

Blister Beetles: A problem or a solution?

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Surveying my pastures earlier this summer I noticed something other than the poor condition of my grass, due to drought NOT overgrazing! What I saw was a relatively larger population of blister beetles than normally occurs. Producers in Eastern Colorado will remember that this spring we were made aware of the fact that we could expect a greater than normal grasshopper infestation. Now for the mixed “blessing”, blister beetle larvae are predatory on grasshopper eggs (Kinney, et.al. 2010).

Blister beetles usually only have one generation per year and grasshopper eggs that were laid last summer were the first to hatch this summer. Like most livestock, the more feed available the better the population survival – more grasshopper eggs, more feed for blister beetle larvae, more blister beetles.

In sufficient quantities, cantharidin, the chemical produced by blister beetles, is toxic to humans and animals. Animal deaths are primarily associated with horses, but cattle and sheep are also susceptible. In a newsletter article Dr. Frank Peairs, CSU professor, states that there are over 100 species of blister beetles in Colorado. Three are the most common; the black, the spotted, and the three-striped (Figure 1). But, not all blister beetles are created equal. The three-striped is of most concern to Colorado livestock owners for two reasons 1) they produce much higher concentration of cantharidin than other species. Dr. John Capinera determined that the lethal dose for an 825 pound horse was 1700 black blister beetles, 520 spotted blister beetles, and only 120 three-striped blister beetles. 2) Unlike most other blister beetles, three-striped blister beetles tend to congregate in swarms. If one of these swarms gets trapped during harvest, the likelihood of a lethal dose occurring in a flake of hay can be high.

Chemical control of blister beetles is usually not an option for several reasons. First is that all of the chemicals labeled for blister beetles have a preharvest interval requiring a specific number of days after application that a crop can be harvested. Second, beetles that are killed with chemicals still remain in the fields and some attach to the hay. Dead beetles still contain cantharidin, so the problem remains in the field. Third, insecticides that kill blister beetles also kill a large array of other, beneficial, insects.

The common haying practice of running plants through a conditioner to improve drying also may contribute to a higher incidence of blister beetle poisoning. Again, the beetle is dead but the cantharidin remains. Researchers at Kansas State found that inspection of the hay is also of little

value, again because smashed bugs are hard to identify and, again, the cantharidin is still present. Also, smashed bugs all look pretty much the same.

Management is the best option for producers. Cut the crop prior to bloom and control flowering weeds as blister beetles are attracted to flowers. Blister beetles are less prevalent early in the season (i.e. – first cutting hay) and more prevalent as the season progresses. Hay from fields close to rangeland is more suspect than if the fields are close to cultivated ground.

References:

Kinney, K.K., Peairs, F.B., and Swinker, A.M. (August 2010). Blister beetles in forage crops. Colorado State University. <http://www.ext.colostate.edu/pubs/insect/05524.html> (19 July 2011).
Peairs, F.B., newsletter article sent to author via email (19 July 2011).