



Organic Phosphorus Workshop

July 13-16, 2026

Holland College, Charlottetown, PE, Canada

Centre for Applied Science and Technology Building, 300 Kent Street, Room 319

Day 1 Monday, July 13	
8:30	Registration Open
Session 1 (Hybrid) – Policy: Translating P knowledge into action	
9:30 – 9:45	Welcome and opening remarks, Land Acknowledgement • <i>Conference organizers</i> • <i>Dr. Geoff Mercer, AAFC Soil and Water Portfolio Lead</i>
9:45 – 10:05	Dr. Se-Yeoun Cha, Representative of the CRP's Scientific Advisory Body and Dr. Marie Russel, Coordinator of the CRP <i>Presentation of the OECD's Co-operative Research Programme: Sustainable Agricultural and Food Systems (CRP)</i>
10:05 – 10:25	David Turcotte, AAFC Senior Policy Advisor <i>Phosphorus science driving policy and program action in Canadian agriculture</i>
10:25 – 10:50	Health break
10:50 – 11:10	Dr. Barbara Cade-Menun, Agriculture and Agri-Food Canada Prof. Kari Dunfield, University of Guelph Dr. Tandra Fraser, Agriculture and Agri-Food Canada <i>Past, present and future of organic P</i>
11:10 – 11:30	Invited speaker - Prof. Phil Haygarth, Lancaster University <i>Phosphorus, food security and a changing climate</i>
11:30 – 11:50	Invited Speaker – Dr. Per-Erik Mellander, Teagasc <i>Phosphorus losses in agricultural river catchments and implications under future climate scenarios</i>
11:50 – 12:15	Panel Q&A / policy discussion
12:15 – 13:30	Lunch & Networking



Session 2 – Plant–Soil–Microbe Interactions (Chair: Prof. Kari Dunfield)	
13:30 – 13:50	Invited Speaker – Prof. Nelly Raymond, University of Copenhagen <i>How soil development and agricultural management shape microbial pathways of phosphorus cycling</i>
13:50 – 14:05	Dr. Shanwei Xu, Agriculture and Agri-Food Canada <i>Changes of organic phosphorus mineralization genes after 15 years of P-based cattle manure application and soil P draw-down under corn-soybean rotation</i>
14:05 – 14:20	Prof. Anwar Dawas, Volcani Institute <i>Linking alkaline phosphatase activity in uncultivated soils, key gene abundance and soil chemical properties</i>
14:20 – 14:35	Dr. Frederik van der Bom, University of Copenhagen <i>Translating root and rhizosphere mechanisms into field-validated strategies for phosphorus mobilisation</i>
14:35 – 14:50	Prof. Maria de la Luz Mora, Universidad de La Frontera <i>From biodiversity loss to functional specialization: P fertilization shapes the ryegrass rhizosphere microbiome in an Andisol</i>
14:50 – 15:10	Health break
15:10 – 16:00	Invited Keynote – Prof. Timothy George, The James Hutton Institute <i>Unlocking organic phosphorus for agricultural sustainability: From rhizosphere processes to agroecosystem cycling</i>
16:00 – 17:00	Discussion
17:00 – 18:30	Reception & Networking

Day 2 Tuesday, July 14	
Session 3 – Management of organic phosphorus availability (Chair: Prof. Milko Jorquera)	
8:30 – 8:50	Invited Speaker – Prof. Alan Richardson, CSIRO Agriculture & Food <i>Bioavailability of organic phosphorus in soil – a matter for legacy</i>
8:50 – 9:10	Invited Speaker – Prof. Ana García-López, University of Seville <i>Availability of organic phosphorus for crops, from the dominant soil pool to an agronomic resource</i>



