Mites in Ornamental Crops

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Mites in greenhouse crops

Spider mites
Broad mite, cyclamen mite
Bulb mites
Eriophyid mites
Spider mites

Includes:

• Twospotted spider mite
  – Widespread on many agricultural crops including many ornamentals

• Lewis mite
  – Mainly on poinsettias
  – Probably introduced on cuttings
Spider mite damage

Twospotted spider mite

Lewis mite
Monitoring for spider mites

- Crop inspection
- Look for damage, webbing
- Preferred crops/cultivars, e.g.
  - roses
  - hibiscus
  - NG impatiens
  - ivy geraniums
  - foliage plants
  - poinsettia (Lewis mite)
  - certain chrysanthemum varieties
- Indicator plants e.g. bean plants
Control of spider mites

Several control options biologically and chemically

Biocontrol
• Predatory mites
• Predatory midge (*Feltiella*)
• Predatory ladybeetle (*Stethorus*)

Chemical: miticides
Control of spider mites

Biological control

• Predatory mites – *Phytoseiulus persimilis*
• One of the earliest commercially produced BCAs
• specific
• very effective
• curative
Factors Affecting biological control with *P. persimilis*

- Temperature

Comparative rate of development of TSSM and *P. persimilis* - 20° C
Biocontrol with *P. persimilis*

- Packaged in sawdust, vermiculite or on leaves
- Sprinkled at rates of 2-20/m²
- Focus on hot spots, susceptible varieties
- Pest in first?
- Don’t wait until populations are too heavy
  - No incentive to search
Control of spider mites

Biological control – more predatory mites

- *Amblyseius fallacis*, *A. californicus*, *A. andersoni*
- preventative rather than curative
- very effective
- more generalists than *P. persimilis* and will survive better in the absence of prey
- some growers prefer these over *P. persimilis*
Biocontrol of spider mites

*Feltiella*

- Predatory midge
- Lays eggs in spider mite colonies
- Not widely used, but can be very effective
Biocontrol of spidermites

*Stethorus*
- Predatory ladybeetle, 2-2.5 mm long
- Lays eggs in spider mite colonies
- Larvae and adults feed on mites
- Adults can live for 1-2 years
- Most research in veg crops
- Reportedly very effective

Photo: Applied Bionomics
Control of spider mites

Chemical control

• More alternatives than for many pests
  – Avid
  – DynoMite
  – Pylon
  – Floramite
  – Forbid
  – FujiMite
  – Vendex

• Resistance management is critical

Potential for integration with biocontrol
Broad mite, cyclamen mite

In a family of mites called tarsonemids

- Tiny mites, 0.1-0.2 mm long,
- Need a microscope to see
- Damage is usually seen before the mites
- Feed deep in the growing point
- Dispersal on cuttings, human contact and by other insects
Susceptible crops and damage

- gerbera, african violet, cyclamen, impatiens and begonias
Broad mite, cyclamen mite

Differences are difficult to see

• Does it matter?
• Both feed on a wide range of crops including many of the same
• Controls (biological and chemical) are the same
Biocontrol

• Several commercially available predatory mites feed on these pests

• *N. cucumeris*, *A. swirskii*, *A. andersoni*, *A. californicus*
Biocontrol

• If predatory mites are being used preventatively for thrips control, then control of broad/cyclamen mites is likely as well

• If mite infestations are occasional, then it probably makes more sense to monitor and treat as needed

• If ongoing/frequent infestations occur, biocontrol an option

• Clean Start?
Chemical control

• Forbid
• FujiMite
• Avid will also work
• Rest of pesticides for spidermite will **NOT** work for broad mite
• Check compatibility with biocontrol