
Society of American Florists
SAF PalmBeach2017
SEPTEMBER 6-9 ~ 133RD ANNUAL CONVENTION

Down and Dirty:
Nitty Gritty Hacks to Extend Vaselife

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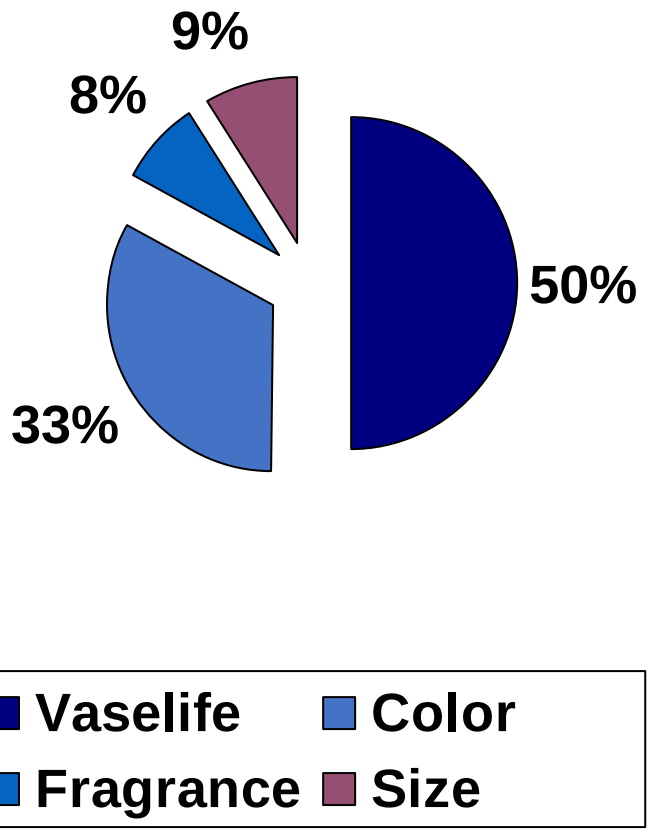
September 8, 2017

Topics

- What Consumers Want & Need
- Science Friday with Steve
- 4 Colossal Profit Thieves
- Cleaning House
- Flower Solutions 101
- Protocols

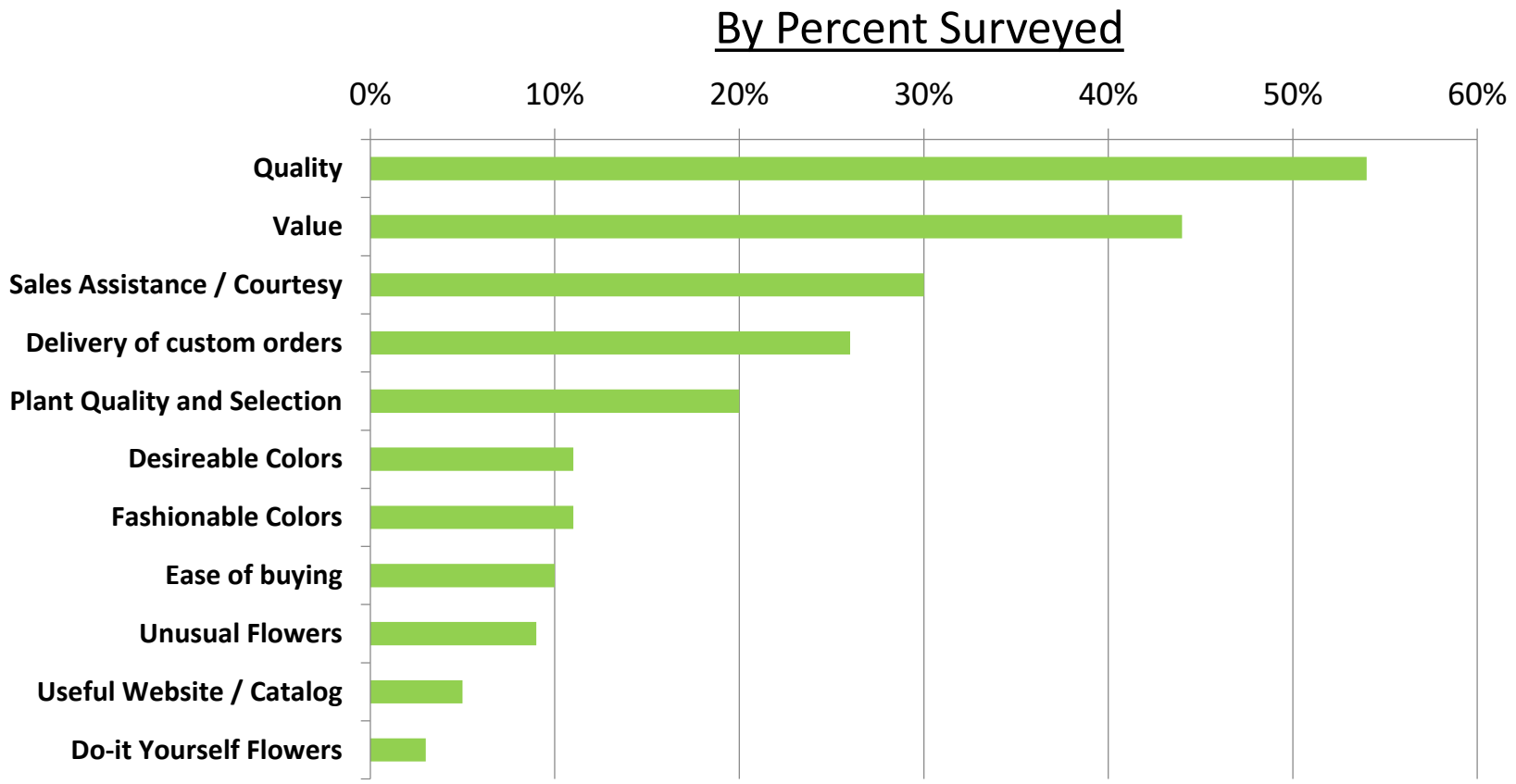
What's Most Important to the Consumer?



