Flowering bulbs offer a multitude of opportunities for brightening the home landscape. Their range of color and bloom type and size, as well as their long sequence of bloom, are unequalled in any other class of flowers. Although most gardeners think of lilies, tulips, hyacinths, and narcissus whenever the term "bulb" is mentioned, there is an almost unending array of bulbs.

Bulbs require little garden area and can be planted in annual or perennial flower beds, among shrubs, under trees, and in practically every area of the landscape. By careful scheduling, a gardener can have flowering bulbs in bloom before the last snows in spring until the first snow in the fall. Besides variation in cost, bulbs’ permanence and rate of multiplication should also be considered when planning a garden.

This publication discusses when to plant bulbs and explains soil preparation methods and planting procedures. Also provided is a convenient table including information on various bulbs' characteristics and requirements (Table 1). To simplify access to the table, an Index of Common Names is also provided. The term "bulb" is used in this publication to refer also to all corms, tubers, and rhizomes handled in the dormant condition.

**Bulb Hardiness Dictates Planting Time**

Bulbs are considered either hardy or tender. Hardy bulbs survive winters in the ground and may be left in place all year. Most of them should be planted early in the fall. Proper planting time is important not only for winter survival, but to insure adequate root development, which results in better flower production. Tender bulbs must be lifted after the growing season, stored indoors, and replanted the following year. Tender bulbs should be planted outdoors in spring only after all danger of frost is past, or they may be started indoors for later transplanting.

Hardy flowering bulbs forced in a pot for indoor, winter bloom may be planted permanently in the garden. However, such bulbs seldom bloom well the first year after planting out. If they grow at all, they may take several years to flower again. They should be moved outdoors in spring after frost danger is past. Plant the entire contents of the pot.

While indoors, these plants should be placed in a well-lighted location and fertilized like any other indoor house plant. Be sure to allow the foliage to remain green until it naturally dies back (usually 5 to 6 weeks after flowering).

**Buying Bulbs**

The best bulbs come from reputable businesses, either local or catalog sources. Order bulbs early from catalogs, and make your selections at local sources as soon as the bulbs are offered for sale. Select large, firm, plump bulbs or roots. Do not purchase any that are bruised, blemished, or soft.

During their dormant season, tulip, narcissus, and most other bulbs with a protective covering of dry scales can be stored for several weeks prior to planting, if necessary. Some, such as fritillaria and snowdrops, deteriorate rapidly and should be replanted as soon as possible. Similarly, fleshy bulbs and roots like lilies should be planted immediately after purchase or delivery.

**Using Bulbs in the Landscape**

The most important environmental factor to consider in locating bulb plantings in the landscape is light level. Be sure you provide full sun or partial shade as the particular species requires (Table 1). Excellent soil drainage is also crucial for most species, but poor conditions can be altered with proper soil preparation.

Bulbs are typically planted as either formal or informal garden beds, or they may be naturalized. As a general rule, bedded bulbs look best in informal groups, unless the overall landscape character demands a formal treatment. Avoid small numbers of bulbs planted individually or in straight rows. Mass plantings are far superior, visually. An exception to this is the rock garden.
Flowers • HO-86-W

Flower color is an important element in bulb usage. A pleasing coordination of colors is the goal.

Naturalized plantings can be accomplished with any type of hardy bulb which will reproduce and multiply itself in its planted location. Avoid stiffly formal plant shapes such as Darwin tulips or crown imperial. However, species tulips or the checkered lily, for example, make good naturalizing candidates. Narcissus and crocus are, perhaps, the most commonly used bulbs for naturalistic plantings.

Bulbs planted for a “natural” effect should be located in drifts or informal masses. Try to work with the topography so that drifts gently climb a slope or wrap around a high point or landscape feature. One approach is to throw bulbs gently onto the ground and plant them where they land.

Remember that bulbs naturalized in a lawn require special attention. The grass cannot be cut for several weeks after flowering or until the foliage of the bulb plant is ready to die down naturally. If the foliage is cut off too soon, the bulb will not be regenerated for the next year.

