

# Protein Content of Some Available Breads for Sale at Rawalpindi and Islamabad

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Sixty three samples of six brands of commercially available breads and different bakery breads sold in Rawalpindi and Islamabad were analyzed for their content of protein. The samples consisted of plain bread and milk bread. It was found that commercially available breads had higher content of proteins except in one brand where milk protein had a lower protein content as compared to the plain bread. Bakery prepared breads had wide fluctuations in their protein content.

**Key words:** Protein, bread, bakery.

Cereals are components of main diet in Pakistan. Of these wheat is a staple diet. One of the preparations of products of wheat is bread which is prepared from flour produced by commercial flour mills. Bread is produced by certain commercial companies and by local bakeries and these are then sold in various markets.

In Pakistan there is no enforced legislation to make the producers of bread to label the product with its nutrient content to let the people know what is it that they are consuming. Bread is also a source of proteins for people of Pakistan. Protein and energy are so closely linked that public health officials often use the term of protein calorie malnutrition<sup>1</sup>.

This study was carried out to estimate the protein content in various commercially available breads sold in some of the markets of Rawalpindi and Islamabad, Pakistan.

## Material and Methods

Two different kinds of bread namely plain and milk bread prepared by commercial companies sold under different brands and bread prepared by local bakeries were sampled from different areas of Rawalpindi and Islamabad.

They were bought in the morning and were transported to the laboratory immediately in the same packing in which they were being offered for sale on the counters. None of the samples carried nutrient details on the label.

The samples were dried in the oven at 60 degree Celcius and then the sample was homogenised. Part of the sample was then analysed for crude protein content using KJELDAHL Method at NIH Laboratories. In order to check for Rice Starch Kit blanks were run with each sample. At least one sample in duplicate was analysed along with the standard.

## Results

The results are reported on analysis of dry weight samples. The results showed that the crude protein content of commercial breads of various brands ranged from 9.99 to 12.65. The commercial milk bread protein content showed significant variation and range was from 7.34 to 15.86. In

bakery prepared plain bread protein content ranged from 8.38 to 11.38.

## Discussion

In Pakistan, cereal mainly wheat is the staple food of Pakistani population. According to micronutrient survey, 1978<sup>2</sup> average consumption of wheat by an individual in Pakistan is 448 grams per day and provides over 50% of the total calories and 60% of the total proteins. National Nutrition Survey in 1985-87<sup>3</sup> the consumption of wheat was found to be 439 grams per day indicating that there was little change in the consumption of wheat per day by an individual over ten years.

The net dietary protein calories of wheat bread are about 5.9% and can meet some of the protein requirements of when consumed in adequate amount<sup>4,5</sup>.

Bread is an important baked product and has assumed importance as one of the main components of breakfast and is also used in snacks and for school time lunch. Baked bread is usually used by people in middle to upper socioeconomic strata and contributes towards nutritional requirement of people living in urban area<sup>1</sup>.

Osborne estimated protein in flour of commercial mills<sup>6</sup>. Patt et al<sup>7</sup> analysed the effect of milk protein concentrates in bread and found it to be useful enhancing the protein content in bread. It has been suggested that plain bread should contain 13% of protein on dry weight basis when "Good Manufacturing Practices" are followed.

The results in this study indicate that protein content of commercial plain bread is slightly less than what is expected on the basis of international standards. The content of protein fluctuates widely in plain bread showing lack of standardization. The content in bakery plain bread also indicates a big variation in their protein content. This may be attributed to different formulations being employed by various bakeries. A study conducted in country reported protein content of 10.2gm% in bakery prepared plain bread<sup>8</sup>. Though the data shows variation in protein content, average protein value is around the reported value quoted in the above study.

The commercial milk breads also had variable protein. The results indicate that most were either without

milk or milk was added in a small quantity not grossly affecting the protein content. There was one brand which showed a lesser amount of protein in bread as compared to its plain bread which is not possible unless a substandard substrate was used to prepare bread. This bread was being sold at a higher price than plain bread under the cover of it being milk bread.

These results also indicate that on the whole there are no prescribed or enforced requirements by the law for breads to contain nutrients in a certain quantity. This also highlights the requirement of legislation to make the manufacturers commit on label regarding the nutrients of bread and other foods being offered for sale.

On the whole protein content was in a higher range in commercial breads than the local bakery breads. This study also indicates that according to the degree of consumption of bread a substantial amount of protein are consumed though in a lesser amount than what is desired. The authors are indebted to the help of N.I.H. for their technical assistance in laboratory work.

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