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College of Agriculture  
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# 1974 Idaho Insect Control Recommendations for Alfalfa Seed Production

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Many insects are associated with alfalfa grown for seed. To obtain maximum seed production, you as a grower must manage insect and mite pests and at the same time protect pollinators and other beneficial insects. This

publication discusses the major pest insects in the order they generally appear as the season progresses. Secondary insects are also listed. Under certain situations, they cause damage and require control to prevent seed losses.

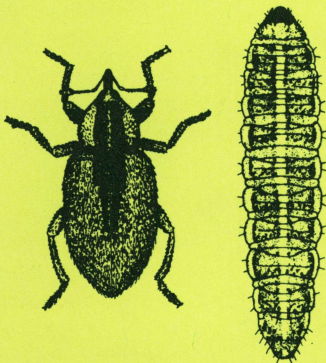
## Insects of Major Importance To Alfalfa Seed Production

**Alfalfa Weevil.** Adults spend the winter in plant debris found in alfalfa and adjoining fields. After emerging in March, adults migrate from field to field on warm spring days. By the time alfalfa has grown 2 inches tall, weevils have mated and females begin to lay their eggs inside

the tender alfalfa stems. Upon hatching, the tiny larvae crawl up the outside of the stems and enter terminal flower and leaf buds. As the larvae develop, they eat flower buds and skeletonize leaves. Mature larvae spin a frail lace-like cocoon which may be found among the debris at the ground surface or attached to a stem. New adults emerge in early summer to early fall and fly to surrounding areas for winter hibernation. Several effective insecticides are currently registered for control of alfalfa weevil.

been as low as 1 percent. These tiny black-bodied wasps emerge from hibernation in late spring or early summer to lay eggs in developing seeds. A little over a month is required for the white legless larva to complete its development within the seed and for the next generation of adults to appear. Larvae hibernate overwinter within the seeds which have fallen to the ground in the field, in seed chaff and in non-harvested seed produced by volunteer plants outside of seed fields. There may be a partial third generation some years.

No known insecticide will control the alfalfa seed chalcid. The primary control is by cultural practices that bury the overwintering forms with at least 1 inch of soil. The frail adults cannot emerge through the soil. Other methods include destroying infested chaff piles or moving them from the seed area and eliminating volunteer alfalfa plants near the fields.



Alfalfa weevil adult and larva

**Alfalfa Seed Chalcid.** In some years, the alfalfa seed chalcid has destroyed over 20 percent of alfalfa seed in areas of southern Idaho, while in other years damage has

**Lygus Bugs.** Alfalfa is an excellent host plant for lygus bugs. These bugs also develop on many other host plants. Lygus bugs are strong flyers and will move into alfalfa seed fields from hay and other crops or weeds as the plants are cut or reach maturity. This results in overlapping generations of lygus bugs in seed fields. Moderately high populations can drastically reduce alfalfa seed yields.

The color of adult lygus bugs varies from a pale yellowish-green to a dark reddish-brown. At the base of their wings, in the middle of the back, they have an easily distinguished, yellowish, triangle-shaped area. Females lay eggs singly in tender plant tissues. The young nymphs are a shiny green and move very rapidly. This readily distinguished them from dull green, slow-moving pea aphids. Just before nymphs mature, short wing pads appear on their backs. About 4 to 6 weeks are required to complete a generation. Adults hibernate by overwintering in alfalfa crowns, in plant debris and in cracks in the soil.

Lygus bugs feed by piercing tender leaves, stems, buds, petioles and developing seeds with their beaks. They inject a toxic saliva as they feed. This can cause stunted plants, shriveled seeds, blasting of buds and shedding of bloom and seed curls. The most serious losses are from blossom drop and shriveled seed. Adverse effects of nymphal

and adult lygus feeding start during bud stage of the seed-producing crop and continue until the plant matures in the fall.

Alfalfa pollinators are readily killed by most insecticides that are toxic to lygus bugs. Before considering any insecticide application to a blooming field, remember that pollinators must be protected by a wise choice of the best materials for each situation and by careful timing of applications. Once blossoming begins all spray applications for insect pests should be made in the evening after pollinator activity has ceased.

Throughout the bloom and seed-producing period lygus bug population should be kept below an average of 4 lygus bugs per 180-degree sweep of a 15-inch diameter insect net. Apply a prebloom treatment for initial lygus bug control.