- Consumers are concerned with how long the flowers last.
- Studies show consumers **expect 5-7 days** of vase life to consider flowers a worthwhile purchase.

Factors influencing consumer behavior

Based on a consumer study of 1,200 flower-buying households in the U.S., over 14 years and four surveys, consumers rated the following positive/negative influencers

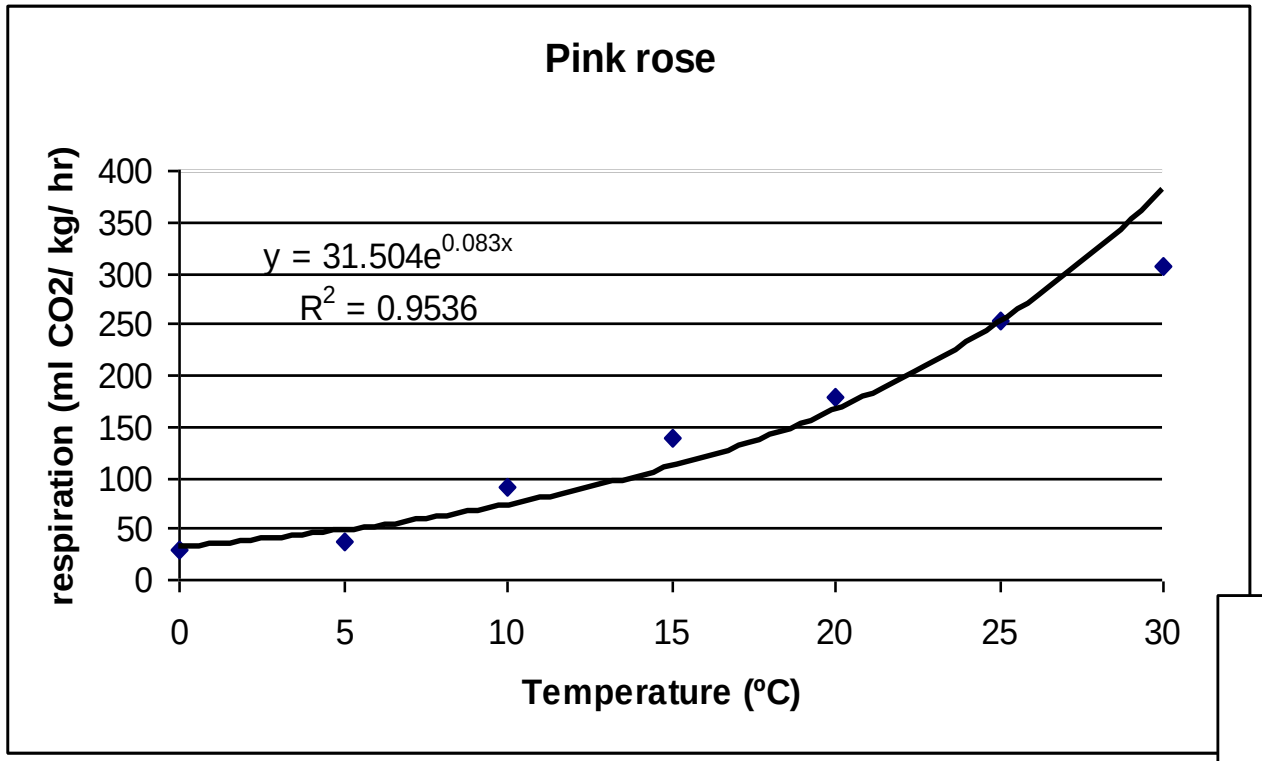


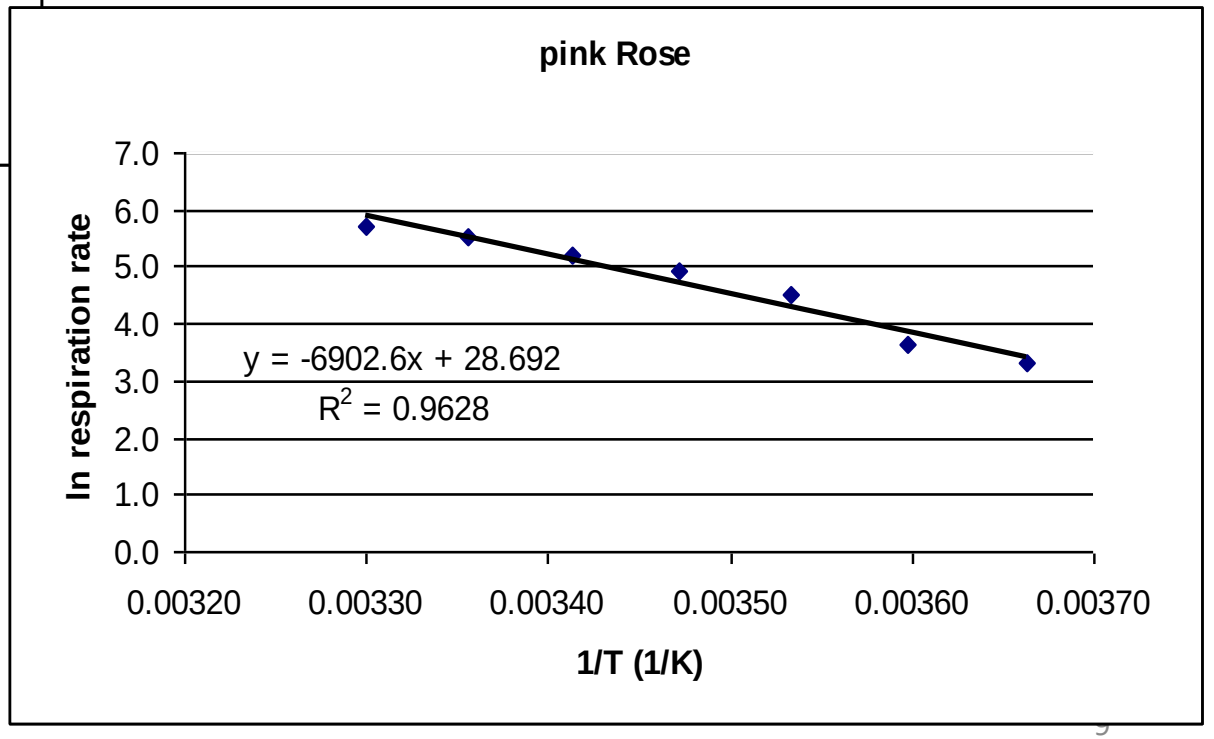
Science Friday with Steve

Temperature and Relative Humidity

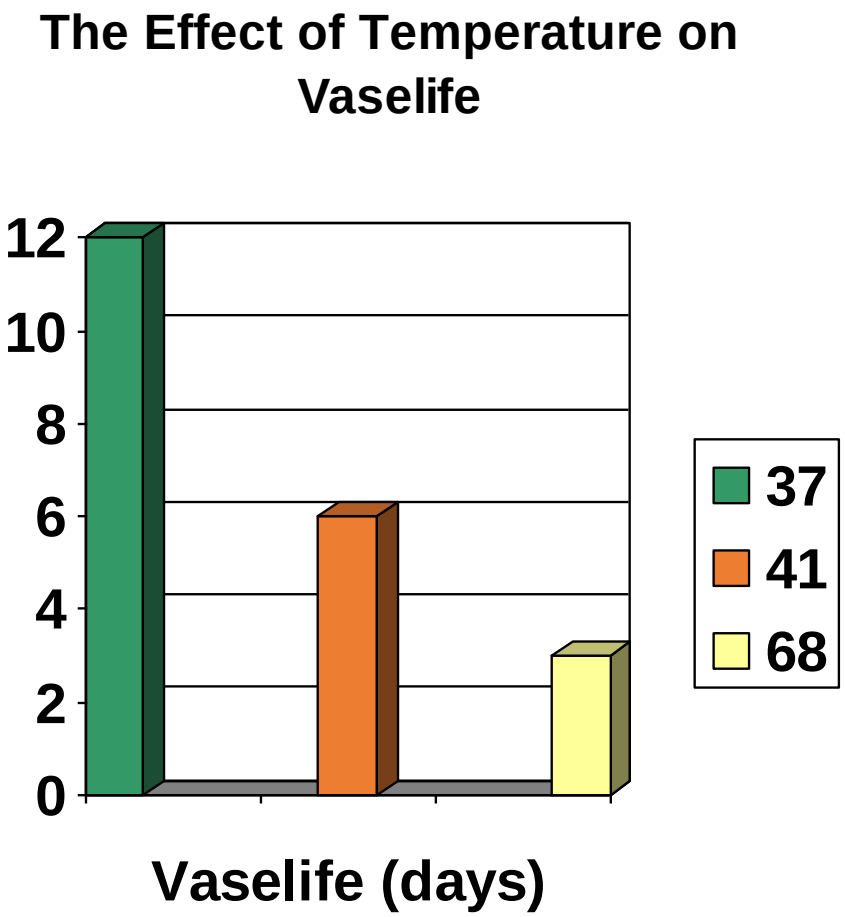
Effects of Temperature 5 days @ __ F … then day 5 =

A few degrees matter!


Pink rose
respiration (ml CO2/ kg/ hr)
400
350
300
250
200
150
100
50
0
y = 31.504e0.083x
R2 = 0.9536
0
5
10
15
20
25
30
Temperature (ºC)

