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## Optimization of solid phase microextraction procedure followed by GC-ECD for pesticides Butachlor and Chlorpyrifos

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In this study, headspace solid phase microextraction (HS-SPME) followed by gas chromatography using electron capture detection system (GC-ECD) were developed for the determination of chloraacetanilide (butachlor) and chlorpyrifos present in biological samples. Different parameters affecting the extraction procedure were optimized including extraction time (30 minutes), extraction temperature (80°C), sample volume (3 mL), sample pH (2), added NaCl (0.3 gram) and sample stirring rate (400 rpm). Different concentrations of 1-100 ng/ml were applied for butachlor and a linear calibration curve was obtained. Furthermore, a similar linearity was obtained for chlorpyrifos, using a concentration range of 1-250 ng/ml. The limit of detection (LOD) obtained for butachlor and chlorpyrifos were 0.088 and 0.53 ng/ml respectively. The optimized methods for both compounds were validated using two concentrations of 25 and 50 ng/ml in spiked urine samples. Obtained recoveries of spiked urine samples were 83.06-99.8% with RSD of lower than 11%. Optimized technique was simple, inexpensive, solvent free and fast in comparison with other conventional methods and had compatibility with the chromatographic analytical system. This method offers low detection limits to analyze pesticides in urine samples that are very important in the exposure monitoring in occupational health.

### Biography

Seyed Jamaledin Shahtaheri has completed his PhD at the age of 38 years from Surrey University, Guildford, Surrey, England in 1996. He is an academic member of Department of Occupational Health Engineering, Tehran University of Medical Sciences, Iran, acting as the Dean Research Deputy at Institute for Environmental Research the same University too. He is the Persistent Organic Pollutant Review Committee (POPRC) Member under the Stockholm Convention, UNEP, UN. He has published more than 150 papers in reputed journals and has been serving as an editorial board member of 7 national and International Journals.

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