SEPTEMBER, 2025 ISSUE 3

NEWSLETTER

🌿 Seabuckthorn: The Superfruit at the Heart of RIA4FOOD

ONE SHRUB, ENDLESS POSSIBILITIES. FROM SUPPLEMENTS TO FUNCTIONAL FOOD PRODUCTS, INNOVATION AND RURAL SUSTAINABILITY.

Seabuckthorn (*Hippophae rhamnoides*) takes center stage in the RIA4FOOD project as a sustainable, nutrient-rich crop with huge potential for functional foods and nutraceutical innovation. With its ability to thrive in marginal soils and provide multiple health benefits, seabuckthorn is a perfect example of how nature and science can work together

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Marie Skłodowska-Curie Actions

CULTIVATION, BENEFITS & CHALLENGES

- Seabuckthorn is mainly cultivated in Eastern Europe and Central Asia.
- Cultivation is increasing due to its adaptability to arid, poor soils and its role in soil regeneration.
- In Europe, the interest in seabuckthorn has grown due to EU support for alternative crops and its multifunctional benefits.
- High in Vitamin C (up to 15x more than oranges!)
- Rich in omega fatty acids (3, 6, 7, 9) – rare in plant-based sources
- Contains antioxidants, flavonoids, and immune-boosting compounds
- Used in functional foods, cosmetics, and pharmaceuticals

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CULTIVATION, BENEFITS & CHALLENGES

SEA BUCKTHORN ON THE RISE ACROSS EUROPE

In recent years, sea buckthorn has emerged as a star crop in several European countries, gaining popularity for its nutritional value and commercial potential. Once primarily associated with northern and eastern regions, its cultivation is now spreading rapidly across the continent. Southern Europe, particularly Greece, has seen a remarkable expansion in planting activity, with interest growing among cooperatives and individual producers alike. Eastern European countries such as Romania and Moldova are also investing heavily in new plantations, tapping into both domestic demand and export potential. Meanwhile, the Baltic States continue to maintain a strong presence in sea buckthorn production, with consistent cultivation efforts across Estonia, Latvia, and Lithuania. In Northern Europe, Finland's growers are embracing the crop, combining traditional knowledge with modern farming practices. Germany, especially the Brandenburg region, remains a key hub for sea buckthorn, though growers are adapting to environmental changes and exploring more resilient farming approaches. As awareness of the crop's health benefits increases, and more producers recognize its economic value, sea buckthorn is poised to become a staple in Europe's sustainable agriculture landscape.

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PARTNER EVENT HIGHLIGHTS

🟠 **3RD FEEDACTIV WORKSHOP**
📅 **DATE: MAY 26, 2025**
📌 **LOCATION: VILLA PACE, MESSINA, ITALY**
🎤 **REPRESENTED BY: USAMV CLUJ-NAPOCA**

RIA4FOOD was prominently featured at the 3rd FEEDACTIV Workshop, an event that brought together researchers, practitioners, and students to discuss innovation in sustainable food systems. Representing the project, Prof. Dr. Dan Cristian Vodnar and Lecturer Dr. Lavinia Mureșan delivered a comprehensive presentation on the objectives, progress, and expected impacts of RIA4FOOD, with a special focus on the role of seabuckthorn as a climate-resilient crop.

KEY HIGHLIGHTS

- Raised awareness of RIA4FOOD's mission within the academic and agri-food innovation community.
- Fostered dialogue on innovative valorization of underutilized crops.
- Generated interest in sustainable, functional food development among young researchers.

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PARTNER EVENT HIGHLIGHTS

92ND INTERNATIONAL AGRICULTURAL FAIR

📅 DATE: 17TH - 22ND MAY 2025

📌 LOCATION: NOVI SAD, SERBIA

🎤 REPRESENTED BY: FOODSCALE HUB

RIA4FOOD made a strong presence at the renowned 92nd International Agricultural Fair in Novi Sad, one of the largest and most prestigious agricultural events in Southeast Europe. Our partner, Foodscale Hub, showcased the project's mission to foster innovation and sustainability within regional food systems.

KEY HIGHLIGHTS

- Direct engagement with agri-food stakeholders, including producers, industry leaders, and researchers.
- Promotion of seabuckthorn's potential and RIA4FOOD's innovative research activities.
- Productive conversations around food sustainability, circular economy, and cross-border collaboration.

