STUDIES ON MUDAFFARA CHEESE AS AFFECTED BY SOME SPICES

By

AHMED MOHAMED BAKHEIT

B.Sc., Agric. Sci. (Dairy Science), Fac. Agric., Alex. Univ., Egypt, 1984
M.Sc. Agric. Sci. (Animal production), Fac. Agric., Gazira Univ., Sudan, 2000

THESIS

Submitted in Partial Fulfillment of the Requirements for the Degree of

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APPROVAL SHEET

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رساله مقدمة من

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دكتوراة الفلسفة

في

العلوم الزراعية
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DEDICATION

I gratefully dedicate this work to soul of my mother as well as to my father and to whom my heart felt thanks; to my wife Samia and my sons for their patience and support they lovely offered along the period of my post graduation.

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Name of Candidate: Ahmed Mohamed Bakheit **Degree:** Ph. D.

Title of Thesis: Studies on Mudaffara Cheese as Affected by Some Spices.

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Department: **Dairy Science** **Approval: 15/ 09 /2010**

ABSTRACT

Mudaffara cheese is a semi-hard type cheese widely known in some Middle East countries. Little information is available concerning its properties. The effect of some spices on its chemical, microbiological, organoleptical and rheological (meltability) properties as well as its antioxidant activity and different flavor components were studied during ambient and cold storage. Spices used were clove, black cumin and black pepper.

The obtained results indicated that the chemical components of different spices-containing Mudaffara cheeses were markedly affected during ambient than cold storage. Regarding the microbiological properties, it was found that spices-containing cheeses had lower coliform, mold and yeast and total bacterial count than that of the spices-free cheese. Concerning the meltability, it was greatly affected by storage period and storage temperature regardless the type of spices used.

The organoleptic properties of cold stored was improved upon incorporation of spices in cheese making. Opposite to that was the situation with the ambient stored where spices-free Mudaffara cheese (control) scored higher marks.

The antioxidant activity of spices-containing cheese was higher when clove was added, followed by that of black cumin and black pepper cheeses respectively. The volatile components in experimented Mudaffara cheese were aldehydes, ketones, fatty acids, esters, alcohols, hydrocarbons and miscellaneous compounds. All these components were detected in higher percentages at room temperature than refrigerated storage.

It can be concluded that spices incorporation improved the different Mudaffara cheese properties beside their therapeutic functions.

Key words: Mudaffara cheese, Spices, Chemical and microbiological properties, Clove, Black cumin, Black pepper, Volatile compounds and flavors, Antioxidant activity.

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