



International Conference
Impacts of Soil Amendments on Dryland
Agro-Ecosystems

28-30 October 2024

UFR STAPS, Bât.25, Campus moulin de la Housse

Reims, France

Scientific Program

Day1: Monday October 28, 2024

Session 1: Soil degradation, conservation and mitigation strategies in dry areas

Chairman: Beatrice Marin & Maxime Gommeaux

- 10h20 – 10h50** **Degradation and conservation strategies of soils in dry areas: land degradation processes related to soil management and example of mitigation strategies for soil and water conservation**
Keynote speaker: Pascal Podwojewski
- 10h50 -11h05** **Green Earth Program – Ecological engineering through induced biocrusts as valuable tool for combating desertification and mitigation of climate change in dryland ecosystems – a case study of Western Burkina Faso**
Ines Wagner, Josué Maré Boussa Tockville, Andreas Burr, Pia Swatkowski, Marvin Braun, Jessica Friedrichs, Olga Spang, Waldemar Spsychalski, Łukasz Wolko, Jérôme Juilleret
- 11h05 -11h20** **Mitigation ability of humified organic matter towards soil salinity and sodicity**
Daniel Moro, Elisa Pellegrini, Marco Contin, Maria De Nobili
- 11h20 – 11h35** **Reactivity towards Na of biochars produced from palm date residues with different oxygen proportions during pyrolysis**
Marie Ponthieu, Jeremy Beucher, Alexandra Guillaneuf, Elie Le Guyader, Vincent Miconnet, Maxime Gommeaux, Rachidou Amadou Guimbari, Mohamed El Mazlouzi, Béatrice Marin, Xavier Morvan
- 11h35 – 11h50** **Dynamic of woody vegetation in two protected areas of South semi-arid Tunisia**
Refka Mnasri, Khaoula Ben Atia Zrouga, Christophe Mahuzier, Mustapha Gorai, Pascal Podwojewski, Séraphine Grellier

12h05 – 13h30

Lunch

- 13h30 – 14h00** **Case Studies on the interactive effect of zeolite and treated agricultural residues (composts) on crop performance**
Keynote Speaker: Victor Kavvadias
- 14h00 – 14h15** **Carbon farming and the trials for the agricultural sector**
Ilaria Falconi, Irene Criscuoli
- 14h30 – 14h45** **The EOM4SOIL project and the best practices for adding organic matter to the soil**
Ilaria Falconi, Irene Criscuoli, Maria Valentina Lasorella

15h00 – 16h00

Coffee Break + Poster session

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- 16h00 – 16h15 The eco-physiological and fodder resources in El Haouch area (Biskra) from south-east of Algeria: situation and preservation**
Hadda Arab, Sassia Sellaoui, Nadia Boufedda, Said Dekhinat, Smail Mehennaoui
- 16h15 – 16h30 Assessing the impact of combining organic and inorganic fertilization on greenhouse gas emissions from agricultural soils**
Georgios Giannopoulos, Elpida Pasvadoglou, Georgios Kourtidis, Lars Elsgaard, Georgios Zanakis, Ioannis Anastopoulos, Vasileios Tzanakakis
- 16h30 – 16h45 Analysis of soil clay content changes on agricultural fields due to applications of sediments from water reservoirs in India**
Juliette Gaab, Cécile Gomez, Laurent Ruiz
- 16h45 – 17h00 Technosol's aggregation patterns according restoration treatments in limestone cement quarry in a semi-arid environment**
Françoise Watteau, Rocío Soria, Adeline Bouchard, Raúl Ortega, Isabel Miralles

Day 2: Tuesday October 29, 2024

Session 2: Optimizing crop productivity and ecosystem services in dryland agro-ecosystems

Chairman: Victor Kavvadias

9h00 – 9h30 **The use of organic matter in orchards: effect on soil and plant performances**
Keynote speaker: Pr. Elena Baldi

9h30 – 9h45 **Relationships between soil and green covers development in persimmon orchards**
Carmen Orts, Angel Marqués-Mateu, Rafael Boluda, Cristina Lull, Josep Llinares, Desamparados Soriano

9h45 – 10h00 **Nutrient uptake and leaching of barley cultivated with organic amendments form date palm residues**
Mohamed El Mazlouzi, Elie Le Guyader, Alexandra Guillaneuf, Marin Béatrice, Gommeaux Maxime, Xavier Morvan

