



Recovery Studies using the QuEChERS Method*

M. Anastassiades

Fortification level was 0.1 mg/kg in all cases. Calibrations were performed using matrix-matched standards. RSDs (in %) ranged between 1-15; usually below 5 (n=5).

In the following table includes pesticides for which recoveries were between 70 and 110 %. In most cases, the recoveries ranged between 90 and 100 %.



*publication in preparation

Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
2,3,6-Trichlorobenzoic acid	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
2,4,5-T	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
2,4,5-TP	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
2,4-D	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
2,4-DB	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
2,4-Dichlorobenzoic acid	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
2,4-DP	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
2,6-Dichlorobenzamide	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x		
2-Naphthyloxyacetic acid	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
2-Phenylphenol	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
4-CPA	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
Acephate	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Acetamiprid	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Acrinathrin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Aldicarb	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Aminocarb	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Amitraz	Apple	LC-MS/MS	x		
	Cucumber	LC-MS/MS	x	x	



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Atrazine	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Atrazine-desethyl	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Atrazine-desisopropyl	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Azinphos-methyl	Cucumber	GC-MSD	x	x	Sensitive towards decomposition in the injector
Azoxystrobin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Beflubutamid	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Benalaxyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Benazolin	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
Bendiocarb	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Bentazone	Apple	LC-MS/MS		x	
Bifenazate	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Bifenthrin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Biphenyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Bitertanol	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Boscalid (Nicobifen)	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Bromacil	Apple	LC-MS/MS		x	
Bromoxynil	Apple	LC-MS/MS		x	
Bromopropylate	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Bromuconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Bupirimate	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Buprofezin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Captan	Apple	GC-MSD	x	x	Sensitive towards decomposition **



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Carbaryl	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Carbendazim	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Carbetamide	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Carbofuran	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Cadusafos	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Chlorfenvinphos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Chlorfluazuron	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Chloridazon	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Chlorpyrifos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Chlorpyrifos-methyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Chlorothalonil	Apple	GC-MSD		x	Sensitive towards decomposition **
	Cucumber	GC-MSD	x	x	
Chlorotoluron	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Chlozolinate	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Chromafenozide	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Clomazone	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Clopyralid	Apple	LC-MS/MS		x	pH up to 5 avoid PSA
Cyfluthrin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Cyhexatin	Apple	LC-MS		x	
	Cucumber	LC-MS		x	
Cypermethrin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Cyproconazol	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Cyprodinil	Apple	GC-MSD	x	X	
	Cucumber	GC-MSD	x	x	
Cyromazine	Apple	LC-MS	x	x	
DDD op	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
DDD pp	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
DDE op	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
DDE pp	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
DDT op	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
DDT op + DDD pp	Apple	GC-MSD	x	x	Same retention time and target masses
	Cucumber	GC-MSD	x	x	
DDT pp	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Deltamethrin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Demeton-S-methyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Demeton-S-methylsulfon	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Diazinon	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Dicamba	Apple	LC-MS/MS		97,1	pH up to 5 avoid PSA
Dichlofluanid	Apple	GC-MSD	x	x	Sensitive towards decomposition **
	Cucumber	GC-MSD	x	x	
Dichloro-benzophenone pp'	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Dichlorvos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Diclobutrazol	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Dicloran	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Dicofol	Apple	GC-MSD		x	Sensitive towards decomposition **



