

The Latest Across the Plains

Timely Reminders

- ◆ Test Forages.
- ◆ Inoculate and cover silage/earlage piles.
- ◆ Scrape pens and pile manure.
- ◆ Make sure waterers are clean and in good working order.
- ◆ Visit with your veterinarian on a vaccination program and your nutritionist on an implant and receiving/weaning program.
- ◆ Start evaluating fall ingredient and pricing for new diet formulations now. Feed prices have dropped significantly.
- ◆ Consider the use of energy supplements and diets on cool season pasture grazing this fall to help boost gains since the value of gain is very high.
- ◆ With expensive feeder calf prices, consider some form of price protection by forward contracting or utilizing a put.

Unused Feed

Efficient is doing the job right; Effective is doing the right job. Strive to be both.

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.

What's New in the Industry

Cattle prices are high and the difference between poor quality and good quality calves is relatively low. Don't increase your risk by buying poor quality calves!

We want to hear from you...

Do you have a question you would like one of the nutritionists to address in depth in our newsletter? Just submit your question through our website www.GPLC-Inc.com and we will get to work on it.

Calendar of Events

- **Aug 29 - Sept 7** Vermont State Fair, Rutland, VT
- **Sep 4 - 14** Utah State Fair, Salt Lake City, UT
- **Sep 5 - 14** Kansas State Fair, Hutchinson, KS
- **Sep 5 - 14** Tennessee State Fair, Nashville, TN
- **Sep 5 - 21** Washington State Fair, Puyallup, WA
- **Sep 9 - 11** Big Iron Farm Show, West Fargo, ND
- **Sep 9 - 11** Husker Harvest Days, Grand Island, NE
- **Sep 10 - 21** New Mexico State Fair, Albuquerque, NM
- **Sep 12 - 28** Four State Farm Show, Parsons, KS
- **Sep 12 - 28** Massachusetts State Fair, West Springfield, MA
- **Sep 16 - 18** Farm Science Review, London, OH
- **Sep 26 - 28** World Beef Expo, West Allis, WI
- **Sep 26 - Oct 19** Texas State Fair, Dallas, TX
- **Sep 26 - Oct 5** Virginia State Fair, Doswell, VA
- **Sep 30 - Oct 4** World Dairy Expo, Madison, WI
- **Oct 1 - Oct 12** Mississippi State Fair, Jackson, MS
- **Oct 3 - 5** Ozark Fall Farmfest, Springfield, MO
- **Oct 8 - 19** South Carolina State Fair, Columbia, SC
- **October 14 - 16** Sunbelt Ag Expo, Moultrie, GA
- **Oct 16 - 26** North Carolina State Fair, Raleigh, NC
- **Oct 17 - 26** Georgia - Carolina State Fair, Augusta, GA
- **Oct 23 - Nov 2** Louisiana State Fair, Baton Rouge, LA
- **Oct 24 - Nov 2** Alabama State Fair, Mobile, AL
- **Oct 31** Happy Halloween



Managing Mycotoxins

By Luke Miller, M.S., Nutritionist

A unique aspect of beef production is that we can utilize feed ingredients that have been “damaged” or “rejected” and are not suitable for other species of livestock, nor marketable for human consumption. However, caution must be taken when feeding these ingredients because they can contain molds which can produce mycotoxins. Mold grows when the right combination of oxygen, moisture, substrate, and temperature are present. These factors, which induce mold growth, become present when a plant is damaged due to drought, insects, or excess moisture. Mold growth can lead to mycotoxin production, which may be detrimental to performance.

Last fall, many areas experienced less than ideal drying weather for corn. This summer, some locations around the Midwest witnessed the same thing when it was time to harvest wheat. This created an opportunity for those whom had access to the grain containing some level of mycotoxins which had a reduced value at the elevator. However, it also demanded a certain level of management to ensure that we were not subject to production losses due to excess mycotoxin intake by our cattle. We still don’t know what is in store for fall 2014 harvest, but being prepared to take action when a feed ingredient becomes available at less than market value can have a significant effect on your bottom line when it comes to feed cost.

Mycotoxins in forages can be difficult to manage because cow/calf and growing rations are typically composed of higher roughage levels than finishing rations. Forage mycotoxins are typically the result of not enough moisture being available for ideal fermentation to occur. Not spending enough time packing silage will create air pockets, which also leads to poor fermentation. When harvesting forages or grains that contain high levels of moisture, an inoculant is always recommended because it will speed the fermentation process, and can greatly reduce the opportunities for mold growth.

