# ALFALFA: ALFALFA INSECT CONTROL

**David Buntin, Research/Extension Entomologist**

## At-Planting Pests
Cutworms, grubs, wireworms

<table>
<thead>
<tr>
<th>PEST</th>
<th>INSECTICIDE</th>
<th>MOA</th>
<th>AMOUNT PER ACRE</th>
<th>LBS ACTIVE PER ACRE</th>
<th>REI/PHI (Hours or Days)</th>
<th>REMARKS AND PRECAUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>chlorpyrifos</td>
<td>1B</td>
<td>6.7 lb</td>
<td>1</td>
<td>24 H/ 21 D</td>
<td>Apply in-furrow at planting for suppression of target pests. Do not cut or graze within 21 days after application. Make only 1 application/year.</td>
</tr>
<tr>
<td></td>
<td>Lorsban 15G Smartbox</td>
<td></td>
<td>0.001 mg (ai)/ seed</td>
<td></td>
<td>12 H/ 21 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SEED TREATMENT: thiamethoxam</td>
<td>4A</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Cruiser 5FS alfalfa</td>
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</tbody>
</table>

## Alfalfa weevil
(Hay production)

<table>
<thead>
<tr>
<th>PEST</th>
<th>INSECTICIDE</th>
<th>MOA</th>
<th>AMOUNT PER ACRE</th>
<th>LBS ACTIVE PER ACRE</th>
<th>REI/PHI (Hours or Days)</th>
<th>REMARKS AND PRECAUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>alpha-cypermethrin</td>
<td>3A</td>
<td>2.2-3.8 fl oz</td>
<td>0.012-0.025</td>
<td>12 H/ 3 D</td>
<td>Alfalfa weevil infestations can normally be found from mid-February until after the 1st cutting. Scout 1-2 times/week during this period by randomly pulling 30 whole stems from throughout the field. Place stems in a plastic bucket and dislodge larvae by vigorously flailing the stems against the sides of the bucket. Count the number of larvae. Use plant height to determine your treatment level where:</td>
</tr>
<tr>
<td></td>
<td>Fastac CS, other brands 0.83 EC</td>
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<tr>
<td></td>
<td>beta-cyfluthrin</td>
<td>3A</td>
<td>1.6-2.8 fl oz</td>
<td>0.0125-0.022</td>
<td>12 H/ 7 D</td>
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</tr>
<tr>
<td></td>
<td>Baythroid XL 1.0 EC</td>
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<tr>
<td></td>
<td>cyfluthrin</td>
<td>3A</td>
<td>1.6-2.8 fl oz</td>
<td>0.025-0.044</td>
<td>12 H/ 7 D</td>
<td></td>
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<tr>
<td></td>
<td>Tombstone 2</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>chlorpyrifos</td>
<td>1B</td>
<td>1-2 pt</td>
<td>0.5-1</td>
<td>24 H/ 14 D at 1 pt 21 D at 2 pt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lorsban Adv, Chlorfos, Chlorpyrifos, other brands 4E</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>indoxacarb</td>
<td>22</td>
<td>6.7-11.3 fl oz</td>
<td>0.065-0.11</td>
<td>12 H/ 7 D</td>
<td></td>
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<tr>
<td></td>
<td>Steward 1.25 SC</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>gamma-cyhalothrin</td>
<td>3A</td>
<td>1.02-1.54 fl oz</td>
<td>0.01-0.015</td>
<td>12 H/ 7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Declare 1.25 EC</td>
<td></td>
<td>2.56-3.08 fl oz</td>
<td>0.01-0.015</td>
<td>12 H/ 7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proaxis 0.5 EC</td>
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<td></td>
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<tr>
<td></td>
<td>lambda-cyhalothrin</td>
<td>3A</td>
<td>1.28-1.92 fl oz</td>
<td>0.02-0.03</td>
<td>12 H/ 7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Warrior II Zeon 2.08</td>
<td></td>
<td>2.56-3.84 fl oz</td>
<td>0.02-0.03</td>
<td>12 H/ 7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer, Lambda, other brands 1 EC</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>methomyl</td>
<td>1A</td>
<td>3 pt</td>
<td>0.90</td>
<td>48 H/ 7 D</td>
<td>Do not treat solely on weevil numbers. Wait until you have damage on about 30% of the terminals before you consider spraying. For sweep net sampling, treat if 20 or more larvae/sweep are present. All weevil sprays should be made with ground equipment with a minimum of 10 gal/A</td>
</tr>
<tr>
<td></td>
<td>Lannate, other brands 2.4 LV</td>
<td></td>
<td>1 lb</td>
<td>0.90</td>
<td>12 H/ 14 D</td>
<td></td>
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<tr>
<td></td>
<td>Lannate 90 SP</td>
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<tr>
<td></td>
<td>permethrin</td>
<td>3A</td>
<td>8 fl oz</td>
<td>0.2</td>
<td>12 H/ 14 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permethrin 3.2EC, other brands</td>
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<tr>
<td></td>
<td>zeta-cypermethrin</td>
<td>3A</td>
<td>2.24-4 fl oz</td>
<td>0.014-0.025</td>
<td>12 H/ 3 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mustang Maxx, Respect 0.8 EC</td>
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</tbody>
</table>

## Alfalfa weevil
(Grazing alfalfa)
Products and rates listed have grazing restrictions of 0-3 days.

<table>
<thead>
<tr>
<th>PEST</th>
<th>INSECTICIDE</th>
<th>MOA</th>
<th>AMOUNT PER ACRE</th>
<th>LBS ACTIVE PER ACRE</th>
<th>REI/PHI (Hours or Days)</th>
<th>REMARKS AND PRECAUTIONS</th>
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<tr>
<td></td>
<td>alpha-cypermethrin</td>
<td>3A</td>
<td>2.2-3.8 fl oz</td>
<td>0.012-0.025</td>
<td>12 H/ 3 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fastac CS, other brands 0.83 EC</td>
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</tr>
<tr>
<td></td>
<td>gamma-cyhalothrin</td>
<td>3A</td>
<td>1.02-1.54 fl oz</td>
<td>0.01-0.015</td>
<td>12 H/ 1 D Forage</td>
<td>Grazing Alfalfa Pastures: Products and rates listed in the table for grazing alfalfa have grazing restrictions of 0 days. Several products listed in the hay section have a 7-day grazing restriction. The reduced rate of permethrin may be less effective in controlling larvae than rates recommended for hay production.</td>
</tr>
<tr>
<td></td>
<td>Declare 1.25 EC</td>
<td></td>
<td>2.56-3.08 fl oz</td>
<td>0.01-0.015</td>
<td>12 H/ 1 D Forage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proaxis 0.5 EC</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lambda-cyhalothrin</td>
<td>3A</td>
<td>1.28-1.92 fl oz</td>
<td>0.02-0.03</td>
<td>12 H/ 1 D Forage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Warrior II Zeon 2.08</td>
<td></td>
<td>2.56-3.84 fl oz</td>
<td>0.02-0.03</td>
<td>12 H/ 1 D Forage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer, Lambda, other brands 1 EC</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>permethrin</td>
<td>3A</td>
<td>8 fl oz</td>
<td>0.2</td>
<td>12 H/ 14 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permethrin 3.2EC, other brands</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>zeta-cypermethrin</td>
<td>3A</td>
<td>2.24-4 fl oz</td>
<td>0.014-0.025</td>
<td>12 H/ 3 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mustang Maxx, Respect 0.8 EC</td>
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</tbody>
</table>

