

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 pastures.
- ◆ 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) after freeze up/dormancy occurs. In both cows and calves.

Unused Feed

Motto to Live By: Life should NOT be a journey to the grave with the intention of arriving safely in an attractive and well preserved body, but rather to skid in sideways, body thoroughly used up, totally worn out, and screaming, "WOO HOO, what a ride!"

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.

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

- **Nov 8 - 21** North American International Livestock Expo (NAILE), Louisville, KY
- **Nov 11** Veterans Day
- **Nov 11 - 13** Wichita Farm & Ranch Show, Park City, KS
- **Nov 19 - 20** Kansas Agri-Business Expo, Wichita, KS
- **Nov 19 - 20** Gateway Farm Expo, Kearney, NE
- **Nov 19 - 20** McCook Farm & Ranch Expo, McCook, NE
- **Nov 27** Thanksgiving
- **Dec 2 - 4** Amarillo Farm & Ranch Show, Amarillo, TX
- **Dec 2 - 5** Ag Retailers Association Conference & Expo, New Orleans, LA
- **Dec 2 - 4** Greater Peoria Farm Show, Peoria, IL
- **Dec 3 - 4** Farm News Ag Show, Fort Dodge, IA
- **Dec 7 - 9** NGFA Country Elevator Conference & Trade Show, Indianapolis, IN
- **Dec 8 - 12** ASTA's CSS & Seed Expo, Chicago, IL
- **Dec 9 - 11** Nebraska Power Farming Show, Lincoln, NE
- **Dec 11 - 13** Tulsa Farm Show, Tulsa, OK
- **Dec 16 - 18** Indiana - Illinois Farm & Equipment Show, Indianapolis, IN
- **Dec 24** Christmas Eve
- **Dec 25** Christmas Day
- **Dec 31** New Years Eve

Have a Safe and Happy New Year!



The Great Plains News Feed



Winter Weather Effects on Nutrient Requirements of Cattle

By *Jeremy Martin, Ph.D., Nutritionist*

We recently experienced some unseasonably warm fall weather in Western Nebraska, so as I write this, winter seems a ways away. While I am certainly not a forecaster, I suppose we will have to adjust to some cold, and perhaps wet, winter weather before long. Now is a good time to take advantage of the remaining nice weather to winterize your operation. From a nutritional standpoint, the following are some points to keep in mind regarding the effects of winter weather on cattle performance.

Lower critical temperature is the temperature at the lower end of the thermoneutral zone. At temperatures below this, cattle must compensate by increasing heat production, and thus they will have higher maintenance energy requirements. Higher maintenance energy requirements mean one of two things: either cattle eat more to achieve the same amount of production (gain, lactation, etc.) or they eat the same and produce less. The lower critical temperature for cattle with dry, winter coats is generally considered to be about 30 degrees Fahrenheit (including wind chill). The lower critical temperature is dependent on body condition, coat thickness, wetness, and ability to find shelter from the wind. Below this temperature, energy requirements of cattle increase approximately 1% for each degree the wind chill is below 30 degrees. Therefore, if the wind chill is 0 degrees, maintenance energy requirements will increase by 30%.

Wind Chill (deg F)	Increased Energy Requirements of Cattle with Dry, Winter Coat	Increased Energy Requirements of Cattle with Wet Coat
59	0%	0%
32	0%	27%
20	12%	39%
10	22%	49%
0	32%	59%
-10	42%	69%
-20	52%	79%

Moisture has a tremendous effect on maintenance energy requirements of cattle during cold weather. The lower critical temperature for cattle with wet hair coats is generally considered to be 59 degrees Fahrenheit. Dry hair coats trap air and provide a layer of insulation to help cattle cope with cold stress. As their coats become wet, the hair lays flat and the cattle are deprived of their layer of insulation. Energy requirements of cattle with wet coats also increase much more rapidly than requirements of cattle with dry coats. For every degree the wind chill is below 59 degrees, cattle that are wet require 2% more energy to maintain body temperature and body weight. See Table 1 for a

direct comparison of how moisture affects energy requirements of cattle during cold weather.

As cold stress increases the maintenance energy requirements of cattle, nutrition must compensate for increased energy requirements in order to maintain performance or body condition score. The appropriate strategy depends greatly on the type of cattle and feeding situation.

Feedlot cattle on rations designed for maximum gain are consuming high levels of energy compared to their maintenance requirements. Dry matter intake of feedlot cattle increases during cold weather, compensating somewhat for the effects of temperature. However, wet pen surfaces contribute to wet cattle – and can potentially increase maintenance energy requirements by nearly double. We recommend removing snow from pens any time accumulation could lead to wet or muddy pens. The cost of doing so will be more than made up for in cattle health and performance. Likewise, with low quality roughage being inexpensive, bedding pens to keep cattle dry makes financial sense, especially when receiving calves.

Storm rations should be used when major fronts and/or associated moisture cause interruptions in the daily routine of the cattle or feeding crew. If cattle are being fed on schedule and consumption is not limited substantially by weather conditions, there is no need to use a storm ration. In many cases, a good storm ration strategy is simply to back up one ration, increasing the roughage level and diluting the energy to prevent digestive deaths when the storm passes. By doing so, it is possible to maintain dry matter intake with limited risk to the cattle, and limited loss of performance. In extreme cases of cold weather, cattle may back off feed even if no storm is involved. In these cases, it is wise to use a storm ration before cattle come aggressively back to the bunk.

Cowherd management in cold weather depends on whether cows are drylotted or grazing. Cows in a drylot will generally eat more in cold weather, and simply delivering more feed is a viable option to minimize the effects of cold stress. Again, maintaining a dry, smooth pen surface is critical.

