
Živila rastlinskega izvora - Metode za določevanje ostankov pesticidov z uporabo analiz, osnovanih na plinski ali tekočinski kromatografiji po acetonitrilni ekstrakciji/ločevanju in čiščenju z disperzivnim SPE - Validacijski podatki modularne metode QuEChERS

Foods of plant origin - Multimethod for the determination of pesticide residues using GC- or LC-based analysis following acetonitrile extraction/partitioning and cleanup by dispersive SPE - Validation data of the modular QuEChERS-method

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Pflanzliche Lebensmittel - Multiverfahren zur Bestimmung von Pestizidrückständen mit GC- oder LC-Verfahren nach Acetonitril Extraktion/Verteilung und Reinigung mit dispersiver SPE - Validierungsdaten des modularen QuEChERS-Verfahrens

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Aliments d'origine végétale - Méthodes multiples de détermination des résidus de pesticides par analyse CG ou CL après extraction/partition avec de l'acétonitrile et purification par SPE dispersive - Données de validation de la méthode modulaire QuEChERS

Ta slovenski standard je istoveten z: CEN/TR 17063:2017

ICS:

67.050

Splošne preskusne in
analizne metode za živilske
proizvode

General methods of tests and
analysis for food products

SIST-TP CEN/TR 17063:2017

en,fr,de

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TECHNICAL REPORT

CEN/TR 17063

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

March 2017

ICS 67.050

English Version

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This Technical Report was approved by CEN on 3 March 2017. It has been drawn up by the Technical Committee CEN/TC 275.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (CEN/TR 17063:2017) has been prepared by Technical Committee CEN/TC 275 “Food analysis - Horizontal methods”, the secretariat of which is held by DIN.

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CEN/TR 17063:2017 (E)**1 Scope**

This Technical Report lists the validation data which were obtained with EN 15662:2008 and prEN 15662:2016 in interlaboratory tests and in single laboratory method validation studies.

2 Normative references

Not applicable.

3 General

When the applicability of these validation data in Table 1 is considered, the most important difference between EN 15662:2008 and prEN 15662:2016 is the duration of first extraction. This first extraction was extended from 1 min to 15 min. It is assumed that the extended extraction does not result in reduced recoveries. Instable pesticides are the only exception. Well known examples are the losses of chlorothalonil in extracts of Allium, the oxidation of Malathion in cereals after addition of water and the degradation of thiram in plant homogenates. Furthermore, in plant homogenates the formation of carbofuran from carbosulfan or benfuracarb and the formation of carbendazim from benomyl or thiophanate-methyl can be observed. Finally, several pesticides of the sulfonyl urea group are known for fast hydrolysis at pH conditions used within QuEChERS.

Validity of the method has been supposed to be confirmed for any specific commodity/pesticide combination if at least two laboratories conducted independently validation studies with the same matrix at two identical fortification levels with at least five replicates per level and obtained a recovery between 70 % and 120 %. Furthermore, the relative standard deviation had to be below or equal 20 % for both spiking levels in each laboratory.

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Table 1 — Precision data and results of recovery tests (approximately 50.000 individual results)

Analyte / CAS-No.	Matrix group	Matrix	Extraction module	Clean-up	GC/LC	Level ^a	Recovery	RSD ^b %	n ^c	Labs ^d
2.4-D	High water content	Cucumber	E1	C0	LC	0,01	100	12,6	45	7
94-75-7	High water content	Cucumber	E1	C0	LC	0,1	95	12	62	9
	High water content	Apple	E1	C2	LC	0,02	79	19,3	14	1
	Acidic	Lemon	E2a	C0	LC	0,01	103	7,6	35	6
	Acidic	Lemon	E2a	C0	LC	0,1	99	7,9	35	6
	Acidic	Lemon	E2a	C1	LC	0,005	97	3,8	5	1
	Acidic	Lemon	E2a	C1	LC	0,1	89	8,7	15	3
	High water content	Banana	E3a	C0	LC	0,025	102	11	6	1
	Sugar containing	Grapes, dried	E4	C0	LC	0,01	96	15	25	5
	Sugar containing	Grapes, dried	E4	C0	LC	0,1	96	9,4	35	6
	Sugar containing	Honey	E5	C2	LC	0,02	83	9	5	1
	Dry (cereals, dry pulses)	Wheat flour	E5	C1	LC	0,01	93	9,3	10	2
	Dry (cereals, dry pulses)	Wheat flour	E5	C1	LC	0,1	96	6,6	15	2
	Dry (cereals, dry pulses)	Wheat flour	E5	C0	LC	0,01	94	12	28	5
	Dry (cereals, dry pulses)	Wheat flour	E5	C0	LC	0,1	94	9	26	5
Acephate	High water content	Cucumber	E1	C2	LC	0,01	82	12,6	20	3
30560-19-1	High water content	Cucumber	E1	C2	LC	0,1	87	8,4	26	4
	Acidic	Lemon	E2a	C2	LC	0,01	90	7,9	10	2
	Acidic	Lemon	E2a	C2	LC	0,1	89	11,1	15	3
	Acidic	Lemon	E2a	C1	LC	0,005	79	1,6	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	82	7,9	15	3
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	81	7,2	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,01	81	12,8	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,1	81	6	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C1	LC	0,1	77	8,1	5	1
Acetamiprid	High water content	Apple	E1	C2	LC	0,025	98	7,1	46	8

