# Fresh Flower Care & Handling

# Care and Handling

- Vase Life-length of time flowers remain beautiful
- Senescence-flower death

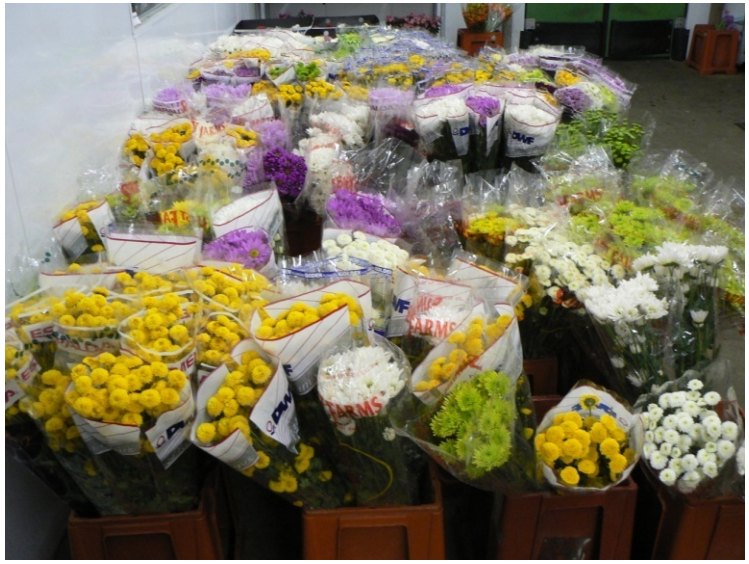
# Why flowers wilt and die prematurely

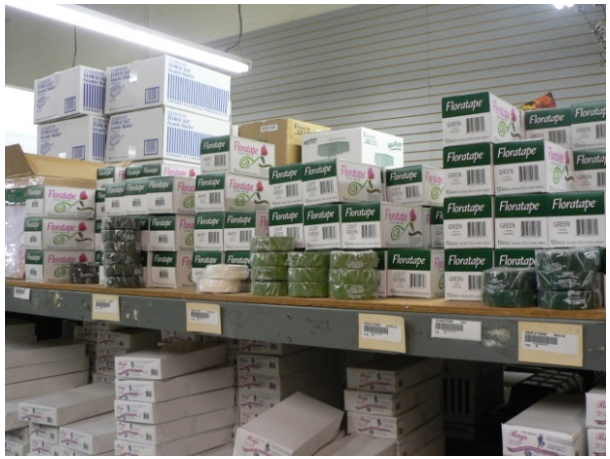
- Stem diameter and thickness
- Genetics
- Inability of the stem to absorb water
- Lack of carbohydrates
- Excessive transpiration
- Bacterial growth and disease
- Ethylene gas
- Improper surrounding conditions

# The Chain of Life

- **The Chain of Life**-a long chain of handlers involved in moving the floral product from the greenhouse/field to the design bench
  - **Grower-** harvest flowers and ship them to an auction
  - **Broker-**receives large quantities from foreign countries and domestic growers
  - **Shipper-**ships by air or truck to wholesalers
  - **Wholesaler-**receives flowers from brokers and growers; conditions flowers and sells to retail florists
  - **Florist-**receives flowers from wholesalers and local growers; conditions flowers and sells and delivers flowers to consumers
  - **Customer-**receives flowers as a gift or purchases them for personal enjoyment

# The Chain of Life-Wholesaler




# Chemical Treatments

- Rehydrating
  - Add hydrating solution to water after harvesting plant material
    - encourages water absorption and maintains turgidity
  - Repeat if cut flowers transported out of water
  - rehydrate with clean, good quality water
  - Use a biocide and or an acidifier

# Chemical Treatments

- Pulsing-method of conditioning in which fresh cut plant material is in a particular solution for a certain time
  - contains sugars like sucrose
  - given with growth regulators
  - used to inhibit bacterial growth
  - improve product quality during shipping & storage to extend the ultimate vase life of the flowers
  - important to know about how the product has been cared for along its journey

