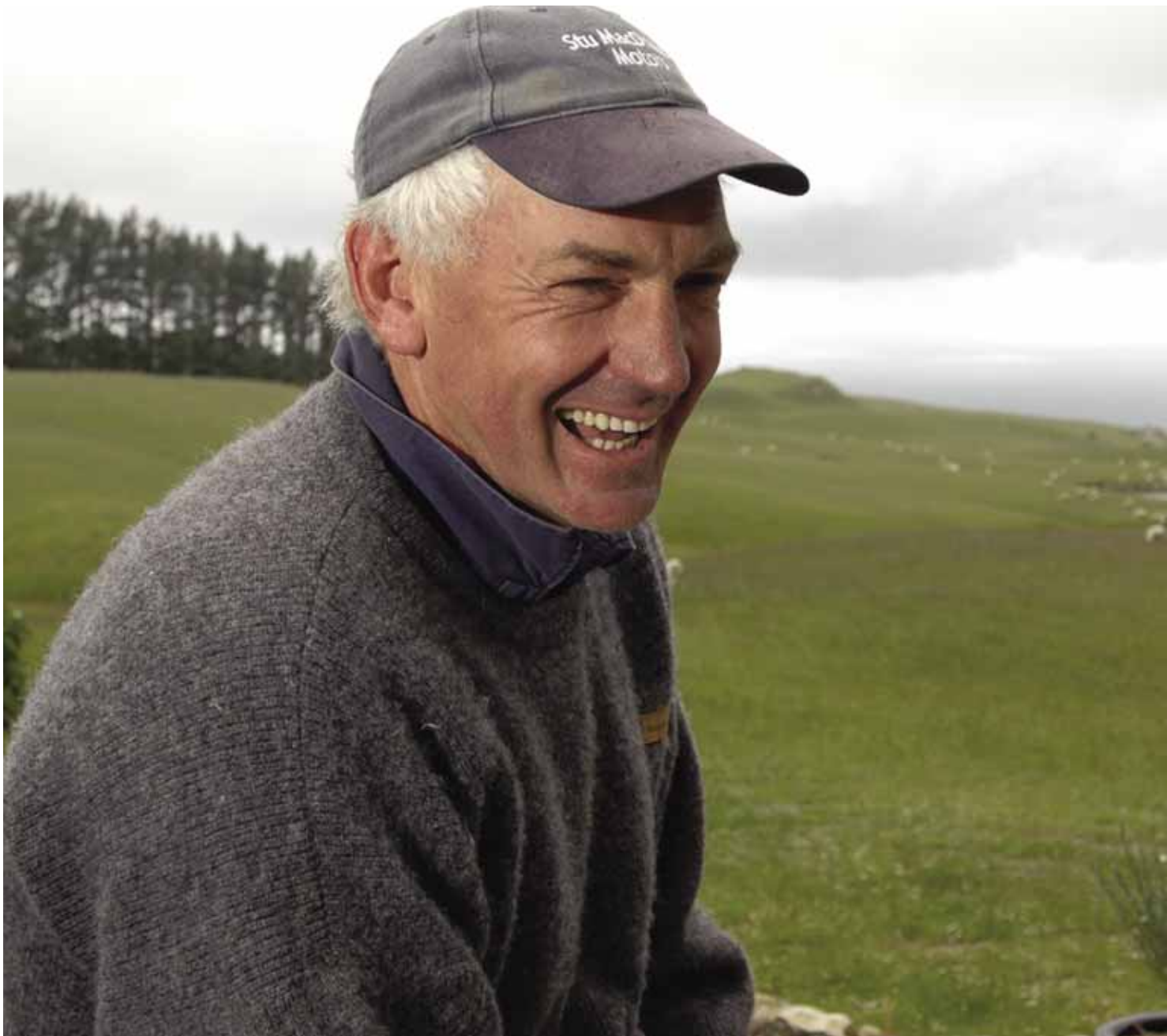


## Barry & Sue Stoddart

890ha – Porangahau  
32 years of dicalcic use  
No 8S (0:3.6:0:8) @ 370kg/ha

**'My father first applied dicalcic on this place after his spreader operator, Tom Fuller, began expressing the virtues of the product during the 1970s,' recalls Barry. 'He later followed up with conversations with Joe Topp at Hatuma who spoke of the advantages to applying a non water-soluble phosphate, and the benefits to nurturing the soil.'**



‘I’ve always been mindful of the benefits from a healthy soil transpiring through to the surface. This is reflected in the large content of clover that grows here and the good performance of the stock.’

Barry Stoddart



The key to the farm's productivity has been its soil and making sure it remains in a healthy condition is something I've always put a great deal of emphasis on. That's why I've continued to use dicalcic, it complements the natural processes of the soil.

A few years back when we purchased a neighbouring block one of the first things we noticed was the contrast of soil conditions, something I'm sure was due to the dicalcic applications. The moisture retention has been the biggest difference. I can hop over the fence and dig a hole, and it'll be dry and pale looking, whereas back on this side, only 20 metres away, it will be moist and black. Obviously something on the original place is right. In saying that, the new property is already showing signs of improvement with the initial applications of dicalcic and Cropfine, such as the thatch disappearing from the surface.

I'm conscious of making sure the rest of my management doesn't compromise the potential of the soil. One of these is running a reasonable number of sheep so as not to damage it in the winter time. I find if I do experience any cases though, the soil repairs itself quickly thanks to the structure already being very good.

