

List of posters

Theme 1: Plant-microbe interactions and nutrient acquisition

P1-1

Medicago truncatula Zinc-Iron Permease6 provides zinc to rhizobia-infected nodule cells

Isidro Abreu, Ángela Saéz, Rosario Castro-Rodríguez, Viviana Escudero, Benjamín Rodríguez-Haas, Marta Senovilla, Camille Larue, Daniel Grolimund, Manuel Tejada-Jiménez, Juan Imperial, Manuel González-Guerrero

P1-2

Pathways to improve nutrient uptake under drying condition by modifying the rhizosphere physical properties

Katayoun Ahmadi, Mohsen Zarebanadkouki, Michaela Dippold, Andrea Carminati

P1-3

Utilization of γ –Irradiation Technique for Enhancing Biological Nitrogen Fixation of Bradyrhizobium

Suad. A. Al-Saedi, Ibrahim B. Razaq, A. Wahbi, G. Dercon

P1-4

Changes in organic acid production and malate dehydrogenase gene expression in P-solubilizing bacteria induced by P-deficiency and Al-toxicity

Patricio J. Barra, Sharon Viscardi, Milko A. Jorquera, María L. Mora

P1-5

Efficiency of Microbial Consortia Improving Early Growth of Maize with Different Levels of N and P Supply

Klára Bradáčová, Markus Weinmann, Günter Neumann, Ellen Kandeler, Nils Berger

P1-6

Inclusion of caraway in the ryegrass-red clover mixture modifies soil microbial community composition

Wen-Feng Cong, Jingying Jing, Karen Sjøgaard, Jørgen Eriksen

P1-7

Soil available phosphorus controls the effect of *Penicillium bilaii* on maize growth

Gómez-Muñoz B., de Neergaard A., Jensen L.S., Richardson AE., Magid J

P1-8

Microbial biomass phosphorus difference between rhizosphere and bulk soil of maize caused by phosphorus fertilizer addition

Zhen Xu, Xinping Chen, Fusuo Zhang, Gu Feng

P1-9

Can microbial inoculants improve the plant and root growth and P uptake of winter wheat in low P soil?

Veronika Hansen, Katharina Sexlinger, Inês Nunes and Lars Stoumann Jensen

P1-10

Two-way N-transfer between *Dalbergia odorifera* and hemiparasite *Santalum album* is enhanced when N₂-fixing host effectively fixes N

Xinhua He, Junkun Lu, Lihua Kang, Janet Sprent, Daping Xu

P1-11

Seed inoculation with Azospirillum and the effect on marandu palisade grass production

Reges Heinrichs, Guilherme Constantino Meirelles, Cesar Augusto Figueiredo, Melina Daniel Rebonatti, Aline Magalhães, Carolina dos Santos Batista Bonini, Maikon Vinícius da Silva Lira

P1-12

Microbial Bio-effectors for Improved Growth and Yield of Tomato

Isaac Kwadwo Mpanga, Andreea Simona Florea, Markus Weinmann, Gheorghe Poșta, Karl Fritz Lauer, Günter Neumann, Uwe Ludewig

P1-13

Nitrogen Transfer in Soybean/Maize Intercropping System Inoculated Arbuscular Mycorrhizal fungi and Rhizobium

Shumin Li, Xuerong Wang, Runzhi Zhang, Ning Xu, Lingbo Meng

P1-14

Phosphorus-Acquisition Strategies of Plant Species of the Pampas Biome

Diego Michelinei, Francois P. Teste, Hans Lambers

P1-15

Microorganism growth promoters as affecting biomass production and nutrients uptake in upland rice plants

Adriano Stephan Nascente, Marta Cristina Corsi de Filippi, Anna Cristina Lanna

P1-16

Seed inoculation with diazotrophic bacteria as affecting upland rice yield

Adriano Stephan Nascente, Maria da Conceição Santana Carvalho

P1-17

Common mode of action in drought stress mitigation by seaweed and compost extracts as affected by the form of N supply in maize

Narges Moradtalab, Fridjof Freytag, Sebastian Wanke, Günter Neumann

P1-18

Effect of PGPM and N-form on P-nutrition and growth of wheat plants supplied with rock phosphate

Peteh M. Nkebiwe, Niklas Käfer, Günter Neumann, Torsten Müller

P1-19

The effect of biochar and rhizobium inoculation on chickpea nodulation and selected soil properties in two different soil types

Tshigoli V. Lucadia, Jude J.O Odhiambo and Patricia J. Macil

P1-20

Effect Of Biochar Dosing And Mycorrhizal Application On Carbon Fixation And Plant Nutrient Uptake

Ibrahim Ortas, Alexandra Bykova, İbrahim A.M. Ahmed and Mazhar Rafique

P1-21

Mineral nutrition of fruit trees depends on rhizosphere dynamics and mycorrhizal fungi

Ibrahim Ortas

P1-22

The promoting effect of Mg on nodulation in soybean

Wen-Ting Peng, Zhi-Chang Chen, Hong Liao

P1-23

Plant species and plant compartment alter the effect of cropping regimes on fungal and bacterial communities of winter wheat and winter faba bean in a greenhouse pot experiment

B. Pfeiffer, S. Granzow, K. Kaiser, B. Wemheuer, R. Daniel, S. Vidal, F. Wemheuer

P1-24

A microcosm that enriches for organic phosphorus degraders present in soil

Sabrina M. Pittroff, Stefan Olsson, Ole Nybroe, Courtney Giles, Tim George, Ashlea Doolette, Mette Nicolaisen

P1-25

Biochar and microbial interaction for onion (*Allium cepa* L.) plant growth promotion and nutrients uptake

Mazhar Rafique, Ibrahim A. Malik, Hassan J. Chaudhary, Ibrahim Ortas

P1-26

From formulation to application of a phosphate biofertilizer

Nelly S. Raymond, Dorette S. Müller Stöver, Lars Stoumann Jensen

P1-27

Neighbouring faba bean shapes maize root foraging behaviors for localised P

Jianbo Shen, Deshan Zhang, Hongbo Li, Fusuo Zhang

P1-28

Effects of a microbial consortium product on growth and rhizosphere processes in maize

Maximilian Sittinger, Klára Bradáčová, Guenter Neumann, Nils Berger

P1-29

The positive relationship between copiotrophic bacteria and soil C and N accumulation: Result of a 30 year field experiment

Ying Wang, Hongfei Ji, Shengli Guo

P1-30

Effects of PGPR application on gene expression and primary metabolism of maize plants under non-sterile conditions

N. F. Weber, P. Mazzei, A. Piccolo, U. Ludewig, G. Neumann

P1-31

Bio-effectors for alternative plant nutrition strategies: practical aspects for successful applications in crop production

M. Weinmann, M.M. Hasan, O. Zaytseva, R. Liu, S. Bandari, N. Morad-Talab, N. Weber, P.M. Nkebiwe, I. Mpanga, K. Bradáčová, A.S. Florea, G. Fora, G. Pošta, K.F. Lauer, B. Biró, Z.M. Szalai, U. Ludewig, T. Müller, G. Neumann

P1-32

Defense responses against *Rhizoctonia solani*, interactions with bacterial antagonists and root exudation of antifungal compounds in lettuce are differentially expressed on different soils

Saskia Windisch, Günter Neumann, Sebastian Bott, H.-P. Mock

P1-33

The diversity of symbiotic mycorrhizal fungi associated with terrestrial orchids in Yunnan, China

Jianrong Wu, Huancheng Ma

P1-34

Rhizosphere microbial characteristics of different pioneer plants growing on heavy metals-contaminated soils

Wenhao Yang, Wuzhong Ni

P1-35

Preferential allocation towards the most beneficial mycorrhizal mutualist with different phosphorus supplies

Chaoyuan Zheng, Baoming Ji, Junling Zhang, Fusuo Zhang, James D. Bever

Theme 2: Nutrient functions in plants

P2-1

Is *Beta vulgaris* able to fully recover from Mg deficiency in young growth stages after resupply?

