Scouting for Leafhoppers
Weekly Scouting – 20 sweeps at 5 locations in each field
Because leafhopper population densities vary from year to year and from field to field, the only way to accurately determine damage potential is by monitoring fields on a weekly schedule.
• Start scouting 5-7 days after first cut.
• Use a standard 15-inch diameter insect sweep net.
• Walk a W-shaped pattern in the field and take twenty consecutive sweeps in each of five randomly selected areas.
• Keep a running total of the number of leafhoppers caught. Count adults and nymphs.
• Divide the field total by 100.
• Compare the field counts with the threshold based on crop height.
• If over the threshold, decide on spraying or cutting.
• Continue to the next field.
• After cutting a field over threshold, scout the regrowth. Start scouting sooner if nymphs were present.

Leafhopper ID
Damage to Alfalfa:
Damage symptoms appear as stunting and as yellowing of the leaves in a v-shaped pattern starting at the tip of a leaf. As a result of hopper burn, there may be yield loss, quality loss and potentially a reduction in plant vigor and stand. New alfalfa seedings are particularly susceptible to potato leafhopper damage.

Leafhopper Thresholds

<table>
<thead>
<tr>
<th>HEIGHT</th>
<th>COUNT/SWEEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 inch</td>
<td>0.2/sweep</td>
</tr>
<tr>
<td>6 inch</td>
<td>0.5/sweep</td>
</tr>
<tr>
<td>8-11 inch</td>
<td>1.0/sweep</td>
</tr>
<tr>
<td>12+ inch</td>
<td>2.0/sweep</td>
</tr>
</tbody>
</table>

Sample of scouting record
Potato leafhoppers: Use 20 sweeps per set.

<table>
<thead>
<tr>
<th>SET 1</th>
<th>SET 2</th>
<th>SET 3</th>
<th>SET 4</th>
<th>SET 5</th>
<th>TOTAL/100</th>
<th>AVERAGE/SWEEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>12</td>
<td>8</td>
<td>15</td>
<td>11</td>
<td>56</td>
<td>0.56</td>
</tr>
</tbody>
</table>

Alfalfa Height 6 inch

The average is above the threshold of 0.5 for this field
**Potato Leafhopper profile**

**Life History:**
Potato leafhoppers do not overwinter in Wisconsin, but migrate from the Gulf States, arriving mid-late May. First crop alfalfa usually escapes economic damage. Each generation takes approximately 4-5 weeks to mature and there may be 3-4 generations/year in the Midwest. Potato leafhoppers can cause economic damage through late summer or early fall to a wide range of host plants including snap beans and potatoes.

Tip for scouting: The immature leafhoppers (called nymphs) walk sideways – simply touch the net to see this distinguishing movement.

**Non-chemical control:**
There isn’t any effective biological control of potato leafhoppers by natural predators or parasites. Glandular-haired alfalfa varieties are available and offer some resistance to potato leafhopper feeding. However, under moderate to heavy potato leafhopper infestations glandular-haired varieties may still benefit from timely scouting and applications of insecticides. Timely cutting of all alfalfa varieties is a good control recommendation because it forces the adults out of the field in search of food and kills many nymphs due to exposure and starvation. Sweep new alfalfa regrowth to monitor the return migration of adult potato leafhoppers. The timing and severity of this return is difficult to predict. Therefore, automatic insecticide applications are not recommended.

**Chemical Control:**
Potato leafhoppers are not difficult to control with insecticides. A number of registered insecticides provide adequate control. Consult UW-Extension bulletin A3646, Pest Management in Wisconsin Field Crops (available from UW publications Learning Store on the internet at: http://learningstore.uwex.edu ) for an approved list of insecticides, rates and precautions. Pay close attention to the pre-harvest restrictions. Also, consider price, honeybee hazards and whether or not it is a restricted use insecticide. Read and follow the label carefully before applying any pesticide.

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**Other Insects in your net?**

**Pea Aphid**
Pea aphids are green or rose colored, pear-shaped, soft bodied and range in size up to 1/8 inch. Adults may or may not have wings.

**Alfalfa Weevil**
Alfalfa weevil adults are small (1/4 inch), light brown with a darker brown v-shaped “shield” on their back. Larvae are initially slate-colored but will eventually become green in color. Larvae have a black head, a white stripe down their back and will grow to a length of 3/8 inches.

**Alfalfa Plant Bug**
Plant bug damage

The adult alfalfa plant bug is oblong, 3/8 inch long, and green to yellowish-green in color. Nymphs are usually lime green but are occasionally a reddish-orange color and range from 1/16 to 3/8 inch in length. Nymphs closely resemble adults except they are smaller and do not have wings.

The adult tarnished plant bug is oval and approximately 1/4 inch long and brown in color. Newly hatched nymphs are approximately 1/16 inch in length and are pale green. Tarnished plant bug nymphs, like alfalfa plant bugs, must go through five instars before they become adults. By the third instar you can see five black spots on their backs.

Injury from plant bugs appear as stunted, malformed, wrinkled and/or misshapen leaves. They do not cause alfalfa to discolor. The toxic saliva of plant bugs inhibits cell expansion near the feeding site and causes malformed leaves.