

COMPARISON OF THE GLYCEMIC INDEX OF THE WHEAT FLOUR BREAD AND MALTED RICE-WHEAT BREAD AVAILABLE AT JAFFNA IN SRI LANKA

Raguparan, P¹., Veluppillai, S¹., Thayaananthan, K²., Nithyanantharajah, K²., Balakumar, S²., Arasaratnam, V².

¹Department of Agricultural Chemistry, Faculty of Agriculture, University of Jaffna, Sri Lanka

²Department of Biochemistry, Faculty of Medicine, University of Jaffna, Sri Lanka

ABSTRACT

The glycemic index (GI) is an important parameter of food quality which compares the hyperglycemic effect of a tested meal with pure glucose (or another defined standard food). The glycemic index of different types of breads (wheat flour bread and malted rice-wheat bread) was determined. The determination of the glycemic response and the glycemic index of these two types of breads were objectives of this study. Glucose was used as the reference food. A group of 22 with the mean age, weight, height and body mass index of volunteers were 24.62 (± 1.43) years, 63.42 (± 10.50) kg, 1.70 (± 0.07) m and 21.90 (± 2.74) kgm⁻² respectively selected for this study. The mean fasting blood glucose level of the volunteers was 84.81 (± 4.37) mgdL⁻¹. The mean blood glucose level at 30 and 60min after the orally administered 75g glucose were 147.43 (± 11.67) and 125.95 (± 9.30) mgdL⁻¹ respectively. The mean glycemic response of pure glucose at 30 and 60 min were 62.62 (± 11.45) and 41.14 (± 8.93) mgdL⁻¹ respectively. The higher glycemic response for the pure glucose was obtained at 30min. To three volunteers, wheat flour bread and malted rice-wheat bread containing 75g digestible carbohydrate were administered. The peak blood glucose response was obtained at 30min. The mean glycemic response of wheat flour bread, malted rice-wheat bread were 42.95 (± 2.34), 38.79 (± 4.80) mgdL⁻¹ respectively. The glycemic response obtained after the administration of 75g digestible carbohydrate containing wheat flour bread was differed significantly ($p < 0.05$) from malted rice-wheat bread and glycemic index of wheat flour bread and malted rice-wheat bread was differed significantly ($p < 0.05$). The mean GI values of wheat flour bread and malted rice-wheat bread were 68.59 (± 3.74) and 61.95 (± 7.67)% respectively. Based on these GI values, it can be suggested that among the two types of breads, the malted rice-wheat bread has lower GI than wheat flour bread. Hence, the malted rice-wheat bread is a better choice for the diabetics and coronary heart disease patients.