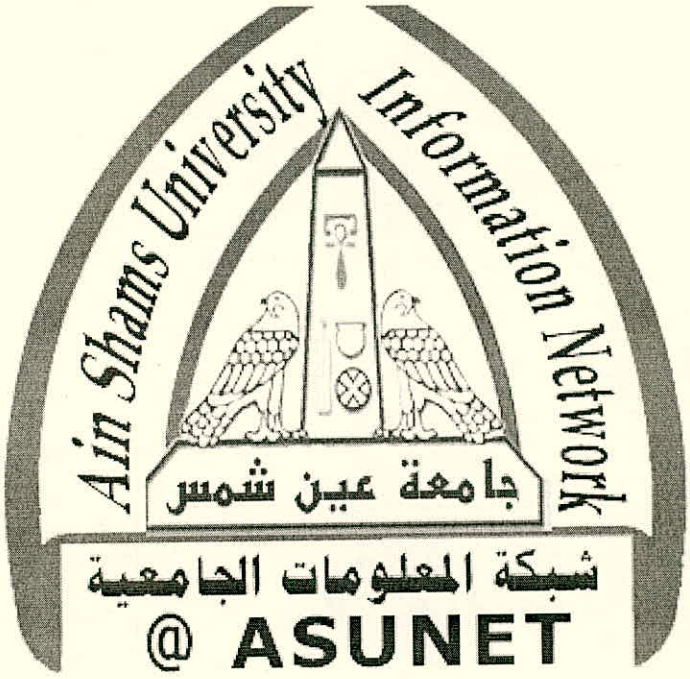
بسم الله الرحمن الرحيم

Ain Shams University Information Network

جامعة عين شمس

شبكة المعلومات الجامعية

@ ASUNET



شبكة المعلومـــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قسم ﴾

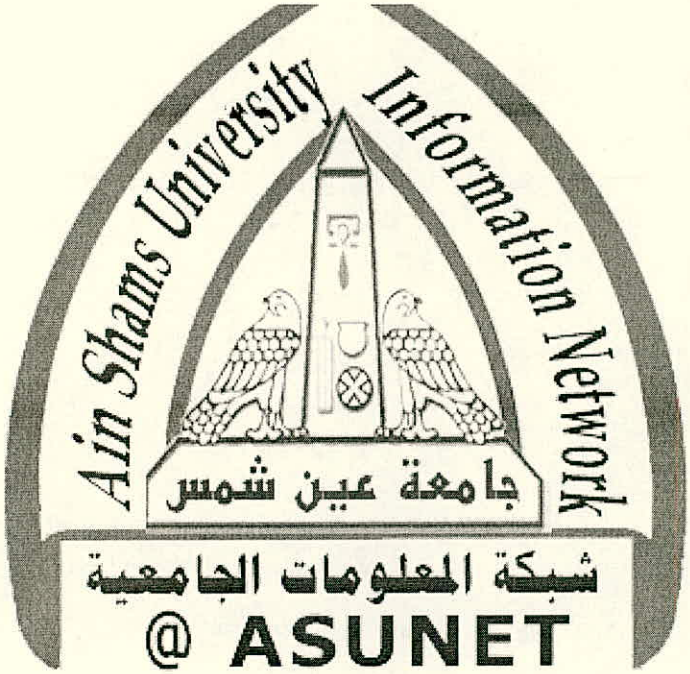
نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

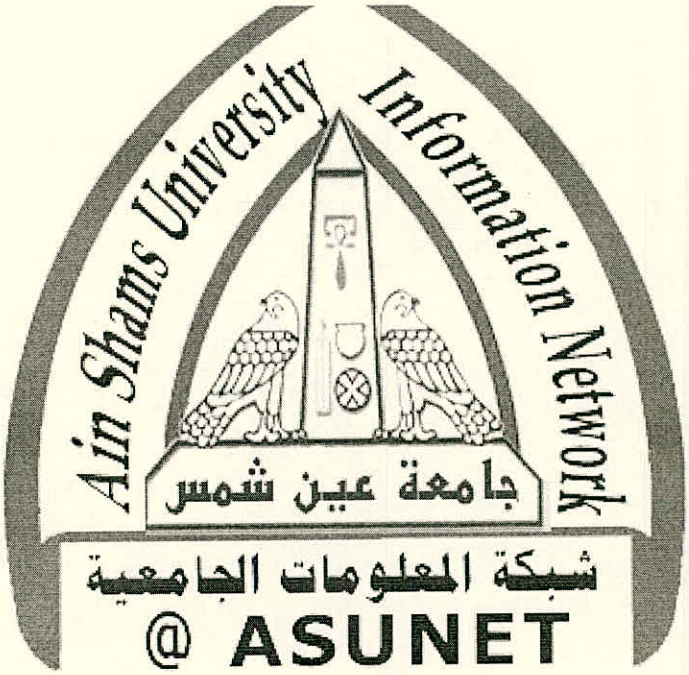
في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %



