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## BULB MAINTENANCE & INSTALLATION

With the first breath of **Spring**, I cannot wait to get outside and fiddle-about the garden. At no other time do I need to practice more restraint than in the Spring. The Snow Drops, Bunting *Crocus*, and *Bulbocodium* are finally blooming, and it's **ONLY** the beginning of March. However, do they find their way through the snow and mulch? During this time, if you installed a Winter mulch, I recommend **PARTIAL** removal of it but not all of it. Total removal of the Winterizing mulch, where applicable, should not be done until about mid-April. Mulch prevents frost heaving, premature growth and frozen growth tips. Most bulbs are quite accustomed to coming up through mulch and snow. Some bulbous plants actually produce their own heat to help them push up through the ice and snow. In native environments, snow, leaves, mulch and grasses protect them through the Winter and keeps them healthy in the Spring.

### PLANTING TIME

The optimum time to plant bulbs in S. WI is usually from October 1 to about December 15. Planting them too early may result in premature ABOVE GROUND Autumn growth and reduced Spring bloom. If you do not have the time to plant your bulbs immediately, PLEASE store them in a cool place until time permits. Storage in a warm garage or a damp basement corner may kill the bulbs and be very disconcerting to both you and your supplier. 1-2 weeks of storage in your refrigerator's fruit and vegetable drawers works very well but without fruits and vegetables in the same drawer. Longer refrigeration may abort the internal flower buds. If refrigerator experiments, involving fruits or vegetables, are stored with bulbs, bulb damage may occur. Planting two weeks before a 2" deep freeze, bulbs generally will be in great shape. Mulch immediately after planting with 2-3" of shredded oak or conifer bark.

### PLANTING DEPTH

**SPECIAL BULBS:** plant at noted depth

*Anemone* -Wind Flower (1) 1"

*Anemonella* -Rue Anemone (1)(3) 1"

*Dentaria* -Toothwort (1)(3) 1"

*Cyclamen* -Cyclamen (1) 1/2 of bulb in ground, remainder atop with airy mulch

*Claytonia* -Spring Beauty (1)(3) 1"

*Eranthis* -Winter Aconite (1)(3) 1"

*Corydalis* -Fumeworts (1)(3) 1"

*Ipheion & Brodiaea* (1) 2-3"

**MINOR BULBS:** plant at 3-5" deep.

*Allium* -Onion small species (3)

*Arisaema* -Jack-in-the-Pulpit (1)(3)

*Bellevallia* -Bellevallia

*Brimeura* -Wild Hyacinth (3)

*Bulbocodium* -Spring Saffron

*Chinodoxa* -Glory-of-the-Snow (3)

*Crocus* -Spring & Autumn(4) Crocus

*Cypripedium* -Lady Slipper Orchids (1)

*Dicentra* -Dutchman's Breeches (1)(3) *Iris danfordiana* Danford Iris

*Endymion* -Woodland Hyacinths (1) *Leucojum*-Spring Snowflakes (1)(2)(3)

*Erythronium* -Trout Lily (1)(3)

*Fritillaria* -Checker Lily species (1)

*Galanthus* -Snow Drops (3)

*Hyacinthoides* -Woodland Hyacinths (1) *Puschkinia* -Squill (3)

*Iris reticulata* -Reticulated Iris

*Liatris* -Gayfeather (1)

*Muscari* -Grape Hyacinth (2)

*Ornithogalum* -Star-of-Bethlehem

*Oxalis* -Sorrel (1)

*Scilla* -Squill (3)

*Trillium* -Wake Robin (1)

**INTERMEDIATE BULBS:** plant at 4-5" deep.

*Colchicum* -Meadow Saffron (4)

*Eremurus* -Foxtails (1)

*Iris bucharica* -Buchar Iris

*Narcissus* -Daffodil divisions 5 - 8, 10

*Tulipa* -Tulip species

**MAJOR BULBS:** plant at 6-8" deep.

*Allium* -Onion large species

*Camassia* –Camas (1)

*Fritillaria* -Crown Imperial & lg. spp.

