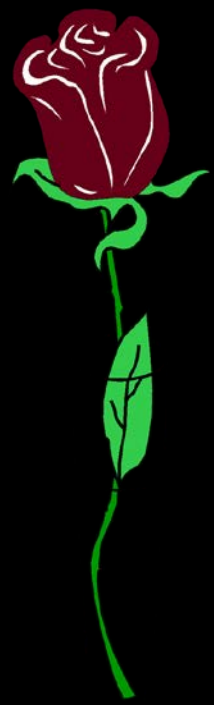
Conditioning and Storing Cut Flowers and Greens

Long lasting flowers

- important
- pleases customer
- happy customers return to the florist when they need flowers in the future

Chain of Distribution

- developed by the Society of American Florists
- Helps growers, wholesalers, and retailers lengthen the life of flowers



Processing:

1. cut flower care to extend the vase life of flowers for extended use

Five most Common Causes of Deterioration

- Low Water Absorption
- Loss of Water
- Loss of Food
- Disease
- Ethylene Gas

Low Water Absorption

- most flower stems are at least partially blocked when they arrive at the retail florist


florequisa
florequisa
florequisa

Causes of blockage: Low Water Absorption

- cutting stems with dull tools or with shears that pinch the xylem (water conducting tubes in the stem)

Causes of blockage: Low Water Absorption

- bacteria or minerals in the water clog the stem

Results of blockage

- air can enter the stems at the time of cutting and partially block the stem
- can become so severe that flowers wilt in their container

Loss of water

1)transpiration

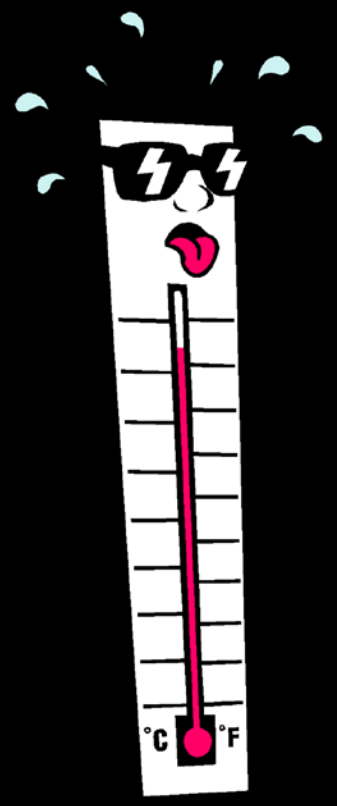
- process by which plants lose water through their leaves

Loss of Water

- flowers wilt when moisture is lost through transpiration quicker than it is taken in through the stems.

Loss of Water

2) occurs more rapidly at higher temperatures



Loss of food

- flowers are still living and need a source of food

Causes for Loss of food

1)flowers continue to photosynthesize after they are cut

2)must be given the proper light and a source of sugar

Disease

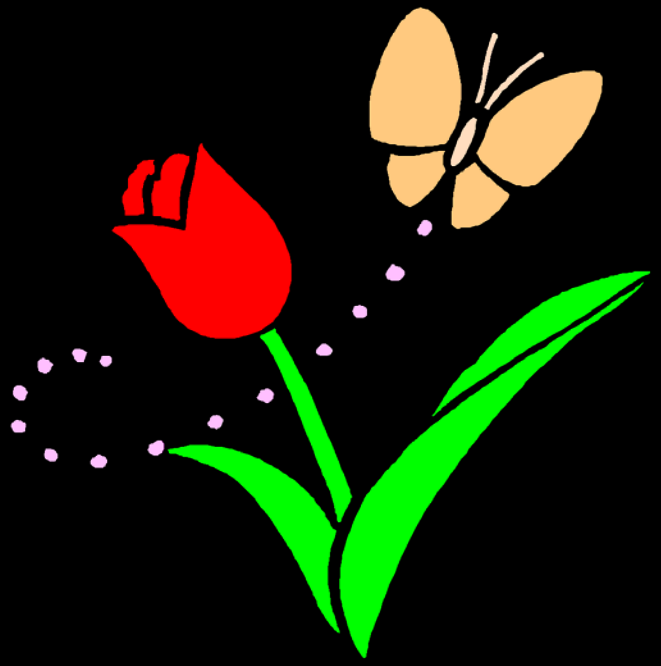
- Botrytis
- a fungus which causes brown spots on petals

Botrytis- Prevention

- do not allow flowers to get wet before putting them in the cooler
- allow wet flowers to dry before putting in the cooler