9:10 – 9:25	Dr. Judith Nyiraneza, Agriculture and Agri-Food Canada <i>Critical phosphorus dilution curve and the phosphorus-nitrogen relationship in potato</i>
9:25 – 9:45	Invited Speaker – Prof. Richard McDowell, Lincoln University <i>What we've learned from inorganic phosphorus databases and what's missing for organic phosphorus</i>
9:45 – 10:00	Lightning poster presentations
10:00 – 10:45	Health break & poster session
Session 4 - Organic phosphorus and carbon-nitrogen dynamics in soils (Chair: Dr. Judith Nyiraneza)	
10:45 – 11:05	Invited Speaker – Prof. Luisella Celi, University of Turin <i>The organic matter–phosphorus nexus in agroecosystems: from biogeochemical cycling to resource recycling</i>
11:05 – 11:20	Youssef Zoggagh, Mohammed VI Polytechnic University <i>Phosphorus addition increases soil organic matter mineralization in arid calcareous soil</i>
11:20 – 11:35	Prof. Julia Diaz, University of California San Diego <i>Alkaline phosphatase mediates heterotrophic carbon acquisition in the California Current Ecosystem</i>
11:35 – 11:55	Invited Speaker – Dr. Yuki Audette, CHITOSE Laboratory Corp. <i>Soil organic matter as a regulator of P availability: Linking soil functions to circular nutrient systems</i>
11:55 – 12:15	Invited Speaker – Prof. Marie Spohn, Swedish University of Agricultural Sciences <i>Interactions of phosphorus, carbon, and nitrogen in soil organic matter</i>
12:15 – 13:30	Lunch
Session 5 - Environmental impacts of organic phosphorus on water quality (Chair: Dr. Barbara Cade-Menun)	
13:30 – 14:15	Invited Keynote – Prof. Solange Duhamel, University of Arizona <i>Marine microbial cycling of organic phosphorus</i>
14:15 – 14:30	Dr. Tiequan Zhang, Agriculture and Agri-Food Canada <i>Characterizing organic phosphorus across the land-water continuum: A One Health Perspective in the Great Lakes Region</i>



14:30 – 14:45	Dr Chris Parsons, Environment and Climate Change Canada <i>Phosphorus transformation and transient storage by periphyton in agricultural headwater streams</i>
14:45 – 15:05	Invited Speaker - Prof. Anu Kisand, Estonian University of Life Sciences <i>Organic matter and organic phosphorus dynamics in the sediment of a deep boreal lake</i>
15:05 – 15:40	Health break and posters
Session 6 – Managing soil organic phosphorus (Chair: Dr. Frederik van der Bom)	
15:40 – 15:55	Dr. Nestor Pouya, ETH-ZURICH <i>Role of soil organic matter in managing soil phosphorus in yam-based systems from West Africa</i>
15:55 – 16:10	Dr. Taras Lychuk, Agriculture and Agri-Food Canada <i>Long-term soil nitrogen and phosphorus dynamics under contrasting input systems and environmental drivers in semi-arid Canadian Prairies: Implications for nutrient management</i>
16:10 – 16:25	Khalid Lemrhari, University Mohammed VI Polytechnic-McGill University <i>Bacillus endospores resist the acidity, salinity, and metal contaminants of phosphorus fertilizer</i>
16:25 – 16:40	Prabin Ghimire, Agriculture and Agri-Food Canada & Laval University <i>Effect of cover crop strategies on nutrient-cycling and phosphorus (P) dynamics in a legacy-P soil: an eight-year study in Fraser valley, BC, Canada</i>
16:40 – 16:55	Dr. Barbara Cade-Menun, Agriculture and Agri-Food Canada <i>Phosphorus speciation and dynamics are altered by tillage and soil acidification in wheat plots in Saskatchewan, Canada</i>
16:55 – 17:30	Discussion

Day 3 Wednesday, July 15	
8:15 - 8:30	Tour day – Load bus and leave Holland College
9:00 – 9:50	AAFC Harrington Research Farm Tour
9:50 – 10:10	Health Break
10:30 – 12:00	Prof. Xander Wang, UPEI Climate Centre <i>Climate change impacts on coastal regions, PEI National Park, Brackley,</i>



	PEI
12:30 - 14:30	Lunch – New Glasgow Lobster Suppers
15:30 – 17:00	Raspberry Point Oysters • Discussion on nutrient movement to waterways and mitigation
17:00 – 17:45	Return to Holland College