Soil Preparation

Nothing will cause bulbs to deteriorate as quickly as poorly drained soil. Most bulbs prefer a well-drained, sandy loam soil, ideally with moderate amounts of organic matter.

If the subsoil is highly impervious to water, some disruption by deep digging may be helpful. If the planting area is naturally low, raise the bed level 2 to 3 inches above the average surrounding soil. Sand is useful for this purpose. Incorporate it thoroughly and as deeply as practical into the existing soil.

Organic matter should be worked into the soil when the planting site is prepared. Use compost, leaf mold, undecomposed peat moss, or well-rotten manure (never fresh manure). Since most bulbs prefer a slightly acidic soil, decrease the pH with sulfur if your soils are highly alkaline. However, a soil test should precede any pH adjustments.

The soil should be of average fertility. High nitrogen level will promote excessive leaf growth with poor flower production and more bulb splitting. Color and size of foliage are good indications of fertility level. Large, bluish-green leaves indicate an excess of nitrogen, whereas small and light colored leaves indicate low fertility.

A good organic fertilizer for bulbs is bonemeal, with its high phosphorus content. Apply 3 to 4 pounds of bonemeal per 100 square feet of area. However, bonemeal alone may have inadequate nitrogen. Supplement bonemeal with one of the inorganic fertilizers or well-rotted manure.

Inorganic fertilizers are equally useful. On loam or clay soils, add a 6-12-6 or 5-10-5 fertilizer at the rate of 2 to 3 pounds per 100 square feet of area. On sandy soils, use a 5-10-10 mix. Numerous mixes specified for bulbs are now on the market. Be sure to mix all fertilizer and soil amendments thoroughly and deeply into the soil before planting.

Spacing

The size of the bulb, plant, and flower controls spacing; thus, small bulbs are planted more closely together than larger bulbs. Planting bulbs too closely together results in small leaves and flowers, and it prevents each flower from showing its intrinsic beauty. See the specific recommendations in Table 1.

Planting

After the site is prepared, place the bulbs on the exact spot where they are to be planted. Plant sequentially to avoid walking or kneeling on just-planted areas. All bulbs should be planted with the base down.

Plant small bulbs with a trowel or bulb planter. A trowel is preferred since it avoids compacting the soil immediately below the bulb. For larger bulbs, use a trowel or spade to make the larger holes. When planting large beds, consider excavating the entire bed to the proper depth, placing the bulbs, and then filling over the tops of the bulbs with soil.

Correct planting depth is important. Generally, plant to a depth equal to 2-1/2 to 3 times the bulb's largest diameter (see Table 1 & Figure 1).

General Culture

For hardy bulbs, annual application of fertilizer as a top dressing is needed. Apply at the manufacturer’s recommended rates or one-half of the rates listed in “Soil Preparation.” Do so as foliage growth begins in the spring. Do not allow the fertilizer to remain on leaves, or burning will result. Water it in immediately.

Foliage of bulbous plants must not be cut until it begins to yellow and die. Leaves furnish food to the bulb, permitting it to grow large enough to flower the following year.

On the larger species, spent flowers should be removed before seeds begin to form. This practice assists the developing bulbs to grow bigger.

Among hardy bulbs which remain undisturbed for many years, an abundance of foliage with few or no flowers is an indication that the bulbs have become crowded through natural division. When the foliage dies, the bulbs enter a dormant period. They can safely be lifted, sepa-
rated, and replanted at proper spacing during this time. Large bulbs may flower the following year; small bulbs will require a longer period to reach flowering size.

Insects and Other Bulb Pests

When present, aphids or plant lice are usually found on succulent young growing tips. They may transmit virus diseases. Grayish or powdery white aphids may occur on tulip bulbs. Spray with insecticidal soap, imidacloprid, cyfluthrin, permethrin, or malathion. Dust bulbs with a 1% lindane dust before planting or storage.

