

## Bedding Plants

- Flats
- Potted annuals
- Perennials
- Hanging baskets
- Patio plants/containers



## Sales of Flats

- Flats - \$867 million, ↓3%
  - Begonias - 56
  - Geraniums (cuttings) - 10
  - Geraniums (seed) - 7
  - New Guinea - 7
  - Impatiens - 112, ↓
  - Marigolds - 50
  - Pansy - 107, ↑
  - Petunias - 95
  - Other flowers - 330
  - Veggies - 69



## Sales of Potted Annuals

- Total - \$642 million, ↑8%
  - Begonias - \$24
  - Geraniums (cuttings) - 112
  - Geraniums (seed) - 38
  - New Guinea Impatiens - 42
  - Impatiens - 24
  - Marigolds - 8
  - Pansy - 30
  - Petunias - 27
  - Other flowers - 293
  - Veggies - 44

## Sales of Perennials

- Total - \$571 million, ↑17%
  - Outdoor mums - 116
  - Hostas - 38
  - Other perennials 417



## Sales of Hanging Baskets

- Total - \$230 million, ↑6%
  - Begonias - \$14
  - Geraniums (cuttings) - 30
  - Geraniums (seed) - 4
  - New Guinea impatiens - 31
  - Bedding impatiens - 21
  - Marigolds - 0.3
  - Pansy - 3
  - Petunias - 20
  - Other species - 107



## General Trends

- Total bedding plants \$2.28 billion, ↑5%
- ↑ potted annuals
- ↑ mixed containers
- ↑ novelty/new species
- ↑ vegetative bedding plants



## General Trends

- ↑ use of weather resistant varieties
- ↑ use of species suitable for plugs
- ↑ seed quality – priming, seed sorting
- ↑ cultivars



## Seed Propagation



- Hand sowing into open flats
- Mechanical sowing into plugs

## Plugs

- Significant portion of industry using plugs vs. seed flats
- Buying in vs. growing own plugs

## Advantages of buying plugs

- Simplified crop schedules
- Eliminates propagation
- Can allow additional turns of greenhouse space

## Disadvantages of buying plugs

- Limited selection
- Delivery problems
- Quality problems



## Germination Stages

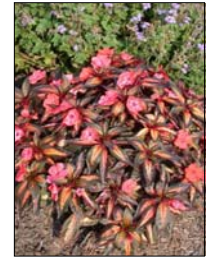
- 1 – root emerges
- 2 – root system and cotyledons emerge
- 3 – first true leaves develop
- 4 – seedlings almost ready to transplant

## Bedding Impatiens

- 1 – 75-80F, 100% humidity, 450fc, no fertilizer
- 2 – 72-75F, 75% humidity, 450fc, 50-100 ppm N after 7 days
- 3 – 65-70F, 150 ppm N after 14 days
- 4 – 60-62F, fertilize as needed

## Cuttings

- Geraniums and other annuals for pots and hanging baskets
- High value crops
- Explosion of vegetatively-propagated materials
- Have retained value



## Cutting Propagation Stages

- 0 – Prepare for arrival or harvest of cuttings
- 1 – Sticking cuttings
- 2 – Callus formation
- 3 – Root development
- 4 – Toning cuttings

## Double Bedding Impatiens

- 1 – 50-60°F, 100% humidity
- 2 – 70-75°F media, 65-70°F air, 75-90 % humidity, 500-1000 fc, 50-75 ppm N, 5-7 days
- 3 – 68-72°F media, 65-70°F air, 75-90% humidity, 1000-1500 fc, 100-150 ppm N, 9-11 days
- 4 – 65-68°F air, ambient humidity, 1500-2500 fc, 100-200 ppm N, 7 days

## Transplanting

- Seed flats – when seedlings have one set of true leaves
- Plugs – when root ball holds together
- Plants stunt if transplanting delayed
- Plugs can be stored at 32-55F, depending on species and light in cooler

## Growing On

- Media – lightweight, well drained
- Containers – 1804, 806, etc. flats, 4+ in. pots,
- Water – can be used to control height
- Temperatures – 60-62°F night, some cooler, some warmer
- Light – full sun, HID useful on plugs but not used on flats

## Growing On

- Photoperiod – natural days, some species are photoperiodic but rarely considered
- Height control – don't use on veggies and herbs, all products used on ornamental species
  - Water restriction, DIF, low nutrition, proper timing
- Insects – whiteflies, aphids, thrips, spider mites, fungus gnats

## Diseases

- Damping off
  - Pre-emergent
  - Post-emergent
- Botrytis
- Impatiens necrotic spot virus, tomato spotted wilt virus
- Many others outside

## Postharvest/marketing

- Poor handling by mass marketers
- Label everything
- Group by use
- Display beds

## Potted Annuals

- Increasing sales
- Geraniums
- Vegetatively-propagated species
- Veggies
- Herbs
- Add 2-6 weeks onto time for flats
- Do not pot up left over flatted plants



## Advantages

- Higher profits/ft<sup>2</sup>
- Increase product diversity
- Longer marketing period



## Disadvantages

- Longer crop times
- More limited market



## Hanging baskets

- Any species that does not have an strongly upright growth pattern
- Increasing sales
- Ivy geraniums
- Fuchsias
- Impatiens
- Begonias
- Petunias
- Mixed species



## Advantages

- Use 'free' space in greenhouse
- Easy to fit into product mix
- Increase product diversity



## Disadvantages

- Irrigation
- Dripping – disease and erratic growth of plants below
- Shipping
- Blocks light below
- Structural support
- Higher cost than other products

## Perennials



- Increasing sales
- Garden mums
- Hostas
- Daylilies
- Thousands of species

## Advantages

- Can be grown earlier and moved outdoors
- Grow under cooler temperatures
- Grow in unheated hoop houses
- Increase product diversity



## Disadvantages

- More difficult to grow than the typical bedding plant, less information available
- Many species – many production requirements
- Often propagates less uniformly
- More insect and disease problems, some of which are specific to genera

## Disadvantages



- Many do not flower in a pot
- Public knowledge is poor
- Fewer repeat sales, less quantities sold of each species

## Marketing Perennials



- Label every pot with tag and picture
- Give consumers as much cultural info as possible
- Use display beds and containers
- Educate consumers – plant several species, some may not work in location, some best for specific locations

## Patio Plants

- Patio plants – large plants of any type.

- Hibiscus
- Veggies
- Tree-forms
- Small market



- Can be profitable but must be priced high due to long crop times and large amount of space

## Mixed Containers

- High interest
- Pots and hanging baskets combining 2 or more species together for variety
- More 'reliable' in that at least one species usually does well
- Get creative

