

18th International Plant Nutrition Colloquium 2017 Location: Tivoli Congress Center, Copenhagen, Denmark			
17:00-21:00	20 August, Sunday Registration and poster mounting Welcome reception from 19:30		
21 August, Monday			
9:00-10:15	Opening session 9:00-9:10 Welcome by Jan K. Schjoerring, Denmark Chairman of the Colloquium and President of International Plant Nutrition Council 9:10-9:20 H.C. Andersen parade 9:20-9:30 Welcome by Thomas Bjørnholm, Denmark Pro-rector for Research, University of Copenhagen 9:30-10:15 Opening plenary presentation Plant nutrition for global green growth - Designing next generation fertilizers for crop nutrition Mike McLaughlin, Australia		
10:15-10:45	Coffee break and poster viewing		
10:45-12:25	Keynote presentations 10:45-11:10 Exploiting the root-soil microbiome for benefit to plant nutrition Alan E. Richardson, Australia 11:10-11:35 Phosphorus promotes nitrogen fixation in soybean Hong Liao, China 11:35-12:00 Non-mycorrhizal strategies to acquire phosphorus from soils with very low phosphorus availability Hans Lambers, Australia 12:00-12:25 Plant nutrients - The functional ionome Philip White, United Kingdom		
12:25-14:00	Lunch and poster viewing		
	Parallel sessions		
14:00-15:30	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> Theme: Plant-microorganism interactions and nutrient acquisition </td> <td style="width: 50%; vertical-align: top;"> Theme: Nutrient functions in plants </td> </tr> </table>	Theme: Plant-microorganism interactions and nutrient acquisition	Theme: Nutrient functions in plants
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14:15-14:30	A quantitative analysis of phosphorus acquisition efficiency of direct pathway and mycorrhizal pathway of maize Feng Gu, China	Photoprotective responses and PSII functionality under magnesium deficiency Merle Tränkner, Germany
14:30-14:45	The root external mycelium of mycorrhizal fungi has a key role in plant nutrition but is suppressed by the soil microbiota Carla Cruz Paredes, Denmark	Functional impacts of phosphorus deficiency on the photosynthetic machinery Andreas Carstensen, Denmark
14:45-15:00	Identifying the mechanisms behind mycorrhiza-enhanced plant zinc nutrition Stephanie Watts-Williams, Australia	Frost increases internal potassium requirements for alleviation of sterility and grain yield of wheat Richard Bell, Australia
15:00-15:15	Complementarity between citrate and phytase exudation enhances acquisition of soil phosphorus by plants Timothy George, United Kingdom	Limiting physiological processes for maize growth under magnesium deficiency Stephan Jung, Germany
15:15-15:30	Do bioeffectors matter? - A meta-analysis of more than 150 experiments Jonas Duus Stevens Lekfeldt, Denmark	Potassium – silicon interaction under drought stress condition in barley Seyed Abdollah Hosseini, France
15:30-16:30	Coffee break and poster viewing	
16:30-18:00	Marschner session: Nurturing the future 4 presentations á 20 min from young awardees + ceremony	
Evening	Poster viewing and welcome reception – City Hall	

22 August, Tuesday	
8:30-10:10	<p>Keynote presentations</p> <p>08:30-08:55 A paradigm of nutrient management for fertilizer industry and global society Fusuo Zhang, China</p> <p>8:55-09:20 Factors affecting the permeability and efficacy of foliar fertilisers: An update Victoria Fernandez, Spain</p> <p>09:20-09:45 Node-based distribution of mineral elements in rice Jian Feng Ma, Japan</p>

	09:45-10:10 Silicon mediates ion uptake, transport and homeostasis in plants under mineral stress Miroslav Nikolic, Serbia	
10:10-10:45	Coffee break and poster viewing	
	Parallel sessions	
10:45-12:15	Theme: Nutrient management and fertilizers in crop production	Theme: Nutrient uptake, transport and homeostasis
10:45-11:00	From research to farmers: An example of knowledge transfer on potassium benefit in Turkey Dilek Anaç, Turkey (SOPIB awardee)	Iron-nicotianamine transporters regulate long distance shoot to root signalling of iron deficiency in Arabidopsis Elsbeth Walker, USA
11:00-11:15	Efficiency of foliar applications of potassium sulphate on field crop production Michel Marchand, France	The iron-chelate transporter OsYSL9 is crucial in iron distribution in developing rice grain Naoko Nishizawa, Japan
11:15-11:30	Establishing high-yielding maize system for sustainable intensification in China Xinping Chen, China	Associative transcriptomics reveals potential new targets for calcium and magnesium uptake in <i>Brassica napus</i> Thomas Alcock, United Kingdom
11:30-11:45	Proximal and remote quantification of nitrogen fertilizer demand – A case study in sugar beet Frank Liebisch, Switzerland	Increasing rice nitrogen use efficiency by altering nitrate transporter activity Guohua Xu, China
11:45-12:00	Comparing ammonium sulfate to recent sulfur fertilizers in sulfur availability to crop growth S.H. (Norman) Chien, USA	The kinase CIPK23 inhibits ammonium transport in <i>Arabidopsis thaliana</i> Benjamin Neuhäuser, Germany
12:00-12:15	Nutrient management increases crop water use efficiency Dejene Eticha, Germany	Cis- and epi-regulation of amino acid transporters contribute to inhibition of ear growth by nitrogen limitation in maize Xuexian Li, China
12:15-14:00	Lunch and poster viewing	
14:00-15:40	Keynote presentations 14:00-14:25 The root endodermis acts as a gateway for vascular transport David E. Salt, United Kingdom	

