

Soils

Dig, Handle, Measure

A spade is one of the most important tools on the farm for soil management. Dig a hole to make three key checks especially where a field is to be reseeded, is underperforming, has been heavily stocked or trafficked in wet conditions. This will help to prioritise the actions needed to improve yield and performance.

- Check soil structure to assess soil compaction
- Analyse soil samples for soil chemistry to plan soil nutrient management
- Count earthworms to assess soil biological health



Assessing Soil Structure

The way the particles of sand, silt, and clay stick together (aggregate) defines the soil structure.

Compaction affects the soil structure and reduces the water and air content, ease of rooting, grass yield and ley life, the length of the growing season, and increases costs.

- Use a spade to cut three sides of a square, leaving the fourth side, then lever out the soil block.
- Look at the structure of the undisturbed side of the hole and the soil block.
- Check for horizontal cracking, shallow roots, or roots growing sideways, a stale unpleasant smell, orange or grey mottles, and blocky aggregates over 10 mm, which do not break under pressure of forefinger and thumb, and defined solid soil layers. Note the depth of these.
- Compare holes from the middle of a field with those at the base of the hedge where compaction is unlikely.
- Tap the tip of a penknife blade on the sides of the hole to identify compacted layers.
- Take photographs and make a field record.

Analyse soil samples

Soil pH, phosphate, potash and magnesium are key elements for efficient nutrient planning.

Results are only as good as the sample. To make sure that they are representative, take 15-30 cores or spade slices to 7.5 cm depth walking across the field/part-field. If texture, colour, or cropping history differs across the field take separate sub samples.

Counting Earthworms

Earthworm numbers are a useful guide to soil health.

- Dig a hole, a spade width by a spade depth
- Take the block of soil from the hole and break it up, taking care to pull apart the soil/grass layer
- Count and record the number of earthworms and take soil temperature
- Count earthworms at the same time each year for comparison (spring or autumn is best when soils are moist)