## NOTE: Chlorpyrifos products may cause injury to young, rapid-growing foliage but normally does not affect yield. Do not tank mix with other pesticides unless previously shown to not cause injury. HIGHLY TOXIC TO BEES.
# ALFALFA INSECT CONTROL

| PEST | INSECTICIDE | MOA | AMOUNT
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aphids</td>
<td><em>chlorpyrifos</em>&lt;br&gt; Lorsban Adv, Chlorfos, Chlorpyrifos, other brands 4E</td>
<td>1B</td>
<td>1-2 pt</td>
</tr>
<tr>
<td>dimethoate</td>
<td>Dimethoate 4EC, 400&lt;br&gt; Dimethoate 2.67EC</td>
<td>1B</td>
<td>0.5-1 pt 0.75-1.5 pt</td>
</tr>
<tr>
<td>flupyradifurone</td>
<td>Sivanto prime</td>
<td>4D</td>
<td>7-14 fl oz</td>
</tr>
<tr>
<td>gamma-cyhalothrin</td>
<td>Declare 1.25&lt;br&gt; Proaxis 0.5</td>
<td>3A</td>
<td>1.02-1.54 fl oz 2.56-3.84 fl oz</td>
</tr>
<tr>
<td>lambda-cyhalothrin</td>
<td>Warrior II Zeon 2.08&lt;br&gt; Silencer, Lambda, other brands</td>
<td>3A</td>
<td>1.28-1.92 fl oz 2.56-3.84 fl oz</td>
</tr>
<tr>
<td>malathion</td>
<td>Malathion SEC, 57EC, Malathion SEC</td>
<td>1B</td>
<td>1.5-2 pt 1-1.25 pt</td>
</tr>
<tr>
<td>permethrin</td>
<td>Permethrin 3.2EC, other brands</td>
<td>3A</td>
<td>8 fl oz</td>
</tr>
</tbody>
</table>

**Cutworms and Armyworms**<br>(True armyworm, Fall armyworm, Beet armyworm, Yellowstriped armyworm)

| PEST | INSECTICIDE | MOA | AMOUNT
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>alpha-cypermethrin&lt;br&gt; Fastac CS, other brands 0.83 EC</td>
<td>3A</td>
<td>2.2-3.8 fl oz</td>
<td>0.012-0.025</td>
</tr>
<tr>
<td>beta-cyfluthrin&lt;br&gt; Baythroid XL 1.0EC</td>
<td>3A</td>
<td>1.6-2.8 fl oz</td>
<td>0.0125-0.022</td>
</tr>
<tr>
<td>carbaryl&lt;br&gt; Sevin XLR Plus, 4F</td>
<td>1A</td>
<td>1-1.5 qt</td>
<td>1-1.5</td>
</tr>
<tr>
<td>chlorantraniliprole&lt;br&gt; Coragen 1.67SC&lt;br&gt; Prevathon 0.43 (armyworms only)</td>
<td>28</td>
<td>3.5-5 fl oz 14-20 fl oz</td>
<td>0.047-0.09 0.047-0.09</td>
</tr>
<tr>
<td>cyfluthrin&lt;br&gt; Tombstone 2</td>
<td>3A</td>
<td>1.6-2.8 fl oz</td>
<td>0.025-0.044</td>
</tr>
<tr>
<td>gamma-cyhalothrin&lt;br&gt; Declare 1.25&lt;br&gt; Proaxis 0.5</td>
<td>3A</td>
<td>1.02-1.54 fl oz 2.56-3.84 fl oz</td>
<td>0.01-0.015 0.01-0.015</td>
</tr>
<tr>
<td>lambda-cyhalothrin&lt;br&gt; Warrior II Zeon 2.08&lt;br&gt; Silencer, Lambda, other brands</td>
<td>3A</td>
<td>1.28-1.92 fl oz 2.56-3.84 fl oz</td>
<td>0.02-0.03 0.02-0.03</td>
</tr>
<tr>
<td>methomyl&lt;br&gt; Lannate, Annililate 2.4 LV&lt;br&gt; Lannate 90SP</td>
<td>1A</td>
<td>3 pt 1 lb</td>
<td>0.90 0.90</td>
</tr>
<tr>
<td>methoxyfenozide&lt;br&gt; Intrepid 2F</td>
<td>18</td>
<td>4-8 fl oz</td>
<td>0.06-0.12</td>
</tr>
<tr>
<td>zeta-cypermethrin&lt;br&gt; Mustang Maxx, Respect 0.8EC</td>
<td>3A</td>
<td>2.24-4 fl oz</td>
<td>0.14-0.025</td>
</tr>
</tbody>
</table>

**REMARKS AND PRECAUTIONS**

- In Georgia, especially in the Coastal Plain area, aphids can be extremely abundant without causing economic damage. Some varieties are resistant to aphids. Treat aphids as listed below based on average number per stem at a given stem height. If alfalfa is near the time of cutting, consider cutting earlier and treating the stubble if aphids remain after cutting.

**Stem Height (inches) | Aphids per Stem**
--- | ---
10-15 | 40-50
16-20 | 60-80
21+ | 100-120

**NOTE:** *Chlorpyrifos* products may cause injury to young, rapid-growing foliage but normally does not affect yield. Do not tank mix with other pesticides unless previously shown to not cause injury. HIGHLY TOXIC TO BEES.

**ARMYWORMS ON SOIL SURFACE:** Treat when any of these armyworm pests or combination of pests are found at an average of 2-3/sq ft.

**CUTWORMS:** Several species. Treat if 3 or more cutworms/sq ft. In standing alfalfa use enough pressure and water for spray penetration to reach the ground. If near cutting, consider cutting early and treating stubble if infestation remains. Cutworms often will congregate under windrowed hay.

**CARRBARYL NOTE:** Do not apply when crop is wet. *Carbaryl* may bleach tender foliage. Do not apply this product to target crops or weeds in bloom.

