



# Beef Tips

September 2006

Department of Animal Sciences & Industry

[www.asi.ksu.edu/beeftips](http://www.asi.ksu.edu/beeftips)

## Upcoming Events

### Beef Stocker Conference

September 28  
Manhattan  
See details on page 4

### Applied Reproductive Strategies in Beef Cattle

Oct 3-4  
Rapid City, SD

<http://ars.sdstate.edu/extbeef/Repro/Conference/homepage.htm>

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## Moderate stocking rates improve rangeland production following drought

*Keith Harmony, range scientist, Agriculture Research Center - Hays*

Western Kansas has received much needed rains within the past few weeks. However, many locations suffering from drought conditions either missed these showers or did not receive enough precipitation to end their drought situation. Grasses in our native rangelands primarily respond to drought by reducing leaf growth and production, which in turn reduces forage yield. Secondary responses, such as reduced carbohydrate production and storage, reduced root growth, and reduced new tiller recruitment, also result from low moisture and having less leaf growth present.

Studies in northeast Colorado and at the K-State Ag Research Center in Hays have shown that several years of near normal precipitation followed by one year of severe drought reduced forage production from 25 to 60% of normal, depending on management of the rangelands in previous years. At Hays, yields of new rangeland growth during the drought year were 220 and 800 lbs/acre greater for the moderate and lightly utilized pastures compared to the heavily utilized pasture (Fig. 1). The year following the drought year, above average precipitation was received, and light or moderate grass utilization prior to and during the drought year resulted in 600 to 1490 lbs/acre more forage than the heavily utilized pastures during the recovery.

In these studies, the moderate utilization would be similar to the concept of 'take half leave half'. If grass was not heavily utilized during the drought year, moderate stocking may resume the year following drought since the main determinant of annual forage yield is current year precipitation. However, producers should be ready to reduce stocking rates early in the season if precipitation does not return to avoid heavy grass utilization.

Heavy grass utilization reduces leaf area and mulch accumulation, which lowers rainfall infiltration rates. In addition, less root volume to absorb soil moisture compounds the effect of lower water infiltration in heavily utilized pastures, so an artificial drought situation can be created by pasture management rather than the climate. To maintain vigorous rangelands with the greatest opportunity to remain environmentally sustainable and economically productive, a moderate stocking rate should be established. Under moderate rates, individual animal gain is near maximum and production per acre is near optimum for economic returns. Furthermore, forage not utilized during one growing season is carried over into the next year and is available in case drought conditions limit new growth.

Moderate stocking rates vary by precipitation zone, range site, and vegetative composition, so producers should investigate recommended rates for their area. To prepare for future drought, producers should consider diversifying their cow/calf herd with stocker animals. The cow herd size could remain consistent, and adjustments to reduce overall stocking rate to prevent overutilization during drought could be made by selling stocker animals early and reallocating those acres to their cow/calf herd. This would avoid low cow prices during drought dispersion and high cow replacement prices during drought recovery.

Improving animal distribution with fencing, water developments, burning, or supplement and mineral tubs can also help to

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limit overutilized and low vigor areas in pastures. Vegetative composition of Kansas' western rangelands will shift towards high buffalograss proportions under repeated heavy utilization. Other grasses, such as big and little bluestem, sideoats and blue grama, and western wheatgrass are more productive than buffalograss. Management that reduces buffalograss composition and increases other desirable grasses is an indication that grazing practices are improving pasture composition, vigor, and production. Shortgrass rangelands of western Kansas are resilient and have survived numerous droughts, but preventing heavy utilization prior to and during drought can help to limit the loss of production during years of low rainfall and can improve the rate and extent of recovery once more abundant precipitation resumes.

## Drought Resources

[www.oznet.ksu.edu/drought](http://www.oznet.ksu.edu/drought)

<http://www.oznet.ksu.edu/drought/contacts.asp>

<http://ianrhome.unl.edu/drought/>

<http://sdces.sdstate.edu/drought/>

[www.ag.ndsu.edu/drought](http://www.ag.ndsu.edu/drought)

<http://outreach.missouri.edu/agconnection/newsletters/drought.htm>

<http://www.angusjournal.com/drought/links.html>

<http://www.oznet.ksu.edu/forage/>

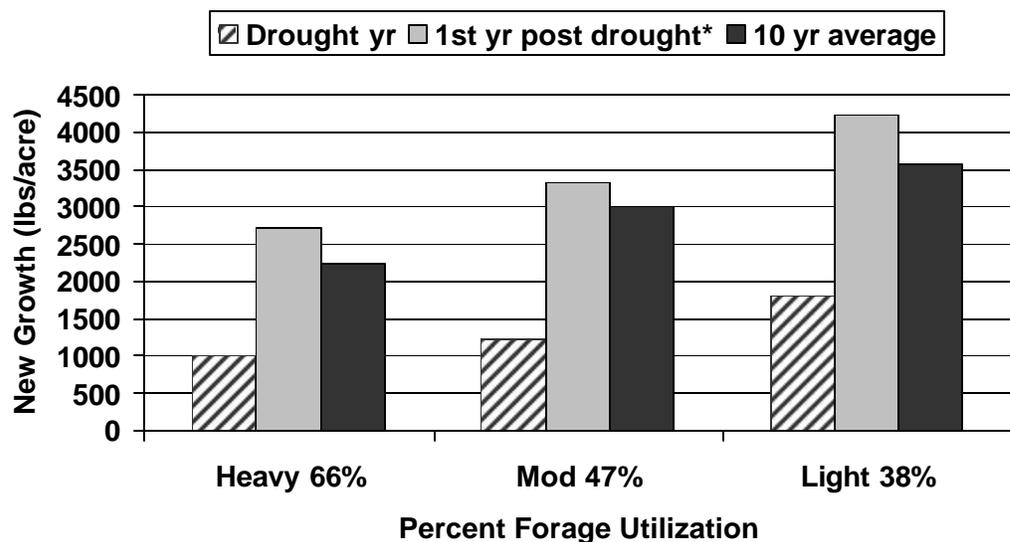
<http://www.uwex.edu/ces/forage/pubs/altcrp.htm>