Spider mites affect summer-blooming bulbs or bulbs forced indoors. Tiny, light colored spots on leaves and webbing on the underside of leaves are evidence of infestation. Dust with sulfur, apply granular disulfoton, or spray with miticides, esfenvalerate, or insecticidal soap.

Bulb mites are minute white mites found in rotting bulbs. Scabby and pitted bulbs are signs of these pests. Discard all infested and rotten bulbs.

Narcissus bulb fly and lesser bulb fly come from plump yellow maggots, 1/2 to 3/4 inches long, which tunnel in rotting bulbs of narcissus and daffodils. Discard all soft and rotting bulbs. Drench soil around plants with dylox 80% SP, at label specified rates to prevent bulb fly problems.

Thrips cause leaves to have a silvery appearance and flowers to become deformed, spotted, and streaked. Gladiolus corms in storage become sticky and russeted. During the growing season, spray or dust plants with malathion. After harvest and prior to storage, dust the corms with a malathion or lindane dust.

Chipmunks and ground squirrels dig up newly planted bulbs and seeds. For small numbers of animals, use common rat-size snap traps. Bait the traps unset with oatmeal and/or peanut butter for 2 or 3 days, placing them next to the burrow entrances. Once bait is taken, set traps. For large infestations, poison baits are best, but such baits should only be applied by trained personnel.

Field mice (voles) eat bulbs and often follow mole tunnels to find them. Use mouse-size snap traps to control small numbers. Bait traps with peanut butter and place them with the long dimension perpendicular to the runways or within a mole tunnel. Repellents such as thiram may provide protection of bulbs up to 6 months. For severe infestations of voles, poison baits are most effective.

Moles are insectivores and do not eat bulbs; however, they can destroy bulbs and plants by burrowing. The most effective control method is to set traps early in the spring or during fall. Both choker and harpoon traps are available. Moles rarely eat any poison “peanut-type” baits, and poisonous gases are equally ineffective. Chemical treatment of the soil to kill grubs and earthworms (and thus solve a mole problem by eliminating their food supply may be effective. However, treatments must be thorough and repetitive, can be costly, and may provide only temporary control.

Bulb Diseases

Once established, bulb diseases are difficult to eradicate. Prevention is the key to maintaining a disease-free planting. A few simple precautions will help prevent extensive damage to highly prized home plantings.

1. Since the fungi which cause disease live on infected bulbs, the most important step in preventing trouble is to avoid planting diseased bulbs. When you plant bulbs in the fall, remove the outer brown scales and discard any bulbs showing symptoms of softness, decay, or yellowish lesions on the inner scales.

2. Bulb diseases most frequently occur when plants are grown in the same area year after year. If practical, move the bed each year and avoid planting bulbs in the same spot more often than every third year. Remove stems from tender bulbs right after digging, and store only disease-free bulbs in a cool, dry place during winter.

3. In the spring, it is important to keep plants under constant observation. Examine the sheathing leaves weekly, and immediately remove leaves showing spots which continue to increase in size. As soon as the plants have died to the ground, carefully remove all dead leaves and other plant debris from the beds.

4. Use fungicides as protectants to prevent disease. The fungicide Cleary’s 3336 contains thiophanate-methyl, a systemic fungicide which controls a variety of common bulb diseases. Use Cleary’s 3336 at the label specified rate, soaking the cleaned bulbs for 15 to 30 minutes in warm solution (80 to 85°F), preferably within 48 hours after digging. After treatment, let bulbs air dry before storing. If bulbs are for forcing, treat bulbs that have been heat -cured. Use pesticides with caution, and follow all label instructions. Note: Cleary’s 3336 does not control Pythium, Phytophthora, or bacterial diseases.
Index of Common Names*

Armenian Grape Hyacinth
Muscari armeniacum

Arum Lily
Zantedeschia aethiopica

Autumn Crocus
Colchicum autumnale

Calla Lily
Zantedeschia aethiopica

Camassia, Eastern
Camassia scilloides

Canna
Canna x generalis

Checkered Lily
Fritillaria meleagris

Chinese Chive
Allium tuberosum

Crocus
Crocus spp. and hybrids

Crown Imperial
Fritillaria imperialis

Daffodil
Narcissus spp. and hybrids

Dahlia
Dahlia hybrids

Danford Iris
Iris danfordiae

Dogtooth Violet
Erythronium dens-canis

Dutch Hyacinth
Hyacinthus orientalis

Dutch Iris
Iris hybrids

Elephant Ear
Colocasia esculenta

Fancy-leaved Caladium
Caladium x hortulanum

Foxtail Lily
Eremurus spp.

