

Electronic Supplementary Information

Evaluation of matrix effects in pesticide multi-residue methods by matrix fingerprinting using liquid chromatography electrospray high resolution mass spectrometry

María del Mar Gómez-Ramos, Łukasz Rajski, Ana Lozano and Amadeo R. Fernández-Alba*

European Union Reference Laboratory for Pesticide Residues in Fruit & Vegetables, University of Almeria, Agrifood Campus of International Excellence (ceiA3), 04120 Almería, Spain

Corresponding author. Email: amadeo@ual.es

Table S1. Signal suppression effects of pesticides at different dilution factors in tomato, pepper, grape, cucumber, orange, leek and broccoli

Figure S1. Matrix fingerprinting of the 23 studied matrices analyzed using LC-TOF-MS (absolute height $\geq 10,000$ counts). The x-axis represents the retention time (min) and the y-axis the mass.

Table S1. Signal suppression effects of pesticides at different dilution factors in tomato, pepper, grape, cucumber, orange, leek and broccoli

Tomato					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Acephate	1.1	15	-19	-21	-39
Acetamiprid	4.5	1	-4	-4	-2
Aldicarb	5.8	3	-12	-6	-16
Aldicarb sulfone	1.8	16	11	12	23
Aldicarb sulfoxide	1.2	13	-12	-23	-11
Azoxystrobin	9.7	-12	-12	-11	-6
Bitertanol	10.2	-24	-20	-16	-22
Boscalid	9.9	-9	-11	-10	-15
Bromuconazole I	9.3	-10	-11	-12	-15
Bromuconazole II	9.8	-12	-14	-12	-21
Bupirimate	8.4	-14	-12	-11	-17
Buprofezin	9.9	-23	-29	-21	-14
Carbaryl	7.5	4	-13	-7	-19
Carbendazim	1.2	-7	-17	-20	-28
Carbofuran	7.2	-13	-10	-19	-38
Chlorantraniliprole	8.7	-8	-13	-7	-10
Chlorfenvinphos	10.9	-15	-15	-12	-17
Chlorpyrifos	13.1	-30	-23	-15	-29
Clofentezine	11.5	-30	-29	-32	-33
Clothianidin	3.5	7	-7	-14	-21
Cyproconazole	9.1	-12	-12	-9	-8
Cyprodinil	7.8	-11	-18	-15	-29

Tomato					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Cyromazine	0.9	-14	-36	-55	-84
Demeton-S-methylsulfone	2.3	7	-9	0	3
Demeton-S-methylsulfoxide	1.5	22	0	3	-11
Diazinon	11.4	-13	-15	-14	-19
Dichlorvos	6.6	-10	-12	-16	-12
Dicrotophos	2	6	-10	-7	-2
Diethofencarb	9.3	-22	-20	-13	-10
Difenoconazole	10.9	-25	-26	-7	-23
Diflubenzuron	10.2	-26	-13	-9	-25
Dimethoate	4.4	-3	-7	-7	-3
Dimethomorph I	8.6	-5	-9	-10	-11
Dimethomorph II	8.9	-14	-9	-11	-11
Diniconazole	10.5	-18	-19	-18	-23
Dodine	8.8	-30	-65	-46	-50
Epoxiconazole	9.6	-12	-11	-10	-16
Ethion	13.4	-19	-25	-11	-21
Ethirimol	2.5	-8	-13	-11	-10
Ethoprophos	9.8	-12	-8	-13	-10
Etofenprox	10.9	-19	-6	-13	-18
Fenamidone	9.8	-11	-12	-11	-8
Fenamiphos	9.6	-22	-10	-7	-9
Fenamiphos sulfone	7	-14	-7	-7	-7
Fenamiphos sulfoxide	5.8	-11	-9	-10	-7
Fenarimol	9.4	-17	-11	-11	-12
Fenazaquin	12.6	-27	-18	-19	-14
Fenbuconazole	10.2	-15	-23	-19	-16
Fenhexamid	9.8	-14	-10	-12	-16
Fenoxycarb	7.8	-10	-7	-4	-1
Fenpropimorph	7.7	-10	-24	-13	-14
Fenpyroximate	13.2	-19	-16	-13	11
Fenthion sulfoxide	7.2	-8	-7	-8	-4
Fonicamid	2.9	-11	-10	-7	-8
Fluazifop	9.3	-12	-1	-8	-13
Flufenoxuron	13	-15	-18	11	15
Fluopyram	10.2	-10	-11	-9	-12
Fluquinconazole	9.8	-13	-13	-14	-19
Flusilazole	10.1	-16	-16	-15	-15
Flutriafol	7.6	-7	-15	-9	-7
Formetanate	1.1	-15	-17	-25	-62
Fosthiazate	7.6	-18	-2	-6	-12

Tomato					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Haloxyfop	10.4	-13	-11	-11	-11
Hexaconazole	10.2	-15	-19	-12	-21
Hexythiazox	13.1	-16	-32	-22	-29
Imazalil	6.5	-6	-6	-8	-8
Imidacloprid	3.9	-3	-9	-6	-6
Indoxacarb	12.2	-14	-13	-24	-5
Iprodione	10.5	-11	-1	-7	-8
Iprovalicarb	9.6	-9	-11	-8	-5
Isocarbofos	9.1	7	-10	-11	-22
Isoprocarb	8.3	-16	-6	-8	-7
Isoproturon	8.7	-11	-2	-7	-1
Kresoxim-methyl	11.1	1	-12	-14	-12
Linuron	9.2	-12	-9	-10	-11
Lufenuron	12.6	-10	-20	13	15
Malathion	10.5	-11	-1	-7	-8
Mandipropamid	9.9	-19	-15	-16	-12
Mepanipyryn	9.8	-10	-15	-15	-19
Metalaxyl	7.8	-13	-9	-4	-2
Metconazole	10.3	-16	-20	-15	-20
Methamidophos	1.1	-7	-25	-39	-45
Methidathion	9.3	2	-17	-4	-18
Methiocarb	9.1	-16	-4	-9	-13
Methiocarb sulfone	5.1	-3	15	12	-6
Methiocarb sulfoxide	2.9	-1	-7	13	-1
Methomyl	2.1	14	-8	-10	-14
Methoxyfenozide	10.3	-7	-12	-9	-11
Metobromuron	8.2	-6	-10	-2	-10
Monocrotophos	1.7	17	20	20	-5
Myclobutanil	9.7	-10	-11	-7	-15
Nitenpyram	1.6	-8	-9	-14	-33
Omethoate	1.2	14	11	-10	-12
Oxadixyl	6.3	-20	-25	-19	-3
Oxamyl	1.7	-18	0	5	-15
Oxydemeton-methyl	1.5	22	0	3	-11
Paclobutrazol	8.9	-7	-11	-8	-9
Penconazole	10.2	-11	-11	-13	-21
Pencycuron	11.8	-20	-20	-23	-24
Pendimethalin	13.1	-15	-19	-21	-27
Phenthoate	11.5	-19	-28	-22	-27
Phosalone	11.9	-12	-30	-17	-30

Tomato					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Phosmet	9.5	-15	-6	-1	-10
Pirimicarb	2.4	-13	-11	8	-10
Pirimicarb desmethyl	1.4	-6	-12	-18	-23
Pirimiphos-methyl	11.1	-18	-21	-17	-22
Prochloraz	8.7	-16	-18	-18	-19
Profenofos	12.1	-26	-29	-23	-32
Propamocarb	1.1	-9	-10	-12	-61
Propargite	13.6	-7	-17	-8	-15
Propiconazole	10.5	-15	-16	-11	-21
Propoxur	7	-3	-8	-9	-5
Propyzamide	9.9	-10	-7	-13	-13
Prothioconazole	10.4	-37	-30	-58	-79
Pymetrozine	0.9	30	29	4	-50
Pyraclostrobin	11.5	-30	-22	-15	-15
Pyridaben	13.9	-25	-15	-1	12
Pyrimethanil	6.2	-22	-17	-13	-11
Pyriproxyfen	12.7	-21	-25	-17	-26
Quinoxyfen	11.7	-25	-28	-25	-30
Rotenone	10.4	-17	-17	-18	-25
Spinosyn A	8.7	-17	-24	-26	-13
Spinosyn D	9.2	-17	-45	-33	-14
Spirodiclofen	14.3	-24	-10	-1	-22
Spiromesifen	14.2	-11	-19	4	29
Spiroxamine	7.7	-13	-16	-12	-15
Tebuconazole	9.9	-14	-13	-14	-17
Tebufenozide	10.9	-20	-13	-3	-17
Tebufenpyrad	12.2	-33	-25	-25	-28
Terbuthylazine	9	-21	-12	-9	-15
Tetraconazole	10	-14	-13	-10	-19
Thiabendazole	1.3	0	-17	-14	-28
Thiacloprid	5.6	-2	-4	-6	-4
Thiamethoxam	2.5	11	-7	-5	7
Thiodicarb	6.9	-11	-11	-9	-4
Triadimenol I	8.8	-26	3	-11	-12
Triadimenol II	9.1	-11	-15	-11	-13
Triazophos	10.5	-6	-4	-7	-13
Trichlorfon	3	0	-7	2	-2
Trifloxystrobin	12.3	-25	-27	-22	-19
Triflumuron	11.1	-31	-30	-25	-28
Triticonazole	9.1	-12	-9	-7	-12

Tomato					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Zoxamide	11.4	-16	-15	-12	-13

