

蔬菜、茶叶中农药及其代谢物残留量的测定 (Copure® QuEChERS)

GB 23200.113—2018《食品安全国家标准 植物源性食品中 208 种农药及其代谢物残留量的测定 气相色谱-质谱联用法》

一、样品前处理

1.1 深色蔬菜

称取 10 g 试样于 50 mL 塑料离心管中，加入 10 mL 乙腈、4 g 硫酸镁、1 g 氯化钠、1 g 柠檬酸钠、0.5 g 柠檬酸氢二钠及 1 颗陶瓷均质子（货号：COQ050010CH），盖上离心管盖，剧烈震荡 1 min 后 6000 r/min 离心 4 min。吸取 6 mL 上清液加到内含 900 mg 硫酸镁、150 mg PSA 及 15 mg GCB（货号：COQ015020H）的 15 mL 塑料离心管中涡旋混匀 1 min。6000 r/min 离心 4 min，准确吸取 2 mL 上清液于 10 mL 试管中，40°C 水浴中氮气吹至近干。加入 1 mL 乙酸乙酯复溶，过微孔滤膜，用于测定。

1.2 茶叶

取称取 2 g 试样（精确至 0.01 g）于 50 mL 塑料离心管中，加 10 mL 水涡旋混匀，静置 30 min。加入 15 mL、1% 醋酸乙腈溶液、6g 无水硫酸镁、1.5g 醋酸钠及 1 颗陶瓷均质子（货号：COQ050020CH），盖上离心管盖，剧烈震荡 1 min 后 9000 r/min 离心 4 min。吸取 8 mL 上清液加到内含 1200 mg 硫酸镁、400 mg PSA、400 mg C18 及 200 mg GCB（货号：COQ015047H）的 15 mL 塑料离心管中，涡旋混匀 1 min。7500 r/min 离心 5 min，准确吸取 2 mL 上清液于 10 mL 试管中，40°C 水浴中氮气吹至近干。加入 1 mL 乙酸乙酯复溶，过微孔滤膜，用于测定。

1.3 标准曲线的制备

精确吸取一定量的混合标准溶液，用乙酸乙酯稀释成质量浓度为 0.05 mg/L 的标准工作溶液。空白基质溶液氮气吹干，加入 1 mL 上述标准工作溶液复溶，过微孔滤膜配制成基质混合标准工作溶液，供气相色谱-质谱联用仪测定。

二、仪器条件

仪器设备：气相色谱串联质谱仪 (TSQ 9000)

色谱柱：TG-5LPGC-MS

16m×0.53mmID×1um+5m×0.18mmID

流速：1.6 mL/min

柱温：65°C 保持 0.5min，然后以 35°C/min 程序升温至 320°C，保持 1.3min

进样量：1.0 μL；

进样口温度：280°C；

进样方式：不分流进样；

电子轰击源：70eV；

离子源温度：320°C；

传输线温度：280°C

质谱条件：

检测方式：多反应监测 (MRM)；

表 1 离子选择参数

项目	保留时间 (min)	定量离子对	碰撞能量	定性离子对	碰撞能量
乙酰甲胺磷	3.74	136.0-42.1	8	136.0-94.0	12
艾氏剂	5.59	330.0-298.9	10	262.7-191.0	30
乙丁氟灵	4.56	292.0-159.7	20	292.0-206.1	10
甲基除草醚	6.90	172.9-137.9	16	341.1-281.0	12
联苯菊酯	6.77	181.0-165.9	10	165.1-163.6	24
溴螨酯	6.81	340.8-185.0	14	183.0-155.0	15
丁草胺	5.96	160.0-131.7	12	188.1-160.1	10
毒虫畏	5.79	323.0-266.9	14	266.9-159.0	16
氯苯甲醚	3.97	190.9-113.0	14	206.0-190.9	12
氯苯胺灵	4.49	213.0-127.0	14	171.0-127.0	8
毒死蜱	5.56	313.9-257.9	12	196.7-107.0	36
异噁草酮	4.84	125.0-89.0	16	138.0-74.9	24
蝇毒磷	7.39	226.0-163.0	18	209.9-182.0	10
氟氯菊酯	7.52	226.0-206.1	10	163.0-127.1	6
氯氟菊酯	7.61	163.0-127.1	6	180.9-152.1	20
环丙唑醇	6.24	222.0-82.1	10	222.0-89.3	38
啉菌环胺	5.71	224.1-196.9	20	225.1-209.7	16
溴氟菊酯	8.06	252.8-172.0	8	250.7-172.0	5
二嗪磷	4.96	137.1-84.1	12	179.1-121.5	26
敌草腈	3.39	172.8-99.8	24	170.9-99.9	24
敌敌畏	2.96	185.0-93.0	12	186.9-93.0	12
氯硝胺	4.78	206.0-176.0	10	160.0-124.1	8
三氯杀螨醇	6.27	250.9-139.0	12	111.0-74.9	12
苯醚甲环唑	8.00	323.0-265.0	16	265.0-138.9	36
乐果	4.78	87.0-42.1	10	93.0-63.0	8
二苯胺	4.41	169.2-167.1	22	168.1-139.0	38
敌瘟磷	6.51	172.9-109.0	8	310.0-109.0	26
α-硫丹	6.00	240.6-205.9	12	194.7-125.0	22
β-硫丹	6.32	240.6-205.8	12	158.9-123.0	12
硫丹硫酸盐	6.32	271.7-234.0	12	238.7-203.9	12
氟环唑	6.71	192.0-111.0	22	165.0-138.0	8
灭线磷	4.43	200.0-158.0	6	157.9-96.9	16
乙螨唑	6.84	204.0-176.1	10	140.9-62.9	26
咪唑菌酮	6.88	268.0-77.1	34	238.1-103.1	22
腈苯唑	7.51	198.1-129.1	8	129.0-77.8	18
甲氟菊酯	6.83	181.0-151.9	22	181.0-126.8	28
倍硫磷	5.55	278.0-109.0	18	245.3-125.0	12
倍硫磷砷	6.34	309.9-105.0	10	135.9-92.0	10
倍硫磷亚砷	6.31	278.0-109.0	15	278.0-169.0	15
氟戊菊酯	7.90	167.0-125.0	10	167.0-89.0	32
氟虫腈	5.79	368.8-214.9	30	366.9-212.9	28
吡氟禾草灵	6.19	383.1-282.1	14	282.0-91.1	18
氟氯戊菊酯	7.67	199.1-107.1	22	157.0-107.1	12
咯菌腈	6.10	248.0-127.0	26	248.0-153.8	18
氟酰胺	6.02	281.0-173.0	10	173.0-95.0	28

地虫硫磷	4.95	246.0-137.0	6	246.0-109.0	14
抑霉唑	6.07	215.0-173.0	8	172.8-109.0	26
异菌脲	6.73	314.0-245.0	12	314.0-56.0	22
氯唑磷	5.05	257.0-162.0	8	161.0-119.1	5
水胺硫磷	5.60	136.0-108.0	12	136.0-69.0	30
甲基异柳磷	5.70	199.0-121.0	10	241.1-121.1	20
稻瘟灵	6.05	290.0-118.0	12	204.0-85.0	28
醚菌酯	6.15	116.0-89.0	14	130.9-130.1	10
高效氟氯氟菊酯	7.07	197.1-141.1	10	207.9-180.9	8
马拉硫磷	5.48	173.1-99.0	12	92.8-63.0	8
甲胺磷	2.92	141.0-64.0	18	141.0-79.0	20
杀扑磷	5.91	145.0-58.0	14	145.0-85.0	6
甲氧滴滴涕	6.84	227.1-141.1	32	227.1-169.1	22
异丙甲草胺	5.54	238.1-162.2	10	238.1-132.8	26
速灭磷	3.68	192.0-127.0	10	127.0-95.0	14
禾草敌	4.11	187.1-126.1	6	126.1-55.1	12
久效磷	4.63	96.9-82.0	10	127.0-95.0	16
腈菌唑	6.14	179.0-90.0	28	179.0-125.0	14
二溴磷	2.96	145.0-112.9	16	145.0-109.0	12
氧乐果	4.33	156.0-110.0	8	110.0-79.0	10
噁霜灵	6.37	163.1-132.1	8	163.1-117.0	24
多效唑	5.94	236.0-125.0	12	125.0-89.0	18
戊菌唑	5.76	248.0-192.0	12	248.0-157.0	22
二甲戊灵	5.75	252.1-161.0	14	252.1-162.0	8
氯菊酯	7.33	183.1-168.0	12	183.1-153.0	12
甲拌磷	4.64	260.0-75.0	8	121.0-65.0	8
甲拌磷砒	5.54	199.0-143.0	10	153.0-96.9	10
甲拌磷亚砒	5.50	96.9-65.0	16	153.0-97.0	10
伏杀硫磷	7.01	182.0-111.0	14	182.0-74.8	30
硫环磷	5.81	195.8-139.9	10	139.9-60.0	15
亚胺硫磷	6.82	160.0-50.9	38	160.0-76.9	22
磷胺	4.99	264.1-127.0	12	127.0-94.9	16
增效醚	6.62	176.1-103.1	22	176.1-117.0	18
丙草胺	6.07	238.1-146.1	10	202.1-145.5	14
腐霉利	5.86	283.0-96.1	8	95.9-67.1	8
丙溴磷	6.07	336.9-308.9	8	336.9-266.9	12
敌稗	5.23	217.0-161.0	8	160.9-99.0	24
丙环唑	6.54	172.9-74.0	38	172.9-145.0	16
哒螨灵	7.36	147.1-132.1	12	147.1-117.1	20
吡丙醚	7.01	136.1-96.0	10	226.1-186.1	12
啶硫磷	5.82	157.1-102.0	22	146.0-118.1	10
啶氧灵	6.52	307.0-237.0	18	237.0-208.0	26
五氯硝基苯	4.94	294.8-236.9	14	213.8-141.9	28
治螟磷	4.59	322.0-202.0	10	202.0-145.9	10
戊唑醇	6.62	250.0-125.0	20	125.0-89.0	16
吡螨胺	6.84	318.1-131.1	14	276.1-171.0	10
四氯硝基苯	4.36	214.8-143.6	20	214.8-178.7	10
特丁硫磷	4.91	230.9-128.9	22	230.9-174.9	12
特丁硫磷砒	5.76	199.0-143.0	10	199.0-97.0	20
杀虫畏	5.96	330.8-108.9	15	328.8-108.9	15
四氯醚唑	5.59	336.0-204.0	28	100.9-51.0	10
三唑酮	5.58	208.0-111.0	20	208.0-126.7	12
三唑醇	5.82	128.0-65.0	18	168.2-70.0	10
三唑磷	6.42	161.0-134.1	8	172.1-77.1	25
肟菌酯	6.48	145.0-95.0	14	116.1-63.0	24

