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Spring Pastures and Grass Tetany

As temperatures begin to warm, cool-season grasses and legumes begin a rapid growth phase resulting in the production of large amounts of lush, palatable, green pasture. During this phase, forages are very high in moisture content and low in nutrient density. This can result in difficulty for a grazing animal to consume enough dry matter to meet their nutrient requirements.

Grass tetany or hypomagnesaemia, is a nutritional disorder of ruminants caused by low blood levels of magnesium (Mg). It is most commonly seen in the early spring when cows nursing spring calves have a three-fold greater demand for Mg due to milk production and cool season grass pastures have low Mg levels. Lactating animals are most susceptible, with older cows considered more susceptible than those with their first or second calves. Older cows seem less capable of mobilizing Mg reserves from the bones than their younger counterparts.

Unfortunately, sometimes the only evidence of a problem is a dead cow, since symptoms are not usually noticed. Animals affected by acute grass tetany may suddenly stop grazing, appear uncomfortable, and show unusual signs of alertness, such as staring and keeping their heads and ears in an erect position. Cows may also stagger, have twitching skin (especially on the face, ears, and flanks), and lie down and get up frequently. A staggered gait pattern typically develops followed by collapse, stiffening of muscles and violent jerking convulsions. Periodic foreleg paddling, twitching of the eyes and ears, and a chewing motion that produces froth around the mouth often occurs while the animal lies flat on one side. Animals should be removed from the tetany-producing pasture and fed hay and concentrates. Once a cow gets grass tetany, they are more likely to get it again later in the season or in future years.

A high Mg supplement (8-12 percent Mg) should be fed to prevent grass tetany. Magnesium may be added to a protein supplement, grain mix, silage or liquid supplement. Magnesium oxide is the primary source of Mg in mineral supplements; however, it is unpalatable. Corn, soybean meal, or molasses can be added to the mineral mix to increase palatability and mineral intake. The best recommendation is to feed a more moderate amount of Mg (2.5-3.5 percent Mg) on an ongoing basis as a preventative.

It is much easier and more cost effective to proactively manage cattle to prevent grass tetany than to treat it after it occurs. If cattle express symptoms of grass tetany, call a food animal veterinarian. For more information on grass tetany or on Mg containing supplements, contact an MU Extension livestock specialist.

Source: *Heather Conrow, livestock specialist*

Gardening Tips for February

Ornamentals

- Inspect summer bulbs in storage to be sure they are not drying out. Discard any that show signs of rot.
- Winter aconite (*Eranthis* sp.) and snowdrops (*Galanthus* sp.) are hardy bulbs for shady gardens that frequently push up through snow.
- Take geranium cuttings now. Keep the foliage dry to avoid leaf and stem diseases.
- Sow seeds of larkspur, sweet peas, Shirley poppies and snapdragons where they are to grow outdoors. For best results, these plants must sprout and begin growth well before warm weather arrives.
- Start seeds of slow-growing annuals like ageratum, verbena, petunias, geraniums, coleus, impatiens and salvia indoors.
- Start tuberous begonias indoors.
- Dormant sprays should be applied to ornamental trees and shrubs. Do this on a mild day when temperatures are above freezing.

Fruit

- Inspect fruit trees for tent caterpillar egg masses. Eggs appear as dark brown or gray collars that encircle small twigs. Destroy by pruning or scratching off with your thumbnail.
- When pruning diseased branches, sterilize tools with a one-part bleach, nine parts water solution in between cuts. Dry tools when finished and rub lightly with oil to prevent rusting.
- Begin pruning fruit trees. Start with apples and pears. Peaches and nectarines should be pruned just before bloom.
- Prune grapes and bramble fruits.
- Established fruit trees can be fertilized once the ground thaws. Use about one-half pound of 12-12-12 per tree, per year of age, up to a maximum of 10 pounds of fertilizer per tree. Broadcast fertilizers over the root zone staying at least one foot from the tree trunk.



Vegetables

- Run a germination test on seeds stored from previous years to see if sprouting occurs.
- Season extending devices such as cold frames, hot beds, cloches and floating row covers will allow for an early start to the growing season.
- Sow seeds of broccoli, cauliflower, Brussels sprouts and cabbage indoors now for transplanting into the garden later this spring.

Miscellaneous

- When sowing seeds indoors, be sure to use sterile potting mix to prevent diseases. As soon as seeds sprout, provide ample light to encourage stocky growth.
- Repot any root-bound houseplants before vigorous growth occurs. Choose a new container that is only 1 or 2 inches larger in diameter than the old pot.
- To avoid injury to lawns, keep foot traffic to a minimum when soils are wet or frozen.
- Branches of pussy willow, quince, crabapple, forsythia, pear and flowering cherry may be forced to bloom indoors. Place cut stems in a vase of water and change the water every four days.

Resource: Missouri Botanical Garden

Source: *Jennifer Schutter, horticulture specialist*

Adding Red Clover to Pasture Reaps Benefits

Red clover is a short-lived perennial legume, which is widely utilized in Missouri. It is well adapted to the soil and climate of the Midwest. Clover is easy to establish in cool season grass pastures and hay fields because it can withstand shading during the seedling stage better than most other legumes. A mixed cool season grass-clover stand reduces the concern for bloat and can be maintained longer than a pure red clover stand.

