

NUTRITION

Diet in Health and Disease

By

S. B. Lal, M.B.B.S., D.P.H., (EDIN)

Asstt. Director of Public Health (Nutrition)

Public Health Laboratories, Patna-4.

The Nature of Foods. (Cont'd)

Wheat.

The next cereal of importance in our daily dietary is wheat. It is the staple diet for the people of the North-Western regions of India and, till recently, its consumption was mostly confined to these areas but with the scarcity of rice, people of the rice-eating areas now include it to some extent in their diet. It is believed that wheat is as old as civilisation itself and remains of it have been found in the ruins of Mahenjadaró although the ancient scriptures of India *e.g.* Vedas, give prominence to rice only.

The nutritive value of wheat depends on its chemical composition which varies from sample to sample, depending on the variety of the seed, climate, rainfall, chemical composition of soil, the type of strain and the harvesting season. In view of this the composition given will not be true for every variety of wheat but will be an average of the sample. The average protein content of English wheat is round about 8.9% but India wheat is richer. Wheat grown in the Punjab and Bihar have a protein content of 9 to 11%. Of the different constituents of wheat grain, it has been reported that with 75% extraction, the protein content of white flour, bran and germ is 12.0, 15.0, and 25.9% respectively, the germ being richest in protein.

Wheat contains a large number of mineral constituents and as a rule white flour or "maida" contains much

less than whole wheat flour. Wheat contains but a small quantity of iron but even this makes an appreciable contribution in those diets which predominantly consist of whole wheat flour. The calcium content varies from 22.0 to 98.0 milligram/100 g and maida only has about 10 mgm. Wheat contains no vitamin A, D or C. The total vitamin E content may be as much as 3.5 mgm/100 g and most of it is concentrated in the germ. It has been shown recently that it is a fairly good source of folic acid. The thiamine content varies, but on an average whole wheat contains 5.4 micrograms per gram.

Just as in the case of rice, so also in wheat, the processing may be done at home or in mills *i.e.*, by hand driven "Chakkis" or by power driven mills. During the process of milling the aleurone layer, which is particularly rich in some nutrients, is discarded which is unfortunate. The germ is of very high nutritive value and its inclusion in the flour is commendable but it is not liked by some people because of the colour and further it does not bake so well. During milling, at different stages of the process sujji, atta, maida, and bran are produced. 100 units of wheat would produce 34 units of atta, 41 units of maida, 8 units of Sujji and 17 units of bran. The digestibility of whole wheat flour is lower than the refined flour but this disadvantage is offset by the larger quantity of protein available in the former. It has been

[Continued on page 233]