

Plant nutrition courier

The best bits of plant nutrition research

2022-03

Sulphur reduces nitrate loss on heavily nitrogen-fertilised soils 4

Falling wheat grain yields associated with rising CO₂ levels 7

Tuber coating with micronutrient nanoparticles protects potato against diseases 9

Petiole phosphate concentration reflects potato phosphorus status 9

Low-cost alternative to ICP measurements 11

Silicon promotes phosphorus reuse from metabolites 44



Sulphur reduces nitrate-leaching risk in light-textured grasslands 4

Heavily nitrogen-fertilised grasslands on sulphur-deficient and light-textured soils need sulphur to reduce the risk of nitrate leaching.



Falling wheat grain yields associated with rising CO₂ levels 7

Winter wheat grain yields are declining due to rising atmospheric CO₂ concentrations, but grain protein contents remained constant in long-term field trials in California.



Tuber coating with micronutrient nanoparticles protects potato 9



Low-cost alternative to ICP measurements 11

Grassland

- 4 Sulphur reduces nitrate-leaching risk in light-textured grasslands
- 5 Editorial: Effects of sulphur fertilisation on nitrogen losses deserve more attention
- 5 Clover benefits from neighbouring grasses
- 6 Sulphur deficiency reduces nitrogen fixation by legumes
- 6 Signalling compound reported to reduce urea excretion by livestock

Arable farming

- 6 Sulphur deficiency reduces nitrogen fixation by legumes
- 6 Sulphur reduces nitrogen losses in heavily nitrogen-fertilised crops
- 7 Falling wheat grain yields associated with rising CO₂ levels
- 7 Ammonification speeds up straw decomposition
- 8 Catch crop roots accumulate significant amounts of nitrogen and phosphorus
- 8 Catch crop promotes mycorrhization subsequent crop
- 8 Reduction of methane emission via nitrogen fertilisation
- 8 Stomata important for uptake of nanomaterial
- 8 Special issue on micronutrients
- 8 Turbulent irrigation water may affect the fate of soil nutrients
- 8 Water repellency isn't that bad
- 13 Drought affects nitrogen fixation differently per legume species
- 44 Silicon promotes phosphorus reuse from metabolites
- 44 Soybean benefits from silicon in various ways
- 44 Wheat landraces respond differently to silicon application
- 44 Drought-stressed rice profits from combining silicon with selenium
- 44 Silicon in boron foliar fertiliser mitigates boron deficiency and toxicity

Potato nutrition

- 9 Petiole phosphate concentration reflects potato phosphorus status
- 9 Tuber coating with micronutrient nanoparticles protects potato against diseases
- 9 Nitrogen mineralisation in potato ridge may be higher than in surrounding soil
- 10 Publications about potato nutrition research

Fruits, vegetables and ornamentals

- 11 Smartphone app measures nitrogen status of tomato
- 12 Nitrified digestate as fertiliser for crops on peat-based substrates
- 45 Silicon promotes fruit wound healing in harvested muskmelon

Plant and soil analytics

- 9 Petiole phosphate concentration reflects potato phosphorus status
- 11 Low-cost alternative to ICP measurements
- 11 Portable X-ray fluorescence suitable for zinc analysis of plant samples
- 11 Microbial biomass is important potassium source for crops
- 11 Smartphone app measures nitrogen status of tomato

Fertilisers and organic fertilisers

- 9 Tuber coating with micronutrient nanoparticles protects potato against diseases
- 11 Nitrpyrin reduces carbon dioxide emission from soil
- 11 NBPT stabilizers tested
- 12 Organic acids can match EDTA's effectiveness in iron nutrition
- 12 Alternatives to ammonium sulphate recommended
- 12 Phosphorite ore beneficiation techniques compared
- 13 Humic acids can increase effectiveness of urea fertilisers
- 13 Amino acid polymers enhance fertiliser performance
- 14 Publications about new, experimental and potential fertiliser formulations

Organic fertilisers

- 12 Nitrified digestate as fertiliser for crops on peat-based substrates
- 12 Selenium affects greenhouse gas emission during goat manure composting



Silicon promotes phosphorus reuse from metabolites 44

Young phosphorus-deprived wheat increases its shoot phosphate content at the expense of organic phosphorus compounds when provided with silicon. This 'extra' phosphate is recycled from phosphorus-containing metabolites in shoots.

Rhizobacteria and beneficial soil bacteria

- 8 Catch crop promotes mycorrhization subsequent crop
- 13 Drought affects nitrogen fixation differently per legume species
- 13 Potassium phosphite enhances soil suppressiveness against ralstonia wilt
- 44 Silicon increases growth of biocontrol bacterium

Silicon

- 44 Silicon promotes phosphorus reuse from metabolites
- 44 Silicon increases growth of biocontrol bacterium
- 44 Soybean benefits from silicon in various ways
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- 44 Silicon in boron foliar fertiliser mitigates boron deficiency and toxicity
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Fertiliser companies



Agricultural cooperatives

(Dutch - with international network of subsidiaries)



Fertiliser research



Liquid fertiliser applicators



Soil services



Mycorrhizae



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Colophon

Editor	Gert van den Berg
Publisher	Landbouwkundige Uitgeverij G.C. van den Berg
Address	Van Maerlantstraat 5, 3906 EL Veenendaal, The Netherlands
Website	www.plantnutritioncourier.nl
Subscriptions	Small: € 140,00/year ex VAT (1 - 10 readers at one physical location of the organisation). Medium: € 410,00/year ex VAT (11 - 50 readers at multiple physical locations of the organisation). Worldwide: € 875,00/year ex VAT (worldwide in-company subscription).
Single issues	€ 45,00/issue ex VAT.

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