Garlic Chive
Allium tuberosum

Giant Onion
Allium giganteum

Giant Snowdrop
Galanthus elwesi

Gladiolus
Gladiolus x hortulanus

Glory-of-the-Snow
Chionodoxa luciliae

Golden Garlic
Allium moly

Grape Hyacinth
Muscari botryoides

Grecoian Windflower
Anemone blanda

Guinea-hen Flower
Fritillaria meleagris

Hardy Amaryllis
Lycoris squamigera

Hardy Begonia
Begonia grandis

Hyacinth
Hyacinthus orientalis

Jonquil
Narcissus spp. and hybrids

Lebanon Squill
Puschkinia scilloides

Lily
Lilium spp. and hybrids

Lily-of-the-Field
Stembergia lutea

Lily-of-the-Nile
Agapanthus orientalis

Magic Lily
Lycoris squamigera

Mexican Shell Flower
Tigridia pavonia

Montebretia
Crocosmia spp.

Narcissus
Narcissus spp. and hybrids

Netted Iris
Iris reticulata

Nodding Star-of-Bethlehem
Ornithogalum nutans

Peacock Orchid
Acidanthera bicolor

Persian Fritillary
Fritillaria persica

Persian Onion
Allium christophii

Peruvian Daffodil
Hymenocallis narcissiflora

Poppy-flowered Anemone
Anemone coronaria

Resurrection Lily
Lycoris squamigera

Siberian Squill
Scilla siberica

Snowdrop
Galanthus nivalis

Spanish Bluebell
Hyacinthoides hispanicus

Spider Lily
Hymenocallis narcissiflora

Spring Starflower
Ipheion uniflorum

Star-of-Bethlehem
Ornithogalum umbellatum

Stars-of-Persia
Allium christophii

Summer Hyacinth
Galtonia candidans

Summer Snowflake
Leucojum aestivum

Tiger Flower
Tigridia pavonia

Troll Lily
Erythronium americanum

Tuberous Begonia
Begonia x tuberhybrida

Tulip
Tulipa spp. and hybrids

Turkestian Onion
Allium karataviense

Wild Hyacinth
Camassia scilloides

Winter Aconite
Eranthis hyemalis

Wood Hyacinth
Hyacinthoides hispanicus

Wood Sorrel
Oxalis spp.

Yellow Adder’s Tongue
Erythronium americanum

*spp = Multiple species

Figure 1. Planting Depth Chart for Some Commonly Planted Bulbs.
## Table 1. Bulbs Suitable for Indiana Gardens.

