

Table S1. GC–MS/MS parameters of 82 pesticides.

No	Pesticide	Retention time (min)	Confirmation	Quantification
1	Methomyl	3.64	105.0→58.0(8)	105.0→88.0(8)
2	Dichlorvos	4.54	185.0→93.0(10)	109.0→79.0(10)
3	Trichlorfon	4.54	145.0→109.0(10)	109.0→79.0(5)
4	Etridiazole	5.53	213.0→185.0(10)	211.0→139.9(20)
5	Propoxur	6.33	110.0→92.0(12)	110.0→63.0(25)
6	Propachlor	6.33	196.1→120.0(8)	176.1→120.0(10)
7	Ethoprophos	6.47	200.0→158.0(5)	158.0→96.9(15)
8	Trifluralin	6.6	164.0→159.9(15)	306.0→264.1(5)
9	Phorate	6.82	260.0→75.0(5)	121.0→64.9(10)
10	Atrazine	7.18	200.1→104.1(20)	215.1→200.1(10)
11	Propazine	7.21	229.1→214.1(10)	214.1→172.1(10)
12	Clomazone	7.22	125.1→89.1(15)	204.1→107.1(8)
13	Propyzamide	7.4	255.0→84.0(6)	240.0→173.0(12)
14	Triallate	7.66	270.1→186.0(15)	268.0→184.0(20)
15	Pirimicarb	7.73	238.0→72.0(28)	238.0→166.0(10)
16	Acetochlor	8.03	146.1→117.1(15)	223.1→146.1(10)
17	Propisochlor	8.03	162.1→144.1(10)	223.1→147.1(10)
18	Metribuzin	8.08	198.1→89.1(10)	198.1→82.1(15)
19	Tolclofos-methyl	8.17	265.0→220(22)	265.0→250.0(10)
20	Propanil	8.21	161.0→99.0(25)	217.0→161.0(10)
21	Metalaxyl	8.25	249.1→190.1(10)	234.1→174.1(10)
22	Ametryne	8.27	227.1→212.2(10)	227.1→170.1(10)
23	Acephate	8.31	136.0→42.2(10)	136.0→93.9(10)
24	Prometryn	8.31	241.0→199.0(8)	241.0→184.0(13)
25	Pirimiphos-methyl	8.45	290.1→233.1(10)	290.1→125.0(15)
26	Fenitrothion	8.51	277.0→260.0(10)	277.0→109.0(20)
27	Dimethoate	8.62	125.0→78.9(10)	125.0→47.0(15)
28	Malathion	8.62	127.0→99.0(10)	173.0→99.0(10)
29	Metolachlor	8.71	238.1→162.1(15)	162.1→133.1(15)
30	Chlorpyrifos	8.74	197.0→169.0(15)	313.9→258.0(15)
31	Diethofencarb	8.77	267.0→168.0(18)	267→225.0(8)
32	Triadimefon	8.91	208.1→127.0(10)	208.1→181.1(10)
33	Pendimethalin	9.26	252.1→191.1(12)	252.1→162.1(12)
34	Thiametoxam	9.37	212.0→139.0(10)	247.0→212.0(10)
35	Fipronil	9.37	213.0→178.0(10)	367.0→213.0(16)
36	Penconazole	9.37	248.0→192.0(13)	248.0→157.0(25)
37	Phenthoate	9.49	246.0→121.0(10)	274.0→121.0(7)
38	Procymidone	9.58	283.0→255.0(10)	283.0→96.0(15)
39	Triadimenol	9.59	128.0→100.0(10)	168.0→70.0(10)
40	Methidathion	9.75	144.98→58(15)	144.98→85(10)
41	Butachlor	9.89	176.1→146.1(10)	237.1→160.1(10)
42	Paclobutrazol	9.9	236.1→167.1(15)	238.1→127.1(15)
43	Hexythiazox	10.03	184.1→149.0(10)	227.0→149.0(10)
44	Napropamide	10.12	128.0→100.0(8)	271.0→72.0(15)
45	Hexaconazole	10.2	214.1→172.0(20)	231.1→175.0(10)

