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"Greener" food processing in light of sustainability



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Non-thermal and innovative processing technologies are attracting great attention nowadays. The advantages of those "green" technologies lies in faster, better, cheaper, sustainable and optimised process for preservation of foods, modification of food components or to design "novel food".

Application of thermal techniques is used for decades and non-thermal techniques are being "considered" in terms of food preservation. Non-thermal processing techniques include: electrotechnologies, UV light, cold pressure (high pressure processing), hydrodynamic cavitation, ionising radiation, ozonation, oscillating magnetic fields, pulsed light, supercritical fluid processing, biopreservation, electrohydrodynamic processing and electron beam processing.

Sustainability of non-thermal processing is now "hot" topic. Valorisation of agri-food wastes by non-thermal technologies is great research area nowadays. There is large discard of food by-products in food industry that can be used as energy or raw-material for other purposes. In order to think "green", *eco* (economic, ecologic and environmental) we must think about having non-thermal processing in the way of less processing time, less energy consumption, less CO₂ production and energy efficient processing (sustainability). Food scientists need to think to connect all processing variables and to have "green" strategy. There are methods of life cycle assessment (LCA); Quality function deployment etc. that can combine parameters and give results about improvement of processing, consumer's preferences and impact on the environment. The use of "green" solvents is one example in sustainable extraction.

Non-thermal and innovative food processing can and must be optimised, and results should be transformed from lab scale to large scale (industry).

Biography

Anet Režek Jambrak, Associate professor is working at the Faculty of Food Technology and Biotechnology of the University of Zagreb, Croatia. She is working in the area of nonthermal and advanced thermal processing techniques, food chemistry, food physics, and process engineering. She also has strong international collaboration with renowned scientists. In the period from 2007. Anet Režek Jambrak has published over 80 significant scientific papers, published in top scientific journals with high impact factors (citation more than 1300, h-index 20). She is the winner of the 2016. Young Scientist Award from the International Union of Food Science and Technology.

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