

**Anresco Cannabis Multiresidue Analysis via GCMSMS and LCMSMS**

QuEChERS with modification, AOAC Official Method 2007.01 and J.Agric. Food Chem, 2010, 58, 5959-5972

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	<b>Compound Name</b>	<b>Instrument</b>	<b>Prop. 65</b>	<b>Category I CA Proposed Regulation Action Level/Anresco LoQ in ppm</b>	<b>Category II Inhalable CA Proposed Regulation Action Level/Anresco LoQ (ppm)</b>	<b>Category II Other Products CA Proposed Regulation Action Level/Anresco LoQ (ppm)</b>	<b>Estimated LoD range for various sample matrix</b>
1	Aldicarb	LCMSMS		NA/0.10			0.05 to 0.5
2	Carbofuran	LCMSMS		NA/0.10			0.05 to 0.5
3	Chlordane cis	GCMSMS		NA/0.50			0.05 to 0.5
4	Chlordane trans	GCMSMS		NA/0.50			0.05 to 0.5
5	Chlorfenapyr	GCMSMS		NA/0.50			0.05 to 0.5
6	Chlorpyrifos	GCMSMS	x	NA/0.50			0.05 to 0.5
7	Coumaphos	GCMSMS		NA/1.0			0.05 to 0.5
8	Dichlorvos	GCMSMS		NA/0.50			0.05 to 0.5
9	Dimethoate	LCMSMS		NA/0.50			0.05 to 0.5
10	Ethoprophos	GCMSMS	x	NA/0.50			0.05 to 0.5
11	Ethylan	GCMSMS		NA/0.50			0.05 to 0.5
12	Fenoxycarb	LCMSMS		NA/0.50			0.05 to 0.5
13	Fipronil	GCMSMS		NA/0.50			0.05 to 0.5
14	Imazalil	LCMSMS	x	NA/0.50			0.05 to 0.5
15	Methiocarb	LCMSMS		NA/0.50			0.05 to 0.5
16	Mevinphos	GCMSMS/LCMSMS		NA/0.50			0.05 to 0.5
17	Paclobutrazol	GCMSMS		NA/0.50			0.05 to 0.5
18	Parathion	GCMSMS		NA/0.50			0.05 to 0.5
19	Propoxur	LCMSMS	x	NA/0.50			0.05 to 0.5
20	Spiroxamine	LCMSMS		NA/0.50			0.05 to 0.5
21	Thiaclorprid	LCMSMS		NA/0.50			0.05 to 0.5
22	<b>Abamectin (a,c)</b>	<b>LCMSMS</b>	<b>x</b>		<b>0.10/0.10</b>	<b>0.30/0.30</b>	0.05 to 0.5
23	Acephate	LCMSMS			0.10/0.10	5.0/1.0	0.05 to 0.5
24	Acequinocyl	LCMSMS			0.10/0.10	4.0/1.0	0.05 to 0.5
25	Acetamiprid	LCMSMS			0.10/0.10	5.0/1.0	0.05 to 0.5
26	Azoxystrobin	LCMSMS			0.10/0.10	40.0/1.0	0.05 to 0.5
27	Bifenazate	LCMSMS			0.10/0.10	5.0/1.0	0.05 to 0.5
28	Bifenthrin	GCMSMS			3.0/0.50	0.50/0.50	0.05 to 0.5
29	Boscalid	LCMSMS			0.10/0.10	10.0/1.0	0.05 to 0.5
30	<b>Captan (a)</b>	<b>GC-ECD</b>	<b>x</b>		<b>0.70/0.70</b>	<b>5.0/2.0</b>	0.05 to 0.5
31	Carbaryl	LCMSMS	x		0.50/0.10	0.50/0.50	0.05 to 0.5
32	Chlorantraniliprole	LCMSMS			10/0.10	40.0/1.0	0.05 to 0.5
33	Clofentezine	LCMSMS			0.10/0.10	0.50/0.50	0.05 to 0.5
34	Cyfluthrin	GCMSMS			2.0/2.0	1.0/1.0	0.05 to 0.5
35	Cypermethrin	GCMSMS			1.0/1.0	1.0/1.0	0.05 to 0.5
36	Diazinon	GCMSMS/LCMSMS			0.10/0.10	0.20/0.20	0.05 to 0.5
37	Dimethomorph	LCMSMS			2.0/0.10	20.0/1.0	0.05 to 0.5
38	Etoxazole	LCMSMS			0.10/0.10	1.50/1.0	0.05 to 0.5
39	Fenhexamid	GCMSMS			0.10/0.10	10.0/1.0	0.05 to 0.5
40	Fenpyroximate	LCMSMS			0.10/0.10	2.0/1.0	0.05 to 0.5
41	Flonicamid	LCMSMS			0.10/0.10	2.0/1.0	0.05 to 0.5
42	Fludioxanil	GCMSMS			0.10/0.10	30.0/1.0	0.05 to 0.5
43	<b>Hexythiazox (a)</b>	<b>LCMSMS</b>			<b>0.10/0.10</b>	<b>2.0/1.0</b>	0.05 to 0.5
44	Imidacloprid	LCMSMS			5.0/0.10	3.0/1.0	0.05 to 0.5
45	Kresoxim Methyl	LCMSMS			0.10/0.10	1.0/1.0	0.05 to 0.5

