

# Specialty Cut Flowers & Season Extension



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# Marketing: The First Step!

## ◆ Assess:

- Who are your buyers?
- Where will you sell?
- How large is your market?
- What prices will your market bear?
- What season(s) is your market accessible?

# Post Harvest Handling: Our Ace in the Hole



- ◆ Imported Flowers can be 8-10 days old
  - Airfreight to Miami: 1-2 days
  - Processing by Importer: 2-3 days
  - Regional Wholesale Handling: 2-3 days
  - Florist: 1+ days
  - Consumer: 8-10 day old flowers
- ◆ Pretty tough on a product with a max. life of 21 days.
- ◆ Some flowers do not ship well
  - Zinnia, sunflower, snapdragons, hydrangea....

# Typical Cut Flower Markets

- ◆ Wholesale
- ◆ Direct to Florist
- ◆ PYO (cut your own)
- ◆ Farmstand
- ◆ Farmers Market
- ◆ Subscription
- ◆ Cooperative\*\*\*
- ◆ Auction



Bouquets at CVA

# Packaging Specialty Cut Flowers

- ◆ Standards on the Web at USDA site
  - [www.ams.usda.gov/marketnews.htm](http://www.ams.usda.gov/marketnews.htm)
- ◆ Package size
  - Singly
  - Bunch of ten
  - Mixed Bouquet
- ◆ Water filled buckets
- ◆ Preservatives

# Production Considerations

- ◆ Site Selection
- ◆ Planting
- ◆ Irrigation
- ◆ Labor
- ◆ Refrigeration
- ◆ Equipment
- ◆ Wind Protection and Support



