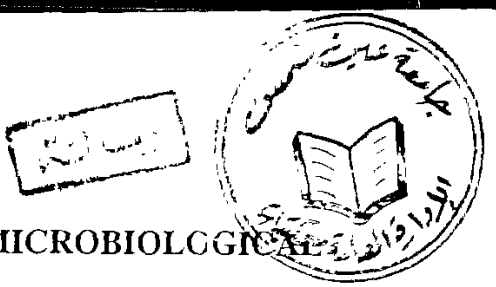

CHEMICAL AND MICROBIOLOGICAL STUDIES ON PROCESSED CHEESE

BY

ASHRAF GABER MOHAMED SAYED AHMED
B.Sc.Agric.(Dairy Sci. & Tech.) Ain Shams Univ., 1988
Diploma Quality Control of Food & Milk Products,
Ain Shams Univ., 1992

A thesis submitted in partial fulfil ment

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Ain Shams University

1997

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Approval Sheet

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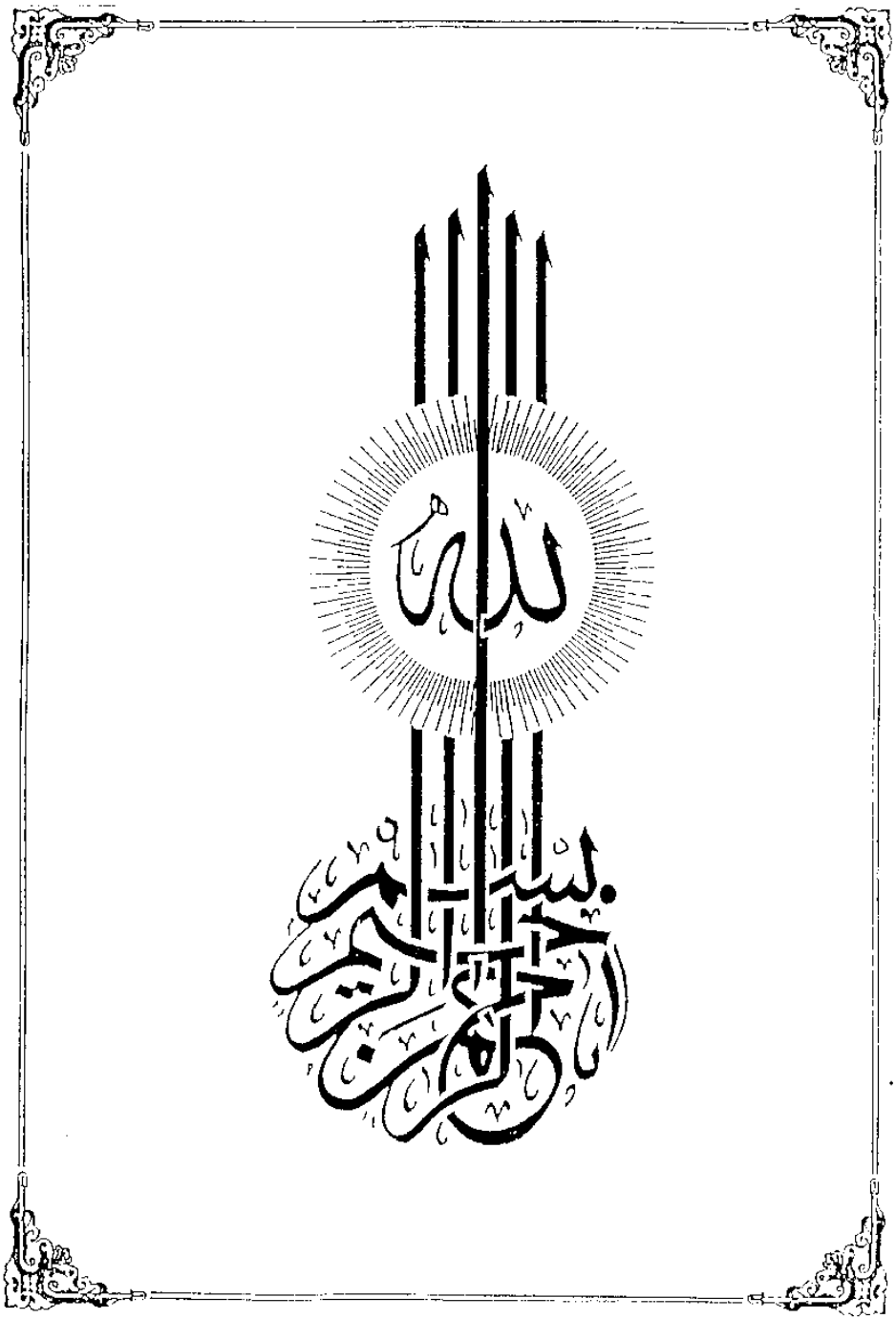

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ABSTRACT

Ashraf Gaber Mohamed Sayed Ahmed. *Chemical and Microbiological Studies on Processed cheese. Unpublished Master of science, Ain Shams University, Faculty of Agriculture, Food science Department (1997) .*

Processed cheese is traditionally made from hard type cheese such as Cheddar or Ras cheese by grinding, blending and melting with emulsifying salts and other ingredients at a high temperature Three different cheese bases were prepared from fresh skim milk using indirect acidification, direct acidification and rennet coagulation Each cheese base was processed using three different levels of the emulsifying salt including the optimum level and less and more than these ratio by 0.5% The samples were analyzed for chemical, physical and sensory properties. The effect of emulsifying salt and modification of technological procedure on improvement of cheese base made by direct acidification and rennet coagulation was determined The physical changes during storage was monitored for the processed cheese that made from two treatment succeed to clear the optimum level of the emulsifying salt as well as the stability of the product during storage.

The microstructure of processed cheese using nature cheese was compared to that was made using the cheese base The best cheese base exhibited an excellent physical properties and sensory properties in processed cheese products was the cheese base made by using starter culture The processed cheese made from direct acidified cheese base showed lower score in organoleptic properties because having some defects such as slight pronounced sand texture in the product The cheese base made by direct acidification was improved by the modification of technological procedure The final product was most homogenized with all emulsifying salt used in cooking but the body became longer which make this cheese base suitable to produce block processed cheese Cheese base made by enzyme gave the worst product and the sandy defect was very clear No improvement in the rennet coagulated cheese base when the technological procedure were modified The sandy defect was very clear

The microstructure of processed cheese made from hard type cheese was different than the processed cheese made from cheese base but the processed cheese made from cheese base made using starter and modified direct acidified were apparently very organized structure.

Different combinations of Ras cheese and matured Cheddar cheese were used in the blends of processed cheese. The processed cheese manufactured from blend mixture which contained from 50% matured Cheddar cheese and 50% Ras cheese and from 75% matured Cheddar cheese and 25% Ras cheese were given the highest score by the panelists.

Different new types of processed cheese were manufactured using the indirect acidified cheese base which was used to replace both Ras and Cheddar cheese. The end product of such processed cheese characterized with clean cream taste when the Ras cheese was replaced by the cheese base. While, the processed cheese show the highest score for flavour when the Cheddar cheese was replaced by the indirect acidified cheese base.

Key words: Processed cheese, Ras cheese, Cheddar cheese, cheese base, direct acidification, indirect acidification, microstructure.

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