بسم الله الرحمن الرحيم

∞∞∞

تم رفع هذه الرسالة بواسطة / هناء محمد علي

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: ....

PRODUCTION OF SOME NUTRACEUTICAL FOODS FROM FOOD PROCESSING WASTES FOR PRESCHOOL CHILDREN

Submitted By

Wael Mohamed Mansour Sayed Mansour

B.Sc., Agric. Sc., Fac. Agric., Cairo Univ., 1996

A Thesis Submitted in Partial Fulfillment
Of
The Requirements for the Master Degree
In
Environmental Science

Department of Environmental Agricultural Sciences

Faculty of Environmental Studies and Research
Ain Shams University

2022

APPROVAL SHEET

PRODUCTION OF SOME NUTRACEUTICAL FOODS FROM FOOD PROCESSING WASTES FOR PRESCHOOL CHILDREN

Submitted By

Wael Mohamed Mansour Sayed Mansour

B.Sc., Agric. Sc., Fac. Agric., Cairo Univ., 1996

A Thesis Submitted in Partial Fulfillment

Of

The Requirements for the Master Degree

In

Environmental Science Department of Environmental Agricultural Sciences

This thesis was discussed and approved by:

The Committee Signature

Dr. Shahinaz Ahmed Helmy ……..……..

Prof. of Food Science and Technology, Faculty of Agriculture, Cairo University

Dr. Youssef Morse Youssef Elkenany……..……..

Prof. of Food Science and Technology, Faculty of Agriculture, Ain Shams University

Dr. Ihab Salah Abd El-Hamid Ashoush……..……..

Prof. of Food Science and Technology, Faculty of Agriculture, Ain Shams University

Dr. Mohamed Abd Elrazek Elnawawy……..……..

Prof. of Food microbiology, Department of Food Science, Faculty of Agriculture, Ain Shams University

2022

PRODUCTION OF SOME NUTRACEUTICAL FOODS FROM FOOD PROCESSING WASTES FOR PRESCHOOL CHILDREN

Submitted By

Wael Mohamed Mansour Sayed Mansour
B.Sc., Agric. Sc., Fac. Agric., Cairo Univ., 1996

Under the supervision of:

Dr. Mohamed Abd Elrazek Elnawawy
Prof. of Food Microbiology, Department of Food Science, Faculty of Agriculture, Ain Shams University

Dr. Ihab Salah Abd El-Hamid Ashoush
Prof. of Food Science and Technology, Faculty of Agriculture, Ain Shams University

Dr. Wageeh Ahmed Elmalky
Prof. of Biochemistry, National organization for Drug Control and Research

2022

ABSTRACT

Wael Mohamed Mansour Sayed Mansour: "Production of some nutraceutical foods from food processing wastes for preschool children". Unpublished M.Sc. Thesis in Environmental Agricultural Sciences, Faculty of Environmental Studies and Research, Ain Shams University, 2022.

Until recently, the aim of foods was to provide nutrients to humans and satisfy hunger, but nowadays the aim is to satisfy consumers' needs (appearance and health benefit), besides trying to avoid diseases related to nutrition. In this respect, functional foods play distinguished role. Hence, the concept of functional foods. Therefore, the present study aimed to produce low-calorie biscuits and crackers and to evaluate their effectiveness on the body weight gain using oat whole grain powder and sweet cheese whey by using different formulations. In addition to evaluate the effect of these products on lipid profiles, glucose level as well as kidney and liver functions in high fat diet fed rats.

The results of the arbitration of biscuits and crackers formulas ascertained high sensory acceptance of the following B3, B4 for biscuits formulas and C3, C4 for crackers formulas as they recorded high sensory acceptance compared to control and others formulas.

The proximate analysis of the biscuits and crackers formulas found biscuits (B4) had the highest in moisture (5.13%), ash (1.76%) and carbohydrates (33%) and the lowest in fat (16.71%) content as well as the lowest calories value (314.43 cal.). Also, the crackers formulae (C3 and C4) had the highest in moisture (11.52; 10.96 %) and ash (2.4; 2.58 %),

respectively. While, they recorded the lowest in fat (13.89; 13.89 %) contents and the lowest calories value (266.99; 273.69 cal.). Also, there were increase in both of antioxidants activity and phenols content for the biscuits and crackers formulas.

Feeding rats on different biscuits and crackers formulae decreased body weight gain and showed adipocyte histological alterations. Besides feeding rats recorded significantly decreased levels of both total cholesterol and LDL. Meanwhile, data revealed elevated HDL levels. In addition, noticeable improvement in the liver function enzymes (AST) and (ALT) and the kidney function parameters (Urea and Creatinine) at the end of experimental period (60 day). In conclusion, consumption of sweet cheese whey and oat whole-grain in form of low calorie biscuits and crackers formula reduced the adipocytes histological changes, resulting in reduction of the body weight of the rats.

Keywords: Whey Cheese, Oat whole-grain, Biscuits, Crackers, Proximate analysis, Antioxidant activity, Sensory evaluation, Weight Gain, Lipid Profile, Liver function, Kidney function, Histopathological alteration, Rats.

ACKNOWLEDGMENT

First and before all, full praise and gratitude is to ALLAH, who granted me the ability to perform this thesis and helped me to pass safely through all the difficulties.

My sincere appreciation and deepest gratitude to **Prof. Dr. MohamedAbd Elrazek Elnawawy**, Prof. of Food Microbiology, Dept. of Food Sci., Faculty of Agriculture, Ain Shams University, for his supervision, with him I learned a lot, at both professional and personal levels. His wide knowledge and his logical way of thinking have been of great value for me. His understanding and encouraging have provided a good basis for the present work. I have no great words to express how much I am grateful to him, Thank you so much.

My sincere appreciation and deepest gratitude to **Prof. Dr. Ihab Salah Abd El-Hamid Ashoush**, Prof. of Food Science, Dept. of Food Sci., Faculty of Agriculture, Ain Shams University, for his supervision, and his wide knowledge and his logical way of thinking have been of great value for me. His understanding and encouraging have provided a good basis for the present work. I have no great words to express how much I am grateful to him. Thank you so much.

Deepest thanks and sincere appreciation to **Prof. Dr. Wageeh Ahmed Elmalky**, Prof. of biochemistry, National organization for Drug Control and Research, for his supervision, precious advice given throughout the whole study. He was an important support throughout this work. I wish to express my deep thanks and gratitude to my family for their constant help and encouragement. Finally I wish to dedicate this thesis to the soul of my father (**Prof.Dr. Mohamed Mansour Sayed Mansour**) who taught me the meaning of life.

CONTENTS

LIST OF TABLES

LIST OF FIGURES