46	Pretilachlor	10.23	162.06→147.1(15)	162.06→132.1(15)
47	Isoprothiolane	10.23	290.1→204.0(15)	290.1→118.0(15)
48	Profenofos	10.29	338.95→269(20)	336.95→267.0(20)
49	Oxadiazon	10.36	304.06→260.1(10)	258.05→175.0(10)
50	Fludioxonil	10.42	248.05→154.0(20)	248.05→182.0(15)
51	Myclobutanil	10.44	179.06→152.1(15)	179.06→125.1(15)
52	Buprofezin	10.47	249.1→193.1(10)	172.1→57.0(10)
53	Flusilazole	10.47	233.07→152.1(20)	233.07→165.1(20)
54	Trifloxystrobin	10.48	131.04→130.0(10)	116.04→89.0(15)
55	Kresoxim-methyl	10.48	206.09→89.0(30)	206.9→131.1(15)
56	Carboxin	10.61	143.0→87.0(15)	235.1→143.0(15)
57	Chlorfenapyr	10.64	247.01→226.8(20)	247.01→246.6(5)
58	Cyproconazole	10.74	224.09→127.1(20)	222.09→125.1(20)
59	Diniconazole	11.00	270.06→134.1(15)	268.06→232.1(15)
60	Oxadixyl	11.09	233.0→146.0(20)	163.0→132.0(14)
61	Triazophos	11.36	257.0→162.0(10)	161.0→134.0(10)
62	Propiconazole	11.69	261.0→175.0(20)	259.0→173.0(20)
63	Clodinafop-propargyl	11.74	349.0→266.0(15)	349.0→238.0(15)
64	Tebuconazole	11.98	252.1→127.1(20)	250.1→125.1(20)
65	Propargite	11.99	173.1→135.1(12)	135.1→107.1(15)
66	Epoxiconazol	12.23	192.0→138.0(10)	192.0→111.0(10)
67	Iprodione	12.46	314.0→271.0(10)	314.0→245.0(15)
68	Bifenthrin	12.54	181.1→141.0(22)	181.1→166.1(15)
69	Lambda-Cyhalothrin	12.72	208.0→181.0(10)	181.0→152.0(23)
70	Fenpropathrin	12.72	265.1→210.1(15)	181.1→152.1(23)
71	Triticonazole	13.22	235.1→217.1(10)	235.1→182.1(10)
72	Pyriproxyfen	13.35	136.0→96.0(15)	136.0→78.0(15)
73	Pyridaben	14.42	147.0→132.0(13)	147.0→117.0(22)
74	Beta-cypermethrin	15.31	163.0→127.0(10)	181.0→152.0(25)
75	Flumioxazin	15.99	354.1→326.1(10)	287.1→259.1(15)
76	Esfenvalerate	16.16	167.0→139.0(10)	167.0→125.0(10)
77	Difenoconazole	16.5	265.0→202.0(5)	323.0→265.0(15)
78	Indoxacarb	16.58	203.0→134.0(20)	203.0→106.0(20)
79	Deltamethrin	16.72	251.0→172.0(8)	181.0→152.0(20)
80	Azoxystrobin	16.95	388.1→345.1(15)	344.1→329.1(20)
81	Dimethomorph	17.07	387.1→301.1(12)	301.1→273.1(10)
82	Famoxadone	17.21	330.1→224.1(10)	224.1→196.1(10)

Collision energy (eV) is given in parentheses.

Table S2. The concentrations of pyridaben and difenoconazole in standard solutions.

Standard solutions	0 cycle times (n=6) mg kg ⁻¹		1 cycle times-1 (n=6) mg kg ⁻¹		2 cycle times (n=6) mg kg ⁻¹	
	Pyridaben	Difenoconazole	Pyridaben	Difenoconazole	Pyridaben	Difenoconazole
Pyridaben (0.5 mg kg ⁻¹)	0.476	<0.001	0.448	<0.001	0.403	<0.001
Difenoconazole (0.5 mg kg ⁻¹)	<0.005	0.480	<0.005	0.419	<0.005	0.427