10h00 – 10h15 **Exploring Soil Physical and Chemical Dynamics in Different Soil Organic Amendment Systems in Arid Forests Post-Planting**
Adnane Beniaich, Mohamed Louay Metougui, Mohamed El Gharous

10h30 – 11h30

Coffee Break + Group Photo

11h30 – 11h45 **Cowpea residue management effect on productivity of subsequent millet in a legume-cereal crop rotation**
Aliou Faye, Sidy Tine, Augustine K. Obour, Doudou Diouf, Junior Bruno Mbar Ndiaye, Mouhamadan Lo, Tobi Moriaque Akplo, Saliou Ndiaye, Yared Assefa

11h45 – 12h00 **Effect of organic amendments on the chemical properties and carbon mineralization in the oasis soil of arid regions and date yield (Southern Tunisia)**
Fatma Mekki, Inès Rahma Zoghmi, Nissaf Karbout, Ali Bennour, Mohamed Moussa, Xavier Morvan, Mohamed Ouessar

12h00 - 12h15 **Effects of sole and combined addition of biochar and compost on improving soil quality and crop productivity**
Houda Oueriemmi, Rahma inès Zoghmi, Ali Bennour, Mohamed Moussa, Xavier Morvan, Mohamed Ouessar

12h30 – 13h30

Lunch

Session 3: Economical aspects of soil management and valorization of natural resources

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Chairman: Ines Rahma Zoghلامي

13h30 – 14h00 **Analysis of the viability of the rainfed cereal intensification model in semi-arid regions in Algeria**
Keynote Speaker: Pr. Ali Daoudi

14h00 – 14h15 **5 times cheaper, innovative method for restoration of non-productive soils by applying organic matter only locally**
Petras Steponavičius, Aušrius Juozapavičius

14h15 – 14h30 **A design and evaluation of a climate-responsive fertilization for rainfed wheat: Integrating APSIM-Wheat model with a rule-based strategy.**
Achraf Mamassi, Hélène Marrou, Abdellah Hamma, Mohamed El-Gharous, Bernard Tychon

14h30 – 15h30

Coffee Break

Session 2 (continued): Optimizing crop productivity and ecosystem services in dryland agro-ecosystems

15h30 – 15h45 **Effect of biochar addition on soil properties and durum wheat production**
Zohra Bounouara, Sabah Larit, Rabia Negrach, Lecheheb Ouissem, Marwa Lamri, Abir Ahmed Seghir, Ibtissem Bouhdiba

16h45 – 17h00 **Evaluation of parametric changes of water moisture curve in soil containing microplastics**
Charalampos Doulgeris, Soheila Ebrahimi, Roghayeh Karimpoor

17h00 – 17h15 **The effect of microplastics on the variability of functional parameters of available water in loessial soils**
Soheila Ebrahimi, Charalampos Doulgeris, Roghayeh Karimpoor

17h15 – 17h30

Cocktail dinner

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Day 3: Wednesday October 30, 2024

Session 4: Soil hydrological processes and water management practices

Chairman: Mohamed El Mazlouzi

9h00 – 9h30

Soil processes and water management practices

Keynote speaker: Pr. Yves Coquet

9h30 – 9h45

The relationship of δD and $\delta^{18}O$ in soil water and its implications for soil evaporation across distinct rainfall years from winter wheat field in the North China Plain

Abdoul Kader Mounkaila Hamani, Junming Liu, Zhuanyun Si, Djifa Fidele Kpalari, Guangshuai Wang, Yang Gao, Xiaotang Ju

9h45 – 10h00

Water requirements of date palms between two periods (1975-2000 and 2001-2018) with software (Cropwat 8.0) in southern Algeria (Biskra)

Naima Mebrek, Fatma Demnati, Fatima Hiouani, Nour el Houda Bennaceur

10h00 – 11h00

Coffee Break + poster session

11h00 – 11h15

Enhancing Soil Fertility in Arid Agriculture: Investigating Two Years of Combined Soil Amendments with Saline Irrigation

Rahma inès Zoghlami, Houda Oueriemmi, Mohamed Moussa, Ali Bennour, Mohammed Ouessar

