

Formulation of a low glycaemic index health snack, with no added sugar or sweeteners

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Objectives: The aim of this study was to formulate a low glycaemic index health snack (baked cookie) with no added sugar or sweeteners and to biochemically assess its nutrient composition and glycaemic index (GI).

Methods: The health snack was prepared using mung beans, chick peas, barley, oats and whole wheat flour which have a low glycaemic index (GI), together with egg white, butter, raisins, cinnamon, vanilla essence and baking powder. The GI of the snack was calculated using glucose as the standard food and the glycemic load (GL) was calculated accordingly. Protein (Kjeldhal method), fat (mojonner method), carbohydrate (amylase/ amyloglucosidase method), dietary fibre (gravimetric analysis), sodium and potassium (flame photometry) content of this health snack was analysed using flour samples of the baked product.

Results: The GI (33.11) of the formulated health snack fell within the low GI range (American Diabetic Association (ADA) recommendation: 0 - 55). A 100g of the formulated health snack yielded 443.45 kcal of energy, with 11.45% from protein (European Association for the study of diabetes (EASD) recommendation: 10 - 20%), 39.07% from fat (EASD recommendation: not more than 35%), and 49.48% from carbohydrate (EASD recommendation: 45 - 60%). With a PFC ratio (percent calories from protein, fat and carbohydrates) of 1:3:4. The soluble (3.95g per 100g) to insoluble (9.27g per 100g) dietary fibre ratio was 1:2. Sodium and potassium content were 447 mg per 100g and 644 mg per 100 g respectively. The nutrient composition of one serving (20g) provides: 88.69 kcal of energy, 10.97g carbohydrate, 2.54g protein, 3.85g fat, 2.58g fibre, 89.9mg sodium, 128.8mg potassium and has a GL of 3.6.

Conclusion: The formulated snack with a low GI and GL, is a high fibre, low carbohydrate snack with no added sugar or sweeteners, and can be promoted as a health snack.

keywords: Health snack, glycaemic index