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Oh BEHAVE!

Behavioral Education for
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BEHAVE Outreach Program • 435-797-3576

The Newsletter for the
BEHAVE Research and
Outreach Program

BEHAVE Principle of the Month:

The skin and gut systems work in concert to keep animals safe.

The skin defense system protects animals from physical harm. Sight, hearing and feelings of pain and comfort are associated with the skin-defense system. Taste, nausea and satiety are associated with the gut system. When an animal has just eaten a new food and is given a capsule of LiCl, which causes nausea, it learns two different things. First, it learns to avoid the person that caused it discomfort by shoving objects down its throat. Second, it learns to avoid the food because the animal's gut defense system automatically pairs food with nausea caused by the LiCl.



Smart Sheep Learn about Foods Associated with Bloat



Bloat is a big problem for producers. Last summer, Dr. Juan Villalba investigated if ruminants can learn which plants to eat to relieve the effects of bloat. His results provide a new understanding of how animals form food aversions and preferences and have Juan thinking about the next steps in teaching animals to alleviate bloat.

Juan's experiment used lambs with rumen cannulas and balloons. Here's how it worked: Balloons that could be inflated or deflated were placed in the lambs' rumens. Lambs were then fed one food and the balloon was inflated to simulate bloat's effects. Next the lambs were fed a different food and the balloon was deflated to relieve their bloat.

Once the lambs were conditioned to the "bloat food" and the "relief food" they were given a choice of the two foods. What the lambs ate was monitored to see what they learned from their experiences.

Surprisingly, animals formed strong aversions to the foods associated with inflation of the balloon and gut distension. This is significant because researchers knew that rumen distension reduces food intake but didn't know that it can cause food aversions and affect diet selection.

Lambs also formed a strong preference for foods associated with deflation of the balloon (relief). In addition, just like we do as our stomachs get full at mealtime, the more air pumped into the balloons, the less food lambs ate.

Now that we know animals can learn to choose foods based on the effects of bloat, the next step is to translate this to the field. Soon we may know if animals can learn to mix birdsfoot trefoil with their alfalfa to prevent bloat.



Fred Provenza Wins USU's Top Research Award

Great news!!! Dr. Fred Provenza has been selected as the 2008 recipient of the D. Wynne Thorne Career Research Award. Fred was selected for USU's top research award based on a review by a committee of former recipients as well as a peer review by international specialists. This award recognizes outstanding achievements over a

researcher's career to date. It formally recognizes Fred for his prominence in his field and for enhancing Utah State University's reputation in the international research community. Congratulations Fred!!!

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Fall Grazing of Sagebrush by Sheep Reduces Sagebrush and Increases Use by Sage-Grouse

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for All Things
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Utah State University researchers have been using their understanding of behavior to see if they can manipulate vegetation and improve wildlife habitat.

In the fall of 2006, graduate student, Michael Guttery, and Range Extension Specialist, Roger Banner, grazed ewes on sagebrush dominated rangeland on Parker Mountain in central Utah. Their goal was to decrease sagebrush while increasing forbs and grasses important for sage grouse. At the same time they hoped to increase available forage for sheep producers and flush ewes for improved lambing.

Sagebrush contains terpenes that can decrease the amount of the plant sheep are willing to eat. Previous work by researchers at USU demonstrated that intake of sagebrush can be increased by feeding a supplement that offsets the effects of terpenes. In this case, sheep were supplemented with an alfalfa, beet pulp, corn and soybean meal mixture.



Greater sage-grouse brood flushing from a grazed sagebrush plot, Parker Mountain Study Site, 2007

Browsing by sheep decreased sagebrush cover from 27% to 9% while sagebrush in the ungrazed plots remained unchanged. Forb and grass cover were slightly higher for grazed versus ungrazed plots.

In Fall of 2007, grouse used grazed areas more than areas that were not grazed by sheep. Biologists can track use of an area by counting dung or bird pellets. Grazed plots contained five times as many pellets as ungrazed plots. In addition, three times as many sage grouse were flushed from grazed plots as ungrazed plots.

There was good news for the producer too. Sheep used in the study maintained their body condition while browsing sagebrush and the producer reported that his ewes had more sets of twins this spring than he can ever remember.



Grazed sagebrush plot in spring, Parker Mountain Study Site, 2007