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**"Biodiversity and Lipolytic Activity of *Acinetobacter* species
Isolated from Raw Milk and Some Milk Products in Luxor
Governorate "**

Thesis

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Abstract

"Biodiversity and Lipolytic Activity of *Acinetobacter species* Isolated from Raw Milk and Some Milk Products in Luxor Governorate "

A total of 250 samples of raw milk divided as 150 samples of dairy street vendors raw milk, dairy shops raw milk and dairy farms raw milk (50 each), and 100 samples of milk products Kariesh cheese, Domiati cheese, Cream, and Milk Powder (25 each) were collected randomly from Luxor governorate. Results revealed that 10 % of raw milk were contaminated with *Acinetobacter species* described as 14%(7) isolates from dairy street vendors, 10%(5) isolates from dairy shops raw milk and 6%(3) isolates from dairy farms raw milk also 15% of from milk products were contaminated with *Acinetobacter species* as 8%(2), 16%(4), 24%(6) and 12%(3) from Kariesh cheese, Domiati cheese, Cream, and Milk Powder respectively. The species which isolated were *A. baumannii* 5.3% (8) from raw milk samples and 8%(8) from raw milk products. *A. calcoaceticus* were 2.7%(4), 12% (3) and 4% (1) from raw milk, Domiati cheese and milk powder respectively. *A. haemolyticus* were 2%(3) and 8%(2) from raw milk and fresh cream respectively. *A. lwoffii* were 4%(1) from kariesh cheese. *A. baumannii* strains were confirmed by conventional PCR for searching the *bla_{oxa-51}* like gene. all 16 *A. baumannii* strains were harbored this gene 100%. in this study tributyrin agar medium was used for searching lipolytic activity of *Acinetobacter species*, all *Acinetobacter species* were had lipolytic activity 100%. in addition to that agar disk diffusion test was made by using cinnamon and thyme oil for antibacterial effect of these oil on *A. baumannii* strains, results showed that all *A. baumannii* strain were sensitive to cinnamon and thyme oil. also in vitro experiment was made by cinnamon and thyme oil for inhibitory effect of these oils on the survival of *A. baumannii* strains in laboratory prepared domiati cheese injected previously with *A. baumannii* strains. cinnamon and thyme oils with different concentrations 0.01%, 0.02% and 0.03%. were inhibited the growth of *A. baumannii* in domiati cheese at 14th day of experiment and the total *A. baumannii* strains count were decreased from 1.78×10^6 in control samples to completely undetectable level at 14th day. The public health concern for this microbe was discussed with recommendation of fortification of raw milk products with cinnamon and thyme oils in dairy industry.

Key words: *Acinetobacter spp.*, Raw Milk, Lipolytic Activity, Cinnamon oil, Thyme oil.

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List of Abbreviations

Abbreviations	Explanation
<i>A. baumannii</i>	<i>Acinetobacter baumannii</i>
A.P.H.A	American Public Health Association
bp	Base pair
BA	Blood Agar
CRAB	Carbapenem Resistant <i>A.baumannii</i>
EMB	Eosin Methylene Blue Agar
EO	Essential Oil
FAO	Food and Agriculture Organization
HACCP	Hazard Analysis Critical Control Point
<i>H. pylori</i>	<i>Helicobacter pylori</i>
ICUs	Intensive Care Units
LAM	Leeds Acinetobacter Medium
MBC	Minimum Bactericidal Concentration
MIC	Minimum Inhibitory Concentration
MHA	Muller Hinton Agar
MLST	Multilocus Sequence Typing
MDR	Multiple-Drug Resistance
NCI	National Cancer Institute
PCR	Polymerase Chain Reaction
SBT	Sequence-Based Typing
<i>Spp.</i>	Species
TEO	Thyme essential oil
UHT Milk	Ultra Heat Treatment Milk
VAP	Ventilator-Associated Pneumonia
WHO	World Health Organization

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