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Marie Skłodowska-Curie Actions

PARTNER EVENT HIGHLIGHTS

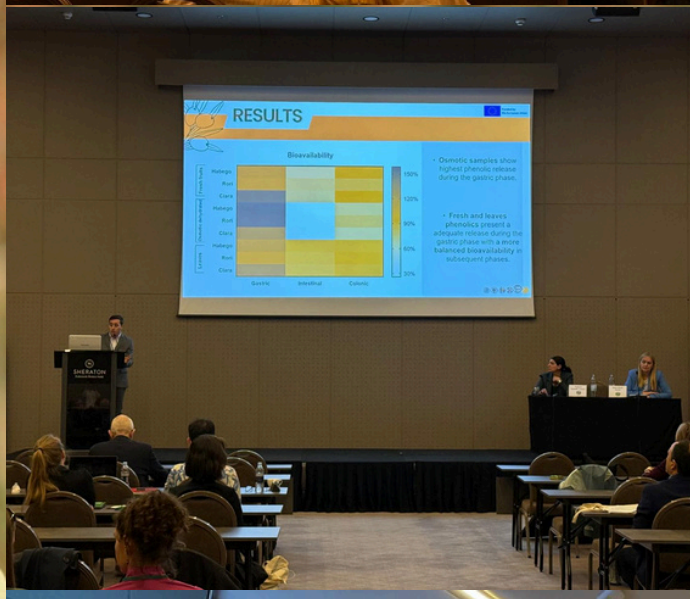
🟠1ST INTERNATIONAL CONGRESS ON SUSTAINABLE FOOD, GREEN CHEMISTRY AND HUMAN NUTRITION

📅 DATE: APRIL 7–9, 2025

📌 LOCATION: DUBROVNIK, CROATIA

🎤 REPRESENTED BY: USAMV CLUJ-NAPOCA

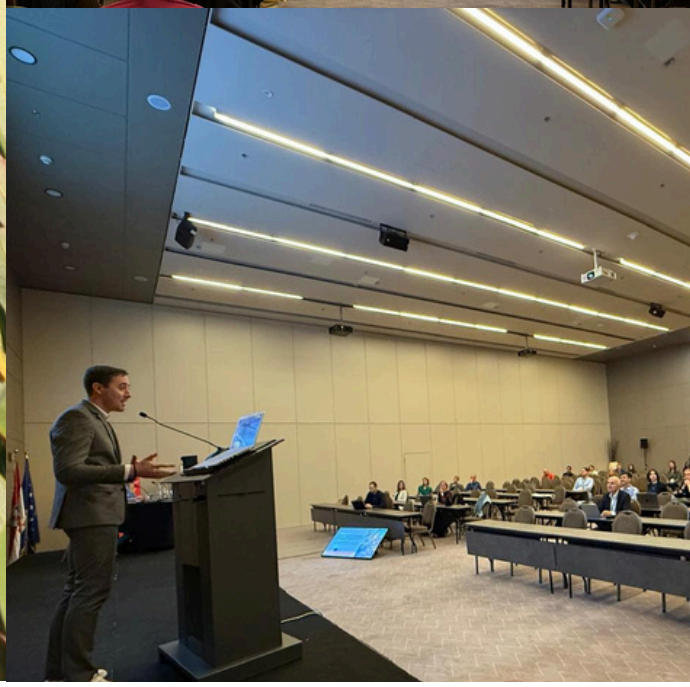
The RIA4FOOD project was proudly represented at GreenNutriFood 2025, a flagship event dedicated to advancing science for healthier diets and more sustainable food systems. Prof. Vodnar's team presented key scientific findings from Work Package 2, contributing to discussions on the future of sustainable nutrition and bioactive compound research.



SCIENTIFIC FOCUS

On the final day, the team delivered a presentation on the *in vitro* and extended colonic digestion of seabuckthorn, highlighting:

- Bioaccessibility and bioavailability of seabuckthorn's bioactive compounds
- The plant's potential in functional food development
- Health-promoting properties unlocked through digestive behavior analysis



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Marie Skłodowska-Curie Actions

MEASURING WHAT MATTERS
LIFE CYCLE ASSESSMENT (LCA)

💬 **Measuring environmental performance is the first step toward sustainable innovation in food systems.**

In today's rapidly changing world, sustainable food production has become more important than ever. As consumers, businesses, and policymakers look for ways to reduce environmental impact, Life Cycle Assessment (LCA) has emerged as a key scientific tool for measuring sustainability in the food sector. LCA is a standardized method used to evaluate the environmental impacts of a product, process, or service throughout its entire life cycle. By applying LCA, **RIA4FOOD** ensures that environmental sustainability is considered alongside health and nutrition benefits, contributing to more responsible and informed food innovation in Europe.

