

Alfalfa Insect Management

March 8, 2000

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Central Wisconsin

Agricultural Specialization



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



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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 seedlings can be hit the hardest

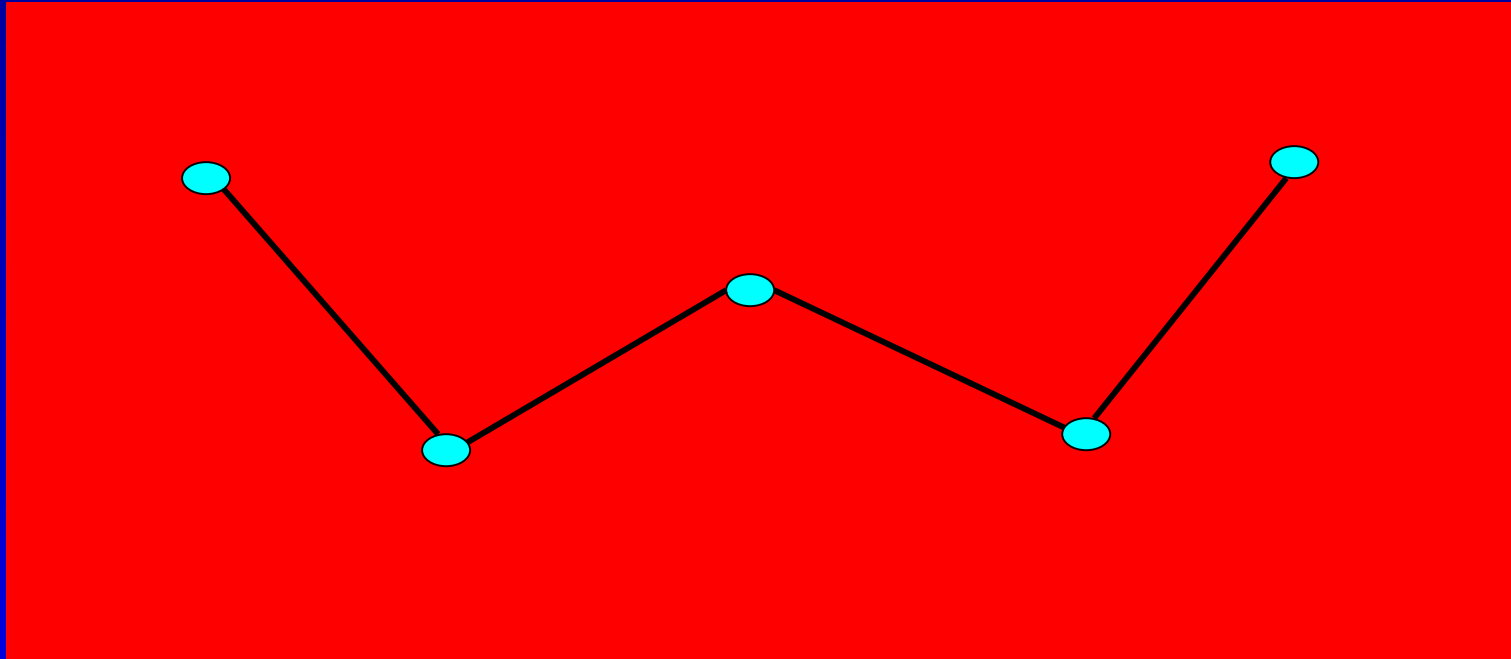
Scouting

- 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

Stem Height (Inches)	Leafhoppers (Average)
3	0.2 Adults
6	0.5 Adults
8 – 11	1.0 Adults or Nymphs
12 – 14	2.0 Adults or Nymphs

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 increase 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

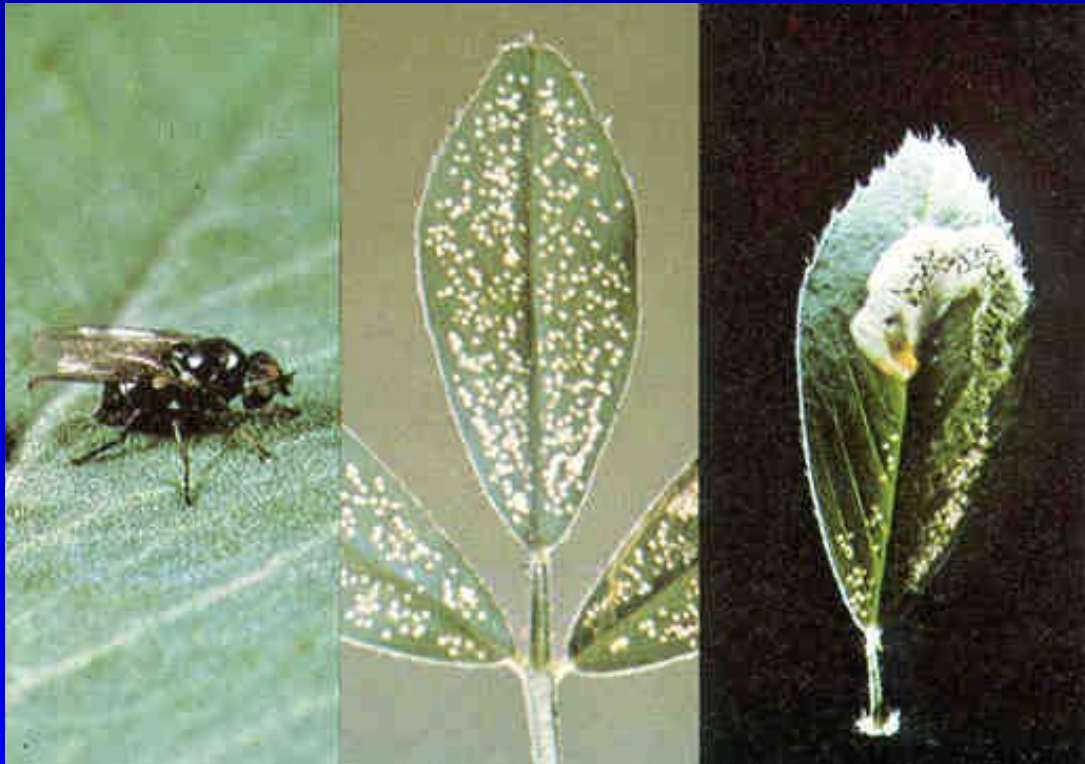
- Alfalfa blotch leafminer
- Aphids (pea aphids)
- Spittlebugs
- Clover root curculio
- Tarnished plant bugs
- Grasshoppers
- Blister beetles
- Clover leaf weevil

