



# Beef Tips

July 2010

Department of Animal Sciences & Industry

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

## Upcoming Events

### K-State Beef Conference

Aug. 12, 2010  
Manhattan, KS  
[www.KSUBeef.com](http://www.KSUBeef.com)  
Remote sites:  
Butler Community College  
Pratt Community College  
WaKeeney Public Library  
Details on page 5

### KLAKSU Field Days

Coming in August

### Beef Stocker Conference

Sept. 30, 2010  
Manhattan, KS  
[www.beefstockerusa.org](http://www.beefstockerusa.org)

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## Good weaning management is good for animal welfare

*Sandy Johnson, livestock specialist*

When you ask producers about weaning experiences you hear a variety of stories. The late night call from the sheriff looking for the owner of the black cows trotting down the highway; the favorite heifer calf that broke a leg getting out of the weaning pen; too much noise outside to carry on a conversation and enjoy the deck on a beautiful fall evening. Weaning is stressful for calves, cows and people.

The magnitude of weaning as a stressor was emphasized by Dr Joe Stookey, PhD, Western College of Veterinary Medicine, Saskatoon, Canada at the International Symposium on Animal Welfare held in Manhattan in May. He pointed to the fact that cows and calves will bawl for days after weaning as evidence to support his belief that weaning is the most stressful experience in a calf's life. The survival instincts of cattle as prey animals would normally keep them from alerting predators of their whereabouts and to blend in with the herd.

Weaning seems like such a threat to survival that the cow and calf will vocalize loudly for days ignoring the fact that it may draw predators. We know the calf will have all it needs to survive, but the calf doesn't know that yet.

Two methods have been researched recently to reduce the stress of weaning; fenceline weaning and two-stage weaning. Fenceline weaning separates cows and calves by a fenceline in a familiar pasture for several days before removing cows from the area. Two-stage weaning uses an anti-suckling device in place for 3 to 7 days prior to actually separating the cow/calf pair. Both methods reduce signs of behavioral stress by

the calves as compared to traditional weaning. Walking and vocalization are particularly reduced with 2-stage weaning leading some to view it as the least stressful method. Fenceline weaned calves will still walk the fence for the first couple of days but not nearly as much as traditionally weaned calves.

Measurements of postweaning gain indicate that fenceline weaned calves outgain traditionally weaned calves as far as 10 weeks after weaning whereas improvement in gain in 2-stage weaned calves was only apparent in the first 2 to 3 weeks after being removed from dams.

Reducing stress at weaning could involve shifting from traditional weaning to fenceline or 2-stage weaning. These methods won't fit all production settings but what might not have seemed possible at first glance may be when considered further. Weaning as a topic at an animal welfare program is indicative of the time we live in and gives us cause for reflection.

### Other steps to reduce stress at weaning –

Ensure calves are prepared to respond to disease challenge by providing appropriate mineral nutrition and starting a vaccination program prior to weaning. Have both cows and calves together at the weaning site to allow cows to show calves the location of food and water. Teach calves to eat by providing a creep feeder a month before weaning. Make sure pens and waterers are clean and in good repair. Evaluate pen size and bunk placement so that stopping and eating is easier to do than walking the fence.

*continued...see Weaning on page 2*

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

## ***Tally Time – Enterprise records and benchmarking***

*Sandy Johnson, livestock specialist*

The Kansas Farm Management Association (KFMA) publishes a variety of reports summarizing state-wide and enterprise data each year. Recently the 2009 summary was released and can be found at <http://www.agmanager.info/KFMA/> by using the links on the left hand side of the page. This information can be used as benchmark with which to compare your own financial data. The KFMA costs include opportunity costs on family and operator labor, and raised feed and pasture.

According to Michael Langemeier, professor in the KSU Department of Agriculture Economics and KFMA newsletter editor, benchmarking is a process that can be used to identify and implement internal and external best management practices. Moreover, benchmarking can be used as an early warning signal of organizational problems and is an important component to a continuous improvement program.

Both internal and external benchmarking is important to farms and ranches. Internal benchmarking involves an examination of the trend in an indi-

vidual farm’s performance. The benefits of internal benchmarking include the establishment of a baseline of acceptable performance, the identification of gaps in existing performance, and the establishment of standards involving common practices and procedures.

External benchmarking involves comparing an individual farm’s performance to that of similar farms. External benchmarking is a key ingredient in the determination of whether an individual farm has a competitive advantage.

The KFMA newsletters also contain a number of articles that may be of interest. In particular see *Production, Marketing, And Pricing Practices And Methods Of Cow-Calf Producers (December 2009)*; *Risk Preferences and Management Strategies of Cow-Calf Producers (January 2010)*; *Perceived Comparative Advantage of Cow-Calf Producers (February 2010)*.

