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Sugar composition of some tropical fruits of Sri Lanka

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Sugars are widely distributed in fruits. Sugar has a significant role in determining the flavor, quality and nutritive value of the fruits. The objective of this study was to determine the sugar composition of four species of fruits namely papaya (*Carica papaya*- variety Ratnam), mango (*Magnifera indica* - variety Karuththa colomban), pineapple (*Ananas comosus* - variety Mauritius), and banana (*Musa accuminata* - variety Empul kesel). Three samples of each of the fruit varieties were randomly selected from local markets. Edible portions of mature fruits of each variety were dried at 45 – 55°C. The low molecular weight sugars were extracted with 80:20 (v/v) EtOH: H_2O and total sugar content was determined using the Phenol-Sulphuric acid method. The glucose, sucrose and fructose concentrations were determined by paper chromatography using 1-butanol: ethanol: water (5:3:2, v/v) as the mobile phase and spraying with ammoniacal silver nitrate. The Rf values of sucrose, glucose and fructose were 0.43, 0.47 and 0.61 respectively. A significant difference in the sugar content among four fruit varieties was observed. The total sugar content of the fruits varied between 8.1 ± 0.35 and 14.0 ± 0.2 g/100g of edible portion, while the lowest concentration was found in papaya and the highest concentration found in banana. Fructose was high in all four fruits and varied between 45 % and 49 %, while sucrose contributed less than 20 % to the total sugar content.

Keywords: Tropical fruits, Sugar, Spectrophotometry composition, Phenol sulphuric acid method, Paper chromatography