Pepper					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Acephate	1.1	2	-18	-16	-38
Acetamiprid	4.5	5	0	3	5
Aldicarb	5.8	1	-13	-8	-34
Aldicarb sulfone	1.8	28	3	12	12
Aldicarb sulfoxide	1.2	20	-9	-4	1
Azoxystrobin	9.7	-12	-13	-1	3
Bitertanol	10.2	-19	-17	-7	-9
Boscalid	9.9	-6	-12	-4	-11
Bromuconazole I	9.3	-7	-9	-8	-10
Bromuconazole II	9.8	-8	-12	-8	-12
Bupirimate	8.4	-11	-9	-7	-9
Buprofezin	9.9	-5	-11	-2	1
Carbaryl	7.5	7	-21	-1	-19
Carbendazim	1.2	2	-14	-12	-23
Carbofuran	7.2	13	15	15	-48
Chlorantraniliprole	8.7	-5	-14	-2	-3
Chlorfenvinphos	10.9	-9	-9	-3	-5
Chlorpyrifos	13.1	-7	-1	10	0
Clofentezine	11.5	-11	-25	-10	-19
Clothianidin	3.5	4	-7	-2	-1
Cyproconazole	9.1	-9	-11	-4	-6
Cyprodinil	7.8	-7	-9	-14	-25
Cyromazine	0.9	-15	-33	-43	-72
Demeton-S-methylsulfone	2.3	8	-6	3	4
Demeton-S-methylsulfoxide	1.5	24	0	17	9
Diazinon	11.4	-9	-12	-5	-12
Dichlorvos	6.6	-14	-7	-11	-8
Dicrotophos	2	9	-1	8	8
Diethofencarb	9.3	-18	-14	-5	-6
Difenoconazole	10.9	-15	-17	-10	-6
Diflubenzuron	10.2	-2	-8	-4	-13
Dimethoate	4.4	1	-3	3	2
Dimethomorph I	8.6	-7	-9	-3	-4
Dimethomorph II	8.9	-6	-9	-5	-3
Diniconazole	10.5	-15	-12	-8	-10
Dodine	8.8	11	-16	14	-6
Epoxiconazole	9.6	-13	-10	-8	-10

Pepper					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Ethion	13.4	10	3	21	12
Ethirimol	2.5	-3	-13	-6	-12
Ethoprophos	9.8	-6	-7	-6	-6
Etofenprox	10.9	-13	-11	-5	-8
Fenamidone	9.8	-7	-9	-5	-6
Fenamiphos	9.6	-23	-4	-7	-13
Fenamiphos sulfone	7	-11	-5	1	2
Fenamiphos sulfoxide	5.8	-6	-7	8	17
Fenarimol	9.4	-15	-11	-6	-8
Fenazaquin	12.6	6	5	11	10
Fenbuconazole	10.2	-15	-19	-10	-12
Fenhexamid	9.8	-15	-6	-9	-12
Fenoxycarb	7.8	-5	-4	1	-6
Fenpropimorph	7.7	-13	-19	-3	-11
Fenpyroximate	13.2	9	21	27	20
Fenthion sulfoxide	7.2	-3	9	24	17
Flonicamid	2.9	-11	-8	-3	-6
Fluazifop	9.3	-10	3	-5	-10
Flufenoxuron	13	5	2	1	17
Fluopyram	10.2	-5	-12	-2	-4
Fluquinconazole	9.8	-9	-8	-7	-13
Flusilazole	10.1	-14	-15	-5	-8
Flutriafol	7.6	5	-9	-3	-6
Formetanate	1.1	-15	-15	-20	-38
Fosthiazate	7.6	-11	1	1	-9
Haloxifop	10.4	-11	-11	-5	-8
Hexaconazole	10.2	-10	-13	-5	-11
Hexythiazox	13.1	-4	-10	6	2
Imazalil	6.5	-10	-12	-10	-14
Imidacloprid	3.9	-1	-6	1	9
Indoxacarb	12.2	-8	-5	3	11
Iprodione	10.5	-11	-3	-1	-2
Iprovalicarb	9.6	-17	-2	-1	-4
Isocarbofos	9.1	5	-8	-5	-21
Isoprocarb	8.3	-17	2	0	-6
Isoproturon	8.7	-2	-8	-4	-6
Kresoxim-methyl	11.1	-1	-12	-3	-7
Linuron	9.2	-9	-8	-3	-9
Lufenuron	12.6	-7	-8	-4	-8
Malathion	10.5	-11	-3	-1	-2
Mandipropamid	9.9	-16	-10	-10	-4
Mepanipyryn	9.8	-10	-9	-11	-13
Metalaxyl	7.8	-8	0	15	17
Metconazole	10.3	-10	-16	-7	-11
Methamidophos	1.1	1	-18	-26	-36
Methidathion	9.3	12	-5	-5	-16

Pepper					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Methiocarb	9.1	-15	-3	-3	-11
Methiocarb sulfone	5.1	-13	13	16	-1
Methiocarb sulfoxide	2.9	-2	-4	14	3
Methomyl	2.1	12	2	10	-9
Methoxyfenozide	10.3	-6	-8	-3	-4
Metobromuron	8.2	1	-10	3	-7
Monocrotophos	1.7	9	-5	2	3
Myclobutanil	9.7	-11	-14	-5	-11
Nitenpyram	1.6	-8	-8	-4	-16
Omethoate	1.2	10	3	4	-20
Oxadixyl	6.3	-6	-5	7	3
Oxamyl	1.7	-18	2	7	-6
Oxydemeton-methyl	1.5	24	0	17	9
Paclobutrazol	8.9	-8	-8	-3	-7
Penconazole	10.2	-11	-10	-5	-10
Pencycuron	11.8	-12	-11	-3	-1
Pendimethalin	13.1	6	-7	13	8
Phenthoate	11.5	0	-20	-6	-13
Phosalone	11.9	-1	-20	-9	-16
Phosmet	9.5	-16	-3	13	-10
Pirimicarb	2.4	3	-8	-3	-12
Pirimicarb desmethyl	1.4	0	-10	-8	-17
Pirimiphos-methyl	11.1	-5	-10	-5	-8
Prochloraz	8.7	-9	-12	-10	-9
Profenofos	12.1	-11	-18	-8	-6
Propamocarb	1.1	-10	-12	-11	-24
Propargite	13.6	18	11	31	16
Propiconazole	10.5	-3	-11	-3	-12
Propoxur	7	-8	-9	-1	-5
Propyzamide	9.9	-9	-5	-8	-11
Prothioconazole	10.4	-53	-61	-69	-85
Pymetrozine	0.9	20	15	21	-25
Pyraclostrobin	11.5	-11	0	16	19
Pyridaben	13.9	-1	16	39	43
Pyrimethanil	6.2	-13	-11	-11	-18
Pyriproxyfen	12.7	7	-1	9	2
Quinoxifen	11.7	-5	-5	-1	-2
Rotenone	10.4	-16	-11	-9	-10
Spinosyn A	8.7	5	-17	16	15
Spinosyn D	9.2	27	-9	24	22
Spirodiclofen	14.3	-9	23	21	-11
Spiromesifen	14.2	2	16	10	12
Spiroxamine	7.7	-14	-19	-10	-16
Tebuconazole	9.9	-4	-12	-9	-9
Tebufenozide	10.9	42	5	1	-3
Tebufenpyrad	12.2	-10	-13	-4	2

Pepper					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Terbutylazine	9	-7	-10	-5	-13
Tetraconazole	10	-10	-8	-5	-12
Thiabendazole	1.3	2	-16	-10	-28
Thiacloprid	5.6	3	-3	3	7
Thiamethoxam	2.5	7	-1	5	36
Thiodicarb	6.9	-11	-7	3	16
Triadimenol I	8.8	1	5	-5	-10
Triadimenol II	9.1	-8	-13	-6	-9
Triazophos	10.5	-2	-1	2	-4
Trichlorfon	3	5	-3	12	8
Trifloxystrobin	12.3	-7	-8	0	10
Triflumuron	11.1	-17	-16	-9	-4
Triticonazole	9.1	-12	-9	-4	-8
Zoxamide	11.4	-7	-5	5	3

Grape					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Acephate	1.1	10	10	2	1
Acetamiprid	4.5	-2	7	7	5
Aldicarb	5.8	-11	-4	-9	-22
Aldicarb sulfone	1.8	-10	4	7	8
Aldicarb sulfoxide	1.2	4	1	-7	-3
Azoxystrobin	9.7	11	15	19	11
Bitertanol	10.2	-7	-4	-7	-9
Boscalid	9.9	-8	-5	-1	-4
Bromuconazole I	9.3	-9	-5	-3	-3
Bromuconazole II	9.8	-11	-6	-4	-4
Bupirimate	8.4	-6	0	-3	-2
Buprofezin	9.9	16	17	14	-7
Carbaryl	7.5	1	10	13	-1
Carbendazim	1.2	14	7	5	6
Carbofuran	7.2	-5	16	3	43
Chlorantraniliprole	8.7	2	5	2	6
Chlorfenvinphos	10.9	-6	4	-1	-2
Chlorpyrifos	13.1	19	13	27	15
Clofentezine	11.5	-11	-4	-8	0
Clothianidin	3.5	-7	-1	2	-2

