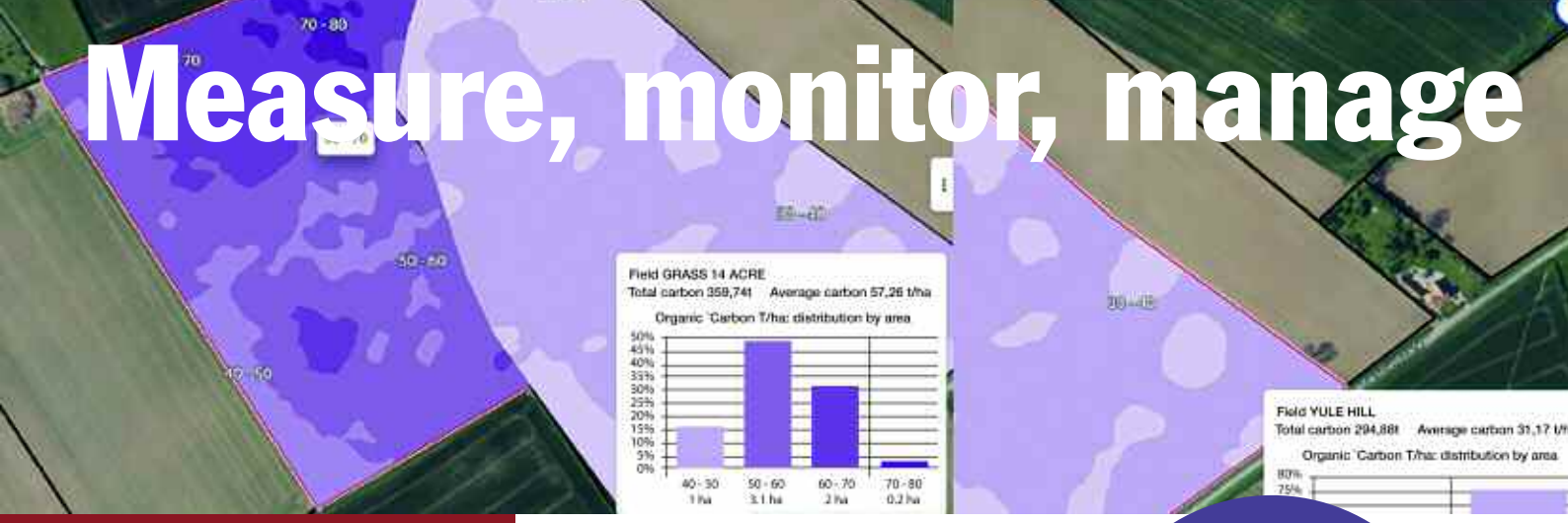
Measure, monitor, manage



Innovation
Carbon farming

As the importance of carbon accounting begins to come to light, Hutchinsons has unveiled a new service to help growers glean more accurate baseline measurements. *CPM* joined the recent launch event to find out more.

By Charlotte Cunningham

Though the industry is under increasing pressure to start looking at, and accounting for, its carbon footprint, a recent *CPM* twitter poll revealed that over a third of growers (38%) just don't know where to start when it comes to measuring, monitoring, and managing carbon on farm.

This may not come as a surprise to some, as it's fair to say that the world of carbon accounting tools is a bit of a minefield and there have been questions over the reliability and accuracy of the calculators currently on the market.

However, Hutchinsons reckons it has an answer to this challenge with the launch of its new carbon mapping service — Terramap Carbon.

The service operates within the firm's existing Terramap software and is designed to provide an accurate baseline measurement of both organic and active carbon in the soil, explains Matt Ward, Hutchinsons service manager.

"This launch comes as a result of heavy investment in developing services and technologies that can be utilised at farm level to allow growers to work towards these goals.

"Terramap revolutionised the way in which soil nutrient mapping was undertaken in the UK — and we believe it can now do the same for carbon mapping."

Matt Ward says the industry must move away from seeing carbon footprinting as a burden or simply a box-ticking exercise.

> *"The pressure to manage carbon is only going to become greater."*

Enviable position

Matt reckons that the pressure to manage carbon is only going to become greater as other industries are already showing positive change. "As an industry UK farming is in a unique and enviable position as farming activities can make positive changes to carbon, which most other industries are not able to do.

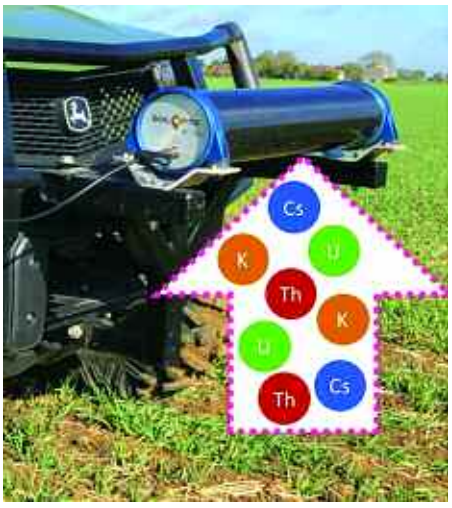
"This challenge comes at a time when the arable industry is facing great change in the light of the loss of basic farm payment, and many growers may well be questioning the importance or relevance of carbon management as potential profit margins are threatened.

