



# Beef Tips

May 2012

Department of Animal Sciences & Industry

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

## Upcoming Events

### K-State Cattle Feeders College

Cimarron and Oakley, KS  
May 2-3, 2012  
[www.ksubeef.org](http://www.ksubeef.org)

### Beef Cattle and Forage Crops Field Day

Mound Valley, KS  
May 3, 2012  
[www.ksubeef.org](http://www.ksubeef.org)

### Tallgrass Range School

Camp Wood YMCA, Elmdale, KS  
July 31-August 2  
See details on page 4

### Mid-/Shortgrass Range School

Camp Lakeside, Scott County Lake and  
The Nature Conservancy Smoky Valley Ranch, Logan County  
August 21-23  
See details on page 4

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## *Adapt to conditions and avoid shrink to improve stocker returns*

*Dale Blasi, extension beef specialist*

Historically high grass cattle prices and escalating costs of gain have caused many grass managers to closely evaluate the various inputs and management practices in order to maximize returns. Further complicating this decision process are the existing pasture conditions (water supply) resulting from last year's drought. Moreover, the unseasonably warm temperatures combined with the advent of timely moisture have resulted in native grass pasture growth 3 to 4 weeks ahead of schedule. If cattle have not been placed on pastures this spring on a time schedule to match the earlier than normal growth of grass, it is plausible that calf performance may be disappointing because of advanced grass growth (lower crude protein and higher fiber content). As a result, supplement programs in addition to grazing dates may require adjustment this year.

One often overlooked mistake that can contribute (or help) to an already stressed make or break margin is the management of shrink when calves are removed off of grass. For example, reducing shrink by one percentage unit on an 800 lb steer with a value of \$1.35 per pound is roughly equal to \$10 to 12 dollars per head. Cattle shrink can be impacted by gathering time and conditions, pre-gathering rations and handling.

With respect to gathering time, many operators prefer to gather at first light and have the calves ready for the trucks sometime between 8 and 10 am. According to multi-year research conducted at KSU, producers can pick up about 3 pounds per head per hour for every hour after daylight that the calves are allowed to graze, until 9 a.m. or so. More specifically, steers gathered three hours after daybreak shrunk at a rate of 0.5 percent per hour compared to 0.69 percent per hour for steers gathered at daybreak. Steers shrunk 0.71 and

0.67 percent per hour when gathered at one or two hours after dawn, respectively.

This occurrence is related to the typical grazing pattern of cattle. Depending on factors such as forage type and environment, cattle will usually graze during 2 to 4 distinct periods throughout the day with the primary grazing period being during the early morning. In effect, disrupting this grazing period "robs" them of their main meal of the day. In general, KSU research has shown that cattle shrink at approximately 1.0 percent per hour for the first 3 to 4 hours of food and water deprivation, then shrink declines to as little as 0.1 percent per hour up through 10 hours.

Naturally, stocker operators are concerned about the typically hot weather conditions that are encountered when calves are gathered during the latter summer and fall months and as a result calves are gathered during the very early morning hours. So, delaying the onset of gathering by even 1 to 2 hours and coordinating with the arrival of trucks, a producer will have the opportunity to pick up pounds by grazing longer, and by reducing the amount of time the calves can "melt" off the pounds they carried into the pen.

Be it the inherent disposition or the environment from whence the cattle originate, excitable cattle seem to shrink more and take longer to recover the pounds that they lose. With that being said, most grass cattle managers recognize the importance of careful and minimal stress cattle handling and have the facilities and attitude geared towards quieter handling. While supplement costs are high, strategic supplementation on an every other or

*continued...see Adapt on page 5*

**“You can’t manage what you don’t measure.”**

## Tally Time – Measuring Reproductive Responses

Sandy Johnson, livestock specialist

Operations that use artificial insemination (AI) and synchronization of estrus continually strive to increase pregnancy rates to AI. Working towards an improved response is a good thing, however it could be that you are already doing as good a job as your neighbor, but you are measuring the response differently.

