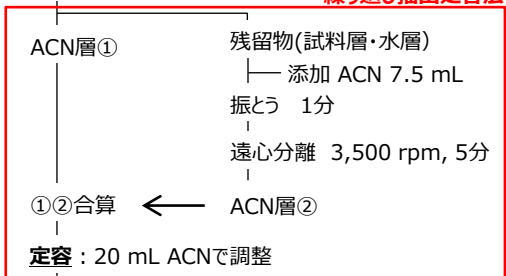


日本酒

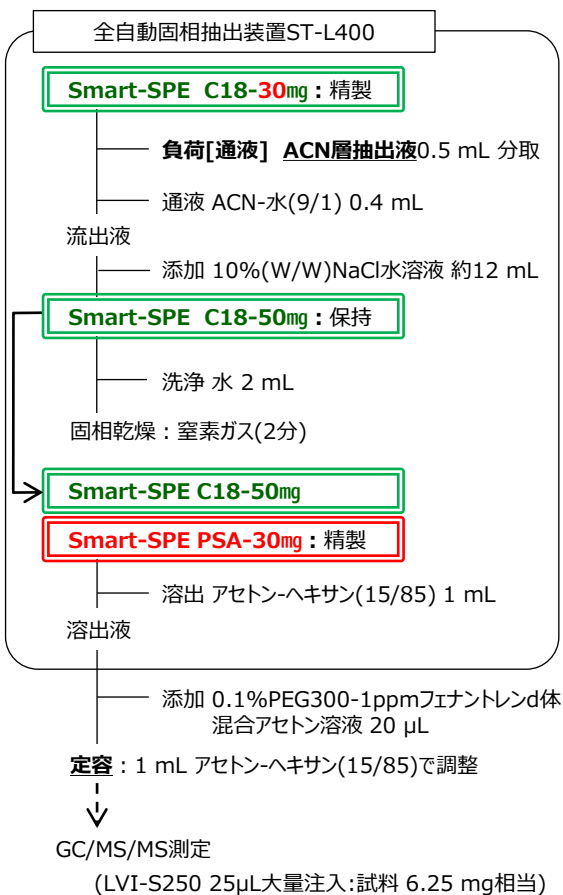
STQ-GC-B1法 (全自動固相抽出装置ST-L400)

前処理フロー

- 試料採取 10 g ※ ACN : アセトニトリル
 - 添加 2 ppm 混合標準溶液 100μL
- 混和
 - 添加 アセトニトリル 10 mL
- 混和
 - 添加 塩化ナトリウム 1 g
 - 添加 クエン酸3Na2水和物 1 g
 - 添加 クエン酸水素2Na1.5水和物 0.5 g
- 振とう溶解 10秒
 - 添加 無水硫酸マグネシウム 4 g
- 振とう 1分
- 遠心分離 3,500 rpm, 5分 **繰り返し抽出定容法**

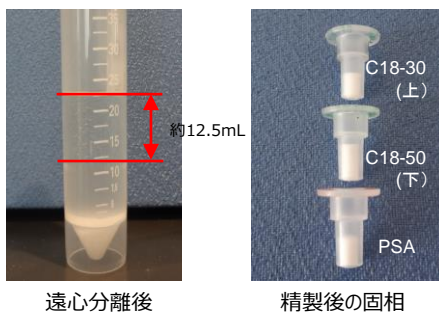


ACN層抽出液



実験方法

- 添加濃度 (試料中) : **0.02 ppm**
- 最終バイアル中濃度 : **5 ppb**
- 標準溶液 : * いずれも林純薬工業製
 - ・ PL2005農薬GC/MS MIX- I, II, III, IV, V, VI, 7
- 検量線 :
 - ・ 1点 : 5ppb(PEG共注入標準溶液、直線検量線)
 - ・ 20ppbフェナントレンド体/20ppmPEG /混合標準溶液 (アセトン-ヘキサン)
 - * フェナントレンド体は装置の感度確認 (定量値補正なし)
- 使用機器 :



