



Summer Bulbs

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What are 'summer bulbs'?

Summer bulbs are summer-blooming plants that have some type of underground storage structure. Although commonly referred to as 'bulbs', there are a variety of different underground storage structures. In northern Illinois, the vast majority of the summer bulbs are not cold hardy and will not survive the winter outside. They are often referred to as 'tender' bulbs. These plants need to be dug at the end of the season and the storage structure kept indoors until the following planting season (after the danger of frost has passed). The plants discussed in this fact sheet are all tender bulbs in northern Illinois.

The Underground Structures

True bulbs are the structure with which most gardeners are familiar. They are the underground storage structures of some of our common spring bulbs (tulips and daffodils). A true bulb is comprised of a basal plate (from which the roots grow), fleshy scales (storage tissue), a shoot (flower and leaf buds), and side buds in a structure that is round on the lower end and pointed on top. There are two main types: tunicate bulbs have a papery covering over the scales and imbricate bulbs have no covering over their scales. Summer bulbs that are true bulbs include pineapple lily.

Corms are swollen stem bases modified into a mass of storage tissue. When the corm is cut in half, the storage tissue appears solid. The corm is comprised of a basal plate, the storage tissue, a papery tunic and a growing point. Summer bulbs that are really corms include acidanthera, gladiolus and tigridia.

Tubers are swollen stems that are modified into storage tissue. A tuber is distinguished by its nodes or 'eyes' (like those seen on a white potato). Tubers differ from true bulbs in that they do not have a basal plate. Summer bulbs that are really tubers include begonia, caladium, elephant ears and ranunculus.

Tuberous roots are enlarged roots that serves as storage organs. Buds are found at the stem end and fibrous roots form at the opposite end. Summer bulbs that are really tuberous roots include dahlia.

Rhizomes are swollen stems that grow horizontally under the surface of the soil or just at the surface level. Roots are produced on the lower side of the rhizome and shoots are produced on the upper side. Summer bulbs that are really rhizomes include calla lily and canna.

The Plants and Their Care

Acidanthera, Peacock Orchid

(*Acidanthera bicolor* or *Gladiolus callianthus*)

Underground structure: corm

Plant description: 2-3 ' tall; flowers are white with a maroon center, slightly resembling the flowers of gladiolus in shape; flowers are fragrant; foliage strap-like

Bloom time: late summer into early autumn

Planting: Plant 3-4" deep; space corms about 6" apart

Culture: Full sun; keep soil evenly moist, but not wet; protect from wind; staking may be needed

Lifting and storing: Dig corms after the first frost; cut the stems just above the corm; air dry the corms for a week or more; store in mesh bags or slotted trays with good air circulation; store at 55 degrees

Comments: Can be used as cut flowers

Begonia, Tuberous (*Begonia x tuberhybrida*)

Underground structure: tuber

Plant description: 12-18" tall (there are also trailing types); wide range of colors from pastels to brights; several types, classified according to flower form; crisp, attractive foliage

Bloom time: summer into autumn

Planting: Plant about 1" deep, with the concave side facing up; space tubers about 9-12" apart; for earlier bloom, start tubers in pots indoors about 6-12 weeks before last frost

Culture: Best in partial shade; keep soil evenly moist, but not wet; avoid wetting the foliage

Lifting and storing: Dig tubers after the first frost; dry the tubers in the open air for a few days; store tubers in dry peat moss, vermiculite, etc, at 35-40 degrees

Comments: Diseases can be a problem (stem rots and leaf diseases)

Caladium, Angel's Wings (*Caladium x hortulanum* or *Caladium bicolor*)

Underground structure: tuber

Plant description: 1-2' tall; foliage colors are a mix of red, pink, green and white

Bloom time: grown for foliage, not flowers

Planting: Plant about 1" deep, with the knobby side facing up; space tubers about 8-12" apart; for earlier bloom, start tubers in pots indoors about 6 weeks before last frost; soil needs to be warm (60-70 degrees)

Culture: Best in partial shade; keep soil evenly moist, but not wet

Lifting and storing: Dig tubers in fall before leaves lose all their color; dry the tubers in the open air for a few days; store in dry peat, vermiculite, at 70-75 degrees

Comments: Tubers may rot if they are stored below 70 degrees; challenging to grow

Calla Lily (*Zantedeschia* species and hybrids)

Underground structure: rhizome (but looks somewhat like a tuber)

Plant description: 1-4' tall; waxy, trumpet-like flowers in a wide range of colors

Bloom time: mid-late summer

Planting: Plant about 1" deep; space tubers about 1-2' apart; for earlier bloom, start tubers in pots indoors a few weeks before last frost

Culture: Full sun; keep soil evenly moist; calla lilies can tolerate wet soils

Lifting and storing: Dig rhizomes in fall after foliage withers; allow rhizomes to dry; store at 50-60 degrees

Canna (*Canna x generalis*)

Underground structure: rhizome

Plant description: 2-7' tall; grown for both flowers and foliage; wide range of flower colors (red, orange, yellow, pink, some bicolors); some cultivars have colored foliage

Bloom time: summer into autumn

Planting: Plant about 3-4" deep; plant rhizomes horizontally and space them about 18-24" apart; for earlier bloom, start rhizomes indoors about 3-4 weeks before last frost; fairly fast growing

Culture: Full sun; best growth in a rich soil with a good supply of moisture

Lifting and storing: Dig rhizomes in fall after first frost; let rhizomes dry for a day or two; store in dry peat, vermiculite at 40-50 degrees