Let’s start with the year I achieved a pregnancy rate to AI of 100 percent. At this extreme result, most would ask about how many head were involved, but they may not ask if the reported result was in the 60 to 80 percent range. In this case, only 3 females were inseminated and the results were either going to be 0, 33, 67 or 100 percent pregnant to AI. Reports of excellent responses mean more when you know how many animals were involved. If there are 20 animals total, one animal more or less pregnant changes the outcome 5 percentage points and if there are 30 head total, one animal changes the outcome by 3.3 percentage points. While our research efforts generally include an entire group of cows, others may selectively AI only the mature cows or only those that calved in a certain time period. These may be sound management choices for a particular producer, but may not be directly comparable to your results.

Often people use the terms pregnancy rate and conception rate interchangeably. The most accepted definitions for these terms are: pregnancy rate equals number pregnant divided by number synchronized or treated and conception rate is number pregnant divided by number inseminated. In the example of animals bred after detected estrus in Table 1, 90 animals are detected in estrus of the 100 animals treated and 54 are determined to be pregnant to AI; conception rate= $54/90=60\%$  and pregnancy rate is  $54/100=54\%$ . For AI after detection of estrus, conception rates will be higher than pregnancy rates. If animals are only inseminated after observed heat, the conception rate may be relatively high, but the pregnancy rate low because of failure to detect many animals in heat. In the case of fixed-timed AI, conception rate will be equal to pregnancy rate because all animals are inseminated. Pregnancy rate to AI is the key number from a practical standpoint.

Another factor that can influence results is the method of determination of AI pregnancy. Failure to return to estrus after an extended AI period is a reliable method especially if combined with actual calving dates. Other methods used might be based on a pregnancy determination, calving dates, calf color or DNA parentage test.

**Table 1. Conception rate and pregnancy rate after estrus AI or fixed-timed AI.**

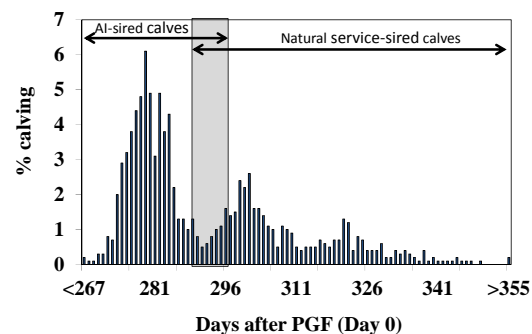
Item	AI after observed estrus	Fixed-time AI
No. synchronized, hd	100	100
Total detected in estrus, hd	90	-
Number inseminated, hd	90	100
Number pregnant, hd	54	54
Conception Rate, %, (n)	60 (54/90)	54 (54/100)
Pregnancy Rate, %, (n)	54 (54/100)	54 (54/100)

Currently, the most accepted method to report research results from synchronization of estrus and AI is to hold natural service sires out for 10 days after AI and pregnancy determination generally occurs between 30 and 40 days after AI with the use of ultrasonography. Variation in fetal growth rate increases the opportunity for error mis-identifying an AI pregnancy as pregnancy advances.

Figure 1 shows calving data from 1476 cows that were part of a multi-state synchronization research project where AI pregnancies were determined as described above and calving dates recorded for all cows. The shaded area indicates the overlap in calving dates between the cows confirmed pregnant to AI and natural service sired calves (overlap days 289 to 296 after the prostaglandin injection given just prior to insemination).

When comparing your results to others, keep in mind the potential differences in measurement technique that may influence your interpretation. If you want to compare your time in running the mile to mine, I’ll be using a sun dial to measure my speed.

Figure 1. Calving distribution after synchronization of estrus



Larson et al., 2006

## Southeast Agricultural Research Center Research Summaries

The following are summaries of two of the studies reported in the Southeast Agricultural Research Center 2011 Progress Report. The complete report is available at: <http://www.ksre.ksu.edu/SEARC/p.aspx?tabid=17>

### Distillers Grains Supplementation Strategy for Grazing Stocker Cattle

*L.W. Lomas and J.L. Moyer*

Previous research at this location evaluating dried distillers grains (DDG) supplementation of stocker cattle grazing smooth bromegrass has shown DDG at 0.5% of body weight per head daily to be the most efficacious level from both an animal performance and economic perspective. This research was conducted to evaluate DDG supplementation strategies that might increase the efficiency of supplement conversion by delaying supplementation until later in the grazing season, when forage quality starts to decline.

