



Technical Update 42

Guide when Sampling Soil for Microbe Analysis

January 2024

BACKGROUND

Soils are heterogeneous and populations of soil microbes vary with soil depth and type, so it is important to realise that a single sample is unlikely to be representative of the whole site. Soil pathogens can occur in patches across a field. While separately testing each sample collected is the best method of checking microbe levels, the cost is prohibitive, so composite samples are used.

To ensure a composite sample is representative it is necessary to collect several smaller samples from the area and combine them.

SAMPLING STRATEGY

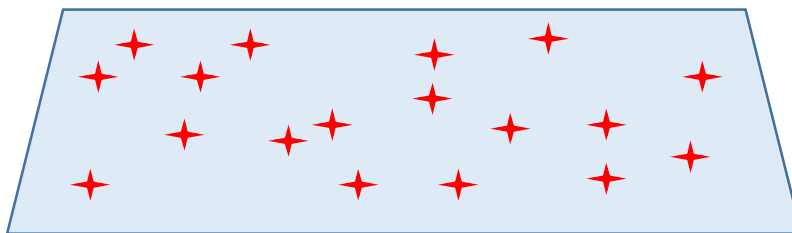
The frequency and distribution of soil collection for the composite sample is important. The more sub samples the better. If a specific issue occurs in a restricted area, then samples might be collected from that area alone. If the entire site is to be assessed, then subsamples representing the entire site should be collated.

Soil should be taken from the rhizosphere (the root zone), the area within the soil profile that will have the most microbes. This means discarding the top 5 cm of soil, generally sampling to a depth of 25 cm. To ensure representation of the entire site a random or grid sampling strategy should be adopted. The composite soil sample should be sealed in a plastic bag and sent to the laboratory. Fresh soil samples should be sent to the lab as soon as possible.

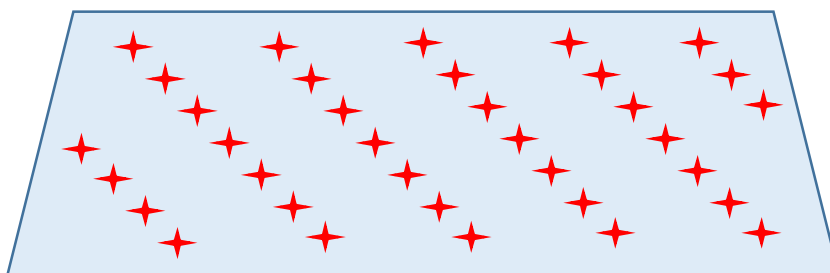
Whether using a sampling auger, trowel or spade it is important to realise that sample contamination can occur if equipment is not cleaned thoroughly between sites. A weak bleach-based solution is recommended for cleaning equipment between sites but cleaning equipment thoroughly with water will also avoid contamination.

Sampling patterns:

Random sampling: Choose random points to sample across the entire field.



Grid Sampling: Take samples at regular fixed intervals across the area – typically used where little is known about the field in question.



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Processors & Growers Research Organisation

The Research Station, Great North Road, Thornhaugh, Cambridgeshire PE8 6HJ, UK
Chief Executive: Roger Vickers **Tel:** +44 (0)1780 782585 email: info@pgro.org www.pgro.org
Company Limited by Guarantee - Registered in London No. 567232. Registered Charity No 284077. VAT Reg No 281 7742 37GB