



**COUNCIL OF
THE EUROPEAN UNION**

Brussels, 3 December 2008

**16734/08
ADD 2**

**AGRI 424
ENV 933**

COVER NOTE

from: Secretary-General of the European Commission,
signed by Mr Jordi AYET PUIGARNAU, Director

date of receipt: 21 November 2008

to: Mr Javier SOLANA, Secretary-General/High Representative

Subject: Commission Staff Working Document "Monitoring of Pesticide Residues in
Products of Plant Origin in the European Union, Norway, Iceland and
Liechtenstein 2006" - Annex 2

Delegations will find attached Commission document SEC(2008) 2902 final.

Encl.: SEC(2008) 2902 final



COMMISSION OF THE EUROPEAN COMMUNITIES

ANNEX 2 TO THE COMMISSION STAFF WORKING DOCUMENT

Monitoring of Pesticide Residues

in Products of Plant Origin

in the European Union, Norway, Iceland and Liechtenstein

2006

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2. COUNTRY COMMENTS

BELGIUM

1. SUMMARY OF RESULTS

In 2006, a total number of 1539 samples of fruits, vegetables, cereals and processed products of plant origin (including baby food) were taken by the Belgian Federal Agency For the Safety of Food Chain (FASFC) on the Belgian market and analysed for the presence of pesticide residues (table 1).

Table 1: Overview of the results of the pesticide residue monitoring programme 2006.

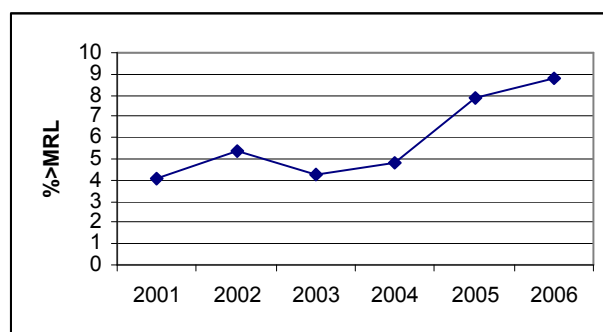
Samples	analyse d	withou t residue s	with residue s at or below MRL	> MRL	Origin					
					BELGIUM			IMPORTED		
					samples	>MRL	%	samples	>MRL	%
Fruits & vegetables	1359	39,3 %	51,9 %	8,8%	770	40	5,2	589	80	13,6
Cereals	39	59 %	41 %	0						
Processed products	86	74,4 %	25,6 %	0						
Baby food	55	100 %	0 %	0						
TOTAL	1539	43,9 %	48,3 %	0						

Fruit & vegetables : 1359 samples of fresh or frozen fruit and vegetables were analysed in 2006. No residues were found in 39% of them. 8,8% of the samples analysed exceeded the maximum residue levels (MRL) set in the Belgian legislation. It should be noted that more exceedings were observed in imported foodstuffs. The rate of MRL exceeding is higher than in 2005 (+0,9%) [graph 1]. It is important to note that, as specified by the Commission guidelines, this report does not take into account the analytical uncertainty of the result. Taking into account that uncertainty, the rate of exceeding falls to 4,6%.

The main commodities showing MRL exceeding are stone fruits (peaches and plums), berries (table grapes), leguminous vegetables (beans and peas) and citrus fruit (oranges, lemons and mandarins).

Out of a list of 307 different pesticide residues analysed in fruit and vegetables, a total of 113 were found at least once during the monitoring programme.

The pesticide residues that were found most frequently are fungicides : iprodion, maneb-group, boscalid, propamocarb, imazalil, chlorpropham, thiabendazole and carbendazim.



Graph 1: MRL exceedings (%) in fruit and vegetables in Belgium from 2001 to 2006

Several factors have to be taken into account when interpreting these results:

1. The improvement of the analytical performance of the laboratories. More and more pesticides are analysed with a higher sensitivity of detection (from 141 in 2002 to 307 in 2006).
2. The national MRL. A large number of foodstuffs imported from EU Member States exceeded the Belgian MRL but did not exceed the MRL of the Member State of origin. 47% of the 120 exceedings observed in 2006 concerned non harmonized MRLs. This commercial problem will be

solved in the next months by the entry into force of Regulation (CE) No 396/2005 which harmonizes all MRL in the EU.

3. The drafting of the monitoring programme is based on risk assessment . It does not provide for a total random analysis, as more samples are taken of food items expected to contain pesticides or to exceed MRLs.

Cereals: 39 samples of cereals were analysed in 2006. No exceedings of the MRL were observed.

Processed products: 141 samples of processed products, including baby food, were analysed. No exceeding of MRLs was observed.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

- Responsibilities: The Federal Agency for the Safety of the Food Chain (FASFC), under the responsibility of the Minister of Public Health, is the competent authority for the control of pesticides residues in foodstuffs (<http://www.afsca.be>)
- Drafting of the monitoring plan: The monitoring programme does not provide for a total random analysis, but is based on risk assessment. Several factors were taken into account: the exceeding in previous years in Belgium and in other Member States, the RASFF messages, the toxicity of pesticides, the importance of the foodstuffs in diets, the analytical and budgetary possibilities and all other useful information. All groups of fruits and vegetables are included in the programme and a rolling programme is applied for less important commodities. The coordinated programme of the European Commission was also included in the national programme.
- Sampling: Sampling was executed by trained officials according to directive 2002/63/EG, at auctions, importers, wholesalers, processors and exceptionally in retail businesses.
- Measures taken: In case of infringement, the responsible company/person is identified. When the exceeding of MRL is within the analytical uncertainty, a warning is issued. When the exceeding is higher, an official report is made and sent to the responsible company/person and also to the legal department of the FASFC. The legal department proposes a fine. If the fine is not paid, or in case of repeated offences, the matter is taken to court . When the dietary intake calculations indicate a risk for the consumer (estimated in accordance with document SANCO/3346/2001) a national and an international rapid alert are issued and measures to protect consumers are taken (tracing and recall of the foodstuffs for destruction). In 2006, Belgium issued one RASFF message for omethoate on Belgian table grapes. A recall was organised.

3. QUALITY INSURANCE

- Four officially recognised laboratories were involved in the monitoring programme 2006. They are all ISO 17025 accredited for the most important analytical methods and commodities. Multiresidue methods as well as specific individual methods were performed on the samples. All certificates of accreditation can be found on the website of the Belgian Organisation for Accreditation (<http://belac.be/>). The laboratories take into account EU Quality control procedures (ref. SANCO/10232/2006).
- Three laboratories participated in the European Commission's Proficiency Tests 8 with good results.

4. FURTHER INFORMATION

- An MRL is not a toxicological endpoint. An exceeding of MRL seldom represents a hazard for the consumer. MRLs exceeding reflects the non compliance with good agricultural practices (product authorised on the crop, dose, delay before harvest, ...)

CZECH REPUBLIC

1. SUMMARY

In 2006, totally 947 samples of fruits, vegetables, cereals and processed products and 72 baby food products of domestic and non-domestic origin were analysed in the national and co-ordinated monitoring program. National or EU harmonised MRLs were exceeded in 9 samples (0,95 %). Pesticide residues above the reporting limits were found in 36 % of the surveillance products of plant origin. Regarding products of plant origin, domestic production made up 22,7 % of the samples, 62,4 % of the samples came from other EU countries and 14,9 % were from the third countries. Aubergines, bananas, cauliflowers, grapes, orange juices, peas (fresh/frozen, without pods), peppers, wheat – totally 221 samples, were analysed in the of EU co-ordinated programme for the year 2006. The level exceeding MRL was found out in 7 samples of fresh fruits and vegetables, in 1 sample of coffee and baby food product. Most of violative samples were from EU countries (7), one sample was from the Czech Republic and one sample from third country (Marocco).

53 different pesticide residues out of 184 sought analytes (including metabolites) in fruit and vegetables were found at least once during the monitoring programme. The most frequently found pesticide residues, in decreasing order of frequency (found/sought) are: orthophenylphenol, imazalil, thiabendazole, azoxystrobin, carbendazim, imidacloprid, thiacloprid, procymidone, cyprodinil, fenhexamid. Out of 182 pesticide residues (including metabolites) sought for, only pirimiphos-methyl was detected in cereals.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

Responsibilities

Czech Agriculture and Food Inspection Authority (CAFIA) is the competent authority for controls of pesticide residues in foodstuffs and provides the national and EU co-ordinated monitoring programmes in co-operation with the Ministry of Agriculture.

Design of Programmes

The sampling plan for pesticide residues monitoring is always drawn up for one calendar year. The plan is elaborated by the Headquarters of CAFIA as internal provision and it is distributed to the CAFIA regional inspectorates which are responsible for its implementation. The plan is based on Commission Recommendation concerning a coordinated Community monitoring programme which sets the minimum number of samples for the Czech Republic. Within the monitoring of pesticide residues, the Czech Republic analyses approximately 800 samples per year. Within pesticide residue monitoring, especially commodities mainly presented in the consumer basket are collected. In selection of commodities for the monitoring a number of findings in the past (in the Czech Republic and other member states) is also taken into account. Fresh fruit and vegetables and baby food comprise the primary proportion of samples taken.

