

**DETERMINATION OF GLYCAEMIC INDEX AND MARKET POTENTIAL OF COCONUT TREACLE AS AN ALTERNATIVE SWEETENER AMONG A SELECTED GROUP OF UNDERGRADUATES IN SRI LANKA**

**M.R.F. Litha<sup>1</sup>, M.R.F. Rishafa<sup>1</sup>, W.M.A.M. Weerasekara<sup>1</sup>, A.F. Rushdha<sup>1</sup>, R.M. de Silva<sup>1</sup>, R.G.L. Rathnayake<sup>2</sup>, M.D.T.L. Gunathilaka<sup>3</sup> and P. Ranasinghe<sup>4</sup>**

<sup>1</sup>*Department of Biomedical Science, Faculty of Health Sciences, Kaatsu International University, Sri Lanka.*

<sup>2</sup>*Department of Medical Laboratory Sciences, Faculty of Health Sciences, Open University of Sri Lanka.*

<sup>3</sup>*Department of Basic Science and Social Science for Nursing, Faculty of Nursing, University of Colombo, Sri Lanka.*

<sup>4</sup>*Herbal Technology Section, Industrial Technology Institute, Halbarawa Garden, Thaladena, Malabe, Sri Lanka.*

\**thilina@dss.cmb.ac.lk*

The progressing prevalence of diabetes (8.5%) among Sri Lankans, as reported by WHO in 2015, highlights the urgent need to address the contributing dietary factors. Refined sugar, mainly used as a sweetener in Sri Lanka, is one of them. This study aimed to determine the glycaemic index (GI) and market potential of coconut treacle (CT) to assess its probability as a low GI alternative sweetener. Initially, the total sugar content was determined by the Lane-Eynon method (AOAC,2000). GI was determined by standard clinical method as three separate sessions at 3-day intervals among 30 healthy undergraduates (Age: 18-26 years, BMI: 18.5-23.5 kg/m<sup>2</sup>). In session 1, following an 8-hour fasting, blood glucose level (BGL) was measured. Then, participants consumed 50 g glucose (standard) with 150 ml water. BGL was measured after 15<sup>th</sup>, 30<sup>th</sup>, 45<sup>th</sup>, 60<sup>th</sup>, 90<sup>th</sup>, and 120<sup>th</sup> minutes. The same procedure was repeated with 74.9 g CT in session 2 and session 3 (duplication). A cross-sectional study through google forms was performed among 365 undergraduates examining consumers' consumption habits, preferences, knowledge and perceptions regarding CT. The total sugar content was 66.68 g per 100 g CT. The GI of CT was 53.6. Purity (57.0%), texture (17%) and taste (14%) were identified as important factors influencing purchasing decisions, and 52.6% opted for supermarket purchases. Ninety-seven percent of consumers exhibited adequate knowledge regarding the health attributes of CT, and 35.9% preferred CT for health benefits. The majority of students (74.2%) displayed a genuine interest in including CT in their diets, and 72.6% perceived that CT can replace refined sugar. The study concluded that the CT belonged to the low GI category with a moderate amount of total sugar. However, further studies are recommended to analyze the sugar profile in the CT to determine its association with GI.

*Financial assistance from KAATSU International University (KIU) and Ceylon Coconut Company (Pvt) Ltd. (CCC) is acknowledged.*

**Keywords:** Alternative sweetener, Coconut treacle, Diabetes, Glycaemic index, Market potential