

# EVALUATION OF MCM-41 MESOPOROUS MATERIAL IN THE SOLID-PHASE EXTRACTION OF PESTICIDES FROM MANGO

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During recent years, research on new materials for extraction, purification and separation processes of organic compounds in a wide polarity range has also been proposed by the growing interest for environmental preservation and human health protection. On the other hand, fruits are susceptibles to insect and diseases attacks, so pesticides are widely used. Therefore, residues of pesticides could affect the ultimate consumers especially when freshly consumed. In view of these, the aim of this study was evaluating the performance of mesoporous material, MCM-41, which was obtained by a method described elsewhere[1], as an alternative adsorbent material for matrix solid-phase dispersion method for the multiclass analysis of methyl-parathion, thiabendazole, trichorfon, tetraconazole, imazalil, tebuconazole, and pyrimethanil residues in mango matrix, using gas chromatography-mass spectrometry (GC/MS). Considering that there are Brazilian regulations concerning maximum permissible pesticide residue concentrations in mango (0.1-2.0 mg/kg), recovery experiments were carried out at fortification level of 1.0 mg/kg, resulting in recoveries in range of 64% to 100% for MCM-41 mesoporous material. Detection and quantification limits for mango ranged from 0.10 to 0.15 mg/kg and from 0.15 to 0.25 mg/kg, respectively, for the different pesticides studied. Comparison between MCM-41 material and conventional solid-phase (silica-gel) showed similar performance of MCM-41 mesoporous material for the seven pesticides tested.

[1]L. Fu, R.A. Ferreira, A. Valente, J. Rocha, L.D. Carlos, **Microp. Mesop. Mat.**, 2006, 94, 185.

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