

GRASS TETANY MAY OCCUR IN MATURE COWS ON WHEAT PASTURE

A few, very fortunate, cow calf producers received rain after the wheat was planted in early or mid September. If a few more showers come along, they may have wheat pasture available this winter. Because other pasture and hay supplies are quite limited, these producers will look to the wheat pasture to help feed the cow herd this winter. If the cows are calving in the winter, while still on the wheat pasture, these cows need a mineral supplement available to them.

Grass tetany, caused by magnesium deficiency does not seem to be a major problem in Oklahoma although occasional cases are reported. It typically occurs in beef cows during early lactation and is more prevalent in older cows. The reason is thought to be that older cows are less able to mobilize magnesium reserves from their bones than are younger cows. Grass tetany most frequently occurs when cattle are grazing lush immature grasses or small grains pastures and tends to be more prevalent during periods of cloudy weather. Symptoms include incoordination, salivation, excitability (aggressive behavior towards humans) and, in final stages, tetany, convulsions and death.

It is known that factors other than simply the magnesium content of the forage can increase the probability of grass tetany. High levels of potassium in forages can decrease absorption of magnesium and most lush, immature forages are high in potassium. High levels of nitrogen fertilization have also been shown to increase the incidence of tetany although feeding protein supplements has not. Other factors such as the presence of certain organic acids in tetany-causing forages have been linked with

tetany. It is likely that a combination of factors, all related to characteristics of lush forage, are involved.

When conditions for occurrence of tetany are suspected, cows should be provided mineral mixes containing 12 to 15 percent magnesium and be consumed at 3 to 4 ounces per day. It is best for the supplements to be started a couple of months ahead of the period of tetany danger so that proper intake can be established. Because tetany can also occur when calcium is low, calcium supplementation should also be included. Symptoms of tetany from deficiencies of both minerals are indistinguishable without blood tests and the treatment by your veterinarian consists of intravenous injections of calcium and magnesium gluconate, which supplies both minerals.

Cows grazing lush small grain pastures should be fed mineral mixes containing both calcium and magnesium.

Source: Glenn Selk, OSU Extension Animal Reproduction Specialist

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KEEP YOUR POINSETTIA LOOKING CHEERFUL THROUGH THE HOLIDAYS



The colorful poinsettia is undoubtedly the most popular live Christmas plant in America. Indigenous to Mexico, where it is called flor de nochebuena, the poinsettia was brought to the United States more than 150 years ago and popularized here by Joel Roberts Poinsett, who fell in love with the crimson plant while serving as U.S. ambassador to Mexico.

Today poinsettias are available not only in the classic deep red, but also in pink, salmon, yellow, creamy white, and marbled colors. Poinsettias are purchased or received as a gift by millions of people, although many of us are not quite sure how to take care of them. With proper care, these plants will continue to bloom for several months. Here's a checklist for keeping your poinsettia looking good:

- Place the plant in indirect sunlight for at least 6 hours per day.
- Keep the room temperature at 65-70°F. during the day and, if possible, reduce it to 60-65°F at night.
- Never expose the plant to cold drafts or excessive heat. If necessary, cover plants while carrying them to and from the car.
- Keep the soil moist, but not wet. Water when the soil feels dry, but don't let the plant sit in water that's drained through the pot (remove the foil from the bottom of the pot if necessary).

If spider mites, whiteflies, or mealybugs are found on the plant, spray it with [Systemic Insect Killer](#) by following the label directions.

Feed after the blooming season with a balanced plant food.

And by the way, poinsettias are not poisonous. That really is just an "old wives' tale." Research by The Ohio State University has proven that poinsettias are not toxic to humans or pets - although your children, dog, or cat might get an upset stomach if they ate some!

HOUSEPLANTS LOSING LEAVES

Homeowners often become concerned about their houseplants at this time of year because they look unthrifty and may even shed leaves. Most of this is the plant responding to low light levels. Not only is the day length shorter but the angle of the sun means sunlight must travel through more atmosphere before it reaches us in the northern latitudes. Each of these factors means less light energy reaches our houseplants.

Houseplants respond to this stress by stopping growth and dropping leaves if necessary. So how can we tell if leaves are being dropped due to stress or due to other factors? Normally, stress is the culprit if leaves are dropped throughout the plant so a general thinning occurs.

The next question, then, is what do we do about it? Well, you can add supplemental lighting or just wait until longer days and higher light levels allow the plants to recover. Unfortunately, people are often not patient enough and decide the plant needs more fertilizer or water to perk it up. Remember the problem is low light; not a lack of fertilizer or water.

