



Measuring and monitoring soil health

Practical advice for soil husbandry

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Soil Health refers to soil functionality and its capacity to deliver ecosystem services and productivity. It is a complex interrelation between physical, chemical and biological properties, all combining to help soil fulfil its key functions. Drawing on experience from recent ORC projects, we aim to help guide farmers' sustainable soil management.

Any lab test should include a measure of soil organic matter as a key indicator of soil health and function, as it enhances soil properties and increases fertility. Whilst a standard test of pH, P, K and Mg provides useful information and should be routinely undertaken, this focusses only on basic chemistry and takes no account of physical or biological elements. Soil health assessments should account for structure with a spade test and texture should also be determined to inform results on other indicators and benchmarks. Earthworms are an excellent biological indicator and simple to assess. Assessment of microbiology is potentially useful with Active Carbon and Soil Protein tests giving the labile fractions that are useful indicators of medium-term fertility that are responsive to management. Microbial activity can be measured through potentially mineralizable nitrogen or the Solvita CO₂ burst respiration test, but the CO₂ burst bears some limitations, as high microbial activity is not necessarily related to other aspects of a healthy, well-structured soil with high earthworm populations.



An integrated health assessment including visual observation, biological activity, and nutrient reserves and availability is essential information for managing a healthy soil. Through the [Soil Biology and Soil Health Partnership](#) we aim to better understand the contributions these key indicators play in determining soil health through development of a scorecard, with UK and sector specific benchmarks being developed.

FURTHER READING

1. Measures (2019) tinyurl.com/a9w42bmz
2. Soil health: Let's get physical (chemical and biological): ahdb.org.uk/soil-health-scorecard
3. Amos & Vieweger (2018) tinyurl.com/4be53673
4. Stockdale (2018) tinyurl.com/4vyayud5