www.soilmatters.co.nz

soilmatters
SOIL CONSULTANTS

Meet
Soil Matters

A company dedicated to the health of soil... and everything that feeds from it.

Soil Matters is an established soil consultancy company based in Christchurch. The company has been looking after soils all over New Zealand for over 15 years.

Soil Matters works for farms where the added value of a healthy soil is appreciated and for those who want to build their business by investing in the health of the soil.

PASTORAL FARMING

VITICULTURE & HORTICULTURE

ARABLE FARMING

Can we help you?

I want to...

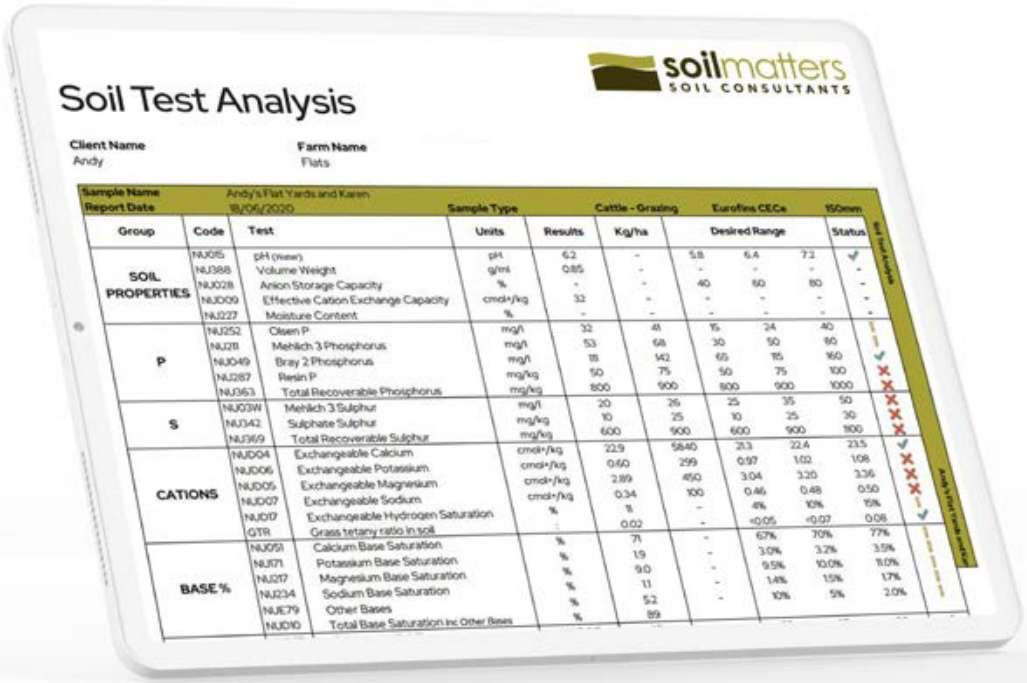
- make use of nutrients already in the soil
- diversify my pastures
- make calculated decisions on fertiliser use
- reduce the amount of crop protection/chemicals that I use
- be confident about making changes in the way that I farm

What Soil Matters offers

Independent expertise and personal guidance to grow better crops and pastures.

- **Soil and plant testing**
- **Nutrition plans**
- **Remediation of problem paddocks**
- **Transition to different crops or farming systems**
- **Soil carbon management and measurement**
- **Review of existing information e.g. soil tests**
- **Training and education**

