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UNIVERSITY OF
Nebraska
Lincoln

Restricted Feeding Can Improve Performance of Growing Steers Prior to Grazing on Burned Native Flint Hills Pasture

by Chad Anglin, Dale Blasi, KC Olson, Chris Reinhardt, Marc Epp, Rodney Derstein, and Brian Barnhardt, Department of Animal Sciences and Industry, Kansas State University

Stocker and background operators are margin operators – relying on the amount of weight gain their cattle can obtain during the time the animals spend at the owner's property. However, rising feed prices have driven their input costs upward, forcing them to consider alternative feeding strategies in order to reduce their production costs. Restricted feeding is a management technique that has positive implications for cost control. In an experiment conducted at the Kansas State University Beef Stocker Unit, dry matter intakes were restricted in a drylot from early March to May to determine the degree of compensatory gain calves would achieve following a period of dietary restriction during intensive early grazing.

High-risk, crossbred calves (n=329) with average weight of 420 lbs arrived at the Beef Stocker Unit in late February. Calves were weighed, tagged, given a metaphylactic antibiotic (Draxxin™), vaccinated for clostridial and viral diseases, de-wormed, and bulls were castrated upon arrival. Following processing, steers were placed in a row of eight pens divided into two blocks with four pens in each block and an average of 14 steers per pen. Steers were randomly assigned to pens and treatments within a block. Treatments consisted of a control group (full-fed) and steers restricted to dry matter intakes of 2.50% of BW, 2.25% of BW, and 2.00% of BW. Steers were fed two step-up diets, Rations 1 and 2, twice daily for



18 days and then fed a high-energy diet, Ration 3, until April 25 (Table 1). Steers were weighed at 14-day intervals, and the intakes of restricted treatments were adjusted according to body weight on days 30, 45, and 62. Final weights with a common gut-fill were measured on day 67. On day 67, steers were de-wormed, implanted (Ralgro™) and allotted by weight and treatment to burned,

native tallgrass pastures with equal stocking densities. Each treatment group was evenly distributed in each pasture. Steer weights were measured 45 and 90 days after turnout. After 90 days, steers were removed from the pastures and placed in the previous pens for five days and fed a common diet to reduce the variation in gut-fill.

Average daily gain (ADG) of control steers was 28, 32, and 51% higher than steers fed 2.50, 2.25, and 2.00% BW, respectively (Table 2). The ADG of steers fed 2.50 and 2.25% BW was similar at the conclusion of the drylot phase. When compared to all other treatments, steers fed 2.00% BW had the lowest ADG during the drylot period. Feed: Gain was more desirable for steers restricted to 2.50 or 2.25% BW compared with control steers or at 2.00% BW. Steers fed 2.00% BW had poorer feed conversion than in any other treatment (Table 2). Overall, control steers cost 25% more than steers for which feed was restricted (Table 2).

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The Center for Grassland Studies is a unit within the University of Nebraska–Lincoln Institute of Agriculture and Natural Resources. It receives guidance from a Policy Advisory Committee and a 50-member Citizens Advisory Council. This newsletter is published quarterly.

Note: Opinions expressed in this newsletter are those of the authors and do not necessarily represent the policy of the Center for Grassland Studies, the Institute of Agriculture and Natural Resources or the University of Nebraska.

Martin A. MassengaleCGS Director
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FROM THE DIRECTOR

All indications are that we are facing a shortfall of qualified workers in agricultural and related industries in both the short-term and long-term futures. Dr. George Cooper, Deputy Administrator of the Cooperative State Research, Education, and Extension Service of the United States Department of Agriculture, stated recently that there are approximately 52,000 jobs available annually in these areas, but only 49,000 graduates. The vitality of United States agriculture depends upon a well prepared and available workforce for the wide expanse of its enterprises.

What can we do to attract more students into these important subject matter areas? First, we all need to be more pro-active in communicating the numerous and wide ranging opportunities available in the broad areas of agriculture and its related industries for productive and enjoyable career opportunities. As we have witnessed population shifts from rural to urban areas, there are fewer and fewer people familiar with the broader context of the word agriculture. In addition to production agriculture, we need to think of a much broader arena, including the marketing, processing and merchandising of food, feed, fiber, bio-energy and recreational opportunities. The conservation and preservation of natural resources, native prairies, grasslands, forests, wetlands, wildlife and recreational areas are all included, as well as many more career choices.

