Abstract

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Fresh chokeberry as valuable additive in extruded snack pellets and crisps

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Abstract

Fruit additives became very popular last years in various food products. In order to exert a beneficial effect on human health, functional food can be enriched with biologically active components present in fruits. In this context, many scientists highlight the highly positive effects of

Components with high antioxidant activity. One of the most nutritionally valuable fruit is chokeberry (Aronia melanocarpa (Michx.) Elliott) known for its antioxidant properties and beneficial impact on human health. Chokeberry fruit contains a wide range of nutrients and health-improving substances, such as: sugars (glucose, fructose), pectins, tannins, calcium and iron compounds, vitamins (A, C, E, PP and others from the B group), flavonoids (hyperoside, quercetin, rutin), anthocyanins (cyanidin derivatives), phenolic acids (ferulic, p-coumaric, protocatech). Chokeberry extracts have proven effective in the prevention of stomach ulcers; besides, they help seal blood vessels, improve vessel flexibility, and reduce permeability. They are administered for colds and in periods of reduced immunity. Except of nutritional benefits, chokeberry gives the product specific purple-violet color due to the presence of natural colorants.

Various compositions based on potato and cereal starches were used as control mixtures and fresh chokeberry was used as nutritionally valuable additive in various amounts. Extrusion-cooking process was made using the Polish prototype of single screw extruder-cooker Zamak Mercator type EXP-45-32. Selected chemical and physical analyses were completed as well as antioxidant activity, amino acids profile and sensory properties. Ready-to-eat snacks supplemented with fresh chokeberry addition expanded by hot oil frying were characterized by increased nutritional value, antioxidant activity and higher sensory characteristics.

These results are part of the research project LIDER/29/0158/L-10/18/NCBR/2019 entitled “Development of a Comprehensive Technology of Obtaining High-Quality Extruded Snacks Based on Minimally Processed Vegetable and Animal Raw Materials”.

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Biography

Renata Różyło is a University Professor holding at the University of Life Sciences in Lublin, Poland. Her research focus on the development of innovative functional foods, including gluten-free, high-protein and high-fiber cereal products. She is an author and co-author over 108 scientific papers and over 46 conference abstracts and 3 patents.