Testing

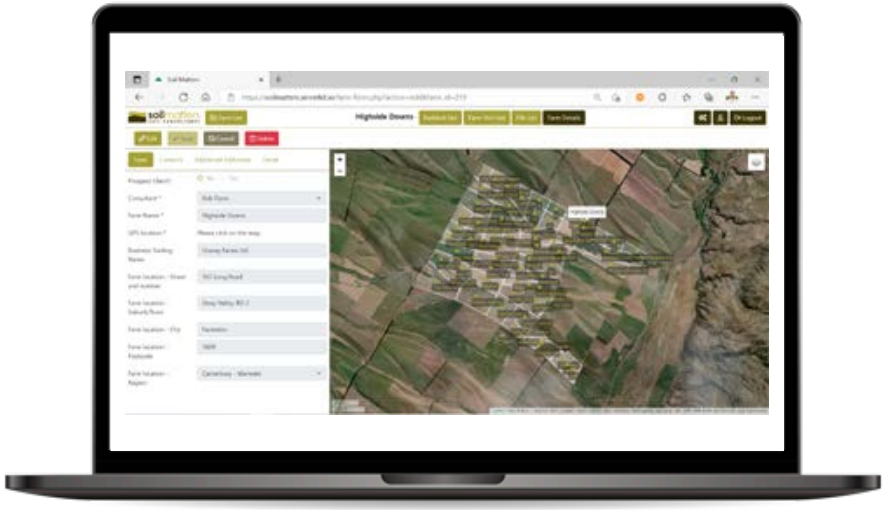


Samples are collected and sent to preferred laboratories.

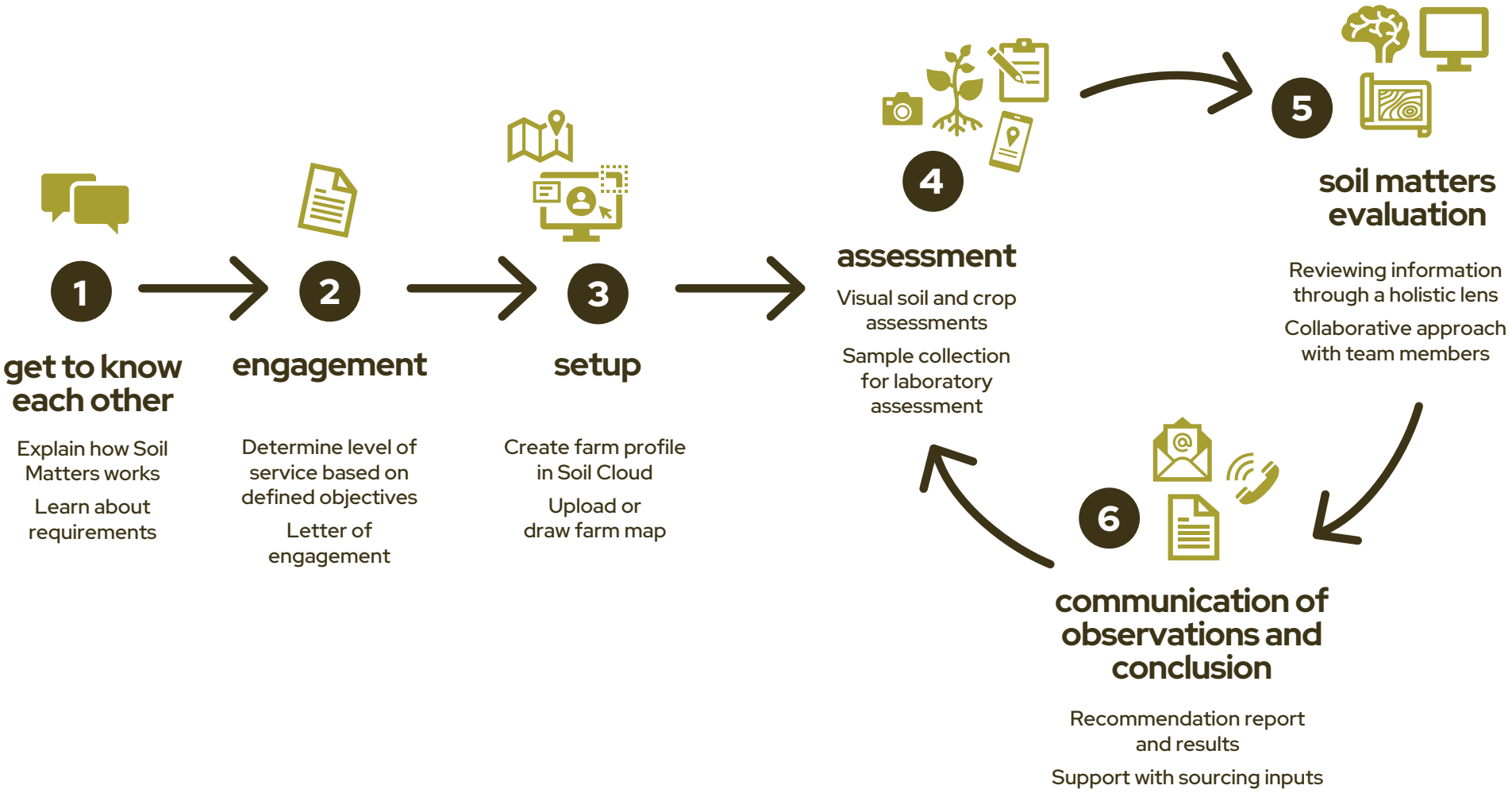
- **Soil testing**
- **Herbage testing**
- **Plant sap testing**
- **Soil foodweb testing**
- **Carbon testing**
- **Any other testing required**