🌍 Why LCA Matters in Food Innovation?

In a world where sustainability is essential, LCA provides a scientific method to evaluate the environmental footprint of food products, from farm to fork. By measuring factors such as carbon emissions, energy use, and resource consumption, LCA enables more responsible innovation and supports decisions that promote both human health and planetary wellbeing.

🧩 RIA4FOOD Internal Workshop on LCA

📅 Date: May 29, 2025
📍 Location: online
🟣 Organized by: Foodscale Hub (FSH)

RIA4FOOD's partners gathered together for a focused internal workshop hosted by Foodscale Hub. The workshop deepened the understanding of LCA methodologies among project partners, encouraged knowledge exchange, and laid the groundwork for the sustainable valorization of seabuckthorn and related food products.

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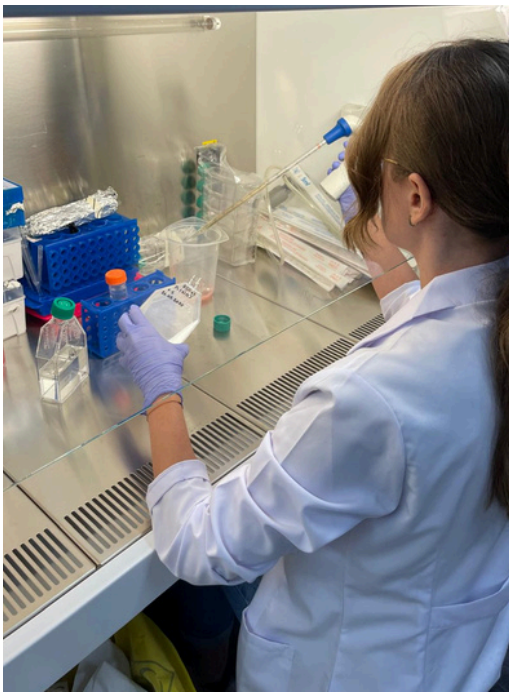
Marie Skłodowska-Curie Actions

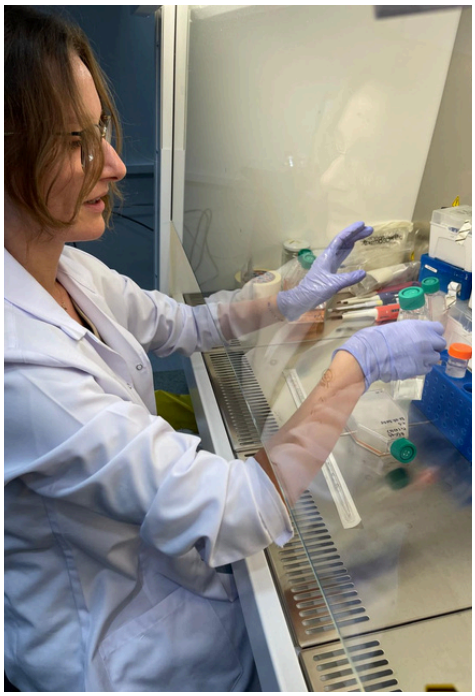
STORIES FROM OUR SECONDEES

INSPIRE SCIENCE
EMPOWERING TOMORROW'S INNOVATORS

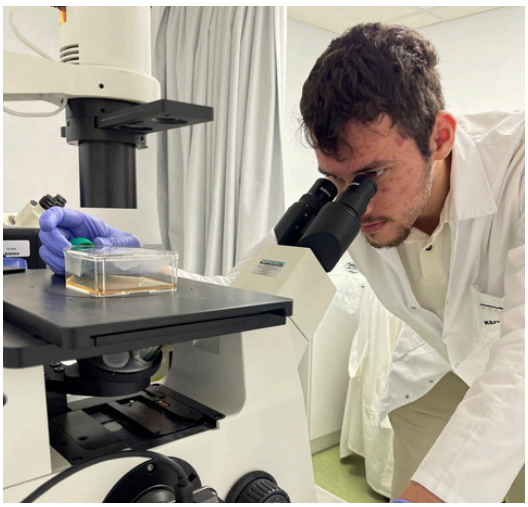
THE CYPRUS INSTITUTE OF NEUROLOGY & GENETICS

