Program

Monday 8. July, 2019

12.00 – 13.30	Arrival/Registration
	Chair: Kai Udert
13.30 – 14.30	**Opening session - F 30 – Audimax** **Astrid Oberson,** Organizing Committee **Nina Buchmann**, ETH Zurich, Switzerland **Janet Hering**, Eawag, Switzerland **Claudia R. Binder / Michael Zimmermann** EPF Lausanne / Federal Office for Agriculture, Switzerland Dynamics and drivers of phosphorus flows in Switzerland **Christian Stamm**, Organizing Committee
14.30 – 15.10	**Keynote Lecture - F 30 - Audimax** **Andrea Ulrich**, ETH Zurich / PhosAgro Trading SA, Switzerland The importance of adequate phosphate rock quantity and fertilizer quality in the 21st century
15.10 – 15.40	Coffee break (Main Hall, E Floor)
	Chair: Claudia R. Binder
15.40 – 16.20	**Keynote Lecture - F 30 - Audimax** **Geneviève Metson**, Linköping University, Sweden A need to better integrate substance flow analyses in to transdisciplinary spaces for transformative change in phosphorus recycling
16.20 – 17.00	**Keynote Lecture - F 30 - Audimax** **Anders Nättorp,** University of Applied Sciences and Arts Northwestern Switzerland, Switzerland How to transform a phosphorus waste stream into a fertilizer?
17.15 – 18.00	**Parallel sessions – E 1.1 and D 1.2** **1.1 – Optimizing regional and national P cycles – Manure/Soil** **1.2 – Sourcing P fertilizers – Precipitates from wastewater**
18.00 – 19.30	Welcome reception at the Dozentenfoyer, ETH Zurich Supported by the City and Canton of Zurich

Tuesday, 9. July, 2019

	Chair: Astrid Oberson
9.00 – 9.40	**Keynote Lecture - F 30 - Audimax** **Therese McBeath**, CSIRO Agriculture and Food, Australia Strategies for efficient phosphorus use in crop and pasture systems
9.40 – 10.20	**Keynote Lecture - F 30 - Audimax** **Helen Jarvie**, NERC Centre for Ecology & Hydrology, Wallingford, UK 350 years after phosphorus discovery: Addressing environmental challenges of phosphorus deficiencies and excesses
10.20 – 10.45	Coffee break (Main Hall, E Floor)
10.45 – 12.00	**Parallel sessions – E 1.1 and D 1.2** **2.1 – Efficient P use in agroecosystems – P utilization by plants** **2.2 – Optimizing regional and national P cycles – Governance**
12.00 – 13.30	Lunch (ETH Polyterrasse mensa)
13.30 – 14.45	**Parallel sessions – E 1.1 and D 1.2** **3.1 – Environmental P problems – Soil** **3.2 – Sourcing P fertilizers – Sewage sludge**
14.45 – 14.55	Introduction to the poster session of Themes 1-2 and 5 Including 1-minute poster pitches by: Kirsty Forber, Anastasia Papangelou, Erst Spiess, Christoph Weihrauch Darya Dudareva, Monika Nausch, Jelena Rakovic, Margret Vogt
14.55 – 16.30	Poster session 1 (Incl. Coffee break) Posters of Themes 1-2 and 5 in Foyers E North and E South
16.30 – 18.00	**Parallel sessions – E 1.1 and D 1.2** **4.1 – Efficient P use in agroecosystems - Fertilizer, fertilization and long term effects** **4.2 – Environmental P problems – Atmosphere and forest**
18.00 – 19.30	Get together with free beers at the bQm bar

Wednesday, 10. July, 2019

9.00 – 10.30 Workshops

Themes 1&2 – Lead moderator Oscar Schoumans – Room G 26.5

Theme 3 – Lead moderator Christian Schaum – Room F 26.1

Theme 4 – Lead moderator Alan Richardson – Room E 1.1

Theme 5 – Lead moderator Phil Haygarth – Room D 1.2

10.30 – 11.00 Coffee break – lunch bags pick up (Main Hall, E Floor)

11.30 – 18.00 Excursions on case studies

1. Options to mitigate phosphorus losses from land to waters in an area with high livestock density (Midland Lakes/P losses)