Grape					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Cyproconazole	9.1	-15	-7	-2	12
Cyprodinil	7.8	12	12	14	-30
Cyromazine	0.9	-12	-14	-17	19
Demeton-S-methylsulfone	2.3	-1	7	19	32
Demeton-S-methylsulfoxide	1.5	7	4	15	-4
Diazinon	11.4	-15	2	-8	8
Dichlorvos	6.6	-5	9	-6	31
Dicrotophos	2	-3	5	4	3
Diethofencarb	9.3	-6	-4	2	18
Difenoconazole	10.9	7	9	2	-4
Diflubenzuron	10.2	-5	-15	-7	2
Dimethoate	4.4	-4	0	2	5
Dimethomorph I	8.6	-12	-3	5	5
Dimethomorph II	8.9	-7	-2	-1	-6
Diniconazole	10.5	-14	-2	-5	-54
Dodine	8.8	8	2	-10	-5
Epoxiconazole	9.6	-7	-4	-3	-10
Ethion	13.4	-2	8	-10	-3
Ethirimol	2.5	-8	-4	-1	4
Ethoprophos	9.8	-10	6	6	-5
Etofenprox	10.9	3	4	8	2
Fenamidone	9.8	-14	-10	-6	1
Fenamiphos	9.6	0	-1	5	8
Fenamiphos sulfone	7	-9	-1	1	-2
Fenamiphos sulfoxide	5.8	-8	-5	5	-20
Fenarimol	9.4	-14	-6	-4	-5
Fenazaquin	12.6	-13	7	-17	11
Fenbuconazole	10.2	-7	-4	-7	-17
Fenhexamid	9.8	14	17	11	-26
Fenoxycarb	7.8	-13	-5	-11	-23
Fenpropimorph	7.7	-18	-3	-15	-7
Fenpyroximate	13.2	-9	11	-12	4
Fenthion sulfoxide	7.2	-2	9	5	-2
Flonicamid	2.9	-11	-7	-3	25
Fluazifop	9.3	-12	-2	-4	1
Flufenoxuron	13	-13	8	-11	-3
Fluopyram	10.2	-10	5	-2	-4
Fluquinconazole	9.8	-13	-4	2	-2
Flusilazole	10.1	-7	-1	-4	-39
Flutriafol	7.6	-13	-5	-5	5

Grape					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Formetanate	1.1	-18	-19	-12	-2
Fosthiazate	7.6	-3	11	4	-8
Haloxypop	10.4	-6	-4	-4	-29
Hexaconazole	10.2	-6	-6	-5	-3
Hexythiazox	13.1	1	-6	-11	16
Imazalil	6.5	-12	-4	-4	10
Imidacloprid	3.9	12	20	14	0
Indoxacarb	12.2	13	14	15	1
Iprodione	10.5	2	0	2	-10
Iprovalicarb	9.6	-6	3	2	0
Isocarbofos	9.1	-7	-7	-1	7
Isoprocarb	8.3	3	-3	-2	-3
Isoproturon	8.7	1	0	4	-2
Kresoxim-methyl	11.1	17	12	11	0
Linuron	9.2	-5	-4	2	34
Lufenuron	12.6	-10	-11	-12	-14
Malathion	10.5	2	0	2	-2
Mandipropamid	9.9	-11	7	1	-13
Mepanipyryn	9.8	3	-4	-3	-7
Metalaxyl	7.8	-9	-2	-2	-16
Metconazole	10.3	-10	-7	-7	-5
Methamidophos	1.1	-10	-5	-5	-5
Methidathion	9.3	-8	-4	-3	-11
Methiocarb	9.1	-3	1	10	4
Methiocarb sulfone	5.1	12	14	10	8
Methiocarb sulfoxide	2.9	8	-1	2	1
Methomyl	2.1	-2	6	-5	1
Methoxyfenozide	10.3	6	1	1	0
Metobromuron	8.2	-1	4	5	9
Monocrotophos	1.7	-6	3	0	-3
Myclobutanil	9.7	1	1	5	-42
Nitenpyram	1.6	-10	-4	1	-1
Omethoate	1.2	-10	-6	-7	22
Oxadixyl	6.3	-2	3	-7	15
Oxamyl	1.7	3	6	18	-4
Oxydemeton-methyl	1.5	0	5	12	30
Paclobutrazol	8.9	-14	2	-3	-7
Penconazole	10.2	13	16	16	-25
Pencycuron	11.8	-2	-2	-2	-3
Pendimethalin	13.1	-8	11	-7	-6

Grape					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Phenthoate	11.5	-10	3	-1	-5
Phosalone	11.9	-11	10	-3	-8
Phosmet	9.5	3	-7	7	-7
Pirimicarb	2.4	-4	-6	-6	-3
Pirimicarb desmethyl	1.4	-10	-4	-1	-7
Pirimiphos-methyl	11.1	-17	-3	-5	-11
Prochloraz	8.7	-10	-4	-2	-26
Profenofos	12.1	-9	2	-4	-4
Propamocarb	1.1	-11	-7	-8	-1
Propargite	13.6	-2	-1	0	3
Propiconazole	10.5	-9	-2	-6	-3
Propoxur	7	-1	2	3	-19
Propyzamide	9.9	-10	-5	-2	7
Prothioconazole	10.4	-9	-12	-13	8
Pymetrozine	0.9	5	5	14	-20
Pyraclostrobin	11.5	16	19	11	31
Pyridaben	13.9	-22	30	-29	-20
Pyrimethanil	6.2	7	14	12	14
Pyriproxyfen	12.7	-7	-6	-15	-5
Quinoxyfen	11.7	5	6	7	-22
Rotenone	10.4	1	-4	2	-41
Spinosyn A	8.7	-10	-13	-13	-21
Spinosyn D	9.2	-14	-15	-23	8
Spirodiclofen	14.3	-1	1	-29	-11
Spiromesifen	14.2	-10	6	-2	7
Spiroxamine	7.7	-8	-2	-6	-7
Tebuconazole	9.9	9	1	2	-7
Tebufenozide	10.9	-1	3	-7	-3
Tebufenpyrad	12.2	-8	12	-8	0
Terbuthylazine	9	-12	4	-3	-17
Tetraconazole	10	-14	4	-3	2
Thiabendazole	1.3	-9	-8	-5	12
Thiacloprid	5.6	-4	1	9	0
Thiamethoxam	2.5	0	0	13	24
Thiodicarb	6.9	-5	2	4	1
Triadimenol I	8.8	5	2	1	-2
Triadimenol II	9.1	11	11	8	-7
Triazophos	10.5	3	-1	1	10
Trichlorfon	3	7	-9	23	-8
Trifloxystrobin	12.3	-14	3	-5	-1

Grape					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Triflumuron	11.1	-12	6	-6	-15
Triticonazole	9.1	-8	-5	-5	-3
Zoxamide	11.4	-3	-7	-9	-6

Cucumber					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Acephate	1.1	-11	-11	-12	-20
Acetamiprid	4.5	0	-6	15	27
Aldicarb	5.8	-3	-12	-13	-35
Aldicarb sulfone	1.8	-10	-6	14	5
Aldicarb sulfoxide	1.2	10	5	20	2
Azoxystrobin	9.7	-3	-3	10	5
Bitertanol	10.2	-2	-8	3	-11
Boscalid	9.9	-9	-17	-9	-21
Bromuconazole I	9.3	-7	-10	1	-15
Bromuconazole II	9.8	-9	-13	1	-15
Bupirimate	8.4	-9	-11	-5	-22
Buprofezin	9.9	-6	-11	-2	-4
Carbaryl	7.5	25	14	15	-25
Carbendazim	1.2	-3	-15	-10	-30
Carbofuran	7.2	-4	6	5	12
Chlorantraniliprole	8.7	8	5	4	-4
Chlorfenvinphos	10.9	-3	-5	9	-5
Chlorpyrifos	13.1	-18	-11	-12	-35
Clofentezine	11.5	9	-10	-7	-39
Clothianidin	3.5	-3	-7	0	-3
Cyproconazole	9.1	-6	-10	1	-11
Cyprodinil	7.8	-7	-16	-14	-38
Cyromazine	0.9	-4	-27	-32	-56
Demeton-S-methylsulfone	2.3	-1	-6	17	17
Demeton-S-methylsulfoxide	1.5	4	1	23	25

Cucumber					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Diazinon	11.4	-10	-10	-7	-23
Dichlorvos	6.6	-29	2	-32	-3
Dicrotophos	2	-3	-8	6	0
Diethofencarb	9.3	-6	-10	3	-27
Difenoconazole	10.9	-6	-18	-2	-17
Diflubenzuron	10.2	2	-23	-9	-25
Dimethoate	4.4	-4	-11	5	6
Dimethomorph I	8.6	-7	-11	11	10
Dimethomorph II	8.9	-8	-10	6	14
Diniconazole	10.5	-7	-11	-1	-18
Dodine	8.8	-9	-10	-37	-30
Epoxiconazole	9.6	-5	-9	1	-10
Ethion	13.4	-7	-18	-23	-37
Ethirimol	2.5	-5	-11	-3	-3
Ethoprophos	9.8	-14	-9	1	-12
Etofenprox	10.9	1	-1	6	0
Fenamidone	9.8	-7	-17	-5	-16
Fenamiphos	9.6	5	-1	24	19
Fenamiphos sulfone	7	-3	-6	11	18
Fenamiphos sulfoxide	5.8	1	-11	6	28
Fenarimol	9.4	-10	-13	-2	-8
Fenazaquin	12.6	-7	-8	-10	-18
Fenbuconazole	10.2	-3	-11	-2	-7
Fenhexamid	9.8	-13	-16	-3	-16
Fenoxycarb	7.8	-6	-11	-7	-11
Fenpropimorph	7.7	-17	-16	-15	-15
Fenpyroximate	13.2	-11	-14	-10	-21
Fenthion sulfoxide	7.2	0	11	31	14
Flonicamid	2.9	10	19	13	17
Fluazifop	9.3	-2	-9	-1	-5
Flufenoxuron	13	6	7	-12	15
Fluopyram	10.2	-5	-5	-3	-15
Fluquinconazole	9.8	-8	-18	-4	-18
Flusilazole	10.1	-1	-12	0	-12
Flutriafol	7.6	-2	-4	-2	-5
Formetanate	1.1	-3	-19	-22	-26
Fosthiazate	7.6	-3	8	16	22
Haloxifop	10.4	-4	-16	-7	-14
Hexaconazole	10.2	-2	-8	-1	-12
Hexythiazox	13.1	-7	-8	-13	-39

