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Effect of selected traditional breakfast meals on postprandial serum glucose levels

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The glycaemic Index (GI), an index that reflects the potential of a carbohydrate food to raise the postprandial serum glucose level has now been accepted by the WHO as a tool for management of type II diabetes. Low GI foods have a beneficial health impact on individuals suffering from diabetes, cardiovascular diseases, obesity and cancers, most of which show a high incidence in Sri Lanka. Studies have reported that dietary fiber, fat and protein can lower the GI values of foods. The objective of the study was to calculate the GI values and investigate the effect of other nutrients on the GI values of some of the high moisture-breakfast meals consumed in Sri Lanka. The meals consisted of legumes (chickpea, mungbean, cowpea), Olu-milk rice and breadfruit. The GI values were determined with healthy individuals (n=10, age 20-30 yr) in a random crossover study design. The control (Prima crust-top white bread) and the test foods were served on separate occasions after an overnight fast (10-12 hrs). The 25 g digestible carbohydrate portions of the control (white bread) and test foods were served (chickpea, mungbean, cowpea, breadfruit and Olu-milk rice). The 25 g digestible carbohydrate content was arrived due to the high moisture percentage of the test food portions. The test foods were served with coconut scrapings or *lunumirisa* except for chickpea. The calculated GI values increased in the order of chickpea (boiled and tempered) < cowpea (boiled) < munbean (boiled) < breadfruit (boiled) < Olu-milk rice (GI values ± SEM were 29±5, 49±8, 57±6, 64±7 and 91±8 respectively). A high negative correlation (r -0.918 $p<0.05$) between GI and total dietary fiber (TDF) per meal was observed for these 5 foods. Thus the lowering of GI of legumes could be attributed to high TDF contents (24.3 – 28.8 % DW). Such a correlation between GI and the fat or protein was not seen. However, when Olu-milk rice was omitted (with rather a high fat content 31.5% D.W), a significant negative correlation (r -0.984 $p<0.05$) was seen. Thus in the case of Olu-milk rice rather than the nutrient content some other factor may be contributing for the high GI. In conclusion, the legumes can be categorized as low GI foods (GI < 60) whilst breadfruit as a medium GI food (60 >GI<85) and Olu-milk rice as a high GI food (GI >85).

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