**NOTE:** Baythroid and Tombstone for small armyworm larvae only.
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<tr>
<th>PEST</th>
<th>INSECTICIDE</th>
<th>MOA</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Blister beetles</td>
<td>carbaryl</td>
<td>1A</td>
<td>0.5-1 qt</td>
<td>0.5</td>
<td>12 H/ 7 D</td>
<td>Treat when 2 beetles/sq ft are found. Beetles tend to aggregate on the weedy margins of fields. Blister beetles bailed up in hay are toxic to livestock, especially horses. <strong>CARBARYL NOTE:</strong> Do not apply when crop is wet. Carbaryl may bleach tender foliage. Do not apply this product to target crops or weeds in bloom.</td>
</tr>
<tr>
<td></td>
<td>Sevin XLR Plus, 4F, other brands</td>
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<tr>
<td></td>
<td>gamma-cyhalothrin</td>
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<td></td>
<td>Declare 1.25</td>
<td></td>
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<td>0.01-0.015</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Proaxis 0.5</td>
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<tr>
<td></td>
<td>lambda-cyhalothrin</td>
<td>3A</td>
<td>1.28-1.92 fl oz</td>
<td>0.02-0.03</td>
<td>12 H/ 7 D</td>
<td>CLOVER ROOT CURCULIO, SWEET CLOVER WEEVIL: Damage is caused by larvae in soil feeding on roots and root nodules. No effective control for larvae in soil. Adults feed on foliage causing notches in leaves. Products listed may reduce adult populations.</td>
</tr>
<tr>
<td></td>
<td>Warrior II Zeon 2.08</td>
<td></td>
<td>2.56-3.84 fl oz</td>
<td>0.02-0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer, Lambda, other brands</td>
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<td></td>
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<tr>
<td>Clover root curculio, Lesser clover leaf weevil, Sweet clover weevil (Adults only)</td>
<td>gamma-cyhalothrin</td>
<td>3A</td>
<td>1.02-1.54 fl oz</td>
<td>0.01-0.015</td>
<td>12 H/ 7 D</td>
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<tr>
<td></td>
<td>Proaxis 0.5</td>
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<tr>
<td>Foliage feeding caterpillars: Green cloverworm, Velvetbean caterpillar, Alfalfa Webworm, Alfalfa caterpillar, and/or Alfalfa looper</td>
<td>alpha-cypermethrin</td>
<td>3A</td>
<td>2.2-3.8 fl oz</td>
<td>0.012-0.025</td>
<td>12 H/ 3 D</td>
<td>FOLIAGE FEEDING CATERPILLARS: For alfalfa caterpillar, green cloverworm, velvetbean caterpillar, alfalfa webworm, and foliage inhabiting armyworms, treat when any of these pests or combinations of pests are found at an average of 2 or more 1/2&quot; long larvae per plant OR defoliation exceeds 10%. <strong>CARBARYL NOTE:</strong> Do not apply when crop is wet. Carbaryl may bleach tender foliage. Do not apply this product to target crops or weeds in bloom.</td>
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<tr>
<td></td>
<td>Fastac CS, other brands 0.83 EC</td>
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<tr>
<td></td>
<td>Baythroid XL 1.0EC</td>
<td></td>
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<tr>
<td></td>
<td>carbayl</td>
<td>1A</td>
<td>0.5-1 qt</td>
<td>0.5</td>
<td>12 H/ 7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sevin XLR Plus, 4F, other brands</td>
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</tr>
<tr>
<td></td>
<td>chlorantraniliprole</td>
<td>28</td>
<td>3.5-5 fl oz</td>
<td>0.047-0.09</td>
<td>4 H/ 0 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coragen 1.67SC</td>
<td></td>
<td>14-20 fl oz</td>
<td>0.047-0.09</td>
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<tr>
<td></td>
<td>Prevathon 0.43</td>
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<td>cyfluthrin</td>
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</tr>
<tr>
<td></td>
<td>indoxyacarb</td>
<td>22</td>
<td>6.7-11.3 fl oz</td>
<td>0.065-0.11</td>
<td>12 H/ 7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steward 1.25 SC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>gamma-cyhalothrin</td>
<td>3A</td>
<td>1.02-1.54 fl oz</td>
<td>0.01-0.015</td>
<td>12 H/ 7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Declare 1.25</td>
<td></td>
<td>2.56-3.84 fl oz</td>
<td>0.01-0.015</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proaxis 0.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lambda-cyhalothrin</td>
<td>3A</td>
<td>1.28-1.92 fl oz</td>
<td>0.02-0.03</td>
<td>12 H/ 7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Warrior II Zeon 2.08</td>
<td></td>
<td>2.56-3.84 fl oz</td>
<td>0.02-0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer, Lambda, other brands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>methomyl</td>
<td>Lannate, Annihilate 2.4 LV</td>
<td>1A</td>
<td>3 pt</td>
<td>0.90</td>
<td>48 H/ 7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lannate 90 SP</td>
<td></td>
<td>1 lb</td>
<td>0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>methoxyfenozide</td>
<td>Intrepid 2F</td>
<td>18</td>
<td>4-8 fl oz</td>
<td>0.06-0.12</td>
<td>4 H/ 3 D</td>
<td></td>
</tr>
<tr>
<td>permethrin</td>
<td>Permethrin 3.2EC, other brands</td>
<td>3A</td>
<td>8 fl oz</td>
<td>0.2</td>
<td>12 H/ 14 D</td>
<td></td>
</tr>
<tr>
<td>zeta-cypermethrin</td>
<td>Mustang Maxx, Respect 0.8EC</td>
<td>3A</td>
<td>2.24-4 fl oz</td>
<td>0.14-0.025</td>
<td>12 H/ 3 D</td>
<td></td>
</tr>
</tbody>
</table>
# Alfalfa Insect Control

