expressSoil®

What is the expressSoil® test?

The expressSoil® nutrient analysis is based on a multi-element soil extraction process, which was originally developed in 1984 by the chemist Dr Adolph Mehlich. It has been widely adopted around the world. AgVita Analytical has conducted extensive R&D on the suitability of the test for assessing plant available nutrients in Australian soils.

Which elements and indicators are measured and reported?

See product list for available test options .

Nutrient test: This test is used to assess the potential availability of the following nutrients:

Major Elements	Minor and Trace Elements
Phosphorus (P)	Zinc (Zn)
Potassium (K)	Boron (B)
Calcium (Ca)	Iron (Fe)
Magnesium (Mg)	Copper (Cu)
Sulphur (S)	Manganese (Mn)
Chloride (Cl)	

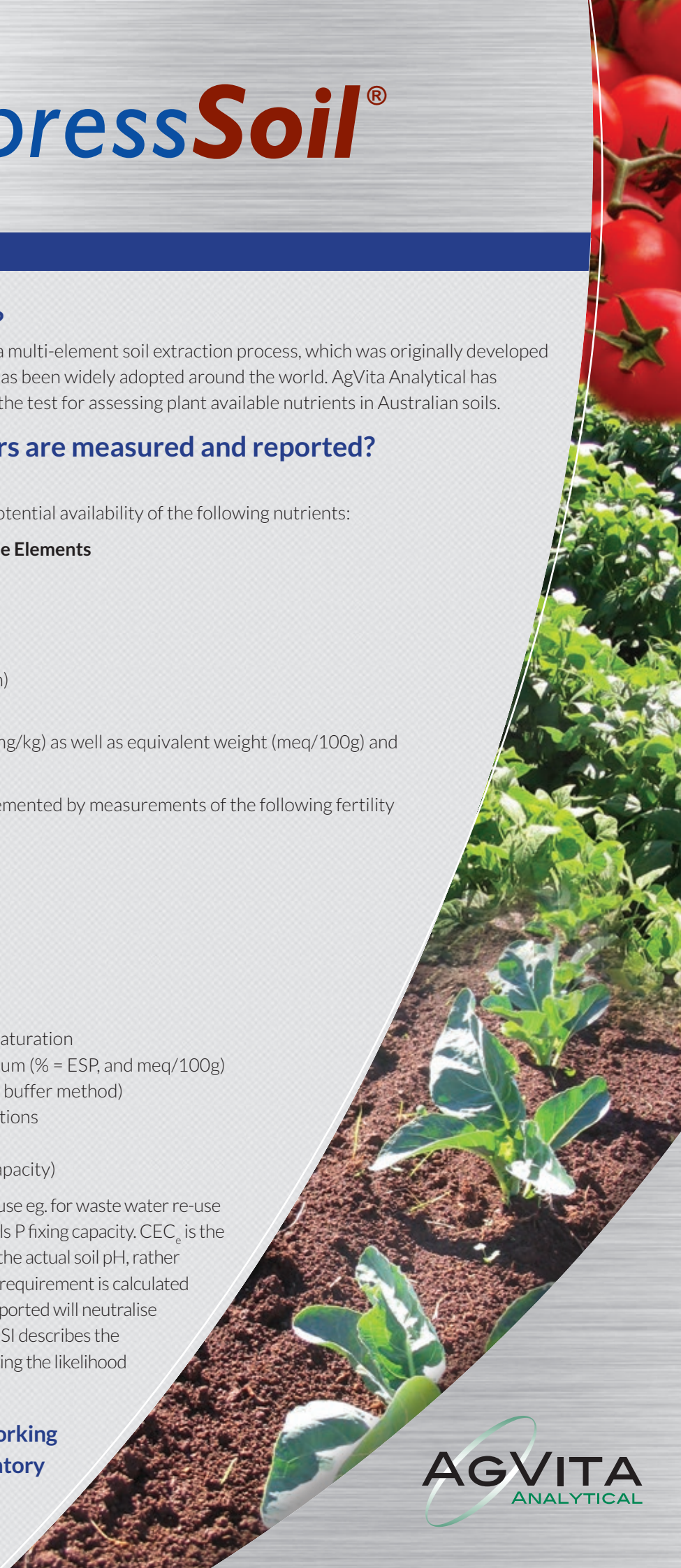
All cations are determined as absolute levels (mg/kg) as well as equivalent weight (meq/100g) and percentage (%) of total cations.