<table>
<thead>
<tr>
<th>Bulb</th>
<th>Tender/ Hardy</th>
<th>Flower Color</th>
<th>Bloom Period</th>
<th>Height (cm)</th>
<th>Planting Depth (cm)</th>
<th>Distance Apart (cm)</th>
<th>Light, Soil, Cultural Requirements, Storage Conditions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acidanthera bicolor</strong></td>
<td>T</td>
<td>creamy with chocolate blotch</td>
<td>summer</td>
<td>24-42</td>
<td>3-4</td>
<td>12-18</td>
<td>Full sun or light shade; rich, well-drained soil. Store corms dry at 60-70°F.</td>
<td>Very fragrant; two week bloom period; successive plantings will extend season.</td>
</tr>
<tr>
<td><strong>(Peacock Orchid)</strong></td>
<td></td>
<td></td>
<td></td>
<td>(60-1m)</td>
<td>(8-10)</td>
<td>(30-45)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Agapanthus orientalis</strong></td>
<td>T</td>
<td>blue, white</td>
<td>summer</td>
<td>24-36</td>
<td>barely covered</td>
<td>24</td>
<td>Full sun to light shade. Best planted in large pots or boxes; water frequently. Move boxes indoors for winter, and grow quite dry at 40-50°F.</td>
<td>Ideal for patio plantings. Use as interior plant in winter.</td>
</tr>
<tr>
<td><strong>(Lily-of-the-Nile)</strong></td>
<td></td>
<td></td>
<td></td>
<td>(60-90)</td>
<td>(60)</td>
<td>(60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Allium christophii</strong></td>
<td>H</td>
<td>silvery-violet</td>
<td>early summer</td>
<td>15-24</td>
<td>4</td>
<td>12-18</td>
<td>Full sun; average soil with good drainage.</td>
<td>Often bears 10-inch diameter flower heads. Also sold as <em>A. albopilosum</em>.</td>
</tr>
<tr>
<td><strong>(Stars-of-Persia, violet</strong></td>
<td></td>
<td></td>
<td></td>
<td>(40-60)</td>
<td>(10)</td>
<td>(30-45)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Allium giganteum</strong></td>
<td>H</td>
<td>pink-purple</td>
<td>early summer</td>
<td>36-48</td>
<td>6</td>
<td>12-18</td>
<td>Full sun; well-drained soil. Give space to grow.</td>
<td>4-inch diameter flower heads are showy.</td>
</tr>
<tr>
<td><strong>(Giant Onion)</strong></td>
<td></td>
<td></td>
<td></td>
<td>(90-1.2m)</td>
<td>(15)</td>
<td>(30-45)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Allium karataviense</strong></td>
<td>H</td>
<td>lilac-pink</td>
<td>late spring</td>
<td>8-10</td>
<td>4</td>
<td>12-18</td>
<td>Full sun; well-drained soil.</td>
<td>Large flower heads on short stature plant make this an interesting pot or border plant.</td>
</tr>
<tr>
<td><strong>(Turkestan Onion)</strong></td>
<td></td>
<td></td>
<td></td>
<td>(20-25)</td>
<td>(10)</td>
<td>(30-45)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Allium moly</strong></td>
<td>H</td>
<td>bright yellow</td>
<td>late spring</td>
<td>10-14</td>
<td>3</td>
<td>6-18</td>
<td>Full sun to partial shade; most soils tolerated. Vigorous, spreading habit requires restraint; replant when flowering declines.</td>
<td>Bears bright yellow, star-like 2- to 3-inch flower heads.</td>
</tr>
<tr>
<td><strong>(Golden Garlic, Lily Leek)</strong></td>
<td></td>
<td></td>
<td></td>
<td>(25-35)</td>
<td>(8)</td>
<td>(15-45)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Allium tuberosum</strong></td>
<td>H</td>
<td>white</td>
<td>late summer</td>
<td>20</td>
<td>3</td>
<td>6-18</td>
<td>Full sun or light shade; most soils tolerated. Will self-sow unless seed heads are removed.</td>
<td>Forms dense clusters of fragrant flowers; attracts butterflies.</td>
</tr>
<tr>
<td><strong>(Chinese Chive, Garlic Chive)</strong></td>
<td></td>
<td></td>
<td></td>
<td>(50)</td>
<td>(8)</td>
<td>(15-45)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anemone blanda</strong></td>
<td>H</td>
<td>blue, rose, pink, white</td>
