

Alternative Method of Reducing Sugars Determination in Some Selected Fizzy Drinks and Fruits by Chromic Acid Reagent

Mustapha A. Olajide.

Department of Chemical, Geological and Physical Sciences, College of Pure and Applied Sciences, Kwara State University Malete, PMB 1530, Ilorin, Kwara State, Nigeria.

Abstract

Chromic acid reagent as an alternative colorimetric method for the quantitative determination of reducing sugars and ascorbic acid in some selected fizzy drinks: Seven Up, Limca, Mirinda, Cocoa-Cola, Fanta, Pepsi Cola, Maltina, Guinness Malt, Hi-Malt and Maltonic) and fruits: pineapple (Ananas cosmoses), sweet orange (Cimifi sinensis), grape fruit (Dints paradise) and tangerine (Citrus reticulate) has been studied. Chromic method involves sugar solution of about 1% concentration. treated with an equal volume of concentrated nitric acid and a few drops of a 5% solution of potassium dichromate was added, a blue colour develops in less than a minute in the cold and the absorbance taken in a Spectronic 20D Spectrophotometer at 560 um. Results obtained from the simple chromic acid as test method compares well with those obtained from the titrimetric methods of Association of Official Analytical Chemists (AOAC, 2012) and Pearson (1991) as control, with negligible variations. Apart from being a very powerful oxidizing agent, its reaction with monosaccharide, disaccharides and ascorbic acid are less-time consuming, showed distinct colour development and its easy preparation, made chromic acid reagent a faster, better and suitable alternative method for the quantitative determination of reducing sugars and ascorbic acid in routine analyses of foods.

Keywords: reducing sugar, ascorbic acid, chromic reagent.

Email: aliru.mustapha@kwasu.edu.ng.

Received: 2019/03/11

Accepted: 2020/02/07

DOI: