

INIA-JKI organized Workshop, Montevideo, 14 - 16 November 2019

Towards a more sustainable agriculture through managing the soil microbiome

General organization of sessions:

- 25 min impulse talks + 3-5 min questions

Time Schedule/Program:

DAY 1 - Thursday, 14 Nov - Radisson Victoria Plaza Hotel - Sala Florida (8:30 - 18:30)

8:00 -8.45 Registration

8.45 – 9.00 Welcome and objectives of the workshop (Carolina Leoni & Kornelia Smalla)

9.00 - 11:00 - Session 1: Below-/aboveground microbial-plant interactions in agroecosystems (Chair: Kornelia Smalla)

9:00 - 9:30

"Microbe-mediated soil memory in agroecosystems – implications for plant performance". Doreen Babin & Kornelia Smalla, Julius Kühn-Institut, Germany.

9:30 - 10:00

"Profiling of fungal and oomycete communities in agricultural soils under different long-term farming practices". Loreen Sommermann & Jörg Geistlinger, Anhalt University of Applied Sciences, Germany

10:00 - 10:30

"Soil microbial parameters under varying land-use practices in the northwest region of Argentina". Carolina Perez Brandan, Estación Experimental Agropecuaria Salta – INTA, Argentina

10:30 – 11:00

"Natural grassland soil microbiome diversity respect to edaphic properties". Silvia Garaycochea, Instituto Nacional de Investigación Agropecuaria (INIA), Uruguay.

11:00 - 11:30 Coffee Break

11:30 - 13:00 - Session 2: Microbiome-based development and optimization of sustainable farming strategies (Chair: Doreen Babin)

11:30 – 12:00

"Effects of crop rotations with diverse catch crops on soil microbiome and soil fertility". Barbara Reinhold & Thomas Hurek, University Bremen, Germany



12:00 - 12:30

"Impact of reduced tillage and organic fertilization on soil microbiome in vegetable farming systems". Victoria Cerecetto & Carolina Leoni, *Instituto Nacional de Investigación Agropecuaria (INIA), Uruguay*

12:30 – 13:00

"Effects of biological amendments on soil microbial community". Natalia Bajsa, *Instituto de Investigaciones Biológicas Clemente Estable (IIBCE), Uruguay*

13:00 – 14:30 – Lunch (not included)

14:30 – 16:00 - Session 3: Risk assessment for soils with long-term agricultural land use history (Chair: Silvia Garaycochea)

14:30 – 15:00

"Soil aggregation - Nexus between soil microbiome and management". Cordula Vogel & Karsten Kalbitz, *Technical University Dresden, Germany*

15:00 – 15:30

"Connected pore space controls the efficiency of nitrogen use by the soil microbiome". Andy Neal, *Rothamsted Research, UK*

15:30 – 16:00

"Tillage and no-tillage effects on prokaryote communities, soil physiology, lipidic profiles and soil aggregation in semi-arid soils in Argentina". Luis Gabriel Wall, *CONICET, Universidad Nacional de Quilmes, Argentina*

16:00 - 16:30 Coffee Break

16:30 - 18:30 - Session 4: Towards plant probiotics - Improvement of the efficiency of existing and development of new inoculant-based solutions (Chair: Natalia Bajsa)

16:30 - 17:00

"Challenges of inoculated PGPB to survive associated to rice plants". Ana Fernandez & Lucía Ferrando, *Facultad de Química (UDELAR), Uruguay*

17:00 - 17:30

"Soil type dependent rhizosphere competence and biocontrol activity of two bacterial inoculants and their effect on the rhizosphere microbial community of field-grown crops". Rita Grosch, *IGZ Großbeeren, Germany*

17:30 - 18:00

"Microbial biostimulants: rhizocompetence, plant beneficial activity and effects on the indigenous microbial community in the rhizosphere". Kornelia Smalla, *Julius Kühn-Institut, Germany*

18:00 – 18:30

"Biocontrol in sweet potato", Diogo de Azevedo Jurelevicius, *Federal University of Rio de Janeiro (UFRJ), Brazil*

DAY 2 - Friday, 15 Nov - INIA Las Brujas, Canelones (8:00 - 17:30)