Jessica Albers and Merle Tränkner

P2-2

Effects of Seed- Zinc Priming on SPAD Values, Dry Matter Yields and Zinc Concentrations of Maize Plants under Greenhouse Conditions

B. Torun, I. Tolay, H. Erdem and A. Torun

P2-3

Effects of Boron Nutrition on Alleviation of Salt Damages in Sunflower Plants

A. Torun, E. Duymus, I. Tolay, N. Gulmezoglu, H. Erdem, and B. Torun

P2-4

Beneficial effects of silicon supply on N-deprived oilseed rape (*Brassica napus* L.)

Mustapha Arkoun, C. Haddad, J.C. Yvin, P. Laîné, P. Etienne

P2-5

Phosphorus deficiency influences leaf area more than it effects radiation use efficiency of wheat

Marina Azzaroli Bleken, Iva Zivanovic

P2-6

Photomorphogenic tomato mutants as a tool to study light responses mediated by iron

Emilaine R. Prado, Letícia R. Alves, Carolina C. Monteiro, Priscila L. Gratão, Rogério F. Carvalho, Renato M. Prado

P2-7

Silicon mitigates the ammonium toxicity in passion fruit seedlings

Renato de M. Prado, Gabriel B. Silva Júnior, Cid N. S. Campos, Luiz C. N. dos Santos, Sylvia L. O. Silva

P2-8

Does phosphorus and nitrogen resorption during leaf senescence in southern South American Proteaceae depend on nutrient availability in the soil?

Delgado M, Valle S, Zúñiga-Feest, A

P2-9

Beneficial effects of foliar-applied iron and zinc on sesame and fennel photosynthetic attributes under different irrigation regimes

P. Ehsanzadeh, S. Faryabi, N. Kheradmand, A. Rajabi, H. Mirjahanmardi

P2-10

Delaying senescence by selenium in oilseed rape plants

Roghieh Hajiboland, Somayeh Rahmat

P2-11

Tolerance of common bean genotypes to phosphorus deficiency in a calcareous soil

Mustafa Harmankaya, Fatma Gökmen Yilmaz, Sait Gezgin, Mehmet Hamurcu, Erdoğan E. Hakkı

P2-12

An ABC Transporter is Involved in the Silicon-Induced Formation of Casparian Bands in the Exodermis of Rice

Martin Hinrichs, Alexander T. Fleck, Eline Biedermann, Ngoc S. Ngo, Manfred K. Schenk

P2-13

Tissue-dependent metabolic and ionic changes in pepper plants as affected by macroelement deficiency

Jwakyung Sung, Minji Cho, Hyejin Yun, Yejin Lee, Seulbe Lee, Deogbae Lee, Sukyoung Hong

P2-14

Oilseed rape! Rarely thought to be positively responsive to zinc seed enhancements

Asim Mahmood, Günter Neumann

P2-15

Oxidative stress induced by copper nutritional disorders in Citrus depends on nitrogen and calcium supply

Franz W.R. Hippler, Veronica L. DAVIS, Rodrigo M. Boaretto, Jose A. Quaggio, Ricardo A. Azevedo, Dirceu Mattos-Jr.

P2-16

Silicon selectively favours Zn distribution to the shoot and improves chilling tolerance in early growth of maize plants

Narges Moradtalab, Tobias E Hartmann, Günter Neumann

P2-17

Maize Plant Nitrogen Allocation Dynamics during the Critical Period

Sarah M. Mueller and Tony J. Vyn

P2-18

Diversity in the vegetative growth and leaf zinc concentration response of eight groundnut cultivars to root-zone Zn supply

Phumzile N.C. Ndlela, Godfrey E. Zharare, Sydney Mavengahama

P2-19

Cytosolic Glutamine Synthetase1;2 Contributes to Nitrogen-Dependent Biosynthesis of Cytokinin Required for Rice Tillering

Miwa Ohashi, Keiki Ishiyama, Soichi Kojima, Mikiko Kojima, Hitoshi Sakakibara, Tomoyuki Yamaya, Toshihiko Hayakawa

P2-20

Relationship between manganese and magnesium and their effects on two contrasting Mn-resistance perennial ryegrass genotypes

M. Reyes-Díaz, C. Inostroza-Blancheteau, P. Cartes, G. Berríos, M. Deppe, R. Demanet, M. Alberdi

P2-21

Auxin transport mediates root proliferation in response to local phosphorus supply in maize

Xin Wang, Lingyun Cheng, Jianbo Shen

P2-22

Response of architecture of cell wall components of trifoliolate orange roots to boron deficiency stress

Xiuwen Wu, Cuncang Jiang

P2-23

The molecular and ecological mechanisms of improving iron nutrition in Peanuts intercropped with maize in calcareous soil

Yuanmei Zuo, Hongchun Xiong, Xiaotong Guo, Wei Qiu

Theme 3: Nutrient management and fertilizers

P3-1

Lettuce Seed Quality Response to Nitrogen Availability During Crop Stage

Francisco Albornoz, Samuel Contreras, María Bascuñan

P3-2

Response of graded levels of NPK fertilizers on yield attributes and yield of Bt cotton in an Alfisol of Southern India

T.V. Jyothi, N.S. Hebsur, S.K. Bansal, Eldad Sokolowski

P3-3

Balanced Fertilization for Sustainable Cotton Production with a Special Emphasis on Potassium in Vertisols of Maharashtra, India

V. K. Kharche, Rajinder N. Katkar and Surinder K. Bansal

P3-4

Potassium Fertilization for Improving Growth, Yield and Quality of Seedless Coloured Grapes (*Vitis vinifera* L.) in India

G.C. Satisha, J. Satisha and Surinder K. Bansal

P3-5

Potassium Fertilization for Improving Yield and Quality of Red Delicious Apple in Kashmir Valley of India

G. H. Rather, Surinder K. Bansal, Bhisham Pal and Patricia Imas

P3-6

Root Morphology, Crop Lodging and Yields in Canola and Grain Cereal Crops

Bao-Luo Ma, and Wei Wu

P3-7

Nutrients Sufficiency Norms for Shahroudi Table Grape using the Compositional Nutrient Diagnosis Method

M. Basirat, A. Akhyani and A. M. Daryashenas

P3-8

Comparing polyhalite and KCl in alfalfa fertilization

Alberto C. de Campos Bernardi, Gilberto Batista de Souza, Fabio Valle, Hillel Magen

P3-9

The Effect of High Concentration of Biochar on Yield Components of Water Stressed and Irrigated Fenugreek (*Trigonella foenum-graceum*)

Zahra Bitarafan, HamidReza Asghari, Tahereh Hasanloo, Ahmad Gholami, Foad Moradi

P3-10

Micronutrients for better yields – A research plan

Miriam S. Breure, Ellis Hoffland, Bas Kempen, Prem S. Bindraban

P3-11

Growth of barley roots in a sandy soil after 74 years of contrasting applications of lime and superphosphate

Julie T. Christensen, Musibau O. Azeez, Lars J. Munkholm, Hanne L. Kristensen, Rodrigo Labouriau and Gitte H. Rubæk

P3-12

Struvite crystal size determines phosphorus release rate in soil

Nina H. Christiansen, Astrid Oberson, Emmanuel Frossard, Camilla Lemming, Peter Sørensen, Gitte H. Rubæk

P3-13

Nitrogen mineralization rate of five organic fertilizers commonly used for greenhouse fruit and vegetable crops

Pierre-Paul Dion, Steeve Pepin, Mireille Thériault, Martine Dorais

P3-14

Soybean Nutrient Accumulation Patterns and Their Response To Different K Fertilizers in Humid Subtropical USA

Syam Dodla, Kiran Pavuluri and Hari Bohara

P3-15

Improving nitrogen-use efficiency in oilseed rape (*Brassica napus*)