<td>early to mid spring</td>
<td>3-6</td>
<td>2</td>
<td>4-6</td>
<td>Sun or partial shade; rich, well-drained soil. Soak tubers before planting.</td>
<td>Blossoms remain closed at night and when cloudy; open in sunlight.</td>
</tr>
<tr>
<td><strong>(Grecian Windflower)</strong></td>
<td></td>
<td></td>
<td></td>
<td>(8-15)</td>
<td>(5)</td>
<td>(10-15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tender</td>
<td>Height Planting (in.)</td>
<td>Distance Apart (cm.)</td>
<td>Light, Soil, or Flower Bloom (cm.)</td>
<td>Cultural Requirements, Storage Conditions, Comments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>----------------------</td>
<td>----------------------</td>
<td>----------------------------------</td>
<td>-----------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anemone coronaria</strong> (Poppy-flowered Anemone)</td>
<td>12-18</td>
<td>8-12</td>
<td>Full sun; water regularly.</td>
<td>Best handled as pot crop or grown as bouquet flower. Store tubers at 55-60°F.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Begonia grandis</strong> (Hardy Begonia)</td>
<td>24-36</td>
<td>1-2</td>
<td>Partial shade; rich, organic soil.</td>
<td>Propagated by tiny bulbils produced in leaf axils; plants are slow to begin. Store tubers at 45-50°F.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Begonia x tuberhybrida</strong> (Tuberous Begonia)</td>
<td>10-20</td>
<td>barely (10)</td>
<td>Partial shade; highly pendulous forms excellent as ground cover.</td>
<td>Plants are slow to begin. Store tubers at 45-50°F.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Camassia scilloides</strong> (Eastern Camassia)</td>
<td>18-24</td>
<td>4</td>
<td>Full sun or light shade; Normal to very moist soil.</td>
<td>Native in Indiana. Wild Hyacinth. American Indian name is quamash.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Canna x generalis</strong> (Garden Canna)</td>
<td>18-72</td>
<td>3-6</td>
<td>Full sun; fertile, moist soil.</td>
<td>Flowers may be bright pink, red, purple, or white. Store roots dry at 50-60°F.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tender</td>
<td>Height</td>
<td>Planting Distance</td>
<td>Light, Soil, or Flower Bloom</td>
<td>Depth</td>
<td>Cultural Requirements, Storage Conditions, Comments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>--------</td>
<td>-------------------</td>
<td>-----------------------------</td>
<td>-------</td>
<td>-----------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chionodoxa luciliae  (Glory-of-the-Snow)</td>
<td>H blue, pale</td>
<td>early</td>
<td>Full sun; well-drained soil. Lift &amp; divide when over-crowded.</td>
<td>3-6</td>
<td>For rock gardens, edgings, and indoor forcing; a good companion to forsythia.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colchicum autumnale  (Autumn Crocus)</td>
<td>H lavender, pink, rose</td>
<td>early</td>
<td>Full sun or partial shade.</td>
<td>4-6</td>
<td>For cock gardens, borders.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colocasia esculenta  (Elephant Ear)</td>
<td>T rarely</td>
<td>foliage</td>
<td>Full sun; average soil.</td>
<td>36-72</td>
<td>Produces large, coarse, tropical looking foliage; huge, uniformly green foliage.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crocosmia spp.</td>
<td>T red, orange</td>
<td>late</td>
<td>Full sun or partial shade.</td>
<td>24-36</td>
<td>for early color in late summer; a good companion to primulas.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crocusespp. &amp; hybrids</td>
<td>H golden yellow, lavender, blue, white</td>
<td>early</td>
<td>Full sun to partial shade.</td>
<td>2-6</td>
<td>Excellent for early color.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dahlia hybrids</td>
