Plant nutrition *courier*

20 years best bits of plant nutrition research 2025-04

Chamomile flower heads make simple and synthesizable urease and nitrification inhibitor 10

Growth stimulus by microbubble-assisted administration of plasma-activated water 6

Effectiveness of coated phosphate fertiliser differs by soil type 8

Spectroscope reads a plant's nutritional status from electrical current through tissue 14

Recent plant nutrition patent publications 40

- *polyphosphate additive for granular ammonium nitrate*
- *foliar fertiliser enhances glufosinate efficacy at low temperature*
- *new urease and nitrification inhibitor formulations and new coatings*
- *UAN / sulphur suspension*
- *new adjuvants and formulation inerts*
- *thickener for suspensions with high electrolyte concentrations*

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Growth stimulus by microbubble-assisted administration of plasma-activated water **6**
Engineers at the University of Alberta have developed a scalable system to provide reactive oxygen and nitrogen species to stimulate crop growth on hydroponics

Effectiveness of coated phosphate fertiliser differs by soil type **8**
The effectiveness of soil-applied coated monoammonium phosphate fertiliser depends on soil texture and the phosphate fixation capacity of the soil.

Chamomile makes synthesizable urease and nitrification inhibitor **10**
Chamomile contains a potent urease and nitrification inhibitor. Chinese researchers are investigating the dual-action inhibitor for agricultural applications. The low-molecular weight compound can be synthesized in a number of ways.

Arable farming

4 Fertilisation affects bulk soil more strongly than rhizosphere soil
4 Plant pathogenic fungi manipulate phosphate sensing to promote infection
4 Iron mitigates prolonged heat stress in wheat and cool-season grass
4 High phosphate soil status exacerbates boron deficiency in oilseed rape
5 Wheat cultivars differ in responsiveness to silicon application
5 Silicon dioxide suspension reduces soybean pest and diseases
5 Flowers and leaves recycle nutrients differently
5 Ammonium nutrition improves silicon uptake compared to nitrate supplementation
5 Silicon-solubilising bacteria help mitigate potato rot and wilt
6 Bacterial biopolymer mitigates aluminium stress in wheat
6 Better protein quality through sulphur and selenium biofortification
6 Again disappointing results with foliar-applied nano-urea

Potato nutrition

6 Foliar-applied nanoselenium increases potato yield
Publications about potato nutrition research: see section Publications about plant nutrition research (from page 16)

Fruits and vegetables

6 Growth stimulus by microbubble-assisted administration of plasma-activated water
7 Macronutrient solubility responds to the pH of peat-based container substrates
7 High ammonium level enhances growth of southern highbush blueberry in high pH-buffered substrate
7 Dissolving in acid makes insoluble phosphates suitable for hydroponics
7 Light source affects ammonium toxicity in tomato
7 Potassium iodide as biostimulant in iceberg lettuce
7 Silicon mitigates calcium deficiency stress in tomato
8 Foliar-applied urea is effective bud-breaking agent

Fertilisers

8 New ammonium carbonate-based fertiliser materials
8 Shellac coating for granular urea
8 Effectiveness of coated phosphate fertiliser differs by soil type
8 New method for phosphogypsum purification
9 Co-granulation with pillared clay turns fertiliser into slow-release formulation
9 Mechanically activated clay carrier for slow-release phosphate fertiliser
9 Composite coating for pristine rock phosphate
10 Chamomile makes synthesizable urease and nitrification inhibitor
10 Modification makes humic acid a better urease inhibitor for urea fertilisers
11 Publications about new, experimental and potential fertiliser formulations

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15 Sensing of maize nitrogen status using digital images from below the canopy
15 No difference in critical nitrogen dilution curve between silage maize maturity groups

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50 Milling cellulose waste into biodegradable surfactants
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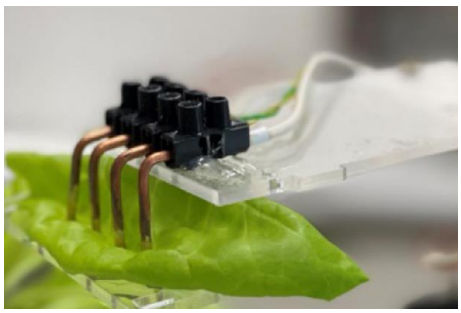

Spectroscope reads a plant's nutritional status from electrical current through tissue 14

Picture: Golden electrodes attached to lettuce leaf. Flórián Kovács et al.

Silicon

5 Wheat cultivars differ in responsiveness to silicon application
5 Silicon dioxide suspension reduces soybean pest and diseases
5 Ammonium nutrition improves silicon uptake compared to nitrate supplementation
5 Silicon-solubilising bacteria help mitigate potato rot and wilt
7 Silicon mitigates calcium deficiency stress in tomato

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Colophon

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