



The Estonian Monitoring of Pesticide Residues in Food of Plant Origin: 2005

Report of Monitoring Results Concerning Directives 90/642/EEC, 76/895/EEC, 86/362/EEC and Commission Recommendation 2005/178/EC.

by Merike Toome

Further information

Information about the Estonian monitoring of pesticide residues in food of plant origin is available from:

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1. Summary of results

In 2005, a total of 448 surveillance samples of fruits, vegetables, cereals, processed products (cereal products) and baby food were analysed for residues of 204 analytes. National or EU harmonised Maximum Residue Limits (EC-MRLs) were exceeded by 14 samples (3,3 %).

Pears, beans, potatoes, carrots, oranges, mandarins, spinach, rice and cucumber, in all 129 samples, were analysed in the 2005 EU co-ordinated programme.

2 of these samples exceeded the EC-MRLs for the pesticides that were included in the co-ordinated programme.

A total of 14 samples of cereals were analysed. The residue was found only in the 1 sample of the cereals.

A total of 16 samples of processed products (cereal products) were analysed and no residues were found.

A total of 29 samples of the baby food were analysed and no residues were found.

The most frequently found pesticide residues, in decreasing order of frequency (found/sought) are: chlorpyrifos, maneb group, imazalil, procymidone, thiabendazole, benomyl group, tolylfluanid, 2-phenylphenol, iprodione, captan.

2. Organisation of monitoring programmes and sampling

- **Competent Authorities**

In 2005, the Veterinary and Food Board (VFB) of the the Ministry of Agriculture and the Health Protection Inspectorate (HPI) of the Ministry of Social Affairs were the Competent Authority for the control on plant protection products residues in foodstuffs of plant origin, including baby-food and processed products.

- **Drafting of the monitoring plan**

The national monitoring plan is drawn up by the Agricultural Research Centre (ARC) in consultation with the VFB, HPI and Plant Production Inspectorate (PPI) according Commission Directives, including the co-ordinated monitoring programme of the European Commission.

The monitoring plan specify the number and type of sample to be taken, the region and the sampling period.

The plan is based on the results of the previous year sampling activities, the results of the annual monitoring for the plant protection products residues in fruit and vegetables, the main food groups consumed in Estonia and on the Rapid Alert Systems in place.

- **Sampling: personnel, procedures, sampling points**

Sampling was done by trained officials inspectors according to Directive 2002/63/EC.

- HPI employees(inspectors) in their two laboratories buy samples at retail shops as planned by the ARC. The cost of the samples covered by the Ministry of Agriculture.

- VFB inspectors of the county veterinary centres carry out sampling for residues of foodstuffs of plant origin in the context of food control activity according to the provisions of the law and by the monitoring plan. Samples are taken from domestic and non-domestic commodities of plant origin at wholesale level.

-The number of samples from the organic sector are taken by the inspectors of the county centres of the PPI.

- **Enforcement action**

The laboratories do not compare the results of analysis with the MRL, only submit the laboratory certificate to the inspector in charge. The evaluation of the analysis results is the responsibility of the inspector. Where MRLs are exceeded, enforcement action may be taken by the inspector of HPI and VFB – the marketing of the product is prohibited, retailers and consumers are informed and procedures are put in place for product recall.

3. Quality assurance

- **Status of accreditation of laboratories; number of laboratories**

Two laboratories of the HPI (Tallinn and Tartu) and one laboratory of the ARC (Laboratory for Residues and Contaminants in Saku) participated in the monitoring programme (Table G) and they are accredited by the Estonian Accreditation Centre (EAK) for all analytical methods used for official control of pesticide residues in food of plant origin. All certificates of the accreditation can be found on the website of the Estonian Accreditation Centre (<http://www.eak.ee>)

- **Participation in proficiency tests**

Two laboratories have participated in the European Commission's Proficiency Test 7 with good results and all three laboratories have participated in the proficiency tests organised by FAPAS (UK) (see Table G).

- **Implementation of EU Quality Control Procedures**

The EC guidelines SANCO/10476/2003 “Quality Control Procedures for Pesticide Residue Analysis”, third edition, 2003 have been implemented as far as practicable (see Table G).

4. Other information

- **Background on legislation**

Estonia has implemented all EC-MRLs. For some other pesticide/commodity combinations national limits are in force (mostly for cereals).

- **Rapid Alert System**

The Trade, Import and Export Department within the VFB is the national contact point (NCP) for food and feed for the Community RASFF system. This department acts as the coordination point for the official control services of the VFB, HPI, PPI Tax and Customs Board.

