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ADSORPTION OF THIRAM BY SOIL

A THESIS PRESENTED BY

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to the Board of Study in Chemical Sciences of the
POSTGRADUATE INSTITUTE OF SCIENCE

*In partial fulfillment of the requirement
for the award of the degree of*

MASTER OF SCIENCE IN ANALYTICAL CHEMISTRY

of the

UNIVERSITY OF PERADENIYA

SRI LANKA

2005

590966

ABSTRACT

Adsorption of thiram onto garden soil was investigated in this study. The fungicide, thiram, was electroactive at glassy carbon electrode within -1.00 V to +1.00 V, and it showed a major peak at +0.70 V. Amperometric and uv-visible spectroscopic methods were developed to determine the amount of adsorption of thiram by soil. It was found that amperometry would be a better method to investigate the adsorption of thiram, as compared to uv-visible spectroscopy.

Real environmental simulation studies were carried on the adsorption of thiram on garden soil. Different concentration levels of thiram were investigated, and the extent of removal of thiram was determined for each concentration level. It was found that the maximum adsorption of thiram of 96% was obtained for an initial concentration of $4.15 \times 10^{-5} \text{ mol dm}^{-3}$ when thiram was treated in a column packed with soil. Finally, a real environmental simulation study was demonstrated using soil beds into which the recommended dose of thiram was introduced. The maximum adsorption of thiram under these circumstances was determined to be 95% for an initial concentration of $1.13 \times 10^{-4} \text{ mol dm}^{-3}$.