<table>
<thead>
<tr>
<th>PEST</th>
<th>INSECTICIDE</th>
<th>MOA</th>
<th>AMOUNT PER ACRE</th>
<th>LBS ACTIVE PER ACRE</th>
<th>REI/PHI (Hours or Days)</th>
<th>REMARKS AND PRECAUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grasshoppers</td>
<td><em>alpha</em>-cypermethrin&lt;br&gt;Fastac CS, other brands 0.83 EC</td>
<td>3A</td>
<td>2.2-3.8 fl oz</td>
<td>0.012-0.025</td>
<td>12 H/3 D</td>
<td>Treat when heavy grasshopper infestations are causing excess defoliation. Grasshoppers often invade fields from adjacent weedy areas; border treatments are sometimes appropriate. <strong>NOTE:</strong> Chlorpyrifos products may cause injury to young rapid growing foliage but normally does not affect yield. Do not tank mix with other pesticides unless previously shown to not cause injury. HIGHLY TOXIC TO BEES.</td>
</tr>
<tr>
<td></td>
<td><em>beta</em>-cyfluthrin&lt;br&gt;Baythroid XL 1EC</td>
<td>3A</td>
<td>2-2.8 fl oz</td>
<td>0.0155-0.022</td>
<td>12 H/7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>chlorpyrifos&lt;br&gt;Lorsban Adv, Chlorfos, Charmorpyrifos, other brands 4E</td>
<td>1B</td>
<td>1 pt</td>
<td>0.5</td>
<td>24 H/16 D at 1 pt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>cyfluthrin&lt;br&gt;Tombstone 2</td>
<td>3A</td>
<td>2-2.8 fl oz</td>
<td>0.031-0.044</td>
<td>12 H/7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>dimethoate</em>&lt;br&gt;Dimethoate 4EC, 400&lt;br&gt;Dimethoate 2.67EC</td>
<td>1B</td>
<td>0.5-1 pt&lt;br&gt;0.75-1.5 pt</td>
<td>0.25-0.5&lt;br&gt;0.25-0.5</td>
<td>12 H/10 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>gamma-cyhalothrin&lt;br&gt;Declare 1.25&lt;br&gt;Proaxis 0.5</td>
<td>3A</td>
<td>1.02-1.54 fl oz&lt;br&gt;2.56-3.84 fl oz</td>
<td>0.01-0.015&lt;br&gt;0.01-0.015</td>
<td>12 H/7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>lambda-cyhalothrin&lt;br&gt;Warrior II Zeon 2.08&lt;br&gt;Silencer, Lambda, other brands</td>
<td>3A</td>
<td>1.28-1.92 fl oz&lt;br&gt;2.56-3.84 fl oz</td>
<td>0.02-0.03&lt;br&gt;0.02-0.03</td>
<td>12 H/7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>malathion&lt;br&gt;Malathion 5EC, 57EC&lt;br&gt;Malathion 8EC</td>
<td>1B</td>
<td>1.5-2 pt&lt;br&gt;1-1.25 pt</td>
<td>0.94-1.25&lt;br&gt;0.94-1.25</td>
<td>12 H/0 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>zeta</em>-cypermethrin&lt;br&gt;Mustang Maxx, Respect 0.8EC</td>
<td>3A</td>
<td>2.8-4 fl oz</td>
<td>0.0175-0.025</td>
<td>12 H/3 D</td>
<td></td>
</tr>
<tr>
<td>Leafhoppers (potato leafhopper, aster leafhopper)</td>
<td><em>alpha</em>-cypermethrin&lt;br&gt;Fastac CS, other brands 0.83 EC</td>
<td>3A</td>
<td>2.2-3.8 fl oz</td>
<td>0.012-0.025</td>
<td>12 H/3 D</td>
<td>Potato leafhopper feeding generally causes V-shaped yellow leaf discoloration that reduces yield. Treat when sweep net samples show leafhopper numbers for a given stem height exceed the following levels: <strong>NOTE:</strong> Chlorpyrifos products may cause injury to young, rapid-growing foliage but normally does not affect yield.</td>
</tr>
<tr>
<td></td>
<td><em>beta</em>-cyfluthrin&lt;br&gt;Baythroid XL 1EC</td>
<td>3A</td>
<td>1.6-2.8 fl oz</td>
<td>0.0125-0.022</td>
<td>12 H/7 D</td>
<td>Stem Height (inches)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3-7</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8-10</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>11-14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14+</td>
</tr>
<tr>
<td></td>
<td>cyfluthrin&lt;br&gt;Tombstone 2</td>
<td>3A</td>
<td>1.6 fl oz</td>
<td>0.013</td>
<td>12 H/7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>dimethoate</em>&lt;br&gt;Dimethoate 4EC, 400&lt;br&gt;Dimethoate 2.67EC</td>
<td>1B</td>
<td>0.5-1 pt&lt;br&gt;0.75-1.5 pt</td>
<td>0.25-0.5&lt;br&gt;0.25-0.5</td>
<td>12 H/10 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>flupyradifurone&lt;br&gt;Sivanto prime</td>
<td>4D</td>
<td>7-14 fl oz</td>
<td>0.09-0.14</td>
<td>12 H/7 D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>gamma-cyhalothrin&lt;br&gt;Declare 1.25&lt;br&gt;Proaxis 0.5</td>
<td>3A</td>
<td>1.02-1.54 fl oz&lt;br&gt;2.56-3.84 fl oz</td>
<td>0.01-0.015&lt;br&gt;0.01-0.015</td>
<td>12 H/7 D</td>
<td></td>
</tr>
</tbody>
</table>
### ALFALFA INSECT CONTROL

<table>
<thead>
<tr>
<th>PEST</th>
<th>INSECTICIDE</th>
<th>MOA</th>
<th>AMOUNT PER ACRE</th>
<th>LBS ACTIVE PER ACRE</th>
<th>REI/PHI (Hours or Days)</th>
<th>REMARKS AND PRECAUTIONS</th>
</tr>
</thead>
</table>
| Leafhoppers (potato leafhopper, aster leafhopper) (continued) | **lambda-cyhalothrin**  
Warrior II Zeon 2.08  
Silencer, Lambda, other brands | 3A | 1.28-1.92 fl oz  
2.56-3.84 fl oz | 0.02-0.03  
0.02-0.03 | 12 H/  
7 D |  |
|  | **permethrin**  
Permethrin 3.2EC, other brands | 3A | 8 fl oz | 0.2 | 12 H/  
14 D |  |
|  | **zeta-cypermethrin**  
Mustang Maxx, Respect 0.8EC | 3A | 2.24-4 fl oz | 0.014-0.025 | 12 H/  
3 D |  |
| Mites | **dimethoate**  
Dimethoate 4EC, 400  
Dimethoate 2.67EC | 1B | 1 pt  
1.5 pt | 0.5  
0.5 | 12 H/  
10 D |  |
|  | **gamma-cyhalothrin**  
Declare 1.25  
Proaxis 0.5 | 3A | 1.54 fl oz  
3.84 fl oz | 0.015  
0.015 | 12 H/  
7 D |  |
|  | **lambda-cyhalothrin**  
Warrior II Zeon 2.08  
Silencer, Lambda, other brands | 3A | 1.92 fl oz  
3.84 fl oz | 0.03  
0.03 | 12 H/  
7 D |  |
| Threecornered alfalfa hopper | **alpha-cypermethrin**  
Fastac CS, other brands 0.83 EC | 3A | 2.2-3.8 fl oz | 0.012-0.025 | 12 H/  
3 D |  |
|  | **beta-cyfluthrin**  
Baythroid XL 1.0EC | 3A | 1.6-2.8 fl oz | 0.0125-0.022 | 12 H/  
7 D |  |
|  | **carbaryl**  
Sevin XLR Plus, 4F, other brands | 1A | 1 qt | 1 | 12 H/  
7 D |  |
|  | **cyfluthrin**  
Tombstone 2 | 3A | 1.6-2.8 fl oz | 0.025-0.044 | 12 H/  
7 D |  |
|  | **gamma-cyhalothrin**  
Declare 1.25  
Proaxis 0.5 | 3A | 1.02-1.54 fl oz  
2.56-3.84 fl oz | 0.01-0.015  
0.01-0.015 | 12 H/  
7 D |  |
|  | **lambda-cyhalothrin**  
Warrior II Zeon 2.08  
Silencer, Lambda, other brands | 3A | 1.28-1.92 fl oz  
2.56-3.84 fl oz | 0.02-0.03  
0.02-0.03 | 12 H/  
7 D |  |
|  | **zeta-cypermethrin**  
Mustang Maxx, Respect 0.8EC | 3A | 2.24-4 fl oz | 0.014-0.025 | 12 H/  
3 D |  |

**Premixed or Co-Packed Insecticides:** Products listed are available as premixes or co-packages of two insecticide active ingredients. User should check mixture labels for active ingredient, specific use rates, target pests, and precautions.