Grazing animals often have reduced intake during cold snaps, especially if they must be exposed to wind in order to graze. Energy supplementation can help maintain body condition score in grazing situations. We recommend fiber-based energy supplements such as soybean hulls, gluten feed, distiller's grains, etc. to provide energy without reducing forage digestibility. If weather conditions prevent cows from grazing, feed enough good quality grass or small grain hay to keep cows full. Grass or small grain hay with high TDN tests are recommended as they provide similar energy as alfalfa hay with reduced rate of passage, thus they are a more effective aid in maintaining core temperature. Avoid the temptation to feed cows more than 0.3% of body weight in corn or other grain during cold stress, unless your diet is specifically designed to do so. Although concentrates contain more energy, forages produce more heat in the rumen and aid cows in maintaining core body temperature.

I have heard all kinds of forecasts for this winter, and I am sure all of us will experience at least some cold and/or snow this winter. Plan ahead, and communicate your plan to all involved, so winter weather will have minimal impact on your operation.





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Genetically Engineered Feeds Shown To Be Safe For Consumption, Again

By Zeb Prawl, M.S., Nutritionist

The debate on the use of Genetically Engineered (GE) feeds, or sometimes more commonly referred to as Genetically Modified Organisms (GMO) feeds, has been going on for the last several years. On a weekly basis, if not daily, I read something online whether in the news or on social media, about someone who is fed up with big corporations who are getting rich off of the GMO products. These people believe these companies are producing and single-handedly destroying the human race because they think these GMO's are not safe. Science is rarely considered in these rants. However, based on a recent review paper that has just been published in the Journal of Animal Science, it probably should be in this case.

Published in September 2014 in the Journal of Animal Science, the most recent article regarding the use of GE feeds in food animal production provides a comprehensive review of the literature regarding the safety of feeding GE feeds to cattle, among other species. The paper is written by Alison Van Eenennaam, a cooperative extension specialist in animal biotechnology in the Department of Animal Science at the University of California, Davis, along with research assistant Amy Young. In it, they review data from peer reviewed, as well as some non-peer reviewed papers, going back to 1983, 13 years before GE crops were first introduced.

There are many GE crops approved for use in the US. A total of 165 strains in 19 plant species have been approved through a comprehensive risk assessment set forth by an international set of accepted guidelines. Since 1996 when GE crops were first approved and introduced into the US market, their adoption for crop and livestock feed production has boomed. In 2013, 95% of the sugar beet, 93% of the soybeans, and 90% of both the corn and cotton acres planted in the US were GE varieties. But as some activists might want the uninformed public to believe, these crops are not planted as a feed source that will enhance animal feeding performance. Conversely, the data has shown that no significant differences exist in terms of feed digestibility, performance, or health of the animals that could be attributed to GE crops vs those fed non-GE crops before 1996. While improvements in cattle performance have occurred over this time frame, the reasons for these improvements have been attributed to better genetics in the animals, better animal husbandry practices, and continued understanding and implementation of improved feeding management programs.

The research summary illustrates that multiple generations of food producing animals including cattle, sheep, goats, pigs, chickens, quail, rabbits, and fish have been consuming GE feeds for more than 15 years with no negative effects on performance. Furthermore, the comparison has been done on animals looking at both body and nutritional composition of the animals and no differences have been found between animals fed

GE feeds vs those that have been fed conventional feeds. Additionally, organ pathology and function is similar between GE and non-GE fed animals, and gut morphology and gut bacteria are also similar between the two.

In order to help understand the magnitude of the numbers of animals that have been fed GE feeds since 1996, the following table estimates the number of food producing animals raised in the US during a 10 year period. With more than 95% of the animals produced in this time frame consuming GE feeds, that equals over 97 BILLION animals over a 10 year span that have had no signs of negative effects on health or performance as shown by the authors' literature review.

Table 1. Estimated cumulative number of livestock raised in the United States during the period from 2000 to 2011

Industry	United States
Broilers	94,683,600,000
Layer Hens	3,722,708,000
Turkeys	2,733,500,000
Beef Cattle	339,350,000
Dairy Cows	33,550,000
Hogs	1,219,460,000
Total	102,732,168,000

¹Numbers for broilers, hogs (barrows and gilts), and beef cattle (steers) are for slaughtered animals during calendar year. Dairy animals are number of dairy cows in a calendar year divided by 3 to account for 3 lactations per animal.

Source: Van Eenennaam and Young, 2014.

What this means is basically what we already knew within the agriculture industry. GE (or GMO) feeds are safe for use in food animal production. The importance of this is global in nature. With the earth's population continuing to grow at a steady pace, the increased demand for food of all types will be experienced all over the world. For example, according to the Food and Agriculture Organization of the United Nations, consumption of meat and dairy products in Asia alone has been increasing annually by approximately 3 and 5%, respectively. Increased demand for meat and dairy products will mean increased demand for grains and protein feeds. It is this demand that will double the demand for global grain trade by the year 2050. Without GE feeds, the world will not be able to satisfy these demands. But with GE feeds, it could be possible to not only meet the demands, but to do so while creating a more sustainable environment that uses fewer pesticides in crop production and produces more nutrients per acre of land. All the while, GE feeds will help lower cost of production as well, which means lower cost, high quality food for consumers at the grocery store.

To read the review article yourself, you can find it available for full viewing at www.asas.org. It is a great article to arm yourself with useful, scientifically backed information about GE and GMO feeds and their use in today's food animal production world.





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