Introducing Soil Cloud

Soil Cloud is a cloud-based mapping software system to manage soil information, hence the name - Soil Cloud!



The customer journey



Our mission statement

With a holistic view on the health of soil and the environment, Soil Matters provides guidance to future-proof NZ farming.

Everything is a product of its environment

Soil health parameters can be categorised as biological, mineral or physical.

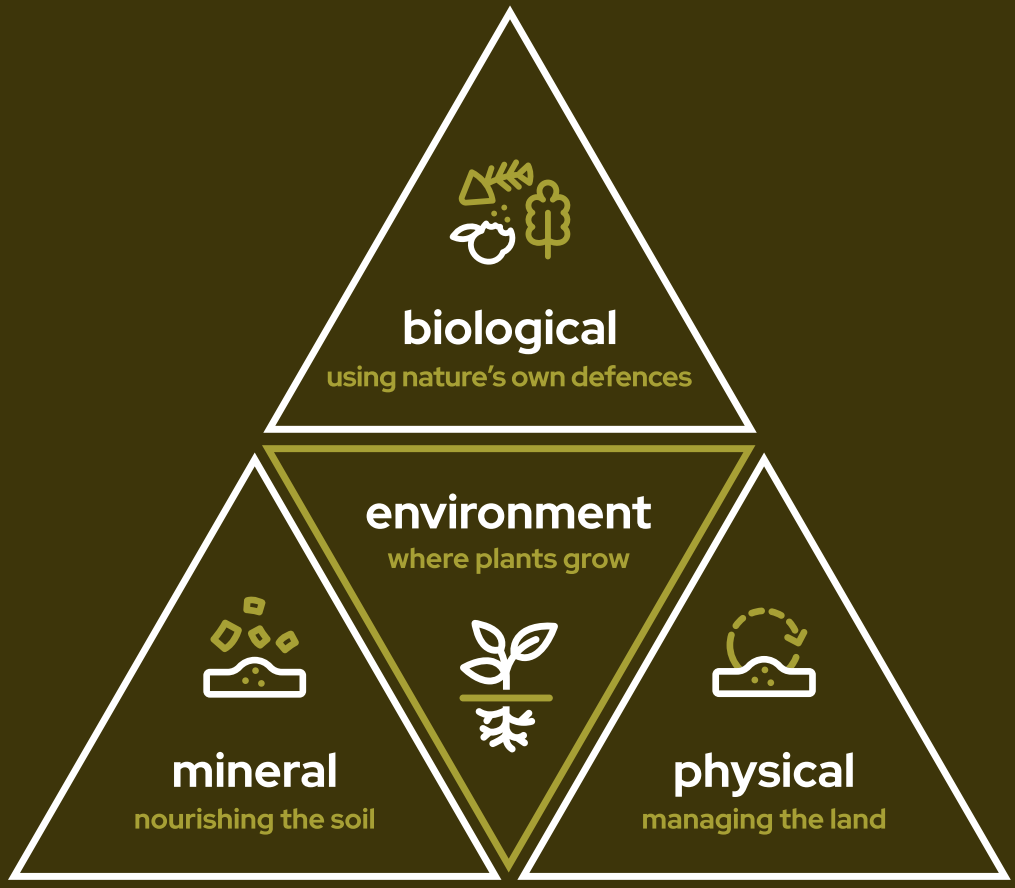
Think of the middle of the triangle as the place where plants grow. Try to imagine what would happen to the environment if we only looked at one of these three supporting elements.

