

The influence of fresh highbush blueberry addition on the extrusion process of snack pellets

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Abstract

In many countries, mainly Europe and the United States, a limited consumption of fresh fruit and vegetables has been observed. The lack of a balanced diet can lead to many civilization diseases such as cardiovascular disease, diabetes, obesity, or colon cancer. In order to minimize this undesirable trend, fresh fruit and vegetables can be added to a variety of meals, including snacks.

The aim of this work was to investigate the influence of fresh highbush blueberry addition on the extrusion-cooking process of snack pellets. Extrusion-cooking process was performed using the Polish prototype single screw extruder-cooker Zamak Mercator type EXP-45-32. Determination of relevant recipe mixtures based on potato or cereal raw materials and the use of fresh highbush blueberry addition in various amount allowed to obtain high-quality snack pellets. A low level of moisture content of blends and high screw rotational speed allowed to increase the efficiency of the extrusion-cooking process at a relatively high energy consumption during processing. The increased initial moisture content of processed blends and higher percentage of highbush blueberry content in recipes affected the lower consumption of specific mechanical energy during the extrusion-cooking process. 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

Marcin Mitrus is an Assistant Professor of technical sciences at the University of Life Sciences in Lublin. His scientific activity last years is focused on technological and nutritional

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