

## Microbiological quality and sensory properties evaluation of Middle Eastern style soft cheese produced without and with starter culture and probiotic bacteria

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Starter culture and probiotic bacteria have been used in cheese manufacturing and demonstrated successful application in relation to preventing growth of pathogen bacteria to obtain safe product and optimum quality. Contamination of soft cheese by spoilage microorganisms and pathogen from the environment is a major concern, which causing outbreaks of food borne diseases and decreasing its sensory properties and acceptability. Therefore, we studied the properties of three Middle Eastern style soft cheeses which were manufactured from commercial pasteurized milk includes cheese without starter culture (NSC), with starter culture (SC) and with starter culture and three strains of probiotic bacteria including *Lactobacillus acidophilus* LA-5, *Bifidobacterium* ssp BB12 and *Lactobacillus casei* Shirota. After 21 days storage at 2-5°C microbial quality and sensory evaluation for cheese attributes were evaluated. Significant differences ( $p < 0.05$ ) between cheeses in the microbiological (mesophilic aerobic bacteria, lactic acid bacteria, Enterobacteriaceae and mould and yeasts counts), variables between PC and NSC was found. PC and SC had lower loads of undesirable bacteria than NSC and higher viable count of lactic acid bacteria, linked to decreases of pH, which results in a cheese environment less suitable for the growth of unwanted microorganisms. The three cheeses were recorded a good results of acceptance in relation to the preference attributes. Higher mean sensory scores for intensity of cheese attributes were recorded in moderate score for all cheeses. Significant differences ( $P < 0.05$ ) between cheeses in the intensity of crumbliness and colour attributes, variables between PC and NSC were recorded.

### Biography

Emad has completed his MSc at age 26 years in the Food Sciences and Biotechnology Department/University of Basrah, Republic of Iraq. He has worked in dairy industry field since 1987 until yet through employing in the Iraqi Ministry of Industry and Minerals. He has accepted in the University of Plymouth in United Kingdom at 2009 to completing his PhD degree in Biology (Dairy Technology). He has published some papers in the field of dairy and environment. Currently, he is studying the application of probiotic bacteria strains to the Middle Eastern Style soft cheese.

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