Table S3. The results of matrix effects of automated m-PFC device and d-SPE methods

pesticide	Matrix effect		Matrix effect		pesticide	Matrix effect		Matrix effect	
	mulberry leaf		mulberry tea			mulberry leaf		mulberry tea	
	m-PFC	d-SPE	m-PFC	d-SPE		m-PFC	d-SPE	m-PFC	d-SPE
Methomyl	1.38	1.50	2.68	4.19	Paclobutrazol	1.55	1.71	1.35	1.59
Dichlorvos	1.26	1.82	2.35	3.02	Hexythiazox	1.46	2.36	2.25	2.48
Trichlorfon	1.25	1.68	2.48	2.96	Napropamide	1.46	1.47	1.37	1.39
Etridiazole	1.78	2.42	2.22	3.09	Hexaconazole	1.52	1.67	1.33	1.54
Propoxur	2.60	2.49	2.61	2.90	Pretilachlor	1.38	1.44	1.29	1.44
Propachlor	1.68	1.60	1.81	1.78	Isoprothiolane	1.38	1.48	1.24	1.36
Ethoprophos	1.77	1.79	1.85	2.14	Profenofos	1.88	1.78	2.18	1.94
Trifluralin	1.29	1.28	1.47	1.47	Oxadiazon	1.14	1.26	1.16	1.16
Phorate	1.67	1.63	1.64	1.85	Fludioxonil	2.04	2.29	1.91	2.17
Atrazine	1.26	1.32	1.24	1.31	Myclobutanil	1.35	1.52	1.31	1.51
Propazine	1.23	1.30	1.21	1.28	Buprofezin	1.35	1.27	1.13	1.23
Clomazone	1.55	1.62	1.44	1.66	Flusilazole	1.41	1.51	1.25	1.47
Propyzamide	1.37	1.40	1.32	1.38	Trifloxystrobin	1.30	1.36	1.13	1.27
Triallate	1.31	1.34	1.36	1.42	Kresoxim-methyl	1.41	1.45	1.24	1.34
Pirimicarb	1.30	1.30	1.28	1.25	Carboxin	1.59	1.39	1.53	1.57
Acetochlor	1.34	1.39	1.17	1.32	Chlorfenapyr	1.19	0.94	1.19	0.93
Propisochlor	1.39	1.42	1.21	1.28	Cyproconazole	1.67	1.71	1.30	1.57
Metribuzin	1.20	1.22	1.14	1.27	Diniconazole	1.83	1.74	1.59	1.77
Tolclofos-methyl	1.27	1.36	1.24	1.35	Oxadixyl	1.29	1.37	1.35	1.41
Propanil	2.29	2.34	2.77	2.73	Triazophos	1.94	1.93	2.23	2.15
Metalaxyl	1.25	1.25	1.18	1.19	Propiconazole	1.17	1.54	1.43	1.49
Ametryne	1.25	1.32	1.14	1.23	Clodinafop-propargyl	1.84	1.84	1.57	1.76
Acephate	1.21	1.23	1.17	1.19	Tebuconazole	1.69	1.68	1.33	1.62
Prometryn	1.12	1.23	1.15	1.19	Propargite	1.43	1.45	1.33	1.42
Pirimiphos-methyl	1.22	1.35	1.20	1.27	Epoxiconazol	1.69	1.55	1.51	1.61
Fenitrothion	1.48	1.62	1.72	1.71	Iprodione	2.68	2.80	3.65	3.51
Dimethoate	1.36	1.51	3.00	1.44	Bifenthrin	1.42	1.45	1.28	1.34
Malathion	1.49	1.59	1.56	1.59	Lambda-Cyhalothrin	1.66	1.47	1.09	1.43
Metolachlor	1.25	1.30	1.19	1.24	Fenpropathrin	1.48	1.42	1.36	1.43
Chlorpyrifos	1.24	1.29	1.23	1.23	Triticonazole	1.73	1.76	1.56	1.79
Diethofencarb	1.43	1.47	1.38	1.34	Pyriproxyfen	1.52	1.58	1.35	1.47
Triadimefon	1.31	1.44	1.20	1.28	Pyridaben	1.57	1.60	1.50	1.66
Pendimethalin	1.39	1.40	1.19	1.30	Beta-cypermethrin	1.30	1.82	1.83	1.97
Thiametoxam	1.45	1.83	2.18	2.87	Flumioxazin	2.03	2.02	2.01	2.18
Fipronil	1.40	1.38	1.15	1.35	Esfenvalerate	1.86	1.67	1.60	1.64
Penconazole	1.26	1.35	1.19	1.31	Difenoconazole	1.05	1.86	1.99	2.23
Phenthoate	1.30	1.38	1.34	1.37	Indoxacarb	1.95	2.03	1.98	2.09
Procymidone	1.24	1.25	1.23	1.16	Deltamethrin	1.68	1.97	0.92	1.04
Triadimenol	1.58	1.52	1.23	1.37	Azoxystrobin	2.32	2.54	2.61	2.83

