Sujinda Aussawasujindarat 2007: The Comparative Study and Efficiency Test of Pesticide Residue Analysis System. Master of Science (Postharvest Technology), Major Field: Postharvest Technology, Interdisciplinary Graduate Program. Thesis Advisor: Mrs. Roongnapa Korpraditskul, Dr.Agri.Sci. 95 pages.

Study on the methodology development to analyze pesticide residue in fruit and vegetable juice without solvent extraction process was carried out. The result from reaction between acetylcholine esterase enzyme obtained from electric eel and acetyl thiocholine showed that the concentration of substrate and enzyme at 1.2 μmol and 0.02 unit, respectively, at 37 °C within 15 min gave highest activities. The results of enzyme inhibition by studied chlorpyrifos with asparagus juice and cantaloupe juice showed less efficient determination compared to cucumber juice, Valencia orange juice and mixed vegetable juice, repectively.

Comparative studied of Chlorpyrifos pesticide analysis methods following Multiresidue Analysis with the Gas Chromatograph (Shimadzu GC 14-B) and the ELISA test kit named Chlorpyrifos plate kit 96 well (for water analysis; purchased from Strategic diagnostics inc.) were carried out in the vegetable sampling from wet market in Kamphaengsaen and a co-operative market place of Kasetsart University, Kamphaengsaen campus. It was found that correlation coefficient from the two methods was 0.99. However, when the concentration of chlorpyrifos is lower than Limit of Determination (0.01 ppm), analysis results by GC was not achieved while ELISA method was capable.

Effect of wrapped mango by double-layer paper bag was studied for the residue in fruit after spraying pesticide on fruit at the rate recommended by GAP farm with the Nam Dog Mai Sri Tong variety. Effect of VHT to the pesticide residue was also carried out. The degradation rate of chloripyrifos of wrapped and unwrapped mango at 60 days after spraying were 100 and 98%, respectively. Result of VHT of mango fruits at 47 °C 20 min showed the range of degradation at 62.5-46.8 %.

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