

Supplementary material: Figures S1 – S9.

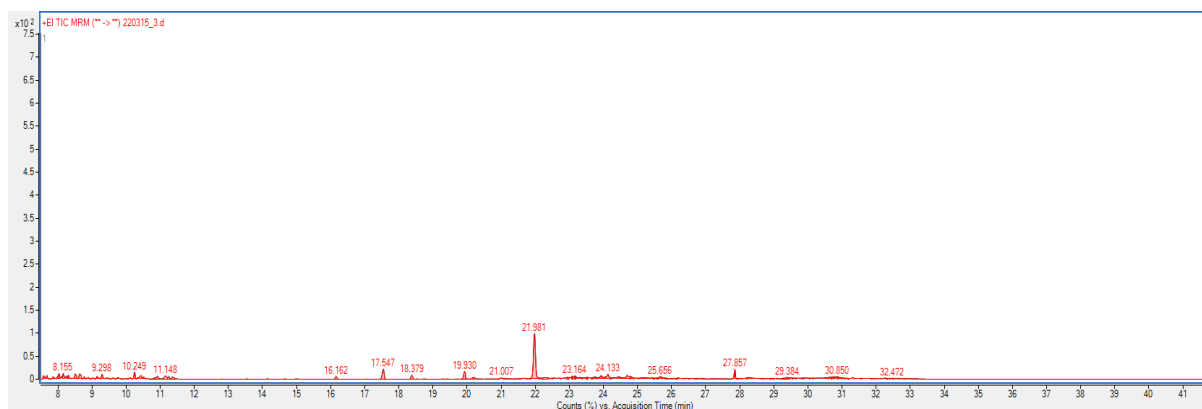


Figure S1. Chromatogram for the blank sample - soil matrix

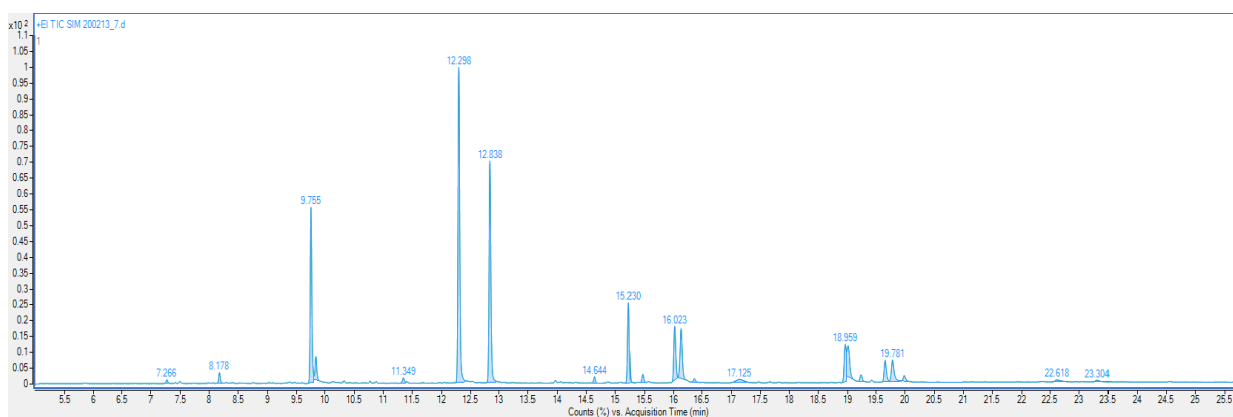


Figure S2. Chromatogram for the fortified sample (level 0.001 mg/kg) - soil matrix, PAHs (*Rt*: 7.27 - Acenaphthylene; 8.18 - Fluorene; 9.76 - Phenanthrene; 9.85 - Anthracene; 12.84 - Pyrene; 16.02 - Benzo[a]anthracene; 16.15 - Chrysene; 18.96 - Benzo[b]fluoranthrene; 19.02 - Benzo[k]fluoranthrene; 19.78 - Benzo[a]pyrene; 22.62 - Dibenzo[a,h]anthracene; 23.30 - Benzo[ghi]perylene)