## ***Weaning .... continued from page 1***

### **Fenceline weaning –**

Don’t let your idea of fenceline weaning stop at cows in one existing pasture and calves in another. Many things will work. Consider fencing cows in a smaller area with supplemental feed and leaving the calves in the bulk of the pasture. In some cases working corrals have been used to hold cows with the calves outside the working area.

A wide range of fencing approaches have been used to separate cows and calves in fenceline weaning; electric and non-electric, barbed, woven and high-tensile. If cows and calves are already trained to an electric fence, a single hot wire with 3 strands of barbed wire may work fine. As with anything tried for the first time, anticipate the need for adjustment. Calves should be familiar with the pasture and location of water prior to fenceline weaning. More suggestions on fenceline weaning can be found in a bulletin by Wright and Pruitt at <http://agbiopubs.sdstate.edu/articles/ExEx2049.pdf>.

### **Two-stage weaning -**

Anti-suckling devices should be in place for 3 to 7 days prior to weaning. If allowed to remain longer, some calves learn how flip the device up so they can still nurse. One study using an adjustable nose clip found those calves were eating less and spent more time idle than fenceline weaned or control calves. The authors speculated that there may have been more discomfort with this particular device as this effect was not reported in similar studies. Devices can be re-used but be sure to disinfect between uses. The disadvantages of this method include at least one additional handling and the distance between the pasture and the working area.

Is setting up for fenceline weaning or applying and removing the anti-suckling devices at a planned time better than treating sick calves on their schedule? Now is the time to be assessing current weaning practices and looking for ways of minimizing stress to improve calf health, performance and well being. It is also the time to be proactive in applying acceptable animal welfare techniques that also have positive production benefits for the producer.

# Nutrient quality of wet distiller's grain maintained when stored under plastic for several months<sup>1</sup>

Justin W. Waggoner, beef systems specialist

Wet distiller's grain (WDG) can often be purchased at very attractive prices during the summer months. The major problem that arises concerning the purchase of WDG during the summer is the relatively short shelf life and the logistics associated with storing WDG. Wet distiller's grains can be stored in bags or mixed with forages and packed into bunkers. However, these storage methods require additional inputs (purchase of forages, grinding/processing of forages, mixing and bagging equipment, fuel, and labor) that substantially increase the cost of the product.

Therefore, a series of case studies have been conducted at the Agricultural Research Center in Hays (ARCH) examining the feasibility of storing WDG in concrete bunkers without the addition of forage as a bulking agent. In each of these case studies 1 to 3 loads of WDG was unloaded directly into small concrete bunkers and covered with 6 mil black plastic and tires. Wet distiller's grains have been stored at ARCH from July to January, and from September to April with little change in nutrient composition (Table 1) and product loss.

A thin layer of mold (approximately 0.5 to 4 inches thick) typically develops on the pile, but may be minimized by ensuring direct contact (no air gaps) between the WDG and the plastic. A sample obtained from the face of each pile was submitted for mycotoxin analysis and found to be safe for all classes of livestock.

Wet distiller's grains have been stored on several occasions for extended periods of time (6 to 8 months) in bunkers without incorporating forage as bulking agent with minimal product or nutrient loss. A cross-section of the pile, containing the mold layer should be analyzed for mycotoxins prior to feeding.

The chemical composition of WDG makes it an excellent candidate for low input storage systems. Wet distillers grains is relatively acidic (pH of 3 to 4), and has a low starch content (2 to 6 percent on a dry basis), therefore if exposure to oxygen is limited the product should remain stable for extended periods of time.

<sup>1</sup>A portion of this work was funded by a grant obtained from the Kansas Corn Commission.

*“...mold may be minimized by ensuring direct contact between the WDG and the plastic.”*

**Table 1: Initial and post storage nutrient composition of wet distiller's grain stored in bunkers.**

Item	Case Study A		Case Study B	
	July 2008	Jan. 2009	Sept. 2009	April 2010
Dry matter, %	35.2	31.5	36.7	36.6
Crude Protein, %	28.0	32.0	30.8	31.1
NDF, %	23.37	21.6	25.1	27.0
ADF, %	17.5	19.3	11.3	13.4
pH	3.8	3.5	3.9	3.9
Net Energy Maint, Mcal/lb	0.80	0.78	0.99	0.97
Net Energy Gain, Mcal/lb	0.52	0.50	0.67	0.65



Covered WDG in bunker



Surface mold after storage



Feeding face of WDG at feed out

## Use caution when baling and feeding sweet clover hay

Larry C. Hollis, D.V.M., M.Ag., extension beef veterinarian

A casual glance would indicate that we have a bumper crop of Yellow Sweet Clover (*Melilotus officinalis*) and/or White Sweet Clover (*Melilotus alba*) growing in ditches, pastures and CRP fields across much of the state of Kansas. The delayed arrival of spring, coupled with adequate moisture in most areas, created a favorable growing environment for this commonly-found plant species. Because of the overabundance of the plant this year in areas suitable for haying, cattle producers should be reminded that this plant may have potential side effects that should be taken into consideration when haying, storing or feeding.

