NBudget: a simple tool for farmers and advisors for N management in Australia's grain cropping

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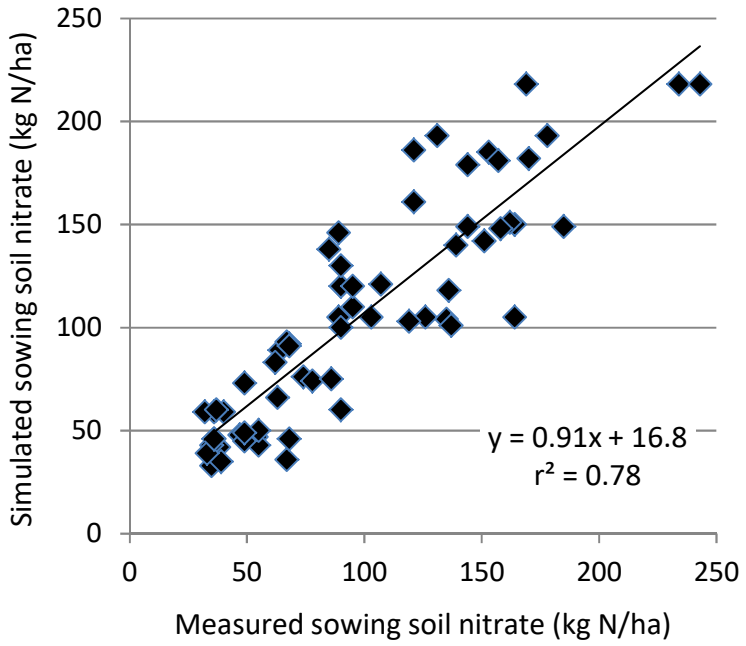
Nbudget (DS tool)

- NBudget is an Excel-based DS tool that does not require associated soil testing, making it different from other DS tools
- NBudget requires
  - Simple soil/paddock assessment and last two years crop information
- NBudget estimates
  - Sowing soil mineral (nitrate) N (empirical data, simulations, rules-of-thumb, linked algorithms)
  - Sowing soil water (empirical data, fallow efficiency, standard functions)
  - N_2 fixed by the legume crops (functions derived from empirical data)
  - Expected grain yields for a range of crops (using soil water and WUE)
  - Fertiliser N required for those crops (using NUE from empirical data)
- Used published and unpublished data from, amongst others, NSW and Qld farming systems, nutrition expts during past 35 years.

Nbudget – does it work?

- The greatest value of NBudget may be estimating sowing soil nitrate-N
- Evidence that the ultimate decision about fertiliser N inputs is complex. Farmers and advisors want accurate information to help make decisions, but don't want to be told what to do.
- Accuracy of estimated sowing soil nitrate-N tested against three independent data sets from northern NSW (Cryon) and southern Qld (Warra, Nindigully) (n = 65)
- Reasonably good agreement, but does not account for denitrification losses, e.g. very wet 2011-12 summer fallow, N over-estimated by 65-90 kg/ha at 3 of 7 sites.
- Needs to be converted to/released as a stand-alone app



Associated manual:
https://grdc.com.au/~/media/6E5659619C7C4063AB3C8E58A4DE39E7.pdf