Waters™

Application Note

Multi-Residue Analysis of Pesticides in Oranges Using AOAC QuEChERS Method by UPLC-MS/MS

Waters Corporation

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

Abstract

This application brief highlights the multi-residue analysis of pesticides in oranges using AOAC QuEChERS method by UPLC-MS/MS

Experimental

Extraction Procedure

1. Add 15 mL 1% acetic acid in acetonitrile into the 50 mL DisQuE extraction tube 1.
2. Add 15 g of homogenized orange with skin into the 50 mL tube.
3. Add any internal standards and standard mixture.
4. Shake vigorously for 1 minute and centrifuge > 1500 rcf for 5 minute.

5. Transfer 1 mL of the acetonitrile extract into the 2 mL clean-up tube containing 50 mg PSA, 150 mg MgSO4, and 50 mg C18.
6. Shake for 30 seconds and centrifuge >1500 rcf for 1 minute.
7. Transfer 100 µL of final extract into a 1.5 mL centrifuge tube.
8. Add any post-extraction internal standards.
9. Dilute as needed with an appropriate buffer or solvent.
10. Centrifuge > 16000 rcf for 5 minutes.
11. Transfer to autosampler vial.

LC Conditions

LC System:	Waters ACQUITY UPLC System
Column:	ACQUITY UPLC BEH C_{18}, 2.1 x 100 mm, 1.7 µm
Column Temp:	40 °C
Sample Temp:	4 °C
Flow Rate:	0.3 mL/min.
Mobile Phase A:	Water + 0.1% formic acid
Mobile Phase B:	Methanol + 0.1% formic acid
Injection Volume:	15 µL, Partial loop injection

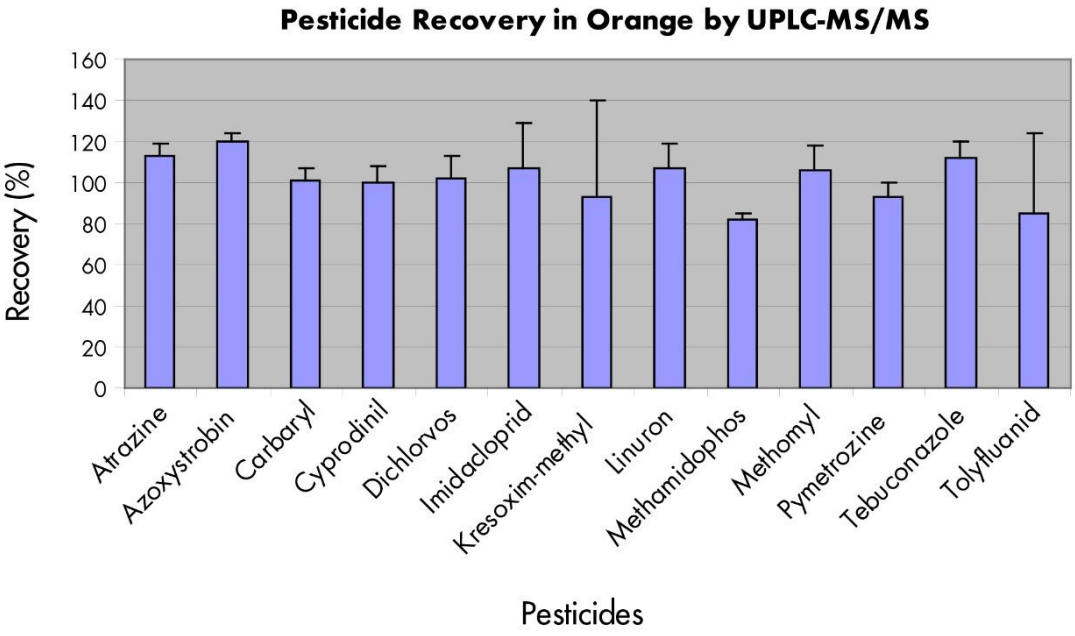
Gradient:

Time	Flow Rate	A%	B%
0.00	0.3	75	25
0.25	0.3	75	25
7.75	0.3	5	100
8.50	0.3	0	100
8.51	0.5	75	25
10.50	0.5	75	25
11.00	0.3	75	25

MS Conditions

Instrument:	Waters ACQUITY TQ Detector
Ionization:	Positive electrospray (ESI+)
Acquisition:	Multiple reaction monitoring (MRM)

Results and Discussion



Pesticides in Oranges by UPLC-MS/MS

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ACQUITY UPLC System <https://www.waters.com/514207>

ACQUITY UPLC Tunable UV Detector <https://www.waters.com/514228>

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