2. Nutrient recovery from source-separated waste streams (Eawag/On-site sanitation)
   Supported by Laufen

3. Phosphorus, a limiting nutrient in Swiss forests (WSL/Swiss forest)

4. Producing biomass from wastewater (Wädenswil/Aquaponics)
   Supported by Hach

5. Mitigation measures for soil erosion - a successful story in the Canton of Bern (Bern region/Erosion)
   Supported by BGS

6. Phosphorus in Swiss agriculture: Sources, rates, and fertilization guidelines (Reckenholz/P fertilization)
   Supported by Hauert

Thursday, 11. July, 2019

9.00 – 10.30	Workshops (groups organized during Wednesday's workshops)
10.30 – 11.00	Coffee break (Main Hall, E Floor)
11.00 – 12.00	**Parallel sessions – E 1.1 and D 1.2** **5.1 – Sourcing P fertilizers – Alternative wastewater treatment** **5.2 – Efficient P use in agroecosystems – P utilization by animals**
12.00 – 13.30	Lunch (ETH Polyterrasse mensa)
13.30 – 14.45	**Parallel sessions – E 1.1 and D 1.2** **6.1 – Efficient P use in agroecosystems - Soil P dynamics, forms and processes** **6.2 – Environmental P problems – Land management**
14.45 – 14.55	Introduction to the poster session of Themes 3 and 4 Including 1-minute poster pitches by: Gabriel Gerner, Changyong Lu, Ana A. Robles Aguilar and Antonio Ruiz-Navarro Florentina Gartmann, Mareike Kavka, Aime Jean Messiga and Charlotte Vermeiren
14.55 – 16.30	Poster session 2 (Incl. Coffee break) Posters of Themes 3 and 4 in Foyers E South and E North Coffee break supported by Landor
16.30 – 18.00	**Parallel sessions – E 1.1 and D 1.2** **7.1 – Efficient P use in agroecosystems – P use in cropping and farming systems** **7.2 – Environmental P problems – Aquatic Systems**
19.00	Conference dinner at the restaurant "Lake Side" by Lake Zurich

Friday, 12. July, 2019

	Chair: Kai Udert
	F 30 – Audimax
9.00 – 9.30	**Christian Stamm,** Eawag, Switzerland Presentation of Workshops key findings
9.30 – 9.45	Questions and comments
9.45 – 10.00	**Chris Thornton**, European Sustainable Phosphorus Platform, Belgium P-research in Horizon Europe (FP9)
10.00 – 10.30	Research perspectives
10.30 – 11.00	Coffee break (Main Hall, E Floor)
	Chair: Emmanuel Frossard
11.00 – 11.30	**Keynote Lecture - F 30 - Audimax** **Hansjörg Grützmacher**, ETH Zurich, Switzerland Building blocks containing phosphorus for atom efficient syntheses
11.30 – 12.00	**Keynote Lecture - F 30 - Audimax** **Christophe Lasseur**, European Space Agency Mars Mission the ultimate example of circular economy
12.00 – 12.30	**Emmanuel Frossard**, ETH Zurich Closing remarks and end of IPW9

Parallel sessions – details

Monday 8. July, 2019

Parallel 1.1 – E 1.1

Optimizing regional and national P cycles – Manure/Soil
Chair: Klaus Jarosch

17.15 – 17.30	**Fien Amery**, ILVO, Belgium Environmentally and economically sustainable phosphorus use in Flanders
17.30 – 17.45	**Silvia Renata Motta**, ERSAF, Italy Phosphorus: evaluation of P surplus in Lombardy agricultural soil
17.45 – 18.00	**Raniero Della Peruta**, Agroscope, Switzerland Can manure trade make an effective contribution towards sustainable P cycles in Swiss agroecosystems?

