



## - Nutritional assessment of raw, gamma irradiated, microwave treated and fermented wheat germs .

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### Abstract:

ABSTRACT Wheat germ was irradiated with two types of radiations; gamma and microwave. Gamma irradiation was used at a dose of 6 k.Gy. Microwave radiation was performed by continuous supply of 200 W/Kg of wheat germ for 3 min, and wheat germ was fermented. The gross chemical composition as well as the caloric value of all studied samples, in addition the mineral composition and vitamins of these studied samples was estimated. The amino acid composition and fatty acids composition were studied as well. The results showed that treated and untreated wheat germ had relatively high content of protein, fat, and minerals. Moreover, it proved that it is a good source of vitamin E. It was also noticed that wheat germ protein was rich in most of the essential amino acids, especially leucine, and lysine. Data revealed that wheat germ is considered as a rich source of fatty acids ,and showed that the dominant fatty acid was the linoleic acid. The data revealed that fermented wheat germ recorded the highest percentages in crude protein (36.42%).However microwave treated wheat germ had the highest content of crude fiber (6.13%) . While gamma irradiated wheat germ recorded the highest percentages of carbohydrates (60.75%). On the other hand, raw wheat germ recorded the highest percentages of the ash (5.00%) on dry weight basis. The data concerning mineral contents of the present study are revealed that the fermented wheat germ had the highest iron, manganese, copper, sodium, potassium and sulphur levels.The data revealed that fermented wheat germ recorded the highest percentages in Vitamin (A) and Vitamin (C).However microwave treated wheat germ had the highest content of vitamin (E). Moreover,the data revealed that there were obvious variations in the amino acid composition and in the fatty acids composition as well among all studied types of wheat germ.

### Keywords:

Keywords: raw wheat germ, gamma irradiated wheat germ, microwave treated wheat germ, chemical composition, mineral, vitamin, amino acids, fatty acids.

### Published In:

- مجلة العلوم الزراعية- جامعة المنصورة- , مجلد 34 العدد( 12) ديسمبر 2009 , من 11179 الى 11193