Sampling

Sampling is performed in accordance with sampling procedures referred to in Commission Directive No. 2002/63/EC that has been incorporated into the national regulation for sampling for determination of pesticides in and on fruit and vegetables.

Samples are taken by authorised and for this purpose trained employees of the CAFIA, i.e. inspectors of the CAFIA regional inspectorates. The main sampling points are importers, wholesalers and retail shops for domestic and non-domestic products.

Enforcement

A ban on sale/distribution of inspected foodstuffs is imposed when exceeding the MRL or it is ordered to withdraw unsatisfactory foodstuffs from circulation. Furthermore, the person inspected is

ordered to take such measures that minimise the risk of further occurrence of limit-exceeding findings. A fine is imposed on the inspected person within administrative procedure. When determining its amount the importance, manners, duration and consequences of illegal act are taken into consideration.

3. QUALITY ASSURANCE

Accreditation

All analyses were carried out in the laboratory of Czech Agriculture and Food Inspection Authority (CAFIA) in Prague. Laboratory is accredited by Czech Accreditation Institute (CAI) according to the ISO/IEC 17025 standard for all methods used for monitoring and/or enforcement analysis.

Analytical methods

Pesticide residues reported by the laboratory in the year 2006 were analysed by 5 analytical methods which covered together 184 analytes (incl. metabolites) – 2 multi-residue methods (one MRM is based on ethyl acetate extraction, GPC clean-up and capillary gas chromatography (GC-ECD/NPD/MSD), second MRM is based on acetonitrile extraction followed by LC-MS/MS - liquid chromatography coupled either with ion-trap mass spectrometry or with triple quadrupole) and 3 single-methods (GC-MSD for dithiocarbamates, GC-ECD for inorganic bromine and LC-MS/MS for chlormequate).

Proficiency testing

During the year 2006 the laboratory took part in 5 proficiency tests focused on pesticide residues – in two FAPAS rounds, two EU-PT rounds (EUP-08 and EUP-SRM01) and in one test organised by APLAC.

EU Quality Control procedures

Although most of requirements from the EU quality control guidelines (SANCO/10476/2003) have been fully implemented some of them are still fulfilled only partly. Improvement of QC procedures has been achieved since the year 2004 and the process will continue in light of new edition of guidelines also in the future.

Uncertainty

A concentration-dependent uncertainty concept based on the Horwitz equation is still applied for uncertainty estimation. For calculation of expanded uncertainty (U), the RSDR obtained from the equation is multiplied by a factor of 1.4, which is derived from laboratory experiments, validation and QC data. The change of the described above approach to the harmonised “50% uncertainty” approach recommended in the guidelines must be first approved by national accreditation body and is planned for the end of the year 2007.

4. OTHER INFORMATION

Details of homogeneity exercise

Homogeneity experiments were realised on 10 samples – bananas (5 x), aubergines (2 x), grapes (2 x) and peppers (1 x). The homogeneity factors are showed in the table below:

Product	Pesticides	Homogeneity factor
Banana	Imazalil	2,02
	Thiabendazole	1,79
Banana	Imazalil	1,68
	Thiabendazole	1,73

Product	Pesticides	Homogeneity factor
Banana	Imazalil	1,04
Banana	Imazalil	1,83
	Thiabendazole	2,40
Banana	Imazalil	2,08
	Thiabendazole	2,81
Pepper	Procymidone	5,94
	Methiocarb	1,84
	Pirimiphos-methyl*	1,79
Aubergine	Acetamiprid	3,03
	Methomyl	2,14
	Imidacloprid	1,23
Aubergine	Imidacloprid	2,09
Grapes	Fenitrothion	1,00
	Cyprodinil	1,20
	Fenhexamid	1,09
	Fludioxonil	1,21
Grapes	Chlorpyrifos	1,24
	Carbendazim	1,16

* concentration in composite sample below reporting limit

Risk assessment

Health risk assessment is in the Czech Republic performed by the Ministry of Health. Non-complying samples relevant for transmission via RASFF (Rapid Alert System for Food and Feed) were ceded to them, 2 of them gave rise to notifications in 2006, one sample which was taken in 2006, however its results were available in 2007, was notified in January 2007.

2006.AUX – Dicophol in sweet peppers from Morocco via France

2006.BAO – Ethion in carrots from France

2007.ACW – Procymidone in fresh spinach from France.

DENMARK

1. SUMMARY OF RESULTS

In 2006 a total of 1952 samples of fruit, vegetables and cereals (fresh, organic, frozen, processed or baby food) were analysed: 396 samples of domestic origin and 1556 samples of foreign origin, i.e. 774 from other European countries and 782 samples from non-European countries. The samples included 1613 samples of fruit and vegetables and 234 samples of cereals. In addition, 85 samples of other processed foods and 20 samples of baby foods (10 cereal based and 10 fruit and vegetable based) were analysed.

Frozen foods 3% of the fruit and vegetable samples, 4% were organically produced and 4% of the samples were processed food (wine and juice).

Of the cereal samples 18% (36 samples) were organically produced. 57 of the cereal samples were only analysed for chlormequat and mepiquat for the control of the declaration “free of straw shortener” or “produced without straw shortener”

Residues exceeding the maximum residue levels were found in 59 samples (4%). All samples with exceedances were fruit and vegetables. The residue found in one lettuce sample was exceeding a national MRL. Pesticide residues were found on average in 51% of fruit and vegetables, and in 16% of the cereal samples.

The residues found in cereals were mainly the plant growth regulator chlormequat (found in 6% of the samples). Pirimiphos-methyl and deltamethrin were found in 4% and 3% of the cereal samples. Imazalil, carbendazim and chlorpyrifos were the pesticides most common found in samples of fruit and vegetables (15.2%, 10.4 and 9.7%, respectively). Multiple residues were found in 29% of the fruit and vegetable samples. The highest number of pesticide residues, i.e. nine, was found in a sample of grapes.

Multiple residues were found in 3% of the cereal samples. In organic food, residues of chlorpyrifos and propargite were found in one lemon sample and fenhexamid was found in one kiwi sample, both samples originated from Italy. Furthermore pyrethrins were found in one sample of sweet pepper and one sample of tomato, however the later are not considered as a violation, as some countries grant an exemption for the use of pyrethrins in organic farming.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

Pesticide monitoring in Denmark were in 2006 the responsibility of the Danish Veterinary and Food Administration under the Ministry of Family and Consumer Affairs. The National Food Institute designed the monitoring programme and consolidated the collected data in cooperation with the Danish Veterinary and Food Administration. The Regional Veterinary and Food Control Authorities were responsible for implementing the sampling plans and for enforcement actions.

The sampling plan was based on dietary consumption pattern with regard to pesticide intake. A previous report [1] analysing monitoring data from 1998-2003. This report showed that 25 commodities were responsible for more than 98% of the intake of pesticide residues. These commodities were included in the sampling plan along with commodities suggested by the commission (monitoring plan 2006). Furthermore about 100 samples were left open for the sampling authorities to sample the “left over” commodities on the Danish market. Sampling fewer commodities but more samples of the single commodity will provide a better basis for comparison between years, so that trends in pesticide residues found may be analysed. All samples included in the centrally coordinated monitoring in 2006 were designed as surveillance samples.

Samples were taken by authorised personnel from the 10 Danish Regional Veterinary and Food Control Authorities. Directive 2002/63/EC on sampling procedures for control of pesticide residues is implemented in Danish legislation. Enforcement actions included warnings, fines and orders to improve internal control programmes.

3. QUALITY ASSURANCE

The analytical methods have been developed and validated by the National Food Institute (FVI), Danish Technical University. All samples were analysed at the laboratory at the Regional Veterinary and Food Control in Ringsted. FVI performed confirmatory analysis of samples with residues exceeding the MRL or resulting from illegal uses. Both laboratories are accredited for pesticide analysis in compliance with EN45001/ISO17025 by the Danish body of accreditation, DANAK (certificate numbers 315 and 350). The laboratories participated in the relevant FAPAS performance verification scheme and in the EU-proficiency tests.

All samples of fruit and vegetables were analysed for about 190 pesticides, including isomers and metabolites. In addition, part of the samples were analysed for dithiocarbamates. Due to the methodology applied it was not possible to distinguish between the dithiocarbamates included in the MRL definition and other dithiocarbamates for which no MRL has been fixed. Thus it was not possible to report confirmed exceedances for the maneb-group. From 15th of September the MRL for carbendazim and thiophanate-methyl were set separately, and from that date carbendazim and thiophanate-methyl was reported as individual findings instead of "sum of carbendazim". All cereal samples were analysed for 124 pesticides, including isomers and metabolites.

"Guidelines concerning Quality Control Procedures for Pesticide Residue Analysis" has been applied for all methods. Mass selective confirmation was performed for part of the GC multimethods and for the LC/MS-MS methods for fruit and vegetables. Analytical uncertainty is not applied in monitoring reports, but is always applied in case of enforcement actions.