<table>
<thead>
<tr>
<th>BRAND NAME (ACTIVE INGREDIENTS)</th>
<th>RANGE OF FORMULATION RATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Besiege (lambda-cyhalothrin, chlorantraniliprole)</td>
<td>5-9 fl oz/A</td>
</tr>
<tr>
<td>Cobalt Advanced (chlorpyrifos, gamma-cyhalothrin)</td>
<td>13-42 fl oz/A</td>
</tr>
<tr>
<td>Stallion (chlorpyrifos, zeta-cypermethrin)</td>
<td>5-11.75 fl oz/A</td>
</tr>
</tbody>
</table>

**CARBARYL NOTE:** Do not apply when crop is wet. Carbaryl may bleach tender foliage. Do not apply this product to target crops or weeds in bloom.
# ALFALFA WEED CONTROL

Patrick E. McCullough, Extension Agronomist – Weed Science

<table>
<thead>
<tr>
<th>HERBICIDE</th>
<th>MOA</th>
<th>BROADCAST RATE PER ACRE</th>
<th>REI/PHI (Hours or Days)</th>
<th>REMARKS AND PRECAUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRE-PLANT INCORPORATED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>benefin</td>
<td>Balan 60DF</td>
<td>2 lb</td>
<td>1.2</td>
<td>Incorporate 2-3” deep before planting for grass control. EPTC may provide better broad-spectrum weed control. Some epinastic injury to alfalfa usually occurs from EPTC; however, injury is normally temporary. Do not use if grain or grass crop is to be planted with alfalfa. Research has shown significant injury as stand reduction from Balan. Injury would be expected to be less when used on fall than on spring planted alfalfa. The yield of the first cutting may be reduced when treated with Balan.</td>
</tr>
<tr>
<td>Eptam</td>
<td>7 lb/gal</td>
<td>3.5 pt</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>trifluralin</td>
<td>Treflan 4 lb/gal</td>
<td>1</td>
<td>0.5</td>
<td>TREFLAN HFP has a supplemental label for weed control in seedling alfalfa during establishment. Proper incorporation is critical (refer to Treflan HFP label), since severe crop damage and stunting can result. Some stand reduction and stunting of alfalfa may occur with TREFLAN HFP, but reduced weed competition will allow establishment of a quality stand.</td>
</tr>
<tr>
<td><strong>POST-EMERGENCE SEEDLING ALFALFA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,4-DB</td>
<td>Butyrac 200</td>
<td>2-3 qt</td>
<td>1-1.5</td>
<td>Apply in fall or spring after alfalfa has 2-4 trifoliate leaves. Controls emerged annual broadleaf weeds less than 3” tall. Do not graze or cut for hay for 60 days after application. Rainfall or irrigation within 7-10 days after treatment may cause injury. DO NOT add wetting agents or surfactants to the spray solution.</td>
</tr>
<tr>
<td>Butoxone</td>
<td>1.75 lb/gal</td>
<td>4.3-6.5 pt</td>
<td>0.9-1.4</td>
<td></td>
</tr>
<tr>
<td>bromoxynil</td>
<td>Buctril 2L</td>
<td>1.5 pt</td>
<td>0.375</td>
<td>Apply to seedling alfalfa that has a minimum of 4 trifoliolate leaves. Spray winter annual broadleaf weeds that do not exceed the 4-leaf stage or 2” in height, or have rosettes greater than 1.5” in diameter. DO NOT apply when temperatures exceed 70°F at and 3 days after application or unacceptable crop injury may occur. DO NOT add a surfactant or crop oil. DO NOT cut for feed or graze spring treated alfalfa for 30 days after application. DO NOT cut for feed or graze fall or winter treated alfalfa for 60 days after application.</td>
</tr>
<tr>
<td>imazethapyr</td>
<td>Pursuit 70DG</td>
<td>1.08-2.16 oz</td>
<td>0.047-0.094</td>
<td>Apply to seedling alfalfa with a minimum of 2 trifoliolate leaves and when weeds are 1-3” tall or before rosette forming weeds exceed 3” in diameter. Pursuit requires a 1 hour rain free period. Pursuit may cause a temporary reduction in height or slight leaf yellowing. DO NOT feed, graze, or harvest alfalfa for 30 days after application. Add a nonionic surfactant at 0.25% v/v or a crop oil concentrate at 1.25% v/v to the spray solution. If replanting is necessary in a field treated with Pursuit, do not plant alfalfa for 4 months following the application of Pursuit.</td>
</tr>
<tr>
<td></td>
<td>Pursuit 2EC</td>
<td>3-6 fl oz</td>
<td>0.047-0.094</td>
<td></td>
</tr>
<tr>
<td>glyphosate</td>
<td>Roundup WeatherMax</td>
<td>22-44 fl oz</td>
<td>0.95-1.9</td>
<td><strong>USE ONLY ON ALFALFA VARIETIES DESIGNATED AS CONTAINING A ROUNDP READY (RR) GENE.</strong> Apply from alfalfa emergence up to 5 days before cutting hay. May be applied at any alfalfa growth stage. Due to alfalfa biology and breeding constraints, up to 10% of seedlings may not contain the Roundup Ready gene and will be killed by glyphosate. To eliminate undesirable stand gaps during seedling establishment, apply Roundup WeatherMax at the low rate at or before the 3-4 trifoliate leaf stage of alfalfa. Sequential applications may be made as needed (allow a minimum of 7 days between applications) but do not exceed 4.1 qt/A/year. Remove livestock before application and wait 5 days after the last application before grazing, cutting for silage or hay harvest. Glyphosate will control most weed species, including dodder. Weeds that are not effectively controlled by a single application of glyphosate include: hemp sesbania, bermudagrass, yellow nutsedge, tropical spiderwort, greenbrier species, catleaf eveningprimrose, Carolina geranium, maypop passionflower, and trumpet creeper. Repeat applications, or other appropriate herbicides, will be needed to control this group of weeds. Other brands of glyphosate may be used on Roundup Ready alfalfa, if the specific brand label lists this use.</td>
</tr>
</tbody>
</table>
## ALFALFA WEED CONTROL

