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Traditional foods and their blood glucose responses

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Glycaemic Index (GI) classifies carbohydrate rich foods according to their effects on postprandial blood glucose responses. Thus carbohydrate rich foods are categorized as high, medium and low GI foods respectively. Low GI foods are claimed to have many health benefits. Most traditional foods consumed by our ancestors have now become underutilized. According to folklore and Ayurvedic medicine consumption of traditional foods appears to have had a beneficial effect on blood glucose responses. Thus the objective of the present study was to determine the GI of foods prepared from flour of Madu (*Cycas circinalis*) seeds and Kithul (*Cariota urens*) stem. The flour and seeds were collected from Matale and Kurunegala districts, which are known to have a wide distribution of these plants. Madu roti was prepared with Madu flour (37%) wheat flour (37%) and coconut (26%) and Kithul roti with Kithul flour (74%) and coconut (26%). Madu pittu contained Madu flour (37%) and rice flour (37%) and coconut (26%). Kithul thalapa (Kithul flour100%) was mixed with sufficient amount of water and cooked under a medium flame. Foods were prepared under standardized conditions. For the determination of glycaemic index healthy individuals (n=10); Body Mass Index 22 + 2; ages 20-30 years; were given the control (prima crust top bread) and test foods both containing 50g of available starch after an overnight fasting (8-10 hours). Fasting and after consumption of control and test foods, blood samples were taken at 30,45,60,90,120 min on each day and GI was calculated by FAO / WHO standard method. This study was carried out as a randomized crossover study. Glycaemic Indices of Kithul thalapa Kithul roti, Madu roti, Madu pittu were 128+11, 57+ 4,66 + 6, 72 + 4 respectively. According to these results Kithul roti can be categorized as a low GI food and Madu roti and pittu as medium GI foods whereas Kithul thalapa is a high GI food. Kithul roti showed a significantly low GI ($p=0.02$) value when compared to Kithul thalapa preparation. High GI could be due extensive gelatinization of starch granules in Kithul thalapa during preparation. Madu pittu GI was significantly lower ($p<0.05$) when compared with earlier reported GI of rice and wheat pittu preparations. Some traditional Sri Lankan food preparations elicit low blood glucose responses and therefore use of this flour for food preparation could be beneficial in controlling the glycaemic response.

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