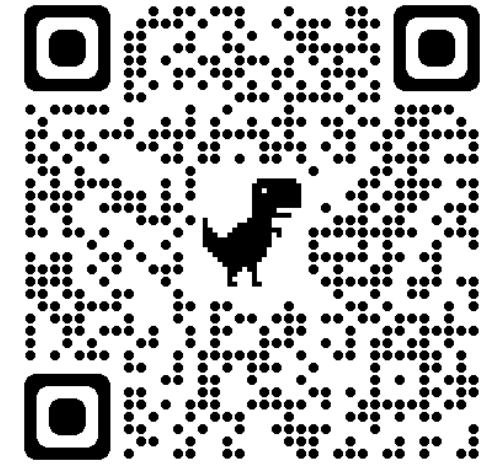


Plant Fall Bulbs for Spring Color



Presented by...
Walton County
Master Gardener Extension
Volunteers

“

*All the flowers of
tomorrow are in the
seeds of today.*



”

...so says an Ancient Proverb

In fall, if one plans and plants, one will reap the benefits of the beauty of flowers in spring.

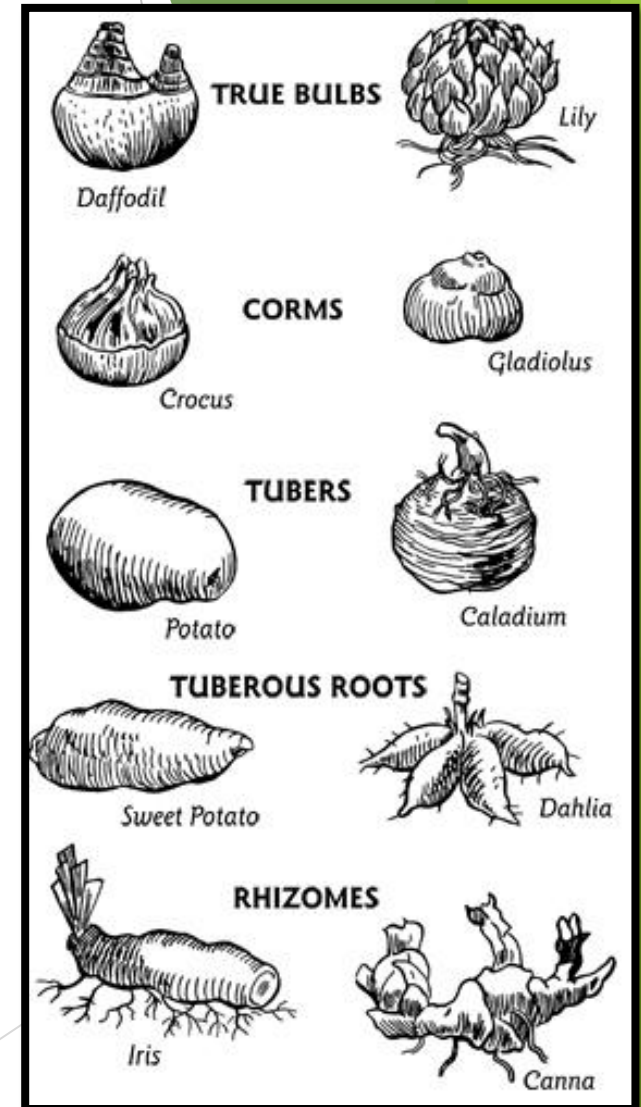
Bulbs & More, History & Lore

- ▶ Daffodils – brought to Britain by the Romans who thought that the sap from daffodils had healing powers...
 - ▶ *Actually the sap contains crystals that can irritate the skin.*
- ▶ Hyacinths – came to Europe from Turkey in 1573
 - ▶ By the early 1700s hyacinths were very popular with more than 2,000 cultivars available.
- ▶ Crocuses – brought to England from France by Jean Robin, a Director of Gardens in Paris; brought to the United States on ships by English settlers
- ▶ Tulips – originally cultivated in the Ottoman Empire (Turkey); imported into Holland in the sixteenth century
 - ▶ In the mid-seventeenth century, tulips were so popular that they created the first economic bubble, known as "Tulip Mania" (tulipomania).
 - ▶ As people bought up bulbs, they became so expensive that they were used as money until the market in them crashed.