	<p>14:25-14:50 AMT-type transporters mediate radial transport pathways and root-to-shoot translocation of ammonium Nicolaus von Wirén, Germany</p> <p>14:50-15:15 Making waves ... Einstein's lessons for crop nutrition research Paul E. Fixen, USA</p> <p>15:15-15:40 Plant nutritional challenges in an industrialized agriculture – The Danish lesson Leif Knudsen, Denmark</p>
15:40-16:30	Coffee break and poster viewing
	Parallel sessions
16:30-18:30	<p>Theme: Nutrient management and fertilizers in crop production</p> <p>Theme: Nutrient uptake, transport and homeostasis</p>
16:30-16:45	<p>Phosphorus availability of fertilizers recycled from urban waste water in combination with bioeffectors – Pot and field experiments Iris Wollmann, Germany</p> <p>Natural variation in <i>Arabidopsis thaliana</i> to identify genes underlying zinc deficiency response Valeria Ochoa, The Netherlands</p>
16:45-17:00	<p>Improving soil of low phosphorus availability with biochar produced from bonemeal Sander Bruun, Denmark</p> <p>Zinc controls leaf length via FLOWERING LOCUS T in early-flowering <i>Arabidopsis thaliana</i> Uwe Ludewig, Germany</p>
17:00-17:15	<p>Rock phosphate-enriched compost in combination with PGPR; a cost-effective source for better soil health and wheat (<i>Triticum aestivum</i>) productivity Motsim Billah, Pakistan</p> <p>Absorption and distribution of foliar-applied zinc (⁷⁰Zn) in maize and wheat grown with low or adequate zinc supply Raheela Rehman, Turkey</p>
17:15-17:30	<p>The effects of pH on root morphology and physiology of narrow-leaf lupine, grown with a recycled phosphorus source Ana A. Robles Aguilar, Germany</p> <p>Role of trichomes, stomata, and the cuticle in the absorption of foliar-applied zinc fertiliser Cui Li, Australia</p>
17:30-17:45	<p>BASS - A new sulfur fertilizer Diedrich Steffens, Germany</p> <p>Proteomic responses to zinc deficiency stress in maize (<i>Zea mays</i> L.) Wang Hong, China</p>

17:45-18:00	Efficiency of polyhalite as a fertilizer supplying potassium, magnesium, calcium and sulfate Uri Yermiyahu, Israel	Sulfur deficiency negatively affects nitrate root to shoot translocation and leaf cytokinin concentration in wheat Jose Maria García-Mina, Spain
18:00-18:15	Tomato responses to polyhalite in comparison to other conventional potassium fertilizers in Southeast Brazil Kiran Pavuluri, United Kingdom	Rice HRZ ubiquitin ligases are involved in both iron deficiency and excess responses and jasmonate signalling Takanori Kobayashi, Japan
18:15-18:30	Leaching rate of selected sulphur fertilizers; understanding selenate - sulphate competition Linxi Jiang, United Kingdom	Jack of all trades: Inositol polyphosphates regulate phosphorus and mineral cation nutrition as well as jasmonate-dependent defenses Gabriel Schaaf, Germany
Evening	Poster viewing and happy hour – Tivoli Congress Centre	

