

## Influence of Different Heat Treatments on the quality characteristics of Edam cheese

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**Abstract:** In this study, Edam cheese was produced from milk subjected to different heat treatments. In the production of Edam cheese, pasteurization (72°C/15 sec) and thermization (65°C/15 sec) were used in comparison to raw milk. The resultant cheese was ripened for 45 days and analyzed at 1, 15, 30 and 45 days intervals. The highest moisture content 48.87% was determined in Edam cheese produced from pasteurized milk, while the lowest (45.55%) was observed in raw milk Edam cheese at the first stage of ripening. Edam cheeses produced either from pasteurized or thermized milk was characterized by lower fat and protein contents. The acidity of raw milk Edam cheese was the highest among all Edam cheese samples during ripening period. Ripening indices including WSN/TN (15.41, 13.20 and 14.58%) and NPN/TN (6.31, 5.78 and 6.17%) were determined and were comparable between raw, pasteurized and thermized milk Edam cheese respectively at the end of ripening. In addition, Edam cheeses from pasteurized or thermized milk characterized with lower hardness values than raw milk Edam cheese. Moreover, the applied heating of Edam cheese milk affected the microbial of Edam cheese samples and the level of proteolysis, lipolysis and subsequent liberation of free fatty acids and volatile compounds when compared to raw milk Edam cheese. Edam cheese produced from pasteurized milk had the higher sensorial scores particularly at the end of ripening period. Overall, Edam cheese manufactured with Pasteurized milk was higher in quality characteristic than others.

**Key words:** Edam cheese, Pasteurization, thermization, free fatty acids, volatile compounds

