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TERRAMAP CARBON: THE UK'S FIRST CARBON MAPPING SERVICE NOW AVAILABLE – MATT WARD, SAM HUGILL

Hutchinsons launches TerraMap Carbon the first ever carbon mapping service to provide the most accurate baseline measurement of both organic and active carbon in the soil and is now available...

Despite growers coming under increasing pressure to look at their carbon footprint in response to the NFU's commitment for UK farming to achieve Carbon net zero by 2040 – until now there has been no accurate means of measuring carbon in the soil – and unless you can measure carbon there is no way it can be managed, says **Matt Ward**, Hutchinsons services manager.

“Infact unless carbon can be measured how will we know when we are at net zero!” he points out.

In light of these challenges, Hutchinsons has been investing heavily in developing services and technologies that can be utilised at farm level to allow growers to work towards these goals- and the development of **TerraMap** carbon is an exciting and unique development that reflects this approach.

“TerraMap revolutionised the way in which soil nutrient mapping was undertaken in the UK- and it is now doing the same for carbon mapping,” explains Mr Ward. TerraMap 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 infield process of collecting the data is carried out in 2 very simple steps; scanning by driving a light weight 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. This means that there are very few limitations to when TerraMap can be used – offering a much wider operating window compared to other soil scanning systems.

“The consistency and reliability of the results from TerraMap are proven, reflected in its uptake on over 35,000ha's on UK farms since its launch in 2018,” he adds.



CARBON MAPPING RESULTS – ARABLE VS. GRASSLAND

Now with the launch of TerraMap Carbon it is possible for users to accurately map both organic and active carbon in the soil for the first time.

TerraMap Carbon is available as a standard or premium service. The standard service maps a total of 17 micronutrients soil type & pH layers that now also includes total organic carbon in terms of percentage carbon and tonnes/ha. The premium service maps 27 layers which includes a wider range of micronutrients than those in the

standard service, and also cation exchange, and now both total organic and active carbon percentage and tonnes/ha – that is the percentage of carbon that's active in the soil.

WHY IS IT IMPORTANT TO MEASURE CARBON?

“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.

“We need to move away from seeing carbon footprinting as a burden or simply a tick-box exercise and see that this is beneficial, as a proxy measurement for efficiency and profitability of a farm as well as simply a measure of waste,” says Mr Ward.

“So 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. 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.”

OMNIA CARBON MANAGEMENT

“Once I have the carbon measurements what can I do with them to achieve any of the potential benefits we have outlined? This is one of the most common questions with regards to carbon management,” says Mr Ward.

“Well, 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 is possible to create different rotation scenarios from types of cropping and variety to stewardship and management practices and 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 Mr Ward.

“It's not always the grand gestures that make the difference, and this is where the ability to look at different scenarios is invaluable. For example, it might be more beneficial to put more land into ELMs and sequester more carbon this way than to replace or change machinery.”

Nick Wilson of Hundayfield Farm just outside York is the host of the [Hutchinsons Helix North Farm](#), one of the Helix Farms network where TerraMap Carbon has been trialled and tested.

The farm consists of 260ha of mainly arable cropping, with land let out for potatoes and winter sheep grazing on stubble turnips. There is also bed & breakfast cattle which utilise the farm buildings and some of the permanent grass in the rotation.

For Nick and his agronomist **Sam Hugill**, carbon is just a part of the whole farm system, but both believe that it is useful to obtain a baseline measurement now, so that they have a baseline figure to work from going forward.

“The results of the TerraMap Carbon scanning showed up large differences in the carbon balance between the arable fields and permanent pasture, as you would expect. The average across the arable fields was about 30t/ha of organic carbon and it was almost double that for the permanent pasture,” he explains.

“Now that we have a baseline measurement, we can look not just how we can manage our processes to build carbon on the arable fields up to the levels of that of the pasture, but also to prevent any unnecessary losses of carbon. For example we would be interested to look at the impact of root crops on carbon. We will also use cover cropping to prevent having any bare land over winter and reducing loss this way,” says Sam Hugill.

“The carbon management tool allows us to look at these scenario’s using real and accurate measurements and then quantify the impact on our carbon.”

For Nick Wilson the bottom line is that he is a food producer, and managing carbon has to fit into that. “We always look at what we do and how we can do better and carbon is a part of that – how much we do about it will ultimately be driven by policy – but whatever decisions we make on farm have to be good for us agronomically and economically in the first instance.

“It’s all about adapting what we do rather than radical change- and being able to measure what we have is the first step.”

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