New Innovations in Floral Care & Handling

April 10, 2012

Steve Daum

North American Sales

Floralife®, a division of Smithers-Oasis Company

Where we work

LATIN AMERICA DIVISION
Brazil*
Colombia
Mexico

N. AMERICA DIVISION
United States/Canada

EUROPEAN DIVISION
Belgium
England
France
Germany
Slovenia
Spain

AFRICAN DIVISION
Kenya
South Africa*

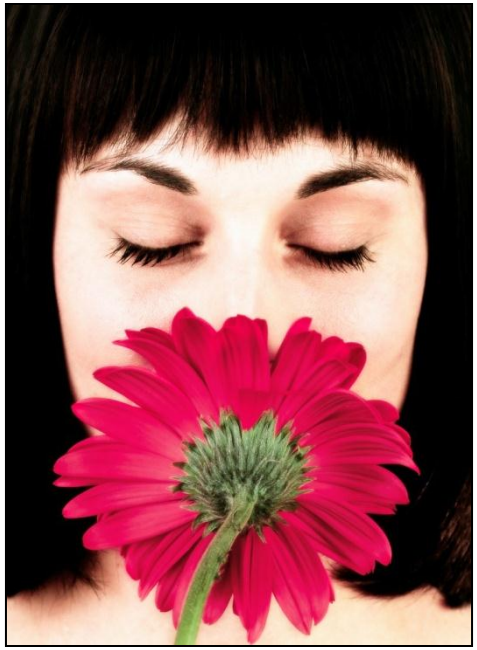
ASIA PACIFIC DIVISION
China
Hong Kong
Japan
S. Korea

S.W. ASIA DIVISION
Australia
India
Malaysia

MIDDLE EAST
Dubai

Why is care and handling important?

- Consumer satisfaction equals repeat customers and sales!
  - Customers expect seven days of vase-life in their home
- Reduce scrap
- Flowers are a perishable commodity!
  - Proper care & handling can add between 2% to 4% of NET profit to your operation

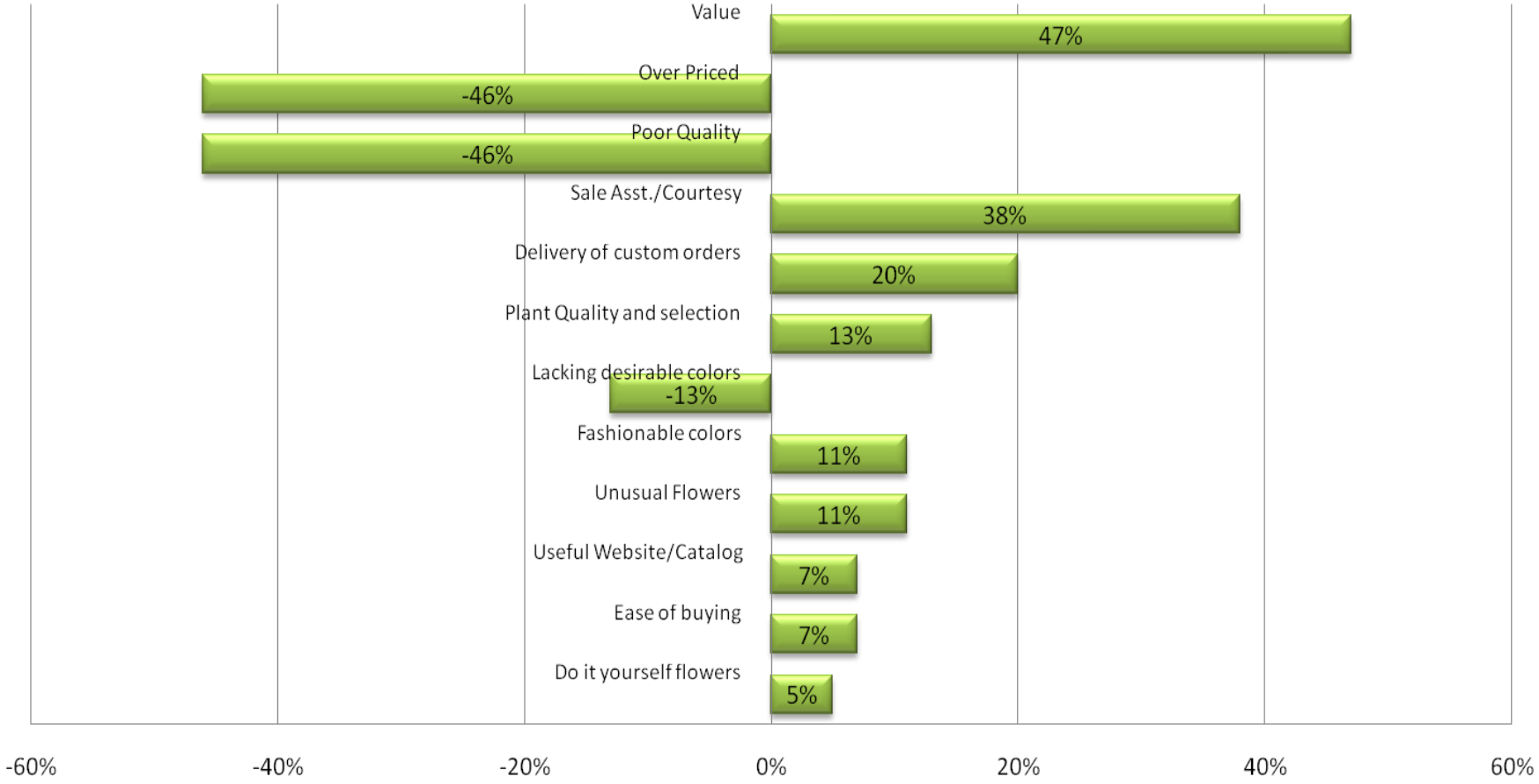


What do consumers care about?

- Value
- Price
- Quality
- Customer Service in shop
- Delivery on custom orders

What is influencing customer behavior?

A Prince & Prince consumer study of 1,200 flower-buying households in the U.S., over 10 years and three surveys, consumers rated the following positive/negative influencers



- Prince and Prince Market research, commissioned survey by Smithers-Oasis
- Historical data from 1996, 2000, 2004 and 2007
- More than 5,000 floral buyers across the US

What can you do to help customers?

