Alfalfa Insect Management

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Major Alfalfa Pests in Wisconsin

- Potato Leafhopper
- Alfalfa Weevil
Potato Leafhoppers

• Adults
  - 1/8 inch long
  - wedge shape
  - florescent green

• Nymphs
  - much smaller
  - yellowish green to florescent green
  - no wings
Life Cycle

- Does not overwinter in Wisconsin
- Migrate from Gulf States on spring winds, usually arriving mid-May
- Can feed on a wide range of hosts
- Has a very explosive population growth potential
- Survives until late summer or early fall
Damage

- Symptoms
  - Hopper burn
  - Distinct V-shape discoloration

- Caused by
  - Sucking plant sap and injecting toxin which inhibits water and nutrient transport
Economic Damage

• Yield and quality losses
• Reduced stand life
  - Slow recovery of regrowth after harvest
  - Increased stand loss due to winter kill
• Greater potential yield loss the following season
• New seedings can be hit the hardest
Scouting

• Use a 15 inch sweep net
  - W shape pattern
  - 20 consecutive sweeps
  - 5 random areas

NOTE: adults seen in bottom of net, nymphs on collar of net!
Potato Leafhopper Scouting Pattern

20 sweeps in 5 locations
## Economic Threshold

<table>
<thead>
<tr>
<th>Stem Height (Inches)</th>
<th>Leafhoppers (Average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.2 Adults</td>
</tr>
<tr>
<td>6</td>
<td>0.5 Adults</td>
</tr>
<tr>
<td>8 – 11</td>
<td>1.0 Adults or Nymphs</td>
</tr>
<tr>
<td>12 – 14</td>
<td>2.0 Adults or Nymphs</td>
</tr>
</tbody>
</table>
Economic Threshold

Dan Undersander’s
Rule of thumb:

One insect per 10 sweeps per inch of plant height
Control Strategies

• If you’re within 7 days of cutting, take an early harvest
• Cutting kills nymphs and forces adults to search for other food
• After cutting reassess the regrowth
Control Strategies

- Host plant resistance
  - Glandular haired resistance first became available in 1997
  - Newer varieties have increased resistance
  - Resistance helps, but monitoring and insecticide treatments are still needed
Leafhopper
Chemical Control Options

- Ambush 2E
- Baythroid 2
- dimethoate
- Furadan 4F
- Lorsban 4E
- Penncap-MC 2FM
- Sevin XLR Plus
- Imidan 70WP
- Pounce 3.2EC
- Warrior 1EC

Always read and follow the label!
Alfalfa Weevil

• Larva
  – Slate-colored when small
  – Bright green when full grown (3/8”)
  – White stripe down the back, black head

• Adult
  – Dark gray to brown snout beetle (3/16”)
  – Distinct dark shield-like mark on the back
Life Cycle

- Eggs are mostly laid in the spring
- Larva hatch and feed on leaves
- Full grown larva spin silken cocoons
- Adults emerge from cocoons in 1-2 wks
- Adults feed for a short time and then leave the field to rest until fall.
Damage

- Larva chew and skeletonize leaves
- Severe damage gives the field a grayish cast
- Most damage occurs on spring growth
- Feeding can continue on second crop new growth
- Some fields may not green up
Scouting

- Walk the field, develop a pattern that gives you a representative sample
- Avoid field edges
- Collect 30 random stems
- Determine percent of tips that show obvious signs of damage
- Check fields every few days until second crop is established
Economic Threshold

Consider control measures when:

• 40% of plant tips show obvious damage
• 50% of second crop shows damage
• There is no sign of regrowth 3-4 days after harvest
Control Strategies

- If you’re within 7-10 days of harvest, cut early and watch the regrowth
- If you’re at threshold determine where the weevils are in their life cycle
- You might want to factor in the hay value when considering control options
Weevil
Chemical Control Options

- Ambush 2E
- Baythroid 2
- Furadan 4F
- Imidan 70WP
- Lorsban 4E
- Penncap-MC 2FM
- Pounce 3.2 EC
- Warrior 1 EC

Always read and follow the label!
OTHER PESTS IN WI

- Alfalfa blotch leafminer
- Aphids (pea aphids)
- Spittlebugs
- Clover root curculio

- Tarnished plant bugs
- Grasshoppers
- Blister beetles
- Clover leaf weevil
Other Alfalfa Pests
In Wisconsin
Other Alfalfa Pests

In Wisconsin
Alfalfa Blotch Leafminer
Aphids (pea aphids)
Tarnished Plant Bugs
Spittlebugs
Grasshoppers
Clover Leaf Weevil
Forage Web Page

http://www.uwex.edu/ces/crops/teamforage/index.html
Forage Web Page
http://www.uwex.edu/ces/forage/

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Alfalfa Cold Tolerance

• Depending on stage of growth and health, alfalfa may survive temperatures as low as 10 F or be killed by 40 F temperatures
• Alfalfa can survive temperatures as low as 15 F
• This is crown temperature not air temperature
Alfalfa Cold Tolerance

• Crown temperature varies based on:
  – If shoots are low in the soil
  – Insulation by plant residue
  – Moisture in the soil
Alfalfa Cold Tolerance

• Snow reduces effects of temperature swings
• Four inches of snow will allow up to a 20 F temperature difference between air & soil
• In general, well-managed, healthy, winterhardy plants will survive colder temperatures than other plants
In the spring watch for delayed green-up

- Typically spring buds are produced in the fall
- If fall buds are killed the plant needs to develop new buds in the spring
- If green-up is slow, wait/watch for new buds before plowing down
Alfalfa growth in the spring is predominantly from crown buds.
• The plant on the left has suffered winter injury

• If crown buds are killed, the plant must form new buds
• A symptom of winter injury is uneven growth

• Damage is often found on older, diseased plants