Challenges of managing weeds in perennial production

• Weeds
• Multi-species nature of perennial production
• Herbaceous aspects of the plants
• Finding appropriate management options
Weeds

• A few weed species are major problems
  – Hard to control propagules
• Move by air
  – Groundsel
  – Willowherb
  – Horseweed
  – Dandelion
Weeds

• A few weed species are major problems
  – Hard to control propagules

• Seed-poppers
  – Bittercress
  – Oxalis (woodsorrel)
Weeds

• A few weed species are major problems
  – Hard to control propagules
    • Movement by water
      – Chickweed
      – Pearlwort
      – Liverwort
Weeds

• Scout
  – Identify what you have regularly
  – Find infestations of new weeds early
  – Inspect new plant material
Rust Disease caused by Puccinia lagenophorae
Weeds

- Keep surrounding areas weed free
- Regular hand weeding is key
  - Even when it hurts !!!
Multi species production

• Grow “like with like”
  – Good competitors with each other
• Segregate “problem children”
• The allure of the new and exotic:
  Are you growing your next weed problem as a crop?
Multi species production

- Segregate the “weed suspects”
- What to look for and think about:
  - Where did come from:
    - Recently (how long in the area or country)
    - Originally (Asia vs. native of nearby area)
    - How does it propagate itself?
      - Excessive seed production
      - Small seed
      - Windborne seed
      - Underground seed
      - Rhizomes
    - Some families are not to be trusted
      - Like Umbelliferae and Composites
Multi species production

- Weed populations change when perennials growth requirements change:
  - Solar radiation
    - Full sun vs shade house
  - Irrigation
  - Fertility
  - pH
  - Growing media composition and origin
The Herbaceous nature of the crop

• Commonly grown perennials differ in:
  – Habit
  – Leaf texture
  – Leaf succulence
  – Spreading ability
  – Stem numbers/pot
  – Deciduousness
Finding appropriate management options

- Cultural options include:
  - Optimizing production cycle for minimal time in the nursery
  - Handweeding regularly
  - Organic mulches or topdressings
  - Synthetic disks or other mulches
What are the herbicide options?

Finding out what’s available, safe and effective
• Other growers
• University publications and websites
• Extension specialists/agents
• Company tech/sales reps
What are the herbicide options?

• What to avoid always:
  – Several materials used on woody plants
    • Casoron
    • Princep
    • Sureguard
    • Broadstar
    • Goal 2XL
    • Ronstar WSP
What are the herbicide options?

• What to avoid probably:
• A few species are labeled:
• Worth checking the reference/label for more information:
  • Ronstar G
  • Combinations with granular oxyfluorfen
    – Rout, OH2, Regal O-O
What are the herbicide options?

• These have several perennials on the label, but still might be problematic:
  – **Sprayable** forms of DNAs and similar pre-emergence
    • Oryzalin (Surflan 4AS)
    • Prodiamine (Barricade 4FL)
    • Pendimethalin (Pendulum3.3EC and others)
    • Dithiopyr (Dimension EC)
    • S-metolachlor (Pennant Magnum 7.8EC)
    • Isoxaben (Gallery 75 DF)
What are the herbicide options?

- These have several to many perennials labeled, and can be applied with caution.
  - **Granular** forms of DNAs and similar pre-emergence
    - Trifluralin (Treflan 4G/Preen)
    - Prodiamine (Regalkade)
    - Pendimethalin (Pendulum 2G)
    - Napropamide (Devrinol 2G)
    - Combinations with isoxaben
      - Snapshot, PreenPlus, others?
    - Terracyte (for liverwort and moss control)
**What are the herbicide options?**

- These have several to many perennials labeled, and can be applied with caution:
  - Postemergence grass killers
    - Clethodim (Envoy will control annual bluegrass)
    - Sethoxydim (Vantage)
    - Fluazifop-p (Fusillade)
    - Fenoxaprop (AcclaimExtra)
What are the herbicide options?

• Others that can be used around the nursery for clean up.

• Postemergence herbicides
  – Glyphosate (RoundupPro and others)
  – Glufosinate (Finale)
  – Pelargonic acid (Scythe)
  – Diquat (Reward)
What are the herbicide options?

• New Developments: soon to be here ???
  – Mogeton for liverwort control
  – Other granular products:
    • alone or in combinations
  – Postemergence broadleaf herbicides for weed control in ornamental grasses
• Liverwort Control with MOGETON

- Terracyte
  New formulation
- Mogeton
  25 WP
- untreated
Trimec applied to dormant grasses for winter annual weed control
Strategies for evaluating new ideas

– Utilize dormant season if possible.
– Keep good records/digital photos of trials
  • Application timing
  • State of plants at time of application
  • Irrigation after planting
  • Apply materials to foliage for worst case scenario
  • Apply 1X and 2X at least.