

Technical Note

Soil Sampling Protocol

WHY SOIL ANALYSIS?

A soil analysis program will provide important and essential information on the soils nutritional status, which enables decisions of fertiliser and micronutrient applications to maximise the quantity and quality of crop yields.

A comprehensive measurement of available levels of macro and micronutrients such as nitrogen, calcium, magnesium, potassium, sodium, phosphorous, sulphur, iron, manganese, copper, zinc, boron and chloride in addition to pH, conductivity are available to assess the nutritional status of the soil. It is recommended that a comprehensive soil test regime be performed at least once every 3 years to determine your soils nutritional status.

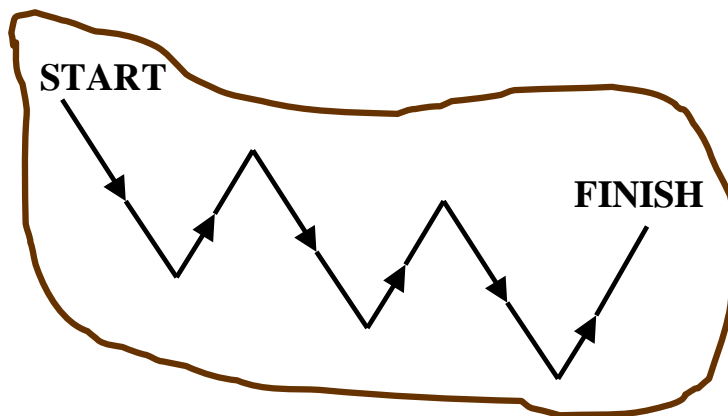
The important and essential information available from soil testing is completely dependent on the sample taken. The soil sample must be representative of the area in order for the results and subsequent recommendations to be reliable. Therefore designing and following your sampling plan will allow this to occur.

DESIGNING YOUR SAMPLING PLAN

The degree of non-uniformity of soil type present in each paddock will influence your sampling strategy, that is, sample numbers and locations, so it is important to consider these aspects when establishing your soil-sampling plan.

As a general rule, paddocks of up to 10ha in area can be sampled as one unit, providing each field is uniform in terms of soil type, topography, land use, crop variety and fertiliser history. Larger paddocks, that is, greater than 10ha will generally be less uniform and as such, should be subdivided and each part sampled separately. You will need a clean auger, hand trowel or spade (preferably chromium plated or of stainless steel) and a plastic bucket.

NOTE – Do not collect samples immediately after lime, gypsum or fertiliser (or other chemical) applications to the soil. Also avoid collection of roots and leaves when collecting soil samples. Individual soil samples should be taken along a carefully planned route across the paddock. The ‘W-pattern’ sampling plan (see figure below) is adaptable to most field shapes:



Identify a start position and move way from this point, avoiding all areas which are not representative of the paddock such as fences, hedges, tracks, dung or urine patches. At least 20 sub-sampling points should be taken at regular intervals along this sampling path. Around 20 sub-sampling points are required even when sampling small paddocks or areas.

At each of the 20 sub-sampling points, take a sample to a depth of 10cm for pastures and most agricultural crops, and place in a bucket. Thoroughly mix all samples with your trowel, avoiding spillage. Fill the provided Phosyn sample bag with soil from the bucket, and seal securely. Label the bag. As a general guide, a ½ filled bag will weigh about 500g, which is sufficient for a comprehensive soil test. Remember, that wholesale bulking of samples, especially of different soil types will not allow the identification of problems associated with more localised spots on the paddock. It is recommended that these areas be sampled separately.

(Note – the sampling depths above are included only as a general guide and you may decide to sample at a deeper level as dictated by the crop root depth).

For further information contact Phosyn Analytical or your local agronomist/consultant.

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