Stock Plant Management

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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

Plant Breeders
Virus Removal

Offshore Propagation
(stock plant managers)

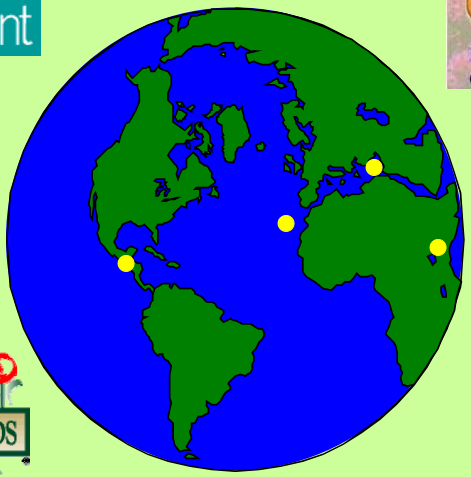
Propagator
(rooting stations)

Grower

Broker

Consumer

The Propagation Industry



Stock Plants

Mist and Bottom Heat

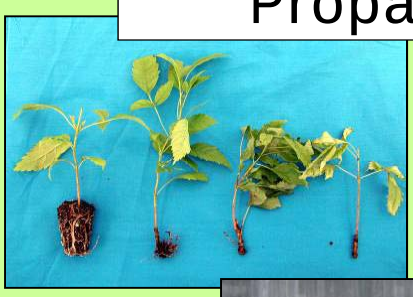
Tip Cuttings

Rooted

Successful Propagation

Successful Product

Propagation



PGRs

Fertility

Pesticides

Temp

Light

Water

Stock Plant Environment

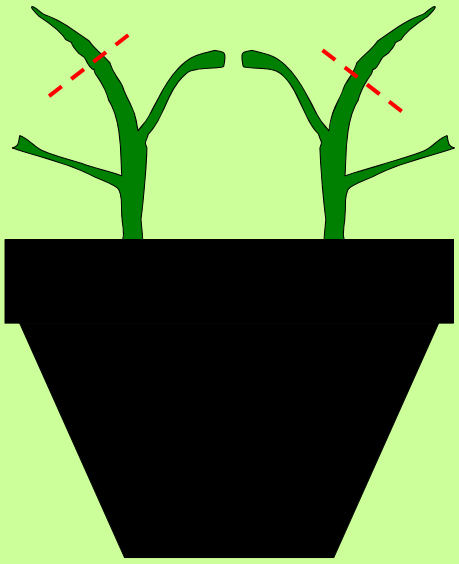
- Light- 3,000 to 7,000 fc
- Temperature
  - Day: 70 to 75ºF
  - Night: 65 to 68°F

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

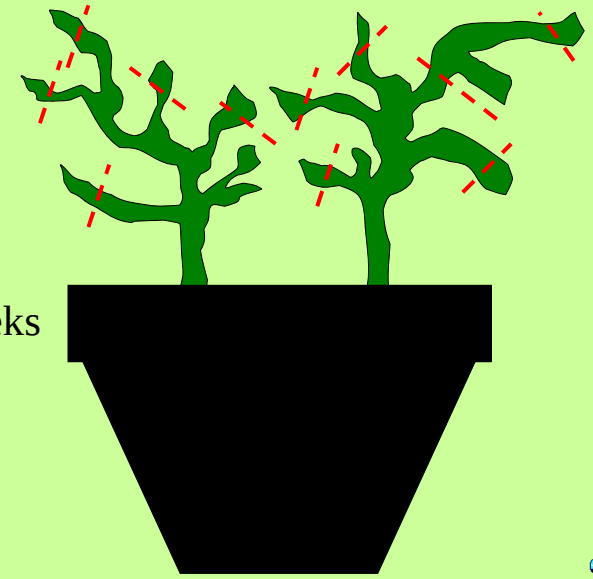
Stock Plant Establishment

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

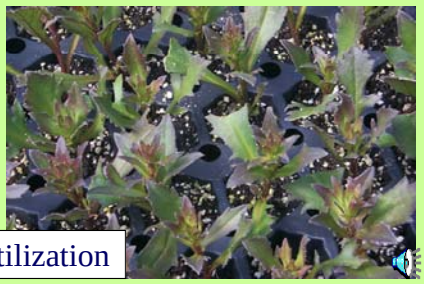
- Shoots
  - 5 to 6 leaves
  - Healthy tissue
- Roots
  - Adventitious
  - Fibrous
- “Heavy” stem
- No flowering

Shoot Problems

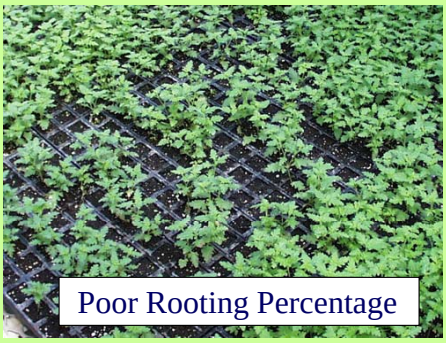
Over-fertilization

Shoot Maturity

Under-fertilization



Rooting Problems



Poor Rooting Percentage

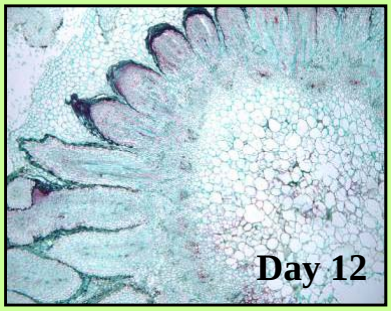
Callus

Poor Root Production

Poor Root Development

Stage 1

- Light- 500 to 1,000 fc
- Temperature
  - Bottom heat: 68 to 80ºF
  - 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



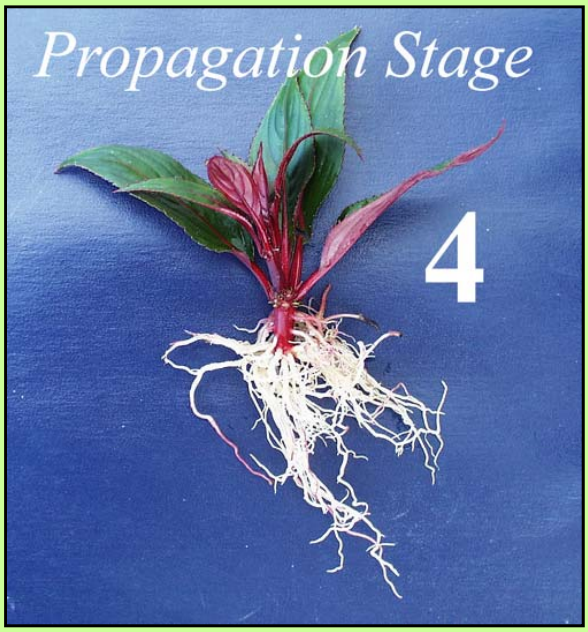
Day 3 Day 8 Day 12

Stage 2

- Light- 1,300 to 1,800 fc
- Temperature
  - Bottom heat: 68 to 73ºF
  - 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

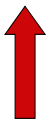
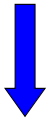
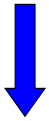
Stage 3

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



Stage 4

- Light- 2,000 to 4,000 fc
- Temperature
  - Bottom heat: 60 to 65ºF
  - 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