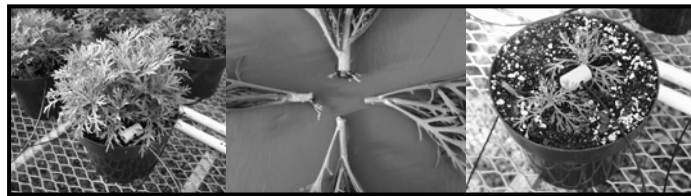




Stock Plant Management

James L. Gibson
University of Florida-Milton
Floriculture Research



Common Vegetatively-Propagated Plants

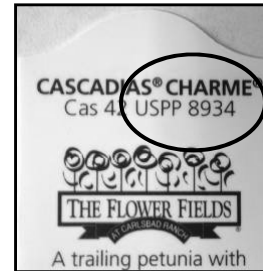


- Poinsettias
- Garden mums
- New Guinea impatiens
- Geraniums



Plant Patents

- New plants are developed yearly.
- Illegal to propagate
- Firms collect royalties.
- The industry is carefully monitored.
- Expire in 17 years

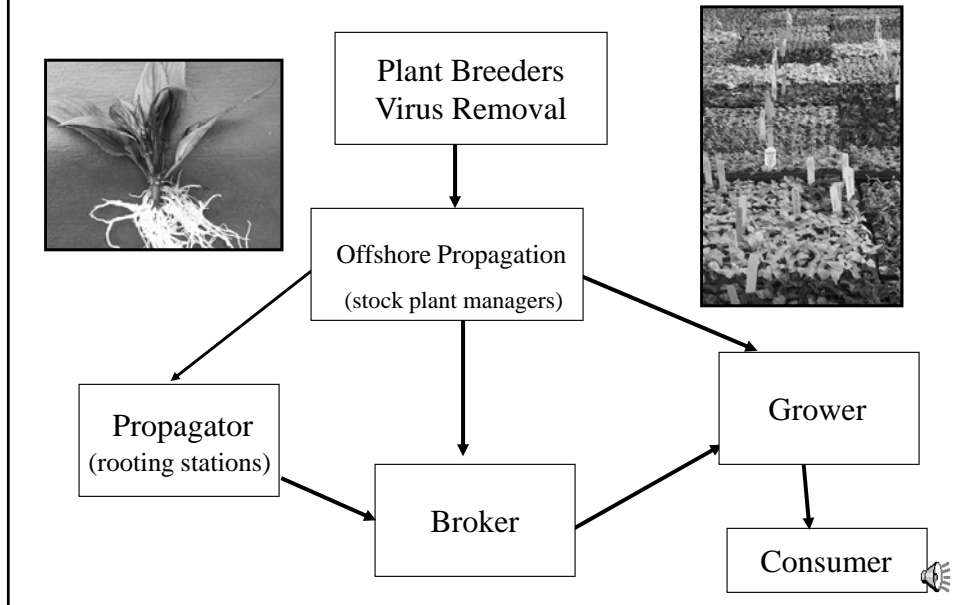


The "Others"