46	Malathion	GCMSMS			0.50/0.50	5.0/1.0	0.05 to 0.5
47	Metalaxyl	GCMSMS/LCMSMS			2.0/0.10	15.0/1.0	0.05 to 0.5
48	Methomyl	LCMSMS			1.0/0.10	0.1/0.10	0.05 to 0.5
49	Myclobutanil	GCMSMS/LCMSMS	x		0.10/0.10	9.0/1.0	0.05 to 0.5
50	<b>Naled (b)</b>	<b>GC-FPD</b>			<b>0.10/0.10</b>	<b>0.5/0.5</b>	0.05 to 0.5
51	Oxamyl	LCMSMS			0.50/0.10	0.2/0.2	0.05 to 0.5
52	Pentachloronitrobenzene	GCMSMS			0.10/0.10	0.20/0.20	0.05 to 0.5
53	Permethrins	GCMSMS			0.50/0.50	20.0/1.0	0.05 to 0.5
54	Phosmet	GCMSMS			0.10/0.10	0.20/0.20	0.05 to 0.5
55	Piperonyl Butoxide	GCMSMS/LCMSMS			3.0/0.10	8.0/1.0	0.05 to 0.5
56	<b>Prallethrin</b>	<b>GC-ECD</b>			<b>0.10/0.10</b>	<b>0.40/0.40</b>	0.05 to 0.5
57	Propiconazole	LCMSMS			0.10/0.10	20.0/1.0	0.05 to 0.5
58	Pyrethrins	LCMSMS			0.50/0.50	1.0/1.0	0.05 to 0.5
59	Pyridaben	GCMSMS			0.10/0.10	3.0/1.0	0.05 to 0.5
60	Spinetoram	LCMSMS			0.10/0.10	3.0/1.0	0.05 to 0.5
61	Spinosad	LCMSMS			0.10/0.10	3.0/1.0	0.05 to 0.5
62	Spiromesifen	LCMSMS			0.10/0.10	12.0/1.0	0.05 to 0.5
63	Spirotetramat	LCMSMS			0.10/0.10	13.0/1.0	0.05 to 0.5
64	Tebuconazole	GCMSMS/LCMSMS			0.10/0.10	2.0/1.0	0.05 to 0.5
65	Thiamethoxam	LCMSMS			5.0/1.0	4.5/1.0	0.05 to 0.5
66	Trifloxystrobin	LCMSMS			0.10/0.10	30.0/1.0	0.05 to 0.5
67	2-Phenylphenol	GCMSMS	x				0.05 to 0.5
68	3-Hydroxycarbofuran	LCMSMS					0.05 to 0.5
69	4,4'-Methoxychlor olefin	GCMSMS					0.05 to 0.5
70	5-OH Thiabendazole	LCMSMS					0.05 to 0.5
71	Acetochlor	GCMSMS					0.05 to 0.5
72	Alachlor	GCMSMS	x				0.05 to 0.5
73	Aldicarb Sulfone	LCMSMS					0.05 to 0.5
74	Aldicarb sulfoxide	LCMSMS					0.05 to 0.5
75	Aldrin	GCMSMS					0.05 to 0.5
76	Atrazine	GCMSMS					0.05 to 0.5
77	Benfluralin	GCMSMS					0.05 to 0.5
78	BHC alpha	GCMSMS					0.05 to 0.5
79	BHC beta	GCMSMS					0.05 to 0.5
80	Bitertanol	LCMSMS					0.05 to 0.5
81	Buprofezin	GCMSMS					0.05 to 0.5
82	Carbendazim (MBC)	LCMSMS					0.05 to 0.5
83	Carfentrazone ethyl	GCMSMS					0.05 to 0.5
84	Chlorobenzilate	GCMSMS					0.05 to 0.5
85	Chlorotoluron	LCMSMS					0.05 to 0.5
86	Chlorpropham	GCMSMS					0.05 to 0.5
87	Chlorpyrifos methyl	GCMSMS					0.05 to 0.5
88	Chlorthiophos	GCMSMS					0.05 to 0.5
89	Clethodim	LCMSMS					0.05 to 0.5
90	Clomazone	GCMSMS					0.05 to 0.5
91	Clothianidin	LCMSMS					0.05 to 0.5
92	Cyazofamid	LCMSMS					0.05 to 0.5
93	Cymoxanil	LCMSMS					0.05 to 0.5
94	Cyprodinil	GCMSMS/LCMSMS					0.05 to 0.5
95	Cyromazine	LCMSMS					0.05 to 0.5
96	DCPA (Dacthal)	GCMSMS					0.05 to 0.5
97	Diallate	GCMSMS					0.05 to 0.5
98	Dieldrin	GCMSMS					0.05 to 0.5
99	Diflubenzuron	LCMSMS					0.05 to 0.5
100	Dimethachlor	GCMSMS					0.05 to 0.5