*Iris hybridum* -Dutch Iris (1)

*Iris xiphioides* -English Iris

*Hyacinthus* –Hyacinth

*Lilium* –Lily (1)

*Lycoris* -Magic Lily (1)(4)

*Narcissus* -Daffodil div. 1,2,3,4,9,11

*Tulipa* -Tulip lg. flowering cultivars

**(1) Often require 3-5 years to fully establish. (2) Leaf growth begins in the Autumn - it's normal! (3) Seeds naturally. Flowers in three to five years from seed. (4) Foliage in Spring, flowers in very late Summer or Autumn.**

Generally plant bulbs deeper in light sandy soils and shallower in heavy -- clay soils. If in doubt, cover a bulb to a depth of three times their maximum diameter. Plant bulbs with their growth tips facing any direction except directly down. Most bulbs are tear or drop shaped. The point is the top. On other bulbs, check for dried roots, plant with roots downward. *Anemone*, *Eranthis*, and *Fritillaria* are almost impossible to tell which way is up, just plant them and they will find their way. *Liatris* is slightly concave on the top. *Trillium* is planted horizontally as it is a rhizome. *Anemone* and *Eranthis* should be soaked in 70°F water overnight. This plumps up the bulbs and promotes more rapid development before the onset of winter.

## SPACING

Spacing is rarely a problem in the garden. Few of us plant bulbs in recommended quantities. Spacing is a matter of personal preference. In the residential garden, I prefer planting bulbs in random clumps and waves of 5-15 each. When blooming, the effect is very natural and pleasant.

**MINOR BULBS** are planted at 90 to 188 per three by three foot area. This is about one bulb every 2-5".

**INTERMEDIATE & MAJOR BULBS** are planted at 24-40 per square yard. This is about one bulb every 6-8".

## FERTILIZATION

I recommend a complete 9 element, 6-8 month time and temperature release fertilizer such as our custom blended REMKE® 22-3-3 + 6 micro-nutrients. Topical or broadcast applications should be made post planting at 1 to 2 pounds (one cup is ½ pound) per ten by ten foot area. REMKE® supplies all the necessary minerals for good sturdy growth. Annual Autumn applications contribute to quality growth on bulbs and herbaceous perennials for the entire following season. Bulbous perennials use their stored food (which is the bulb) for Spring blooms. This needs to be replenished before Summer's dormancy. If there's a reduction in the nutrient availability in the Spring, bulbs may fail to bloom properly the following year.

Recent studies, at North Carolina State University in Raleigh, show a good fertilizer must be applied in the Autumn. Nutrition will readily be available for active Spring growth. Studies have shown that Spring fertilizer applications may actually contribute to the decline of many bulbs.

Bone meal, incorporated into the soil at time of planting, encourages dogs and other vermin to dig up the planting bed to find the `bones' etc. Little total nutrient, but no harm, is derived from bone meal. Most Southern Wisconsin soils are high in total Phosphorus and Potassium but low in Nitrogen. Well-composted organics are excellent but avoid fresh animal wastes as they often promote fungal and bacterial diseases.

## WATERING

If Spring or the location is dry, bulbs appreciate additional water to keep the soil moist. Most bulbs enjoy copious amounts of water in the Spring but very little during dormancy. If there is snow, keep it piled on them as long as possible. Watering is generally not necessary when planting but if the soil is dry, I recommend irrigating two days before planting for ease in planting.

During a bulb's dormancy, excessive watering reduces its vitality or potentially kills many of your favorites. Most species and cultivars of *Bulbocodium*, *Eremurus*, *Hyacinthus*, *Oxalis* and *Tulipa* (above all!) enjoy hot dry conditions during the summer months. Planting these bulbs with heavy water requiring annuals or perennials, may not allow the bulbs to properly mature. Insufficient maturation often results in improper flowering in subsequent years or terminal rotting of your beloved bulbs.