4. OTHER INFORMATION

Residues without maximum residue limits and residues with acute reference doses were individually evaluated by toxicologists at the National Food Institute, Danish Technical University. Residues of pesticides with a low acute reference dose were detected in 5 samples of fruit and vegetables in quantities that could lead to an exceedance of the ARfD. One tomato sample from Spain containing chlorothalonil exceeded ARfD by 217% for adults and 647% for children, and one cucumber sample from Spain containing methamidophos exceeded the ARfD by 185% for adults and 682% for children. Even though the probability of a toxicological effect to occur is minimal, the significant reduction in the safety margin leads to an evaluation of these two samples as toxicologically unacceptable. Furthermore the level of methomyl detected in one lettuce sample lead to an exceedances of the ARfD by 838% and 1431% for adults and children, respectively. This sample was evaluated by the toxicologists, who concluded that possible health risk could not be excluded, and that the sample might cause a health risk.

References:

1. M.E. Poulsen, J.H. Andersen, A. Petersen, H. Hartkopp (2005). Pesticide Food Monitoring, 1998-2003 Part 2. ISBN 87-91569-54-0.
<http://www.foedevarestyrelsen.dk/FDir/Publications/2005002/Rapport.pdf>

GERMANY

1. SUMMARY OF RESULTS

In 2006 in the Federal Republic of Germany a total of 17,535 samples (16,941 surveillance and 594 follow-up enforcement samples) were tested for pesticide residues. In 6,461 (38.1 %) surveillance samples no residues of pesticides could be quantified and in 9,580 (56.5 %) surveillance samples, residues of pesticides were quantified in compliance with official, national and EU MRLs. 900 (5.3 %) surveillance samples contained residues of pesticides exceeding MRLs. Multiple residues were found and quantified in 41,6 % of the total samples.

Table 1 shows the number of surveillance samples divided into domestic production and imports (including samples with origin not known) and takes into account the five product groups. Residues of pesticides in imported samples and samples with unknown origin exceeded MRLs more frequently than those of domestic foods.

Non-harmonised MRLs are one reason for this result. In some countries of origin the MRLs for particular pesticides are higher (less strict) than they are in Germany. Therefore residues may be treated as MRL exceeding in Germany, while they are permitted in the country of origin.

Table 1 Overview of the results of the tests performed on domestic and foreign produce (surveillance samples only)

Food group	Domestic produce				Import produce and samples with origin not known			
	total amount	without residues*	residues up to MRL	residues above MRL	total amount	without residues*	residues up to MRL	residues above MRL
Cereals	381	204	177	0	127	79	47	1
Fruit and vegetables	5345	2299	2836	210	8979	2736	5562	681
Animal products	1280	611	663	6	543	278	263	2
Processed products	92	80	12	0	18	9	9	0
Baby food	158	148	10	0	18	17	1	0
Total	7256	3342	3698	216	9685	3119	5882	684

* without residues means below limit of determination

The participating laboratories reported a total of 3,446,011 analyses for the food samples. The samples were analysed for a total of 717 different pesticides (excluding isomers and metabolites) from which 323 were detected at least in one sample. Residues of 158 individual pesticides exceeded MRLs.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

In Germany there is a difference between the Food Monitoring Programme and official food control. Parts of the data generated in both programmes correspond with the provisions of Directives 76/895/EEC, 86/362/EEC, 90/642/EEC and the Commission Recommendation of 18 January 2006 (2006/26/EC) concerning a coordinated Community monitoring programme. Therefore, the report includes the respective data from both programmes:

- Monitoring programme 2272 samples

- official food control 15263 samples.

The monitoring is based on a representative collection of data. With regard to bio-statistical aspects, the samples are taken randomly according to defined sampling plans. The sampling plans to be used for this purpose are laid down every year by the Federal Government together with the Federal Laender.

In the framework of official residue control, the samples are taken in a risk-oriented manner in order to check if there are any infringements against food legislation (e.g. surpassing of MRLs). The kind and extend of the sampling are decided on by the Federal Laender. When infringements are stated, the Laender authorities apply adequate measures (follow-up examinations, fines and, if necessary, transfer of the case to public prosecution).

1077 samples of 17,535 (6.1 %) were from products produced under the rules of organic farming. In only 377 (35.0%) samples residues of pesticides could be quantified. The sampling strategies for these products vary between the Laender. Some have special programs, other take samples rather by chance.

The Federal Laender are responsible for the sampling, which is carried out by correspondingly trained official inspectors according to Commission Directive 2002/63/EC. Samples were taken on the level of producers, manufacturers, wholesalers and retailers.

3. QUALITY ASSURANCE

All the 33 laboratories transmitting data to the 'Federal Office for Consumer Protection and Food Safety, BVL' have been accredited to ISO 17025 standard and participated in proficiency tests.

Analytical methods used in the framework of food surveillance and of food monitoring comply with the requirements set out in the EU-guidelines document "Quality Control Procedures for Pesticide Residue Analysis" (SANCO/10232/2006).

The analytical uncertainty is not considered in this report. The numerical measured values of residues are compared to the MRLs, only. However, food control authorities in Germany take into account the analytical uncertainty before administrative consequences follow. In these cases they use the subsequent procedure. If measured residues indicate that maximum residue levels are exceeded, the analytical uncertainty is considered. For food of plant origin an over-all reduction of 50% of the measured value, over all ranges of concentration, is generally applied. For food of animal origin the result is reduced by twice the theoretical standard deviation as derived from the Horwitz curve for the concentration range in question.

It is taken for sure that maximum residue levels are exceeded when measured values, reduced by the respective deviation, are still above the respective limit value.

4. OTHER INFORMATION

Homogeneity exercises in 2006 were carried out in 21 sweet pepper samples (with 10 single units).

Summary of results

In 2006, a total of **472** surveillance samples of fruits, vegetables, cereals, processed products (cereals products, juice) and baby food were analysed for residues of 204 analytes. National or EU harmonised Maximum Residue Limits (EC-MRLs) were exceeded by 9 samples (2,2 %).

Among them there were :

- 1 **148** domestic and **270** imported fruit and vegetables samples, were **244 (58,4%)** samples without residues, **165 (39,5%)** samples with residues at or below MRL-s and **9 (2,2%)** samples with residues exceeding MRL-s
- 1 **18** samples of cereals, 16 domestic samples and for 2 samples country origin were unknown
- 1 **26** samples of processed products, 12 domestic samples, 12 samples of imported and for 2 samples country origin were unknown
- 1 **10** samples of baby food

Aubergines, bananas, cauliflower, grapes, orange juice, pears, peppers and wheat in all **124** samples, were analysed in the 2006 EU co-ordinated programme.

- 1 **1** of these samples exceeded the EC-MRLs for the pesticides that were included in the co-ordinated programme.

The residue was found only in the **1** sample of the cereals.

The residues were not found in the processed products and baby food.

The most frequently found pesticide residues, in decreasing order of frequency (found/sought) are:

- 1 imazalil, maneb group, 2-phenylphenol, chlorpyrifos, benomyl group, thiabendazole, endosulfan sum., azoxystrobin, iprodione, triadimefon/triadimenol, tolylfluanid.

Organisation of monitoring programmes and sampling

1 **Competent Authorities**

In 2006, 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.

1 **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.

1 **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

1 **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.

Quality assurance

1 **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>)

1 **Analytical methods used**

The laboratories used multi-residue method EN 12393 – 1,2,3 for analysis of pesticide residues in fruit, vegetables, cereals, processed products and baby food with GC-ECD/NPD, GC-MS and LC-MS/MS determination. The first extraction is different by laboratories: two laboratories used acetone and one laboratory used ethyl acetate. A single residue method was used for determination of dithiocarbamates (maneb-group).

1 **Participation in proficiency tests**

Two laboratories have participated in the European Commission's Proficiency Test 8 with good results (Category A) and in 2006 two laboratories have participated in the proficiency tests organised by FAPAS (UK) (see Table G).

1 **Implementation of EU Quality Control Procedures**

The EC guidelines SANCO/10232/2006 “Quality Control Procedures for Pesticide Residue Analysis”, fourth edition, 2006 have been implemented as far as practicable (see Table G).

1 **Analytical uncertainty**

The analytical uncertainty of the results is calculated based on relative standard deviation of recovery rates and results of proficiency testing if available. If the analytical results, without any correction were mathematically above the MRL, the sample was defined as an exceeding. However, before any enforcement actions were taken the analytical uncertainty was subtracted from the measured value. If the corrected analytical results still exceed the MRL enforcement actions could be taken.

1

Other information

1 **Details of homogeneity exercise**

In 2006 the homogeneity exercise was not carried out

1 **Background on legislation**

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

1 **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.

GREECE

1. SUMMARY OF RESULTS

A total number of 2981 surveillance samples were analysed by 9 laboratories, including 2270 samples of fresh and frozen fruit and vegetables, 129 samples of cereals, 553 samples of processed products and 29 samples of baby food. Furthermore, 36 follow up samples were also examined. From the above mentioned 2980 surveillance samples analyzed, 236 samples were also examined for pesticides specified in the 2006/26/EC Commission Recommendation.