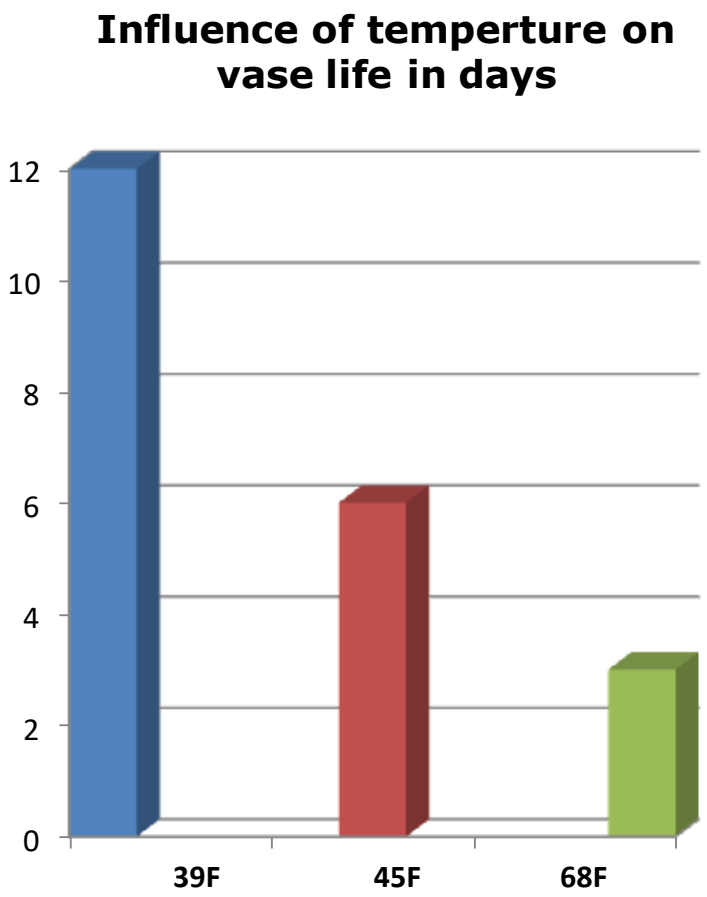

pink Rose
ln respiration rate
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
y = -6902.6x + 28.692
R2 = 0.9628
0.00320
0.00330
0.00340
0.00350
0.00360
0.00370
1/T (1/K)

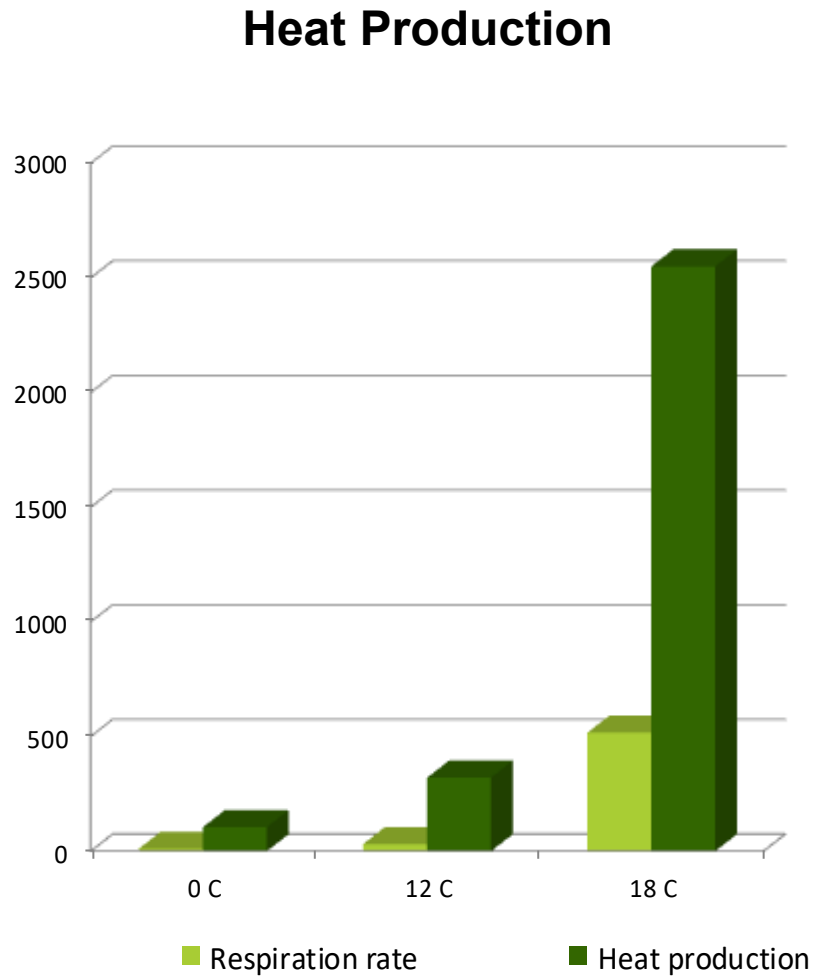
Storage: Temperature and Relative Humidity



- The proper temperature of a cooler should be 34-38F
- Coolers should be cleaned with DCD or Chrysal Cleaner every two weeks
- Tropical flowers should be stored at 55F or room temperature
- Relative Humidity should be 80-90%

Empirical data on the affects of heat and RH on cut flowers





Cooler maintenance

- What is the best way to get an accurate read on the temperature?
- What is the humidity level?
- How often is the compressor serviced?
- Is bleach the most effective cleaner for cooler walls and shelves?
- Fat guy breathing…only so many breaths

Profit Thieves

- ➔ Temperature
- ➔ Ethylene
- ➔ Bacteria
- ➔ Botrytis
- ➔ Mechanical Damage

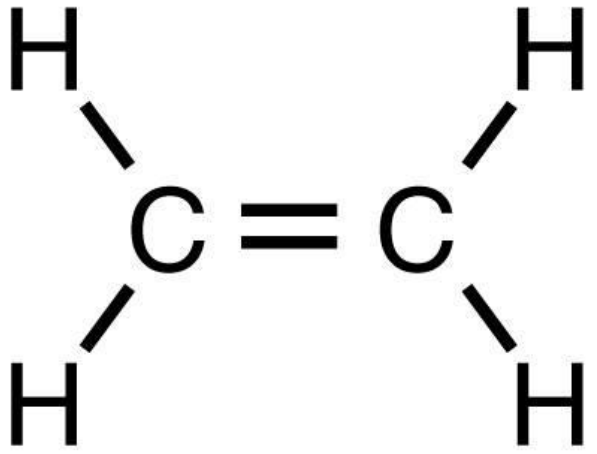
Resolutions:

1. …be cool
2. Consistent sanitation
3. Work clean
4. Standardize protocols
5. Control your gas

ETHYLENE

What is Ethylene?