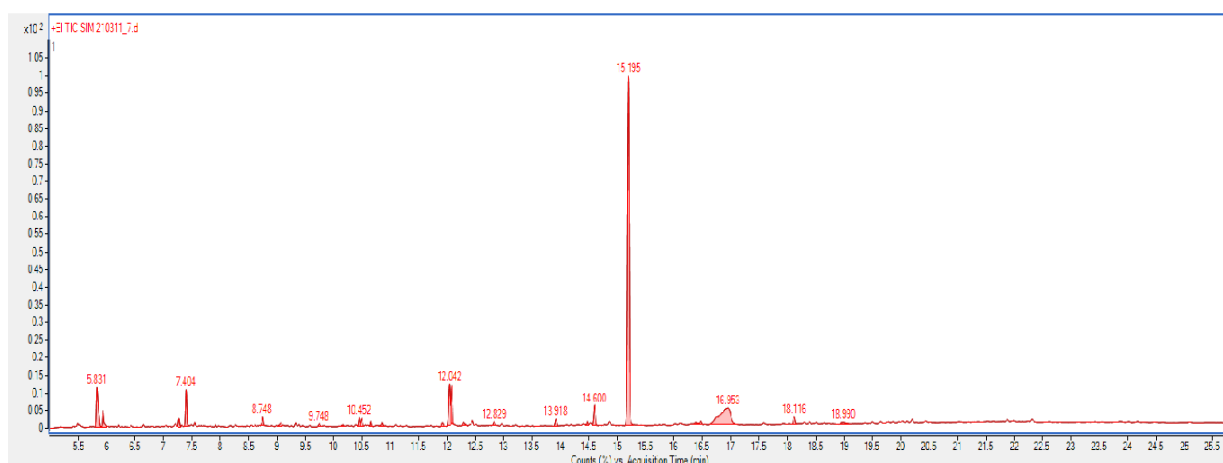


Figure S3. Chromatogram for the real sample - soil (sample No. 7) (*Rt*: 9.75 - Phenanthrene; 12.83 - Pyrene)