Cucumber					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Imazalil	6.5	-11	-18	-5	-4
Imidacloprid	3.9	-4	-6	4	10
Indoxacarb	12.2	-9	17	-15	-15
Iprodione	10.5	-2	-6	2	-17
Iprovalicarb	9.6	-1	-2	12	-1
Isocarbofos	9.1	-27	-52	-58	-83
Isoprocarb	8.3	0	-8	-6	-19
Isoproturon	8.7	-3	-7	-3	-8
Kresoxim-methyl	11.1	2	-12	-12	-43
Linuron	9.2	-3	-19	-7	-23
Lufenuron	12.6	4	7	-1	-3
Malathion	10.5	-2	-6	2	-16
Mandipropamid	9.9	-8	1	3	-14
Mepanipyrim	9.8	-1	-13	-9	-31
Metalaxyl	7.8	-2	2	18	16
Metconazole	10.3	-6	-16	-2	-14
Methamidophos	1.1	0	-4	1	-14
Methidathion	9.3	-23	-38	-48	-71
Methiocarb	9.1	-4	-8	-6	-45
Methiocarb sulfone	5.1	4	-6	8	12
Methiocarb sulfoxide	2.9	11	-13	18	12
Methomyl	2.1	-3	-4	6	-13
Methoxyfenozide	10.3	-7	0	5	-7
Metobromuron	8.2	-7	-9	0	-23
Monocrotophos	1.7	-4	-5	20	9
Myclobutanil	9.7	-7	-1	-3	-6
Nitenpyram	1.6	-4	-11	-3	-19
Omethoate	1.2	-9	-3	16	-8
Oxadixyl	6.3	2	5	8	17
Oxamyl	1.7	1	-2	21	13
Oxydemeton-methyl	1.5	1	5	27	15
Paclobutrazol	8.9	-3	-10	2	-6
Penconazole	10.2	-2	-9	-4	-16
Pencycuron	11.8	-3	-22	-4	-29
Pendimethalin	13.1	-5	-10	-11	-32
Phenthoate	11.5	-5	-22	-7	-34
Phosalone	11.9	-14	-16	-12	-34
Phosmet	9.5	12	-19	19	-27
Pirimicarb	2.4	6	-1	3	7
Pirimicarb desmethyl	1.4	-3	-6	1	-12

Cucumber					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Pirimiphos-methyl	11.1	-11	-12	-14	-38
Prochloraz	8.7	-1	-13	2	-17
Profenofos	12.1	-7	-36	-7	-35
Propamocarb	1.1	-6	-11	-8	-30
Propargite	13.6	5	7	-6	-3
Propiconazole	10.5	-8	-10	-4	-18
Propoxur	7	0	-7	6	-10
Propyzamide	9.9	-10	-17	-5	-18
Prothioconazole	10.4	-22	-22	-42	-78
Pymetrozine	0.9	-7	39	-13	-26
Pyraclostrobin	11.5	-1	-16	0	-31
Pyridaben	13.9	-7	-18	-14	-31
Pyrimethanil	6.2	-2	0	8	-13
Pyriproxyfen	12.7	-7	-12	-14	-27
Quinoxifen	11.7	-3	-11	-11	-30
Rotenone	10.4	-5	-13	1	-18
Spinosyn A	8.7	-20	-17	-23	-28
Spinosyn D	9.2	-27	-28	-40	-61
Spirodiclofen	14.3	-7	-31	-17	-21
Spiromesifen	14.2	-11	46	-14	8
Spiroxamine	7.7	-7	-39	-19	-11
Tebuconazole	9.9	-4	-13	-2	-8
Tebufenozide	10.9	14	0	2	-25
Tebufenpyrad	12.2	-4	-34	-13	-21
Terbuthylazine	9	-7	-19	-11	-44
Tetraconazole	10	-8	-4	-2	-11
Thiabendazole	1.3	-10	-15	-8	-37
Thiacloprid	5.6	-6	-12	8	10
Thiamethoxam	2.5	3	-12	7	4
Thiodicarb	6.9	8	9	34	21
Triadimenol I	8.8	-5	-11	-2	-4
Triadimenol II	9.1	4	-11	-2	-17
Triazophos	10.5	-4	-9	5	-13
Trichlorfon	3	7	-13	6	10
Trifloxystrobin	12.3	-1	4	-11	-19
Triflumuron	11.1	-13	-16	-8	-28
Triticonazole	9.1	-4	-16	-4	-21
Zoxamide	11.4	-6	-18	-10	-31

Orange					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Acephate	1.1	8	-16	-24	-55
Acetamiprid	4.5	13	-5	15	-15
Aldicarb	5.8	-13	-18	-18	-62
Aldicarb sulfone	1.8	38	22	38	17
Aldicarb sulfoxide	1.2	30	6	13	-2
Azoxystrobin	9.7	-18	-20	-11	-5
Bitertanol	10.2	-21	-24	-17	-33
Boscalid	9.9	-15	-18	-13	-22
Bromuconazole I	9.3	-14	-16	-13	-26
Bromuconazole II	9.8	-8	-19	-13	-30
Bupirimate	8.4	-42	-53	-59	-78
Buprofezin	9.9	-10	-19	-9	-5
Carbaryl	7.5	-7	-18	-9	-38
Carbendazim	1.2	-5	-22	-19	-31
Carbofuran	7.2	-6	-9	-50	-63
Chlorantraniliprole	8.7	-11	-24	-17	-28
Chlorfenvinphos	10.9	-15	-18	-11	-23
Chlorpyrifos	13.1	-13	-25	-20	-66
Clofentezine	11.5	-28	-31	-31	-62
Clothianidin	3.5	21	4	-1	-24
Cyproconazole	9.1	-12	-18	-11	-13
Cyprodinil	7.8	-9	-24	-32	-62
Cyromazine	0.9	12	15	22	1
Demeton-S-methylsulfone	2.3	6	-4	19	19
Demeton-S-methylsulfoxide	1.5	11	14	17	5
Diazinon	11.4	-15	-18	-16	-33
Dichlorvos	6.6	-11	-11	-18	-16
Dicrotophos	2	-4	-15	-4	7
Diethofencarb	9.3	-19	-20	-12	-20
Difenoconazole	10.9	-34	-28	-23	-45
Diflubenzuron	10.2	-39	-18	-13	-46
Dimethoate	4.4	5	-6	9	-29
Dimethomorph I	8.6	-10	-18	-12	-10
Dimethomorph II	8.9	-25	-24	-30	-62
Diniconazole	10.5	-20	-24	-18	-36
Dodine	8.8	-100	-100	-100	-93
Epoxiconazole	9.6	-13	-17	-16	-27
Ethion	13.4	-11	-18	-16	-63
Ethirimol	2.5	-13	-20	-14	-13
Ethoprophos	9.8	-11	-12	-15	-13

Orange					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Etofenprox	10.9	-100	-27	-16	-25
Fenamidone	9.8	-16	-13	-12	-16
Fenamiphos	9.6	-21	-11	-10	-23
Fenamiphos sulfone	7	-12	-10	-1	-3
Fenamiphos sulfoxide	5.8	-6	-15	1	22
Fenarimol	9.4	-15	-17	-14	-24
Fenazaquin	12.6	-29	-20	-27	-58
Fenbuconazole	10.2	-45	-27	-20	-23
Fenhexamid	9.8	-13	-14	-16	-24
Fenoxycarb	7.8	-16	-18	-16	-35
Fenpropimorph	7.7	-41	-60	-66	-87
Fenpyroximate	13.2	-12	-11	-12	-43
Fenthion sulfoxide	7.2	-8	-10	-6	-10
Flonicamid	2.9	-16	-13	-8	-8
Fluazifop	9.3	-13	-12	-10	-16
Flufenoxuron	13	-19	-17	7	-28
Fluopyram	10.2	-12	-16	-9	-16
Fluquinconazole	9.8	-18	-18	-17	-31
Flusilazole	10.1	-16	-21	-15	-27
Flutriafol	7.6	-24	-35	-50	-65
Formetanate	1.1	-8	-20	-14	-31
Fosthiazate	7.6	-49	-52	-59	-76
Haloxifop	10.4	-17	-17	-12	-21
Hexaconazole	10.2	-14	-18	-15	-29
Hexythiazox	13.1	-13	-29	-25	-67
Imazalil	6.5	-10	-13	-13	-17
Imidacloprid	3.9	-2	-8	3	28
Indoxacarb	12.2	-25	-24	-21	-50
Iprodione	10.5	-13	-8	-6	-12
Iprovalicarb	9.6	-20	-19	-11	-24
Isocarbofos	9.1	-1	-26	-28	-64
Isoprocarb	8.3	-40	-50	-60	-75
Isoproturon	8.7	-56	-63	-72	-89
Kresoxim-methyl	11.1	-12	-19	-17	-32
Linuron	9.2	-11	-14	-13	-27
Lufenuron	12.6	-20	-8	11	-18
Malathion	10.5	-13	-8	-6	-12
Mandipropamid	9.9	-18	-21	-17	-18
Mepanipyrim	9.8	-12	-20	-21	-44
Metalaxyl	7.8	-10	-11	0	-2

