

# The Latest Across the Plains

## Timely Reminders

- ◆ Prepare adequate wind shelter and protection from winter elements. A dry, clean hair coat reduces maintenance energy requirements.
- ◆ Test hay and silage to insure proper ration formulation, **be sure to check nitrates on annual crops.**
- ◆ Analyze Winter Feed Supplies.
- ◆ Keep an eye on breakeven projections for cattle placed on feed.
- ◆ Consider limit feeding stock cows. High energy feedstuffs are relatively low cost compared to hay. Limit feeding high energy feeds may substantially reduce cow input costs.
- ◆ Monitor BCS of cows monthly.
- ◆ Keep pens scraped and get manure hauled to fields.
- ◆ Make sure waterers are clean and in good working order.
- ◆ Prepare supplies and pen conditions for weaning calves.
- ◆ Wean calves - contact us about setting up backgrounding diets.
- ◆ Use an internal parasite control product (white wormer) in both cows and calves after freeze up/dormancy occurs.

Great Plains Livestock Consulting, Inc. would like to announce the addition of Jason Warner as our newest nutritionist! Jason earned a Bachelor's degree in Animal Science and Grazing Livestock Systems, followed by a Master's in Animal Science all from the University of Nebraska-Lincoln. He furthered his research career and completed his Ph.D. in Ruminant Nutrition, also from UNL, through his work in alternative (intensified) cow-calf systems. While cow-calf nutrition and management has been Jason's primary research focus, he has research and practical experience in reproductive management, heifer development, and growing/finishing nutrition and management, as well. Jason's objective is to serve GPLC, Inc. clients of all sizes and assist them by providing research information and practical knowledge to make economically sound decisions to improve their businesses. A native of southwest Nebraska, Jason was raised on his family's cow-calf and diversified dryland farming operation and he enjoys working with producers in all facets of the beef industry. In November, Jason will begin working as a part-time consultant and will initiate his full-time position in January 2016.



## Unused Feed

"To avoid criticism, do nothing, say nothing, be nothing." — Elbert Hubbard

## Save Money \$\$\$ Test Your Feeds

Tests are relatively inexpensive, usually costing less than \$18, for the information derived. Contact our office to set up an appointment to have us pull feed samples if we have not done so yet.

## Calendar of Events

- **Nov 3 - 20** North American International Livestock Expo (NAILE), Louisville, KY
- **Nov 11** Veterans Day
- **Nov 10 - 12** Wichita Farm & Ranch Show, Park City, KS
- **Nov 18 - 19** Kansas Agri-Business Expo, Wichita, KS
- **Nov 18 - 19** Gateway Farm Expo, Kearney, NE
- **Nov 18 - 19** McCook Farm & Ranch Expo, McCook, NE
- **Dec 1 - 3** Amarillo Farm & Ranch Show, Amarillo, TX
- **Dec 1 - 3** Ag Retailers Association Conference & Expo, Palm Desert, CA
- **Dec 1 - 3** Greater Peoria Farm Show, Peoria, IL
- **Dec 2 - 3** Farm News Ag Show, Fort Dodge, IA
- **Dec 6 - 8** NGFA Country Elevator Conference & Trade Show, Kansas City, MO
- **Dec 7 - 11** ASTA's CSS & Seed Expo, Chicago, IL
- **Dec 8 - 10** Nebraska Power Farming Show, Lincoln, NE
- **Dec 10 - 12** Tulsa Farm Show, Tulsa, OK
- **Dec 15 - 17** Indiana - Illinois Farm & Equipment Show, Indianapolis, IN



# The Great Plains News Feed



## Feeding and Managing the Cowherd in Confinement or Semi-Confinement Systems

By Jason Warner, M.S.