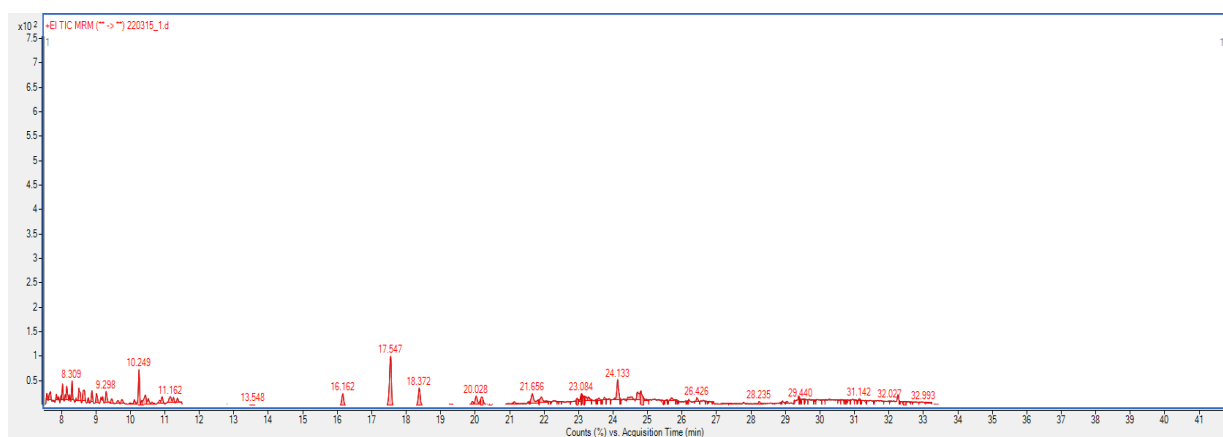


Figure S4. Chromatogram for the blank sample - apple matrix

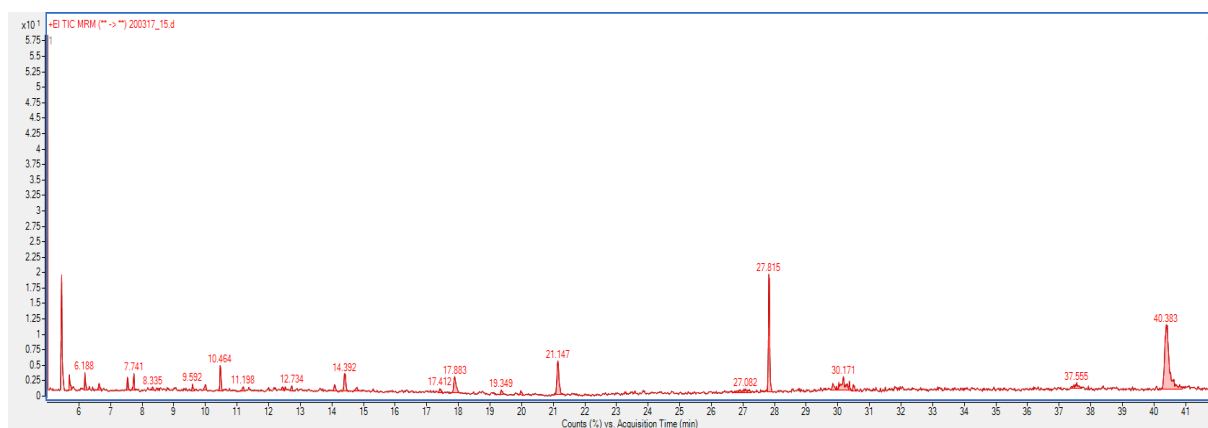


Figure S5. Chromatogram for the fortified sample (level 0.001 mg/kg) - apple matrix, selected pesticides (*Rt*: 9.592 - Oxamyl; 17.412 - Heptachlor; 17.883 - Metalaxyl; 21.147 - Cyprodinil; 26.082 - Benalaxyl; 27.815 - Diflufenican)

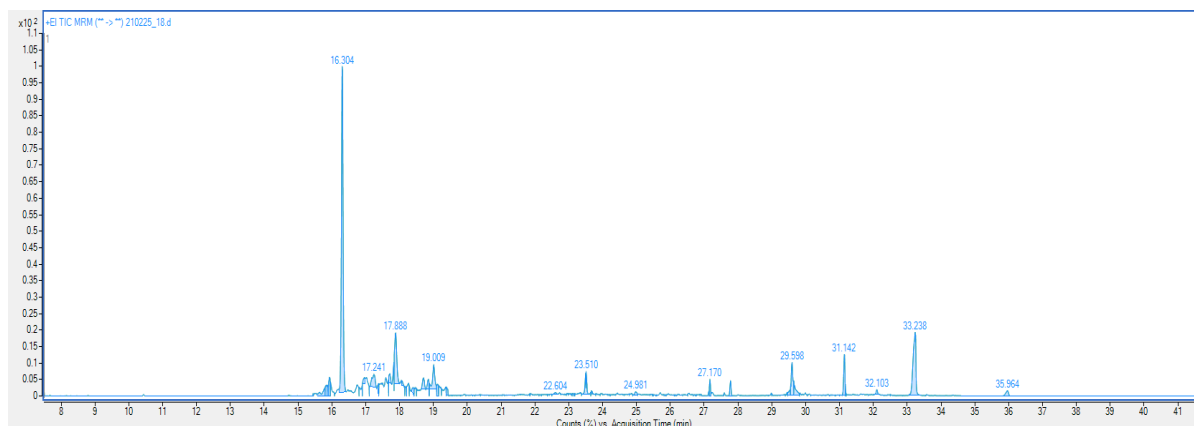


Figure S6. Chromatogram for the real sample - apple (sample No. 7) (*Rt*: 33.238 - Boscalid)

