

The biological influences of diet supplemented with different levels of soy milk byproduct "Okara" on adult male rats.

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Abstract:

The present study was carried out to investigate the biological influences of different levels of soy milk byproduct "Okara" on Sprague-Dawley rats. Thirty male Sprague-Dawley rats were divided into 4 groups. All groups were fed the experimental diet for four weeks and were fed as the following: control group on basal diet, group (Ok S 10%) on basal diet supplemented with 10% dried Okara protein, group (Ok S 20%) on basal diet supplemented with 20% dried Okara protein, group (Ok R 10%) on basal diet with 10% dried Okara protein as partial replacement of casein, group (Ok R 20%) on basal diet with 20% dried Okara protein as partial replacement of casein. The investigated parameters included: changes in food intake, body weight, FER, Total serum protein, serum albumin, serum calcium and the histological changes in rats' liver. Results showed that, weight gain were significantly ($P \leq 0.05$) low in all experimental groups when compared with the control group. The FER values were significantly decreased in Ok S 10%; Ok R 10% and Ok R 20% groups, compared to the control group. Serum total protein, albumin and calcium were insignificantly ($P \leq 0.05$) differed among the experimental groups and control group. The liver of rats fed on okara diets showed histological changes in comparison with that of the control group. Results of the present study clarified that dried Okara as a waste byproduct could be used to increase the dietary fiber intake. However, more researches are needed to investigate the safety aspect of dried Okara and its effect on human organs too.

Key word: Okara, Rats, Body Weight, FER, Serum Protein, Serum Calcium and Liver Histology.