Application Of In Situ Solvent Formation Microextraction Based On Ionic Liquids For Extraction And Determination Of Thiram And Carboxin

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In this research, applicability of microextraction technique based on ionic liquids (ILs) termed in situ solvent formation microextraction (ISFME) was evaluated for two fungicides, Thiram and Carboxin. In this method, small amount of sodium hexafluorophosphate (NaPF\textsubscript{6}, as an ion-pairing agent) was added to the sample solution containing very small amount of 1-hexyl-3-methylimidazolium tetrafluoroborate ([Hmim][BF\textsubscript{4}]), as hydrophilic IL. A cloudy solution was formed as a result of formation of fine droplets of 1-hexyl-3-methylimidazolium hexafluorophosphate [Hmim][PF\textsubscript{6}]. After centrifuging, the fine droplets of the extractant phase settled to the bottom of the conical-bottom glass centrifuge tube. Analysis was carried out using high performance liquid chromatography detection method. Type and amount of IL, temperature and the other parameters were optimized. The very good figures of merit were obtained under the optimum conditions. Reliability of the introduced methodology was evaluated by analyzing water reference materials. Finally, ISFME was successfully applied to determining of the two mentioned fungicides in several real water samples.

ISFME is a simple and rapid method for extraction and preconcentration of organic pollutants from water samples. Furthermore, this technique is much safer in comparison with the organic solvent extraction methods.