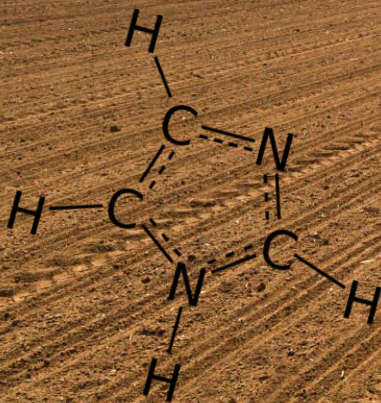


Plant nutrition courier

The best bits of plant nutrition research

2024-02



Silica solubilisers improve silicon status of crops 4

Grain biofortification via new seed priming method 8

Field potatoes have nitrogen-fixing bacteria around the roots 10

Acidification increases phosphorus fertiliser value of digestate solid fraction 13

Recent plant nutrition patent publications 39



Silica solubilisers improve silicon status of crops 4

Silica is virtually inert. However, Indian scientists have found biodegradable molecules that solubilise silica in soil. Application increases the silicon content of crops.



Grain biofortification via new seed priming method 8

Soaking rice seeds in an iron solution for three days increases grain yield and iron content of the harvested grains.



Field potatoes have nitrogen-fixing bacteria around the roots 10



Acidification increases phosphorus fertiliser value of digestate solid fraction in vegetables 13

Silica solubilisation

- 4 Silica solubilisers improve silicon status of crops
- 5 Editorial: Innovations in silicon nutrition come from unexpected sources
- 6 Silica scale inhibitors find their way to agriculture

Arable farming

- 8 Grain biofortification via new seed priming method
- 8 Seed priming with glass waste as silicon source
- 8 Cotton benefits from the combination of boron with silicon
- 8 Silicon can partially replace boron in plant nutrition
- 9 Boron-deficient rapeseed benefits from silicon supplementation
- 9 Silicon improves fertigation efficiency
- 9 Book about benefits of silicon in plant nutrition
- 9 Selenium protects tobacco plants against fungi
- 9 Early silicon fertilisation in sugarcane
- 9 Plant species respond differently to silicon under dry conditions
- 9 Boron seed treatment protects safflower against seed-borne pathogens
- 9 Cover crop seed as carrier for biocontrol agent
- 9 Nodulated faba bean thrives on organic soil phosphorus

Potato nutrition

- 10 Field potatoes have nitrogen-fixing bacteria around the roots
- 10 Potato responds unexpectedly to differences between mycorrhiza strains
- 11 Silicon plus iron biostimulant affects nutrient contents of new potato tubers
- 11 Publications about potato nutrition research

Fruits and vegetables

- 12 Diphenylurea in nutrient solution reduces tipburn in lettuce
- 12 Potassium reduces chilling stress in strawberry
- 12 Boron and pear cork spot disease

Ornamentals

- 12 Silica nanoparticles improve carnation micropropagation

Plant and soil analytics

- 12 New express method for on-site soil analysis
- 12 Shoot sample at termination predicts nitrogen from cover crop residues

Fertilisers

- 12 New method estimates dissolution of granules
- 13 Acidification increases phosphorus fertiliser value of digestate solid fraction
- 13 Effect of copper oxide coating on granular urea depends on soil type
- 13 Biopolymeric aerogels as nutrient delivery systems
- 13 Thiourea enhances effectiveness of insect pathogenic nematodes
- 13 Publications about new, experimental and potential fertiliser formulations

Silicon

- 4 Silica solubilisers improve silicon status of crops
- 5 Editorial: Innovations in silicon nutrition come from unexpected sources
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Novel nitrification and urease inhibitors 39

Recently new nitrification inhibitory molecules have been synthesized and patent protection has been applied for. Companies have also disclosed new formulations for existing inhibitor compounds.

Rhizobia, mycorrhizae and other beneficials

- 10 Field potatoes have nitrogen-fixing bacteria around the roots
- 10 Potato responds unexpectedly to differences between mycorrhiza strains
- 10 Male and female plants have different mycorrhiza communities

Plant nutrition patents

- 39 Recent plant nutrition patent publications

Literature

- 11 Publications about potato nutrition research
- 13 Publications about new, experimental and potential fertiliser formulations
- 16 Publications about plant nutrition research

Service

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Cover photograph

Imidazole, histidine and mannitol can solubilise silica in soil and improve the silicon status of crops. Structural formulas have been depicted by [Jynto](#) (imidazole), [NEUROtiker](#) (histidine) and [Su-no-G](#) (mannitol), respectively.

Publications about plant nutrition research

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Fertiliser companies



Analytical services



Fertiliser research



Liquid fertiliser applicators



Soil services



Agricultural cooperatives

(Dutch - with international network of subsidiaries)



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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: € 160,00/year ex VAT (1 - 10 readers at one physical location of the organisation). Medium: € 465,00/year ex VAT (11 - 50 readers at multiple physical locations of the organisation). Worldwide: € 985,00/year ex VAT (worldwide in-company subscription).
Single issues	€ 50,00/issue ex VAT.

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