<http://muextension.missouri.edu/explore/agguides/crops/g04661.htm>

<http://agbiopubs.sdstate.edu/articles/ExEx5050.pdf>

*“...one year of severe drought reduced forage production from 25 to 60% of normal.”*

**Figure 1. Response of shortgrass rangelands to one year of severe drought**



\*First year post drought was above average precipitation

## New Faces to K-State Research & Extension

### *Karl Harborth*



Karl Harborth is the new Southeast Area Livestock Specialist located in Chaunte. Harborth recently completed his Ph.D. at Kansas State University under the guidance of Twig Marston. His research emphasis has been in

cow/calf nutritional management, including research in early weaning, supplementation with distiller's by-products, and the effects of Optaflexx on cull beef cows. Karl is a Texas native and received his BS in Animal Science from Texas A&M University. Following two years with the San Antonio Livestock Exposition he returned to Texas A&M for a masters degree focused on beef cattle management. Harborth hopes to serve the needs of Kansas livestock producers by implementing extension educational programs to increase production efficiency and profitability. He would also like to help promote environmental stewardship and help producers find alternatives to decreasing agricultural resources. Karl can be reached at 620-431-1530, [harborth@ksu.edu](mailto:harborth@ksu.edu).

### *John Jaeger*



John Jaeger began working at K-State Research and Extension's Agricultural Research Center in Hays on Jan. 1, 2006. He had previously worked at the center from 1986 to

1994 as a research assistant and cow-calf herdsman. Jaeger earned bachelor's, master's and doctoral degrees from Oregon State University. His expertise is in reproductive physiology. From 1994 to 2000, he worked as a research assistant and ranch manager at OSU's Eastern Oregon Agricultural Research Center in Union, OR.

Since arriving in Hays he has been heavily involved in feedlot odor issues and improving pen surface structure. Future research goals are to examine novel cow-calf production systems that will result in a value-added beef carcass. Additional research will include replacement heifer development, improvement of AI conception rates, and feasibility of strip grazing of forage sorghum hay windrows to reduce production costs. A current project involves health issues of early weaned calves.

### *KC Olson*



KC Olson is an associate professor of cow-calf nutrition and management with the Department of Animal Sciences and Industry in Manhattan. KC holds advanced degrees from Kansas State University and North Dakota State

University and most recently was a member of the University of Missouri beef focus team. He is actively involved in the undergraduate and graduate education programs at KSU and takes great pleasure in the privilege of helping to train the next generation of Great Plains ranchers and farmers. KC's research program is designed to address questions that directly affect the beef producer's bottom line. Specific areas of research involve nutritional management of the 1<sup>st</sup> - and 2<sup>nd</sup> - calf heifer, value-enhancing weaning strategies for calves, and manipulation of cow grazing patterns.

KC originally hails from northwestern North Dakota, where he is still actively involved in the management of his family's cow-calf operation. KC and his wife Karli reside south of Olsburg, Kansas, where they raise boys (Charles and Theodore), paint horses, and, unfortunately, lots of ironweed.

## Age and source verification still needed for Japan

Early in January there was a lot of interest and momentum in age and source verification in anticipation of the re-establishment of the Japanese market. A considerable financial investment was made by the industry in developing QSAs, verifying product and meeting Japanese requirements. When the market was closed again because of prohibited material in one shipment, a portion of that investment was lost. Despite efforts to the contrary, Japan's Health Minister Jiro Kawasaki indicated that all beef trade would halt again if any specified risk materials are found in a US shipment. Given this statement and the knowledge that few processes are 100% perfect, it is no wonder that most are approaching the market reopening much more cautiously.

Nevertheless, there is evidence that more feedlots have completed the QSA establishment process. Feedlots seem happy to get age verified cattle, but are not willing to pay extra at this point for lack of harvest premiums. For now, it seems that most of the product being prepared for shipment to Japan is coming from carcasses meeting the A<sup>40</sup> age

specification. If the Japanese consumer gets their appetite for American beef back, there could be more demand than what can be met by carcass age alone.

Remember it does take some time to go through the steps to become approved to provide age and source verified cattle. A signed affidavit is not enough and will need to be backed with written management plans and documentation. For more information on age and source verification, refer to March 2006 and September 2005 Beef Tips. Producers have a variety of options to participate in these types of programs and some provide additional benefits such as documented health programs. While you might not find a payoff for age and source verification in the next few months, there is reason to hope that the quality and flavor of US beef will bring the Japanese back soon. There is evidence that other markets such as non-hormone treated beef and all natural may be growing and in most cases some type of process verification will be needed similar to the age verification process.

## KSU Stocker Field Day Planned

The **KSU Stocker Field Day** will be held on Thursday, September 28 at the KSU Beef Stocker Unit. Come visit the KSU Beef Stocker Unit and see the latest animal identification technology. We'll offer practical information and management tips to help you optimize your stocker operation and achieve greater flexibility in the evolving beef industry. Pre-registration is \$20.00 by September 1 or \$30.00 at the door. For a copy of the brochure, visit <http://www.beefstockerusa.org/conference/index.htm> or contact Lois at 785-532-1267; [lschrein@ksu.edu](mailto:lschrein@ksu.edu).