



Forage Management

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How To Reduce The Potential For Grass Tetany

Grass tetany (a form of hypomagnesemic tetany) occurs when there is a low level of Magnesium (Mg) in the cow's blood. Grass tetany, is caused by a low content or availability of Mg in pasture or hay. The availability of Mg is reduced if the forage is high in nitrogen (N) or potassium (K). This often occurs after heavy application of chemical fertilizers or manure. Farmers who practice "good" pasture and forage management may experience grass tetany more frequently than farmers who do not fertilize or use "improved" management methods.

Another cause for Mg deficiency is that the limestone quarried in West Virginia contains little or no Mg and that mixed fertilizers contain little or no Mg. Soils low in Mg occur on many WV farms, especially in a belt from Preston county in the north to Mercer county in the south. It is a prudent practice to apply high Mg limestone when soil tests show a Mg deficiency. Application of Mg over time will correct the deficiency.

One solution to preventing grass tetany is the use of dolomite or high Mg limestone along with the inclusion of legumes in your forage stands. Low soil pH indicates the need for lime. Since dolomite is not quarried in West Virginia (except in Jefferson county) this material may not be readily available. Ask your county agent or fertilizer dealer to find a source.

If your fields need Mg, ask for a high quality dolomite, which contains 12-13% of actual Mg or 20-22% Mg oxide equivalent. The increased cost of this high quality lime is justified by the long-term advantages in livestock nutrition and health. One ton of dolomite (12% Mg) per acre would add 240 lbs Mg to the soil. If your soil already has enough Mg (over 250 lb/a) you are generally safe to use calcitic lime.

Since legumes contain more Mg than grasses it is helpful to increase the legume content in your hay fields and pastures. In many cases this is readily accomplished by correcting the soil pH using limestone, providing phosphorous, and potassium (according to soil test) and frost seeding clovers in the winter.

Legumes pay for themselves! Well managed grass legume stands will produce as much forage as a straight grass pasture fertilized with 150 lbs of nitrogen/a. Yearling steers grazing grass legume pastures will gain 0.25 to 0.33 lbs/day more than similar steers grazing straight grass pastures fertilized with nitrogen. Dairy cows will produce 6-10 lbs more milk/day under the same conditions. It is well documented that cattle and sheep can eat more forage when it contains legumes. Increased consumption accounts for the increase in performance when the livestock have the genetic potential for higher production.

Dolomite or high Mg limestone will increase the pH of the soil (decrease the acidity) while adding the necessary Mg. This is a rather slow process and will not solve an immediate Mg deficiency. To prevent grass tetany, you should supplement winter hay and early spring pasture with Mg oxide (60% Mg) in a mixture with salt, other minerals and grain. Insure that each animal gets about 2 oz. of Mg oxide (about 50 grams) each day. Commercial mineral mixes or soft molasses blocks containing Mg can also be used.

The value of limestone depends on its neutralizing value and fineness (TFS 3212 "The Value of Agricultural Limestone"). The minimum standards of quality aglime are 85% neutralizing value and sufficiently fine to pass through a 20-mesh sieve.