Parallel 1.2 – D 1.2

Sourcing P fertilizers – Precipitates from wastewater
Chair: Kai Udert

17.15 – 17.30	**Dyllon Randall**, University of Cape Town, South Africa Development of a phosphorus recovery urinal
17.30 – 17.45	**Conor Watson**, Rhine-Waal University of Applied Sciences, Germany Assessment of nutrient provision by the secondary fertilizers hazenite and struvite
17.45 – 18.00	**Mark Spiller**, University of Antwerp, Belgium A comparative analysis of European struvite: production volume, quality and P release in soil

Tuesday 9. July, 2019

Parallel 2.1 – E 1.1

Efficient P use in agroecosystems – P utilization by plants
Chair: Sokrat Sinaj

10.45 – 11.00	**Mohamed El Mazlouzi**, ISPA Bordeaux, France Phosphorus partitioning and accumulation in durum wheat plants as affected by post-anthesis phosphorus supply
11.00 – 11.15	**Marina Azzaroli Bleken**, Norwegian University of Life Sciences, Norway Critical phosphorus concentration in cereals – dilution with growth
11.15 – 11.30	**Beverly Agesa**, Bangor University, UK Phosphorus efficient cereals: Is genetic engineering of plant phsphorus the answer?
11.30 – 11.45	**Corina Carranca**, INIAV, Portugal Annual pasture legume species differ in response to phosphorus fertilizer input
11.45 – 12.00	**Nicolas Honvault**, Unilasalle Beauvais, France Highlighting phosphorus-acquisition strategies in intermediate crops, a functional approach

Parallel 2.2 – D 1.2

Optimizing regional and national P cycles – Governance
Chair: Armin Keller

10.45 – 11.00	**Bernou van der Wiel**, Rhine-Waal University of Applied Sciences, Germany Towards restoring nutrient circularity in local agro-food-waste systems
11.00 – 11.15	**Claudia R. Binder**, EPFL, Switzerland Transition of the Swiss phosphorus system towards a circular economy
11.15 – 11.30	**Oscar Schoumans**, Wageningen University and Research, The Netherlands SYSTEMIC large scale eco-innovation to advance circular economy and mineral recovery from organic waste in Europe
11.30 – 11.45	**Jessica Stubenrauch**, University of Rostock, Germany Phosphorus Governance from a Cross-National Perspective
11.45 – 12.00	**Felix Ekardt**, Leipzig/Berlin & Universität Rostock, Germany Animal Food, Land-Use Governance, and Phosphorus Governance

Tuesday 9. July, 2019

Parallel 3.1 – E 1.1

Environmental P problems – Soil
Chair: Federica Tamburini

13.30 – 13.45	**Jolanda Reusser**, ETH Zurich, Switzerland Structural composition of organic phosphorus in hypobromite oxidised soil extracts determined by NMR spin-echo analysis
13.45 – 14.00	**Ruben Warrinnier**, KU Leuven, Belgium Redox cycling in unsaturated agricultural soil explains the release of phosphorus and colloids
14.00 – 14.15	**Hao Chen**, Chinese Academy of Sciences, China Effect of quickly repeated drying and rewetting on soil microbial P turnover
14.15 – 14.30	**Meike Widdig**, University of Bayreuth, Germany Phosphorus-solubilizing bacteria and phosphatase activity show deviating responses towards nitrogen and phosphorus addition in grassland soils
14.30 – 14.45	**Hakan Wallander**, Lund University, Sweden Ectomycorrhizal utilization of different phosphorus sources in a glacier forefront in the Italian Alps

Parallel 3.2 – D 1.2

Sourcing P fertilizers – Sewage sludge
Chair: Christian Schaum

13.30 – 13.45	**Daniel Klein**, Emschergenossenschaft, Germany Phosphorus recovery by a two stage incineration process – first results of the EuPhoRe pilot plant
13.45 – 14.00	**Else Bünemann**, FiBL, Switzerland Alkaline pyrolysis as an energy-efficient approach to recover phosphorus from sewage sludge
14.00 – 14.15	**Mohamed Amine Saoudi**, Irstea, France Bio-acidification, an innovative approach to increase nutrients and energy recovery from sewage sludge
14.15 – 14.30	**Tobias Hartmann**, University of Hohenheim, Germany Partial replacement of rock phosphate by sewage sludge ash for the production of superphosphate fertilisers
14.30 – 14.45	**Emmanuel Frossard**, ETH Zurich, Switzerland Predicting phosphate release from sewage sludge ash using an ion sink assay

