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**STUDIES ON QUALITY ATTRIBUTES
OF SOME SEMIFRIED CHICKEN
PRODUCTS DURING FROZEN
STORAGE**

ca 72

BY

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THESIS

Submitted in Partial Fulfilment of
the Requirements for the Degree of

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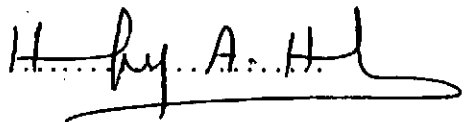
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**STUDIES ON QUALITY ATTRIBUTES
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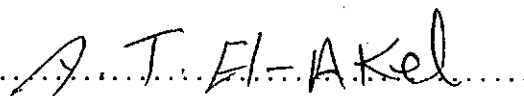
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STUDIES ON QUALITY ATTRIBUTES OF SOME SEMIFRIED CHICKEN PRODUCTS DURING FROZEN STORAGE

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Thesis

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For

The spirit of my father, my family,
my husband, my daughters
Mona & Basma
and my son Sherif

Name of Candidate : **Fardous Ahmed Ahmed Wally**

Degree : Ph.D. Agric. Sci. (Food Technology)

Title of Thesis : Studies on quality attributes of some semifried chicken products during frozen storage

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ABSTRACT

This study was carried out to shade light on the quality of chicken meat as influenced by frying in sunflower seed oil and palm olein oil. Stability of both frying oils was also studied. The effect of part (leg or breast) and storage variables (at -18°C) (deboned or boned, frying before or after frozen storage) on the quality of chicken were also investigated; cooking loss and organoleptic properties of the frying chicken were determined.

The obtained results showed that : Percent satisfaction of the daily requirements of man when consuming 150 g of chicken was 61-64% for protein and 11% of energy. Thiobarbituric acid (TBA), peroxide value (PV) and acid value (AV) were always higher in the leg than the breast meat, cooking increased these values and then increased progressively as the time of frozen storage increased. Both of (PV) and (AV) were less in deboned than in boned chicken breast or leg. Frying process caused a slight increase of total volatile nitrogen and cooking loss and then increased progressively as the time of frozen storage increased. The amino acid concentrations were increased and biological value of semifried chicken parts was higher than the fresh chicken parts that frozen storage and then fried. The best sample, was that of deboned meat semifried before-frozen-storage when fried in palm olein oil especially when breast was considered.

Key words : Chicken, deboned, semifrying, cooking loss, palm olein, acid value, peroxide value, amino acid

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Abbreviations

AA	Amino acid
AV	Acid value
B.V	Biological value
BPW	Buffered peptone water
C	Cholesterol
C.S	Chemical score
DG.	Diglycerides
Du	Degree of unsaturation
EAA	Essential amino acids
EAAI	Essential amino acid index
FA	Fatty acid
FAA	Free fatty acids
FAC	Fatty acids composition
H	Hydrocarbons
HOSO	High oleic acid sunflower oil
IP	Induction period
IV	Iodine value
Ks	Insaturation ratio
L	Linolenic fatty acid
LPC	Lysophosphatidyl choline
LPE	Lysophosphatidyl ethanolamine
MDCM	Mechanically deboned chicken meat
MG	Mono glycerides
MUSFA	Monounsaturated fatty acid
NEAA	Non-essential amino acids
NL	Neutral lipids

NPN	Non-protein nitrogen
O	Oleic fatty acid
OO	Olein oil
OODD	Olive oil deodorizer distillate
OR	Oleoresin rosemary
OTC	Oxytetra cycline
PA	Phosphatidic acid
PC	Phosphatidyl choline
PE	Phosphatidyl ethanolamine
PG	Phosphatidyl glycerol
PL	Phospholipids
POO	Palm olein oil
PS	Psychrophilic bacteria
P.S/150%	Percent satisfaction of the recommended daily intake (9.67 g) of omeg-6 F.A when consuming 150 g of product
PUFA	Polyunsaturated fatty acids
PV	Peroxide value
RI	Refractive index
RCMP	Pre-cooked restructured chicken meat
SFA	Saturated fatty acids
SFO, SO	Sunflower seed oil
SL	Sphingomyelin lipids
SSP	Saly soluble protein
STPP	Sodium tripolyphosphate
TBA	Thiobarbituric acid
TBA RS	Thiobarbituric acid reactive substances
TC	Total count
TEN	Total extractable nitrogen

TG	Triglycerides
TLC	Thin layer chromatography
TSFA	Total saturated fatty acids
TSPN	Total soluble protein nitrogen
TVBN	Total volatile basis nitrogen
USFA	Unsaturated fatty acids
VBN	Volatile basic nitrogen

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