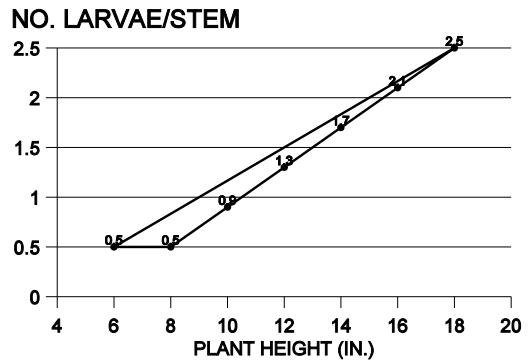


ALFALFA INSECT CONTROL

David Buntin, Research/Extension Entomologist

PEST	INSECTICIDE	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS
At-Planting seed Cutworms, grubs, wireworms	Lorsban 15G	6.7 lb.	Apply in-furrow at planting for suppression of target pests. Do not cut or graze within 21 days after application. Make only 1 application per year.
Alfalfa weevil (Hay production)	Baythroid XL (1.0EC)	1.6 - 2.8 fl. oz.	<p>ALFALFA WEEVIL: Alfalfa weevil infestations can normally be found from mid February on until after the 1st cutting. Scouted 1-2 times a week during this period by randomly pulling 30 whole stems from throughout the field. Place stems in a plastic bucket and dislodge larvae by <u>vigorously flailing</u> the stems against the sides of the bucket. Count the number of larvae. Take note of their size. Use plant height to determine your treatment level. <u>Do not</u> treat solely on weevil numbers. Wait until you have damage on at least 50% of the terminals before you consider spraying.</p> <p><u>Grazing Alfalfa Pastures:</u> Alfalfa weevil can be controlled in alfalfa used for grazing. Products and rates listed in the table for grazing alfalfa have grazing restrictions of 1 to 7 days, except permethrin which has 0 day grazing restriction when used at the rates listed under grazing alfalfa. These treatments and rates may be less effective in controlling larvae than rates recommended for hay production.</p>
	Furadan 4F	1 - 2 pt.	
	Lannate 2.4LV Lannate 90 SP	3 pt. 1 lb.	
	<u>chlorpyrifos</u> Lorsban 4E, Chlorfos 4E, Chlorpyrifos 4E	1 - 2 pt.	
	Mustang MAX, Respect (0.8EC)	2.24 - 4.0 fl. oz.	
	Methyl 4EC	1 pt.	
	Permethrin, other brands 3.2EC	8 fl. oz.	
	Steward 1.25SC	6.7 - 11.3 fl. oz.	
	<u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	1.28 - 1.6 fl. oz. 2.56 - 3.2 fl. oz. 2.56 - 3.2 fl. oz.	
	Alfalfa weevil (Grazing alfalfa) Products and rates listed have grazing restrictions of 0 to 7 days, see table of pesticide restrictions.	Baythroid XL (1.0EC)	
Furadan 4F		0.5 pt.	
Lannate 2.4LV Lannate 90 SP		3 pt. 1 lb.	
<u>chlorpyrifos</u> Lorsban 4E, Chlorfos 4E, Chlorpyrifos 4E		0.5 pt.	
Permethrin, other brands 3.2EC		4 fl. oz.	
Mustang MAX, Respect (0.8EC)		2.24 - 4.0 fl. oz.	
Steward 1.25SC		6.7 - 11.3 fl. oz.	



—●— Treatment Level

All weevil sprays should

be made with ground equipment with a minimum of 20 gal./acre. The chart shown provides alfalfa weevil treatment levels for various plant heights.

NOTE: Chlorpyrifos products may cause injury to young rapid growing foliage but normally does not affect yield.

ALFALFA INSECT CONTROL (continued)