11h15 – 11h30

The Impact of Arbuscular Mycorrhizal Fungi and/or Compost on Enhancing Tomato Resistance to Water Stress

Fadoua Mekkaoui, Amina Hamma Elidrissi, Nada Zaari Jabri, Ilham Amghar, Soukaina Essadssi, Abdelaziz Hmyene, Mohamed Ait-El-Mokhtar

11h30 – 11h45

Comparing the effect of various land use types on moisture dynamics in loamy soils using the Hydrus 1D model in Southwest Hungary

Parisa Maleknia

11h45 – 13h00

Lunch

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Session 5: Linking soil biological processes and carbon/nutrient cycling to improve soil health

Chairman: Hugues Clivot

13h00 – 13h30 **Biochar-based fertilizers: trade-offs between soil C sequestration and gaseous N losses**

Keynote Speaker: Dr. Maria Luz Cayuela

13h30 – 13h45 **Evaluation of the stability of date-palm based biochar and compost in soil by C mineralization kinetics and Rock-Eval analysis**

Elie Le guyader, Houda Oueriemmi, Hugues Clivot, Ines Rahma Zoghalmi, Mohamed El Mazlouzi, Alexandra Guillaneuf, Maxime Gommeaux, Béatrice Marin, Marie-Liesse Aubertin, David Sebag, Xavier Morvan

13h15 – 14h00 **Alternative Cover Crops and Soil Management Practices Modified the Macronutrients, Enzymes Activities, and Soil Microbial Diversity of Rainfed Olive Orchards (cv. Chetoui) under Mediterranean Conditions in Tunisia**

Elhaddad Fadoua, Julio Antonio Calero González, Sofiane Abdelhamid, Roberto Garcia-Ruiz, Hechmi Chehab

14h15 – 15h00 **Coffee Break**

15h30 – 15h45 **Climate Change and Biogeochemical Cycles in Agricultural Soils: Impact on the speciation, transfer of heavy metals to plants and physiological, biochemical responses of alfalfa plants.**

Lina Chebbi, Itab Boughattas, Sondes Helaoui, Mohamed Banni, Noureddine Bousserhine

Closing remarks

ISADAE 2024 Sponsors:



Poster presentation program

Session 1: Soil degradation, conservation and mitigation strategies in dry areas

- 1-1 **Antidepressants persistence in a Mediterranean soil, and effect of cow manure amendment**
Rafael Boluda Hernández, Pablo Hernández, Eva Fernández-Gómez, Óscar Andreu-Sánchez, Carmen Orts, M^a Desamparados Soriano, Miguel Gamón, Luis Roca-Pérez
- 1-2 **Assessing the long-term impact of organic amendments on taxa and functions of restored quarry soil microbial communities through shotgun metagenomics**
Ana B. Villafuerte, Jorge López, Rocío Soria, André M. Comeau, Raul Ortega, Isabel Miralles
- 1-5 **Dynamics of Soil Erosion Response to Land Use and Climate Variability in the Beas Valley, Kullu, Himachal Pradesh: A Study of the Western Himalayan Landscape (1993-2023)**
Suraj Kumar Maurya, Vartika Singh, Kesar Chand, Prabuddh Kumar Mishra
- 1-6 **Functionality assessment of bacterial communities in short-term restored soils: A metagenomic sequencing study in semi-arid ecosystems.**
Raúl Ortega, Rocío Soria, André M. Comeau, Ana B. Villafuerte, Jorge López, Isabel Miralles
- 1-7 **Mineralogical evolution in certain Saharan soils of Algeria (case of Ziban soils and the Oued Righ valley)**
Boumaraf Belkacem, Inesse Saadi, Alexandra Guillaneuf
- 1-8 **Spatial evolution of crusts and encrustation in the Wadi Righ valley Northern Sahara Algeria**
Boumaraf Belkacem, Inès Saadi
- 1-9 **Spatial evolution of morpho-pedological characters in Ziban soils**
Samiha Laouar, Belkacem Boumaraf, Guillaume Pierre
- 1-11 **Sustainable soil restoration in mining areas: Long-term effects of organic amendments on microbiological activities and soil structural stability**
Isabel Miralles, Natalia Rodríguez-Berbel, Michael Schloter, Estefanie Schulz, Jorge López, Raul Ortega
- 1-13 **Development of plants adapted to climate change in the province of Valencia. Case of Moringa oleifera**
Jose Vicente Peris Torres, Maria Desamparados Soriano Soto, Laura Garcia-España Soriano, Francisco Garcia Mares

