

عنوان مقاله:

Air-assisted Liquid-liquid Microextraction vs. Dispersive Liquid-liquid Microextraction; A Comparative Study for the Analysis of Multiclass Pesticides

محل انتشار:

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خلاصه مقاله:

Two convenient sample preparation methods, air-assisted liquid-liquid microextraction (AALLME) and dispersive liquid-liquid microextraction (DLLME) have been developed for the simultaneous determination of multiclass pesticide residues in vegetable and fruit juice samples with gas chromatography-flame ionization detection and the advantages of each method were investigated. In AALLME, fine droplets of an extraction solvent were immediately formed by suction with a syringe and injection of the mixture of an aqueous sample solution and an extraction solvent into a test tube for several times. In DLLME, the cloudy solution was formed with the aid of a disperser solvent. The effect of main factors, such as type and volume of extraction solvent, salt addition, pH, etc was studied. Under the optimum conditions, enrichment factors and extraction recoveries were obtained in the ranges of ۲۶۲-۵۱۵, ۵۲-۱۰۳% and ۴۵-۴۳۸, ۹.۲-۸۸% in AALLME and DLLME methods, respectively. Both methods are inexpensive, simple, fast, efficient, reliable, and sensitive. Therefore, the proposed methods are suitable for determination of trace levels of multiclass pesticide residues in fruit juice and vegetable samples.

کلمات کلیدی:

Air-assisted liquid-liquid microextraction, Dispersive liquid-liquid microextraction, Fruit and vegetable samples, Gas chromatography, Multiclass pesticides

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