"Through the RIA4FOOD Horizon European project, I had the valuable opportunity to undertake a five-month secondment at the Department of Cancer Genetics, Therapeutics & Ultrastructural Pathology within the Cyprus Institute of Neurology and Genetics in Nicosia, Cyprus. This experience proved to be extremely fruitful, both professionally and personally, offering me exposure to a vibrant scientific, cultural, and social environment. "





"During my 5-month secondment at the Cyprus Institute of Neurology and Genetics (CING) in Nicosia, Cyprus, as part of the RIA4FOOD Horizon European project, I had the opportunity to engage in advanced scientific training and collaborative research. This experience allowed me to deepen my expertise in molecular biology, work closely with leading experts in the field, and gain hands-on experience with cutting-edge technologies."



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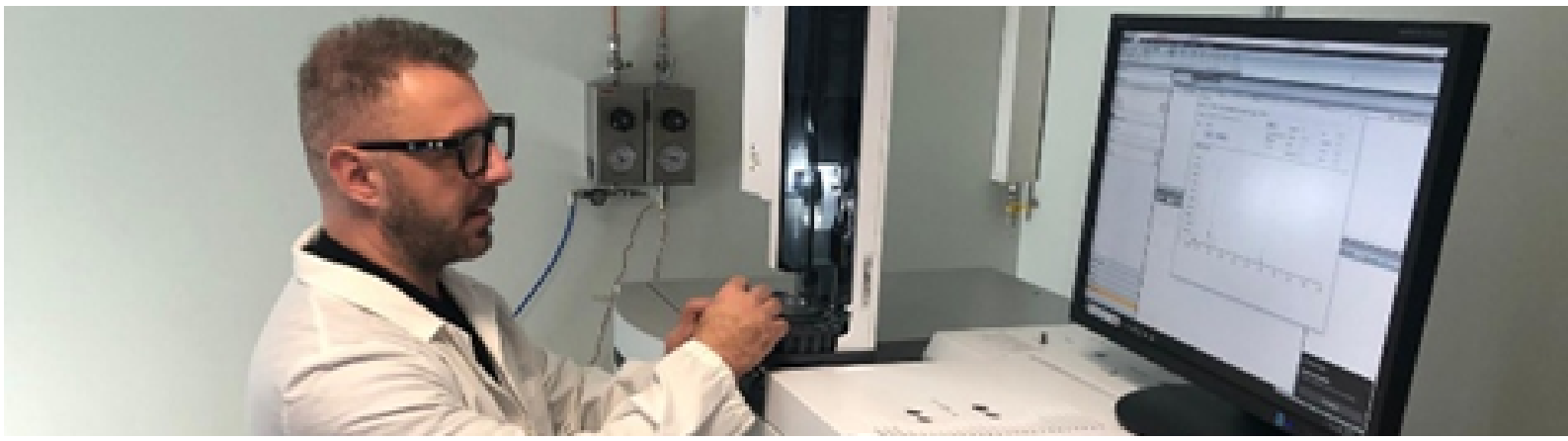
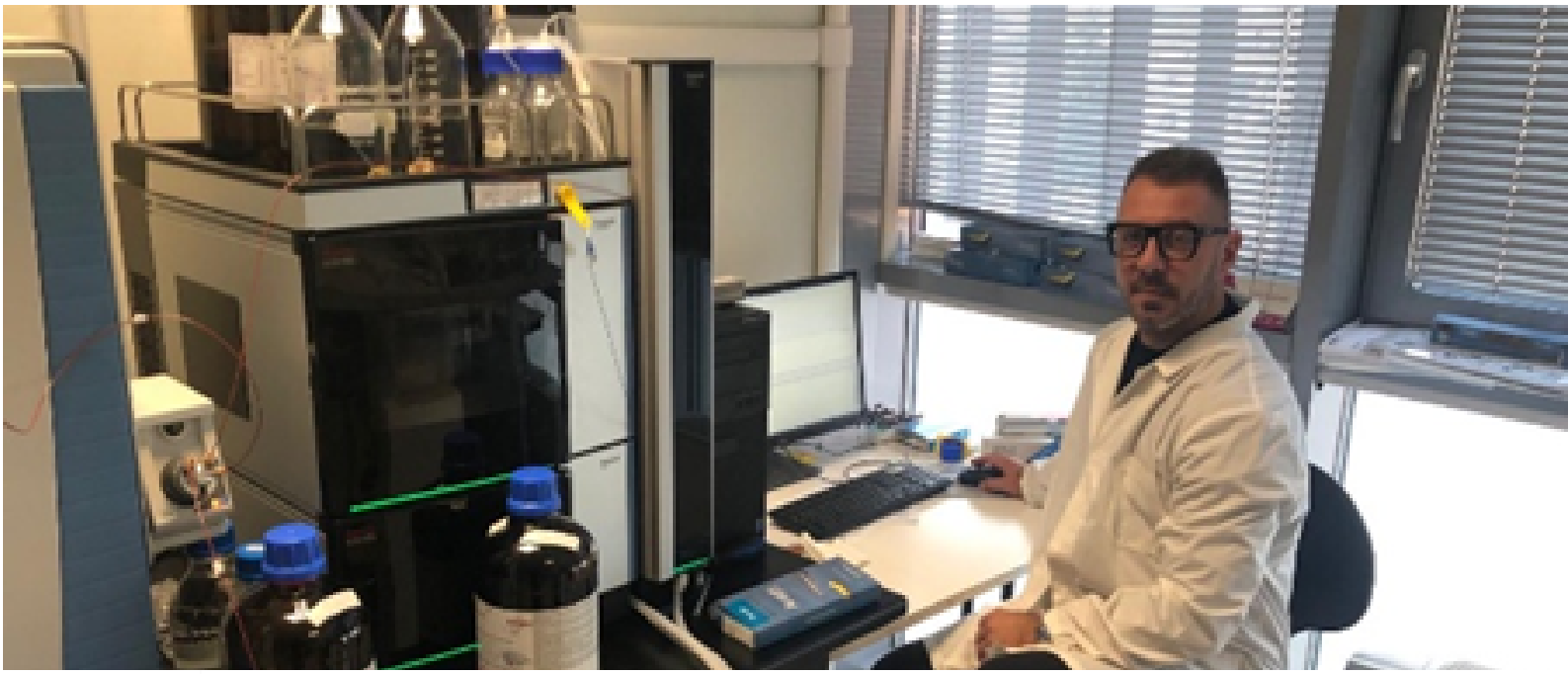
STORIES FROM OUR SECONDEES

