



Smart and Circular Agriculture towards Sustainability **2022**

**Smart and Circular Agriculture towards Sustainability congress
21 - 22 JULY 2022
HOTEL HF IPANEMA - PORTO, PORTUGAL**

Day 1 – 21 of July

9h00 – Reception

9h30 – Welcome session

Prof. Dr. Ana Cristina Freire, Director of Faculdade de Ciências da Universidade do Porto

Raquel Meira, Regional Development Director at Comissão de Coordenação e Desenvolvimento Regional do Norte - CCDR-N

Prof. Ruth Pereira, Director of GreenUPorto

Session 1 – Research, Innovation & Training in Agriculture 4.0

Conveners: Ruth Pereira (GreenUPorto/Inov4Agro, FCUP, Portugal); George Katranas (Cerca Trova, Ltd., Bulgaria)

10h00 Keynote I | “Tunisian experience: Strengths – Innovation & Sustainable agriculture” by **Mohamed Khaled AYADI**, CEO of AGRIUP Distribution Company

Oral communications

10h40 – GIS-based decision support system for identifying optimal locations to capturing water of better quality in agriculture. **Daniela Terêncio**, Universidade de Trás-os-Montes e Alto Douro, Portugal. **(O1)**

10h55 –Cospectrocam sensor. **Ali Abkar**, AgriWatch B.V., The Netherlands (online). **(O2)**

11h10 – Coffee break and poster session*

Session 2 – Circular Agriculture and Food Systems

Conveners: Ana Barros (CITAB/INOV4AGRO, UTAD, Portugal) and Juan Carlos Sánchez-Hernández (Universidad de Castilla-La Mancha, Spain)

11h30 – Keynote II | “Design, elaboration, and implementation of organo-mineral substrates in agriculture from a right waste management: Transference of knowledge for a circular economy model”, by **Adrián González Guzmán**, INPROYEN Consulting & Universidad de Córdoba, Spain.



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Oral communications

12h10 – The best circular practices in Portugal's wine sector - The REWINE project. **Cátia Santos**, CoLAB VINES&WINES/ADVID, Portugal. **(O3)**

12h25 – Biochar as a soil conditioner in modern agriculture –study on its degradation processes in soil. **Michal Kalina**, Faculty of Chemistry, Brno University of Technology, Czech Republic. **(O4)**

12h40 – **Lunch break** (not provided, for some suggestions see Congress booklet)

Oral communications

14h00 – Quality trait analysis of a Portuguese collection of common bean (*Phaseolus vulgaris* L.) Germplasm. **Rosa Moreira**, Universidade Católica Portuguesa, Portugal. **(O5)**

14h15 – Valorization of hydroponic agriculture residues: cellulose and nanocellulose extraction and soil amendment. **Ana Araújo**, CIQUP & Faculdade de Ciências da Universidade do Porto, Portugal. **(O6)**

14h30 – Insects as a key to a more circular and sustainable planet – ENTOSAFE project. **Diogo Cardoso**, Universidade de Aveiro, Portugal. **(O7)**

14h45 –Seaweed-based edible coating for sustainable fresh-cut fruits preservation. **Ana Augusto**, MARE-Politécnico de Leiria, Portugal. **(O8)**

15h00 –Development of pickering emulsion products from natural raw materials. **Mariana Marques Pereira**, Faculdade de Engenharia da Universidade do Porto, Portugal. **(O9)**

15h15 One-minute posters attention-grabbing

- **P1** - *Bioclimatic distribution of Castanea sativa in Portugal*. **Teresa R. Freitas**, Universidade de Trás-os-Montes e Alto Douro, Portugal.
- **P2** - *Effects of excluding agricultural soils for urban development*. **Ludwika Poręba**, Institute of Soil Science and Plant Cultivation State Research Institute, Poland.
- **P3** - *Comparative analysis of the microbiome and metabolome of wild and crop Salicornia europaea*. **Ângela Cunha**, CESAM - Universidade de Aveiro, Portugal.
- **P4** - *Impact of climate change on the main crops of the Côa region: the CoaClimateRisk project*. **Helder Fraga**, CITAB-Universidade de Trás-os-Montes e Alto Douro, Portugal.
- **P5** - *Soildiveragro regional communities with multifactor approach*. **David Fernández-Calviño**, Faculdade de Ciencias, Universidade de Vigo, Spain.
- **P6** - *Ecotoxicological characterization of sludge originated in the treatment of olive oil wastewater*. **Andreia Pereira**, CESAM, Universidade de Aveiro, Portugal.



