Evaluation potential commercial prebiotic products as media for growth of selected probiotic bacteria strains

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The commercial prebiotic in cereal-based products with bovine colostrum, namely Germa-Fit® and Extra-Fit® as culture media for growth selected probiotic lactic acid strains (growth separately): \( L. \ gasseria \) and \( L. \ rhamnosus \) were cultured in MRS (control) and commercial prebiotic products. The media were fermented for 48 h at 37 ºC and analysed for viable cell count and changes in pH values. In Germa-Fit® medium, both probiotic lactic acid strains attained the highest population (9.6 cfu/ml) in the 16th of fermentation time (\( P \leq 0.05 \)). With addition lactose at 0.5, 1.0 and 1.5% the viability of \( L. \ gasseria \) was improved by approximately 2.1, 2.3 and 1.7 log10 cycles respectively, compared to 3.0, 2.3 and 2.5 for \( L. \ rhamnosus \) after 12h of fermentation time. The effect of Extra-Fit® medium was more positive for growth of \( L. \ gasseria \) than that of \( L. \ rhamnosus \) at 8-24h of inoculation time. Generally, Germa-Fit® medium in presence of lactose exhibited the highest growth for both prebiotic strains compared to Extra-Fit® and MRS media. The changes in pH of commercial media were in the optimal pH range (4.5-4.4) for growth of lactic acid bacteria. Therefore, this study suggested that the feasibility use of commercial prebiotic products based-cereal with bovine colostrum in the place of the widely used MRS for culture media of probiotic lactic acid bacteria to developing new symbiotic functional fermented dairy food products.

Biography

I. H. I. Abd El-Ghany has completed his Ph.D. at the age of 29 years from Cairo University. He has published more than 30 papers in the field of dairy science and technology.