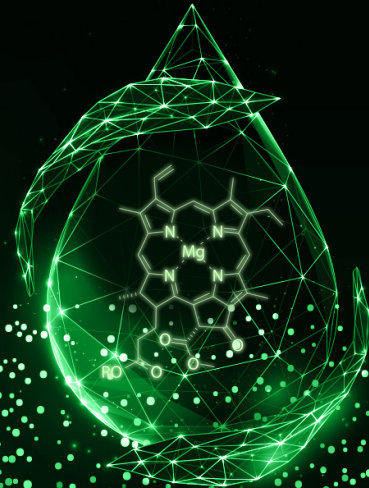


# EMPOWER YOUR SOIL & YOUR BUDGET



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GOLDEN BAY  
**Dolomite**  
NZ's Finest Magnesium Fertiliser

# The Mission of Golden Bay Dolomite

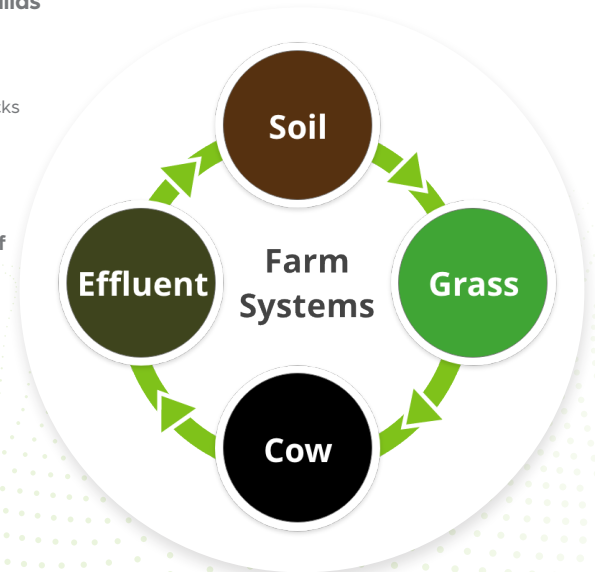
**Golden Bay Dolomite's core business is producing and supplying premium Dolomite, a New Zealand source of calcium/magnesium carbonate that builds both levels in soils.**

A healthy farm system starts with the soil and these two elements are fundamental building blocks of well-structured soils, linking to healthy plant and animal production.

How Dolomite performs in our pastoral systems is outlined in this booklet – take the opportunity to learn about the benefits of adding Golden Bay Dolomite to your fertiliser programme.

**Ultimately Golden Bay Dolomite's mission is to help farmers get to the root cause of magnesium and calcium deficiencies on their properties and to sustainably protect soil health for perpetually.**

**Productive farming in an environmentally sustainable landscape**



**New Zealand's  
natural mineral  
deposit**



# Achieve healthier soil through Golden Bay Dolomite

**New Zealand sourced Golden Bay Dolomite provides a reliable magnesium product without the supply issues and price fluctuations of imported minerals.**

The Golden Bay Dolomite quarry at Mt Burnett near Collingwood is New Zealand's only commercial source of Dolomite.

Mt Burnett has a distinctive geology and topography contributing to the presence of this prized mineral deposit.

In its raw form Dolomite is a very dense rock containing 39% magnesium carbonate and 59% calcium carbonate.

Golden Bay Quarry infrastructure allows the rock to be ground to a very fine powder (30mm – 150 microns) increasing availability to the plant via the soil. With its natural high quality and fineness Golden Bay dolomite is a very effective treatment for animal metabolic disorders. In fact, our Microfine product can be fed as a stock magnesium supplement.

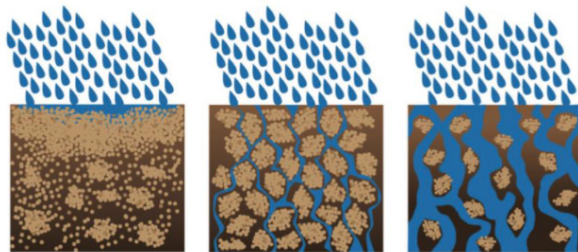
The rock has been quarried in the area since the 1940's and current owner Merv Solly is sensitive to the ecological values of the site. He is committed to sustainable mining practices restoring the area and undertaking significant reclamation work planting native's unique to the region.