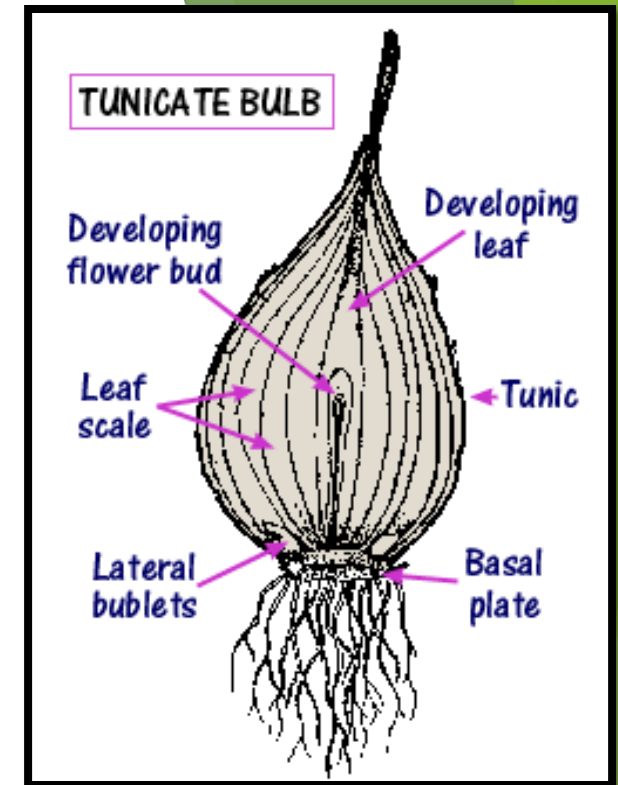
Bulb Basics

- ▶ Bulb is “any plant that stores its complete life cycle in an underground storage structure.”
 - ▶ Primary function to store nutrient reserves to ensure the plants' survival
 - ▶ Consists of short, fleshy, usually vertical stem axis (basal plate) bearing a growing point or a flower bud, enclosed by thick, fleshy scales
- ▶ Bulbs can be broken down into five types* of storage structures:
 - ▶ true bulbs
 - ▶ corms
 - ▶ tubers
 - ▶ tuberous roots and stems
 - ▶ rhizomes
 - ▶ *Also including “fleshy roots”



True Bulbs

- ▶ Five major parts:
 - ▶ the basal plate (bottom of bulb from which roots grow)
 - ▶ fleshy scales (primary storage tissue)
 - ▶ tunic (skin-like covering that protects the fleshy scales)
 - ▶ shoot (consisting of developing flower and leaf buds)
 - ▶ lateral buds (develop into bulblets or offsets)
- ▶ Two types of bulbs
 - ▶ Tunicate or laminate has a paper-like covering or tunic that protects the scales from drying and from mechanical injury
 - ▶ Examples include: tulips, daffodils, hyacinths, grape hyacinths (muscaria), and alliums
 - ▶ Non-tunicate or imbricate bulbs does not have the tunic (papery covering) to protect the fleshy scales.
 - ▶ Example is the lily



True Bulb Basics

- ▶ **New bulbs, called bulblets, form around the base of original bulb**
 - ▶ Also called offsets
 - ▶ Used to produce new plants
- ▶ **Bulbils develop in the leaf axils of the plants such as the lily (pictured)**
- ▶ **Takes more than one year for the bulbils or bulblets to become flower size**
- ▶ **When bulbs become overcrowded, flowers will diminish in size and number—**
 - ▶ Time to dig up and divide the bulbs!



Daffodil, Narcissus, or Jonquil?

Much confusion has existed over the proper name for these plants.

- ▶ **Narcissus** – the generic botanical name given these plants in 1753
- ▶ In England, the plants were commonly known as daffodils.
 - ▶ Carried to other countries by English-speaking people
- ▶ **Jonquil** refers to a specific kind of narcissus, and is *not correct for the group in general*.
 - ▶ True jonquils have a reedlike leaf and sweet-smelling flowers.
- ▶ **Narcissus**, then, is the correct botanical name for the genus; **daffodil** is the correct common name for all members of the genus; and **jonquil** correctly refers to *one particular division* of the genus.



