LOW COST APPROACH ON CHLORPYRIFOS RESIDUE ANALYSIS IN VEGETABLES

A PROJECT REPORT PRESENTED BY

CHAMPA MAGAMAGE

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

2009

LOW COST APPROACH ON CHLORPYRIFOS RESIDUE ANALYSIS IN VEGETABLES

Champa Magamage
Office of the Registrar of Pesticides
Peradeniya
Sri Lanka

Chlorpyrifos is an organophosphorous insecticide heavily used in vegetable fields. Chlorpyrifos residues were studied throughout a period of 14 days in chillies and brinjals. Samples were analyzed using two approaches, analysis of whole crop and analysis of surface wash extraction and quantified by gas chromatography. Surface wash extraction process is very simple and quick approach compared to the conventional whole crop analysis. Comparing the residue contents detected by two approaches, residue content detected in whole crop was nearly 8 times higher than that of surface wash analysis for chillies and 9 times higher in brinjal. Further, degradation patterns of chlorpyrifos residues which detected using the above two analytical techniques were also studied. The above studies were also employed to study the dependence of surface area on the level of residues in the crop. The results showed that the residue contents in crops depend on its surface area which is exposed to the applied pesticides. A total of 83 samples of chillies and brinjal were analyzed for chlorpyrifos residues by using surface wash extraction method. The results obtained showed that 12% of the samples were positive on chlorpyrifos residues and within the national standards.