

Soil Sampling Guidelines

page 1

When to sample?

Generally, the best time to sample is in Spring for pasture paddocks and a few months before sowing for cropping paddocks (to allow enough time to plan for and purchase fertiliser). Soil properties can vary between seasons so it's important to sample around the same time each year when comparing soil test results with other years.

Whole paddock or zonal sampling?

Which sampling approach you choose depends on how you plan to use that information - will you manage the paddock as a whole or apply different rates of fertiliser or lime on different zones?

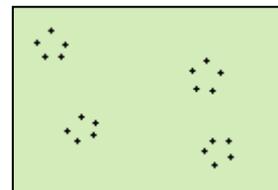
Identifying and sampling different zones within a paddock can be valuable in paddocks of high variability. On-ground observations and free online information such as regional soil landscape maps, Google Earth and Sentinel-2 satellite imagery can be used to identify differences in plant growth, soil and topography on your farm. Identifying and sampling these different zones can reduce the number soil tests needed.

Which sampling method?

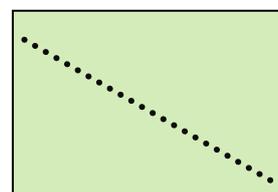
A trial conducted near Holbrook in 2011-13 tested the accuracy of the 3 sampling methods and found no statistical difference between methods when sampling from paddocks of little variability. Cluster or Transect methods are recommended however, for ease and practicality. GPS coordinates of sites can be recorded and easily returned to in following years. Random sampling of paddocks is difficult to repeat and monitor over time.

Sampling Methods

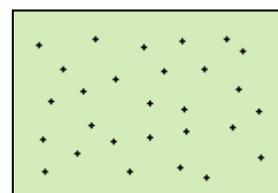
Cluster



Transect



Random



RECOMMENDATION

Avoid sampling near gates, fences, troughs, dams, feed-out areas, and stock tracks.

Collecting a representative soil sample is important!

Collecting a representative soil sample is essential to meaningful soil analysis and fertiliser recommendations. The greatest source of error in soil testing comes from the sample that represents the area being tested.



1500 tonnes soil per hectare
(0-10cm depth)



3 kg collected



500g sent to laboratory



10g analysed in laboratory

Soil Sampling Guidelines

page 2

Which depth intervals - 5cm or 10cm?

Traditionally soil samples are collected at 0-10cm and 10-20cm depth intervals. NSW DPI recommend, in some instances, testing certain soil properties (such as pH) at 5cm depth intervals to identify 'stratified' layers that are known to occur in soils in the region. Instructional videos on when and how to sample at 5cm intervals are on the HLN website under the 'Soils Program' page.

Sampling Tools

Foot corer/
pogo stick**Pro's**

- Quick and easy
- Good for sampling 0-10cm and 10-20cm depths

Con's

- Bulks in 10cm depth intervals and can fail to identify stratified layers
- Not good for sampling 5cm depth intervals due to high risk of contamination between layers

Soil Core

**Pro's**

- Good for sampling in 5cm depth intervals to identify stratified layers
- Minimal contamination between depth intervals

Con's

- Slower and more tools required compared to the foot corer/pogo stick

Digstick

**Pro's**

- Good for rapidly checking subsurface pH in the field (pH test kit required)
- Cheap test, no need to send samples to a laboratory

Con's

- Not good for collecting samples to send to a laboratory
- Tests are indicative only, not as good as laboratory tests

Which soil test?

Standard - Option 1

A comprehensive soil test recommended for 0-10cm, 0-5cm or 5-10cm depth intervals. *Recommended every 3-5 years.*

Standard - Option 2

A test for monitoring phosphorus and pH levels at all depths, and calculating liming rates. *Recommended every 3-5 years.*

Basic - Option 1

A test for monitoring phosphorus and pH levels at all depths. *Recommended every 1-2 years.*

Note this basic test can not be used to calculate liming rates. CEC/ECEC (included in the Standard soil test options) is required.

RECOMMENDATION

Collect around 30 cores per site and mix thoroughly in a bucket before bagging a subsample for the laboratory.