Corms

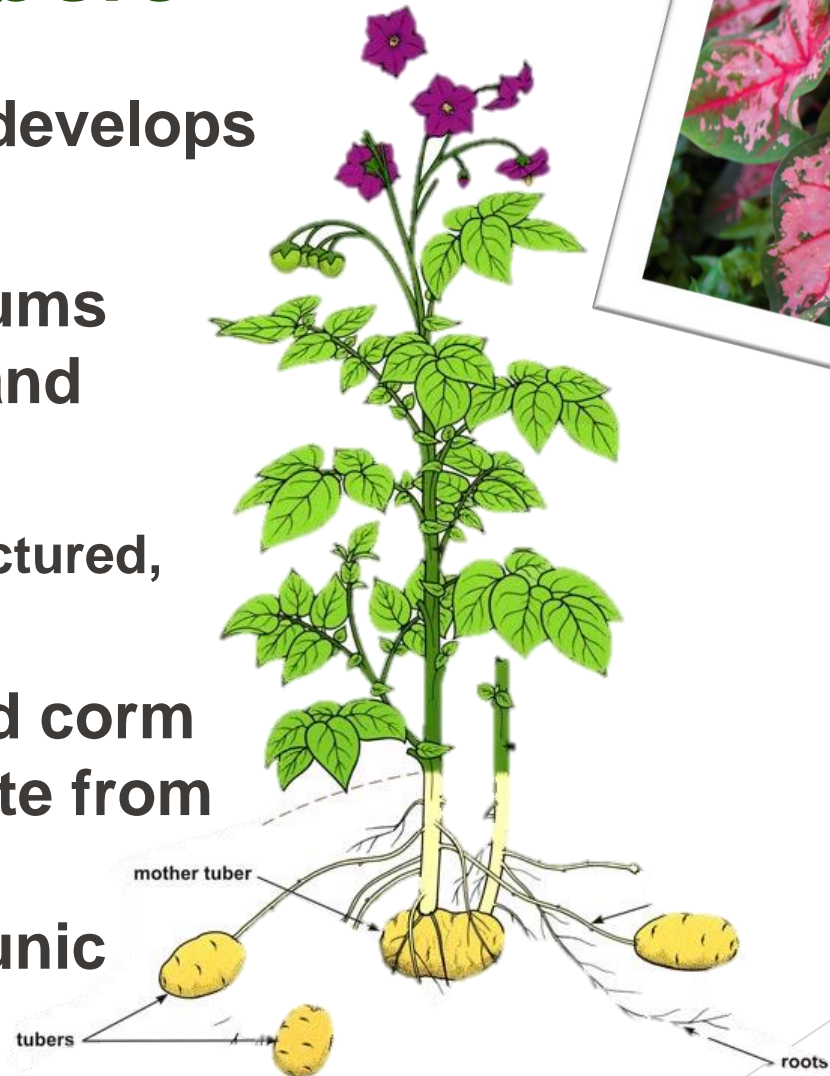


- ▶ Swollen stem base, modified into a mass of storage tissue
 - ▶ Does not have visible storage rings when cut in half
 - ▶ Distinguishes it from a true bulb
- ▶ Contains a basal plate (bottom of bulb from which roots develop), thin tunic and a growing point
- ▶ Pea-sized structures at base called cormels = new plants
 - ▶ can be saved and replanted
- ▶ Examples of plants that develop from corms include gladiolus (pictured above) and crocus (pictured, right)



