

Plant nutrition courier

The best bits of plant nutrition research

2022-04

Patents are underutilised source of plant nutrition knowledge 27

(with highly relevant patent descriptions)

Sulphur deficiency associated with wheat gluten-related diseases 4

Sensor array determines nitrogen status of field crops 6

New chelating agent is little sensitive to leaching 7

When do enhanced efficiency nitrogen fertilisers add value? 8

Database of deliquescence and efflorescence points 11



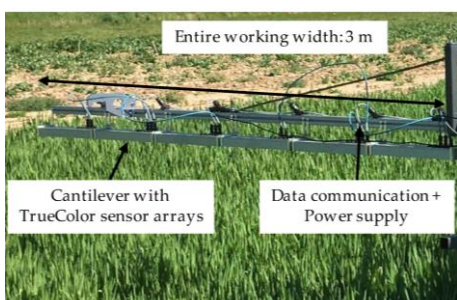
Patents are underutilised source of plant nutrition knowledge 27

Unknown, unloved, unread. The wealth of plant nutrition and fertiliser knowledge hidden in patents remains underutilised.



Sulphur deficiency associated with wheat gluten-related diseases 4

Grains of sulphur-deficient wheat have an increased content of gliadins. Coeliac disease patients are sensitive to these gluten components.



Sensor array determines nitrogen status of field crops 6

Picture: Institute of Agricultural Engineering, University of Bonn



When do enhanced efficiency nitrogen fertilisers add value? 8

Arable farming

- 4 Sulphur deficiency associated with wheat gluten-related diseases
- 4 Nitrogen management for transplantable rapeseed seedling blankets
- 4 Low molybdenum foliar fertiliser dose acts as biostimulant
- 4 Root residues affect soil phosphorus availability differently
- 4 Elevated CO₂ requires additional phosphorus for nitrogen fixation

Potato nutrition

- 5 Satellite and temperature data to assess nitrogen needs of potato
- 5 Pesticide-tolerant phosphate-solubilising bacteria
- 5 Publications about potato nutrition research

Plant and soil analytics

- 5 Satellite and temperature data to assess nitrogen needs of potato
- 6 Sensor array determines nitrogen status of field crops
- 6 High-throughput phenotyping for nutrient deficiency diagnostics
- 6 Printed potentiometric sensor to measure soil nitrate
- 6 Portable sensor measures soil nitrogen

Fertilisers

- 7 New chelating agent is little sensitive to leaching
- 8 When do enhanced efficiency nitrogen fertilisers add value?
- 8 Effectiveness of APP comes from lowering soil pH
- 8 Fertiliser additive increases plant-availability of phosphate
- 9 Wastewater treatment plants are increasingly important phosphorus sources
- 9 Addition of chemicals prior to incineration affects phosphorus recovery and heavy metal extraction from sewage sludge ash
- 9 Publications about new, experimental and potential fertiliser formulations

Deliquescence and efflorescence

- 11 Database of deliquescence and efflorescence points
- 11 Leaf surfaces are dotted with hygroscopic substances

Rhizobia, mycorrhizae and other beneficials

- 5 Pesticide-tolerant phosphate-solubilising bacteria
- 9 Quality control framework for commercial mycorrhizal inoculants

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Plant nutrition patents

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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

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