This triangular make-up also explains why there isn't such a thing as a 'silver bullet'.

Everything has its place.

All aspects that influence the environment can be enhanced, and we can help you by optimising:

- Canopy and grazing management
- Plant diversity
- Soil structure
- Mineral balance
- Integrated pest management



Profit from photosynthesis

This is the goal of a general farming enterprise – to create a positive number on the bottom of the P&L, propelled by the power of the sun.

Solar energy is the kick-off in a cascade of events that makes your farm work. The major one is that the leaves of your crops convert carbon into biomass, complex proteins, and sugars. Biomass can turn into food for animals or human consumption, or even a nice glass of wine.

How do we quantify nutrient requirements?

CEC

Cation Exchange Capacity (CEC) is a measure that represents the soils ability to store nutrients. Accurate inputs for soil remediation can then be calculated. Nutrient exchange occurs on surfaces of clay minerals, organic matter, and roots. Therefore, the CEC typically lifts as clay content and organic matter increase.

Base saturation

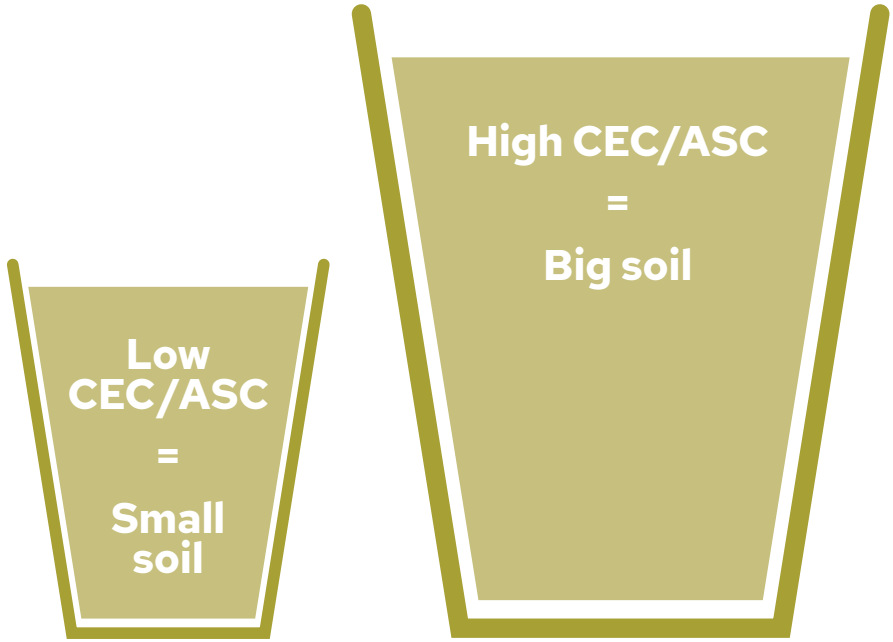
Base saturation is a calculation which determines the percentage of cations in the soil. Cations are nutrients with a positive charge.

pH

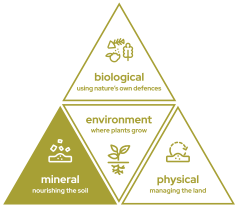
pH is measured in the soil solution and is strongly influenced by all the nutrients in the CEC (not just calcium/lime!).

ASC

Anion Storage Capacity (ASC) is similar to CEC but then relates to the negatively charged nutrients. A difference is that ASC is typically only influenced by clay content and not so much by organic matter.



