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Oh BEHAVE!

Behavioral Education for
Human, Animal, Vegetation
& Ecosystem Management

BEHAVE Outreach Program • 435-797-3576

The Newsletter for the
BEHAVE Research and
Outreach Program

Coming in
June!

Saving Money and Improving Landscapes: The Economics of Using Animal Behavior: This DVD/CD set includes examples of people using animal behavior to improve landscapes and reduce costs. Videos highlight the economics of low moisture blocks, animals mixing their own diets, herding and low-stress handling; and teaching cows to eat weeds. The CD contains fact sheets, examples, articles, and worksheets to help you evaluate each technique. We will send copies to all NRCS offices in the West and the Facilitators Network.

To request a copy, email your mailing address to: beth.burritt@usu.edu.



Diet Influences Shedding of E. coli by Cattle Grazing Pasture

Recent outbreaks of *Escherichia coli* (*E. coli*) have consumers worried about food safety. People suffer health problems from *E. coli* not only from eating undercooked ground meat but also from leafy vegetables due to contamination by wildlife, dust and water. Certain strains of *E. coli* are especially harmful to people, one of these is *E. coli* O157:H7.

Plant secondary compounds, such as tannins, in correct doses can benefit livestock. Tannins decrease bloat and internal parasites, and bolster the immune system making domestic livestock healthier. Tannins may also influence the incidence of *E. coli* O157 in cattle. Visiting scientist, Royce Larsen, conducted a study to determine the frequency of *E. coli* O157 in cattle that were grazing irrigated pastures with different forages that contain tannins.



Cattle grazing irrigated pastures with birdsfoot trefoil were 13 times less likely to shed *E. coli* O157 than cattle grazing pastures with no trefoil but cattle grazing sainfoin continued to shed *E. coli* O157 in their feces. Both sainfoin and trefoil contain tannins. Interestingly, cattle supplemented with creep (72% hominy, 25% wheat middlings, and 3% limestone) were 7.1 times less likely to shed *E. coli* O157 in their feces than those not supplemented. These preliminary data indicate that cattle diets affect the prevalence and shedding of *E. coli* O157.

Royce Larsen is an Area Watershed & Natural Resource Advisor for UC Cooperative Extension

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Variety and choice are good for livestock. Recently, I searched the literature for studies on choice. The large number of studies on dietary choice surprised me. The fact none of them were conducted in the U.S., except for one study conducted by our group, was no surprise.

On pasture, dairy cows produced 10% more milk and sheep ate 25% more forage when grazing strips of grass and clover rather than traditional mixed pastures.

In feedlot trials, lambs and kids offered a choice of foods gained more weight, were more efficient, and were healthier than those fed a total mixed ration (TMR). Dairy goats offered a choice also gained more weight, and produced more milk than goats fed a TMR. In the majority of studies, animals were less expensive to feed when offered choice rather than a nutritionally balanced TMR.

The number of foods also matters. Dairy goats offered a choice of six foods instead of four gave more milk and ate less. Giving animals more choices of foods may help them overcome any nutritional imbalances in supplying nutrients to themselves and/or to rumen microorganisms.

Giving animals choice is also likely to be better for the environment by reducing the amount of nitrogen (N) livestock eat and excrete. Dairy cows offered a choice between a high- and low-protein ration selected a diet of 18% crude protein (CP) but produced the same amount of milk as cows fed 19.7% CP. Also, lambs given a choice selected more energy and less protein as they aged. Sheep also chose diets adequate in protein but against excess protein especially if part of the N in the diet came from urea.

