

A-09 Hypercholesterolaemic components in some foods of Sri Lanka: protein and dietary fibre

K Kulanathan¹, W R Wimalasiri², P H P Fernando¹, P A J Perera¹

(¹Dept. of Biochemistry, Faculty of Medicine, Univ. of Peradeniya,

²Div. of Biochemistry, Dept. of Basic Science, Faculty of Dental Sciences, Univ. of Peradeniya)

Hypercholesterolaemia is a major risk factor in Coronary Heart Disease (CHD), and dietary components capable of decreasing blood cholesterol are useful in alleviating this risk. Dietary fibre, especially soluble fibre, and proteins are known to be agents active in this respect. The objective of this project is to investigate some selected local foods for their protein and fibre contents.

The foods analyzed for protein and fibre contents included pulses: cowpea, black gram, green gram and soya bean, vegetables: amaranthus, avara, brinjal, battana, bitter gourd, carrot, kekiri, radish, snake gourd, spinach and yellow pumpkin and spices and condiments: garlic and karapincha. The protein contents were estimated by Micro-Kjeldahl methods. The estimation of fibre fractions were based on Hellendoorn's enzymatic and gravimetric methods.

High protein contents were observed in soya bean (37.5 ± 0.7 g/100g dry weight) and cowpea (27.2 ± 0.0). Amaranthus, avara, black gram, green gram and spinach had moderate values ranging from 20 to 24, and all others had less than 17g/100g. Spinach had the highest total dietary fibre content ($69.3 \pm 7.4\%$ of dry matter) and no significant difference was observed between spinach and other foods analyzed, except with garlic. High levels of insoluble dietary fibre were observed in Karapincha (59.4 ± 4.8), spinach (57.0 ± 7.1), amaranthus (47.4 ± 0.6), black gram (50.7 ± 0.5) and bitter gourd (48.3 ± 5.0). All the other vegetables investigated had less than 35% DF. The highest level of soluble dietary fibre was observed in carrot ($24.9 \pm 0.5\%$ of dry matter). Kekiri had (17.4 ± 0.2), and no significant difference was observed between Kekiri and others except black gram which had $1.0 \pm 0.1\%$). Carrot and bitter gourd had high levels of pectin $15.3 \pm 0.4\%$ of dry matter and $12.4 \pm 0.4\%$, respectively. Other foods analyzed had less than 5% pectin.

This shows that soya and cowpea, had a high content of protein and carrot a high amount of soluble dietary fibre and pectin, which are known to possess hypocholesterolaemic effect.