前処理ポイント

試料を直接固相に負荷すると疎水性農薬の回収率が低下します。ACN抽出した場合遠心後のACN層が10mLを超えるので繰り返し抽出定容法を行います。

結果

繰り返し抽出定容法により対象成分353成分のうち333成分で良好な回収率と再現性が得られました。



全自動固相抽出装置 ST-L400 For STQ Method

Sample



Information

主な原材料
米、米こうじなど
アルコール 14%以上
15%未満

水分含量 83.6%

【出典】
食品成分データベース
<http://fooddb.mext.go.jp/>

Key Word

残留農薬分析
STQ法
自動前処理装置
固相抽出

AiSTI SCIENCE

Product

LVI-S250
ST-L400
Smart-SPE C18-30
Smart-SPE C18-50
Smart-SPE PSA-30

株式会社アイステイサイエンス
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No.	化合物名	回収率 (%)	RSD (%)	No.	化合物名	回収率 (%)	RSD (%)	No.	化合物名	回収率 (%)	RSD (%)	No.	化合物名	回収率 (%)	RSD (%)
1	Acetochlor	90	3.5	91	Cypermethrin-3	78	1.5	181	Fluthiacet-Methyl	88	1.7	271	Prohydrojasmon-1	88	2.6
2	Acrinathrin	67	7.3	92	Cypermethrin-4	79	6.2	182	Flutolanil	82	2.6	272	Prohydrojasmon-2	89	9.2
3	Alachlor	90	0.9	93	Cyproconazole-1	82	4.6	183	Flutriafol	61	8.2	273	Propetryn	88	4.9
4	Allethrin-1,2	80	10.7	94	Cyproconazole-2	78	4.7	184	Fluvalinate-1	85	4.7	274	Propachlor	86	1.4
5	Allethrin-3,4	87	3.0	95	Cyprodinil	87	1.3	185	Fluvalinate-2	82	5.4	275	Propanil	72	8.7
6	Allidochlor	45	3.0	96	DCIP	79	0.2	186	Folpet ²⁾	54	分解	276	Propaphos	88	0.9
7	Ametryn	85	2.3	97	Deltamethrin	87	8.3	187	Fonofos	86	1.4	277	Propargite-1,2	83	2.6
8	Anilofos	88	3.2	98	Demeton-S-Methyl	85	7.3	188	Formothion	57	8.1	278	Propazine	92	3.4
9	Atrazine	92	6.8	99	Dialifos	91	4.5	189	Fosthiazate-1	87	4.7	279	Propiconazole-1	117	2.1
10	Azaconazole	78	1.6	100	Di-Allate-1	88	1.0	190	Fosthiazate-2	77	4.5	280	Propiconazole-2	91	2.8
11	Azamehthippos	60	9.0	101	Di-Allate-2	91	2.1	191	Fthalide	89	2.7	281	Propoxur	82	1.6
12	Azinphos-Ethyl	86	2.0	102	Diazinon	89	5.5	192	Furametpyr	87	2.8	282	Propyzamide	89	1.5
13	Azinphos-Methyl	86	2.0	103	Dichlobenil	82	0.2	193	Furametpyr (Metabolite)	77	8.1	283	Prothiofos	73	4.5
14	Benalaxyl	87	3.3	104	Dichlobutrazol	78	4.2	194	Furilazole	90	5.9	284	Pyraclofos	110	3.4
15	Benfluralin	83	6.8	105	Dichlofenthion	83	1.7	195	Halifenpro	77	7.5	285	Pyraclostrobin	89	2.8
16	Benfuratese	90	1.5	106	Dichlofluanid ²⁾	58	分解	196	Hexaconazole	83	2.2	286	Pyrimiflufen Ethyl	93	10.0
17	Benoxacor	89	1.5	107	Dichlofluanid (Metabolite)	73	10.6	197	Hexazione	67	7.5	287	Pyrazoxfos	85	4.5
18	Bhc (Alpha)	90	1.9	108	Dichloran	88	5.4	198	Imibenconazole	84	3.0	288	Pyrazoxyfen	89	2.4