Tuesday 9. July, 2019

Parallel 4.1 – E 1.1

Efficient P use in agroecosystems - Fertilizer, fertilization and long term effects
Chair: Lars Stouman-Jensen

16.30 – 16.45	**Peter Sørensen**, Aarhus University, Denmark Replacement of mineral phosphorus starter fertilizers with cattle slurry in maize cropping
16.45 – 17.00	**Mario Fontana**, Agroscope, Switzerland Effect of calcium phosphite on soil properties and plant productivity of two subsequent crops: green manure and maize
17.00 – 17.15	**Stany Vandermoere**, Ghent University, Belgium Soil phosphorus (P) mining in agriculture: impacts on P availability and soil organic carbon stocks
17.15 – 17.30	**Heide Spiegel**, Austrian Agency for Health and Food Safety, Austria Trace elements in soils and crops after long-term mineral P fertilization
17.30 – 17.45	**Juliane Hirte**, Agroscope, Switzerland Non-linear multilevel models for crop response to soil P and pedoclimatic conditions
17.45 – 18.00	**Mart Ros**, Cornell University, USA The effectivity of phosphorus fertilisation on grasslands across the world

Parallel 4.2 – D 1.2

Environmental P problems – Atmosphere and forest
Chair: Gitte Rubaek

16.30 – 16.45	**Avner Gross**, Ben Gurion University, Israel Dust as a natural phosphorus fertilizer: from deserets to lakes to tropical rainforests
16.45 – 17.00	**Malte Pallentin**, Leibniz Institute for Baltic Sea Research Warnemuende, Germany Determination of atmospheric phosphorus deposition in the German part of the Baltic Sea
17.00 – 17.15	**Maja Siegenthaler**, ETH Zurich, Switzerland Tracing the fate of phosphorus fertilizer into soil phosphorus pools in a temperate beech forest
17.15 – 17.30	**Anna Missong**, Forschungszentrum Jülich, Germany P associated to natural colloids in forest topsoil leachates
17.30 – 17.45	**Simon Hauenstein**, Eberhard Karls Universität, Germany Organic layers favor phosphorus storage and uptake by young beech trees (Fagus sylvatica L.) at nutrient poor ecosystems
17.45 – 18.00	**Cornelia Herschbach**, Albert-Ludwigs-University Freiburg, Germany The different P nutrition strategies of Fagus sylvatica and Populus canescens can be related to their habitats and growth behaviour

Thursday 11. July, 2019

Parallel 5.1 – E 1.1

Sourcing P fertilizers – Alternative wastewater treatment
Chair: Tove Larsen

11.00 – 11.15	**Ariane Krause**, Leibniz Institute of Vegetable and Ornamental Crops, Germany Valuing wastes – P-Recycling from energy and sanitation to the agroecosystem in smallholder farming in Karagwe, Tanzania
11.15 – 11.30	**Michel Elia Riechmann**, Eawag, Switzerland Recovery of phosphorus and other nutrients from source-separated urine by stabilization of the urine and evaporation of the water
11.30 – 11.45	**Kris Dox**, KU Leuven, Belgium Phosphorus recycling from urine using layered double hydroxides
11.45 – 12.00	**Lu Gao**, Forschungszentrum Jülich, Germany Phosphorous storage pools in microalgae

Parallel 5.2 – D 1.2

Efficient P use in agroecosystems - P utilization by animals
Chair: Michael Kreuzer

11.00 – 11.15	**Michael Oster**, Leibniz Institute for Farm Animal Biology (FBN), Germany Molecular determinants of phosphorus utilization in pigs
11.15 – 11.30	**Solveig Vollmar**, University of Hohenheim, Germany Livestock breeding for improved phosphorus utilization? Results from genomic analysis in the model species Japanese quail
11.30 – 11.45	**Brad Harrison**, University of Reading, UK A pilot survey aimed at dairy farmers and nutritionists to identify current phosphorus feeding practices on UK dairy farms and the barriers and motivators to reducing phosphorus overfeeding
11.45 – 12.00	**Michael Kreuzer,** ETH Zurich, Switzerland Phosphorus on Alpine pastures: utilization, redistribution and soil accumulation by cattle