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- **P7** - Valorization of agricultural wastes as a sustainable approach to improve soil productivity and health: a case study with tomato. **Diogo Cardoso**, Universidade de Aveiro, Portugal.
- **P8** - The effect of biochar cultivation in soil on the physicochemical characteristics of soil and biochar. **Sarka Sovova**, Faculty of Chemistry, Brno University of Technology, Czech Republic.
- **P9** - Topsoil and subsoil organic carbon and nitrogen stocks under short-term drip fertigation. **Yaser Ostovari**, Technical University of Munich, Germany.
- **P10** - Activated carbons from wasted coffee grounds and olive stones as highly porous materials for adsorption of indoor pollutants. **Natalia Czerwińska**, Università Politecnica delle Marche, Italy.
- **P11** - Nutritional and morphological responses of kabuli and desi chickpeas (*Cicer arietinum*) to different water supplies. **Janaína Silva Medeiros**, Universidade Católica Portuguesa, Portugal.
- **P12** - Local seasonal foods: a revision on how they impact on sustainable consumption. **Alexandre Vargas**, GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.
- **P13** - Consumer perceptions and attitudes of the circular economy and food by-products. **Pedro Manuel Sousa**, GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.
- **P14** - Effect of pendimethalin formulation on interaction with humins fraction. **Romualda Bejger**, Department of Bioengineering, West Pomeranian University of Technology in Szczecin, Poland.
- **P15** - Consumers' perceptions towards horticultural products obtained under soilless production. **José Vieira**, GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.

15h30 – Coffee break and Poster Session*

Session 2 – Circular Agriculture and Food Systems

Oral communications

16h00 – Comparative ecotoxicological study towards a sustainable agriculture: reusing organic substrates from different sources. **Joana Serrão**, GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal. **(O10)**

16h15 – Biochemical effects of insect frass and its biochar in arid agroecosystems from the Canary Islands (Spain). **Angie Marcela Pedraza Torres**, Universidad de Castilla-La Mancha, Spain. **(O11)**

16h30 – Algal wrack as a soil amendment – is it worth restoring an old practice to face future challenges? **Maria Martins**, GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal. **(O12)**

16h45 – Poster pitch online

- **PP1** - Impact of biobased residues on soil health in a temperate agricultural field. **Emmanuel Badewa**, University of Waterloo, Canada.
- **PP2** - Impact of eucalyptus biochar on physical indicator of distinct soil texture. **Neyde Fabíola Balarezo Giarola**, State University of Ponta Grossa, Brazil.



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- **PP3** - *Corn development analysis through digital images processing of remote piloted aircraft.* **Neyde Fabíola Balarezo Giarola**, State University of Ponta Grossa, Brazil.
- **PP4** - *Significance of the symbiotic status of rhizobia strains in bambara groundnut production.* **AJAYI Olaoluwa Oluwafunto**, Faculty of Science, University of Ibadan, Nigeria.
- **PP5** - *GREENFARM: sustainable production of fresh vegetables in vertical farms.* **Margarethe Sophie Karpe**, Wageningen University and Research, The Netherlands.
- **PP6** - *Use of plant extracts to control fungal diseases in grapevine cv. Touriga franca.* **Eliana Monteiro**, Universidade de Trás-os-Montes e Alto Douro, Portugal.

17h15– 18h00 – Round Table (Session 1&2)

20h00 – Conference dinner



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Day 2 – 22 of July

Session 3 – Vertical Farming and protected cultivation: where do we stand?

Conveners: Susana Carvalho (GreenUPorto/INOV4Agro, FCUP, Portugal); Ep Heuvelink (Wageningen University, The Netherlands)

9h00 - Keynote III | “Progress and challenges in vertical farming: Light and other aspects”, by **Theoharis Ouzounis**, *Research Project Manager at Fluence EMEA.*

9h40 - Keynote IV | “Farred brings yield improvements nearby” by **Ep Heuvelink**, *Wageningen University, The Netherlands.*

Oral communications

10h20 - Light quality matters: vinca alkaloids production under di- and polychromatic light spectra with extended UV-A. **Marisa Lourenço**, *GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal. (O13)*

10h35 - Light regulation of quality and growth of basil. **Dorthe H. Larsen**, *Horticulture and Product Physiology, Wageningen University and Research, Wageningen, The Netherlands. (O14)*

10h50 – One-minute posters attention-grabbing

- **P16** - *Effect of hormetic doses of UV-C light on biometric traits of red mustard microgreens.* **Joana Machado**, *GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.*
- **P17** - *Morpho-physiological effects of omeprazole on tomato plants subjected to water, nitrogen and combined stress.* **Ana Patrícia Fernandes**, *GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.*
- **P18** - *Impact of the production system and nutritional regime on the physicochemical quality and sensory profile of strawberry preparations.* **Maling Wang**, *GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.*
- **P19** - *Portuguese consumer's perception of horticultural crops grown in vertical farming systems.* **Mariana Silva**, *GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.*
- **P20** - *Vertical gardens for food production.* **Ruth Pereira**, *GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.*

10h55 – Coffee break and posters session



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Session 4 – Pests and disease control in sustainable agriculture: the challenging 2030 targets

