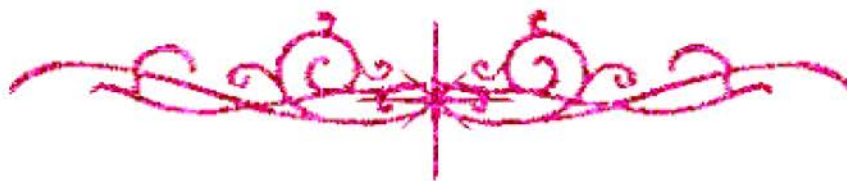


بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

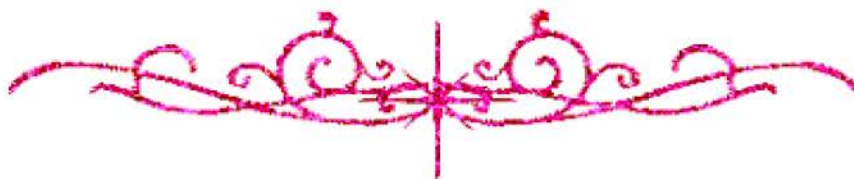
قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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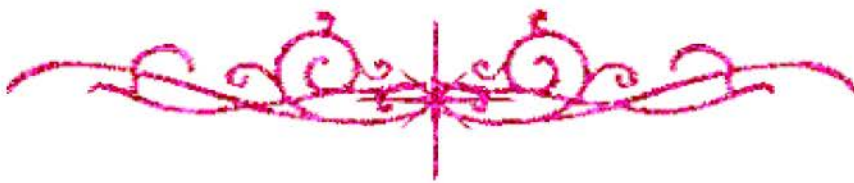
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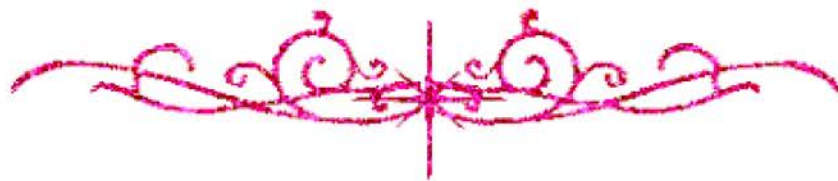


بعض الوثائق الأصلية تالفة





بالرسالة صفحات
لم ترد بالأصل



**SELECTION OF SOME PROBIOTIC YEAST
STRAINS AND THEIR APPLICATIONS
IN SOME FOODS**

By

REHAM ABDALLAH KAMEL MOHAMED

B.Sc. Agric. Sci. (Food Sciences and Technology), Fac. Agric., Ain Shams Univ., 2013

**A Thesis Submitted in Partial Fulfillment
Of
The Requirements for the Degree of**

MASTER OF SCIENCE

in

**Agricultural Sciences
(Food Sciences and Technology)**

**Department of Food Science
Faculty of Agriculture
Ain Shams University**

2021

Approval Sheet

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By

REHAM ABDALLAH KAMEL MOHAMED

B.Sc. Agric. Sci. (Food Sciences and Technology), Fac. Agric., Ain Shams Univ., 2013

This Thesis for M.Sc. Degree has been Approved by:

Dr. Abd-Elrahman M. Khalaf-Allah

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

Dr. Nagwa Mousa H. Rasmy

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

Dr. Amal Ahmed M. Hassan

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

Dr. Ibrahim Rizk Sayd Ahmed

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

Date of Examination: 27 /10 /2021

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Under the Supervision of:

Dr. Ibrahim Rizk Sayd Ahmed

Prof. Emeritus of Food Science and Technology, Department of Food Science, Faculty of Agriculture, Ain Shams University (supervisor).

Dr. Amal Ahmed Mohamed Hassan

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

Dr. Hemat ElSheshetawy ElSheshetawy Ali

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

ABSTRACT

Reham Abd Allah Kamel Mohamed: Selection of Some Probiotic Yeast Strains and Their Applications in Some Foods. Unpublished M.Sc. Thesis, Department of Food Science, Faculty of Agriculture, Ain-Shams University, 2021.

The selected commercial yeast cultures *Saccharomyces boulardii* (SB1 and SB2) were identified by determining the sequence of rDNA of the ITS region for two isolated yeasts then a database search for similar sequences in the GenBank was performed using the BLASTn program. The commercial and pure yeast cultures were preserved by chilled, freezing, and drying methods. According to the obtained results, preserving the yeast cultures by freezing technique is considered the more suitable method for yeast preservation. Encapsulation technique was applied on yeast cultures before the lyophilization process to enhance the viability of lyophilized yeast cells.

Yeast cultures were subjected to probiotic microbial selection experiments. Tolerance to pH, bile salt, temperature, simulated gastrointestinal conditions in vitro, antibiotics, auto-aggregation capacity, cell surface hydrophobicity, ability to assimilate cholesterol, anticancer activity, antimicrobial activity, and antioxidant activity are the selection experiments which carried out to decide if the examined yeast strains can be considered as probiotic microorganisms.

From the obtained results, *Saccharomyces boulardii* SB1 and SB2 strains achieve the highest scores in most carried out experiments to be considered as a probiotic strains. The addition of prebiotics (inulin and lactulose) increased the viability of yeast strains under study with the increase of addition level up to 5% in particular with the strains SB1 and SB2 yeast cultures.

The tested yeast strains were used for the production of gummy candy and sweet potato puree with the addition of inulin or lactulose to the recipe

of each product. The gummy candy supplemented with the strains SB1 and SB2 remained intact without the growth of fungi until the end of the storage period. In concern with texture profile, no remarkable effects of yeast strains on cohesiveness and springiness were observed for the tested candy samples. The addition of *S. boulardii* yeast with suggested prebiotic material had a positive effect on most sensory properties of sweet potato puree.

Keywords: Probiotics, Prebiotics, Yeasts, Preservation methods, Probiotic properties and Synbiotic foods.

ACKNOWLEDGEMENT

In the name of Allah, most gracious, most merciful. All praises are due to almighty Allah who granted me the ability to perform assay. I would like to express my deepest thanks, gratitude and deep appreciation to **Dr. Ibrahim Rizk Sayd Ahmed**, Professor emeritus of Food Science and Technology, Fac. of Agric., Ain Shams University, for his kind supervision, valuable guidance and beneficial advices during the present of this investigation.

Sincere thanks to **Dr. Amal Ahmed Mohamed Hassan**, Professor emeritus of Food Science and Technology, Fac. of Agric., Ain Shams University for sharing in supervision, guiding and supporting the experimental work and discussion of the obtained results.

Honest thanks, deepest gratitude and appreciation to **Dr. Hemat ElSheshtawy ElSheshtawy Ali**, Professor of Food Science and Technology, Fac. of Agric., Ain Shams University for supporting, guiding and helping of the obtained results.

Dedication to the soul of **Dr. Hussien Ahmed Abd-ElRahman**, Professor emeritus of Food Science and Technology, Fac. of Agric., Ain Shams University for his constructive help during the first of this investigation.

Deep thanks to **Dr. Yehia Abd-ElRazik Hiekal**, Professor emeritus of Food Science, Fac. of Agric., Ain Shams University for support during the practical parts of this research work and his continuous advice.

Great thanks to Microbiological Resources Centre, Cairo, Egypt (**MIRCEN**) for supporting the practical parts of Texture Profile Analysis. Grateful appreciation is also extended to **all staff members** of Food Science Department, Fac. of Agric., Ain Shams University. Special deep appreciation is given to my mother and all my family for their great understanding and support during the preparation of this thesis.

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