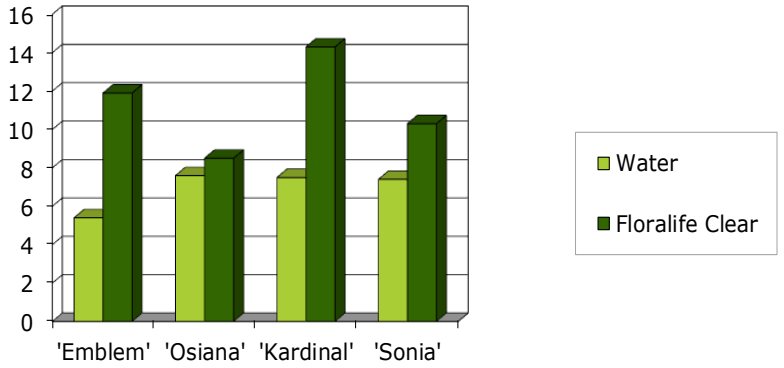
Order by cultivar name…… not by color

- A cultivar is the name of the flower
  - For example - Cherry Love is the cultivar name for a kind of rose
- Many postharvest problems can be solved by choosing the correct cultivar
- Pick the right cultivar and order by name

Inspect your flowers upon arrival

- If you have received damaged or unusable flowers, notify your supplier
- Have the labels on the end of the box on hand as these labels have important information pertaining to the farm and airway bill that helps identify and correct the problem

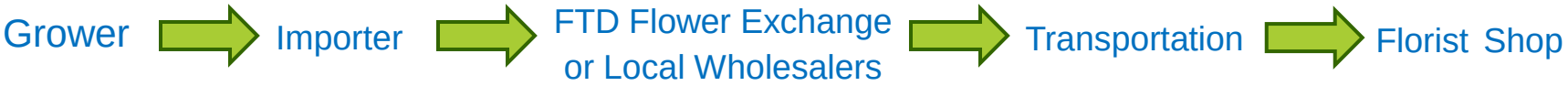
Vase-life study with 4 different rose cultivars



TRANSPORTATION AND STORAGE

A cool flower chain should not be disrupted

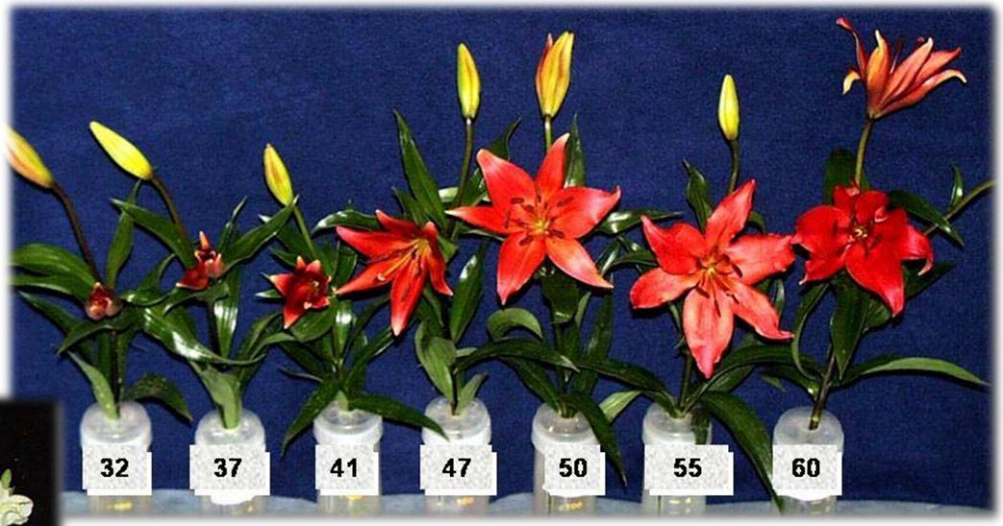
Harvest to vase, a working cold chain is very important to assure good quality and maximum vase-life.

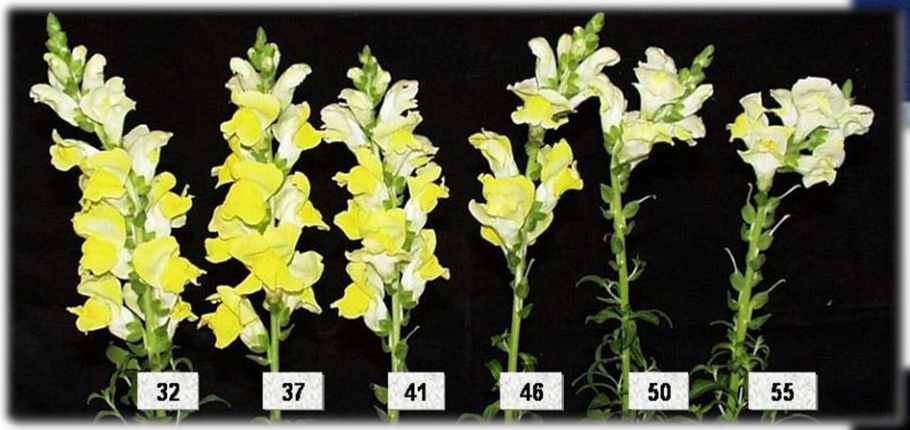


The optimum transport and storage temperature for most flowers is between 33°F – 38°F.

Why is Cut Flower Storage Important?

Small temperature changes can result in noticeable quality changes.



