

## **Incorporating of Soy Flour in Wheat Bread and its Effects on Growth and Renal Function in Young Rats.**

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Quantity and quality of dietary protein considered to be a nutritional problem and the search for inexpensive and quality protein foods considered as a vital mission to improve and enhance the nutritional quality of bread as it had been recognized as a stable food in Egypt., Hence this study aims to examine the effect of mixing defatted soy flour (DSF) and wheat flour on the breads' quality in addition to investigate the effects of these mixtures on growth and kidney function in young rats. Different flour mixtures of wheat and DSF were used in preparing of tested breads which were subjected to sensory evaluation. Thirty six young male albino rats 50-70 g were divided into six groups and fed the experimental diets for 4 weeks as follows: group (1) Control group fed on basal diet; group (2) fed on 100% protein from defatted soy flour (DSF 100%); group (3) fed on 100% protein from wheat flour (W 100%); group (4) fed on 90% protein from wheat flour and 10% DSF protein (W 90%+ DSF 10%); group (5) fed on 85% protein from wheat flour and 15% DSF protein (W 85%+ DSF 15%), and group (6) fed on 80% protein from wheat flour and 20% DSF protein (W 80%+ DSF 20%). Biological evaluation was undertaken by determination of body weight gain, Feed Efficiency Ratio (FER) and protein Efficiency Ratio (PER); and at the end of the experimental period blood was collected and serum total protein, albumin, globulin, uric acid, creatinine and serum urea was determined. Results indicated that wheat 100% bread had the highest score in overall quality and acceptability, followed by bread of wheat 90%+ DSF 10%, whereas the bread of wheat 80%+ DSF 20% had the lowest score value. And the biological and biochemical results showed that the addition of DSF to wheat flour enhanced the protein quantity and quality of bread as illustrated by increments of weight gain and FER values of groups fed on wheat and DSF mixtures, and by increasing of serum total protein in group fed mixtures of wheat and DSF; on the other hand serum urea was significantly ( $P \leq 0.05$ ) increased on mixture of wheat and SDF at 15 and 20% levels. The results of this study revealed that, the addition of 10 and 15% DSF to wheat bread have good acceptability and it can be used to enhance the quantity and quality of wheat bread protein.

**Keywords:** Wheat- Soy- sensory evaluation- rats- growth- serum total protein- kidneys function.