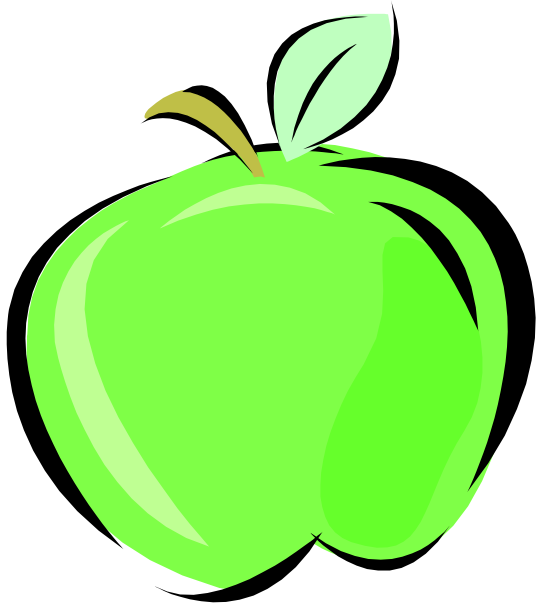
- A natural plant hormone internally produced by all plants
- The only plant hormone existing in the form of a gas.
- Commonly used to ripen fruits and veggies, but deadly to flowers
- Ethylene molecules are small enough to migrate through plastic and cardboard
- Once exposure occurs, damage is irreversible



What Does Ethylene Do?

- Causes premature death of many cut flowers and potted plants
- Reduces the shelf life of many cut flowers and potted plants
- Sensitive Cut Flowers : carnations, delphinium, larkspur, stock, roses, cut orchids, sweet peas, wax
- Sensitive Potted Plants: mini roses, kalanchoe, lilies, orchids, impatiens, others

Ethylene Sources



- Internal

  -Flowers/Fruit generate their own ethylene as a hormone

- External

  -Other flowers

  -Fruits & vegetables

  -Bacteria

  -Burning organic material

  -Cigarette smoke

  -Propane heater or forklift fumes

  -Auto exhaust

Symptoms of Ethylene Exposure

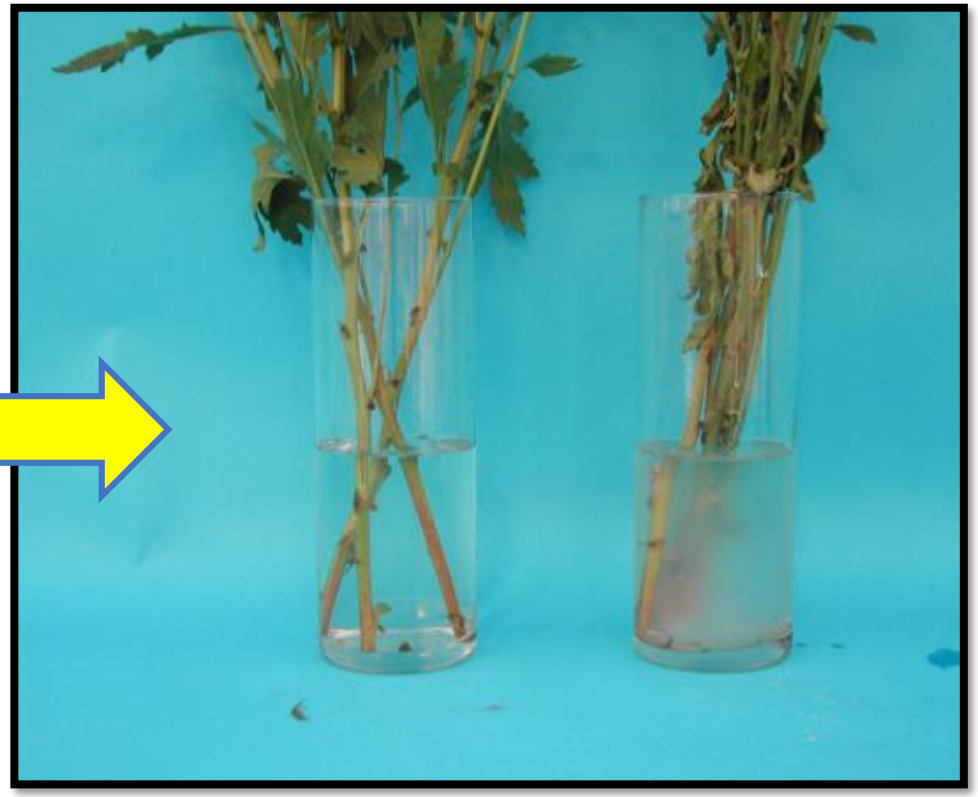
How to Avoid Ethylene Problems

- Buy treated flowers.
- Don’t over peel guard petals on roses.
- Clean cuts, no ragged edges.
- Avoid cramming product in buckets.
- No deco mosses in the coolers.
- No fruit basket items, no lunches in coolers.
- Work clean. Sanitation matters.
- No smoking in vans.

BACTERIA

Damaging Effects of Bacteria

If you don’t control bacteria here



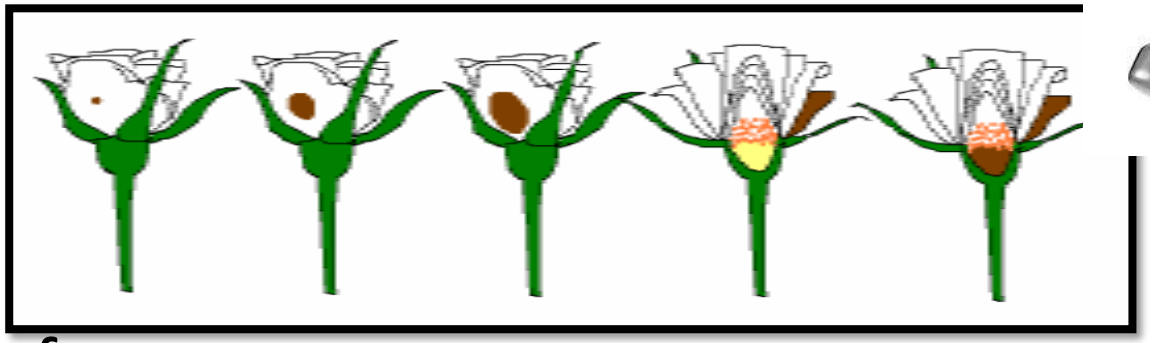
It ends up here

If you wouldn't drink it, or drink out of it, neither will your flowers.