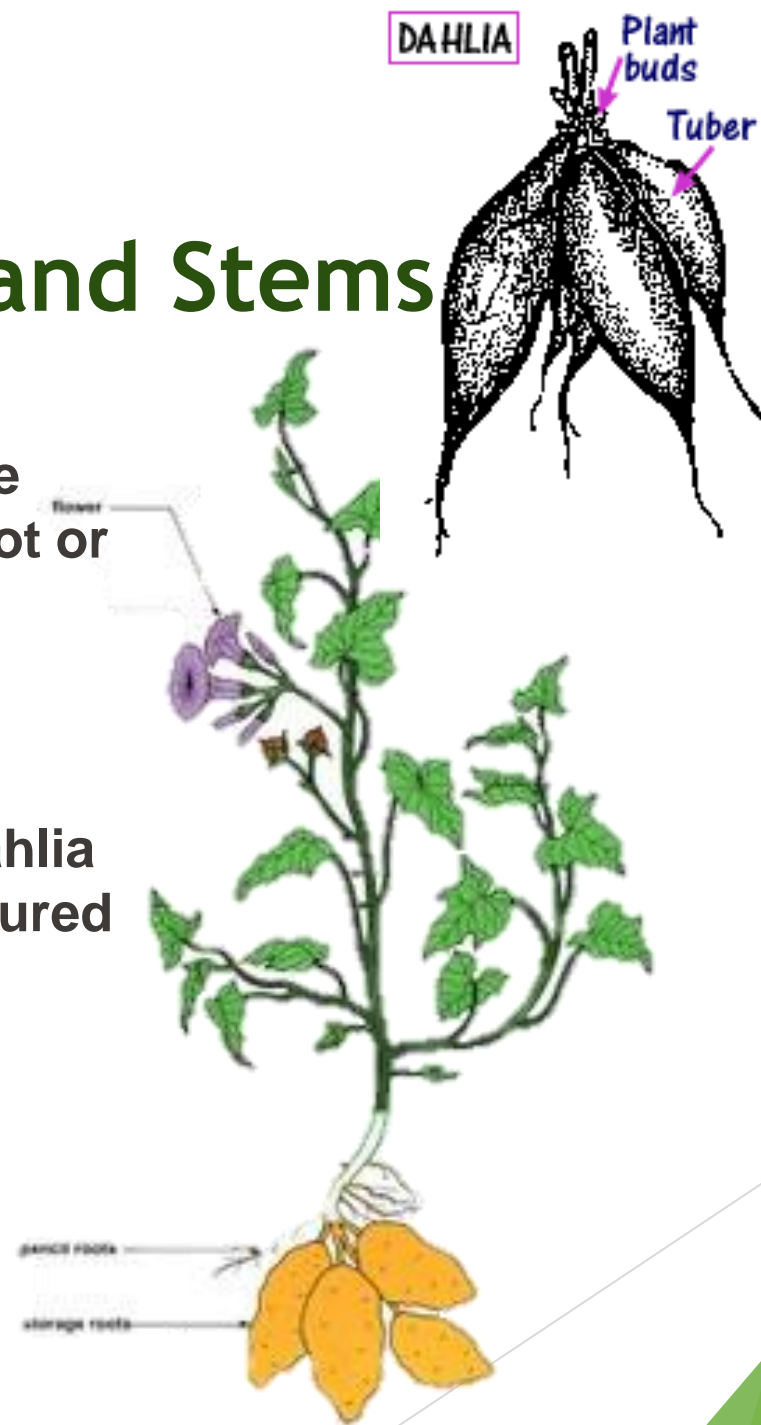
Tubers

- ▶ Modified stem structure develops on underground stems
- ▶ Examples include caladiums (pictured above), oxalis and anemones, and potato
 - ▶ The potato *does* flower (pictured, right)
- ▶ Differs from true bulb and corm by not having a basal plate from which roots develop and not having a protective tunic covering



Tuberous Roots and Stems

- ▶ Differs from other root structures by the nutrient reserves stored in an actual root or in enlarged stem tissue at soil surface
- ▶ Examples of tuberous stems include tuberous begonia and gloxinia
- ▶ Examples of tuberous roots include dahlia (pictured above) and sweet potato (pictured right)
 - ▶ Sweet potato is member of morning glory family



Rhizomes

- ▶ Differ from other storage structures by growing *horizontally* under the surface of the soil
- ▶ Bear same internal and external structure as true stems
- ▶ Examples include: iris (pictured, right), canna, and lily-of-the-valley



Fleshy Roots*

- ▶ ***Sixth category that stores nutrient reserves in fleshy roots added showing similar structure to bulbs**
- ▶ **Examples include daylilies and peonies**
- ▶ **Both peonies and daylilies *propagated by dividing in Fall***
 - ▶ **Root clumps of peonies (pictured, above) should be divided, leaving at least *three crown buds* with each clump**
 - ▶ **Daylily can be divided in the fall or spring into plantlets with a single fan of leaves (pictured, right)**



Site Selection and Preparation

▶ Select the site

- ▶ Spring-flowering bulbs prefer light shade to full sun
- ▶ Spring bulbs bloom before most trees or shrubs leaf out, so can successfully be planted under trees and shrubs
- ▶ Spring bulbs planted on south slope bloom earlier than same bulbs planted on north slope
- ▶ Spring bulbs planted on hillside will bloom earlier than bulbs planted in valley