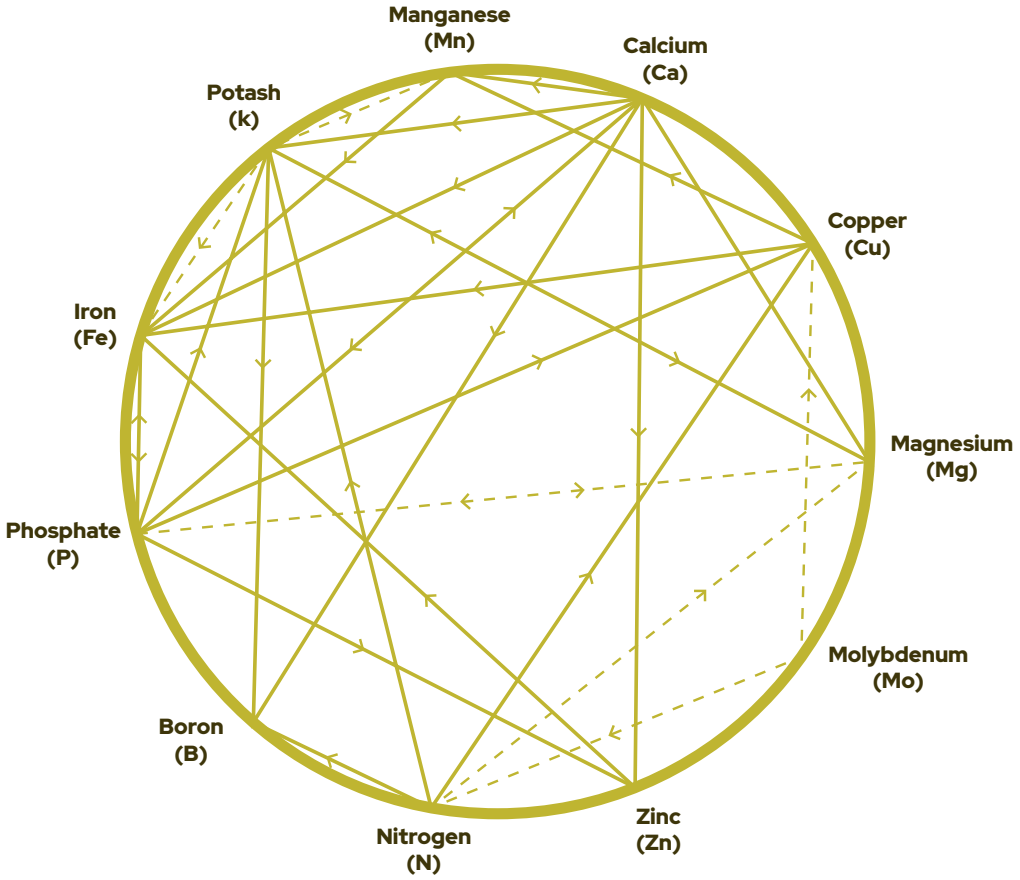
The mineral side of the triangle



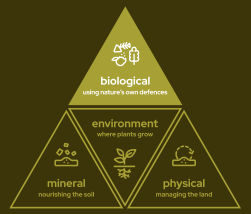
Nutrients in the soil interact both synergistically and antagonistically. You can't add one without altering the uptake of another nutrient(s).

N, P, and K are the popular ones as they boost plant growth like no other. But the ones 'at the back of the class' are just as, if not more, important for nutrient efficiency.

Soil Matters focuses on reducing the reliance on synthetically produced nitrogen, enhancing carbon sequestration, and providing the right balance for nutrient dense crops.



