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アプリケーションノート

# Multiresidue LC-MS/MS Determination of 52 Non-Gas Chromatography-Amenable Pesticides and Metabolites in Fruits and Vegetables

Waters Corporation

This is an Application Brief and does not contain a detailed Experimental section.

## Abstract

This multi-residue pesticide sample preparation shows the steps used to process fruit and vegetable samples, extract and concentrate the extract by an Oasis HLB SPE method.

## Introduction

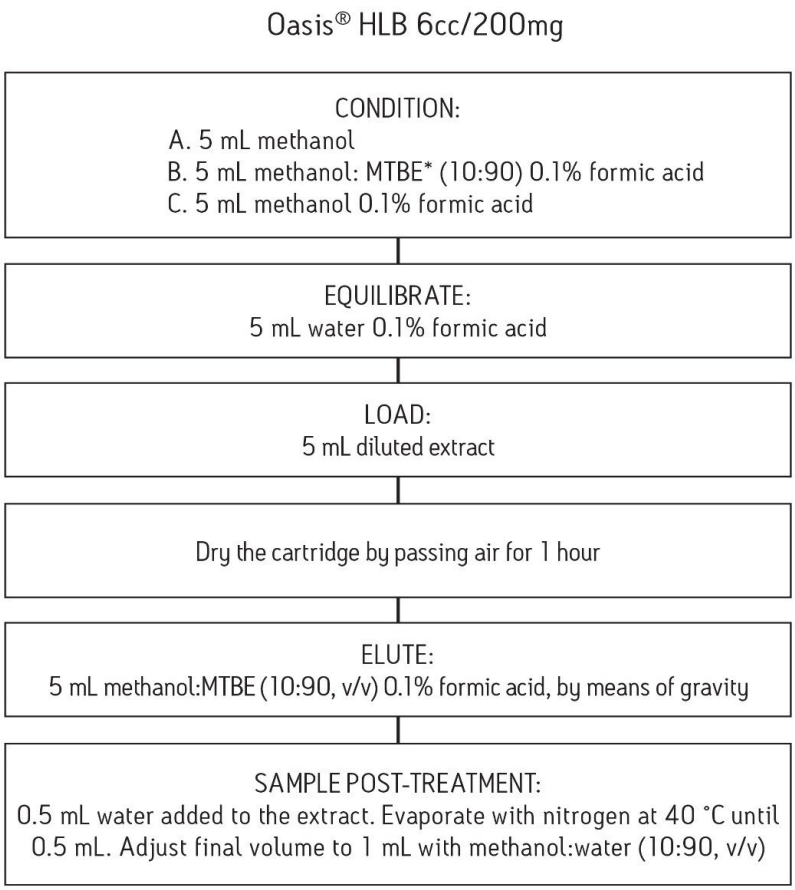
This multi-residue pesticide sample preparation shows the steps used to process fruit and vegetable samples, extract and concentrate the extract by an Oasis HLB SPE method.

## Experimental

### Pre-treatment

1. Samples (lemon, raisin, tomato and avocado) were cut into small pieces.
2. A 20 g portion of homogenized sample was mixed with 60 mL 0.1% formic acid in methanol:water (80:20, v/v).
3. Extraction for 2 minutes with Ultra-Turrax at 8000 rpm.
4. Filtration and dilution with methanol:water 0.1% formic acid (80:20, v/v) to a final volume of 100 mL.
5. 2.5 mL aliquot diluted to 20 ml with 0.1% formic acid in water. Load 5 mL of the diluted extract onto the SPE Cartridge.

## SPE Procedure




**MBTE: methyl-t-buthyl ether*

## LC Conditions

| | |
|---|---|
| System: | Alliance HPLC 2695 |
| Column: | Atlantis $dC_{18}$, 5 µm, 2.1 x 100 mm |
| Flow rate: | 0.2 mL/min |
| Mobile phase A: | 0.01% formic acid in water |
| Mobile phase B: | 0.01% formic acid in methanol |
| Injection volume: | 20 µL |

## Gradient

| Time (min) | %A | %B |
|---|---|---|
| 0 | 95 | 5 |
| 1 | 95 | 5 |
| 8.5 | 50 | 50 |
| 25 | 10 | 90 |
| 28 | 10 | 90 |
| 29 | 95 | 5 |