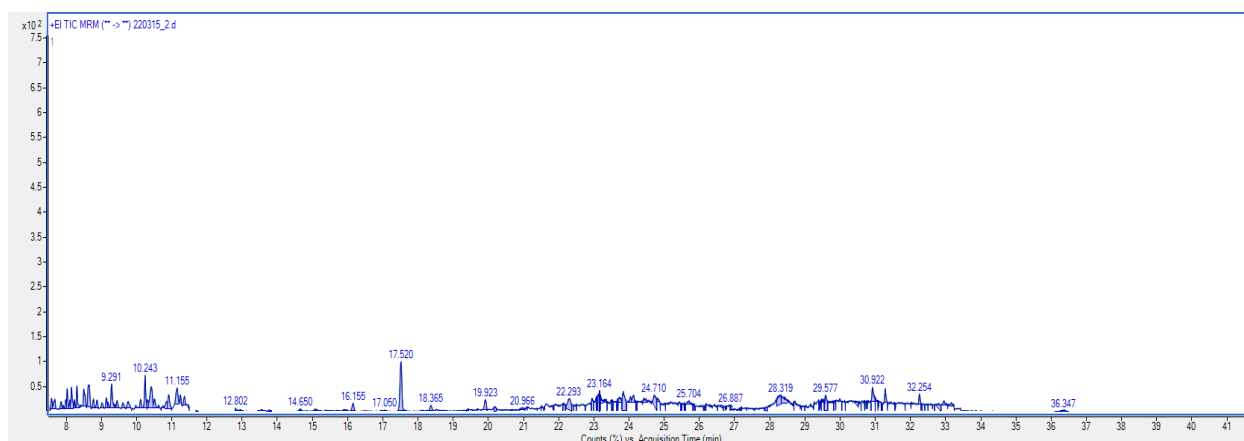


Figure S7. Chromatogram for the blank sample - lettuce matrix

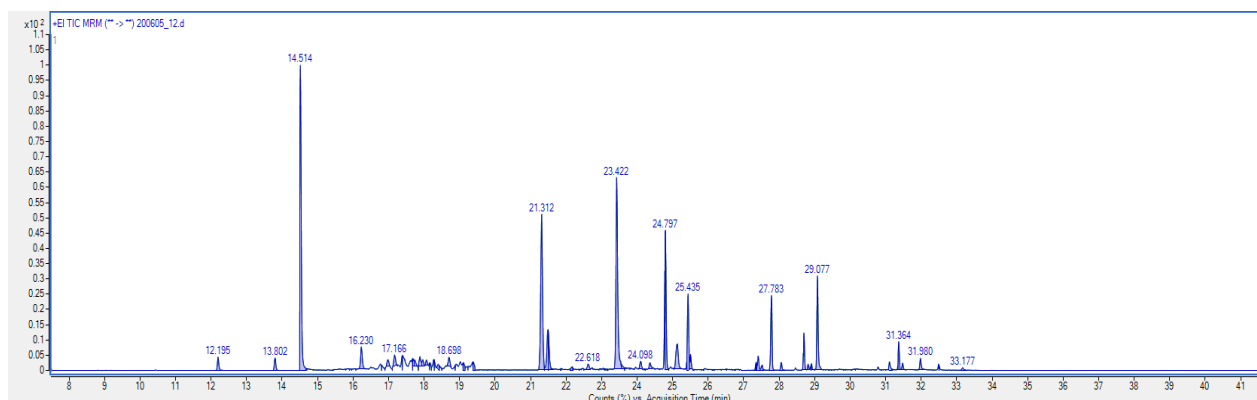


Figure S8. Chromatogram for the fortified sample (level 1.00 mg/kg) - lettuce matrix, selected pesticides (*Rt*: 12.195 - *Pencycuron*; 13.802 - *Clomazone*; 16.230 - *Pirimicarb*; 21.312 - *Metazachlor*; 23.422 - *Mepanipirym*; 24.797 - *Buprofezin*; 29.077 - *Fenazaquin*; 31.980 - *Fenbuconazole*)