Table A 1 - Part I: Summary of numbers of samples, sample origins and results

(sum of samples of national and co-ordinated programme)

(pesticides covered by Directives 76/895, 86/362 and 90/642 and by national programmes)

(surveillance sampling only, no follow-up enforcement sampling)

Reporting country: Estonia

Year of sampling: 2005

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
12		Number of samples	Sample origin					Results								
13		Total number of samples	Number of domestic samples	domestic samples of total number of samples	Number of samples from other EU MS	samples from other EU MS of the total number of samples	Number of samples on imports from TC	% samples from TC of the total number of samples	Number of samples without detectable residues	% of total number of samples	Number of samples with residues at or below MRL (national or EC) or for which no MRL is set	% of total number of samples	Number of samples with residues exceeding the MRL (national or EC)	% of total number of samples	Number of samples with residues exceeding EC-MRLs	% of total number of samples
14	Sum (certain products of plant origin, incl. fruit, vegetables)	389	129	33,2	173	44,5	86	22,1	210	54,0	165	42,4	14	3,6	14	3,6
15	Cereals	14	2	14,3	5	35,7	4	28,6	13	92,9	1	7,1	0	0,0	0	0,0
16	Processed products (other than baby food)	16	9	56,3	7	43,8	0	0,0	16	100,0	0	0,0	0	0,0	0	0,0
17	Baby food	29	5	17,2	22	75,9	2	6,9	29	100,0	0	0,0	0	0,0	0	0,0

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PLEASE ENTER IN THIS TABLE ALL SURVEILLANCE SAMPLES (INCLUDING ORGANIC PRODUCE)

Table A 1 - Part II: Summary of numbers of samples, sample origins and results

(sum of samples of national and co-ordinated programme)
 (pesticides covered by Directives 76/895, 86/362 and 90/642 and by the national programmes)
 (follow-up enforcement sampling only, no surveillance sampling)

Reporting country: Estonia
 Year of sampling: 2005

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
12		Number of samples	Sample origin					Results								
13		Total number of samples	Number of domestic samples	% domestic samples of total number of samples	Number of samples from other EU MS	% samples from other EU MS of the total number of samples	Number of samples on imports from TC	% samples from TC of the total number of samples	Number of samples without detectable residues	% of total number of samples	Number of samples with residues at or below MRL (national or EC) or for which no MRL is set	% of total number of samples	Number of samples with residues exceeding the MRL (national or EC)	% of total number of samples	Number of samples with residues exceeding EC-MRLs	% of total number of samples
14	Sum (certain products of plant origin, incl. fruit, vegetables)	0	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!
15	Cereals	0	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!
16	Processed products (other than baby food)	0	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!
17	Baby food	0	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!

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PLEASE ENTER IN THIS TABLE ALL FOLLOW-UP ENFORCEMENT SAMPLES (INCLUDING ORGANIC PRODUCE)

Table A 1 - Organic: Summary of numbers of samples and results

(sum of samples of national and co-ordinated programme)

(pesticides covered by Directives 76/895, 86/362 and 90/642 and by national programmes)

(surveillance sampling plus follow-up enforcement sampling)

Reporting country:

Estonia

Year of sampling:

2005

	A	B	C	D	E	F	G	H	I	J
12		Number of samples	Results							
13	ORGANIC PRODUCE ONLY	Total number of samples	Number of samples without detectable residues	% of total number of samples	Number of samples with residues at or below MRL (national or EC) or for which no MRL is set	% of total number of samples	Number of samples with residues exceeding the MRL (national or EC)	% of total number of samples	Number of samples with residues exceeding EC-MRLs	% of total number of samples
14	Sum (certain products of plant origin, incl. fruit, vegetables)	9	9	100,0	0	0,0	0	0,0	0	0,0
15	Cereals	2	2	100,0	0	0,0	0	0,0	0	0,0
16	Processed products (other than baby food)	0	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!
17	Baby food	0	0	#VALUE!	0	#VALUE!	0	#VALUE!	0	#VALUE!
18	TOTAL ORGANIC	11	11	Err:503	0	#VALUE!	0	#VALUE!	0	#VALUE!

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Please provide the total if a breakdown is not available.

The data in this table should be a sub-set of the data in Table A1 Part I and Part II.

If there are no data reported in this table, please indicate if that is because:

√ Tick

NO ORGANIC SAMPLES TAKEN

ORGANIC SAMPLES TAKEN BUT UNABLE TO DISTINGUISH ORGANIC FROM CONVENTIONAL IN THE DATA.

