

# Unique opportunities in processing and preserving of plants

The food process engineering is undergoing significant transformation and it provides unique opportunities to ensure that we have access to the needed vitamins and nutrients crucial for our continued well-being. "A number of 21st century developments will drive the change, including world population growth and aging; the digital universe, "big data" and informatics; personalization, food, health and wellness; food security, environment, sustainability and social responsibility; and the innovation ecosystem (open innovation and partnerships)<sup>1</sup>".

## Finnish perspective

As regards the Finnish industrial development, it is making a radical transition from forestry-based to technology-based and service-dominated society<sup>2</sup>, by investing and exploring new possibilities in many industrial areas, including the intensified modernization of food processing and preserving.

## Baltic TRAM relevance

With the support of the local agricultural agency ProAgria, the Finnish regional development company Kainuun ETU Oy reached out to the local businesses dealing with food processing. Together with the businesses the industrial challenges were identified and addressed by engaging in a scientific collaboration with the analytical research facilities of the University of Oulu.



<sup>1</sup><https://www.sciencedirect.com/science/article/abs/pii/S0260877413002665>

<sup>2</sup><https://finland.fi/business-innovation/finnish-industry-constantly-adapting-to-a-changing-world/>



**The analyzed products were a herbaceous plant nettle, wild mushrooms and a flowering plant common yarrow. In all cases the mentioned plants usually grow prolifically in the region and thus make an interesting base for many products with potential markets in foods as well as other health products.**

### **Industrial challenges**

The involved companies were interested in getting a more in-depth information about vitamins and nutrient content, which is an essential knowledge to be provided to consumers and regulative bodies. When bringing new products made of plants that are not commonly used to the market, such an information would be helpful in terms of the product development and in finding the correct customer groups potentially interested in the product. New expansion possibilities would open up for the companies if they could validate the products' safety and the contents demanded in the food market.

### **Measurements and implications**

The measurements provided important information on the qualities of the product, its vitamins and nutrients content. The results obtained would possibly enable the companies to open up for new markets in public sector. Additionally, the findings provided a good base for further product development and marketing. The company benefited from receiving the important description and specification of the samples microstructures, allowing to explore the durability of the tested metal.

### **Last but not least**

The results of the analysis will be uploaded to a national database for food products. This is important for any products that are sold to public sector food providers like hospitals, schools, etc. The data will also be used as base for new product development and marketing of existing products. The company benefited from receiving the important description and specification of the samples microstructures, allowing to explore the durability of the tested metal.

### **Analytical research facility (ARF)**

University of Oulu, [www.oulu.fi](http://www.oulu.fi)

### **Industrial research center (IReC)**

Kainuun Etu Oy, [www.kainuunetu.fi](http://www.kainuunetu.fi)

**For more information visit [www.baltic-tram.eu](http://www.baltic-tram.eu)**