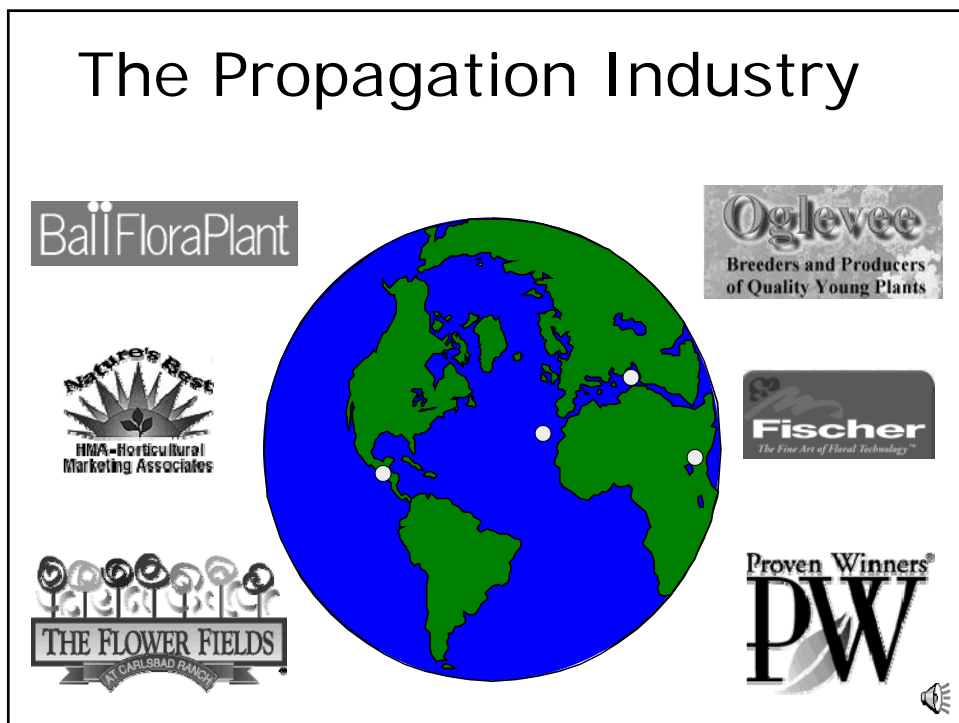
- Coleus
- Sweetpotato vine
 - 'Blackie'
 - 'Pink Frost'
- Rex begonias
- Persian Shield
- Plectranthus