A Fraser, MR Broadley, NS Graham, T Alcock, MJ Foulkes, PJ White, K Storer, P Berry

P3-16

Response of soybean to organomineral phosphate fertilizer in a tropical soil: plant growth and P source

Joaquim José Frazão, Vinicius M. Benites, Vitor M. Pierobon, João Victor S. Ribeiro, José Lavres Junior

P3-17

Effects of different nitrogen, phosphorus and potassium rates on quality and yield of sugarbeet

Sait GEZGİN, Fatma GÖKMEN YILMAZ, Nesim DURSUN, Mehmet Gökhan YAZGAN, Mustafa HARMANKAYA, Mehmet HAMURCU

P3-18

Effect of Boron Fortified Sulphur Granules on the Growth, Yield, and Uptake by Cotton and Soybean in Swell-Shrink Soils of India

M.V. Singh and [Virendra Goswami](#)

P3-19

Effects of Seed Priming with Powdered of Zinc Enriched Materials on Wheat and Barley Yield Parameters and Zinc Concentration

Ali Inal, [Aydin Gunes](#), Mehmet Sait Adak, Ozge Sahin, Emre Can Kaya, Mehmet Burak Taskin

P3-20

The Effect of Acid Modified Biochar on the Growth and Mineral Element Concentrations of Sunflower Plants

[Aydin Gunes](#), Ali Inal, Mehmet B. Taskin, Ozge Sahin, Havva Taskin, Emre C. Kaya

P3-21

Fertilizing Potential of Glacially Eroded Rock Flour

[Klara Cecilia Gunnarsen](#), Beatriz Gómez-Muñoz, Lars Stoumann Jensen & Andreas de Neergaard

P3-22

Impact of urea fertilization in combination with urease inhibitor on physiological parameters, yield and N uptake of winter wheat

Alejandro Aguirre, [Heike Hahn](#), Nicolaus von Wirén

P3-23

Potential of cover crop species and mixtures to enhance nutrient supply for subsequent crops

[Michael Hemkemeyer](#), Clara Berendonk, Cornelia Bufe, Ingo Dünnebacke, Christian Fritz, Hubert Kivelitz, Nicole Wrage-Mönnig, Florian Wichern

P3-24

Nutrient scavenging by catch crop variants and its influence on the nutritional status of subsequently grown maize

[Diana Heuermann](#), Nicolaus von Wirén

P3-25

Benefits of a nutritional approach for sugarcane ripening

[Don M. Huber](#), Maria F. Terraza Pira, Malcolm E. Sumner

P3-26

Chloride: Uptake, translocation, and resistance of two potato cultivars

[Birgit W. Hütsch](#), Katrin Keipp, Sven Schubert

P3-27

Nitrogen availability of 15N-labelled digestates in two different soils: A pot experiment

[Franziska Häfner](#), Kurt Möller

P3-28

Effects of Seed Priming with Powder Form of Zinc Enriched Organic and Inorganic Materials on Wheat and Barley Growth and Zinc Concentration

[Ali Inal](#), Aydin Gunes, Mehmet Sait Adak, Ozge Sahin, Emre Can Kaya, Mehmet Burak Taskin

P3-29

Impact of climate change on crop production in coastal saline areas of Bangladesh

M. M. Islam, M. R. Khan, M. H. Rahman and A. Wahbi

P3-30

A potential solution for sustainable grain production in Africa: implications from Quzhou model of China

Jiao Xiaoqiang, Shen Jianbo, Zhang Fusuo

P3-31

Nitrogen affects the quality of biomass for biorefining

Henning Jørgensen, Jan van Hecke, Laetitia Baldwin, Jan K. Schjoerring

P3-32

Increasing cropping intensity in saline coastal zone soils of Bangladesh: the challenges of fitting maize between wet soils at establishment and saline, dry soils after silking

Enamul Kabir, Yadul Islam, Sarwar Jahan, Richard W Bell

P3-33

Effect of Different Soluble Potassium Fertilizers on Yield and Quality Properties of Melon (Cucumis melo L.)

C.C Kılıç, H. Duyar, N. Eryüce, B. Çolak Esetlili, D. Anaç

P3-34

Forage yield and quality of pearl millet (Pennisetum glaucum L.) as affected by soil and foliar zinc fertilization

Balwinder Kumar, Jasmine Kaur, S.S. Dhaliwal, Navjot Singh Brar and Hari Ram

P3-35

Enhanced-efficiency fertilizers are not panacea for resolving the nitrogen problem

Tingyu Li, Weifeng Zhang, Jiao Yin, David Chadwick, David Norse, Yuelai Lu, Xuejun Liu, Xinping Chen, Fusuo Zhang, David Powlson, and Zhengxia Dou

P3-36

Response of different rice varieties to fertilizers and plant density: grain yield, nutrients uptakes and lodging

Xiaokun Li, Wenfeng Hou, Jianglin Zhang, Yunchun Li, Jianwei Lu

P3-37

[S,S]-EDDS: a biodegradable chelating agent for zinc fertilization in calcareous soil

Sandra López-Rayó, Ricardo Ruiz, Juan J. Lucena

P3-38

How Fe deficiency can be remotely detected in vineyards by using specific Vegetation Indices from hydroponic cultures

Felipe Yunta, Laura Caminero, José Felix Cibriáin, Sandra López-Rayó, Agustín Gárate, Magaly Koch

P3-39

Use of DOP and DRIS to assess the nutrition of Vitis vinifera L. cv. Tempranillo grafted on several rootstocks grown on calcareous soil

Felipe Yunta, Laura Caminero, José F. Cibriáin, Juan J. Lucena, Agustín Gárate

P3-40

Influence of the Rate of Nitrogen Fertilizer Application on Soil Nutrient Content, Spring Maize Yield and Agronomic Efficiency

Ma Xing-zhu, Hao Xiao-yu, Chi Feng-qin, Wei Dan, Zhou Bao-ku

P3-41

Efficiency of Polyhalite as a sulfur source on wheat in Argentina

Magen, H, Melgar, J.R., Ventimiglia, L., Torrens, L., Vale, F

P3-42

Mavuno Zaidi- A Large Scale Outreach To Demonstrate Balanced Fertilization to Small Scale Potato Farmers in Kenya

Lilian Wanjiru Mbutia

P3-43

Center for Fertilization and Plant Nutrition (CFPN): A new joint ARO-ICL research center for fertilizer and plant nutrition knowledge

Hillel Magen, Patricia Imas, Uri Yermiyahu

P3-44

Uniform Nutrient Distribution-A Key to Efficient Nutrient Management

Kiran Mann, Ross Bender, Curt Woolfolk, Kyle Freeman

P3-45

Use of Sparingly soluble zinc and boron fertilizer sources via leaf spray

Luiza O. Macedo, Rodrigo M. Boaretto, Natalia F. Carr, Jose A. Quaggio, Dirceu Mattos-Jr.