- 1-14 **Effect of organic amendments on the CO₂ sourcing of restored soils: Simulating Global Warming by Long-Term Field Experiment with Open-Top-Chambers**
Rocío Soria, Ángel Fernández-Cortés, Raul Ortega, Jorge López, Ana I. Sánchez-Villanueva, Ana B. Villafuerte, Isabel Miralles
- 1-15 **Evaluation of biochar amendments to retain organic compounds in soil**
Asma Hmaied, Aida Ben Hassen Trabelsi, Claude Hammecker
- 1-16 **Exploring synergies and trade-offs across the agricultural management strategies associated with achieving food self-sufficiency objectives.**
Achraf Mamassi, Nicolas Guilpart, Lucile Muneret, Francesco Accatino
- 1-17 **Impact of rainfall extremes and mulch application on maize productivity and nitrogen cycling in Zimbabwe**
Abderrahim Bouhenache, Hugues Clivot, Gwenaëlle Lashermes, Regis Chikowo, Armwell Shumba, Emmanuel Matimba, Hope Mazungunye, Sylvie Recous, Rémi Cardinael
- 1-18 **Spatiotemporal Land Use Dynamics and Sustainable Resource Management in the Oued Righ Region (1990-2021)**
Karima Belaïche, Belkacem Boumaraf, Guimeur Kamel, Inesse Saadi
- 1-19 **Identification of Rhinoceros Beetles (*Oryctes* spp.) on Date Palm Plantations in El Oued, Algeria**
Sana Rais, Inesse Saadi, Jenő Kontschán
- 1-20 **Phytosanitary analysis of compost from date palm waste associated with manure (sheep, bovine, poultry).**
Inesse Saadi, Belkacem Boumaraf

Session 2: Optimizing crop productivity and ecosystem services in dryland agro-ecosystems

- 2-7 **Effect of date palm compost on the yield, growth and quality of melon (*Cucumis melo* L)**
Mira Merad, Kamel Guimeur, Hanane Bedjaoui, Houda Boutalbi
- 2-10 **Effect of some cropping systems on the microbiological properties of oasis soils of the Sahara desert of Algeria**
Mokhtar Karabi, Baelhadj Hamdi Aissa
- 2-12 **Effects of the enriched agricultural waste application on the soil of a Mediterranean agro-ecosystem**
Rafael Boluda Hernández, Eva Fernández-Gómez, Giuliano Blancato, José Vicente Ros-Lis, Óscar Andreu-Sánchez, Luis Roca-Pérez
- 2-13 **Impact Assessment of Nickel and Nitrogen Application on Nutrient Levels and Enzyme Activity in Soybean Grown in Low Nickel Soil**
Abhik Patra, Satish Kumar Singh
- 2-14 **Impact of compost and biochar on date (*Phoenix dactylifera*) production at different phenological stages.**

Khawla Barkat, Kamel Guimeur, Hanane Bedjaoui

- 2-16 **Impact of soil and water salinity on the quality of Deglet Nour dates cultivated in arid zones (Algeria)**
Hanane Bedjaoui, Mohamed seghir Mehaoua
- 2-18 **Plant Growth-Promoting Rhizobacteria inoculants to alleviate drought stress and analysis of rhizobacteria dynamics in soil farmlands**
Asmae Boumezgane, Samantha McLean, Diana Di Gioia, Mauro De Feudis, Marcello Di Bonito
- 2-19 **Relationship between Phenolic Compounds and Antioxidant Activity of Some Moroccan Date Palm Fruit Varieties (*Phoenix dactylifera* L.): A Two-Year Study**
Abdousadeq Ouamnina, Abderrahim Alahyane, Imane Elateri, Mohamed Abderrazik
- 2-20 **Resilience of cowpea (*vigna unguiculata*) to water and salinity stresses**
Ravaka Andriatsitohaina, Radu Sumalan, Rado Rasolomampianina
- 2-23 **The study of the effectiveness of soil solarization against The stem and bulb nematode *Ditylenchus dipsaci* on broad beans and its comparison with chemical control in arid region**
Inesse Saadi, Belkacem Boumaraf
- 2-26 **Effect of organic amendments based on date palm residues on barley crop (*Hordeum vulgare* L.) in oasian environment: case of Oued Righ region, Algeria**
Tirichine Aissa, Abid Abdelfettah, Hafouda Lamine, Mahtali Sbih, Gommeaux Maxime, Boumaraf Belkacem, Moussa Mohamed, Morvan Xavier, Marin Béatrice, Le Guyader Elie, Kavvadias Victor
- 2-28 **Effect of Date Palm (*Phoenix dactylifera*) By-product Compost on Some Chemical Parameters of Soil in a Semi-Arid Zone (Algeria)**
Messaouda Rebai, Kamel Guimeur, Nadia Boulelouah

