

# Plant nutrition courier

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The best bits of plant nutrition research

2023-04



*More carbon in the soil by fertilising straw 4*

*Computational chemistry advances understanding of phosphate binding in soil 7*

*Metal-free ligand improves iron uptake in calcareous soil 9*

*MAP and DAP influence fertosphere-pH differently 11*

*Urease inhibitors reduce fungal disease severity 14*

*Recent plant nutrition patent publications 33*





## More carbon in the soil by fertilising straw 4

Arable farmers who want to sequester extra carbon must fertilise straw and stubbles and then incorporate them into the soil, according to Australian researchers.



## Metal-free ligand improves iron uptake in calcareous soil 9

The biodegradable chelating agent [S,S]-EDDS and its degradation products improve the iron uptake of common bean growing in calcareous soil.



## MAP and DAP influence fertosphere-pH differently 11



## Urease inhibitors reduce severity of fungal disease 14

### Arable farming

- 4 More carbon in the soil by fertilising straw
- 5 Editorial: Fertilising straw: interesting approach with many unanswered questions
- 6 Amorphous silica increases grain yield and soil organic carbon stock
- 6 Future carbon dioxide scenarios reduce silicon content in tall fescue
- 6 Nitrogen and neighbours affect silicon uptake in wheat
- 6 Grasses are highest in silicon under waterlogging
- 7 Low silicon availability limits phosphate availability in paddy soils
- 7 Elevated carbon dioxide in air requires adjustment of in-season nitrogen timing
- 7 Effect of phosphate foliar fertilisation in phosphate-deficient maize is short-lived
- 7 Computational chemistry advances understanding of phosphate binding in soil
- 7 Crops profit from phosphate banding
- 8 Oil radish stands out in saving nitrogen from leaching
- 8 Drought appears to stimulate excretion of nitrification inhibitors by sorghum
- 8 Organic amendment effects differ over time

### Potato nutrition

- 8 Publications about potato nutrition research

### Plant and soil analytics

- 9 Soil solution contains trivalent manganese
- 9 Combining two analytical techniques to determine phosphorus species in soil
- 9 Soil testing with android smartphone
- 9 Novel on-farm tests for ammonium and potassium concentrations in slurry

### Fertilisers

- 9 Metal-free ligand improves iron uptake in calcareous soil
- 10 Experimental slow-release micronutrient fertilisers
- 10 Slow-release boron fertiliser of cellulose insulation waste
- 10 Granular urea with nanoporous coating
- 11 MAP and DAP influence fertosphere-pH differently
- 12 Increasing the phosphate content of layered double hydroxide fertilisers
- 12 Aromatic organic acids help citric acid in increasing plant-available phosphorus
- 12 DAP coating comprising sulphur and sulphur-oxidizing bacteria
- 12 Sustainable fertilisers in papers and patents
- 14 Urease inhibitors reduce severity of fungal diseases
- 14 Nano-fertiliser: if it's too good to be true, it probably is!
- 13 Publications about new, experimental and potential fertiliser formulations

### Silicon

- 6 Amorphous silica increases grain yield and soil organic carbon stock
- 6 Nitrogen and neighbours affect silicon uptake in wheat
- 6 Grasses are highest in silicon under waterlogging
- 7 Low silicon availability limits phosphate availability in paddy soils

### Mycorrhizae

- 8 AMF inocula composition often differs from label
- 8 Mycorrhizae affect water retention and drainage depending on soil type

### Plant nutrition patents

- 33 Patent as a stepping stone to subsidy
- 33 Recent plant nutrition patent publications

### Literature

- 8 Publications about potato nutrition research
- 13 Publications about new, experimental and potential fertiliser formulations
- 15 Publications about plant nutrition research

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Coatings and other specific release mechanisms	21		

Fertiliser companies



Fertiliser research



Liquid fertiliser applicators



Soil services



Agricultural cooperatives

(Dutch - with international network of subsidiaries)



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