

<b>Livestock Weekly</b> Internet Edition May 1, 2008 News	 <b>BAYER MOTOR CO. INC.</b> 218 East Grand • COMANCHE bayer1@itexas.net • www.bayermotor.com 800/843-5230 • 325/356-2541
<a href="#">Columnists</a>	<h2>Knowledge Of Animals And Plants Essential For Targeted Grazing</h2> <p><b>By John Bradshaw</b></p> <p>ALBUQUERQUE — It's probably not news to most people that different animal species have evolved in different environments and are best fit to cope with different types of vegetation, said Andres Cibils of New Mexico State University, speaking at the Targeted Grazing Workshop here recently.</p> <p>Some animals prefer grass, while others prefer forbs or browse, he explained. Goats prefer browse and woody plants, while sheep are the intermediate feeders, eating grass, forbs and browse. Cattle have the highest proportion of grass in the diet.</p> <p>“These differences in feeding habits also translate into differences in the way these animals naturally use the landscape. Of course, we're talking about broad generalizations about picking the right species. Probably you're all thinking of exceptions to all of this, and there are some.”</p> <p>In general, different species should be selected for the type of landscape that is to be managed, depending on the plant communities located there. Cibils said some stockmen may be culturally inclined to own cattle, and they may be able to force cattle to do things that are considered out of the ordinary, but in general, a goat can't be made out of a cow.</p> <p>“There are just simple things that have to do with physiology and anatomy. Goats have the ability to get around thorns and spines that is not present in cattle. Goats have the ability to stand on their hind legs and access browse, as well as climb trees.”</p> <p>Goats also have the ability to handle substances in certain</p>
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plants that cattle cannot, such as tannins and monoterpenes. Multi-species grazing, he said, can be beneficial to get a balanced use of the plant community.

Studies have shown, Cibils said, that when sheep and goats are grazed together, the goats will impact the shrubbery more than if they were alone. He showed a photograph to demonstrate this. Several sheep were grazing on grass, while the lone goat in the photo was so far inside a juniper bush that he could barely be seen.

“Again, pick the right species for the kind of plant you’re trying to target, but once you’ve selected your species or a mix of species that works best for your situation, the next decision is, of course, breed.”

Different breeds can have slightly different dietary preferences. Cibils used a graph to show juniper consumption of different species and breeds. Cattle consumed the least, followed by sheep and then Angoras goat. Spanish and Boer goats consumed equal amounts, followed by Ibex and ending with deer.

Though different breeds will consume more of certain plants than other breeds, individual animals within breeds will consume more than others. Spanish goats, on average, eat more juniper than Angoras. Even so, Cibils showed a graph demonstrating that 25 percent of Angoras consume more juniper than the average Spanish goats.

“What we’re saying is that individual variations are another important thing to look out for.”

Cibils said questions have been asked, and studies conducted on whether or not an animal’s vegetation preferences can be manipulated. Research has shown that palatability is linked to the effect that consuming that plant or flavor has on the animal’s physiology.

When an animal consumes something, positive or negative feedback is given. Sickness is an extreme example of negative

feedback. It has been found that animals can be conditioned to shift their preferences based on different feedbacks.

“The idea is that we can influence the likelihood that the animal will consume or not consume something by adding certain things or by generating some kind of condition preference. There are four ways that you can have some kind of influence on an animal’s perception of the palatability of something.”

Background and experience, such as things an animal learned from its mother, can affect preference. These are important and may be manipulated. He explained that this is the same as a person preferring certain foods, comfort foods that they ate as children. This can have a strong influence on an animal’s perception of palatability.

“Animals generally take it slow when it comes to sampling new items. They will sample it, but generally mix it with familiar foods. All of this will have an impact on what it prefers and what it stays away from.”

Cibils told of a study where kid goats were exposed to blackbrush while still on the nannies. Later they were turned out with goats inexperienced with blackbrush. The goats that had learned from their mothers to eat blackbrush consumed far more of it.

Nutrition can also affect the palatability of a plant. Cibils told of another trial in which lambs were conditioned to prefer wheat straw. After the straw was consumed, researchers infused starch into their rumens. The lambs learned to associate the flavor of the straw with the positive feedback they received from their rumen.

Another group was fed straw, but water was infused in place of the starch. The trial lasted 33 days after the starch infusion, and the lambs who received the starch consumed more straw for the entire trial.

“What you basically see is these guys created a preference

for wheat straw by just tweaking the post-ingested feedback. So, that feedback response that the animal received and associated with it was false.”

Different types of supplements can enable the animals to eat more of certain things. Contract grazers keep protein blocks out, and polyethylene glycol, activated charcoal and ethoxyquin can also be beneficial.

“What we’re basically doing there is altering the ratio between nutrients and toxins, and by doing that we’re also altering preference.”

Age and condition can also affect an animal’s perception of palatability. Cibils said the body condition that reflects the nutritional state of the animal will to a certain degree influence its likelihood to consume more or less of certain plants.

Genetics can also play a role. Breeding can be manipulated to achieve desired characteristics. Senses, such as taste, are heritable. This is an attribute that receives little attention in breeding programs, though. An example is the juniper-eating goats currently being studied in Sonora, he said.

“Targeted grazing depends on skill, obviously, and knowledge,” concluded Cibils.

The plant perspective is just as important in targeted grazing as the animal side, and Lisa Surber from Montana Sheep Institute said a number of mechanisms can change a landscape. Fire, drouth or just time can do this.

“One thing to keep in mind is that invasive species change all this. What it means is that instead of going from our desirable community, weeds take us in a completely different direction. We have to learn to deal with that system and some of these invasive species.”

The goal, Surber said, is to cause significant damage to the

targeted plant while maintaining the good vegetation, but sheep production goals must be kept in mind. Targeted grazing should be an integral part of herbicide or bio-control programs.

The goal is to get the timing down to where the grazing program is done when the targeted plant is at its most susceptible stage. If possible, this should be done when the desirable plants are in their least susceptible state.

“There are some species that you want to hit during the winter, some spring, summer or fall. It depends on the plant you’re working with,” explained Surber.

When grazing cattle as well as sheep or goats, it is best to graze them at the same time or to bring in the sheep or goats soon after the cattle are moved. It is not a good plan to turn out the sheep or goats when the grass is coming back and is young and palatable.

It works well, Surber said, to treat infected areas with herbicide one year, and then bring in sheep or goats the next year to clean it up. A concentrated effort in the beginning followed by a maintenance effort works well, particularly for the leafy spurge she deals with in Montana.

Absentee landowners particularly like targeted grazing, she said, because many of them are interested in going “green” and don’t like using chemicals on their property.

Surber showed a fenceline photo to demonstrate the effectiveness of targeted grazing. One side of the fence was virtually all good grass. The other side, Forest Service land, was nearly completely yellow with leafy spurge blooms. She said she always shows that picture, and a Forest Service representative was regularly giving her a hard time and asking her not to show it.

“He finally got so fed up with us showing that picture that he started allowing some targeted grazing projects there. We think we made some progress there.”

Targeted grazing is part of an integrated approach to landscape management, concluded Surber, and the landscape won't have much to offer without it.

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