A total of 108 steers grazing smooth bromegrass pastures were used to evaluate the effects of distillers grains supplementation strategy on available forage, grazing gains, subsequent finishing gains, and carcass characteristics in 2008, 2009, and 2010. Supplementation treatments evaluated were no supplement, DDG at 0.5% of body weight per head daily during the entire grazing phase, and no supple-

mentation during the first 56 days and DDG at 0.5% of body weight per head daily during the remainder of the grazing phase.

Supplementation with DDG during the entire grazing phase or only during the latter part of the grazing phase resulted in higher ( $P<0.05$ ) grazing gains than feeding no supplement. Supplementation treatment had no effect ( $P>0.05$ ) on available forage during the grazing phase. Grazing performance and supplement conversion efficiency were not different ( $P>0.05$ ). However, compared with steers supplemented during the entire grazing phase, those on the delayed supplementation treatment consumed 155, 142, and 128 lb less DDG in 2008, 2009, and 2010, respectively, but had similar gains. Supplementation during the grazing phase had no effect ( $P>0.05$ ) on finishing performance in 2008 or 2010. In 2009, steers that received no supplementation during the grazing phase had greater ( $P<0.05$ ) finishing gains than those that were supplemented during the entire grazing phase and lower ( $P<0.05$ ) feed:gain ratios than steers that were supplemented with DDG while grazing. Steers supplemented with DDG in 2010 had greater ( $P>0.05$ ) overall gains than those that received no supplement during the grazing phase.

*“...compared with steers supplemented during the entire grazing phase, those on the delayed supplementation treatment consumed 141 pounds less DDG but had similar gains.”*

### Effect of dried distillers grains (DDG) supplementation strategy on available smooth bromegrass forage and grazing and subsequent finishing performance of steer calves grazing smooth bromegrass pastures, Southeast Agricultural Research Center, 2008, 2009, and 2010.

Item	Level of DDG (% body weight/head per day)		
	0	0.5	0.5 delayed <sup>1</sup>
Grazing phase (214 days)			
No. of head	36	36	36
Initial weight, lb	455	455	455
Final weight, lb	785 <sup>a</sup>	893 <sup>b</sup>	887 <sup>b</sup>
Gain, lb	330 <sup>a</sup>	438 <sup>b</sup>	432 <sup>b</sup>
Daily gain, lb	1.55 <sup>a</sup>	2.05 <sup>b</sup>	2.02 <sup>b</sup>
Gain/acre, lb	264 <sup>a</sup>	350 <sup>b</sup>	346 <sup>b</sup>
Total DDG consumption, lb/head	0	727	586
Average DDG consumption, lb/head/day	0	3.4	2.7
DDG, lb/additional gain, lb	---	6.9	5.9
Average available forage, lb of dry matter/acre	6,918	6,831	6,976

<sup>1</sup> Steers were supplemented with DDG only the last 158 days of the grazing phase.

<sup>a,b</sup> Means within a row followed by the same letter do not differ ( $P<0.05$ )

*continued...see Summeries on page 4*

**“Daily gains and DDG intake of heifers fed daily or three days per week were similar during both years.”**

*Summaries . . . continued from page 3*

**Effect of Frequency of Dried Distillers Grains Supplementation on Gains of Heifers Grazing Smooth Bromegrass Pastures**

*L.W. Lomas and J.L. Moyer*

Many producers would prefer to not supplement their cattle on a daily basis to save labor and reduce costs. This research was conducted to compare daily supplementation of grazing stocker cattle with DDG at 0.5% body weight with an equivalent amount of DDG supplemented three days per week (Monday, Wednesday, and Friday).

A total of sixty heifer calves grazing smooth bromegrass pastures were used to compare daily supplementation of dried distillers grains (DDG) with supplementation with an equivalent amount of DDG three days per week (Monday, Wednesday, and Friday) in 2009 and 2010. The rate of DDG fed was based on the equivalent of 0.5% of body weight per head daily. Daily gains and DDG intake of heifers fed daily or three days per week were similar ( $P>0.05$ ) during both years.