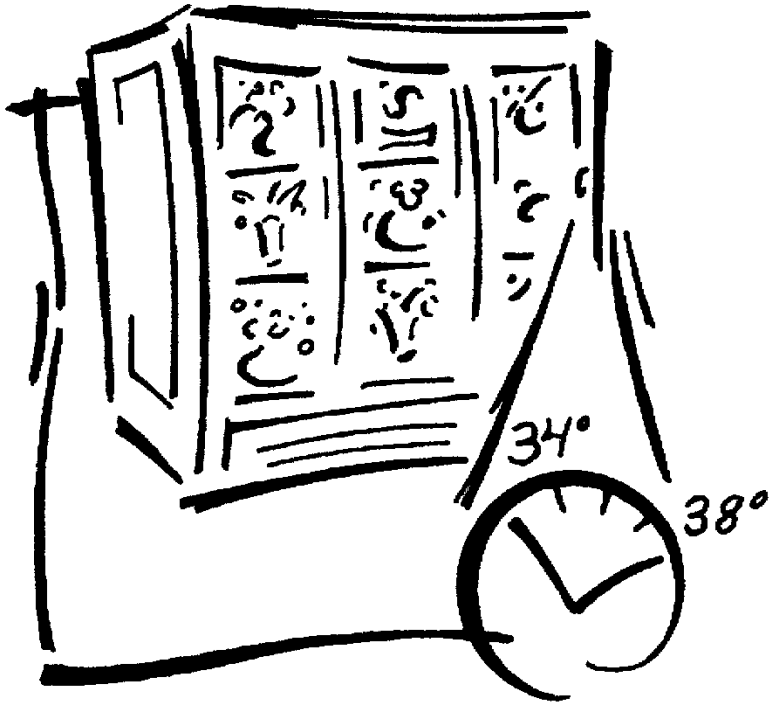


All flowers were stored at the temperatures noted for five days….

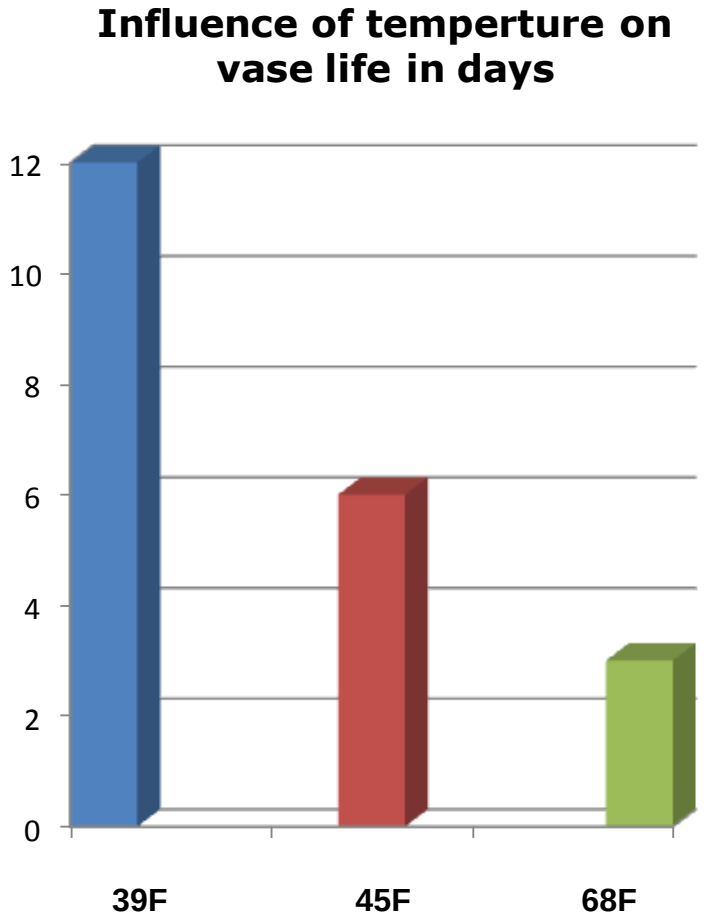
…then brought into a room temperature of 68 F.

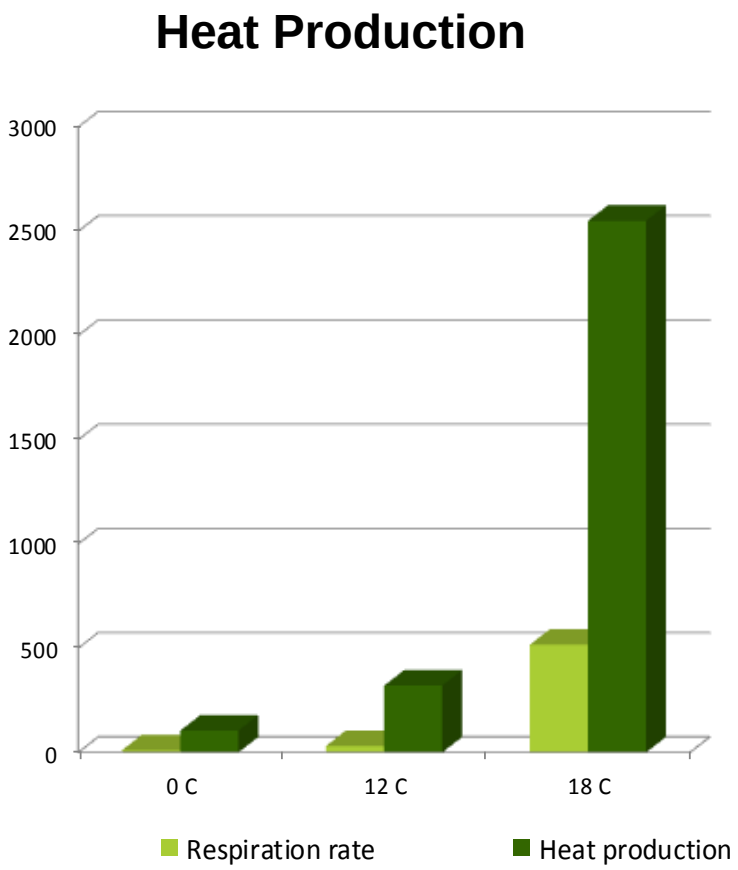
The Affect of Temperature & Relative Humidity on Cut Flowers

- Hydrated flowers are healthy flowers
- High humidity slows water loss
- Respiration is the burning of the plant's internal food storage
- A flower will use its food stores up 3 times faster at 50°F than 32°F
- Cut flowers should ALWAYS be stored in a cool environment between 33°F-38°F
- Tropicals should be stored between 56°F-60°F
- Temperature has the most influence on vase-life as it effects the metabolism rate of the flower – low temperature slows metabolism
- A flower will also create its own heat when not properly stored
- High temperatures have a negative effect on the vase-life of flowers
- Respiration creates additional heat
- Cut flowers respire 3x more at 54°F than at 34°F
- Increased respiration rate leads to shorter vase life
- A relative air humidity between 80%-93% slows down the aging process



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





CLEANING AND SANITIZING PRACTICES

Scrub Your Buckets!