P3-46

Effects of mineral fertilization on cloudberry

Belén Merelas Meijide, Marie-Pier Denis, S. Kristine Naess, Léon-Étienne Parent, Line Rochefort and Line Lapointe

P3-47

Yield, nutritional status, and phosphorus use efficiency in soybean Genotypes

A. Moreira, L. A. C. Moraes

P3-48

Zinc seed priming enhance growth and improve nutrient status of maize plants grown under salt stress (NaCl)

Muhammad Imran, Birte Boelt, Karl H. Mühling

P3-49

Plant phosphorus availability in thermally treated municipal sewage sludge

Dorette Müller-Stöver, Rhys Thompson, Tobias Thomsen, Sander Bruun, Nadia Glæsner

P3-50

Phosphorus rates as affecting upland rice grain yield in Suriname

Adriano Stephan Nascente, Ruby Kromocardi

P3-51

Response of nodulation of 3 chickpea genotypes to biochar and rhizobium inoculation

J. B. O. Ogola, P. J. Macil, J. J. O. Odhiambo

P3-52

Slurry injection in maize cropping: Impact on nitrous oxide emissions

Hans-Werner Olfs, Matthias Westerschulte, Carl-Philipp Federolf, Tim Zurheide, Maria E. Vergara Hernandez, Nikolas Neddermann, Herbert Pralle, Dieter Trautz

P3-53

Relationship between mineral nutrition and downy mildew disease (*Pseudoperonospora cubensis* (Berk&Curtis) Rostovzev) of cucumber (*Cucumis sativus* L.) grown in greenhouses

Sule Orman, Mehmet Vuruş

P3-54

Maize (*Zea mays* L.) Plant Nutrient Uptake Under Various Organic Amendments in Long Term Field Conditions

İbrahim Ortas, Feyzulla Öztürk, Mazhar Rafique, Alexandra Bykova, Hasan Akgöl, Nisan Bilgin, Yusuf Cem Yücel, Waleed Khaled and Mehmet Isik

P3-55

Impact of Different Phosphorus Fertilizer Doses On Corn Yield, Soil-Plant-Nutrient Uptake, and Soil Carbon-Nitrogen Sequestration

İbrahim Ortas

P3-56

Effect of foliar potassium applications on cotton yield and quality

C. F. Ozkan, D. Anac, N. Eryuce, E. I. Demirtas F. Ö. Asrı, D. Guven, M. Simsek and N. Arı

P3-57

Soil Phosphorus Pools as Affected by Phosphate Sources and Filter Cake in Sugarcane

Paulo Sergio Pavinato, V. R. dos Santos, A. Soltangheisi

P3-58

The role of ammonium supply on the plant acquisition of dicalcium phosphate

Ingeborg F. Pedersen, Peter Sørensen, Jim Rasmussen, Paul J. A. Withers and Gitte H. Rubæk

P3-59

Where to apply nitrogen to minimize immobilization and improve corn recovery?

Aline C. Richart, Laís T. de Souza, Danyllo S. Dias, José L. Favarin

P3-60

Evaluate regional phosphorus fertilization strategy of winter oilseed rape under intensive cropping systems: large-scale field experiment analysis

Rihuan Cong, Hui Li, Zhi Zhang, Tao Ren, Xiaokun Li, Jianwei Lu

P3-61

Does nitrogen fertilizer application rate to corn affect yield of subsequent soybean?

Maria da Conceição Santana Carvalho, Nelson Horowitz, Adriano Stephan Nascente, Paulo César Teixeira

P3-62

Demonstration Project – “Indicators for the Early Detection of Nitrate Loads in Soil under Crop Production”

Burkhard Schoo, Oliver Stock, Martin Kücke, Jörg-Michael Greef

P3-63

Coupling Effects of Water and Nitrogen Supply on Growth of Tomato under Alternate Partial Root-zone Drip Fertigation

X.C.Wang, R. Liu, L.Z. Shu, P.F.Zhu, C.Chen, Y.F.Zhang

P3-64

Prediction of Summer Leaf Nitrogen Concentration from Early Season Samples to Better Manage Nitrogen Inputs at the Right Time in Walnuts, Prunes, and Pears

Sebastian Saa, Emilio Laca, Patrick Brown

P3-65

Positive effects of Potassium Sulfate on Crop yield and quality

Ershad Tavakol, Heike Thiel, Andreas Gransee

P3-66

Remodeling of membrane lipids in older and younger leaves of two rice cultivars under phosphorus deficient condition

Keitaro Tawaraya, Soichiro Honda, Weiguo Cheng, Masaru Chuba, Yozo Okazaki, Kazuki Saito, Akira Oikawa, Hayato Maruyama, Jun Wasaki, Tadao Wagatsuma

P3-67

Carbon and nutrient dynamics during a 14-years-long nectarine orchard lifetime under mineral and organic fertilization

Toselli M., Baldi E., Quartieri M., Sorrenti G., Marzadori C., Cavani L., Gioacchini P.

P3-68

The effects of long-term mineral and organic input history on phosphorus availability and speciation

F.J.T. van der Bom, T.I. McLaren, A.L. Doolette, J. Magid¹, E. Frossard, A. Oberson, L.S. Jensen

P3-69

Response of Sugarcane to the Application of Doses and Sources of Manganese

Estêvão Vicari Mellis, José A. Quaggio, Luiz A. J. Teixeira, Heitor Cantarella

P3-70

Genotypic variability in growth and yield of spring wheat varieties in long-term soil fertility regimes

Yaosheng Wang, Daozhi Gong, Lars S. Jensen, Jakob Magid

P3-71

Plant availability of P and Mg from struvite with concurrent nitrification inhibitor application

C. Watson, J. Clemens, F. Wichern

P3-72

Chickpea root proliferation resulting from deep banded phosphorus in a northern NSW Vertosol, Australia

Timothy B. Weaver, Michael J. Bell, David C. Lester, Bruce D. Haigh, Graeme D. Schwenke

P3-73

Nutrient Balances in Smallholder Food Gardens in Bena Bena District, Papua New Guinea

Emma Kiup, Michael J. Webb, Paul N. Nelson, Christa Placzek

P3-74

Below-ground effects of catch crops

Florian Wichern, Martin Johannes Kanders, Clara Berendonk, Dina in 't Zandt, Christian Fritz

P3-75

Accumulation and Distribution Characteristics of Biomass and Nitrogen in Bitter Gourd (*Momordica charantia* L.) under Different Fertilization Strategies

Baige Zhang, Mingzhu Li, Jian Cao, Fusuo Zhang, Xinping Chen

P3-76

In addition to yield, nitrogen but not phosphorus supply, affects the tuber skin colour of sweet potato (*Ipomea batata* cv. Bophelo)

Godfrey E. Zharare

P3-77

Relationship between grain yield and phosphorus concentration in the canopy of oat, spring wheat and winter wheat

Iva Zivanovic, Marina Azzaroli Bleken

Theme 4: Nutrient uptake, transport and homeostasis

P4-1

Dry weight and Nutrient uptake of Some Sweet Sorghum Genotypes under Different Climatic Conditions of Turkey

Ibrahim. A. M. Ahmed, Celal Yucel, Derya Yucel, Abdullah Öktem, Ibrahim Ortas

P4-2

Chemical diversity of metabolites secreted by roots of dicot plants in response to iron deficiency

Ana Álvarez-Fernández, Adrián Luis-Villarroya, Patricia Sisó-Terraza, Pierre Fourcroy, François Lefèvre, Silvia Venuti, Yolanda Gogorcena, Jean-François Briat, Nicola Tomasi, Christian Dubos, Roberto Pinton, Marc Boutry, Frédéric Gaymard, Anunciación Abadía, Javier Abadía

P4-3

Elucidation of early Zinc sensing and signalling events in Arabidopsis, upon Zn starvation and re-supply

Borjana Arsova, Sahand Amini, Maxime Scheepers, Dominique Baiwir, Gabriel Mazzucchelli, Monique Carnol, Bernard Bosman, Michelle Watt, Edwin de Pauw, Marc Hanikenne

P4-4

The importance of Cu supplied at or before pegging for seed and pod yield of peanut on low Cu sand

Thinh Thai Nguyen, Surender Mann and Richard Bell

P4-5

Identification of mechanisms contributing to boron efficiency in rapeseed and Arabidopsis Genotypes

Benjamin Pommerrenig, Annett Bieber, Jacqueline Fuge, Till A. Diehn, Nicolas Richet, François Chaumont, Manuela D. Bienert, Christoph Spitzer, Astrid Junker, Thomas Altmann and Gerd P. Bienert

P4-6

Absorption and distribution of molybdenum leaf sprayed in citrus trees

Rodrigo M. Boaretto, Franz W.R. Hippler, Verónica L. Dovis, José A. Quaggio, Ana Quiñones, Dirceu Mattos-Jr.

