

Spotted Alfalfa Aphid

The spotted alfalfa aphid, *Therioaphis maculata* Buckton, was first found in the United States about 1953 and in Alberta in 1979. This species of aphid can be more serious on alfalfa than the pea aphid because it not only sucks out the juice, but it also injects a toxin into the plant.

Damage

Early symptoms of spotted alfalfa aphid damage to alfalfa include vein clearing of newly emerging leaves. As aphid feeding continues, veins may whiten, and the remaining areas of the leaf will turn yellow. Eventually, leaves die and fall from the plant (Figure 1).

The aphids suck juice from the phloem of leaves and stems and inject a salivary toxin that damages the plant. Young plants of susceptible cultivars are often killed by the aphid, and mature plants are severely stunted and covered with a sticky honeydew secreted by the aphid. Various sooty mold fungi may develop in the honeydew. Fungal growth on the honeydew causes a reduction in hay palatability and quality.



Figure 1. leaf damaged by the spotted alfalfa aphid

Description and life history

The spotted alfalfa aphid is pale yellow, with six rows of raised dark spots, each with a spine, along its back. The aphid is small, about 1-1.5 mm long. Adults may be winged or wingless (Figure 2 and 3). The winged forms have smoky areas along the wing veins. The aphid prefers to feed on the lower portion of the plant and on the underside of the leaves.



(Photo: John Jackman, Texas A&M University)

Figure 2. Winged spotted alfalfa aphid

The spotted alfalfa aphid is relatively tolerant of heat and does well at temperatures of 27°C. At that temperature, development from birth to adult takes less than a week.

There are many generations of the aphid a year as adults reproduce without mating and give birth to living young during spring and summer. Adults and eggs overwinter in some regions, but only eggs appear to overwinter in colder areas.



Figure 3. Wingless spotted alfalfa aphid

Biological control

Predators, parasites and fungi are important in controlling aphid pests in alfalfa. Ladybird beetles and nabid bugs, *Nabis alternatus*, play a major role in aphid control.

Many other insects also feed on aphids. These include the green lacewing, *Chrysopa oculata*, the minute pirate bug, *Orius tristicolor*, the big eyed bug, *Geocoris bullatus*, and larvae of the syrphid flies, *Scaeva pyrastris* and *Eupeodes volucris*. An *Entomophthora* fungus and the parasite *Trioxys complanatus* are also important in controlling the aphid in the United States, but have not been found on it in Canada.

Resistant varieties

The most important control method for the spotted alfalfa aphid is the use of aphid-resistant cultivars. In the United States, Australia and New Zealand, spotted alfalfa aphid-resistant varieties have been developed that prevent infestation. As the aphid becomes more of a problem in Alberta, aphid-resistant cultivars with adequate disease and cold tolerance will probably be developed.

Chemical control

Insecticides for control of the spotted alfalfa aphid should be applied before the plants are severely damaged. All directions and precautions listed on the insecticide label, especially those concerning the use of alfalfa for forage, must be followed.

Insecticide recommendations may change from one year to the next. Farmers planning to spray a crop should check with Alberta Agriculture crop specialists for the latest recommendations.