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2004 Nebraska Grazing Conference

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J. B. MILLIKEN
THANK YOU!

2004 Nebraska Grazing Conference
August 10, 2004
Kearney, NE
John C. Owens
NU Vice President and IANR Harlan Vice Chancellor

It is both my privilege and pleasure to have the opportunity this morning to welcome you to the 2004 Nebraska Grazing Conference. I am sure you are looking forward to the next two days of great topics and excellent speakers. This is the fourth year this conference has brought people together to hear, to discuss, and to exchange a wide variety of ideas. Reading through the list of conference sponsors and supporters, I think how fortunate we are in Nebraska to forge and foster such productive partnerships for the good of our state.

Because Nebraska is home to nearly 23 million acres of rangeland and pastureland – half of which is in the Sandhills – the importance of knowledge in how we can best manage, conserve, and sustain this land cannot be overestimated.

Last September the National Science Foundation awarded the University of Nebraska-Lincoln a \$1.8 million grant that is

funding a four-year comprehensive, interdisciplinary study of Nebraska's unique Sandhills region. Our Institute of Agriculture and Natural Resources scientists are heavily involved in this work. It builds on years of Sandhills research by team members and other UNL scientists.

The work funded by this \$1.8 million grant will increase our knowledge of the 20,000 square-mile Sandhills area, which, as I noted earlier, is home to half our state's range and pastureland. We also think it could help expand our understanding of the broader potential impacts of global climate change.

This large-scale study focuses on the links between the Sandhills' grass cover, wetlands, groundwater, and regional climate. We hope to discover new knowledge to help us all better understand how climate and environment interact to create and maintain this fragile ecosystem.

Work funded by the National Science Foundation grant is only one of the many projects underway right now to provide us with new knowledge of value to Nebraska and Nebraskans.

Currently in the Institute we have ongoing research on developing decision-support tools for grazing management; drought and defoliation impacts on key rangeland forage species; seeded irrigated and dryland forages; grazing system effects on plant communities; wet meadow management; and more. Much more. Grazing and livestock research is especially important to the Institute of Agriculture and Natural Resources and to Nebraska. This morning I'm going to provide just a few examples of our programs and research projects focused on grazing in Nebraska, along with some of our other work I think you'll find interesting, as well. In the time we have there is no way we can begin to touch them all, of course, but I think those I'm going to talk about today provide a glimpse into the ongoing work so vital for our state.

For starters, there's all the information on drought management the Institute has been disseminating in a variety of ways in the past few years – through cooperative extension-education meetings, through media, via the Web, and one-on-

one, as drought has gripped parts of Nebraska and has held on tight. This is information we wish we never had to use, because drought means hard times as well as hard decisions. It's so very important that we have unbiased, research-based knowledge available to us in times like these, however, to provide information for good decision making. Our researchers have worked hard over the years - as they continue to work hard today - to provide this important knowledge.

In southwest Nebraska last year, participants in a cooperative extension beef-cattle and drought seminar aimed at helping producers protect drought-damaged rangeland and explore ways to stretch limited feed supplies, estimated the knowledge they gained to be worth more than \$18 per head of cattle, for an average of \$4,700 per producer. In west central Nebraska, four ranchers who treated 6,300 acres for grasshoppers estimated extension information increased their combined-profits between \$11,000 and \$12,000.

Discovering and providing knowledge is a part of everything

we do. Certainly it's a part of our Beef Basics home study courses, with which I hope you are familiar. Our Cooperative Extension Division recently released Beef Basics VI in a joint venture with Cooperative Extension in Wyoming. Beef Basics VI emphasizes an understanding of range plants, drought management, cattle grazing behavior, riparian management, feed intake, supplemental feeding, weed control, and marketing cattle.

Earlier Beef Basics courses – I through V – cover a multitude of other topics: nutrition, economics and forage use, reproduction, genetics and sire selection, health and management of growing calves, financial record keeping and production records, and nutritional strategies for the beef-cow-herd.

Each course is designed by our Cooperative Extension educators and specialists, with input from producers and veterinarians. The courses are designed to stand-alone, so you needn't take one through five before participating in six. Some people certainly do choose to take more than one, however, to further their understanding with a wide-variety of knowledge.

