Sustainable&Healthy -novel technologies for added value food products from side-streams

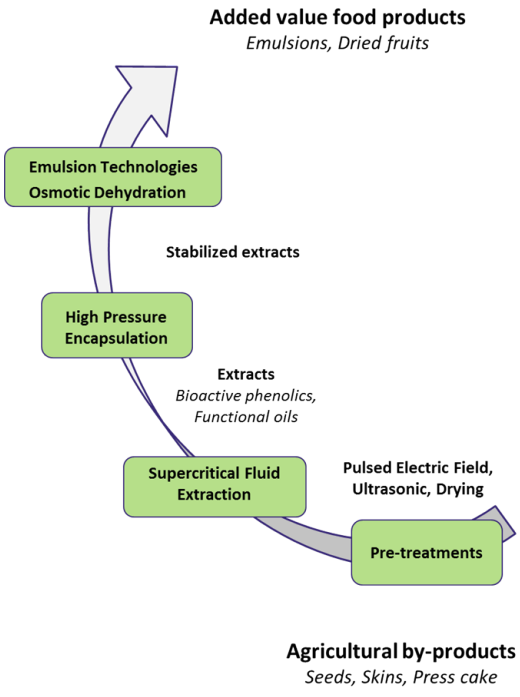
The Sustainable&Healthy project has applied sustainable technologies throughout the food chain in order to retrieve bioactive compounds from side-streams from berry industry and converting them into food gradable ingredients and products.

Berry processing industry generates a number of by-products (e.g. press cake/skins/seeds) that contain bioactive compounds. Despite its valuable content, most of these by-products are discarded as waste. The Sustainable&Healthy project addressed this challenge and applied innovative sustainable technologies throughout the food chain in order to develop new added value food product.

Extraction of bioactive compounds from bilberry press-cakes
Supercritical fluid extraction (SFE), pulsed electric fields (PEF) and drying technologies were applied and optimized to extract non-polar compounds (bioactive oils) as well as water soluble bioactive compounds (anthocyanins). By combining appropriate conditions and technologies it was possible to increase anthocyanin yield as well as obtaining bilberry seed oil with enhanced vitamin E content, and antioxidant activity.

Stabilization of extracts
Particles from Gas Saturated Solutions (PGSS) and spray drying were used to encapsulate the extracts in maltodextrin, Eudragit and Revel A. By controlling processing parameters, different bulk densities, particle sizes, morphologies and moisture contents could be obtained.

Development of added value food products
The stabilized extracts were combined with non-thermal emulsification or osmotic dehydration in order to develop added value emulsions containing both the polar and non-polar extract fractions as well as dried food products with improved organoleptic properties and enhanced levels of bioactives.



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The RISE institutes Innventia, SP and Swedish ICT have merged in order to become a stronger research and innovation partner for businesses and society.