Table S1   Recoveries of 12 kinds of IGRs with different purification in fruit (%) [a]

Compound	PSA/ MgSO$_4$	C$_{18}$/ MgSO$_4$	GCB/PSA/ MgSO$_4$	GCB/C$_{18}$/ PSA/MgSO$_4$	GCB/C$_{18}$/ MgSO$_4$	C$_{18}$/PSA /MgSO$_4$
Flonicamid	99.14	101.92	96.43	102.41	99.06	102.26
Cyantraniliprole	90.95	94.94	17.82	16.58	21.21	88.37
RH-5849	84.65	100.04	71.77	87.15	87.62	86.01
Chlorantraniliprole	86.63	107.08	26.01	24.11	27.49	85.09
Methoxyfenozide	86.55	92.96	76.40	83.79	85.51	86.78
Chromafenozide	88.00	93.52	83.98	83.90	82.61	86.26
Fenoxycarb	86.72	93.35	81.56	80.87	82.93	89.07
Tebufenozide	88.87	98.71	82.64	84.66	82.43	86.79
Flubendiamide	79.90	96.70	79.69	91.98	87.46	98.09
Buprofezin	89.38	96.36	85.03	82.54	87.28	88.96
Tolfenpyrad	89.39	96.73	53.79	50.03	55.41	85.82
Pyriproxyfen	80.76	90.12	64.40	60.06	69.14	80.05

[a] C$_{18}$: 0.1g, PSA: 0.1g, GCB: 0.1g; MgSO$_4$: 0.3g

Table S2   Recoveries of 12 kinds of IGRs with different purification in vegetable oil (%) [b]

Compound	C$_{18}$	MgSO$_4$	PSA	MgSO$_4$/PSA	MgSO$_4$/C$_{18}$	C$_{18}$/PSA	C$_{18}$/PSA/MgSO$_4$
Flonicamid	84.84	82.62	73.71	91.71	85.47	77.76	79.75
Cyantraniliprole	78.72	78.36	66.87	97.77	78.71	69.77	77.85
RH-5849	89.22	71.43	78.60	85.86	79.85	78.01	88.47
Chlorantraniliprole	82.25	83.03	61.98	104.05	69.06	75.43	78.40
Methoxyfenozide	73.92	67.96	65.73	90.76	70.63	73.54	74.87
Chromafenozide	73.35	71.82	62.41	92.33	67.29	70.74	74.53
Fenoxycarb	68.40	70.65	58.33	89.41	64.89	66.10	67.76
Tebufenozide	71.26	70.97	62.81	94.86	65.84	71.95	72.52
Flubendiamide	83.23	75.13	73.79	105.85	77.42	72.20	80.55
Buprofezin	60.09	61.85	53.52	81.71	58.79	57.77	57.22
Tolfenpyrad	49.12	51.49	43.49	65.90	45.39	47.66	47.83
Pyriproxyfen	41.47	45.22	38.84	60.34	41.78	42.44	42.08

[b] C$_{18}$: 0.1g, PSA: 0.1g, MgSO$_4$: 0.3g

Table S3   Recoveries of 12 kinds of IGRs with different purification in tea (%)

Compound	MgSO$_4$/0.3 g				
	C$_{18}$/ 0.2g	PSA/ 0.2g	PSA+C$_{18}$/ 0.1g+0.2g	PSA+C$_{18}$/ 0.2g+0.2g	PSA+C$_{18}$/ 0.3g+0.2g
Flonicamid	58.65	49.89	62.97	70.63	59.88
Cyantraniliprole	60.35	54.78	74.99	71.06	65.27
RH-5849	63.58	56.34	87.81	73.79	71.65
Chlorantraniliprole	65.48	58.23	88.45	71.57	64.69
Methoxyfenozide	71.97	63.95	91.15	77.74	70.63
Chromafenozide	74.06	63.65	88.21	80.80	72.83
Fenoxycarb	89.15	67.23	94.27	82.99	80.63
Tebufenozide	74.08	62.52	89.44	79.71	71.79
Flubendiamide	78.87	65.84	87.62	84.66	67.20
Buprofezin	82.23	60.32	89.11	80.43	74.03
Tolfenpyrad	118.79	188.77	110.81	190.97	142.49
Pyriproxyfen	89.71	60.89	90.37	81.90	76.57

