Soil Sampling I -
How to take a soil sample
Practical Guide

Farming for a Better Climate

Soil analysis provides farmers and crofters with essential information about the pH and nutrients in their soil. This practical guide details what is required to take a soil sample for analysis that is representative of the area sampled. A second practical guide in this series looks at how to interpret your soil results.

What do you need?

- The best sampling tool is either a soil auger or corer. If these are unavailable, then provided due care is taken a spade or trowel can be used.
- A bucket for mixing and collecting samples.
- Clean plastic sampling bags able to hold 1kg and a waterproof marker pen.

When to sample?

Soil samples can be taken at any time of year, but avoid sampling within two years of applying lime or within two months of applying a compound fertiliser, organic manure or more than 50 kg/ha nitrogen.

Where to sample?

- Larger fields should ideally be sub-divided into 4 ha (10 acre) units and sampled separately, even if they appear uniform.
- Separate samples should also be taken from distinct areas which were manured differently, or which have different soil types or topography, even if there is only one crop.
- Avoid sampling “hot spot areas” such as around gates, areas where lime or manure has previously been dumped and areas where livestock gather such as water troughs. Field margins should also be avoided as there tends to be variations in fertiliser applications in these areas.

Our Practical Guides cover five useful topics:

1. Use energy and fuels efficiently
2. Renewable energy
3. Lock carbon into soils and vegetation
4. Making the best use of nutrients
5. Optimise livestock management

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The European Agricultural Fund for Rural Development: Europe investing in rural areas
Scottish Government Riaghaltas na h-Alba gov.scot
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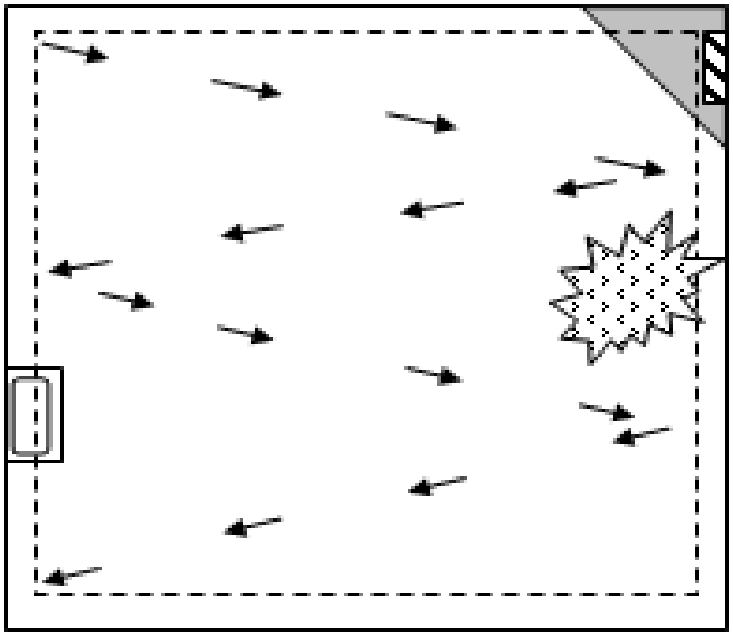
Soil Sampling I - How to take a soil sample

How to take your own soil samples

- Walk across the field in a “W” pattern, aiming to collect 25 cores with the sampling tool.
- When an auger is used, it should be twisted into the soil to sampling depth and pulled out. All soil adhering to it should be carefully transferred to the bucket and this method should be repeated until all sub-samples have been collected. If upon inspection part of the soil core is missing, this sample should be discarded and another sample should be taken within 1m.
- If using a spade, remove a slice of soil about 2.5cm wide to sample depth and collect in a clean bucket. Further slices should be taken in the same way from different parts of the field until all samples have been collected.
- For arable land and temporary grass, the typical sampling depth is to plough depth approximately 20 cm, although for fields which have had different cultivations applied may require a different sampling depth.
- For permanent grassland sampling depth should be shallower, approximately 10 cm, with extra care taken to exclude any vegetation from the sample.
- Write the Land Parcel Identifier if known, field name, farm name and address on the sampling bag. The sample should be thoroughly mixed in the bucket before taking a representative amount of soil to fill the bag. Large stones, roots and plant materials should not be placed in the bag.
- The sample can then be sent away to the lab as soon as possible with clear instructions on the analysis required.



“W” sampling pattern shown avoiding gateways, manure heaps, and water troughs.

What test should I ask for?

The soil analyses that are typically applied to routine soil samples are:

- pH and lime requirement
- Extractable phosphorous, potassium and magnesium quoted in milligrams/litre—this quotes the amount of each nutrient available to be used by the plant

There are a wide range of other tests available such as Sulphur, Nitrogen, heavy metals and trace elements as well as soil texture and organic matter.