



NEWSLETTER No. 3



Message from our coordinator



Ass.Prof Maria - Jesus Sanchez Martin

Hello all,

Thank you for reading the 3rd edition of the Se4ALL newsletter. this issue includes updates and news about the project and related areas in science, biotechnology, and agricultural engineering.

Ass.Prof Maria - Jesus Sanchez Martin

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ROXANA and LETICIA SECONDMENTS at UAB



Roxana Paez



Leticia E. Toselli



Roxana Paez and Leticia E. Toselli from **INTA**, Argentina, recently embarked on a secondment under the H2020 Se4All project to the Universitat Autònoma de Barcelona (**UAB**) and the research laboratory of GTS Reserach Group. During their visit, they explored innovative research avenues focused on Se-enriched edible plants to tackle crucial nutritional challenges

As part of the **Se4All** project, the team aims to produce Se-enriched dairy products and cheese as functional foods. To achieve this, they are leveraging Se-biofortified alfalfa hay for feeding milking cows, thus increasing the quality and quantity of milk produced. Roxana and Leticia's research focused on exploring new ways to enrich edible plants with Se, furthering the Se4All project's goals

This secondment highlights the importance of collaboration and the exchange of knowledge in addressing global nutritional challenges. The Se4All project's focus on Se-biofortified products is particularly relevant as Se deficiency is widespread, especially in developing countries. Thus, Se4All's efforts to provide functional foods fortified with Se will have significant implications for global health

Roxana and Leticia's secondment to UAB's research facilities underscores the Se4All project's commitment to innovation and education. Their research provides an essential foundation for the production of functional foods enriched with Se, greatly contributing to alleviating nutritional deficiencies.

The Se4All Project has been awarded the Exploitation Booster 2023 for its innovative approach



Se4All Project has been awarded the Exploitation Booster 2023 for its innovative approach to promoting sustainability and entrepreneurship in the dairy industry. Se4all is focused on producing Se-biofortified alfalfa to create Se-enriched dairy products

Se4All became a part of **ENRICH in LAC**, a network of research and innovation centres and hubs that promotes cooperation between Latin America and Europe. The Exploitation Booster 2023 award is a recognition of the Se4all Project's commitment to innovation, sustainability and entrepreneurship

With the support of ENRICH in LAC, the Se4All Project will become excellence-positioned to continue making strides towards a more sustainable and innovative dairy industry

SeAll official YouTube Channel has been released

Se4All launch of the official YouTube channel for the Se4All project! The highly anticipated channel was unveiled on 28th July 2023 during the project's symposium held in Argentina. This milestone marks a significant step forward in maximizing the outputs of Se4All and promoting its achievements to a wider audience



The newly launched YouTube channel is set to become the go-to destination for all things related to the Se4All project. It will serve as a dynamic platform for showcasing the project's progress, highlighting breakthroughs, and disseminating important events. The channel will feature informative videos, interviews with experts, behind-the-scenes footage, and engaging content to create awareness and foster collaboration

Se4All International Symposium in Argentina (1)



The **Faculty of Agricultural Sciences at the National University of Litoral** in Argentina played host to a significant event in the field of dairy product and agricultural research. On July 28, 2023, the International Symposium on Applying Emerging Technologies for the Treatment and Production of Functional Dairy Products was organized as part of the Se4All project. This noteworthy gathering brought together experts from industry and academia to explore innovative approaches in the production of dairy products, fight health issues related to selenium-deficiency in diets, and foster collaboration within the agriculture and dairy sectors

Fighting Health Issues with Functional Dairy Products:

A major focus of the symposium was addressing health issues resulting from selenium-deficient diets. Selenium, an essential micronutrient, plays a crucial role in maintaining good health and preventing chronic diseases. The symposium provided a platform for researchers and industry professionals to delve into emerging technologies that can be utilized to produce selenium-enriched dairy products. With the use of selenium-biofortified hay, these products have the potential to considerably enhance dietary selenium intake, contributing to improved overall health



Cooperation between Industry and Academia:

Recognizing the importance of collaboration and knowledge exchange, the symposium emphasized the need for strong cooperation between industry and academia. Both sectors play pivotal roles in advancing research, development, and innovation in the agricultural and dairy product sectors. Through shared insights and experiences, participants explored ways to bridge the gap between research findings and practical applications, encouraging the development of sustainable and impactful practices

Se4All International Symposium in Argentina (2)

Research, Training, and Career Development:

In addition to knowledge sharing, the symposium uniquely focused on research, training, and career development activities. The event provided a platform for young researchers, students, and professionals to engage with leading experts in the field, fostering networking opportunities and creating an environment where new ideas could flourish. Workshops, presentations, and panel discussions delved into cutting-edge research, providing valuable insights and inspiration for aspiring researchers and industry leaders



Se4All Project's Commitment to Advancement:

The International Symposium on Applying Emerging Technologies for the Treatment and Production of Functional Dairy Products was an example of the Se4All project's dedication to promoting sustainable practices and improving nutrition through the application of emerging technologies. By organizing and facilitating such events, the project continues to drive innovation, encourage collaboration, and disseminate invaluable knowledge that benefits the agriculture and dairy sectors



The symposium held by the Se4All project at the National University of Litoral provided a crucial platform for the discussion of emerging technologies in the production of functional dairy products. By focusing on crucial topics such as selenium enrichment, collaboration between industry and academia, and research and career development, the symposium contributed to the advancement of the agricultural and dairy sectors. The event's outcomes will undoubtedly push these industries further towards producing healthier, more sustainable dairy products, ultimately benefiting the well-being of individuals and communities

Se4All Seminar

Unveiling Direct Speciation and chemical imaging



Se4all Seminar Unveiling Direct Speciation and Chemical Imaging." This seminar was held in collaboration with the Biological Research Institute (IIB) at the National University of Mar del Plata (**UNMdP**) and the National Scientific and Technical Research Council (**CONICET**).

