Available online at **www.joac.info**

ISSN: 2278-1862

Journal of Applicable Chemistry, 2012, 1 (2):239-249

(International Peer Reviewed Journal)

Spectrophotometric Determination of Ziram and Zineb in Commercial Samples and Food-Stuffs Using Par-Naphthalene as Column Adsorbate for Preconcentration

Shivender Singh Saini*, A.L.J. Rao

Department of Chemistry, Punjabi University, Patiala, India-147002

E-mail: shiv_algal2007@yahoo.com

ABSTRACT

A procedure has been developed for the determination of zinc(II) bis (dimethyldithiocarbamate) (Ziram) and zinc(II) ethylenebisdithiocarbamate (Zineb) after preconcentration on a column using naphthalene-PAR as adsorbent. Ziram and Zineb are quantitatively retained on the column in the pH range 9.0- 12.5 and at a flow rate of 1-2 ml/min. The solid mass consisting of the Zn-PAR complex along with naphthalene is dissolved from the column with 5 ml of dimethylformamide (DMF). The absorbance is measured at 490 nm with a spectrophotometer against the reagent blank. Beer's law is obeyed over the concentration range 0.1- 15 µg of ziram and 0.1 -13 µg of zineb in 5 ml of the final DMF solution. Ten replicate determinations on a sample solution containing 40 µg of ziram and 36 µg of zineb gave a mean absorbance of 0.30 with a relative standard deviation 0.98%. The interference of various ions has been studied and the method has been employed to the determination of ziram and zineb in commercial samples and in various foodstuffs.

Keywords: Spectrophotometry, Ziram, Zineb, Commercial sample, PAR.
