The “CERESiS: ContaminatEd land Remediation through Energy crops for Soil improvement to liquid biofuel Strategies” Annual Project Meeting was held on May 17–18, 2023 at the University of Strathclyde in Glasgow, Scotland, UK.

Prof. Andrea Colantoni, Dr. Leonardo Bianchini and PhD student Riccardo Alemanno presented the preliminary study results conducted at the University of Tuscia Department of Agriculture and Forest Sciences (DAFNE) under the international CERESiS project.

The results of the Italian scholars are based on analyses and insights on the optimisation of cultivation and harvesting methods of sustainable biofuel energy crops. The results were obtained and processed on the basis of the field trial carried out at the Nello Lupori’ Teaching and Experimental Farm of the University of Tuscia in Viterbo and some selected agricultural lands in the province of Viterbo.

The ultimate objective of this trial is to study in order to optimally manage the cultivation of the native perennial grass crop which is Reed Canary Grass (Phalaris arundinacea). This plant is able to stabilise soil, tolerate contaminants and is also used in the biofuel industry.

The University of Tuscia researchers are studying the possibilities of soil remediation and the production of different types of biomasses through the growing of Reed Canary Grass (Phalaris arundinacea) on the University Teaching and Experimental Farm. Among others, the scholars analyse:

- Quantification of the yields of the crop in the different samplings and under the different treatments;
- Phytoremediation ability of the plant;
- Quantification of the vehicle consumption in terms of fuel, during the harvesting phases;
- Analysis of the various agronomic operations times with the C.I.O.S.T.A. method;
- Laboratory analysis for the characterization of the physical and chemical properties of the biomass produced.

During the Annual Meeting the project partners shared their point of view for further implementation of the following activity:
- Manage and adopt cultivation strategies optimized for contaminated land;
- Direct-drilling of Phalaris arundinacea into grassland to tackle the indirect land use change (ILUC) risk while producing biofuels;
- Identification and agronomic management carried out of small-scale, low ground pressure machinery.

The participants of the Glasgow meeting visited CERESiS phytoremediation trial site of the University of Strathclyde. The plot is located in the south of Scotland in Wanlockhead village area. The land in the examined territory is polluted by mining. The UK scholars from the University of Strathclyde within the CERESiS project are studying the possibilities of soil remediation from lead and other harmful substances through the cultivation of Reed Canary Grass (Phalaris arundinacea) in contaminated areas. In the Wanlockhead village, which is Scotland’s highest village, lead was actively mined until 1950. This area was called “God’s treasure house” because of the deposits and mining of other minerals there, such as: zinc, copper, silver, and some of the world’s purest gold, which was used to make the Scottish Crown.

The CERESiS project intermediate research results were presented by University of Tuscia scholars at the General Assembly 2023 of the European Geosciences Union (EGU) in Vienna (Austria), held at the end of April. The main conclusions of the trials presented in conference papers on the EGU website: “Assessing penetration resistance in Phalaris arundinacea harvest operations under minimum tillage conditions” (https://doi.org/10.5194/egusphere-egu23-5907) and “Growing perennial grasses on contaminated soils for phytoremediation and renewable energy: a nature-based solution to maximise energy and eco-system service provision?” (https://doi.org/10.5194/egusphere-egu23-3221).
The previous meeting of the CERESIS consortium was hosted by the University of Tusia in November 2022 in Viterbo.

CERESiS means “ContaminatEd land Remediation through Energy crops for Soil improvement to liquid biofuel Strategies”. This international project is aimed to investigate whether the production of sustainable biofuel energy crops can be combined with the remediation of contaminated land. CERESiS is oriented to develop of a decision support system for stakeholders and policy makers wishing to produce biofuels while decontaminating land.

CERESiS consortium funded in the frame of Horizon 2020 European Union scientific research initiative.

Project partners are representing 12 institutions from 8 countries: Brazil, Canada, Germany, Greece, Italy, Luxembourg, UK, and Ukraine. Among them there are universities, research bodies, companies and industry professionals, as well as NGOs.

CERESiS duration: November 2020 – April 2024.

For more information about the CERESiS project go to its official website: https://ceresis.eu