

## Herd Health Focus - Magnesium supplementation in cow diets

By Brian Campion, Premier Molasses



### INTRODUCTION

Magnesium is one of the most important minerals to supplement in ruminant diets. It serves a variety of vital functions within the body and plays an important role in the regulation of energy and protein metabolism. Deficiency of magnesium is most commonly associated with the metabolic disorder "Grass Tetany". However, hypomagnesaemia can also reduce feed intake (even in the absence of tetany), which can lower milk yield by 10-20 per cent in the herd. Furthermore, magnesium plays a vital part in the prevention and control of another metabolic disorder "Milk Fever" through its role in calcium metabolism.

### GRASS TETANY

This condition, which is also called grass staggers is most common in cows grazing lush spring or autumn pastures and is caused by low blood magnesium levels. A sudden deterioration in weather conditions can lead to severe outbreaks of grass tetany by dramatically increasing the number of cows deficient in magnesium. Therefore, farmers need to be aware of the risks and take steps to prevent this disease, particularly during spring and autumn.

Figure 1. Clinical Signs of Grass Tetany

- Nervousness or excitability
- Staggering gait, muscular twitching
- Animal goes down, convulsions, froths at mouth, coma and eventually dies

Due to the short duration of clinical signs (Figure 1), animals are often found dead. However, most will exhibit suspicious signs in the preceding days such as a drop in milk yield, loss in condition or reduced appetite. All animals with clinical signs require emergency treatment and the vet should be called immediately. A clinical case of tetany is usually an indicator that the rest of the herd is likely to be suffering from a magnesium deficiency. Taking blood samples from a representative number of cows is a good method of determining the magnesium status of your herd.

### PREVENTION

Due to the high mortality associated with grass tetany, prevention is essential. The main preventative strategy involves supplementing the diet with additional magnesium and reducing other risk factors (Figure 2).

Figure 2. Other Steps to Reduce Risk of Grass Tetany

- Provide adequate shelter to reduce stress from bad weather
- Feed silage or hay after turnout to slow the rate of passage of feed through the gut - allows better magnesium absorption
- Ensure adequate sodium (salt) in the diet - 0.4% of DM
- Introduce clover into swards - has a higher magnesium content than ryegrass
- Avoid use of potash and over use of nitrogen fertilisers in spring as they interfere with magnesium absorption

Figure 3. Magnesium Requirements (Grass Tetany)

- Low to moderate risk - 15-25 g/day
- Moderate to High risk - 25-35 g/day
- High risk - 35-50 g/day

Cows cannot store magnesium and therefore require a daily supply, ranging from 15 g/day in low risk periods up to 50 g/day in high risk periods (Figure 3). Providing a palatable magnesium supplement with high biological availability is an effective strategy for meeting the requirements of grazing cows.

Premier Molasses's Ultra-Mag, when fed at a rate of 1 kg/cow/day will supply most cows' daily requirements (25 g). Ultra-Mag uses magnesium chloride as the magnesium source which has a higher bio-availability to the animal than the more commonly used magnesium oxide (Cal-mag). The excellent palatability of Ultra-Mag always ensures adequate intakes, which can sometimes be an issue with other magnesium supplements. For more information on Ultra-Mag or any of our liquid feeds, contact us on 069-65311 or email [info@premiermolasses.ie](mailto:info@premiermolasses.ie). All our feeds are available through your local co-op/merchant or from Premier Molasses direct.

Brian Campion M.Sc. (Agr.)  
Product Development Manager  
Premier Molasses, Harbour Rd,  
Foynes Co. Limerick