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Analyte / CAS-No.	Matrix group	Matrix	Extraction module	Clean-up	GC/LC	Level ^a	Recovery	RSD ^b %	n ^c	Labs ^d
135410-20-7	High water content	Apple	E1	C2	LC	0,25	99	5	40	8
	High water content	Cucumber	E1	C2	LC	0,01	96	5,6	35	6
	High water content	Cucumber	E1	C2	LC	0,1	98	5,9	37	6
	High water content	Lettuce, head	E1	C2	LC	0,025	97	6,5	37	7
	High water content	Lettuce, head	E1	C2	LC	0,25	97	7,5	45	9
	Acidic	Orange	E1	C2	LC	0,025	96	7,5	32	6
	Acidic	Orange	E1	C2	LC	0,25	97	3,6	35	7
	Acidic	Lemon	E2a	C2	LC	0,01	97	8,4	30	6
	Acidic	Lemon	E2a	C2	LC	0,1	96	8,4	30	6
	Acidic	Lemon	E2a	C1	LC	0,005	102	17,2	5	1
	Acidic	Lemon	E2a	C1	LC	0,1	99	2,9	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	97	6,7	20	4
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	99	6,3	25	5
	Sugar containing	Honey	E5	C2	LC	0,01	94	4,2	5	1
	Sugar containing	Honey	E5	C2	LC	0,1	96	4,6	5	1
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,01	99	6,8	20	4
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,1	97	4,9	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,1	95	9,1	10	2
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,01	99	2,8	5	1
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,1	103	3,5	5	1
Acrinathrin	High water content	Cucumber	E1	C2	GC	0,02	98	10,3	50	6
101007-06-1	High water content	Cucumber	E1	C2	GC	0,1	92	6,3	26	4
	Acidic	Lemon	E2a	C2	GC	0,02	98	7,9	40	4
	Acidic	Lemon	E2a	C2	GC	0,1	85	8,1	20	4
	Sugar containing	Grapes, dried	E4	C2	GC	0,02	99	8	46	5
	Sugar containing	Grapes, dried	E4	C2	GC	0,1	90	11,4	28	5
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,02	97	9,2	21	4
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,1	95	12,9	16	3

Analyte / CAS-No.	Matrix group	Matrix	Extraction module	Clean-up	GC/LC	Level ^a	Recovery	RSD ^b %	n ^c	Labs ^d
Aldicarb	High water content	Cucumber	E1	C2	LC	0,01	97	7,1	25	4
116-06-3	High water content	Cucumber	E1	C2	LC	0,1	93	12,1	26	4
	Acidic	Lemon	E2a	C2	LC	0,01	96	7,3	15	3
	Acidic	Lemon	E2a	C2	LC	0,1	100	5,6	15	3
	Acidic	Lemon	E2a	C1	LC	0,005	92	2,1	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	98	9,6	21	4
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	95	9,6	21	4
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,01	100	7,4	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,1	97	5,6	15	3
Avermectin B1a	High water content	Cucumber	E1	C2	LC	0,01	88	17,1	15	3
65195-55-3	High water content	Cucumber	E1	C2	LC	0,1	87	10,1	15	3
	Acidic	Lemon	E2a	C2	LC	0,01	86	12,2	15	3
	Acidic	Lemon	E2a	C2	LC	0,1	96	13	25	5
	Acidic	Lemon	E2a	C1	LC	0,1	94	1,1	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	94	17,7	10	2
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	100	8,7	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,01	99	16,8	10	2
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,1	96	12,1	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C1	LC	0,1	104	5,7	10	1
Azinphos-methyl	High water content	Cucumber	E1	C2	LC	0,01	95	10,4	36	6
86-50-0	High water content	Cucumber	E1	C2	LC	0,1	97	9,5	36	6
	Acidic	Lemon	E2a	C2	LC	0,01	100	12,1	20	4
	Acidic	Lemon	E2a	C2	LC	0,1	105	8,4	20	4
	Acidic	Lemon	E2a	C1	LC	0,1	94	8,6	10	2
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	102	9,2	21	4
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	98	10,9	26	5