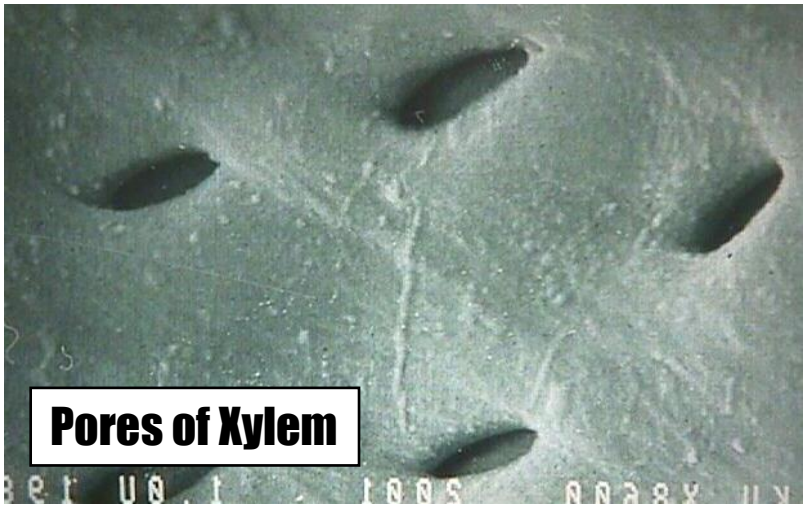
Clean your buckets at least once a week using a reliable floral cleaner

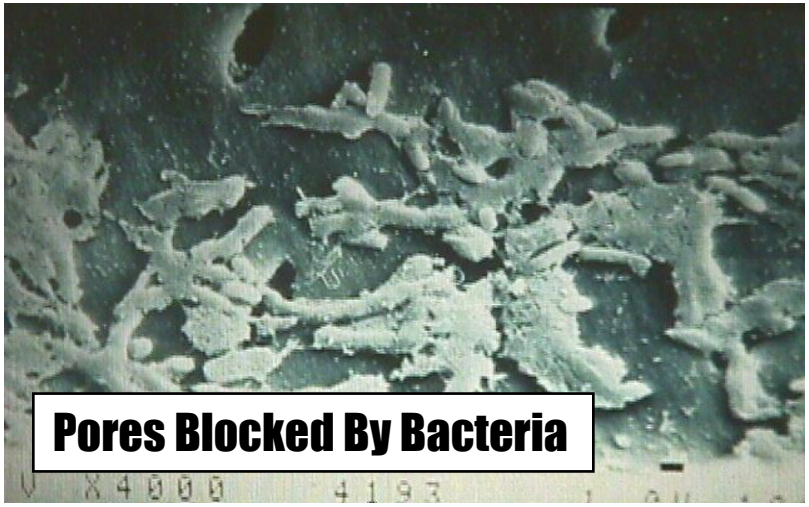
Unsanitary Conditions Will Affect Flower Quality

- FACT: Bacteria clogs stems.
- FACT: Clogged stems lead to hydration problems and bent neck.
- FACT: Bacteria produce ethylene.
- FACT: Fungi are opportunists.
- FACT: The effectiveness of all post harvest products is dependent on a clean environment.
- **FACT: Fungicide, bactericide cleaner is needed.**

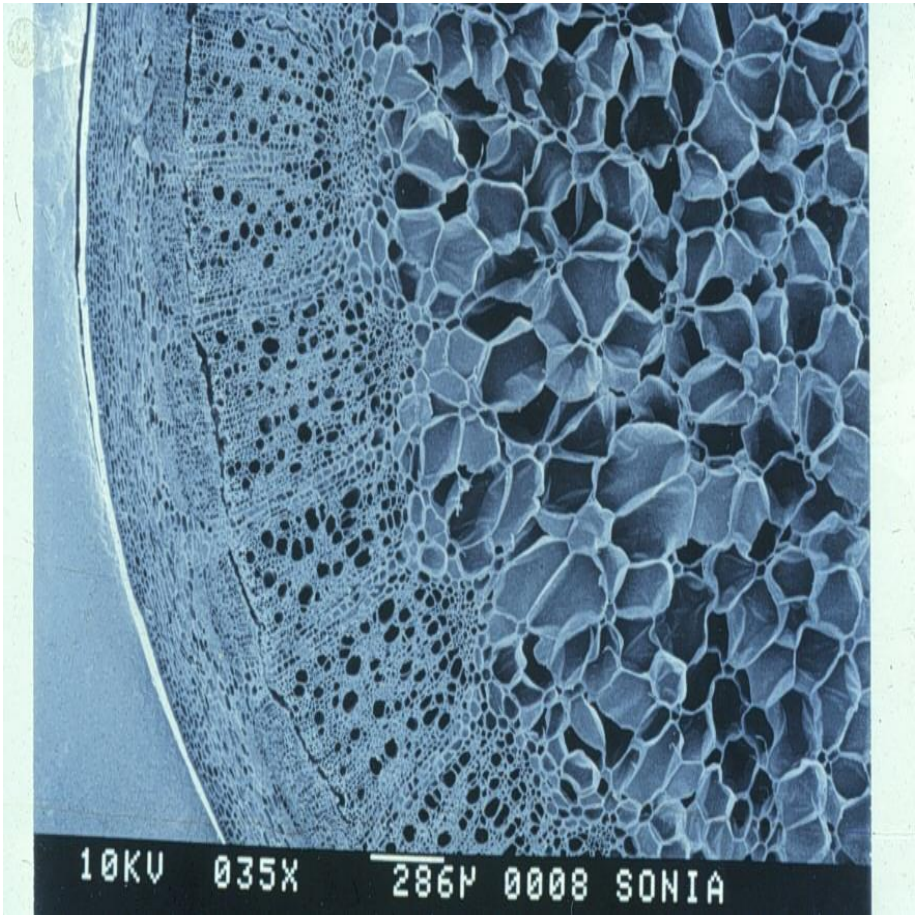
Why is Sanitation Important?

