



MANNER-NPK nutrient management software

E. Sagoo¹, F.A. Nicholson², J.R. Williams¹, R.E. Thorman¹, A. Bhogal², T.H. Misselbrook³ and D.R. Chadwick⁴

1. ADAS Boxworth, Battlegate Road, Boxworth, Cambridge, CB23 4NN. 2. ADAS Gleadthorpe, Meden Vale, Mansfield, Nottingham, NG20 9PD.

3. Rothamsted Research North Wyke, Okehampton, Devon, EX20 2SB. 4. Bangor University, Bangor, Gwynedd, LL57 2UW

Background

- Efficient use of nutrients supplied by organic materials is crucial for sustainable agricultural production.
- Crop available nitrogen supply from organic materials can be difficult to estimate because it depends on a number of factors.
- **MANure Nutrient Evaluation Routine (MANNER-NPK)** is a free software decision support tool for calculating crop available nutrient supply from applications of organic materials to land.

Crop available nitrogen

- MANNER-NPK estimates crop available nitrogen supply using algorithms for each of the nitrogen transformation and loss pathways including ammonia volatilization, denitrification, nitrate leaching and mineralization.
- MANNER-NPK addresses the challenge of translating the complex science of nitrogen transformations and losses (Fig 1) into an accessible format that enables farmers to calculate crop available nutrient supply.

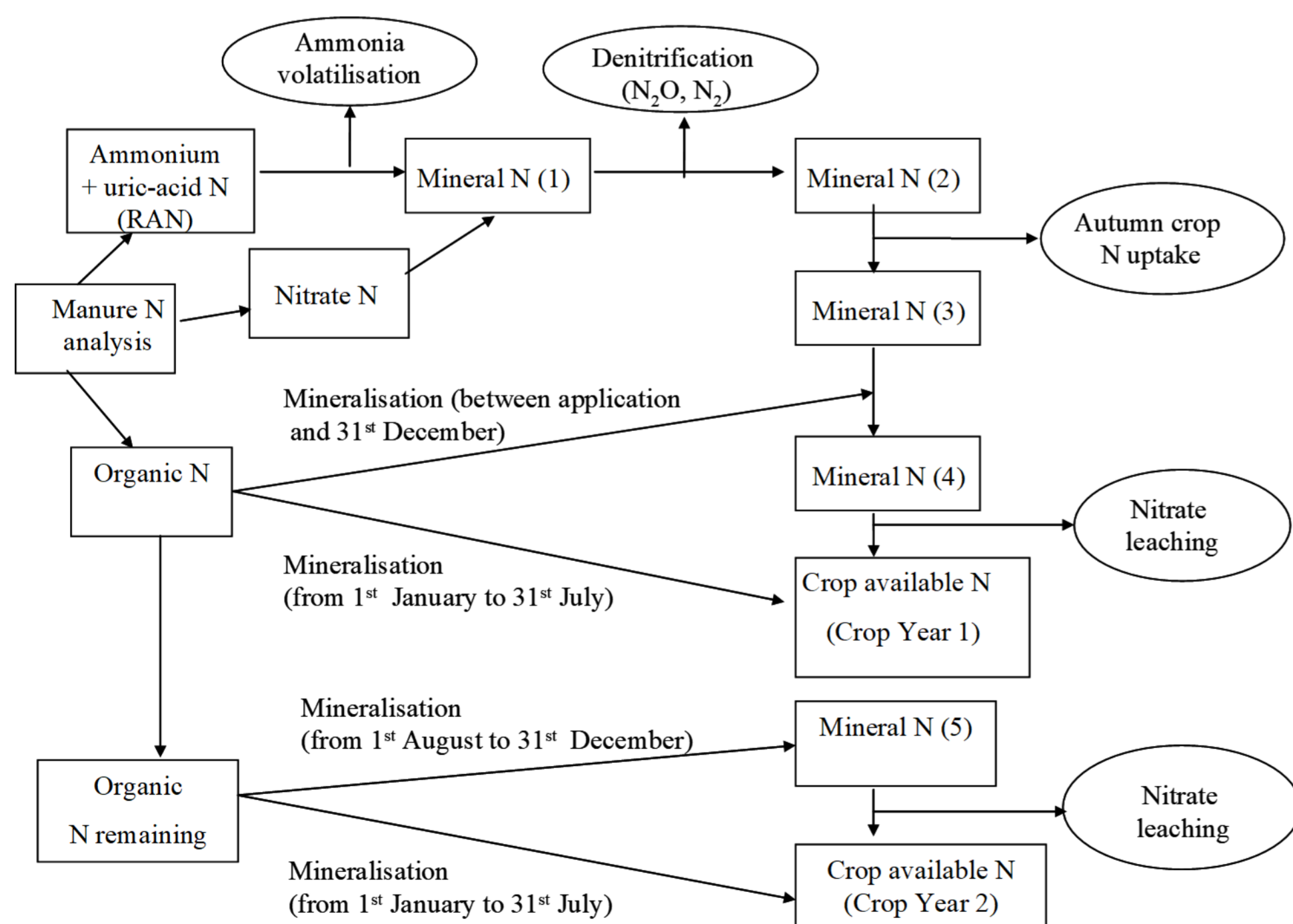


Fig. 1. MANNER-NPK nitrogen flow pathways

Uptake and impact

- MANNER was first released in 2000. The software was updated in 2004, 2010 and 2013.
- 4000 registered users of the current 'standalone' version of MANNER-NPK.
- The MANNER-NPK 'calculation engine' (Dynamic Link Library – DLL) has been integrated into the PLANET nutrient management software tool which has 18,000 registered users.
- PLANET provides fertiliser recommendations taking into account crop requirements, soil nutrient supply and the nutrient supply from organic materials (calculated from MANNER-NPK).
- The PLANET DLL has been integrated into commercial tools produced in the UK by Farmplan, Muddyboots and Pear Agri.
- The Defra Farm Practice Survey (2017) showed that 54% of farms in England and Wales with a nutrient management plan used a software tool which integrates the MANNER-NPK calculations.
- MANNER-NPK and PLANET are available to download free from www.planet4farmers.co.uk

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MANNER
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