REZOS BRANDS Delivering Value | EUROPEAN R&D DEPARTMENT Τμήμα Ευρωπαϊκής Έρευνας & Ανάπτυξης → UPO UNIVERSITÀ DEL PIEMONTE ORIENTALE



"During my secondment, I focused primarily on deepening my understanding of the relevant literature by reading and analyzing key studies and articles related to the research topic. I also received training in designing and carrying out various experimental setups, learning how to systematically organize and execute experiments. Additionally, I gained specialized knowledge and skills in protocols and methodologies related to the metabolic profiling of fresh and osmotic SB samples, which significantly contributed to the progress of the project and enriched my research background."



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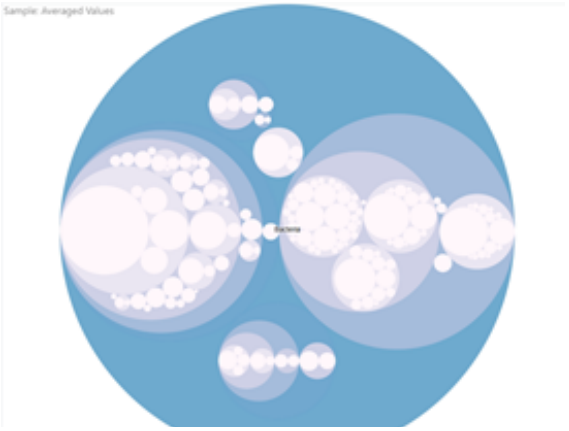
Marie Skłodowska-Curie Actions

