



Blister Beetle Toxicity in Horses

The Educated Horseman: Disease Series



Purchasing hay is routine to many horse owners. While selecting quality hay is important, it is equally important for horse owners to be aware of tiny, toxic and potentially fatal passengers in some alfalfa hay bales. Those pests are blister beetles.

Blister beetles are members of a family of plant-feeding insects that contain cantharidin, a toxic defensive chemical that protects the beetles from predators. Blister beetles have long (3/4 to 1 1/4 inch) narrow bodies, broad heads and antennae that are about a third of their entire bodies.

There are four species of blister beetles common throughout the eastern and central states – ash gray, black, margined and striped. Although the amount of cantharidin content in each beetle varies, the amount within the striped blister beetle is consistently higher than the other three species. In addition to the higher toxin content, striped beetles tend to congregate in large clusters along field margins, which can result in a higher amount of beetles in one section of hay. During the hay crimping process, the beetles are killed and remain in the hay once it is baled. Those factors, coupled with these blister beetles remaining toxic even after they are killed, increase the importance of choosing quality hay.

The lethal dose of cantharidin is between 0.5 and 1 milligram per kilogram (2.2 pounds) of body weight, but as few as 25 ingested beetles may be toxic to an average horse. The severity of the reaction, which ranges from temporary poisoning or reduced digestive ability to death depends on the amount of cantharidin ingested and the overall health of the animal.

Symptoms typically appear within hours of ingestion and can include inflammation of the digestive and urinary tract, colic and straining during increased urination. Secondary infection may occur and cause kidney failure, increased heart rate and respiration, dehydration, sweating, diarrhea and decreased calcium levels, which may cause damage

Tips to reduce the chance of blister beetle poisoning:

- Buy hay from local producers, if possible. Develop a relationship with your hay producer and be aware of his or her production practices.
- Buy first-cutting hay, when blister beetles are not active.
- Look for hay that is harvested at the late bud stage or when the first flowers open.
- Learn to recognize blister beetles and understand their behavior.
- Check all hay prior to feeding for the presence of blister beetles.



This photo of the blister beetle is from the LSU AgCenter Louisiana State Arthropod Museum.

to the heart. Animals that recover from the potential intestinal damage may develop complications, including laminitis or other systemic infections.

Since animals can die within 72 hours, it is extremely important to contact your veterinarian as soon as blister beetle poisoning is suspected.

While an effective preventive program will reduce the chances of blister beetle poisoning, there is no

efficient way to inspect baled hay carefully enough to be sure it is completely free of blister beetles. Horse owners must be responsible for identifying and understanding the biology of blister beetles and following the suggested tips to protect their horses. If you suspect your horse has come into contact with blister beetles, contact your veterinarian immediately.

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