Grazing fresh, undamaged yellow or white sweet clover is normally a safe management practice. Problems with sweet clover typically occur after it is damaged or spoiled, either shortly before or as it is being made into hay. A naturally-occurring substance in the plants called coumarin, which is responsible for the characteristic smell of sweet clover, is converted to a toxic substance called dicoumarin when the plant is damaged by hail, drought or frost prior to harvest, or by improper curing or harvest/storage conditions that allow the hay to become moldy.

Dicoumarin, the active ingredient in some rodent poisons, interferes with the synthesis and metabolism of vitamin K. Vitamin K is essential for proper blood clotting to occur, so dicoumarin toxicity problems are manifested primarily as bruising or bleeding disorders. Bleeding from one or more of the body orifices, a wound, or excessive bleeding following calving is usually the first sign noticed. Young animals are more sensitive to the toxin than older animals. Cows fed affected hay can pass the toxin in the milk to nursing calves.

Because the toxin has to accumulate in the animal's body before signs begin, the damaged or moldy hay usually has to be fed a minimum of 2-3 weeks or longer before any signs begin to appear. Toxicity is usually seen as a herd problem affecting many animals, and is most commonly seen during the winter after prolonged hay feeding. Affected hay will remain toxic for years.

To prevent sweet clover toxicity from occurring, it is essential that recently-damaged plants not be harvested for hay. Also, the stems of sweet clover plants should be examined to make sure that the stems are properly cured (thoroughly dry) before being baled as hay. If conditions are right for hay to

become moldy, they are right for coumarin to convert to dicoumarin.

Questionable or obviously moldy hay should be tested for dicoumarin levels prior to feeding. Check with your county agent or veterinarian to see about having hay samples tested. Test the most heavily damaged or moldiest spots in the bale. If hay is found to contain toxic levels of dicoumarin and it is your primary hay supply, alternating between feeding 1-2 weeks of sweet clover-containing hay and 1-2 weeks of good-quality alfalfa hay has been found to reduce the likelihood of toxicity signs being observed. However, hay containing significant amounts of yellow sweet clover should not be fed as cows approach calving time.



Yellow Sweet Clover— [http://www.kswildflower.org/flower\\_details.php?flowerID=447](http://www.kswildflower.org/flower_details.php?flowerID=447)



White Sweet Clover— [http://www.kswildflower.org/flower\\_details.php?flowerID=233](http://www.kswildflower.org/flower_details.php?flowerID=233)

**“Hay containing significant amounts of yellow sweet clover should not be fed as cows approach calving time.”**

## K-State Beef Conference to Focus on Value Optimization

MANHATTAN, Kan. – Kansas State University Research and Extension will host the 2010 K-State Beef Conference Aug. 12 with the theme “Value Optimization.”

Registration will begin at 8 a.m., followed by the program at 9 a.m. in the Frick Auditorium of Mosier Hall in K-State’s College of Veterinary Medicine Complex in Manhattan. In addition to on-site participation, attendees can register to view the conference live at Pratt Community College, Butler Community College or the WaKeeney Public Library.

More information and online registration is available at: [www.asi.ksu.edu/beefconference](http://www.asi.ksu.edu/beefconference) or by calling Charlotte Bruna at 785-532-1280.

The program includes the following presentations and speakers:

- Welcome - Ken Odde, Department Head, K-State Department of Animal Sciences & Industry;
- Challenges facing the cow/calf industry - Sam Hands, Triangle H Cattle Co.;
- Characterizing change in the beef industry - Justin Waggoner, K-State SW Area Beef Specialist;
- What are buyers looking for? Presentations and panel discussion - Moderator: Larry Hollis, K-State Department of Animal Sciences & Industry with panelists Mark Harmon, Joplin Regional Stockyards; Tom Brink, Five Rivers Cattle Feeding; and Paul Branch, Superior Livestock;

- Backgrounding systems – Presentations and panel discussion - Moderator: Dale Blasi, K-State Department of Animal Sciences & Industry with panelists Gene Holthaus, Holthaus Farms; Rich Porter, Porter Farms; and Kenny Knight, Knight Feedlot;
- Pasture lease rates - Kevin Dhuyvetter, K-State Department of Agricultural Economics;
- Wet distillers storage: no bags, no forage required - Justin Waggoner, K-State SW Area Beef Systems Specialist; and
- What have we learned today? - Greg Henderson, Drovers Magazine.

The early registration fee of \$60 per person or \$100 for two from the same family, ranch or organization is due by July 30. The registration includes conference materials, a noon meal and refreshments.

The 2010 K-State Beef Conference is co-sponsored by K-State Research and Extension, and Quality Liquid Feeds.