P4-7

Back to the future: identifying micronutrient efficiencies in Heritage barley lines for improved agricultural sustainability

Lawrie K. Brown, Sidsel Birkelund Schmidt, John Wishart, Allan Booth, Joanne Russell, Søren Husted, Peter Martin, Timothy S. George

P4-8

Effects of Mn toxicity on the protein profiles of tomato (*Solanum lycopersicum*) xylem sap and roots

Laura Ceballos-Laita, Elain Gutierrez-Carbonell, Daisuke Takahashi, Matsuo Uemura, Anunciación Abadía, Javier Abadía, Ana Flor López-Millán

P4-9

Effects of Varied Boron Nutrition on Root Uptake and Shoot Accumulation of Potassium in Canola Plants

Yasemin Ceylan Sen, Atilla Yazici and Ismail Cakmak

P4-10

A member of MFS is involved in phytosiderophore efflux for metal distribution in rice

Jing Che, Kengo Yokosho, Naoki Yamaji, and Jian-Feng Ma

P4-11

Relative K uptake from different soil depths in soybean crop

Danyllo S. Dias, José L. Favarin, Laís T. Souza, André F. B. Reis, Aline C. Richart, Silas M. Oliveira, Darly G. Sena Junior

P4-12

Xylem sap organic N content is linked to soil N composition in an organic greenhouse cucumber crop

Pierre-Paul Dion, Sandra Jämtgård, Mireille Thériault, Annick Bertrand, Steeve Pepin, Martine Dorais

P4-13

Response to phosphorus deficiency of two rice genotypes with contrasting tolerance is determined by plasticity of root growth and leaf phosphorus remobilization

D.M.S.B. Dissanayaka, Sho Nishida, Keitaro Tawaraya, Jun Wasaki

P4-14

Salt tolerance and K-homeostasis in tetraploid *Arabidopsis thaliana*

Sina Fischer, David E Salt

P4-15

Copper toxicity in maize plant effected growth and metals translocation

Alessandro Franco, Laura Zanin, Roberto Pinton, Nicola Tomasi

P4-16

Novel function of potassium and cesium channel, SKOR, involved in dormancy-induced nutrient re-allocation in poplar

Jun Furukawa, Yusaku Noda, Naoto Nihei, Atsushi Hirose, Keitaro Tanoi, Shinobu Satoh

P4-17

15N uptake and distribution in grasses growing under *Nothofagus antarctica* vs. grasses in an open site

Verónica Gargaglione, Pablo L. Peri, Héctor A. Bahamonde

P4-18

MtNramp1, MtMOT1.3, and MtCOPT1 are respectively responsible for iron, molybdate, and copper uptake by *Medicago truncatula* nodule cells

Manuel González-Guerrero, Isidro Abreu, Rosario Castro-Rodríguez, Viviana Escudero, Patricia Gil-Diez, Javier León-Mediavilla, Marta Senovilla, Manuel Tejada-Jiménez, Juan Imperial

P4-19

Interactions between wheat and sugar beet under intercropped System

Roghieh Hajiboland, Shirin Shekari

P4-20

Turkish Bread Wheat Genotypes and their Nutrient Content – Prospective for Wheat Improvement

Mohd Kamran Khan, Anamika Pandey, Mehmet Hamurcu, Sait Gezgin, Ali Topal, Necdet Akgun, Erdogan E. Hakkı

P4-21

Elongation of Barley Roots in High-pH Nutrient Solution

Kyoko Higuchi, Kota Ono, Satoru Araki, Shogo Nakamura, Masayuki Sue

P4-22

Where has all the nitrogen gone? – Different transfer pathways from peas to cereals

A. Hupe, F. Näther, R. G. Joergensen, C. Bruns, J. Heß, F. Wichern

P4-23

Impact of MTP8 on metal enrichment and localization in seeds of *Arabidopsis thaliana*

Stefanie Höller, Seckin Eroglu, Ricardo F. H. Giehl, Bastian Meier, Elisa Andresen, Konstantin Ignatiev, Jan Garrevoet, Gerald Falkenberg, Hendrik Küpper, Edgar Peiter, Nicolaus von Wirén

P4-24

Analysis of the relationship between length of photoperiod and translocation of photoassimilates in eggplants fruits

Satomi Ishij, Kaori Kikuchi, Nobuo Suzui, Naoki Kawachi

P4-25

Ionic screening of EMS-mutagenized rice

Takehiro Kamiya, Nobuhiro Tanaka, Toru Fujiwara

P4-26

Down-regulations of candidate genes by CRISPR/CAS9 to reveal their role in P deficiency-induced root hair elongation in *Brassica carinata*

Thomas W. Kirchner, Markus Niehaus, Marco Herde, Manfred K. Schenk

P4-27

Magnesium Deficiency Damages the Young Mature Leaf Through the Unstabilization of Iron Homeostasis in Rice

Natsuko I. Kobayashi, Ryohei Sugita, Taka-aki Ogura, Hisashi Suzuki, Ren Iwata, Tomoko M. Nakanishi, Keitaro Tanoi

P4-28

Contributions of two cytosolic glutamine synthetase isozymes to ammonium assimilation in Arabidopsis roots

Noriyuki Konishi, Keiki Ishiyama, Marcel Pascal Beier, Eri Inoue, Keiichi Kanno, Tomoyuki Yamaya, Hideki Takahashi, and Soichi Kojima

P4-29

Involvement of two MATE transporters with different subcellular localizations in buckwheat Al tolerance

Gui Jie Lei, Kengo Yokosho, Naoki Yamaji and Jian Feng Ma

P4-30

GmG3PT3 controls root hair growth and Pi homeostasis in soybean

Xin-Xin Li, Wan-Dong Qi, Hong Liao

P4-31

Zinc Deficiency Sensing and Regulation in Plants

Grmay Hailu Lilay, Pedro Humberto Castro, Diego Almeida, Joana Gusmão, Nelson Saibo, Herlander Azevedo, Mark Aarts, Jan K. Schjoerring, Ana Assunção

P4-32

Zinc Speciation of the Barley Endosperm During Grain Development

André Macherius, Amelie Detterbeck, Daniel P. Persson, Stephan Clemens, Søren Husted

P4-33

Fe Acquisition by Mugineic Acid Family Phytosiderophores in Foxtail Millet

Reiko Nakanishi Itai, Naoko K. Nishizawa, Hiromi Nakanishi

P4-34

The Evolution of Sodium Accumulation in the Caryophyllales

Konrad Neugebauer, Helen C. Bowen, Martin R. Broadley, Hamed El-Serehy, Timothy S. George, Neil S. Graham, Anna Taylor, Jacqueline A. Thompson, Gladys Wright, Philip J. White

P4-35

Characterization of the key proteins responsible for Zn transport and homeostasis in leaves of Nicotiana tabacum

Anna Papierniak, Katarzyna Kozak, Maria Kendziorek, Jerzy Tiuryn, Bohdan Paterczyk, Lorraine E. Williams and Danuta M. Antosiewicz

P4-36

Aluminum-Toxicity Effect On Phosphate Transporters From Ryegrass Plants

Leyla Parra-Almuna, Nuria Ferrol, Maria de la Luz Mora

P4-37

Changing the paradigm: Eudicots from phosphorus-limited environments preferentially allocate phosphorus to the mesophyll

Caio G. Pereira, Peta Clode, Rafael S. Oliveira & Hans Lambers

P4-38

Components of the Nitrate Transport and Assimilatory Systems of Barley are Both Nitrogen Responsive and Diurnally Regulated

Darren C. Plett, Hanne C. Thomsen, Jan K. Schjoerring, Trevor P. Garnett

P4-39

Soil type affects P-induced Zn deficiency in cabbage

Paula Pongrac, James W. McNicol, Allan Lilly, Jacqueline Thompson, Gladys Wright, Philip J. White

P4-40

Impact of Si on the regulation of Al/Si uptake and expression of Si transporters genes in ryegrass plants subjected to Al stress

Sofia Pontigo, María de la Luz Mora, Paula Cartes

P4-41

NRAMP family genes analysis in soybean (Glycine Max L.)

