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Proteolysis and Sensory Properties of Probiotic Gouda Cheese

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Abstract

The dairy products with probiotic bacteria recognition as functional foods that provide health benefits beyond basic nutrition and the emerging clinical evidence to their potential in preventing some diseases have notably enlarged their consumption and stimulated innovation and new product development. Cheese products enriched with probiotic bacteria are one of optimized functional foods. The objective of the present study was to influence of physically modified mesophilic starter by heat–shocked and probiotic Lactobacillus, as adjunct culture, on product quality, in particular the proteolytic pattern of the Gouda cheese. Gouda cheese were manufactured from three trials, Tc (control) of milk with modified mesophilic lactic starter bacteria, Ta and Tb made using modified mesophilic lactic starter bacteria by heat–shocked at 60°C/15, 70°C/15 and probiotic Lactobacillus, as adjunct culture. The composition and the pH value were almost identical between cheeses. The rate of proteolysis of cheese with probiotic bacteria was slightly higher than that in control cheese, probably as a consequence of their different proteolytic activity. Levels of nitrogen fractions increased significantly with ripening period. Organoleptic evaluation showed that probiotic cheese had higher sensory evaluation than control cheese, without probiotic strain. The population of Lactobacillus survived to numbers > 10^7 cfu/g, which is necessary for positive effects on health. These results showed that the contribution of mesophilic starter and probiotic strain as adjunct culture can be successfully used in production of Gouda cheese.

Biography

El-Sayed El-Tanboly has completed his PhD from The Institute of Dairy Technology at University of Agriculture and Technology (AR-T) Olsztyn, Poland, Since June 1991. He is the Professor and Consultant of Dairy Technology at Dairy Technology Department, National Research Centre (NRC), Cairo, Egypt. He has published more than 40 papers in journals and scientific conferences, local and European countries.