Thursday 11. July, 2019

Parallel 6.1 – E 1.1

Efficient P use in agroecosystems - Soil P dynamics, forms and processes
Chair: Tim McLaren

13.30 – 13.45	**Yaqi Zhang**, University of Queensland, Australia Understanding phosphorus behaviour in soils: The key to increasing its agronomic efficiency
13.45 – 14.00	**Silke Ruppel**, Leibniz Institute of Vegetable and Ornamental Crops, Germany Kosakonia radicincitans – bacteria's secret of improving phosphorus utilization efficiency in crop production
14.00 – 14.15	**Asgeir Almas**, Norwegian University of Life Sciences, Norway The partitioning of P in soil determines the fluxes and deliveries of labile P in soil solution
14.15 – 14.30	**Gylaine Vanissa Tchuisseu Tchakounté**, Leibniz Institute of Vegetable and Ornamental Crops, Germany Selected rhizosphere bacteria help tomato plants to cope with combined phosphorus and salt stresses
14.30 – 14.45	**Gregor Meyer**, The University of Queensland, Australia Phosphorus transformation in the fertosphere of fertilizer bands

Parallel 6.2 – D 1.2

Environmental P problems – Land management
Chair: Chiara Pistocchi

13.30 – 13.45	**Biao Huang**, Chinese Academy of Sciences, China Phosphorus accumulation under intensive greenhouse vegetable soils in China and its potential loss risk: A meta-analysis
13.45 – 14.00	**Samia Richards**, James Hutton Institute, UK Phosphorus transfer from septic tank effluent and the associated impact on soakaway soils and receiving waters
14.00 – 14.15	**Merin Macrae**, University of Waterloo, Canada Managing phosphorus losses from agricultural fields in regions with cold climates
14.15 – 14.30	**Mark Tibbett**, University of Reading, UK Too much of a good thing: are we over-fertilising restored landscapes of high biodiversity value?
14.30 – 14.45	**Antti Iho**, Natural Resources Institute, Finland Optimal tilling frequency to balance PP and DRP loads under vertical stratification of soil P

Thursday 11. July, 2019

Parallel 7.1 – E 1.1

Efficient P use in agroecosystems - P use in cropping and farming systems

Chair: Else K. Bünemann

16.30 – 16.45	**Chunjie Li**, Wageningen University, The Netherlands Do rhizosphere modifications lead to complementary phosphorus uptake by species mixtures?
16.45 – 17.00	**Julie Therese Christensen**, Aarhus University, Denmark Is it possible to enhance the utilisation of soil phosphorus in a main crop by adapting species and management of the preceding cover crop?
17.00 – 17.15	**Bettina Eichler-Löbermann**, University of Rostock, Germany Phosphorus pools in the soil profile – results of different fertilizer practices over 20 years
17.15 – 17.30	**Klaus Jarosch**, University of Bern, Switzerland Soil P budgets, P availability and P use efficiencies in conventional and organic cropping systems
17.30 – 17.45	**Cathal Buckley**, Teagasc, Ireland Phosphorus demand and supply at farm scale – How big is the gap?
17.45 – 18.00	**Paul Murphy**, University College Dublin, Ireland Benchmarking farm P and N management to improve agricultural sustainability

Parallel 7.2 – D 1.2

Environmental P problems – Aquatic Systems

Chair: Merrin Macrae

16.30 – 16.45	**Nina Gottseling**, University of Bonn, Germany Cross-scale analysis of natural colloids in forested headwater catchments
16.45 – 17.00	**Toon van Dael**, KU Leuven, Belgium The effect of dissolved oxygen and sediment iron on phosphate fluxes in lowland streams
17.00 – 17.15	**Tallent Dadi**, UFZ-Helmholtz Centre for Environmental Research, Germany Trajectories of sediment water interactions in reservoirs as a result of temperature and redox conditions
17.15 – 17.30	**Michael Rode**, Helmholtz Centre for Environmental Research-UFZ, Germany Major controls of base flow soluble reactive phosphorus losses in humid temperate headwater streams
17.30 – 17.45	**Marc Stutter**, The James Hutton Institute, UK Riparian and channel processes affecting P mitigation in a Scottish headwater: on the case of the disappearing and re-appearing P
17.45 – 18.00	**Sara Sandström,** Swedish University of Agricultural Sciences, Sweden Comparison of particulate phosphorus and sediment transport from agricultural catchments using long-term monitoring data

