The Parts of a Flower

This lesson is from Virginia Tech and has not been edited by the Georgia Curriculum Office.

Parts of a Flower

- Sepal
- Petals
- Stamen
- Pistil
- Receptacle

*See Handout 1

Sepal

- Green, leaf-like structure
- Fold back when flower opens
- Collectively called the calyx

Petals

- Inside the sepals
- Leaf-like
- Colorful
- Attractant for pollinators

Stamen

- Male reproductive parts
- Consists of a filament & anther
- Produces pollen
- Pollen contains male sex cell

Pistil

- Female reproductive part
- 3 main parts
  - Stigma
  - Style
  - Ovary

Receptacle

- Swollen portion of the stem
- Flower parts are attached

Pollination

- Pollen transferred from anther to stigma
- Transfer take place via
  - Animals
  - Wind

*See Handout 2

Fertilization

- Pollen fuses with the egg
- Forms a new plant
- Self-pollination
- Cross-pollination

Cross-Pollination

- Used to develop new cultivars
- Occurs between closely related plants

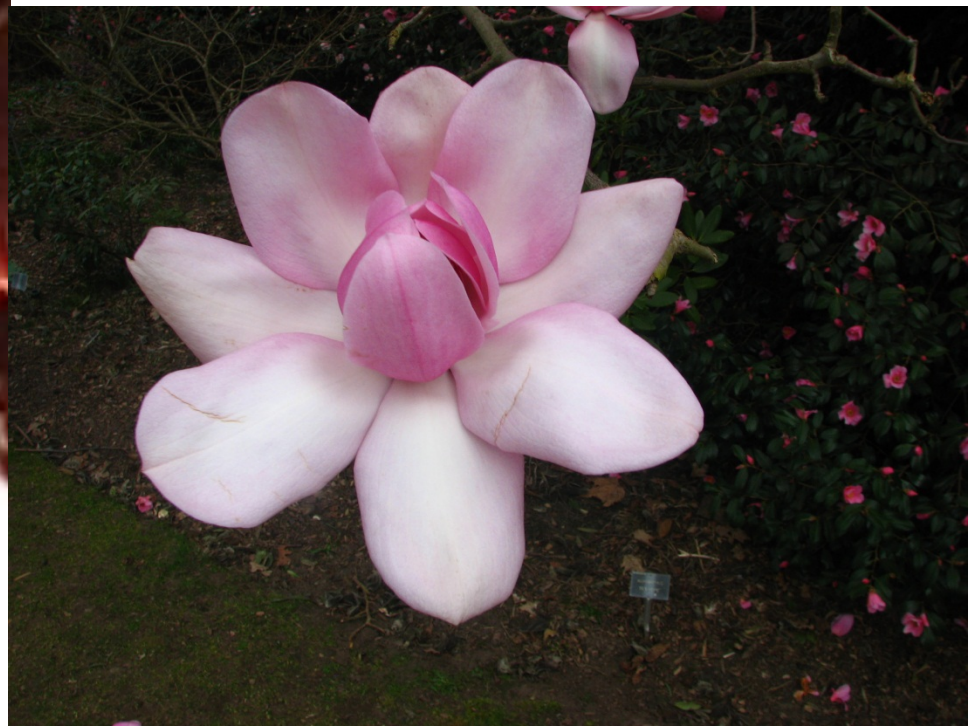


Review

- Flowers have 5 main parts
  - Sepals, Petals, Stamen, Pistil, & Receptacle
- Stamen is the male part
- Pistil is the female part
- Fertilization is where the pollen fuses with the egg
- Cross-pollination occurs between two different plants