Aflatoxin is the most common mycotoxin and is primarily associated with corn and corn silage. It predominately affects the liver, causing hemorrhaging and suppression of the immune system. Reduction in digestibility can also occur, resulting in decreased performance.

Zearalenone is typically associated with losses in reproduction. It is an estrogenic compound that may cause animals to display a constant heat or may inhibit estrus. Therefore, if raising breeding stock, grains contaminated with zearalenone should not be fed. Zearalenone contamination is particularly an issue during years characterized by abnormally wet and cool weather. Symptoms of this toxin are: reduced conception rates, early embryonic death, poor feed efficiency, swelling of female reproductive organs, reduced milk production, reduced growth rate, and increased morbidity or mortality.

Vomitoxin, also referred to as DON, is created by the pink mold that grows in warm wet weather often noted in corn silage. Lower temperatures may increase toxin production once the corn or small grain is infected. This toxin’s symptoms include diarrhea, reduced reproduction, vomiting, reduced growth, poor feed efficiency, neurological problems, and increased mortality.

Fumonisin is more prevalent during periods of high humidity when preceded by hot and dry weather. Cattle are typically not

affected to as great of an extent as other livestock species, but liver damage may still occur.

T-2 toxin causes digestive upsets, hemorrhage of the intestine, poor growth and feed efficiency, bloody diarrhea, and an increase in morbidity and mortality.

Ergot is not a traditional mycotoxin, but is a type of fungus that has become more prevalent in the last few years. Cattle producers accustomed to dealing with fescue may be familiar with it because it is the primary cause of fescue toxicosis. However, it can be found in many other cool season forages such as brome, rye, wheat, and triticale. The primary symptoms of ergot poisoning are loss of tail switches, hooves, and ears due to decreased blood flow. Reproductive losses, suppressed performance, neurological disorders, and even death are other common causes associated with feeding ergot infected forages. Feeding a supplement designed to help increase blood flow and decrease body temperature are two ways to help combat ergot poisoning. Talk to your nutritionist about advice on this matter. However, if present at high levels, little can be done to bind it or reduce uptake by the animal. In many cases, dilution is the most practical solution.

Potentially Harmful Toxin Levels for a Total Diet (DM)					
	Dairy	Feedlot	Swine	Poultry	Equine
Toxin	Values listed in gray are PPM, others listed in PPB				
Aflatoxin	20	20	20	20	20
Vomitoxin (DON)	3	10	1	2	500
Fumonison	2	7	10	20	500
T-2 Toxin	100	500	100	100	NA
Zearalenone	400	5	300	10	50
Ergot toxins (combined)	500	500	500	750	300
www.rockriverlab.com					

Because toxin concentrations are not evenly spread throughout a feed source, getting a representative sample can sometimes be problematic. A sub-sample from many different locations should be taken in a large bucket or sack, and then mixed, and a secondary sample pulled from there. The sample should not be frozen, but refrigeration is fine. All air should be removed from the bag and it should be kept out of the heat to prevent further mold growth, and then sent to a lab as soon as possible.

Reduced dry-matter intake is typically the first sign that a mycotoxin is present. Cleaning bunks regularly and properly managing silage piles helps reduce the growth of mold that may already be present. Maintaining a flat face on silage piles and feeding at least 6 inches into a pile or bag per day will keep feed fresh and minimize exposure to oxygen. Furthermore, hauling silage from a far-away pit and temporarily storing it at the feedlot for periods of time to be mixed into the TMR later should be done with caution. Disturbing fermented feeds and exposing them to oxygen for extended amounts of time can significantly increase mold production. In the winter, do not move more than a one week’s supply of feed. During periods of warmer weather, no more than a 3-4 day supply. If you are concerned with mycotoxin infected feeds, don’t hesitate to talk to one of our nutritionists about immediately getting feed tested, the possibility of utilizing a commercially available binder, and diluting the infected ingredient with other feeds so we can help you minimize the negative effects of mycotoxins.





Heifer Development

By Dan Larson, Ph.D., Nutritionist

Weaning is upon us and along with it comes the decision on how many heifers to retain and perhaps more importantly, how to develop them. The research clearly demonstrates that heifer development has both immediate and lasting effects on profitability and cow longevity. For a review, I refer readers to previous issues of this newsletter on our website (May/June, 2009) and numerous beef reports at beef.unl.edu. In this article, I want to discuss the practical application of development strategies and what this means from an economic standpoint.