# Chemical Treatments

- Preventing the effects of ethylene gas--
  - Ethylene
    - naturally occurring plant hormone
    - involved in the aging process
    - released as an odorless, colorless gas
    - extremely harmful to cut flowers
    - produced by ripening fruit & vegetables, decomposing plant material, bacteria, and burning of gasoline, diesel fuel, firewood, and tobacco
  - Treatment-silver thiosufate solution

# General Guidelines on Care and Handling

- **On receiving cut plant material:**
  - Open and unpack immediately
  - Allow the produce to breathe
  - Check name, quantity, & price against invoice
  - Remember correct plant & variety name for future reference
  - Check quality and look for damage

# General Guidelines on Care and Handling

- **Begin re-cutting and conditioning immediately**
- **Use properly sanitized buckets**
  - Bacteria shortens the lifespan of cut flowers and foliage.
  - Sanitize knives, cutters, work surfaces, coolers & buckets.

# General Guidelines on Care and Handling

- **Fill the buckets with six to eight inches of clean, lukewarm water.**
  - 100-110 Degrees F
  - Warm water will encourage the development and opening of the plant material.

# General Guidelines on Care and Handling

- **Add a correctly measured amount of the appropriate floral preservative to clean water and make sure that it is well dissolved.**
  - Floral preservative doubles the vase life of cut flowers.

# Floral preservative ingredients

- Sugars
  - carbohydrates to nourish
- Biocides
  - inhibits the growth of microorganisms
- Acidifiers
  - lowers pH levels
- Growth regulators
  - to increase the vase life of some flowers
- Wetting agents
  - to aid in water absorption

# General Guidelines on Care and Handling

- **Remove any foliage that will be below the water line**
  - Discourages bacterial growth
  - avoid damaging the stem's skin when stripping
    - juices from stem causes extra bacterial growth

# General Guidelines on Care and Handling

- **Cut 1-3 inches off the bottoms of the stems**
  - Re-cutting exposes fresh, healthy tissue to better uptake water
  - Callus—outer cells surrounding cut that dry out-preventing uptake
  - repeated cutting under the same water can pollute with accumulating debris and bacteria
  - cut the plant stem at a 45-degree slant using a knife
    - exposes a maximum area of clean, open cells
    - keeps the bottom of the stem from resting flat on the bottom of the bucket, further impeding water uptake.

# General Guidelines on Care and Handling

- **If a product has not been pre-treated, do so by placing or dipping into an appropriate hydrating solution.**
- **Place flowers into buckets containing warm, pre-mixed nutrient solution.**
- **Prevent unnecessary handling**
  - Dirt or salt and sweat on the hands can easily stain and leave permanent damage on delicate plant surfaces.

# General Guidelines on Care and Handling

- **Condition the product**
  - Leave product to recover and acclimatize for several hours
  - Product becomes fully hydrated
  - Encourages bud development

# General Guidelines on Care and Handling

- **Store product at the right temperature and humidity**
  - A lower temperature slows the respiration rate of cut plant material
  - Storage temperature--36-38 degrees F
  - Tropical plant materials—store 55-60 degrees F.
  - Humidity--minimum of 80%

# General Guidelines on Care and Handling

- **Rotate stock**
  - Always practice the ‘First In, First Out’ rule.
- **Maintain proper care and handling practices at the design bench**
  - **Use plant material sensibly and pay attention to its needs and its destination.**
  - **Soak floral foam and bouquet holders in clean water with nutrient solution**
  - **Keep cut flowers in water rather than laying them on the bench**
  - **Include a packet of floral preservative with wrapped flowers and hand tied bouquets.**
  - **Include care instructions with flowers that are delivered.**
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# General Guidelines on Care and Handling