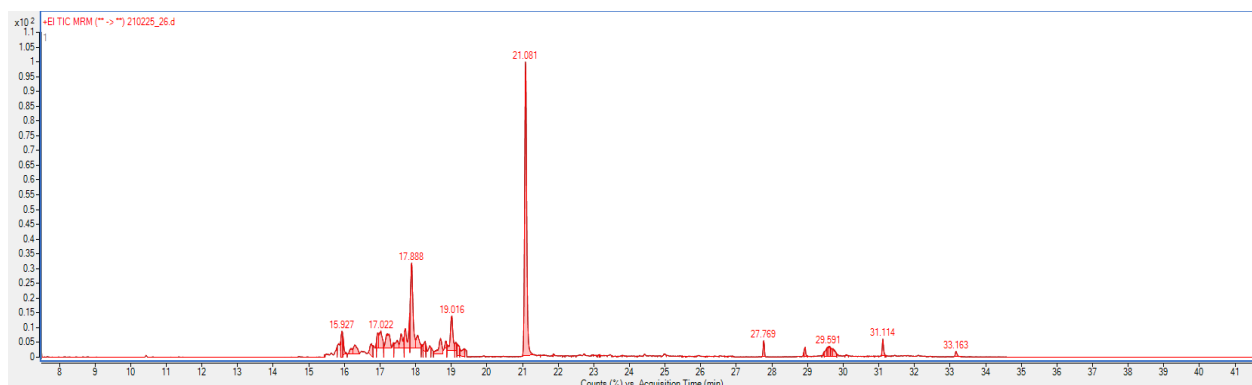


Figure S9. Chromatogram for the real sample - lettuce (sample No. 7) (*Rt*: 21.081 - *Cyprodnil*; 33.163 *Boscalid*)

Table S1. Multiple reactions monitoring MRM transition and retention times for pesticide residues.

Retention time (min)	Active substance (pesticide type)	MRM transitions m/z (collision energy, eV)		
		Quantification	Identification (ion pairs I)	Identification (ion pairs II)
9.536	Oxamyl (I)	98 > 58.1 (10)	98 > 69.1 (10)	162 > 115 (10)
11.858	Propyzamide (H)	172.8 > 145 (15)	174.9 > 146.7 (15)	172.8 > 109 (30)
12.297	Pencycuron (F)	208.1 > 125 (20)	180.1 > 125 (20)	180.1 > 89.1 (30)
12.695	HCH alpha (I)	216.7 > 180.7 (5)	218.8 > 183 (5)	180.7 > 144.9 (15)
12.999	HCB (I)	283.7 > 213.9 (30)	283.7 > 248.8 (15)	288.8 > 211.8 (30)
13.833	HCH beta (I)	180.9 > 144.7 (15)	216.9 > 180.9 (5)	218.9 > 182.8 (5)
13.862	Clomazone (H)	124.8 > 89.9 (15)	204 > 107 (20)	124.8 > 98.9 (15)
14.082	HCH gamma	216.7 > 180.9 (5)	218.9 > 182.9 (5)	180.9 > 144.8 (15)
14.802	Pyrimethanil (F)	198.1 > 183 (15)	198.1 > 118 (35)	198.1 > 158 (20)
15.678	Tefluthrin (I)	177 > 127 (15)	197 > 141.1 (10)	177 > 87 (30)
16.165	Metobromuron (H)	197 > 90.1 (20)	198.9 > 90.1 (20)	198.9 > 169.9 (10)
16.286	Pirimicarb (I)	238 > 166 (10)	166 > 54.9 (20)	166 > 96 (15)
16.468	Terbutylazine (H)	173 > 172 (5)	229.1 > 173 (5)	173 > 138 (5)
16.880	Metribuzin (H)	197.9 > 81.9 (15)	197.9 > 55.2 (30)	143.8 > 126.8 (10)