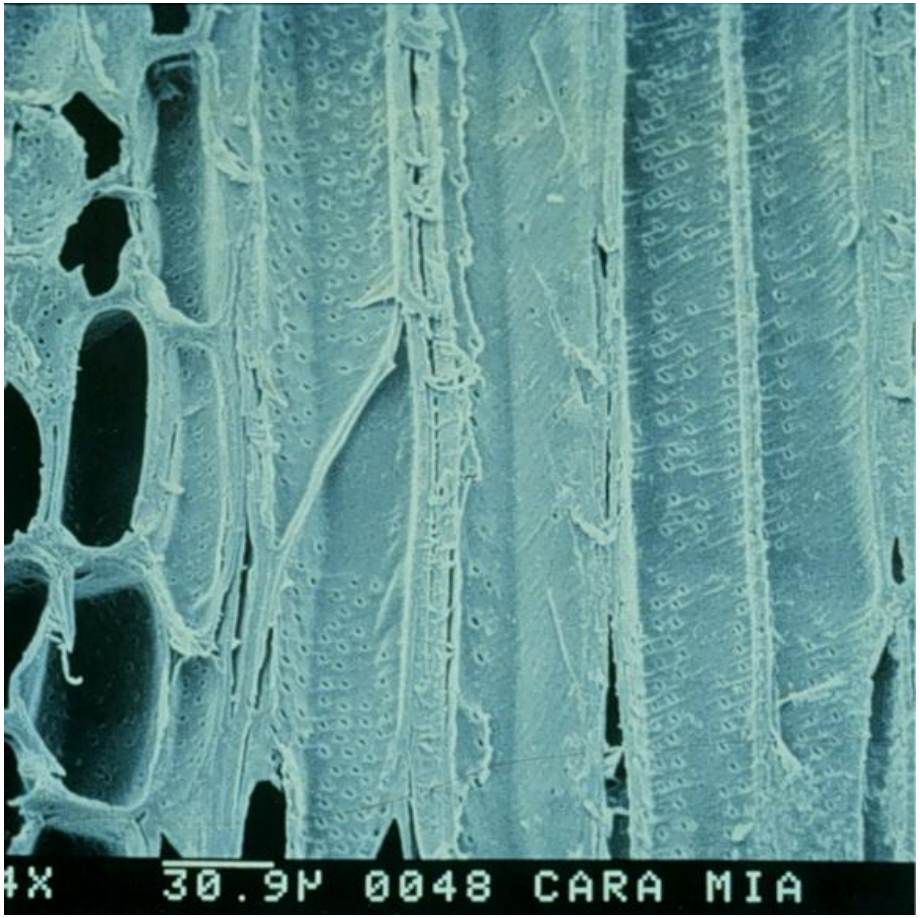
- The walls inside the flower stem (xylem) can be blocked with bacteria.
- This can cause wilting and bent-neck!
- Proper hydration and sanitation can eliminate this problem.





Why is Sanitation Important?





Why is Sanitation Important?

Bucket Treatment	Relative Bacterial Counts	Relative Fungal Counts
Floral Cleaner	1	1
Clorox®	389	38
Water	889	560

High Bacterial Counts = Dead Flowers

Clean Tools Will Make your Flowers Last Longer

Not cleaned Cleaned with water Cleaned with DCD

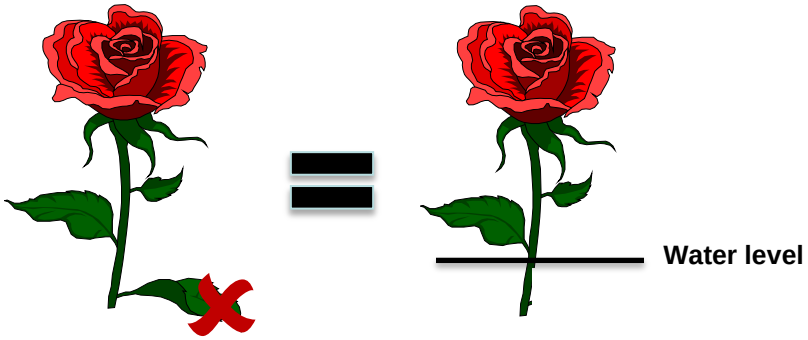
- Cut flowers were stored in vases for two weeks.
- Water was discarded.
- One vase was not washed. One was washed with water. One was washed with DCD.
- Flowers were put in all three vases with clean water only.

FLORAL PROCESSES

Process Your Flowers As Soon As Possible

- Cut the foliage that will be below the liquid solution.
  - WHY - Foliage below the solution level can speed up bacteria growth
- Cut bottom 1 in. of stem with sharp, clean cutters or knife
  - WHY - You don't want to crush the stem and you want to remove the clogged, dehydrated part of the stem
- Dip the freshly cut stem into Quick Dip for 2 seconds.
  - WHY - Quick Dip is a hydrating solution that contains acid to increase uptake and stem unpluggers to keep the stems free-flowing. It aids in uptake to reduce bent-neck and hydration problems
- Do not place the flowers in direct sunlight.
  - WHY – Too much temperature stress
- Keep them away from draughts
  - WHY- Too much temperature stress
- Do not place the flowers close to fruits or vegetables
  - WHY- Damage from ethylene gas emitted from fresh fruit

Cut the Foliage that will be Below the Solution



- Only remove leaves that will be under the liquid solution level
- Above the water level only remove damaged leaves
- Leaves are important for the respiration of the flower and as energy depot

Usually leaves contain high loads of bacteria and increase the bacterial growth in the water.

