STUDY ON THE FLOW RATE AND INITIAL OVEN TEMPERATURE OF GC-FID USING PESTICIDE ANALYSIS

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APPROVAL SHEET

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ABSTRACT

STUDY ON THE FLOW RATE AND INITIAL OVEN TEMPERATURE OF GC-FID USING PESTICIDE ANALYSIS

Gas Chromatography Flame Ionisation Detector (GC-FID) has been used in this study to determine the optimum initial oven temperature and carrier gas flow rate using three different Organophosphorus pesticides (OPPs) namely as vinclozolin, malathion and methidathion. A non-polar of HP-5 column was used as the injector and detector temperature were both set at 300°C using 1 µL injection volume. The initial oven temperature and carrier gas flow rate were ranged from 60°C to 110°C and 2 mL min^{-1} to 6 mL min^{-1} respectively. In the determination of the optimum initial oven temperature and carrier gas flow rate, 90°C and 5 mL min^{-1} of the initial oven temperature and carrier gas flow rate were fixed respectively. For the study on the effect of isothermal temperature, the temperatures were ranged from 150°C to 270°C. In this study, 90°C and 5 were chosen as the optimum initial oven temperature and carrier gas flow rate respectively as it based on the highest percentage of peak area of the pesticides. For the effect of isothermal temperature, 150°C, 180°C and 210°C were chosen as the best temperature as it showed highest in percentage of peak area for vinclozolin, malathion and methidathion respectively.