Agriculture is a high impact area critical to the nation's independence, security and economic viability. It is also a high tech science-based industry. Professionals are needed in all areas of production, processing, manufacturing, servicing, protecting, preserving, business interactions and management. The needs for an agriculture workforce are much broader, more diverse and complex today than they have been in the past. There is great demand for a better educated workforce.

With all of the publicity and discussion occurring presently about bio-energy, food and feed prices, labor supplies, etc., agriculture is facing a new paradigm. Therefore, we need to evaluate the way we are educating our students for this new era. In the future, both the need and demand will be more for those capable of multidisciplinary training. Universities and other educational institutions should be more flexible and responsive to student and industry needs. Likewise, considerable emphasis is now being placed on a more holistic multidisciplinary approach as opposed to a single discipline.

For example, in our Grazing Livestock Systems (GLS) major, we have synthesized this major primarily from three different disciplines – animal science, forage and range science, and agricultural economics. By integrating courses from all three of these disciplines, we have been able to provide students with a broader more diverse background than they would have been able to obtain otherwise. Our other major in the Center – Professional Golf Management (PGM) – integrates business, turfgrass science, restaurant and hospitality management and communications and human relations skills.

Agriculture is a dynamic biological system. When one part of the system is changed, it may affect another. All of these changes need to be considered simultaneously. Therefore, employees of the future need to do critical thinking and be analytical in this complex and highly competitive world marketplace.

M. A. Massengale

UNL Study Reports on the Cost of Growing Switchgrass as Ethanol Feedstock

by Brian Williams and Richard Perrin, Department of Agricultural Economics, UNL

Concerns about dependence on foreign oil and the menace of global warming led Congress to pass the Energy Independence and Security Act of 2007. This bill mandates that over the next 15 years, an increasing share of “renewable fuels” must be used by the nation’s cars and trucks. One of those renewable fuels is ethanol made from cellulose, and switchgrass is recognized as one of the potential biomass crops to provide the feedstock for this ethanol.

If switchgrass were to provide even one-fourth of this mandated cellulosic ethanol, the U.S. would need to harvest around 20 million acres of it by 2022. Therefore, switchgrass must be seriously considered as a commercial crop for the Great Plains region within the next few years. Recently completed research under the direction of UNL and USDA scientists Richard Perrin and Kenneth Vogel provides some information about the cost of producing that crop on a commercial scale.

Ten collaborating farmers produced the switchgrass for this study on fields ranging from 15 to 20 acres. The fields were scattered from southern Nebraska to North Dakota. The crop was grown for five years between 2000 and 2005 on unirrigated marginal cropland that would have qualified for the Conservation Reserve Program (CRP), though none of the fields had been enrolled in that program.

Yields on these fields averaged 2.23 tons per acre during the four harvest years, but yields varied greatly due to weather and soil conditions. The average production cost over the five-year crop rotation was \$60 per ton, with cost components as shown in Table 1. Two farmers who had experience with the crop were able to produce for only \$40 per ton. During the time of this study, weather conditions were generally not very favorable for production. Seven of the ten sites received below-normal rainfall for the duration of the study, while all but one of the sites experienced above-normal temperatures. This may have caused the yields to be less than they would have if the rainfall were near normal.

Table 1. Annualized average switchgrass production cost on ten collaborating farms.

Cost item	\$/acre	\$/ton
planting	12.15	5.47
herbicide appl.	13.53	6.09
fertilizer appl.	15.03	6.77
harvest	32.64	14.69
Operating costs	73.35	33.02
land rent	59.67	26.86
Total cost	133.02	59.88

Cooperating farmers generally followed practices recommended by UNL researchers, using traditional planting and harvesting equipment for hay crops. In order to determine costs of production, each farmer recorded all work and inputs used. The two highest cost components were harvesting and land rent, accounting for 25% and 45% of the costs, respectively. Chemical use was low relative to row crops; average nitrogen application was 67 pounds per acre, and average annual weed-control chemicals cost \$13 per acre.

