

AGRICULTURAL GUIDE

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Alfalfa insects

Blister beetles in alfalfa

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In Missouri, blister beetles are an infrequent pest of alfalfa, but when present in sufficient numbers the consequences can be serious. These insects cause only limited plant damage. However, when they are ingested by livestock, especially horses, the animals may become sick and even die. These insects produce a highly toxic drug called cantharidan.

in small areas of the field. Although this characteristic makes them easier to see, it also increases the chance of harvesting large numbers of the beetles. The toxin cantharidan produced by the beetles is very stable. Even the dried remains of beetles in the hay are toxic to livestock.

Description and life history

Blister beetles are common throughout the southern and eastern areas of the United States. In Missouri, several species may be found feeding on alfalfa during the growing season. These beetles are all similar in shape and range from $\frac{1}{2}$ to 1 inch long. The adult beetles are narrow, cylindrical, soft-bodied beetles, with heads distinct from the rest of their bodies (See photograph). Their colors range from black, gray, to brown. Some have orange stripes, depending upon the species. The striped blister beetle is most frequently associated with sickness in livestock.

Blister beetles have only one generation per year. The eggs females lay in the soil hatch in the fall. The larvae feed on grasshopper eggs laid in the soil during the late summer and fall. These larvae overwinter in the soil and emerge as adults in early summer. Adults may be very abundant in July and August. Few, if any, adults are present in the first two cuttings of alfalfa.

Infestations in alfalfa

Blister beetles feed on alfalfa foliage and flowering parts. The effects of this feeding are usually minor. This insect is mobile and congregates in large numbers

Effects on livestock

Horses are most susceptible to this toxin. The cantharidan may cause irritation or serious damage to the lining of the stomach, small intestine, bladder, and urethra. The reaction depends on the number of beetles consumed.

Reports indicating the exact number of beetles necessary to cause a reaction vary considerably, probably because individual animal's susceptibility varies. Research shows that as few as two to five beetles may cause colic in horses. A much higher consumption of beetles could cause death.

Symptoms of blister beetle poisoning in horses depend on the number of beetles eaten. Death could occur within six hours if a large number of beetles were consumed. Small amounts result in depression or mild colic (pawing, looking to the side, stretching). Frequently, horses play in water with their lips and tongue. More severe poisoning may cause lower blood calcium and magnesium, resulting in stiffness and occasionally in an exaggerated contraction of the diaphragm. Any horse showing these symptoms should be immediately examined by a veterinarian. Inspect the forage the animal was eating for the presence of blister beetles.

Control

Alfalfa growers concerned with blister beetles should inspect their fields before cutting the third and fourth cuttings. If you find high concentrations of blister beetles, avoid these areas when harvesting, or treat them with an insecticide. No economic threshold for treatment has been developed. As a result, treatment decisions depend on your concern about potential effects of feeding the hay to the animals.

Treat only the infested area with either of the following insecticides.

Use malathion at 1.0 to 1.25 pound active ingredient per acre (1.5 to 2 pints 57 percent malathion emulsifiable concentrate).

Or use Sevin (carbaryl) at 0.8 to 1.0 pound active ingredient per acre (1 to 1.25 pound Sevin 80S).

There is no waiting period between spraying and cutting with either insecticide.

Considerations

- Blister beetles occur in pockets throughout the field. Scout fields to locate the pockets in July and August.
- Avoid harvesting infested areas, or treat the infestations prior to harvest. Treating will eliminate the threat. Harvesting live beetles will concentrate them in bales where they remain toxic even after the beetle dies.
- Early-season hay has little chance of beetle infestations.
- Give special consideration to alfalfa fed to horses.
- If poisoning symptoms appear, call your veterinarian immediately.