off the foliage only after the leaves have yellowed and withered. Leaves are necessary for photosynthesis (food production that feeds the bulb) to occur. There are different schools of thought about the advantages of tying up, knotting, or braiding the foliage, which allows the leaves to remain, but limits leaf surface exposure to sun. Any method that interferes with sunlight reaching leaves should be discouraged until after May 10.

Replanting: After foliage has yellowed, the bulbs may be **lifted, sorted, divided, and replanted** immediately or stored for fall planting.

Adding a thin layer of humus or compost and fertilizing with a complete fertilizer such as 10-10-10 or 10-6-4 at 0.5 lb./100 sq. ft. in fall or before growth starts in March will help ensure vigorous productive growth each year. Ideally fertilizer analysis and amount is based on soil test results.

PROPAGATION

Propagation techniques useful for making new plants include scoring, seeding, scaling, bulb cuttings, rhizome division, stem cuttings, division of tuberous roots, and propagation of structures that develop from the mother bulb. Bulbs multiply from the following structures:

- **Offsets** (splits or spoons) - develop within the mother bulb, and then break away.
- **Bulblets** - develop just above or below the mother bulb.
- **Bulbils** - tiny bulbs that develop along the stem above ground.
- **Cormels** - small offsets that develop around the edge of a corm.
- **Pips** - underground rootstalks or shoots produced by rhizomes.

PESTS

Fortunately, most spring bulbs are fairly resistant, but some possible pests include: narcissus bulb fly larvae, iris borer, slugs, mites, aphids, thrips, wireworms, nematodes, viral and fungal diseases, and animal pests (deer, rabbits, voles, squirrels). If animals are a problem, plant daffodils that are poisonous and left alone by deer and rodents. Consult your local Cooperative Extension office/Master Gardener Helpline or internet web site for up-to-date pest control. Bulbs least likely to be damaged by animals include daffodils, ornamental onion, and squill. Most likely to be eaten are tulip, crocus, and grape hyacinth.

POSSIBLE CAUSES OF POOR FLOWERING AND BULB DECLINE

- Improper storage. If temperatures during storage exceed 80°F for too long, the flower buds are likely to be killed, especially with heat sensitive bulbs like tulips.
- Also, the longer bulbs are displayed for sale, the more likely that they will desiccate, or dry out.
- Planting where the soil becomes *too hot or dry in summer at the bulb depth* when the bulbs are forming the next year's flower buds.
- Planting bulbs that were "forced."
- Removing leaf tissue before photosynthesis has replenished food stores in the bulb.
- Pests, such as animals, insects, or diseases
- Poor drainage.
- Lack of initial soil preparation and follow-up maintenance.
- Improper planting depth for the species. Shallow planting of tulips and daffodils is a common cause of failure to thrive or return to bloom a second year.
- Overcrowded planting. Daffodils benefit from being dug and divided about 12-15 years after initial planting. Clumps that become overcrowded may be comprised primarily of undersized bulbs, because the area has become too crowded for bulbs to expand.