This study ended with the fifth year of switchgrass production, but farmers who grow the crop may choose to keep the field



in production for ten years. A ten-year rotation allows the establishment costs to be spread over more years and production. This study projects that average production cost would fall from \$60 to \$54 per ton when production is spread over ten years.

The switchgrass produced in this study was not actually converted into ethanol because commercial facilities to make cellulosic ethanol are not yet available. However, various studies have indicated that each ton would have produced about 90 gallons of ethanol. Based on this, production of switchgrass feedstock would have been about \$0.67 per gallon. An additional \$0.13 per gallon would have been required to transport the switchgrass to the ethanol plant, bringing the total delivered feedstock cost to \$0.80 per gallon. Increases in land and input prices since the period of this study would increase this delivered cost to about \$1.00 per gallon at current prices. By comparison, corn as an ethanol feedstock currently costs about \$1.25 per gallon, with corn priced at \$5 per bushel and byproduct similarly priced.

Higher-yielding varieties will likely be developed in the future that would increase the economic efficiency of producing biomass from crops such as switchgrass. Traditional breeding techniques have increased yields of switchgrass by 20% to 30%; however, additional improvements in genetics similar to those seen in corn can result in much higher-yielding varieties as well as a higher net energy value. A recent study on new switchgrass cultivars in Nebraska, South Dakota, and North Dakota produced yields that were 50% greater than those in this study.

No market yet exists for switchgrass as a biomass crop, so the study could not evaluate potential profit per ton or per acre. Past experience with grain ethanol as a mandated fuel additive has shown that government mandates can provide a powerful boost to ethanol price. It seems likely that sometime in the next few years the federal renewable fuels standard will stimulate cellulosic ethanol plants to contract with farmers to produce switchgrass at a price that is favorable relative to the production costs we estimate here.

Editor’s Notes: Further details about this study are available in Agricultural Economics Report 184, accessible at digitalcommons.unl.edu/ageconfacpub/37/. Also, see related article on this research in the Winter 2008 issue of this newsletter.

Restricted Feeding Can Improve Performance of Growing Steers Prior to Grazing on Burned Native Flint Hills Pasture (continued from page 1)

Control steers had the poorest gains during the first 45 days of grazing; those fed at 2.00% BW had the greatest gains (Table 3). Animal performance tends to suffer as the summer progresses because of declining forage quality. Daily gains for all treatments were lower during the second 45 days of the grazing phase. Control steers had the poorest daily gains overall during grazing. Final weights for control steers, 2.50, and 2.25% BW were similar, and the 2.00% BW steers had the smallest final weights of all treatments (Table 3).

Conclusions drawn from this study are that restricted feeding prior to pasture turnout will reduce feed cost as well as manure production. Steers for which intakes were restricted experienced higher compensatory gains than those fed at free choice. Three treatment groups had similar weights at the conclusion of the grazing phase. This study implies that stocker and back-grounder operators who utilize the restricted-feeding strategy can decrease operation costs as well as optimize the performance of their cattle on pasture.

Table 1. Drylot Ration Ingredients (% dry matter)

Ingredient	Ration 1	Ration 2	Ration 3
Dry Rolled Corn	30.00	30.67	36.76
Wet Corn Gluten Feed	28.00	35.96	36.76
Alfalfa Hay	23.00	15.49	15.00
Prairie Hay	16.00	15.19	8.47
Mineral Supplement	3.00	2.70	3.00
Cost ⁴	107.56	107.83	111.53

¹Ration 1 fed for 9 days following arrival of steers.

²Ration 2 fed for 6 days following Ration 1.

³Ration 3 fed for remainder of feeding trial.

⁴Costs/ton of DRC: \$152; WCGF: \$60; Alfalfa: \$140; Prairie Hay: \$80; Mineral Suppl.: \$180.

