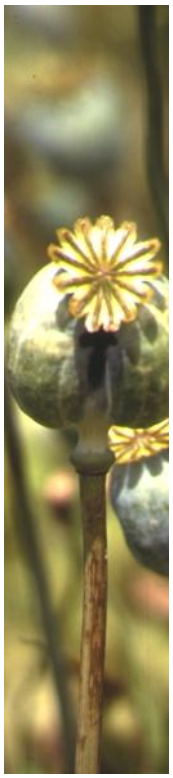
Soil and Plant Testing

What's different about irrigated cropping?



Adequate nutrition is a vital part of profitable cropping. Irrigation increases the stakes. Crop yields and nutrient removal are higher under irrigation than for dryland crops, and fertiliser rates need to be adjusted accordingly to maximise returns on your irrigation investment. Soil and plants tests are important tools to help you decide (a) whether fertiliser is needed, and if so, (b) how much to apply.

The three key parts of soil and plant testing are:
1. Sampling; 2. Analysis; and 3. Interpretation of the results.

Sampling and sample handling

This is the most crucial step in the process. Soils and plants can both vary considerably over short distances, even though they may appear uniform. A good soil or plant sample can only be obtained by collecting and combining sub-samples from a large number of locations (at least 30) within the area in question. Soil also changes with depth and it is important when sampling soil that each location is sampled evenly to the same depth, usually 15 cm for cropping paddocks. Soils are best sampled using a tube sampler or spade.

For plants, particular plant parts may need to be sampled. Young leaves and petioles (leaf stalks) are often preferred for diagnosis. Your agronomist or field officer can provide guidance on which tissues are best to sample, or perhaps even sample them for you!

How the sample is treated can affect how much it changes before the laboratory tests it. To minimise such change, use clean bags or containers and try to get the sample to the laboratory as quickly as possible. Avoid exposing the sample to high temperatures - don't leave samples in the sun or inside a hot vehicle. Keep them in the shade, ideally in an esky or the fridge until you are ready to send them off.

Further information on soil sampling can be found at:

http://dpipwe.tas.gov.au/agriculture/land-management-and-soils/soil-management

Analysis

Soil and plant analysis are specialised tasks. While field tests are becoming more common, laboratory testing remains the preferred option. If possible, use a laboratory that has Australasian Soil and Plant Analysis Council Inc. (ASPAC) and/or National Association of Testing Authorities Australia (NATA) accreditation. For more information about these organisations and their programs see: www.nata.asn.au and www.aspac-australasia.com.

For consistency, it's good practice where possible to stick with the same laboratory from year to year.

Interpretation

Your agronomist or field officer is best placed to tell you what your test results mean. The best advice will be based on locally calibrated, recent trials, but these are not always available. It is wise to get a second opinion if big changes to normal practice (for example, doubling rates or applying no fertiliser at all) are recommended.

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