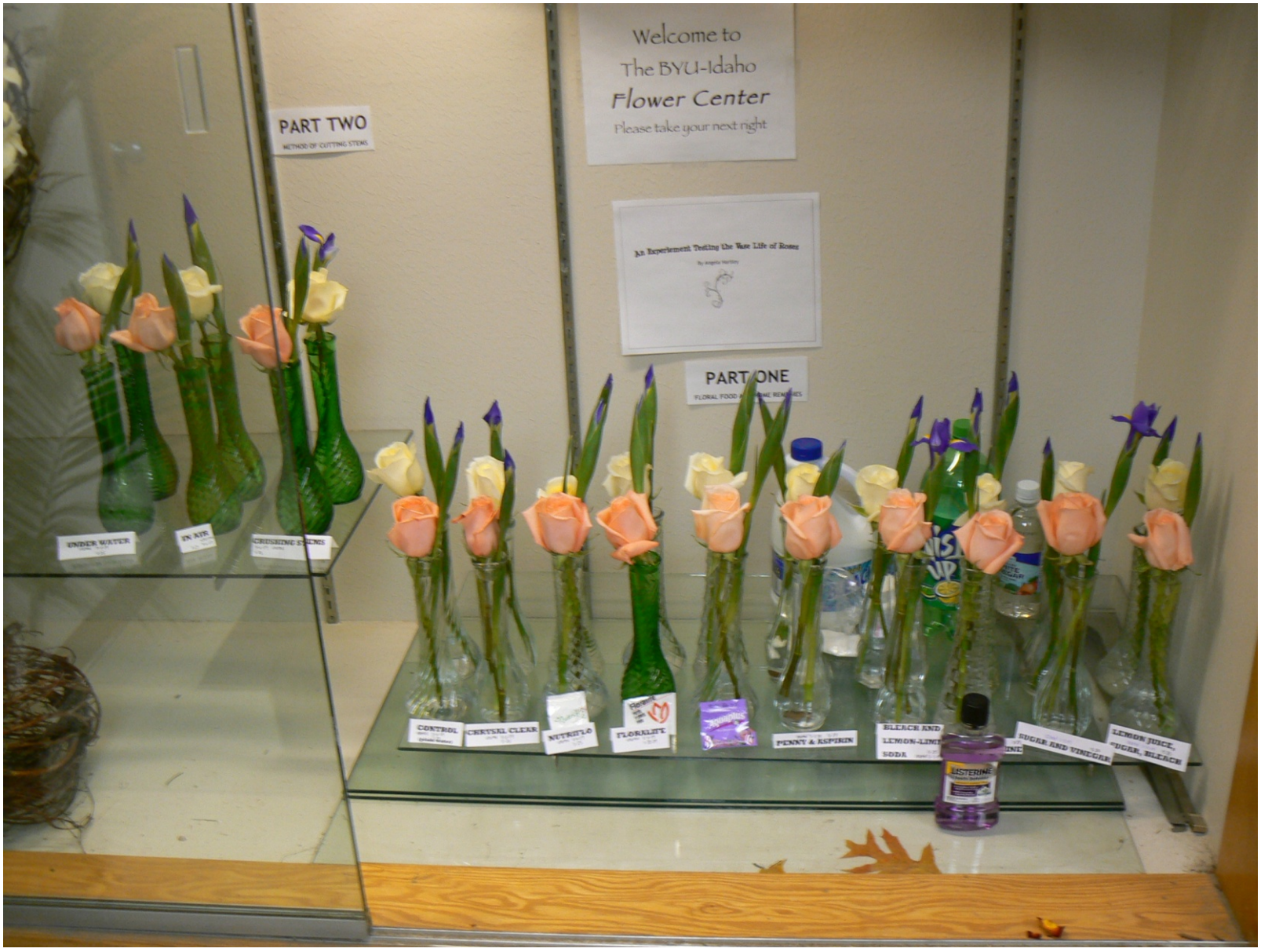
- **Keep up with regular maintenance**
  - Remove dead flowers
  - Remove empty buckets and clean carefully
  - Change the water in the buckets and replace with the correct cut flower food
  - Re-stock partly filled buckets from flower stock