The biology side of the triangle

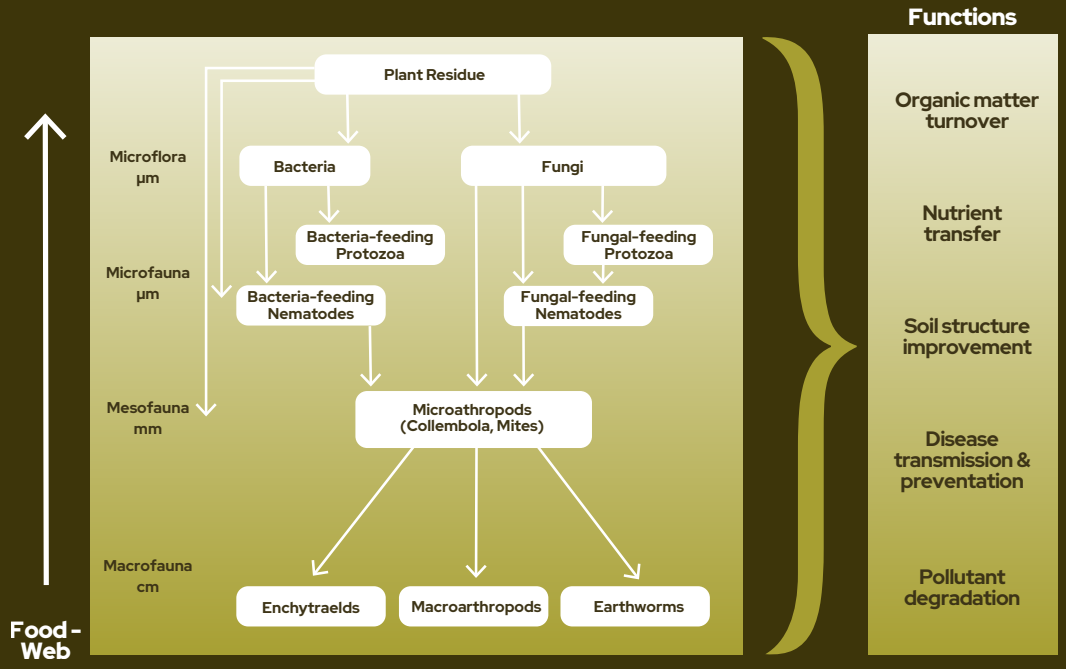


Keep the biology alive

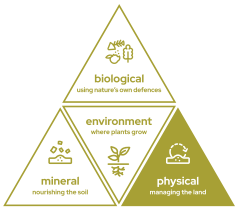
Biology is important because it facilitates nutrient and carbon cycling. Biology is alive and must be fed, nurtured, and treated with care. Plants growing in soils with a high biological diversity, that balance naturally, resist diseases much better than soils with low biological diversity. Food sources for soil biology come in forms of carbon from decaying plant material, and carbohydrates from root exudates, which are created by a photosynthesising plants.

Soil biology can be managed by choosing specific food sources (e.g. plant residues or compost) to stimulate different types of biology.

Soil Biology Ecosystem



The physical side of the triangle



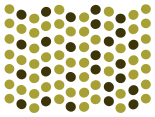
To assess and improve soil structure, you need to know the type of soil first.
Soil type also determines the nutrient holding capacity (CEC & ASC).

Soil structure refers to the way soil particles group together to form aggregates. These aggregates vary in size and shape from small crumbs through to large blocks, or in the worst case some soils resemble a large, solid, featureless mass.

Structure is what determines the ability of water to soak into the soil and excess water to drain away. It also determines air movement through the soil. Structure is a product of microbial activity combining soil particles into aggregates.

Sand

CEC 0-15



Silt/Loam

CEC 10-20

Clay

CEC 15-50

Peat

CEC 35-60

Our reputation is important to us

"Great consistency in growth right throughout the block, which is quite amazing compared to what we started with."

Will Grigg

Owner Meadowbank Vineyard | Blenheim

"Seeing what it used to look like compared to what it looks like now, is very impressive in such a short space of time."

Dave Glyne

Cropping and Agronomy Farm Manager at Organic Farming | Mt Cass

"Having someone that I can count on to help answer questions about what is going on, helps us address the things that really matter."

Brandon Dalton

Farm Manager | Lees Valley Station & Gleneyre Station

Kono beverages and Whenua Awa

Organic matter and CEC comparison over time at Whenua Awa, Kono Vineyards.

Whenua Awa vineyard produces grapes for the award winning TOHU winery, part of Kono Beverages.