Dr. **Roberto Boada**, a distinguished researcher associated with the Se4ALL Project, led the seminar. Dr. Boada's extensive knowledge and expertise in the field of X-ray spectroscopy were shared with participants, providing them with valuable insights into the principles and techniques of direct speciation and chemical imaging

The seminar aimed to broaden the understanding of participants about the applications and significance of X-ray spectroscopy in identifying the chemical composition and mapping of materials. By exploring the field of direct speciation and chemical imaging, Dr. Boada shed light on cutting-edge research and its potential impact in various scientific disciplines

Direct Speciation:

The seminar commenced with an in-depth exploration of direct speciation, a specialized area within X-ray spectroscopy. Direct speciation involves the identification and characterization of chemical species in a sample without the need for sample separation or extraction. Dr. Boada elucidated the various methods and instruments employed in direct speciation, emphasizing the significance of X-ray absorption spectroscopy (XAS) and X-ray fluorescence (XRF) techniques. He showcased examples of direct speciation studies carried out to investigate the chemical state of elements in biological and environmental samples, providing valuable insights into the reactivity and distribution of elements in complex systems

Chemical Imaging:

As the seminar progressed, the focus shifted to chemical imaging, a technique that enables the visualization and mapping of chemical elements within a sample. Dr. Boada highlighted the utility and versatility of techniques such as X-ray photoelectron spectroscopy (XPS) and X-ray microscopy, which allow researchers to obtain detailed spatial information about the distribution and composition of materials at the micro- and nanoscale. He showcased cutting-edge research where chemical imaging has been instrumental in understanding the behavior of materials in various fields, including biomedicine, catalysis, and energy storage.

Se4All at International Conference



Se4All at International Conference on Selenium in Environment and Human Health in Bangkok

Dr. **Fernando Muñoz** from National University of Litoral in Argentina was invited to speak by the event's organizing committee chairman, Dr. Gary Banuelos, a researcher of the Agricultural Research Service of the United States Department of Agriculture (USDA-ARS) and a world reference in selenium research.

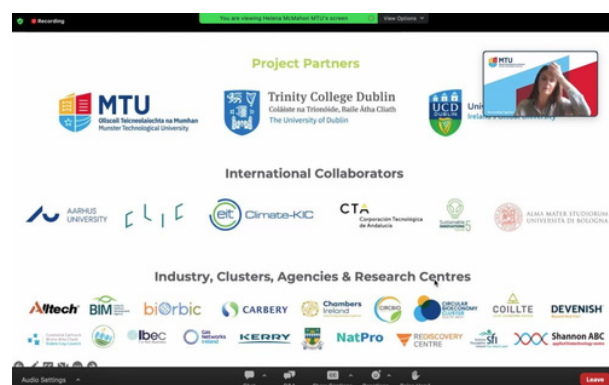
During the **conference**, Dr. Muñoz presented his multidisciplinary research work conducted over the past years titled "Selenium Biofortification Improves the Nutritional Value and Post-harvest Quality of Broccoli Heads". He explained how foliar selenium application on broccoli crops not only increases the intake of essential nutrients in a healthy human diet but also adds value during post-harvest storage, extending the shelf-life of the broccoli heads. Additionally, Dr. Muñoz used the opportunity to share with the International Society for Selenium Research the current research that he is conducting in collaboration with an international public-private consortium funded by the European Union (Se-bioFORTified ALfaLfa for Se-enriched Dairy products, Se4All). This research is related to the development of dairy products enriched with organic selenium through the biofortification of alfalfa plants for dairy cow feed, with the goal of producing functional foods.



Se4All Participates in Ireland Bioeconomy Week

In an effort to address the challenges faced by the agriculture industry in Ireland, **Ireland Bioeconomy Week** was organized as a collaborative initiative between the Department of Agriculture, Food and the Marine, **ICOS Skillnet**, **CAP Network**, and the **CIRCBIO** research group at Munster Technological University (**MTU**). This week-long event aimed to explore industry challenges related to water quality, land use, decarbonization, and alternative enterprise opportunities. A notable participant in this event was the Se4All project, which is focused on optimizing the concentration and bioavailability of Selenium (Se) in milk, contributing to sustainable agriculture

The Se4All project's participation in Ireland Bioeconomy Week highlighted the importance of sustainable agriculture and innovative approaches to enhance the nutritional quality of dairy products. By optimizing selenium concentration in milk, the project has the potential to contribute significantly to Ireland's agriculture industry, benefiting farmers, consumers, and the environment. The collaborative efforts showcased during this event bring hope for a future where sustainable practices and bioeconomy solutions play a central role in shaping a resilient and thriving agricultural sector in Ireland



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Se4All

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PROJECT PARTNERS

These organizations have partnered with us to advance our common goal: increasing the availability of Selenium-rich dairy products for common consumption. We thank them for their support and are proud of the relationships we've built thus far. They have been instrumental in the progress of this project.

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Universitat Autònoma
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