

**EFFECT OF NATURAL FERMENTATION ON THE NUTRITIONAL QUALITY OF
"EL HAMMOUM" DURUM WHEAT (*TRITICUM DURUM*) FERMENTED
PRODUCT OF THE ALGERIAN COUNTRY**

FREHA GOURCHALA¹, ALAIN-FRANCK HOBAMAHORO², FATMA MIHOUB³ & CHERIFA HENCHIRI⁴

^{1,2&3}Faculty of Natural Sciences and Life, Ibn Khaldoun University, Algeria

⁴Faculties of Sciences, Badji Mokhtar Annaba University, Algeria

ABSTRACT

In Algeria, El-Hammoum, durum wheat fermented, from storage in underground silos (matmoras) in some rural environment, is appreciated for its organoleptic properties and its richness in protein, good for health; it is used as a remedy by diabetics, because of its poverty of sugars linked to its fermentation. The aim of the study is the characterization of the El-Hammoum biochemical composition and that of profile its main metabolites which have health effect. Compared to unfermented wheat, El-Hammoum was rich in water, protein and total polyphenols representing increases of 3.46%, 4.9% and 29.6% and low content of pH, PMG PS, total sugars, starch, amylopectin and gliadin respectively reductions of 10.35%, 17.3%, 23.4%, 40.4%, 34.2% 47 % and 57.3%. The richness of polyphenols (antioxidants) and protein of fermented wheat confers him a beneficial effect on health. The Low contents of total sugars and starch would justify its use by the local population diabetics. The decrease in gliadin, gluten protein fraction, implicated in celiac disease, would be beneficial for these patients.

KEYWORDS: Durum Wheat, El-Hammoum, Fermentation, Matmora, Diabetics, Physicochemical, Phytochemical