

CARBON-CONSCIOUS FARMERS

Rebuilding soil carbon and soil health

In 1943, before the advent of agriculture based on fossil fuels, chemicals and big machinery, Eve Balfour wrote in *The Living Soil*: “The health of soil, plant, animal and man is one and indivisible.” Since then, the soils of Britain have been severely depleted, especially where they have been cultivated for annual crops like cereals. Nearly all the organic matter stored in the soil – that precious resource upon which we all depend for food – has been ‘mined’ and converted into ever-increasing crop yields supported by artificial fertilisers. It took from the 1940s to the 1990s for the reasoning of organic pioneers like Balfour to be taken seriously.

But fast-forward to 2014, and carbon-conscious farmers are not just endorsing the same message as Balfour, but putting it into practice with enthusiasm. The principles of feeding the soil, not the plant, understanding and encouraging soil biology, and harvesting sunlight to maximum effect are all embraced. These farmers understand that we must repair our damaged soils because fossil fuels (from which artificial fertilisers are produced) are a non-renewable resource, and equally importantly they reduce the health of soil systems. Carbon-conscious farmers aim to work with the grain of Nature in soil ecosystems, not against it.

Martin Howard farms 400 acres in the Tamar Valley and has seen life breathed back into his soils by a combination of minimising compaction (caused by overuse of agricultural machinery), increasing aeration of the soil, and introducing beneficial bacteria and fungi. He is passionate about improving soil biology, not least because this actively improves the water quality of the nearby river Tamar.

Rob Richmond is a dairy farmer on 500 acres in the Cotswolds who has increased soil organic matter at an extraordinary rate whilst maintaining high milk yields. He uses a complex

mix of forage species (such as clover, vetch and alfalfa) that grow robustly as good companion plants and allow him to graze and rest the land for optimum efficiency.

Furthermore, his soils retain more water and his cows are healthier.

Julian Gold is an arable farm manager on over 2,000 acres in Oxfordshire. He

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has been working hard to reduce chemical inputs and increase soil carbon, whilst maintaining profitability. Through carefully controlling compaction from machinery and minimising cultivation depth, he has seen a significant increase in earthworm populations and better soil quality.

All these farmers are serious about building carbon in their soils, realising that the crops are secondary to the health of the ecosystem. Their approach

is backed up by hard scientific data from leading soil scientists such as Pete Smith and his colleagues at Aberdeen University, and world-renowned soil scientist Rattan Lal, who also advises the IPCC. Building soil carbon is not an approach of idealists. These are professional farmers who have to make their farms profitable, but who are also concerned about the health of their soils for future generations.

The amount of atmospheric carbon that can be absorbed in well-managed soils is extraordinary. Lal estimates the potential for soil carbon sequestration across the world as “equivalent to a draw-down of about 50 parts per million of atmospheric CO₂ by 2100”. This amazing figure proves that carbon sequestration in soils is one of the few tools we have to actually reduce global atmospheric CO₂ levels. To build organic matter in the soil is a win-win situation for climate change as well as soil health and crop yields. Carbon farming needs to become the focus of farmers everywhere.

www.farmcarbontoolkit.org.uk

Thanks to Jonathan Smith, pioneer of the Farm Carbon Cutting Toolkit, for this article.



Cows amongst clover

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