Co-funded by the European Union

INNO-SAFE-LIFE

REPORT

STUDENTS TRAINING

Organized by

P2 of the ERASMUS KA220-HED - Cooperation partnerships in higher education, project no. 2023-1-RO01-KA220-HED-000164767, Partnership for innovation on the exchange of best practices and the design of joint collaborative initiatives at European level related to the awareness of the effects contamination on human health

The specific objectives of Work Package n°2 – Teaching, Training and Learning are to ensure continuous professional development for specialists by addressing international and interdisciplinary themes related to soil, food, and health contamination. The program also aims to educate and guide students in designing and applying innovative techniques and protocols at institutional, national, and international levels. By integrating expertise from agriculture, horticulture, health, and industry, it promotes knowledge transfer, sustainable practices, and responses to pressing global challenges such as climate change and antimicrobial resistance. Furthermore, it seeks to enhance professional growth, civic responsibility, and entrepreneurial skills through a combination of theoretical and practical activities that encourage active involvement and innovation.

The expected results of Work Package n°2 – Teaching, Training and Learning include the development of a highly qualified group of experts with strong interdisciplinary and complementary skills, as well as a significant number of students prepared to create innovative solutions in agriculture, horticulture, health, and industry. The activities will produce training reports and digital support materials to facilitate knowledge transfer and the exchange of best practices. Direct beneficiaries—such as academic staff, researchers, industry professionals, and students—will acquire both theoretical insights and practical competencies, while indirect beneficiaries, including the broader population, will gain from improved access to skilled professionals and comprehensive educational resources. Overall, these outcomes will reinforce international cooperation, foster professional advancement, and strengthen the connections between higher education, research, industry, and society.

Students training period: 17-21 June 2024

From 17–21 June 2024, Sveučilište Josipa Jurja Strossmayera u Osijeku, Faculty of Agrobiotechnical Sciences (UNIOS/FAZOS), hosted a five-day training under the INNO-SAFE-LIFE project. The activity was designed to transfer specialized knowledge and provide hands-on training to students on soil contamination, remediation methods, food safety, and their impact on human health.

The program was divided into three days of theoretical lectures and two days of practical laboratory sessions, ensuring a comprehensive learning experience.

1. Theoretical Part (17–19 June 2024)

Day 1 – 17.06.2024

Welcome and institutional presentation (Prof. Karolina Vrandečić, UNIOS/FAZOS).

Lecture: Mycobiota of the soil (Prof. Jasenka Ćosić).

Lecture: Theoretical aspects of soil-borne pathogens (Prof. Karolina Vrandečić).

Group discussions and conclusions.

Day 2 – 18.06.2024

Phytoremediation of heavy metals in soils (Prof. Brigita Popović).

Different methods of heavy metal remediation in soil (Prof. Brigita Popović, Ante Bubalo).

Phytorizofiltration as a specific remediation method (Ante Bubalo).

Phytotoxicity testing with biotests – theoretical overview (Prof. Brigita Popović).

Heavy metals from soil to plants and their impact on human health (Ante Bubalo).

Day 3 – 19.06.2024

Pesticides in the environment (Prof. Renata Baličević, Dr. Marija Ravlić).

Impact of pesticides on human health, risk assessment, and MRL values (Prof. Renata Baličević, Dr. Marija Ravlić).

MRLs for crops and pesticides – database and practical examples (Prof. Renata Baličević, Dr. Marija Ravlić).

Methods of pesticide remediation in soil (Prof. Renata Baličević, Dr. Marija Ravlić).

Phytoremediation of pesticides in soil – case studies.

Theoretical Outcomes

Comprehensive understanding of soil mycobiota and soil-borne pathogens.

Knowledge of heavy metal contamination, phytotoxicity, and remediation methods.

Insights into pesticide contamination, its human health impacts, and remediation strategies.

Increased capacity to assess contamination pathways and design innovative solutions.

2. Practical Part (20–21 June 2024)

Day 4 – 20.06.2024

Laboratory training: Determination of pesticide residues using the QuEChERS method (Prof. Renata Baličević).

Applied session: Phytoremediation methods for heavy metals in soils (Prof. Brigita Popović).

Group discussions and reflections.

Day 5 – 21.06.2024

Practical activity: Determination of soil-borne pathogens (Prof. Karolina Vrandečić, Prof. Jasenka Ćosić).

Final evaluation of acquired knowledge through tests and discussions.

Closing session with conclusions and feedback.

Practical Outcomes

Hands-on skills in pesticide residue detection with advanced analytical methods.

Direct experience in phytoremediation techniques for soil detoxification.

Practical knowledge in identifying soil-borne pathogens.

Reinforcement of interdisciplinary skills through applied laboratory work.

Contribution to WP Objectives

This training directly supported the objectives of Work Package n°2 – Teaching, Training and Learning by:

Providing continuous interdisciplinary education in soil science, food safety, and environmental toxicology.

Equipping students with practical methodologies to assess and mitigate contamination.

Promoting sustainability and innovation through green remediation methods.

Strengthening links between education, research, and practice, preparing students for future professional and scientific challenges.

The June 2024 training in Osijek successfully integrated theoretical lectures and practical laboratory sessions. Students gained comprehensive knowledge of soil contamination, heavy metal and pesticide remediation, phytoremediation techniques, and pathogen detection. The training enhanced their analytical and problem-solving skills while aligning with the INNO-SAFE-LIFE project's objectives of interdisciplinary cooperation, sustainable innovation, and capacity-building for future specialists.


ΙFAZOS