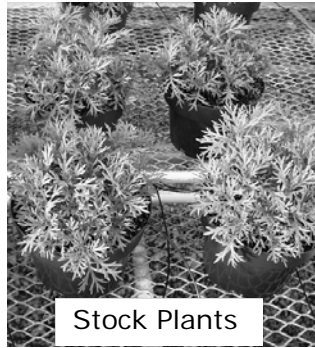


The Propagation Industry



The Propagation Industry





Stock Plants



Mist and Bottom Heat



Tip Cuttings



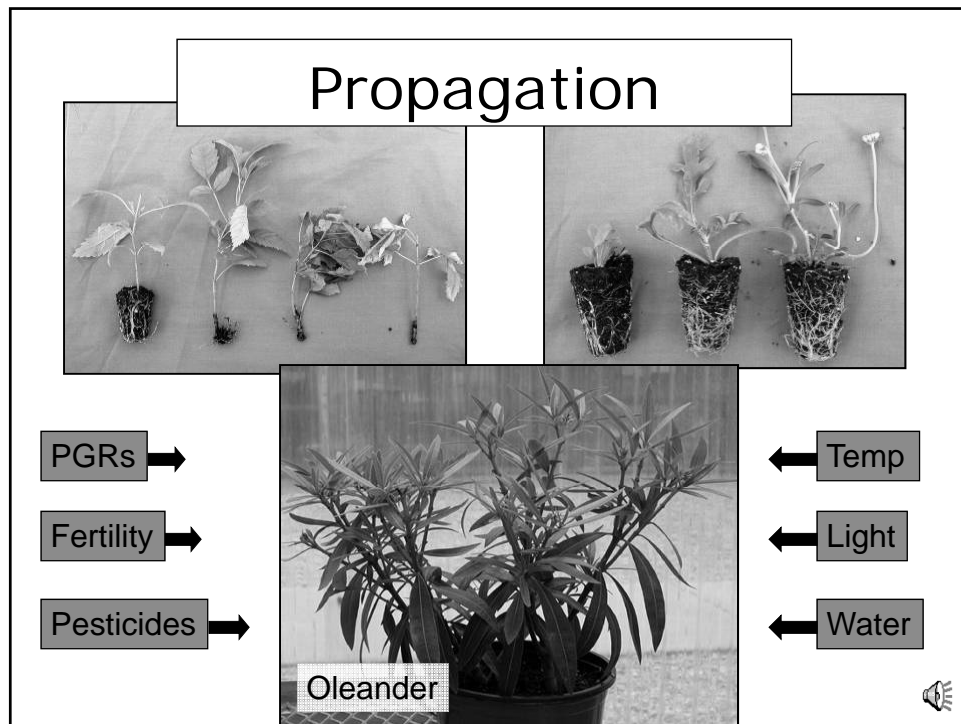
Rooted



← Successful Propagation

Successful Product →





Stock Plant Environment

- Light- 3,000 to 7,000 fc
- Temperature
 - Day: 70 to 75°F
 - Night: 65 to 68°F

Two black and white photographs show the stock plant environment. The left photo shows a large indoor facility with many potted plants arranged on long tables under bright overhead lights. The right photo shows a similar setup with potted plants on a raised platform or table.

A small speaker icon is located in the bottom right corner of the slide area.

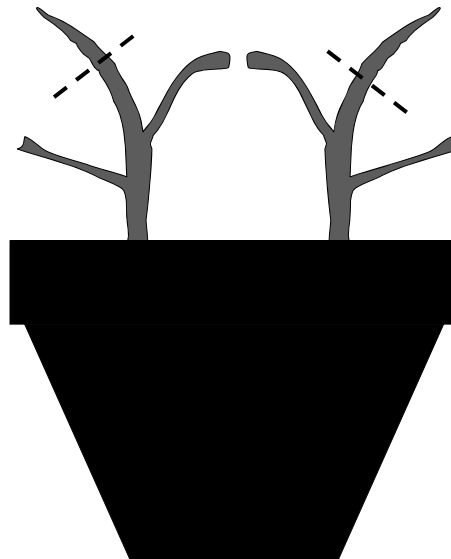
Stock Plant Culture

- 2 to 3 cuttings per 6.5 to 7.5 inch pot
- Spacing – 0.5 to 1.5 sq. ft. per 6.5 to 7.5 inch pot
- Nutrition
 - 150 to 250 ppm N
 - pH = 5.8 to 6.2
 - EC (PourThru) = 2.5 to 4.0 mS/cm