Bacteria colonies double every 20 minutes……

BOTRYTIS

The Botrytis Hammer



- **Botrytis**
  - **What is it?**

    Non-specific, air-borne fungus

    Loves ALL flowers, fruits, veggies and plants

    Cross contaminates

  - **What Botrytis spores need to germinate: *MOISTURE***

    Dripping on flower heads

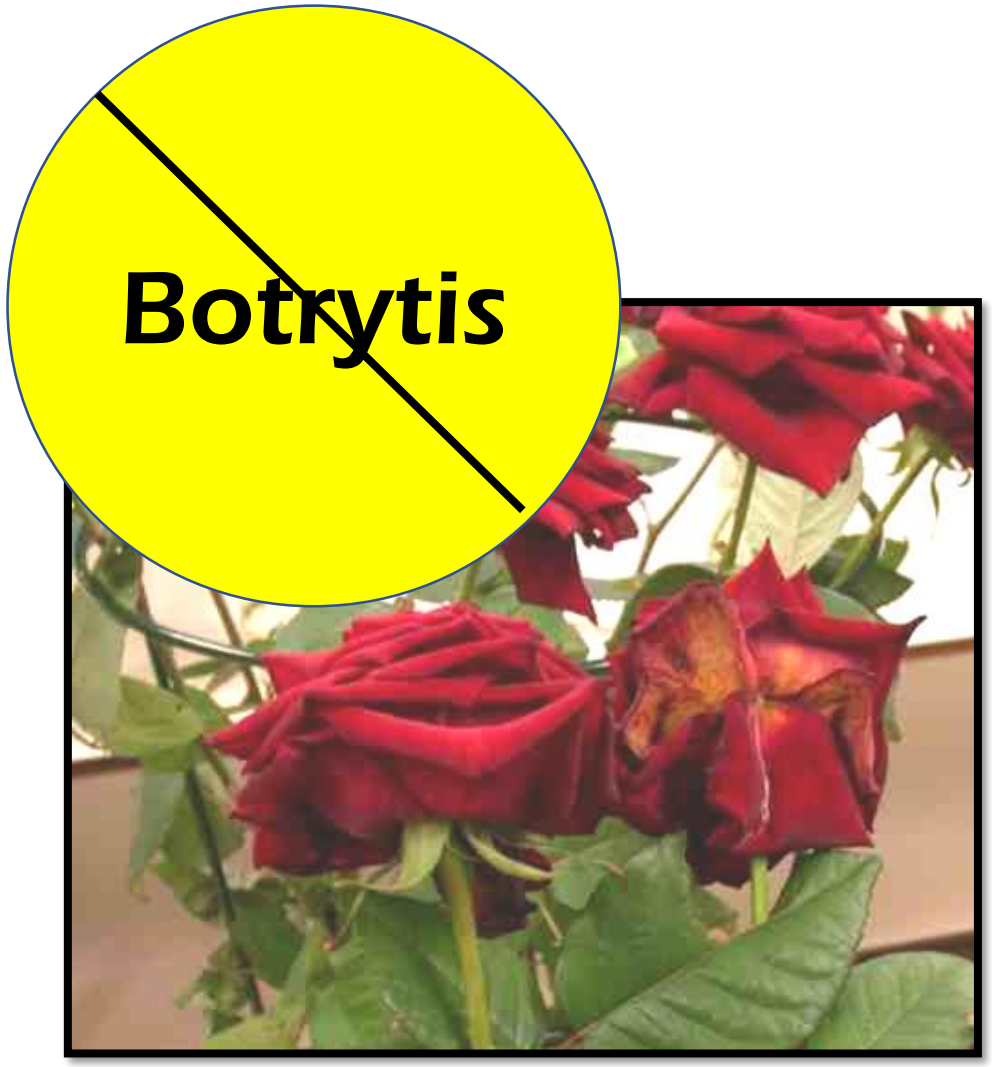
    Condensation inside sleeves

    Overturned wet-packs

    Wet cooler floors

How to spot Botrytis

More examples…

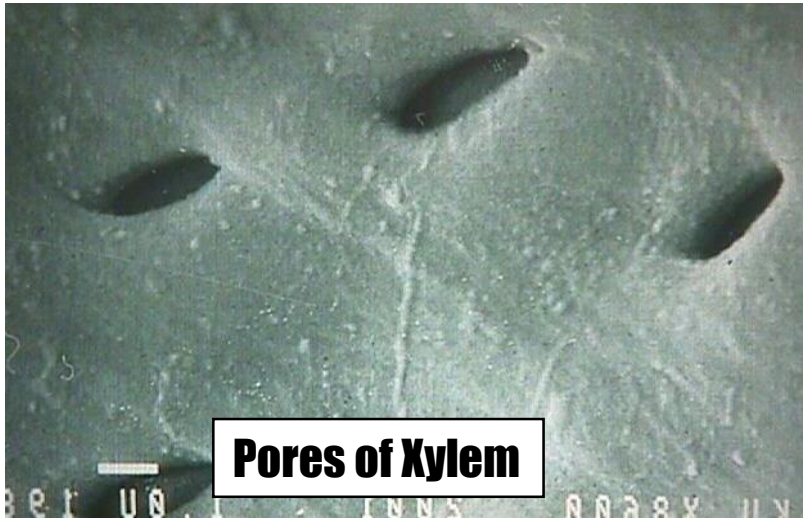


- Respect the cold chain
- Keep Flowers DRY
- Prevent condensation on the flowers!
- Keep cooler and production floors dry
- Give breathing room in buckets
- Avoid mechanical damage
- WORK CLEAN