Posters

Theme 1 – Phosphorus scarcity

Tuesday, 9 July – Foyer E North

1.1 Christoph Weihrauch
The end is nigh? – Concepts of Phosphorus scarcity and the scientific approaches they foster

Theme 2 - Optimizing regional and national phosphorus cycles

Tuesday, 9 July – Foyer E North

2.1 Kirsty Forber
Historic trends in UK phosphorus consumption: can we consume less phosphorus?

2.2 Beatrice Garske
Governance of sustainable phosphorus management

2.3 Jana Krämer
The German Phosphorus-Platform - a network for sustainable phosphorus management

2.4 Anastasia Papangelou
Towards circular urban food systems – phosphorus and energy flows in Brussels Capital Region

2.5 Shane Rothwell
Identifying opportunities for sustainable phosphorus management in Northern Ireland with substance flow analysis

2.6 Simona Sharma
Spatially disaggregated Substance Flow Analysis for the optimization of the Norwegian Phosphorus cycle

2.7 Marzena Smol
Towards circular economy for phosphorus in Poland

2.8 Ernst Spiess
Large soil phosphorus accumulation due to nutrient surpluses in Swiss agriculture

Theme 3 - Sourcing phosphorus fertilizers

Thursday, 11 July, Foyer E South

3.1 Tobias Borgmeyer
Preliminary economic assessment of phosphorus recovery from waste bio feedstocks using the Improved Hard Process

3.2 Yaniv Freiberg
Availability of organic and mineral phosphorous from different sludges

3.3 Gabriel Gerner
HTC-Innovation in Switzerland: Phosphorus recovery from sewage sludge

3.4 Peter Leinweber
Weathering of bone char particles and P-release in a perennial pot experiment

3.5 Changyong Lu
Magnetic MgFe LDH sorbents for phosphorous recovery from waste water

3.6 Bhavish Patel
The application of the improved hard process for phosphorus recovery from bio feedstock

3.7 Dyllon Randall
Development of a phosphorus recovery urinal

3.8 Mark Reiter
Poultry litter ash chemical and agronomic characteristics as a phosphorus maize fertilizer

3.9 Ana Alejandra Robles Aguilar
Standardization of methods to determine the efficiency of phosphorus fertilizers recovered from municipal wastewater

3.10 Antonio Ruiz-Navarro
Designing a sustainable biofertilizer based on organic wastes, struvite and phosphorus-solubilizing microbes (BIOFORG)

3.11 Marzena Smol
Possibility of recovering phosphorus from sewage sludge ash (SSA) in Poland

3.12 Yawen You
Phosphorus bioavailability of sewage sludge based fertilizer in a greenhouse experiment

Theme 4 - Efficient phosphorus use in agroecosystems

Thursday, 11 July, Foyer E North

Subtheme: Soil phosphorus dynamics, forms and processes

4.1 Ashour Ahmed
New insights into the IR spectroscopic characterization of phosphate binding at the goethite-water interface

4.2 Fien Amery
Soil phosphorus requirement for agriculture in Flanders

4.3 Martin Blackwell
In-soil trophic interactions between plants, rhizosphere bacteria and nematodes: Improving availability of soil organic phosphorus

4.4 Antonio Delgado
Phosphorus forms in agricultural Mediterranean soils studied by solid-state NMR

4.5 Antonio Delgado
Effect of different microorganisms and Fe oxides on P and Zn uptake by plants fertilized with phytate

4.6 Antonio Delgado
Inorganic P sorption dynamics is affected by organic P in Mediterranean soils

4.7 David Houben
Phosphorus availability is an important driver of the response of organic matter decomposition to no-tillage adoption

