



Rumetrace Magnesium Capsules – Reliable Magnesium Supplementation

Milk fever is a common metabolic disease that occurs around calving in dairy cows. It is due to insufficient calcium circulating in the blood of the cow.

When a cow calves and begins lactating her body suddenly requires significantly more calcium than was available previously. This is because each litre of milk contains a significant amount of calcium, and extra calcium needs to be mobilised from body stores and absorbed from the diet to compensate.

Mammals have a sophisticated means to mobilise calcium in the face of higher requirements. Hormones are released in response to low blood calcium levels, which results in calcium being released into the blood from bones, calcium being more efficiently absorbed from the diet in the gastrointestinal tract, and calcium also being better extracted by the kidneys (so less calcium is excreted in urine).

To trigger relevant hormone release, and to be effective at key sites of action, the cow **must** have sufficient magnesium in her bloodstream. Low magnesium levels around the time of calving can result in a cow being unable to 'switch on' her calcium release response fast enough. The net effect of this can be clinical milk fever.

Unlike calcium, body stores of magnesium cannot be mobilised in times of high demand or in response to low blood levels. This means that cattle are dependent on an adequate daily intake of magnesium to meet metabolic requirements.

Many factors can contribute to low levels of magnesium in the blood. Inadequate magnesium intake most often occurs when cows are grazing lush, rapidly growing pasture with low dry matter (DM) and low magnesium content. The risk is further increased if nitrogen or potash fertilisers have been used on the pasture, as the resultant grass is generally lush with lower DM content, and potassium can also interfere with magnesium absorption from the diet. Risks of low blood magnesium are also significant when cows are subject to a period of reduced feed intake; perhaps caused by inclement weather, yarding or transport.

Preventing low magnesium levels requires a combination of management actions.

Key items are summarised below;

Managing the Diet

Beware of Nitrogen and/or Potassium (or effluent) fertilised lush, fast growing pasture.

Managing the Cows



Avoid transport and minimise yard time of cows in late pregnancy and during early lactation. Feed cows adequately to minimise loss of body condition after calving. Ideally provide shelter if inclement weather is likely.

Magnesium supplementation

There are several ways to provide additional magnesium to cows. It is important that supplementation occurs at least two weeks prior to the start of the “risk period”.

Some supplementation methods will not be possible or practical for all farms. Ask your vet for advice on the best method for your herd.

Magnesium can be;

1. Top-dressed (i.e. dusted) onto pasture (magnesium oxide)
2. Added to silage and other feeds (typically magnesium oxide, or other mag salts)
3. Added to water troughs (mag sulphate, mag chloride)
4. Drenched to cows individually (magnesium oxide)
5. Delivered into the rumen via a slow release intra-ruminal capsule (Rumetrace[®] Magnesium Capsules)

Supplementation is just that! Metabolic disease can still occur in herds receiving magnesium supplementation in those seasons where there is a high risk (due to the factors discussed above). Even in high challenge circumstances, however, supplementation will substantially reduce the severity of clinical disease and limit mortality.

About Rumetrace Magnesium Capsules

For some farmers, the best option for magnesium supplementation is Rumetrace[®] Magnesium Capsules. This is especially the case in situations where

- dusting the pasture or hay with magnesium oxide is difficult or impractical
- water reticulation infrastructure does not allow water trough treatment,
- access to free water means cows will not drink water from treated troughs

Rumetrace Magnesium Capsules are often used to assist with managing later calving dairy cows. As the number of cows in this mob reduces, the time taken to dust magnesium oxide onto their daily pasture ration often becomes particularly annoying. Treating once with a Rumetrace Magnesium Capsule means that time can be spent on other tasks instead.

Rumetrace Magnesium Capsules are made from a specific magnesium alloy. The specially designed rubber hinge closes into a cylindrical bolus for administration into the rumen. Once in the rumen the capsule opens out to a flat shape with two semi-cylindrical magnesium portions adhered, minimising likelihood of regurgitation.



The rubber hinge of the Capsule also acts as a conductor. The interaction between this conducting rubber (cathode) and the magnesium alloy (anodes) drives the release of magnesium from the Capsule. The magnesium released from the Capsule is fully available for absorption by the cow. Also important is that magnesium (in this Mg^{++} form) is only absorbed in the rumen of cows. In contrast, magnesium in feed and other supplements must first be extracted and solubilised in the rumen, before becoming available as Mg^{++} and hence only a relatively low proportion of magnesium from these sources is absorbed before passing from the rumen.

Rumetrace Magnesium Capsules release magnesium at a constant rate over a 9 – 12 week period. They must be administered a few days ahead of when they are required, to allow time for the electrolytic reaction to get underway. The capsules provide around 2 grams of available magnesium per day. This compares to the daily available magnesium requirement for a springer dairy cow of 2.3g. These figures do not take into account the antagonistic interference in the rumen by minerals such as potassium. Magnesium Capsules are a supplement to augment dietary magnesium intake, and can be considered 'insurance' to minimise the seasonal risk and impact of metabolic disease.

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