



High-performing, high-producing

# Livestock

## Why is soil fertility important?

A fertile soil is the foundation for maximum agricultural productivity – supplying essential minerals for soil microbes and crops which, in turn, provide nutrition for people and animals.

Livestock productivity declines if their feed is deficient in any essential body constituent. Stock requirements for carbohydrates and fats (mainly used as sources of energy) are easily met but the essential building blocks of proteins (i.e. the 8 – 10 essential amino acids required) are not so easily catered for because these amino acids are not interchangeable. Since proteins are required for growth, reproduction and providing immunity against disease, their absence in stock food can cause serious animal health issues and compromise productivity.

### To produce mineral-rich, protein-rich, high fertility crops

The constant goal of gaining higher yields by planting exotic pasture species and using predominantly N-P-K fertiliser to stimulate growth has caused overall soil fertility to decline. The outcome of

focusing only on the bulk or dry weight produced is likely to be a depleted soil and the growing of bulk crops high in carbohydrates, but poor in minerals and protein, i.e. quantity rather than quality.

To produce mineral-rich, protein-rich, high fertility crops such as lucerne, clover and ryegrass requires mineral-rich soils. These crops represent better nutrition and lead to enhanced productivity. More nutritious crops give more grazing days per paddock with quicker and greater weight gains and a decline in the requirement for mineral feed supplements. Growing legumes that are able to fix nitrogen will also reduce the need for commercial nitrogen fertilisers.

Increasing pasture quality through growth on high fertility soils improves survival rates of newborn stock, produces better lambing and calving percentages, increases milk and fibre quality, and improves overall animal health. By growing crops in optimum soil conditions plants are also better able to develop their own resistance to pests, disease and drought.

## The results speak for themselves

Farmers using Superior fertiliser tell us that stock shows their preference for crops grown on higher fertility soils by grazing the paddocks more evenly and favouring the paddocks with increased fertility.

## The role of trace elements

Trace elements are also essential for vital biochemical functions in soil microbes, plants and animals. It is sometimes assumed that when all the major nutrients are present in the soil in the proper amounts, this makes the trace elements more available. However, this is only true when all trace elements are present in the soil initially.

Many soils can have a trace element deficiency which is harming the crop in some way, but is not yet a visible problem. This deficiency is often magnified in livestock, causing animal health to suffer. Once symptoms of these hidden deficiencies show up it is often too late to reverse the problem

Reproductive irregularities or failure, and increased infections are often the first symptoms of nutritional deficiencies in animals. Often these can be linked to deficiencies in the soil.





### Chris Dagg, Hazeel Downs, Queenstown

Chris has seen a phenomenal turnaround to his pasture and lucerne quality since the first application of Superior and says he expects to keep seeing improvements as the trace elements in his soil build up.

“Last season we had the heaviest lamb weights we have ever had on this place – averaging 19.95kg up about 1.5kg on what we have traditionally been finishing our lambs to. It’s not like the season was kind to us, either; I would put those weights down to quality pasture.”

Chris was measuring the growth rate of his dryland lucerne on a weekly basis and over a 30 day period the lucerne grew 28 inches. The amount of dry matter his two lucerne paddocks have produced has also increased, averaging around 15,000kg of dry matter per hectare and he is getting three to four cuts a season from his lucerne.



### Tom and Bevan Arthur, Ida Valley, Central Otago

The Arthurs conducted a trial involving an experiment analysing very similar eight hectare dryland paddocks all in close proximity. “We wanted to see if those trace elements were actually going to show any difference,” Bevan says.

Tom says: “After 18 months it was very obvious the Superior paddock had a lot more clover cover than the other two and that paddock held on a lot longer in the dry. The ground also felt spongier under foot and manure was breaking down faster.”

Bevan adds: “You could also see the stock preferred the Superior paddock as we grazed the two fertilised paddocks together with the gate open and 80 per cent of the stock consistently grazed on the Superior side.”



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