Session 3: Economical aspects of soil management and valorization of natural resources

- 3-1 **Ethnobotanical study of *Acacia tortilis*, a soil-improving tree in the Sahara Desert**
Augusto Lança
- 3-2 **Evaluation of the stability and maturity of composts based on date palm waste**
boutalbi houda, Guimeur Kamel, Mahtali Sbih, Mustapha Nader Riki, Merad Mira
- 3-3 **Promotion of agroforestry systems for enhancing soil fertility and crop production in Niakhar, Senegal**
Hassna Founoune - Mboup, Moussa Ndienor, Abdoulaye Fall, Halima Maiguizo-Diagne, Bassirou Diallo, Aïssatou Diouf, Ndeye Maguette Hane, Harun Cicek

Session 4: Soil hydrological processes and water management practices

- 4-1 **Evaluation of the water productivity of cereal crops in arid environments: example in the El Outaya plain**
Mohamed Taki Eddine Hamed, Guillaume Pierre, Hassina Hafida Boukhalfa, Julien Berthe
- 4-2 **Valorization of Vine Pruning Waste for Biohydrogel Formulation to Enhance Vine Drought Resilience**
Abderrazak Aitbihi, Khadija Beraouz, Abdelilah Meddich, Abdelhi Dihazi, Amine Guendouz, Zainab El Alaoui Talibi, Cherkaoui El Modafar

Session 5: Linking soil biological processes and carbon/nutrient cycling to improve soil health

- 5-2 **Canopy cover and bioclimatic patterns influence C:N stoichiometry and particle size distribution of various soils of Ephedra L. species across Tunisia**
Mustapha Gorai, Warda Souid
- 5-3 **Changes in bacterial community structure and carbon metabolism in sandy soil under the long-term application of chitin-rich organic material and attapulgite**
He Zhang, Aurore Degré, Jianfeng Zhang
- 5-6 **Influence of Termites in Soil Amendments on Soil Structure and Nutrient Dynamics in the Western Ghats of Kerala, India: A Biodiversity Hotspot**
Ajay Harit, Naveen Babu, Eswara Vankatesapermul Ramasamy, Mahesh Mohan, Nalinakshan Vishnu
- 5-7 **Microbiota associated with soils of cacao and coffee farms with potential promoter effect of plant growth in the Amazona region**
Jois V. Carrion, Maricela Chavez-Huigo., Yadhira M. Olano, Martha S. Calderon, Danilo E. Bustamante
- 5-8 **Nitrogen addition mediates soil microbial communities to promote organic carbon sequestration under long-term conservation tillage**
Zixuan Han, Aurore Degré, Xueping Wu
- 5-9 **Organic matter transformation processes in citrus waste. Assessment of oxidisable carbon and soil respiration.**
Jose Vicente Peris Torres, Maria Desamparados Soriano Soto, Laura Garcia-España Soriano
- 5-10 **Study of the antagonistic activity of *Trichoderma asperellum* against *F. oxysporum* and *F. solani* of Cucurbitaceae in arid regions of Algeria**
Mohammed Seghir Mehaoua, Soumaia Fadlaoui, Hanane Bedjaoui
- 5-11 **Evaluation of nitrogen mineralization in the soil using different organic amendments from dry palm waste.**
Aya Masmoudi, Guimeur Kamel, Ali Masmoudi, Abdulaziz G. Alghamdi