Fresh and frozen fruit and vegetables: A total of 2270 samples was examined. 32 of them were organic samples.

- 1803 (83%) were domestic samples of fruit and vegetables
- 48 (2.1%) were samples from other EU countries
- 339 (14.9%) were imported samples from TCs.
- 1892 (83.3%) were samples without detectable residues
- 359 samples (15.8%) contained detectable residues at or below MRLs (2 of them were organic products)
- 19 samples (0.8%) contained residues of one or more pesticides at concentrations exceeding the EU-MRLs

The total number of pesticides sought in fresh fruits and vegetables was 142. The most frequently pesticides found in fresh fruits and vegetables were: chlorpyrifos ethyl, phosalone, iprodione, captan, endosulfan, ethoprophos, diphenylamine, methomyl, cyprodinil and procymidone (MRM methods) and maneb group, carbendazim and thiabendazole (SRM methods).

Cereals: A total of 129 samples was examined.

- 31 (24%) were domestic cereal samples
- 98 (76%) were imported samples from TCs
- 123 (95.3%) were samples without detectable residues
- 6 samples (4.7.0 %) contained detectable residues at or below MRLs

The total number of pesticides sought in cereals was 65. The 3 most frequently pesticides found in cereals were pyrimiphos methyl, deltamethrin and malathion.

Processed products: A total of 553 samples was examined. 511 of the samples were virgin olive oil.

- 549 (99.3%) were domestic samples
- 1 (0.2%) sample was from another EU country
- 3 (0.5%) were imported samples from TCs.
- 386 (69.8%) were samples without detectable residues
- 166 samples (30%) contained detectable residues at or below MRLs
- 1 sample (0.2%) contained residues of a pesticide at concentrations exceeding the national MRL

Baby Food: A total of 29 surveillance samples were analysed. All of them (100 %) were samples without detectable residues.

The reporting levels are generally those routinely achieved in the laboratories.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

The annual monitoring plan was organised by the central competent authority. The responsibilities of the laboratories involved, regarding the number of samples of each commodity that should be analysed and the areas of sampling were well defined by this program. The responsible for the EU co-ordinated program laboratories as well as the responsible for the homogeneity exercise laboratory were also clearly stated.

- *Design of Programmes (priorities, targeting)*

The annual national monitoring plan is based on various important parameters such as the number of samples for each commodity (depending on the produce, the cultivation area and the daily dietary intake contribution of each commodity), the sampling location and the personnel and analytical capacity of each laboratory.

- *Sampling: personnel, procedures, sampling points*

The responsible for sampling authorities, with the designated personnel, follow the methods of sampling (Commission Directive 2002/63/EC). Samples were taken from points of entry, wholesalers, retailers and farm gates.

- *Enforcement action*

In the case of an MRL infringement, the relevant to the case enforcement actions specified by our National law are taken.

3. QUALITY ASSURANCE

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

From the 9 laboratories involved in the pesticide monitoring program of 2006, two are accredited, whereas, the procedures for the accreditation of the rest 7 laboratories are in a final progressed stage.

- *Analytical methods used*

1. The Dutch Manual (5th edition 1988) for gas chromatographic analysis with NPD, ECD, TSD and PFPD - Multiresidue method 5 for organophosphorus compounds, Ministry of Welfare, Netherlands, FIFTH EDITION - The proposed EU method for dithiocarbamates - A French UV method for benzimidazoles - Multiresidue analysis for N-methyl-carbamates to determine the following pesticides: Aldicarb sulfoxide (Standak), Aldicarb sulfone, Oxamyl (Vydate), Methomyl (Lannate), Aldicarb (Temik), Propoxur (Baygon), Carbofuran (Furadan), Carbaryl (Serin), Methiocarb (Mesurol). EPA Methods 5 and 531.1 and AOAC international protocol 29A05, described a direct inject method which employs gradient liquid chromatography with fluorescent detection, accomplished by post-column hydrolysis and derivatization of the eluted carbamates - For olive oil, a method developed in the one lab and published in Journal of Chromatography.

- *Participation in proficiency tests*

From the 9 laboratories involved in the pesticide monitoring programme 2006, 3 have participated in PT08 and 3 have participated in PT07 organised by EU.

- *Implementation of EU quality control procedures*

The EC guidelines SANCO/10476/2003 "Quality Control Procedures for Pesticide Residue Analysis", third edition, 2003 are followed as close as possible.

- *Analytical uncertainty*

The pesticide residues figures found are compared with the MRLs. However, in a case of an exceedance of the MRL, before any enforcement action is taken, a total the analytical uncertainty (95 % confidence interval) is subtracted from the measured value. If this figure still exceeds the MRL, enforcement action relevant to the case is taken.

4. OTHER INFORMATION

- *Details of homogeneity exercise*

The homogeneity exercise was performed for the combinations as recommended by 2006/26/EC Commission Recommendation.

SPAIN

The Spanish Pesticide Monitoring Programme for pesticide residues in food was carried out by the Autonomous Communities. The sampling in origin is coordinated by the Spanish Ministry of Agriculture, Fishery and Food (MAFF). The results of consumption's sampling, including baby food sampling, were gathered by the Spanish Nutrition and Food Safety Agency (SNFSA). The SFSA is the contact point between Spain and the European Commission.

The objectives of the programme were to assume that:

- The pesticides were used accordingly with the Good Agriculture Practice.
- The health of consumers was well protected.

The samples were collected by the inspectors following the requirements of the directive 2002/63/CE (Real Decreto 290/2003) at productions, wholesalers and retail level. Most of the samples were taken from domestic production because more than 95% of the Spanish food is produced in the own country. After being taken, samples are sent to the laboratories.

Summary of the results of the Spanish monitoring 2006:

The total number of samples in the Co-ordinate Programme and the National Spanish Programme 2006 was 4743; 4077 (85,9%) samples were taken from fruits and vegetables, 346 (7,3%) from cereals, 213 (4,5%) from baby food and 107 (2,3%) samples from other processed products. The number of pesticides sought has increased notably in this year.

For fruits, vegetables and other vegetables the number of samples that exceeded the MLRs was 179 (about 4,3%), 5 samples (1,4%) for cereals and no samples for baby food and other processed products were above the MRL.

Pesticides most frequently found were (refer to the percentage of the total number of samples analyzed for each pesticide):

- **For fruits and vegetables:** chlorpyrifos-ethyl, dichlorophenone, procymidone, imazalil, maneb group, chinomethionat, flutolanil, chlorothalonil, malathion/malaoxon (sum).
- **For cereals:** malathion/malaoxon (sum), pirimiphos-methyl, flusilazole, deltamethrin, cypermethrin (total), propiconazole, simazine, tebuconazole.
- **For baby food:** Only disulfoton and haloxyfop methyl (in the same sample) were found with levels found of 0,003 and 0,002 respectively.

Products	Sample Analysed	Sample Without detectable residues	Sample with residues at or below LMR	Samples With residues >LMR	Samples With residues >LMR E	Samples With residues >LMR N
Fruits and vegetables	4077	2441	1457	179	128	51
Cereals	346	323	18	5	4	1

Processed products (other than baby food)	107	80	27	0	0	0
Baby food	213	212	1	0	0	0
TOTAL	4743	3056	1503	184	132	52

Organisation of monitoring programmes in Spain:

There are two subprograms (“in origin” and “in market”) mainly distinguished for the place where samples are taken. The responsible of the coordination for the “in origin” subprogram is the *Subdirección General de Medios de Producción Agrícolas* from the MAFF. The responsible of the coordination for the “in market” subprogram is the SNFSA.

The programme takes into account:

- Proportion of the crops accordingly with the production
- Requirements from EU co-ordinated programme
- Some special actions concerning problems with certain crop
- Products more consumed
- Alerts regarding exceeding of MRLs
- Results of previous years

The responsible personal of the sampling are the inspectors from the Autonomous Communities. Samples are taken from wholesales, in farm gate and retail. Inspectors from agricultural departments take samples following the Manual Proceeding made at national level and co-ordinated by S. G. Medios de Produccion Agrícolas.

QUALITY ASSURANCE

28 laboratories carried out the analyses of the monitoring programme.

10 laboratories took part in Proficiency EUPT-8 (2006) from European Commission and all laboratories are participating in the Spanish proficiency Test (Test-Qual) and ten laboratories have made several exercises of intercalibration organized by FAPAS.

Fifteen laboratories are accredited and some others are in very advance phase to obtain the accreditation. The accreditation can be occurred only if methods are validated by collaborative studies. The validation "in house" requires a lot of investigation. For the new molecules the accreditation seems difficult to obtain. The nine laboratories accredited assumed approximately the 63% of the samples (in 2005 was 52%). It is important to emphasize that requirements for accreditation of ENAC (organism responsible of accreditation in Spain) are very hard and it is only awarded for each pesticide and food item.

For all the samples is applied the method of multiresidues and maneb-group, and the method of benzimidazol and methyl carbamate is applied to the samples that had registration or some problems were found.

