

October, 2008

Volume 3, Issue 5

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

BEHAVE Principle of the Month:

Nutrients influence palatability. When it comes to food the body can be pretty picky. It's nutrients and their interactions not taste that matters. The body prefers foods high in nutrients but too much energy and protein especially in ruminants can depress intake and even cause illness. More than just nutrients, the ratio of protein to energy is also important to the body. In addition, it also prefers nutrients that are digested at the same rate. The wisdom of the body keeps us and our animals in balance. Want to know more? [See the fact sheet.](#)

The BEHAVE Conference

Late in October, about 100 scientists, land managers and ranchers gathered in Park City, Utah to participate in the BEHAVE Conference. The meeting theme was Behavior-Based Management and highlighted ongoing research at USU. It also included several international speakers and topics such as early adaptation of food preferences in humans and exploring unpredictability. There was great food, great company and plenty of time for conference participants to meet and



interact with each other. We'd like to thank our sponsors the Dixon Foundation, USU Extension and the Department of Wildland Resources for making our meeting great!

The Benefits of Variety

Do lambs eating a single forage eat less than lambs fed two forages? And how does variety affect digestibility? USU graduate student Jake Owens tested whether variety really matters for sheep eating tall fescue (TF) and reed canarygrass (RCG). His study determined the nutritional benefits of feeding alfalfa (ALF) or birdsfoot trefoil (BFT) with TF or RCG.

Complementary relationships may exist between the alkaloids in TF and RCG and the saponins in ALF or the tannins in BFT that may allow herbivores to increase intake or improve digestibility of these forages. On this basis, Jake predicted sheep fed mixtures of the

above forages would have higher nutrient intake and increased digestibility than sheep fed only alkaloid-containing forages.

In trial 1, lambs were fed a basal diet of either RCG or TF. Half the lambs in each group were supplemented for 30 minutes with ALF. In trial 2, lambs were also fed RCG and TF but this time half were supplemented with BFT.

Supplementing lambs fed basal diets of RCG or TF with ALF or BFT increased intake and as a result increased the amount of energy and protein digested by the animals. Highlighting once again variety is best.

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BEHAVE Outreach Program

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BEHAVE

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Variety (con't)

Jake followed his forage trials with a trial using several purified secondary compounds, alkaloids, saponin and tannin. He offered all lambs diets containing the alkaloids gramine or 5-methoxy-N,N-dimethyltryptamine. Half of the lambs also received diets containing either saponin or tannin. All diets used in the study contained the same amount of energy and protein.

Eating a food containing saponins with a food containing either of the alkaloids did not affect intake or digestibility. Ingesting tannin reduced energy digestibility but lambs offered tannin ate more total food, and as a result, digested the same amount of energy as lambs not offered tannin. Feeding diets with tannin were beneficial because lambs offered tannin digested and retained more nitrogen than lambs not fed tannin.

Let the Bison Roam

Early in October, Kathy Voth and I had the opportunity to visit with ranch manager, Mark Kossler, at Turner's Vermejo Park Ranch near Raton, NM. Interviews with Mark talking about his management practices are part of a video on the economics of behavior. This section of the video will profile the benefits of food choice and reducing stress on bison feeding operations. It will also explore the economics of low-stress bison handling as well as low-input versus high-input feeding systems. Lastly, it will highlight a study looking at the costs and benefits of weaning versus not weaning bison replacement heifers.



The video project is funded by western SARE Professional Development Program and should be finished in fall of 2009. We'll keep you posted.



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