

Cantharadin Toxicosis aka Blister Beetle Poisoning



There have been reports in the news recently of horses dying from blister beetle poisoning here in Florida. What is this disease, and how should owners protect their horses from it? Blister beetles species vary in size and color, but they all have these characteristics: 1-1.5 inch narrow bodies, with a protective shell, wings, and separate head and body units joined by a narrow neck. One of the most common and deadly species found in hay is striped orange/brown and black. Others are black, gray, brown, or orange. They can be a solid color, striped, or spotted. The beetles live in, and feed on: tomatoes, potatoes, soybeans, and stands of alfalfa. Alfalfa hay is the highest risk hay type to contain these beetles, but timothy and alfalfa or orchard grass and alfalfa mixed hay may also contain the beetles. Blister beetle larvae feed on grasshopper eggs. Adult beetles generally emerge from the soil in mid to late summer and only live for a few weeks. Their bodies contain a substance called cantharadin, which causes blistering of external and internal tissues on contact. This product has been marketed as "Spanish Fly", a fabled but ineffective aphrodisiac. The beetles tend to live in swarms, so great numbers of them can be crushed and killed together as the hay is swathed. If the beetles are squashed during the hay making process and then drop to the ground, it is possible for the toxin to contaminate the hay even in the absence of beetle bodies. In other words, if the toxin gets on the hay it tends to stay there. The toxin is very stable, so it is unlikely that time will decrease its potency. As few as 3 striped beetles can produce enough toxin to kill an

adult horse. Male beetles tend to contain more cantharadin than females.

Professional growers take great precautions to avoid cutting hay where the beetles are swarming and trained inspectors survey fields prior to cutting. However, the beetles are very mobile, and have been found in fields that were inspected and deemed fit for mowing just a few hours earlier. Insecticides are effective against the beetles, but there is a waiting period of a few days after a field has been sprayed before it is safe to harvest the hay. During the wait, more beetles can move in. Modern haying equipment can worsen the problem. Old-fashioned equipment cut the hay and left it to dry in the field. Beetles prefer to live on live plants, so they would simply move elsewhere once the hay was cut, leaving no beetles to be baled up with the dry hay in a few days. Hay is now cut and crimped or conditioned immediately to speed the drying process. This produces a higher quality hay product, but allows beetle bodies to be crushed into the hay. Unfortunately, alfalfa hay is not the only hay crop harvested in this manner, and some experts believe that it is possible for other types of hay to contain blister beetles. Such cases have not been reported, however. Fortunately, swarms of beetles are often so large that they can be seen by haybine operators who can cut around them.

Signs of blister beetle poisoning include abdominal pain (colic), loss of appetite, fever, sweating, rapid breathing, diarrhea, splashing and submerging the muzzle repeatedly in water, increased drinking, and urinating small amounts frequently. Blisters may also be visible on the lips and muzzle. There may be blood present in the urine or manure. Blood calcium levels frequently drop with this disease. This can lead to muscle fasciculations (trembling), synchronous diaphragmatic flutter ("thumps"), depression, weakness, stiffness, staggering, difficulty breathing or swallowing, and abnormal heartbeat. Signs first start to appear six to eight hours after ingestion of the toxin. If the horse ingested a high enough dose, death can occur within 24 hours.

There is no real cure for blister beetle poisoning, and the prognosis is poor in most cases. However, in cases where horses have ingested low amounts of toxin, supportive care, fluid therapy, pain control, diuretics and anti-inflammatory medication, as well as supplemental calcium may provide a successful outcome. If you suspect your horse has blister beetle poisoning, CONTACT YOUR VETERINARIAN IMMEDIATELY! Prompt veterinary attention can improve the outcome of this disease. Check your hay for the presence of beetles. Remove all suspect hay from feeders immediately.

What can you do to prevent this disease? Blister beetles like to live in dry conditions so drought years are higher risk. Hay grown in the Southwest and Midwest is a higher risk than hay grown in the North. Buy from a reputable dealer who buys from a reputable producer. Knowledgeable hay growers will remove conditioning rollers before harvesting hay during high-risk situations. Buy first cutting hay that was baled before the adult beetles emerged from the ground. The ultimate responsibility rests with you, so examine each flake carefully. Shake hay out to look for beetles; don't just look at the outside of the flake. If you see any beetles, or parts of beetles, don't feed the hay, and inform the person who sold it to you. This will not only allow you to be refunded for the hay, but will also allow the seller to notify other buyers of the problem.

Contact Brandon Equine Medical Center at 813-643-7177 or email info@brandonequine.com with any questions regarding this topic.