Table A 2 - Part I-fruit&veg: Summary table of pesticides sought and found
Surveillance sampling only

(fresh and frozen fruit, vegetables)

(pesticides covered by Directives 76/895, 90/642 and by the national programmes)

(sum of samples of national and co-ordinated programme)

Reporting country: Estonia
 Year of sampling: 2005

Number of different pesticides* sought:
 Number of different pesticides* found:
 % pesticides found from pesticides sought:

Fruit and vegetables

Column 1	Column 2	Column 3	Column 4	Column 5
Pesticide* (listed in alphabetical order of the English name of the pesticide)	Total number of samples analysed for specific pesticide	Number of samples with residues at or above reporting level	% samples with residues at or above reporting level	Reporting level (mg/Kg)**
Acephate	448	0	0,0	0,02-0,04
Acetamiprid	276	0	0,0	0,02
Aclonifen	276	1	0,4	0,01-0,02
Acrinathrin	87	0	0,0	0,03
Aldrin	448	0	0,0	0,01-0,03
Amitraz	87	0	0,0	0,03
Amitrole	87	0	0,0	0,03
Atrazine	87	0	0,0	0,03
Azinphos-ethyl	363	0	0,0	0,02
Azinphos-methyl	448	2	0,4	0,01-0,03
Azoxystrobin	448	5	1,1	0,01-0,02
Benalaxyl	448	0	0,0	0,02-0,04
Bendiocarb	87	0	0,0	0,04
Benomyl group	448	23	5,1	0,02-0,1
Bentazone	85	0	0,0	0,10
Bifenthrin	448	6	1,3	0,01-0,03
Binapacryl	87	0	0,0	0,03
Biphenyl	448	1	0,2	0,02-0,1
Bitertanol	448	0	0,0	0,02-0,04
Bromophos	448	0	0,0	0,01-0,02
Bromophos-ethyl	448	0	0,0	0,01-0,02
Bromophos-methyl	87	0	0,0	0,02
Bromopropylate	448	1	0,2	0,01-0,03
Bupirimate	448	0	0,0	0,01-0,02
Buprofezin	448	0	0,0	0,01-0,02
Captafol	448	0	0,0	0,02-0,05
Captan	448	12	2,7	0,01-0,03
Carbaryl	448	5	1,1	0,02-0,04
Carboxyn	85	0	0,0	0,05
Chlordane-cis	172	0	0,0	0,01-0,03
Chlordane-oxy	172	0	0,0	0,01-0,03
Chlordane-trans	172	0	0,0	0,01-0,02
Chloridazon	172	0	0,0	0,03-0,05
Chlorfenvinphos	448	0	0,0	0,01-0,03
Chlorbenzide	87	0	0,0	0,03
Chlorbupham	87	0	0,0	0,03
Chlorobenzilate	276	0	0,0	0,02
Chlorothalonil	448	4	0,9	0,02-0,03
Chlorpropham	448	2	0,4	0,02
Chlorpyrifos	448	47	10,5	0,01
Chlorpyrifos-r	448	8	1,8	0,01-0,02
Chlozolinate	448	0	0,0	0,01-0,03
Clofentezine	172	0	0,0	0,01-0,02
Cyanazine	276	0	0,0	0,02

Column 6	Column 7
MRM # Ten most frequently found pesticides in decreasing order of frequency (1=most frequent, 2=second most frequent,...)	SRM # Ten most frequently found pesticides in decreasing order of frequency (1=most frequent, 2=second most frequent,...)
sorted by column 4 (% of samples)	sorted by column 4 (% of samples)
1 Chlorpyrifos	Maneb group
2 Imazalil	
3 Procymidone	
4 Thiabendazole	
5 Benomyl group	
6 Tolyfluanid	
7 2-Phenylphenol	
8 Iprodione	
9 Captan	
10 Cypermethrin	