CLEAN HOUSE

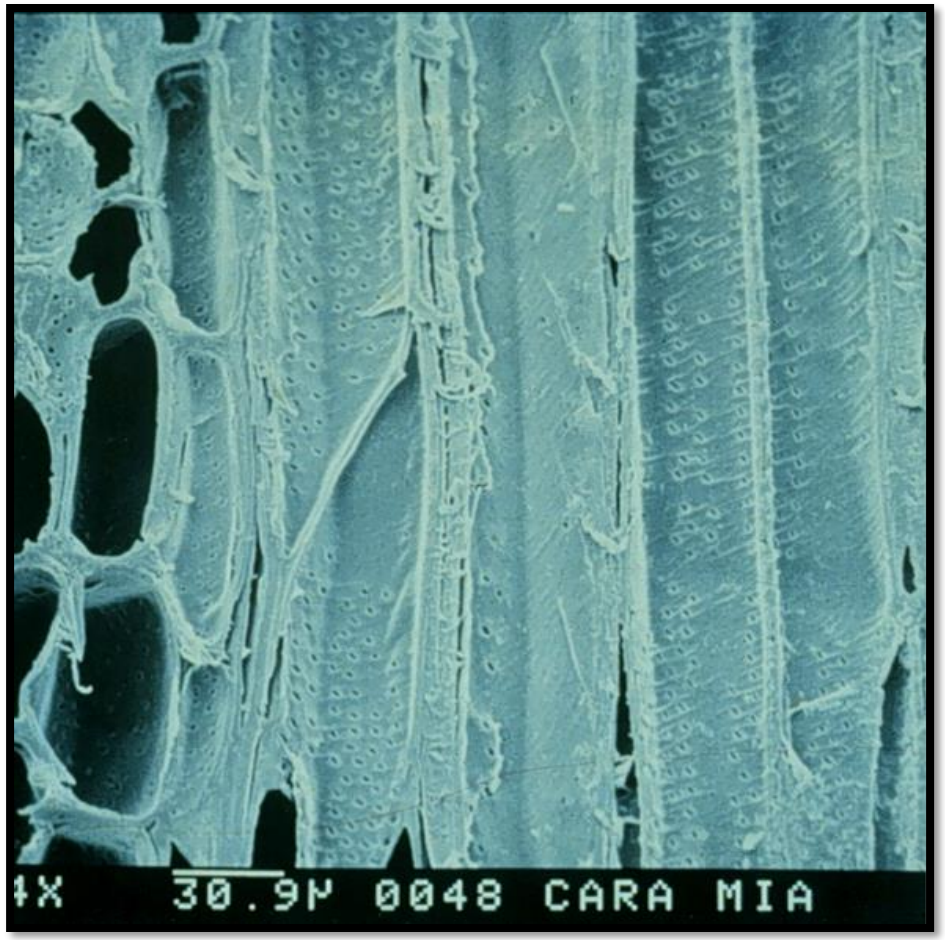
Ask “does it bring you joy?”

Why is Sanitation Important?



- The walls inside the flower stem (xylem) can be blocked with bacteria.
- This can cause wilting and bent-neck!
- Proper hydration and sanitation can eliminate this problem.

Free Flow vs. Blocked system



Is bleach your cleaning solution?

PROS

Aggressive

CONS

Short lived

No residual effect

Corrosive to metal

Hard on clothes

Hard on skin

Cleaning Schedule

1. Tables, tools, chopper and knives daily

2. Buckets and vases—before each filling

3. Floors, coolers and vans-- 2 x week

4. Trash cans, brooms, dust pans--empty daily, sanitize weekly

FLOWER SOLUTIONS 101

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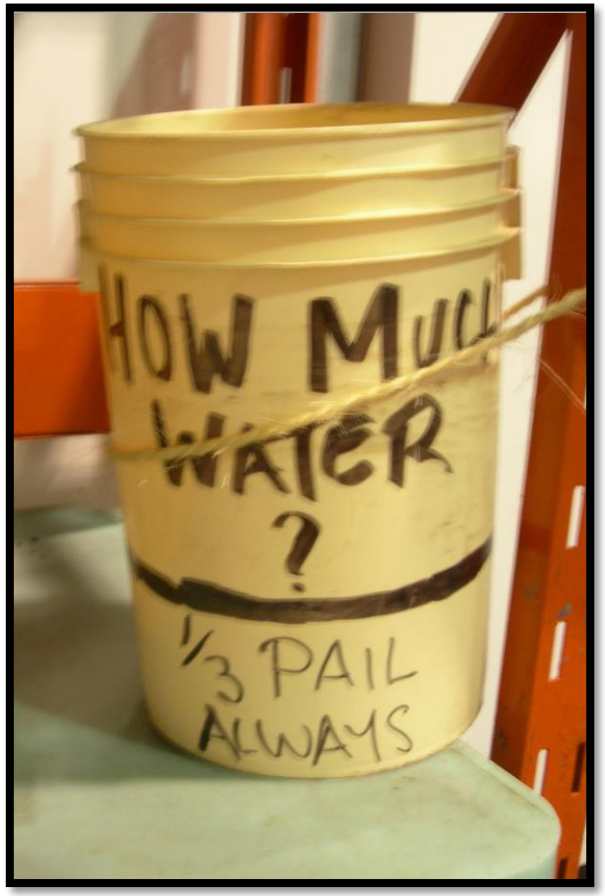
Solution Review

- What's the difference between hydration and flower food solutions?
- Why is pH important?
- How does your supplier treats his/her flowers?
- Which solution to use?
- Guestimate or measure?
- How long are solutions active?
- Why change bucket & vase water every other day?