Table 2. Steer Performance by Treatment in Drylot

	Receiving Treatment ¹			
	Control	2.50% BW	2.25% BW	2.00% BW
No. head	83	81	81	82
Initial Body Wt., lbs	420	418	420	420
Final Body Wt., lbs	587 ^a	561 ^b	557 ^b	530 ^c
Overall BW Gain, lbs	167	143	139	110
ADG, lbs	3.12 ^a	2.29 ^b	2.13 ^b	1.61 ^c
Feed: Gain	5.67	5.34	5.25	5.76
Cost, \$/hd/trt/day	1.03	0.79	0.78	0.74

¹Receiving Treatments:

Control: steers fed at free choice managed on slick-bunk; 2.50% BW: steers fed at 2.50% of BW; 2.25% BW: steers fed at 2.25% of BW; 2.00% BW: steers fed at 2.00% of BW.

^{abc}Means within a row without a common superscript letter differ (P<0.05).

Table 3. Steer Performance by Treatment During Grazing

	Receiving Treatment ¹			
	Control	2.50% BW	2.25% BW	2.00% BW
Turnout Wt., lbs ²	587	561	557	530
Period 1 BW, lbs ³	693	671	671	645
Final Grazed BW, lbs ⁴	781 ^a	770 ^a	770 ^a	745 ^b
Overall BW Gain, lbs	196	207	211	216
Period 1 ADG, lbs	2.33 ^a	2.42 ^b	2.51 ^b	2.57 ^c
Period 2 ADG, lbs	1.87	2.05	2.05	2.07
Overall ADG, lbs	2.09	2.24	2.29	2.31

¹Receiving Treatments:

Control: steers fed at free choice managed on slick-bunk; 2.50% BW: steers fed at 2.50% of BW; 2.25 BW: steers fed at 2.25% of BW; 2.00% steers fed at 2.00% of BW.

^{abc}Means within a row without a common superscript letter differ (P<0.05).

Water Is Focus of Prairie Conference

The 21st North American Prairie Conference will be held August 4-8, 2008 on the Winona State University campus in Minnesota. The following is excerpted from the conference web site:

Water is a most precious resource. Prairies adapt to the changing availability of water. The long taproots of perennial grasses are needed in dry, thick-soiled environments to ensure water availability. Ecologically, what happens when the soil becomes a thin layer? Which species predominate? What happens when a dry prairie melds into a wetland environment? What happens when the prairie meets the river?

Because Winona is located next to a major river and since there are nearby examples of prairies that range from sand prairie to dry prairie to wet prairie to the special thin-soiled "goat prairie" of the surrounding limestone and sandstone bluffs, we have chosen The Prairie Meets the River as a theme to emphasize the importance of water in the prairie environment.

For program and registration information, see the conference web site, bio.winona.edu/napc.

Professional Golf Management Highlights

In December three students received the first bachelor's degrees in Professional Golf Management awarded at UNL. A few more PGM students will graduate in May.

As the program builds, students are securing great internships at excellent facilities, including Carnoustie (we had an intern there when it hosted the 2007 British Open), The Broadmoor, Pinehurst, Chicago Golf Club, TCP Sawgrass, Medina, Oakmont, Congressional, and Castle Pines – to name a few.

For the second time in three years of testing, 100% of our students who attempted a PGA Checkpoint passed that Checkpoint. A Checkpoint consists of several tests conducted by PGA professionals who come to campus to administer those tests. PGM students must pass three Checkpoints before graduation. In March 2008, all 28 students who participated in Checkpoint 2 passed it. Two years ago, all of our students who attempted Checkpoint 1 (the first Checkpoint ever held at UNL for the new PGM program) were the very first in the nation to have 100% of those attempting a Checkpoint pass it. We work very hard to provide a supportive environment that gives our students every opportunity to be successful, and it looks like the students are making the most of that opportunity!



Master PGA professional Jim White works with a 2007 camper on proper form. White, Director of Golf Operations at Wilderness Ridge Golf Club, is also one of the teaching pros who works with the UNL PGM students.



PGM Coordinator Scott Holly demonstrates to a camper the proper way to chip out of a bunker.