Cyfluthrin	448	1	0,2	0,01-0,03
Cypermethrin	448	11	2,5	0,01-0,04
Cyproconazole	361	0	0,0	0,01-0,02
Cyprodinil	448	9	2,0	0,02-0,03
Cyromazine	87	0	0,0	0,03
Dazomet	85	0	0,0	0,03
Deltamethrin	448	1	0,2	0,02-0,03
Desmedipham	361	0	0,0	0,02-0,03
Desmetryn	448	0	0,0	0,01-0,04
Diafenthiuron	172	0	0,0	0,02-0,03
Diazinon	448	2	0,4	0,02
Dichlobenyl	85	0	0,0	0,01
Dichlofluanid	448	0	0,0	0,01-0,02
Dichloran	448	1	0,2	0,01-0,04
Dichlorfenthion	85	0	0,0	0,01
Dichlorvos	448	0	0,0	0,01-0,02
Dicofol	448	0	0,0	0,01-0,05
Dieldrin	448	0	0,0	0,01-0,05
Difenoconazole	363	2	0,6	0,02-0,03
Dimethoate	448	4	0,9	0,01-0,02
Dimethomorph	276	1	0,4	0,02
Dioxathion	85	0	0,0	0,02
Diphenylamine	448	9	2,0	0,01-0,02
Disulfuton	172	0	0,0	0,02-0,04
o,p-DDD	172	0	0,0	0,01-0,03
p,p-DDD	448	0	0,0	0,01-0,02
o,p-DDE	172	0	0,0	0,01-0,02
p,p-DDE	448	0	0,0	0,01-0,02
o,p-DDT	448	0	0,0	0,01-0,02
p,p-DDT	448	0	0,0	0,01-0,02
Endosulfan sum	448	11	2,5	0,01-0,02
Endosulfan-sulf	448	6	1,3	0,01-0,03
Endrin	448	0	0,0	0,01-0,02
Epoxyconazole	361	0	0,0	0,01-0,02
Esfenvalerate	363	0	0,0	0,02-0,03
Ethofumesate	448	0	0,0	0,01-0,02
Ethion	448	6	1,3	0,01-0,03
Ethoprophos	363	0	0,0	0,02-0,03
Etrinphos	448	0	0,0	0,01-0,03
Fenamiphos	448	0	0,0	0,01-0,06
Fenarimol	448	5	1,1	0,01-0,03
Fenchlorphos	448	0	0,0	0,01-0,02
Fenhexamid	448	2	0,4	0,02-0,03
Fenitrothion	448	3	0,7	0,01-0,02
Fenpropathrine	363	1	0,3	0,02-0,03
Fenpropimorph	363	0	0,0	0,02-0,03
Fenthion	276	0	0,0	0,04
Fentin	87	2	2,3	0,03
Fenvalerate	448	3	0,7	0,01-0,03
Fluazinam	276	0	0,0	0,02
Flucythrinate	448	0	0,0	0,01-0,03
Fludioxonyl	448	8	1,8	0,01-0,03
Folpet	448	1	0,2	0,01-0,05
Formothion	448	0	0,0	0,02-0,04
Fuberidazole	87	0	0,0	0,03
Furathiocarb	87	0	0,0	0,03
HCB (hexachlor	172	0	0,0	0,01
HCH sum	448	0	0,0	0,01-0,03
Heptachlor	448	0	0,0	0,01-0,06
Heptachlorepo	172	0	0,0	0,01-0,02
Heptachlorepo	172	0	0,0	0,01-0,02
Heptenophos	448	0	0,0	0,01-0,02
Heksaconazole	363	0	0,0	0,01-0,03
Imazalil	448	32	7,1	0,01-0,05
Imidaclopid	85	0	0,0	0,02
Iprodione	448	13	2,9	0,02-0,03
Isobenzan	85	0	0,0	0,01
Isodrin	85	0	0,0	0,01
Isufenphos	276	0	0,0	0,02