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Analyte / CAS-No.	Matrix group	Matrix	Extraction module	Clean-up	GC/LC	Level ^a	Recovery	RSD ^b %	n ^c	Labs ^d
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,01	98	6,5	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,1	98	11,8	20	4
Azoxystrobin	High water content	Cucumber	E1	C2	LC	0,01	96	5,2	30	5
131860-33-8	High water content	Cucumber	E1	C2	LC	0,1	99	5,4	30	5
	Acidic	Lemon	E2a	C2	LC	0,01	102	5,8	20	4
	Acidic	Lemon	E2a	C2	LC	0,1	95	5,2	20	4
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	102	5,7	20	4
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	99	4,3	20	4
	Sugar containing	Honey	E5	C2	LC	0,01	99	2,7	5	1
	Sugar containing	Honey	E5	C2	LC	0,1	94	4,6	5	1
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,01	95	7,7	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,1	99	3,4	15	3
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,01	95	3,7	5	1
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,1	107	3	5	1
	Dry (spices, herbs, tea)	Tea, black	E7	C3b	LC	0,05	79	10,1	6	1
	Dry (spices, herbs, tea)	Tea, black	E7	C3b	LC	0,5	81	7,6	6	1
Benalaxyl	High water content	Cucumber	E1	C2	LC	0,01	98	8,2	51	9
71626-11-4	High water content	Cucumber	E1	C2	LC	0,1	98	9,1	51	9
	Acidic	Lemon	E2a	C2	LC	0,01	98	7,1	41	8
	Acidic	Lemon	E2a	C2	LC	0,1	100	6	46	9
	Acidic	Lemon	E2a	C1	LC	0,005	95	8,3	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	97	5,6	41	8
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	100	5,4	41	8
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,01	100	7,2	20	4
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,1	101	6,5	25	5
	Fatty, wet (oily fruits)	Avocado	E6	C0	LC	0,1	101	4,2	5	1
	Dry (spices, herbs, tea)	Tea, black	E7	C3b	LC	0,05	84	6,3	6	1

Analyte / CAS-No.	Matrix group	Matrix	Extraction module	Clean-up	GC/LC	Level ^a	Recovery	RSD ^b %	n ^c	Labs ^d
	Dry (spices, herbs, tea)	Tea, black	E7	C3b	LC	0,5	85	4,3	6	1
Bifenthrin	High water content	Cucumber	E1	C2	GC	0,02	95	7,8	72	9
82657-04-3	High water content	Cucumber	E1	C2	GC	0,05	101	7,4	55	8
	High water content	Cucumber	E1	C2	GC	0,1	99	8,5	63	7
	Acidic	Lemon	E2a	C2	GC	0,02	100	4,1	40	3
	Acidic	Lemon	E2a	C2	GC	0,05	103	5,6	34	5
	Acidic	Lemon	E2a	C2	GC	0,1	106	8,6	49	6
	Acidic	Lemon	E2a	C1	GC	0,005	105	2,4	5	1
	Acidic	Lemon	E2a	C1	GC	0,02	112	1,2	5	1
	Sugar containing	Grapes, dried	E4	C2	GC	0,02	98	6,7	46	4
	Sugar containing	Grapes, dried	E4	C2	GC	0,05	98	6,1	26	4
	Sugar containing	Grapes, dried	E4	C2	GC	0,1	102	6,3	48	6
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,02	95	8,1	36	6
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,05	102	6,5	36	6
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,1	106	3,7	26	5
Biphenyl	High water content	Cucumber	E1	C2	GC	0,02	94	9,2	31	6
92-52-4	High water content	Cucumber	E1	C2	GC	0,05	102	10,2	37	6
	High water content	Cucumber	E1	C2	GC	0,1	101	9	37	6
	Acidic	Lemon	E2a	C2	GC	0,02	99	12,2	10	2
	Acidic	Lemon	E2a	C2	GC	0,05	98	11,7	18	3
	Acidic	Lemon	E2a	C2	GC	0,1	108	12,3	20	4
	Sugar containing	Grapes, dried	E4	C2	GC	0,02	106	8,1	11	2
	Sugar containing	Grapes, dried	E4	C2	GC	0,05	102	12,6	21	4
	Sugar containing	Grapes, dried	E4	C2	GC	0,1	96	11,8	24	4
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,02	93	9	11	2
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,05	101	8,6	21	4
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,1	104	9,1	21	4

