ABSTRACT

Optimization of Extraction Method for Analysis of Triadimefon in Cabbage Using Gas Chromatotography – Mass Spectrometry

A simple, fast and economical method was developed for the determination of triadimefon in cabbage. The method is based on extraction with ultrasonic solvent extraction (USE). The extraction procedure was optimized with regard to the solvent type, duration of sonication and number of extraction. Ethyl acetate extracted high percentage extraction of triadimefon and lower relative standard deviation (RSD) compared to acetonitrile and acetone. The results also shows that the percentage extraction of triadimefon on cabbage was more efficient in 10 minutes compared to 5 minute and 15 minute and also more efficient with once extraction compared to twice extraction. The highest recovery from cabbage sample was fortified at 20 mg kg⁻¹ obtained when samples were extracted once by ultrasonication for 10 minutes with 20 mL ethyl acetate. The recoveries of triadimefon from fortified sample obtained ranged from 83 % - 84 % for one fortification level, and relative standard deviation of the recoveries lower than 0,7 %. Analytical determination of triadimefon was carried out by gas chromatography using mass selective detector (GS-MS). This method showed satisfactory extraction efficiencies combined with simplicity of use and low solvent consumption. Therefore this method is suitable for routine analysis of triadimefon in cabbage.

Keywords : cabbage, extraction, triadimefon, GS-MS