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Dicrotophos	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	X	
Dieldrin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Diethofencarb	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Difenconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Diflubenzuron	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Diflufenican	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Dimefuron	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Dimethachlor	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Dimethenamid	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Dimethoate	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Dimethomorph	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Diniconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Dinocap	Apple	GC-MSD		x	
	Cucumber	GC-MSD	x	x	
Dioxacarb	Apple	LC-MS	x		Problems with decomposition at low pH
	Cucumber	LC-MS	x	x	
Diphenylamine	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Disulfoton	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Diuron	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Endosulfan alpha	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Endosulfan beta	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Endosulfan sulfate	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Endrin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	X	
Epoiconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Esfenvalerate	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Ethiofencarb	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Ethion	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Ethirimol	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Ethoprophos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Etofenprox	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Etridiazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Etrimfos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Famoxadone	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fenbutatin oxide	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Fenamiphos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fenarimol	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fenbuconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fenhexamid	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fenitrothion	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fenobucarb	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Fenoxycarb	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fenpropathrin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Fenpropidin	Apple	GC-MSD	x		
	Cucumber	GC-MSD	x	x	
Fenpropimorph	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fenson	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fenthion	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fenthion-sulfoxide	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x		
Fentin	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Fenvalerate	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fluazifop	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
Fluazinam	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fluazuron	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Flucythrinate	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fludioxonil	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Flufenacet	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Flufenoxuron	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Fluquinconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Fluroxypyr	Apple	LC-MS/MS		x	Avoid PSA
Flusilazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Folpet	Apple	GC-MSD	x	x	Sensitive towards decomposition **
	Cucumber	GC-MSD		x	
Fonofos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Halofenozide	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Hexachlorobenzene	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
HCH alpha	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
HCH beta	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Heptachlor	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Heptachlor epoxide cis	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Heptachlor epoxide trans	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Hexaconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Hexaflumuron	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Hexazinone	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Hexythiazox	Apple	GC-MSD	x		
	Cucumber	GC-MSD	x		
Imazalil	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Imazapyr	Apple	LC-MS/MS		x	pH up to 5 avoid PSA
Imazaquin	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
Imazethapyr	Apple	LC-MS/MS		x	pH up to 5 avoid PSA
Imidacloprid	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Indoxacarb	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Ioxylnil	Apple	LC-MS/MS		x	
Iprodione	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Isofenphos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Isoprocab	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Isoproturon	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Kresoxim-methyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Lambda-Cyhalothrin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Landrin	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Lenacil	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Lindane	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Linuron	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Lufenuron	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Malaoxon	Apple	GC-MSD		x	
	Cucumber	GC-MSD		x	
Malathion	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
MCPA	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
MCPB	Apple	LC-MS/MS		x	Avoid PSA
Mecarbam	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Mecoprop	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
Mepronil	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Metalaxyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Metamitron	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Metazachlor	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Methabenzthiazuron	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Methamidophos	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Methidathion	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x		
Methiocarb	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Methomyl	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Methoxychlor	Apple	GC-MSD		x	Sensitive towards decomposition in the injector
	Cucumber	GC-MSD		x	
Methoxyfenozide	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Metobromuron	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Metolachlor	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Metolcarb	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Metosulam	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Metoxuron	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Metribuzin	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Mevinphos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Monocrotophos	Apple	LC-MS-MS	x	x	
	Cucumber	LC-MS-MS	x	x	
Myclobutanil	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Naphthylacetic acid	Apple	LC-MS/MS		x	pH up to 6 avoid PSA
Nitenpyram	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Nuaimol	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Ofurace	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Omethoate	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Oxadiazon	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Oxadixyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Oxamyl	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Oxydemeton-methyl	Apple	LC-MS-MS	x	x	
	Cucumber	LC-MS-MS	x	x	



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Paraoxon	Apple	GC-MSD		x	
	Cucumber	GC-MSD	x		
Paraoxon-methyl	Apple	GC-MSD		x	
	Cucumber	GC-MSD		x	
Parathion	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Parathion-methyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Penconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Pencycuron	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Permethrin	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Phorate	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Phosalone	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Phosmet	Apple	GC-MSD		x	
	Cucumber	GC-MSD	x		
Phosphamidon	Apple	GC-MSD		x	
	Cucumber	GC-MSD	x		
Picloram	Apple	LC-MS/MS		x	pH up to 5 avoid PSA
Piperonyl butoxide	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Pirimicarb	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Pirimiphos-methyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Prochloraz	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Procymidone	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Profenofos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Promecarb	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Prometryn	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	X	



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Propamocarb	Apple	LC-MS		x	
	Cucumber	LC-MS	x	x	
Propargite	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Propazin	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Propiconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Propoxur	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Propyzamide	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Prothiofos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Pymetrozine	Apple	GC-MSD	x	x	Degradation at low pH
		GC-MSD			
Pyraclostrobin	Apple	LC-MS-MS	x	x	
	Cucumber	LC-MS-MS	x	x	
Pyrizophos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Pyridaben	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Pyridaphenthion	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Pyrifenox	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Pyrimethanil	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Pyriproxyfen	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Quinalphos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Quinoxifen	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Quintozene	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Quizalofop-ethyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Sebuthylazine	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	



Pesticide	Commodity	Determination	Cleanup with PSA	No cleanup	Remarks
Simazine	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Spiroxamine	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Sulfotep	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Tau-Fluvalinate	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Tebuconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Tebufenozide	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Tebufenpyrad	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Teflubenzuron	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Terbufos	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Terbuthylazin	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Terbuthylazin-desethyl	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Terbutryn	Apple	LC-MS/MS	x	x	
	Cucumber	LC-MS/MS	x	x	
Tetraconazole	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Tetradifon	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Thiabendazole	Apple	GC-MSD	x	x	
	Cucumber	LC-MS	x	x	
Thiacloprid	Apple	LC-MS	x	x	
	Cucumber	LC-MS	x	x	
Thiometon	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	
Tolclofos-methyl	Apple	GC-MSD	x	x	
	Cucumber	GC-MSD	x	x	

** Degradation at various stages of analysis including storage of extracts and GC-injection. Most vulnerable at elevated pH values