

Funding obtained from Cradle Coast NRM and DairyTas for a Soil Nutrient Management project allowed for six different dairy farmers to participate from across the Cradle Coast region.

The farms were:

- Paul & Rachel Hamilton (Elliott farm)
- Paul & Nadine Lambert (South Riana farm)
- Rod Butler of East Ridgley
- Brett Ford of Paradise
- Gary & Helen Strickland of King Island
- Darren & Veronica Charles of Mawbanna.

The project

The project involved full farm soil testing and nutrient mapping. Soil testing on the farms, coordinated by Dr Bill Cotching of TIAR, commenced in February 2010. The results of the extensive soil nutrient evaluation of the levels of phosphorous, potassium, sulphur and pH of all paddocks of their respective farms were delivered at presentations in each farm locality. This information was colour mapped to more clearly identify the varying levels across the farm (see example below). A budget of recommended nutrient addition was prepared for each farm, based on all calculated inputs and outputs of that farm. This included a potential fertiliser savings calculation, based on previous additions of nutrients.

Results

The findings of the analyses confirmed a general trend for over-fertilising, with a very substantial range for all nutrients of P, K & S, with some paddocks being at excessive levels (specifically K at >500mg/kg). The averages of ALL paddocks of the 6 dairy farms across the Cradle Coast region were:

Olsen P	~33 mg/kg, with a range of 12 to 90
Colwell K	~450 mg/kg, with a range of 180 to 1700
Sulphur	~24 mg/kg, with a range of 7 to 77

Generally speaking, the pH was within the optimal range, with very few paddocks <5.5

The opportunity to save \$\$, by targeted distribution or reduction of fertilising load, is very significant for the majority of participants. Estimated savings for the six dairy farms are claimed to be over \$280,000 in the next two years. There should also be a major benefit for the environment, as nutrients surplus to requirements can be washed into waterways, creeks and rivers.

All participants insist they will keep testing at least part of their farm, to keep an eye on the nutrient loads, and better manage the fertiliser application. The same opportunity could exist for all dairy farmers, to test paddocks for nutrient levels and so better manage fertiliser use.

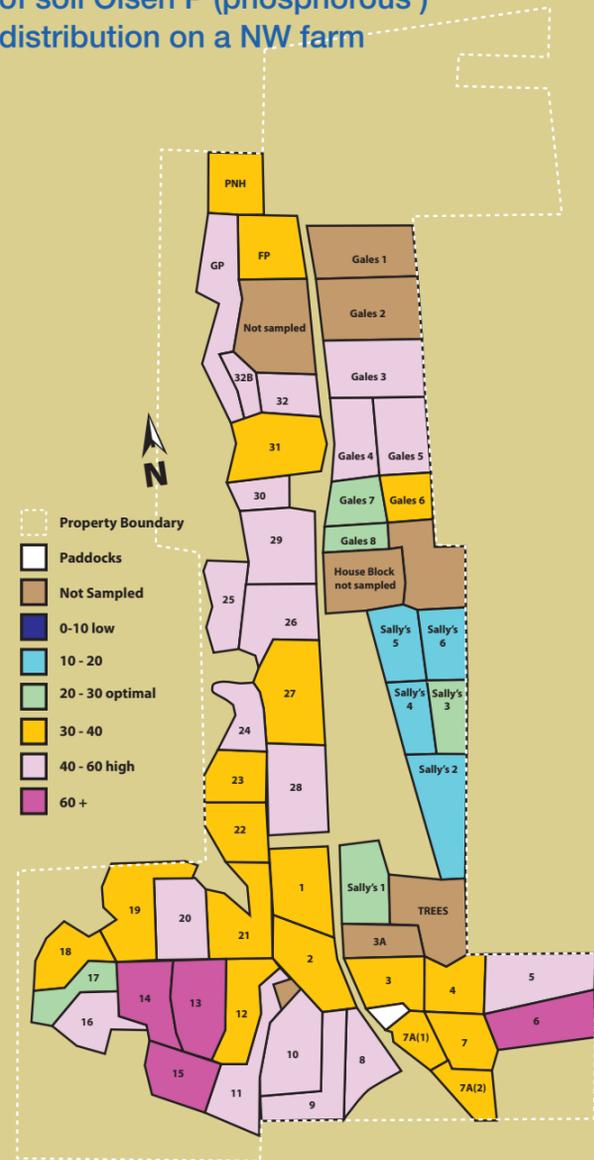
- Optimal ranges determined through consultation with Dr Bill Cotching and Dr Lucy Burkitt as part of the national "Better Fertiliser Decisions Project."