<table>
<thead>
<tr>
<th>HERBICIDE</th>
<th>MOA</th>
<th>BROADCAST RATE PER ACRE</th>
<th>AMOUNT OF FORMULATION</th>
<th>POUNDS ACTIVE INGREDIENT</th>
<th>REI/PHI (Hours or Days)</th>
<th>REMARKS AND PRECAUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POST-EMERGENCE SEEDLING ALFALFA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>imazamox</td>
<td>Raptor 1 lb/gal</td>
<td>4-6 fl oz</td>
<td>0.031-0.047</td>
<td></td>
<td></td>
<td>Apply to seedling alfalfa with a minimum of 2 trifoliate leaves and when weeds are 1-3” tall. Raptor requires a 1-hour rain-free period. A temporary growth reduction may occur after application. DO NOT feed, graze, or harvest alfalfa for 20 days after application. A maximum total of 6 fl oz/A may be applied per season. Add a nonionic surfactant at 0.25% v/v or a crop oil concentrate at 1-2% v/v to the spray solution. If replanting is necessary in a field treated with Raptor, do not plant alfalfa for 4 months following the application of Raptor.</td>
</tr>
<tr>
<td>pendimethalin</td>
<td>Prowl H2O 3.8 lb/gal</td>
<td>1.1-2.1 pt</td>
<td>0.5-1</td>
<td></td>
<td></td>
<td>Apply to seedling alfalfa before annual weed emergence and after alfalfa has developed 2 trifoliate leaves. Applications should be made before alfalfa exceeds 6” in height. <em>Pendimethalin</em> will provide good to excellent pre-emergence control of annual grasses and some annual broadleaf weeds. Do not cut for hay or graze for 28 days after an application.</td>
</tr>
<tr>
<td>pronamide</td>
<td>Kerb 50W 1-1.5 lb</td>
<td></td>
<td>0.5-0.75</td>
<td></td>
<td></td>
<td>Spray pre-emergence or early post-emergence for control of winter annual weeds after the alfalfa has reached the trifoliolate leaf stage. Do not graze or cut for hay for 120 days after treatment.</td>
</tr>
<tr>
<td>sethoxydim</td>
<td>Poast 1.5 lb/gal</td>
<td>1-1.5 pt</td>
<td>0.19-0.3</td>
<td></td>
<td></td>
<td>Apply low rate with 2 pt of crop oil concentrate/A for control of annual grasses up to 8” tall (varies with species). Use high rate if rhizome johnsongrass is to be controlled, followed by a second application to regrowth or new plants. Do not apply to grass or alfalfa under stress. Apply before the grass has been cut. Do not apply <em>sethoxydim</em> products within 7 days of feeding, grazing or harvesting undried forage, or within 14 days of cutting for dry hay.</td>
</tr>
<tr>
<td></td>
<td>Poast Plus</td>
<td>1.5-2.25 pt</td>
<td>0.19-0.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sethoxydim E-Pro</td>
<td>1.5-2.25 pt</td>
<td>0.19-0.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sethoxydim G-Pro</td>
<td>1.5-2.25 pt</td>
<td>0.19-0.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>clethodim</td>
<td>Select Max 0.97 lb/gal</td>
<td>9-32 fl oz</td>
<td>0.07-0.24</td>
<td></td>
<td></td>
<td><em>Clethodim</em> will provide excellent control of annual and perennial grasses, but will not control broadleaf weeds or sedges. Use the low rate on annual grasses, and the high rate on perennial grasses (see label). Select Max and Intensity One require the addition of a nonionic surfactant at 0.25% v/v. For Shadow and Arrow use only a crop oil concentrate at 1% v/v. Use a nonionic surfactant or crop oil concentrate with TapOut. <em>Clethodim</em> may be tank-mixed with 2,4-DB; however, the risk of temporary injury to alfalfa will increase. <em>Clethodim</em> may also be tank-mixed with Pursuit and Raptor. Do not cut for hay or graze for 15 days after an application of <em>clethodim</em>.</td>
</tr>
<tr>
<td></td>
<td>Intensity One 0.97 lb/gal</td>
<td></td>
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<tr>
<td></td>
<td>TapOut 0.97 lb/gal</td>
<td></td>
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<tr>
<td></td>
<td>Shadow 2 lb/gal</td>
<td>6-16 fl oz</td>
<td>0.09-0.25</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Arrow 2 lb/gal</td>
<td>6-16 fl oz</td>
<td>0.09-0.25</td>
<td></td>
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</tr>
<tr>
<td><strong>POST-EMERGENCE SEEDLING – ALFALFA (BETWEEN CUTTINGS)</strong></td>
<td></td>
<td></td>
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<tr>
<td>paraquat</td>
<td>Firestorm 3 lb/gal</td>
<td>0.7 pt</td>
<td>0.25</td>
<td></td>
<td></td>
<td>Apply to small emerged annual grass and broadleaf weeds in first year alfalfa immediately after removing hay between cuttings. Do not treat more than 5 days after cutting. Add a nonionic surfactant at 1 pt/100 gal of water. Do not make more than 2 applications during the growing season. Apply in 20-40 gal of water/A. Weeds much beyond the seedling stage and stubble of those cut off during harvest will be less affected by the treatment. Do not graze, cut, or harvest within 30 days of application.</td>
</tr>
<tr>
<td></td>
<td>Gramoxone Inteon 2 lb/gal</td>
<td>1 pt</td>
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</tbody>
</table>

*Note: The use of any pesticide should be based on specific field conditions and local regulations.*

