

DO DAIRY COWS NEED CALCIUM IN LATE LACTATION?

In theory, low-producing cows in late lactation should be getting enough calcium from pasture to meet all their daily calcium needs. In reality, we see down cows with milk fever and cows with subclinical hypocalcaemia in late lactation, over the drying-off period, and even into the early dry period.

Obviously something is not going according to plan.

The main assumptions will be:

- There's not enough calcium in the cow's daily diet
- She's getting enough calcium in her diet but isn't absorbing it
- Her calcium requirements are higher than assumed
- A combination of the above

Not enough calcium in the diet. The first problem, unfortunately common in New Zealand, is that the cow is simply not getting enough to eat to meet the needs of milk production, foetal growth, body condition gains, activity, growth, weather problems, etc.. Most of our pastures contain enough calcium for late lactation needs in a normal, healthy, well-grown, well-conditioned cow, so if pasture dry matter intake (DMI) is adequate ($\geq 3 - 3.5\%$ of mature bodyweight), and pasture calcium content is above 0.5%, theoretically she will be getting enough calcium. Note that calcium content may be diluted in fast-growing grasses.



CALCIMATE

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Problems arise when the calcium content of the diet is too low and/or total intake is too low. If the cow's intake is not solely pasture but includes grains, cereal silage, maize silage or any other low or marginal calcium-containing feed, such as palm kernel expeller meal, then her total daily calcium intake will fall. Calcium will need to be supplemented.

In certain circumstances, calcium may not be well absorbed from the gut, or if absorbed, may be rapidly excreted or otherwise made unavailable to the cow. Depressed rumen pH, i.e.: subclinical or clinical rumen acidosis, even transiently each day, can result in depressed uptake as calcium may 'pool' in the gut. Calcium excretion by the kidneys may be increased.

Lush, fast-growing grass after the autumn flush, especially nitrogen-boosted young grasses and annuals are common culprits, especially if not accompanied by adequate physically effective fibre. These problems are exacerbated where low calcium, rapidly fermented feeds are improperly introduced, rates of feeding are increased too rapidly, or slug feeding occurs.

Excess zinc and/or magnesium can also cause hypocalcaemia. Diets high in unprotected fats and oils can reduce calcium availability to the cow. The calcium may form 'soaps' with the fat or oil which may not be able to be dissociated and absorbed in the lower gut.

Increased calcium needs can be numerous and interrelated, e.g.:

- Need to replenish bone calcium reserves, foetal growth
- Need for continued growth (most New Zealand cows are not skeletally full-grown, even as 4-year-olds)
- Meeting activity needs, e.g.: walking, trucking, fighting
- Adverse weather events
- Jersey cows have an increased susceptibility to hypocalcaemia
- High risk milk fever farm, e.g.: high potassium feed at calving
- Calcium reserves must be replenished before dry-off
- Stress, such as dry-off, new feeds, new mobs

Most often when we look at health and productivity in late lactation, especially when looking forward to avoid problems in the next season, most New Zealand cows would benefit from an improved calcium intake in late lactation. Too often, it is assumed that because it is the end of the season, calcium supplementation is not required. The clinical problems we see are only the tip of the iceberg. Rates of supplementation may not be as high as needed in early lactation, but getting it wrong can be just as costly. Many of those potential problems may not be seen until next season!

50-100g *CALCIMATE* per cow per day in late lactation won't do the cow any harm and may save you a lot of grief. Get your supplies from your Rural Merchant Store today.

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