



Grass Tetany

KURT WOHLGEMUTH
Extension Veterinarian

I. A. SCHIPPER
Professor of Veterinary Science
Agricultural Experiment Station

NORTH DAKOTA
STATE UNIVERSITY
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Grass Tetany is also known as "Winter Tetany", "Grass Staggers", "Wheat Poisoning", "Magnesium Tetany" and "Hypomagnesemia".

What Are the Symptoms?

Frequently clinical signs are not observed and the only history is a cow found dead. Clinical signs may vary. Affected animals may become excitable, expressing a wild stare with erect ears and appearing to be blind. They are uncoordinated and tend to lean backward and stumble. An animal may appear to recover temporarily or go down. An animal affected by grass tetany often has trembling muscles and grinding teeth, followed by violent convulsions, deep coma and death. However, some animals remain quiet yet are unable to arise. Cows often resemble those with milk fever, and many of them have low serum calcium as well as low serum magnesium.

Positive diagnosis of grass tetany is a major problem because other diseases can cause some of the same signs associated with magnesium tetany. Some of the "downer animals" respond to calcium glutamate.

If tetany is suspected, it might be desirable to obtain blood samples from several similar animals to get an indication of status of the herd. A normal level of magnesium is about 2.25 mg. per 100 ml. of serum. The level of serum magnesium in cows affected by grass tetany is usually below 1 mg. per 100 ml.

However, not all cows with low serum magnesium develop tetany. Since the kidney apparently starts conserving magnesium when the serum level reaches about 1.8 mg/100 ml., one of the better diagnostic aids to indicate hypomagnesemia is low urinary magnesium.

What conditions are most likely to be associated with grass tetany?

The greatest number of grass tetany cases usually occur in April and May, but many cases are also seen in the fall and winter.

- . Grass tetany occurs most frequently in cows six years and older which are nursing calves under two months of age.
- . In the United States grass tetany is more likely to occur in beef herds than in dairy herds.
- . Cows grazing grass pasture or consuming grass hay account for most of the cases. Cloudy, windy, rainy weather with the daytime temperature between 40 to 60°F. seems to affect both the cow and the grass she consumes. Tetany seldom occurs when legumes or legume grass mixtures are a major portion of an animal's diet. Legumes usually contain twice or more magnesium of grasses grown in the same soil.
- . Soils that have a high level of available potassium in the top 3 inches with the magnesium level of less than 10% of the cation exchange capacity are more suspect than others. But tetany can also occur under other soil conditions.

Management is important in the prevention of grass tetany.

- . Keep plenty of magnesium mineral available from October until May. Keep mineral boxes filled and scattered at several locations in pastures or lots.
- . Do not start grazing grass pastures too early in the spring. Wait until the growth is 8 to 10 inches tall. Magnesium is more available in mature grass plants than in younger ones.
- . Graze legumes or legume-grass pastures first. There have seldom been cases of grass tetany when animals were grazed in legumes.
- . Graze less susceptible animals on high risk pastures. Heifers, dry cows or cows with calves over four months old, and stocker cattle have less chance of developing grass tetany.
- . Animals that have tetany one year tend to repeat in following years. Record the identity of each animal that has had tetany, and if a family tendency is noted, consider culling them from the herd.

- . The best long term solution is probably a combination of these steps.
- . If soil magnesium is low, develop a long term program to increase this nutrient.

What is the treatment for grass tetany?

A common treatment is intravenous injection of 500 cc of a commercial preparation of calcium and magnesium in a dextrose solution. Timely administration is paramount for a successful treatment; animals treated when already comatose seldom, if ever, recover.

Another treatment consists of an enema of 60 gr (2 oz) of magnesium chloride dissolved in 200 cc of warm water per cow. The enema may be administered with a plastic squeeze bottle and must be retained in the rectum 5-10 minutes to be effective.

Another alternative is the subcutaneous (under the skin) injection of 200 cc of a saturated solution of magnesium sulfate (Epsom salts). This approach affords temporary relief until the animal is treated intravenously.

The effectiveness of the treatment is a function of EARLY administration. For practical purposes, the emphasis must be placed on prevention of GT.

Methods of grass tetany prevention

- Keep plenty of magnesium mineral available from October until May (see "SUPPLEMENTS" below).
- Do not start grazing pastures too early in spring; wait until new growth is 8-10 inches tall; magnesium is more available in mature grass plants than in younger ones.
- Graze legume, or legume-grass, pastures first.
- Graze less susceptible animals on high risk pastures. Heifers, dry cows, or cows with calves older than 4 months, and stocker cattle have less chance to develop GT.
- Animals which had GT last year will tend to repeat this year.
- If soil magnesium is low, develop a long range program to increase this nutrient.
- Obviously a combination of these steps is the best long-term solution.

Suggested Supplements

a) Salt	30 lb
Molasses	10 lb
Bone meal or dical-phosphate	30 lb
Magnesium oxide	30 lb
b) Salt	75 lb
Magnesium oxide	25 lb
c) Salt	15 lb
Dry molasses	15 lb
Magnesium oxide	15 lb
Soybean meal	55 lb
d) Liquid molasses	1 ton
Magnesium chloride	100-200 lb
Feed free-choice in lick-tanks.	

What are the livestock requirements for magnesium?

Assuming a 20% availability, the cows total need for maintenance and lactation would be from 13 to 15 grams of magnesium per day. However, situations are recorded where it was necessary to add at least 2 oz. - or approximately 60 grams - of magnesium oxide, which contains 60% magnesium, for a total of 36 grams to prevent tetany from developing in herds. Obviously something other than just the availability of the magnesium must be considered.

In high risk situations, supplements may need to provide 2 oz. of magnesium oxide. This will best be fed in a combination of grain and salt to insure adequate distribution to all animals. Management practices must be such that each cow will eat some of the supplement each day.

Concentrates help prevention of rumen acidity which keeps the magnesium in solution. This is one explanation for the relatively low incidence of magnesium tetany in grain fed beef cattle. Grass tetany occurs when cows graze winter pasture or are being wintered on grass hay. The increase in fall calving cows may increase the number of fall tetany cases. During estrus and periods of heavy rainfall or high wind, cattle may not eat enough to get their magnesium requirements.

Summary

- . Grass tetany is common in beef herds usually during April and May.
- . Grass tetany is associated with diets deficient in magnesium.
- . Magnesium supplementation, either by legume forage or by addition of magnesium oxide to the diet, are useful tools in the prevention of grass tetany.
- . Treatment of grass tetany to be successful must be implemented early during the course of the disease.