

Today's focus

Geology and landscape	Climate	Land management history	Plant physiology and nutrition
Soil physical properties	Soil sampling	Soil chemical analysis	Soil chemistry
Soil Food Web	Interpreting soil test results	Deciding on a course of action	Plant tissue testing
Root-soil interactions			
Human and animal health	Crop yield and quality	Fertilizers and soil inputs	Society, markets and economics

Considerations in sampling method

- Choosing sample areas based on landform, soil profile, cropping history
- Number of sampling locations in each bulk sample
- Sampling pattern
- Number of bulk samples analysed
- Sampling depth
- Depth of topsoil mixing
- Sampling equipment
- Avoiding contamination

Considerations in analytical method

Extractants used (eg Mehlich, Colwell, Olsen methods)

Cation Exchange Capacity units.

Cation units

pH method

Organic matter/carbon method

Screening gravel and coarse materials in or out

Considerations in interpretation

Several different philosophical approaches

- Base Cation Saturation Ratio (BCSR) methods
- Sufficiency Level of Available Nutrient (SLAN)
- Build-up, maintenance and replacement
- Economic response curve methods
- Combination methods

Considerations in taking action

- Available and acceptable nutrient sources
- Timing and method of application
- Obtaining best results for money/effort
- Long term consequences and pay-offs
- Minimizing risk, precautionary principle
- Prioritizing and “triage”

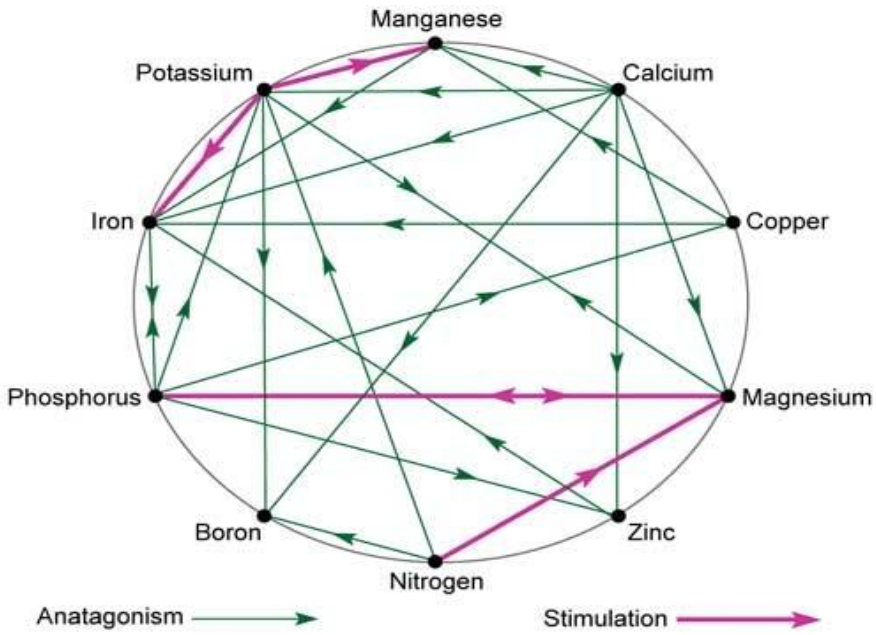
Information resources – a starter

Some local laboratory/recommendation services

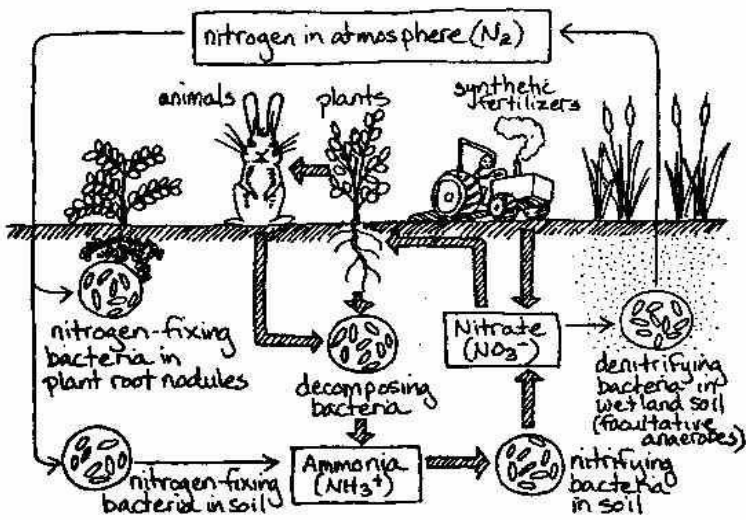
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| • hortus.net.au | Bundaberg |
| • phosyn.com.au | Gold Coast |
| • nutri-tech.com.au | Yandina |
| • scu.edu.au/eal | Lismore |

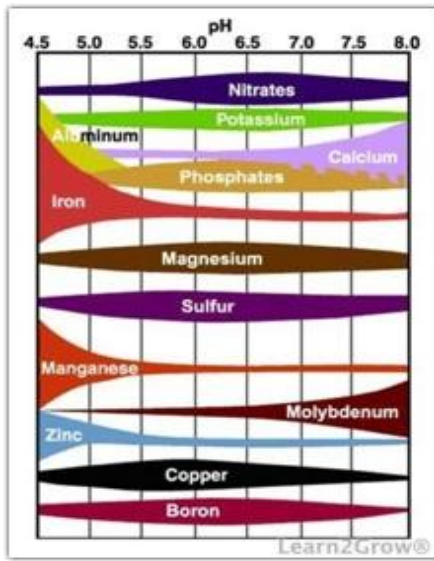
Some recommended places to learn more

- soilquality.org.au
- soilhealth.com/soils-are-alive/
- soilanalyst.org
- soilandhealth.org



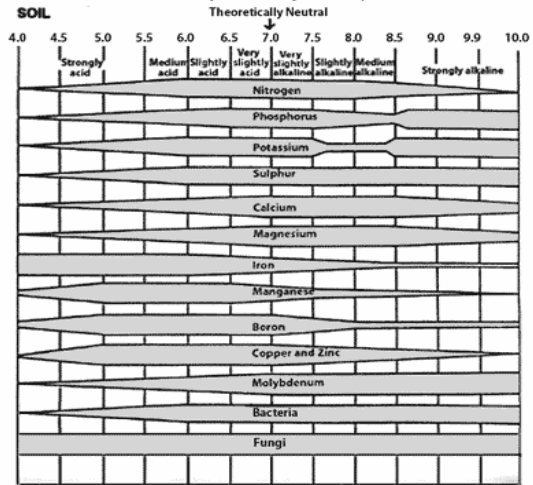
The Nitrogen Cycle





GUIDE TO THE INFLUENCE OF pH ON THE AVAILABILITY OF PLANT NUTRIENTS

Maximum availability is indicated by the widest part of the bar.



Relationships existing in mineral soils between the pH and the availability of plant nutrients and the activity of microorganisms. The wider the band, the greater the availability or activity.