三、实验结果

表 2 0.250mg/kg 红茶中农药加标回收实验结果

检测项目	回收率 (%)			平均回收率 (%)	RSD (%)
	1	2	3		
乙酰甲胺磷	111	102	97.4	103	6.55
艾氏剂	90.3	93.0	86.9	90.1	3.41
乙丁氟灵	96.9	101	90.4	96.1	5.47
甲羧除草醚	101	102	100	101	0.792
联苯菊酯	96.6	97.9	94.5	96.3	1.75
溴螨酯	98.1	103	96.0	99.1	3.76
丁草胺	84.5	87.5	87.2	86.4	1.92
毒虫畏	89.6	91.4	80.7	87.2	6.54
氯苯甲醚	87.4	91.3	88.1	88.9	2.34
氯苯胺灵	95.3	95.1	93.6	94.7	0.963
毒死蜱	96.4	92.6	91.5	93.5	2.76
异噁草酮	101	104	94.0	99.5	5.13
蝇毒磷	82.0	88.5	82.2	84.2	4.42
氟氯氟菊酯	96.8	98.6	91.7	95.7	3.71
氯氟菊酯	94.0	96.9	95.4	95.4	1.52
环丙唑醇	91.3	90.8	91.2	91.1	0.275
啉菌环胺	78.5	86.4	81.2	82.1	4.89
溴氟菊酯	91.5	87.8	77.0	85.4	8.86
二嗪磷	98.4	96.8	96.9	97.4	0.929
敌草腈	84.3	90.1	85.0	86.5	3.64
敌敌畏	97.3	98.8	94.6	96.9	2.23
氯硝胺	100	101	105	102	2.29
三氯杀螨醇	100	102	96.9	99.9	2.79
苯醚甲环唑	86.7	91.6	89.3	89.2	2.74
乐果	102	97.1	97.1	98.6	2.59
二苯胺	95.2	97.3	93.3	95.3	2.08
敌瘟磷	92.0	88.7	83.2	88.0	5.06
α -硫丹	90.3	105	87.2	94.1	9.97
β -硫丹	95.5	102	96.4	98.1	3.81
硫丹硫酸盐	87.6	93.6	85.2	88.8	4.85
氟环唑	93.9	103	94.8	97.2	5.03
灭线磷	83.5	87.1	87.7	86.1	2.60
乙螨唑	86.4	91.5	85.3	87.7	3.77
咪唑菌酮	97.8	99.5	94.4	97.2	2.68
腈苯唑	90.1	94.9	92.0	92.3	2.62
甲氟菊酯	93.2	95.3	93.1	93.8	1.32
倍硫磷	94.4	94.8	87.8	92.3	4.22
倍硫磷砒	101	94.2	81.0	92.2	11.2
倍硫磷亚砒	91.3	98.0	97.4	95.5	3.89
氟戊菊酯	90.5	90.5	84.4	88.5	3.97
氟虫腈	96.3	97.2	91.9	95.1	2.98
吡氟禾草灵	92.2	91.5	84.9	89.5	4.53
氟氧戊菊酯	102	102	94.7	99.7	4.36
咯菌腈	98.0	99.9	101	99.7	1.62
氟酰胺	96.3	98.6	96.8	97.3	1.23
地虫硫磷	83.7	86.0	85.4	85.0	1.40
抑霉唑	76.9	80.6	76.7	78.1	2.83
异菌脲	87.7	86.8	83.8	86.1	2.35

氯唑磷	103	101	97.9	100	2.32
水胺硫磷	94.8	91.4	92.2	92.8	1.91
甲基异柳磷	98.2	98.8	95.3	97.4	1.92
稻瘟灵	91.6	98.2	91.8	93.9	3.97
醚菌酯	95.2	93.4	95.7	94.8	1.27
高效氯氟氧菊酯	92.9	97.7	92.4	94.3	3.08
马拉硫磷	87.6	81.2	87.3	85.4	4.19
甲胺磷	103	98.4	98.8	100	2.49
杀扑磷	105	98.6	98.2	101	3.58
甲氧滴滴涕	102	108	99.0	103	4.14
异丙甲草胺	99.6	98.8	98.7	99.1	0.493
速灭磷	108	105	99.4	104	4.34
禾草敌	76.1	76.9	73.1	75.4	2.63
久效磷	92.1	94.3	82.6	89.7	6.96
腈菌唑	95.3	99.7	96.2	97.0	2.37
二溴磷	95.5	98.6	95.7	96.6	1.79
氧乐果	96.2	84.5	73.3	84.7	13.5
噁霜灵	94.2	97.7	94.3	95.4	2.06
多效唑	87.6	99.9	92.9	93.5	6.59
戊菌唑	96.8	103	96.5	98.8	3.82
二甲戊灵	103	105	93.1	101	6.37
氯菊酯	92.8	90.9	91.5	91.7	1.09
甲拌磷	81.3	82.0	76.0	79.8	4.13
甲拌磷砒	90.2	93.4	92.2	91.9	1.74
甲拌磷亚砒	99.5	102	99.0	100	1.42
伏杀硫磷	95.1	96.0	90.7	94.0	3.01
硫环磷	112	109	105	109	3.52
亚胺硫磷	91.3	92.7	84.4	89.5	4.99
磷胺	103	105	95.5	101	4.95
增效醚	99.7	103	103	102	1.79
丙草胺	78.1	86.3	82.0	82.1	4.98
腐霉利	93.5	95.7	93.1	94.1	1.47
丙溴磷	85.9	86.0	83.6	85.2	1.61
敌稗	78.4	82.0	86.0	82.1	4.63
丙环唑	93.2	94.4	95.8	94.5	1.39
哒螨灵	90.6	93.7	90.7	91.7	1.92
吡丙醚	96.3	103	93.6	97.6	4.85
啶硫磷	103	97.3	92.3	97.4	5.35
啶氧灵	72.7	78.5	74.9	75.4	3.90
五氯硝基苯	88.2	90.5	88.2	89.0	1.50
治螟磷	87.3	88.1	82.0	85.8	3.88
戊唑醇	93.5	93.4	94.0	93.6	0.357
吡螨胺	91.6	93.7	87.8	91.0	3.29
四氯硝基苯	86.6	93.7	90.1	90.1	3.97
特丁硫磷	95.0	98.8	92.3	95.4	3.41
特丁硫磷砒	101	99.7	96.5	98.9	2.20
杀虫畏	102	108	105	105	3.28
四氯醚唑	82.4	87.9	82.1	84.2	3.87
三唑酮	107	109	101	106	3.80
三唑醇	92.5	86.1	90.8	89.8	3.66
三唑磷	101	104	97.2	101	3.53
肟菌酯	98.3	103	101	101	2.38

