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United Arab Emirates University

The College of Graduate Studies and the College of Food and Agriculture

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**Master Thesis Defense**

Entitled

*STUDY OF RHEOLOGICAL, CHEMICAL & MICROBIOLOGICAL PROPERTIES OF CHAMI, AN EMIRATI TRADITIONAL SOFT CHEESE*

by

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Abstract

In this work, ten Emirati Chami cheese samples were collected and analyzed for chemical composition, texture, rheology, and microbiological properties. Chami cheeses showed large variations in moisture (60.9-84.1%), protein (7.5-14.6%), fat (0.5-7.8%), and ash (3.4-8.0%) contents as well as in pH (3.6-4.4), and water activity (0.977-0.999%). The variation in fat content of samples suggested that extra fat was added; either butter or vegetable oil as indicated by the fatty acid composition. The different samples showed variable size peaks for fat melting. The sodium content in the 10 cheese samples varied from 223-2410 mg/kg with three samples having very high contents 1756, 2024, and 2410 mg/kg indicative of added salt. The sample with the low moisture content (60.9%) was the hardest among the cheeses. Rheological examination showed the Chami cheese samples to have more elastic than viscosity behavior. Seven Chami samples contained lactic acid bacteria (6.5-9.1 cfu/ml) while 5 samples showed yeast and mould growth (5.3-8.2cfu/ml). Six Chami samples showed presence of *Staphylococcus spp.* while Coliform bacteria was detected in 4 Chami samples. All samples tested positive for Salmonella and 4 samples were positives for Listeria.

**Keywords:** Chami, Cheese, Chemical Composition, Rheology, Microbiology, Lactic Acid Bacteria, Salmonella, Listeria