

Simultaneous Determination of Some Phenolic Pesticides in Environmental and Biological Samples

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Abstract : Simple and sensitive analytical thermal gradient-thin layer chromatography technique has been developed for the simultaneous determination of phenolic pesticides like carbaryl, propoxur and carbofuran. It is based on the differential migration of colored derivatives formed by the reaction of hydrolysed phenolic compound with diazotized 3, 4 dimethyl aniline on a silica gel plate. Quantitative evaluation of hydrolyzed phenolic compound is made by visual comparison of intensities of color by spectrophotometry. The color system obeys Beer's law in the following working range in ppm : carbaryl, 0.5-6.6; propoxur, 0.8-7.2; and carbofuran, 0.2-3.3 respectively. The Molar absorptivity, Sandell's sensitivity, Correlation coefficient have been determined. The effects of analytical parameters on migration and analysis have been evaluated. The methods are highly reproducible and have been successfully applied to determination of phenolic pesticides in environmental and biological samples.

Keywords : phenolic pesticides (carbaryl, propoxur and carbofuran), 3,4 dimethyl aniline, environmental, biological samples

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