Conveners: Mario de La Fuente (PTV, Plataforma Tecnológica de Vino, Spain); Tatiana Andreani (GreenUPorto/INOV4Agro and FCUP, Portugal)

11h15 - Keynote V | “Copper distribution in the EU soils – Natural and anthropogenic sources”, by **Panos Panagos**, *European Commission, Joint Research Centre (JRC)*. **Online.**

Oral communications

11h55 - Development of biodegradable microcapsules containing essential oils as pesticides with efficient antifungal activity on tomato plants. **Iuliana cota**, *Eurecat Chemical Technologies Unit Tarragona, Spain. (online) (O15)*

12h10 - New spray technologies to reduce the use of copper in vineyard. Accomplishment of EU sustainability requirements. **Elena Sánchez Sánchez**, *Universitat Politècnica de Catalunya, Spain. (O16)*

12h25 – Lunch break (not provided, for some suggestions see Congress booklet)

Session 4 – Pests and disease control in sustainable agriculture: the challenging 2030 targets

Oral communications

14h00 - NOVATERRA project: increasing sustainability in viticulture using novel fertilization and management strategies. **Carlos Rad**, *Universidad de Burgos, Spain. (O17)*

14h15 - Biocontrol of grey mould disease (*Botrytis Cinerea*) in strawberry using an endophytic agent. **Antonia Barberio**, *GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal. (O18)*

14h30 - Is the organic farming more sustainable than the conventional? Merlin-expo as tool to evaluate the environmental exposure of inorganic pesticides. **Nicoleta Suci**, *Università Cattolica del Scaro Cuore, Italy. (O19)*

14h45 - An integrated approach for vineyard soils sustainable management: targeted protective measures for Cu application. **Cristiana Paiva**, *GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal. (O20)*

15h00 – One-minute posters attention-grabbing



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- **P21** - *Could plant by-products be a solution for sustainable crop protection?*. **Ana Sofia Pereira Teixeira**, Universidade de Trás-os-Montes e Alto Douro & Universidade do Minho, Portugal.
- **P22** - *Prediction model of Venturia inaequalis occurrence and field validation*. **José Francisco Antunes**, Universidade de Trás-os-Montes e Alto Douro, Portugal.
- **P23** - *Defense inducers in apple scab control*. **José Francisco Antunes**, Universidade de Trás-os-Montes e Alto Douro, Portugal.
- **P24** - *The vineinspector system and the siapd/mysense iot/ai platform for decision support in the management of pests and diseases in the vineyard*. **Raul Morais**, CITAB-Universidade de Trás-os-Montes e Alto Douro, Portugal.
- **P25** - *Control of phytopathogenic fungi by Magnolia grandiflora seed extract*. **Luara Simões**, Universidade do Minho, Portugal.
- **P26** - *Seaweed extracts potential to mitigate fungal infections during long-term storage of pear*. **Eloísa Toledo Iglesias**, MARE-Politécnico de Leiria, Portugal.
- **P27** - *Seaweed extracts as sustainable solutions to combat orchard phytopathogenic fungi*. **Tânia Vicente**, MARE-Politécnico de Leiria, Portugal.
- **P28** - *Enhancement of copper deposition on plant leaves by its encapsulation*. **Magdalena Olkiewicz**, EURECAT, Spain.
- **P29** - *Bacterial community tolerance in vineyard soils spiked with Bordeaux mixture*. **David Fernández-Calviño**, Faculdade de Ciências, Universidade de Vigo, Spain.
- **P30** - *Exchangeable Cu in vineyard soils spiked with Bordeaux mixture*. **Raquel Vázquez Blanco**, Faculdade de Ciências, Universidade de Vigo, Spain.
- **P31** - *Protocol optimization for an artificial botrytis cinerea inoculation in detached strawberry leaves and fruits*. **Chiara Murena**, GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.
- **P32** - *Effect of different pre-inoculation procedures on leaf spotting appearance in adult kiwifruit plants artificially inoculated with Pseudomonas syringae pv. Actinidiae*. **Miguel Gomes Santos**, GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.
- **P33** - *Copper application and soil properties: how are soil organisms affected*. **Beatriz Fernandes**, GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.
- **P34** - *Pesticide sorption to mineral associated organic matter*. **Aleksandra Ukalska-Jaruga**, Institute of Soil Science and Plant Cultivation – State Research Institute, Poland.
- **P35** - *Sustainable agriculture: safety assessments of nanopesticides on non-target species*. **Catarina Ganilho**, GreenUPorto & Faculdade de Ciências da Universidade do Porto, Portugal.

15h20 – Coffee break and Poster Session

15h50-16h35 – Round Table (Session 3 & 4)

16h50 – Closing Session

Prof. Susana Carvalho, Vice-Director of GreenUPorto

Prof. Pedro Couto, Vice-Director of Inov4Agro



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This congress is supported by



National funds via FCT (Foundation for Science and Technology) through the Strategic Projects UIDB/05748/2020 and UIDP/05748/2020.

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