<td>T all but blue</td>
<td>mid summer</td>
<td>Full sun; well-drained soil.</td>
<td>12-72</td>
<td>Many varieties in flower to extend bloom season.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Flowers • HO-86-W
Revised 6/01 Purdue University Cooperative Extension Service
<table>
<thead>
<tr>
<th>Tender</th>
<th>Height</th>
<th>Planting Distance</th>
<th>Light, Soil, or Flower Bloom</th>
<th>Depth</th>
<th>Cultural Requirements, Storage Conditions, Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eranthis hyemalis</td>
<td>H</td>
<td>yellow</td>
<td>early</td>
<td>3-4</td>
<td>2-3</td>
</tr>
<tr>
<td>Eremurus spp.</td>
<td>H</td>
<td>cream, rose to yellow, peach-pink</td>
<td>late</td>
<td>12-18</td>
<td>6</td>
</tr>
<tr>
<td>Erythronium americanum</td>
<td>H</td>
<td>yellow</td>
<td>early</td>
<td>6-9</td>
<td>3</td>
</tr>
<tr>
<td>Erythronium dens-canis</td>
<td>H</td>
<td>rose-purple</td>
<td>spring</td>
<td>6-12</td>
<td>3</td>
</tr>
<tr>
<td>Fritillaria imperialis</td>
<td>H</td>
<td>red, yellow</td>
<td>spring</td>
<td>60-90</td>
<td>15</td>
</tr>
<tr>
<td>Fritillaria meleagris</td>
<td>H</td>
<td>checkered purple, white</td>
<td>spring</td>
<td>20-30</td>
<td>5-10</td>
</tr>
<tr>
<td>Fritillaria persica</td>
<td>H</td>
<td>maroon</td>
<td>spring</td>
<td>25-75</td>
<td>10</td>
</tr>
<tr>
<td>Flowers: HO-86-W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tender</td>
<td>Height</td>
<td>Planting</td>
<td>Distance</td>
<td>Light, Soil, or Flower Bloom</td>
<td>in. Depth</td>
</tr>
<tr>
<td>---------</td>
<td>--------</td>
<td>----------</td>
<td>----------</td>
<td>-----------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Galanthus elwesii H white early 6-9 2-4 3-4</td>
<td>Full sun or light shade; Good for borders and rock gardens.</td>
<td>Early fall as soon as available. Do not disturb.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galanthus nivalis H white early 4-6 2-3 3-4</td>
<td>Partial shade; sandy loam.</td>
<td>One of the earliest spring bloomers for rock gardens; easy to grow; increases rapidly.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galtonia candicans T greenish-white, mid 36-48 6 15</td>
<td>Full sun, well-drained soil.</td>
<td>Good for borders and rock gardens.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gladiolus x hortulanus T all colors mid 12-60 4-6 6-8</td>
<td>Full sun; rich soil.</td>
<td>Wide array of colors and sizes available; helpful for borders.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyacinthus orientalis H blue, pink, salmon, rose, white mix</td>
<td>Spring bulbs; excellent for borders and rock gardens.</td>
<td>Easy to grow; increases rapidly. Only if growing distance is 6-8 ( (15-20) ) cm. Plant as soon as soil warms.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hymenocallis narcissiflora H white</td>
<td>Full sun; well-drained soil.</td>
<td>Good for borders and rock gardens.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ipheion uniflorum H bluish-white spring 6-8 2-3 6</td>
<td>Full sun; well-drained soil.</td>
<td>Good for borders and rock gardens.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tender</td>
<td>Height Planting</td>
<td>Distance</td>
<td>Light, Soil, or Flower Bloom</td>
<td>in.</td>
<td>Depth</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------</td>
<td>----------</td>
<td>-----------------------------</td>
<td>-----</td>
<td>-------</td>
</tr>
<tr>
<td>Iris dandfordiae</td>
<td>(Danford Iris) lemon-yellow</td>
<td>(10-15)</td>
<td>well-drained soil</td>
<td>6-8</td>
<td>2-3</td>
</tr>
<tr>
<td>Irishybrids T</td>
<td>(Dutch Iris) blue, purple</td>
