

### 3.4 Magnesium – getting the right amount into your cows

With calving well underway and dry cow numbers decreasing daily, it is important to focus on ensuring all cows continue to get the right amount of magnesium. Magnesium is essential in the prevention of milk fever and grass tetany, and a deficiency in magnesium will reduce potential milk production. However, you can also give too much magnesium, which can cause scouring and poor absorption of other nutrients. Therefore, it is important that you know how much you are giving cows and how much they actually need.

Lactating cows need 0.25% to 0.30% of their daily diet as magnesium, and dry cows require 0.35% DM as magnesium. Pasture typically contains around 0.20% magnesium, so cows need to be supplemented at a rate of 0.05% - 0.10% of daily diet.

Use *Table 7* to calculate how much magnesium the cows require and *Table 8* shows how much of each type of magnesium supplement is required.

*Table 7. Magnesium (Mg) requirements (grams/cow/day) for dry and lactating cows*

Intake/cow/day	Total Mg Required (g/cow/day)	Mg from pasture (g/cow/day)	Mg to be added (g/cow/day)
<b>Lactating Cows</b>			
16kg	48g	32g	16g
17kg	51g	34g	17g
18kg	54g	36g	18g
19kg	57g	38g	19g
20kg	60g	40g	20g
<b>Dry Cows</b>			
Mg to be added (g/cow/day)	Jersey	Crossbred	Friesian
8-12kg intake	12g	16g	20g

*Table 8. Amount of Magnesium supplement required per cow per day to achieve target magnesium requirements*

Magnesium source (%MG)	Example Product	Amount of magnesium product required (g/cow/day)				
		12g	14g	16g	18g	20g
Mg Oxide (55%) Drenching	CausMag	22g	25g	29g	33g	36g
Mg Oxide (55%) Dusting	CausMag	44g	50g	58g	66g	72g
Mg Sulphate (10%)	MagS	122g*	142g*	162g*	182g*	202g*
Mg Chloride	MagC	100g*	117g*	134g*	151g*	167g*

\* This is how much magnesium sulphate, or magnesium chloride cows need to be supplemented with to get their total daily magnesium intake. However, you should not supplement with more than 60g total of either or both of these, or risk causing other complications. Therefore, the cows needs to be supplemented from another source to make up the short fall in cow requirements.

For example, a lactating cow eating 16kg DM needs 16g of elemental magnesium/day. If drenching with CausMag, this would mean drenching at a rate of 29g/cow/day. If dusting with CausMag, this would mean dusting at 60g/cow/day to try to account for the high level of wastage with dusting.

### *Magnesium in water*

When adding magnesium to water via a Dosatron or similar system, it is important to realise how strong the concentration of magnesium ends up in the water.

For example, a cow eating 20kg DM/day requires 202g of magnesium sulphate in the water. This is way above the recommended dose of 60g magnesium sulphate per cow per day. In this situation, the cows need another supplement source and pastures could be dusted with 60g CausMag/cow/day plus the 60g of magnesium sulphate added to the Dosatron or trough.

### *Magnesium pre-calving*

Recent research by DairyNZ reported that magnesium sulphate and magnesium chloride before calving are more likely to prevent milk fever than magnesium oxide. However, it is not possible to supply cows with enough magnesium pre-calving using either magnesium sulphate or magnesium chloride. Therefore, it is essential to dust pastures with 60g magnesium oxide/cow/day as well, to ensure that the cows receive enough magnesium, not just the correct type.

Check how you are offering magnesium to your cows today, and make sure they are getting the right amount!

**For more information see FarmFact 3-1 on [www.dairynz.co.nz](http://www.dairynz.co.nz).**