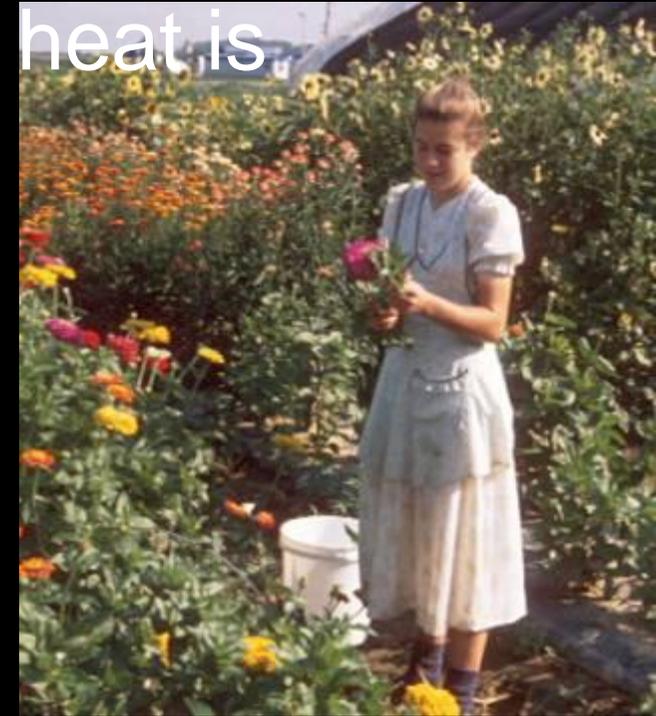
# Pest Control

- ◆ Weeds
- ◆ Insects
- ◆ Diseases
- ◆ Deer

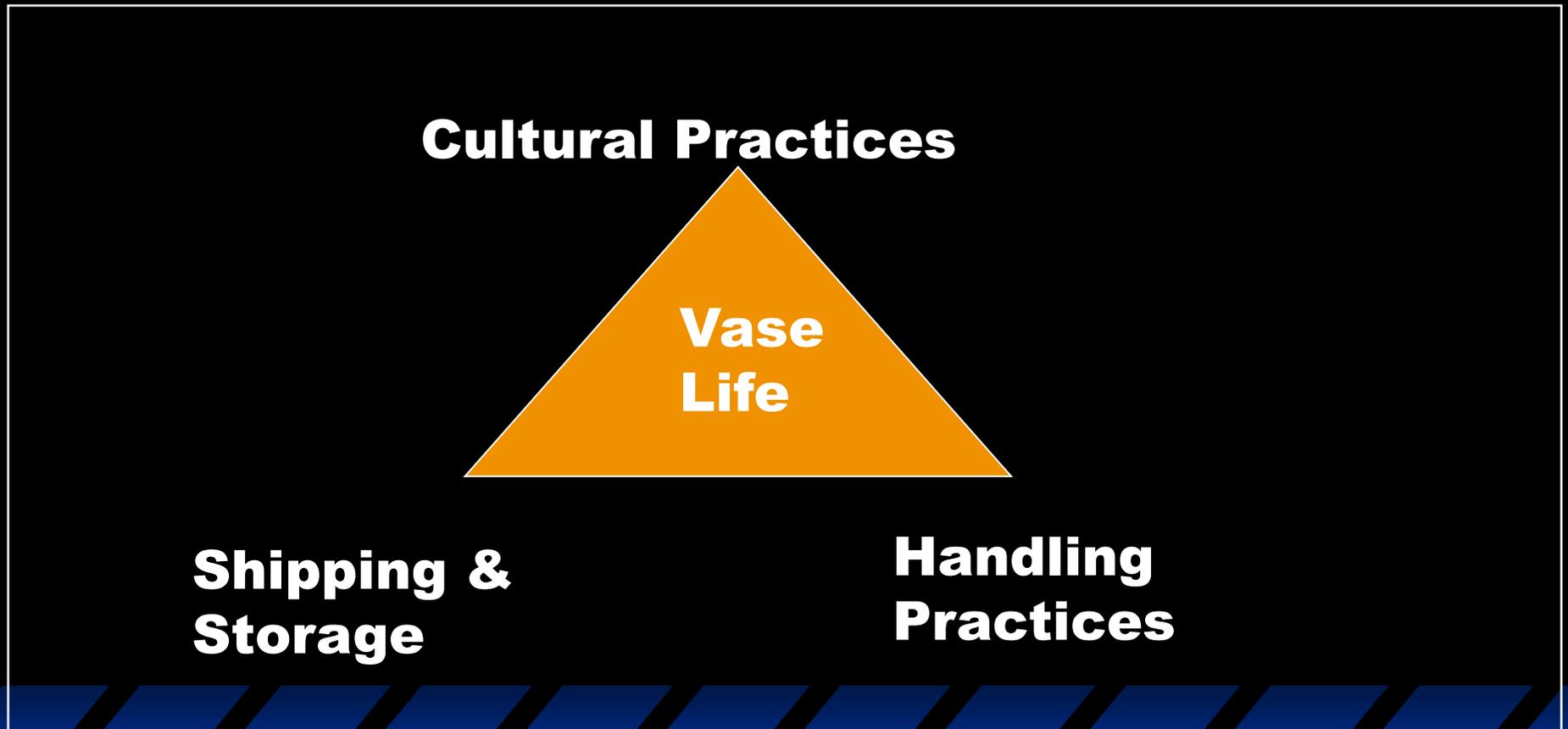


# Harvest and Post-Harvest

- ◆ Cut after dew is off, but before heat is on.
- ◆ Remove spent blooms
- ◆ Place in water as cut
- ◆ Adjust pH of water (3.5)
- ◆ Cool rapidly
- ◆ Know your flower (when best to cut)



# Vase Life Triangle



# Know when to cut:

- ◆ Sunflowers: just full open
- ◆ Snapdragons: 1/2 to 2/3 full open
- ◆ Gladiolis: 1-5 flowers showing color
- ◆ Zinnias: Full open
- ◆ Salvia: Just showing color
- ◆ Asters: 2-4 flowers open

# Variables in Post Harvest Handling

Temperature  
Sanitation  
Processing  
Ethylene



# Temperature

- ◆ Ideal Temperature = 33-35F
- ◆ Flowers continue to open at 36F +
- ◆ Flowers start to senesce at 40F +
- ◆ Speed to final destination is not a substitute for 33-35F
- ◆ Zinnias are damaged below 45F

# Sanitation

- ◆ Everything must be sanitized
  - Buckets
  - Clippers
  - Flowers
- ◆ Bacterial counts rise quickly
- ◆ Would you drink this solution (visual)?

# Processing

- ◆ Speed is critical
  - Cut and place in floral preservative
- ◆ Recut as the tip is probably incapable of water transport.
- ◆ Cut DRY!
  - This avoids cross contamination of stems in dirty water.
- ◆ Floral preservatives
  - Carbohydrate supply
  - Bacterial control
- ◆ Warm or Cold water?
- ◆ Rehydration