**Pea Aphid.** Pea aphids can damage alfalfa grown for seed. In the fall, female aphids lay eggs which hatch in early spring. Each female may produce 50 to 150 nymphs during her 30-day life.

Syrphid fly larvae, lady beetles, tiny wasp parasites and lacewing larvae are the principle pea aphid parasites and predators. Properly applied systemic insecticides are less destructive than contact insecticides to beneficial parasite and predatory insects and pollinators. Apply an aphicide when aphid populations reach 160 per sweep.

**Two-spotted Spider Mite.** It is usually mid- to late summer before damaging spider mite populations develop. Adults spend the winter in debris at the soil surface. In late spring female mites begin laying eggs on the undersides of leaves. Development is rapid during hot, dry weather, slower in cool weather. Eggs can hatch in 3 to 5 days and the young mites can complete development in 7 to 10 days. Each female is capable of laying 300 eggs in her 30- to 45-day lifetime.

Spider mites are seldom noticed until their feeding damages the upper leaf surfaces. Feeding injury is characterized by the yellowing and

“fired” appearance of the leaf. When severe spider mite infestations develop, leaves may turn brown and drop to the ground. Mite webbing may become so extensive that entire terminals of several stems are webbed together. When you inspect the lower surface of mite-damaged leaves, you will often find clear, tear-shaped predatory mites, tiny black lady beetles and minute pirate-bug predators feeding on the spider mites.

For effective control, apply a miticide before the leaves are webbed over. Cover the plant thoroughly.

## Insects of Secondary Importance to Alfalfa Seed Production

**Alfalfa Caterpillar Butterflies.** These butterflies have yellow wings with black border. From mid- to late summer, you may see large numbers of them flying over alfalfa fields. Their larvae range up to 1 1/2 inches long and are a velvety-green color. They have a fine white stripe on each side of the body through which runs a fine red stripe. Insecticides used for lygus bug control usually prevent damaging numbers from developing.

**Clover Root Curculio.** Larva feeding destroys alfalfa rootlets and nodules and often girdles the tap root, exposing the root to invasion by disease organisms. Adult curculio resemble the alfalfa weevil but are shorter and slenderer with shorter, broader snouts. They are copper-gray to shiny brownish-black in color. Control practices listed for alfalfa weevil usually hold this insect in check.

**Cutworms.** Feeding by these insects can seriously retard spring growth of alfalfa. Adult cutworms are the dusky brown or grayish moths or “millers” commonly seen flying around lights in the summer.



*Use Pesticides Safely*

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They spend the winter as eggs, larvae or pupae. Usually their natural enemies help keep them in check. If treatment is necessary, irrigate the field thoroughly before applying recommended insecticides. This will improve effectiveness of chemical treatments by forcing cutworms to the soil surface.

**Grasshoppers.** These insects can damage seed alfalfa by clipping off blossoms and seed curls.

**Spotted Alfalfa Aphids.** This aphid can kill seedling alfalfa plants and lower the productivity of established fields. Only about 1/16-inch long, this aphid is lemon-yellow in color and has 6 or more rows of conspicuous grayish spots on its back. It is generally most active after mid-August. While feeding, the spotted alfalfa aphid releases an abundance of honeydew upon which sooty mold grows. A systemic insecticide treatment is most effective when applied to vigorously growing plants.

## Insect Control Recommendations And Precautions

These recommendations are for alfalfa seed production only:

1. Do not feed the alfalfa, chaff or seed screenings unless permitted by the label on all spray products used.

2. Always protect pollinators. Wait until the pollinators have left the field before applying insecticides. Choose those materials that are least toxic to pollinators.

3. Thorough coverage is necessary for insect and mite control.

4. Apply treatments at a time when there will be the least possible drift onto neighboring crops.

5. Buffering increases effectiveness of certain insecticides so **FOLLOW LABEL RECOMMENDATIONS.**

6. Galacron, Fundal, Omite and Temik have Idaho state labels for 1974 only. Do not use these materials in 1975 without a new label permit.

