质谱学报 2009 30 (6): 352-358 ISSN: 1004-2997 CN: 11-2979/TH

研究简报

药用植物中残留有机磷农药的定性和定量分析

陈跃[1];王金花[2];卢晓宇[2];徐超一[2];杜振霞[1]

1.北京化工大学理学院，北京100029 2.北京出入境检验检疫局检验检疫技术中心，北京100026

收稿日期 修回日期 网络版发布日期:

摘要 研究了气相色谱-火焰光度检测器(GC-FPD)定量和气相色谱 离子阱质谱(GC-ITMS)定性法测定药用植物中25种有机磷类农药残留的分析方法。以丙酮为提取溶剂，采用超声波辅助提取药用植物中残留的有机磷农药，经凝胶渗透色谱(GPC)净化，气相色谱-火焰光度检测器定量，气相色谱-离子阱质谱定性，同时检测药用植物中25种有机磷类农药的残留量。添加浓度为0.01～0.04 mg•kg^{-1}时，回收率为66.58%～111.20%，相对标准偏为0.75%～8.07%。

关键词 有机磷农药 药用植物 农药残留

分类号

The Qualitative and Quantitative Analysis of Organophosphate Pesticides in Medicinal Herbs

CHEN Yue[1];WANG Jin-hua[2]; LU Xiao-yu[2];XU Chao-yi[2]; DU Zhen-xia[1]

1.School of Science, Beijing University of Chemical Technology, Beijing 100029, China; 2.Beijing Entry-Exit Inspection and Quarantine Bureau, Beijing 100026, China

Abstract An analytical method for the determination of 25 kinds of organophosphate pesticide residues in medicinal herbs was established by gas chromatography-flame photometric detection (GC-FPD) and gas chromatography-ion trap mass spectrometry (GC-ITMS). The pesticide residues in samples were extracted with acetone by ultrasonic wave assistant extraction (UAE)， and purified by gel permeation chromatography(GPC). GC-ITMS was used as qualitative determination, whereas GC-FPD was used as quantify. This method can simultaneously analyze 25 kinds of organophosphate pesticide residues. When additive levels between 0.01 mg•kg^{-1} and 0.04 mg•kg^{-1}, the range of recovery is between 66.58% and 111.20%， with RSD is between 0.75 % and 8.07%.

Key words organophosphate pesticides _ medicinal herbs _ pesticides residues

DOI

通讯作者