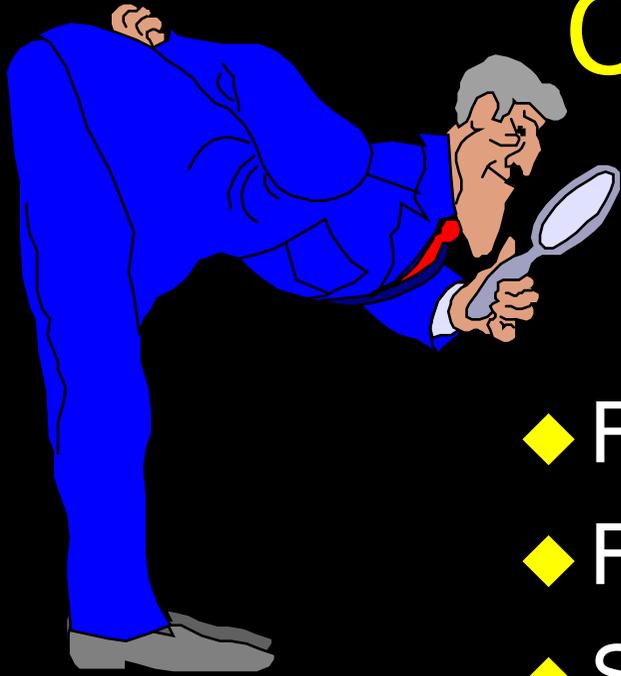
# Factors affecting PostHarvest Quality

- ◆ Variety
- ◆ Pre-harvest Factors
  - Insect and Disease Free
  - Fertilized properly
  - Irrigated well
- ◆ Maturity
- ◆ Harvest Temperature
- ◆ Food Supply

# Additional Factors affecting Postharvest life

- ◆ Light
- ◆ Water Supply
  - Air embolism
  - Bacterial plugging
  - Hard water (high pH)
- ◆ Water quality
  - Sodium - carnations
  - Fluoride - glads, freesia, gerbera
  - Water softeners

# Choosing Cultivars



- ◆ Flower color
- ◆ Flower form
- ◆ Shelf-Life
- ◆ Stem length
- ◆ Ease of production
- ◆ Market



# Some Strong Suggestions

- ◆ Know your market and flowers well
- ◆ Have refrigeration
  - Not shared with fruit & vegetables
- ◆ Install irrigation\*\*\*
- ◆ Access to a raised-bed machine
- ◆ Keep up on production and market changes
- ◆ Visit trial gardens

# Annuals Worth Starting With

- ◆ Calendula
- ◆ Cosmos
- ◆ Mexican Marigold
- ◆ Mexican Sunflower
- ◆ Orn. Pepper
- ◆ Salvia
- ◆ Strawflowers
- ◆ Sunflowers
- ◆ Sweet Pea
- ◆ Zinnia
- ◆ China Asters
- ◆ Snapdragons
- ◆ Larkspur
- ◆ Celosia
- ◆ Lisianthus



# Perennials worth starting with

- ◆ Black-Eyed Susan (*Rudbeckia*)
- ◆ Columbine (*Aquilegia*)
- ◆ Bellflower (*Campanula*)
- ◆ Wild Indigo (*Baptisia*)
- ◆ Yarrow (*Achillea*)
- ◆ Shasta Daisy (*Leucanthemum*)
- ◆ Cornflower (*Centaurea*)

# Specific Flowers for use: USDA AMS Florist survey 2003-4

- ◆ All rated from don't need to must have (1-7)
- ◆ Lisianthus: 73.3% (4+)
- ◆ Hydrangea: 64.2% (4+)
- ◆ Snapdragon: 79.4% (4+)
- ◆ Celosia, spike: 46.6% (4+)
- ◆ Celosia, cockscomb: 79.4% (4+)\*
- ◆ Sunflower: 79.2% (4+)\*

# More on specific flowers

- ◆ Ageratum: 38.5% (4+)
- ◆ Peonies: 57.5% (4+)
- ◆ Calla lilies: 72.9% (4+)\*
- ◆ Lilies: 80.2%(4+)\*
- ◆ Aster: 62.1% (4+)
- ◆ Daisy: 68.6% (4+)
- ◆ Statice: 70.3% (4+)
- ◆ Zinnia: 56.6% (4+)
- ◆ Yarrow: 64.7% (4+)



Blue Horizon  
Ageratum

# Flowers that pulled low numbers

- ◆ Agastache
- ◆ Ammobium
- ◆ Strawflowers
- ◆ Globe amaranth
- ◆ Salvia



A. Opopeo



S. Gruppenblau

# Strongly Recommended Sunflowers

- ◆ Brilliance (4.00)
- ◆ Double Solar (4.00)
- ◆ Full Sun (4.75)
- ◆ Goldburst (4.00)
- ◆ Joker (3.50)
- ◆ Moonbright (5.00)
- ◆ Sunbeam (4.00)
- ◆ Sunbright (5.00)
- ◆ Sunbright Supreme (4.00)