表 3 0.100mg/kg 上海青中农药加标回收实验结果

检测项目	回收率 (%)			平均回收率 (%)	RSD (%)
	1	2	3		
乙酰甲胺磷	88.6	86.3	83.9	86.3	2.73
艾氏剂	94.5	104	98.1	98.7	4.66
乙丁氟灵	102	103	99.5	101	1.62
甲羧除草醚	98.9	102	91.4	97.3	5.47
联苯菊酯	96.0	99.4	97.9	97.8	1.75
溴螨酯	93.6	99.4	99.1	97.4	3.34
丁草胺	89.8	89.3	93.7	90.9	2.65
毒虫畏	93.8	95.9	92.1	93.9	2.05
氯苯甲醚	97.6	101	98.6	99.1	1.79
氯苯胺灵	98.6	103	101	101	2.00
毒死蜱	100	98.4	99.2	99.3	1.03
异噁草酮	100	103	103	102	1.54
蝇毒磷	93.0	95.9	92.5	93.8	1.97
氟氯氧菊酯	94.9	97.9	92.7	95.2	2.76
氯氟菊酯	97.5	101	96.4	98.4	2.61
环丙唑醇	88.6	97.3	94.8	93.6	4.78
啉菌环胺	92.7	93.6	101	95.6	4.59
溴氟菊酯	93.2	94.9	93.0	93.7	1.12
二嗪磷	94.4	98.9	97.7	97.0	2.39
敌草腈	98.4	103	102	101	2.30
敌敌畏	97.3	99.9	96.9	98.1	1.67
氯硝胺	97.1	101	99.2	99.1	1.89
三氯杀螨醇	89.6	94.6	96.4	93.5	3.76
苯醚甲环唑	94.4	100	101	98.5	3.66
乐果	93.8	98.4	95.5	95.9	2.45
二苯胺	101	103	102	102	0.937
敌瘟磷	92.0	88.3	83.3	87.9	4.96
α -硫丹	99.3	104	91.2	98.1	6.48
β -硫丹	95.7	97.1	95.7	96.2	0.810
硫丹硫酸盐	87.7	104	96.9	96.2	8.44
氟环唑	93.8	96.3	94.9	95.0	1.34
灭线磷	96.4	103	100	99.8	3.24
乙螨唑	95.8	102	103	100	3.94
咪唑菌酮	89.8	94.5	93.9	92.7	2.73
腈苯唑	94.2	99.1	100	97.9	3.31
甲氧菊酯	97.0	102	99.4	99.6	2.69
倍硫磷	99.4	96.6	98.3	98.1	1.44
倍硫磷砒	91.0	92.5	82.1	88.5	6.32
倍硫磷亚砒	94.3	92.1	95.2	96.1	2.53
氟戊菊酯	94.6	99.3	97.2	97.0	2.43
氟虫腈	99.1	100	101	100	0.935
吡氟禾草灵	87.8	90.1	87.6	88.5	1.60
氟氧戊菊酯	93.8	101	97.6	97.5	3.73
咯菌腈	97.1	102	100	99.7	2.44
氟酰胺	92.4	98.6	95.6	95.5	3.23
地虫硫腈	95.3	99.3	101	98.4	2.82
抑霉唑	93.5	96.9	101	97.2	3.87
异菌脲	78.1	76.9	71.6	75.5	4.58
氯唑磷	93.6	102	103	99.5	5.10
水胺硫磷	96.1	91.6	96.5	94.7	2.88
甲基异柳磷	96.9	98.0	99.3	98.0	1.25
稻瘟灵	92.8	98.8	94.5	95.4	3.22
醚菌酯	97.2	101	96.1	98.2	2.78
高效氯氟氧菊酯	99.2	95.9	98.3	97.8	1.73

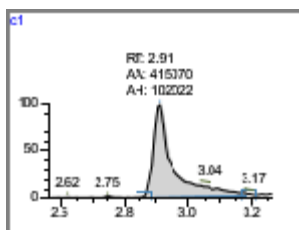
马拉硫磷	95.9	98.0	102	98.7	3.25
甲胺磷	99.0	96.6	99.2	98.3	1.46
杀扑磷	90.7	95.9	89.5	92.0	3.72
甲氧滴滴涕	79.4	79.4	74.5	77.8	3.65
异丙甲草胺	93.9	96.2	94.7	95.0	1.22
速灭磷	102	101	98.7	101	1.62
禾草敌	96.2	94.7	96.4	95.8	0.964
久效磷	87.6	88.3	89.2	88.3	0.919
腈菌唑	95.2	95.5	99.2	96.6	2.31
二溴磷	99.4	101	101	101	0.965
氧乐果	91.9	87.3	82.2	87.1	5.60
噁霜灵	96.0	96.4	97.9	96.8	1.05
多效唑	92.6	101	98.8	97.5	4.51
戊菌唑	94.7	101	101	99.0	3.80
二甲戊灵	101	90.9	87.3	93.0	7.52
氯菊酯	96.8	101	96.7	98.3	2.63
甲拌磷	102	100	101	101	0.819
甲拌磷砒	98.6	101	98.1	99.1	1.37
甲拌磷亚砒	98.0	88.7	97.7	94.8	5.56
伏杀硫磷	92.6	94.9	87.1	91.5	4.40
硫环磷	96.6	98.0	99.8	98.1	1.65
亚胺硫磷	91.6	89.1	85.4	88.7	3.55
磷胺	88.7	89.8	83.4	87.3	3.90

增效醚	96.6	101	100	99.2	2.24
丙草胺	93.9	98.7	95.6	96.1	2.53
腐霉利	98.3	101	102	100	1.78
丙溴磷	95.9	92.0	89.6	92.5	3.43
敌稗	94.7	103	98.4	98.8	4.40
丙环唑	97.2	100	102	99.8	2.37
哒螨灵	98.3	101	99.6	99.7	1.50
吡丙醚	97.4	98.0	98.2	97.9	0.444
唑硫磷	92.8	91.7	90.7	91.7	1.17
唑氧灵	94.2	96.8	95.4	95.5	1.36
五氯硝基苯	102	99.9	102	101	1.27
治螟磷	93.9	97.9	96.9	96.2	2.19
戊唑醇	88.5	92.2	95.4	92.0	3.77
吡磷胺	96.5	96.1	99.0	97.2	1.62
四氯硝基苯	93.7	94.3	98.7	95.6	2.88
特丁硫磷	96.8	99.3	98.2	98.1	1.29
特丁硫磷砒	96.2	93.0	102	96.9	4.46
杀虫畏	90.3	86.8	85.5	87.5	2.83
四氯醚唑	98.6	98.4	100	99.1	1.03
三唑酮	102	99.5	102	101	1.21
三唑醇	100	82.2	99.6	94.0	10.9
三唑磷	93.7	98.8	92.9	95.2	3.35
肟菌酯	99.0	97.4	104	100	3.36