Isoproturon	85	0	0,0	0,02
Kresoxyl-methy	448	4	0,9	0,01-0,02
Lambda-cyhalo	448	8	1,8	0,01-0,03
Lenacyl	172	0	0,0	0,01-0,03
Linuron	85	0	0,0	0,02
Malaixon	363	0	0,0	0,02-0,03
Malathion	448	6	1,3	0,01-0,02
Maneb group	194	14	7,2	0,05
Mecarbam	448	0	0,0	0,02-0,03
Metalaxyl	448	4	0,9	0,02-0,04
Metamitron	363	0	0,0	0,03-0,04
Metazachlor	363	0	0,0	0,02-0,03
Methacrifos	448	0	0,0	0,01-0,02
Methamidophos	172	0	0,0	0,01-0,05
Methidathion	448	4	0,9	0,01-0,02
Methiocarb	448	0	0,0	0,01-0,03
Methomyl	87	0	0,0	0,05
Methoxychlor	172	0	0,0	0,01-0,03
Metribuzin	448	0	0,0	0,01-0,02
Mevinphos	448	0	0,0	0,01-0,03
Mirex	85	0	0,0	0,01
Monocrotophos	448	0	0,0	0,01-0,02
Monolinuron	87	0	0,0	0,03
Myclobutanil	448	2	0,4	0,01-0,04
Omethoate	448	0	0,0	0,05
Oxadixyl	448	0	0,0	0,01-0,02
Oxydemeton-m	448	0	0,0	0,02-0,03
Parathion	448	0	0,0	0,02-0,03
Penconazole	448	4	0,9	0,02
Pencycuron	87	0	0,0	0,03
Pendimethalin	448	6	1,3	0,02
Pentachloroana	87	0	0,0	0,03
Pentachlorober	85	0	0,0	0,01
Permethrin	448	1	0,2	0,01-0,02
Phenmedipham	361	0	0,0	0,02-0,05
Phenylphenol-2	448	18	4,0	0,02-0,1
Phorate	448	0	0,0	0,01-0,04
Phosalone	448	2	0,4	0,02-0,03
Phosmet	448	6	1,3	0,03-0,04
Phosphamidon	448	0	0,0	0,01-0,05
Pirimicarb	448	2	0,4	0,01-0,03
Pirimihos-methy	448	1	0,2	0,01-0,02
Prochloraz	363	7	1,9	0,02-0,03
Procymidone	448	32	7,1	0,01-0,02
Profenofos	448	1	0,2	0,01-0,03
Promethryn	448	0	0,0	0,01-0,02
Propachlor	448	0	0,0	0,01-0,02
Propargite	448	4	0,9	0,02-0,04
Propazine	85	0	0,0	0,01
Propham	276	0	0,0	0,04
Propiconazole	448	0	0,0	0,01-0,02
Propoxur	87	0	0,0	0,03
Propyzamide	448	0	0,0	0,01-0,03
Prothiophos	276	0	0,0	0,02
Pyrazophos	363	0	0,0	0,02-0,03
Pyrimethanil	448	3	0,7	0,01-0,03
Quinalphos	363	0	0,0	0,02
Quintozene	448	1	0,2	0,01-0,02
Resmethrin	87	0	0,0	0,03
Rimsulfuron	85	0	0,0	0,02
Simazine	448	0	0,0	0,01-0,04
Spiroxamine	172	0	0,0	0,02-0,03
Tau-fluvalinate	448	1	0,2	0,02
Tebuconazole	448	1	0,2	0,01-0,02
Tecnazene	448	0	0,0	0,01-0,03
Terbutylazine	276	0	0,0	0,02
Terbutryn	448	0	0,0	0,01-0,03
TEPP	85	0	0,0	0,05
Tetraconazole	276	0	0,0	0,02

Tetradifon	448	0	0,0	0,01-0,02
Thiabendazole	448	27	6,0	0,01-0,05
Thiometon	276	0	0,0	0,02
Tolclophos-met	448	0	0,0	0,02
Tolyfluamid	448	21	4,7	0,01
Triadimefon	448	4	0,9	0,01-0,03
Triadimenol	448	6	1,3	0,02-0,03
Tri-allate	172	0	0,0	0,01
Triazophos	448	0	0,0	0,01-0,03
Trifloxystrobin	87	1	1,1	0,02
Trifluralin	448	1	0,2	0,01-0,02
Vamidothion	87	0	0,0	0,03
Vinclozoline	448	4	0,9	0,01-0,02

*report pesticides (isomers, metabolites) according to the residue definition in the EU Directives or national legislation

SRM - single residue methods, MRM - multi-residue methods.

**Table A 2 - Part II-cereals: Summary table of pesticides sought and found
Surveillance sampling only**

(cereals)

**(pesticides covered by Directive 86/362/EEC and by the national programmes)
(sum of samples of national and co-ordinated programme)**

Reporting country: Estonia
Year of sampling: 2005

Number of different pesticides* sought:
Number of different pesticides* found:
% pesticides found from pesticides sought:

Cereals

Column 1	Column 2	Column 3	Column 4	Column 5
Pesticide* (listed in alphabetical order of the English name of the pesticide)	Total number of samples analysed for specific pesticide	Number of samples with residues at or above reporting level	% samples with residues at or above reporting level	Reporting level (mg/kg)**
Acephate	14	0	0,0	0,04
Aldrin	14	0	0,0	0,02
Azinphos-ethyl	14	0	0,0	0,02
Azinphos-methy	14	0	0,0	0,02
Azoxystrobin	14	0	0,0	0,02
Benalaxyl	14	0	0,0	0,04
Bifenthrin	14	0	0,0	0,04
Bitertanol	14	0	0,0	0,04
Bromophos	14	0	0,0	0,01
Bromophos-ethy	14	0	0,0	0,02
Bromopropylate	14	0	0,0	0,02
Captafol	14	0	0,0	0,02
Carbaryl	14	0	0,0	0,02
Chlordan	14	0	0,0	0,02
Chlorfenvinphos	14	0	0,0	0,02
Chlorobenzilate	14	0	0,0	0,02
Chlorothalonil	14	0	0,0	0,02
Chlorpyrifos	14	0	0,0	0,01
Chlorpyrifos-m	14	0	0,0	0,02
Chlozolinate	14	0	0,0	0,02
Cyanazine	14	0	0,0	0,02
Cyfluthrin	14	0	0,0	0,02
Cyhalothrin-lam	14	0	0,0	0,02
Cypermethrin	14	0	0,0	0,02
Cyproconazole	14	0	0,0	0,02
2,4 D	2	0	0,0	0,02
4,4-DDD	14	0	0,0	0,01
4,4-DDE	14	0	0,0	0,01
2,4-DDT	14	0	0,0	0,01
4,4-DDT	14	0	0,0	0,01
Deltamethrin	14	1	7,1	0,02
Diazinon	14	0	0,0	0,02
Dichlorvos	14	0	0,0	0,02
Dichlorprop	2	0	0,0	0,02
Dicofol	14	0	0,0	0,02
Dieldrin	14	0	0,0	0,02
Dimethoate	14	0	0,0	0,02
Disulfuton	14	0	0,0	0,02
Endosulfan sum	14	0	0,0	0,01
Endosulfan-sulf	14	0	0,0	0,02
Endrin	14	0	0,0	0,02
Epoxyconazole	14	0	0,0	0,02
Ethion	14	0	0,0	0,02
Etrinphos	14	0	0,0	0,02
Fenarimol	14	0	0,0	0,02
Fenitrothion	14	0	0,0	0,02
Fenpropimorph	14	0	0,0	0,02
Fenthion	14	0	0,0	0,04
Fenvalerate	14	0	0,0	0,02
Flamprop-M-iso	14	0	0,0	0,02
Flucythrinate	14	0	0,0	0,02
Flutriafol	14	0	0,0	0,02
Formothion	14	0	0,0	0,02
HCB (hexachlor	14	0	0,0	0,02
HCH sum	14	0	0,0	0,01
Heptachlor	14	0	0,0	0,02
Heptachlorepo	14	0	0,0	0,02
Heptachlorepo	14	0	0,0	0,02
Heksaconazole	14	0	0,0	0,01
Imazalil	14	0	0,0	0,02
Iprodione	14	0	0,0	0,02

Column 6	Column 7
MRM # Ten most frequently found pesticides in decreasing order of frequency (1=most frequent, 2=second most frequent,...)	SRM # Ten most frequently found pesticides in decreasing order of frequency (1=most frequent, 2=second most frequent,...)
sorted by column 4 (% of samples)	sorted by column 4 (% of samples)
1 Deltamethrin	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Kresoxyl-methyl	14	0	0,0	0,02
Malaoxon	14	0	0,0	0,02
Malathion	14	0	0,0	0,02
MCPA	2	0	0,0	0,02
MCPB	2	0	0,0	0,02
Mecarbam	14	0	0,0	0,02
Mecoprop	2	0	0,0	0,02
Metalaxyl	14	0	0,0	0,04
Metconazole	14	0	0,0	0,04
Methacrifos	14	0	0,0	0,02
Methidathion	14	0	0,0	0,02
Myclobutanil	14	0	0,0	0,02
Omethoate	14	0	0,0	0,04
Parathion	14	0	0,0	0,02
Penconazole	14	0	0,0	0,02
Pendimethalin	14	0	0,0	0,02
Permethrin	14	0	0,0	0,04
Phorate	14	0	0,0	0,02
Phosphamidon	14	0	0,0	0,02
Pirimicarb	14	0	0,0	0,04
Pirimihos-methy	14	0	0,0	0,02
Prochloraz	14	0	0,0	0,02
Procymidone	14	0	0,0	0,02
Profenofos	14	0	0,0	0,02
Propham	14	0	0,0	0,04
Propiconazole	14	0	0,0	0,02
Propyzamide	14	0	0,0	0,02
Pyrazophos	14	0	0,0	0,02
Quintozene	14	0	0,0	0,02
Tebuconazole	14	0	0,0	0,02
Tecnazene	14	0	0,0	0,02
Terbutryn	14	0	0,0	0,02
Thiometon	14	0	0,0	0,02
Triadimefon	14	0	0,0	0,02
Triadimenol	14	0	0,0	0,04
Triazophos	14	0	0,0	0,02
Vinclozoline	14	0	0,0	0,02

*report pesticides (isomers, metabolites) according to the residue definition in the EU Directives or national legislation
SRM - single residue methods, MRM - multi-residue methods.

