

Evaluation of Beta-Glucosidase Activity of Probiotic Bacteria in Fermentation of Soy Milk Treated with Ultrasound

Neda Maleki*; Faramarz Khodaiyan; Mozhdeh Karimi

Department of Food Science and Engineering, Faculty of Agricultural Engineering and Technology,
University of Tehran, Tehran, Iran

n_maleki90@ut.ac.ir

Background & Objectives: β -glucosidase activity of *Lactobacillus* and *Bifidobacterium* hydrolyzed glucoside isoflavones to aglycones in fermented soy milk and increase in aglycones in fermented soy milk can improve biological activity of soy milk. The purpose of this study is to investigate the beta-glucosidase activity of probiotic bacteria in soy milk treated with ultrasound and compare the effect of various probiotic bacteria on the isoflavones and antioxidant activity of soy milk.

Methods: The determined amounts of soy milk samples treated with ultrasound was autoclaved in 121° C for 15 min then a suspension of selected bacteria was prepared and in the ratio of 1% are used as the inoculum, at the end mixture was incubated at 37° C for 48 hour. Enzymatic activity of bacteria (β -glucosidase) was determined by measuring the hydrolysis rate of p-nitrophenylbetadiglucose (p-NPG).

Results: Among the microorganisms tested, the highest enzymatic activity is related to bifidobacterium bifidium which have significant difference with other bacteria.

Conclusion: Using *B.bifbium* in fermentation process of ultrasonic treated soy milk, provides the highest amount of functional compounds for consumers.

Keywords: β -Glucosidase; *Lactobacillus*; *Bifidobacterium*; Soy Milk; Ultrasound

