شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

# بسم الله الرحمن الرحيم


HANAA ALY

# شبكة المعلومات الجامعية

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# جامعة عين شمس

# التوثيق الإلكتروني والميكروفيلم

# قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

# يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

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# Safety and quality assessment of some Egyptian traditional dairy products: trials for improving Karish cheese

**Thesis Presented by**

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(B.V.Sc Cairo University, 2013)
(M.V.Sc. Cairo University, 2017)

**For the Degree of Ph. D.**
(Hygiene and Control of Milk and its products)

Under the Supervision of

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**(2021)**

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# APPROVAL SHEET

**This is to approve that thesis presented by: Ola Wagih Abd El Moneim Hegab**

**Entitled: Safety and quality assessment of some Egyptian traditional dairy products: trials for improving Karish cheese**

**For the Degree of Ph.D. (Hygiene and Control of milk and its products)**

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# Abstract

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## Abstract

This study was performed to investigate the chemical and microbiological quality of some traditionally produced dairy products (Ras, Domiati, Karish cheeses and Mish) 200 random samples (50 each) were examined. The mean values of moisture, salt and acidity % for Ras cheese were (30.3, 3.30 and 0.65), respectively, while (56.44, 6.63 and 0.68) for Domiati cheese, (77, 0.95 and 0.63) for Karish cheese and (85.70, 7.56, 0.50) for Mish samples, respectively. Mean counts of total bacteria, presumptive coliform, staphylococci, yeast and mold were ($2\times10^8$, $3\times10^5$, $1\times10^6$, $3\times10^5$ and $7\times10^3$) for Ras cheese, ($3\times10^6$ $5\times10$, $4\times10^5$, $1\times10^5$ and $4\times10^3$) for Domiati cheese, ($9\times10^6$, $5\times10$, $3\times10^3$, $8\times10^5$ and $7\times10^2$) for Karish cheese and ($1\times10^7$, $5\times10^2$, $1\times10^5$, $5\times10^5$ and $3\times10^4$) for Mish samples, respectively. There was a significant correlation coefficient between chemical parameters and the examined microorganisms. Some potentially pathogenic microorganisms were isolated as *Escherichia coli* that serologically identified as O125, O18 and O114, as well as the virulence genes fimH and iss were detected by molecular examination. Enterotoxigenic *Staphylococcus aureus* strains producing enterotoxin (B, D and E) were also detected. Therefore, strict hygienic measures should be applied during manufacture, handing and distribution of traditional products. On the other side of the study, synbiotic Karish cheese was produced as a trial for improving such cheese type. Using *Lactobacillus plantarum* and inulin (4%) positively improved sensory characteristics, hygienic quality and shelf life of Karish cheese. In addition, *L. plantarum* showed a great inhibition against *Enterobacter aerogens.* Moreover, using of 4% inulin significantly increased the survival of *L. plantarum* throughout the entire storage period.

**Key words:** traditional, Ras, Domiati, Mish, Karish, *E. coli*, fimH, iss virulence genes, Enterotoxigenic *S. aureus*, symbiotic, *L. plantarum*, inulin.

# Dedication

*To*

*My Mother and Father*

*&*

*My Sisters and Brother*

*&*

*My Husband*

*&*

*My son*