QUALITY EVALUATION OF BISCUIT SUPPLEMENTED WITH HIGH PROTEIN–FIBER SOURCES

By

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B.Sc. Agric. Sc. (Food Science and Technology), Ain shams Univ., 2009

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ABSTRACT

Mohamed Abd-Elnaby Abo-Elmakarem Ragheb: Quality Evaluation of Biscuit Supplemented with High Protein – Fiber Sources. Unpublished Master of Science Dissertation, Department of Food Science, Faculty of Agriculture, Ain Shams University, 2017

The possibilities of replacing wheat flour in its products and to develop food items based on the by-product of wheat or rice milling industry were investigated. Meals and protein concentrates were prepared from wheat germ and rice bran. Chemical composition and amino acid profiles indicated that wheat germ and rice bran protein products can be considered as good plant protein supplements in biscuits. The function properties include, water and oil binding capacities, emulsifying activity and stability, as well as, foaming characteristics of wheat germ and rice bran protein products were studied. Selected function properties are essential for incorporation of such proteins in biscuits. Plant protein prepared from wheat germ and rice bran were used to study their influence on rheological characteristics of wheat flour dough and biscuit making quality. Biscuits containing wheat germ or rice bran protein products were equal or superior to control biscuits in their chemical composition, amino acids and nutritional value, physical and sensory characteristics. Therefore, the purpose of this research was to find the potential use of by-products of wheat and rice milling industry in the rheological characteristics of wheat flour dough and the quality of biscuits.

Key Words: Wheat flou**r,** Wheat germ, Rice bran, Biscuits, Wheat germ protein concentrate, Rice bran protein concentrate, Functional characteristics, Nutritional value, Amino acids, Sensory evaluation.

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LIST OF ABBREVIATION

BV	Biological value
C-PER	Calculated protein efficiency ratio
CS	Chemical score
DRB	Defatted rice bran
DWG	Defatted wheat germ
EA	Emulsification activity
EAAI	Essential amino acid index
ESI	Emulsion stability index
FC	Foaming capacity
FS	Foaming stability
OBC	Oil binding capacity
RBM	Rice bran meal
RBPC	Rice bran protein concentrate
WBC	Water binding capacity
WF	Wheat flour
WGM	Wheat germ meal
WGPC	Wheat germ protein concentrate
WOBI	Water-oil binding index