Lu Qin, Peipei Han, Liyu Chen, Thomas C Walk, Hong Liao, Xing Liao

P4-42

Molecular characterisation of cluster root development in highly phosphorus-efficient harsh hakea (Proteaceae)

Kosala Ranathunge, Ricarda Jost, Philipp Bayer, Dave Edwards, Hans Lambers, Patrick Finnegan

P4-43

Foliar absorption and translocation of B complexed with a polyol in cotton and coffee

Ciro A. Rosolem, Danilo S. Almeida, Caio V. Cruz, Jorge E.S. Sarkis

P4-44

Genome-wide association mapping of 17 ionomic traits in rice (Oryza sativa L.) grain

Panthita Ruang-areerate, Alex Douglas, Gareth J. Norton, David E. Salt and Adam H. Price

P4-45

Plant zinc status changes phosphorus use efficiency in photosynthesis

Elcio F. Santos, José Lavres

P4-46

Identification of transcription factors binding to PHOSPHATE2 5'-UTR in barley

Pawel Segal, Katarzyna Kruszk, Zuzanna Wroblewska, Zofia Szweykowska-Kulinska, Andrzej Pacak

P4-47

Preferential distribution of boron to developing tissues is mediated by OsNIP3;1 localized in rice node

Ji Feng Shao, Naoki Yamaji, Ren Fang Shen and Jian Feng Ma

P4-48

Differential nitrogen uptake rates is revealed by NRT2.1 transcriptional regulation in forage grasses

Cristiane P. Silveira, José Lavres Jr, Joni E. Lima

P4-49

Fruit load affect potassium uptake of Coffea arabica in the field

Laís T. Souza, José L. Favarin, André F. B. Reis, Danyllo S. Dias and Aline C. Richart

P4-50

Investigating the link between metabolites in immature wheat tissue and final grain zinc concentration

Georgia Guild, Govindan Velu, James Stangoulis

P4-51

Association mapping of rice micronutrients suggests a role for NAS3 in endosperm Zn accumulation

Nicholas I. Warnock, [James C. R. Stangoulis](#)

P4-52

The metabolome analysis in Fe-deficient olive plants; possible biosynthesis of mugineic acid family phytosiderophores in nongraminaceous plants

[Motofumi Suzuki](#), Tomoko Nozoye, Seiji Nagasaka, Hiromi Nakanishi, Naoko K. Nishizawa, Satoshi Mori

P4-53

Maize Gains in Nitrogen Efficiencies over Four Decades of Hybrid Improvement are Dependent on Post-Silking Traits

[Tony J. Vyn](#), Keru Chen

P4-54

Characterization of an Fe-deficiency Inducible Protein Kinase Gene (PK) in Rice

[Fan Wang](#), Reiko N. Itai, Takeshi Senoura, Naoko K. Nishizawa, Takashi Yamakawa, Hiromi Nakanishi

P4-55

Mapping of QTLs for Root Morphology and Nitrogen Uptake Under Different Nitrogen Conditions in Maize

[Yi Wang](#), Yi Jiang, Yanlai Han

P4-56

Efficient P Utilization and Lipid Remodeling in Leaves of White Lupin Grown under Low P Conditions

Kiyotoshi Hanashiro, Keitaro Tawaraya, Yozo Okazaki, Kazuki Saito, [Jun Wasaki](#)

P4-57

The involvement of programmed cell death mechanisms in development of Zn-related pre-necrotic/necrotic regions in tobacco leaves

[Aleksandra Weremczuk](#) and Danuta Maria Antosiewicz

P4-58

Mapping and cloning of the major B efficiency QTL qBEC-A3a in Brassica napus

[Fangsen Xu](#), Yingpeng Hua, Didi Zhang, Mingliang He, Lei Shi, Xiangsheng Ye

P4-59

Nutritional Characteristics in Needles of Different Sources of Radiata Pine Clones and their Relationships with Tree Growth

[J.M. Xue](#), P. W. Clinton

P4-60

A Novel Phosphate Transporter Controlling Grain P Accumulation in Rice

[Naoki Yamaji](#), Yuma Takemoto, Takaaki Miyaji, Namiki Mitani-Ueno, Kaoru T. Yoshida, Jian Feng Ma

P4-61

Functional characterization of Nramp transporter genes in buckwheat

[Kengo Yokosho](#), Ji Feng Shao, Naoki Yamaji, Ren Fang Shen, Jian Feng Ma

P4-62

Influence of B on Al immobilization in alkali-soluble pectin of RBCs

Jiayou Liu, Xuewen Li, Yingming Feng, Hongdong Xiao, Lilan He, Min Yu

P4-63

Growth and root exudation of *Caragana orshinskii* in response to phosphorus supply

Weina Zhang, Yuanmei Zuo, Haigang Li

P4-64

Transcriptome analysis reveals genes associated with efficient utilization of organic phosphorus in sugarcane (*Saccharum officinarum* L.)

Zunkang Zhao, Ke Yi, Lu Xie, Xinlian Tang, Minghua Gu, Xiaofeng Li

P4-65

CRISPR/Cas9 based genomic editing of cluster root genes in white lupin involved in adaptation to low P stress

Yaping Zhou, Benjamin Neuhäuser, Uwe Ludewig

Theme 5: Nutrient availability in soils, toxicity and remediation

P5-1

Soil Al availability effects on biomass production and Al concentration in young sweet cherry trees

P. Artacho, C. Bonomelli

P5-2

Physiological and transcriptomic analysis of iron excess response in various tissues of rice

May Sann Aung, Hiroshi Masuda, Takanori Kobayashi, Naoko K. Nishizawa

P5-3

The sensitivity of different *Lupinus* species to pH and bicarbonate under a low phosphorus supply

Wenli Ding, Peta Clode, Jon Clements, Hans Lambers

P5-4

Effects of Engineered Ag Nanoparticles on the Germination, Growth and Gas Exchange of *Zea mays* and *Brassica napus*

Sebastian Fellmann and Thomas Eichert

P5-5

Cd and Zn concentration in ear-leaves of three maize genotypes grown on Cd contaminated soil and challenged by water withholding during flowering

Mario Franić, Vlatko Galić, Domagoj Šimić

P5-6

White Lupin Root-Secreted Phosphatase and Organic Acids Have a Synergistic Effect to Mobilize Unavailable Phosphorus in Soil

Hiroaki Furutani, Hayato Maruyama, Jun Wasaki

P5-7

Study of the suitability of four soil extractants for estimation of micronutrients bioavailability in soils of Poland

Krzysztof Gediga, Krzysztof Bielecki, Zofia Spiak, Urszula Piszcz

P5-8

Cadmium-induced stress modulates sulfur metabolites in *Panicum maximum* shoots and roots accompanied by changes on CO₂ assimilation rate

José Lavres, Flávio Henrique Silveira Rabêlo, Alejandro Navazas, Adriana Pinheiro Martinelli, Ricardo Antunes Azevedo, Ann Cuypers

P5-9

Mn-induced Chlorosis Development in Sugarcane Plantlets as Influenced by Nitrogen form

Ling G.Z., Cheng Y.M.Z., Yu H., Tang X.L., Wang X.X., Zhao Z.K., Li X.F.

P5-10

Al Tolerance Mechanism of Rice under High pH

Nanako Miyauchi, Shenkui Liu, Hiromi Nakanishi, Tetsuo Takano

P5-11

Phosphorus mobility and spring barley yields at increasing doses of fertilization in a pot experiment

Mühlbachová G., Čermák P., Vavera R., Káš M., Pechová M., Hlušek J., Lošák T., Lampardová I.

P5-12

Sulphur mobility and spring barley yields at increasing doses of phosphorus and sulphur in a pot experiment

Mühlbachová G., Čermák P., Vavera R., Káš M., Pechová M., Hlušek J., Lošák T., Lampardová I.

