

HYPOMAGNESAEMIA (STAGGERS)

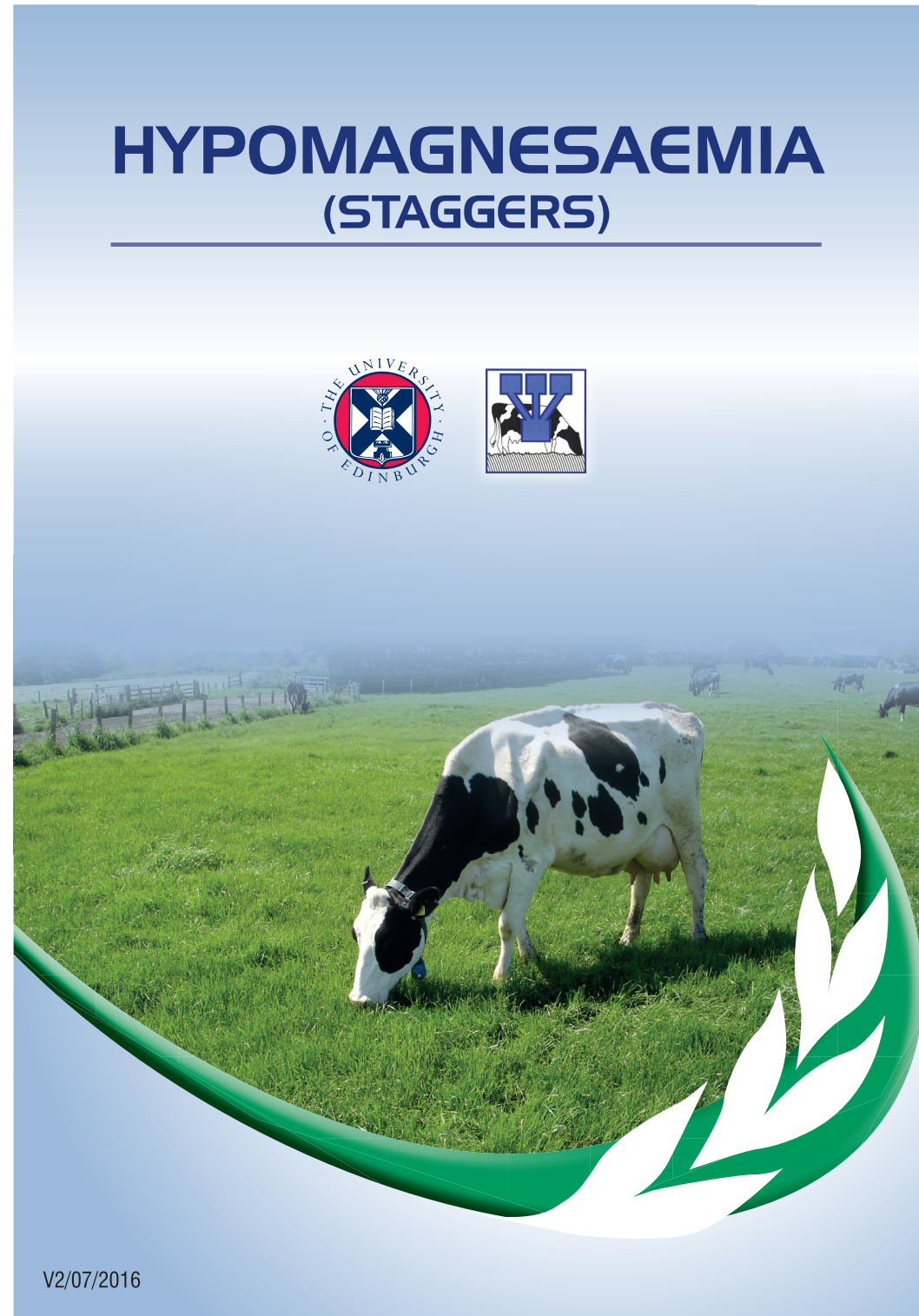


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What is it?

- Hypomagnesaemia is caused by low levels of magnesium in the blood, which leads to nervous signs.
- Although the annual rate is less than 1% of UK dairy cows, 1/3 of affected cows will die.
- As well as dairy cows, it can also affect beef cows and sheep.

Clinical signs

- Affected animals are nearly always in lactation.
- Sudden death with evidence of paddling of the legs.
- Acute cases will be nervous, twitchy with uncoordinated movements.
- Sudden collapse onto the side with convulsions, frothing at mouth.
- Apparently recovered cases will often relapse.
- Chronic cases have been described with cows appearing nervous, reluctant to be milked, loss of milk etc.
- Subclinical hypomagnesaemia in dry cows will predispose to milk fever (see Milk Fever handout).

What causes it?

- Unlike calcium, there are no hormone mechanisms in the body to regulate blood magnesium levels.
- Blood magnesium levels are therefore entirely dependant on short term absorption from the diet.
- Milk production markedly increases requirements due to the relatively high magnesium content of milk.
- Magnesium absorption in adult cows and sheep is poor: at best 35% of dietary magnesium is absorbed, at worst only 10% is absorbed from the diet.
- Various factors inhibit magnesium absorption: low energy, high fat, high potassium, low sodium, low fibre etc. Lush rapidly growing grazed grass is a recognised risk due to a number of these factors involved.
- Stress (for example cold, wet weather) will precipitate signs as it decreases blood magnesium levels.

Diagnosis

- Clinical signs (collapse and convulsions) in lactating animals are usually diagnostic.
- Your vet can take blood samples to check magnesium levels.
- In dead animals, magnesium levels in the eye can be useful to diagnose hypomagnesaemia.



TREATMENT

– acute hypomagnesaemia is an emergency. Call your vet immediately.

- Any sudden stress may precipitate fatal convulsions. Your vet may administer sedatives to prevent these.
- Give a bottle of calcium/magnesium mixture by intravenous injection.
- Magnesium sulphate (usually in a black bottle) is given under the skin.
Never inject in the vein.
- Keep cow quiet, and prop up 15 - 30 minutes after treatment and the last convulsion has stopped.
- Provide fresh food and water, as well as magnesium by mouth daily to prevent relapses.

PREVENTION

- Clinical cases represent the “tip of the iceberg”, and the rest of the group will be subclinically affected.
- For an average cow giving 30 litres of milk at a 20% absorption rate, the target intake is **30 grams of magnesium per day**. This equates to a diet content of 2.5 g/kg DM.
- Note that for higher yielding cows with poor absorption (eg. on lush grazing), intakes need to be higher.
- As an emergency measure, add magnesium chloride to all available water sources. Note that this will not provide enough magnesium long-term, especially in wet weather as the cows will drink less water.
- Provide 30 grams of magnesium per cow per day in the diet, usually by feeding 60 grams (or 2 oz) of calcined magnesite in the concentrate feed or TMR to ensure that every cow gets her allowance.
- Pastures may be dusted during high-risk periods with finely ground calcined magnesite every 10-14 days (17 kg/hectare, double this rate on set stocked grazing systems). Will need to repeat daily in wet weather.
- Magnesium licks (usually with molasses) and magnesium boluses (eg. Agrimin Rumbul Magnesium Bullets) can be used in beef cows, but will not provide enough magnesium for high yielding dairy cows.
- Provide a source of long fibre (conserved forage) to slow gut transit and increase absorption.
- Control use of potassium (potash) fertilizers, provide salt licks, provide shelter during adverse weather.



Discuss prevention of hypomagnesaemia with your vet and nutritional advisor