Since Beef Basics began in 1993, there have been more than 4,500 enrollments in the program. Producer evaluations report ideas[^] implemented[“] from the program save an average \$15 per head.

New technology offers us[“] new tools[“] for research, and our Institute scientists are finding some very intriguing ways to use it. One of our researchers uses[“] leather-collars[“] with Global Positioning System units on Sandhills cows to track[“] where[“] the cows graze - and don't graze. Because cattle are creatures of habit, once they establish their grazing patterns, they very well may[“] overgraze[“] some spots while undergrazing others.

Last summer the GPS collars tracked cattle movements. Data were collected from the collars and downloaded into computers, then cow locations were plotted on topographic/digital elevation maps. Cows' locations also were[“] correlated[“] with such management-and-environmental factors as temperature, topography, and how-far it is to water.

This information has been used as a teaching module in a

grazing management course on campus. Students study the relationships between grazing livestock and the environment, and examine how different factors affect grazing patterns.

The collared cattle project continues in a longer-term research project to identify key variables that affect cattle distribution on rangeland. Results will be used to develop management strategies to improve grazing distribution.

In other work, university and USDA Agricultural Research Service scientists jointly developed three new wheatgrass cultivars we think will provide some high-quality hay and grazing options for ranchers and farmers on the Great Plains. These new cultivars grow-out of nearly 20 years of research.

Two – named Beefmaker and Haymaker – are intermediate wheatgrasses. The third – NU-ARS AC2 – is a Fairway-type crested wheatgrass.

Beefmaker is a high-protein pasture grass more digestible than any other intermediate wheatgrass. It should provide better gains for yearling beef steers than the existing cultivars we've

had.

Haymaker produces high, stable forage yields for cool-season hay or pastures in low-rainfall areas. It's seen as [“]primarily[”] for those using dryland hay to support beef cow herds through the winter.

NU-ARS AC-2 is the [“]first Fairway-type, crested wheatgrass with yield and forage quality[”] equal to the best standard, crested wheatgrass. The highest-yielding [“]Fairway-type[”] yet-developed, its expected use is in mixtures in more-arid regions where crested wheatgrass grows. We'll look forward to seeing these new cultivars [“]in action[”] in the years to come.

In eastern Nebraska IANR researchers are exploring ways to [“]diversify[”] eastern Nebraska's predominantly smooth brome grass pastures so they provide more nutritious, reliable forage through the summer. They're looking for the [“]right-mix[”] of vegetation to supplement brome grass, and the best grazing system that will allow producers to take full-advantage of pastures throughout the season.

While smooth brome grass, dominant in eastern Nebraska pastures, provides plentiful, high-quality forage during spring calving season and often again in the fall, it hits a summer slump. Our scientists have found interseeding three legumes in university brome grass test pastures increased productivity, feed availability, and forage quality from July through September. They interseeded alfalfa, birdsfoot trefoil, and kura clover into the brome grass. This is part of the Institute's ongoing research to help make the best of pastures all season long.

The legumes helped improve beef gains by 25 to 40 pounds per acre. That translates into about \$10 to \$20 per acre of additional income. Once they're established, the legumes require much less fertilizer than does brome, resulting in an estimated \$15 per acre cost savings.

Because it's difficult to plant and establish legumes in existing brome grass, our researchers continue to look for ways to improve interseeding effectiveness. They're also finding promise in using native, warm-season grasses such as indiagrass, big

bluestem, and switchgrass to complement brome. A key, of course, is finding a grazing system that makes the most effective use of both cool- and warm- season grasses. Research has found it's better for pastures to use a rotational approach to give grasses time to recover from grazing.

When it comes to grazing corn-stalks, Institute research shows feeding or grazing genetically-modified corn has no effect on livestock performance. Our studies involved Bt corn for rootworms and Roundup Ready corn. IANR scientists evaluated performance of livestock fed or grazed on genetically-modified corn for three years to provide information on these new types of corn. Results reinforced earlier findings on the feed-value of genetically-modified crops by our scientists here in Nebraska and at other land-grant universities.