*Allium*, *Anemone*, *Brimeura*, *Camassia*, *Chinodoxa*, *Crocus*, *Endymion*, *Erythronium*, *Galanthus*, *Leucojum*, *Lilium* (certain types), *Lycoris*, *Muscari*, *Narcissus*, *Scilla* and *Trillium* tolerate moist conditions and are better suited to the moist flower border. There are always exceptions to the above, as many species and cultivars are involved, being native to many different environmental conditions. A testimony to *Tulipa's* desire for hot dry summers was the magnificent flowering of Tulips in the Spring of 1989 following the drought of 1988!

## MULCHING

*Anemone*, *Camassia*, *Autumn Crocus*, *Colchicum*, *Corydalis*, *Cyclamen*, *Eremurus*, *Iris* and *Oxalis* should be mulched in November or December with a 1-2" deep LIGHT and AIRY shredded bark, evergreen boughs, marsh straw or leaves. Generally, mulching for the first Winter is important. Other bulbs may be mulched simultaneously but it is not as critical for their survival. A year round shredded bark mulch of 2" prevents erosion, maintains moderate soil temperatures and moisture, and provides for clean blooms. Ground covers, (e.g., *Dianthus deltoides*, *Ajuga reptans* and *Vinca minor*) are excellent 'permanent' mulches and may be planted with many bulbs to mask dying foliage. Caution: some ground covers may be allelopathic and may 'kill' all other plantings within their areas; *Convallaria* Lily-of-the-Valley and *Aegopodium* Snow-on-the-Mountain are two prime suspects.

## FOLIAGE

When the bulb's foliage begins to turn yellow, it may be CUT off -- do not tear or pull it off as the bulbs may be damaged. Damaging the bulbs allows for pest and disease opportunities. Wait six to eight weeks from the time of flower before cutting off the foliage on *Narcissus* and *Tulipa*. This may be done even if it has not completely turned yellow.

Certain species of bulbs do not bloom at the same time as the foliage. *Lycoris* produces foliage in the Spring with the foliage dying in early Summer. It then blooms in August without any leaves. *Muscari* begins its growth in August, surprising many gardeners into believing they have weeds or wondering about Autumn blooming. *Colchicum* and Autumn *Crocus* follow *Lycoris'* pattern. Occasionally *Anemone x fulgens* also comes up in the Autumn. Bulbs are part of Mother Nature's grand scheme, as we are -- so ENJOY!

## MAINTENANCE

Bulbs require little care other than the above. *If desired*, remove spent flower pods and flower stalks - pedicels, on hybrid or non-species Tulips, Daffodils and Lilies. Known as dead-heading, this practice is NOT required in the home garden. If desired, on *Narcissus* the pedicel may be cut to within 2 inches of the ground. On *Tulipa* hybrids, you may remove the pedicel just above the second highest leaf on the stem. On *Lilium*, cut off the stem just below the lowest flower's pedicel. I don't dead head unless the seed heads are unsightly. Many are beautiful.

On **MINOR BULBS**: *Allium*, *Anemone*, *Arisaema*, *Eranthis*, *Erythronium*, *Galanthus*, *Iris*, *Muscari*, *Scilla*, *Trillium*, *Tulipa* species, etc., allow the seeds to ripen. The seeds are ripe when the pods begin to open. Let the seeds drop to the ground or collect them and plant them by broadcasting in a desired location. No need to bury them as Mother Nature accommodates.

Most bulbs are monocots with the sprouts looking like grasses. Bulb seedlings feel rubbery when gently pinched, grasses do not. Bulb seeds generally produce flowering size bulbs in 3-10 years. Be patient for the rewards may be great.

## MATURATION

Maturation or planting shock on certain bulbs is occasionally disconcerting -- Oak trees are not majestic overnight! *Anemone\**, *Anemonella\**, *Arisaema\**, *Bulbocodium*, *Camassia\**, *Claytonia\**, *Corydalis\**, *Cypripedium\**, *Dentaria\**, *Dicentra\**, *Endymion*, *Eranthis*, *Eremurus*, *Erythronium\**, *Frittilaria*, *Leucojum*, *Liatris*, *Ornithogalum*, *Oxalis\**, *Trillium\**, and certain species of *Tulipa* may not bloom the first year. Often these bulbs require some time for environmental adaptation. When purchasing many of the above bulbs, you may have noticed these bulbs were not sold as dry bulbs (in bins at garden centers). The \* bulbs should be sold, planted or stored in sphagnum peat. Prolonged dry storage commonly renders the bulb useless.