Tools

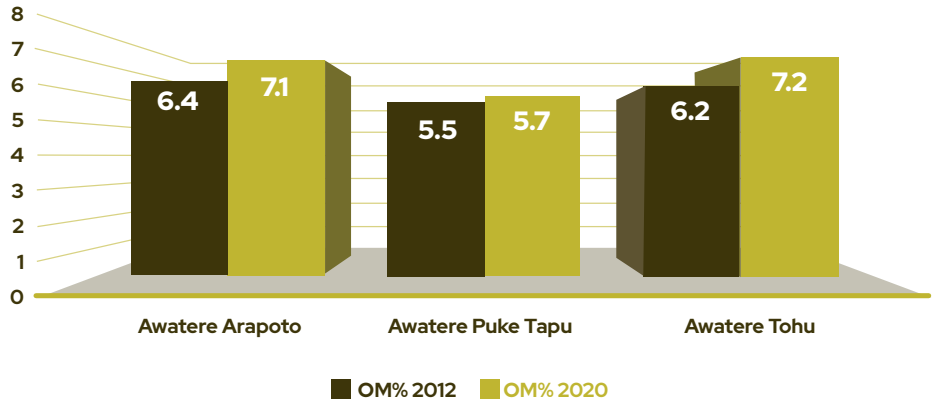
Balancing soil nutrients, among other things, improved soil structure and exposed the soil colloids that resulted in a higher CEC.

The use of slow-release nutrient inputs, improved sward and undervine management, resulted in retaining more organic matter in the soil.

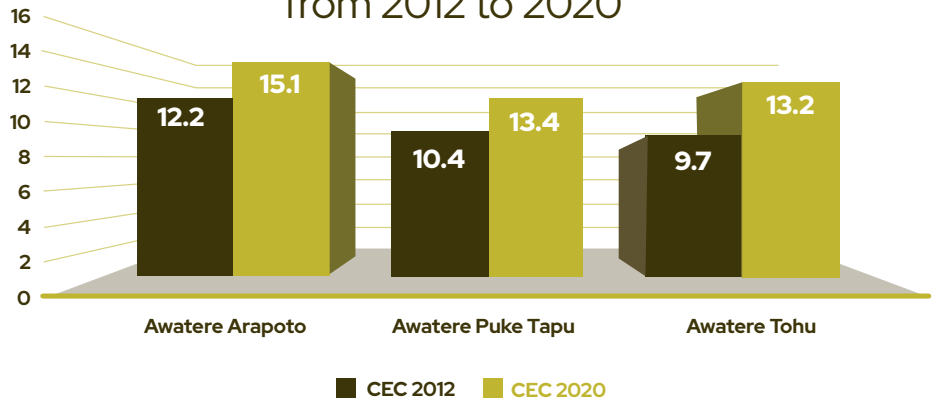
Conclusion

Soil stewardship and successful winemaking go together.

Comparison of Organic Matter % (OM%) from 2012 to 2020



Comparison of Cation Exchange Capacity (CEC) from 2012 to 2020



Ngāi Tahu Farming

Ngāi Tahu, Eyrewell Forest,
North Canterbury

Nitrogen reduction trial

A nitrogen reduction trial was carried out over the 2020/2021 season in which the pasture was diversified.

Original programme:
136 units of Nitrogen were applied

Revised programme:
16 units of Nitrogen were applied

Tools

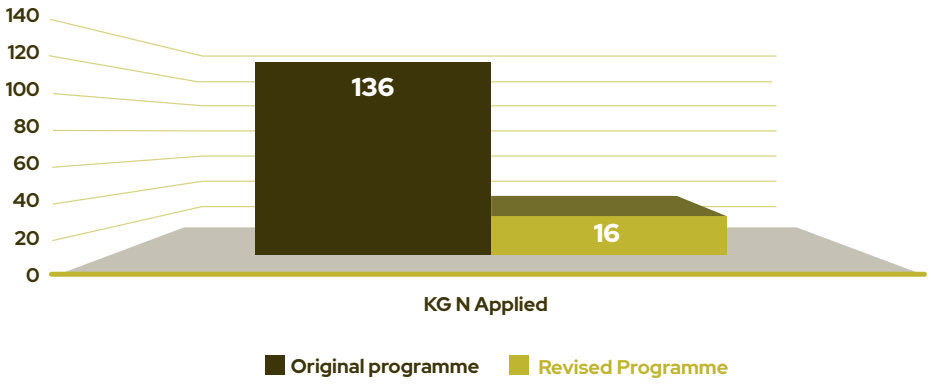
Intensified monitoring through herbage testing, grazing management with higher residuals post grazing, and longer round length.