PEST	INSECTICIDE	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS
Alfalfa weevil (<u>Grazing alfalfa</u>) (cont.)	<u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	1.28 - 1.6 fl. oz. 2.56 - 3.2 fl. oz. 2.56 - 3.2 fl. oz.	
Aphids	<u>chlorpyrifos</u> Lorsban, Chlorfos, Chlorpyrifos, others (4E) Dimethoate 4EC, 400 Dimethoate 2.67EC Methyl 4EC <u>malathion</u> Malathion 5EC, 57EC, Malathion 8EC Permethrin, other brands 3.2EC <u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	1 - 2 pt. 0.5 - 1 pt. 0.75 - 1.5 pt. 1 pt. 1.5 - 2.0 pt. 1.0 - 1.25 pt. 4 - 8 fl. oz. 1.28 - 1.92 fl. oz. 2.56 - 3.84 fl. oz. 2.56 - 3.84 fl. oz.	APHIDS: In Georgia, especially in the Coastal Plain area, aphids can be extremely abundant without causing economic damage. Treat aphids as listed below based on average number <u>per stem</u> at a given stem height. Select several sites per field and clip 10-20 stems per site. Treat if aphid numbers exceed those for a given stem height. <u>Stem Height (inches)</u> <u>Aphids per Stem</u> 10-15 40-50 16-20 60-80 21+ 100-120 If alfalfa is near the time of cutting consider cutting earlier and treating the stubble if aphids remain after cutting. NOTE: Chlorpyrifos products may cause injury to young rapid growing foliage but normally does not affect yield.
Armyworms (True armyworm, Fall Armyworm, Beet armyworm, Yellowstriped armyworm)	Lannate 2.4LV Lannate 90 SP Sevin 80S Sevin XLR Plus, 4F Mustang MAX, Respect (0.8EC) Tracer 4SC <u>lambda/gamma cyhalothrin</u> Katate Zeon 2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	3 pts. 0.5 - 1 lb. 1.625 lb. 1.5 qt. 3.2 - 4.0 fl. oz. 1.0 - 2.0 fl. oz. 1.28 - 1.92 fl. oz. 2.56 - 3.8 fl. oz. 2.56 - 3.84 fl. oz.	ARMYWORM, BEET ARMYWORM, FALL ARMYWORM, YELLOWSTRIPED ARMYWORM, CORN EARWORM, and CUTWORMS: Treat when any of these pests or combinations of pests are found at an average of 2 to 3 per square foot. NOTE: Tracer is most effective against small larvae, use higher rate for large larvae and large infestations.
Clover leaf weevil, Lesser clover leaf weevil, (Larvae)	Products applied for control of alfalfa weevil larvae may give helpful control of other leaf-feeding weevil larvae.		CLOVER LEAF WEEVIL, LESSER CLOVER LEAF WEEVIL: Treat when larvae or adults are damaging the leaves and stems on 50% of the plants.
Green cloverworm and/or Velvetbean caterpillar and/or Alfalfa Webworm and/or Alfalfa caterpillar	Baythroid XL (1.0EC) Lannate 2.4LV Lannate 90 SP Mustang MAX, Respect (0.8EC) Permethrin, other brands 3.2EC	1.6 - 2.8 fl. oz. 1.5 - 3 pt. 0.5 - 1 lb. 2.4 - 4.0 fl. oz. 4 fl. oz.	FOLIAGE FEEDING CATERPILLARS: For alfalfa caterpillar, green cloverworm, velvetbean caterpillar, and alfalfa webworm, treat when any of these pests or combinations of pests are found at an average of 2 or more 1/2-inch long larvae per plant.

ALFALFA INSECT CONTROL (continued)

PEST	INSECTICIDE	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS
Green cloverworm (cont.)	Sevin 80S Sevin XLR Plus, 4F	1.25 - 1.625 lb. 1 - 1.5 qt.	
	<u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	0.96 - 1.6 fl. oz. 1.92 - 3.2 fl. oz. 1.92 - 3.2 fl. oz.	
Blister beetles	Sevin 80S Sevin XLR Plus, 4F	1.25 lb. 1 qt.	BLISTER BEETLES: Treat when 2 beetles per square foot are found. Beetles tend to aggregate on the weedy margins of fields. Blister beetles bailed up in hay are toxic to livestock, especially horses.
	<u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	1.28 - 1.92 fl. oz. 2.56 - 3.84 fl. oz. 2.56 - 3.84 fl. oz.	
Clover root curculio, Lesser clover leaf weevil, Sweet clover weevil (Adults only)	Methyl 4EC	1 pt.	CLOVER ROOT CURCULIO, SWEET CLOVER WEEVIL: Damage 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. Foliar products listed may reduce adult populations.
	<u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	1.28 - 1.92 fl. oz. 2.56 - 3.84 fl. oz. 2.56 - 3.84 fl. oz.	
Cutworms	Baythroid XL (1.0EC)	0.8 - 1.6 fl. oz.	Several species. Treat if 3 or more cutworms per square ft. In standing alfalfa use enough pressure and water for spray penetration to the ground. If near cutting, consider cutting early and treating stubble if infestation remains. Cutworms often will congregate under windrowed hay.
	Lannate 2.4LV Lannate 90 SP	1.5 - 3 pt. 0.5 - 1 lb.	
	Methyl 4EC	1 pt.	
	Mustang MAX, Respect (0.8EC)	2.8 - 4.0 fl. oz.	
	Sevin 80S Sevin XLR Plus, 4F	1.625 lb. 1.5 qt.	
	<u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	0.96 - 1.6 fl. oz. 1.92 - 3.2 fl. oz. 1.92 - 3.2 fl. oz.	
Grasshoppers	Dimethoate 4EC, 400 Dimethoate 2.76EC	0.5 - 1 pt. 0.75 - 1.5 pt.	GRASSHOPPERS: Treat when heavy infestations are causing excess defoliation. Grasshoppers often invade fields from adjacent weedy areas; border treatments are sometimes appropriate. NOTE: Chlorpyrifos products may cause injury to young rapid growing foliage but normally does not affect yield.
	Furadan 4F	0.25 - 0.5 pt.	
	<u>chlorpyrifos</u> Lorsban 4E, Chlorfos 4E, Chlorpyrifos 4E	0.5 - 1 pt.	
	<u>malathion</u> Malathion 57EC Malathion 8EC	1.5 - 2.0 pt. 1.5 - 2.0 pt.	
	Mustang MAX, Respect (0.8EC)	2.8 - 4.0 fl. oz.	