The premise for contemporary heifer development is that heifers do not need to reach 65% of their mature weight by first breeding. Rather, a slightly lower percentage is adequate and, one may argue, more appropriate. I must also preface the article by stating that I do not expect 100% of heifers to become pregnant. An 80% pregnancy rate is a more realistic target and likely means that you have induced the right amount of stress to sort out the reproductively inefficient females. Having said that, first service conception rate is still extremely important and a progesterone based synchronization program (MGA or CIDR) will help insure the reproductively sound heifers breed up early.

The research on target weight and pregnancy rate is clear. However, the focus of this article is the intrinsic benefits of training a virgin heifer to be a cow. A small body of very interesting research has provided evidence that heifers clearly learn how to graze stockpiled forages, corn stalks or winter pasture after weaning, making them substantially more capable to utilize low quality forages as a bred female. Research conducted by Dr. Rick Funston and co-workers at the University of Nebraska have demonstrated that post weaning development alters how bred heifers respond to grazing low quality forage.

Previous treatment	Stalks	Drylot	<i>Heifers developed on corn stalks post weaning gained 50% more weight than counterparts developed in a dry lot when turned to corn stalks after the first breeding season.</i>
ADG, lb/day	0.66	0.32	
Precalving weight gain	55 lb	29 lb	

This adaptation is not only psychological, but also physiological. The same body of research generated the following results proving a physiological effect of heifer development. Though the metabolic pathway is not yet fully understood, postweaning heifer development creates a lasting impact on feed efficiency in the bred heifer.

Previous treatment	Stalks	Drylot	<i>Heifers developed on corn stalks post weaning gained 10 lb more weight than counterparts developed in a dry lot when turned to corn stalks after the first breeding season and did it 10% more efficiently.</i>
Feed efficiency	13.7:1	15.4:1	
Precalving weight gain	129 lb	119 lb	

Additional research from Dr. Funston also suggests that cattle may learn how to graze stockpiled forages more rapidly if "trained" by an experienced animal. To this end, we recommend that if you routinely graze corn stalks or dormant grass during the winter; **use your mature cows to train the virgin heifers.** This can be easily accomplished by weaning the heifer calves for a period of 20-30 days and simply turning them back out with their dam's after they are sufficiently weaned. If winter grazing is not an option, the data clearly indicates that lower energy heifer development will make a more efficient cow herd. This includes not only feed efficiency, but also reproductive efficiency as indicated by data from both the University of Nebraska and the USDA station in Miles City, MT.

Heifer development programs will vary widely across the country depending on forage resources available post weaning. It is imperative to keep the big picture in mind when designing a heifer development program. The goal must be to maintain a moderately increasing plane of nutrition **all the way on to pasture.** The most common failing of many development plans is the plane of nutrition prior to turn out is so high, the transition to grass is actually a reduction in nutrient intake. Keep in mind, a modest increase in total nutrition provision prior to breeding will help initiate puberty and work in conjunction with your synchronization program. However, this must correlate with your pasture resources. Work with your nutritionist to design a program that best fits your spring pasture.

The take home messages from this article are:

- 1) Develop a heifer as similar as possible to how she will be maintained as a stock cow, doing so will allow her to make the transition to a stock cow program seamlessly.
- 2) Take advantage of both the psychological and physiological benefits of heifer development to make the most efficient cow herd possible.
- 3) Manage the development program with the transition from breeding to spring pasture in mind, doing so will limit both reproductive failure and body condition loss after turnout.
- 4) Stress heifers sufficiently to ensure reproductively inefficient heifers are culled from the herd prior to the first calving season.

This is perhaps a paradigm shift for many cattlemen. As any good cattle steward, we like all ages of cattle to look as smooth and uniform as possible. However, the main purpose of a well-designed heifer development protocol should be to stress the heifers sufficiently to cull out the feed and reproductively inefficient animals before they enter the cowherd. The key factors of such a system are that we have put relatively little money into the heifers prior to breeding and that they will remain a body condition conducive to entering the feedlot as a long yearling after pregnancy diagnosis in the fall if they are open. Please visit with your GPLC nutritionist to design a program that bests your feed resources, environment and cowherd goals.





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