

Grass Tetany

Magnesium is essential to a number of vital metabolic processes in the body with the most notable being its role in nerve and muscle function.

Magnesium is not stored in any great quantity within the body, so magnesium intake in the diet is vital to meet daily requirements. In addition, large volumes of magnesium will leave the body at the onset of lactation, particularly in the first few months after calving.

How?

Grass tetany or hypomagnesaemia is characterised by a drop in blood magnesium levels, leading to impaired nervous signals to muscles and the brain.

Why? (Disease development and primary/tertiary effects)

Primary cases of grass tetany usually occurs in late autumn/winter. Seasonal change alters the chemical composition of pasture eaten by calving or late pregnant cows.

Some pastures are particularly grass tetany prone. Low magnesium, sodium and calcium levels associated with high potassium and nitrogen levels tend to precipitate grass tetany.

In severe or primary cases of grass tetany, the observable effects include excitability, aggression and excessive muscular contractions known as tetany. In extreme cases these low levels mean that muscles cannot work properly, the animal cannot breathe and so dies.

The majority of effects occur at the tertiary (or unobservable) level and are a result of poor muscle function.

Some of the major organs affected are the musculature of the rumen, the udder and the uterus.

- Rumen - Rumen function is vital for adequate muscular contractions to allow fermentation and adequate uptake of nutrients. Bloat, even at the tertiary level is a classic example of inadequate magnesium metabolism, and will result in poor feed conversion efficiency.
- Udder - The impaired function of milk let-down will limit adequate nutrients being available to the calf, slowing down calf growth.
- Uterus - The failure of uterine muscular function can lead to dystocia issues at calving and poor fertility at joining.

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Compounding factors

Any environmental or management event (particularly post-calving), such as inclement weather or the stress of mustering and yarding will lead to lowered feed intake and can precipitate inadequate availability of magnesium in the diet.

There are also a number of vital interactions of magnesium compounds within the rumen, soil and pasture which can further limit availability of magnesium. These include low calcium and phosphorus and high sodium, potassium and nitrogen, with the latter situation often occurring in late autumn/winter when lactating cows are grazing lush, green grass pastures.

Controlling magnesium intake at high-risk periods will ensure strong nerve and muscle function. Controlling these periods comes from understanding and diagnostic evaluation of pastures and livestock.

HOW TO MANAGE THE PROCESS

1. To manage magnesium requirements utilise **ELMS Green Feed Supplement Powder Lick** at 80 grams per head (on its own or mixed with small amounts of cereal grain).
2. Bloat-prone pastures – Consider additional protection using bloat-capsules (contact your local **ELMS Manager**).
3. Ensure 7 in 1 vaccination programme (eg. Ultravac® 7in1) is current as anything which disrupts rumen and small intestine movements could precipitate outbreaks of pulpy kidney. It is important to vaccinate cattle every three months at high risk times. In such cases 5 in 1 vaccines (eg. Ultravac® 5in1) may be appropriate.
4. Ensure there are no complications from internal parasites. Remember that exposure to short green pastures may mean exposure to large volumes of infective larvae.

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