



Canterbury Plains under the microscope

The soils of the Canterbury Plains are under the microscope, due to an idea initiated by a Canterbury cropping farmer after visiting a United States city known more for its car racing than precision farming.



Michael Tayler, Director, Smart Ag Solutions

Smart Ag Solutions, which has been in operation for 12 months, has introduced a new precision soil mapping technology to New Zealand. The technology enables farmers to understand the different properties of their soils in far more detail than they have ever been able to in the past.

Although new, demand for the mapping service is increasing as more farmers become comfortable with the technology provided by the Veris MSP3 machine, which was imported from the United States after arable farmer Michael Tayler discovered it while at a precision agriculture conference in Indianapolis in 2012.

Michael, a Nuffield scholar, returned to New Zealand and discussed it with other like-minded farmers Hugh Wigley, Nick Ward and Colin Hurst. In February 2014, after another US visit to the Kansas-based company by one of the farmers, they brought over a soil mapping machine and formed Smart Ag Solutions Limited with the four of them as directors.

“Accurate soil data is vital to high-end crop yields and we could see real opportunities if we brought the technology here. The global demand for precision farming is growing all the time with more and more technology being used in agriculture especially in the United States, Australia, Europe and the United Kingdom,” Michael said.

“This uptake of new technology in agriculture is becoming increasingly important for New Zealand to stay competitive, not only economically but also environmentally as well.”

The technology measures three properties of the soil simultaneously, constantly recording and GPS referencing back to an on-board laptop in real time. Soil pH is one of the properties measured allowing farmers to apply lime exactly where it is needed as opposed to blanket

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applications. Another measure is electrical conductivity (EC), which looks at the amount of electrical current the soil conducts, giving farmers the ability to see the heavier and lighter soils on their farms and allowing them to make decisions based on that information. The third component measures soil reflectance so soil organic matter levels can be calculated and assessed.

General Manager Shaun Lovell was employed from the start to oversee the business on a day-to day basis and is now a director and shareholder in the business.

“We wanted to drive the business forward and needed someone full-time with good attention to detail and high IT skills to do that. With high demand in spring and autumn we now need someone part-time for those periods,” Michael said.

The most popular type of mapping has been of pH levels. Traditionally pH levels are measured by a representative visiting a farm and taking one soil sample per paddock. The Veris MSP3 can take 150 to 200 samples over a 10 hectare paddock.

“It’s the difference between looking at your soils through a pair of glasses or a pair of binoculars,” Michael said.



Guy Slater, Farmer

Soil mapping improves crop yields

Third-generation farmer Guy Slater has put a lot of effort into getting the pH levels right on his land over the years and says precision soil mapping is proving to be a big help.

Guy, a cropping farmer with land in Geraldine and Mid Canterbury, had his soil measured by Smart Ag Solutions in March. The 35 hectare paddock had been used for growing barley and he wanted to sow the same crop again – but was keen to have the pH levels tested before blanket applying lime to the soil.

“Usually we would put 70 tonne of lime on a paddock that size. After the measurements were done we ended up only needing to put on 10 tonne of lime. It’s a significant difference and so much more accurate.”

“It’s a saving by not having to apply so much lime but what we are really striving for is better crop yields and having the right pH level helps increase the outputs per hectare,” Guy said.

“What we have realised is that the pH variation is a lot greater than what we originally thought. Over a 20 to 30 metre area it can vary quite significantly.”

The improved accuracy means farmers know exactly how much lime to put on in certain areas of a paddock, instead of doing a blanket cover, potentially saving them money and allowing for improved yields.

“It’s been encouraging to get repeat business. Farmers are traditionally conservative in their approach to anything new. Education has been the key. While in the first 12 months of operation it was more the progressive farmers that were using our services, now we are seeing it become mainstream as more farmers take an interest.”

Most of Smart Ag Solutions work has been in the Canterbury and Otago area, mainly servicing cropping farmers and dairy farmers. The directors are now

weighing up whether they will expand into the North Island after repeated requests for work up there.

“The big thing for us, as a company, is that we need to have absolute confidence in our data. We calibrate the machine for every paddock making sure the data has integrity, so our clients can have that same confidence. We believe very strongly in this.

“We’re still a young company but uptake is increasing all the time and we’re happy with where we are at. Things are tracking well with the business at the moment with opportunity for expansion in the future,” Michael said.



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