For multiresidues methods the samples are extracted by a solvent (acetone or ethyl acetate) then partitioned by liquid-liquid. The purification for organic-halogenated and organic phosphate molecules were performed by cartridge set-pack, florisil or GPC. ECD, NPD, FPD conduct the determination or hall detector GC/MS is used, as confirmation for samples above MRL's when the techniques are applicable.

Additional methods are used for determination of methyl carbamate, maneb groups, inorganic bromides, benomyl group and so on.

Others

In 2006 was made an homogeneity exercise on benomyl group in table grapes.

FRANCE

1. SUMMARY OF RESULTS

The 2006 programme resulted in the analysing of 4 749 samples of fruits, vegetables, cereals and processed products marketed in France, including 824 as part of targeted surveillance. The breakdown of samples according to origin was as follows: 70% were of French origin, 16.1% were of European Union origin and 13.9% were imported from third countries. The analyses detected and analysed 279 active substances. The most often found molecules were insecticides and fungicides.

Concerning only the results of the fruits and vegetables monitoring plan (3 468 samples), 55.6% of the samples did not contain residues. Contamination levels under the maximum residue limit (MRL) were detected for 38.4% of the samples. 94% of the fruits and vegetables analysed therefore complied with regulations. MRLs were exceeded in 6% of cases.

□ Among vegetables, 65.2% did not contain residues and globally 6.3% were non-conforming. There was more than 6% of non-conformity for peppers and chili peppers (26.5% : 26 exceedances out of 98 samples), lentils (28.9% : 11 exceedances out of 38 samples) and egg plants (10.3% : 8 exceedances out of 78 samples). For lettuces, MRLs were exceeded in 5.8% of cases (11 exceedances out of 189 samples).

□ As for fruits, 35.9% did not contain residues and globally 5.5% were non-conforming. Exceedances mainly concerned mandarins (11% : 9 exceedances out of 82 samples), pears (8.5% : 7 exceedances out of 82 samples), strawberries (7.9% : 6 exceedances out of 76 samples). In contrast, oranges, avocados and apples had few MRL exceedances - respectively 5.4% (5 exceedances out of 93 samples), 2.6% (1 exceedance out of 39 samples) and 1.4% (3 exceedances out of 220 samples). Cereals and cereal products had few MRL exceedances : 0.4% of non-conformity out of 255 samples. 1.48% of processed products were non conforming (out of 202 samples). Among organic products, 1.42 were non-conforming (out of 282 samples). Tea and herbal infusions, spices and sugar plants did not contain residues in a quantity exceeding regulations in force (100% compliance).

24.7% of samples of fruits, vegetables, cereals and processed products analysed as part of the 2006 programme (follow up enforcement and surveillance samples) contained more than 2 residues at contents often under MRLs. This 'multiple residues' phenomenon concerned above all lettuces, grape fruits, strawberries, citrus fruits, pears, peppers and tomatoes.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

The monitoring programme for plant pesticide residues was carried out by the Direction Générale de la Concurrence, de la Consommation et de la Répression des Fraudes (DGCCRF - General Directorate for Competition Policy, Consumer Affairs and Fraud Control). The aims of this multi-year Community programme are to:

1. monitor compliance with MRLs, and therefore compliance with reported good agricultural practices,
2. collect data to assess actual dietary exposure of consumers to pesticide residues.

This programme takes into account :

- the results of the 2005 monitoring programme,
- the requirements of the European Union coordinated programme,
- the dietary proportion of plant products,
- the specific and sometimes targeted inspections of certain fruits and vegetables (specific exercise).

Each department received a crop sampling plan. Inspections were made at every marketing level, with adjustments. The inspection of cereals grains generally took place at the storage stage, at silos, or at the processing stage, at plants. Cereal products, fruits and vegetables were sampled at

retailers or wholesalers. Samplings at growers were less frequent. For all products entering the French territory, specific action was deployed at points of arrival. A priori, domestic and imported production was not broken down, although a 70/30 ratio has prevailed for several years. Inspectors are trained and carried out crop sampling by following the updated monitoring programme. Quantities to be sampled and procedures for are in accordance with Directive 2002/63 provisions.

In 2006, the French targeted programme focused on apples, lettuces, tomatoes, potatoes, peppers, oranges, mandarins, cucumbers, pears, exotic fruits, egg plants and wheat

3. QUALITY ASSURANCE

In 2006, seven DGCCRF laboratories took part in the monitoring programme and targeted surveillance programme. Five of them are COFRAC accredited and for the remaining two, the step for accreditation is on hand. All laboratories apply the “guidance concerning quality control procedures for pesticide residue analysis” and participate in proficiency tests organised by the European Union (EUPT) and by independent suppliers (BIPEA, FAPAS, CHEK). The Rennes laboratory drew up the summary of the results.

The laboratories used multi-residue techniques and sometimes specific adapted methods. The techniques for multi-residue analyses used solvents for extraction (acetone or ethyl acetate), then liquid-liquid partition. Relevant extracts were purified on adsorbents (Florisil or Bio-beads) or by gel permeation. Determination and quantification were performed using chromatographic techniques coupled to mass spectrometry (GC/MS and, depending on the lab, LC/MS). Complementary informations helpful for decision could also be collected using different principles for detection such as ECD, FPD, NPD, ELCD, UV or fluorimetry. Specific methods were used for the determination of dithiocarbamates, bromides, maleic hydrazide, chlormequat and benzimidazoles and some other active substances.

Uncertainties of measurements are taken into account for the interpretation of the results on the analytical reports and the action to be taken : if the difference between the value measured in excess and the MLR remains lower than the uncertainty of measurement, the report of the laboratory indicates a conclusion “to follow” in order to warn the operator. When the product is still available on the market (or at following harvest if control takes place at the production step) a second sample is then carried out for control. Nevertheless, uncertainties are not integrated into the present statements of results to the attention of the European Union, because Excel table does not allow this nuance.

IRELAND

1. SUMMARY OF RESULTS

FRUIT AND VEGETABLES

909 routine samples of fruit and vegetables (including organic and processed) were analysed for pesticide residue content in 2006. Of the samples taken 18.6 % were of domestic origin, 43% were imports from other EU countries, 31 % were imports from countries outside of the EU while a further 7.7% of unknown origin. Samples were analysed for residues of up to 153 pesticides and metabolites. 49.4% of samples analysed contained no detectable pesticide residues which was 5.0 % higher than in 2005. Of the remaining 50.6 % which contained one or more detectable residues 2.85% contained residues in excess of the MRLs. 85 of these samples were of processed food. No residue was detected in 94% of processed fruit and vegetables and where residues were found none exceeded an MRL.

Of the positive samples thiabendazole (12.2 %), iprodione (6.8%), chlorpyrifos (6.2%), diphenylamine (5.5%), captan (5.0%), carbendazim (3.9%), prochloraz (4.2%), imazalil (3.9%), malathion (2.9%), procymidone (2.9%), propargite (2.8%), cyprodinil (2.5%), cypermethrin (2.5%), folpet (2.2%), methidathion (2.2%), tebuconazole (2.1%), carbaryl (2.1%) and tolyfluanid (2.0%) were the most commonly detected pesticides in the routine monitoring programme.

Cereal

52 (including 7 processed) cereal samples of both domestic and imported origin were analysed for residues of 170 pesticides and metabolites. 61.5% contained no residues and of the remaining samples containing detectable residues. 5 samples containing diazinon were in excess of the MRL. Other commonly found pesticides detected were pirimiphos methyl (11.1%), chlorpropham (6.7%) and malathion (6.7%). Following the detection of unauthorised residues of chlorpropham in oats , 218 targetted oat and 4 processed samples were analysed as part of follow up action to identify the source of this unauthorised residue.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING (max. 0.5 pages)

The 2006 Irish monitoring programme was carried out by the Pesticide Control Service of the Department of Agriculture and Food. This programme was agreed at the end of 2005 following discussions between the Pesticide Control Service and the Food Safety Authority of Ireland (FSAI).

The programme was designed by taking account of the following

- the current consumption data for Irish adults (IUNA 1996-1998 survey)
- the co-ordinated EU monitoring programme for 2006
- priority given to commodities eaten in the raw state i.e. lettuce
- the capacity of the laboratory to implement the programme
- samples that gave rise to MRL breaches in 2005 are targeted
- the availability of organic produce on the market.

Samples are taken in accordance with the EU sampling Directive 2002/63/EC. Two sampling officers from the Pesticide Control Service carry out the sampling of food of plant origin. Sampling is normally taken at wholesale level but occasionally it may be carried out at retail level.

Enforcement action

An MRL is considered to be exceeded when the residue found is numerically greater than the indicated MRL. However enforcement action will not take place unless the residue found is greater than the sum of the MRL and the uncertainty of the analytical method.

19 samples were targeted as a follow up to MRL exceedences in 2005. Enforcement action was taken on one samples of Irish lettuce containing dimethoate at 1 mg/Kg.

No RASFF information or alert was issued in 2006.

3. QUALITY ASSURANCE

The Pesticide Control Laboratory of the Department of Agriculture and Food is the only Irish laboratory involved in the official control of pesticide residues in food of plant origin. This laboratory is accredited to ISO 17025 standard.

