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INNO-SAFE-LIFE

REPORT

STUDENTS TRAINING

Organized by

P1 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: 30 September – 04 October 2024

Between 30 September and 4 October 2024, the University of Calabria (UNICAL) hosted a five-day training session under the INNO-SAFE-LIFE project. The activity combined three days of theoretical lectures with two days of practical laboratory sessions, focusing on essential oils, phytotherapy, herbal medicines, biodiversity, green chemistry, and quality control methods.

The program aimed to strengthen participants' interdisciplinary expertise in natural products, food safety, and health promotion, while also providing practical skills in extraction and quality analysis of bioactive compounds.

1. Theoretical Part (30 September – 2 October 2024)



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Day 1 – 30.09.2024

- Welcome and institutional presentation (Prof. Filomena Conforti).
- Lecture on essential oils and aromatherapy (Prof. Giancarlo Statti).
- Session on extraction methods of essential oils (Prof. Giancarlo Statti).
- Concluding discussions.

Day 2 – 01.10.2024

- Lecture on bergamot and its essential oil (Prof. Giancarlo Statti).
- Session on modern phytotherapy (Prof. Filomena Conforti).
- Presentation on the power of the phytocomplex and quality of herbal medicines (Prof. Filomena Conforti).
- Session on health claims related to herbal products.
- Group discussions and reflections.

Day 3 – 02.10.2024

- Lecture on biodiversity (Prof. Mariangela Marrelli).
- Presentation on transforming conventional foods into health-promoting products (Prof. Mariangela Marrelli).
- Lecture on disease prevention through bioactive compounds.
- Sessions on green chemistry and green toxicology.
- Final discussions and conclusions.

Theoretical Outcomes

- Enhanced knowledge of essential oils, phytocomplexes, phytotherapy, and their applications in health promotion.
- Understanding of herbal medicine quality, regulatory health claims, and disease prevention strategies.
- Awareness of biodiversity, green chemistry, and green toxicology as tools for sustainable innovation.

2. Practical Part (3–4 October 2024)

Day 4 – 03.10.2024

- Laboratory training: extraction techniques (part 1 and part 2) (Dr. Mary Fucile).
- Applied session on methods of quality control (part 1) (Prof. Giancarlo Statti).
- Discussions and reflections.

Day 5 – 04.10.2024

- Continued training on methods of quality control (part 2) (Prof. Giancarlo Statti).
- Final evaluation of acquired knowledge through tests, feedback, and conclusions.

Practical Outcomes

- Hands-on experience with extraction methods for natural bioactive compounds.
- Skills in quality control techniques to assess purity, safety, and efficacy of herbal products.
- Strengthened analytical and laboratory competencies aligned with industry and research standards.

3. Contribution to WP Objectives

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



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- Providing continuous interdisciplinary education in natural product research, herbal medicine, and health sciences.
- Equipping students with practical laboratory skills for extraction and quality control.
- Promoting sustainability through green chemistry and biodiversity awareness.
- Strengthening the connection between higher education, research, and industry, particularly in phytotherapy and nutraceuticals.

4. Conclusions

The training at the University of Calabria successfully combined theoretical and practical approaches, offering participants a comprehensive understanding of essential oils, herbal medicines, and phytotherapy alongside practical competencies in extraction and quality analysis.

The program enhanced professional development, encouraged innovation in natural product research, and aligned with the INNO-SAFE-LIFE project's broader goals of interdisciplinary collaboration, sustainability, and knowledge transfer across academia, industry, and society.