Although the busy fall season is upon us and winter is around the corner, it might be an appropriate time to reflect on this year's growing season and plan for the next. While many of us were blessed with adequate moisture and grass conditions are generally much improved in most regions relative to previous years, the topic of managing cowherds in confined systems continues to receive interest. In the past, it may have been looked at simply as a drought mitigation strategy, but many in the industry are now considering or implementing it as an alternative production system. No doubt this is a result of several complicated factors: changes in land use and decreasing pasture availability, increasing rental and purchase prices for grass, generally high real estate values, and variable profitability in row crops to name a few. As interest in nationwide cowherd expansion grows, some question where the cows will be located and how they will be managed. Regardless of the reason for considering feeding cows in confinement, there are key nutrition and management items that need to be addressed for it to be successful. This topic was discussed by Dr. Jeremy Martin in a previous article (March /April 2013 Newsletter), in which he emphasized the importance of planning ahead and preparation, and I strongly agree that adequate preparation and good management are fundamental for success.

An important first step to determine if confinement or semi-confinement is right for you is to assess the infrastructure of your operation. Obviously, any feeding program will be implemented much easier if sufficient facilities, labor, and equipment for handling and delivering feed are available. If your business includes both a cowherd and feedlot or if you simply have pen space available, a confined cowherd may fit well with your current operation. A reliable feed supply is critical, specifically inexpensive forage and a protein and/or energy source. Total confinement and semi-confinement have varying definitions, but for most total confinement refers to keeping cows penned in an open lot or confinement barn year-round. Likewise, semi-confinement usually means the cowherd is confined and fed only a few months during the year. Cattle can be confined and fed in a feedlot pen or on a trap or sacrifice pasture. No matter what your terminology or system is, it is essential that all people involved with your operation (including your nutritionist) have a clear understanding of your goals and expectations.

### Nutrition

Cow nutrient requirements change throughout the year based on stage of production, so diets need to be formulated accordingly. A wide variety of feeds can be used in cow diets including any type of hay or silage, corn milling co-products, wheat milling co-products, crop residues, and sugar beet pulp. Data from several studies show that limit-feeding programs can be used to maintain cow body weight (BW) and body condition score (BCS) at a lower intake than what they would typically consume and still achieve acceptable conception rates. Early-weaning is often discussed with confined cow programs and is a good option for those who can feed cows and calves separately. While recent data (Warner et al., 2015) suggest total feed requirements are roughly the same for nursing pairs as they are for weaned cows and calves, early-weaned calves are very efficient and will perform well if fed a nutrient dense diet. If pairs are fed together, consider options for creep feeding calves. An advantage to confined feeding is that calves are bunk broke at an early age which makes weaning an easier process.

### Reproduction

One of the biggest advantages for having the cowherd confined

is the ability to manipulate BCS to an appropriate level at calving (5.0 – 5.5 for cows; 6.0 for heifers) through controlling the nutrition program. This is important because BCS at calving influences the duration of the postpartum anestrous interval, the proportion of females cycling at the start of breeding, first service conception, and overall pregnancy rates. If cow nutrition is managed correctly, it should not be a challenge for females to become pregnant. The greater challenge for reproduction may lie with females in excessive body condition. Another benefit for a confined system is that it enables the use of estrous synchronization for either A.I. or natural service. This allows more females to become pregnant at the start of the breeding season and the subsequent calving interval to be shorter. An A.I. program also allows one to improve the quality of their calf crop through the use of proven, superior genetics.

### Health

Health is understandably a concern for many people. My experience has been that calves represent a greater concern than mature cows because their immune system is still developing. I am an advocate for calving outside the drylot if at all possible. Many factors influence health, including nutritional status of the cowherd. Cow BCS is directly related to colostrum quality (Odde et al., 1986), and calves with improved immune status through the consumption of higher quality colostrum have decreased morbidity prior to weaning (Grotelueschen, 2014). Health and vaccination protocols will vary for each operation. We encourage you to work regularly with a veterinarian when deciding on protocols, but we would appreciate the opportunity to be part of that discussion. The job of the nutritionist and veterinarian is to help make an operation more successful, which can be accomplished more easily if they work together.

