Abstract No: 663 ***Food, Nutrition and Livestock***

ASSESSING THE PROBIOTIC ACTIVITY IN CONVENTIONAL YOGHURT PRODUCED AT A DAIRY PROCESSING COMPANY IN SRI LANKA

S.A.S.S. Suraweera[1]*, A. Chandrasekara[2] and B.E.P. Mendis[1]

[1]Department of Food Science and Technology, Faculty of Agriculture, University of Peradeniya, Sri Lanka
[2]Postgraduate Institute of Agriculture, University of Peradeniya, Sri Lanka
**suraweerasamadhi@gmail.com*

Yoghurt is a potential source of probiotic *lactobacilli*, because the bacterium is highly adapted to milk environment and is also able to resist low pH values. Regular yogurt consumption can be a contributing factor to the establishment and survival of *Lactobacillus bulgaricus* in upper and lower gastrointestinal tract. The objective of the present study was to assess the probiotic activity in conventional yoghurt produced by a leading dairy processing company in Sri Lanka and to determine whether it has accomplished to reach the minimum level of *Lactobacilli*, specified by regulation in conventional starter culture, as probiotic bacteria. Further, survival of *Lactobacilli* under simulated gastric pH range was tested. The conventional yoghurt samples were enumerated for *Lactobacillus bulgaricus* and assessment was conducted to examine whether the final product reaches the minimum level of *Lactobacilli*, $1.0x10^7$ cfu/g specified by International Dairy Federation, in order to exert the suggested health benefits to the consumer. The mean count of *Lactobacillus bulgaricus* was greater than the minimum level at the 0.05 level of significance. Yoghurt samples were stored at 4 ^{O}C and duplicated plates were enumerated throughout the specified storage period, at 3, 7, 14, 21 and 28 day intervals using Lactobacillus MRS Agar, under incubation at 45^{o}C for 72 h to assess the survival throughout the shelf life. The mean counts of *Lactobacillus bulgaricus* were greater than the minimum level at the 0.05 level of significance throughout the storage period and a negative relationship was observed in the *Lactobacillus bulgaricus* counts with time showing a gradual decrease in colony counts. Throughout the storage period, pH of the samples gradually decreased with time maintaining a pH value below 4.5, which fulfils the requirements of The Australian and New Zealand Food Standards Code. This also indicates that production of organic acids with antimicrobial properties have increased without affecting the sensory properties of the product. The enumerations carried out simulating gastric pH clearly showed that the probiotic bacteria, *Lactobacillus bulgaricus* present in the conventional yoghurt has a significant survival in gastric pH range. *Lactobacillus bulgaricus* did show good survival abilities in lower acidic (pH 3) range of gastric pH, while a significant growth was observed in pH 4. This study concludes that the conventional yoghurt produced by a leading dairy processing company fulfills its probiotic function in terms of growth and survival under tested conditions specified by the regulations.

Financial assistance given by the CIC Agri Businesses (Private) Limited, Pelwehera, Dambulla, Sri Lanka is acknowledged.