Table S4 Linear range, linear equations, LODs and LOQs of 12 IGRs in fruit

Compound	Linear range (μg·L⁻¹)	Calibration curve	R^2	LOD (μg·kg⁻¹)	LOQ (μg·kg⁻¹)
Flonicamid	0.2 ~ 200	$y = 24997.33x + 1302.71$	0.9999	0.55	1.84
Cyantraniliprole	0.2 ~ 200	$y=22423.46x + 6437.74$	0.9999	0.84	2.81
RH-5849	0.2 ~ 200	$y=90306.44x + 82718.90$	0.9997	0.11	0.36
Chlorantraniliprole	0.2 ~ 200	$y=28310.61x + 4315.26$	0.9998	0.17	0.54
Methoxyfenozide	0.2 ~ 200	$y=198676.58x + 174721.83$	0.9998	0.18	0.57
Chromafenozide	0.2 ~ 200	$y=251686.57x + 210908.47$	0.9997	0.40	1.33
Fenoxycarb	0.2 ~ 200	$y=145366.36x + 11218.96$	0.9999	0.25	0.81
Tebufenozide	0.2 ~ 200	$y=180928.60x + 260054.69$	0.9996	0.29	0.93
Flubendiamide	0.2 ~ 200	$y= 22,246.45x + 4335.81$	0.9995	0.19	0.64
Buprofezin	0.2 ~ 200	$y=458808.92x + 818010.26$	0.9996	0.07	0.24
Tolfenpyrad	0.2 ~ 200	$y=146371.94x + 8859.75$	0.9998	0.09	0.30
Pyriproxyfen	0.2 ~ 200	$y=114387.95x + 75362.58$	0.9996	0.12	0.37

Table S5 Linear range, linear equations, LODs and LOQs of 12 IGRs in Tea

Compound	Linear range (μg·L⁻¹)	Calibration curve	R^2	LOD (μg·kg⁻¹)	LOQ (μg·kg⁻¹)
Flonicamid	0.5 ~ 200	$y= 7076.89x+ 3536.25$	0.9999	1.17	3.91
Cyantraniliprole	0.5 ~ 200	$y= 18712.27x+ 5709.81$	0.9999	0.06	0.19
RH-5849	0.2 ~ 200	$y= 130864.25x+ 105866.21$	0.9997	0.06	0.21
Chlorantraniliprole	0.2 ~ 200	$y= 38141.83x- 21947.54$	0.9990	0.49	1.62
Methoxyfenozide	0.2 ~ 200	$y= 205378.50x+ 182938.50$	0.9996	0.03	0.11
Chromafenozide	0.2 ~ 200	$y= 251364.24x + 465414.96$	0.9990	0.03	0.11
Fenoxycarb	0.2 ~ 200	$y= 155347.23x + 78372.29$	0.9997	0.05	0.17
Tebufenozide	0.2 ~ 200	$y= 200712.14x- 19897.48$	0.9996	0.04	0.12
Flubendiamide	0.2 ~ 200	$y= 20757.70x+ 9172.73$	0.9997	0.04	0.12
Buprofezin	0.2 ~ 200	$y= 591392.16x+ 560028.28$	0.9991	0.07	0.22
Tolfenpyrad	0.5 ~ 200	$y=151573.37x+56238.40$	0.9998	0.32	1.07
Pyriproxyfen	0.5 ~ 200	$y= 114534.19x - 14343.71$	0.9999	0.06	0.19

Table S6 Analytical results of fruit samples （μg·kg⁻¹）

Fruit	Flonicamid	Cyantraniliprole	RH-5849	Chlorantraniliprole	Buprofezin	Tolfenpyrad
Pear	-	3.28	-	-	1.26	-
Peach 1	-	-	-	-	0.32	1.63
Peach 2	-	-	-	-	-	-
Grape 1	-	-	-	0.14	0.32	-
Grape 2	-	-	-	-	-	-
Blueberry	-	-	-	-	0.17	-
Strawberry 1	-	-	-	-	-	-
Strawberry 2	2.34	-	0.20	0.19	-	-
Apple	-	-	-	0.18	-	-
Grapefruit	-	-	-	-	-	-
Ugly orange	-	-	-	-	-	-
Kiwifruit	-	-	-	0.15	-	-

-lower than the LOD

Table S7 Analytical results of tea samples（μg·kg^{-1}）

Tea	Chlorantraniliprole	Buprofezin,	Tolfenpyrad
White tea	-	6.35	1.09
Green tea 1	-	0.47	0.83
Green tea 2	0.76	38.60	391.843
Lung Ching tea	-	1.51	44.19
Rose 1	1.04	0.34	-
Rose 2	1.52	0.18	-
Rose 3	-	-	-
Chrysanthemum	0.74	0.24	1.07
Jasmine Flower	84.72	0.91	1.11
Jasmine Tea	-	6.11	161.54
Jasmine tip	-	0.63	8.17
Dianhong	-	0.20	5.19
Liubao tea	-	8.14	55.42
Tieguanyin 1	-	15.57	16.38
Tieguanyin 2	-	5.71	0.34
Six fort tea	-	-	0.63
Peach iced tea	-	0.31	-
Tieguanyin 1	1.09	16.81	934.86
Tieguanyin 2	-	1.98	314.08
Six fort tea	-	8.13	55.42
Peach iced tea	-	0.38	-
Tea bag 1	1.17	0.89	3.82
Tea bag 2	-	0.21	1.30
Tea bag 3	1.66	4.08	1125.15

-lower than the LOD