



1st International Congress on
Food, Nutrition & Public Health
Towards a sustainable future

Book of Abstracts



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Towards a sustainable future

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Osmotic dehydration: an emerging technology applied to the fruit and vegetable sector

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The current unsustainable production and consumption patterns are one of the drivers for Bioeconomy strategy implementation. The horticultural industry produces quantities of by-products and waste whose valorisation, through innovation, enhances new products and production processes development. The aim of this work was to develop new dehydrated food products from horticultural by-products, pumpkin, and courgette, using osmotic dehydration (DO) technology by immersing the food in an osmotic solution (OS). This pre-treatment precedes convective drying, by partial removal of water without damaging the food, maintaining its quality and safety. Laboratory scale steps: 1) Selection of OS. 2) Ratio of by-product/OS determination. 3) Process parameters: Water activity; Initial and final moisture content; Weight loss; Water loss. The most promising results for all process parameters corresponded to OS (NaCl) 2% and 3% (w/w). Pilot scale steps: 1) Production - 2 vessels of 50 L, with thermostat and timer, the products were immersed in OS NaCl 2% (w/w), at 40 °C and 4 h; 2) Tests to evaluate microbiological parameters in the raw material, throughout the process and stability until 6 months after production. Stability tests are being carried out and will be completed in November in the case of the dehydrated courgette and in February in the case of the dehydrated carrot. The products developed are intended to respond to real challenges of the agro-industry, adding value to biological raw materials and repositioning the national agri-food value chain.

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