Other Alfalfa Pests In Wisconsin

A high-angle, close-up photograph of a lush green alfalfa field. The plants are densely packed, showing their characteristic trifoliate leaves and upright stems. The overall color is a vibrant, uniform green.

Other Alfalfa Pests In Wisconsin

Alfalfa Blotch Leafminer



Aphids (pea aphids)



Tarnished Plant Bugs



Spittlebugs



Blister Beetles



Grasshoppers



Clover Leaf Weevil



Forage Web Page

<http://www.uwex.edu/ces/crops/teamforage/index.html>



Mission

Team Members

Work Groups

Focus on Forage

UW Forage Resources

Member Information



Forage Web Page

<http://www.uwex.edu/ces/forage/>



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Extension

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

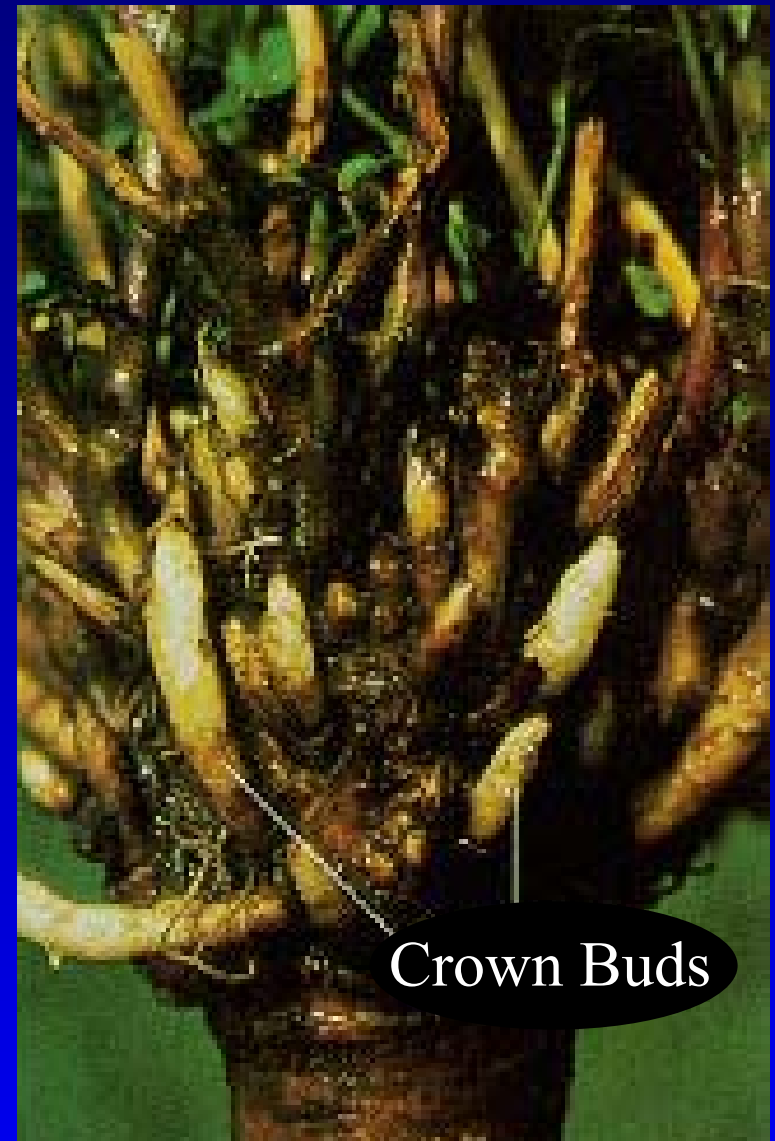
Alfalfa Cold Tolerance

- 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