Conclusion

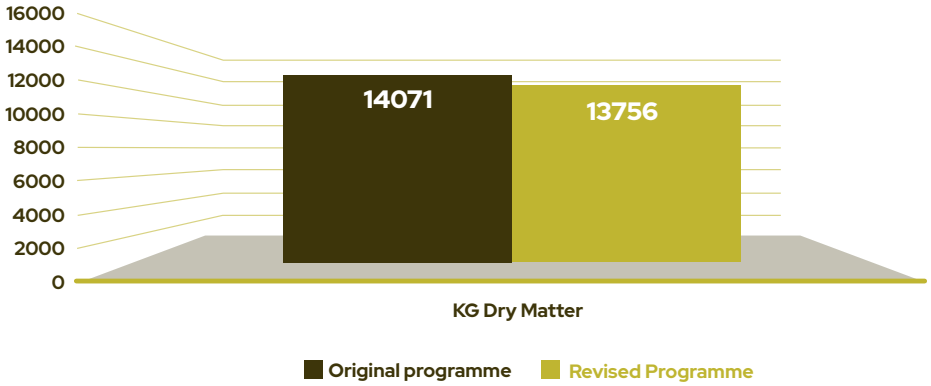
In this case nitrogen was not the limiting factor for pasture growth.

NOTE: The trial also showed increase in the economic performance per kg of N

Comparison of Nitrogen applied



Comparison of measured dry matter



Level of involvement

Let's talk about...

your objectives

how often you want to see us

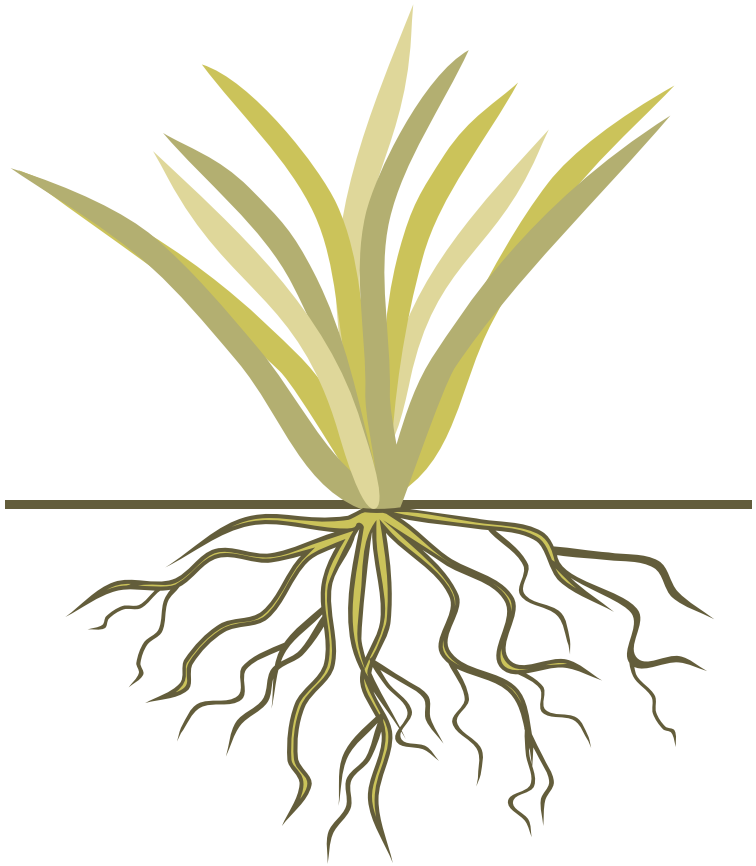
what type of advice you need

Fee structure options

- Charge per hour
- Monthly fee based on agreed services
- Project specific quote

Testing is charged separately

Objectives



growing
New Zealand
naturally

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