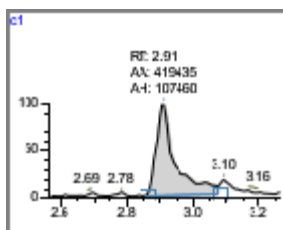
甲胺磷

敌敌畏

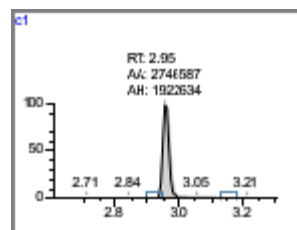
141.000->64.000



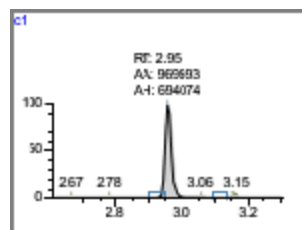
141.000->79.000



185.000->93.000



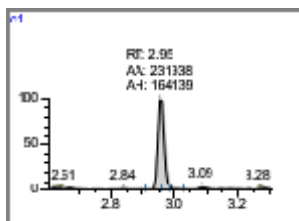
186.900->93.000



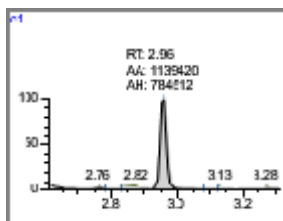
二溴磷

敌草腈

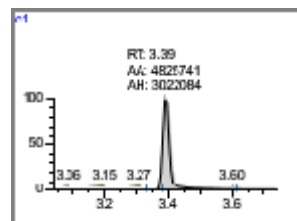
145.000->112.900



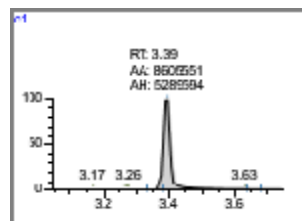
145.000->109.000



172.800->99.800



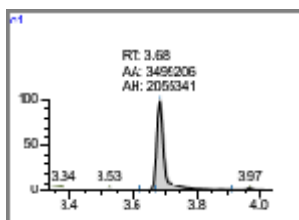
170.900->99.900



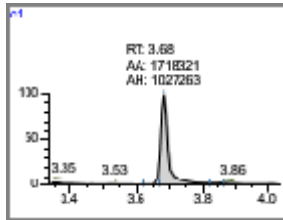
速灭磷

乙酰甲胺磷

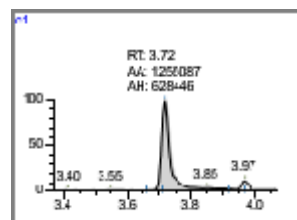
192.000->127.000



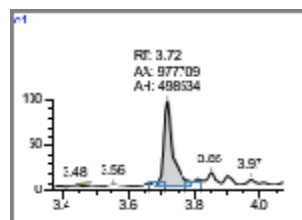
127.000->95.000



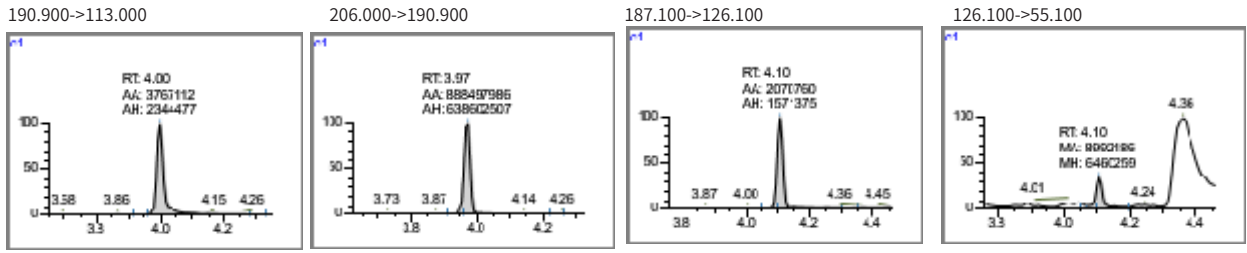
136.000->42.100



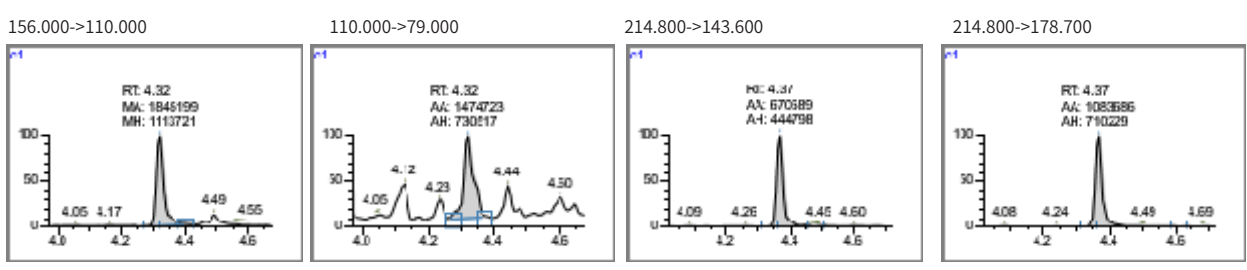
136.000->94.000



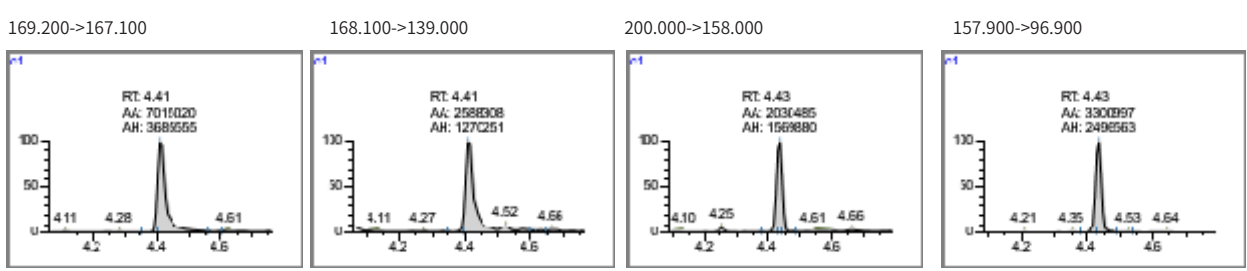
氯苯甲醚 **禾草敌**



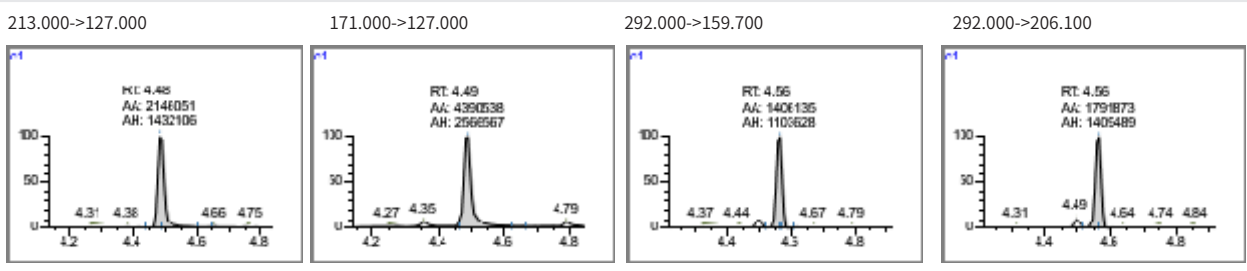
氧乐果 **四氯硝基苯**



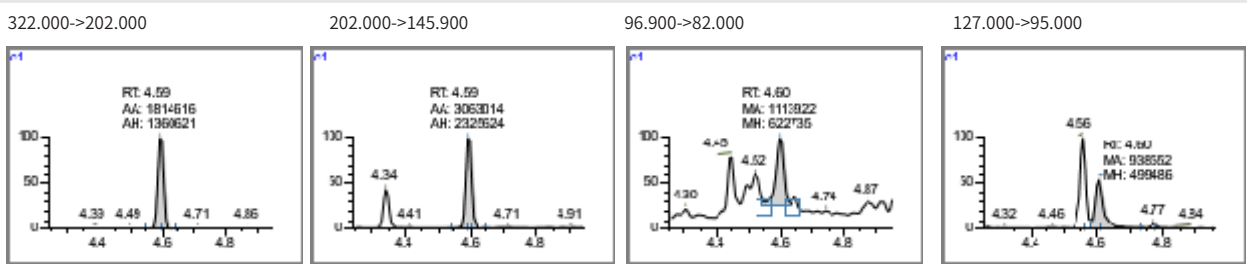
二苯胺 **灭线磷**



氯苯胺灵 **乙丁氟灵**

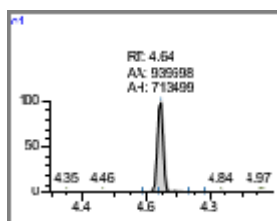


治螟磷 **久效磷**



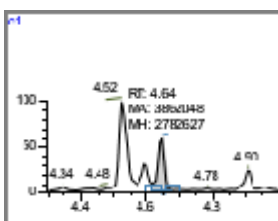
甲拌磷

260.000->75.000

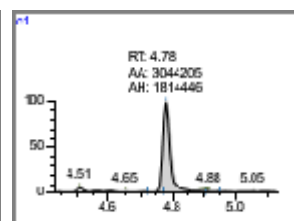


氯硝胺

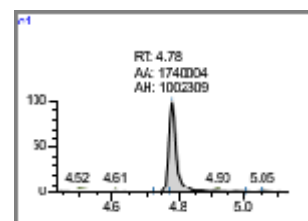
121.000->65.000



206.000->176.000

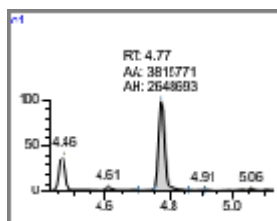


160.000->124.100



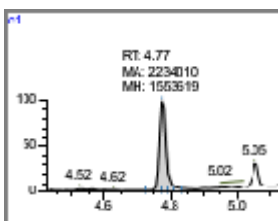
乐果

87.000->42.100

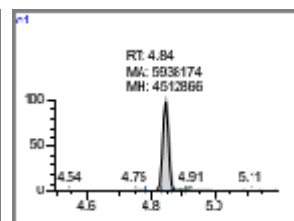


异噁草酮

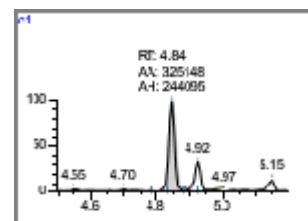
93.000->63.000



125.000->89.000

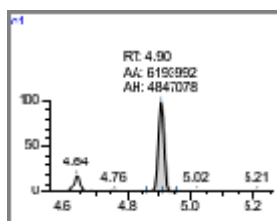


138.000->74.900



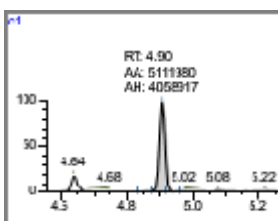
特丁硫磷

230.900->128.900

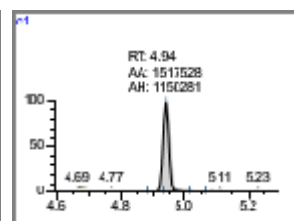


五氯硝基苯

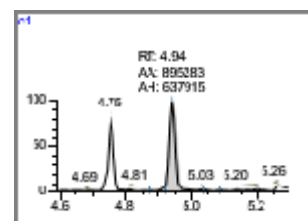
230.900->174.900



294.800->236.900

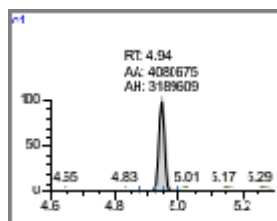


213.800->141.900



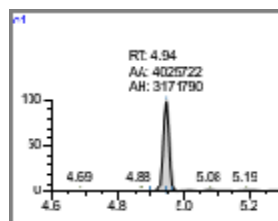
地虫硫磷

246.000->137.000

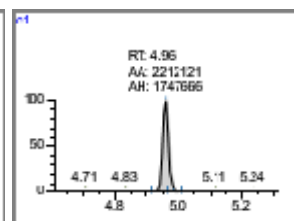