2008 Nike Golf Camp in Lincoln This July

The fourth annual five-day Nike Junior Resident Golf Camp will be held in Lincoln July 21-25, 2008. Scott Holly, a PGA professional and coordinator of the UNL Professional Golf Management (PGM) program, is camp director. Helping with instruction will be three PGA pros at Wilderness Ridge Golf Club, the home course of the UNL PGM program and host site for the camp. Girls and boys 14 to 18 years of age with some golfing ability are qualified to participate. Cost is \$799 for "resident" (campers stay in a dorm on the UNL campus and are supervised by staff) and \$699 for "extended day" (morning through evening).

The daily schedule consists of breakfast, instruction in the morning (putting, chipping, bunker play, full swing), lunch, course play with staff in the afternoon, dinner, and an evening fun activity.

For more information and to register, go to the PGM Web site (pgm.unl.edu) and click on the Nike Junior Golf Camp link. If you have questions, contact Holly at sholly2@unl.edu, 402-472-7467.

Program for 2008 Nebraska Grazing Conference

The eighth annual Nebraska Grazing Conference will be held at the Kearney Holiday Inn on Tuesday and Wednesday, August 12 and 13. As this newsletter goes to press, the planning committee is still finalizing the program. However, we can tell you some of the speakers and topics that are confirmed at this time.

Allen Williams from Mississippi will open the conference with a presentation on marketing grass-fed beef. After lunch Chuck Schroeder will treat us to a slide show on the National Cowboy and Western Heritage Museum in Oklahoma City. Ray Bannister from Montana will speak on modifying animal behavior. That evening there will be informal sessions with Williams and Bannister, as well as a session on grazing-related career opportunities.

Opening the second day will be Charley Orchard with Land EKG, Inc. in Montana, who will discuss land monitoring for management decisions. He will be followed by UNL beef specialist Rick Rasby, who will address by-product use on grazing lands.

Afternoon presentations include one by rancher John Ravenscroft on transitioning his operation to organic production, and one by UNL range specialist Jerry Volesky on winter grazing alternatives. There will also be a panel of grazing managers discussing how they adapt to high feed and fuel costs.

Concurrent sessions on the first day will include one on grazing basics conducted by Bob Scriven and Terry Gompert and one on grazing and wildlife. On the second day there will be follow-up discussions to the morning presentations, so one concurrent session will be on the use of by-products while the other will cover grassland monitoring.

The two-day pre-registration fee of \$75 is due to the Center for Grassland Studies by August 1. The fee covers lunch both days, the evening banquet, break refreshments, and materials (including proceedings). One-day registrations are also available. New this year – registration fee will be waived for students who will still be in high school next year and who pre-register by the Aug. 1 deadline, compliments of the UNL College of Agricultural Sciences and Natural Resources. Reduced registration fees apply for other full-time students. Late fees apply to registrations post-marked after August 1 and to walk-ins. **Checks are to be made out to 2008 Nebraska Grazing Conference** (sorry, credit cards are not accepted). Note the refund policy: cancellations received by August 1, 2008, will receive a copy of the proceedings and a refund of registration fee less \$10. Cancellations after August 1 will not receive a refund but will be sent a copy of the proceedings.

Participants of any of the previous Nebraska Grazing Conferences as well as all Nebraska extension educators will receive a brochure in the mail in June. Others may contact the CGS office to be placed on the mailing list. Information and the registration form are also on the CGS Web site (www.grassland.unl.edu).

The conference is a collaborative effort with many planners and co-sponsors in the public and private sectors. The Center for Grassland Studies coordinates the event and is one of the underwriting sponsors.

The Nebraska Range Shortcourse

Everyone is invited to register for the 16th offering of the Nebraska Range Shortcourse to be held on the campus of Chadron State College from June 16 to 20, 2008. The week-long course focuses on the principles of range ecology and management and the efficient use of rangeland resources for a variety of purposes. Each morning, three or four classroom sessions about one hour long will be presented by experts in each topic area. Afternoon field trips include plant identification, measurement techniques, rangeland assessment, and a ranch tour. Participants commonly include federal agency personnel (i.e., NRCS and USFS), university and college students, personnel of the Cooperative Extension Service and Natural Resources Districts, high school teachers, ranchers, and many others. The registration fee of \$200 includes all materials that will be used for the shortcourse (notebook and other reference material), transportation for field trips, and some instructor expenses. Registration deadline is May 16, 2008. For details, see agronomy.unl.edu/rangeshortcourse, or contact the Center for Grassland Studies.