### General Management

Providing adequate bunk space is essential. We recommend a minimum of 24" for dry cows or bulls and 36" for a cow-calf pair to allow the calf access to feed. Pen size and space requirements will vary, but general recommendations are 500 to 800 ft<sup>2</sup> per pair in open lots and 100 to 150 ft<sup>2</sup> per pair in confinement barns. All things related to pen maintenance for feedlot cattle also apply for confined cows and calves. Pens should be mounded, cleaned regularly, and well drained. Many feeding facilities are not designed for small calves, so bunk rails need to be lowered, holes in the fences filled, and approaches for waterers and bunks graded so calves can access water and feed. Provide shade for cows and calves if possible and consider bedding pens. If pairs are in confinement, I suggest providing a creep area that only calves can access. This can simply be a limited amount of pasture or forage that allows them to escape the dust and potential injury when cows are breeding. Finally, consider using two methods of fly control.

### Economics

The economics of confined or semi-confined systems ultimately depend on the price relationship between grass and feed, and cowherd reproductive performance. Currently, feed prices have moderated significantly which improves the outlook for confined systems. Every year is different, but the price of grass in most areas has continued to increase and will not likely go down with strong demand. Given the choice, a semi-confined system that consists of grazing crop residues or another forage during fall/winter and drylot feeding during summer appears the most economical and logical. Results from an economic analysis with a summer-calving cowherd (Warner et al., 2015) indicate that cost of production through weaning can be reduced approximately \$0.40 per lb by incorporating cornstalk grazing into the system as opposed to feeding cows in confinement year-round. The takeaway here is that feeding cows 365 days a year adds cost to the system, so if you can allow the cow to graze for part of the year it will likely improve the economics. Regardless of your location, use your local forage/feed resources and build the system to fit your operation accordingly. This may also require us to re-think the timing of calving and weaning. For more details on rations, protocols, and budgets please contact us at Great Plains Livestock Consulting.





# The Great Plains News Feed



## Grazing Crop Residues

By Dr. Ki Fanning, Ph.D., PAS

I have visited with hundreds of producers about grazing crop residues. There are many different thoughts about why they don't want to do so. However, the practice is beneficial for both the soil and the cattle. The cattle are able to obtain valuable nutrients from the residue that would be otherwise wasted and other acres would then have to be dedicated to raising feed to maintain those animals. Cattle do not remove nutrients from the field, they only use the nutrients and return them to the soil in a form that is more easily utilized by the crops in the spring. The conversion of residue to manure allows for the ground to warm faster in the spring due to additional sun light reaching the ground. The practice is also beneficial to both the crop farmer as well as the rancher. The crop farmer is able to generate more income per acre, essentially double cropping the field. The rancher is able to maintain the cattle at a reduced cost to winter range or feeding them in a bunk.

Letting the cow harvest forages is generally more economical than mechanically harvesting feeds for several obvious reasons and some less obvious ones. In essence, the cow acts as the swather, baler, grinder, and feed wagon, but she also acts as the bedding blower, compost turner, and manure spreader. Other advantages to grazing crop residue are dispersing the disease load, soils are better for their feet than hard pen surfaces, and reduced labor of feeding cattle.

"The fields do not have fences" is a common rebuttal when I suggest grazing cattle on corn stalks. A single strand of smooth wire and an electric fence is a very effective method of containing livestock in a field without permanent fences. It is fast to install and remove and it is very inexpensive. It can also be used to cross-fence fields to better utilize the crop residue. I have seen electric fences run down a pivot and the pivot act as a movable fence to strip graze. I would be remiss if I did not point out the fact that young calves are not as easily contained using a single strand electric fence as cows are. This may be a problem with fields near highways or frequently traveled roads.

Water may also be an issue. Tanks can be filled using an irrigation well. In the case of dryland acres, a neighboring pasture or pond may be available. If not, drilling a domestic well may be able to pay for itself depending on the size of field and the depth of the water table. The last option would be hauling water to the cows (gestating cow – 8 gal, lactating cow – 15 gal). To estimate water needs, refer to our water intake card. Contact us if you don't have one.