二嗪磷

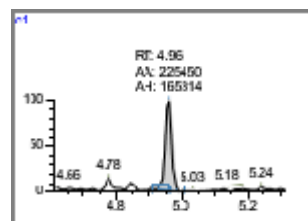
246.000->109.000



137.100->84.100

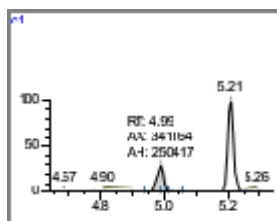


179.100->121.500



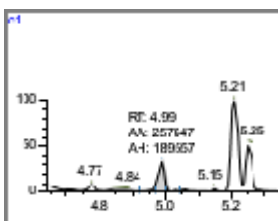
磷胺

264.100->127.000

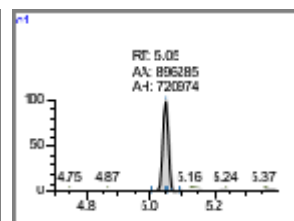


氯唑磷

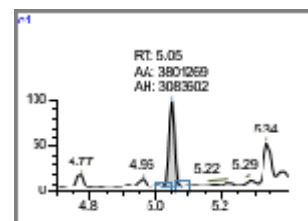
127.000->94.900



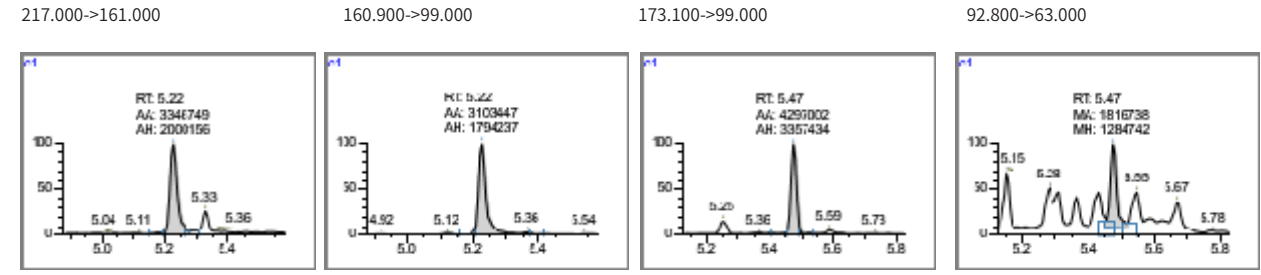
257.000->162.000



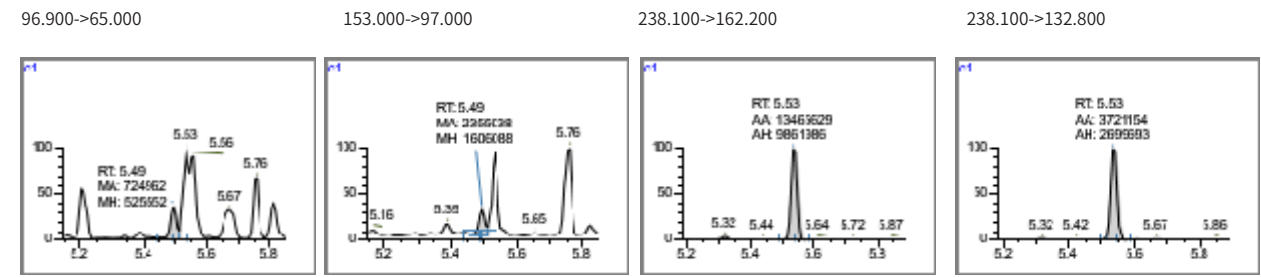
161.000->119.100



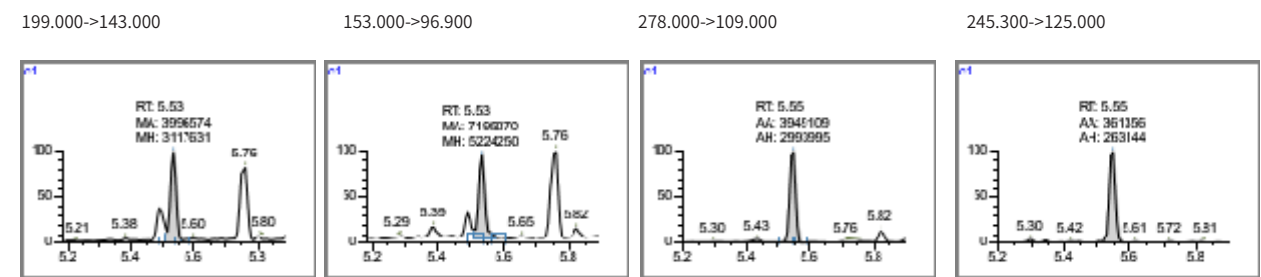
敌稗 **马拉硫磷**



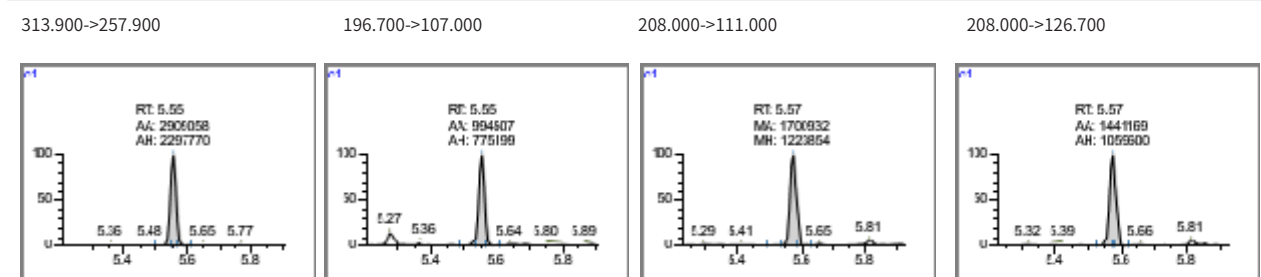
甲拌磷亚砷 **异丙甲草胺**



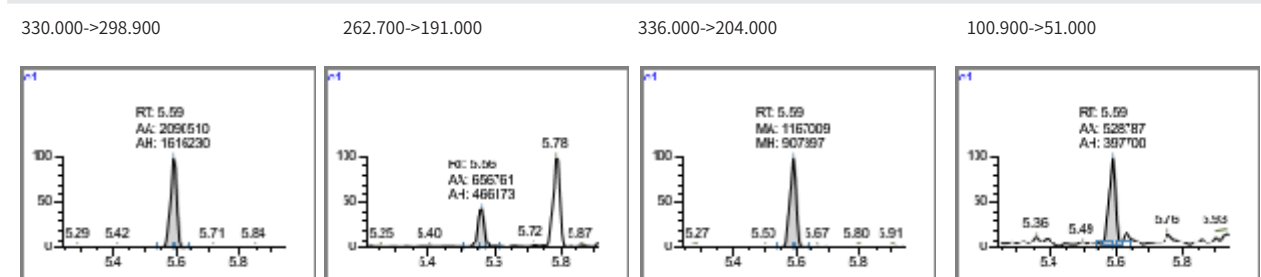
甲拌磷砷 **倍硫磷**



毒死蜱 **三唑酮**

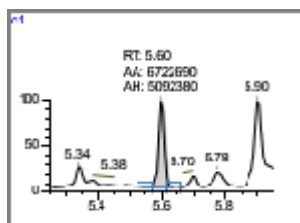


艾氏剂 **四氟醚唑**



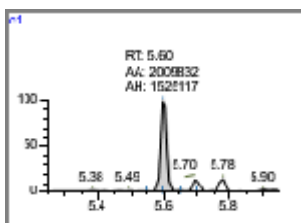
水胺硫磷

136.000->108.000

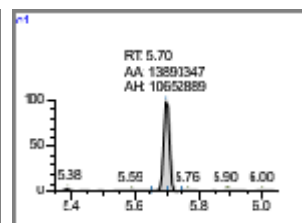


甲基异柳磷

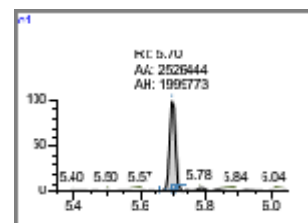
136.000->69.000



199.000->121.000

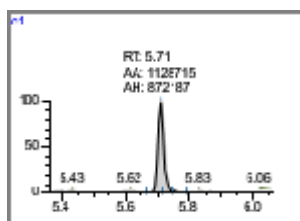


241.100->121.100



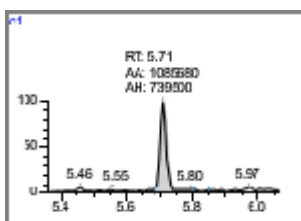
啉菌环胺

224.100->196.900

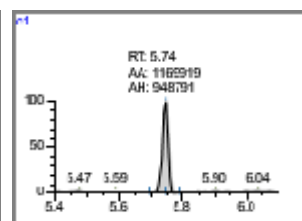


二甲戊灵

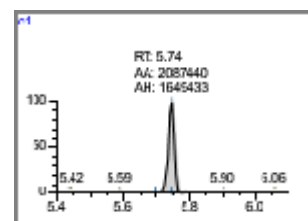
225.100->209.700



252.100->161.000

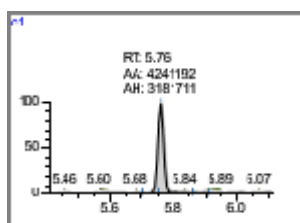


252.100->162.000



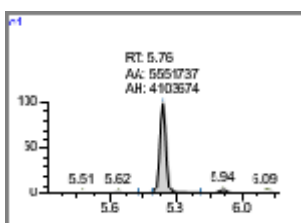
戊菌唑

248.000->192.000

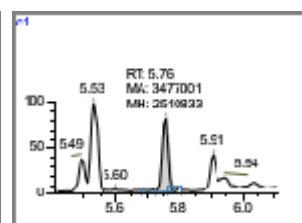


特丁硫磷

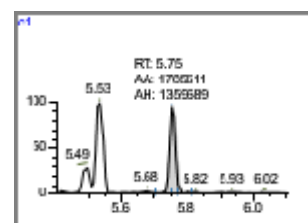
248.000->157.000



199.000->143.000

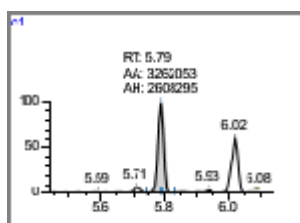


199.000->97.000



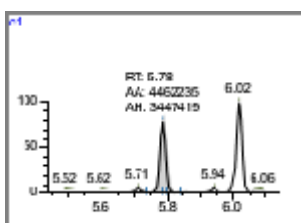
毒虫畏

323.000->266.900

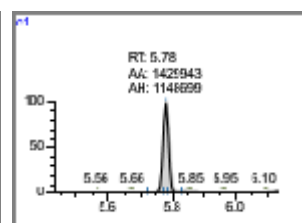


氟虫腓

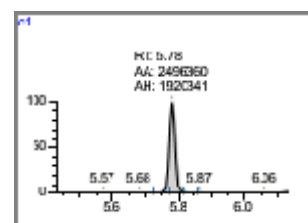
266.900->159.000



368.800->214.900

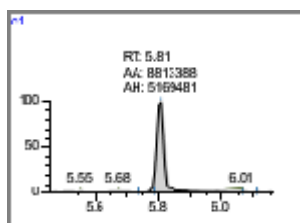


366.900->212.900



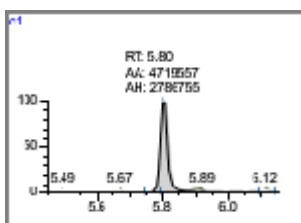
硫环磷

195.800->139.900

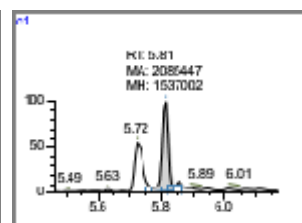


嗪硫磷

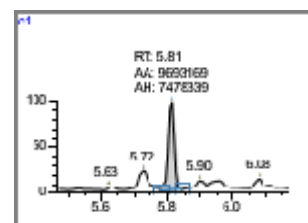
139.900->60.000



157.100->102.000

