IN VIVO EVALUATION OF PREBIOTIC AND SYNBIOTIC PROPERTIES OF PROCESSED SWEET POTATO PRODUCTS

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ABSTRACT

The aims of this research were to investigate the prebiotic and synbiotic properties of sweet potato products (combined with L. casei subsp Rhamnosus for probiotic) in increasing the number of Lactic Acid Bacteria (LAB) and suppressing the number of E. coli and the occurrence of Salmonella in vivo. Some previous study showed that sweet potato is a potent source of prebiotic. The sweet potato products evaluated were sweet potato flakes (SPF) and sweet potato ice cream mix. The in vivo assay used male rat strain Sprague-Dawley. Total microbes, LAB, E. coli and Salmonella in fecal were analyzed before, during and after feeding period. Feeding with SPF as prebiotic, L. casei subsp Rhamnosus as probiotic, and combination of both as synbiotic for ten days were able to increase the number of LAB (0.4-1.1 log CFU/g) and suppress the number of E. coli in rat feces (1.5-1.7 log CFU/g). All of the treatment did not affect the occurrence of Salmonella in rat feces. The treatment of sweet potato ice cream mix as prebiotics and the combination of sweet potato ice cream mix and L. casei subsp. Rhamnosus as synbiotic for ten days did not effect the number of LAB and E. coli in rat feces.

Key words: sweet potato, prebiotic, oligosaccharide, probiotic, synbiotic

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