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Ascorbic Acid Study in Citrus Juice: Effect of Preservative

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Abstract

This paper reports the effect of preservative on ascorbic acid extracted from freshly plucked oranges. Colorimetric method was used for the determination of ascorbic acid. Determination of some inorganic elements like sodium, potassium and lithium were also determined by flame photometry. The preservative was found to have a beneficial effect on the retention of ascorbic acid, particularly when used in high concentration. Metal content, particularly potassium did not alter significantly during preservation for duration of one month.

Keywords: Citrus juice, Oxidation, Preservation, Metal Content.



A Simple Spectrophotometric Determination of Diclofenac Sodium in Commercial Dosage Forms using 2,3-Dichloro-5, 6-Dicyano-1,4-Benzoquinone (DDQ)

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Abstract

A rapid, simple and sensitive spectrophotometric method has been developed for the determination of diclofenac sodium in pure and tablet formulations. The method depends on the charge–transfer complexation between diclofenac sodium as n-electron donor with 2,3-Dichloro-5, 6-Dicyano-1,4-Benzoquinone (DDQ) in acetonitrile medium as π -acceptor to give a colored complex which absorbs maximally at 545 nm. Beer's law has been obeyed in the concentration range of 13-275 $\mu\text{g ml}^{-1}$ with molar absorptivity of $2.5 \times 10^3 \text{ L mole}^{-1} \text{ cm}^{-1}$. The proposed method is precise, accurate and specific for routine quantitative analysis of the drug in bulk and dosage forms.

Key words: Spectrophotometric determination, Diclofenac sodium, 2,3-Dichloro-5, 6-Dicyano-1, 4-Benzoquinone



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Organic Carbon, Nitrogen and Phosphorus Contents of Some Tea Soils

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Abstract

Soil samples were collected from Rungicherra Tea-Estate of Moulvibazar district, Bangladesh. Organic carbon, organic matter, total nitrogen and available phosphorus content of the collected soil samples of different profiles and of different topographic positions have been determined. The experimental data have been analyzed statistically and plotted against topography and soil depth. Organic carbon and organic matter content varied from 0.79 to 1.24% and 1.37 to 2.14%, respectively. Total nitrogen and available phosphorus content of these soils varied respectively from 0.095 to 0.13% and 2.31 to 4.02 ppm.

Keywords: Soil; organic carbon; organic matter; total nitrogen; available phosphorus



Micellar Flow Injection Spectrophotometric Determination of Indium and its Application to the Environmental Samples

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Abstract

A selective and fairly sensitive automatic spectrophotometric method for the determination of indium by flow injection analysis (FIA) has been developed. Anionic micellar medium of sodium dodecyl sulfate has been used for the system Indium reacts with 1,5-diphenylthiocarbazone (dithizone) at pH 7.00 in micellar medium, to give red-violet chelate, which absorb at 530 nm. The molar absorptivity and Sandell's sensitivity were found to be $6.7 \times 10^3 \text{ l mol}^{-1} \text{ cm}^{-1}$ and 20 ng cm^{-2} of indium, respectively. Linear calibration graph was obtained for 0.25 to $6.0 \mu\text{g ml}^{-1}$ of indium. The reaction is instantaneous and absorbance remain stable for 45 h. Various analytical parameters, such as effect of pH, flow rate, sample volume, dispersion coefficient, time and reagent concentration were studied. The interference of over 40 anions, cations and complexing agents has been studied at $1 \mu\text{g ml}^{-1}$. Method has been applied to determine indium in synthetic mixture and water samples.

Key words: Flow-injection analysis, Spectrophotometry, indium determination, environmental samples



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Conjugated linoleic acid: A mixture of bio- active fatty acids in milk fat of ruminants

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Abstract

Conjugated linoleic acid (CLA) present in ruminant milk, have several health benefits including anticarcinogenic, antiatherogenic, immuno-modulating, growth promotion and lean body mass promotion. In the present work we have investigated the content of one dominant (*c9, t11-CLA*), one intermediate (*t10, c12-CLA*) and the three minor CLA isomers (*t11, c13-*, *t7, c9-CLA*) in ruminant milk from three districts of Sindh. A total of 167 milk samples were collected throughout the year from Dairy Farms in Thatta, Dadu and Hyderabad, Sindh. The results show strong variation in CLA content, depending on ruminant milk and season. The mean CLA concentration was higher in cow's milk fat ranging from 8.81 -10.99 mg /g followed by sheep 8.39 – 9.10 mg /g, goat 5.90 -6.35 mg /g and buffalo milk fat 5.10 – 6.22 mg /g respectively. Summer milk fat contains 7.60 – 24.00 % higher content of total CLA as compared to winter milk in all ruminants. The differences in CLA contents are possibly due to the different activity of desaturase enzymes among ruminants, while seasonal variations in milk CLA concentrations reflect the availability of green pasture and its quality.

Keywords: Conjugated linoleic acid, Seasonal variation, Ruminants, Green pastures



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Short communication

Simultaneous Determination of Orotic Acid and Folic Acid in Pure forms and in Pharmaceuticals Formulations by HPLC

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Abstract

Studies were carried out to develop a simple, rapid and accurate HPLC method for the simultaneous determination of Orotic Acid and Folic Acid in pharmaceutical formulation. The separation was done on ODS column by the application of isocratic reversed-phase liquid chromatographic technique. Mobile phase consisted of 800ml phosphate buffer pH 7.2 and 70ml methanol. The method was successfully used for the determination of these drugs in the presence of additives and excipients, which were normally encountered in pharmaceutical formulations. The proposed method of analysis was applied for the individual analysis of both these constituents in their pure forms and found equally effective.