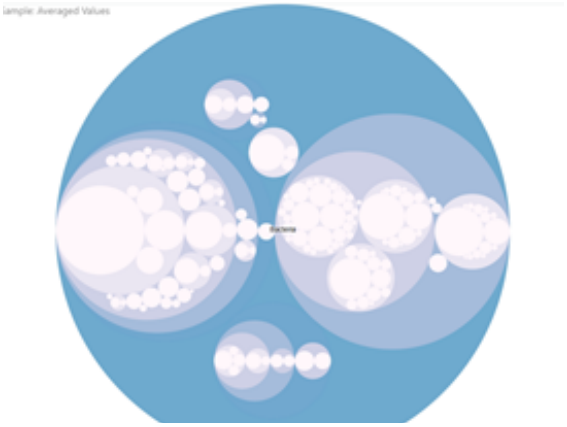
STORIES FROM OUR SECONDEES

"ALEXANDER FLEMING"
Biomedical Sciences Research Center

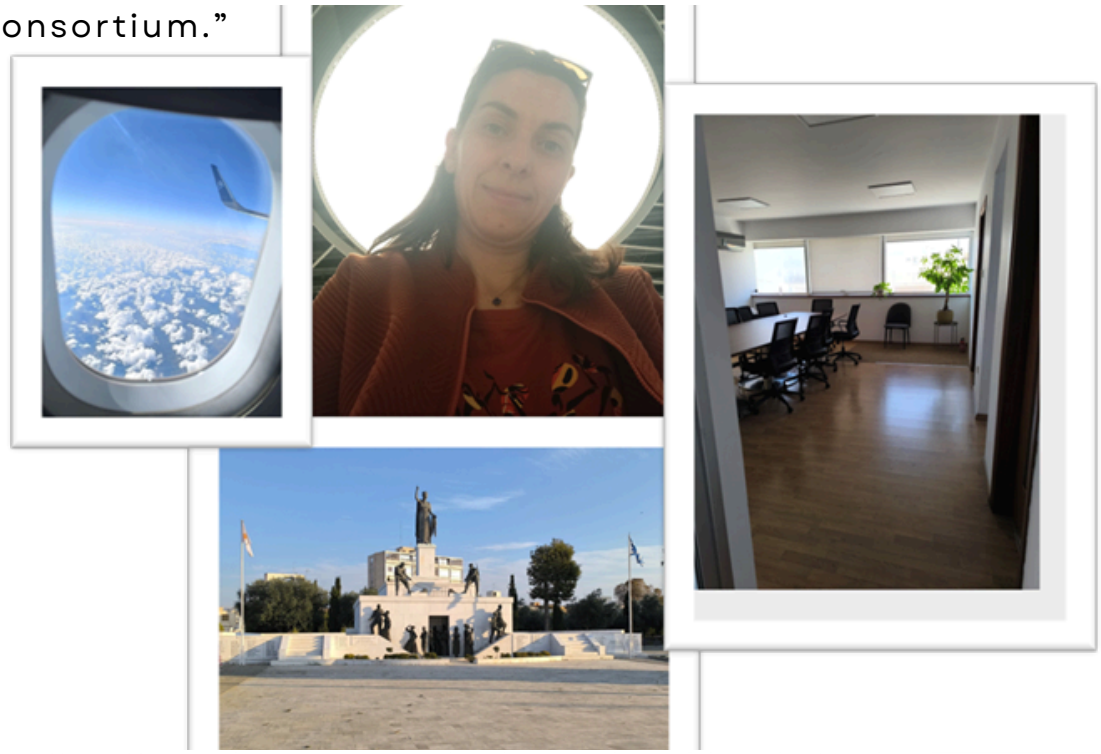
NovaMechanics
Cheminformatics & Nanoinformatics Excellence



Microbiome results



"During my secondment in Cyprus, I collaborated with an excellent team at Novamechanics. I became familiar with a new platform for big multi-omics data analysis. I learned to use new software for statistical analysis and new tools to visualize proteomic and metabolomic changes. More specifically, I worked with an exciting proteomic database of host and gut microbiome, focusing on studying alterations induced by fresh and osmotic sea buckthorn supplementation. This work is the result of the collaboration between multiple sites of the RIA4Food consortium."



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STORIES FROM OUR SECONDEES

”Over the past two months, I had the privilege of joining NovaMechanics Ltd. in Cyprus as part of the RIA4FOOD (MSCA Horizon-MSCA-2022) project. This secondment marked a particularly enriching chapter in my research journey– one that not only enhanced my technical skillset but also deepened my appreciation for collaborative, solution-oriented science. From the outset, I was welcomed into a young and highly skilled team whose agility, openness, and depth of expertise created an inspiring and dynamic work environment. Under solution-focused leadership, challenges were consistently approached as opportunities for innovation, fostering a research culture defined by resilience and creativity. NovaMechanics’ transdisciplinary approach, which seamlessly integrates chemistry, biology, data science, and machine learning, allowed for a holistic view of scientific challenges. I leave this secondment with not only new skills and knowledge but also a renewed vision for what effective scientific collaboration can achieve. I am deeply grateful to the NovaMechanics team and the RIA4FOOD consortium for making this opportunity possible.”