Comments: do not allow rhizomes to freeze

Dahlia (*Dahlia* hybrids)

Underground structure: tuberous root

Plant description: ranging from 12 inches to 8 feet tall; wide variety of flower types: anemone-flowered, ball, pompom, cactus, semi-cactus and others; also a wide range of flower sizes and colors

Bloom time: summer into fall

Planting: Plant with the crown (the end with the buds) just above soil level; spacing of the tuberous roots depends on the mature size of the plant; dahlias that will reach 3 feet or less should be spaced about 2 feet apart; larger plants should be spaced about 3 feet apart; most dahlias will need staking

Culture: Full sun; keep soil evenly moist, but not wet; to obtain larger flowers allow only one shoot to develop; disbudding will also lead to larger flowers (flower buds come in threes, remove the two side buds)

Lifting and storing: Dig tuberous roots after the first frost. Before digging, cut the tops off so that a 3-4 inch section of stem remains attached. Tuberous roots tend to spread, so dig away from the main stem; try to dig the entire clump to avoid injuring the individual tuberous roots. Remove the majority of the soil from the clump; let the remainder dry and remove it once dry. Store in dry peat or vermiculite at 35-50 degrees; packing material can be very slightly moist to reduce shrinkage of the tuberous roots.

Comments: Dahlias may be troubled by a variety of insects and viruses.

Elephant Ears (*Colocasia esculenta*)

Underground structure: tuber

Plant description: 3-3 ½ ' tall; large tropical-looking leaves

Bloom time: grown for foliage, not flowers

Planting: Plant tuber 4-6" deep, with blunt end down; space the tubers 2-3 feet apart

Culture: Full sun to partial shade; moist to wet soil; protect the plant from wind which can damage the large leaves.

Lifting and storing: Dig up in autumn after the first frost; allow tubers to air dry; store in dry peat, vermiculite, at 70-75 degrees

Gladiolus (Gladiolus x hortulanus)

Underground structure: corm

Plant description: 1-5' tall; wide range of flower colors

Bloom time: mid-summer

Planting: Plant 4-6" deep; space corms about 3-6" apart

Culture: Full sun; keep soil evenly moist, but not wet; protect from wind; staking may be needed

Lifting and storing: Dig corms after the first frost; cut the stems just above the corm; air dry the corms for a week or more; store in mesh bags or slotted trays with good air circulation; store at 40-45 degrees

Comments: Easy to grow

Pineapple Lily (Eucomis autumnalis and Eucomia comosa)

Underground structure: bulb

Plant description: 1-2' tall; low rosette of strap-like leaves; greenish flowers in spike-like clusters atop 1-2 foot stem; the flower spike is topped with a cluster of leaf-like bracts, causing the flower cluster to resemble a pineapple.

Bloom time: mid-late summer

Planting: Plant 5-6" deep; space bulbs about 1' apart

Culture: Full sun to light shade; well drained soil

Lifting and storing: Dig bulbs before first frost; store bulbs at 55-65 degrees

Comments: Long-lasting cut flowers

Ranunculus (Ranunculus asiaticus)

Underground structure: tuber (with an irregular claw-like shape)

Plant description: 12- 18" tall; large flowers with numerous petals (shades of yellow, red, pink, and white)

Bloom time: late spring into early summer

Planting: Soak tubers overnight prior to planting; plant 1-2 " deep with "claws" pointing down; space tubers 6-8" apart

Culture: Full sun; very well drained soil (tubers are prone to rotting if soil is too wet)

Lifting and storing: Dig tubers as foliage dies down; store in dry vermiculite or peat at 50-55 degrees.

Comments: Prone to powdery mildew and crown rot.

Tigridia, Peacock Flower, Tiger Flower (*Tigridia pavonia*)

Underground structure: corm

Plant description: 1-2' tall; unique flower with three large outer petals and three small inner petals; flower color varies orange-red, white, pink and mauve; flowers are speckled in the center; foliage is strap-like

Bloom time: summer

Planting: Plant 3-4" deep and 6-9" apart

Culture: Full sun; well drained soil; may require some protection from wind

Lifting and storing: Dig corms as foliage dies down; store in vermiculite or peat at 35-40 degrees.

Comments: Each flower lasts only one day, but flowers are produced for several weeks.

Propagation of the Underground Structures

True Bulbs: Bulbs naturally produce 'daughter' bulbs along side the original 'mother' bulb. Gently pull the daughter bulbs away from the mother bulb. Be sure each daughter bulb has a portion of the basal plate attached. Small daughter bulbs that can not be removed easily, may be left on the mother bulb to mature for another year.

Corms: 1. **Separating new corms:** After flowering, the leaves produce food which helps produce a new corm (the old corm shrivels as the plant's leaves and flowers are produced). New corms can easily be separated by hand.

2. **Cormels:** These are miniature corms that form between the old corm and the new one. Separate the cormels and store. Plant out in spring. They will require one or two years to reach flowering size.

3. **Division of the corm:** A large corm that has two buds can be cut in half, with each half retaining a bud.

Tubers: Propagating tubers is usually done prior to planting in the spring. The tuber can be cut into pieces. Each piece should contain at least one bud or 'eye'. Allow the cut pieces to dry for a couple of days before planting.

Tuberous Roots: Divide so that each section contains a swollen root and part of the crown (a bud). This is usually done in spring prior to planting.

Rhizomes: Similar to tubers; cut into pieces so that each piece contains at least one bud or 'eye'.

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