Proper Steps to Hydration Will Produce Results

- Cut off excess foliage
- Re-cut the stems
- Use a hydration step
- Feed the flowers with a fresh flower food solution

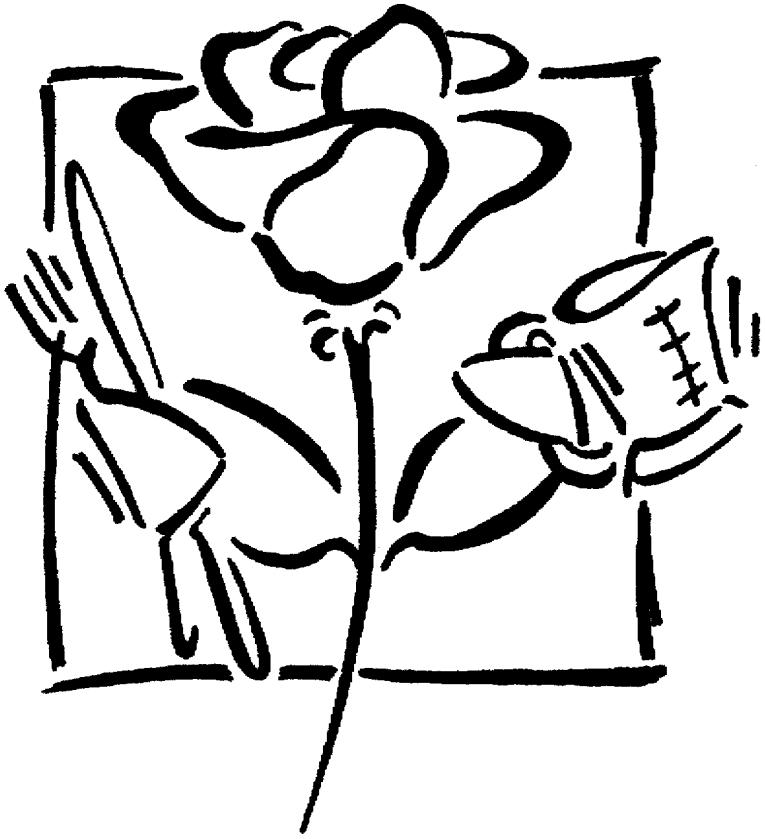
Flower Food Only

Hydration step + Flower Food

Why Use Flower Food?

When a flower is cut, it does not receive energy from nature.

- Flower food contains:
  - Carbohydrate sources – food/energy for the flowers
  - Acid – lowers water pH and increases solution uptake
  - Stem unpluggers – keeps stems free-flowing



Use Fresh Flower Food

- Accurately measure the amount of water
- Accurately measure the flower food
- Add to buckets, vases, and arrangements

Use Proper Flower Food for your Needs

Follow the flowers

Color coding and naming to identify which product to use in which part of the flower chain