19	Bhc (Beta)	88	1.8	109	Dichlorvos	79	1.0	199	Imzamehthabenz-Methyl-1	70	6.7	289	Pyributicarb	82	4.2
20	Bhc (Delta)	91	0.2	110	Diclocymet-1	92	2.8	200	Imzamehthabenz-Methyl-2	69	5.6	290	Pyridaben	85	3.4
21	Bhc (Gamma)	84	1.8	111	Diclocymet-2	90	2.0	201	Indanofan	87	3.8	291	Pyridafenthion	91	4.8
22	Bifenazate	104	4.8	112	Diclofop-Methyl	84	2.2	202	Indoxacarb	86	3.6	292	Pyrifenoxy-E	82	6.2
23	Bifenox	84	5.4	113	Diethofencarb	85	4.1	203	Iprobenfos	85	4.4	293	Pyrifenoxy-Z	85	1.1
24	Bifenthrin	77	3.2	114	Difenoconazole-1	87	6.8	204	Iprodione	70	4.9	294	Pyrimethanil	84	2.2
25	Biphenyl	76	1.1	115	Difenoconazole-2	88	4.6	205	Iprodione (Metabolite)	95	2.5	295	Pyrimidifen	87	2.1
26	Bitertanol-1	81	3.7	116	Diflufenican	86	4.7	206	Isazofos	92	2.7	296	Pyriminobac-Methyl-E	92	8.5
27	Bitertanol-2 ³⁾	-	-	117	Dimepiperate	89	2.1	207	Isocarboxphos	87	3.0	297	Pyriminobac-Methyl-Z	103	6.2
28	Bromobutide	86	3.1	118	Dimethametryn	85	1.7	208	Isofenphos	86	3.0	298	Pyriproxyfen	84	4.5
29	Bromoconazole-1	80	2.0	119	Dimethenamid	87	2.0	209	Isofenphos Oxon	79	4.9	299	Pyroquilon	71	2.3
30	Bromoconazole-2	85	2.7	120	Dimethomorph-1	87	4.1	210	Isoprocab	86	1.7	300	Quinalphos	89	2.1
31	Bromofos Methyl	87	3.4	121	Dimethomorph-2	86	5.7	211	Isoprothiolane	86	3.8	301	Quinoclamine	74	5.4
32	Bromophos-Ethyl	79	2.6	122	Dimethylvinphos-E	89	3.1	212	Isoxadifen-Ethyl	90	1.6	302	Quinoxifen	87	3.7
33	Bromopropylate	81	4.4	123	Dimethylvinphos-Z	90	2.6	213	Isoxathion	83	2.8	303	Quintozene	83	2.9
34	Bupirimate	88	7.2	124	Diniconazole	77	9.8	214	Kresoxim-Methyl	87	3.5	304	Quizalofop-Ethyl	86	4.0
35	Buprofezin	91	6.7	125	Dioxathion	87	3.4	215	Lenacil	77	6.0	305	Resmethrin-1	80	3.3
36	Butachlor	85	1.8	126	Dioxathion (Decomposite)	89	3.3	216	Leptophos	79	0.5	306	Resmethrin-2	79	3.3
37	Butafenacil	92	3.4	127	Diphenamid	88	2.3	217	Malathion	83	3.0	307	Salithion	89	1.8
38	Butamifos	86	4.7	128	Diphenylamine	91	3.5	218	Mcpa-Thioethyl	81	1.8	308	Silafluofen	80	3.9
39	Butylate	81	0.8	129	Disulfoton	86	1.8	219	MCPB-ethyl	90	4.0	309	Simazine	80	7.1
40	Cadusafos	88	3.9	130	Disulfoton Sulfone	82	3.4	220	Mecarbam	82	2.3	310	Simeconazole	85	4.6
41	Cafenstrole	91	3.1	131	Ditalimfos	83	2.5	221	Mefenacet	87	3.1	311	Simetryn	85	4.9