P5-13

Genome-Wide Association Study identifies strategies of *Arabidopsis thaliana* adapting to acid soil environment

Yuki Nakano, Kazutaka Kusunoki, Satoshi Iuchi, Masatomo Kobayashi, Hiroyuki Koyama, Yuriko Kobayashi

P5-14

Grain yield of newly developed maize hybrids is increased by enhanced salt resistance and higher plant density under salt-affected field conditions

Muhammad Saqib, Javaid Akhtar, Ghulam Murtaza, Sven Schubert

P5-15

Evaluation of Extractable Cadmium and other Heavy Metals from Cocoa Growing Soils of Trinidad and Tobago

Paramasivam Sivapatham, Chauntilena Butler, Umaharan Pathmanathan, Caleb A Lewis, Adrian Lennon and Jayaraman Kuppusamy

P5-16

The effect of fulvic acid on the uptake and removal of prometryn by vetiver from hydroponic media

S. X. Sun, S.K. Liu, R. Datta, D. Sarkar, Y. Zheng

P5-17

Arsenic in rice ecosystems

Lalith Suriyagoda, Klaus Dittert, Hans Lambers

P5-18

Caesium distribution and translocation to grain in a rice plant

Keitaro Tanoi, Tatsuya Nobori, Shuto Shiomi, Hiroki Takagi, Yoshimichi Fukuta, Natsuko I. Kobayashi, Tomoko M. Nakanishi

P5-19

Soil plant-available nutrients and olive leaf concentrations in Terra rossa soil from Adriatic coast

Branimir Urlić, Filip Pošćić, Željka Fiket, Nevenka Mikac, Marija Romić, Helena Bakić, Niko Bačić, Mavro Lučić, Maja Jukić Špika, Marko Runjić, Tatjana Klepo, Frane Strikić, Zed Rengel, Slavko Perica

P5-20

Differences in soil Mg characteristics between paddy soil and upland soil in southern China

Liangquan Wu, Weidong Xu, Chaoyuan Zheng

P5-21

Effect of Vermicomposted Biosolids on Seedling Growth and Nutrient Uptake by Exotic and Native Tree Species

J.M. Xue, D. J. Graham

P5-22

Dynamics of soil phosphorus fractions in a calcareous soil after four-year wheat-maize rotation

Weina Zhang, Haigang Li

Theme 6: Roots and genetics of crop nutrient uptake

Posters relevant for theme 6 are presented as part of theme 4

Theme 7: Plant nutrition and food quality

P7-1

Effect of foliar potassium application on fruit quality of fig cv. Bouhouli in the North West of Tunisia

Mehdi Ben Mimoun, J. Ben Yahmed, B. Gaaliche

P7-2

Non-destructive measurement of fluorescence for evaluating seed quality in common buckwheat

Boldbaatar Orgil, Inoue Naoto, Orii Koji, and Sekinuma Mikio

P7-3

Nano-zinc oxide: A new source for biofertilization of rice

Cid Naudi Silva Campos, Rita de Cassia Félix Alvarez, Renato de Mello Prado, Guilherme Felisberto, Angélica Fernandes Deus, Raimundo Leonardo Lima de Oliveira

P7-4

Response of Fe deficient tomato plants to commercial seaweed extracts application

Sandra Carrasco-Gil, Lourdes Hernandez-Apaolaza, Juan J. Lucena

P7-5

Effect of phosphorus on growth, oxidative damage and phenols production in wheat cultivars (*Triticum aestivum* L.)

Paula Cartes, Marlys Ulloa, Sofía Pontigo, Marjorie Reyes-Díaz, María de la Luz Mora

P7-6

Effect of potassium nutrition on the sensory profile of tomato

Bashar Daoud, Elke Pawelzik, Inga Smit

P7-7

Iodine biofortification of strawberries: effect on fruit yield, quality and healthiness

Diemo Daum, Christoph Budke, Christian Meinecke

P7-8

Selenium biofortification in the field and greenhouse conditions

Nashmin Ebrahimi, Helinä Hartikainen, Mervi Seppänen

P7-9

Overexpression of cytosolic glutamine synthetase may promote grain yield and nitrogen use efficiency in barley while preventing grain protein decline under elevated atmospheric carbon dioxide

Yajie Gao, Hanne Cecilie Thomsen and Jan Kofod Schjoerring

P7-10

Risk Assessment of Nitrate Accumulation in Some Vegetables

Shirin Haftbaradaran, Mohammad Jafar Malakouti, Amir Hosein Khoshgoftarmansh

P7-11

Uptake of organic forms of iodine, selected molecular parameters and chemical composition of tomato plants at an early stage of vegetative growth

Mariya Halka, Magdalena Klimek-Chodacka, Sylwester Smoleń, Rafał Barański, Włodzimierz Sady

P7-12

Barley Forage Feed Quality in Response to Four Annual Anaerobically-Digested Cattle Manure Applications

Xiying Hao, Ben Thomas

P7-13

Ponds mud and dyke soil influence on production and nutritional quality of indian spinach and snake gourd in southern region of Bangladesh

M. Ashraful Islam, Nusrat Jahan, Khandaker Anisul Huq, Shahroz Mahean Haque, Russell Borski

P7-14

Effect of water management on anthocyanin in local purple rice genotypes from Thailand

Pennapa Jaksomsak, Wannapha Kathau, Benjavan Rerkasem and Chanakan Prom-u-thai

P7-15

Effect of a nutrient solution with NaCl on the fruit quality of third-truss tomatoes grown in a nutrient film culture

K. Kikuchi, S. Abiko, C. Goto, M. Ito and Y. Iwasaki

P7-16

Zinc biofortified wheat provides more absorbable zinc in-vivo

Marija Knez, Elad Tako, Raymond P. Glahn, Nikolai Kolba, Emma de Courcy-Ireland, James C. R. Stangoulis

P7-17

Selecting cultivars of Brazilian wheat for biofortification with zinc

João Augusto Lopes Pascoalino, Talita Cristiane Lima Guerra, Pedro Luiz Scheeren, Francisco de Assis Franco, Philip John White, Milton Ferreira Moraes

P7-18

Effects of polysulphate application on the yield, quality and shelf life of green pepper in Hainan province, China

Guohua Li, Ming He, Eldad Sokolowski, Patricia Imas, Hillel Magen

P7-19

Concentration of Fe and Zn in field grown pepper (*Capsicum annum* L.) in different fertilization schemes

Ivana Maksimović, Marina Putnik-Delić, Josef Eitzinger, Žarko Ilin, Boris Adamović

P7-20

Iron biofortification in important rice varieties obtained by the introduction of multiple genes or ion-beam irradiation

Hiroshi Masuda, May Sann Aung, Takanori Kobayashi, Hiromi Nakanishi, Naoko K. Nishizawa

P7-21

Biofortification of wheat genotypes grown in tropical soils with high available levels of zinc

Milton Ferreira Moraes, João Augusto Lopes Pascoalino, Adilson Oliveira Junior, Pedro Scheeren, Francisco Franco

P7-22

Failure behavior of P, Fe and Cu in rice causes its impediment in ripening when grown on a strongly reduced paddy field

Akira Noguchi, Hiroko Yamaya-Ito, Isao Hasegawa

P7-23

Compound-specific isotope ratio analysis can reveal the fertilization history of plants

Novak V, Adler J, Husted S and Laursen KH

P7-24

Barley nicotianamine synthase 1 (HvNAS1) gene is useful candidate to improve nutritional qualities and agricultural productivity in soybean and sweet potato

Tomoko Nozoye, Takeshi Senoura, Suyoen Kim, Yuske Kakei, Michiko Takahashi, Motoyasu Otani, Hiromi Nakanishi, Naoko K. Nishizawa

P7-25

Silicon uptake, lignin accumulation and yield at different growth stages of barley under aluminum stress

Isis Vega, Sofía Pontigo, María de la Luz Mora, Paula Cartes

P7-26

Improving grain zinc concentration in rice by foliar zinc fertilizer application among five farmer's fields

Chanakan T. Prom-u-thaj, Piyawan Phuphong, Ismail Cakmak

P7-27

Fertilization effects on quality of cabbage produced in the greenhouse

Putnik-Delic M., Maksimovic I., Dalla Marta A., Miroslavljević M., Ilin Ž., Adamović B.