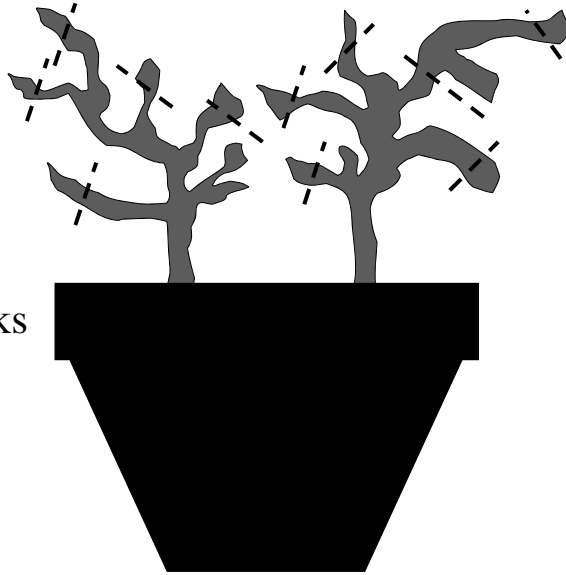
Stock Plant Establishment

Conduct a
“soft” pinch
2 weeks
after potting



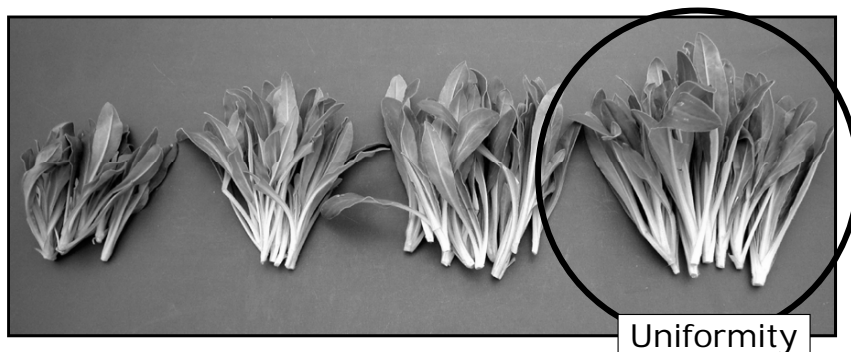
Stock Plant Establishment

Conduct “hard”
pinches 4-8 weeks
after potting

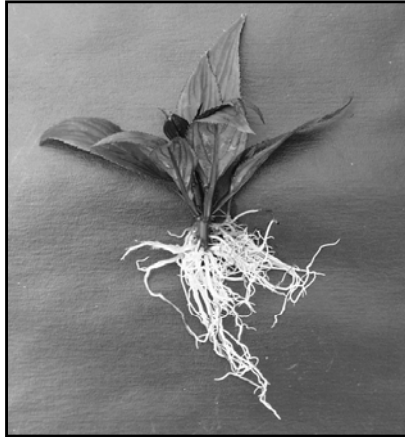


Cutting Quality

- Hedging vs. selective harvesting
- Caliper, leaf area, and shoot length
- High respiration/ low chlorophyll



The Vegetative Cutting



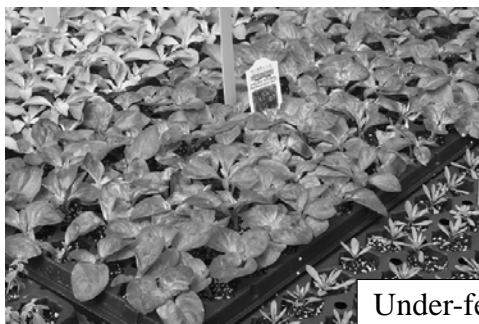
- Shoots
 - 5 to 6 leaves
 - Healthy tissue
- Roots
 - Adventitious
 - Fibrous
- "Heavy" stem
- No flowering



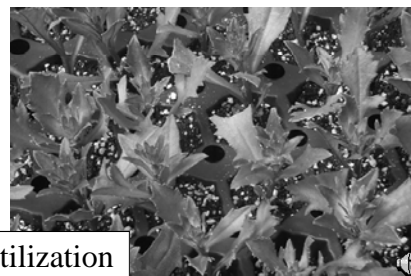
Over-fertilization



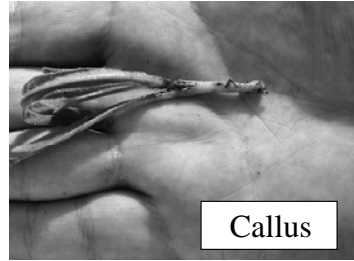
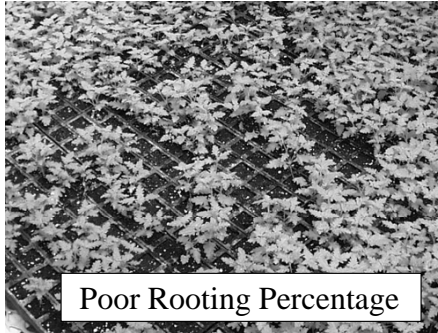
Shoot Maturity