17.238	Chlorpyrifos methyl (I)	125 > 47 (15)	125 > 79 (5)	285.9 > 93 (20)
17.435	Heptachlor (I)	99.8 > 58 (10)	100 > 72 (5)	198 > 126 (5)
17.458	Tolclofos methyl (F)	265 > 249.9 (15)	265 > 93 (25)	125 > 47.1 (15)
17.963	Metalaxyl (F)	220.1 > 192.1 (5)	234.1 > 146 (20)	234.1 > 174.1 (10)
18.389	Malathion (I)	127 > 99 (5)	173 > 99 (15)	158 > 124.9 (5)
18.908	Pirimiphos methyl (I)	290.1 > 125 (20)	233 > 151 (5)	233 > 125 (5)
19.843	Chlorpyrifos (I)	196.9 > 168.9 (15)	198.9 > 170.9 (15)	313.9 > 257.9 (15)
20.214	Flufenacet (H)	151.1 > 136 (10)	151.1 > 95.1 (30)	123 > 95.1 (20)
20.427	Tetraconazole (F)	171 > 136 (10)	336.1 > 218.1 (20)	336.1 > 204.1 (30)
20.471 - 20.548	Flurochloridone (H)	186.7 > 158.9 (10)	311 > 173.9 (15)	145.1 > 95.1 (15)
21.163	Cyprodinil (F)	225.1 > 224.1 (10)	224.1 > 208.1 (20)	226.2 > 225.1 (10)
21.377	Metazachlor (H)	133 > 132 (10)	132 > 117 (15)	208.9 > 132 (15)
21.548	Pendimethalin (H)	252 > 162.2 (10)	252 > 161.1 (15)	162 > 161.1 (10)
21.800	Captan (F)	151.1 > 80.2 (5)	149 > 79.1 (10)	151.1 > 79.1 (15)
21.923	Penconazole (F)	248.1 > 192.1 (15)	248.1 > 157 (25)	159 > 89 (35)
22.160	Folpet (F)	260.2 > 130 (15)	261.9 > 130 (15)	260.2 > 231.9 (5)
22.229	Fluopyram	176.9 > 101	222.9 > 196.0 (10)	222.9 > 187.1 (10)
22.391	Zoxamide (F)	187 > 159 (15)	189 > 160.9 (15)	187 > 122.9 (30)
22.640	Hexythiazox (A)	227 > 149.1 (10)	184 > 149.1 (10)	184 > 115 (20)
22.787	Triflumizole (F)	206 > 179 (15)	206 > 186 (10)	179 > 143.9 (15)
22.888 23.580	Iprowalickarb (F)	119 > 90.9 (15)	115 > 97.9 (5)	115 > 55 (15)
23.036	Paclobutrazol (F)	235.7 > 125 (10)	125 > 89.8 (20)	235.7 > 166.9 (10)
23.500	Mepanipirym (F)	223.2 > 222.2 (10)	222.2 > 207.1 (15)	221.2 > 220.1 (15)
23.605	Flutriafol (F)	123 > 95 (15)	123 > 75 (25)	219 > 123 (15)
23.863	Napropamide (H)	128.1 > 72.1 (5)	128.1 > 100.1 (10)	271.2 > 72.1 (15)
24.125	Imazalil (F)	215 > 172.9 (5)	217 > 175 (5)	172.9 > 144.9 (15)
24.248	Dieldryna	396 > 222.9	172.9 > 145 (15)	172.9 > 141 (15)
24.375	p,p' DDE (I)	245.9 > 176 (30)	315.9 > 245.9 (15)	317.8 > 245.9 (15)
24.666	Oxyfluorfen (H)	252.1 > 196 (20)	252.1 > 146 (30)	300 > 223 (15)
24.679	o,p' DDT (I)	235 > 165.1 (20)	236.9 > 165.1 (20)	235 > 199 (15)
24.759	Myclobutanyl (F)	179 > 125 (10)	179 > 90 (30)	150 > 122.9 (15)
24.933	Buprofezin (I)	105.1 > 104 (10)	105 > 77.1 (20)	119 > 91 (15)
25.07	Bupirimate (F)	272.9 > 192.8 (5)	272.9 > 107.8 (15)	207.9 > 166.1 (10)
25.154	Kresoxim-methyl (F)	116 > 89 (15)	116 > 63.8 (30)	131.1 > 89 (30)
25.187	Cyproconazole (I)	139 > 111.1 (15)	222 > 125 (15)	222 > 82.1 (10)
25.510	Cyflufenamid (F)	118 > 90 (10)	118 > 89 (25)	188 > 88 (35)
25.554	Fluazifop-p-butyl (H)	282.2 > 91 (20)	282.2 > 238 (20)	383.2 > 282.2 (10)

