

THE COMPARISON OF SAMPLE EXTRACTION METHODS FOR ORGANOCHLORINE PESTICIDES IN AMBIENT AIR

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9 of 12 persistent organic pollutants (POPs) are organochlorine (OC) pesticides and they are of concern because they bioaccumulate through the food chain to top predators including human beings. It is thus very important to monitor ambient air for such compounds. Polyurethane foam (PUF) sampler with quartz fiber filter and PUF cartridge is mostly used to acquire sufficient sample for the analysis of OC pesticides in ambient air. Although USEPA recommended to use soxhlet extraction as a sample extraction method, the three different extraction methods of soxhlet extraction, sonication extraction and accelerated solvent extraction (ASE) were selected and applied to suggest a reliable and fast extraction method in this study. Also these extraction methods were performed with different solvent and its contents like 5%, 10%, 20% diethyl ether in hexan and 5%, 10%, 20% aceton in hexan. Quartz fiber filter and PUF cartridge spiked the standards of OC pesticides was used for analytical sample. The extracts from several sample extraction processes were analyzed through both external standard and internal standard calibration by the selected ion monitoring mode (SIM) of GC/MS. The recovery rate and elapsed time and efficiency were estimated at each extraction condition and the optimum sample extraction method was presented for the determination of OC pesticides trapped into air filter and PUF cartridge in ambient air.