According to Ohio State University, livestock can cause soil compaction in the top six inches of soil; however, this is only a problem when soils are wet and cattle are overstocked. Soil compaction can be corrected by the normal freezing and thawing of the ground, disking, or chiseling the field. Typically, cattle only consume 25% of the residue available which leaves plenty of residue to control erosion from wind and water. Likewise, cattle do not actually remove nutrients from the field as opposed to baling the residue; because they consume the forage and then re-apply the manure to the soil.

Contrary to popular myth, grazing crop residues is not a detriment to crop yields in the following year(s). In fact, yields in some cases are increased by grazing crop residues. The first two tables are from fields that would be a heavier soil similar to the corn belt, while

the third table is representative of a sandier type of soil. The following three tables are from Effect of Corn Residue Removal on Subsequent Crop Yields in the University of Nebraska 2015 Beef Cattle Report. Table 1 compares two fields in a corn and bean rotation over a 16 year period. The field grazed has similar corn yields to the field that was never grazed; however, there is a 1.5 bu/ac advantage for bean yield to the field that is grazed compared to the field that is never grazed.

Table 1. Effect of grazing corn residue in the spring over a 16-year period (1997-2013) on corn and soybean yields<sup>1</sup> from a field managed in an annual corn-soybean rotation at Mead, Neb.

	Ungrazed	Spring grazed	SEM <sup>1</sup>	P-value <sup>2</sup>
Corn, bu/ac	214	214	2.6	0.96
Soybean, bu/ac	57.8 <sup>b</sup>	59.3 <sup>a</sup>	0.54	0.03

<sup>1</sup>Yields are based on 13% moisture for soybeans and 15.5% moisture for corn grain.

<sup>2</sup>Means with differing superscripts in a row are different ( $P < 0.05$ ).

Table 2 compares three fields in a corn and bean rotation over an 11 year period. One field is never grazed, the second is grazed in the spring, and the third is grazed in the fall. Corn yields were not significantly affected; however, the soybean yields were increased by the fall grazing compared to the fields that were never grazed or the spring grazed field. There were no differences between the spring grazed and the ungrazed fields.

Table 2. Effect of grazing corn residue in the fall/winter or spring on corn and soybean yields<sup>1</sup> over a 10-year period (2003-2013) from a field managed in an annual corn-soybean rotation at Mead, Neb.

	Ungrazed	Spring grazed	Fall grazed	SEM	P-value <sup>2</sup>
Corn, bu/ac	207	209	211	3.9	0.55
Soybean, bu/ac	62.1 <sup>b</sup>	63.5 <sup>b</sup>	65.5 <sup>a</sup>	0.54	< 0.01

<sup>1</sup>Yields are based on 13% moisture for soybeans and 15.5% moisture for corn grain.

<sup>2</sup>Means with differing superscripts in a row are different ( $P < 0.05$ ).

Table 3 compares three fields in a corn on corn production system and grazed at different stocking rates over a 5 year period. The first field has never been grazed, the second is stocked at 1 AUM/ac, and the third is stocked at 2 AUM/ac. No significant differences in corn yields were observed due to grazing system; however, there is a numerical trend for increased corn yields as stocking rate increases.

Table 3. Effect of corn residue removal on corn grain yield<sup>1</sup> over a five-year period (2009-2013) from a field used for continuous corn production at Brule, Neb.

	Ungrazed	Fall grazing 1 AUM/ac	Fall grazing 2 AUM/ac	Baled	SEM	P-value
Corn, bu/ac	148	152	155	147	6.7	0.16

<sup>1</sup>Yields are based on 15.5% moisture.

In summary, grazing crop residue is beneficial to the farmer by producing an additional source of income off the land. Grazing crop residue is beneficial to the soil and crops by allowing additional sunlight to reach the ground in the spring and to increase the rate of breakdown of crop residues without removal of nutrients. It is beneficial to the rancher by lowering the carrying cost of a cow, or calves to be held over for grass, or the cost of gains on weaned calves, and it is beneficial to the animals by dispersing disease load and providing a softer surface for the animals to be housed.





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