Ethylene Gas

- naturally occurring gas in flowers that hastens maturity



Ethylene Gas

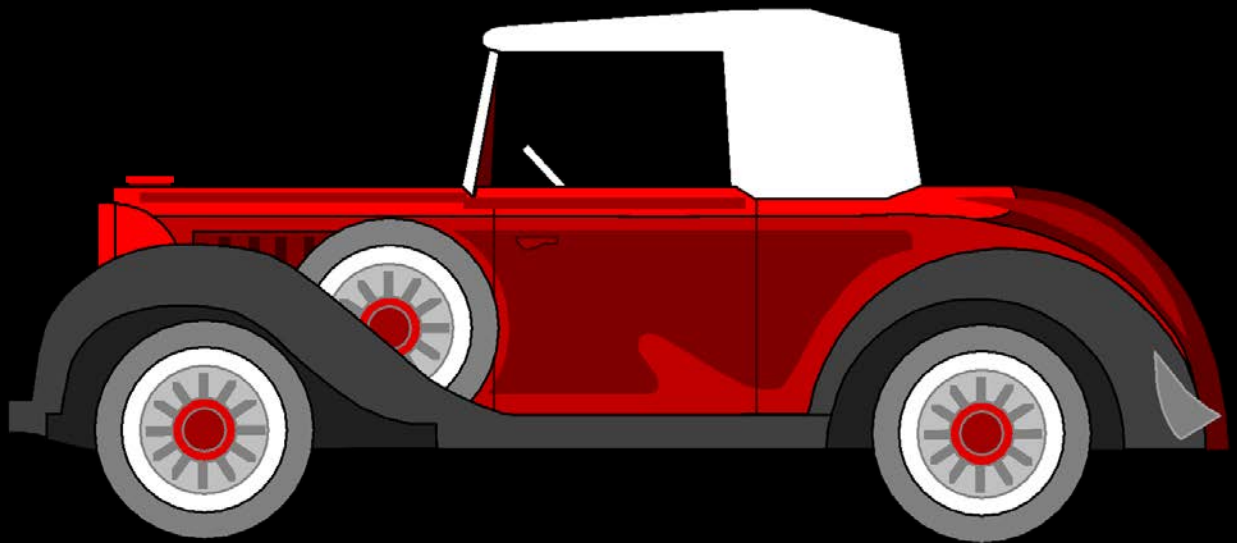
- causes rapid deterioration of cut flowers
- many sources of ethylene gas

Ethylene Gas

- is also found in diseased or injured flowers
- fruit, especially apples

Ethylene Gas

- rotting foliage below the water line
- exhaust fumes from cars



Symptoms of ethylene

- premature death
- flower and petal drop
- yellowing of foliage

Symptoms of ethylene

- loss of foliage
- upward cupping of petals - known as sleepiness in carnations.

Water quality

- hydration, process where flowers draw water and nutrients up their stems to the leaves and flowers through capillaries
- (keeps the flowers fresh longer)

Total Dissolved Solids

- TDS
- measure of the dissolved salt and minerals

TDS

- some minerals are beneficial to flowers
- floral preservatives are formulated for varying water types and pH’s

pH

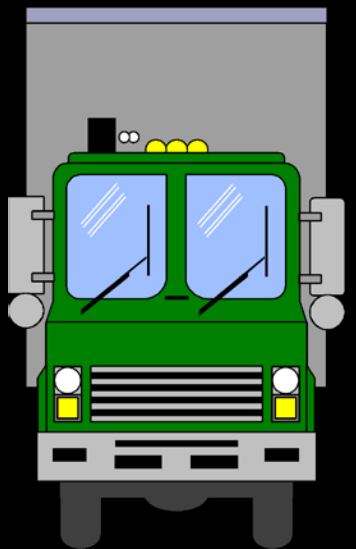
- pH of 3.2 - 4.5 maximizes hydration
- floral preservatives commonly added to prolong flower life lower the pH

Water Quality

- pH: needs to be 3.2-4.5
- measure of acidity or alkalinity on a scale from 0-14 with 7 being neutral

Conditioning flowers

- techniques of treating flowers to extend their life.
- Begins when flowers arrive from the wholesaler



Unpacking

- as soon as they arrive
- loosen paper or plastic sleeves which they have been wrapped in

Unpacking

- flowers will expand as they mature
- flowers will be crushed if the sleeves are not loosened.

Unpacking

- do not loosen sleeves on roses
- customers prefer roses in the bud stage

Unpacking

- check for signs of disease, damage or wilting
- remove damaged or diseased flowers from the bunch before storage

Unpacking

- excessive damage should be reported to the wholesaler

Re-cut the stems

- stems are cut with a knife rather than shears
- shears can pinch the xylem tubes causing partial blockage

Re-cut the stems

- cut stems at an 45 slant
- this helps them to absorb more water
- prevents the stems from sealing to the bottom of the container - air, debris, etc

Re-cut the stems

- stems should be cut under warm water
- warm water contains less air than cold water
- -Blockage - when air buddles are drawn to stem