Adding extra fertilizer or water won't help and may actually harm the plant. Everything needs to be balanced in the plant. If there is plenty of sunlight, the plant can use plenty of water and plenty of fertilizer. Under low light levels, the plant is unable to use much fertilizer and the nutrients just stay in the soil where they can build up and may eventually burn roots. Also, excess water can actually drown roots. Therefore, it is important to do a good job of watering and fertilizing during the winter. Only water when the soil is dry ½ inch deep in the pot. Eventually you can learn to judge whether a plant needs water just by weight. Also, reduce or eliminate fertilizing during the winter months. If the plant still looks thin in the spring, cut it back so that it can put out new, thicker growth. Also, knock the plant out of the pot in the spring and make sure it isn't rootbound. If it is, move it up to a larger pot.

AVOID NITRATE TOXICITY IN THE FIRST SNOW/ICE STORM

Almost as predictable as the coming of the winter season, will be the quickly spread horror story of the death of several cows from a herd that was fed "the good hay" for the first time after snow storm. Ranchers that have harvested and stored potentially high nitrate forages such as forage sorghums, millets, sudangrass hybrids, and/or Johnsongrass, need to be aware of the increased possibility of nitrate toxicity. Nitrate toxicity is most likely if the cows are fed this hay for the first time after a severe winter storm. Cattle can adapt (to a limited amount) to nitrate intake over time. However, cattlemen often wait and feed the higher quality forage sorghum type hays during a stressful cold wet winter storm. Cows may be especially hungry, because they have not gone out in the pasture grazing during the storm. When fed the hay, the cows eat a larger than normal meal. They may be stressed and slightly weakened by the cold, wet conditions. This combination of events make them even more vulnerable to nitrate toxicity.

The rancher is correct in trying to make available a higher quality forage during severe winter weather in an effort to lessen the loss of body weight and body condition due to the effect of the wind chill. But if the forage he provides to the cows is potentially toxic, his best intentions can back-fire.

The best approach would be to know ahead of time the concentration of nitrate in the hay. Send a sample to a testing laboratory and that will quantify the amount of nitrate in the sample. If the producer is confident that the hay is very low in nitrate content then use of the hay should be safe. If the nitrate content is unknown or high in nitrate, then precautions should be taken. Feeding small amounts of the hay along with other grass hays during the fall and early winter days can help to "adapt" the cattle to the potential of nitrate. This is not a fool-proof concept. If the hay is quite high in nitrate, it can still be quite dangerous. Diluting the high nitrate feed with other feeds can reduce the likelihood of problems. Feeding a high starch grain (such as corn or milo) at a rate of about 7 pounds per 1000 pounds of body weight per head per day will reduce the risk of nitrate toxicity.

The grain should be fed about 1 to 2 hours prior to feeding the high nitrate hay. Be sure to acclimate the cows to the grain gradually as well, so as to not create digestive disorders due to grain overload.

To learn more about nitrate toxicity and management of "high nitrate feeds" read OSU Fact Sheet No. [F-2903 "Nitrate Toxicity in Livestock"](http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-1996/F-2903web.pdf). <http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-1996/F-2903web.pdf>

GUIDELINES FOR USE OF DISTILLERS' BY-PRODUCTS

By Chris Reinhardt Feedlot Extension Specialist, KSU

Distillers' grains (DG), either wet or dry, can make a valuable contribution to beef cattle diets, regardless of the animals' stage of production. However, there are various factors that need to be considered when determining the potential value of DG in a production system.

It is important to understand that during the distillation process, the starch component of cereal grains (normally 60-70%) is fermented out of the grain to make ethanol. By removing this fraction, the remaining nutrients are concentrated, roughly threefold. For beef producers, this can be beneficial, resulting in an affordable protein supplement containing about 30% crude protein. Also, after removal of the starch component and concentration of the fat and fiber fractions, DG is a good source of energy in the form of digestible fiber and fat.

However, some of the nutrients can be elevated in DG and may limit the potential use in beef cattle diets. The phosphorus content (about .8-9%) of DG may increase the required calcium content in order to maintain a proper calcium to phosphorus ratio. Excess phosphorus also will result in increased phosphorus excretion in the manure and the associated need to dispose of this element. Excessive sulfur content (about .5-1.2%) can limit the potential use of DG due to mineral imbalances, health problems, reduced intake and possibly death.

The fat content of DG is beneficial to growing and finishing cattle as a concentrated energy source; but excessive fat in the diet of forage-fed animals can reduce forage digestibility, resulting in lower net energy consumption and lost body condition.

One benefit of feeding wet distillers' grains (WDG) is the conditioning factor this wet ingredient brings to an otherwise dry diet. This may stimulate consumption in growing and finishing cattle, particularly if all other ingredients in the diet are dry and/or dusty. The moisture added by WDG helps tie the loose, fine particles together.

Conversely, dried distillers' grains (DDG) actually may contribute to dust in an already dry diet, due to its fine particle size. A dusty ration may not be palatable, particularly for stressed calves. This dusty characteristic can be alleviated if even a small amount of some other wet ingredient, such as silage, is fed.