What's the Difference between Hydration and Flower Food?

- Hydration solutions kick-start stem flow and lowers pH levels.

- Flower food kick-starts stem flow, lowers pH levels, *AND* provides energy to keep blooms standing tall

Two kinds of Flower Food:

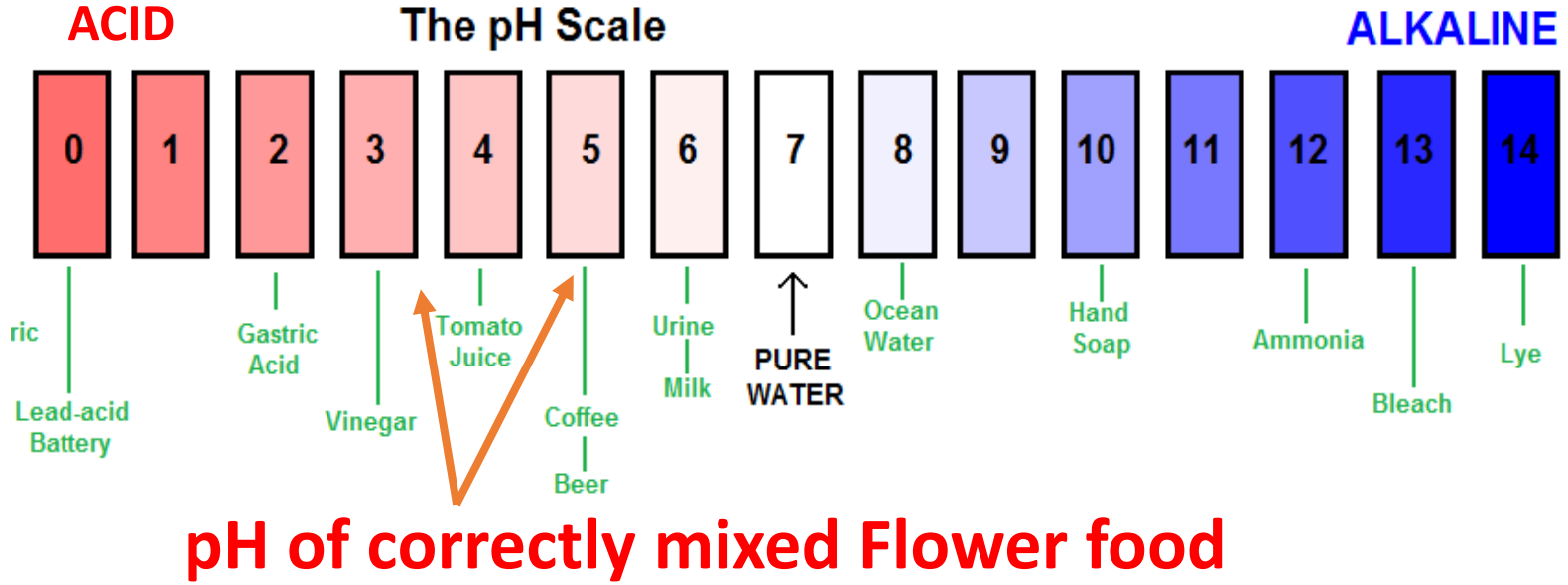
BUCKETS: Use holding solutions that contain minimum amount of glucose

VASES and FOAM SOAKING BIN:

Contains **maximum** amount of glucose

pH—why it matters

- Lowering pH dissolves air bubbles in stems & boosts flow
- Clarifiers in solutions are pH dependent
- Flowers drink most efficiently between pH 3.5—5.0
- Tap water is neutral or close to neutral pH 7



BUCKET FILLING DEMO

Importance of Correct Dosing

- Correct dosage is important for best performance of flower food
- Both under- and over-dosing reduce the effectiveness of flower food

Day 7

Improper dosing results in premature flower death.

Importance of Correct Dosing!

0% 25% 50% 100%

Alternative Facts (honk)

Flower food clogs stems and burns foliage
Change solutions every other day
“Home brews” work as well as commercial formulas
Add Ice.
Dip stems in alum.
Spray blooms with diluted Elmer’s glue
Cut stems underwater at 45 degree angle
Solutions make bad flowers better
Prep solutions with warm water

Alternative Fact Buster:

WARNING: Research shows commercial flower food extends vase life by 50% longer than plain water and is more effective than any combination of aspirin, 7UP, sugar, Vodka, Viagra, cinnamon, bleach, vinegar, pennies, pure water, etc.

PROTOCOLS

The story behind stripping & peeling

Best Practices

- Temperature management
- Start and finish clean
- Right solution-- right sequence --right job
- Allow time to re-hydrate blooms
- Use sharp, clean tools
- Handle with care
- Ethylene—the silent killer
- Beware of wet heads
- Use plastic liners in metal containers & lead crystal vases

Flower handling is easier than rafting, but not as thrilling!

Questions???

Thank you!