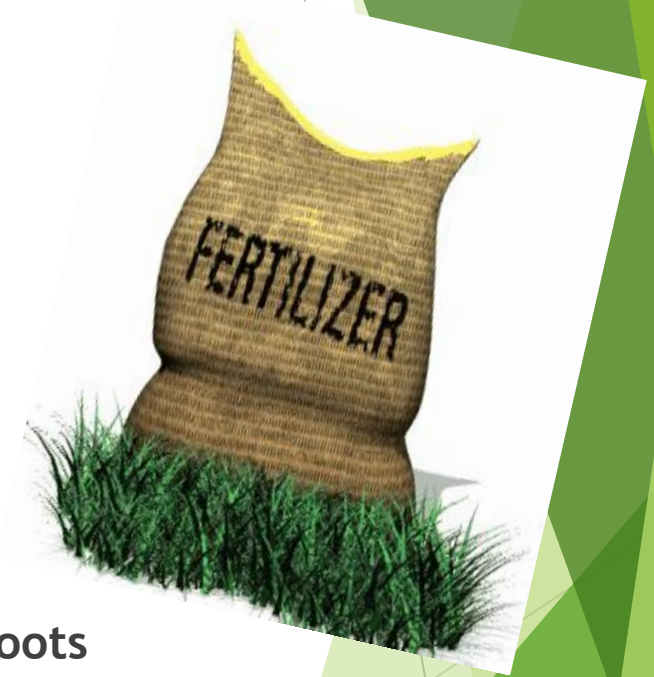
▶ Test the soil

- ▶ Bulbs prefer pH range of 6.0-6.8
- ▶ Add lime if soil test indicates need



Prepare the Soil

- ▶ Most bulbs prefer medium sandy loam, but not *that* particular
- ▶ Good soil drainage essential
 - ▶ Improve heavy clay soils by adding compost, composted leaves, peat moss, or other source of organic material
- ▶ Incorporate lime, fertilizer, and any soil amendments recommended by soil test results into top 12-18”
 - ▶ In absence of soil test, add 1-2 lbs 5-10-10, 10-10-10 per 100 sq ft
 - ▶ Phosphorus (second number) is MOST IMPORTANT to develop good roots
 - ▶ Bone meal used to be the recommended but current meat processing procedures have reduced amount of phosphorus
 - ▶ Phosphorous needs to be *added to the planting hole and worked into the surrounding soil*, rather than just sprinkled on top.



Selecting Bulbs to Plant

- ▶ 3 sources for obtaining bulbs: mail order, local garden centers, and discount or big box stores
- ▶ Color – Think existing color palette
 - ▶ What color is your house? What other plants will be flowering in the garden at the same time as the spring bulbs? What foliage colors will be around the bulbs?
- ▶ Height at flowering – Don't obscure!
- ▶ Bulb Size and Condition
 - ▶ Larger the bulb, higher the grade...usually means larger flowers
 - ▶ Bulbs should be firm and have unblemished skin
 - ▶ Avoid any bulbs that are soft or discolored
- ▶ Quantity: Think odd numbers
 - ▶ plant large drifts of 11 to 15 bulbs of the same variety
- ▶ Flowering Time: Early, Mid-, or Late Season?
 - ▶ plant all three varieties to have continuous wave
- ▶ Combinations – Tulips*, daffodils, hyacinths, and crocus create riot of spring color and bloom



Sequence of Flowering

► Early Spring (weeks 1-4)

- Snowdrop (*Galanthus nivalis*) (pictured right/top); Winter Aconite (*Eranthis hyemalis*); Danford Iris (*Iris danfordiae*); Crocus (*Crocus spp.*); Glory-of-the-Snow (*Chionodoxa luciliae*); Siberian Squill (*Scilla siberica*); Striped Squill (*Puschkinia scilloides*); Grecian Windflower (*Anemone blanda*); Common Grape Hyacinth (*Muscari botryoides*); Early Daffodils (*Narcissus spp.*); Netted Iris (*Iris reticulata*)



► Midspring (weeks 4-8)

- Checkered Lily (*Fritillaria meleagris*); Species Tulips (*Tulipa spp.*); Early Tulips (*Tulipa spp.*); Early Alliums (*Allium spp.*); Hyacinths (*Hyacinthus orientalis*); Summer Snowflake (*Leucojum aestivum*); Medium-Cupped Daffodils (*Narcissus spp.*)