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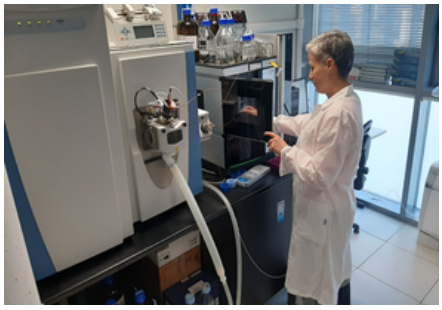
REZOS BRANDS Delivering Value

EUROPEAN R&D DEPARTMENT

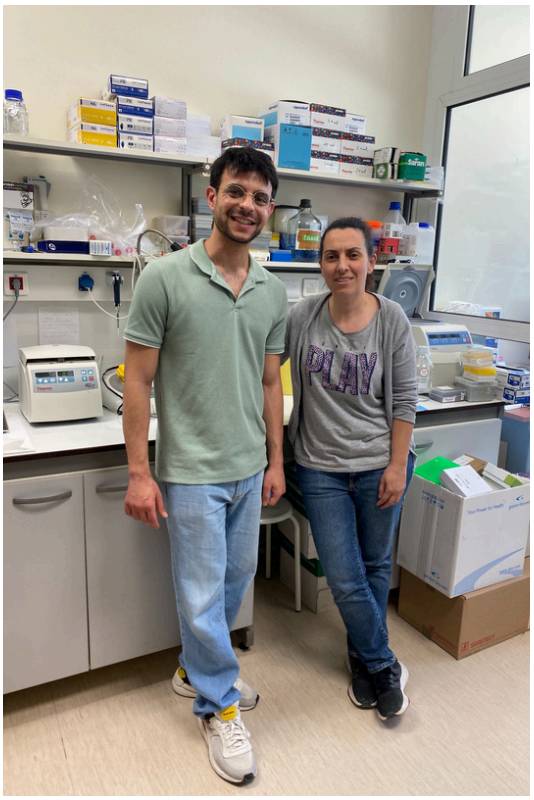
UPO UNIVERSITÀ DEL PIEMONTE ORIENTALE



“My secondment offered a valuable opportunity to expand my research skills. I began by analyzing key scientific literature to build a strong foundation in the topic. I then took part in the design and execution of experiments, gaining practical experience in various protocols used for the metabolic profiling of fresh and osmotic SB. I also practiced statistical analysis of the results, which helped me better understand and evaluate the findings. Overall, the secondment was an important step in my scientific development.”

NovaMechanics
Cheminformatics & Nanoinformatics Excellence

"ALEXANDER FLEMING"
Biomedical Sciences Research Center



“For the secondment for the RIA4FOOD project, I was scheduled to move from Novamechanics Ltd to BSRC Alexander Fleming institute in Athens, Greece. At the beginning of my hosting at BSRC Alexander Fleming, we mostly exchanged information regarding our technical expertise (in Novamechanics Ltd) and the technical expertise of the members of the institute, to figure out how we can combine our skills and collaborate to carry out our project responsibilities. Coming from a computer science background with zero previous interaction with anything related to lab work, I was genuinely impressed by the process of sample preparation and experimental execution. I was given the chance to firsthand observe the protocol in action and seeing how the results are collected and then how they can be interpreted by scientists with deep domain expertise.

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RIA4FOOD – BUILDING SUSTAINABLE FOOD SYSTEMS TOGETHER

Through **RIA4FOOD**, we are dedicated to unlocking the potential of seabuckthorn to foster healthier, more sustainable, and regionally rooted food systems across Europe. Through research excellence, cross-sector collaboration, and knowledge exchange, we aim to:

- ✓ Promote sustainable cultivation and valorisation of seabuckthorn
- ✓ Develop functional foods with proven health benefits
- ✓ Support eco-friendly innovation through Life Cycle Assessment (LCA)
- ✓ Foster skills development through international secondments

🌱 Stay connected with us!

👉 Visit our website for the latest updates, publications, and events:
🔗 www.ria4food.eu

👉 Questions or collaborations? Contact us:
📩 projects@rezosbrands.com

🤝 Thank you to our partners

RIA4FOOD brings together an international consortium of universities, research centres, and businesses to innovation in food systems.

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