

Blister Beetle Toxicity in Horses

By Dr. Rebecca S. McConnico, DVM, PhD, School of Veterinary Medicine, Louisiana State University

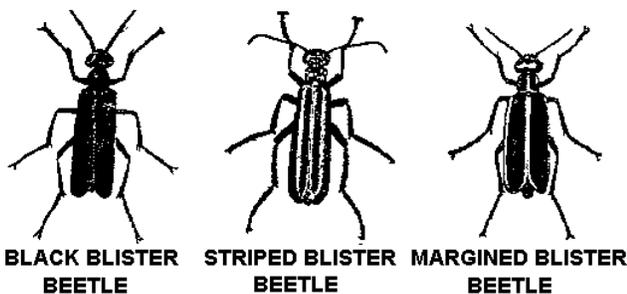
Blister beetles are $\frac{3}{4}$ - to $1\frac{1}{4}$ -inch-long, narrow-bodied, broad-headed insects that may be found in alfalfa hay originating from certain parts of the United States.

As little as 25 ingested beetles may be toxic to an average-size horse. One beetle alone is not enough to cause toxicity in a horse.

Blister beetle larvae feed on grasshopper egg pods in the soil of alfalfa fields, usually in the western United States (Texas, Oklahoma, Kansas, Colorado, etc.) but can be found in many states from Florida to Arizona and as far north as South Dakota. The larvae overwinter, mature, then feed in groups on flowering alfalfa.

During the hay crimping process, the beetles are killed and remain in the hay as it is baled. The beetles remain toxic even after they are crushed and killed. Since the beetles gather in groups or swarms, large numbers can occur in concentrated clusters in a field. The beetles are usually found in focal areas of the hay (not spread out throughout all of the bales).

If your horse happens to eat that specific flake of hay, then the chances of that horse being adversely affected are high.



Univ. of Kentucky Entomology

Toxicity

Cantharidin is the poisonous substance present in blister beetles. It is comparable to cyanide and strychnine in toxicity.

Horses seem to be more sensitive to blister beetle toxicity compared to sheep or cattle, although comparable doses can cause problems.

Curing hay does not decrease the level of toxicity in blister beetles. Cantharidin is absorbed through the intestine and can cause symptoms such as inflammation, colic, straining, elevated temperature, depression, kidney failure, increased heart rate and respiration, dehydration, sweating and diarrhea.

There is frequent urination during the first 24 hours after ingestion, accompanied by inflammation of the urinary tract. This irritation may also result in secondary infection and bleeding.

In addition, calcium levels in horses may be drastically lowered, and heart muscle tissues may be destroyed.

Animals that recover from the intestinal damage may develop complications such as laminitis (founder) or other systemic infections. Since animals can die within 72 hours, it is imperative to contact a veterinarian as soon as blister beetle poisoning is suspected.

The concentration of cantharidin does vary some from species to species of blister beetle. Striped blister beetles seem to be the most toxic.

If a horse is showing signs of blister beetle toxicity, a veterinarian should examine the horse, determine the risk of blister beetle ingestion and administer appropriate therapy. Confirmation of cantharidin toxicity requires stomach contents or urine levels of cantharidin.

Horse Owners

Horse owners can reduce the risk of feeding blister beetles to their horses by implementing the following precautions:

- Set aside or buy hay from the first cutting, since it is much less likely to have beetles in it.
- Purchase certified blister-beetle-free hay.
- Check all hay prior to feeding for the presence of blister beetles.

July 2006 — Visit our Web site: www.lsuagcenter.com

Louisiana State University Agricultural Center, William B. Richardson, Chancellor
Louisiana Agricultural Experiment Station, David J. Boethel, Vice Chancellor and Director
Louisiana Cooperative Extension Service, Paul D. Coreil, Vice Chancellor and Director

Issued in furtherance of Cooperative Extension work, Acts of Congress of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. The Louisiana Cooperative Extension Service provides equal opportunities in programs and employment.