ALFALFA INSECT CONTROL (continued)

PEST	INSECTICIDE	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS										
Grasshoppers (cont.)	<u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	1.28 - 1.92 fl. oz. 2.56 - 3.84 fl. oz. 2.56 - 3.84 fl. oz.											
Green June Beetle Larvae	Sevin 80S Sevin XLR Plus, 4F	1.625 lb. 1.5 qt.	GREEN JUNE BEETLE LARVAE: Treat when populations average 1 larva per square foot.										
Fire ants	methoprene Extinguish (bait) (broadcast application)	1 - 1.5 lb.	FIRE ANTS: Generally fire ants are important predators and help reduce populations of other pest insects. However, treat when mounds are so numerous that they interfere with haying operations. Methoprene granular bait requires several weeks or months after application to reduce fire ant populations.										
Leafhoppers (potato leafhopper, aster leafhopper)	Baythroid XL (1.0EC) <u>chlorpyrifos</u> Lorsban 4E, Chlorfos 4E, Chlorpyrifos 4E Dimethoate 4EC, 400 Dimethoate 2.76EC Permethrin, other brands 3.2EC Mustang MAX, Respect (0.8EC) <u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	1.6 - 2.8 fl. oz. 0.5 - 1 pt. 0.5 - 1 pt. 0.75 - 1.5 pt. 8 fl. oz. 3.2 - 4.0 fl. oz. 1.28 - 1.60 fl. oz. 1.92 - 3.20 fl. oz. 1.92 - 3.20 fl. oz.	POTATO LEAFHOPPER: Feeding generally causes V-shaped yellow leaf discoloration which reduces yield. Treat when sweep net samples show leafhopper numbers for a given stem height exceed the following levels: <table border="1"> <thead> <tr> <th>Stem Height (inches)</th> <th>Hoppers per sweep</th> </tr> </thead> <tbody> <tr> <td>3 - 7</td> <td>0.5</td> </tr> <tr> <td>8 - 10</td> <td>1.0</td> </tr> <tr> <td>11 - 14</td> <td>2.0</td> </tr> <tr> <td>14+</td> <td>4.0 or cut hay early</td> </tr> </tbody> </table> NOTE: Chlorpyrifos products may cause injury to young rapid growing foliage but normally does not affect yield.	Stem Height (inches)	Hoppers per sweep	3 - 7	0.5	8 - 10	1.0	11 - 14	2.0	14+	4.0 or cut hay early
Stem Height (inches)	Hoppers per sweep												
3 - 7	0.5												
8 - 10	1.0												
11 - 14	2.0												
14+	4.0 or cut hay early												
Mites	Dimethoate 4EC, 400 Dimethoate 2.76EC Karate Zeon (2.08)	1 pt. 1.5 pt. 3.82 fl. oz.	MITES: Control may be difficult. Treat if mites are causing leaf discoloration over large areas of the field. If near cutting, consider cutting early and treating stubble if infestation remains. Apply by ground with 25 or more gal. per acre. Karate for suppression only.										
Threecornered alfalfa hopper	Baythroid XL (1.0EC) Sevin 80S Sevin XLR Plus, 4F Mustang MAX, Respect (0.8EC) <u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	1.6 - 2.8 fl. oz. 1.25 lb. 1 qt. 3.2 fl. oz. 1.28 - 1.92 fl. oz. 2.56 - 3.84 fl. oz. 2.56 - 3.84 fl. oz.	THREECORNERED ALFALFA HOPPER: Treat when adults and/or nymphs are found on 10% of <u>seedling</u> alfalfa plants or if adults or nymphs are girdling and killing 10% of the lateral stems in a field.										
Thrips	Dimethoate 4EC, 400 Dimethoate 2.76EC Sevin 80S Sevin XLR Plus, 4F	0.5 - 1 pt. 0.75 - 1.5 pt. 1.25 lb. 1 qt.	THRIPS: Treat when thrips are causing leaf discoloration and deformation over large areas of the field.										