25.613- 25.771	Metamitron (H)	103.9 > 77.2 (15)	202.2 > 174.1 (5)	103.9 > 51.1 (35)
25.926	p,p' DDD (I)	235 > 164.7 (20)	237 > 164.7 (20)	235 > 199 (15)
26.208	Penthiopirad	302.1 > 151.9 (15)	302.1 > 177.0 (15)	302 > 176.9 (15)
26.212	Fludioxonil (F)	248 > 153.9 (20)	248.1 > 181.9 (10)	248.1 > 127 (30)
26.889, 27.101	Prothioconazole (F)	186 > 53 (20)	186 > 117 (10)	186 > 89 (10)
26.906	Benalaxyl (F)	148.1 > 105.1 (20)	148.1 > 77 (35)	266.1 > 148.1 (5)
26.959	p,p' DDT (I)	235 > 165 (20)	237 > 165 (20)	235 > 199 (15)
27.406	Trifloxystrobin (F)	116.2 > 89 (15)	172 > 144.8 (15)	116.2 > 63.2 (30)
27.470	Fluopicolide (F)	209 > 182 (10)	209 > 146 (20)	347 > 171.9 (20)
27.576	Tebuconazole (F)	124.9 > 89.1 (15)	250.1 > 124.9 (20)	124.9 > 99.2(20)
27.883	Diflufenican (DFF) (H)	266 > 238.1 (15)	266 > 246 (15)	394 > 266 (10)
28.152	Epoxiconazole (F)	192 > 138 (10)	192 > 111 (25)	165 > 138 (10)
28.521, 29.202	Bromuconazole (F)	173 > 144.9 (15)	173 > 108.9 (30)	174.9 > 146.9 (15)
28.739	Phosmet (I)	160 > 77.2 (20)	160 > 133 (10)	160 > 105 (15)
28.781	Dimoksyystrobina (F)	116 > 89 (15)	116 > 63.1 (30)	205.1 > 116 (10)
28.880	Fenoxycarb (I)	255.1 > 185.9 (10)	185.9 > 158.1 (5)	185 > 129. (5)
28.881	Bifenazat (I)	184.1 > 156.1 (10)	199.1 > 184.1 (10)	184.1 > 169 (10)
28.882	Chlorantraniliprole (I)	278 > 249.1 (25)	278 > 215 (30)	239 > 214 (20)
28.892	Acetamiprid (I)	152 > 116.1 (15)	125.9 > 90 (5)	125.9 > 98.8 (10)
29.086	Etoazol (A)	140.9 > 113.2 (15)	140.9 > 63 (30)	204 > 175.9 (10)
29.09, 29.2	Metconazol (F)	125 > 88.8 (20)	125 > 99 (20)	138 > 69.1 (10)
29.177	Fenazaquin (A)	145.2 > 117.1 (10)	160.1 > 145.2 (5)	160.1 > 117.1 (20)
29.563	Triticonazole (F)	235.1 > 217 (5)	235.1 > 182.2 (10)	217 > 165 (25)
29.586, 29.352	Acrinathrin (I)	207 > 181.2 (10)	181.2 > 152.1 (30)	289.2 > 93 (10)
29.853	Pyriproxyfen (I)	136 > 78.1 (20)	136 > 96 (15)	320.8 > 222 (10)
30.103	Pyraclostrobin (F)	132 > 77.2 (20)	165.5 > 132.9 (10)	132.9 > 104.9 (15)
30.330, 30.631, 32.605	Lambda cyhalothrin (I)	197 > 141 (10)	181 > 152 (25)	197 > 160.9 (5)
30.691	Cypermethrin (I)	163.1 > 90.9 (10)	163.1 > 127.1(5)	165.1 > 90.9 (10)
30.870	Metrafenone (F)	209.1 > 166.1 (10)	395.1 > 365 (15)	227 > 169 (10)
31.246	Spirodiclofen (A)	108.9 > 81 (10)	108.9 > 78.9 (15)	312.2 > 259.1 (10)
31.443	Pyridaben (A)	147.1 > 117 (20)	147.1 > 132.1 (10)	147.1 > 105.1 (10)
31.547	Fluquinconazole (F)	340.1 > 298 (15)	108 > 57 (15)	340.1 > 108 (40)
31.647	Prochloraz (F)	195.9 > 97.1 (30)	180.1 > 138.1 (10)	310 > 70 (15)
32.052	Fenbuconazole (F)	129 > 102 (15)	198.1 > 129 (5)	129 > 78 (20)