The main method used for fruit and vegetables consists of extracting the samples with acetone, partitioning into Dichloromethane and Petroleum ether; cleanup by gel permeation chromatography and detection by gas chromatography with mass selective/ single ion monitoring, electron capture and pulsed flamed photometric detections. In the case of pesticides that are not amenable to gas chromatography such as the benzimidazoles, HPLC with diode array and MS-MS detection are used. For cereal samples a variation of the fruit and vegetable method is used with ethyl acetate as the extracting solvent. In general, multi residue methods are used to detect as many pesticides as possible in one method with increasing use of LC MS-MS as a multi residue method.

Participation in proficiency tests

The Pesticide Control participated in the EU Proficiency test which was organised by the University of Alimeria as well as the FAPAS schemes for fruit, vegetables and cereal.

IMPLEMENTATION OF EU QUALITY CONTROL PROCEDURES

The laboratory incorporates the majority of the EU Quality procedures for pesticide residues into its work practices.

Analytical uncertainty

The Laboratory uses the 50% figure to take into consideration inter-laboratory variations for MRL breaches.

4. OTHER INFORMATION

3 homogeneity exercises were carried out in 2006 covering 5 different pesticides

All relevant EU Directives have been transposed into Irish Legislations

Details of risk assessment

In all cases where an MRL breach was detected a deterministic risk assessment was carried out using the Irish consumption data for both Irish adults and children.

ITALY

1. SUMMARY OF RESULTS

Of a total of **8081 samples** (Tab.1 e 2), **2238 samples (27,7%)** with residues not exceeding permitted levels were found, while **73 (0,9 %)** were found with residues exceeding permitted levels; no residues were detected in **5770 samples (71,4%)**. The percentage of irregular samples is equal to **0,9%** of which **1,0%** for fruit and vegetables; **0,0%** for cereals and wine; **4,1%** for oil.

SUMMARY OF DATA - YEAR 2006				
	Fruit and Vegetable	Cereals	Processed products	Total
Nr. Of samples	6.822	507	752	8.081
Regular samples	6.757	507	744	8.008
Irregular samples	65	0	8	73
Irregular samples %	1	0	1	0,9

Tab. 1

PESTICIDE RESIDUES IN REGULAR SAMPLES				
	Fruit and Vegetable	Cereals	Processed products	Total
Nr. Of samples without residues	4.773	452	545	5.770
Nr. Of samples without residues %	70	89,2	72,5	71,4
Nr. Of samples with residues within legal limits	1.984	55	199	2.238
Nr. Of samples with residues within legal limits %	29,1	10,8	26,5	27,7

Tab. 2

2. ORGANIZATION OF MONITORING PROGRAMME AND SAMPLING

RESPONSIBILITIES

The Ministry of Health – **General Directorate for Food Safety and Nutrition** – coordinates and defines Italian official control programmes on foodstuffs, including the annual plans regarding pesticide residues.

STRUCTURE OF THE PLAN

The annual official control plans on residues of plant protection products are defined by **Ministerial Decree 23 December 1992, transposing Directive 90/642/EEC**, integrated by the **Ministerial Decree 30 July 1993** regarding the programming of official controls for importation from Third Countries.

The National Program Pesticide Residues (P.N.R.A.) foresees a detailed programme implementing the checks to be carried out by the Regions and Autonomous Provinces of Trento and Bolzano, with indication of the minimum number and the typology of samples to be analysed. The division of the number of samples to be taken for each Region/Province is calculated according to the data on consumption and production of a given foodstuffs in the Region or autonomous Province concerned. The Decree contains some tables reporting the number of samples to be taken for each Region/Province for the following foodstuffs: vegetables, fruits, cereals, wine, oils, meat, milks and derivatives, eggs. The plan foresees also priority of a research of residues of plant protection products both in animal and vegetable origin foodstuffs.

As regards products of vegetable origin imported from Third Countries, the sampling is performed by Uffici di Sanità Marittima, Aerea e di Frontiera (USMAF) of Ministry of Health, in at least **3%** of a lot present at importation with a priority given to fruit and vegetable origin products.

SAMPLING, STAFF, PROCEDURES AND SAMPLING SPOTS

Based on the programmes of the Regions and Autonomous Province, inspectors of a Local Health Units provides for implementation of sampling of foodstuffs to be tested for PPP residues.

The sampling spots indicated in P.N.R.A concerning products of plant origin are the collection centers and cooperatives for products coming from within the Region or Autonomous Province, specialised and non-specialised wholesale markets, wholesale stores, hypermarkets and supermarkets for products coming from outside the Region or Autonomous Province.

The sampling methods are those established by the Decree of the **Ministry of Health of 23 July 2002, transposing Directive 2002/63/EC of 11 July 2002** regarding the methods of sampling for the Official control for pesticide residues in plant and animal origin products.

MEASURES TAKEN

In case of irregular samples, the administrative or criminal sanctions are applied which are foreseen by the Law n° 283 of 30 April 1962, by the Legislative Decree of 3 March 1993, n° 123 (transposing Directive 89/397/CE on official control of foodstuffs), and by the Regulation (EC) 882/2004. Contaminated foodstuffs are confiscated on a precautionary basis and/or destroyed.

3. QUALITY ASSURANCE

ACCREDITATION

Official control public laboratories participating in 2006 in the national programme on pesticide residues in vegetables were **36**.

Of 36 laboratories **22** are accredited in accordance with norm **EN 17025**.

Table G laboratories is enclosed, showing the list of accredited and non-accredited laboratories, participating in proficiency test and ring tests during the 2006.

ANALYTIC METHODS

Analytic methods used mainly include GC multi-residue methods, associated with selective detectors (ECG, NPD, MS) and HPLC-UV.

PARTICIPATION IN PROFICIENCY TESTS

During the 2006, 23 Italian laboratories attended the 8th CRL European Proficiency Test (year 2006) organized by Community Reference Laboratory Pesticides in fruit and Vegetables, European Commission Proficiency Test 08. Of those 23 laboratories, 17 took part in pesticide monitoring and are reported in Table G. Some of laboratories attended FAPAS proficiency test and national ring tests.

CYPRUS

1. SUMMARY OF RESULTS

In **2006** a total of **356** samples of plant origin (187 vegetable samples and 92 fruit samples) were analyzed. **6** samples were of organic farming as shown in table A1- Organic. Sampling rate was **47** samples /100 000 inhabitants. The main emphasis was on the local production including exports. **14.6%** of the tested samples were imported ones. In addition **300** samples were analyzed for QC and method development/validation. In **62.4%** of the samples no residues were detected (ND) and in **30.6%** the residues were at the level of or below the MRL. The percentage of samples above MRLs (national or EC) was **7.0%**, of which **4.2%** were considered as real legal violations. **5.6%** of the samples were classified as “critical”. In §4 term definitions are provided. **24** baby food (fruit and vegetables) and **26** samples of cereals were analyzed. Out of **144** pesticides sought in the samples of fruits and vegetables **44** were found to be present. The most frequently found pesticides were **Cypermethrin** (in **20.0%** of the samples) and **Chlorpyrifos** (in **16.0%** of the samples). Out of the **117** pesticides sought in cereals only **2** pesticides were found **Pirimiphos methyl** (in **30.8%** of the samples) and **Carbaryl** (in **3.8%** of the samples).

In **16.4%** of the analyzed samples of fruits, vegetables and cereals, two to up to five pesticides were detected. In two baby food samples pesticide residues were detected below the relevant MRL.

2. ORGANIZATION OF MONITORING PROGRAMS AND SAMPLING

Ministry of Health is the competent authority for the enforcement of the Pesticide Residues (PR) Legislation and the execution of the national monitoring and surveillance programs. The enforcement of Legislation and sampling is allocated to the Department of Medical and Public Health Services (MPHS). The Pesticide Residue Lab (PR-SGL) of the State General Laboratory is the Official Laboratory for the Monitoring & Surveillance of PR in Food of Plant and Animal Origin. The PR-SGL Lab and the MPHS design and implement a multisectoral program for local market, including imports and exports. The sampling regime is based on a combination of “at random” sampling and target oriented sampling focusing towards problematic pesticides/food combination. This combination is in a way bias towards problematic products and might end up with higher violation rates. Nevertheless it can provide higher degree of consumer protection and cost-effectiveness. Main criteria used in the sampling design are: violations from previous years, pattern of actual pesticide usage, info from RASFF, toxicological data, consumption data especially by children and the needs of exports control. Sampling is done by 72 well qualified Health Inspectors (with BSc or at least 3 years of education in the Public Health inspectors School of Cyprus) of the MPHS, according to the harmonized Regulation KΔΠ 473/2004. It is focused at the key points of food chain: producers, market, import, processing, primary storage etc. The MPHS exercise the regulatory functions. Enforcement actions are taken as follows: a) for all critical and violating samples a notification is issued to the Dept. of Agriculture, b) “Violating” samples, for which adequate evidence can be provided , are legally prosecuted by the Dept. of MPHS. Every effort is made to withdraw violating products from the market and prevent them from been exported/consumed. Imported products non complying with the EU harmonized MRLs are not permitted to enter Cyprus. In our legislation there is a provision which allows to use 0.01 mg/Kg in cases where specific limits are not provided either in the EU or other national legislation. The action taken, when samples found to exceed this low level, follows a defined procedure which considers the particular problem, the LOQ and the related uncertainties. The action taken, when samples found to exceed level of 0,01mg/kg, follows a defined procedure which considers the particular problem, the LOQ and the related uncertainties.