Orange					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Metconazole	10.3	-18	-23	-16	-30
Methamidophos	1.1	0	-25	-35	-46
Methidathion	9.3	-2	-23	-20	-55
Methiocarb	9.1	-20	-9	-14	-34
Methiocarb sulfone	5.1	0	16	12	-25
Methiocarb sulfoxide	2.9	-4	-13	27	17
Methomyl	2.1	10	-6	2	-5
Methoxyfenozide	10.3	-16	-19	-12	-16
Metobromuron	8.2	-12	-25	-25	-50
Monocrotophos	1.7	7	-2	16	7
Myclobutanil	9.7	-13	-15	-11	-18
Nitenpyram	1.6	-10	-14	-15	-47
Omethoate	1.2	18	23	26	-7
Oxadixyl	6.3	-19	-10	-16	-16
Oxamyl	1.7	-26	-3	-4	-37
Oxydemeton-methyl	1.5	21	34	27	5
Paclobutrazol	8.9	-12	-19	-18	-30
Penconazole	10.2	-13	-14	-12	-29
Pencycuron	11.8	-28	-23	-24	-55
Pendimethalin	13.1	-6	-22	-21	-65
Phenthoate	11.5	-12	-29	-18	-51
Phosalone	11.9	-9	-29	-23	-63
Phosmet	9.5	-27	-10	-7	-41
Pirimicarb	2.4	-24	-22	-16	-19
Pirimicarb desmethyl	1.4	-9	-17	-19	-29
Pirimiphos-methyl	11.1	-17	-19	-19	-34
Prochloraz	8.7	-21	-31	-35	-48
Profenofos	12.1	-22	-29	-24	-57
Propamocarb	1.1	-18	-22	-24	-34
Propargite	13.6	-21	-31	-22	-26
Propiconazole	10.5	-9	-15	-14	-29
Propoxur	7	-16	-25	-27	-51
Propyzamide	9.9	-12	-15	-14	-22
Prothioconazole	10.4	-42	-47	-53	-72
Pymetrozine	0.9	-20	-31	-53	-60
Pyraclostrobin	11.5	-28	-25	-23	-51
Pyridaben	13.9	-22	-13	-1	-39
Pyrimethanil	6.2	-30	-31	-56	-64
Pyriproxyfen	12.7	-10	-17	-19	-65
Quinoxifen	11.7	-20	-28	-30	-64

Orange					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Rotenone	10.4	-11	-20	-20	-49
Spinosyn A	8.7	-65	-75	-78	-91
Spinosyn D	9.2	-35	-32	-30	-44
Spirodiclofen	14.3	-14	14	2	-57
Spiromesifen	14.2	-38	-14	5	-37
Spiroxamine	7.7	-38	-45	-52	-71
Tebuconazole	9.9	-8	-18	-14	-25
Tebufenozide	10.9	21	-25	-3	-23
Tebufenpyrad	12.2	-31	-24	-25	-61
Terbutylazine	9	-37	-44	-53	-76
Tetraconazole	10	-13	-17	-11	-29
Thiabendazole	1.3	-9	-30	-59	-55
Thiacloprid	5.6	7	4	13	-28
Thiamethoxam	2.5	12	6	25	89
Thiodicarb	6.9	-1	7	33	8
Triadimenol I	8.8	-3	3	-17	-35
Triadimenol II	9.1	-2	-10	-16	-17
Triazophos	10.5	-3	-5	-6	-25
Trichlorfon	3	0	-12	16	18
Trifloxystrobin	12.3	-20	-25	-22	-50
Triflumuron	11.1	-30	-29	-28	-60
Triticonazole	9.1	-20	-21	-20	-40
Zoxamide	11.4	-19	-22	-17	-36

Leek					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Acephate	1.1	-5	-32	-35	-51
Acetamiprid	4.5	1	-15	-25	-51
Aldicarb	5.8	-42	-65	-75	-86
Aldicarb sulfone	1.8	22	-5	4	-7
Aldicarb sulfoxide	1.2	8	-16	-7	-17
Azoxystrobin	9.7	-14	-18	-16	-46
Bitertanol	10.2	-28	-34	-31	-43
Boscalid	9.9	-100	-100	-100	-100
Bromuconazole I	9.3	-23	-27	-31	-57
Bromuconazole II	9.8	-19	-26	-28	-45

Leek					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Bupirimate	8.4	-38	-52	-57	-75
Buprofezin	9.9	-17	-23	-19	-34
Carbaryl	7.5	-56	-74	-79	-92
Carbendazim	1.2	-5	-19	-20	-30
Carbofuran	7.2	-45	-63	-71	-84
Chlorantraniliprole	8.7	-22	-39	-46	-71
Chlorfenvinphos	10.9	-15	-17	-19	-43
Chlorpyrifos	13.1	-21	-41	-37	-52
Clofentezine	11.5	-10	-17	-28	-55
Clothianidin	3.5	0	-17	-11	-28
Cyproconazole	9.1	-16	-19	-22	-47
Cyprodinil	7.8	-35	-53	-61	-80
Cyromazine	0.9	4	26	14	-2
Demeton-S-methylsulfone	2.3	3	-13	0	8
Demeton-S-methylsulfoxide	1.5	19	2	31	-2
Diazinon	11.4	-23	-34	-40	-59
Dichlorvos	6.6	-28	-25	-35	-49
Dicrotophos	2	-1	-16	-8	-3
Diethofencarb	9.3	-42	-50	-55	-80
Difenoconazole	10.9	-30	-36	-38	-35
Diffubenzuron	10.2	-7	-57	-47	-68
Dimethoate	4.4	-5	-14	-12	-37
Dimethomorph I	8.6	7	-7	-14	-48
Dimethomorph II	8.9	11	-5	-16	-49
Diniconazole	10.5	-16	-27	-30	-40
Dodine	8.8	17	-48	-43	-69
Epoxiconazole	9.6	-22	-29	-29	-43
Ethion	13.4	-14	-41	-34	-49
Ethirimol	2.5	-13	-26	-21	-24
Ethoprophos	9.8	-19	-24	-36	-59
Etofenprox	10.9	-17	-42	-53	-72
Fenamidone	9.8	-22	-31	-35	-51
Fenamiphos	9.6	-24	-17	-14	-48
Fenamiphos sulfone	7	-16	-19	-19	-32
Fenamiphos sulfoxide	5.8	-12	-15	-5	-15
Fenarimol	9.4	-14	-25	-33	-55
Fenazaquin	12.6	-17	-44	-40	-28
Fenbuconazole	10.2	-30	-38	-36	-34
Fenhexamid	9.8	-12	-25	-25	-63

Leek					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Fenoxycarb	7.8	-47	-61	-69	-83
Fenpropimorph	7.7	-18	-29	-22	-53
Fenpyroximate	13.2	-4	-11	-17	-3
Fenthion sulfoxide	7.2	17	13	-13	-58
Flonicamid	2.9	-13	-14	-8	-17
Fluazifop	9.3	-23	-17	-17	-58
Flufenoxuron	13	10	16	13	17
Fluopyram	10.2	-20	-27	-30	-59
Fluquinconazole	9.8	-29	-31	-33	-51
Flusilazole	10.1	-21	-27	-32	-38
Flutriafol	7.6	-11	-23	-22	-45
Formetanate	1.1	-12	-14	-22	-31
Fosthiazate	7.6	-22	-15	-24	-70
Haloxfop	10.4	-19	-19	-22	-51
Hexaconazole	10.2	-16	-24	-17	-40
Hexythiazox	13.1	-13	-51	-44	-55
Imazalil	6.5	-19	-28	-33	-44
Imidacloprid	3.9	-1	-10	2	-32
Indoxacarb	12.2	-14	-32	-33	-25
Iprodione	10.5	-20	-17	-28	-56
Iprovalicarb	9.6	-21	-17	-19	-50
Isocarbofos	9.1	-56	-77	-87	-94
Isoprocarb	8.3	-36	-41	-56	-76
Isoproturon	8.7	-39	-44	-53	-79
Kresoxim-methyl	11.1	-23	-45	-52	-74
Linuron	9.2	-35	-38	-41	-66
Lufenuron	12.6	7	-10	-13	2
Malathion	10.5	-20	-17	-28	-56
Mandipropamid	9.9	-27	-26	-29	-57
Mepanipyridin	9.8	-31	-44	-53	-73
Metalaxyl	7.8	-21	-27	-32	-59
Metconazole	10.3	-21	-30	-30	-42
Methamidophos	1.1	35	-10	-35	-24
Methidathion	9.3	-63	-83	-89	-93
Methiocarb	9.1	-36	-43	-53	-75
Methiocarb sulfone	5.1	3	25	24	-46
Methiocarb sulfoxide	2.9	-4	-10	27	-5
Methomyl	2.1	-7	-2	12	-19
Methoxyfenozide	10.3	-14	-22	-23	-57

Leek					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Metobromuron	8.2	-33	-44	-48	-72
Monocrotophos	1.7	7	-5	12	-5
Myclobutanil	9.7	-14	-22	-20	-41
Nitenpyram	1.6	-22	-27	-28	-50
Omethoate	1.2	25	-4	3	-25
Oxadixyl	6.3	-31	-23	-24	-61
Oxamyl	1.7	-20	-3	6	-22
Oxydemeton-methyl	1.5	9	2	11	-2
Paclobutrazol	8.9	-20	-28	-30	-55
Penconazole	10.2	-18	-24	-25	-48
Pencycuron	11.8	-25	-38	-42	-61
Pendimethalin	13.1	-7	-45	-40	-45
Phenthoate	11.5	-17	-43	-46	-74
Phosalone	11.9	-16	-44	-45	-65
Phosmet	9.5	-28	-28	-17	-55
Pirimicarb	2.4	-10	-14	-8	-16
Pirimicarb desmethyl	1.4	8	-13	-5	-31
Pirimiphos-methyl	11.1	-24	-38	-42	-58
Prochloraz	8.7	-30	-49	-59	-82
Profenofos	12.1	-25	-43	-44	-59
Propamocarb	1.1	-13	-20	-17	-24
Propargite	13.6	-20	-47	-35	-51
Propiconazole	10.5	-13	-23	-19	-39
Propoxur	7	-41	-60	-68	-84
Propyzamide	9.9	-11	-20	-21	-43
Prothioconazole	10.4	-96	-92	-87	-87
Pymetrozine	0.9	26	19	-33	-62
Pyraclostrobin	11.5	-11	-26	-34	-63
Pyridaben	13.9	-24	-40	-26	-20
Pyrimethanil	6.2	-33	-47	-49	-73
Pyriproxyfen	12.7	-13	-47	-44	-40
Quinoxifen	11.7	-21	-45	-43	-41
Rotenone	10.4	-25	-32	-42	-56
Spinosyn A	8.7	-28	-45	-53	-74
Spinosyn D	9.2	-20	-42	-54	-75
Spirodiclofen	14.3	-11	-22	-26	-41
Spiromesifen	14.2	-25	-31	-18	-46
Spiroxamine	7.7	-21	-21	-20	-45
Tebuconazole	9.9	-20	-24	-20	-34