ALFALFA INSECT CONTROL (continued)

PEST	INSECTICIDE	AMOUNT PER ACRE	REMARKS AND PRECAUTIONS
Thrips (cont.)	<u>lambda/gamma cyhalothrin</u> Karate Zeon (2.08) Warrior, Silencer, Lambda, others (1.0) Proaxis 0.5	1.28 - 1.92 fl. oz. 2.56 - 3.84 fl. oz. 2.56 - 3.84 fl. oz.	NOTE: Cyhalothrin products not effective against western flower thrips.

PESTICIDE USE PRECAUTIONS AND RESTRICTIONS

CAUTION: Bees, including honey bees, play a major role in the pollination of alfalfa. During the bloom period, make insecticide applications during the early morning and evening hours, when bees are not visiting the field. Do not apply the following to alfalfa during the bloom period: dimethoate, chlorpyrifos, carbofuran, malathion, methomyl and methyl parathion. Read label for complete list of restrictions and precautions.

Baythroid XL (1.0EC, beta-cyfluthrin): Do not apply within 7 days of harvest or grazing. Do not apply more than 3.2 fl. oz. per acre per cutting and more than 12.8 fl. oz. per acre per season. REI = 12 hrs.

Dimethoate (dimethoate): Make only one application per cutting. Do not apply within 10 days of grazing or cutting for hay. Do not apply during bloom period. REI = 48 hrs.

Furadan 4F (carbofuran): Do not apply more than 1 application per season. Apply only to pure alfalfa stands. Grazing restrictions are 7 days for 0.5 pt. per acre, 14 days for 1 pt. per acre, and 28 days for 2 pts. per acre. Do not apply to fields near waterfowl nesting areas and/or fields where waterfowl are known to repeatedly feed. Do not apply if bees are or will be active within 7 days of application. REI = 48 hrs.

Lannate (methomyl): Do not apply within 7 days of grazing or cutting for hay. Do not apply more than 3.6 lbs. ai per acre per crop. Do not apply to dormant or semi-dormant alfalfa when minimum daily temperature is 50 degrees Fahrenheit or lower. Do not apply during bloom period. REI = 48 hrs.

Lorsban 15G (chlorpyrifos): Do not cut or graze within 21 days after application. Make only 1 application per year. REI = 24 hrs.

Lorsban, Chlorfos, Chlorpyrifos (4E, chlorpyrifos): Do not make more than 1 application per cutting and more than 4 applications per year. Cutting and grazing restrictions are 7 days for 0.5 pt. per acre, 14 days for 1 pt. per acre, and 21 days for rates above 1 pt. per acre. Do not apply if bees are active. REI = 24 hrs.

Malathion, other brands (malathion): Apply as needed up to day of grazing or cutting for hay. Do not apply during flowering. REI = 12 hrs.

Methyl 4EC (methyl parathion): Do not apply within 15 days of harvest, cutting, or grazing. Do not apply if the crop or weeds in the treated area are in bloom. REI = 96 hrs. (4 days)

Mustang MAX, Respect (0.8EC, zeta-cypermethrin): Do not apply within 3 days of cutting or grazing or 7 days for harvesting seed. Maximum of 4 fl oz. per acre per cutting and 12 fl. oz. per acre per season. Do not make applications less than 7 days apart. REI = 12 hrs.

Permethrin, other brands (3.2EC, permethrin): Do not apply more than 0.2 lb. ai per acre per cutting. For rates listed for grazing (=0.1 lb ai per acre or less), application may be made on day of harvest. For rate listed for hay production (= more than 0.1 lb ai per acre), do not apply within 14 days of harvest. When bees are active, apply in early morning or evening. REI = 12 hrs.

Proaxis (gamma cyhalothrin): Do not apply within 1 day of harvest for forage or within 7 days of harvest for hay. Do not apply more than 0.24 pt per acre per cutting and more than 0.96 pt per acre per season. REI = 24 hrs.

Sevin (carbaryl): Do not apply within 7 days of harvest or grazing. Do not make more than 1 application per cutting. Do not apply when crop is wet. Carbaryl may bleach tender foliage. Do not apply if bees are active. REI = 12 hrs.

Steward 1.25SC (indoxacarb): Make no more than 1 application per cutting. Do not apply more than 45 fl. oz. per acre per season. Do not apply within 7 days of harvest. REI = 12 hrs.

Tracer 4SC (spinosad): Do not harvest hay of fodder within 3 days of application. No preharvest interval for forage. Do not allow cattle to graze treated area until spray has dried. Do not apply more than 6 fl. oz. per acre per season. REI = 4 hrs.

Silencer, Lambda T, other brands (1.0, lambda cyhalothrin): Do not apply within 1 day of harvest for forage or within 7 days of harvest for hay. Do not apply more than 0.03 lb. a.i. per acre per cutting and more than 0.12 lb. a.i. per acre per season. Avoid application when bees are actively foraging. REI = 24 hrs.