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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*

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