**Effect of frequency of dried distillers grains (DDG) supplementation on gains of heifer calves grazing smooth bromegrass pastures, Southeast Agricultural Research Center, 2009 and 2010.**

Item	Supplementation frequency	
	Daily	Three times per week
No. of days	180	180
No. of head	30	30
Initial weight, lb	421	421
Final weight, lb	749	748
Gain, lb	328	327
Daily gain, lb	1.82	1.82
Gain/a, lb	328	327
Total DDG consumption, lb/head	523	522
Average DDG consumption, lb/head/day	2.9	2.9

**KGLC Plans Summer Range Schools**

“The annual Adult Range Schools organized by the Kansas Grazing Lands Coalition (KGLC) will be held beginning in late July for the east school and later in August for the west school,” said Tim Christian, state coordinator for the non-profit educational group. “The Tallgrass Range School is set for July 31-August 2, at Camp Wood YMCA, Elmdale, and the Mid-/Shortgrass Range School will run from August 21-23, at Camp Lakeside, Scott County State Lake and The Nature Conservancy Smoky Valley Ranch in Logan County.”

While the theme and agenda have not been finalized, we have a good handle on the direction and key topics to be covered by our cadre of rancher, agency, university, and organization presenters, he said. The registration fees for 2012 are \$300 per person; the same as the past two years. The fee covers course materials, lodging, meals and other related costs. The deadline for getting registered for the Tallgrass School is July 23 and the cutoff for the Mid-/Shortgrass School is August 13.

Eligible ranchers, managers, landowners, and students will qualify for a scholarship of \$150. Qualifying agency staff will receive \$100 off the fee. Scholarship forms are available now on the KGLC web site, [www.kglc.org](http://www.kglc.org), under 2012 Range Schools on the left side navigation bar. Scholarship applications are due three days prior to registrations, or July 20 for the Tallgrass School and August 10 for the Mid-/Shortgrass School. As in previous years, the scholarship funds are limited, so applying now is advisable.

KGLC has hosted the Schools since 2005, so there is a history of providing useful information through a quality agenda and slate of presenters. Since 2008, 202 students have attended the three-day sessions.

For more information on the 2012 Adult Range Schools, contact Tim Christian, KGLC state coordinator, at 620-241-3636, email to [tdchristian@cox.net](mailto:tdchristian@cox.net), or Ken Sherraden, KGLC assistant, at 785-922-7061, email to [kennethsherraden@sbcglobal.net](mailto:kennethsherraden@sbcglobal.net).

## **International Cattle ID and Traceability: Competitive Implications for the US.**

*Schroeder, T.C. and G.T. Tonsor.*

**Summary:** A recently released study led by Kansas State University economists examined the status of cattle identification (ID) and traceability systems globally. The authors found the US lags behind both major export and import countries in the development, implementation, and adoption of cattle ID and tracing systems.

**Implications:** The observation of domestic cattle ID and tracing systems lagging behind a developing global standard is particularly troubling. While US cattle markets in 2011 were notably boosted by growing beef exports, the comparative disadvantage regarding current ID and tracing systems puts these (and future) beef export gains at risk. Moreover, to date the domestic beef market has largely been trusting of US cattle producers and not overwhelming “forced” implementation of additional ID and tracing systems. This lack of domestic pressure may soon change as domestic consumers are increasingly interested in understanding food production practices. Moreover, this “blessing” of limited domestic pressure to-date may eventually be looked back upon as a “curse” in that it failed to further encourage quicker implementation of additional ID and tracing systems. The US beef industry would be well served to give these and related implications of this study serious thought before additional ID and traceability systems further and more fully become a “cost of doing business” both domestically and abroad.

This summary is from the Jan 2012 edition of CLPER available at: <http://www.agmanager.info/livestock/marketing/CLPER/default.asp>

Schroeder, T.C. and G.T. Tonsor. (2012). “International Cattle ID and Traceability: Competitive Implications for the US.” *Food Policy*. 37:31-40. Available at: <http://www.sciencedirect.com/science/article/pii/S0306919211001229>

## *Adapt .... continued from page 1*

third day basis during the final 2 to 3 weeks of the grazing period will familiarize “edgy” calves to a truck siren or horn and may facilitate their movement to the load out facilities with minimal stress. Moreover, the supplementation of crude protein during the latter grazing period will improve the intake and digestibility of the grass which will result in some improvement in calf performance.

*Knowledge  
for Life*