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Comparative study on analysis of sucrose content in food

M L M Ibrahim, Rohan P Perera* and Chatu T Sirimanne
Department of Chemistry, University of Colombo

Sucrose is one of the commonly use sweetener in various food and often used in milk based food products such as ice cream. Most of ice cream products contain approximately 13 % of sucrose by w/w. Sucrose is an easily assimilated macronutrient that provides a quick source of energy to the body, provoking a rapid rise in blood glucose upon ingestion.

Overconsumption of sucrose has been linked with some adverse health effects. When a large amount of foods that contain a high percentage of sucrose is consumed, beneficial nutrients can be displaced from the diet, which can contribute to an increased risk for chronic disease. It has been suggested that sucrose-containing drinks may be linked to the development of obesity and insulin resistance.

Therefore, it is essential to determine sucrose content in foods before using for human consumption. Fehling's method, Ferricyanide method and Dinitro salicylic (DNS) based spectrometric method are used as common analytical methods to determine sucrose content in various foods. Fehling's method and Ferricyanide method is suitable for the food sources if they do not have any colour. The accuracy of the results also vary from individuals depend on the ability to detect the end point of the titration. In this article, we have reported the use of these three methods for comparative study to determine sucrose content in food taking ice cream as a source.

Our results show that all three methods produced close results in ice cream samples tested so far. Out of three methods which were applied in this study, spectrophotometric method is a simple, an economical and a fast method. Results obtained by titrametry and spectrophotometry perfectly agreed with the actual content of sucrose in ice cream samples. The actual sucrose content of ice cream samples were conformed by consulting manufacture. Results are tabulated in table 1.

Ice cream	%Sucrose by Fehling's reagent	%Sucrose by DNS based Spectroscopic Method	%Sucrose by Ferricyanide method
Vanilla flavored	12.92	13.06	13.04
Strawberry flavored	____	14.10	13.94

Table 1: Percentage of sucrose in ice cream samples.

*rohan@chem.ac.lk Tel: 011 - 2503367