Stage 1
Hydration and Pretreatment

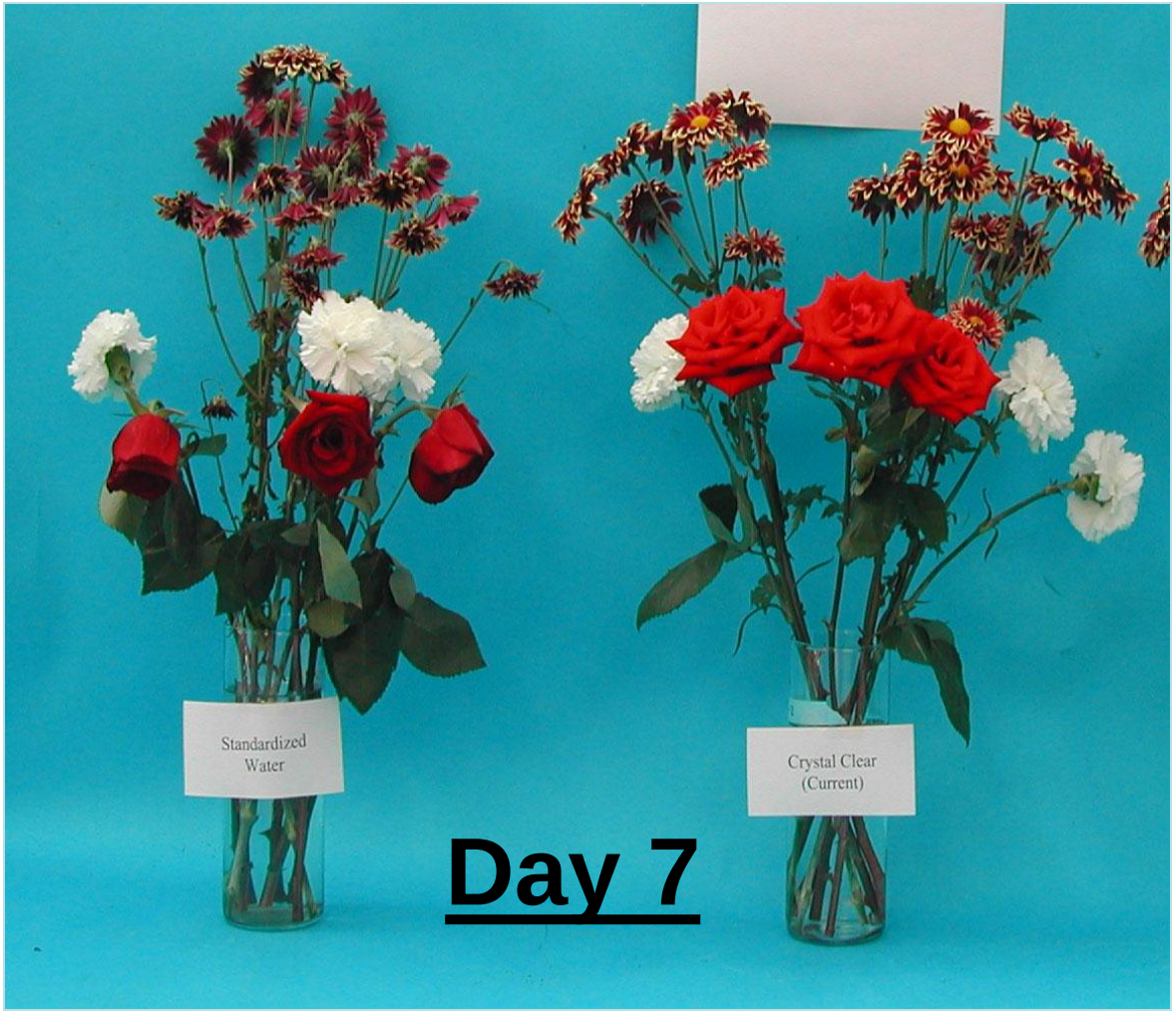
Stage 2
Storage and Transportation

Stage 3
Feeding

Accessories

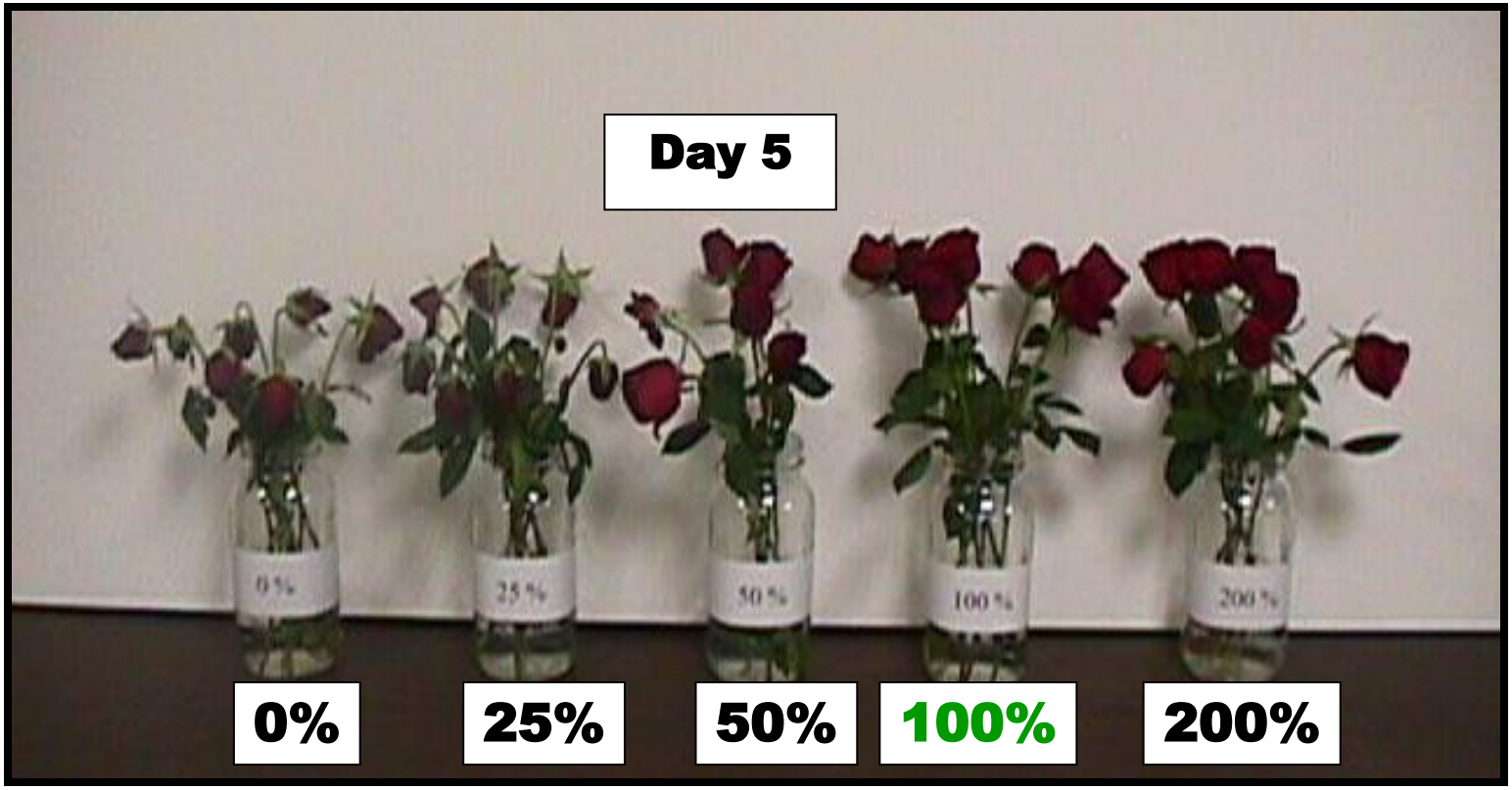
- **Color-coding:** Each color denotes the stage in the flower chain when the product should be used
  - Periwinkle blue: Stage 1 – hydration and pretreatment
  - Gold: Stage 2 – storage and transportation
  - Red: Stage 3 – feeding
  - White/Multi: accessories to use throughout the flower chain.
- **Naming:** Simplified, categorized and easily identifiable
  - 100 series = Stage 1 – hydration and pretreatment
  - 200 series = Stage 2 – storage and transportation
  - 300 series = Stage 3 – feeding

Positive effects of using flower food



water water with flower food

Use The Correct Dosage!!



Improper dosing results in premature flower death!

Use The Correct Dosage!!

Day 7

0% 25% 50% 100%

Improper dosing results in premature flower death!

NEW INNOVATIONS

What is ethylene and why do I care?

What does ethylene do…

- Ripens fruit
- Hastens petal drop
- Increases respiration
- Promotes growth
- Initiates flowering
- Promotes rapid progression through the stages of life to death.

- Ethylene promoted aging has been reported to contribute to 30% of all postharvest dump in horticulture crops
- Ethylene damage can come from within the product or from outside sources
- Ethylene enhances life stages, it has sometimes been called a death hormone.

EthylBloc™ Transportation Kits

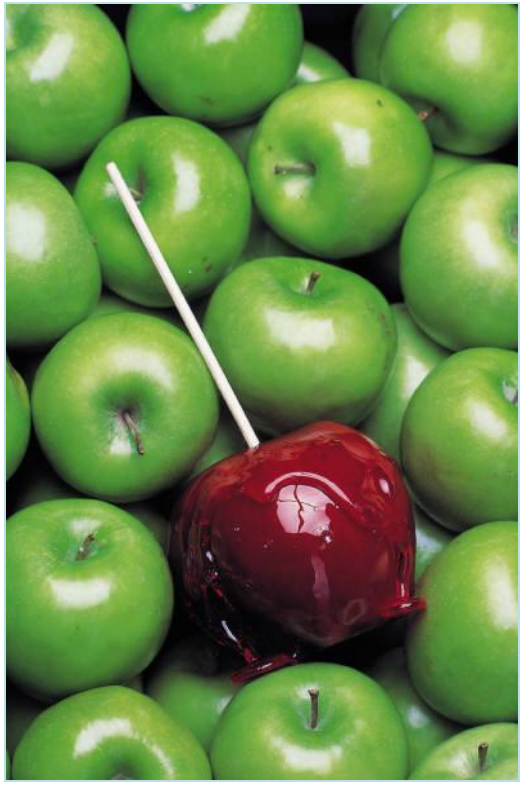
EthylBloc™ Sachets

What: EthylBloc™ Technology is an EPA approved ethylene action inhibitor. It inhibits the negative effects of ethylene which include: premature wilting, leaf yellowing, premature opening, and premature death.

