Be Aware of Blister Beetle Activity

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This time of year, blister beetles become a major consideration to hay buyers and producers. Adult beetles are active from mid-May to October; however, striped blister beetles (important one to alfalfa growers or buyers) concentrate in high numbers in June and July. An estimated 75% of the total numbers of blister beetles occurring in Oklahoma alfalfa are striped blister beetles *Epicauta occidentalis* (Fig. 1).

![Figure 1. Adult Striped Blister Beetle. Photo credit, BugGuide.](image)

The primary problem with blister beetles is related to the toxin, cantharidin, present in the insect's body fluids. Cantharidin provides the beetles protection but may also affect livestock health when beetles are inadvertently incorporated into baled alfalfa during harvest. When livestock, particularly horses, are fed forage containing bodies or fragments of these insects, illness or death can result. Cattle and sheep also have died from cantharidin poisoning. The biggest sub-lethal effects on ruminants have been reduced milk production and weight gains.

After overwintering as larvae, blister beetle adults emerge from the soil in late spring or early summer. Large numbers normally congregate in small areas of fields, usually within 50 yards of a field margin. The first alfalfa cutting of the year normally is free of blister beetle problems because they are not normally in alfalfa fields in large numbers that early.

Because of their congregating nature, remains of beetles killed during the alfalfa harvesting process are likely to be concentrated in a few hay bales or small portions of bales. Cantharidin is a stable compound that retains its toxicity to livestock even when dried remains of the beetles are fed along with the forage.

When infesting alfalfa, blister beetles prefer to feed on blossoms (Fig 2). Swarms of beetles often are crushed by crimper rollers of the swather and are trapped in the windrowed hay (Fig. 3).
If beetles remain alive in the windrows, most of them will crawl out. However, they also can be trapped and killed in hay if windrows are driven on before beetles have had time to escape.

The transition into mid-season alfalfa cuttings in Oklahoma is the time to think about blister beetles and minimizing their risk.

WHAT CAN BE DONE TO MINIMIZE RISK?

- Match cuttings and markets. Early-May and late-September harvests are before and after the major blister beetle season. Target these cuttings for horse buyers.
- Cut alfalfa in the bud stage; the presence of blooms is attractive to blister beetles and increases the likelihood of infestations.
- Utilize an insecticide before harvest, but make sure the product has no/minimal waiting period before harvest. Target the market before spraying to be sure the premium from the buyer justifies application costs.
Do not use a crimper when swathing alfalfa hay. Crimpers crush beetles into the hay and kill them. A simple cutter bar cuts very few insects and they fall to the ground. The live ones fly away as the hay wilts. This is also an effective method for grass meadows used for grazing.

Blister beetles are attracted to flowers of many plants and weeds. Maintain weed control in border areas to prevent flowering and attracting beetles.

Watch carefully when swathing, even large swarms can be overlooked by experienced operators.

Try to eliminate or minimize tire traffic on cut or uncut hay. This will reduce crushing beetles into the hay swath. Remember, a dead beetle is just as toxic to a horse as a live one.

As there is no way to completely eliminate the possibility of blister beetles being in alfalfa, the prudent approach for management is to take all possible precautions to reduce the likelihood that they are present, particularly when marketing hay to horse owners.

Livestock owners buying alfalfa should know their supplier well and find out what precautions were taken to avoid blister beetles in hay.

Additional information on blister beetles in alfalfa can be obtained from OSU Extension Facts No. F-2072, Blister Beetles and Alfalfa.