Complete test: The soil nutrient test is complemented by measurements of the following fertility indicators:

- pH (1:5 H_2O and 1:5 $CaCl_2$)
- Total Carbon (TC) %
- Total Nitrogen (TN) %
- C/N ratio
- Organic Matter %
- Aluminum saturation %
- Electrical conductivity (EC, 1:5)
- CEC_e (meq/100g and % of CEC_e), Base saturation
- Sodium (ppm Na) and exchangeable sodium (% = ESP, and meq/100g)
- Exchangeable acidity (Al^{3+} & H^+, Mehlich buffer method)
- Lime requirement to neutralise acidic cations
- Electrochemical Stability Index (ESI)
- M3-PSR, P Saturation Ratio (P Buffer Capacity)

The M-3 PSR has agronomic and environmental use eg. for waste water re-use and effluent use sites. PSR is a measure of the soils P fixing capacity. CEC_e is the 'effective cation exchange capacity', measured at the actual soil pH, rather than under alkaline conditions (pH 8.2). The lime requirement is calculated based on 90% $CaCO_3$ equivalent. The amount reported will neutralise the exchangeable acidity, resulting in pH 6. The ESI describes the relationship between sodicity and salinity, indicating the likelihood of crusting or hard setting.

Results will be reported within five working days after samples arrive in the laboratory any time of the year.



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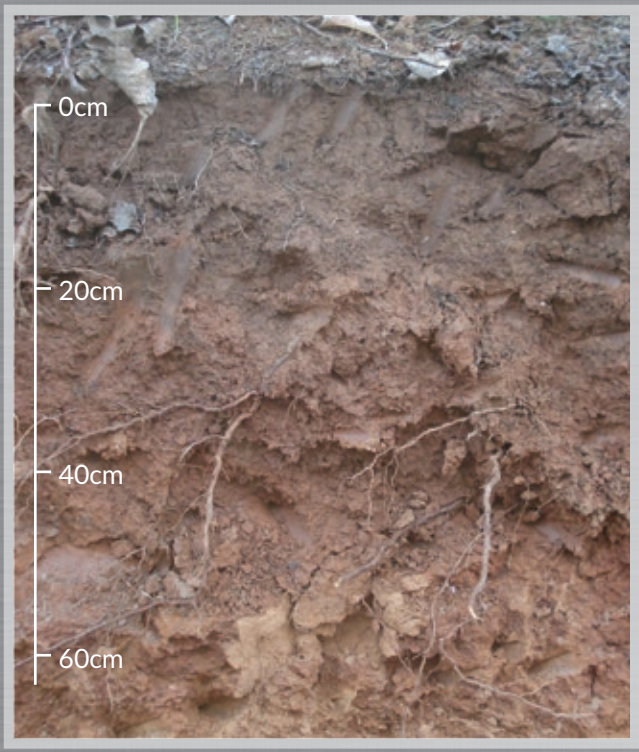

When to sample?

The soil nutrient status should be assessed prior to intended fertiliser applications:

- Pre-cropping to determine base fertilisers and applications at planting
- In-crop to assess nutrient availability
- As a basis for nutrient management plans and budgets

Sampling depth

The soil test should be representative of rootzone conditions. If the soil has not been worked (i.e. mixed) the sampling depth should represent the main rootzone depth (80-90% of roots). This applies especially to orchards, vineyards and no-till or minimum tillage crops to avoid errors due to nutrient stratification.

If you would like an N-check (available soil nitrate analysis) or a Soil Function (soil physics) assessment, or SMI (Soil Microbial Indicator test) on the same sample please refer to www.agvita.com.au for instructions or contact the laboratory directly

Reporting of results

Analytical results will be emailed to clients in our user-friendly reporting template. Raw results can be accessed within this report if required in this format.

Sending the samples by post

Samples should be kept cold after collection. All soil samples must be double bagged prior to sending. This helps to maintain the samples integrity and ensures they pass Quarantine inspection. Do not overfill individual soil bags, they burst.

Send the samples via overnight express to:

AgVita Analytical
PO Box 188, Devonport, TAS 7310
Ph: (03) 64 209 600
Fax: (03) 64 270 230
Email: info@agvita.com.au

For more information and to obtain a sample label visit: **www.agvita.com.au**

Member of ASPAC, Australasian Soil and Plant Analysis Council

ASPAC

ISO 9001
International Standards Certifications

Sampling procedure

1. Select a 1-2 ha area representing uniform soil conditions. Within the area, follow a W or S pattern or use a transect when collecting samples.
2. Avoid irrigation and spray runs, headlands and compacted or other non-typical areas. They may have to be sampled separately, if large.
3. Remove the first 1-2cm of topsoil to eliminate any surface applied fertilizer.
4. Take 15-20 sub samples with an auger to a depth of 15cm, or to the main root zone depth. Record the depth on the sample label.
5. Empty the contents of each sub-sample into a clean bucket, mix and transfer into a plastic zip lock bag. If more than 500g have been collected, take a well mixed 500 g sub-sample from the bucket. If you require a soil microbial indicator test (SMI) as well, please send two bags x 500grams from the same site and from a max of 15cm depth.
6. Samples are to be double bagged prior to sending. Place inside two plastic ziplock bags (available from AgVita Analytical if required)
7. Chill the sample immediately after sampling by placing it into an esky with a frozen ice pack. The samples may be stored, provided they are kept around 4C or are immediately air-dried.
8. Complete a sample label giving complete details for each sample.