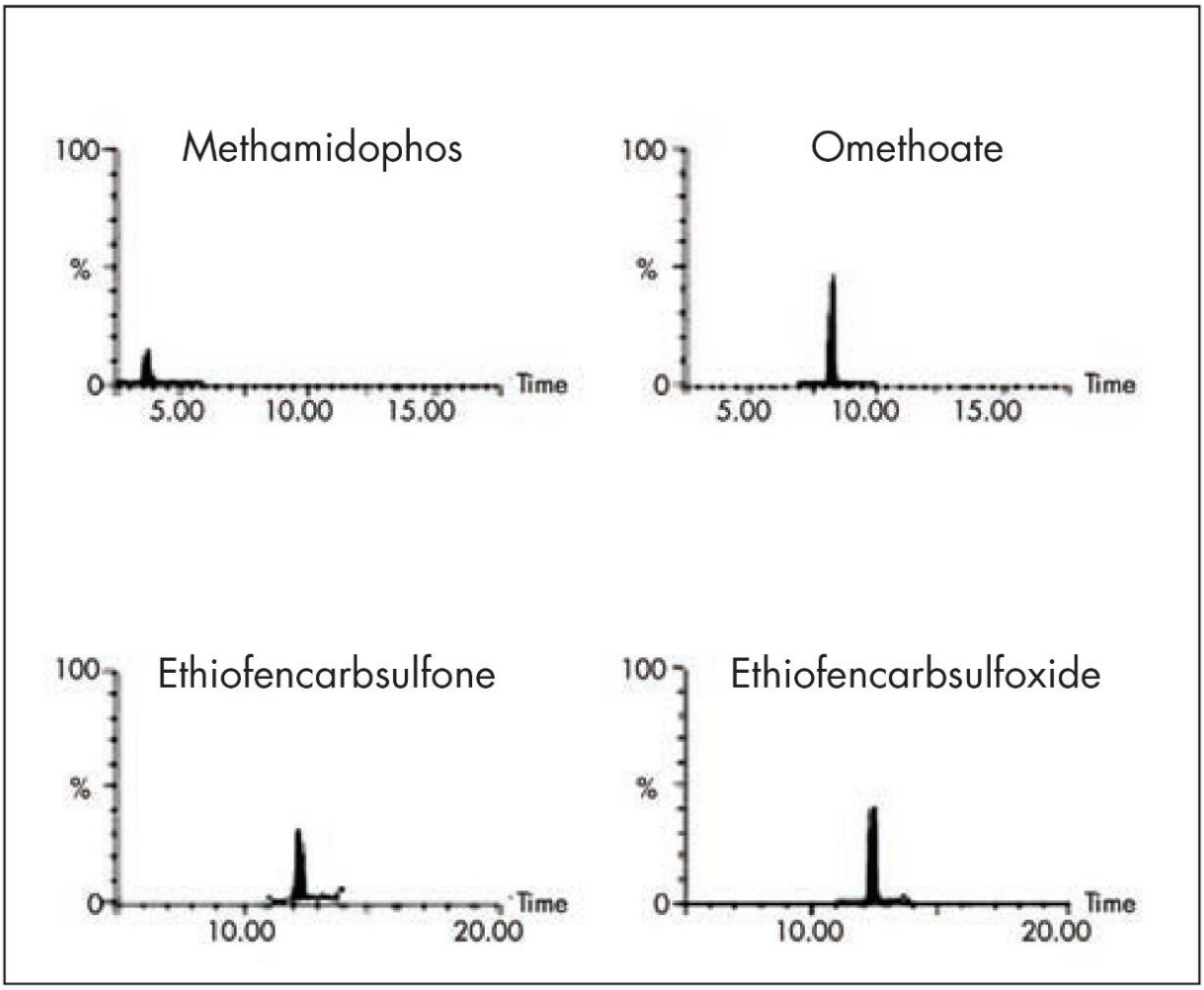
## MS Conditions

| | |
|---|---|
| MS System: | Waters Quattro micro |
| Ionization mode: | Positive electrospray ($ESI^+$) |
| | Multiple reaction monitoring |

Gradient

| Time (min) | %A | %B |
|---|---|---|
| 0 | 95 | 5 |
| 1 | 95 | 5 |
| 8.5 | 50 | 50 |
| 25 | 10 | 90 |
| 28 | 10 | 90 |
| 29 | 95 | 5 |

## Results and Discussion




*LC-MS/MS data for 4 representative pesticides.*

## References

1. *Journal of Chromatography A*, 1109 (2006) 242-252.

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Alliance HPLC System <https://www.waters.com/534293>

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