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Use of gluten-free flour mixture in wafer production

Ivett Jakab, Katalin Kóczán-Manninger, Zsuzsa Mednyánszky, Livia Simon-Sarkadi
Szent István University, Budapest,

The aim of this study to prepare gluten-free flour mixture which has higher protein content than the wheat flour, provide valuable source of protein and essential amino acids for human nutrition and is suitable for bakery use. The wafer samples were made from millet flour, which was supplemented with hemp, alfalfa and lupine. The amino acid composition of the flours was determined by Ingos 400 Automata Amino acid Analyser and Protein Digestibility Corrected Amino Acid Score (PDCAAS) was calculated using reference data. The optimal flour mixture were calculated on the essential amino acid content of the different flours. The hardness of the different wafer samples were measured by Stable Micro Systems TA.XT2 Texture Analyser equipped with a Light Knife Blade fixture. It has been established that wafer prepared from flours containing 2:1 (w/w) millet:hemp was the hardest and appealingly crispy product. Crustiness of the product decreased by adding lupine and alfalfa to the flour. Sample prepared from flours containing 1:5 (w/w) millet:alfalfa was the softness.

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Development of lactic acid fermented, probiotic sour cherry juice and the effect of storage on product

Judit Perjéssy, Ferenc Hegyi, Magdolna Nagy-Gasztonyi, Rita Tömösközi-Farkas, Mária Berki, Zsolt Zalán

National Agricultural Research and Innovation Centre - Food Science Research Institute

The aim of our study was to investigate the possibility of the probiotication of sour cherry juice by fermentation with probiotic starter culture. From the preliminary experiments it was observed that pH adjustment, supplement of nutrients and dilution of sour cherry juice are needed to reach the recommended cell density. Despite the fact that all investigated strains reached the desired 10^9 cfu mL⁻¹ cell density, a significant difference was observed between the number of viable cells of some Lactobacillus strains. Our results show that the type of sour cherry affects the fermentation, so it is important to select the starter culture for the given raw material. Several factors during storage also affect the viability of probiotic organisms. We used glass bottles, plastic bottles and aluminium covered carton packages to store (at 6 °C) the fermented sour cherry juice. By an appropriate strain selection, and with optimization of fermentation parameters, plant-based lactic acid fermented product can be produced, which contains the recommended viable probiotic cell count and they survive for several months.