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Kocková M., Valík R.: Development of new

cereal-, pseudocereal-, and cereal-leguminous-based probiotic foods

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The suitability of the selected cereals, pseudocereals, and legumes for new probiotic foods development was tested. Probiotic products were produced by inoculating buckwheat, dark buckwheat, barley, oat, soya, and chickpea in combination with oat with *Lactobacillus rhamnosus* GG and subsequent moulding to eliminate water from the cooked grains. The cell growth, pH and organic acid profiles were monitored during fermentation process at 37 ° C for 10 h followed by the storage period at 5 ° C for 21 days. The growth and metabolic parameters were calculated using principles of the predictive microbiology. *Lb. rhamnosus* GG was able to grow in all substrates during fermentation and reached the cell density of 6.68 – 7.58 log CFU/g, the highest growth rate having been calculated in the oat product (0.341

log CFU/g/h). After the fermentation, the lowest pH value was observed in the barley product (4.52), while after the storage in the oat-soya product (4.32). The greatest amount of lactic acid after the storage period was measured in the oat-soya product (1977.8 mg/kg). Sensory characteristics of the fermented and stored products were also monitored.

Keywords:

lactose intolerance; milk allergy; predictive microbiology; *Lactobacillus rhamnosus* GG; fermentation

[fulltext]