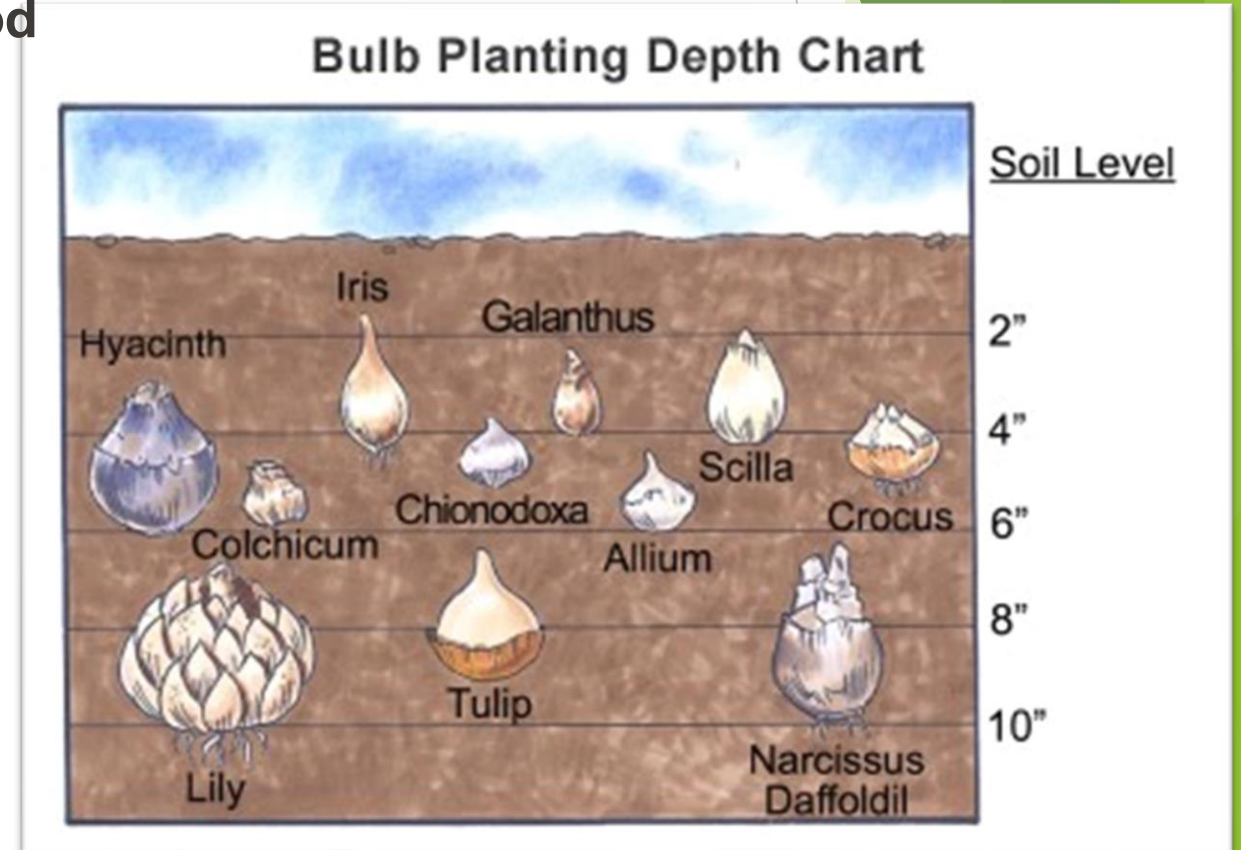


► Late Spring (weeks 8-12)

- Dutch Hybrid Iris (*Iris hybrids*); Midseason Tulips (*Tulipa spp.*); Late Daffodils (*Narcissus spp.*); Late Tulips (*Tulipa spp.*); Alliums (*Allium spp.*) (pictured, right/bottom)

Planting and Care

- ▶ Plant spring-flowering bulbs from October through late December in Georgia
- ▶ Most bulbs require a 12-16 week cold period
 - ▶ Can be in ventilated packaging in bottom of refrigerator at 40-50 degrees
 - ▶ Do not store with fruit!
- ▶ Planting depth important
 - ▶ 2-3 times the greatest diameter for bulbs 2" or more
 - ▶ 3-4 times the greatest diameter for smaller bulbs
- ▶ Spacing will vary
- ▶ Plant bulbs and corms upright; rhizomes and tuberous roots on sides
- ▶ Water the bed thoroughly to settle soil