3. QUALITY ASSURANCE

The PR Lab of the SGL is accredited by the Greek Accreditation body ESYD since **2002** according to EN 45001, from June 2003 according to ISO/IEC 17025 and from July 2006 according to ISO/IEC 17025/2005. The following validated methods are mainly used: 1) "Multiresidue method for fruits, vegetables and milk including PCBs in milk": Ethyl acetate extraction, GPC-clean up, determination/confirmation by GCMS/ITD, GC/FPD, GC/ECD. It covers GC amendable Pesticides within polarity ranging from $Kow=-0,9$ up to non polar. 2) GC/FPD-S determination of dithiocarbamates as CS₂ extracted in isooctane after reaction with aqueous hydrochloric acid in the presence of tin (II) chloride 3) "Multiresidue method for the determination of organochlorine and PCBs in fish and meat products": Soxhlet extraction, GPC clean up, GC/ECD–dual column detection.. The analytical uncertainty has been estimated during validation process at different concentration levels and is taken into consideration for "decision-making" especially to discriminate between "real legal violations" and "above MRLs".

The LC/MS/MS analytical system has been validated for measurement of 48 polar compounds and a number of samples (33) have been analyzed as shown in table A2 part 1 .

The PR-Lab applies Quality Control procedures, which are in line with the provisions of "EU-Quality control procedures" concerning the determination, confirmation and method quality. The lab participated in the following Proficiency test: a) European Commissions Proficiency Test on Pesticide Residues (PT8).

4. OTHER INFORMATION

Background on legislation: The main legal instrument for the protection of Public Health in Cyprus is the Harmonized Food (Control and Sale) Law of 1996-2006, and the EU harmonized Pesticide Residues and sampling Regulations.

The management of results: To increase the cost-effectiveness, the use of the term "critical" sample has been introduced since 2002. **Critical** are those samples which are either above the MRL but when the uncertainty is subtracted cannot be considered as legal violation or are at or below the MRL and when uncertainty is added exit the MRL. The samples are ranked in the following categories: **"without detectable residues", "with residues below or at MRL", "above the MRLs" "critical" and "violating samples"**. Therefore the % of above MRLs recorded in all Tables comprises the legal violations and part of the critical samples. Decision on actions are taken according to a standardized documented SOP process and in compliance with the legislation.

Risk Assessment : For samples containing pesticides, which exceeded MRL, the PSTI values were estimated according to Sanco Document SANCO/3346/2001rev6 (Proposal on notification criteria for pesticide residue findings to the Rapid Alert System for Food and Feed' (RASFF) .

LATVIA

1. Summary of results

The report contains the results of pesticide residue monitoring in fruits, vegetable and cereals. In 2006 a total of 114 samples were analyzed. Of domestic origin were 24 samples, of other EU MS were 68 samples and on imports of TC were 22 samples. In the samples of organic and baby food residue has not been found.

Samples were taken only within the EU coordinated program but within the national program sampling has not been carried out (Table C no data available). In samples taken for surveillance purposes EC MRL have not been exceeded MRL (Table D1, D2, D3, D4 no data available) and there are no data available on homogeneity (Table F).

2. Organization of monitoring programs and sampling

The Food and Veterinary Service is responsible authority for practical application the monitoring of pesticides residue in plants products. Food inspectors are responsible for sampling accordance with to Commission Directive 2002/63/EEC.

Samples have been taken within the surveillance system on the level of wholesalers, retailers, marketing chains and including at the farm gate of domestic products, but sampling based on enforcement sampling was not carried out.

Samples were analyzed in the National Diagnostic Centre of Food and Veterinary Service which is the only laboratory carrying out the monitoring.

3. Quality assurance

Laboratory of the National Diagnostic Centre has introduced a quality assurance system according to the requirements of ISO 17025 standard. All methods for determination of pesticide residues are covered by the scope of accreditation of the laboratory. The laboratory has implemented the EU Guideline on Quality Control Procedures.

Laboratory has successfully participated in the European Commission Proficiency Testing programs for detection of pesticides residues in fruits and vegetables (from EUPT-5 till EUPT-8). The laboratory has been accredited according to ISO/IEC 17025 and has for the most part implemented EC Quality control procedures that are laid down in SANCO 10476/2003 "Quality Control Procedures for Pesticide Residue Analysis".

The method applied for control of pesticides residues in Latvia consists of an acetone or ethyl acetate extraction and sample clean up using gel filtration chromatography. The gas chromatography with NPD and ECD detectors is applied for analysis of main part of pesticides. Liquid chromatography – tandem massspectrometry is used for pesticides not amenable to GC. Dithiocarbamates are analysed as CS₂ using GC-ECD after decomposing with tin chloride solution.

Calculation of the analytical uncertainty of results is based on relative standard deviation of recovery rates and results of proficiency testing if available. The estimated range of uncertainty is from 10 to 30%.

4. Other information

The MRLs that were applied in monitoring program are laid down in Directives 76/895/EEC, 86/362/EEC and 90/642/EEC. All EC MRL have been implemented in Latvia.

1. SUMMARY OF FINDINGS

In 2006, 465 samples on pesticide residues were selected from fruit, vegetables, grain and infant food for testing; of these 345 samples were tested in accordance with the monitoring programme and 120 follow-up enforcement samples. 29,5% samples from the produce originating in Lithuania were tested, 29,8% introduced from EU countries and 40,6% - from third countries. 10 samples (2,2%) were non-complying to the EU requirements; of these seven sample according to the monitoring programme (2,0%).

In 2006, 214 denominations of pesticides were tested using gas chromatography test.

Sampling in accordance with the monitoring programme:

Fruit and vegetables: Total number of samples tested - 287: 102 samples from fruit and vegetables of local origin, 108 samples from EU countries and 77 samples from third countries. Of 287 samples of fruit and vegetables tested pesticide residues were not detected in 202 samples; in 79 samples the detected level was below the tolerable level or at the level, but not above MRL; in 6 sample the MRL was exceeded. The pesticide imazalil was detected in grapes from Turkey, at 0,04 mg/kg, forwarded through RASFF system. Potatoes and cauliflower were tested repeatedly, no pesticides detected.

Cereals: Total number of samples tested – 49: 32 samples from cereals of local origin, 16 samples from EU countries and 1 sample from third countries. Of 49 samples of cereals tested pesticide residues were not detected in 24 samples; in 1 sample the detected level was below the tolerable level or at the level, but not above MRL, and 1 sample exceeded MRL.

Infant food: 9 samples from baby food from the EU countries tested. In none of the samples pesticide residues were detected.

Organic produce: 7 samples from fruit and vegetables tested, in which no pesticide residues were detected.

Follow-up enforcement sampling:

Of 93 samples of fruit and vegetables tested no pesticide residues were detected in 66 samples, in 27 samples the detected level was below the tolerable level or at the level, but not above MRL; in 3 samples the MRL was exceeded. Pesticide fenvalerate in plums from Iran at 1,24 mg/kg, in lemons from Turkey pesticide paration-methyl at 0,35 mg/kg, in orange from Turkey - pesticide prophenophos at 0,08 mg/kg.

Cereals: of 27 samples of cereals tested no pesticide residues were detected in 26 samples, in 1 sample the detected level was below the tolerable level or at the level, but not above MRL.

2. ORGANIZATION OF MONITORING PROGRAMME AND SAMPLING

State Food and Veterinary Service under the Government of the Republic of Lithuania (hereinafter – SFVS) and its regional divisions (10 county SFVS and 5 city SFVS) is competent authority for the organization of the monitoring programme. Inspectors trained for the function take samples from foodstuffs and are responsible for a correct selection, marking of the samples and delivery to the laboratory. SFVS control is accredited by EN ISO/ICE 17020:2004 standard.

Priorities at sample selection:

Recommendations of the EU Commission, recommendations of the Ministry of Health, risk of pesticide contamination data of earlier laboratory analysis, information of State Plant Protection Service on the amounts of pesticides used, budget allocations for the implementation of the programme.

Samples from EU countries products are taken on the market and of imported (third countries) – within the customs area, at the place of unloading. From local products samples are taken directly at wholesale or on the market. Local samples make one third of all samples. Samples are selected in accordance with the provisions of Commission Directive 2002/63/EC, which has been transposed into a national legal act approved by the order of the Minister of Health. Food inspectors of the SFVS follow the approved sample selection procedures and use the required sampling equipment and packaging.

In 2005, no testing of infant food was carried out in accordance with the monitoring programme, but sampling was conducted under other programmes, where infant food was tested for nitrates and patulin. In 2006, nine samples from infant food were tested for pesticides, two – for nitrates and one for heavy metals.

