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In Vitro gastric survival of lactic acid bacteria in commercial probiotic products in Turkey

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A wide range of commercial probiotic products are available on the market. However the gastric endurance of the Lactic acid bacteria (LAB) in most of the products is a mystery. Several methods have been developed for probiotics to reach the intestine alive, but it is not known whether industrial companies apply these methods. In order to achieve the intended beneficial effect on the intestinal flora, probiotics have to reach intestine alive having the number of microorganisms that can be able to compete with the intestinal flora. It has been recommended that the amount of probiotic bacteria that must reach intestinal tract to have therapeutic effect should be minimum 6 log CFU/g, therefore it should be in the range of 8-9 log CFU/ g in the food product. In this study, LAB count in probiotic food products sold industrially in Turkey under simulated stomach environment (SGF) was determined. Industrially produced 20 probiotic-containing food products were collected from the market and a model stomach was created to represent the human gastric digestive system

Methodology: The analysis was performed in duplicate and the bacteria counts before and after simulated gastric digestion was evaluated statistically. When the samples were examined individually, it was found that 15 of the 20 samples contained LAB higher than the total LAB count of 6 log CFU/g after SGF; while the LAB in the other 5 samples were lower than the limit value of 6 log CFU/g. There were no statistical difference between the numbers of LAB before and after SGF in 11 of the 15 samples analyzed (P>0.05) meaning that, all the LAB contained in the product are resistant to stomach acidity. Thus; probiotic-containing claimed food products on the market in Turkey are 55 % realiable.

Biography

Gizem Ozluk Cilak is a Dr. Research Assistant at Hitit University. She has her expertise in food microbiology, pathogens, lactic acid bacteria, food safety. She has been lecturing Food Microbiology, General Microbiology and Meat Science classes for 13 years. She completed her PhD thesis on spice decontamination and has contribution in literature on sporulation, survival of the pathogens in simulated gastric fluid and lactic acid bacteria.