بالرسالة صفحات

لم ترد بالأصـــل



بعض الوثائق الأصلية تالفة

UTILIZATION OF SUGAR BEET PROCESSING WASTES

By

FATMA HASSAN MOHAMED SAYED AHMED EL - MASRY

B.Sc.Agric. (Agric . Microbiology) , Ain Shams University , 1986

M.Sc. Agric. (Agric. Microbiology) , Ain Shams University , 1995

A Thesis Submitted for Doctor of Philosophy

In

" Environmental Science"

Department of Agriculture Science

Institute of Environmental Studies & Research

Ain Shams University

2002

APPROVAL SHEET

Utilization of sugar beet processing wastes

By

Fatma Hassan Mohamed Sayed Ahmed El – Masry

B.Sc. Agric . (Agric. Microbiology) Ain Shams University , 1986
M.Sc. Agric. (Agric. Microbiology) Ain Shams University , 1995

This Thesis for Ph.D. Degree in Environmental Science has been approved by :

1- **Prof. Dr. Mohamed N. A. El – Refy**
Prof. of Food Science and Head Food Techn. Dept.,
Faculty of Agric., Assiout University .

2- **Prof. Dr. Mohamed F. El - Shahat**
Prof. of Analytical Chemi., Faculty of Sci.,
Ain Shams University .

3- **Prof. Dr. Ramadan M. Mahmoud**
Prof. of Food Science and Techn., Fac. Agric.,
Ain Shams University (Supervisor) .

4- **Prof. Dr. Mamdouh H. O. El – Calyoubi**
Prof. of Food Science and Techn., Fac. Agric.,
Ain Shams University (Supervisor) .

Committee in charge

Date / /2002

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Under the supervision of :

1- **Prof. Dr. Ramadan M. Mahmoud**
Prof. of Food Sci . and Techn., Fac. of Agric., Ain Shams Univ.

2- **Prof. Dr. Mamdouh H . O . El – Calyoubi**
Prof. of Food Sci. and Techn., Fac. of Agric., Ain Shams Univ.

3- **Prof. Dr. Mohamed A . M . Ibrahim**
Prof . of Analytical Chemistry , Fac. of Pharmacy , Cairo Univ .

4- **Dr . Mohamed M . M . Khalaf**
Associ . Prof. of Food Sci. and Techn., Fac. of Agric., Ain Shams Univ .

2002

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ABSTRACT

Fatma Hassan Mohamed Sayed Ahmed El – Masry , Utilization of sugar beet processing wastes. Unpublished Ph.D.Thesis , Agric. Science Dept., Ain Shams Univ., Institute of Environmental Studies and Research , 2002 .

Sugar beet wastes as a by – product from the sugar factories was subjected to evaluate the physico – chemical functional and nutritional properties. Two main products were considered for food systems supplementation , i.e., sugar beet pulp protein isolate (SBPPI) and sugar beet pulp fiber (SBPF) . The SBPPI was used at different levels to supplement beef meat in burgers and sausages, while the SBPF was used to supplement wheat flour in bakery products (biscuit and cake) .

Sugar beet pulp protein isolate contained higher level of protein being 92%, however, physically the colour was observed in the light yellow. The isolate was deficient in lysine amino acid and had higher values of essential amino acids index , biological value, and protein efficiency ratio indicating the high protein quality. The obtained results of the functional properties concluded that beet wastes products had a good stability and can be readily mixed with the aqueous and oily systems . Sugar beet products were found to be higher nutritional values and the sensory evaluation proved that it can be used to replace beef meat up to 25 % for SBPPI, however, bakery products can be fortified with SBPF up to 20 % .

Burger or sausage samples substituted by isolate were found to be more cooking yield, lower cooking loss, lower shrinkage, higher water holding capacity and reduced the plasticity . On the other hand , the addition of sugar beet pulp fiber gave a better rating score in the baked cake or biscuit samples than that fortified with wheat bran .

The obtained results proved the higher potential to obtain good grade of product quality and the higher total protein and dietary fiber content , higher functional and nutritional properties in the beet pulp suggests that this by – product may has a potential use as an alternative sources for food systems .

Key words : Sugar beet pulp , proximate composition , protein isolate , dietary fiber , functional properties , food systems utilization .

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