Methidathion	1.98	1.98	2.61	2.31	Dimethomorph	2.09	2.10	2.48	2.78
Butachlor	1.38	1.40	1.28	1.32	Famoxadone	2.47	2.64	2.49	2.58

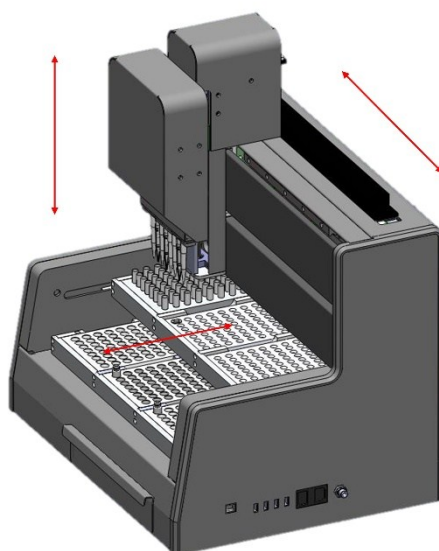


Fig. S1. The simple operation graph of automated device

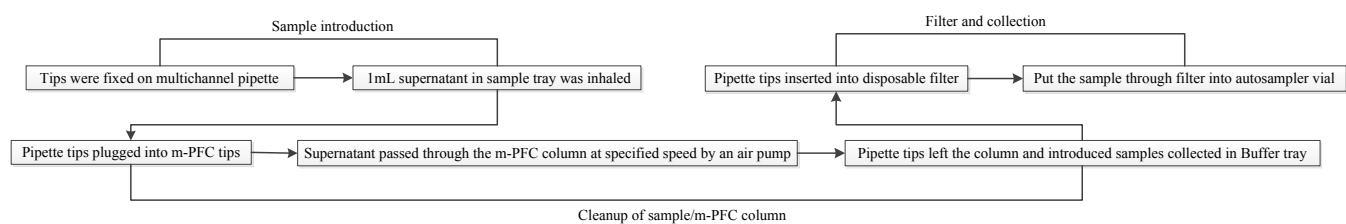


Fig. S2. The working process of automated multi-channel m-PFC device.

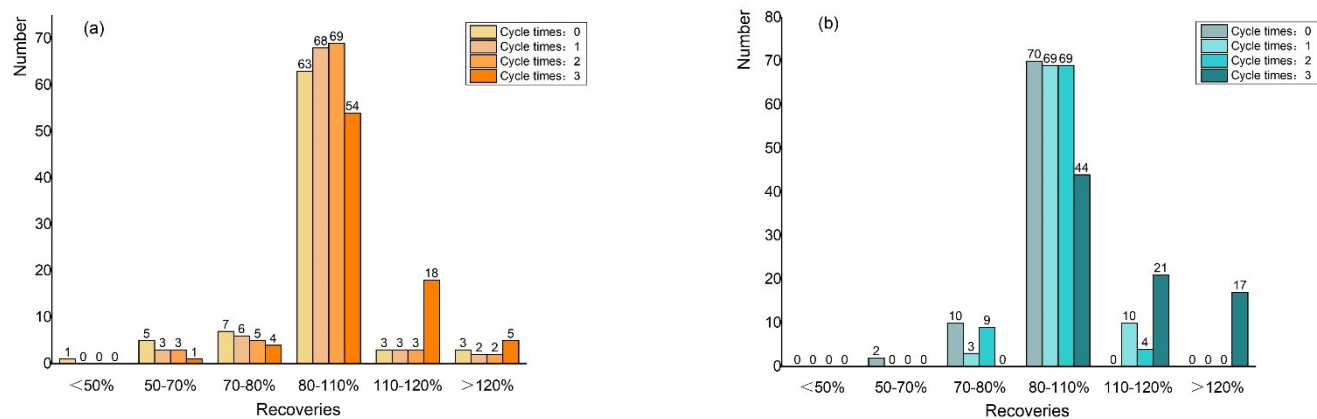


Fig. S3. Histograms (X-axis was recoveries, Y-axis was the number of pesticides) about fresh mulberry leaf (a) and mulberry processed tea (b) at different cycle times.

