

# Thin Layer Chromatographic Analyses of Pesticides in a Soil Ecosystem

S. Afful<sup>1\*</sup>, S. A. Dogbe<sup>1</sup>, K. Ahmad<sup>1</sup> and A. T. Ewusie<sup>2</sup>

<sup>1</sup>Department of Chemistry, NNRI/GAEC, Box LG. 80, Legon-Accra, Ghana

<sup>2</sup>Department of Animal Science, GAEC, Box LG. 80, Legon-Accra, Ghana

\*Corresponding author; E- mail: affulsammy@yahoo.com

## Abstract

Silica gel 60, silica gel 60 F<sub>254</sub> and aluminium oxide as adsorbents were used to investigate their suitability for the analysis and detection of the pesticides: nitrofen, atrazine, diuron, dioxacarb, propoxur, propanil, carbaryl and cypermethrin in soil ecosystem using ethyl acetate, chloroform, dichloromethane and ethyl acetate/chloroform (1:1) as developing solvents. O-tolidine and potassium iodide reagent were used for the detection of the pesticides. R<sub>f</sub> values obtained for the pesticides using the silica gel 60-ethyl acetate, silica gel 60 F<sub>254</sub>-ethyl acetate, silica gel 60-chloroform, silica gel 60 F<sub>254</sub>-chloroform, silica gel 60 – (1:1) ethyl acetate/chloroform and silica gel 60 F<sub>254</sub> – (1:1) ethyl acetate/chloroform systems generally were within the stipulated range of 0.4 –0.8. R<sub>f</sub> values obtained for the pesticides using silica gel 60-dichloromethane and silica gel 60 F<sub>254</sub>-dichloromethane systems were very low except for cypermethrin and nitrofen. Analysis with aluminium oxide coated plates gave a heavy yellow background with the detection reagent making visualization of spots difficult. Aluminium oxide coated plate is, therefore, not recommended when o-tolidine plus potassium iodide is used as detection reagent.