Trial Data

TRIAL 3 : MORE-MAG™ (FORTNIGHTLY) VS UNTREATED CONTROL – BLOOD SERUM

OBJECTIVE: To compare fortnightly More-mag™ oral drenching (60mL dose) with cows receiving no magnesium supplementation.

TRIAL DESIGN: There were 2 groups, each of 10 cows, used in this study. Group 1 was orally drenched with More-mag™ at 60mL/cow on day 0. Group 2 remained untreated.

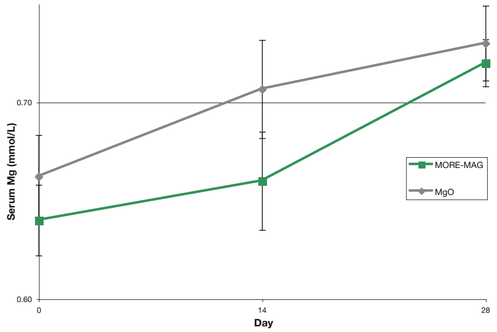
RESULTS: The mean serum magnesium data is presented in Table 4. The two groups were not significantly different at the start of the trial, but by Day 14, Group 2 (untreated) had significantly lower serum magnesium levels than Group 1 which had been treated with More-mag™.

TABLE 4. Mean magnesium blood serum (mmol/L) of Group 1 (More-mag™ drenched) and Group 2 (untreated).

	DAY	
Group	0	14
1	0.82	0.78
2	0.76	0.57
Statistical evaluation	NS	P<0.01

*NS = Not significant

FIGURE 2. Mean blood serum (including standard errors) of Group 1 (More-mag™ drenched fortnightly) and Group 2 (untreated).



CONCLUSION

The drop in serum magnesium of the untreated group demonstrates how quickly the onset of magnesium deficiency can occur. This study also shows that magnesium deficiency can be managed/prevented with fortnightly drenching of More-mag™.

Trial Data

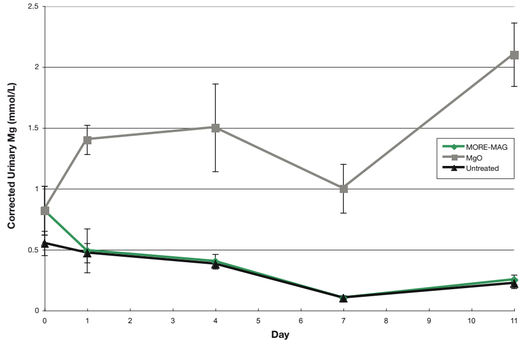
TRIAL 4 : MORE-MAG™ (FORTNIGHTLY) VS UNTREATED CONTROL – URINARY EXCRETION

OBJECTIVE: To compare the urinary magnesium excretion from cows receiving either More-mag™ oral drenching (60mL dose) fortnightly or daily Magnesium Oxide orally.

TRIAL DESIGN: There were 3 groups, each of 10 cows, used in this study. Group 1 was orally drenched with More-mag™ at 60mL/cow on day 0. Group 2 was orally drenched daily with magnesium oxide (20g/cow). Group 3 was not treated with magnesium during the trial period. Urinary magnesium was measured prior to treatment and then 24 hours post treatment, and on Days 4, 7 and 11.

RESULTS: The mean urinary magnesium data is presented in Figure 3. The three groups were not significantly different at the start of the trial. The urinary excretion of magnesium was significantly higher from animals treated daily with magnesium oxide compared with the group treated with More-mag™. The More-mag™ treated animals had similar urinary excretion of magnesium to animals that were not receiving magnesium supplementation.

FIGURE 3. Urinary magnesium of animals treated with a single dose of More-mag on Day 0, daily with magnesium oxide, or left untreated.



CONCLUSION

High urinary excretion of magnesium is indicative of administered magnesium not being retained by the animal. As the More-mag™ treated animals had similar urinary magnesium to the untreated control, that would suggest that the magnesium administered to those animals was being retained as opposed to being excreted.

Made in New Zealand. Distributed by DomHealth
25B Lorien Pl, East Tamaki.
PO Box 204093, Highbrook 2161
Phone 09 274 7676
Email: sales@domhealth.co.nz

Magnesium pidolate drench for improved protection from magnesium deficiency.

