

**VOLTAMMETRIC TECHNIQUE FOR ASCORBIC ACID
ANALYSIS IN COMMERCIAL ROSELLE JUICES**

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ABSTRACT

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Ascorbic acid is a water-soluble vitamin and commonly known as Vitamin. Human cannot synthesize the ascorbic acid. It is naturally abundance in citrus fruits and most of the vegetables. Hence, these fruits and vegetables become main source of ascorbic acid to meet requirement of dietary intake. The differential pulse anodic stripping voltammetric (DPASV) technique has been proposed for ascorbic acid analysis in commercial Roselle juices based on the electrochemical oxidation of the ascorbic acid at glassy carbon electrode (GCE). Phosphate buffer solution (PBS) at pH 5.0 was used as a supporting electrolyte. The parameters used were $E_i = +0$ V, $E_f = 0.8$ V, $t_{acc} = 60$ s, $\nu = 0.05000$ V/s, $E_{acc} = 0$ V and pulse amplitude = 0.15000 V. The calibration graph obtained shows a linear region between peak height and ascorbic acid concentration. The equation of the calibration graph was $y = 83.168x + 284.03$ with regression coefficient (R^2) of 0.9995. The limits of detection (LODs) were found to be 0.25 mg L⁻¹, 0.59 mg L⁻¹ and 0.10 mg L⁻¹. The precision in term of relative standard deviation (RSD) were 0.69 %, 0.18 % and 0.17 % for three consecutive days. The recovery of ascorbic acid content in the commercial Roselle juices were 86.53 ± 4.27 % for 25 mg L⁻¹, 92.53 ± 4.71 % for 50 mg L⁻¹ and 96.73 ± 4.12 % for 100 mg L⁻¹. It can be concluded that the proposed technique is precise, accurate, rugged, cheap, fast and has potential to be an alternative method for further analysis of ascorbic acid in the commercial Roselle juices.

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