2008 Nebraska Beef Cattle Report Available

This year's report contains more than 50 research articles on a variety of topics related to beef production. Below are brief summaries of some of the articles related to grazing and forages. The entire report is online at www.ianrpubs.unl.edu/epublic/live/mp91/build/mp91.pdf.

Effect of Wintering System and Nutrition Around Breeding on Gain and Reproduction in Heifers. Replacement heifers were developed utilizing cornstalks, winter range, or a dry lot with or without a high energy supplement around breeding. Cornstalk development reduced ADG and percentage pubertal prior to breeding; however, neither first service conception nor pregnancy rates were affected. Cornstalk development does not appear to negatively impact reproduction, although it resulted in lighter calf birth weight compared to winter range.

Supplementing Beef Cows Grazing Cornstalk Residue with a Distillers Based Cube. Supplementation using a cube that is 2/3 dried distillers grains did not influence calf birth and weaning weights, cow body weight prior to calving, and calving interval. Cow body condition score and percentage of cows cyclic prior to breeding increased for supplemented cows.

Comparison of Crude Protein and Digestibility of Diets of Grazing Cattle at Different Sandhills Range Sites. Diet samples were collected May - Sept. (2003) and May - Nov. (2004) using esophageally fistulated cows at ranches in the Sandhills and Southwest Nebraska. Differences in CP between the two locations were significant. Diets collected in May and June had higher CP than those collected in Aug.-Nov. Diet digestibility was similar for southwest Nebraska and Sandhills diets.

Determination of Diet Protein and Digestibility of Native Sandhills Upland Range. Samples collected from 2003-2005 at the Gudmundsen Sandhills Laboratory indicated during drought years (2003 and 2004) cows selected plants which were higher in CP and lower in digestibility. High levels of grazing pressure decreased diet IVOMD compared to diets from ungrazed and moderately grazed pastures.

Use of Dried Distiller's Grains to Extend Range Capacity. At Gudmundsen Sandhills Lab from mid-June to mid-August for 2 years (2005 and 2006), 24 paddocks were randomly assigned to one of three treatments, control (CON) recommended stocking rate and no supplementation, double stocked (2X) or double stocked with 5 lb of DDGS daily (SUP). There was no difference in ADG between CON and 2X calves; however, SUP calves gained more than unsupplemented groups. Forage utilization was not different between SUP and 2X; however, utilization was lower for CON group. Distillers dried grains supplementation increased ADG; however, DDGS did not replace grazed forage.

Dried Distillers Grains (DDG) Supplementation to Yearling Cattle Grazing Smooth Bromegrass: Response and Performance Profile Summary. Four years of data were summarized to evaluate yearling performance on smooth bromegrass when supplemented with DDG. Daily gains were increased 0.55 lb/day for the entire grazing season. The response to DDG supplementation increases with increasing grazing days.

The Effects of Supplementing Wet Distillers Grains Mixed With Wheat Straw to Growing Steers. Wet distillers grains, dried distillers grains, and a mix of 66% wet distillers grains and 33% wheat straw were evaluated as supplements to a forage based diet. Wet distillers grains and dried distiller's grains produced higher final body weight and dry matter intake compared to the mix. Increasing levels of distillers grains increased performance in forage based diets and wet grains mixed with straw reduced forage intake.

Forage Quality and Grazing Performance of Beef Cattle Grazing Brown Mid-Rib Grain Sorghum Residue. The grain sorghum hybrid A Wheatland x RTx430 (CON) and its near-isogenic brown midrib counterpart (BRM) were utilized in a residue grazing experiment. ADG increased from 0.75 lb in CON to 1.23 lb in BMR treatments over the grazing period. NDF digestibility increased 6-12% units in leaf fractions in BMR over CON. NDF digestibility of stem fraction increased 14-19% units in BMR over CON. NDF digestibility of the stem fractions remained constant over time.