Table B: Notifications of the co-ordinated programme (specific exercise) to the European Commission

Product group: Root and tuber vegetables		Food item: Carrots	
Reporting country:	<u>ESTONIA</u>	Year of sampling:	<u>2005</u>
		IMPORTANT	
Total number of samples analysed:	18	With residues above MRL (EC+national):	0
Without detectable residues:	18	With residues above EC-MRL:	0
With detectable residues at or below MRL or without MRL:	0	With residues above national MRL:	0

Only insert information on the specified commodity and the listed pesticides.
Do not change, insert or delete rows or columns

Pesticide (**)	Total number of samples	Number of samples without residues	Reporting level (mg/kg)	Samples with quantifiable residues in classes up to and including (µg/kg) (*)													Maximum residue level found (mg/kg)	Number of samples with residues exceeding the MRL	MRL (mg/kg)	Source of MRL (***)	Check	
				0.01	0.02	0.05	0.1	0.2	0.5	1	2	5	10	20	50	>50						
Acephate	18	18	0,04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0
Aldicarb	0	0	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0
Azinphos-methyl	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,50	E	0
Azoxystrobin	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,20	E	0
Benomyl group(##)	18	18	0,05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0
Bifenthrin	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0
Bromopropylate	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0
Bupirimate	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		W	0
Captan	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	xxxxxx			0
Carbaryl	18	18	0,04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,00	E	0	
Chlorothalonil	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,00	E	0	
Chlorpropham	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0	
Chlorpyrifos	18	18	0,01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0	
Chlorpyrifos-methyl	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Cypermethrin	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Cyprodinil	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		W	0	
Deltamethrin	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Diazinon	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,20	E	0	
Dichlofuanid	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,00	E	0	
Dicofol	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Dimethoate	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Endosulfan	18	18	0,01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Fenhexamid	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Fludioxonil	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		W	0	
Folpet	18	18	0,04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	xxxxxx			0
Captan+ Folpet (Sum)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0	
Imazalil	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Imidacloprid	0	0	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		W	0	
Iprodione	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,30	E	0	
Kresoxim-methyl	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Lambda-cyhalothrin	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Malathion	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,50	E	0	
Maneb-group(##)	0	0	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,20	E	0	
Metaxyl	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0	
Methamidophos	0	0	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,01	E	0	
Methidathion	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Methiocarb	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		W	0	
Methomyl	0	0	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Myclobutanil	18	18	0,04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,20	E	0	
Oxydemeton-methyl	18	18	0,04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Parathion	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Phosalone	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0	
Pirimicarb	18	18	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		W	0	
Pirimiphos-methyl	18	18	0,01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,00	E	0	
Procymidone	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Propargite	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		W	0	
Pyretrins	0	0	0,04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,00	E	0	
Pyrimethanil	18	18	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		W	0	
Spiroxamine	0	0	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Thiabendazole	18	18	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Tolclofos-methyl	18	18	0,05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		W	0	
Tolyfluanid	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		W	0	
Triadimefon	18	18	0,01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0	
Vinclozolin	18	18	0,02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,50	E	0	

xxxxxx: do not report MRL here, report MRL in the row (Sum Captan- 0,02
(*) i.e column 0.02 includes the range from 0.011... mg/kg upto 0.020... mg/kg

(##) Benomyl, carbendazim, thiophanate-methyl (sum of residues expressed as carbendazim).

(**) in alphabetical order of the English name
(***) E=EC-MRL, N=National MRL, W=without MRL

(##) Sum of dithiocarbamates, expressed as CS₂

Table B: Notifications of the co-ordinated programme (specific exercise) to the European Commission

Product group: Citrus fruit		Food item: Oranges	
Reporting country:	ESTONIA	Year of sampling:	2005
Total number of samples analysed: 16		With residues above MRL (EC-national):	2
Without detectable residues: 2		With residues above EC-MRL:	2
With detectable residues at or below MRL or without MRL: 12		With residues above national MRL:	0

IMPORTANT
Only insert information on the specified commodity and the listed pesticides.
Do not change, insert or delete rows or columns

