

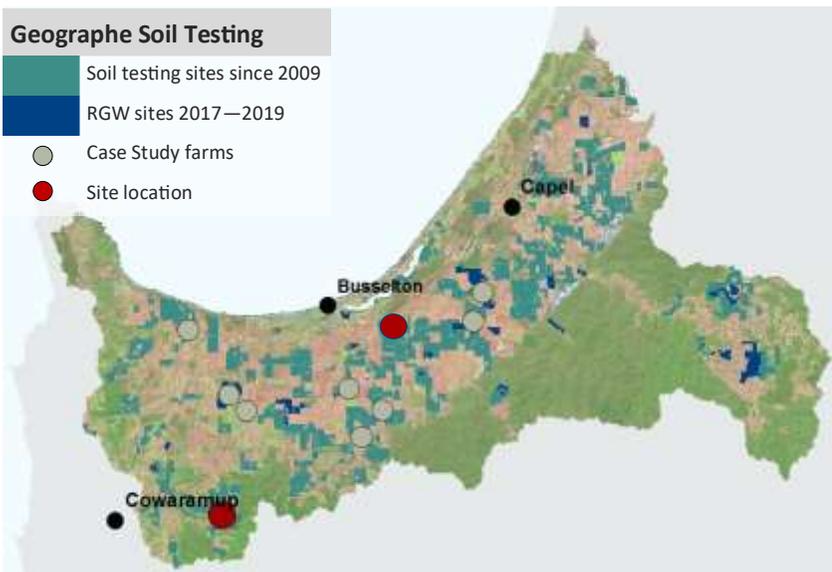


MOST SIGNIFICANT CHANGE

- Applied 1000 tonnes of lime to increase soil pH and unlock residual phosphorus.
- No phosphorus applied for two seasons.
- Improved pasture composition and effectiveness of nitrogen-fixing legumes.

Case Study Farmer - NICK HEALY

Improving soil fertility for better pasture composition



LOCATION

Treeton / Yoganup

LANDSCAPE

Whicher Range

ENTERPRISE

Sheep and beef

PROPERTY SIZE

150 / 293 hectares



Background

Nick Healy runs a 150 hectare farm in Treeton and a 293 hectare farm in Yoganup, alongside his father-in-law, Alan Guthrie. They run a mix of beef and sheep, with a view to move to 100% sheep for lamb and wool in the near future.

Improving pasture composition and managing weeds more effectively were the drivers that got Nick involved in soil testing.

"We found a lot of our pastures were dominated by Cape Weed and other weeds. That prompted us to think, what's the fertility of our soils like and why are we struggling to get our pasture composition right?"

Soil and tissue testing

Nick joined GeoCatch's soil testing project in 2017 to undertake whole-farm soil testing.

"The soil is our biggest asset. We need to look after it. At the same time, we want as much as we can out of it, with putting as little as possible into it."

The results of soil testing on Nick's farm showed that soil phosphorus (P) and sulphur (S) levels were adequate, however soil pH was low.

In response to his soil test results, Nick ordered 1000 tonnes of lime to increase the pH of his soil. He credits this as one of his

AVERAGE SOIL TEST RESULTS 2017

TARGET PRODUCTION: 90% of maximum

High P	Medium K	High S	Low pH
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proudest achievements on the farm.

After focussing on soil pH, he decided he would only apply other nutrients if further soil and tissue testing indicated they were needed.

"To look at the second lot of soil tests...and see that the pH is coming up and that phosphorous levels haven't dropped without the use of fertiliser....makes us think we can do this for a few more years without the sustained high inputs and still grow grass."

Outcomes

The approach Nick took to fertiliser changed significantly from a blanket approach of P across all paddocks to one that is more targeted based on soil testing.

Nick has not applied Super fertiliser since he started soil testing and has not seen a decline in pasture quality. In fact, he says his pasture composition has improved.

Nick redirected his entire 2018 autumn fertiliser investment into lime and increased his soil pH from 4.6 to 5.3 in just two years.

Table 1: Four-year Fertiliser Investment

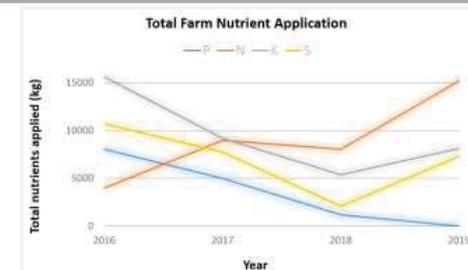
	2016	2017	2018	2019 (planned)
Super Potash 3:1 (t)	75	0	0	0
Super Potash 3:1 + ammonium sulphate (t)	25	0	0	0
NPKS Blend (t)	0	21	12	0
Autumn Burst (t)	31	43	0	0
Econograz (t)	0	0	0	34.5
NK1:1 (t)	0	0	0	21
NK2:1 (t)	0	0	14	0
NKS32 (t)	0	0	6	0
Gypsum (t)	0	0	0	30
Lime (t)	0	150	1000	200
pH (average)		4.6		5.3
Cost	\$59,600	\$37,200	\$31,520	\$33,310
Soil test	N	Whole farm	Targeted	Whole farm
Tissue test	N	N	Targeted	Targeted

Nick has reduced his fertiliser costs by almost half, even with the addition of lime.

By improving his knowledge of soil fertility, Nick has been able to improve his farm business and is now more conscious of maximising resources and investment.

"Basically we went from 150 kilos a hectare over everything, all paddocks, to last year using none in the autumn."

Despite reducing his P application by 85%, Nick says his pastures are doing better, with less weeds and more beneficial species.



Tissue testing in 2018 helped Nick to track the impact of these changes and build confidence in his fertiliser decisions.

More significant changes...

- The **pH increase of 0.7** was a significant outcome for Nick. It **increased his confidence** in the changes he was making and his **investment in lime**.
- Applying 1000 tonnes of lime, instead of fertiliser, **improved his pasture composition** and will **increase future uptake** of nutrients.
- Nick's approach is now **more targeted and strategic**, a shift away from a **blanket application of 150 kilograms** of Super fertiliser per hectare.
- Nick has witnessed an increase in more desirable pasture species and a **greater yield (bulk) in grass**.

Lessons learned

Nick benefited from being able to measure and see results firsthand. Soil testing allowed him to benchmark his pH levels before he invested in 1000 tonnes of lime and see the increase in pH in the following years.

Combined with soil testing, tissue analysis showed how nutrients were being taken up by pasture and increased Nick's knowledge of soil fertility.

The support provided by an independent agronomist gave him confidence to reduce his high-P fertiliser and focus on different nutrient compositions.

"It just gets you looking at your whole farm enterprise, your whole business, differently; what you can do better, and to not think that you're already doing it the best way."

Measuring productivity benefits can be difficult, however Nick is confident that his actions have improved his pasture composition and he's proud of how his paddocks are performing.

Where to from here?

Nick will continue to implement what he has learnt and focus on managing weeds in 'problem paddocks'. He intends to utilise what is in his soil as much as possible. He is sharing his new knowledge and skills with his father-in-law and other farmers in the area.



The Best Practice Fertiliser project is delivered in partnership with the Department of Primary Industries and Regional Development and is part of the Revitalising Geographe Waterways program. The project works directly with farmers and industry to improve fertiliser management through soil testing, nutrient mapping, workshops and access to agronomic advice to ensure fertiliser and profits stay on the farm and out of Geographe waterways.