8:00 - departure from Radisson Victoria Plaza Hotel to INIA

9:00 - 10:00 - Welcome to INIA Las Brujas and visit of the field experiment (Carolina Leoni, Juan Carlos Gilsanz)

10:00 - 10:30 Coffee Break

10:30 - 12:30 - Session 5: New strategies to harness the potential of soil and plant microbiomes (Chair: Silvia Garaycochea)

10:30 - 11:00

"Bioinformatic tools for metagenomics and taxonomic profiling of soil microbial communities". Pablo Fresia, Institut Pasteur-Montevideo, Uruguay

11:00 - 11:30

"Amazonian Dark Earth: The role of biochar to sustain microbial biodiversity and biodegradation". Siu Mui Tsai, CENA-USP, Brazil

11:30 - 12:00

"Relevance of rhizosphere processes at field scale – a road map based on imaging techniques". Doris Vetterlein, Helmholtz Centre of Environmental Research (UFZ), Germany

12:00 – 12:30

"Exploring the bacterial endophytic microbiome as a source of bioinoculants for crops". Cecilia Taulé & F. Batistoni, Instituto de Investigaciones Biológicas Clemente Estable (IIBCE), Uruguay

12:30 – 13:00

"Analysing the plant microbiome for managing pathogens and resistances". Christina A. Müller Bogotá, Graz University of Technology, Austria

13:00 - 14:00 Lunch (included)

14:00 - 15:30 - Session 6: Below-/aboveground microbial-plant interactions in agro-ecosystems (continued) (Chair: Ana Fernandez)

14:00 – 14:30

"From seeds to roots: understanding how microbes interact with barley". Viviane Radl & Michael Schloter, Helmholtz Zentrum München, Germany

14:30 – 15:00

"Deciphering the etiology of apple replant disease". Kornelia Smalla, Julius Kühn-Institut, & Doris Vetterlein, Helmholtz Centre of Environmental Research, Germany

15:00 – 15:30

"Soil-derived microbial consortia and their eco-enzymological roles in the degradation of agricultural residues". Diego Javier Jiménez Avella, UNIANDES, Colombia.

15:30 - 16:00 Coffee break

16:00 - 17:30 - Session 7: Microbiome-based breeding approaches (Chair: Carolina Leoni)

16:00 – 16:30

"The rhizosphere microbiome: how plant breeding can shape microbial traits for resistance against pathogens". Lucas William Mendes, *CENA-USP, Brazil*

16:30 – 17:00

"Combination of microbiome and genetical background bears new potentials in barley protection and breeding strategies". Adam Schikora, *Julius Kühn-Institut, Germany*

17:00 – 17:30

"Root-associated microbiome of tropical maize and sorghum genotypes cultivated with contrasting phosphorus conditions in a long-term experiment". Sylvia Morais de Sousa, *Embrapa Milho e Sorgo and Universidade Federal de São João del-Rei, Brazil*

17:30 Departure to Montevideo

DAY 3 - Saturday, 16 Nov - Radisson Victoria Plaza Hotel - Sala Florida (9:00 - 13:00)

9:00 - 10:15 - Session 8: Below-/aboveground microbial-plant interactions in agro-ecosystems (continued) (Chair: Ana Fernandez)

9:00 – 9:30

"Perspectives on the relationships among soil biotic and abiotic factors towards an improved management of native communities; a couple of Uruguayan experiences". Patricia Vaz, *Instituto de Investigaciones Biológicas Clemente Estable (IIBCE), Uruguay*

9:30 - 10:00

"Cover crop suppression method has distinctive effects on prokaryotic communities and mobile genetic elements in the rhizosphere". María Celina Zabalo, *Universidad Nacional del Sur (UNS)-CONICET, Argentina*

10:00 – 10:15

"Using modelling approaches and indicators for the evaluation of soil functions in agricultural systems." *Sara König & Doris Vetterlein*, *Helmholtz Centre of Environmental Research – UFZ, Halle, Germany*

10:15 - 11:00 - Discussions and exploration of potential collaborative projects (Doreen Babin and Silvia Garaycochea)

11:00 - 11:30 Coffee Break

11:30 - 13:00 Conclusions of the Workshop, Closing remarks (Kornelia Smalla and Carolina Leoni)

END OF WORKSHOP