



Blister Beetles: Alfalfa Hay Contamination

CANTHARIDIN TOXICITY IN HORSES

Blister beetles are small, narrow-bodied insects that feed and nest in alfalfa fields especially in the Central and Western United States (e.g. Kansas). These beetles contain a chemical called cantharidin that is highly toxic to horses. During the mowing and harvesting of the alfalfa, 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 bale will have clusters of the insects within the flakes.

As few as 25 ingested beetles can be toxic to an average horse. The cantharidin is very irritating to the mouth, esophagus, stomach and intestines. It is absorbed in the intestines and passes through the kidneys where it is also very irritating and damaging. The clinical signs will reflect this irritation and may be recognized as colic, oral ulcers, decreased feed intake, apparent depression, mild fever, diarrhea, straining, and frequent urination. The toxin dramatically lowers blood calcium levels and can damage the heart muscle, both which can be fatal within a short period of time.

A presumptive diagnosis is made by a veterinarian based on clinical signs and blood work demonstrating low calcium concentration in the blood. This diagnosis can be reinforced by finding blister beetles in the hay bales. With treatment, a horse may survive, but intensive therapy is needed to mitigate the intestinal irritation, kidney failure, laminitis (founder), and secondary infections. **Early treatment is imperative to prevent death.**

Watch for these symptoms:

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|-----------------------|--------------------|
| colic | mild fever |
| oral ulcers | diarrhea |
| decreased feed intake | straining |
| apparent depression | frequent urination |



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

Feed (either set aside or purchase) alfalfa or alfalfa/grass hay from the **first cutting**.

First cutting alfalfa is much less likely to be infested with blister beetles.

Purchase **certified** blister-beetle-free hay.

Examine all hay (each flake) prior to feeding for the presence of blister beetles.

FURTHER QUESTIONS?

Contact your local extension agent:
extension.tennessee.edu