Care and Maintenance

- ▶ Well-prepared bed requires little cultivation except periodic weeding
 - ▶ Avoid digging too deeply
- ▶ Cover bed with two or three inches of mulch
 - ▶ Helps minimize temperature fluctuation and ensure winter survival of some bulbs
 - ▶ Maintains an optimal moisture level in planting bed
 - ▶ Small, early blooming bulbs should not be mulched.
- ▶ Pine needles, wood chips, shredded bark, and fall leaves are all good mulching materials.
 - ▶ Peat moss tends to shed water and splashes blooms badly during hard rains
- ▶ Normal rainfall provides enough moisture for established spring-flowering bulbs
- ▶ **CAUTION** on cutting back foliage, which feeds the bulbs!
- ▶ Eventually, all bulbs become overcrowded; must be divided and replanted



Dealing with Foliage

- ▶ After flowering, plant needs the green leaves to manufacture food (*photosynthesis*) that is stored in the bulb for next year's growth
- ▶ If foliage removed too early, plant can no longer manufacture nutrient reserves for next year.
 - ▶ Results in small, weak bulb which will gradually decline and die out
- ▶ Ways to divert attention from the yellowing bulb foliage
 - ▶ Interplant bulbs in spring using one or two colors of annuals
 - ▶ Place bulbs behind plants on front edge of border planting
 - ▶ Plant taller flowering bulbs behind lower growing foreground shrubs
 - ▶ Plant bulbs with groundcovers and perennials like hosta or dahlia



Storing Bulbs

- ▶ Allow air circulation around stored bulbs
- ▶ Common storage method: place bulbs in very loose knit sack and hang in sheltered, cool area.
- ▶ Most flowering bulbs are best stored over a long period at temperatures between 60°F and 65°F
 - ▶ Keep humidity in storage area as low as possible
- ▶ Bulbs can also be stored in container with peat moss, sand, perlite, or vermiculite
- ▶ Never store bulbs more than two or three layers deep
 - ▶ Deep piles of bulbs generate heat and decay
- ▶ Never store bulbs in an area where ethylene gas produced by fruit is present!
- ▶ Do not divide or separate bulbs before storing them
- ▶ Discard any bulbs that appear diseased



Landscape Design Considerations

- ▶ **Mass Planting** – Planting bulbs of one variety or color in mass will have greater visual impact; provide uniform color and texture that is pleasing to the eye.
 - ▶ Bulbs will be easier to care for since they will have the same cultural requirements and the foliage will mature at the same time.
- ▶ **Avoid “toy soldier” Planting** – Never plant bulbs in a single straight row or in a single circle around a tree or bush (see photo to right!)
 - ▶ Plants don't grow in a single straight line in nature.
- ▶ **Groupings** – Daffodils and tulips, plant at least 11 bulbs of one variety in a grouping. The smaller spring bulbs should be planted in groups of 50 bulbs or more to have impact.
 - ▶ Smaller bulbs need to be viewed close-up so they should be planted along sidewalks, patios, or entryways to the home.
- ▶ **Naturalizing** – process of imitating nature with bulb plantings
 - ▶ Flowers appear in irregular clumps scattered over the landscape
 - ▶ Several early spring bulbs naturalize easily in grassy areas including: snow drops, winter aconites, crocus, squill, and daffodils (great naturalizers)
 - ▶ *Keep in mind that the foliage cannot be mowed off until it dies down naturally or the bulbs will eventually die out.*



Interplanting

- ▶ The color of spring flowering bulbs is enhanced when interplanted with **pansies** or other compatible early flowers.
- ▶ Plants like lilies and dahlias can be interplanted with perennials, annuals, or shrubs to hide the lower area.
 - ▶ Daylilies, like *Stella de Oro* (pictured at right), are a good choice to hide the lower stems of the lily.
- ▶ When planted in borders, mix daffodils with daylilies, ferns, or other plants that partially hide the foliage but still allow it to manufacture food for the bulb.
- ▶ Flower heads should be promptly removed to prevent seed production.



Bulbs in Containers

- ▶ **Portable Containers** - Containers which can be moved around and used in different areas of the landscape are an excellent location to plant spring-flowering bulbs in fall.
 - ▶ Pay attention to the light requirements of the bulbs
 - ▶ Be sure the container has drainage holes
- ▶ **Choose containers that will overwinter**, including glazed ceramic, resin, or plastic pots which have good longevity and protect plants in the winter.
 - ▶ Unglazed terracotta will absorb moisture, freeze, and crack, so it is best to store those for mild weather use only.