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Analyte / CAS-No.	Matrix group	Matrix	Extraction module	Clean-up	GC/LC	Level ^a	Recovery	RSD ^b %	n ^c	Labs ^d
Bitertanol	High water content	Apple	E1	C2	GC	0,05	103	10,5	15	2
70585-36-3	High water content	Apple	E1	C2	GC	0,1	101	3,8	15	2
	Acidic	Lemon	E2a	C2	LC	0,01	88	2,4	6	1
	Acidic	Lemon	E2a	C2	LC	0,1	91	2,5	6	1
	Acidic	Lemon	E2a	C1	LC	0,002	103	5,5	5	1
	Acidic	Lemon	E2a	C1	LC	0,1	102	3	5	1
	Sugar containing	Honey	E5	C2	LC	0,04	105	12	5	1
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,02	92	6,4	6	1
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,2	91	2,6	6	1
	Dry (spices, herbs, tea)	Tea, black	E7	C3b	LC	0,05	80	3,9	6	1
	Dry (spices, herbs, tea)	Tea, black	E7	C3b	LC	0,5	81	3,6	6	1
Boscalid	High water content	Cucumber	E1	C2	LC	0,01	96	6,4	30	5
188425-85-6	High water content	Cucumber	E1	C2	LC	0,1	99	6	35	6
	Acidic	Lemon	E2a	C2	LC	0,01	100	6	25	5
	Acidic	Lemon	E2a	C2	LC	0,1	97	7,1	36	7
	Acidic	Lemon	E2a	C1	LC	0,005	91	4,8	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	98	9,5	36	7
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	100	11,8	31	6
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,01	96	7,3	10	2
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,1	102	5	20	4
	Dry (cereals, dry pulses)	Wheat flour	E5	C1	LC	0,1	97	3,3	5	1
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,01	91	3,5	5	1
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,1	97	3,5	5	1
Bromopropylate	High water content	Cucumber	E1	C2	GC	0,02	98	5,9	71	9
18181-80-1	High water content	Cucumber	E1	C2	GC	0,05	105	9	52	8
	High water content	Cucumber	E1	C2	GC	0,1	101	6,5	63	8

Analyte / CAS-No.	Matrix group	Matrix	Extraction module	Clean-up	GC/LC	Level ^a	Recovery	RSD ^b %	n ^c	Labs ^d
	Acidic	Lemon	E2a	C2	GC	0,02	101	4,4	45	4
	Acidic	Lemon	E2a	C2	GC	0,05	103	3,7	32	5
	Acidic	Lemon	E2a	C2	GC	0,1	108	7,3	45	6
	Acidic	Lemon	E2a	C1	GC	0,005	101	2,8	5	1
	Acidic	Lemon	E2a	C1	GC	0,05	117	1,9	5	1
	Sugar containing	Grapes, dried	E4	C2	GC	0,02	98	8,9	56	6
	Sugar containing	Grapes, dried	E4	C2	GC	0,05	103	5,4	26	4
	Sugar containing	Grapes, dried	E4	C2	GC	0,1	108	7	42	6
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,02	103	8,9	36	6
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,05	104	6,3	36	6
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	GC	0,1	109	5,9	26	5
Bromoxynil	High water content	Cucumber	E1	C0	LC	0,01	98	8,4	30	5
1689-84-5	High water content	Cucumber	E1	C0	LC	0,1	99	10,3	52	8
	Acidic	Lemon	E2a	C0	LC	0,01	101	6,4	25	5
	Acidic	Lemon	E2a	C0	LC	0,1	103	8,7	30	6
	Acidic	Lemon	E2a	C1	LC	0,1	101	5,8	15	3
	High water content	Banana	E3a	C0	LC	0,025	107	7,2	7	1
	Sugar containing	Grapes, dried	E4	C0	LC	0,01	93	10,7	25	5
	Sugar containing	Grapes, dried	E4	C0	LC	0,1	97	8,1	35	6
	Dry (cereals, dry pulses)	Wheat flour	E5	C1	LC	0,01	98	5,7	10	2
	Dry (cereals, dry pulses)	Wheat flour	E5	C1	LC	0,1	92	9,3	20	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C0	LC	0,01	89	13,6	25	4
	Dry (cereals, dry pulses)	Wheat flour	E5	C0	LC	0,1	94	7,4	20	4
Bromuconazole	High water content	Cucumber	E1	C2	LC	0,01	96	9,7	51	9
116255-48-2	High water content	Cucumber	E1	C2	LC	0,1	98	6	47	8
	Acidic	Lemon	E2a	C2	LC	0,01	97	8,4	36	7
	Acidic	Lemon	E2a	C2	LC	0,1	97	5,9	46	9

