

Martin & Diane Wilson

Te Roto 170ha / Lochiel 330ha – Central Hawke's Bay
36 years of dicalcic use

Application (maintenance):
No.8S Hatuma (80% Dicalcic Sulphur / 20% Cropfine Lime) 0:3.6:0:8 @ 350kg/ha

'I got my appreciation for soil fertility through my father,' says Martin. 'I remember as a teenager going with him to Hatuma and being shown slides of minerals that were required in the soil, how chemical reactions take place, and how farmers can build up humus and microbiological life. I'd studied agricultural courses, and nobody had talked about those sorts of things, but it made common sense. It was the same as what my father had been saying about complementing the natural cycle in the soil. So when we got into farming ourselves, he advised us what sort of fertiliser we should be putting on. That's how I came to be using the dicalcic.'



Right ▶
Son Warwick
and Martin

Continued over ▶



‘Good management is the key to everything. It’ll see you through everything from a wet winter to a dry summer. Dicalcic, like it has been, will always be a part of our long term fertiliser programme. It’s definitely got a place in the future of farming.’

Martin Wilson

► For the first ten years here production and quality just kept increasing. Some of that was more experience on my part and the other was building up the soil biology in the soil, as well as good stock selections. My soil’s condition is a major importance to the operation, and it’s something I worked hard on improving from day one. It took me five years to get it to a condition where I felt it was performing at its best. We’ve now started applying this experience on our other property, Lochiel, and already it’s showing massive improvements. If you want good healthy pasture and good healthy stock for production, then you need the soil to be in a good healthy state first because they’re all integrated with each other. The whole process to achieving that is not short term – we don’t want to be mining what we’ve got, we want to be adding to the natural fertility instead.

Phosphate is one of the main components to growing grass but it is how it is applied, and in what medium it is carried in that matters. If it’s applied in an acid-based fertiliser then you’re going to create an acid environment. That’s why I’ve continued to use dicalcic because of its neutral pH component. A large build up of phosphate residue in the soil isn’t needed if you have plenty of humus for the plant to get nutrients from. By encouraging the soil to have lots of microbial life down there, constantly breaking down the surface litter, then the reliance on artificial nutrients is kept to a minimum. We’ve found the elements have all crept up in our soil tests thanks to the higher producing soil we’ve created.

We graze anywhere between 600 to 1,000 dairy heifers on the two properties, so we do everything we can to avoid pugging. If our soil does experience it, it recovers quickly. I put this down to having more friable topsoil. If the clay is very close to the surface and a beast stamps down when it’s wet, it brings the clay up resulting in too much compaction compared to what humus and topsoil content there is. But if you’ve got a good buffer, it has a far better chance of recovering quickly. The other advantage to humus and topsoil is better moisture retention. We can

keep growing grass longer into the drier spells, as well as the colder times. When I plough up my paddocks now they are deep black thanks to the topsoil I’ve built up over time. In comparison, a paddock next door still looks like it’s still mostly clay. That’s the difference. It shows what can be achieved.

Healthy stock is by far and away the biggest advantage to using dicalcic. We don’t have any sort of metabolic problems, we grow a lot of clover and experience very little bloat. We only drench the young animals, but once they’re a year old that’s usually it. We tend to drench the ewes once pre-tup and at docking, but that’s all as well. Dags are kept to a minimum, which I believe also comes down to a healthy soil.

We do use strategic nitrogen – mainly in our new grassing programme in the early spring, but always follow through with the dicalcic and lime. I only use the high analysis products knowing that the dicalcic and lime have contributed to buffering any adverse effects in the soil. You can’t keep robbing the bank. If you’ve got a good resource of natural fertility in the soil, you can take advantage of that and strategically speed it up when required. We use only low amounts of urea, 40-50kg/ha, as compared to the current trend of using two or three times that amount. There have been times when we’ve given it a decent go, but decided it was a waste of money. It grew grass but the result wasn’t what we paid for. The clover content here is huge so we know that we don’t have to rely on artificial nitrogen as much as other farmers. We like to dig holes and make sure the roots still have plenty of clover nodules on them. Nitrogen is a natural thing and we should only use it artificially when we feel nature needs a helping hand, not like a crowbar.

Hatuma have been very mindful that the client gets what they really need. Over the time I’ve dealt with Joe and Clifford Topp, Rod Lawrence and Bill Nicholson, and even though they’ve had a product to sell, they’ve always given good advice based on what is best for my situation at the time, which I’ve

appreciated. They've always been very approachable which has made the relationship with Hatuma easy.

The level of overall management is the most important factor of sustainable farming. Knowing the critical times to make decisions about stocking, pasture management, the right type of animals at the right time of year . . . good management is the key to everything. It'll see you through everything from a wet winter to a dry summer. Dicalcic, like it has been, will always be a part of our long term fertiliser programme. It's definitely got a place in the future of farming.'



Soil Report

Te Roto & Lochiel, Central Hawke's Bay

170ha /130ha

No.8S 0:3.6:0:8 @ 350kg/ha

When Martin and Diane Wilson first began farming Te Roto over 30 years ago, one of the major challenges was improving the poorly-drained heavy clay soils. Martin recalls how close to the surface the clay was, and its poor structure. Other soils in the area still have dense, cloddy weakly-structured topsoils, with sparse stubby roots, pugging, low Visual Soil Assessment scores (19 out of 38), and low worm numbers (average 9 small worms per 20cm cube). Recycling is poor, with cow pats remaining on the surface for months, dead roots and a thick thatch preventing rain from penetrating the soil easily. pH values are commonly in the mid 5's, with low cation exchange capacity and base saturation, imbalances in trace elements in the herbage analyses and low clover levels.

On the Te Roto property, however, lies the proof that good pastoral farming practices can build topsoils and improve soil health,

and lime and dicalcic have played a major role. Despite the natural clay texture, the combination of high pH (6.3), plentiful calcium (12.8 me/100g) and an active worm population (41 per 20cm cube) has produced a topsoil of consistent 20cm depth with a strongly-developed polyhedral structure. There is good rooting, aeration, moisture penetration and drainage, and the soils are resilient, recovering rapidly from any winter pugging events from the predominantly deer and cattle stock. The Visual Soil Assessment score is a perfect 38 out of 38 for rolling country.

Martin's experience gives him confidence that he can turn any similar soil around in 5 years with good soil conditioning and management practices. The key is in providing the right environment for the soil biology to thrive, enhancing both physical properties and nutrient status. On Te Roto, microbial tests show excellent bacterial and fungal biomass (627 – 758ug/g and

285 – 364ug/g) with good activity (43.9 – 49.7ug/g active bacteria), good mycorrhizal root colonization (50%) and active nutrient recycling making the full range of nutrients available to the plants on a consistent basis. Available nitrogen levels are high, at 288kg/ha. In addition, there is a healthy clover cover, with deep roots and extensive nodulation providing nitrogen as needed.

Such a biologically-active soil is constantly recycling the litter, dung and urine, reducing the need for large external fertiliser inputs. Despite what conventional thinking sees as a 'low' Olsen P of 9, Te Roto has excellent production levels, with an optimal 0.42% level of phosphorous in the herbage. This is due to the citric-soluble, plant-available nature of the dicalcic phosphate applied, an optimal pH of 6.3 ensuring soil P is not held in Al, Fe or Mn compounds, and an active biology recycling and transforming organic P into plant-available P.



Excellent soil structure



Extensive root nodulation