23 August, Wednesday		
Keynote presentations		
8:30-10:10	8:30-08:55	The role of high throughput root phenotyping in crop improvement for adaptation to acid soils Leon Kochian, Canada
	08:55-09:20	Root system architecture in maize determined by genome-wide association analyses Lixing Yuan, China
	09:20-09:45	Arsenic biogeochemistry in paddy systems and impacts on crop production and quality Fangjie Zhao, China
	09:45-10:10	Novel green fertilizers and soil amendments promoting recirculation of plant nutrients Lars Stoumann Jensen, Denmark
10:10-10:45	Coffee break and poster viewing	
Parallel sessions		
10:45-12:30	Theme: Nutrient availability in soils, toxicity and remediation	Theme: Roots and genetics of crop nutrient uptake
10:45-11:00	How does phosphorus accumulate in a clayey tropical soil under fertilizer sources and cover crops? Amin Soltangheisi, Brazil	Genetic control of root type-specific response of lateral roots to local high nitrate in maize Peng Yu, China

11:00-11:15	Bread from stone: Greenlandic glacial flour as soil amendment for tropical weathered soils Andreas de Neergaard, Denmark	Nutrient uptake-based assessment of genetic variation of nitrogen and phosphorus response in rice Yoshiaki Ueda, Japan
11:15-11:30	Effect of deoxymugineic acid application to calcareous soil compared with other chelating agents Motofumi Suzuki, Japan	Genetic variation for nitrogen responsiveness in Australian spring wheat Mamoru Okamoto, Australia
11:30-11:45	The positive effects of the Silicic Acid Agro Technology Henk-Maarten Laane, The Netherlands	Genetic variants associated with the root system architecture of oilseed rape under contrasting phosphate supply Lei Shi, China
11:45-12:00	Nutrient uptake by barley grown in chemically amended salt affected soil Ibrahim Abdulrazzaq, Iraq	Categorizing wheat genotypes for phosphorus efficiency; parameters vs methods Tariq Aziz, Pakistan
12:00-12:15	Phytoremediation by elucidating chemical compounds which alter accumulation of or response to caesium in plants Shin Ryoung, Japan	Dynamics of localised supply of nitrogen-species in soil and their relevance for root system morphology – What have we learned from Drew? Sebastian Blaser, Germany
12:15-12:30	Identification of glycosyltransferases involved in biosynthesis of hydrolyzable tannins in an aluminum-resistant eucalyptus tree Ko Tahara, Germany	Taking the phosphorus: Genetic mapping of QTLs for soybean protein, volume, seed and pod weight Gokhan Hacisalihoglu, USA
12:30-14:00	Lunch and poster viewing	
14:00-15:30	Keynote presentations 14:00-14:25 Fighting human malnutrition with plant nutrition Ismail Cakmak, Turkey 14:25-14:50 GeoNutrition: Spatial aspects of hidden hunger Martin R. Broadley, United Kingdom 14:50-15:10 Identification and characterization of novel metal homeostasis genes in bread wheat Alexander Johnson, Australia 15:10-15:30 Genotype behaviour, water management and zinc fertilization in different rice systems; their implications for grain zinc biofortification Hafeez ur Rehman, Pakistan	

15:30-16:30	Coffee break and poster viewing	
16:30-18:00	Parallel sessions	
	Theme: Nutrient availability in soils, toxicity and remediation	Theme: Plant nutrition and food quality
16:30-16:45	Root/rhizosphere processes and management for improving nutrient use efficiency and yield in Chinese maize-cropping systems Jianbo Shen, China	Biofortification of cassava storage roots to achieve nutritionally significant levels of iron and zinc Narayanan Narayanan, USA
16:45-17:00	Mixed cropping promotes the ability of wheat and lentil to increase rhizosphere micronutrients availability in calcareous soil Shukri Rekani, Iraq	Integrated fertilizer management harvests more grain zinc of wheat Chunqin Zou, China
17:00-17:15	Diversified land, nutrients and intensified cropping system on soil-plant relations for productivity and rural livelihoods in developing India A. M. Puste, India	Overexpression of OsPCS1 reduces arsenic concentration in rice grain Satoru Ishikawa, Japan
17:15-17:30	Growth rate, crop duration, nitrogen, phosphorus and potassium accumulation of rice when grown in fertile and low-fertile soils Lalith Suriyagoda, Sri Lanka	Influence of fertilization strategies on the mineral nutrient content in cereal grains Karin Hammér, Sweden
17:30-17:45	Effects of potassium nutrition on some physiological parameters and productivity of cotton crop under an arid environment Sagheer Ahmad, Pakistan	Soil amendments to reduce cadmium accumulation by leafy vegetables from cadmium-mineralized lockwood loam Rufus Chaney, USA
17:45-18:00	Interactive effects of bicarbonate and two types of Iranian local squash as rootstock on the nutrient uptake in cucumber plants Hamid Reza Roosta, Iran	Effects of Foliar application and fertigation of potassium on yield and fruit quality of apple cv Gala Mimoun Ben, Tunis
Evening	Gala dinner – Langelinie Pavillion	