Forcing Spring Bulbs Indoors

- ▶ **Bulbs made to flower at other than normal times are said to be *forced*.**
- ▶ **With proper planning and care, bulbs can supply color for the home from late November until early April, when they begin to flower normally outdoors.**
- ▶ **Steps for forcing include:**
 - ▶ selecting the most suitable varieties: daffodils, hyacinths, tulips, crocus
 - ▶ potting bulbs properly in well-drained potting medium, in October or November
 - ▶ providing proper cold-temperature treatment: 40 degrees for 8-12 weeks
 - ▶ bringing bulbs into a cool room, in well-lighted location
 - ▶ placing the plants in a display location when well-developed.

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Forcing in Water

- ▶ Favorites include Narcissus such as Paperwhite and Soleil d'Or daffodils that don't require cold treatment before being forced into bloom.
 - ▶ May be grown in *water with pebbles for support*.
- ▶ Hyacinths can be forced into bloom in containers that will support the bulb with only its base touching the water.
- ▶ Bulbs should be cleaned before placing them in glasses.
- ▶ The best time for starting the bulbs is in October.
- ▶ Keep the glasses containing the bulbs in a cool (45 to 50 degrees F), dark location until tip growth is 3 to 4 inches long and the flower cluster emerges free from the bulb.
 - ▶ This may take 8 to 12 weeks.
- ▶ When the top growth is well-developed, move the glasses to a cool, bright window.



Have More Questions? Need Help?



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770-267-1925

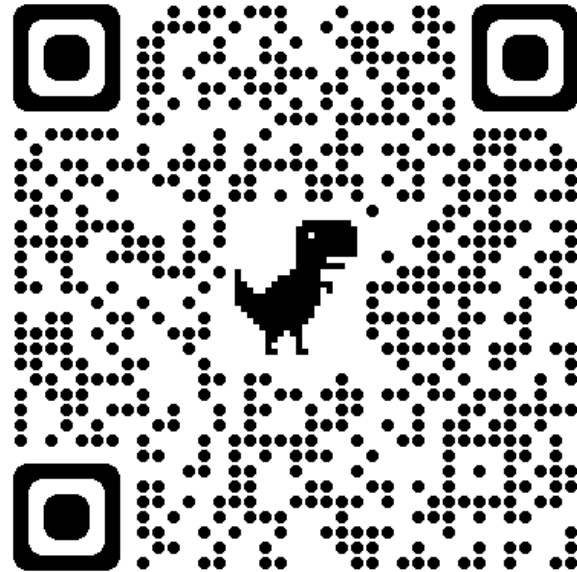
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AUGUST 19, 2023

Friendship Park, Social Circle



Walton County Master Gardeners invite you to
Free Fall 2023 Gardening Talks

Mondays 2:00–3:00 p.m.
O’Kelly Memorial Library
363 Conyers Road, Loganville GA

Aug 7: Fall Bulbs for Spring Color

Aug 14: Cool Weather Vegetables

Aug 21: Walton County Gardens

**Aug 28: Outsmarting Nuisance
Wildlife**

Sept 7: The Nature of Compost



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Free Fall 2023 Gardening Talks

Tuesdays 4:00-5:00 p.m.

W.H. Stanton Memorial Library
407 W. Hightower Trail, Social Circle GA

Aug 8: Fall Bulbs for Spring Color

Aug 15: Cool Weather Vegetables

Aug 22: Walton County Gardens

**Aug 29: Outsmarting Nuisance
Wildlife**

Sept 5: The Nature of Compost



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Wednesdays 2:00–3:00 p.m.
New UGA Extension Office
1258 Criswell Rd SE, Monroe GA

Aug 9: Fall Bulbs for Spring Color

Aug 16: Cool Weather Vegetables

Aug 23: Walton County Gardens

**Aug 30: Outsmarting Nuisance
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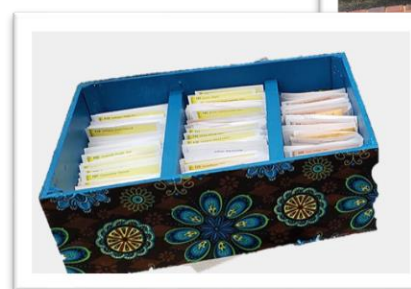


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- ▶ Monroe Senior Center garden
- ▶ Gardening Talks
- ▶ Social Circle Pollinator Sanctuary
- ▶ Ask a Master Gardener Booths
- ▶ Monroe Farmers' Market
- ▶ Seed Libraries





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