Leek					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Tebufenozide	10.9	9	-7	-18	-54
Tebufenpyrad	12.2	-6	-22	-21	-33
Terbuthylazine	9	-29	-36	-46	-72
Tetraconazole	10	-6	-12	-16	-45
Thiabendazole	1.3	-5	-22	-21	-47
Thiacloprid	5.6	-25	-47	-57	-72
Thiamethoxam	2.5	-9	-27	-24	-30
Thiodicarb	6.9	15	36	54	-25
Triadimenol I	8.8	-5	6	-21	-43
Triadimenol II	9.1	-8	-6	-11	-23
Triazophos	10.5	-8	-11	-19	-57
Trichlorfon	3	-1	-21	-6	-35
Trifloxystrobin	12.3	-27	-46	-52	-63
Triflumuron	11.1	-29	-43	-43	-52
Triticonazole	9.1	-20	-24	-26	-54
Zoxamide	11.4	-14	-25	-34	-59

Broccoli					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Acephate	1.1	11	10	14	10
Acetamiprid	4.5	-17	-20	-24	-25
Aldicarb	5.8	8	1	-11	-45
Aldicarb sulfone	1.8	-4	-1	-7	-2
Aldicarb sulfoxide	1.2	-10	-14	-23	-49
Azoxystrobin	9.7	-20	-5	-5	-5
Bitertanol	10.2	-20	-9	-14	-49
Boscalid	9.9	0	1	-15	-38
Bromuconazole I	9.3	-20	-7	-13	-45
Bromuconazole II	9.8	-17	-12	-18	-51
Bupirimate	8.4	-9	-4	-12	-43
Buprofezin	9.9	18	3	19	-6
Carbaryl	7.5	1	-1	-6	-28
Carbendazim	1.2	4	14	-15	-37
Carbofuran	7.2	-36	-43	-56	-62

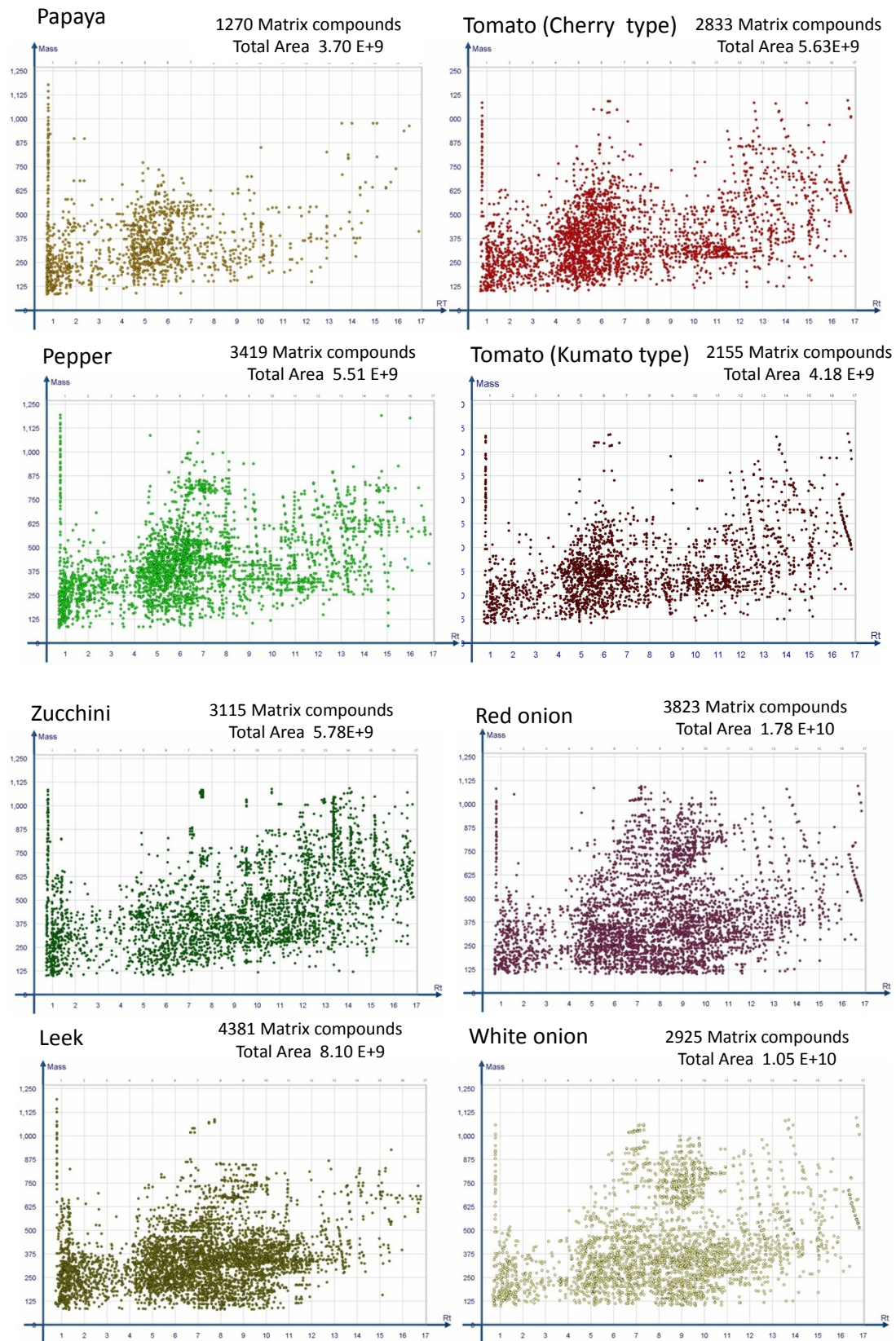
Broccoli					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Chlorantraniliprole	8.7	-12	-9	-16	-64
Chlorfenvinphos	10.9	-20	-8	-6	-27
Chlorpyrifos	13.1	2	-15	-12	-59
Clofentezine	11.5	-9	-17	-32	-77
Clothianidin	3.5	-4	-1	-10	-16
Cyproconazole	9.1	-16	-6	-9	-30
Cyprodinil	7.8	-20	-17	-24	-63
Cyromazine	0.9	7	7	-8	-86
Demeton-S-methylsulfone	2.3	25	32	35	29
Demeton-S-methylsulfoxide	1.5	-8	-4	1	15
Diazinon	11.4	-32	-18	-23	-62
Dichlorvos	6.6	-4	-5	-26	-10
Dicrotophos	2	-8	-3	-3	12
Diethofencarb	9.3	-16	9	-3	-26
Difenoconazole	10.9	-22	-11	-15	-55
Diflubenzuron	10.2	-27	-17	-25	-55
Dimethoate	4.4	-10	-9	-15	-8
Dimethomorph I	8.6	-21	-8	-10	-57
Dimethomorph II	8.9	-14	0	0	0
Diniconazole	10.5	-21	-13	-21	-54
Dodine	8.8	4	6	14	-47
Epoxiconazole	9.6	-14	-11	-14	-46
Ethion	13.4	12	16	16	-39
Ethirimol	2.5	-1	-3	-14	-9
Ethoprophos	9.8	-16	-8	-13	-18
Etofenprox	10.9	-10	-17	-23	-23
Fenamidone	9.8	-21	-8	-12	-30
Fenamiphos	9.6	-27	-9	-1	-21
Fenamiphos sulfone	7	-10	-7	-3	23
Fenamiphos sulfoxide	5.8	-13	-7	-9	46
Fenarimol	9.4	-17	-9	-14	-45
Fenazaquin	12.6	17	5	25	-29
Fenbuconazole	10.2	-11	-10	-21	-51
Fenhexamid	9.8	-17	-14	-11	-34
Fenoxycarb	7.8	7	17	-1	-11
Fenpropimorph	7.7	17	23	30	-11
Fenpyroximate	13.2	2	3	10	16
Fenthion sulfoxide	7.2	3	22	22	28
Flonicamid	2.9	-3	-1	-3	-3