Top Rules for the Best Class

- Number 1
- Be Nice to Gretchen



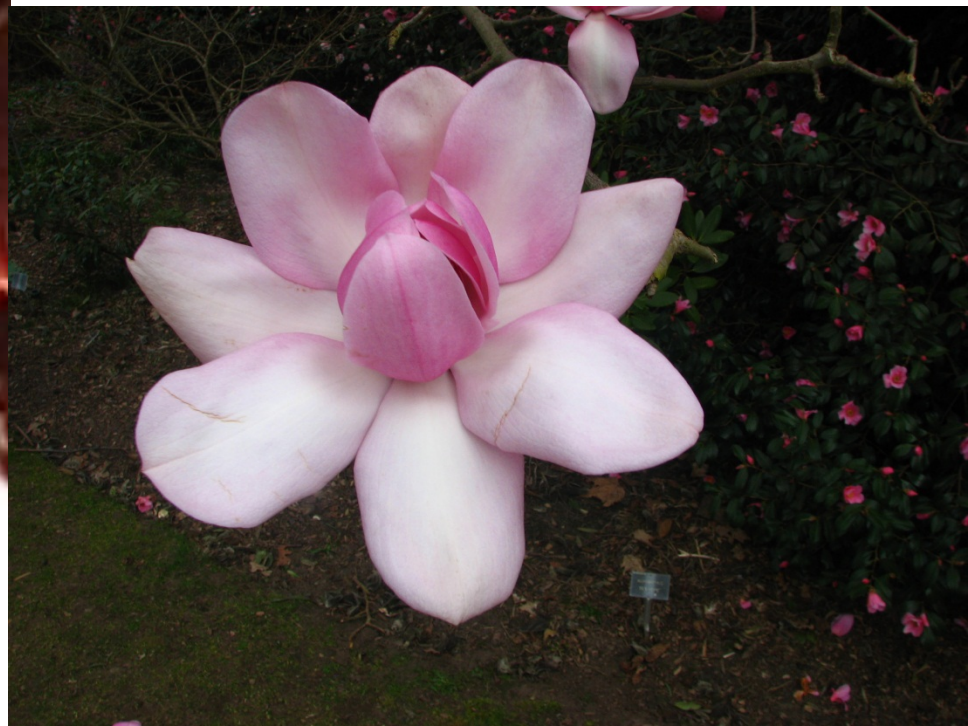
Some Days She Is Stressed

Early Scottish torture techniques, No.17:
"Burning the Campbell at Both Ends."

Don’t Add To It

Top Rules for the Best Class

- Number 1
- Be Nice to Gretchen



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Don’t Add To It

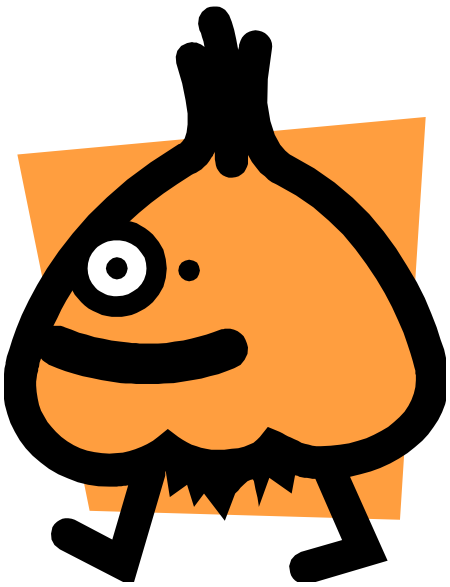
Tulip facts

Tulip facts, cont.

Tulip facts, cont.