Continued over ►

► I've always been mindful of the benefits from a healthy soil transpiring through to the surface. This is reflected in the large content of clover that grows here and the good performance of the stock. The welfare of my animals are number one priority, and the dicalcic applications have meant there's been nothing to think there's anything different I could do to improve their health.

I farm for a happy medium between what is productive, and what the farm can handle. Looking after the soil and running a respectable amount of stock (9.5/ha), to me is better than trying to pump the nutrient levels up, increasing stock numbers, and running the risk of damaging the environment. I think if you are in a farming system where you are using the natural increase in the spring then it's a matter of farming around the situation. I'd prefer to take advantage of the warmer months, instead of trying to manipulate it to suit over-stocking. That's where dicalcic has its biggest advantage, getting the growth in the summer time. We've got a breeding and fattening situation here,

and getting that growth then is paramount to producing the stock. And the moisture retention the dicalcic helps provide is crucial to this.

The dicalcic doesn't grow heaps of grass at any one time, but does the job on a more continuous basis. Certainly the palatability of the grass is never an issue with the stock, as they certainly seem to enjoy eating the pasture. I'm very reluctant to using nitrogen because it is the long-term effects that I'm mindful of. I don't want to compromise the natural system for a short term gain. I'd rather go for a short term loss, with a long term gain.

Hatuma's been tremendous to deal with over the years, they've always been very accommodating and friendly. The way farming is now focussing more on getting production while sustaining the environment, I think Hatuma dicalcic has got a very good future. It's a non intrusive, natural-based product that goes a long way to providing farmers with an effective option.'



## Soil Report

Stoddart Farm, Porangahau, 890ha  
No.8S (0:3.6:0:8) @ 370kg/ha

The Stoddart's home block is well known for finishing top quality lambs. Consistent above-ground production is a reflection of soil health and below-ground biological activity, and this farm has perfect Visual Soil Assessment scores for both soil and plant indicators, as well as the record for worm numbers, with 118 found in a 20cm cube. This equates to nearly 30 million worms per hectare, and an estimated soil turnover of 7200 tonnes per hectare per year. This gentle mucus-rich cultivation has contributed to the strongly developed, friable, nutty structure of the soil, and its excellent moisture retention capacity and rooting medium, allowing dense pasture that holds on later into the dry and recovers quickly.

A good liming history and high worm numbers have also played a part in the high pH (6.3), matter content (10.5%), organic matter content, and nutrient status of this soil. It has a cation exchange capacity of 32 me/100g, with a base saturation of 83%. Soil macro- and micro-nutrients are all in the medium to high range (except selenium), and are in balanced proportions. This balance is reflected in the excellent pasture and clover nutrient status, and the pasture has a good digestibility of 75.4% and a high metabolisable energy of 12.3 MJ/kg.

While natural factors such as rock type, slope and climate are major determinants of soil type and potential, management also plays a crucial role in soil physical,

biological and chemical properties, and ultimately the production benefits.

This is illustrated on the Stoddart property, with the purchase and recent development of a neighbouring block. Three adjoining sites were assessed, each with the same climate, rock type, parent material, slope, aspect and soil type. Management is the primary distinction between the sites, particularly the application of lime and dicalcic phosphate. The 'Stones' block has received 32 years of annual light applications of lime and dicalcic; 'Cemetery' 4 years, including a heavier initial application of lime; and 'Scrub' has not received any. A range of soil and plant indicators are shown for the three sites in the table below:



'Scrub' (0 years) mossy and pugged



'Cemetery' (4 years) pasture improving

	'Scrub' 0 years	'Cemetery' 4 years	'Stones' 32 years
<b>Topsoil</b>	22cm	23cm	28cm
<b>Structure</b>	Weakly developed, crumb, semi-deformable	Moderately developed spheroidal, semi-deformable	Strongly developed, polyhedral, friable to 70+cm
<b>Roots</b>	Few to common	Common	Many; to 70+ cm
<b>Clover</b>	No clover; high moss content	Some clover	Common clover, strong root systems, many reddish nodules
<b>Visual Soil Assessment - Soil (out of 38)</b>	29.5	34.5	38
<b>Visual Soil Assessment - Plant (out of 38)</b>	23.5	28	36.5
<b>Worms (per 20cm cube)</b>	14 small	23 medium	68 medium
<b>pH</b>	5.5	5.8	6.5
<b>Cation Exchange Capacity (me/100g)</b>	18	24	24
<b>% Base Saturation</b>	46	68	81
<b>Ca % Base Saturation</b>	27	46	60
<b>Olsen P</b>	6	9	19
<b>Soil Trace Elements</b>	Very low boron & copper; others medium	Very low boron; others medium including copper	All medium, including copper and boron
<b>Herbage Phosphorus (%)</b>	0.24	0.28	0.42 (optimum)
<b>Pasture Digestibility (%)</b>	70.5	72.7	76.4
<b>Metabolisable Energy (MJ/kg)</b>	11.3	11.8	12.5



'Stones' (32 years) dense, clover rich pasture



Dense rooting in topsoil

Improvements in soil physical properties, worm numbers, pH, and nutrient status with increasing period of lime and dicalcic applications are correlated to improved pasture composition, clover content, feed quality and pasture growth and recovery rates. This ultimately flows through to animal health and farm production.