I hope you're familiar with our grazing livestock systems major begun in our College of Agricultural Sciences and Natural Resources within the Institute in fall of 1999. It integrates animal science, agronomy, and agricultural economics into a three-for-

one package you won't find in many academic programs.

Offered through the Center for Grassland Studies, the grazing livestock systems major [“]focuses[”] on the interrelationships of ruminant livestock production, grassland ecology and management, and business management. We require internships of each of our grazing livestock systems majors. The students and their advisors [“]plan[”] those internships together, based on each student's career and education objectives, so each internship is tailor-made.

We have 23 students enrolled as grazing livestock systems majors this fall. Please encourage the young people you know who are interested in grazing livestock systems to inquire about this interesting major. It's a good one, and our College of Agricultural Sciences and Natural Resources is a terrific place to study. In fact, we're always glad to talk to any student about the multitude of exciting, productive careers available to them through the College of Agricultural Sciences and Natural Resources. Whether they're interested in *food* – growing it,

developing new food products, food safety, and the like; in *business*, where our students go on to careers in agricultural economics, finance, and much more; in *science*, which is so part and parcel of what we do, and in *so many areas*, the College of Agricultural Sciences and Natural Resources offers an excellent educational springboard for a student's future.

Perhaps you've read stories of how our veterinary scientists have designed a calving system to reduce calf scours on Sandhills ranches. The system reduces calf exposure to the organisms causing scours by keeping older and younger calves in separate pastures and by moving pregnant cows to new calving areas where calves are born in pastures free of scours-causing ~~germs~~ ^{organisms}. This system significantly reduced calf illness and treatment costs and eliminated calf deaths from scours in tests on two Sandhills ranches under different calving schemes.

One 900-head ranch that lost 7 percent to 14 percent of its calves to scours before adopting the system has had absolutely no scours deaths since. Because few calves developed scours,

antibiotic costs and labor needed to treat sick animals dropped greatly. The herd owner estimated up to \$50,000 savings since implementing the calving system because of improved calf performance, greatly reduced treatment costs, and having more calves to sell.

The scours prevention system can be adapted to a variety of calving situations in the Sandhills and beyond. Our team is teaching veterinarians and ranchers how to adopt this strategy.

Our experts at the Center for Advanced Land Management Information Technologies, or CALMIT, have developed tools to help state and federal agencies anticipate, manage, and respond to diseases, natural disasters, and potential bioterrorism. CALMIT is a national leader in Geographic Information Systems and remote sensing research and development. Scientists there designed the animal health GIS mapping system for the Nebraska Department of Agriculture and USDA when animal health officials sought their help. Developing these new tools is part of a wider initiative to better prepare for potential outbreaks of foreign

diseases, such as foot and mouth.

The system should help animal health officials protect Nebraska's livestock and poultry industries, and also protect people from diseases affecting both animals and people.

Another accomplishment of which we're very proud in the Institute is that two of our meat scientists are part of a team that received the 2004 International Meat Secretariat Prize for Meat Science and Technology for their beef muscle profiling research.

They analyzed more than 5,500 muscles of the beef chuck and round. They found several muscles usually used for ground beef or roasts had potential for use as higher-value products. As a result of this research, we've seen the wholesale value of beef chuck increase by more than 5 percent at a time the value of other cuts didn't change. That's significant. From their research came the new flatiron steak, which I hope you've had the opportunity to try. It's delicious!

As I end my remarks today I'd just like to note for all who might be interested that there's a Beef Cattle Reproduction

Symposium Sept. 1-2 in North Platte focused on new methods and technologies to control and improve reproductive success in beef cattle. It's sponsored by our Cooperative Extension Division as well as Cooperative Extension in several other states, the North Central Region's Bovine Reproductive Task Force, and private companies.

Thank you for this opportunity to be here with you this morning. It certainly is my pleasure. You have a wonderful conference ahead. Those of us in the Institute of Agriculture and Natural Resources at the University of Nebraska-Lincoln are very happy to be part of it.

Thank you.