Handling also is an important consideration. WDG stored outside during the summer is subject to spoilage within three to five days. If the operation is not large enough to use a full load of WDG within this brief time frame, the product can be stored in sealed plastic bags to limit oxygen content and potential mold development. Another benefit of sealed storage may improve the opportunity to purchase an abundant supply of WDG at a lower price. Using DDG reduces the risk of spoilage, but because of dustiness, cannot be stored long-term outdoors. Also, due to high fat content, DDG may bridge up in a gravity-flow bin. Ideally, DDG would be stored in a concrete-floored commodity bay.

Variability can be an issue when feeding either the wet or dry product. Particularly, moisture level between loads of WDG can vary greatly, affecting the actual amount of dry matter fed. Also, nutrient content may fluctuate over time, between loads and suppliers. There also are notable differences in nutrient content between DG originating from corn, sorghum or a blend of the two.

COMMON BY-PRODUCTS USED IN CATTLE DIETS

By Twig Marston, Extension Beef Specialist, KSU

Many producers are reevaluating winter feed supplies with the recent increase in corn prices. Grain by-products continue to be an important part of cattle diets, both as a nutrient and economic contributor. Historically, we have used wheat midds, soybean hulls, cotton by-products and corn co-products in a wide variety of cattle diets.

Corn gluten feed is a by-product of wet milling corn. Because it has a moderate protein level (18-20%) with high degradability and very little, if any, starch it is an excellent supplement for beef cows consuming low-quality roughages. It can be fed to feeder cattle and has been used in finishing rations. Palatability can be a concern, so avoid using it with young, lightweight calves.

Hominy feed is a mixture of corn bran, corn germ (with or without oil) and the starchy portion of the kernel. It is equivalent to corn in energy and can be used as a substitute for grain if higher protein content is considered. Hominy is low in moisture, so it stores well and palatability is good for all classes of cattle.

Soybean hulls come from the extraction of soybean oil. In high-roughage diets, this by-product is just slightly lower in energy than corn. However, in finishing diets, it is much lower in energy. The relatively low protein content limits its usefulness as a supplement for cattle consuming low-quality roughages.

Wheat middlings are a by-product of flour milling for human consumption. Midds are an excellent supplement for cattle grazing roughages because of the protein content and high energy level. Midds are nearly equivalent to corn in energy level in high-roughage diets, but in finishing diets offer less energy. Wheat midds have been a successful part of cattle diets for more than 80 years.

FACTORS THAT CONTRIBUTE TO CALF VALUE AND RETURN

A nine-year summary of calves fed through the Arkansas Steer Futurity recently was released, showing what contributes to the value of feeder and finished cattle. More than 1,900 cattle were fed in High Plains feedyards, with data collected at the yards and commer-

cial processing facilities. In eight of nine years, hot carcass weight and yield grade contributed most to a calf's value. Hot carcass weight was confounded by several other factors. About 16% of the cattle were treated for respiratory infections and the analysis found these cattle had less salable pounds of carcass and were less likely to grade Choice.

Cattle that earned the greatest grid market premiums were healthy, moderate-framed steers that posted fast and efficient gains, regardless of biotype or ranch origin. Breed makeup (the percentage Brahman, English or continental) did not differ between healthy or treated calves. Treated calves grew 4% slower, took four additional days to finish and had carcasses weighing 15 lbs. lighter. The average medical expenditure was \$41.55. Steers that received a discount for not grading Choice, having greater than 3.5 yield grade and/or unacceptable carcass weights returned \$74.52 less after removing feedlot expenditures. The authors concluded sickness is the major culprit in robbing profit and reducing the value of feeder and fed cattle.

ESTRUS SYNCHRONIZATION FOR REPLACEMENT HEIFERS

Producers wanting to increase the proportion of females that become pregnant early in the breeding season should consider estrus synchronization and artificial insemination (AI). However, several protocols exist with varying degrees of labor intensity and success. Nine researchers using 12 herds scattered across the U.S. compared four different estrus synchronization programs on nearly 2,100 beef replacement heifers. Kansas State University supplied two of the 12 herds studied. K-State reported nearly 90% of the heifers were cycling before any of the estrus synchronization treatments were applied. Two of the treatments required visual estrus detection for 72 hours after a prostaglandin injection. In both cases, an average of 74% of the heifers synchronized were observed in standing heat. Two of the treatments used a timed insemination at 60 hours after the prostaglandin injection. Pregnancy examinations indicated about 5% fewer heifers conceived through timed insemination. AI pregnancy rates among the locations varied from a low of 39% to a high of 74%. The final pregnancy rate, including natural-service cleanup bulls, was 85.5%. These results also indicate if beef replacement heifer estrus synchronization programs are going to use timed insemination, producers should administer a GnRH injection when the CIDR is inserted.