Medusahead Project Funded

We are excited! In August, Juan and I, received a $417,500 grant from USDA to study the effects of early experience on intake of medusahead. The project also includes Helga Van Miegroet (soils), Rhonda Miller (plants), Layne Coppock (social dimensions), Don Synder (economics), and an enthusiastic group of landowners from Paradise and Avon, UT.

Medusahead is an invasive grass that crowds out other forages, greatly decreasing the nutritional value of rangeland. It could take over much of the rangeland in the West. Grazing may be a sustainable, efficient, and low-cost method to control medusahead. Unfortunately, animals typically don't eat medusahead because it is low in nutrients, high in silica, produces little biomass, and has large nasty awns at maturity.

We may be able to change preference for medusahead if we understand how livestock "perceive" the plant due to their previous experiences. These experiences (the correct supplement and with mom) may have life-long influences on livestock by changing the brains, structure and chemistry of animals. We will look at how: 1) supplementation and fertilization programs and experience early in life with mother affects preference for medusahead by sheep, 2) how grazing affects soils and growth of native perennial plants in an area infested with medusahead, and 3) adoption of weed control measures by landowners in the community.

Combating Parasites: From Pens to Pasture

The studies on the ability of sheep to self-medicate to combat parasites continue. Recently, graduate student, Jessica Juhnke studied if lambs would select foods high in tannins when infected with the internal parasite, *Haemonchus contortus*. The particular strain of haemonchus used in this and the following study is resistant to many commercial wormers.
Shortly after his debut on KSL, Juan and his amazing self-medicating sheep were featured in our local paper, the Herald Journal. I also heard about his research on our local public radio station driving to work one morning.

As if that wasn't enough, Juan was also invited to serve on a United Nations Food and Agriculture Organization Panel from Sept. 26-30 in Rome, Italy. (I went to Park Valley, UT in September.) The panel examined sustainable methods to improve animal welfare while enhancing food production. To see the article on the UN Panel and our recent grant click here.

I'd like to let you know that Juan has not let all this attention go to his head :)

WAY TO GO JUAN!!!

Prior to the beginning of the trial, all lambs were wormed with a commercial wormer and fed beet pulp+tannins and beet pulp. Lambs were then infected with haemonchus. After 28 d, half the parasitized lambs were fed beet pulp+tannins and the other half were fed beet pulp. Thus, lambs infested with parasite had two different experiences, eating beet pulp+tannin to combat parasites or eating only beet pulp, which has no known affect on parasites.

Both groups were then offered a choice between beet pulp+tannins and beet pulp. Parasitized sheep with experience eating beet pulp+tannin had higher preferences for beet pulp+tannin than parasitized sheep that previously ate just beet pulp. In addition, fecal egg counts were lower for sheep ingesting tannins than for sheep eating just beet pulp.

Sheep grazing at USU's Research Farm in Lewiston, UT

In a follow-up grazing study conducted by Juan Villalba, lambs were wormed with a commercial wormer then grazed pastures containing sainfoin (high in tannins) and cicer milkvetch (no tannins). All lambs were infected with haemonchus. After 28 d, lambs grazed either sainfoin or cicer milkvetch. All lambs were then offered a choice of forages.

Parasitized lambs that ate sainfoin increased their preference for sainfoin relative to lambs that ate cicer milkvetch when experiencing a parasitic infection. In addition, fecal egg counts were lower for sheep that preferred sainfoin than for sheep that preferred cicer milkvetch.

These finding show that sheep infested with parasites can learn to self-medicate with foods containing tannins and reduce their parasite load. These results will help producers to develop sustainable management strategies to reduce parasites in animals grazing pasture. Livestock infested with parasites with access to a variety of forages will eat tannin-rich vegetation when needed and at needed doses, reducing resistance of commercial wormers. Resistance to tannins by parasites will not likely occur because only livestock with parasites will seek out high tannin foods.
Let me know what I can do to improve the newsletter!!

Sincerely,

Beth Burritt
Utah State University - Department of Wildland Resources

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