Brilliance



Double Solar



Florenza



Premier Light  
Yellow



Double Quick Orange

# Site Selection

- ◆ Accessibility
  - Irrigation
  - Harvest
  - Deer control
  - PYO
- ◆ Good Drainage
- ◆ Wind Protection



# Wind & Rain protection

- ◆ High Tunnels
  - PSU style, Haygroves
- ◆ Windbreaks
- ◆ HortoNova mesh



# Planting

- ◆ Spacing
  - Manages flower and stem size
- ◆ Method
- ◆ Plug size
- ◆ Succession
- ◆ Season



# Irrigation

- ◆ Drip is best!
  - Emitter spacing
- ◆ Strongly suggested
  - Affects yields
  - Required for good stems
  - Affects quality
  - Timing is critical

# Signage



# Cutting Beds



# Where to get information

- ◆ Growing for Market Magazine
- ◆ Penn State Statewide Trials:
  - APD site
  - SE Research Farm, Landisville
    - ❖ Contact me for info.
- ◆ Assoc. of Specialty Cut Flower Growers
  - ASCFG, [ascfg.org](http://ascfg.org)
- ◆ OFA (Ohio Florists Association)

This Space for rent as we transition from Cut Flowers to more generic Season Extension portion of this presentation. For rates, inquire with the educator on-hand.



# Season Extension Systems

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# Vegetable Systems

- ◆ Field grown on soil
- ◆ Field grown on plastic
- ◆ Field grown raised-bed plastic
- ◆ Season Extension:
  - Row covers
  - Low tunnels
  - High tunnels
  - Greenhouse grown



# Transplant production

- ◆ Timing is everything
  - Tomatoes require 6-8 weeks for 12-15” heavy transplants
  - Peppers require 8-10 weeks for 10-12” heavy transplants
- ◆ Johnnys’ seed catalog for timing
  - Planting date – germination date – planting date.
- ◆ Succession planting for constant supply.

# Approaching the Problem

- ◆ Marketing: the key to any and all decisions regarding what and how to grow!
- ◆ Isolate the problem:
  - Who are you selling to?
  - What are you selling them?
  - When will you be selling it?
  - What will they pay?



# Direct Seeded through Plastic

- ◆ Onions
- ◆ Garlic
- ◆ Sweet Corn
- ◆ Zucchini
- ◆ Large seeds are easier, but there are modern planters for many through plastic applications.



# Transplants on Plastic



# Field-Grown Raised-Bed Plastic



# Season Extension: Row Covers



Early planted sweet corn  
under row cover



# Season Extension: Low Tunnels



# Season Extension: High Tunnels



# Season Extension: Greenhouse Grown

- ◆ Raspberries
- ◆ Strawberries
- ◆ Peppers
- ◆ Tomatoes
- ◆ Green Beans
- ◆ Cucumbers
- ◆ Greens
- ◆ Herbs



# What is your reason for season extension and does it pay?

## ◆ Is this a marketing decision?

- Early to market for market share
- Maintaining customer base
- Cash flow
- Quality of product issues
- Locally / on-farm produced

## ◆ Is this a profitable operation

- What does it cost per crop unit?

# Variations on Greenhouse-Grown

- ◆ Hydroponics
- ◆ Grow Bags
- ◆ Troughs
- ◆ Pots
- ◆ In-ground
- ◆ Aquaponics

# Heated Tunnel In-Ground Tomatoes



# Late and Early Strawberries



# Aquaponics



# Transplanting Sweet Corn



# Sweet corn and plasticulture



# Harmony Essentials System



# High Tunnel Spinach & Greens



# Haygrove Tunnel Cherries



# Cut Flower Production



# More on cut flowers



# Beans and Cucumbers in Troughs



# Parthenocarpic Cucumbers



# Grow beds and perlite bags



# Perlite bags w/irrigation



# Trough tomato system



# Greenhouse management tools



# My proposal:

- ◆ Construct a modified tunnel / greenhouse (delta T of 30F +/-)
- ◆ Grow 80% tomatoes and 20% peppers from March to field season price collapse
- ◆ Remove plants, water heavily, close and cook for 2 weeks.
- ◆ Plant with greens starting at bolt resistant types from August to winter holidays
- ◆ Ski from December 26 to Feb 25, replant with tomatoes and peppers.
- ◆ Send me the extra cash in \$100's (I have the storage capabilities).



**Thank You  
Your Questions, Comments and  
Rebuttals Please!**

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