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Analyte / CAS-No.	Matrix group	Matrix	Extraction module	Clean-up	GC/LC	Level ^a	Recovery	RSD ^b %	n ^c	Labs ^d
	Acidic	Lemon	E2a	C1	LC	0,005	93	9,1	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	94	8,3	41	8
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	98	5,7	41	8
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,01	96	9,6	20	4
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,1	94	4,2	25	5
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,01	96	7,9	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,1	100	3,3	10	2
Bupirimate	High water content	Cucumber	E1	C2	LC	0,01	97	8,9	36	6
41483-43-6	High water content	Cucumber	E1	C2	LC	0,1	100	6,2	36	6
	Acidic	Lemon	E2a	C2	LC	0,01	97	7,4	31	5
	Acidic	Lemon	E2a	C2	LC	0,1	98	10,6	31	5
	Acidic	Lemon	E2a	C1	LC	0,01	83	5,3	5	1
	Acidic	Lemon	E2a	C1	LC	0,1	96	2,6	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	100	7	26	4
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	97	8,3	31	5
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,01	97	11,6	24	4
	Dry (cereals, dry pulses)	Wheat flour	E5	C3a	LC	0,1	99	9,6	20	3
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,01	90	1,9	5	1
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,1	93	2,8	5	1
Buprofezin	High water content	Cucumber	E1	C2	LC	0,01	97	7,8	38	7
69327-76-0	High water content	Cucumber	E1	C2	LC	0,1	99	6,3	41	7
	Acidic	Lemon	E2a	C2	LC	0,01	94	8,7	30	6
	Acidic	Lemon	E2a	C2	LC	0,1	94	6,5	30	6
	Acidic	Lemon	E2a	C1	GC	0,005	102	2,6	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	97	7,1	36	7
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	96	7,6	31	6
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,01	96	9	15	3

Analyte / CAS-No.	Matrix group	Matrix	Extraction module	Clean-up	GC/LC	Level ^a	Recovery	RSD ^b %	n ^c	Labs ^d
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,1	101	3,9	15	3
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,01	67	1	5	1
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,1	68	4,4	5	1
Carbaryl	High water content	Cucumber	E1	C2	LC	0,01	102	7,8	25	4
63-25-2	High water content	Cucumber	E1	C2	LC	0,1	101	4,8	28	4
	Acidic	Lemon	E2a	C2	LC	0,01	103	6,8	15	3
	Acidic	Lemon	E2a	C2	LC	0,1	100	8,2	15	3
	Acidic	Lemon	E2a	C1	LC	0,005	103	12,8	5	1
	Acidic	Lemon	E2a	C1	LC	0,1	100	5,5	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	98	9	15	3
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	97	5,5	15	3
	Sugar containing	Honey	E5	C2	LC	0,02	99	10,7	5	1
	Sugar containing	Honey	E5	C2	LC	0,04	105	7,8	5	1
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,01	97	7,8	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C1+C3a	LC	0,1	97	4,6	15	3
	Dry (cereals, dry pulses)	Wheat flour	E5	C1	LC	0,1	81	4,8	5	1
	Fatty, wet (oily fruits)	Avocado	E6	C4	LC	0,01	75	3,6	5	1
Carbendazim	High water content	Cucumber	E1	C2	LC	0,01	91	5,6	30	5
10605-21-7	High water content	Cucumber	E1	C2	LC	0,1	97	8,8	32	5
	Acidic	Lemon	E2a	C2	LC	0,01	89	5,6	20	4
	Acidic	Lemon	E2a	C2	LC	0,1	85	10,6	20	4
	Acidic	Lemon	E2a	C1	LC	0,005	103	5,9	5	1
	Acidic	Lemon	E2a	C1	LC	0,1	90	4,2	5	1
	Sugar containing	Grapes, dried	E4	C2	LC	0,01	88	8,8	20	4
	Sugar containing	Grapes, dried	E4	C2	LC	0,1	83	8,7	20	4
	Sugar containing	Honey	E5	C2	LC	0,01	79	2,8	5	1
	Sugar containing	Honey	E5	C2	LC	0,1	99	4,8	5	1