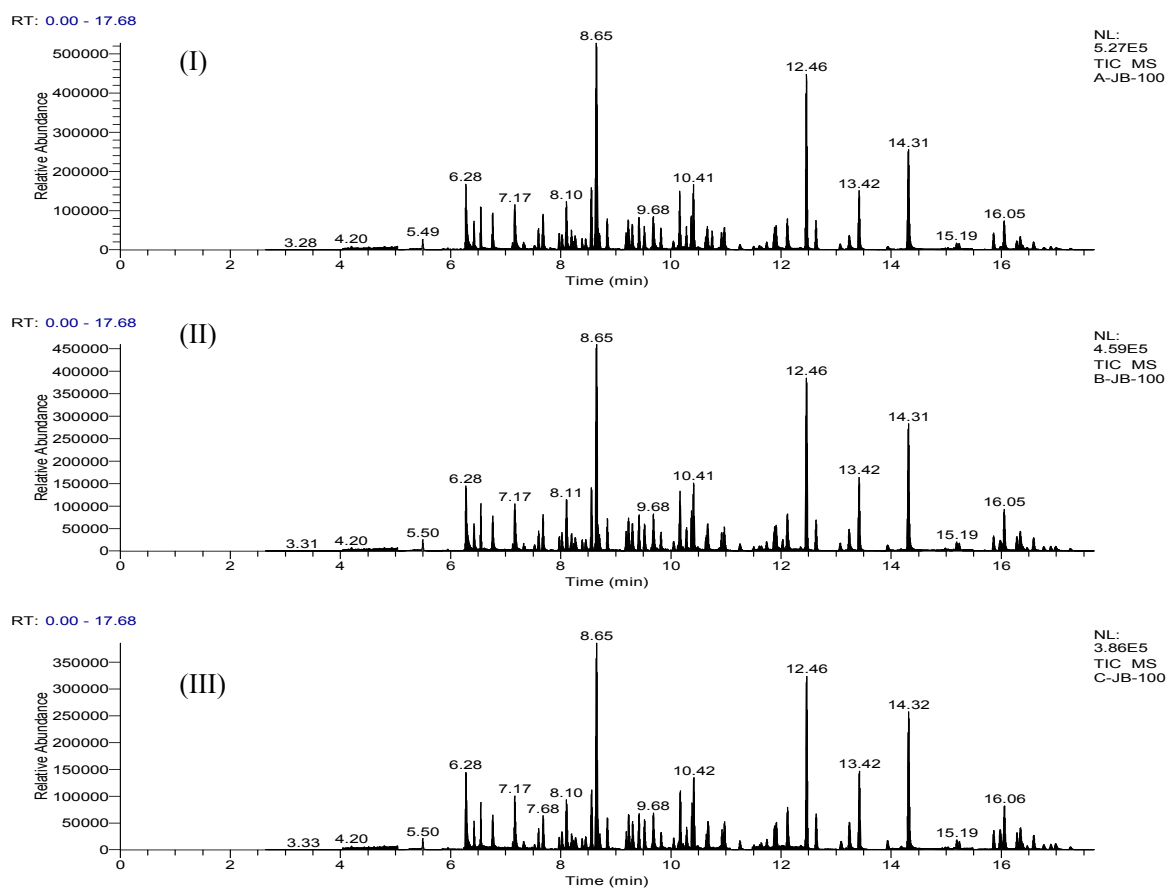


Fig. S4 The total ion chromatogram for blank mulberry processed tea sample spiked with 0.1mg kg⁻¹ of the target analytes by the three kinds of automated method. (I). Primarily automated m-PFC; (II) Automated multi-filtration cleanup; (III). Automated multi-channel m-PFC device.