

A simple spectrophotometric method for the determination of copper in environmental samples using flower extract of *Caesalpinia pulcherrima*.

Journal article: Journal of Chemical and Pharmaceutical Research, 2014, Vol. 6, No. 7, 1563-1570 ref. 21

Author: S. H. Burungale

Affiliation: Laboratory of Analytical Chemistry, PG Department of Chemistry, Yashwantrao Chavan College of Science, Karad, Maharashtra, India



GET ACCESS

Abstract

A very simple, ultra-sensitive and selective new spectrophotometric method has been developed for the rapid determination of copper (II) at ultra-trace level using extract of flower in presence of aqueous solutions. The extract of flower has been proposed as a new analytical reagent for the direct non extractive spectrophotometric determination of copper II. The extract of flower reacts with copper in an aqueous media to give a highly absorbent pinkish chelate complex. The maximum absorption was obtained at 510 nm and remains stable for 72h. The average molar absorptivity and Sandell's sensitivity were found to be $4.71 \times 10^5 \text{ mL}^{-1} \text{ cm}^{-1}$ and $5 \mu\text{g cm}^{-2}$ of copper II respectively. Linear calibration graphs were obtained for $0.01\text{-}200 \text{ mg L}^{-1}$ of CuII. A very large excess of cations, anions and complexing agent do not interfere in the determination. The method is highly selective for copper and was successfully used for the determination of copper in several standard reference materials as well as in some environmental samples. The results of the proposed method for