

研究论文

## 固相微萃取-气相色谱法测定红葡萄酒中残留的有机磷农药

胡媛 刘文民 周艳明 关亚风

1.中国科学院大连化学物理研究所, 辽宁 大连 116023; 2.沈阳农业大学, 辽宁 沈阳 110161

收稿日期 2005-6-21 修回日期 2005-12-14 网络版发布日期 2006-6-1 接受日期

**摘要** 采用溶胶-凝胶包埋技术制备了耐高温固相微萃取头(SPME),用该萃取头与气相色谱-热离子化检测器联用对红葡萄酒中的12种有机磷农药残留进行了测定。实验中对搅拌速度、萃取时间、盐浓度等条件进行了优化。结果表明,在样品用量25 mL,搅拌速度1250 r/min,盐浓度150 g/L,萃取时间30 min的条件下,绝大多数组分峰面积的相对标准偏差(RSD)在5%以下,各种有机磷农药的检测限为5 ng/L到0.38  $\mu\text{g/L}$ 。

**关键词** [固相微萃取](#); [气相色谱](#); [有机磷农药](#); [残留量](#); [红葡萄酒](#)

分类号

## Determination of Organophosphorous Pesticide Residues in Red Wine by Solid Phase Microextraction-Gas Chromatography

HU Yuan, LIU Wenmin, ZHOU Yanming, GUAN Yafeng

1.Dalian Institute of Chemical Physics, the Chinese Academy of Sciences, Dalian 116023, China; 2.Shenyang Agricultural University, Shenyang 110161, China

### Abstract

A method for the determination of 12 organophosphorus pesticide residues (OPs) in red wine by fiber solid phase microextraction (SPME) coupled with gas chromatography (GC) was developed and validated. The SPME phase was prepared by sol-gel technology of physical incorporation. The extraction conditions were optimized with the results of stirring rate of 1250 r/min, NaCl mass concentration of 150 g/L, and extraction time of 30 min. With the sample volume of 25 mL, the relative standard deviations (RSD) of peak areas for most of OPs were below 5%, and the detection limits of OPs were in the range of 5 ng/L-0.38  $\mu\text{g/L}$ . It can be seen from the results that this method has the potential to analyze OPs in other beverages and soft drinking materials.

**Key words** [solid phase microextraction \(SPME\)](#) [gas chromatography \(GC\)](#) [organophosphorus pesticides](#) [residues](#) [red wine](#)

DOI:

通讯作者 关亚风

### 扩展功能

#### 本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(404KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

#### 服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

#### 相关信息

- ▶ [本刊中 包含 “固相微萃取; 气相色谱; 有机磷农药; 残留量; 红葡萄酒” 的相关文章](#)
- ▶ 本文作者相关文章
  - [胡媛 刘文民 周艳明 关亚风](#)