"But we must move away from seeing carbon footprinting as a burden or simply a tick-box exercise and see that it is beneficial — as a proxy measurement for efficiency and profitability of a farm as well as simply a measure of waste.

"It's clear that there are benefits such as lower input costs to having a negative carbon balance, before even getting to the carbon bit itself. A reduced carbon footprint can only be achieved through more efficient fertilisers, different technologies, better soil carbon management or considering the energy used in storage, so it's a win-win on all levels."

Turning focus to the new service, how exactly does it work?

To recap, TerraMap itself uses gamma-ray detection technology that delivers resolutions of over 800 points/ha and it measures naturally emitted isotopes, like caesium and potassium, that are very stable due to their long half-lives. ▸



The new service operates within the firm's existing TerraMap software.

▸ The in-field process of collecting the data is carried out in two simple steps; scanning by driving a lightweight all-terrain vehicle fitted with the sensor over a field, and then taking soil samples to allow for each scan to be used to create the individual map layers.

And now with the launch of Terramap Carbon this technology has been adapted meaning it's possible for users to accurately map both organic and active carbon in the soil for the first time, explains Matt.

"Terramap Carbon is available as a standard or premium service. The standard service maps a total of 17 micronutrients soil type and pH layers that now also includes total organic carbon in terms of % carbon and t/ha.

"The premium service maps 27 layers which includes a wider range of micronutrients than those in the standard service, and also cation exchange, as well as both total organic and active carbon % and t/ha.

Matt says that one of the most common questions he gets with regards to carbon management is once the carbon measurements have been collated, what can growers do with the information to get the most from it?

TerrapMap Carbon is designed to provide an accurate baseline measurement of both organic and active carbon in the soil.

"The results from Terramap Carbon can be used to create carbon maps within the Hutchinsons Omnia Carbon management system which aligns the field carbon measurements against the carbon costs of different machinery operations for that field — incorporating detailed calculations for power, width, work rate and fuel — all of which are generated using the expertise of specialists from the Farm Carbon Toolkit."

Within the Carbon management tool, it's possible to create different rotation scenarios — from types of cropping and varieties, to stewardship and management practices — enabling growers to see first-hand the projected CO2 impact and financial performance for each scenario.

"We wanted to move away from just presenting carbon figures on a spreadsheet into a visible and useable format that can be used for forward planning much like we have done with the Cost of Production tool in Omnia," adds Matt.

"It's not always the grand gestures that make the difference, and this is where the ability to look at different scenarios is invaluable." ■

Variable drill conversion kit to launch this spring.

Keeping with the theme of precision, Hutchinsons has also launched Omnia E-Seed, with the firm claiming its imminent availability will make converting a standard land-metered drill into a variable rate drill easier and more affordable than ever before.

According to Hutchinsons, Omnia E-Seed is the first stand-alone variable rate drill conversion kit that fits to any standard drill and does exactly what it says on the box — enables a standard land-metered drill to be converted simply and efficiently into a variable rate drill.

"We know that growers are increasingly looking to variable rate drilling to lift crop performance, as well as improving the efficiency of their seed and nutrition input," notes Oliver Wood, precision technology manager at Hutchinsons. "However, the cost of investing in a new variable rate drill which can cost circa £40,000 upwards has been a barrier to many growers moving over to a variable approach.

"If there's a perfectly good drill in the shed, but it just doesn't offer a variable rate option, it can be difficult to justify the cost of replacing a good machine.

"But with Omnia E-Seed, we're now able to offer an affordable way of moving over to variable rate drilling without investing large amounts of money — we've calculated that it's possible to recoup the costs of Omnia E-Seed in just 48ha, working on a 0.6t/ha improvement using a variable approach."

Oliver says that over the past two very wet and challenging autumns, conditions have hampered drilling particularly if using one of the newer, larger variable rate drills. "However, there may be an older, smaller, and lighter drill on the farm that could be used, but it doesn't have variable rate capacity.

"This no longer needs to be an issue as the Omnia E-Seed box can be easily fitted to the land metered wheel of the old drill, and drilling can continue."

The box can be fitted to any seed drill, irrespective of age, he explains. "The kit comprises of a motor which bolts on and replaces the land wheel, the sensors fit virtually into the same holes of the original drill.

E-Seed enables a standard land-metered drill to be converted simply into a variable rate drill.

Oliver Wood reckons the cost of investing in a new variable rate drill has been a barrier to many growers moving over to a variable approach.

All control is via an iPad which talks to the box, so once variable rate plans are uploaded onto the iPad, they can be seamlessly sent wirelessly to the box."

