

Introduction

Lime and its synergisms increase earthworm numbers which reduce facial eczema spores and ryegrass pulling by up to 90%, and increase clovers and the root depths of all.

This ryegrass pulling on the Fernyhough Walton, Waikato farm's,

volcanic soil is typical in late summer pastures on many farms lacking lime. Black beetle gets blamed even when there are none. Read Elements > Calcium, and Testimonials New Zealand, Fernyhough. The right photo above on the same farm shows shallow perennial ryegrass roots growing horizontally to avoid the aluminium below it, which is typical on many Waikato volcanic soils. The farm had been starved of lime for 50 years because the pH was around 6 which shows how wrong pH is for deciding lime requirements, especially when the old fashioned "establishments" claim that pH 6 indicates that lime is not needed. Fertiliser companies and fertiliser commission agents had been using soil tests geared to sell fertiliser, rather than lime which grows more pasture and is much cheaper per hectare, even with the deficient elements, which pasture tissue mineral analyses reveal. The soil tests incorrectly showed adequate calcium levels while a spade, earthworms with soil stuck to them, and pasture analyses showed ryegrass Ca at half the optimum of 0.8% Ca and showed toxic aluminium, which GrazingInfo recommends getting measured while others ignore it. Read Elements > Aluminium.

On their farm, after 3,000 kg of LimeMag and trace elements over two years, and 5,000 kg chisel ploughed in for a crop, ryegrass and white clover roots with nodules near the bottom went to 40 cm in the chisel ploughed soil which had five 5 more tonnes of LimeMag per hectare, show how much lime is needed. This totalled 8 tonnes in 3 years. A paddock that got 9 tonnes, all on top over three years, on their farm was even better. In the beginning they resisted 3 tonnes per hectare, but trials I did proved it. I've had to do lime trials on hundreds of farms since 1960 to convince farmers, that lime, not phosphate was needed.

Some of these farms have tried Abron, humate and other low analyses products with no where near the yields of the same cost per hectare of lime and its synergisms.

Peter and Helen Butler's Ngahinapouri, Waikato, dairy farm got 3,500 kg of LimeMag and trace elements mix in 2009 and 2010.

On the right, thatch (dead grass at the base of lime deficient pasture) and almost no earthworms, show a need for more LimeMag and trace elements to remove the haven for facial eczema spores in mouldy smelling grass that animals don't like



grazing over, so eat less and produce less. There were no earthworm casts and the pasture was better and longer.

This trial area only four metres away, got 3,000 kg per hectare of LimeMag and trace elements on 2nd March 2011, about three months before this photo. It shows five earthworm casts and no facial eczema spores. Note the two new clover plants, the germination of which is encouraged by lime. which lime Earthworms were thick, clean, slimy and so healthy.



These five earthworms in the 6,000 kg of LimeMag mix per hectare area are so amazingly healthy and plump because the cows making the manure were getting DeLaval Feedtech soluble minerals, and passing some through in the dung.



A correct lime mix costs little because the extra pasture grown with fewer weeds, helps pay for it.

As a consultant, since 1960 I've recommended LimeMag mixes and very little phosphate in the north island of New Zealand because 90% of pasture ryegrass leaf levels have had above the optimum P of 0.36%. When deficient, the LimeMag mix releases and increases pasture P levels from the thousands of tonnes locked in our soils. In one case ryegrass P rose from 3.5% to 5% P. The mix has made pasture growth leap ahead and weeds decrease.

Scientists and some farmers have done trials with basic hard lime on its own and got little or no response, because they knew nothing about synergistic elements. Most know that for P to work in soils and pastures and to improve animal health, it has to have S, but few know about Ca, needs serpentine and B.

Spore numbers were one-sixth of those in unlimed pasture on a trial on Gavin and Diane Armstrong's Rotorangi, Waikato farm, and one-tenth on a Rod Millar's Ngatea, Thames Valley, farm. Many farmers who lime regularly have less facial eczema (some none) than neighbours who don't. We always limed adequately and had only one slight eczema on a heifer, which may have been spring eczema, from 1958 to 1987 after which we gave up farming.

This information is not new. We applied three times more lime than MAF recommended and our farm showed it by winning the most improved Waikato dairy farm in 1959 and being called the best on the 15 km long Piako Road between Gordonton and Motumahoe.