Under-fertilization



Rooting Problems

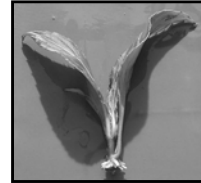


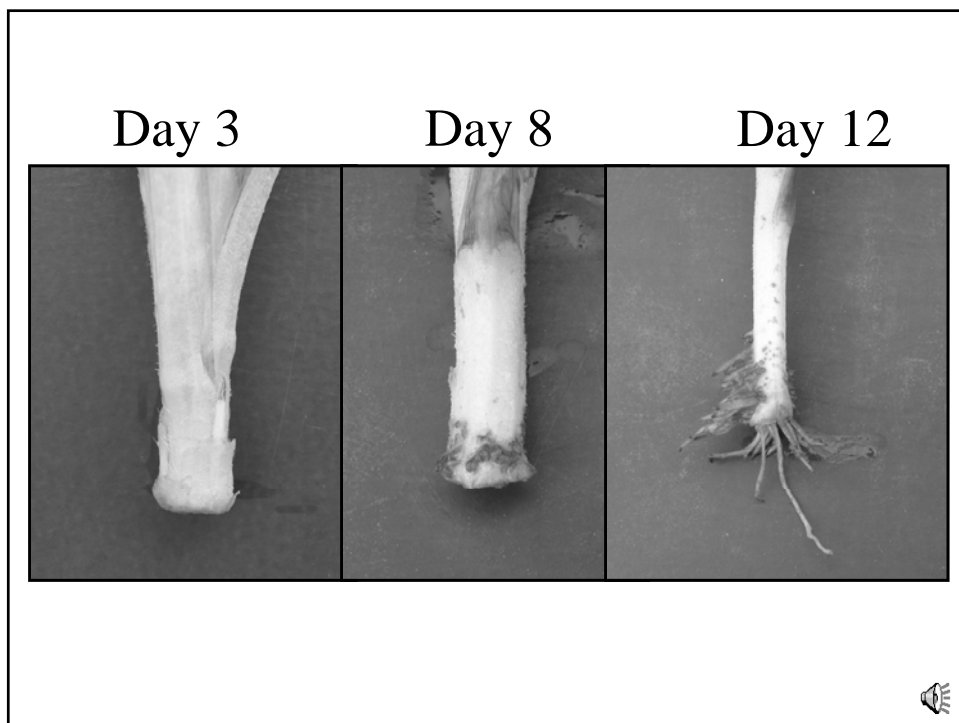
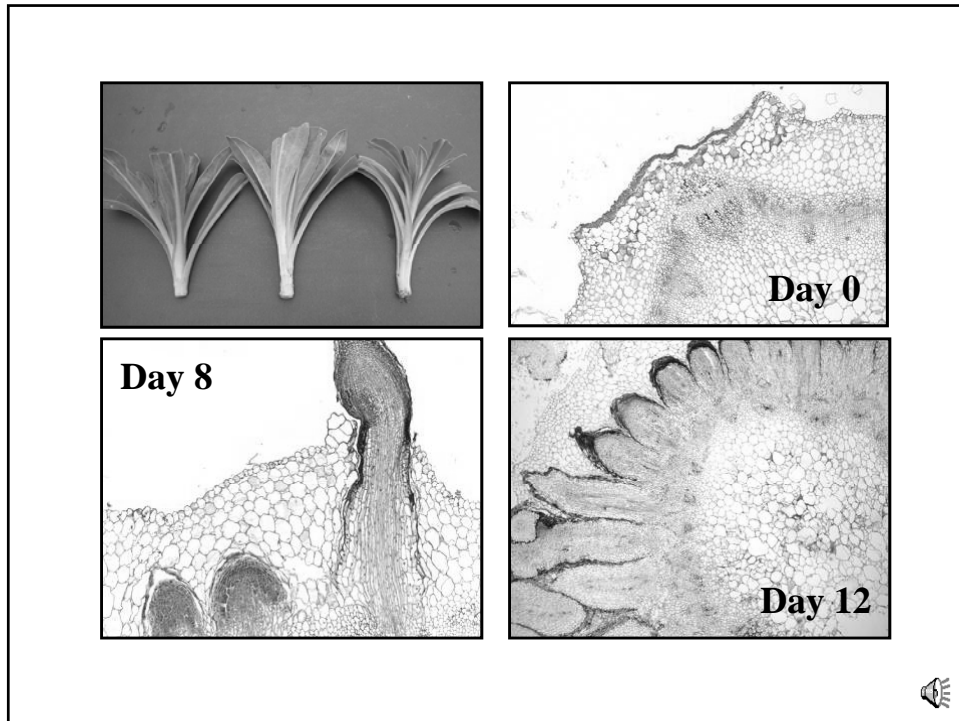
Propagation Stages