# Why we're a smarter product option

**Golden Bay Dolomite is a mixture of calcium and magnesium carbonates along with small amounts of silica and trace elements.**

The minerals calcium and magnesium are both critical inputs for the soil, plant, and animal health of pastoral farms complimentary to your existing fertiliser programme. The dual composition of Golden Bay Dolomite effectively builds both magnesium and calcium soil base saturation levels thus eliminating the need to apply separate, sometimes expensive, products.

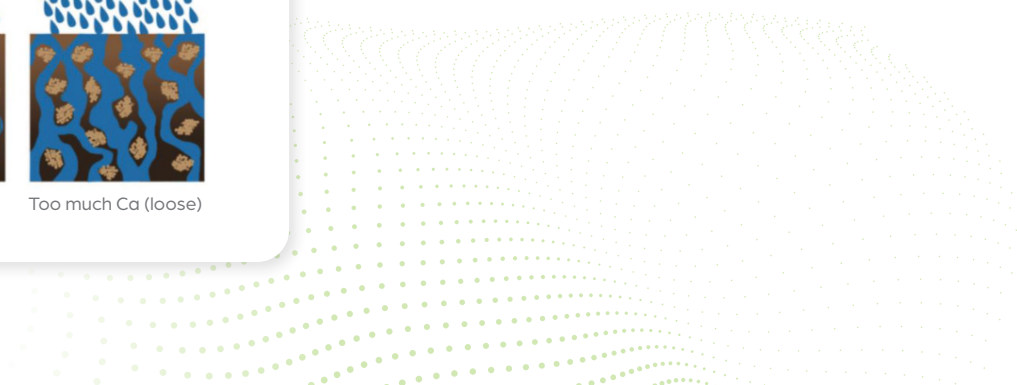
When acting as a soil conditioner calcium loosens soil by (flocculating) soil particles together increasing the air space between soils while magnesium separates particles causing less air space. The key is achieving the right balance between the two allowing for water, air, and nutrient movement while minimising their loss. Golden Bay Dolomite has excellent percentages of calcium to magnesium.



Too much Mg (tight)

Ca/Mg is balanced

Too much Ca (loose)



# Why we're a more natural way of farming

Good soil structure that provides aeration and prevents water logging is critical for beneficial soil microbes survival. The characteristics of Golden Bay Dolomite help 'build a house for the soil biology'.

There are trillions of beneficial organisms that live within your soil: bacteria, fungi, protozoa, nematodes, arthropods, and earth worms – it's often said that there is as much biomass under the soil as there is above. Try to imagine that dairy herd also in action below the soil!

**Beneficial microorganisms play many roles in supporting healthy farming systems.**

## Nutrient availability

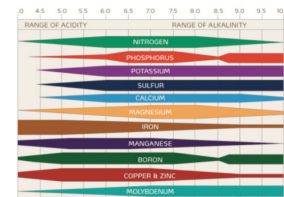
- Microbes are key in converting nutrients into plant available forms, improving the nutrient quality of plant material and benefiting animal health.

## Balancing soil microbes

- The presence of 'good' microbes and correct pH helps animal health by keeping disease causing pathogens in check within the soil.
- Pathogenic organisms that cause ill-health in farming systems thrive in acidic and anaerobic conditions – the complete opposite to beneficial ones.
- Simultaneously weeds also thrive in these conditions which attract bugs, disease and reduces crop and animal production. This can become a vicious expensive cycle relying on veterinarian intervention to address animal health issues.

## Maintaining soil pH

- An optimal pH is critical for pasture growth the use of traditional chemical fertilisers like Super phosphate and Urea are known to have an acidic effect on soils. At pH levels less than 6.0 the availability of key nutrients can become compromised.
- Dolomite can be a good alternative to Ag lime when both magnesium and calcium are required, using Dolomite alone will lift pH 1.66x more than equivalent amounts of Ag lime.
- Acidic soils also inhibit beneficial microbes by causing hibernation or reproductive infertility.





**Dolomite**  
**the right product**  
**at the right rate**

***Do not ask the seed's pedigree  
to substitute for good nutrition.***

Dr William A. Albrecht



# Promoting pasture growth and production

**Golden Bay Dolomites conditioning effect on soil structure promotes good root development and architecture which assists the uptake of water and nutrients for strong plant growth.**

Calcium and magnesium play key roles, calcium is important for healthy plant root, stem, and leaf growth. Magnesium is essential for plant growth actively involved in photosynthesis and found at the centre of the chlorophyll while playing an important role in plant respiration and energy.