101	Diniconazole	LCMSMS					0.05 to 0.5
102	Dinotefuran	LCMSMS					0.05 to 0.5
103	Diphenamid	GCMSMS					0.05 to 0.5
104	Diphenylamine (DPA)	GCMSMS					0.05 to 0.5
105	Diuron	LCMSMS	x				0.05 to 0.5
106	Esfenvalerate	GCMSMS					0.05 to 0.5
107	Ethalfuralin	GCMSMS					0.05 to 0.5
108	Etofenprox	GCMSMS					0.05 to 0.5
109	Etoxazole	LCMSMS					0.05 to 0.5
110	Etridazole	GCMSMS					0.05 to 0.5
111	Fenarimol	GCMSMS					0.05 to 0.5
112	Fenbuconazole	LCMSMS					0.05 to 0.5
113	Fenpropimorph	LCMSMS					0.05 to 0.5
114	Fenthion	GCMSMS					0.05 to 0.5
115	Fenvalerate	GCMSMS					0.05 to 0.5
116	Fluazifop-P-butyl	GCMSMS	x				0.05 to 0.5
117	Flubendiamide	LCMSMS					0.05 to 0.5
118	Fluchloralin	GCMSMS					0.05 to 0.5
119	Flucythrinate	GCMSMS					0.05 to 0.5
120	Fluoxastrobin	LCMSMS					0.05 to 0.5
121	Flusilazole	GCMSMS					0.05 to 0.5
122	Flutolanil	GCMSMS					0.05 to 0.5
123	Flutolanil	LCMSMS					0.05 to 0.5
124	Flutriafol	GCMSMS/LCMSMS					0.05 to 0.5
125	Fonofos	GCMSMS					0.05 to 0.5
126	Formetanate Hydrochloride	LCMSMS					0.05 to 0.5
127	Heptachlor	GCMSMS					0.05 to 0.5
128	Hexachlorobenzene	GCMSMS					0.05 to 0.5
129	Hexaconazole	LCMSMS					0.05 to 0.5
130	Hexazinone	GCMSMS					0.05 to 0.5
131	Indoxacarb	LCMSMS					0.05 to 0.5
132	Isazophos	GCMSMS					0.05 to 0.5
133	Isopropalin	GCMSMS					0.05 to 0.5
134	Isoproturon	LCMSMS					0.05 to 0.5
135	Lindane	GCMSMS	x				0.05 to 0.5
136	Linuron	LCMSMS	x				0.05 to 0.5
137	Mandipropamid	LCMSMS					0.05 to 0.5
138	Methamidophos	LCMSMS					0.05 to 0.5
139	Methoxychlor	GCMSMS					0.05 to 0.5
140	Methoxyfenozide	LCMSMS					0.05 to 0.5
141	Metolachlor	GCMSMS					0.05 to 0.5
142	MGK 264	GCMSMS/LCMSMS					0.05 to 0.5
143	Mirex	GCMSMS					0.05 to 0.5
144	Novaluron	LCMSMS					0.05 to 0.5
145	Omethoate	LCMSMS					0.05 to 0.5
146	Oxadiazon	GCMSMS	x				0.05 to 0.5
147	Oxyflourfen	GCMSMS					0.05 to 0.5
148	Parathion Methyl	GCMSMS					0.05 to 0.5
149	Pebulate	GCMSMS					0.05 to 0.5
150	Penconazole	GCMSMS					0.05 to 0.5
151	Pendimethalin	GCMSMS					0.05 to 0.5
152	Pentachloroaniline	GCMSMS					0.05 to 0.5
153	Pentachloroanisole	GCMSMS					0.05 to 0.5
154	Pentachlorobenzene	GCMSMS					0.05 to 0.5
155	Pentachlorobenzonitrile	GCMSMS					0.05 to 0.5