Stage 1

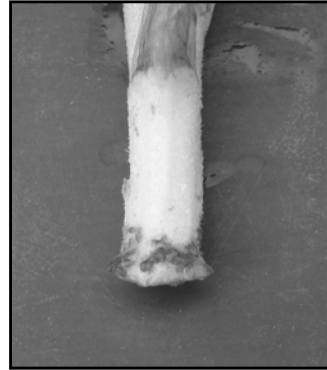
- Light- 500 to 1,000 fc
- Temperature
 - Bottom heat: 68 to 80°F
 - Air temperature: 70 to 80°F
- Moisture
 - Mist: 5 to 10 min/ 3 to 8 sec
 - Media: moist, not saturated
- Fertility- < 0.75 mS/cm





Stage 2

- Light- 1,300 to 1,800 fc
- Temperature
 - Bottom heat: 68 to 73°F
 - Air temperature: 68 to 73°F
- Moisture
 - Mist: 10 to 20 min/ 3 to 5 sec
 - Media: moderate level
- Fertility- 50 to 75 ppm N weekly



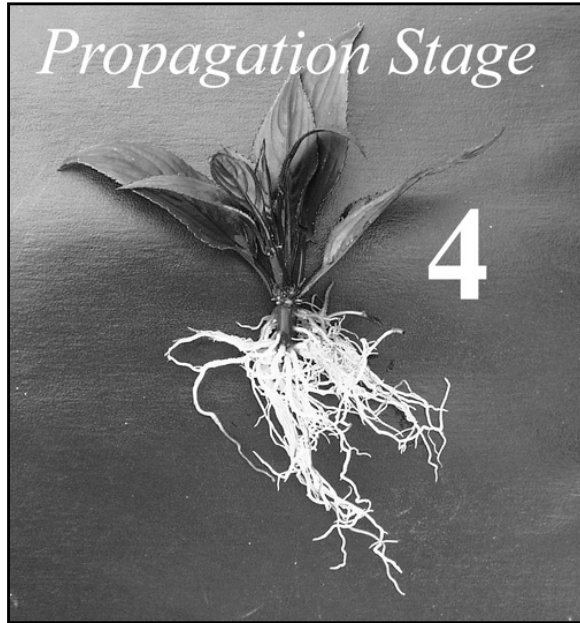
Stage 3

- Light- 1,500 to 2,300 fc
- Temperature
 - Bottom heat: 65 to 68°F
 - Air temperature: 65 to 68°F
- Moisture
 - Mist: discontinue, syringe
 - Media: reduce moisture
- Fertility- 50 to 100 ppm N weekly



Propagation Stage

4



Stage 4

- Light- 2,000 to 4,000 fc
- Temperature
 - Bottom heat: 60 to 65°F
 - Air temperature: 58 to 65°F
- Moisture
 - Mist: none
 - Media: allow to dry
- Fertility- 125 to 250 ppm N weekly



| | Stage 1 | Stage 2 | Stage 3 | Stage 4 | |
|--------------------|----------------------------|---|---|--|---|
| Light | 500 to 1,000 | 1,300 to 1,800 | 1,500 to 2,300 | 2,000 to 4,000 | ↑ |
| Temp. | | | | | |
| Bottom heat | 68 to 80°F | 68 to 73°F | 65 to 68°F | 60 to 65°F | ↓ |
| Air Temp. | 70 to 80°F | 68 to 73°F | 65 to 68°F | 58 to 65°F | |
| Moisture | | | | | |
| Mist | 5 to 10 min/ 3 to 8 sec | 10 to 20 min/ 3 to 5 sec | Discontinue, syringe | Begin overhead, subirrigation | ↓ |
| Media | Moist, not saturated | Moderately moist | Reduce moisture | Allow media to dry | |
| Fertility | < 0.75 mS/ cm | 50 to 75 ppm N, low P/ NH ₄ -N | 50 to 75 ppm N, low P/ NH ₄ -N | 125 to 250 ppm N, toning MgSO ₄ , iron chelate | ↑ |