## Soil benefits:

**Ca**  
59%

### Calcium

- Promotes healthy root, stem, and leaf growth
- Allows nitrogen fixation to occur on the root nodules of legumes
- Needed for the reproduction of critical soil microbes

**Mg**  
39%

### Magnesium

- Is actively involved in photosynthesis
- Plays an important role in plant respiration and metabolism
- Is a carrier of phosphorus, ensuring a steady flow of phosphorus to the plant for growth
- Increases nitrogen fixation in legumes
- Is an enzyme activator for many other enzymes
- Responsible for sugar synthesis and starch translocation

# A healthier way to farm

**When it comes to the health and productivity of your animals, both the volume of feed and the nutritional content of that feed are important.**

**“Not all grass is created equal. Some pastures contain generous amounts of nutrients and minerals while others, despite appearances, are nutritionally thin”**

Intensive farming systems have grown exponentially in recent years largely with the progression of irrigation. There has also been a corresponding increase in the use of artificial nitrogen which boosts plant cell expansion to increase the quantity of feed available to meet demand.

This simply elongates cells increasing fluid content decreasing the nutrient value – many farmers describe observing the loosening of cow effluent especially in the dairy shed. Cows primarily absorb whatever they need to maintain their own conditioning and what’s remaining is then used for milk production. This explains how a farmer can see a drop in milk production despite increased grass growth and feed. Producing healthy nutrient-rich pasture remains the primary goal of farming given its much higher efficiency rate compared to feed concentrates – 80% of nutrient-rich grass is used.

Intensification has resulted in a corresponding rise in the need for stock trace element supplementation. There is an intricate balance between trace elements that impact animal health. Common illness affecting production such as facial eczema, grass staggers, bloat, lameness, and mastitis are all rooted in trace element issues. Trace element levels should therefore be correct in the topsoil to optimise uptake through pasture to the animal.



# Golden Bay Microfine Dolomite is an effective economic animal health supplement

Dolomite is a source of both key elements calcium 59% and magnesium 39% carbonate as a fine grade powder. Applying Microfine Dolomite as a supplement can therefore reduce the need for additional animal health magnesium supplements. Saving time and costs while maintaining production.

## Health benefits:

### Calcium helps facilitate many body processes

- Calcium acts as a catalyst assisting the uptake of other nutrients in the body
- Contributes to bone formation
- It has a buffering effect neutralising acidity for instance in the rumen
- Composition of body fluids and secretions; blood, hormones, milk

### Magnesium major role in animals

- Acts on the nervous system calming impulse transmissions (stress and muscle contractions)
- Required to produce hormones that are important for the absorption of calcium (Ca) from the gut and the mobilisation of calcium from bones
- Ruminants require magnesium for efficient feed conversion and metabolism
- Resistance to infection (immune system, vitamin E)

### Illness due to calcium & magnesium deficiencies.

- Milk fever (parturient paresis due to sudden drop in the blood calcium and glucose levels at the start of lactation)
- Grass staggers (spasms caused by a decrease in the Mg<sup>2+</sup> concentration in the blood)
- Reproductive problems such as bearings in Ewes due to loose muscle condition
- Rickets (crooked limbs or enlarged limbs) occurs due to Vitamin D deficiency and limited calcium uptake.

# A more efficient system

Every farm is a loop which simply means that each part links to the other starting with the soil. The soil feeds the grass which in turn feeds the animals who then return elements back to the soil via dung and urine. The linkages between the system can also be traced backwards to determine where deficiencies may have originated from.



## Farm Environmental Plans (FEP's) and OverseerFM

Capturing nutrient cycles in pastoral systems and creating individual farm models is the primary purpose of the OverseerFM nutrient budgeting program developed in NZ. OverseerFM is designed to model the nutrient movement at a farm level to estimate the expected losses from the system of key nutrient's nitrogen and phosphate to waterways.

[www.overseer.org.nz](http://www.overseer.org.nz)

The good news is that incorporating Dolomite into your farming system will only have a positive effect on growth and will not impact on any nutrient limits that may be in place in your region. Helping to enhance the strategic use of the the nitrogen limit that you have available under the land management rules of your regional council plan.



## Farm Environmental Plan compliance

Using Golden Bay Dolomite not only has the advantages of supporting healthy soil microbes, plants, and animals it is also an environmentally sustainable product. As the Ministry for the Environment brings in further regulations changing to a farm system that protects your critical resources of soil, plants and animals is an astute step.

[Look up your local regional council website.](#)

**Our productive soil resource is limited and there is infinite value in maintaining its health by applying Golden Bay Dolomite.**



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