P7-28

Novel insight into iodine absorption by higher plants: uptake of 5-iodosalicylic acid and chemical composition of lettuce grown in Hydroponic

Sylwester Smoleń, Iwona Ledwożyw-Smoleń, Mariya Halka, Włodzimierz Sady, Peter Kováčik

P7-29

Effect of selenium form and salic acid on chemical composition of lettuce grown in the NFT system

Iwona Kowalska, Sylwester Smoleń, Włodzimierz Sady

P7-30

Overcoming “yield dilution”: high yield and high grain Zn wheat varieties identified for the Loess Plateau of China

Sen Wang, Zhaohui Wang

Theme 8: Nutrient cycling, ecosystems and climate

P8-1

Root Traits and Carbon Input by Sweet Sorghum Genotype under Different Climatic Conditions in Turkey

Ibrahim. A. M. Ahmed, Celal Yucel, Abdullah Oktem, Derya Yucel, Ibrahim Ortaş

P8-2

Response of bread wheat to elevated carbon dioxide as influenced by nitrogen form

Muhammad Asif, Cevza Esin Tunc, Levent Ozturk

P8-3

Nutrient resorption in two co existing Nothofagus species in southern Patagonia

Héctor A. Bahamonde, Victoria Fernández, Francisco Mattenet, Pablo Peri

P8-4

Whole-tree nitrogen dynamics across seasons in response to defoliation and drought in 10 year-old beech trees

Chuste Pierre-Antoine, Massonnet Catherine, Zeller Bernd, Breda Nathalie, Tillard Pascal, Wortemann Rémi, Thirion Erwin and Maillard Pascale

P8-5

Impacts of water and nitrogen addition on nitrogen recovery in Haloxylon ammodendron based desert ecosystems

Xiaoqing Cui, Ping Yue, Xuejun Liu

P8-6

Effect of Combined Application of Green Manure and Rice Straw on Grain Yield, Nutrient Uptake of Rice and Soil Fertility

Mingjian Geng, Wei Liu, Jianwei Lu, Weidong Cao

P8-7

Improvement of water and nutrient retention and use efficiency in arable farming systems from field to catchment scale in Europe and North Africa (WaterFARMING)

Bhim Bahadur Ghaley, Seifeddine Jomaa, Abd-Alla Gad, Marco Lauteri, Niels P.R. Anten, Cristina Máguas Hanson, Makram Anane

P8-8

Improved estimation of below-ground plant biomass

A. Hupe, H. Schulz, R. G. Joergensen, C. Bruns, J. Heß, F. Wichern

P8-9

Improved water use efficiency for sustainable grain maize production under a changing climate may save nutrients

Birgit W. Hütsch, Sven Schubert

P8-10

Case Study on the Evaluation of Greenhouse Gas from Organic Rice Production System

Jong-sik Lee, Hyun-Cheol Jeong, Eun-Jung Choi, Gun-Yeob Kim, Sun-il Lee

P8-11

Performance and drought stress response of winter faba bean genotypes in mixed cropping with winter wheat

Annika Lingner, Birgit Pfeiffer, Klaus Dittert

P8-12

Challenges in a Free Air CO₂ Enrichment (FACE) coffee crop experiment to prospect strategies for mitigation and adaptation to climate change

Ana Paula Packer, Henrique B. Vieira, Nilza Patricia Ramos, Osvaldo M. R. Cabral, Andre May, Eunice R. Batista, Jeanne S.M. Prado, Cristiano A. de Andrade, Marilia I. da S. F. Matsuura, Lucas R. da Silva, Wenceslau G. Teixeira, Andre Torre Neto

P8-13

Crop plant root effects on the soil environment for denitrification in agricultural soils – relevance and experimental concept

Pauline Rummel, Reinhard Well, Klaus Dittert

P8-14

Nitrous oxide and methane fluxes as affected by maize plants and nitrogen fertilization in a semiarid environment

Pengwei Yao, Jiancan Liu, Yufang Shen, Shiqing Li, Shanchao Yue

Theme 9: New analytical techniques in plant nutrition

P9-1

A new tool for sensitive detection of phosphorus deficiency in plants under field conditions

Andreas Carstensen, Søren Husted

P9-2

Tissue specific ionic analysis of barley (*Hordeum vulgare*) root tissue using Laser Microdissection (LMD) and ICP-MS

Anle Chen, Thomas H. Hansen, Daniel P. Persson, Jan K. Schjoerring and Søren Husted

P9-3

High-throughput method for amino acid analysis of green biomass by single quadrupole MS detection

Rasmus Dahl-Lassen, Jan v. Hecke, Henning Jørgensen, Jan K. Schjoerring

P9-4

Measurement of radiotracer movement in a living plant based on Cherenkov light imaging method

Keisuke Kurita, Nobuo Suzui, Yong-Gen Yin, Satomi Ishii, Hiroshi Watabe, Seiichi Yamamoto, Naoki Kawachi

P9-5

Identifying effective wavelengths to monitor winter oilseed rape leaf nitrogen and phosphorus status using in situ canopy hyperspectral data

Lantao Li, Jianwei Lu, Tao Ren

P9-6

Can 1% Na₂CO₃ Method be used as an indicator of plant available Si in rice soils?

Sabyasachi Majumdar and Nagabovanalli Basavarajappa Prakash

P9-7

Estimation of cation exchange capacity and chemical elements using low-frequency analysis with electromagnetic sensor

Orii Koji, Inoue Naoto, Misawa Tsunaki, Komatsu Takahumi, and Momosaki Eishi

P9-8

Noninvasive imaging of zinc dynamics in an intact plant using commercially available radionuclide, ⁶⁵Zn

Nobuo Suzui, Yong-Gen Yin, Satomi Ishii, Hitoshi Sekimoto, Naoki Kawachi

Theme 10: Novel technologies for fertilizers

Posters relevant for theme 10 are presented as part of theme 3

Boron satellite meeting

B1-1

Exogenous Nitric Oxide alleviates Boron Toxicity Effects on Two Turkish Barley Genotypes

Mehmet Hamurcu, Erdogan E. Hakkia, Sündüz Onbaşıa, Anamika Pandeya, Mohd Kamran Khana, Sait Gezgin

B1-2

Potential Boron Deficiency Needs to be Recognised in the Philippines and Papua New Guinea – a Personal Experience

Michael J. Webb

B1-3

Brassinosteroids: another player in B deficiency response?

Monika A. Wimmer, Isidro Abreu, Gerd Patrick Bienert

B1-4**Response of architecture of cell wall components of trifoliolate orange roots to boron deficiency stress**

Xiuwen Wu, Cuncang Jiang

B1-5**Effect of boron deficiency on anatomical structure of petioles in cotton (*Gossypium hirsutum* L.)**

Xinwei Liu, Minfeng Li, Zhuqing Zhao

Manganese satellite meeting

M1-1**Manganese reactions of common bean genotypes grown in a calcareous soil**

Fatma GÖKMEN YILMAZ, Mustafa HARMANKAYA, Sait GEZGİN, Duygu AKCAY, Ayşegül KORKMAZ

M1-2**Excessive Mn-induced Chlorosis in Sugarcane Plantlets**

Huang Y. L., Yang S., Long G. X., Zhao Z. K., Gu M. H., Li X. F.

M1-3**Foliar treatment of Mn deficient 'Golden delicious' apple trees with two Mn fertilizers**

Thomas Sotiropoulos, Nikolaos Voulgarakis, Nikolaos Koutinas