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Watch alfalfa for blister beetles

Richard O. Pope
Iowa State University, ropope@iastate.edu

Jon J. Tollefson
Iowa State University, tolly@iastate.edu

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Abstract
Blister beetles are occasional late-summer problems in Iowa alfalfa fields. The beetles feed on alfalfa and soybean foliage, but leaf loss is not of economic importance. The real problem with blister beetles lies in their toxicity to livestock, especially horses, when accidentally consumed in feed. The beetles produce cantharidin, an irritant that causes painful blistering when the insects are handled. The cantharidin remains in the beetle's body even after it dies. That becomes a problem when alfalfa is swathed, during which dead blister beetles can be incorporated into the hay as it is made.

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Four species of blister beetles are most commonly found in Iowa. The four, listed in the order that they occur during the season are gray, striped, margined, and black, respectively. All these species have long, narrow, cylindrical, and soft bodies, and a pronounced neck and broad head when viewed from above. They range from about 0.75 to 1 inch in length and most have a tendency to congregate in the field--a trait that we can use to reduce contamination of finished hay. Because one of the larval stages is a heavy feeder on grasshopper eggs, knowledge of grasshoppers and their life cycles can be helpful.

 [1] **Black blister beetle.**

 [2] **Margined blister beetle.**

Horses are especially susceptible to blister beetle poisoning. Consumption of 25 to 300 beetles can kill a mature horse. Cattle and sheep are much less susceptible, but blister beetles will reduce digestibility of hay and may throw cattle off feed. Furthermore, cantharidin is a stable compound that withstands decomposition even when it is dried or heated; thus, the hay will retain its toxicity in storage. Affected livestock suffer symptoms that include colic, tenesmus (straining), elevated temperature, depression, increased heart and respiratory rates, dehydration, sweating, and diarrhea. Because the toxin is absorbed and then excreted with the urine, intense inflammation of the urinary tract is a common sign of poisoning. Death may occur within 24 hours, and treatment with mineral oil by stomach tube is recommended but not always very effective. If blister beetle poisoning is suspected, contact a veterinarian immediately.

What can be done to avoid blister beetle problems?

- First, learn how to identify the species of blister beetles.
- Grow your own alfalfa and maintain complete control over management practices, if possible.
- Because blister beetle populations are not large until mid- to late summer, set aside first and often second cutting hay for use in feeding horses. Or consider purchasing first cutting hay from neighbors to use as horse feed.
- Watch for beetles as you cut hay. Some species "swarm" in front of the harvester. Stop and let the beetles disperse before continuing.
- Crimping and other conditioning increases the number of beetles that remain in the swath prior to baling. If possible, try to cut the alfalfa and put in swaths that can be straddled by the tractor to avoid crushing beetles in the windrow.
- Eliminate weeds and cut the alfalfa before it reaches advanced bloom stages. Flowering plants attract the beetles that feed on alfalfa and weed pollen.
- Insecticide treatments are available but must be applied with preharvest intervals in mind. If you treat with insecticides, be sure to allow enough time so that dying beetles fall out of the canopy to the ground where they burrow into the soil. Do not treat fields at peak bloom to avoid bee kills and losses to other beneficial species.

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