



شبكة المعلومات الجامعية  
التوثيق الإلكتروني والميكرو فيلم

# بسم الله الرحمن الرحيم



**HANAA ALY**



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# شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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التوثيق الإلكتروني والميكروفيلم

# جامعة عين شمس التوثيق الإلكتروني والميكروفيلم

## قسم

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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



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# **PRODUCTION OF SOME FUNCTIONAL FOODS FOR GLUTEN ALLERGY PATIENTS**

BY

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B.Sc. Agric. Sci. (Food Sci., & Tech.), Fac. Agri., Al-Azhar University, Assuit 2003

M.Sc. Sci., Agric. Sci. (Food Science), Fac. Agri., Cairo University, 2014

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## ABSTRACT

**Sayed M.T.M. Mostafa: Production of some Functional Foods for Gluten Allergy Patients. Unpublished Ph.D. Thesis, Department of Food Science, Faculty of Agriculture, Ain Shams University, 2020.**

From the point of an increasing demand for improvement the quality of gluten-free products, the objective of this study was to investigate this demand to produce gluten free Balady bread and gluten free pasta by using gluten free raw materials such as white corn flour, rice flour, potato starch and soy protein isolate at different ratios. Psyllium husk and carboxymethyl cellulose were used as binding agents. Maltogenic  $\alpha$ -amylase and xylanase were used to retard staling of gluten free Balady bread. Also glucose oxidase and transglutaminase were used as to improve the quality of gluten free Balady bread. Thus, other trial was conducted to degrade wheat gliadin by using fungal protease from *A. niger* at different conditions of incubation time, incubation temperature, pH and enzyme concentration. The results indicated that, psyllium husk showed high quality properties compared to carboxymethyl cellulose concerning physical and sensory properties for gluten free Balady bread or gluten free pasta, where no significant difference between the gluten free Balady bread containing 2.5% PsH and the Balady bread prepared from 100% wheat flour (82% ext.) in terms of specific volume of bread. Both maltogenic  $\alpha$ -amylase and xylanase were able to delay staling of gluten free Balady bread during three days of storage periods compared to untreated sample, also transglutaminase recorded higher values of quality attributes parameters of bread compared to the other treated with glucose oxidase. On the other hand, sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) test showed the ability of fungal protease to degrade gliadin during 16 hr. of incubation time.

**Key words:** Gluten free Balady bread, Gluten free pasta, Psyllium husk, Carboxymethyl cellulose, Maltogenic  $\alpha$ -amylase, Xylanase, Transglutaminase, Glucose oxidase, Fungal protease.



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