Soil nutrient level optimums

Olsen P (phosphorous)	20-30mg/kg
Colwell K (potassium)	150-180mg/kg for clay/loam soils
Sulphur	8-16 mg/kg

The information contained in this brochure has been prepared by DairyTas from information obtained as part of the Cradle Coast Soil Nutrient Management Project

An example of a nutrient map of soil Olsen P (phosphorous) distribution on a NW farm



Darren & Veronica Charles Mawbanna

Darren and Veronica Charles have been on their farm at Mawbanna for approximately 10 years now, taking over from Darren's parents. They are milking some 300 cows, mostly Holsteins, on 120ha of undulating country. The herd is split for calving, with 60% calving in August, the rest in April/May.

Nutrient project impact

Darren claims that the learnings from the recent Soil Nutrient Management project will now help him to prepare and plan a nutrient budget (allowing for all inputs and outputs) before any addition of fertilisers. Expecting to reduce K and selective Phosphorous levels, he anticipates a saving of near **\$30,000** in the current year, with similar savings in the following year.

He also now sees the advantage of more regular soil tests, even if only selected paddocks are done every 2 to 3 years. Some paddocks previously identified with high K levels had caused grass tetany issues, and have since been better managed and "mined" of K. Participation in past Pasture Management workshops have been extremely valuable in achieving production increases, but the extra knowledge of the soil nutrients will add to productivity increase.

Management

The main challenges on the farm have been planning expansion under the current milk price. Darren states that knowledge of milk prices, market trends, feed budgets, grain prices and the farm's stage of development are all essential to make decisions and plan changes.

High nutrient levels need managing to reduce to reasonable levels

Expected savings of near \$30,000 pa in fertiliser costs for next 2 years



Paul & Rachel Hamilton Elliott

Paul and Rachel have been on their farm for over 15 years now, beginning by doing all the work themselves, then appointing a sharefarmer. Of the total of 290ha they have 146ha of effective milking area. They run a mixed herd of 370 cows.

Nutrient project impact

"extremely worth while!" This was Rachel's comment about the soil nutrient project on their Elliott farm, and claims that "more knowledge makes one a better manager". The soil nutrient testing has been extremely valuable, and both now have a better understanding of the variability between paddocks, and of sections of the farm. Learning of the high potassium levels of some paddocks warned them of imminent milk fever problems, and so they

were prepared for them. But they also realised they can now "mine" the levels down, and so Paul expects a saving of at least \$35,000 in fertilisers in the coming year, and a further \$15,000 in the following. Both acknowledge that they must soil test more often and extensively, not just the dairy farm, but their other enterprises as well.

They acknowledge that they have been somewhat unquestioning of advice received. This can have negative impacts on farm management, production and performance. With the soil nutrient information from the project, they now feel empowered to better run and manage their business and will not compromise on grass growth.

High level of soil nutrients found

Expected saving of \$35,000 in fertiliser costs in first year, and another \$15,000 the next

Management

The main challenges have been watching changing costs of power, interest, grain and fertiliser, and milk price uncertainty. "We (Tassie farmers) cannot be the 'Aussie food bowl' without an effective government advice centre" states Rachel. Farmers really need accurate, readily available, impartial advice, for example, how best to handle information such as the soil data, short and long term.

Now feel empowered to better run the business





Gary & Helen Strickland King Island

Gary and Helen have been milking on the family KI farm for 25 years. They took over the operation from Gary's father, Dick, who had been milking since early the '50s. They milk 430 cross breed cows and split calve to optimise the KI payment rates.

