Greenhouse Pest Management
Greenhouse Functions

- **Display**
  - Conservatory
  - Box store retail sales
- **Production**
  - Retail
  - Wholesale/retail
  - Export
Key production target dates (IN)

- Easter Lilies (April)
- Annuals, Perennials and Bedding plants
  - Mother’s day (May)
  - Home gardeners (April-June)
  - Commercial landscape (April-June)
- Chrysanthemums (August-Sept)
- Poinsettia (Nov-Dec)
- House plants (year-round)
Greenhouse IPM

- Monitor
  - Sticky cards (flying insects)
  - Visual inspection (immatures and wingless)
- Record Keeping
  - Where are pests building or coming from?
  - Make maps to locate sources
- Decision making
  - Effective use of cultural tactics, pesticides and biological control
- Evaluation
  - Are pests likely to be a problem at time of sale?
Specialized greenhouse pest management issues

- Safe reserve for tropical pests and beneficials
- Movement of pests by fans
- Movement of pests on yellow clothes
- Sanitation
  - Weeds and Pet plants as pest reservoir
  - Bag old plants in greenhouse as you discard to prevent pest movement
- Pesticide resistance
  - Need to rotate pesticide by mode of action every life cycle
- Physical exclusion
  - Quarantine / inspection of new plants
  - Screening of vents and fans
Pesticide delivery systems

- Dusts (potential visible residue)
- Wettable Powders, Water Soluble Packets, Dry Flowables, Flowables
- Emulsifiable Concentrates (potential phyto)
- Granular, Baits (slow and expensive to apply)

Products applied to house that must be safely vented

- Aerosols (Total release cans)
- Fogs (heated metal pans)
- Smokes (light and go)
- Fumigants (release as gas)
Worker Protection Safety

- **Workers**: People who work in greenhouses, or handle or water plants.
- **Pesticide Handler**: People who apply or mix or monitor pesticide treated area.
- **Workers** must wear personal protective equipment (PPE) when entering a treated area during the restricted entry interval (REI).
Potential for biological control in greenhouse

- Closed system sets the stage for sustainable biological control.
- Inoculative releases:
  - Seed crop with beneficials that provide control
- Inundation releases:
  - Regular addition of beneficials to keep pest population low
Links to Greenhouse Biocontrol

- **New England Greenhouse Pest Management Guide**
  [http://www.umass.edu/umext/floriculture/pest_management/ne_pest_manage_guide.html](http://www.umass.edu/umext/floriculture/pest_management/ne_pest_manage_guide.html)

- **Links to information about useful beneficial insects**
  [http://www.entomology.umn.edu/cues/inter/Biologic.html](http://www.entomology.umn.edu/cues/inter/Biologic.html)

- **Link to site on pesticide side effects on beneficials (see side effects)**
  [http://www.koppert.com/Home.13133.0.html](http://www.koppert.com/Home.13133.0.html)