Every farm has a different level of magnesium in their pasture, depending on physical properties of the soil, climatic region, fertiliser regime and predominant pasture species. Also, pasture and water intakes between animals vary each day. A simple blood test can determine and monitor the magnesium status of your herd and help determine the frequency that you need to supplement. Drenching is the only way to ensure that every animal gets the right dose of the mineral. However, daily drenching is now a thing of the past as More-mag™ only needs to be administered every 10-14 days.

The magnesium (magnesium pidolate) contained in More-mag™ is metabolised more quickly than other forms of magnesium, and retained by the animal for up to 10-14 days. What is magnesium pidolate? It is an organic form of magnesium, made by compounding magnesium with a naturally occurring amino acid.
The unique bonding between magnesium and the amino acid has three main advantages:

1. Magnesium pidolate is quickly transported through the body more readily than conventional forms of magnesium such as a sulphate, chloride or oxide
2. Magnesium pidolate is absorbed effortlessly through cell membranes
3. Once inside the cells, magnesium pidolate exhibits an extended residual effect, so magnesium is available when needed, for longer than other magnesium supplements. More-mag™ offers a sustainable solution for animals not getting enough magnesium through their normal dietary intake

KEY POINTS ABOUT TRADITIONAL FROMS OF MAGNESIUM SUPPLEMENTATION:

Drenching – magnesium sulphate, magnesium chloride or magnesium oxide. Magnesium oxide is the cheapest form of magnesium. However it is poorly soluble in water causing difficulty with some drench systems

Pasture dusting – Magnesium oxide. Wind and rain can result in field losses of dusted magnesium oxide

Hay & silage treatment – A slurried mixture of magnesium oxide can be applied to hay or silage. This is labour intensive and difficult to evenly mix through feed bins. It also causes a magnesium taint on supplement feed which can lead to higher refusal rates

Water trough – Magnesium chloride or magnesium sulphate. Needs a flavouring to mask the bitterness so that water intakes are not negatively impacted

All of these methods offer limited uptake of magnesium, with highly variable rates of intake between animals. In addition, much of the magnesium from these sources could be excreted within 24 hours.

MAIN CAUSES OF REDUCED MAGNESIUM LEVELS:

- When grass cannot supply enough magnesium, mainly in spring
- Protein content of grass inversely affects magnesium absorption, so the timing of the pastures carrying a high protein level coincides with a high magnesium demand. But, high protein results in low magnesium absorption
- Stress and environmental factors such as a cold snap causes magnesium 're-distribution' within the animal, where magnesium moves from extra cellular fluid to the body tissue
- Increased losses of magnesium during lactation

Trial Data

BENEFITS OF MORE-MAG™:

- Retained in the body for a longer period of time than traditional magnesium supplementation
- More palatable because its not bitter
- Better protection for cows with a history of low magnesium levels. Often your best producing cows are the most at risk
- Less stress on cows at calving time
- Cows are more likely to cycle and milk better if they are not magnesium deficient
- More-mag™ comes in a 'READY TO USE PACK' - No mixing, no stirring
- A unique aqueous solution that will not clog and block drench guns or lines
- A time and labour saving tool

DOSE RATES

Drench once every 10-14 days, or as recommended by your veterinarian.

CATTLE/HORSES		SHEEP	
150kg	30 ml	20kg	4 ml
150 – 250kg	60 ml	20 – 40kg	8 ml
250 – 350kg	70 ml	40+kg	10 ml
350 – 450kg	80 ml		
450+kg	100 ml		

20 litres will treat 200 x 450kg cows
20 litres will treat 2000 x 40kg sheep

WITHHOLDING PERIOD: Nil

TRIAL 1 : MORE-MAG™ VS MAGNESIUM OXIDE – BLOOD SERUM

OBJECTIVE: To compare fortnightly More-mag™ oral drenching (80mL dose) with daily drenching of magnesium oxide (20g magnesium oxide).

TRIAL DESIGN: There were two groups, each of 10 cows, used in this study. Group 1 was orally drenched with More-mag™ at 80mL/cow on Days 14 and 28. Group 2 was orally drenched daily with Magnesium Oxide at 20g/cow. Serum magnesium was measured for all cows on Day 0 prior to treatment, and then again on Days 14 and 28.

