

## INFLUENCE OF SALT CONTENT ON THE CHEMICAL, RHEOLOGICAL AND SENSORY PROPERTIES OF GOUDA CHEESE

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### **Abstract**

Gouda cheese was made from fresh cow's milk standardized to 3.5% fat by traditional method. The curd blocks were divided into six parts. The first part was soaked in 20% brine at pH 4.8, 15°C for 48 hrs (as control) and the remaining parts were soaked in 20% brine for 12, 24, 30 and 06hrs. The resultant cheese were ripened at 10-12°C for 3 months. Moisture, salt, fat, acidity, TN, WSN, TVFA contents, rheological and sensory properties of cheese were assessed at 0 (fresh), 15, 30, 60 and 90 days. TN% increased by increasing the brining and the maturation time, was the highest after brining for 60 hr and maturing for 90 days. WSN%, WSN/TN and TVFA decreased gradually in the fresh cheese being the lowest value in the sample brined for 60 hr. and increased in the cheese brined for 12 hr. and ripened for 90 days. Hardness, springiness, gumminess and chewiness increased during ripening up to 60 days and then decreased after that. Cheese salted for 48 hr. gained the highest scores of sensory properties followed by the cheese salted for 24hr., 36hr. and 60hr. while the cheese salted for 12hr. gained the lowest score.

**Key words:** Gouda cheese – Salt content- Chemical composition – Rheological properties

### **INTRODUCTION**

Gouda cheese is a semi-hard cheese originated in Netherlands and resembles Edam cheese, more firm curd and flat shape with minor differences. The demand for this cheese type has been increased in Egypt accordingly some local dairy factories manufactured this type on commercial scale. Cheese has generally been considered to contribute relatively little sodium intake, however, with increasing cheese consumption, the contribution of cheese to dietary sodium is likely to be increased (Guinee, 2004). Salting process is considered one of the main steps in cheese making, where salt has a major influence on cheese proteolysis and play a great role in the development of flavour and texture (Banks et al., 1993, Mistry and Kasperson, 1998).

Saito (2000) found that the strongest depressive effect in the blood pressure (-24.7 mm Hg) and the intensive inhibitory activity to angiotensin I-converting enzyme (75.7%) were detected in the peptides from 8-months-aged Gouda cheese. The salt level markedly influences cheese flavor and aroma. Rheological and texture properties,