Performance and Economics of Two Calf Wintering Systems. Two wintering systems, cornstalk grazing plus 5 lb/head/day of wet corn gluten feed (WCG) and cornstalk grazing followed by dry lot where steers were fed hay and supplemented 5lb/head/day of WCG were evaluated. While there were no statistical differences in cost of gain, breakeven, or profitability, economics numerically favored steers grazing cornstalks.

Effect of Backgrounding Gain, Grazing Length and Dry Distillers Grain (DDG) Consumption on Performance and Carcass Traits of June Born Cattle. June-born cattle were unable to fully compensate during summer grazing for restricted gain during backgrounding. Higher costs associated with increased gain were offset by heavier sale weights. Cattle grazing meadow regrowth had improved feedlot performance and heavier finished weight. Supplementing with DDG during summer grazing decreased forage intake and increased gain, with 1.8 lb/head/day being more cost effective than 5 lb/head/day.

CGS Associates

Walter Schacht was the recipient of the 2008 UNL Distinguished Teaching Award, which is given in recognition of outstanding teaching ability and dedication to student learning.

Steve Baenziger and **Kim Todd** were among those receiving 2007 Certificates of Recognition for Contributions to Students from the University of Nebraska Teaching Council/Parents Association.

One of the recipients of the Holling Family Award for Teaching Excellence in Agriculture and Natural Resources for the 2007-2008 academic year is **Richard Sutton**.

In recognition of his creativity in developing interactive Web sites, satellite broadcasts, and multi-media presentations to benefit the beef cattle industry, and for his mentoring, teaching, and advising of UNL graduate and undergraduate students, **Rick Rasby** recently received the UNL Distinguished Educational Service Award.

Jerry Volesky received the Outstanding Achievement Award from the Society for Range Management at the 2008 annual meeting in Louisville, KY.

Robert Wilson was presented the Fellow Award recently by the Weed Science Society of America at its annual conference in Chicago.

Don Adams and **Terry Klopfenstein** were presented with the 2008 Omtvedt Awards, which celebrate innovative research and programming. Adams, a developer of the Nebraska Ranch Practicum, was recognized for his research on how to best modify the calving season to extend grazing resources and lower costs. Klopfenstein is nationally known for his extensive work on sustainable beef production systems, including the pioneering research he led on feeding cattle wet rather than dry ethanol byproducts.



Resources

2008 *Nebraska Beef Cattle Report*, www.ianrpubs.unl.edu/epublic/live/mp91/build/mp91.pdf (see related article in this newsletter).

eXtension is an interactive learning environment that provides convenient and timely access to experts and resources from more than 70 land grant universities. You can search the database of resources by subject areas such as “beef cattle,” or do an overall keyword search such as “grazing.” You can also type in a question and have it answered by a university specialist. Check it out at www.extension.org.


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Partnership Effort Helps Reach Habitat Milestone in Nebraska

Pheasants Forever (PF) and Quail Forever (QF) announce a milestone conservation achievement in the state of Nebraska. Nebraska is the first state where PF/QF has impacted at least 2 million acres.

In 2004, Nebraska became the first state where PF/QF had impacted at least 1 million acres. And while it took 18 years for PF/QF to reach that mark in the state, it took just three more years to reach the 2 million acre mark.

“Many of the things that PF and QF accomplish in Nebraska are done in the form of partnerships,” said Pete Berthelsen, PF/QF Senior Field Coordinator. “We are currently involved in over 40 different partnerships in the state where chapter dollars are matched and multiplied to increase our effectiveness and impact on wildlife habitat. Without those various partners and partnerships, we simply couldn't come close to the impact we are having on wildlife habitat, youth education and habitat equipment.”

Major partners include the Natural Resources Conservation Service, Nebraska Game & Parks Commission, Nebraska Environmental Trust, Natural Resource Districts and the U.S. Department of Agriculture, among many others.

Nebraska boasts 60 PF chapters and 3 QF chapters accounting for 11,000 of the organization's 120,000 members. For the past four years in a row, chapters have spent over \$2 million each year in the state on habitat projects and youth conservation education. For more information on PF and QF in Nebraska, log onto www.NebraskaPF.com.

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