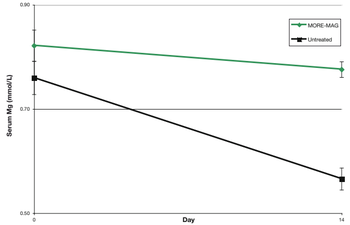
RESULTS: The mean serum magnesium data is presented in Table 1 and Figure 1. There was no statistical difference between the 2 groups on any of the testing days.

TABLE 1. Mean magnesium blood serum (mmol/L) of Group 1 (More-mag™ drenched fortnightly) and Group 2 (magnesium oxide drenched daily).

	DAY		
GROUP	0	14	28
1	0.65	0.68	0.72
2	0.66	0.71	0.73
Statistical evaluation	NS	NS	NS

*NS = Not significant

FIGURE 1. Mean blood serum (including standard errors) of Group 1 (More-mag™ drenched fortnightly) and Group 2 (magnesium oxide drenched daily).



CONCLUSION

There was no significant difference between Group 1 and Group 2 on any of the sampling days, which indicates that fortnightly drenching with More-mag™ was as effective as daily drenching with magnesium oxide.

Trial Data

TRIAL 2 : MORE-MAG™ (FORTNIGHT AND WEEKLY) VS MAGNESIUM OXIDE – BLOOD SERUM

OBJECTIVE: To compare weekly and fortnightly More-mag™ oral drenching (60mL dose) with daily drenching of magnesium oxide.

TRIAL DESIGN: There were 3 groups, each of 10 cows, used in this study. Group 1 was orally drenched with More-mag™ at 60mL/cow on day 0 and on Day 14. Group 2 was orally drenched with More-mag™ at 60mL/cow on Days 0, 7, 14 and 21. Group 3 was orally drenched daily from Day 0 with Magnesium Oxide at 20g MgO/cow. Serum magnesium was measured for all cows on Day 0 prior to treatment, and then again on Days 7,14, 21 and 28. The trial was replicated on two different properties.

RESULTS: The mean serum magnesium data is presented in Table 2 and 3 for the two properties. On Property 1, there was no statistical difference between the two groups on any of the testing days. On Property 2 there were 3 cows in Group 3 (treated with magnesium oxide) with high serum magnesium on Day 14. This meant that on this day Group 3 had significantly higher serum magnesium than Group 1 and 2. However, Group 1 and 2 (More-mag™ treated) still had acceptable serum magnesium levels on this testing day.

TABLE 2. PROPERTY 1: Mean magnesium blood serum (mmol/L) of Group 1 (More-mag™ drenched fortnightly), Group 2 (More-mag™ drenched weekly) and Group 3 (magnesium oxide drenched daily).

	DAY				
Group	0	7	14	21	28
1	0.68	0.66	0.73	0.76	0.72
2	0.73	0.72	0.73	0.75	0.67
3	0.55	0.66	0.73	0.73	0.58
Statistical evaluation – More-mag fortnightly vs magnesium oxide	NS	NS	NS	NS	NS
Statistical evaluation – More-mag weekly vs magnesium oxide	NS	NS	NS	NS	NS

*NS = Not significant

TABLE 3. PROPERTY 2: Mean magnesium blood serum (mmol/L) of Group 1 (More-mag™ drenched fortnightly) and Group 2 (More-mag™ drenched weekly) and Group 3 (magnesium oxide drenched daily).

	DAY				
Group	0	7	14	21	28
1	0.67	0.49	0.69	0.67	0.75
2	0.66	0.46	0.68	0.69	0.71
3	0.64	0.55	0.98	0.72	0.82
Statistical evaluation – More-mag fortnightly vs magnesium oxide	NS	NS	P<0.01	NS	NS
Statistical evaluation – More-mag weekly vs magnesium oxide	NS	NS	P<0.05	NS	NS

*NS = Not significant

CONCLUSION

On both properties, and at each sampling time, serum magnesium was at acceptable levels regardless of whether animals had been treated with More-mag™ weekly or fortnightly, or daily with magnesium oxide. This demonstrates that fortnightly drenching of More-mag™ is sufficient to keep serum magnesium at adequate levels.