Who: EthylBloc is intended for use by professional growers, wholesalers, nursery and greenhouse growers and retail florists.

Where Does Ethylene Come From?

- INTERNAL Sources
  - Flowers/Fruit generate their own ethylene as a hormone
- EXTERNAL Sources
  - Other flowers
  - Fruits & Vegetables
  - Bacteria
  - Burning Organic Material
  - Cigarette smoke
  - Propane heater or truck fumes



What Does Ethylene Do?

No Ethylene Ethylene Exposure

- Causes premature death of many cut flowers and potted plants
- Reduces the shelf life of many cut flowers and potted plants

- <u>Sensitive Cut Flowers:</u> carnations, delphinium, larkspur, stock, roses, others

- <u>Sensitive Potted Plants</u>: mini roses, kalanchoe, lilies, orchids, impatiens, others

Check for another killer: Botrytis

- Look for free water inside sleeves. This would likely indicate a temperature problem.
- Free water promotes botrytis infection.
- Look for legions where the flowers contact the sleeve.

Floralife® TransportCARE™ Paper

Product Features and Benefits

- Inhibits the premature spread of *Botrytis* spores
- Paper sheet size designed to fit most commonly used shipping boxes to aid in the proper amount of treatment per box for most effectiveness.
- Aids in reduction of premature flower aging
- Effective in both refrigerated and non-temperature controlled shipments
- Helps reduce costly scrap and credits

'Mistique': Control

Treated with Floralife® TransportCARE™ Paper Day 11

Dosmatic Dosing Unit

Floralife® Dispensing Systems

Automation for proper dosing

- Accurately measure and mix solution every time
- Take the guesswork out of measuring
- Prevents over or under usage
- Designed for use by growers, wholesalers, and retail florists
- Research shows that improperly measured flower food is worse than not using flower food at all

<u>How the Dispensing System Works</u>

Floralife ® dispensing systems can easily be mounted on a wall. A fresh water source is connected to one end of the system. The system then draws concentrated solution from a Floralife bucket or drum, mixes it with the correct amount of water, and then dispenses it through a hose and wand.

Floralife Special Blend Hard Water®

Special flower food blend for hard water

Specially formulated for hard water conditions

Developed for special waters that generally have high hardness, alkalinity, and extreme salt levels which cause the water to resist lowering of water pH for maximum customer satisfaction. Under these conditions, little change is seen in water pH when regular flower food is added. Water sources such as well waters and areas high in limestone are conditions suitable for this product.

Features and Benefits:

Provides a balanced formula to correct the pH and increase the speed of flower hydration.

OASIS Maxlife Foam

The first and only floral foam proven to provide as long, or longer, flower life than flowers in a vase of water. Keeps flowers fresher longer than any other floral foam -- up to 50 percent longer!

- Prevents premature petal burn, wilting, browning and petal drop
- Stops premature bent neck in flowers with soft stems
- Stops leaves from premature yellowing, browning and falling off stems
- Prevents stem burn

Seeing is believing!

DAY 10

ADVANTAGE Plus Floral Foam

OASIS® Floral Foam Maxlife

EDUCATE YOUR CUSTOMERS

Give customers flower food for continued care & handling

Just Water
after 4 days

With Flower Food
after 12 days

Educate on care and handling harvest to vase

- Always keep your cut flowers hydrated
- Store your flowers at the correct temperatures and relative humidity
- Process your cut flowers as soon as possible
- Use clean surfaces, tools and buckets
- Rehydrate your flowers as your process them
- Always keep your flowers fed
- Minimize the affects of ethylene
- Always use the best product for cut flower care and handling for the long lasting enjoyment of your flowers
- Educate your staff to educate customers on how to take care of their flowers
- Inform them as to what to expect from individual varieties
- Give your customers the proper dosage of flower food, and explain the importance of properly mixing and dosage
- Sell flowers by variety or cultivar name

FLORAL ACCOUNTING 101: DOING THE BUSINESS MATH

Do the business math!

Design Materials	Cost	% of Design Arrangement Cost
Flowers	$7.99	72.12%
Glass Vase	$2.50	22.56%
Ribbon	$0.50	4.51%
Floralife® Flower Food	$0.09	0.81%
Grand Total	$11.08	100%

Not using flower food in an arrangement can reduce flower life by more than half and saves you less than 1% of the cost of the materials. Wouldn't your customer enjoy their arrangement for an additional 3-5 days or more? Think of the repeat sales opportunities!

FINAL SUMMARY

In Summary…

- Harvest to vase, postharvest care and handling is important because consumers want and expect QUALITY from a florist!
- The pillars of cut flower care
  - Temperature control – the cold chain
  - Sanitation
  - Hydration
  - Time
- Know your cultivars and inspect for quality
- Proper flower processing and use of flower food aids in customer satisfaction
- Floral foam is now a post-harvest product and can equal or exceed the vase-life of flowers in water
- Ethylene and botrytis have a negative influence on vase-life
- Develop standardized procedures so quality does not become a coincidence – plan your time!
- Educate your consumer!
- For more scientific information on floral care & handling, review the White Paper II (*Improving the Cold Chain for Cut Flowers and Potted Plants*) by George Staby & Michael Reid

Questions???

Email: flcareandhandling@floralife.com

Handouts are available at:
www.FTDi.com/FTDUniversity/webinarmaterials.htm

Webinar will be available to view at:
www.FTDUniversity.com