Tulip Propagation

Flowering Control and Dormancy

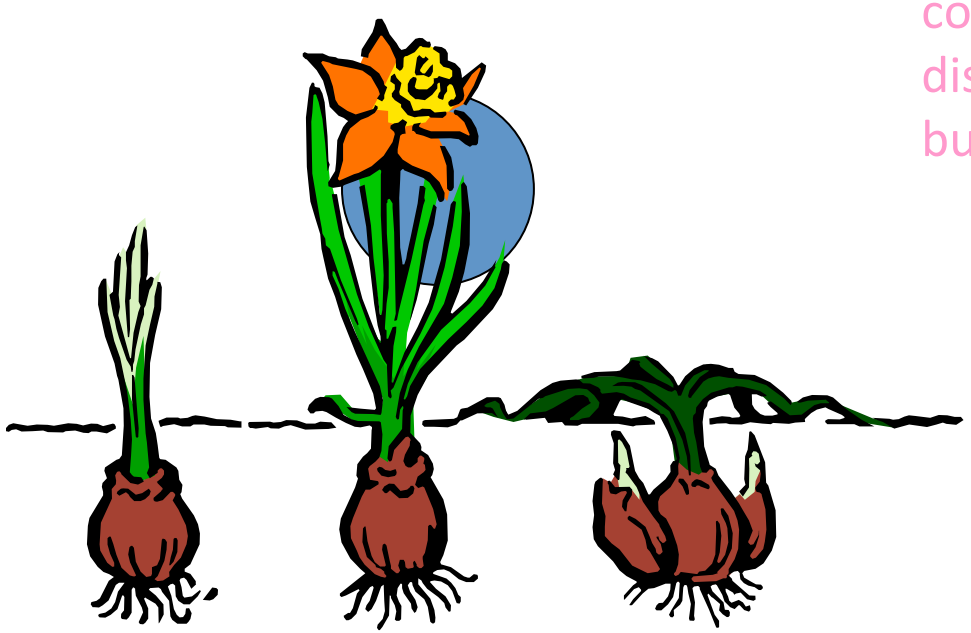


Fall

Bulbs planted, roots develop

Summer

Shoots senesce, daughter bulb complete, old bulb dissicates, harvest bulbs



Winter

Rooting, floral and leaf meristems present

Spring

Shoot elongation, flowering, daughter bulb growth

Flower Induction Requirements

Flower Induction Requirements

Schedule and Timing
Growers must decide:

- Correct cultivar
- Desired flowering date
- Potted vs. cut
- Calculate backwards
  - Flowering to force to plant date
- Weeks of cold
- Which rooting room
- Pre-cooled vs. non pre-cooled

Cold storage

Cold storage

Temperature	Rooting room A	Rooting room B
48 ^{0}F	Plant until Nov. 5-10	Plant until Dec. 5-10
41 ^{0}F	Nov. 5-10 until Jan. 1-5	Dec. 5-10 until Jan 1-5
32-35 ^{0}F	Jan. 1-5 to finish	Jan. 1-5 to finish

Potted flowering tulip culture

Tulip culture, cont.

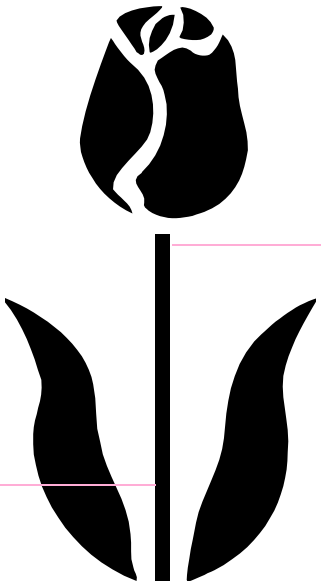
Tulip Diseases

Tulip Physiological Disorders

Scape Elongation

Cause is auxin, low light, and warm temperatures

Cause is endogenous GA induced by cold treatment



2 acropetal nodes

2 basipetal nodes

No commercial means to prevent during postharvest

Arest prevents during forcing

Narcissus

- ***Pseudonarcissus***
- **trumpet**
- **requires cold**
- **one flower/scape**
- **European**
- **<150 commercial cultivars**

- ***Tazetta***
- **paperwhites**
- **no cold**
- **many flowers/scape**
- **Mediterranean**
- **< 10 commercial cultivars**

Flowering Control and Dormancy

- Requires warm temperatures for floral initiation and differentiation which occur prior to harvest and continue afterward.
- Requires an absolute cold treatment for further floral differentiation, development and rapid emergence.

Daffodil Culture (differences compared to tulips)

- Nutrition- no application needed during forcing
- Height control- Florel (ethephon) at 1000-2000 ppm
- Plant 3 standard bulbs in a 6-inch pot
- Bull-nosing is a physiological disorder where the flower fails to expand, is caused by high forcing temperatures.

Hyacinth uses

- Potted flowering plant
- Garden plants
- Bulbs to force in special vases
- Cut flowers
- Individual florets in corsages
- Perfumery

Hyacinth facts

- Origin is Mediterranean region, Asia and Europe
- 95% of bulbs are produced in The Netherlands
- 50 commercial cultivars
- Bulbs are *scored* and *scooped* to produce bulblets

Flowering Control and Dormancy

- The meristem is vegetative when the bulbs are harvested
- Flower formation requires warm temperatures
- Regular or prepared bulbs

Hyacinth culture (differences compared to tulips)

- Temperature- take care to slowly increase temperature when going from cooler to greenhouse to prevent “spitting”
- Nutrition- $CaNO_3$ at 250 ppm
- PGR- Florel at 1000-2000 ppm
- Planting- one bulb/4-inch or
  3 bulbs/6-inch

Hyacinth schedule and timing

- When bulbs arrive, store at 63^0F until potting
- Only rooting room B is used
- December & January- forcing takes 21 days
- March & April- forcing takes 4-12 days
- Market when lower florets show color

- http://aggie-horticulture.tamu.edu/tisscult/microprop/microprop.html