

## P1: DETERMINATION OF GLYCEMIC RESPONSES IN A NOVEL SUGAR PRODUCT INCORPORATED WITH SELECTED NATURAL PLANT EXTRACTS

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**Background:** The glycemic index (GI) is a concept that ranks the glycemic potency of foods. Low-GI carbohydrates lower the risk of adverse health outcomes, including type II diabetes mellitus and cardiovascular disease by causing a lower and slower rise in blood glucose and insulin levels.

**Objective:** The main objective of this study was to determine glycaemic indices of cane sugar, incorporated with Ginger (*Zingiber officinale*) and Gooseberry (*Phyllanthus emblica*) extracts; in aim to suppress glycaemic impact.

**Methods:** Initially a novel sugar product was made from normal cane sugar, adding gooseberry extract and ginger extract at specific temperatures in a particular ratio. Final crystalized product was dried and packed in an air tight package. Then the GI value was determined using standardized methodology in 12 healthy volunteers. Volunteers randomly underwent 2 sets of food challenges involving glucose (reference) and novel sugar (test food), both providing 50 g available carbohydrates. Serum glucose was monitored at various time-points i.e., at 0 (fasting), 15, 30, 45, 60, 90 and 120 minutes after ingestion and GI values were calculated by dividing the incremental area under the curve (IAUC) for the tested food by that for the standard food (IAUCS). Biochemical variables were measured using enzymatic colorimetric method (GOD/POD/PAP). MS Excel and the statistical programme Minitab 17 were used to analyze the data.

**Results:** The mean GI value (95% CI) for sugar was  $38 \pm 9$  with a percentage GI reduction of 40.84%, compared to normal cane sugar (GI = 65).

**Conclusion:** The results of the study indicated that sugar product incorporated with selected plant food extracts; has a significantly ( $p < 0.05$ ) lower GI than normal cane sugar. This trial is registered with the Ethics Review Committee, Faculty of Medical Sciences, University of Sri Jayewardenepura as 21/18.

**Keywords:** Cane sugar, Diabetes mellitus, Ginger, Glycemic index, Gooseberry