Re-cut the stems

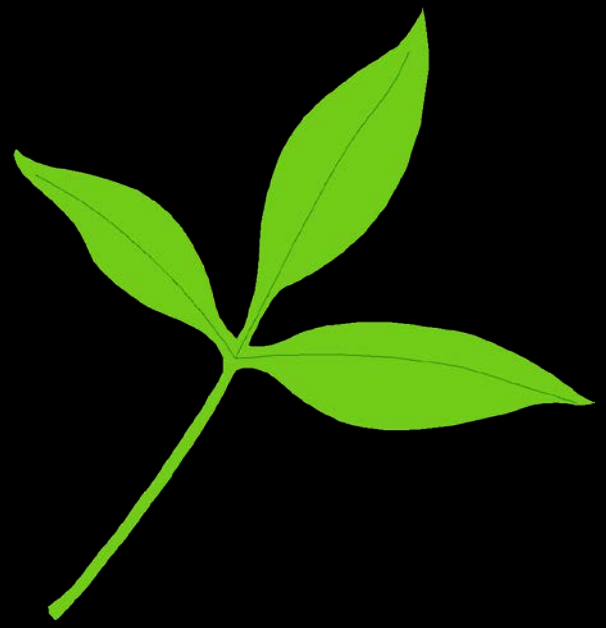
- stems that have a milky sap must be blackened over a flame or put the tips in boiling water for 10-30 seconds to seal the sap so water can be absorbed.

Remove lower foliage

- remove all foliage from stems that would be underwater in the storage container
- foliage left underwater will decay and lead to bacterial growth

Remove lower foliage

- rotting foliage clogs the stems and releases ethylene gas



Remove lower foliage

- use a glove or rag to pull the leaves off quickly down the stem
- remove outside or damaged petals on roses

Clean Containers and Cooler

- containers for flower storage should be cleaned with hot detergent solution, disinfected with bleach and thoroughly rinsed

Clean Containers and Cooler

- a 10% bleach solution is used for disinfecting the containers

Clean Containers and Cooler

- there are commercial products available that disinfect, clean and deodorize in one step
- Non-metallic containers should be used

Metal Containers

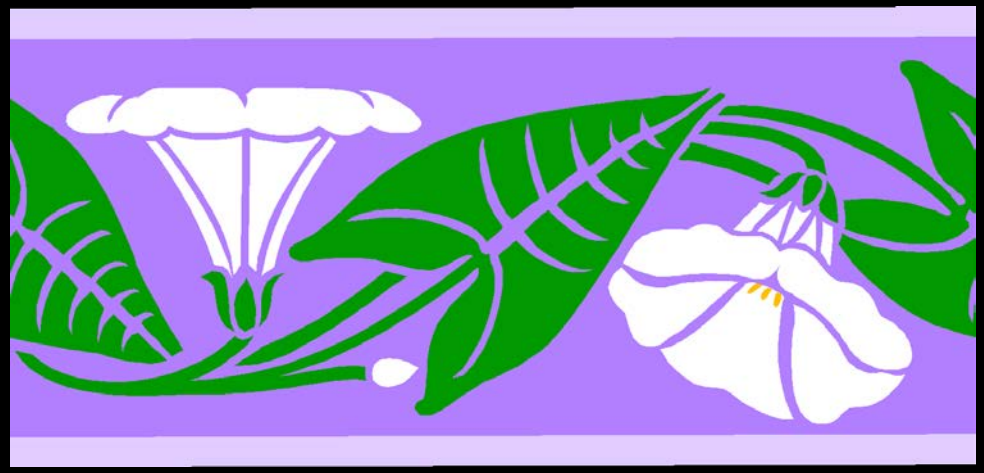
- decrease the effectiveness of preservatives

Containers

- should be short enough so that the flowers do not come in contact with the sides of the container

Preservatives

- Place a warm preservative solution in the container prior to adding flowers



Preservatives

- temperature of the solution should be between 100 degrees and 110 degrees Farenheit

Preservatives

- extend the life of flowers in three ways
- provide a food source needed for respiration

Preservatives

- contain sugar which flowers use to manufacture food to replace that lost through respiration

Preservatives

- provide an acidifier which lowers the pH of the water
- water moves through the vascular system of the flower at a pH of 3.5

Preservatives

- Acidic solution reduces bacterial action
- contain a bactericide which kills bacteria

Preservatives

- can be purchased in either liquid or powder form
- follow directions for mixing the preservative

Preservatives

- too much preservative can burn the flower
- too little will not be enough to keep flowers fresh

Preservatives

- home made preservative can be made using 50% Sprite or 7Up, or similar drink containing citric acid

Preservatives

- 50% warm water
- 1 1/2 teaspoons bleach to each quart of solution

Allow flowers to absorb H2O

- all flowers except roses should remain in the warm preservative solution outside the cooler for one to two hours

Allow flowers to absorb H2O

- roses should be stored in the cooler immediately
- this treatment allows flowers to absorb the maximum amount of water

Allow flowers to absorb H2O

- at the end of this time for water absorption, the flowers should feel turgid - full of water

Allow flowers to absorb H2O

- flowers that are shipped in the bud stage such as gladioli, lilies, and carnations could sit at room temperature overnight to open up

Refridgerate

(30-40 degrees farienheight)

1. reduces rate of transpiration
2. reduces temperature
3. reduces the rate of deterioation