

## Innovative Foods Based on Plums Enriched with Lactic Acid Bacteria

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Plums, through their rich content in phenolic compounds (anthocyanins, flavonols and resveratrol) and fibers, are a natural source of biocompounds with antioxidant properties that have many applications in the pharmaceutical or food industry, medicine and cosmetics. The fruits of *Prunus domestica ssp. insititia* (Damson cultivar) were purchased from the local market, washed and cut into small cubes. The vegetal matrix was used in a fresh, dry form or as lyophilized powder. A  $10^{12}$  CFU/g inoculum of an overnight *Lactobacillus brevis 16GAL* was scattered across the vegetal tissue. For all the obtained products the viability of the lactic acid bacteria (LAB) was evaluated by cultural methods over a period of 30 days. Total phenolic content of the plum extracts was determined using the Folin–Ciocalteu colorimetric. The antioxidant activity was assessed based on the DPPH method. The polyphenols yield varied between  $18.93 \pm 2.3$  mg GAE/100 g DW. The DPPH free radical scavenging activity of 91.53% was correlated to the phenolic compounds content and the lactic acid bacteria viability in regards to the proposed assortments. After 30 days of refrigeration, the total number of *Lb. Brevis* was  $10^9$  CFU/g in fresh plums,  $10^7$  CFU/g in both dried plums and in the powder supplement. The comparative confocal analysis of the samples was performed in order to capture the structural, textural and compositional changes of the experimental variants. Functional food supplements as ready-to-eat single dosage, based on plums enriched with lactic acid bacteria were designed, for optimal nutrition and health well-being or that could correct some digestive diseases.

### Biography:

Barbu Vasilica graduated in 1991 the Faculty of Biology in the University of Bucharest. Since 2003 she is holder in Faculty of Food Science and Engineering (Dunarea de Jos University of Galati) for disciplines: cellular biology, genetic engineering, biotechnology of cell and tissues cultures, environmental monitoring and phytosanitary control. Associate Professor since 2009.5 books as author/coauthor, 36 papers published in ISI or DBI journals, over 29 studies published full or summary in the proceedings of international scientific events, 12 research and innovation projects. Silver Medal at the International Exhibition of Inventions in Geneva, in 2014 for Patent Number RO126627-A0.