Occasionally, the foliage on many of the above bulbs may not even show the first Spring but it often flowers quite nicely the following season. This may be due to planting depth, time of planting, weather, age of bulb, storage before and after you received the bulbs and a host of other environmental conditions.

*Erythronium* bulbs expand and contract together with soil temperature and moisture. Gradually, over a period of years, the bulb finds its proper soil depth and only then commences blooming. *Erythronium* from seed to proper planting depth requires 8-10 years. Of course, planting mature bulb stock at the proper depth circumvents this long wait and shortens it to 1-3 years.

## SPRING GROWTH

Newly planted bulbs commonly make their Spring arrival somewhat later than bulbs that have had a year or two in the ground. Some bulbs such as, *Anemone*, *Anemonella*, *Arisaema*, *Claytonia*, *Dentaria*, *Dicentra cucularia*, *Erythronium*, *Leucojum*, *Lycoris*, *Lilium martagon*, *Narcissus poeticus*, and *Trillium* may require a full year before emerging from the soil. Patience is difficult but the rewards are worth the wait.

## HARDINESS

Not all bulbs listed in catalogues are hardy in Southern Wisconsin. When using any list of bulbs, it is imperative that we interpret the information correctly. Soil composition, moisture, exposure, acidity, alkalinity, quality and size of bulb, genetic strain, nutrition, abnormal seasonal variations all play their part in whether your bulbs make it or not. When trying new types of bulbs for the first time, don't plant them all in one location -- try many locations. Note where they prosper for that is the most favorable environment.

## FLOWERING HEIGHTS

Many of us become a little frustrated in seeing the Spring flowering bulbs blooming at a height very different from what the books and catalogues indicate. Flowering height is conditional. If the Winter is very mild and/or somewhat short, bulbs may not be able to obtain the necessary chilling temperature for sufficient periods. These conditions result in *Hyacinthus* blooming deep in the foliage crown, and short stems on *Narcissus* flowers. Conversely, ideal cold periods result in very tall stately stems. Unfortunately, you will need to wait until the following year to have the pleasure of taller stems. *Tulipa* is one of the few flowers where the stems elongate before, during and after flowering as well as after cutting them for your vase.

## ANIMAL DAMAGE

Many of our flowering bulbs produce tasty treats for rodents, rabbits and deer. ROPEL® and similar products work relatively well but are no means permanent solutions. Chicken wire works well on rabbits but poorly on rodents. Hardware cloth works best on mice. *Crocus*, *Chinodoxa* and hybrid *Tulipa* are a few favorite

feasts of mice and rabbits. *Crocus tomasianus* & its cultivars e.g. 'Ruby Giant' is one of the few *Crocus* resistant to squirrels.

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SPRING bulbs are a welcome addition to any garden and fill the blooming void that would otherwise be present in most perennial gardens. Given a small amount of TLC, the rewards are often spectacular. Showy, with many being very long lived, nothing says an end to Winter in Wisconsin like the first blossoms of SPRING!

**RECOMMENDED REFERENCES:**

*BULBS* Roger Phillips & Martyn Rix, 1989

*BULBS* John E. Bryan, 2002 Revised edition.

*PARK'S SUCCESS WITH BULBS* Alfred F. Sheider, 1981

*TAYLOR'S GUIDE TO BULBS* Norman Taylor, 1986

*PERENNIALS FOR AMERICAN GARDENS* R. Clausen & N. Ekstrom, 1989

*HERBACEOUS PERENNIAL PLANTS* Allan M. Armitage 1997 Second edition

Any questions, please contact us.

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# Happy Gardening!

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