



Pest e-alerts



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Potato Leafhopper and Spotted Aphids in Alfalfa

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While scouting alfalfa fields in Stillwater and Perkins over the past week, I am starting to see some leafhopper damage. Potato leafhoppers are year-round residents of the Gulf Coast states and gradually migrate northward. Although they are not year-round residents to Oklahoma, leafhoppers find their way every year through storm fronts throughout the spring. Because of wind dispersal, potato leafhoppers are likely to be a pest of alfalfa from June to October. Generally, the potato leafhopper poses the greatest threat (if any) in higher rainfall and humid areas of the state; however, this year that description fits many areas. In western Oklahoma, potato leafhopper populations typically decline as hot, dry conditions prevail unless they can find a suitable host and adequate rain or irrigation.



The potato leafhopper adult is a light green, wedge-shaped insect about 1/8 inch in length. The nymphs closely resemble adults, however, they are smaller, yellow and wingless. Both adults and nymphs are very active; they can move sideways and backward as rapidly as forward when they are disturbed.

Both adults and nymphs use piercing-sucking mouthparts to feed on alfalfa. The most serious damage is caused by the nymphs. Initial feeding is characterized by a wedge-shaped yellow area formed on the leaf tip known as "hopperburn". Heavy feeding causes the entire leaf to turn yellow and heavily infested fields take on a yellow color, even from a distance. Usually, damage is greatest along field margins

Although the chlorotic symptoms may be accompanied by some leaf drop and reduction in quality of forage, a more serious problem is stunting of plant growth and significant yield loss. Mowing ditches next to alfalfa fields can increase the chance of sustaining leafhopper damage because the leafhopper adults move (fly) from the mower noise into adjacent alfalfa.

Due to their minute size, the best means of detecting leafhoppers in alfalfa before damage is apparent is with the use of a standard 15 inch sweep net. Sample at least five spots across each field. In each spot take at least 20 sweeps before counting the number of adults and nymphs recovered. Treatment is generally justified at these combinations of alfalfa height and leafhopper numbers:

<u>Alfalfa Height (inches)</u>	<u>Leafhoppers per sweep</u>
3	0.2
6	0.5
12 or taller	1.0

Besides height and leafhopper density, yield potential, stand age, cost of application, and value of the hay should also be considered in the treatment decision. Keep in mind, that as cost of control goes down, fewer leafhoppers can be tolerated. As alfalfa grows beyond 8 inches in height, thresholds for leafhoppers may be two to five times greater.

I am also beginning to see some spotted aphid activity. Weather conditions have a great effect on the likelihood of aphid outbreaks. A continued hot and dry weather pattern increases the chance for damaging infestations of this pest. Compared to early season blue and pea aphid activity being limited due to cooler and wet conditions leading up to first harvest, spotted alfalfa aphids thrive in more summer-like conditions, like we are starting to experience.



Of the major aphid species found in alfalfa, the spotted alfalfa aphid has the greatest damage potential. This aphid causes a severe toxic reaction in susceptible alfalfa that often results in discoloration (yellowing) along veins of leaves near the plant terminals. This characteristic symptom is called 'veinbanding'. Heavily infested plants turn yellow and some leaves often have reddish discoloration. Foliage and entire plants may be killed quite rapidly. Damage in new seedlings during fall and winter may be especially severe due to susceptibility of small plants.



Threshold levels (Aphids/stem) on susceptible varieties of alfalfa at varying growth stages.

	Pea Aphid	Blue Aphid	Spotted Aphid
Seedling Alfalfa	5	1	1
Established Alfalfa			
(<10" tall)	40 (300)**	10 (100-200)	10 (100-200)
Established Alfalfa			
(>10" tall)	75 (400)	30 300	30 (300)

**Numbers in parentheses indicate the threshold level when using a standard 15-inch sweep net/20 sweeps.

For recommendations on insecticide choices in alfalfa consult [OSU publication EPP 7150](#).

Disease and Insect Diagnostic Laboratory

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