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Multiresidue Analysis of Pesticides in Vegetables and Fruits

Waters Corporation

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

Abstract

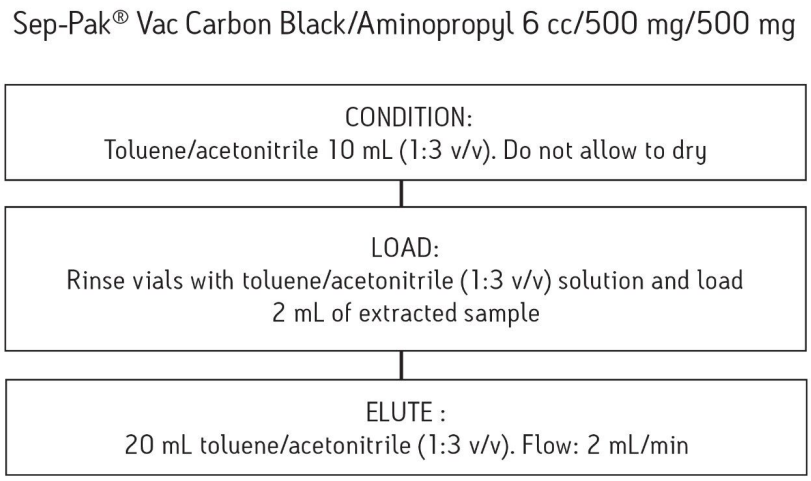
This application brief shows the Japan Ministry of Health, Labor and Welfare (JPMHLW) Method for multi-residue analysis of pesticides in vegetables and fruit.

Introduction

This application brief shows the Japan Ministry of Health, Labor and Welfare (JPMHLW) Method for multi-residue analysis of pesticides in vegetables and fruit. This sample preparation method calls for an extract from the commodity, followed by a SPE extract from a Sep-Pak Vac Carbon Black/Aminopropyl column.

Experimental

SPE Procedure



LC Conditions

System:	Alliance HPLC 2695
Column:	XTerra MS C_{18}, 3.5 µm, 2.1 x 150 mm

Flow rate:	0.2 mL/min
Mobile phase A:	water
Mobile phase B:	methanol
Mobile phase C:	100 mM ammonium acetate in water
Injection volume:	5 µL
Column temp.:	40 ˚C

Gradient

Time (min)	%A	%B	%C
0	80	15	5
1	55	40	5
3.5	55	40	5
6	45	50	5
8	40	55	5
17.5	0	95	5
30	80	15	5
47	80	15	5

MS Conditions

MS System:	Waters Quattro Premie XE

Ionization mode:	Positive electrospray (ESI^+)
	Multiple reaction monitoring

Results and Discussion

Pesticides*	Spike Conc. / µg/g	Recovery (%)
Abamectin	0.1	102.0
Anibfos	0.1	111.7
Azinphos-methyl	0.1	107.6
Benzofenap	0.1	139.5
Butafenacil	0.1	104.5
Chloridazon	0.1	106.0
Chromafenozide	0.1	108.2
Clomeprop	0.1	104.4
Cloquintocet-mexyl	0.1	108.7
Clothianidin	0.1	101.5
Cyazofamid	0.1	108.3
Cyflufenamid	0.1	110.1
Dimethirimol	0.1	101.0
Fenoxycarb	0.1	108.7
Ferimzone	0.1	112.6
Formetanate hydrochloride	0.1	86.7
Furathiocarb	0.1	100.5
Imidacloprid	0.1	111.8
Indoxacarb	0.1	121.2
Iprovalicarb	0.1	106.2
Isoxaflutole	0.1	99.5
Lactofen	0.1	106.8
Methoxyfenozide	0.1	103.3
Mibemectin A3	0.1	114.5
Mibemectin A4	0.1	101.2
Naproanilide	0.1	115.9
Oryzalin	0.1	103.8
Oxycarboxin	0.1	85.1
Oxydemeton-methyl	0.1	108.0
Phenmedipham	0.1	102.2
Pyrazolynate	0.1	72.7
Quizalofop-P-tefuryl	0.1	145.3
Simeconazole	0.1	106.0
Thiacloprid	0.1	109.2
Thiamethoxam	0.1	108.3
Tridemorph	0.1	94.6
Etriticonazole	0.1	113.3

**Five replicate samples analyzed per level.*

Featured Products

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

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