Legumes are generally higher in crude protein than grasses and adding clover to cool season grass pasture is an economical way to improve forage quality. Legumes begin their growth later in the spring and grow longer into the summer than cool season grass. Adding legumes to a cool season grass pasture can also provide forage later in the hot summer months



because the legume has a tap root allowing it to draw moisture from deeper in the soil. Many pastures in Missouri are predominately endophyte infected tall fescue. The addition of clover will not only result in higher quality feed for grazing livestock, it will dilute the toxic effects of the toxic endophyte found in many pastures.

Legumes can fix nitrogen from the atmosphere for their own growth and share that nitrogen with companion grasses. Legume roots become infected with a specific

strain of bacteria, which produces nitrogen. Different legumes require different strains of rhizobia bacteria. If red clover is not already present in the field, it is important to inoculate seed with the proper rhizobia bacteria to insure good nitrogen production.

Medium red clover is best suited for the Midwest. It is an early flowering type and can produce two or three hay crops or grazings per year. Mammoth red clover is better suited for northern areas with shorter growing seasons, such as Canada. It is a late flowering type and usually produces only one hay crop in this region.

Clover is susceptible to drought and root diseases, but due to its ease of establishment and relatively inexpensive seed cost, it can be readily reseeded. White clover tolerates poorly drained soils and lower soil fertility than red clover, but is not drought tolerant and is more likely to cause bloat if fed as a large part of an animal's diet. Alsike clover is found in many pastures in Missouri because it withstands heavy grazing, wet soil conditions and flooding better than other legumes, but it is less productive than red or white clover.

The most common way to seed clover is to frost seed in February or March. Seed is broadcast on pastures or hay fields which have been grazed or mowed short. The freezing and thawing of the ground works the seed into the soil. Seeding three to six pounds of red clover every one to three years is a common practice to maintain a robust red clover stand. Red clover can be seeded as late as April 15 or in the early autumn from August 15 to September 15. It is best to drill seed in late spring or autumn to ensure good seed to soil contact.

Source: *Valerie Tate, agronomy specialist*

Dicamba Safety and Training

Synthetic auxin herbicide application presents a challenge. Dicamba and 2,4-D are synthetic auxin herbicides. Despite the efficacy of these herbicides, off-target injury to other crops remains a problem for Missouri agriculture.

In 2017, crop damage from dicamba grew to more than 325,000 of the state's 6 million acres of soybean. Damage to residential yards and smaller acreages of peaches, watermelons, tomatoes, grapes, pumpkins and certified organic vegetables was also reported.

Despite challenges, there is strong demand for synthetic auxin herbicides due to their high rate of

success. It is imperative they are applied according to label and properly managed to mitigate off-target injury.

The MU College of Agriculture, Food and Natural Resources and MU Extension, in cooperation with the Missouri Department of Agriculture, is offering web-based and in-person training for those wishing to purchase and/or use Engenia, XtendiMax, or FeXapan in 2018.

Registration for web-based training is available at: <https://extension2.missouri.edu/programs/synthetic-auxin-herbicide-applicator-training>

Registration and event information for in-person training is available at: muconf.missouri.edu/SAHtraining

The cost of the training is \$30.00 whether completed online or in-person.

Dates and locations for in-person training:

- Feb. 9 - Stoney Creek Hotel & Conference Center, 2601 S. Providence Road, Columbia.
- Feb. 12 - Quality Inn & Suites, 120 Lindsey Drive, Hannibal.
- Feb. 13 - City of Miner Convention Center, 2610 E. Malone Ave., Sikeston.

Seating will be limited for these sessions, so advance registration is required.

Source: *Kent Shannon, ag engineer*

Missouri Specialty Crop Industry

Recently, University of Missouri released two reports describing the extent of the specialty crop industry in Missouri. These reports have much data about an important sector of the ag economy that is often difficult to assess. The results of the 2017 survey (19 pages) and the 380 page Historical Perspective of the Missouri Specialty Crop Industry are online: <http://crops.missouri.edu/horticulture/>

Specialty crop categories include 1) Fruits and berries, 2) Tree nuts, 3) Vegetables, potatoes, and melons, 4) Nursery and flowering plants, and 5) Horticultural goods, such as, honey.

The initial 2017 survey (phase one) had 469 useable respondents. The majority of growers (75%) indicated they had been producing for at least five years. Almost

half (45%) said they had been growing specialty crops for over ten years.

The median open acres of for an operation is 3.0, but some are quite large. The median square feet under protection is 3,264.

One hundred (23%) of the respondents had gross sales less than \$1000. Forty percent had sales in the \$1000-\$9999 category and 26 percent had sales of \$10,000-\$49,999. Nearly ten percent had sales over six-digits.

The survey revealed some interesting results about distribution outlets. Most growers use only one or two outlets for their specialty crops. On-farm sales and farmers markets were the primary outlet.



Phase two survey is open now
The survey has been reopened to ensure that all growers have the opportunity to participate. **New surveys are being accepted until March 31, 2018.** For those who did not previously complete a survey and want to respond

anonymously, take the survey at <http://tinyurl.com/SpecCrop>. A new summary report will be available in spring 2018. A complete economic impact analysis is also planned.

Source: Brent Carpenter, ag business specialist

Spring Fever?

Soil temperatures can be monitored on the MU weather stations

<http://agebb.missouri.edu/weather/stations/index.htm>

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