Nutrient project impact

The results of the soil testing project were found to be "mind boggling". Gary did expect the figures to be generally on the higher side, as he was already "mining" the farm of nutrients, but he did not expect them to be so much above optimum levels of phosphorous, potassium and sulphur for pasture growth. The expected savings in fertiliser addition will be around **\$64,000 per year for next 2 years.**

Soil results were "mind boggling"

He was particularly concerned with the excessive nutrient levels of certain paddocks. Now that they know the figures, they can manage the fertiliser additions, and declare they will test more of the farm far more often. "It is a real shame we haven't had good impartial advice...." reflects Gary. An application of some free abattoir waste obtained some years ago resulted in very high pH problems in certain paddocks, proving that not all freebies are good to take without consideration. Now that the Stricklands have the nutrient information, they can now manage this and return the paddocks to optimum productivity.

Management

The challenges for most KI dairy farms are availability and reliability of labour, freight costs of most goods to the island, and a restrictive production environment. Accurate and ongoing budgeting is now very necessary. Gary feels that better information on feeding of animals, of nutrition and on fertilisers is also necessary for the dairy sector.

Importance of impartial advice
Opportunity to save \$64,000 per year for next 2 years



Brett Ford Paradise

Brett Ford has been milking for 22 years. Milking 170 cross breed cows on 50 hectares, with 30ha irrigated, the farm has been in dairying for some 34 years. This is a very undulating farm tucked under Mt Roland, near Sheffield.

The project

The recent Soil Nutrient Management project uncovered higher than expected levels of P, K and S in certain paddocks. Brett can now plan strategic application of nutrients, and estimates some \$8,000 saving in each of the next 2 years.

He now realises how stocking practices influence nutrient levels in paddocks, and can better manage this variable to advantage (for example, use of night and feed-out paddocks). Brett now realises the benefit of soil nutrient testing.

He proposes to maintain testing of around 20% of the farm per year to better manage fertiliser application.

Variability of soil nutrients across the farm

Expected saving of \$8,000 plus in fertiliser costs

Management

Brett uses only strategic grain or pellet addition, with no silage use and so maintains a very low cost of production. In the last few years the pasture utilisation has been increased, now at 14t DM/yr, and still improving. He only uses Nitrogen (urea) strategically, mainly to maintain organic matter. There is another big challenge in watching herd health with once a day milking.

Pasture management workshop invaluable

For Soil Sampling and Testing

Company	Phone no.
Serve-Ag	6498 6800
Doug Green -Devonport	0418 141 474
Rob Wilson - Smithton	0408 140 933
Ricky Blake - Ulverstone/Wynyard	0408 145 374
James Burbury - Scottsdale	0408 270 020
Ben Leditschke - Huonville	0419 332 704
Impact Fertiliser	6336 9580
Rowan Popowski- North West	0428 967 439
Scott Carter -Burnie	0417 347 426
Clint Wighton -Devonport	0429 978 572

Company	Phone no.
Incitec-Pivot	6407 885 558
Brett McGlone - North West	0418 137 290
Ian Townsend - Central North	0419 559 925
Darryl Johnson - Central Tas.	0418 571 384
Lester Rainbow - North East	0418 571 384

Company	Phone no.
Roberts	6452 2511
Dan Sutton -Circular Head	0418 143 312
Simon Nowell -Devonport	0408 140 421
Peta Davies -Ulverstone	0448 502 838

Company	Phone no.
Elders	6442 2311
Lisa Abblitt - North West	0439 369 006
Rebecca Evans - Launceston	0417 583 263
Brigid Watson - North East	0448 990 434

For Advice

Advisors	Phone no
Davey & Maynard	6424 9311
Basil Doonan	6424 9311
TIAR (Tasmanian Institute of Agricultural Research - Dairy Centre)	
Rob la Grange	6430 4953
P Williams Consulting	
Penny Williams	6456 1259 0408 622 484
Intelact	
Andrew Wright	0429 444 113

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Cradle Coast Region Dairy Industry Soil Nutrient Management Information

October 2010