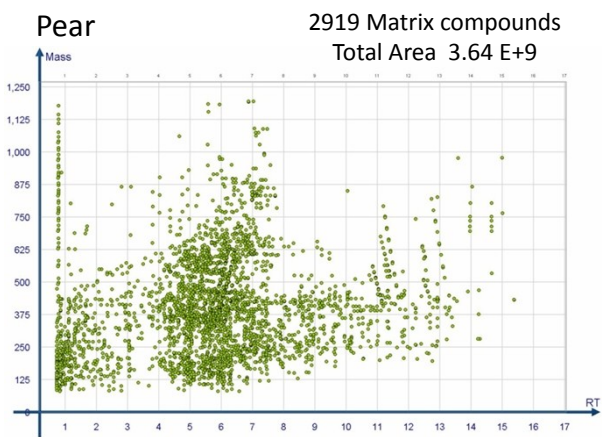
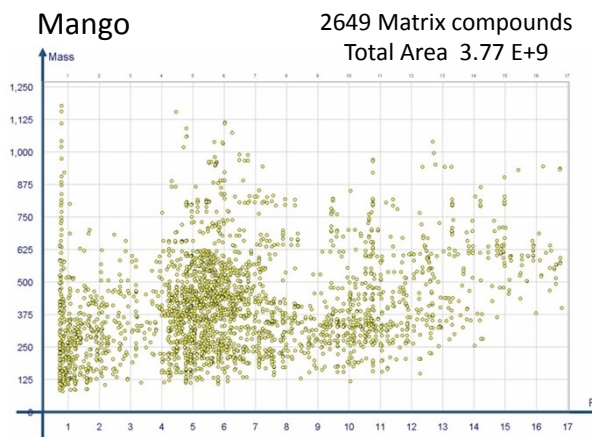
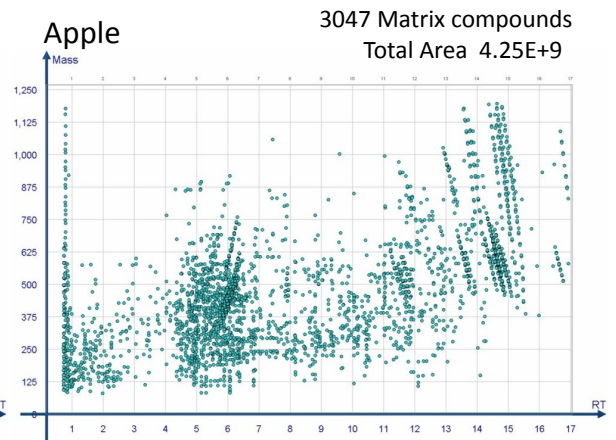
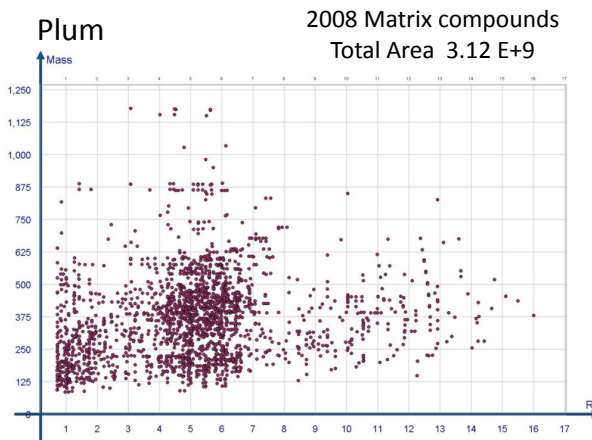
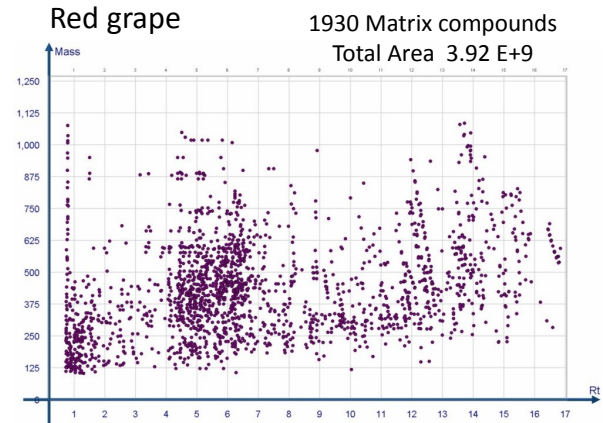
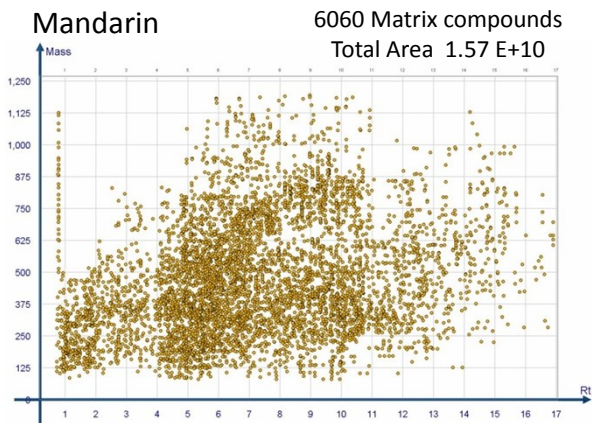
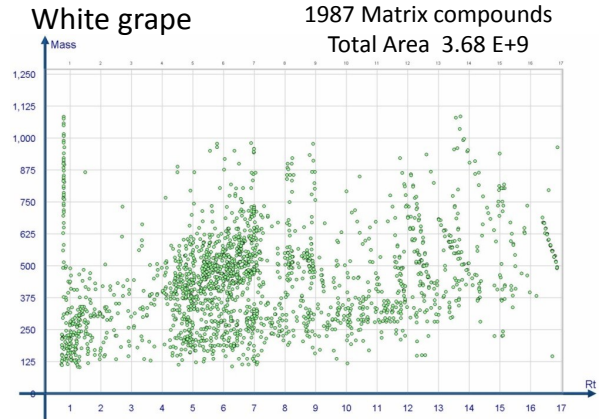
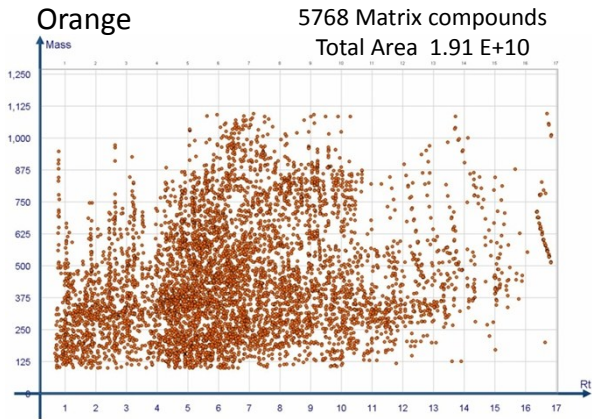
Broccoli					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Fluazifop	9.3	-8	-1	-13	-24
Flufenoxuron	13	2	6	4	13
Fluopyram	10.2	-16	-9	-11	-26
Fluquinconazole	9.8	-18	-8	-15	-48
Flusilazole	10.1	-18	-12	-21	-48
Flutriafol	7.6	-8	4	3	-12
Formetanate	1.1	-8	12	6	-36
Fosthiazate	7.6	-13	2	1	21
Haloxypop	10.4	-17	-8	-20	-46
Hexaconazole	10.2	-16	-8	-15	-49
Hexythiazox	13.1	2	-8	-11	-57
Imazalil	6.5	2	2	-6	-7
Imidacloprid	3.9	-8	-5	-6	-3
Indoxacarb	12.2	14	15	11	2
Iprodione	10.5	-15	-6	-11	-21
Iprovalicarb	9.6	-15	-2	2	-10
Isocarbofos	9.1	20	-14	-27	-65
Isoprocarb	8.3	-1	13	-8	-22
Isoproturon	8.7	-21	-32	-35	-49
Kresoxim-methyl	11.1	-10	-16	-22	-52
Linuron	9.2	-8	-11	-12	-35
Lufenuron	12.6	-8	-12	-32	-35
Malathion	10.5	-15	-6	-11	-21
Mandipropamid	9.9	-22	-10	-14	-34
Mepanipyrin	9.8	-25	0	-18	-51
Metalaxyl	7.8	-3	2	5	27
Metconazole	10.3	-19	-13	-16	-46
Methamidophos	1.1	-3	-14	-16	-12
Methidathion	9.3	4	-12	-35	-69
Methiocarb	9.1	-3	-9	-10	-41
Methiocarb sulfone	5.1	26	23	18	10
Methiocarb sulfoxide	2.9	-4	15	79	21
Methomyl	2.1	-2	4	-4	-5
Methoxyfenozide	10.3	-15	-4	-8	-25
Metobromuron	8.2	-10	-12	-24	-47
Monocrotophos	1.7	20	25	18	23
Myclobutanil	9.7	-23	-6	-11	-36
Nitenpyram	1.6	-5	-3	-20	-30
Omethoate	1.2	-10	-19	-28	-26

Broccoli					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Oxadixyl	6.3	-12	3	11	41
Oxamyl	1.7	-5	4	-5	-28
Oxydemeton-methyl	1.5	-8	-4	1	15
Paclobutrazol	8.9	-14	-2	-8	-24
Penconazole	10.2	-21	-8	-20	-51
Pencycuron	11.8	-16	-15	-23	-52
Pendimethalin	13.1	23	2	6	-56
Phenthoate	11.5	-20	-27	-30	-63
Phosalone	11.9	-43	-50	-54	-83
Phosmet	9.5	-17	-1	23	-35
Pirimicarb	2.4	12	5	-5	-13
Pirimicarb desmethyl	1.4	-4	-22	-17	-23
Pirimiphos-methyl	11.1	-14	-10	-13	-50
Prochloraz	8.7	-13	-10	-13	-63
Profenofos	12.1	-23	-22	-27	-69
Propamocarb	1.1	-21	-28	-47	-62
Propargite	13.6	2	3	8	-32
Propiconazole	10.5	-18	-3	-20	-51
Propoxur	7	1	7	-2	-20
Propyzamide	9.9	-13	-9	-15	-33
Prothioconazole	10.4	-96	-92	-96	-99
Pymetrozine	0.9	23	-23	-34	-60
Pyraclostrobin	11.5	-1	-5	-13	-59
Pyridaben	13.9	11	14	17	-8
Pyrimethanil	6.2	1	-2	-13	-45
Pyriproxyfen	12.7	1	-13	-5	-59
Quinoxifen	11.7	-5	-16	-16	-58
Rotenone	10.4	-18	-13	-11	-46
Spinosyn A	8.7	9	15	6	-8
Spinosyn D	9.2	7	12	6	2
Spirodiclofen	14.3	3	11	4	-21
Spiromesifen	14.2	6	14	3	10
Spiroxamine	7.7	-8	13	4	-8
Tebuconazole	9.9	-21	-12	-14	-41
Tebufenozide	10.9	-32	-20	-7	-38
Tebufenpyrad	12.2	-9	-6	-7	-51
Terbuthylazine	9	-6	-12	-23	-52
Tetraconazole	10	-21	-12	-17	-51
Thiabendazole	1.3	-9	-13	-25	-52