Day 4 | Thursday, July 16

Session 7 - Analytical methods for organic phosphorus (Chair: Prof. Reiner Geisler)

8:45 – 9:00	Dr. Ye Tian, Swedish University of Agricultural Sciences <i>A carbon-isotope approach to estimate soil organic phosphorus turnover: method development and application to a C4-to-C3 vegetation chronosequence</i>
9:00 – 9:15	Dr. Mario Alejandro Salas, University of Copenhagen <i>Integrating phosphorus into soil size-density fractionation approaches</i>
9:15 – 9:30	Evan Mayer, University of Guelph <i>Targeting microbial phosphorus, nitrogen and sulfur cycling genes in a long-term agricultural trial using metagenomic approaches</i>
9:30 – 9:45	Alisea Seren Rosso, University of Torino <i>Organic phosphorus forms and their dynamics in iron plaque on rice roots: A laboratory and hydroponic investigation</i>
9:45 – 10:40	Health break & posters

Session 8 - Organic phosphorus, food security and a changing climate

10:40 – 11:00	Invited speaker – Prof. Reiner Geisler, Umeå University <i>Organic phosphorus and climate change: Lessons from arctic Tundra landscapes</i>
11:00 – 11:20	Invited speaker – Prof. Milko Jorquera, University of La Frontera <i>Effect of addition of phytate on β-propeller phytase genes and predicted phytate-related functions in bacterial communities of an Antarctic rhizosphere soil under indoor and outdoor temperature</i>
11:20 – 11:40	Invited Speaker - Prof. Emmanuel Frossard, ETH Zürich <i>Terrestrial “organic” phosphorus dynamics: impacts of global change</i>
11:40 – 12:15	Discussion



12:15 - 13:30	Lunch & Networking
13:30 – 14:30	Panel discussion & policy roundtable: Translating organic P knowledge into action.
14:30 – 15:30	Breakout <i>groups</i>
15:30 – 15:45	Health break
15:45 – 16:30	Workshop synthesis: Key messages and future directions
16:30 – 17:00	Wrap-up & Awards
18:00 – 23:00	Reception/Banquet HMCS Queen Charlotte, 210 Water St

List of Posters

P1. Phosphorus fertilization reshapes specific taxa but not community assembly in rhizosphere microbiomes of *Lolium perenne* in volcanic soils

P2. Phosphorus and carbon co-distribution in soil size-density fractions Insights from Luvisols under long-term high-input organic fertilization

P3. Phosphorus source drives multigenerational shifts in predicted P-cycling gene abundances in Andisol soils

P4. Organic Phosphorus Amendments Engineer a Stress-Buffering Rhizosphere Microbiome in a High P-Fixing Andisol

P5. The effects of liming to control root rot on soil organic P forms and concentrations in Saskatchewan, Canada

P6. Smart biofertilizers for sustainable nutrient management in agroecosystems

P7. Microbial consortia to improve the efficiency of phosphorus fertilizer use by tomato

P8. Comparison of Organic and Inorganic Phosphorus Fertilization on Permanent Pasture Production in an Andisol of Southern Chile

P9. Unraveling flow-dependent P fractionation in agricultural headwater streams within the Canadian Lake Erie Basin



P10. Extracellular enzymatic activities differ between major soil types

P11. High-resolution passive sampling for organic phosphorus in sediment porewater: Field evaluation and potential applicability

P12. Microbial response of phytate loading in agricultural soils

P13. Isolation and characterization of phosphorus-utilizing culturable bacteria in Chilean Winter Fall-Valdivian Forests

P14. Linking Soil C and N Dynamics to Olsen-P Availability in Mediterranean Olive Orchards.

P15. Phosphorus dynamics and physiological responses in common bean cultivars inoculated with an Antarctic organic P-solubilizing bacterium under water deficit

P16. Reactive Fe and Al phases as well as pH affect interactions between phytate and protein

Sponsors

The OECD Co-operative Research Programme:
Sustainable Agricultural and Food Systems



Canadian Society of Soil Science
Société Canadienne de la Science du Sol