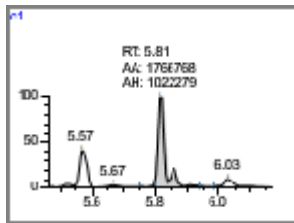


146.000->118.100

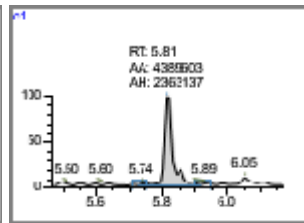


三唑醇 腐霉利

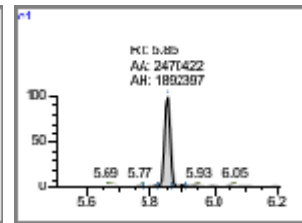
128.000->65.000



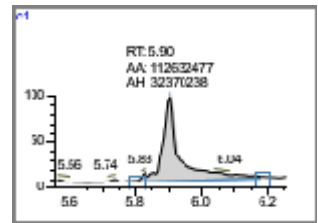
168.200->70.000



283.000->96.100

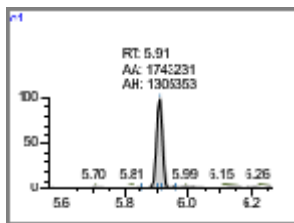


95.900->67.100

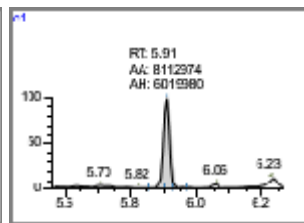


杀扑磷 多效唑

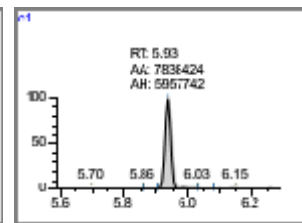
145.000->58.000



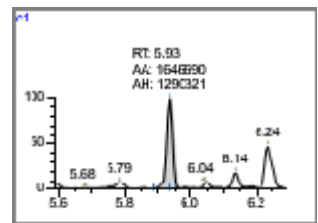
145.000->85.000



236.000->125.000

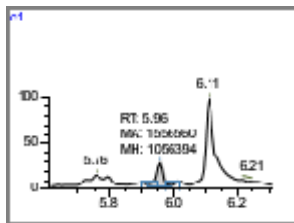


125.000->89.000

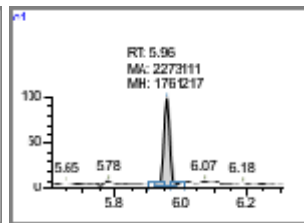


丁草胺 杀虫畏

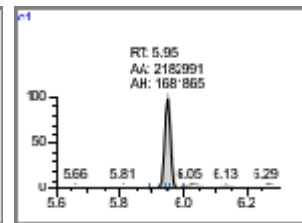
160.000->131.700



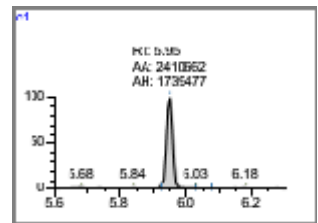
188.100->160.100



330.800->108.900

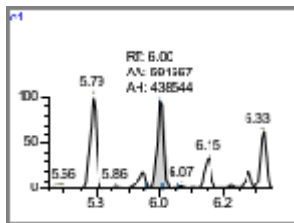


328.800->108.900

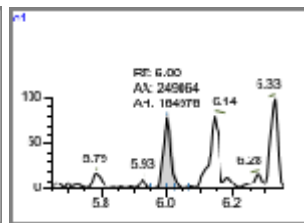


α-硫丹 氟酰胺

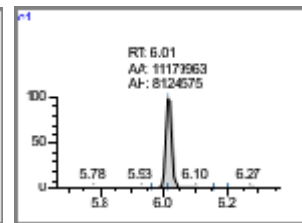
240.600->205.900



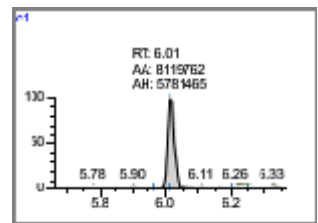
194.700->125.000



281.000->173.000

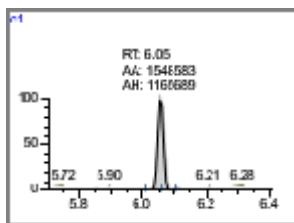


173.000->95.000

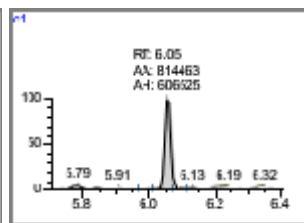


稻瘟灵 抑霉唑

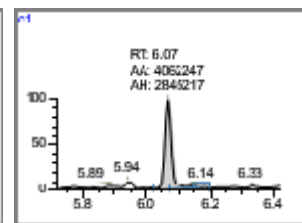
290.000->118.000



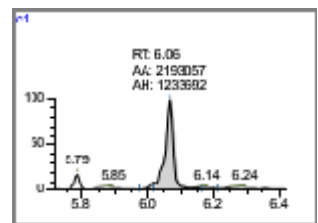
204.000->85.000



215.000->173.000

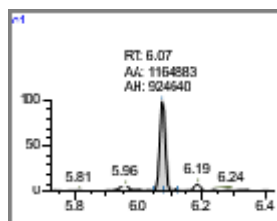


172.800->109.000



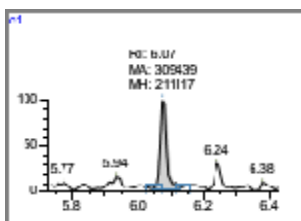
丙草胺

238.100->146.100

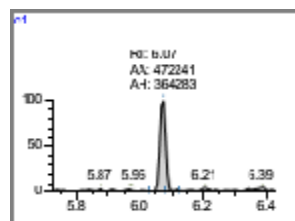


丙溴磷

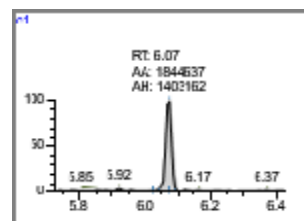
202.100->145.500



336.900->308.900

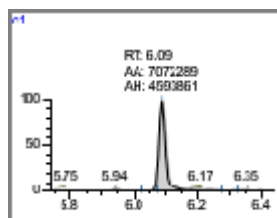


336.900->266.900

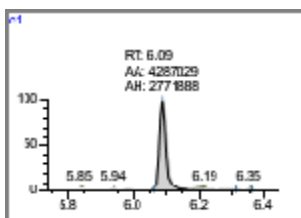


咯菌腈

248.000->127.000

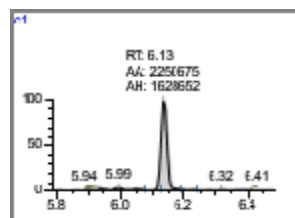


248.000->153.800

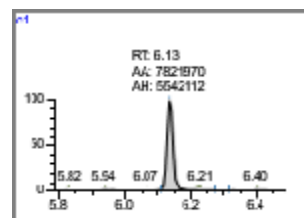


腈菌唑

179.000->90.000

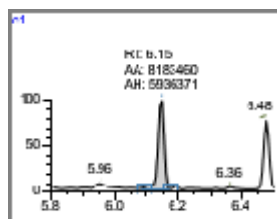


179.000->125.000

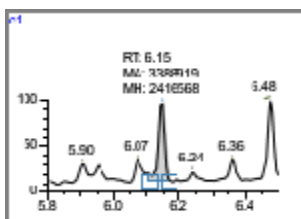


醚菌酯

116.000->89.000

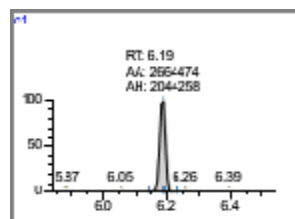


