

# EUROPEAN HEALTHY SOILS

## CONFERENCE SERIES

1ST EDITION: SOIL FERTILITY

Sept. 13-15, 2023 | Muttenz, Switzerland



## Full Program Draft - Subject to Presenter Registration

### September 13, 2023 AM

8.00	Exhibitor set-up
8.30	Registration
	<b>Pre-conference Workshop: Upscaling Regenerative Agriculture Chaired by Pascal Boivin, HEPIA</b>
9.00	Welcome Pascal Boivin, HEPIA
9.10	2945: Soil quality as driven by cropping practices under intensified agriculture in the north of France – large scale on-farm study Pascal Boivin, HEPIA
9.30	Input talks to be confirmed
10.30	Coffee break
11.00	<b>Discussion</b> <ul style="list-style-type: none"><li>• How do we understand regenerative agriculture?</li><li>• How can we upscale regenerative agriculture?</li><li>• What are the goals?</li><li>• What pain points and limitations are we facing?</li><li>• What is the range of tools available?</li><li>• How can we leverage science?</li><li>• How do we integrate approaches systematically?</li></ul>
12.00	Lunch, networking, posters, exhibition

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## September 13, 2023 PM

Main Conference – Opening Session	
13.00	Welcome to the FHNW: Falko Schlottig
13.05	Swiss perspective: <b>Eva Reinhard</b> , Head, Agroscope
	Swiss perspective: Political
13.15	European perspective: The EU mission - A Soil Deal for Europe <b>Peter Wehrheim</b> , European Commission
13.35	International perspective: Food and Agriculture Organization of the United Nations (video)
Soil Diversity Chaired by Reto Meuli, Agroscope	
13.40	<b>Opening keynote:</b> The soils of our planet – a fascinating resource <b>Peter Schad</b> , TU München
14.25	<b>Keynote:</b> Accelerated soil development – a key process to understand future biogeochemical cycles in arctic and alpine environments <b>Sebastian Dötterl</b> , ETHZ
15.10	2930: Cropping practices and soil quality as drivers of soil microbial communities <b>Alyssa Deluz</b> , HEPIA
15.30	Coffee break
Chemistry and Microbiology in Agronomical Soils for Sustainable Crop Cultivation Chaired by Sebastian Wendeborn, FHNW	
15.50	Current priorities and perspectives for soil health and position on pesticides vs biologicals in the UK <b>Rachel Boulderstone</b> , Department for Environment, Food & Rural Affairs
16.00	<b>Plenary:</b> Climate and management impacts on mycorrhizal function in crops <b>Katie Field</b> , University of Sheffield
16.30	2998: Buried underpants as soil health indicator and awareness-raising tool using citizen science and ways to harness soil biological functions for agriculture <b>Franz Bender</b> , Agroscope
16.50	2943: Biofortification of soil microbiota communities using novel biofertilizers, based on siderophores and other metabolites produced by plant-growth promoting psychrotolerant bacterium Pseudomonas ANT_H12B <b>Marcin Musiałowski</b> , University of Warsaw
17.10	2929: Compost-based soil amendments for a sustainable agriculture: linking soil biochemistry and microbiome responses <b>Elena Biagi</b> , University of Bologna

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	Flash Poster Presentations
17.30	Sponsor introduction: Syngenta
17.40	2951: Profiling the impact of crop protection products on mycorrhizae <b>Ben Oyserman</b> , Syngenta
17.45	2939: To inoculate or not to inoculate: predicting the effect of field inoculations with arbuscular mycorrhizal fungi on maize yield <b>Stephanie Lutz</b> , Agroscope
17.50	2962: Root traits explain multitrophic interactions of belowground microfauna on soil nitrogen mineralization and plant productivity <b>Junwei Hu</b> , Ugent
17.55	2932: Restoring soil health through irrigation technology <b>Chris Thomas</b> , Aqua4D
18.00	2952: Impacts of veterinary pharmaceuticals on plant-mycorrhizal symbioses in the environment <b>Emily Durant</b> , University of Sheffield
18.05	2941: Soil and Climate Change: the role of soil organic amendments in carbon sequestration <b>Melania Fiore</b> , Politecnico di Torino
18.10	2947: Further Testing of the Fungicide Fluazinam – Effects on Three Non-Target Species <b>Micha Wehrli</b> , University of Gotenburg
18.15	2942: Siderophores-based biofertilizers as a valuable complement/alternative to chemical fertilizers, soil regenerators and plants' biostimulants <b>Klaudia Debiec-Andrzejewska</b> , University of Warsaw
18.15	
18.20	
18.25	
18.30	Welcome Apéro – 12th floor

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8.00	Registration
8.30	Welcome Day 2
<b>Chemistry and Microbiology in Agronomical Soils for Sustainable Crop Cultivation</b> Chaired by Sebastian Wendeborn, FHNW	
8.45	<b>Plenary:</b> Effects of multiple threats on soil processes and biodiversity <b>Matthias Rillig</b> , Institute für Biologie, Freie Universität Berlin
9.20	2937: The ConSoil project - developing a biomonitoring approach to evaluate the risk of Plant Protection Product residues to soil fertility in agricultural soils <b>Mathieu Renaud</b> , EcoTox Center, EPFL
9.40	2961: Remote sensing of cover crop legacies on soil health and main crop N-uptake dynamics <b>Nikolaos Christos Vavlas</b> , Wageningen University
10.00	Coffee break
<b>Today's Challenges to Soil Health</b> Chaired by Fabio Fava, FHNW	
10.30	<b>Plenary:</b> Soil regeneration and circular bioeconomy <b>Catia Bastioli</b> , Novamont
11.00	<b>Plenary:</b> Living labs and soil needs assessments in support of EU Mission: A soil deal for Europe <b>Niels Halberg</b> , Danish Centre for Food and Agriculture
11.30	2959: Microplastic pollution in agricultural soil: application of hyperspectral imaging and artificial neural networks <b>Misato Toda</b> , FHNW
11.50	2964: The climate challenge of managing organic soils <b>Jens Leifeld</b> , Agroscope
12.10	Lunch

