Combining Different Types of Prebiotic Plant Isolates Toward, Enhancing the Growth of Probiotic Organisms

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Abstract The growth stimulatory effect produced by combining different sources of prebiotics i.e; Fiber isolates from Musa sp pseudostem, polyphenol extracts from Sesbania grandiflora flower petal and non-digestible polysaccharide extracts from Artocarpus heterophyllus seed were assessed against probiotic organisms, Lactobacillus acidophilus and Bifidobacterium animalis subsp. lactis BB-12 in vitro in liquid cultures. Different combinations were formulated by integrating the three sources of prebiotics at two different levels i.e; fibre (0.2% and 2%), polyphenol extracts (0.2% and 0.6%) and non-digestible polysaccharide extracts (0.2% and 1.2%) to obtain eight treatments. The formulation which consisted 2% fibre, 0.2% polyphenol and 0.2% non-digestible polysaccharide was able to promote significant biomass increment in Lactobacillus acidophilus, while the treatment consisting 2% fibre, 0.6% polyphenol and 0.2% non-digestible polysaccharide demonstrated highest proliferation for Bifidobacterium animalis subsp. lactis BB-12 in vitro which were statistically different (p<0.05) than other formulations.

Keywords: L. acidophilus, B. animalis subsp. lactis BB-12, S. grandiflora, Musa sp, A. heterophyllus