# Care and Handling of Floral Arrangements

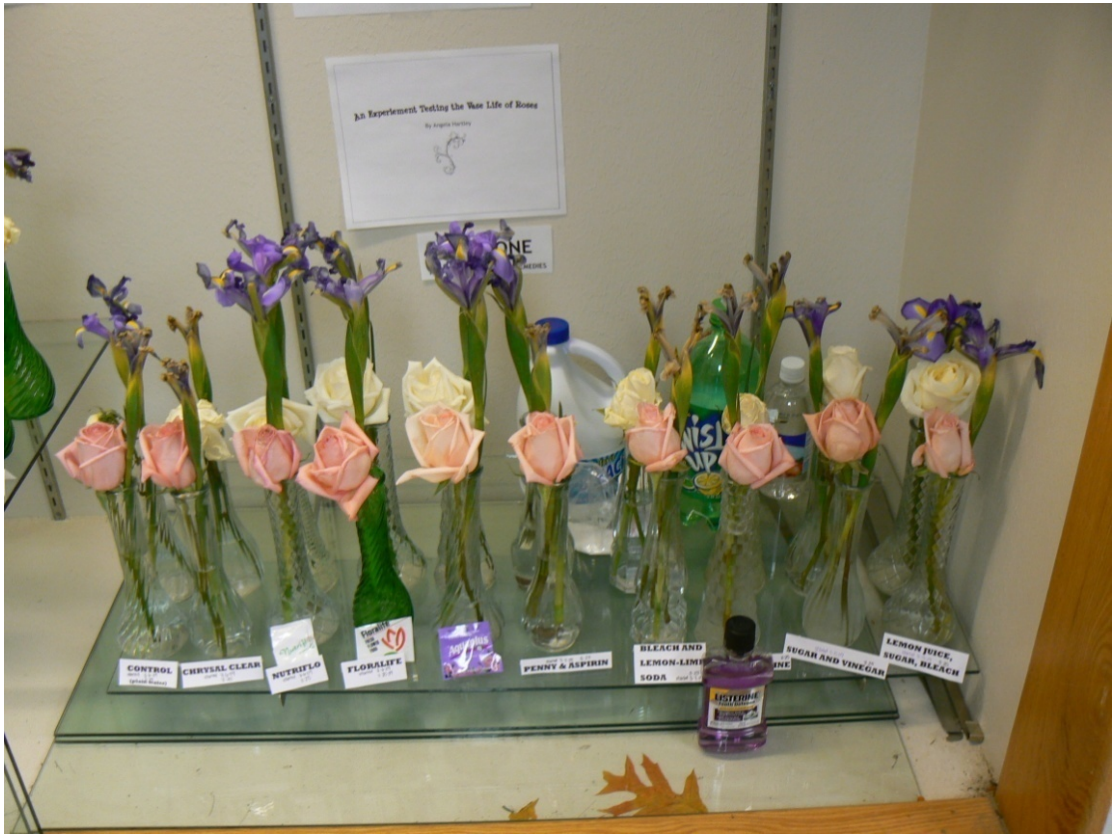
- Care tag
- Replenish water preservative solution
- Misting
- Remove wilted and re-cut or discard
- Keep away from ethylene sources
- Keep out of direct sunlight
- Avoid warm sources (TV, microwave)
- Avoid drafts

# Examples of Care and Handling Experiments

# Care and Handling Experiments—week 1



# Care and Handling Experiments—week 2

# Care and Handling Experiments

- Some of the home remedies added to the water were:
  - Bleach and lemon-lime soda
  - Listerine
  - Sugar and vinegar
  - Lemon juice, sugar, bleach
  - Aspirin and a penny
  - Clear water

# Care and Handling Experiments

- Some of the preservative solutions added to the water were:
  - Floralife preservative solution
  - Nutriflo preservative solution
  - Aqualplus preservative solution

# Care and Handling Experiments

- Some of the methods of cutting the stems were:
  - Underwater
  - In the air
  - Crushing stems
  - Cutting with scissors
  - Cutting with knife
  - Cutting with pruners
  - Not re-cutting the stems

# Care and Handling Experiments

- Some methods of storing plant material:
  - Cooler vs. room temp
  - Any variable temperatures
  - Store on a microwave or TV