

MINER PESTS OF ALFALFA HAY

Rachael Freeman Long
UCCE, 70 Cottonwood St., Woodland, CA 95695

There are a number of pests that occasionally impact alfalfa hay production. This paper provides a description of these pests and control strategies. More detailed control strategies with chemical rates are available through the UC IPM guidelines for alfalfa.

PEST	TREATMENT
<p><i>Cutworms</i></p> <p>There are two types of cutworms that affect alfalfa; one feeds on plants at or below the soil line cutting off plants, whereas the other is a climbing species and feeds more on the plant foliage. Both caterpillars feed at night and are most active from April to June. They can be major pests of seedling fields or established stands.</p>	<p>Sevin 5% baits control the below ground feeders, but are not as effective on the above ground ones, as these worms do not spend enough time on the ground to pick up the bait. Lorsban or Lannate will help control the above ground feeders.</p> <p>Tillage also helps control cutworms; as seedlings in well-tilled fields are less likely be damaged by these larvae. Predators and parasites do not control cutworms due to the subterranean nature of the larvae and their night-time activity.</p>
<p><i>Webworms</i></p> <p>These caterpillars spin webs and draw leaves together where they hide and feed. During summer and fall they can build up to high populations and severely defoliate plants.</p>	<p>Injury and defoliation appear to be worse in weedy fields; therefore, keep fields weed-free, particularly from pigweed and lambsquarter. Early cutting may give control. Dipel, Lannate, or Lorsban will also control these larvae.</p>
<p><i>Leafhoppers</i></p> <p>These are small, wedge-shaped bright green insects that are found in alfalfa throughout the year. Feeding damage causes yellowing of the leaves and stunting of the plants. Peak populations occur in July, August, and September. Outbreaks occur about every 8 years. Often high numbers occur in the first 50 to 100 ft of the field, then drop off as one moves into the field.</p>	<p>Fields should be monitored using a sweep net. Treatments should be applied when counts average 5 per sweep when the alfalfa is short (more than 2 weeks to harvest) and 10 per sweep when the alfalfa is taller. Field edges may only need to be treated. Sevin, Dimethoate, Lorsban or Pounce can be used to control this pest; watch the pre-harvest interval.</p>

PEST	TREATMENT
<p><i>Flower thrips</i> Thrips are tiny insects that feed on young leaves and buds, causing the foliage to turn whitish and have a puckered appearance. Most of the damage occurs during the first or second cutting and disappears when it gets hot, as thrips prefer cool temperatures.</p>	<p>Damage caused by thrips is minor as they do not significantly affect hay yield or quality. Treatment is not recommended as the cost of an application far outweighs yield losses due to this pest.</p>
<p><i>Sowbugs or Pillbugs</i> Pillbugs roll into a ball when disturbed, whereas sowbugs don't; otherwise they have similar habits. Both feed primarily on decaying plant material, so tend to be abundant when there is a lot of field trash or plant residue left from the previous crop. These critters are important in helping to decompose organic matter, but unfortunately get blamed for more damage than they actually do. Occasionally they may feed on new alfalfa seedlings and can destroy stands.</p>	<p>Tillage is the best way to control sow- and pillbugs, as this limits the amount of organic residue. Sevin 5% baits are also effective for controlling these critters.</p>
<p><i>Ground mealybugs</i> These are tiny, bright white insects that live in the soil and feed on alfalfa roots. They are usually found 6 to 12 in. in the soil, but have also been found at a depth of 6 ft. They seem to move around with soil moisture, preferring intermediate moisture levels. Root injury results in chlorotic, stunted plants, which eventually die. Symptoms take a long time to develop as injury depends on large numbers of mealybugs (>10/plant) feeding for more than 4 months. Infestations usually start at field margins, then enlarge until several acres are affected. Sometimes infestations form characteristic rings as the mealybugs spread out from an initial source.</p>	<p>Chemicals are not effective in controlling mealybugs due to their subterranean nature. There are also no known resistant plant varieties, despite numerous screening tests to find one. Crop rotation with less favorable hosts, such as beans, corn, and sugar beets appears to be the only way to bring mealybug populations to tolerable levels. Susceptible hosts include citrus, kiwi, prunes, almonds, strawberries, potatoes, safflower, and tomatoes. Mealybugs can also survive on wheat and cotton, but they don't thrive or reproduce on these crops.</p>

PEST	TREATMENT
<p><i>Clover root cucurlio</i></p> <p>This beetle is primarily a pest back east and in the mid-west , but it is becoming a problem in California. The larvae feed on the roots in the upper 4-inch zone, and eventually kill the plants. The adults live on the soil surface and do very little damage.</p> <p>Their life cycle is similar to the Egyptian alfalfa weevil in that they disperse into alfalfa fields in the spring, lay eggs, and then migrate out when they become adults. There is one generation per year. Infestations spread slowly as adults are poor fliers and disperse mostly by crawling.</p>	<p>There are no recognized controls. Parasites have been released in the eastern part of the US for control of these weevils, but they haven't been very effective.</p>
<p><i>Spotted cucumber beetles</i></p> <p>These beetles feed on the plant foliage, but probably do not affect yield, even though there can be a lot of them in the field. Treatment may be needed if the hay is just beginning to re-grow after a cutting, and there is a high population of beetles associated with damage to the field.</p>	<p>Sevin is most effective against these pests as they are very sensitive to this material.</p>
<p><i>Spider mites</i></p> <p>Mites are spider-like critters that are so small that they're almost invisible. Feeding damage results in stippled, yellowed leaves, often with lots of webbing. Mite damage is associated with stressed plants, especially with lack of water.</p>	<p>Chemical control is usually not recommended, as improved irrigation and cultural practices usually clear up the problem. If severe infestations occur, sulfur will help suppress populations.</p>

PEST	TREATMENT
<p><i>Lygus bugs</i></p> <p>These plant bugs are commonly found in alfalfa, and are especially abundant when the alfalfa is blooming, as they feed on developing seeds. They are also beneficial in that they feed on armyworm and alfalfa caterpillar pests.</p>	<p>These bugs are not injurious to alfalfa hay, so treatment is not necessary.</p>
<p><i>Grasshoppers</i></p> <p>During some years, these insects build up to high numbers in uncultivated areas; then move into alfalfa as the weedy areas dry and food becomes scarce. Damage may be confined to field margins.</p>	<p>Watch for migrating grasshoppers. Treatment timing will vary with the stage of the alfalfa; in general, 15 grasshoppers per yd is a severe infestation. Use Sevin 5% baits for grasshopper control after cutting the hay and Sevin or Malathion sprays when some re-growth has occurred as grasshoppers will prefer the plants at this time to the bait.</p>
<p><i>Slugs</i></p> <p>During wet springs, slugs can build up to high populations and severely defoliate plants. Slugs are most active at night and hide in the soil during the day.</p>	<p>Ammonium sulfate at 500 lb/A will provide some control of slugs. This material must contact the slugs to be effective. Furadan and Sevin 5% baits do not provide control of slugs.</p>