**ALFA**
## ALFALFA WEED CONTROL

<table>
<thead>
<tr>
<th>HERBICIDE</th>
<th>MOA</th>
<th>BROADCAST RATE PER ACRE</th>
<th>REI/PHI (Hours or Days)</th>
<th>REMARKS AND PRECAUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>AMOUNT OF FORMULATION</strong></td>
<td><strong>POUNDS ACTIVE INGREDIENT</strong></td>
<td></td>
</tr>
<tr>
<td><strong>POST-EMERGENCE – ESTABLISHED DORMANT ALFALFA (SECOND YEAR &amp; OLDER)</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>metribuzin</td>
<td></td>
<td>12 fl oz</td>
<td>0.375</td>
<td>See label for weeds controlled at different rates and for precautions related to soil textures. Spray dormant alfalfa, established 1 year or longer, after frost in fall or preferably in late winter before alfalfa begins spring growth while weeds are small. Provides pre-emergence and early post-emergence weed control when surfactant is added. Do not use Sencor, Metribuzin, or Velpar on sands. The higher rate of Velpar may cause crop damage. Do not graze or cut for hay within 28 days after Sencor or Metribuzin treatment. Do not graze or cut for hay within 30 days after Velpar treatment. Do not tank-mix any of these herbicides.</td>
</tr>
<tr>
<td>Sencor 4L</td>
<td></td>
<td>8 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sencor 75DF</td>
<td></td>
<td>8 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metribuzin 75 DF</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>hexazinone</td>
<td></td>
<td>2-3 pt</td>
<td>0.5-0.75</td>
<td>Apply in January at lower rate for most annual winter grasses, except higher rate for annual ryegrass or orchardgrass. Do no graze or cut for hay for 120 days after treatment. Provides pre-emergence and early post-emergence control. Do not tank mix with other herbicides.</td>
</tr>
<tr>
<td>Velpar 2L</td>
<td></td>
<td>8-12 oz</td>
<td>0.5-0.75</td>
<td></td>
</tr>
<tr>
<td>Velpar 75 DF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pronamide</td>
<td></td>
<td>1-1.5 lb</td>
<td>0.5-0.75</td>
<td>Apply during the winter months when established alfalfa is dormant. DO NOT apply dormant treatments to seedling alfalfa less than 6 months old. Controls Italian ryegrass (less than 6” tall), chick weed and most other winter annual weeds. Green alfalfa foliage present at time of application will become necrotic (brown). DO NOT apply after the initiation of new spring growth. Add a nonionic surfactant at 1 pt/100 gal of spray solution. DO NOT graze or harvest within 42 days of application. Make only 1 application per season.</td>
</tr>
<tr>
<td>Kerb 50W</td>
<td></td>
<td></td>
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<tr>
<td>paraquat</td>
<td></td>
<td>0.7-1.3 pt</td>
<td>0.25-0.5</td>
<td></td>
</tr>
<tr>
<td>Firestorm</td>
<td>3 lb/gal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gramoxone Inteon</td>
<td>2 lb/gal</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>norflurazon</td>
<td></td>
<td>1.25-2.5 lb</td>
<td>1-2</td>
<td>Apply to established alfalfa in spring or early fall for the control of annual grasses and annual broadleaf weeds such as tropic croton and prickly sida. May be applied to dormant and actively-growing alfalfa. Apply to actively-growing alfalfa following hay removal to ensure spray penetration to the soil surface. DO NOT apply to seeding alfalfa earlier than 5 months after emergence. DO NOT apply Norflurazon within 28 days of harvest. Use the low rate on sandy soils. Solica may be tank-mixed with Gramoxone Extra, Poast, Pursuit, Kerb, Sencor, Lexone, and 2,4-D. For 16 months following application rotate only to cotton, soybeans, or peanuts.</td>
</tr>
<tr>
<td>Solicam 80DF</td>
<td></td>
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</tr>
<tr>
<td>pendimethalin</td>
<td></td>
<td>1.1-4.2 qt</td>
<td>1.05-4</td>
<td>Pendimethalin will provide good to excellent pre-emergence control of annual grasses and some annual broadleaf weeds. In established alfalfa (defined as alfalfa that was planted in fall or spring and has gone through a first cutting/mowing), Prowl H2O may be applied in the fall after the last cutting, during winter dormancy or in the spring before alfalfa regrowth is 6”. Prowl H2O must be applied before crabgrass or other annual grasses germinate. Prowl H2O has no pre-harvest or pre-grazing interval restriction.</td>
</tr>
<tr>
<td>Prowl H2O 3.8 lb/gal</td>
<td></td>
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<tr>
<td>flumioxazin</td>
<td></td>
<td>4 oz</td>
<td>0.13</td>
<td>Flumioxazin will provide good to excellent pre-emergence control of annual grasses and some annual broadleaf weeds. Apply in the fall or spring months before weed emergence. Do not apply to alfalfa with more than 6” of new growth or significant injury can occur. Do not cut for hay or graze for 25 days after an application of flumioxazin.</td>
</tr>
<tr>
<td>Chateau 51 WDG</td>
<td></td>
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<tr>
<td><strong>POST-EMERGENCE – ESTABLISHED ALFALFA</strong></td>
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</tr>
<tr>
<td>2,4-DB</td>
<td></td>
<td>2-3 qt</td>
<td>1-1.5</td>
<td>Spray established dormant or non-dormant alfalfa in late fall through spring for control of emerged weeds that emerge in the fall and over winter in the rosette stage. Do not graze or cut for hay within 30 days after treatment. Overhead irrigation or rainfall within a few days after use may wash chemical into the root zone, possibly causing some twisting of stems and malformation of leaves. Do not add wetting agents or surfactants to the spray mix.</td>
</tr>
<tr>
<td>Butryn 200</td>
<td>1.75 lb/gal</td>
<td>4.3-6.5 pt</td>
<td>0.9-1.4</td>
<td></td>
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<tr>
<td>Butoxone</td>
<td></td>
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</tbody>
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<th>REI/PHI (Hours or Days)</th>
<th>REMARKS AND PRECAUTIONS</th>
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<tr>
<td><strong>HERBICIDE</strong></td>
<td><strong>AMOUNT OF FORMULATION</strong></td>
<td><strong>POUNDS ACTIVE INGREDIENT</strong></td>
<td><strong>REMARKS AND PRECAUTIONS</strong></td>
<td></td>
</tr>
<tr>
<td>halosulfuron</td>
<td>0.67-1 oz</td>
<td>0.03-0.045</td>
<td>Controls annual and perennial broadleaf weeds and sedges in established alfalfa. It is recommended to make an application as soon as possible after removal of hay. Application of Sandea to alfalfa where re-growth exceeds 6” will result in greater yield reduction. Do not apply more than 2 oz/A/12 month period. Apply to sedges 6-10” tall. Applications are recommended with a non-ionic surfactant at 0.25% v/v. For best results, do not graze or mow for 2 weeks before or after application.</td>
<td></td>
</tr>
<tr>
<td>Sandea 75WG</td>
<td>1.08-2.16 oz</td>
<td>3-6 fl oz</td>
<td>Apply to established alfalfa in the fall, or in the spring to dormant or semi-dormant alfalfa. Spring treatments should be made before excessive alfalfa growth (less than 3” of new growth) to reduce spray interference. Apply when weeds are 1-3” tall or before rosette forming weeds exceed 3” in diameter. DO NOT feed, graze, or harvest alfalfa for 30 days after application. Add a non-ionic surfactant at 0.25% v/v or a crop oil concentrate at 1.25% v/v to the spray solution. If replanting is necessary in a field treated with Pursuit, do not plant alfalfa for 4 months following the application of Pursuit.</td>
<td></td>
</tr>
<tr>
<td>imazethapyr</td>
<td>0.047-0.094</td>
<td>Apply to established alfalfa in the fall, or in the spring to dormant or semi-dormant alfalfa. Spring treatments should be made before excessive alfalfa growth (less than 3” of new growth) to reduce spray interference. Apply when weeds are 1-3” tall or before rosette forming weeds exceed 3” in diameter. Raptor requires a 1 hour rain free period. A temporary growth reduction may occur after application. DO NOT feed, graze, or harvest alfalfa for 20 days after application. A maximum total of 6 fl oz/A/season may be applied. Add a nonionic surfactant at 0.25% v/v or a crop oil concentrate at 1-2% v/v to the spray solution. If replanting is necessary in a field treated with Raptor, do not plant alfalfa for 4 months following its application.</td>
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<tr>