32.698	Boscalid (F)	140 > 112 (10)	140 > 76.1 (25)	112 > 76.1 (15)
32.744	Quizalofop-P-ethyl (H)	372.1 > 299 (10)	163 > 136 (10)	163 > 100 (20)
33.001, 34.533	Tau fluvalinate (I)	250 > 55 (40)	180.9 > 152 (40)	250 > 200 (40)
34.313	Imibenkonazol (F)	125.1 > 89 (20)	125.1 > 98.8 (20)	253.2 > 81.9 (5)
34.409, 34.022	Fenvalerate	167 > 125 (5)	209 > 141 (15)	181 > 152 (20)
35.496, 35.062	Deltamethrin (I)	253 > 93.1 (15)	181.1 > 152 (25)	251 > 172 (5)
36.126	Azoxystrobin (F)	344.1 > 330 (15)	344.1 > 172.1 (40)	344.1 > 183.1 (25)
36.697	Famoksadone (F)	197 > 141 (15)	224 > 196 (10)	197 > 115 (30)
37.132	Indoxacarb (I)	203.1 > 134 (15)	203.1 > 106 (25)	203.1 > 78 (30)

I-insecticides, F – fungicides, H – herbicides, A - acaricides

Table S2. Single ion monitoring SIM and retention times for PAHs

Retention time (min)	Active substance	SIM
7.27	Acenaphthylene	152.2
8.1	Fluorene	166.2
9.8	Phenanthrene	178.2
9.85	Anthracene	178.2
12.86	Pyrene	202.2
16.03	Benzo[a]anthracene	228.2
16.15	Chrysene	228.2
18,96	Benzo[b]fluoranthrene	252.2
19.02	Benzo[k]fluoranthrene	252.2
19.77	Benzo[a]pyrene	252.1
22.58	Indeno[1,2,3- <i>cd</i>]pyrene	276.1
22.63	Dibenzo[a,h]anthracene	278.1
23.28	Benzo[ghi]perylene	276.1