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 – 5
  - 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 – 75-80°F, 100% humidity, 450fc, no fertilizer
- 2 – 72-75°F, 75% humidity, 450fc, 50-100 ppm N after 7 days
- 3 – 65-70°F, 150 ppm N after 14 days
- 4 – 60-62°F, 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 32-55°F, 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/ft²
- Increase product diversity
- Longer marketing period

Disadvantages

- Longer crop times
- More limited market
**Hanging baskets**
- Any species that does not have a 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