42	Cafentrazone Ethy	86	4.8	132	Dithiopyr	88	5.2	222	Mefenpyr-Diethyl	86	2.1	312	Spirodiclofen	96	4.6
43	Captafol ¹⁾	-	-	133	Edifenphos	91	2.2	223	Mepronil	84	5.3	313	Spiroxamine-1	80	3.0
44	Captan ¹⁾	-	-	134	Endosulfan Sulfate	108	0.5	224	Metaxalyl	84	2.1	314	Spiroxamine-2	85	3.4
45	Carbetamide	57	12.9	135	Endosulfan (Alpha)	88	4.4	225	Methacrifos	88	0.6	315	Sulfotep	88	2.4
46	Carbofenotion	80	3.6	136	Endosulfan (Beta)	80	7.7	226	Methidathion	89	2.2	316	Sulprofos	83	3.0
47	Carbofuran	86	3.4	137	EPN	83	3.2	227	Methoprene	87	4.0	317	Swep	85	7.7
48	Carboxine	87	3.7	138	Epoxiconazole	86	2.7	228	Methoxychlor	80	4.3	318	TCMTB	60	1.9
49	Chinomethionate	77	4.5	139	EPTC	81	1.9	229	Metolachlor	88	3.3	319	Tebuconazole	85	2.6
50	Chlomehtoxynil	84	7.5	140	Esfenvalerate	82	3.6	230	Metominostrobin-E	84	2.9	320	Tebufenpyrad	86	6.6
51	Chlorbenside	77	3.9	141	Esprocarb	85	3.7	231	Metominostrobin-Z	85	2.5	321	Tebupirimfos	86	2.7
52	Chlorbufam	90	1.2	142	Ethalfuralin	86	8.8	232	Metribuzin	72	0.8	322	Tecnazene	83	2.7
53	Chlorethoxyphos	81	2.9	143	Ethion	79	4.7	233	Molinate	84	3.0	323	Tefluthrin	80	2.5
54	Chlorfenapyr	80	4.2	144	Ethofumesate	93	1.8	234	Myclobutanil	81	2.7	324	Terbacil	74	2.1
55	Chlorfenfos	83	2.5	145	Ethoprophos	88	4.6	235	Napropamide	85	2.8	325	Terbuticarb	86	3.6
56	Chlorfenvinphos-E	84	3.2	146	Ethychlozate	59	7.7	236	Nitralin	95	6.7	326	Terbufos	87	4.6
57	Chlorfenvinphos-Z	97	1.1	147	Etobenzanid	93	3.9	237	Nitrofen	82	2.1	327	Terbutryn	93	1.0
58	Chlormefos	84	2.3	148	Etofenprox	83	3.8	238	Nitrothol Isopropyl	86	4.5	328	Tetraclorvinphos	92	2.7
59	Chlornitrofen (CNP)	81	6.7	149	Etoxazole	80	1.4	239	Norflurazon	91	5.5	329	Tetraconazole	85	2.0
60	Chlorobenzilate	85	4.7	150	Etoxazole (Metabolite)	82	2.3	240	Orthophenyl phenol	79	3.1	330	Tetradifon	82	1.8
61	Chloroneb	85	0.8	151	Etridiazole	82	3.8	241	Oxabetrinil	93	0.2	331	Tetramethrin-1	86	3.8
62	Chloropropylate	80	2.7	152	Etrifmos	87	1.3	242	Oxadiazon	83	2.1	332	Tetramethrin-2	82	3.8
63	Chlorothal-Dimethyl	85	4.6	153	Famoxadone	89	11.3	243	Oxadixyl	65	5.5	333	Thienylchlor	90	1.2
64	Chlorothalonil ²⁾	30	分解	154	Fenamidone	90	5.8	244	Oxpoconazole	84	2.9	334	Thiobencarb	88	2.7
65	Chlorpropham	90	0.6	155	Fenamiphos	83	2.0	245	Oxpoconazole-Formyl	87	5.6	335	Thiometon	97	4.0
