Fertsmart tips for soil testing

Fertsmart is the Australian dairy industry's national nutrient management framework. It has been developed to improve the efficiency and profitability of fertiliser and effluent use on Australian dairy farms.

Before applying any fertiliser, it is important to assess which nutrients are required and the amounts needed to address deficiencies and replace those removed by the farming system. Soil testing provides this analysis and means you apply the right fertiliser at the right rate, time and place.

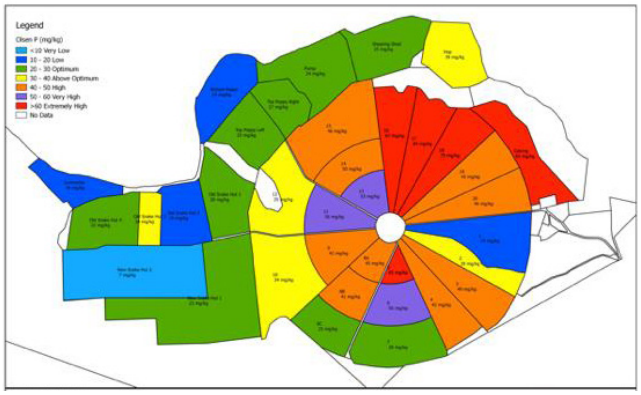
Fertsmart soil testing

Regular observation and monitoring of soil chemical, physical and biological status is the cornerstone of Fertsmart.

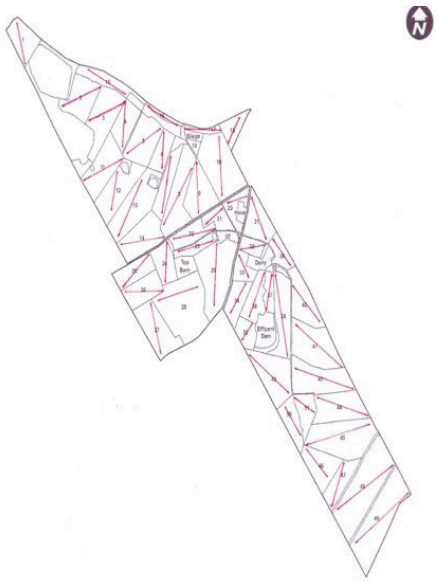
Fertsmart uses the principle of soil testing Farm Management Zones (FMZ). These are areas of your farm which share similar physical characteristics and are managed in a similar way. It is best practice to soil test a representative paddock within each FMZ every 2-3 years.

Expect to pay around $100-$200 per soil sample, depending on number of samples, type of analysis and sampling costs. Money invested in soil testing can potentially save many thousands in fertiliser costs whilst growing more grass. Skimping on soil testing is false economy.

Plan your soil testing program with your agronomist and maintain over time, according to your plan.



Draw soil sampling transect lines on the farm map or record with a GPS, to ensure consistency when sampling. Avoid gateways, troughs, trees and pugged areas to get a representative transect across the paddock. Every person soil sampling over time should walk the same route for consistency.



Mark soil sampling transects on the farm map and walk the same route over time for consistency. You can walk the same route for pasture assessments.

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Best practice tips

- **Timing of Sampling:** for consistency over time, sample at the same time of the year. In cooler regions, soils are typically sampled from late spring to autumn, while warmer regions should align sampling with farming activities.
- **Avoid Recent Applications:** avoid sampling within 3 months of liming or 2 months of applying fertiliser.
- **Planning Ahead:** be organised and complete sampling early to allow time to book fertiliser spreading.
- **Sampling Depth:** dairy pastures are typically sampled to 10 cm depth, although some farms, particularly in Tasmania, have historically used 7.5 cm.
- **Number of Samples:** take a minimum of 30 cores per paddock to form a composite sample. The laboratory sample should be taken from the well-mixed bulk sample.
- **Sample Handling:** complete all required laboratory forms, keep samples cool, and send via Express Post for analysis.
- **Postage Timing:** send samples early in the week to avoid delays and consider including a cool pack to maintain sample integrity.
- **Laboratory Selection:** use a NATA or ASPAC accredited laboratory to ensure quality assurance and reliable analytical results.
- **Consistency in Analysis:** where possible, use the same laboratory over time for consistency. Also consider cost and turnaround time when selecting a provider.
- **Recording Results:** keep track of soil test results. Colour-coded maps can help visualise fertility variation across the farm.
- **Long-term Monitoring:** retain soil test records to build a long-term picture of fertility trends. Many agronomists use commercial software to support ongoing tracking and analysis.

Soil temperature observations are useful for timing fertiliser applications, particularly in colder areas. This is particularly important for nitrogen, which should only be applied when the grass is actively growing.

A **penetrometer** is useful for identifying compacted areas in the paddock. Penetrometer readings over time will be the most reliable gauge for monitoring impacts of different management practices to reduce compaction and pugging.

Take note of:

- Drainage - poorly drained areas are anaerobic and this will limit grass growth and increase the risk of nitrous oxide losses.
- Pugging damage.
- Rooting depth of pasture.
- How soils change with depth. Is there a heavy clay subsoil restricting root growth?
- Weed and pest impacts on the pasture.
- Every observation will give you a better understanding of your farm, its potential and how to manage different parts of the farm.

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