24 August, Thursday			
8:30-10:10	<p>Keynote presentations</p> <p>8:30-08:55 Impact of climate change in plant nutrition Marta Vasconcelos, Portugal</p> <p>08:55-09:20 Achieving nutrient efficient cropping systems with higher productivity and lower emissions Jørgen E. Olesen, Denmark</p> <p>09:20-09:45 Imaging and molecular speciation analysis of essential plant nutrients Søren Husted, Denmark</p> <p>09:45-10:10 Synchrotron X-ray approaches for examining trace metals in plants Peter Kopittke, Australia</p>		
	10:10-10:45	Coffee break and poster viewing	
	10:45-12:30	Parallel sessions	
		Theme: Nutrient cycling, ecosystems and climate change	Theme: New analytical methods in plant nutrition
10:45-11:00	Nitrous oxide and methane emissions from paddy soils as affected by cropping systems and nitrogen management Xuejun Liu, China	Live imaging of ion movement in plants by Real-Time Radioisotope Imaging System (RRIS) Ryohei Sugita, Japan	
11:00-11:15	Post-harvest N ₂ O emissions in bioenergy oilseed rape rotations regulated by soil residual nitrogen not by residue properties Sarah Köbke, Germany	Multi element bioimaging of <i>Arabidopsis thaliana</i> roots Daniel Persson, Denmark	
11:15-11:30	Management of nitrogen fertilizer to reduce nitrous oxide (N ₂ O) emission and ammonia (NH ₃) volatilization from coffee plantation Ana Paula Packer, Brazil	Magnesium, but not calcium, co-localises with phosphorus in specific cell types in leaves Paula Pongrac, United Kingdom	
11:30-11:45	Growth and distribution of upland NERICA rice roots in low-nitrogen management system in West Africa Sylvester Oikeh, Kenya	Revealing radial ion transport pathways in roots by combining the fluorescence activated cell sorting with inductively coupled plasma mass spectrometry Paulina Flis, United Kingdom	

11:45-12:00	Closing the yield gap and improving soil fertility with fertilizer and H NUE hybrids in Sub-Saharan Africa Heather Pasley, USA	Non-destructive growth analysis identifies major differences in nitrogen response in wheat Trevor Garnett, Australia
12:00-12:15	Effect of predicted climate change on yield and quality of wheat under varied zinc and nitrogen fertilization Muhammad Asif, Turkey	Available nitrogen in upland soil can be estimated using ultraviolet light-emitting diode-induced fluorescence Koji Orii, Japan
12:15-12:30	Effects of split nitrogen application on grain protein concentration and composition in winter wheat at different nitrogen fertilisation rates Anne Rossmann, Germany	Photosynthetic iron-use efficiency provides a means for screening elite barley genotypes that adapt to iron deficiency with unknown mechanism Akihiro Saito, Japan
12:30-13:30	Lunch and poster viewing	
	Parallel sessions	
13:30-14:30	Theme: Nutrient cycling, ecosystems and climate change	Theme: Novel technologies for fertilizers and fertilization
13:30-13:45	Why do smallholder farmers in Papua New Guinea, Fiji, Kiribati, The Philippines and Central West Africa not spend resources on management of soil fertility? Michael Webb, Australia	The influence of tensides on ZnIDHA 2.0 adhesion to the leaf surface of wheat canola and corn Anika Mrozek-Niećko, Poland
13:45-14:00	Site specific nutrient management through nutrient expert for improving productivity and nitrogen use efficiency in maize–wheat cropping system Seema Sepat, India	Zinc doped layered double hydroxides: A new source for zinc fertilization Sandra López-Rayó, Spain
14:00-14:15	Kick-starting productivity of abandoned field soils on smallholder farms in Zimbabwe Paul Mapfumo, Zimbabwe	How to tailor nano hydroxyapatite as a kind of potential phosphorus fertilisers Lei Xiong, Australia
14:15-14:30	Fertilizer recommendation method for sustainable cassava intensification Mirasol Pampolino, Philippines	Zinc distribution and localization in primed maize seeds and its translocation during early seedling development Imran Muhammad, Denmark

14:30-15:30	Coffee break and poster viewing
15:30-17:00	<p data-bbox="352 286 555 322">Closing session</p> <p data-bbox="352 344 1054 416">15:30-16:15 Africa - The plant nutritionists paradise Ken Giller, The Netherlands</p> <p data-bbox="352 439 927 474">16:15-16:40 Presentation of poster prizes</p> <p data-bbox="352 497 999 533">16:40-16:55 Introduction to the 19th IPNC 2021</p> <p data-bbox="352 555 667 591">16:55-17:00 Goodbye</p>