4.8 Rhys Pirie
Free the P- liberating soil P with soluble Si

4.9 Jakob Santner
Predicting barley biomass and shoot P concentration using sink-based and batch extraction soil P tests

4.10 Kristin Steinfurth
omparability of the Calcium-Acetate-Lactate and Double-Lactate extraction methods to assess soil phosphorus fertility

4.11 Charlotte Vermeiren
Organic phosphorus mineralization: quantification and correlation to selected soil properties

4.12 Xu Zhao
Various in soil C composition and the response of P pools companied by microorganisms in biochar amended paddy soils

Subtheme: Phosphorus acquisition and utilization by plants

4.13 Charlotte Amy
Impacts of phosphate limitation and its interactions with nitrogen fertilization on the agronomic performances and nutrient use efficiencies of rapeseed

4.14 Marina Azzaroli Bleken
The N:P ratio in cereals

4.15 Michel-Pierre Faucon
Phosphorus acquisition strategies of different crop species in Calcosol amended with sewage sludge

4.16 Mareike Kavka
Root system architecture of potato after cultivation in different phosphorus fertilizer treatments

4.17 Sanja Schwalb
Effect of an arbuscular mycorrhizal and an endophytic entomopathogenic fungal species on plant phosphorus uptake

4.18 Ulrike Schwerdtner
Nutrient acquisition in intercropping – insights from a rhizobox study and a field experiment

4.19 Ouakoltio Youssouf Abidine Traoré
Nitrogen and phosphorus uptake by sorghum and soil microorganisms from applied nutrients for a Lixisol – a dual isotope labeling study

Subtheme: Fertilizer, fertilization and long term effects

4.20 Fien Amery
Phosphorus in circular horticulture: changes in P behaviour and adapted fertilization strategy for soilless cultivation

4.21 Michela Battisti
Long-term effects of organic and mineral fertilisation on soil available P

4.22 Moussa Bouray
Phosphogypsum as an alternative P source on acid soils

4.23 Grace Crain
How can human urine derived phosphorus be utilized for hydroponic crop production?

4.24 Meryem Drief
Impact of soil acidity and moisture on phosphorus fertilizer solubility

4.25 Bettina Eichler-Löbermann
Long-term application of biogas digestates affects phosphorus pools in the soil profile

4.26 Clara Ervin
Identifying alternative phosphorus source for maize production

4.27 Bingqian Fan
Feeding composting cycles increased the phosphorus utilization in a long-term cereal crop rotating system

4.28 Monrawee Fukuda
Development and validation of phosphorus fertilizers made from low-grade Burkina Faso phosphate rock for lowland rice in the Sudan Savanna, Burkina Faso

4.29 Daniel Hauck
Plant availability of secondary phosphates from current recovering technologies

4.30 Philipp Koal
Replacing conventional phosphorus fertilisers with biomass ashes: fertilising effect of straw ashes on different crops

4.31 Ying Li
Effect of ten-year nitrogen and phosphorus fertilization on soil phosphatase and bacterial functions involved phosphorus metabolism

4.32 Aime Jean Messiga
Carryover effects of combined starter mineral P and manure P on silage corn yield and soil P

4.33 Gregor Meyer
Transformation of phosphorus fertilizers applied as highly concentrated bands in agricultural soils

4.34 Gregor Meyer
Pseudomonas protegens CHA0 does not increase phosphorus uptake from 33P labeled synthetic hydroxyapatite by wheat grown on calcareous soil

4.35 Ana Alejandra Robles Aguilar
Struvite's effectiveness as a P fertilizer is enhanced in crop species that exude carboxylates

4.36 Gitte Rubæk
The response in available soil phosphorus to accumulation and depletion scenarios in the Askov long-term fertilizer experiment

4.37 Kristin Steinfurth
Yield response to omitted phosphorus fertilization – results of a meta-study

4.38 Shenqiang Wang
Rice P uptake and soil P release under P fertilizer reduction regime

4.39 Kari Ylivainio
Bio-based fertilisers for securing crop P requirement in the EU

Subtheme: Phosphorus use in cropping and farming systems

4.40 Jehangir Bhadha
Phosphorus use efficiency through sustainable agricultural practices in South Florida

4.41 Florentina Gartmann
Influence of pH change on the phosphorus cycle in aquaponics

4.42 Tobias Edward Hartmann
Adaptation of maize-based food-feed-energy systems to limited phosphate resources" (AMAIZE-P) – a new Sino-German international research training group.