Insect	Insecticide	Days Clearance*	Rate** (lb.)	When and How to Use
Alfalfa weevil	malathion	0	1 1/4	Apply malathion, diazinon, methyl parathion or parathion before bloom when 50% of alfalfa terminals have shown some feeding.
	or diazinon	10	1	
	or methy parathion	15	1/2	
	or parathion	15	1/2	
	Supracide	10	1/2-1	
<i>Pre-bloom only</i>	or Furadan	14-28	1/2-1	Apply Furadan when feeding is first noticed. Apply Supracide or Furadan a minimum of 7 days before bees begin foraging alfalfa blossoms.
Alfalfa seed chalcid	none			Destroy all volunteer ditch bank and roadside alfalfa plants. Cultivate alfalfa fields in the fall or spring to bury plant debris and infested seeds 1 inch deep. Irrigate alfalfa before adult wasps emerge.
Lygus bugs	toxaphene	—	3	Do not feed foliage or screenings from plants treated with Temik, Carzol or toxaphene. Apply diazinon, methyl parathion, Supracide, toxaphene and Furadan a minimum of 7 days before bees begin foraging in the alfalfa fields. Apply dimethoate no later than early bud stage to protect pollinators. Inject Temik 3 to 4 weeks before bloom. Irrigate heavily immediately after application.
	or methyl parathion	15	1/2	
	or diazinon	10	1	
	or malathion	0	1 1/4	
	or dimethoate	10	1/2	
	or Carzol	—	0.92	
	or parathion	15	1/2	
	or Furadan	28	1	
	or Supracide	10	1/2-1	
	or Temik	—	3	
	<i>Pre-bloom only</i>			
Lygus	Dylox	7	1	Treat when lygus bug populations reach 4 per sweep in a 15" net.
	or Dibrom	4	1/2-1	
<i>During bloom or Pre-bloom</i>				Apply Dylox when the bees are not foraging. Apply Dibrom only in the evening after the bees have quit foraging. Do not use the 1 lb. Dibrom rate after bloom begins.

Insect	Insecticide	Days Clearance*	Rate** (lb.)	When and How To Use
Pea aphid <i>Pre-bloom</i>	Systox	21	1/4	Do not feed foliage or screenings from plants treated with Temik or Meta-Systox-R.
	or diazinon	10	1/2	
	or parathion	15	1/2	Apply diazinon, methyl parathion, Supracide or parathion a minimum of 7 days before bees begin foraging in the field. Apply dimethoate no later than early bud stage.
	or malathion	0	1 1/4	
	or dimethoate	10	1/2	
	or Meta-Systox-R	—	1/2	Inject Temik 3 to 4 weeks prior to bloom. Irrigate heavily immediately after treatment.
	or methyl parathion	15	1/2	
	or Supracide	10	1/2	
	or Temik	—	3	
Pea aphid <i>During bloom</i>	Systox	21	1/4	Apply after the bees quit foraging in the evening.
	or Meta-Systox-R	—	1/2	Do not feed to livestock any Meta-Systox-R- treated plants. Do not use Systox-6 formulation during bloom.
Two-spotted spider mite	Sulfur	0	25	Use sulfur as a prevention treatment before damage occurs.
	or Kelthane	—	1 1/2	Apply two Dibrom treatments at 9 day interval. Apply Dibrom evenings only.
	or Dibrom	—	3/4	
	or Galacron	4	1	Do not feed livestock foliage or screening from Kelthan, Galacron, Fundal or Omite. Tank mixing not recommended with insecticides.
	or Fundal	—	1	
	or Omite	—	1	
Cutworms	Toxaphene	—	3	Irrigate alfalfa to force cutworms to the soil surface before applying insecticide.
	or Dylox	7	1	Do not feed to livestock foliage or screening from plants treated with toxaphene.
Grass-hoppers	Malathion	0	1	Do not apply malathion to blossoming crop.
	or Dibrom	4	3/4	Apply Dibrom to blossoming crop in evenings and only after pollinators have left the field.

Systox, parathion, methyl parathion, Supracide, Furadan, Temik and Carzol are hazardous. Follow label instructions precisely when storing, handling and applying these poisonous materials.

These recommendations are based on the best information currently available for each chemical listed. If they are followed carefully, residues should not exceed the tolerance established for any particular chemical. To avoid excessive residues follow label recommendations carefully with respect to dosage levels, number of applications and minimum interval between applications and harvest. **THE GROWER IS RESPONSIBLE** for residues on his crops as well as for problems caused by drift from his property to other properties or crops. Brand names have been used for convenience only. No preference is intended or implied.

\* Minimum days between application and harvest if used for feed

\*\* Rate of active material per acre

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