Pesticide (**)	Total number of samples	Number of samples without residues	Reporting level (mg/kg)	Samples with quantifiable residues in classes up to and including (µg/kg) (*)													Maximum residue level found (mg/kg)	Number of samples with residues exceeding the MRL	MRL (mg/kg)	Source of MRL (***)	Check									
				0.01	0.02	0.05	0.1	0.2	0.5	1	2	5	10	20	50	>50														
Acephate	16	16	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	E	0	
Aldicarb	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	E	0	
Azinphos-methyl	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	E	0	
Azoxystrobin	16	15	0.02	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	E	0	
Benomyl group(#)	16	13	0.02	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	E	0	
Bifenthrin	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	E	0	
Bromopropylate	16	15	0.03	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	E	0	
Bupirimate	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	W	0	0	
Captan	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	xxxxxx	0	0	
Carbaryl	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,00	E	0	
Chlorothalonil	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,01	E	0	
Chlorpropham	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Chlorpyrifos	16	9	0.01	1	3	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,30	E	0	
Chlorpyrifos-methyl	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,50	E	0	
Cypermethrin	16	16	0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,00	E	0	
Cyprodinil	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	W	0	0	
Deltamethrin	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Diazinon	16	15	0.02	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,00	E	0	
Dichlofuanid	16	16	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,00	E	0	
Dicofol	16	16	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	E	0	
Dimethoate	16	15	0.02	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Endosulfan	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,50	E	0	
Fenhexamid	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Fludioxonil	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	W	0	0	
Folpet	16	16	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	xxxxxx	0	0	
Captan+ Folpet (Sum)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0	
Imazalil	16	2	0.01	0	1	2	3	1	1	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5,3	1	E	0
Imidacloprid	0	0	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	W	0	0	
Iprodione	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Kresoxim-methyl	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Lambda-cyhalothrin	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0	
Malathion	16	11	0.05	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,00	E	0	
Maneb-group(##)	16	16	0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,00	E	0	
Metaxyl	16	15	0.02	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,50	E	0	
Methamidophos	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,20	E	0	
Methidathion	16	14	0.03	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,00	E	0	
Methiocarb	16	16	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	W	0	0	
Methomyl	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,50	E	0	
Myclobutanil	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,00	E	0	
Oxydemeton-methyl	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Parathion	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Phosalone	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,00	E	0	
Pirimicarb	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	W	0	0	
Pirimiphos-methyl	16	16	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,00	E	0	
Procymidone	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,02	E	0	
Propargite	16	16	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	W	0	0	
Pyretrins	0	0	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,00	E	0	
Pyrimethanil	16	16	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	W	0	0	
Spiroxamine	0	0	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	
Thiabendazole	16	6	0.01	1	1	2	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,00	E	0	
Tolclofos-methyl	16	16	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	W	0	0	
Tolyfluanid	16	16	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	W	0	0	
Triadimefon	16	16	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,10	E	0	
Vinclozolin	16	16	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,05	E	0	

xxxxxx: do not report MRL here, report MRL in the row (Sum Captan+Folpet)
 (*) i.e column 0.02 includes the range from 0.011... mg/kg upto 0.020... mg/kg
 (**) in alphabetical order of the English name
 (***) E=EC-MRL, N=National MRL, W=without MRL
 (##) Sum of dithiocarbamates, expressed as CS₂
 (#) Benomyl, carbendazim, thiophanate-methyl (sum of residues expressed as carbendazim).

Table F: Details of the Homogeneity Exercise

(Please copy this table as often as needed)

(For the calculation of the homogeneity of the sample a value of 0.5*LCL should be used for negative results of single items)

Reporting country: Estonia Year: 2005 Commodity: Pesticide sought: Samples taken at single producer (yes/no)		
	Result (mg/kg)	Sample reference
Composite sample		
Single items		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
*insert more rows if necessary		
Maximum value (mg/kg)	Err:502	
Mean (mg/kg)	#VALUE!	
Factor for the homogeneity of the sample*	Err:502	

*defined as maximum value/mean value of the single items

Table G: Laboratories

Year	<u>2005</u>
Country	<u>Estonia</u>

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
	Workload with regard to the monitoring exercise	Accreditation status			Participation in proficiency tests or interlaboratory tests in 2005	Implementation of EU Quality control procedures [please refer to each element as specified in the table below by giving its number]	
Name of the laboratory/ laboratories carrying out the monitoring exercise	Percentage of monitoring samples analysed	Accreditation achieved (Yes/No) [Please provide acc. certificates]	Date of accreditation	Accreditation body	Which? Scope?	Implemented parts	Not implemented parts
Agricultural Research Centre Laboratory for Residues and Contaminants	62	Yes: L044	21.03.2001.	EAK	FAPAS 0941; 1942; 1949; 1954; 0519; 0544; EU PT 7	1; 2(partly); 3; 4; 5; 6; 7; 8; 9; 10	None
Health Protection Inspectorate Tartu Laboratory	18	Yes: L019	28.12.1999 (renewed 27.12.2004)	EAK	FAPAS 1941; 1947; 1953; 0542; EU PT 7	1; 2; 3; 4; 5; 6; 7; 8; 9; 10	None
Health Protection Inspectorate Central Laboratory of Chemistry, Tallinn	18	Yes: L042	18.02.2001.	EAK	FAPAS 1954	1; 2(partly); 3; 4; 5; 6; 7; 8; 9; 10	None

EU Quality control procedures (ref. Doc.SANCO/10476//2003)

Element number	Content
1	Accreditation
2	Sampling, transport, processing and storage of samples
3	Pesticide standards, calibration, solutions, etc.
4	Extraction and concentration
5	Contamination and interference
6	Analytical calibration and chromatographic integration
7	Analytical methods and analytical performance
8	Proficiency testing and analysis of reference materials
9	Confirmation of results
10	Reporting of results