Broccoli					
Pesticides	Retention time (min)	Signal suppression (%)			
		1: 20 Dilution	1: 10 Dilution	1: 5 Dilution	No Dilution
Thiacloprid	5.6	-7	-3	-11	-19
Thiamethoxam	2.5	-6	-9	-11	-2
Thiodicarb	6.9	-12	4	6	35
Triadimenol I	8.8	5	16	5	-22
Triadimenol II	9.1	-2	-3	-7	-33
Triazophos	10.5	-26	-13	-18	-38
Trichlorfon	3	0	20	33	2
Trifloxystrobin	12.3	-4	-4	-2	-37
Triflumuron	11.1	-19	-18	-26	-59
Triticonazole	9.1	-17	-3	-10	-29
Zoxamide	11.4	-14	-7	-9	-44

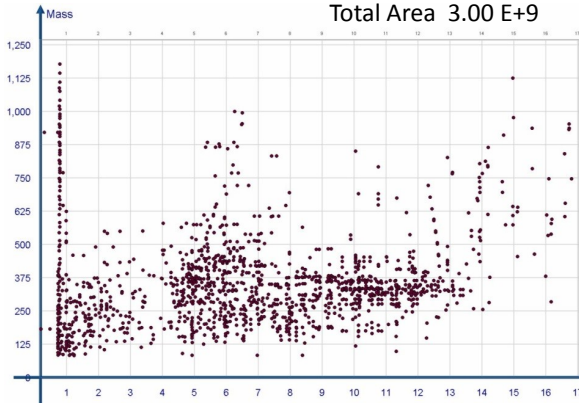
Figure S1. Matrix fingerprinting of the 23 studied matrices analyzed using LC-TOF-MS (absolute height $\geq 10,000$ counts). The x-axis represents the retention time (min) and the y-axis the mass.





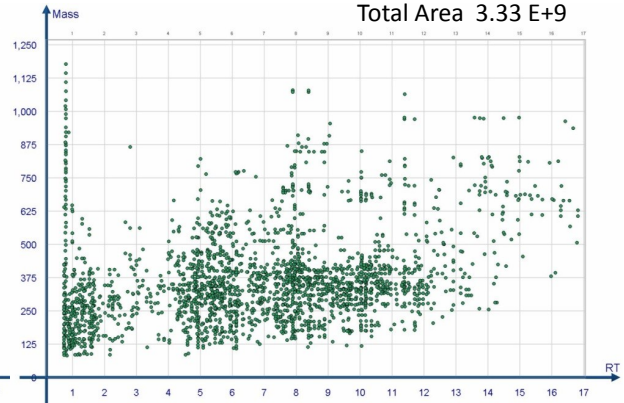
Aubergine

1400 Matrix compounds
Total Area 3.00 E+9



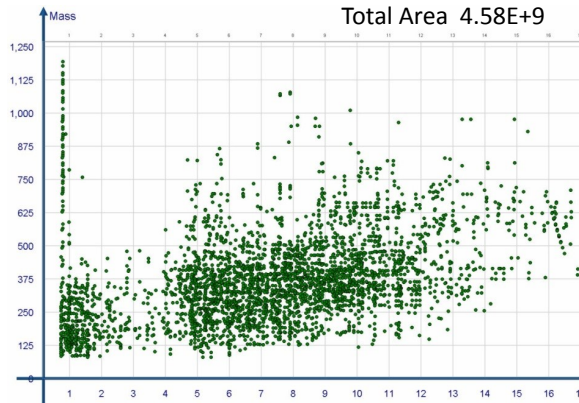
Asparagus

2277 Matrix compounds
Total Area 3.33 E+9



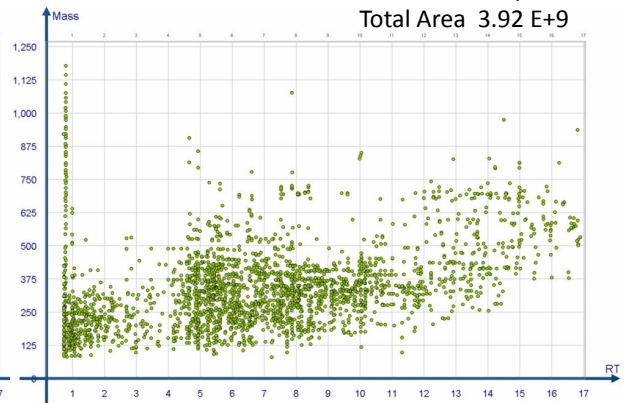
Broccoli

3397 Matrix compounds
Total Area 4.58E+9



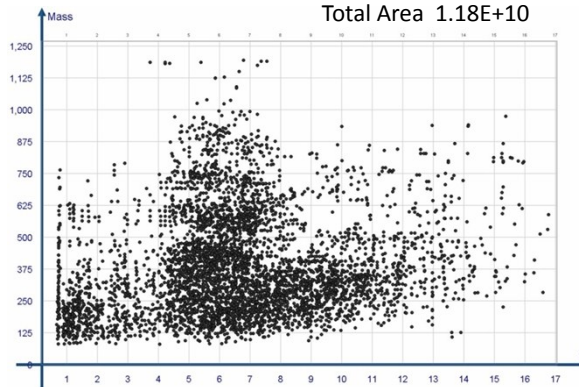
Green bean

2398 Matrix compounds
Total Area 3.92 E+9



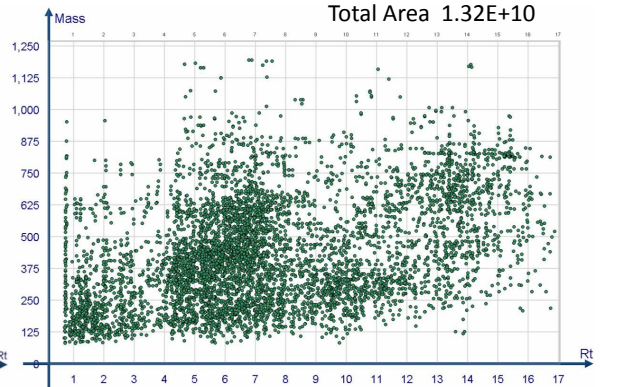
Black tea

4910 Matrix compounds
Total Area 1.18E+10



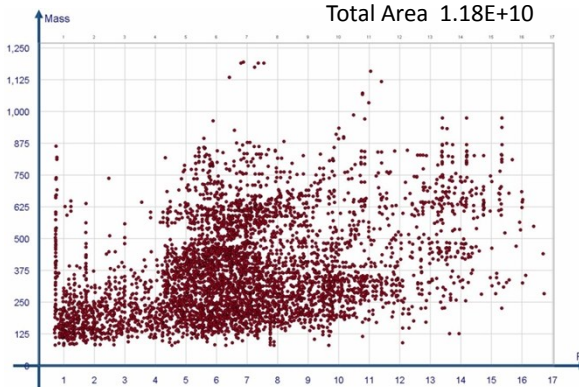
Green tea

5793 Matrix compounds
Total Area 1.32E+10



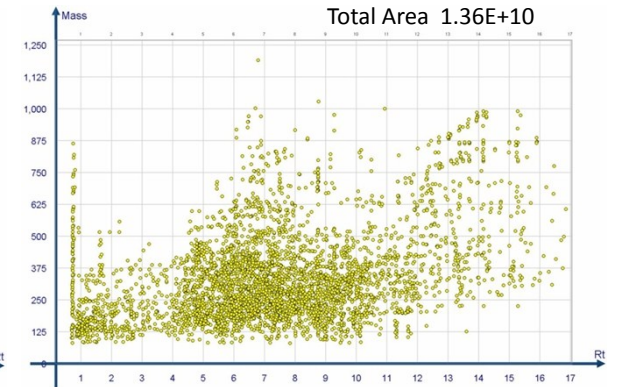
Red tea

4504 Matrix compounds
Total Area 1.18E+10



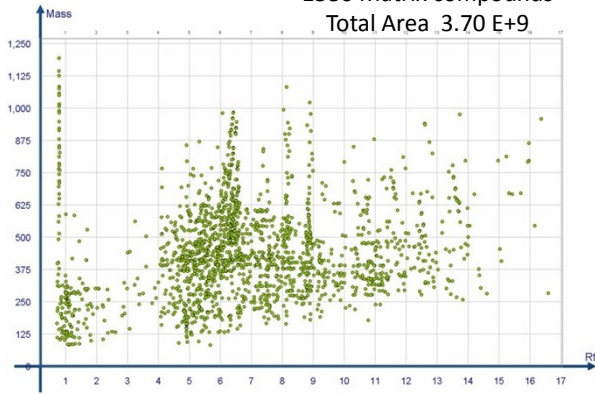
Chamomile

3784 Matrix compounds
Total Area 1.36E+10



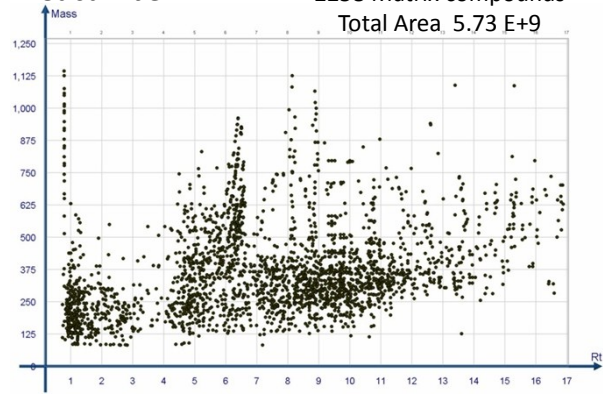
Lettuce

1586 Matrix compounds
Total Area 3.70 E+9



Cucumber

2258 Matrix compounds
Total Area 5.73 E+9



Grapefruit

5064 Matrix compounds
Total Area 7.20 E+9

