On-farm soil test promises instant 'regen measure'

If you've incorporated 'regenerative practices' into this year's farm management plan, you're not alone. But how do you know the effect of what you're doing, particularly on the soil organic carbon (SOC) that underpins regenerative thinking?

The answer may lie with a low-cost, repeatable soil test that's carried out on-farm in less than 20 minutes. It can provide a grower with SOC reference points to help guide a long-term soil health plan.

"More microbes exist in a handful of soil than there are humans on the planet,' says Jack Ingle of Harvest Agri, the UK importer of the microBIOMETER. "Microbial biomass is an important portion of SOC, and we're now far more aware of their importance in agriculture.

"The rhizosphere – the boundary between plant roots and soil – has proved to be a new frontier in soil and plant science. Significant scientific breakthroughs show how much is still to be discovered about how bacteria deliver nutrients to crop roots.

"Crops produce exudates, attracting bacteria and fungi to the rhizosphere. The nutrients they bring stimulate plant growth. Other bacteria enter the root and exchange nutrients with the plant for carbon products from photosynthesis.

"Plants get as much as 40 per cent of their nitrogen requirement through bacterial associations," he adds.

HIGHER BIOMASS

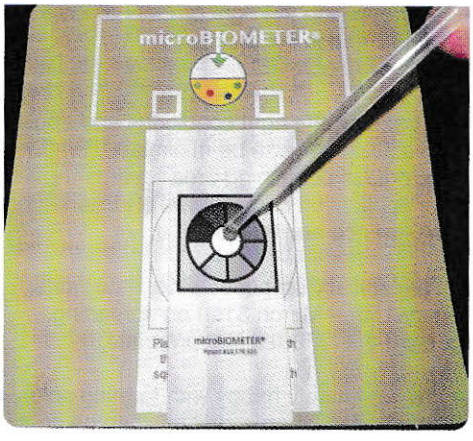
Higher microbial biomass increases the nutrients naturally available to plants, allowing a reduction in synthetic fertilisers. These can inhibit root growth because the plant no longer seeks to attract its microbial partners for nitrogen supply.

"But until now, it's been difficult to take regular, reliable measurements of live soil microbial populations. Without that measure, you won't know how your efforts to improve populations are working."

HOW TO TEST

Developed by US experts versed in microbiology, medical diagnosis and computer vision, the microBIOMETER focuses on in-field simplicity, says Mr Ingle. "It's an easy test: mix your soil sample with a reagent, leave it to infuse, and then place three drops of the settled liquid onto a test card.

"Here's the magic: scan that card with the smartphone app for an instant read-out of the microbial biomass, expressed as a fungal:bacterial ratio. That test is instantly archived, to compare against future readings."



Starter kit

A 'starter' microBIOMETER kit containing the equipment and consumables needed for 10 soil tests, costs less than £150. Subsequent tests cost as little as £6.

"Tests of this nature have previously only been available through a lab, so it's an amazing tool to have on-farm," Mr Ingle enthuses. "It's a highly practical way to quantify fertility and soil health, and measure the effect of practices such as no-till, cover crops, inoculants and so on, in your bid to move to a more sustainable and productive farming system."