66	Chlorpyrifos	85	2.2	156	Fenarimol	81	4.0	246	Oxyfluorfen	83	7.5	336	Tolclofos-Methyl	88	5.9
67	Chlorpyrifos-Methyl	84	9.4	157	Fenbuconazole	77	5.8	247	Paclobutrazol	83	4.1	337	Tolfenpyrad	89	1.4
68	Chlorthiophos-1	84	8.7	158	Fenchlorphos	84	4.4	248	Parathion	84	2.8	338	Tolylfluanid (Metabolite)	96	4.1
69	Chlorthiophos-2	81	4.2	159	Fenitrothion	100	3.9	249	Parathion-Methyl	91	2.9	339	Tolylfluanid ²⁾	63	分解
70	Chlorthiophos-3	83	6.2	160	Fenothiocarb	88	1.7	250	Penconazole	84	4.6	340	Triadimefon	84	2.5
71	Chlozolinate	84	2.9	161	Fenoxanil-1,2	86	4.0	251	Pendimethalin	85	9.5	341	Triadimenol-1	83	10.6
72	Cinidon-Ethyl	96	6.4	162	Fenoxaprop-Ethyl	100	6.4	252	Pentoxazone	83	2.0	342	Triadimenol-2	82	6.8
73	Cinmethylin	77	2.7	163	Fenoxycarb	92	3.8	253	Permethrin-1	88	3.7	343	Triallat	84	4.7
74	Clofentazine	85	3.2	164	Fenpropathrin	80	1.0	254	Permethrin-2	84	4.0	344	Triazophos	85	2.0
75	Clomazone	91	3.1	165	Fenpropimorph	84	2.1	255	Pertthane	79	5.4	345	Tribuhos (DEF)	77	4.4
76	Clomeprop	88	4.7	166	Fensulfthion	84	3.2	256	Phenothrin-1	77	5.0	346	Trifloxystrobin	84	3.9
77	Crymidine	29	2.8	167	Fenthion	88	4.0	257	Phenothrin-2	80	4.3	347	Trifluralin	86	6.4
78	Cyanazine	80	3.7	168	Fenvalerate-1	82	3.6	258	Phenthoate	85	2.3	348	Uniconazole P	72	5.3
79	Cyanophenphos	88	3.5	169	Fenvalerate-2	81	3.0	259	Phorate	88	4.6	349	Vinloclozin	92	1.7
80	Cyanophos	89	2.2	170	Fipronil	89	1.4	260	Phosalone	86	2.2	350	XMC	85	2.0
81	Cyflufenamid	84	4.1	171	Flamprop-Methyl	85	3.8	261	Phosmet	75	2.5	351	Xylcarb	85	2.0
82	Cyfluthrin-1	74	4.3	172	Fluacrypyrim	83	3.9	262	Phosphamidon1	76	2.8	352	Zoxamide	75	4.1
83	Cyfluthrin-2	81	6.0	173	Flucythrinate-1	82	5.0	263	Phosphamidon2	74	5.4	353	Zoxamide (Decomposite)	92	2.8
84	Cyfluthrin-3	77	6.1	174	Flucythrinate-2	83	6.2	264	Picolinafen	83	4.5				
85	Cyfluthrin-4	80	5.3	175	Fludioxonil	47	8.8	265	Piperonyl Butoxide	86	2.7				
86	Cyhalofop-Butyl	83	5.1	176	Flufenpyr-Ethyl	84	4.9	266	Piriprophos	87	6.3				
87	Cyhalothrin-1	74	3.6	177	Flumiclorac-Pentyl	93	5.3	267	Pirimiphos-Methyl	98	4.4				
88	Cyhalothrin-2	78	8.3	178	Flumioxazin	101	2.9	268	Pretlilachlor	84	1.9				
89	Cypermethrin-1	80	4.5	179	Fluquinconazole	96	7.5	269	Procymidone	91	2.4				
90	Cypermethrin-2	82	4.1	180	Flusilazole	84	1.4	270	Profenofos	86	2.3				

* 添加濃度：試料中0.0