130.900->130.100

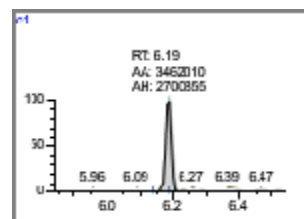


吡氟禾草灵

383.100->282.100

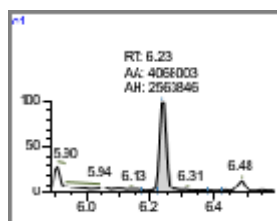


282.000->91.100

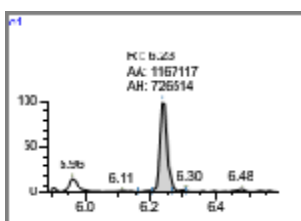


环丙唑醇

222.000->82.100

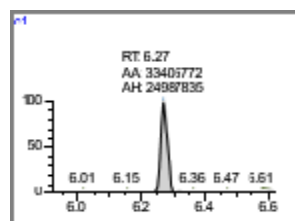


222.000->89.300

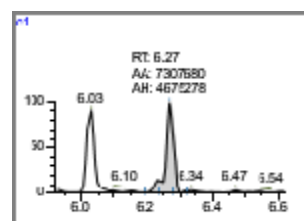


三氯杀螨醇

250.900->139.000

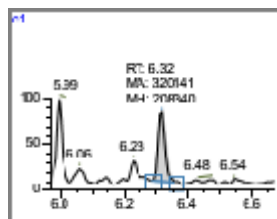


111.000->74.900

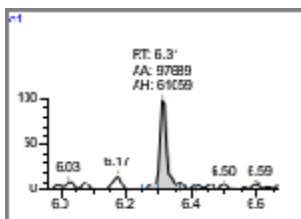


倍硫磷亚砷

278.000->109.000

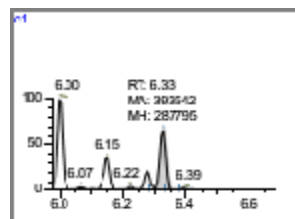


278.000->169.000

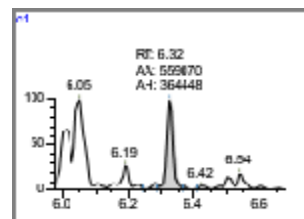


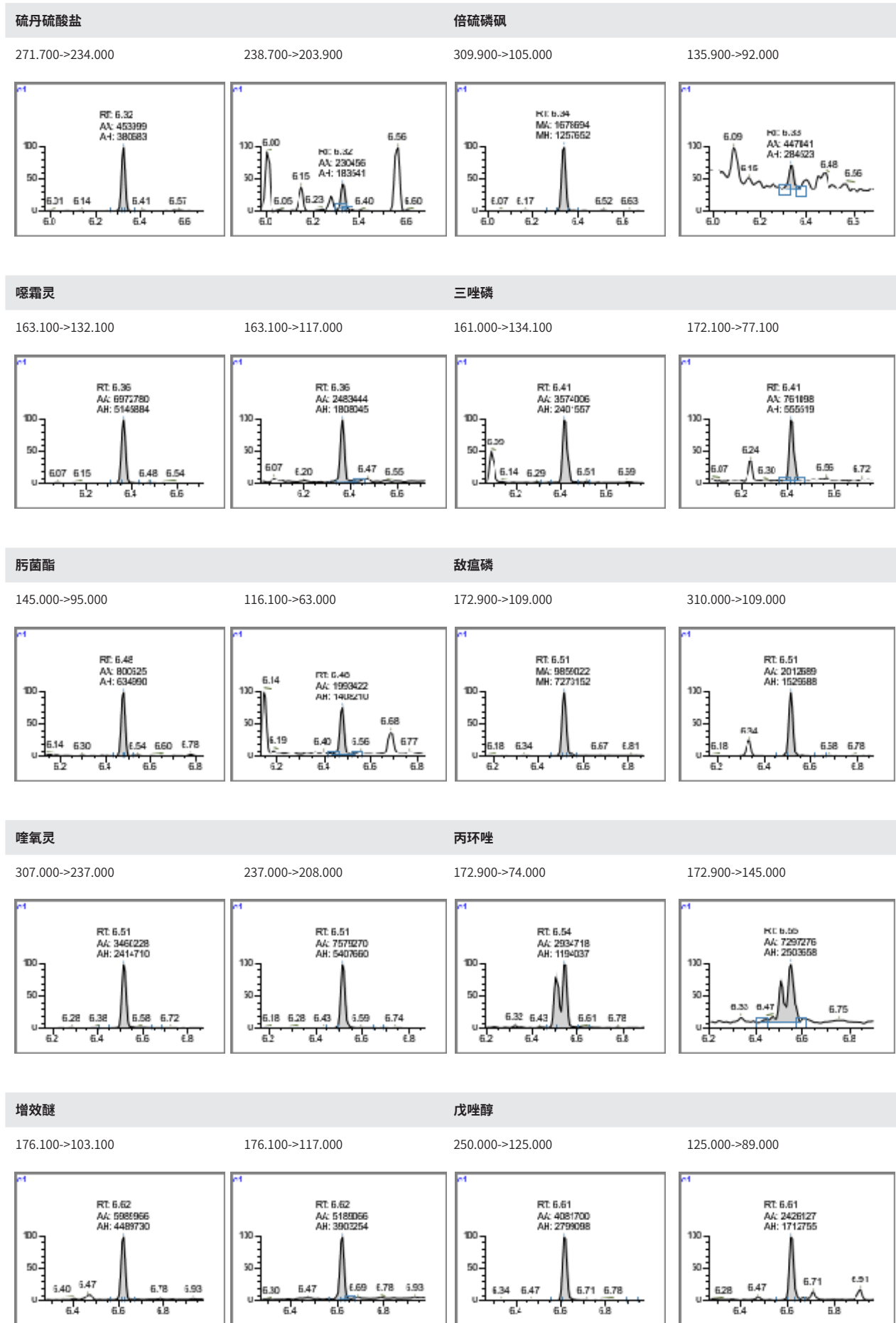
β- 硫丹

240.600->205.800



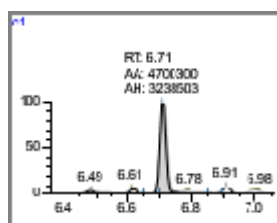
158.900->123.000





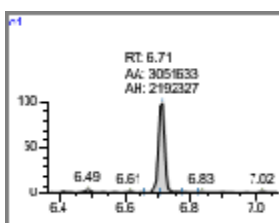
氟环唑

192.000->111.000

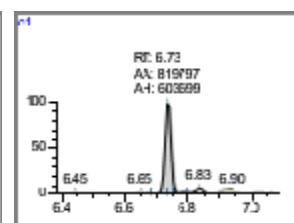


异菌脲

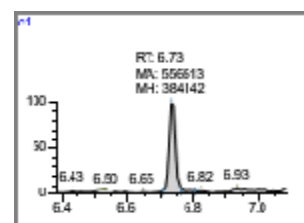
165.000->138.000



314.000->245.000

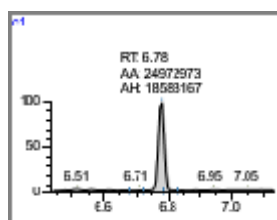


314.000->56.000



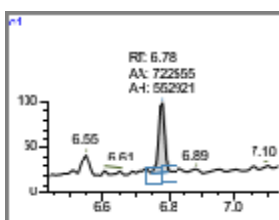
联苯菊酯

181.000->165.900

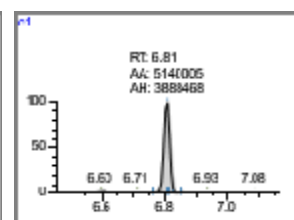


溴螨酯

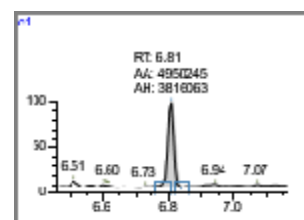
165.100->163.600



340.800->185.000

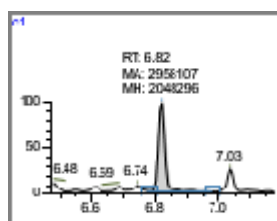


183.000->155.000



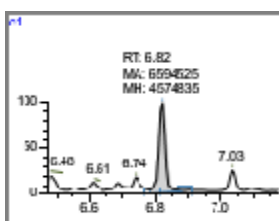
亚胺硫磷

160.000->50.900

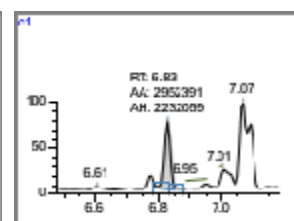


甲氧菊酯

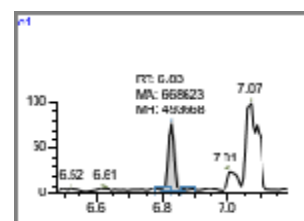
160.000->76.900



181.000->151.900

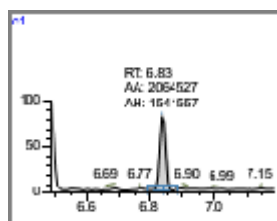


181.000->126.800



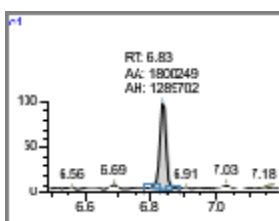
乙螨唑

204.000->176.100

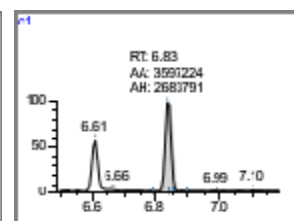


甲氧滴滴涕

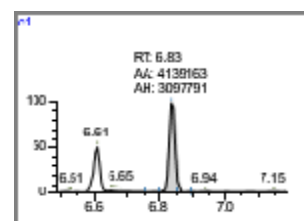
140.900->62.900



227.100->141.100

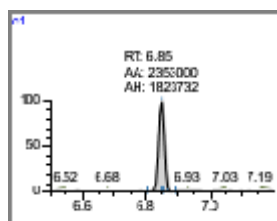


227.100->169.100



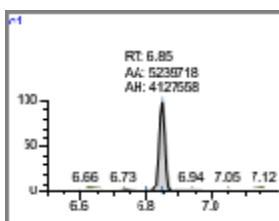
吡螨胺

318.100->131.100

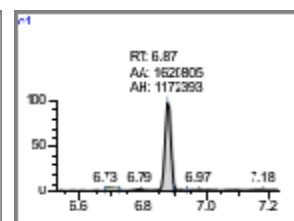


咪唑菌酮

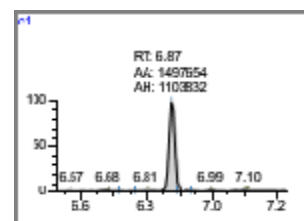