<td>Pursuit 70DG</td>
<td>4-6 fl oz</td>
<td>0.031-0.047</td>
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<tr>
<td>Pursuit 2EC</td>
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<tr>
<td>imazamox</td>
<td>0.19-0.3</td>
<td>Apply low rate with 2 pt of crop oil concentrate/A for control of annual grasses up to 8” tall (varies with species). Use high rate if rhizome johnsongrass is to be controlled, followed by a second application to regrowth or new plants. Do not apply to grass or alfalfa under stress. Apply before the grass has been cut. Do not apply sethoxydim products within 7 days of feeding, grazing, or harvesting undried forage, or within 14 days of cutting for dry hay.</td>
<td></td>
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</tr>
<tr>
<td>Raptor 1 lb/gal</td>
<td>44 fl oz</td>
<td>1.9</td>
<td>USE ONLY ON ALFALFA VARIETIES DESIGNATED AS CONTAINING A ROUNDUP READY (RR) GENE. May be applied at any alfalfa growth stage. Sequential applications may be made as needed (allow a minimum of 7 days between applications) but do not exceed 4.1 qt/A/year. Remove livestock before application and wait 5 days after the last application before grazing, cutting for silage or hay harvest. Glyphosate will control most weed species, including dodder. Weeds that are not effectively controlled by a single application of glyphosate include: hemp sesbania, bermudagrass, yellow nutsedge, tropical spiderwort, greenbrier species, cutleaf eveningprimrose, Carolina geranium, maypop passionflower and trumpetcreeper. Repeat applications, or other appropriate herbicides, will be needed to control this group of weeds. Other brands of glyphosate may be used on Roundup Ready alfalfa, if the specific brand label lists this use.</td>
<td></td>
</tr>
<tr>
<td>glyphosate</td>
<td>1-1.5 pt</td>
<td>0.19-0.3</td>
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<tr>
<td>Roundup WeatherMax</td>
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<tr>
<td>5.5 lb/gal</td>
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<tr>
<td>sethoxydim</td>
<td>1.5-2.25 pt</td>
<td>1.5-2.25 pt</td>
<td>1.5-2.25 pt</td>
<td></td>
</tr>
<tr>
<td>Poast 1.5 lb/gal</td>
<td>1-1.5 pt</td>
<td>0.19-0.3</td>
<td></td>
<td></td>
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<tr>
<td>Poast Plus</td>
<td>1.5-2.25 pt</td>
<td>1.5-2.25 pt</td>
<td>1.5-2.25 pt</td>
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<tr>
<td>Sethoxydim E-Pro</td>
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<tr>
<td>Sethoxydim G-Pro</td>
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<tr>
<td>1 lb/gal</td>
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<tr>
<td>clethodim</td>
<td></td>
<td>POST-EMERGENCE ESTABLISHED – ALFALFA (BETWEEN CUTTINGS)</td>
<td></td>
<td></td>
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<tr>
<td>Select Max</td>
<td></td>
<td>0.97 lb/gal</td>
<td>0.07-0.24</td>
<td>12</td>
<td>Clethodim will provide excellent control of annual and perennial grasses, but will not control broadleaf weeds or sedges. Use the low rate on annual grasses, and the high rate on perennial grasses (see label). Select Max and Intensity One require the addition of a nonionic surfactant at 0.25% v/v. For Shadow and Arrow use only a crop oil concentrate at 1% v/v. Use a nonionic surfactant or crop oil concentrate with TapOut. Clethodim may be tank-mixed with 2,4-DB; however, the risk of temporary injury to alfalfa will increase. Clethodim may also be tank-mixed with Pursuit and Raptor. Do not cut for hay or graze for 15 days after an application of clethodim.</td>
</tr>
<tr>
<td>Intensity One</td>
<td></td>
<td>0.97 lb/gal</td>
<td>0.09-0.25</td>
<td>12</td>
<td></td>
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<tr>
<td>TapOut</td>
<td></td>
<td>0.97 lb/gal</td>
<td>0.09-0.25</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Shadow</td>
<td></td>
<td>2 lb/gal</td>
<td>0.09-0.25</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Arrow</td>
<td></td>
<td>2 lb/gal</td>
<td>0.09-0.25</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>imazethapyr</td>
<td></td>
<td>POST-EMERGENCE ESTABLISHED – ALFALFA (BETWEEN CUTTINGS)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pursuit 70DG</td>
<td></td>
<td>1.08-2.16 oz</td>
<td>0.047-0.094</td>
<td>12</td>
<td>Apply as a between cut treatment. Remove hay from the field and apply before excessive alfalfa regrowth. Apply when weeds are 1-3” tall or before rosette forming weeds exceed 3” in diameter. DO NOT feed, graze, or harvest alfalfa for 30 days after application. A maximum total of 2.16 oz/A/year of Pursuit may be applied. Add a nonionic surfactant at 0.2 5% v/v or a crop oil concentrate at 1.25% v/v to the spray solution. If replanting is necessary in a field treated with Pursuit, do not plant alfalfa for 4 months following its application. Do not apply more than 1.44 oz during the last year of the stand.</td>
</tr>
<tr>
<td>imazamox</td>
<td></td>
<td>POST-EMERGENCE ESTABLISHED – ALFALFA (BETWEEN CUTTINGS)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Raptor 1 lb/gal</td>
<td></td>
<td>4-6 fl oz</td>
<td>0.031-0.047</td>
<td>12</td>
<td>Apply as a between cut treatment. Remove hay from the field and apply before excessive alfalfa regrowth. Apply when weeds are 1-3” tall or before rosette forming weeds exceed 3” in diameter. Raptor requires a 1-hour rain-free period. A temporary growth reduction may occur after application. DO NOT feed, graze, or harvest alfalfa for 20 days after application. A maximum total of 6 fl oz/A may be applied per season. Add a nonionic surfactant at 0.25% v/v or a crop oil concentrate at 1-2% v/v to the spray solution. If replanting is necessary in a field treated with Raptor, do not plant alfalfa for 4 months following its application.</td>
</tr>
<tr>
<td>paraquat</td>
<td></td>
<td>POST-EMERGENCE ESTABLISHED – ALFALFA (BETWEEN CUTTINGS)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Firestorm</td>
<td></td>
<td>3 lb/gal</td>
<td>0.25</td>
<td>12</td>
<td>Apply to established stands (at least one year old) immediately after alfalfa has been removed for silage or hay. Do not treat more than 5 days after cutting. Add surfactant at 1 pt/100 gal of spray mix. DO NOT graze, cut or harvest within 30 days of application. Make 1-3 applications as needed during the cutting season. Apply in 20-40 gals of water/A. Weeds much beyond the seedling stage and stubble of those cut off during harvest will be less affected by the treatment.</td>
</tr>
<tr>
<td>Gramoxone Inteon</td>
<td></td>
<td>2 lb/gal</td>
<td>0.25</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>pendimethalin</td>
<td></td>
<td>POST-EMERGENCE ESTABLISHED – ALFALFA (BETWEEN CUTTINGS)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Prowl H2O</td>
<td></td>
<td>3.8 lb/gal</td>
<td>1.05-4</td>
<td>12</td>
<td>Apply as a between cut treatment before annual weeds emerge. Pendimethalin will provide good to excellent pre-emergence control of annual grasses and some annual broadleaf weeds. Do not cut for hay or graze for 28 days after an application of 2.1 qt/A or less. If Prowl H2O is applied at more than 2.1 qt/A, the grazing and haying restriction is 50 days.</td>
</tr>
<tr>
<td>1.1-4.2 qt</td>
<td></td>
<td>1.05-4</td>
<td>1.05-4</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>flumioxazin</td>
<td></td>
<td>POST-EMERGENCE ESTABLISHED – ALFALFA (BETWEEN CUTTINGS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chateau 51 WDG</td>
<td></td>
<td>4 oz</td>
<td>0.13</td>
<td>12</td>
<td>Apply as a between cut treatment for pre-emergence control of annual grasses and some annual broadleaf weeds. Application should be made as soon as possible after hay harvest to minimize injury to alfalfa. Do not apply to alfalfa with more than 6” of new growth or significant injury can occur. Do not cut for hay or graze for 25 days after an application of flumioxazin.</td>
</tr>
</tbody>
</table>

## Amount of Formulation

- clethodim: 9-32 fl oz
- imazethapyr: 1.08-2.16 oz
- imazamox: 4-6 fl oz
- paraquat: 0.7 pt
- pendimethalin: 1.1-4.2 qt
- flumioxazin: 4 oz

## Pounds Active Ingredient

- clethodim: 0.07-0.24
- imazethapyr: 0.047-0.094
- imazamox: 0.031-0.047
- paraquat: 0.25
- pendimethalin: 1.05-4
- flumioxazin: 0.13