4.43 Peter Leinweber
InnoSoilPhos: advances in the understanding and managing of agricultural phosphorus use

4.44 Amin Soltangheisi
Assessing linkage between soil phosphorus pools in different land uses by path analysis

Theme 5 - Environmental phosphorus problems

Tuesday, 9 July – Foyer E South

Subtheme: Aquatic systems

5.1 Ry Crocker
Phosphorus fate and management on the Somerset Levels and Moors Ramsar ditch systems

5.2 Maria Dittrich
Transport of bioavailable phosphorus in suspended sediment during storm event from lagricultural catchments

5.3 Petri Ekholm
Release of soil-bound phosphorus in aquatic systems

5.4 Daniel Fiala
Phosphorus emissions from municipalities as a framework for pharmaceutical pollution modelling

5.5 Kirsty Forber
Exploring concentration-discharge relationships in UK catchments

5.6 Matthias Frei
Control of P in recirculating oligotrophic bio-swimming ponds – experiences from Switzerland

5.7 Emma E. Lannergård
Internal loading from stream bed sediment: insignificant or a missing link?

5.8 Irene M. C. Lo
Development of $Fe0/Fe_3O_4$ with tunable properties activated by Fe^{2+} for phosphorus removal from river water

5.9 Monika Nausch
Phosphorus concentrations and composition along a lowland river in a northeast German catchment discharging to the Baltic Sea

5.32 Lisa Rönspiess
Different phosphorus fractions – how bioavailable are they?

5.10 Andreas Voegelin
Diffuse phosphorus input to surface waters - new concepts in removal, recycling and management (P-TRAP)

5.11 Cäcilia von Arb
An index to quantify the risk of phosphorus-losses in the catchment area of Lake Baldegg: New perspectives on the critical source area concept

5.12 Marisa Andrea Wirth
Electrodialysis as a pre-processing tool for bulk and target analysis of organophosphorus compounds in seawater

Subtheme: Forest

5.13 Jasmin Fetzer
Phosphorus leaching from forest soils in response to nitrogen and phosphorus fertilization

5.14 Jörg Luster
Different phosphorus pools in forest soils developed on carbonate bedrock vary in their sensitivity to site conditions

5.15 Margret Vogt
Short-term effects of drying-rewetting on the competition between beech saplings and soil microorganisms for phosphorus in acid forest soils

Subtheme: Land management

5.16 Tamara Jadczyszyn
Evaluation of the degree of soil phosphorus saturation in Poland and determination of safe thresholds for tested phosphorus indices

5.17 Philip Moore
Long-term effects of grazing management and buffer strips on phosphorus runoff from pastures

5.18 Harald Neidhardt
Characterization of the phosphorus pool composition in soils and sediments of transitional ecotones under the influence of agriculture

5.19 Stefan Pietrzak
The risk of phosphorus transport in surface runoff from agricultural land in municipality of Puck in Baltic Sea Region

5.20 Jelena Rakovic
Can ecosystem control point concepts help understand and regulate influential P transfers in agricultural catchments?

5.21 Barbro Ullen
Nutrient discharge from a clay soil in a ten-year study comparing conventional cropping and unfertilised fallow

5.22 Cäcilia von Arb
How long does it take to reduce legacy soil-P in the catchment of Lake Baldegg?

5.23 Christoph Weihrauch
On the effectiveness of grassland to prevent Phosphorus losses from soil to water – Results from a case study in Germany

5.24 Tiequan Zhang
Reducing non-point source phosphorus loading to Lake Erie: current measures and perspectives

5.25 Dana Zimmer
Leibniz-ScienceCampus Phosphorus Research Rostock

Subtheme: Soil

5.26 Domiziana Cristini
Isotopic constraints on the fate of phosphate in agricultural catchments

5.27 Darya Dudareva
Contrast response of water-soluble and stable soil P pools to interactive effect of warming – drying

5.28 Abchen Kehler
Phosphonate behaviour and utilisation within reducing soil systems

5.29 Ying Li
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