276.100->171.000



268.000->77.100

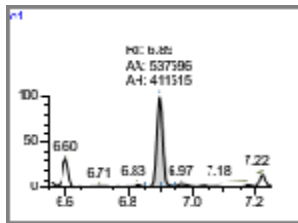


238.100->103.100

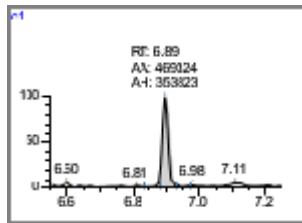


甲胺除草醚 **伏杀硫磷**

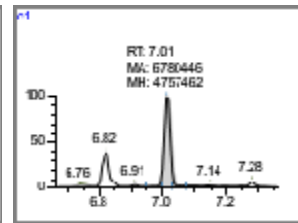
172.900->137.900



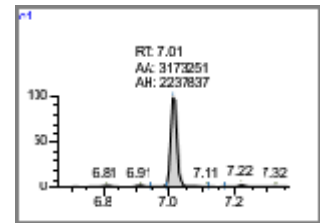
341.100->281.000



182.000->111.000

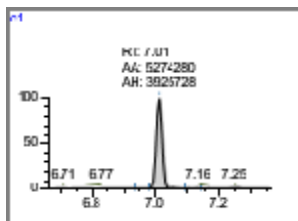


182.000->74.800

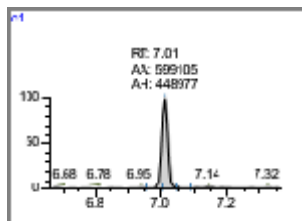


吡丙醚 **高效氯氟菊酯**

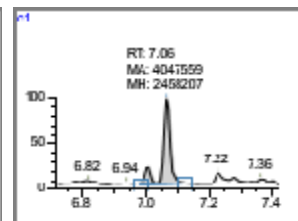
136.100->96.000



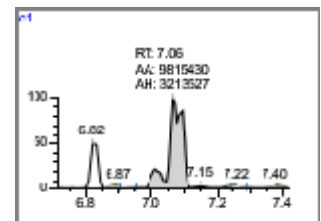
226.100->186.100



197.100->141.100

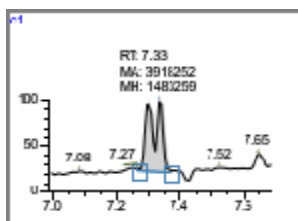


207.900->180.900

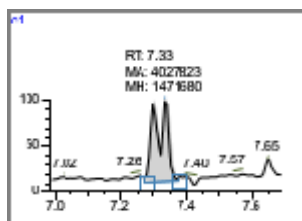


氯菊酯 **哒螨灵**

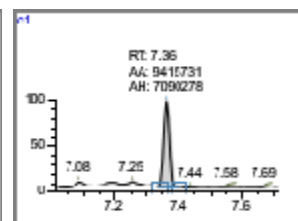
183.100->168.000



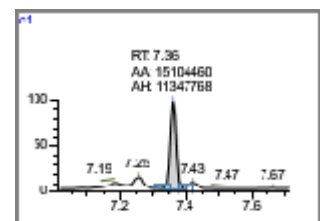
183.100->153.000



147.100->132.100

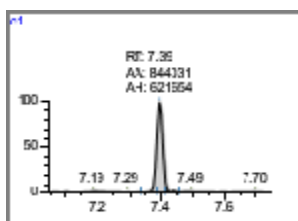


147.100->117.100

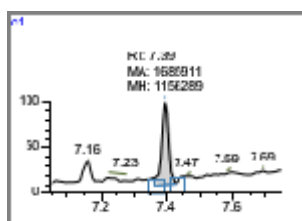


蝇毒磷 **腈苯唑**

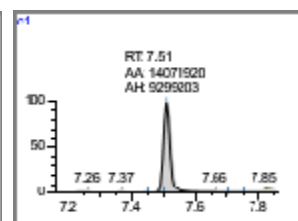
226.000->163.000



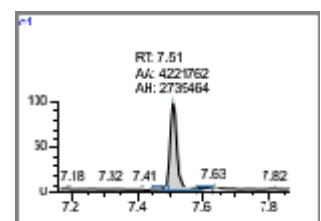
209.900->182.000



198.100->129.100

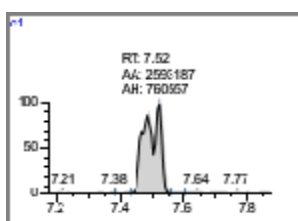


129.000->77.800

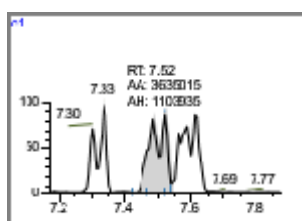


氟氯菊酯 **氯氟菊酯**

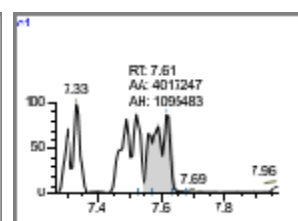
226.000->206.100



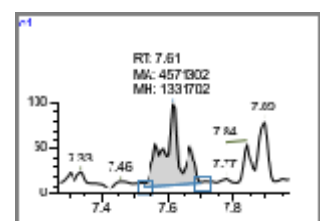
163.000->127.100



163.000->127.100



180.900->152.100



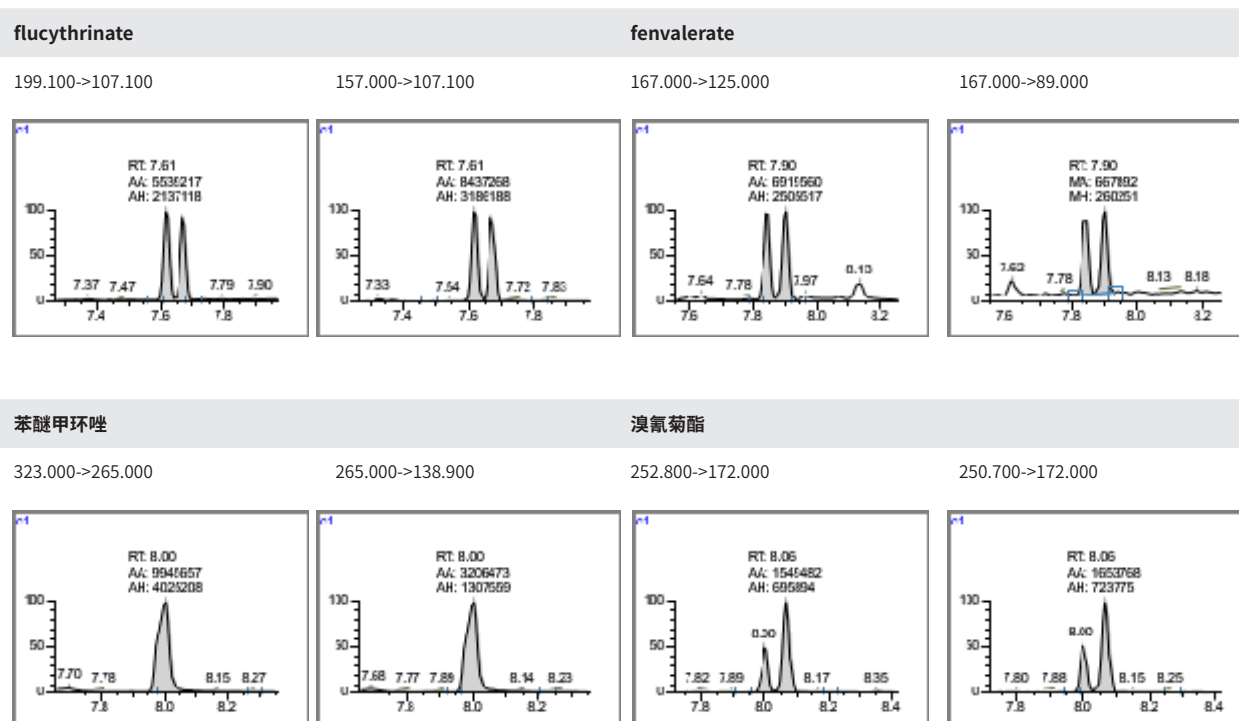


图 1 农药多反应监测色谱图 (0.0500mg/L)

订购信息

货号	描述	包装
COQ050010CH	4 g 无水硫酸镁、1 g 氯化钠、1 g 柠檬酸钠、0.5 g 柠檬酸二钠 + 陶瓷均质子, 50 mL 离心管	50 支 / 盒
COQ050020CH	6g 无水硫酸镁、1.5g 醋酸钠 + 陶瓷均质子, 50 mL 离心管	50 支 / 盒
COQ015020H	900 mg 无水硫酸镁、150 mg PSA、15 mg GCB, 15 mL 离心管	50 支 / 盒
COQ015047H	1200 mg 无水硫酸镁、400 mg PSA、400mgC18 及 200 mg GCB, 15 mL 离心管	50 支 / 盒
SDC-3000-D	biocomma® 多管涡旋混匀仪	1 台 / 箱
SF130-22-NL	尼龙针式过滤器, 直径 13 mm, 孔径 0.22 μm, 有机系	100 个 / 盒
SC2-1	2 mL 蓝色聚丙烯盖, 白色 PTFE/ 红色硅胶垫, 9-425	100 个 / 盒
V2-AL	2 mL 螺纹棕色样品瓶, 带书写处 11.6*32 mm, 9-425	100 个 / 盒