What's more Omnia E-Seed is a system that can be used by everyone, irrespective of being an Omnia Precision user or not, says Oliver. "In a similar way that Omnia Connect is available to use if you are not already an Omnia customer, it's not necessary to generate variable rate plans in Omnia to use Omnia E-Seed, any variable rate plans can be uploaded and used by the system."

The Omnia E-Seed kit has been tested and validated at the Hutchinsons Helix farms and will be available this spring.

New digital assistant helps farmers capture credit from natural capital

A new simple-to-use and "revolutionary" software tool has been released that's claimed to accurately assess and capitalise on the true value of farm output, land use practices and embedded carbon and nature.

Sandy has been developed by independent agri-tech newcomer Trinity AgTech. The company's aim is to "establish a robust and prosperous ecosystem" in food and farming and Sandy has been launched as a digital assistant that will help farmers confront "unprecedented change in farm subsidies and uncertainty in agricultural markets".

"Our industry is changing, and Sandy has come at a time when farmers are asking themselves how their business will evolve," says Trinity AgTech senior managing director, Richard Williamson, previously managing director and farms director of Beeswax Farming and Velcourt respectively.

"Within this change, there are opportunities for farmers to capture different and diverse income streams. However, what's missing is clear and robust information to succeed in these."

Sandy has been developed by a team of over 30 scientists and engineers in consultation with farmers, and industry leaders who sit on Trinity AgTech's Advisory Board, including former AHDB chairman Peter Kendall and current Assured Food Standards chairman Christine Tacon. Major retailers, co-operatives and banks also back the use of the software, notes Richard.

So what does Sandy do? There's a range of tools that capture every aspect of financial and environmental data, says Trinity AgTech. Significantly this includes carbon footprint and biodiversity assessments, completely unique to Sandy. The software pulls in productivity zone management at subfield level, crop performance, growth, nutrient status and yield prediction monitoring. This is combined with data on farm productivity and financial analysis at farm, crop and field level.

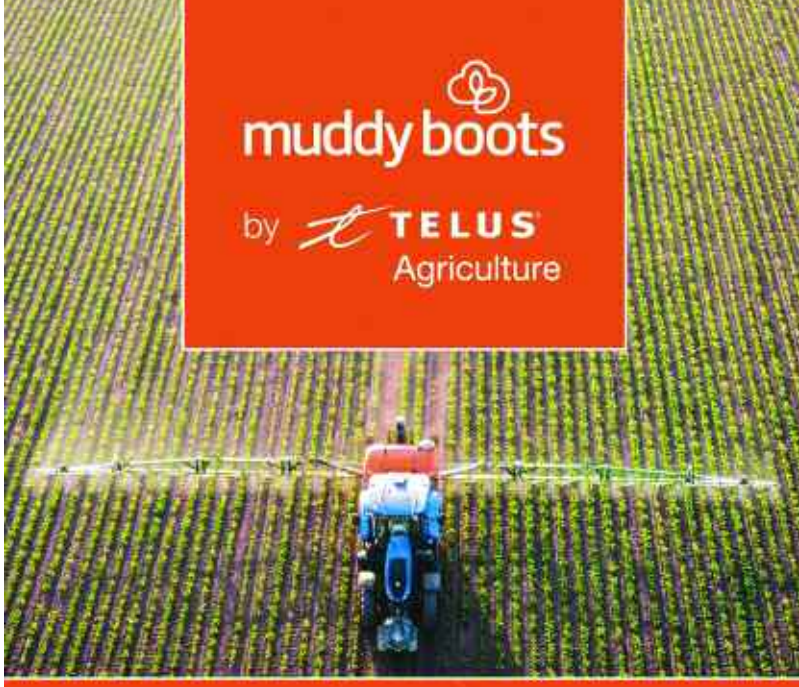
Jake Freestone hopes Sandy will help him capture value from his high standards of production, net-zero and biodiversity achievements.

Jake Freestone, 2020 Soil Farmer of the Year and farm manager of Overbury Enterprises, has been trialling Sandy and says he's excited about its ability for managing and monetising a path for farmers towards net-zero and biodiversity targets.

"For years at Overbury, we've worked hard to develop a rich and diverse farming system, improved the health and biology of our soils, provided habitats for its wildlife to thrive and a vibrant rural setting for the local community. It's how we grow our crops, look after our animals and care for our countryside, and we want to capture those values in the produce that leaves our farm and the services we provide," he says.

"With the quality of science underpinning it and the industry backing it's achieved, Sandy looks set to deliver what we're looking for. It pulls into one place and makes sense of the many data sources we have. It provides clarity and precision through a range of tools that are remarkably easy to use. I hope Sandy will help direct us on our path to building local markets for food with trusted provenance and opportunities to capitalise on emerging income streams."

With the ability to integrate and work alongside most existing farm management and financial recording tools, Sandy is now available for farmers looking to make their wealth of data work for them and can request a demonstration with one of the Trinity AgTech engineers via the website, *www.trinityagtech.com*



GREENLIGHT Farm Management

The trusted farm management software that puts you in control of your data

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