156	Pirimicarb	LCMSMS				0.05 to 0.5
157	Pirimiphos methyl	GCMSMS				0.05 to 0.5
158	Pirimiphos-ethyl	GCMSMS				0.05 to 0.5
159	Pretilachlor	GCMSMS				0.05 to 0.5
160	Prochloraz	LCMSMS				0.05 to 0.5
161	Procymidone	GCMSMS				0.05 to 0.5
162	Propamocarb	LCMSMS				0.05 to 0.5
163	Propargite	LCMSMS	x			0.05 to 0.5
164	Propisochlor	GCMSMS				0.05 to 0.5
165	Propyzamide	GCMSMS	x			0.05 to 0.5
166	Prothiofos	GCMSMS				0.05 to 0.5
167	Pymetrozine	LCMSMS				0.05 to 0.5
168	Pyraclostrobin	LCMSMS				0.05 to 0.5
169	Pyrimethanil	GCMSMS				0.05 to 0.5
170	Pyriproxyfen	LCMSMS				0.05 to 0.5
171	Quinalphos	GCMSMS				0.05 to 0.5
172	Quintozene	GCMSMS				0.05 to 0.5
173	Sulfentrazone	LCMSMS				0.05 to 0.5
174	Sulfotep	GCMSMS				0.05 to 0.5
175	Tau-Fluvalinate	GCMSMS	x			0.05 to 0.5
176	Tebufenozide	LCMSMS				0.05 to 0.5
177	Tecnazene	GCMSMS				0.05 to 0.5
178	Tefluthrin	GCMSMS				0.05 to 0.5
179	Terbutylazine	GCMSMS				0.05 to 0.5
180	Tetrachloroaniline, 2,3,5,6-	GCMSMS				0.05 to 0.5
181	Tetradifon	GCMSMS				0.05 to 0.5
182	Thiobencarb	LCMSMS				0.05 to 0.5
183	Tolclofos-methyl	GCMSMS				0.05 to 0.5
184	Transfluthrin	GCMSMS				0.05 to 0.5
185	Triadimefon	LCMSMS	x			0.05 to 0.5
186	Triallate	GCMSMS				0.05 to 0.5
187	Trichlorfon	LCMSMS				0.05 to 0.5
188	Tricyclazole	LCMSMS				0.05 to 0.5
189	Triflumizole	LCMSMS				0.05 to 0.5
190	Trifluralin	GCMSMS				0.05 to 0.5
191	Vamidothion	LCMSMS				0.05 to 0.5
192	Vinclozolin	GCMSMS	x			0.05 to 0.5
	<b>Daminozide (a,b)</b>	<b>LCMSMS</b>	<b>x specific</b>	<b>1.0 - 2.0 ppm</b>		<b>0.5</b>

a. these compounds tend to be low in recovery or observed instrument ion suppression.

b. compound requires specific testing procedure, not part of routine analysis.

c. compound recovery vary due to sample matrix type. Specific clean up method requires to have acceptable result.

**Note:** some compounds can be detected using both GCMSMS and LCMSMS, LoD is approximately 2 -3 times lower than LoQ.

#### Common Specialty Analyses not part of

No.	Common or Chemical Name	Instrument	Estimated
1	Aflatoxins	LCMSMS	20 ppb
2	Ochratoxin	LCMSMS	20 ppb
3	Benomyl	LCMSMS	1.0 ppm
4	Daminozide	LCMSMS	1.0 ppm
5	Ethephon	GC or LCMSMS	1.0 ppm
6	Fosetyl-Al (Aliette)	LCMSMS	1.0 ppm
7	Glyphosate	LCMSMS	1.0 ppm
8	Maneb/EBDC	LCMSMS	1.0 ppm

Note: the Estimated