



L-R Notts Grower Ed Hammond and Alastair Hugill, ED&F Man Agronomy

# Meeting the Soil Regeneration Challenge Head On

**Adding sources of carbon direct to soils at crop establishment could play a significant role in replenishing soil organic matter and improving soil health.**

Reduced cultivations and min till are being taken up alongside the use of cover crops to try and reduce the degradation of organic matter. Now a range of soil and crop nutrition supplements based on sustainable molasses can help farmers achieve cost-effective performance improvements while optimising traditional chemical inputs.

"They can help improve soil fertility and crop growth in a sustainable way and reverse some of the problems resulting from declining soil health," explains Alistair Hugill from ED&F Man Agronomy. "Reduced soil carbon and lower levels of organic matter compromise crop yields. It is therefore important to reverse this trend, to rebuild soil organic matter and promote more efficient nutrient uptake for more profitable and sustainable production".

## RESEARCH DRIVEN

Research has shown that increasing the supply of readily available energy to the soil microbiome is an effective way to stimulate soil biology, increasing the activity of fungi and protozoa as well as bacteria. Additionally, increasing the supply of carbon will help to improve the soil's physical and chemical properties.

The ED&F Man Agronomy range contains four liquid carbon products formulated for soil and foliar application, allowing a tailored programme to be developed to optimise crop establishment. All products are high in carbon and sugars from sustainable sources complemented with a range of other ingredients. The high carbohydrate content stimulates microbial populations in the





organic layer and drives microbial activity.

"In a planned approach to improving soil health and crop sustainability, the starting point is to boost soil microbial activity. Soil microbes capture nutrients for the plant so the more effective the microbial populations, the better the nutrient supply to the plant".

## ON FARM EXPERIENCE

Ed Hammond farms 800 hectares near Southwell, Notts, grows cereals, potatoes, sugar beet and maize for AD on a mix of soils including Trent gravel, salt clay, sand loam and sandy silt loam. He has been using the range of products since 2020 as an integral part of his soil improvement programme.

"The drive for more intensive, higher yielding systems has damaged soils. The focus now needs to be much more about improving soils which are a finite resource. We need to achieve the same return from lower levels of chemical inputs and regenerate soil," he says.

As a result, since 2017 Ed has been evolving his system, with the goal of achieving the same margin from growing less.

The system is now based on min till for all crops except potatoes, although a small amount of

land is also ploughed for maize as it is a lazy rooter and needs looser soil. He shares a 5m cross slot drill with a near neighbour to ensure effective crop establishment. Extensive use is made of cover crops.

## SOIL BIOLOGY

Ed is also paying close attention to soil biology. "We need to rebuild the soil biota and carbon as these are fundamental to soil health. Soil is much more than just a growing medium. It can contribute significantly to the crop. If we have healthier soil we can increase efficiency of nitrogen use and reduce usage of artificial fertilisers".

All nitrogen is applied as liquid, so the ED&F Man liquid carbon is simply added to the mix, whether applied as a soil or foliar feed.

## N REDUCTION

"We have found it helps work as a wetting agent and reduce scorch, while the amino acids are rapidly utilised by the plant. Since using the supplement, we have been able to reduce nitrogen use.

"On Spring barley we have cut back from 120kg/ha to 80kg/ha with no change in yields. Usage of potatoes has been reduced from 270kg/ha to 180kg/ha.

"The improved soil structure has helped crops deal with drought, generally being able to withstand dry conditions for longer. We have also seen an increase in the number of possible drilling days which is a real plus as we are sharing the drill and having to get a bigger overall hectareage into the ground.

"The drill uses pressure to get into the ground and our drill operator has commented that less pressure is needed as the soils work easier, increasing the speed of operations, increasing the number of drilling days and reducing establishment costs.

"We are taking a holistic approach to soils combining minimal disturbance, cover crops and liquid carbon supplements and it is having a big impact. If we can build soil organic matter and promote more efficient nutrient uptake by plants we can improve soil health for more sustainable production". Ed suggests.