<td>(10-23)</td>
<td>light, sandy soil</td>
<td>8-10</td>
<td>2-3</td>
</tr>
<tr>
<td>Iris reticulata</td>
<td>(Netted Iris) blue, violet-purple</td>
<td>(15-20)</td>
<td>well-drained, humusy soil</td>
<td>6-8</td>
<td>2-3</td>
</tr>
<tr>
<td>Leucojum aestivum</td>
<td>(Summer Snowflake) white</td>
<td>(30-45)</td>
<td>rich soil</td>
<td>2-3</td>
<td>3-4</td>
</tr>
<tr>
<td>Lillium spp. &amp; hybrids</td>
<td>(Lily) yellow, pink orange-red</td>
<td>(60-240)</td>
<td>well-drained, humusy soil</td>
<td>4-8</td>
<td>4-8</td>
</tr>
<tr>
<td>Lycoris squamigera</td>
<td>(Hardy Amaryllis, August Magic Lily, Resurrection Lily) purple</td>
<td>(30-45)</td>
<td>well-drained soil</td>
<td>2-3</td>
<td>2-3</td>
</tr>
<tr>
<td>Muscari armeniacum</td>
<td>(Armenian Grape Hyacinth) blue</td>
<td>(15-20)</td>
<td>well-drained soil</td>
<td>6-8</td>
<td>2-3</td>
</tr>
<tr>
<td>Muscari botryoides</td>
<td>(Grape Hyacinth) blue, white</td>
<td>(15-20)</td>
<td>well-drained soil</td>
<td>6-8</td>
<td>2-3</td>
</tr>
<tr>
<td>Tender1</td>
<td>Height</td>
<td>Planting2</td>
<td>Distance</td>
<td>Light, Soil, or Flower Bloom</td>
<td>in.</td>
</tr>
<tr>
<td>--------</td>
<td>--------</td>
<td>-----------</td>
<td>----------</td>
<td>-------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Narcissus spp. &amp; hybrids</td>
<td>H</td>
<td>yellow, early</td>
<td>3-14</td>
<td>(10-15)</td>
<td>(5-8)</td>
</tr>
<tr>
<td>Ornithogalum nutans</td>
<td>H</td>
<td>silvery-white, spring</td>
<td>9-12</td>
<td>(23-30)</td>
<td>(5-8)</td>
</tr>
<tr>
<td>Oxalis spp.</td>
<td>T</td>
<td>yellow, pink, summer</td>
<td>4-8</td>
<td>(10-20)</td>
<td>(5-8)</td>
</tr>
<tr>
<td>Polianthes tuberosa</td>
<td>T</td>
<td>white, late</td>
<td>15-30</td>
<td>(40-75)</td>
<td>(5-8)</td>
</tr>
<tr>
<td>Puschkinia scilloides</td>
<td>H</td>
<td>blue, white</td>
<td>6</td>
<td>(15-20)</td>
<td>(5-8)</td>
</tr>
<tr>
<td>Scilla siberica</td>
<td>H</td>
<td>blue, white</td>
<td>4-6</td>
<td>(10-15)</td>
<td>(5-8)</td>
</tr>
<tr>
<td>Tender</td>
<td>Height Planting</td>
<td>Distance Light, Soil, or Flower Bloom</td>
<td>in. Depth Apart Cultural Requirements, Bulb Hardy Color Period (cm.) Storage Conditions Comments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>----------------</td>
<td>-------------------------------------</td>
<td>------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Scilla tubergeniana (Tubergen Squill) H silvery-white spring (10-15) (5-8) (5-8) Full sun or partial shade; Abundant flowers; blooms well-drained soil. Plant in with early crocuses. early fall.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sternbergia lutea (Lily-of-the-Field) Lutea H yellow fall (15-30) (10) (10) Full sun; well-drained soil. Mulch heavily for flowers in fall and persists winter protection.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tigridia pavonia (Tiger Flower, Mexican Shell Flower) T yellow, orange-red, white spring. Store dry at 50°F, several flowers; make successive plantings to extend bloom period.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tulipa spp. &amp; hybrids (Tulip) H all colors spring (8-75) (10-25) (10-20) Full sun; well-drained soil. Great variety of colors, shapes and blooming times for all uses; may use blue, pink, purples, white, red, yellow, orange, purple, pink, rose. Plant in late spring.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zantedeschia aethiopica (Calla Lily, Arum Lily) T white spring, early (60-90) (8-10) (30-60) Full sun or partial shade; often best handled as pot since bulbs stored summer. Water and plant outdoors to achieve bloom. Store dry in or out of pot at 40-50°F.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>