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13:15	<b>Plenary:</b> Global fertilizer crisis: challenges and opportunities for boosting soil health <b>Natalia Rodriguez Eugenio</b> , Food and Agriculture Organization of the United Nations (FAO)
	<b>Workshop: Soil Health - From Practical Issues to Indicators</b> Chaired by <b>Alexander Wissemeier</b> , <b>Bettina Hitzfeld</b> , and <b>Natalia Rodriguez Eugenio</b>
13:45	<b>Workshop question 1: What does healthy soil mean to you?</b> Mentimeter Word Cloud
	<b>Threats to soil health</b>
13:50	<b>Workshop question 2: What are the biggest threats to soil health?</b> Mentimeter Ranking Exercise <ul style="list-style-type: none"><li>• Erosion</li><li>• Organic Carbon Loss</li><li>• Nutrient Imbalance</li><li>• Salinization</li><li>• Contamination</li><li>• Acidification</li><li>• Loss of Biodiversity</li><li>• Soil Sealing</li></ul>
13:55	2935: NETmicroplastic in agricultural soil and its impact on soil properties <b>Claudia Preininger</b> , Austrian Institute of Technology
14:00	2954: Greenhouse cultivation practises affect soil health indicators <b>Beatrice Kulli</b> , ZHAW
14:05	2956: Monitoring carbon stocks in arable land: sources of errors, improvement of the one-layer equivalent soil mass method and minimum detectable change <b>Pascal Boivin</b> , HEPIA
14:10	Discussion: Threats
14:30	Coffee break

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Minimum indicators and metrics	
15.00	<b>Workshop question 3: What is the set of minimum indicators and metrics?</b> Mentimeter exercise
15.05	2926: From science to applications: Global demonstration of microbiome properties as a bioindicator linked to differential management practices <b>Alberto Acedo</b> , Biome Makers
15.10	2933: Predicting soil fungal communities from chemical and physical properties <b>Natacha Bodenhausen</b> , FiBL
15.15	2938: Automatic soil biology analysis by computer vision <b>Tobias Heinrich</b> , OTH Regensburg
15.20	2940: Measuring soil quality indicators by means of visible and near-infrared spectroscopy <b>Konrad Metzger</b> , Agroscope
15.25	2944: Characteristic times of soil water partitioning as soil health indicators <b>Peter Lehman</b> , ETH Zürich
15.30	Discussion: Minimum indicators and metrics
Thresholds and parameters	
15.50	<b>Workshop question 4: What are the thresholds for chemical, physical, and biological parameters?</b> Mentimeter exercise
15.55	TBC
16.00	2948: BENCHMARKS - Building a European Network for the Characterisation and Harmonisation of Monitoring Approaches for Research and Knowledge on Soils <b>Fabio Volkman</b> , Climate Farmers and Wageningen University
16.05	2960: Setting targets and thresholds for soil health indicators <b>Amanda Matson</b> , Wageningen University
16.10	Discussion: Thresholds and parameters
16.30	<b>Workshop Wrap-Up Discussion</b> What methods, tools, and indicators need to be developed? How do we put indicators into practice? What can we do after this workshop to keep our momentum going? Share findings, summarize next steps One quote per person into Mentimeter for white paper
17.30	End of the workshop

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Poster display and beer	
17.30	Sponsor introduction: Anglo American
	Poster 2913: Studies on the use of locally available (Coxs Bazar and Saint Martin) alternative renewable seaweed wastes as compost organic fertilizer resources
	Poster 2916: Biogas residues in the battle for terrestrial carbon sequestration: A comparative decomposition study in the grassland soils of the Greater Region
	Poster 2934: Balancing ground water quality and carbon storage in crop production: site-adapted approaches in Switzerland
	Poster 2949: Assessment of soil quality after innovative fertilizer mixtures application based on enzymatic activity
	Poster 2953: Influence zeolite composites from fly ashes mixed with exogenous organic matter and mineral salts on soil respiration and nitrifying bacteria activity in the contaminated soil
	Poster 2957: Are all arbuscular mycorrhizal fungi beneficial for crops and soils?
	Poster 2963: the influence of the crop plant on the physical characteristics of the soil
	<b>Submit your poster!</b>
18.30	End of the poster display session
19.30	Dinner in Basel (additional fee applies)

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### September 15, 2023 AM

8.30	Registration
9.00	Welcome Day 3
<b>Soil and Climate Change: Interaction of Soil with Water and Atmosphere</b> Chaired by Thomas Gross, Agroscope	
9.10	<b>Keynote:</b> Soil organic carbon management in agriculture - potentials and limitations <b>Axel Don</b> , Thünen Institut
9.50	2931: Modified soil erodibility global map using saturated hydraulic conductivity <b>Surya Gupta</b> , University of Basel
10.10	Coffee break
10.40	2936: 3D+T mapping in the Netherlands reveals soil organic matter changes between 1953 and 2022 at 25m resolution <b>Anatol Helfenstein</b> , Wageningen University
11.00	2958: Deep-rooting cover crop mixtures: Highways to subsoil water and nutrient resources <b>Sandra Spielvogel</b> , Christian-Albrechts-Universität zu Kiel
<b>Conclusion</b>	
11.20	<b>Closing plenary - TBC</b>
12.00	Poster award and announcement of next conference
12.30	End of the event