Melon Pests

- Seedcorn maggot
- Wireworms
- Cucumber beetles
- Aphids
- Mites
Seedcorn Maggots
### Seedcorn Maggot Management on Muskmelons
**Vincennes, IN 2008**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate</th>
<th>% Healthy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated</td>
<td>-----</td>
<td>35.4 abc</td>
</tr>
<tr>
<td>Admire</td>
<td>16 fl. oz./A</td>
<td>14.6 a</td>
</tr>
<tr>
<td>Admire</td>
<td>24 fl. oz./A</td>
<td>31.3 abc</td>
</tr>
<tr>
<td>Platinum</td>
<td>5 fl. oz./A</td>
<td>22.9 ab</td>
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<tr>
<td>Platinum</td>
<td>8 fl. oz./A</td>
<td>52.1 bcd</td>
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<tr>
<td>Furadan</td>
<td>2.4 fl. oz./1000 ft</td>
<td>47.9 bcd</td>
</tr>
<tr>
<td>Brigade*</td>
<td>6 fl. oz./A</td>
<td>75.0 d</td>
</tr>
<tr>
<td>Hero*</td>
<td>5 fl. oz/A foliar</td>
<td>58.3 cd</td>
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</tbody>
</table>

* Not Labeled
Seedcorn Maggot

- Worse on early-planted cucurbits during cool, wet weather and/or high organic matter
- Several generations per year but only first is important
- Nothing can be done after plants are infested – except replant
- Best to avoid the problem
Avoiding Seedcorn Maggot Damage

- Plant on well-drained soils if possible
- Limit amount of organic matter
- If planting after cover crop, plow it down 3+ weeks before planting
- Plant when soils have warmed to 70°F if possible
- Soil insecticides
Soil Insecticides

- Furadan, Admire and Platinum are labeled for use on cucurbits.
- None have seedcorn maggots on the label.
- Furadan or the high rate of Platinum will provide some control.
- Brigadier (bifenthrin + imidaclorpid) looks very promising for the future.
Wireworms

- Feed on roots and stems of young plants
- Worse:
  - In cool, wet soils
  - Following sod or small grains
  - In heavier soils
Wireworm Management

- Don’t plant cucurbits after small grains or sod
- Use of plastic mulch to warm soil may reduce problems
- Sample with grain bait stations
- Threshold = 1 wireworm per bait station
- Furadan does not have wireworms on the label but will provide some control
Striped Cucumber Beetle

- Overwinters as adults
- One generation per year
- Feeds on leaves, stems, fruit
- Transmits bacterial wilt
Spotted Cucumber Beetle

- Doesn’t overwinter in North
- Migrates in from South
- Arrives later in summer
- Minor in importance compared to striped cucumber beetles
Striped Cucumber Beetle Damage
Important Points to Remember

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- Cucumber beetles are not always present.
- Cucumber beetles are not efficient vectors of bacteria.
Bacterial Wilt of Cucurbits

- Muskmelons are very susceptible
- Cucumbers are somewhat susceptible
- Pumpkins may be susceptible when plants are very small
- Watermelons and most squashes are not susceptible
Cucumber Beetle Thresholds
Direct Counts

- Muskmelons and cucumbers – 1 beetle per plant
- Seedling pumpkin plants – 1 beetle per plant
- Watermelon, squash, and older pumpkins – 5 beetles per plant
# Insecticides for Striped Cucumber Beetle Control – Planted 4/25/08

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Rate</th>
<th>May 22</th>
<th>May 29</th>
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<tbody>
<tr>
<td>Untreated</td>
<td>-----</td>
<td>0.86</td>
<td>2.39</td>
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<tr>
<td>Admire</td>
<td>16 fl. oz./A</td>
<td>0.00</td>
<td>0.39</td>
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<tr>
<td>Admire</td>
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<td>Platinum</td>
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<td>Platinum</td>
<td>8 fl. oz./A</td>
<td>0.03</td>
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<tr>
<td>Furadan</td>
<td>2.4 fl. oz/1000 ft</td>
<td>0.08</td>
<td>4.55</td>
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<tr>
<td>Brigade*</td>
<td>6 fl. oz./A</td>
<td>0.10</td>
<td>3.90</td>
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<tr>
<td>Hero*</td>
<td>5 fl. oz./A foliar</td>
<td>0.04</td>
<td>0.88</td>
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</tbody>
</table>

* Not labeled
Cucumber Beetle Management

- Seed-furrow or transplant applications of Admire, Platinum, or Furadan may give 2-4 weeks of control
- Sevin XLR
- Pyrethroids: Capture, Mustang Max and Baythroid are better than Asana, Pounce/Ambush, or Ammo
- Spraying too much can reduce yield
Aphids and Mites

- Secondary pests, usually controlled by natural enemies
- Outbreaks are usually the result of too many insecticide applications killing natural enemies
Aphids
Twospotted Spider Mites
Natural Enemies
Aphid and Mite Thresholds

- No specific thresholds are available
- Infestations are often localized
- Look for presence of natural enemies
- Mark infested areas
- Check again in 3-7 days to see if infestation is increasing or if natural enemies are keeping it under control
Virus Transmission

- Winged aphids determine the suitability of a host plant by landing and taste testing.
- Aphids pick up virus particles on their mouthparts by feeding on infected plants – crops or weeds.
- When aphids carrying a virus feed on an uninfected plant, transmission occurs in seconds.
- Even if the aphid dies shortly after beginning to feed, the disease is already transmitted and the plant is infected.
Aphid Management

- Conserve natural enemies by spraying only when necessary – Sevin and pyrethroids are especially problematic
- Remember that you cannot control viruses by killing aphids with insecticides
Aphid Insecticides

- Specific Insecticides
  - Actara
  - Admire
  - Beleaf
  - Fulfill
  - Platinum
  - Venom

- General Insecticides

- Organic Insecticides
Aphid Insecticides

- Specific Insecticides
- General Insecticides
  - Dimethoate
  - Endosulfan
  - Malathion
  - Diazinon
- Organic Insecticides
Aphid Insecticides

- Specific Insecticides
- General Insecticides
- Organic Insecticides
  - Neem
  - Insecticidal soap
Mite Management

- Conserve natural enemies
- Agri-Mek
- Acramite
- Kelthane
- Danitol
- Dimethoate
- Oberon
- Insecticidal soaps
Picnic and Sap Beetles

- Attracted to decaying or fermenting fruit
- If feeding on harvestable fruit, apply an insecticide
Putting It All Together

- Delay planting to avoid root maggots if possible
- Soil insecticide?
- Scout for beetles and only spray when necessary
- Conserve predators and parasites
- Spray when necessary for mites and aphids