3. QUALITY ASSURANCE

Status of accreditation of laboratories; number of laboratories

The analyses were carried out in the National Veterinary Laboratory (NVL). This laboratory is accredited since 2000 according to EN 45001 and in the year 2003 the laboratory was reaccredited according to EN ISO/IEC 17025 by German Accreditation Body DAP for all methods used for official control of pesticide residues in food of plant origin. The last visit of assessors of DAP was conducted in August 2006.

Analytical methods used

Most of samples were analysed by multi-residue method EN 12393-(1-3): 2000 “Non - fatty alimentary products. Multi - stage detection of pesticide residues using the method of gas chromatography”. By this method, the samples were extracted with ethylacetate or acetone-cyclohexane, cleaned up on gel permeation column and determined by capillary gas chromatography.

Dithiocarbamates were determined by method EN 12396-(1-3):2000 “Non-fatty alimentary products. Determination of residues of Dithiocarbamates and thiuram pesticides. Spectrophotometric method. Pesticides surveyed: CS2 - Maneb group (Maneb, Mancozeb, Metiram, Propineb, Zineb) and Thiuram.

Diphenylamine, thiabendazole, o-phenilphenol, benzimidazoles, and benomyl group were determined by HPLC – multimethod.

Participation in proficiency tests

NVL participated in the European Proficiency Test EU-PT-08 organised by Community Reference Laboratory in 2006.

Implementation of EU quality control procedures

Quality control procedures include daily checks of instruments sensitivity, possible matrix effects by injection of test solution. Confirmation by mass spectrometry is used for results above reporting limits. Implementation of EU Quality control procedures for pesticide residues analysis (Pesticide residue analysis. Document N° SANCO/10232/2006) is in process.

Analytical uncertainty

Uncertainties of analytical results were estimated in process of in-house validation at the level of MRL. Level of uncertainty depend on individual and is in the level of 20 to 45 % of analytical results.

4. OTHER INFORMATION

Details of homogeneity exercise

In 2006 the homogeneity exercise was not carried out. The results of the tests performed on apples, raisins and lemons has obligated the SFVS to make modification in control plans for foodstuffs imported from third countries. Monitoring of foodstuffs is carried out in accordance with the EU laws, with an emphasis on the risk factors of product contamination.

Rapid Alert System

Four messages were transmitted by RASFF (Rapid Alert System for Food und Feed) system (grapes from Turkey, dried grapes from Iran, lemons from Turkey, oranges from Egypt).

LUXEMBOURG

1. SUMMARY OF RESULTS

In 2006, 113 samples of plant origin were examined. Wine grapes and cereals were domestic samples. No MRL exceedance was observed. Therefore, no follow-up sampling nor action taking was necessary.

Table: Summary of the 2006 monitoring programme (co-ordinated and national programme)

N° of samples of plant origin analysed	N° of samples without residues	N° of samples with residues at or below the MRL	N° of samples exceeding MRL
113	88	25	0

In 2006 again, the list of the most frequently found pesticides was tightly linked to the commodities analysed: Imazalil and thiobendazole in bananas, folpet, cyprodinil and fludioxonil to wine grapes. Helicopter spraying in wine yards was mirrored by the uniform pesticide pattern in grape samples. Pesticides were also found in some pea samples. From the toxicological point of view MRLs for sugar peas (Mangetout, pea with pod) should be in line with MRLs for peas without pod. Aubergines, cauliflowers, peppers, orange juice and wheat samples contained no detectable pesticides, neither did organic samples and baby food. The latter were included in the programme for screening purposes, in spite of reporting levels above 0.01 mg/kg.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

Pesticide residues were analysed at the laboratory of food control, being a division of the National Laboratory of Health (Ministry of Health). Due to limited personal resources (one technician), the annual programme consisted mostly of the EC programme. Instead of imported table grapes preference was given to domestic wine grape samples. The objective to collect at least one organic sample per commodity was achieved in 2006.

The samples were collected by a food inspector of the food control unit. Imported products were sampled at wholesaler distribution points and retailers. Wine grapes were obtained directly from winegrowers, cereals from Agrocenter (crop collecting point). Due to the sampling requirements of directive 2002/63/EC (number of samples and sample sizes) no samples could be taken at the central market in the City of Luxembourg any more.

3. QUALITY ASSURANCE

The laboratory of food control is the only laboratory doing pesticide analysis in Luxembourg. It was accredited in 2003. Pesticides were analysed by a gas chromatographic multi-residue method with MSD (DFG S19, modified). With this method omethate couldn't be analysed.

For deciding whether a MRL was exceeded or not, an analytical uncertainty of 50% was taken.

In 2006, the laboratory participated in the proficiency test organized by the EC (pesticide residues in aubergines).

Not all EU quality control procedures could be fully implemented (e.g. frequencies of verification and calibrations). Due to limited resources it becomes more and more difficult to strike a balance between the steadily increasing demands concerning

- the annual programme,
- method performance (lowering reporting limits, increasing number of pesticides),
- elaborating single residue and other methods for new pesticides,
- and quality control.

HUNGARY

In 2006, the programme for controlling the residues was made in the 7 pesticide residue analytical laboratories.

In 2006, **3656** samples were analysed - in the frame of the official sampling programme - up to 200 pesticide residues.

Among them, there were **1836** domestic and **1462** introduced fresh vegetable and fruit samples, **69** cereal-, **186** processed food of plant origin and **141** baby food and drink.

Fruit and vegetable samples

Out of the tested **1836** domestic samples (taken at market place, place of production and for exports) **58.1 %** did not contain pesticide residues above the level of detection. Altogether **1.0 %** of the samples were objected because of pesticide residues detected above the MRL.

Among the **1462** samples taken from lots of foreign origin **3.0 %** were objected, while **27.9 %** did not contain pesticide residues above the level of detection.

In 2006 the scope of official controls was enlarged by testing *processed food of plant origin and baby food and drink*.

The percentage of samples containing pesticide residues over the level of detection was **7.5 %** of the **186** samples of processed food of plant origin, and **9.9 %** of the **141** baby food and drink samples had detectable pesticide residues.

In the overall programme 67 (1.8%) of the samples contained residues exceeding the MRL. All of these exceedances in the fruit and vegetable category with the greatest proportion in the table grapes and pepper surveys.

Rapid Alert System for Feed and Food on behalf Central Service for Plant Protection and Soil Conservation: the content of pesticide residues in 6 cases was reported to the Hungarian Food Safety Office, and via them, to DG Sanco.

Commodities	Origin	Pesticide	Residue mg/kg
Pepper	Spain	methamidophos	0.23
Apples	Hungary	dimethoate	0.24
Lemons	Turkey	parathion-methyl	0.12
Pears	Italy	dithiocarbamates	8.41
Cucumber	Turkey	oxamyl	0.82
Beans (with pods)	Turkey	chlorothalonil	0.34

Organisation of Monitoring programmes and Sampling Responsibilities

Central Service for Plant Protection and Soil Conservation is responsible for coordination of testing pesticide residues in unprocessed agriculture commodities, and processed food of plant origin; heavy metals and organic contaminants in soil and raw agriculture food commodities, quality control of agrochemicals, as well as for the diagnosis of pests and control of pest management technologies during production.

Raw agriculture food and feed commodities of plant origin: *coordinating institute* is **CSPPSC** supervising 7 regional laboratories.

Design of Programmes

Selection study of the crops for the sampling was made with consideration of the consumption habits of the Hungarian population, the number of studied samples was about the same as those in the previous years.

Sampling

The sampling procedure is specified in the Decree 7/2001(I.17.) MARD on the implementation of phytosanitary measures, Decree 82/2004 (IX.18) MH on taking samples, the original Decree 5/2002 (II.22) MARD- MH, as well as in their amendments continuously harmonised with the Community legislation.

The programme for official sampling made by the analytical network covered mostly the produces representing the main consumption habits, but other crops were also included. Sampling points: Border Station Offices, wholesale magazines, markets, places of production.

Personal: plant health inspectors at the border and plant protection inspectors within the country.

Quality assurance

Status of accreditation of laboratories:

The laboratories work according to OECD-GLP systems, 7 laboratories have accreditation, i.e. their procedures follow the quality assurance practice based on requirements of MSZ EN ISO 17025 standard and joint decree 31/1999 (VIII.6.) MH-MARD and 9/2001 (III.30.) MH-MARD.

Analytical methods

The test methods recorded in the Standard Operation Procedures (SOP) are used as they help maintaining the quality requirements. The local inspections made by quality assurance inspectors and the audits of testing plans and reports contribute to the improvement of work efficiency.

International proficiency tests

In 2006, 128 laboratories in Europe took part in the **8th European Proficiency test**, including all the 7 Analytical Laboratories of the national plant protection organisation.

The Hungarian Analytical Laboratories obtained very good results.

From the 128 laboratories in Europe, 4 Hungarian analytical laboratories ranked among the first 13.

Analytical uncertainty

Depends on the concentration of analytes.

Concentration	Repeatability		Between Laboratory Reproducibility		Trueness
	CV _A %	CV _L %	CV _A %	CV _L %	Range of mean recovery %
≤1 ug/kg	35	36	53	54	50 - 120
>1 ug/kg≤0.01 mg/kg	30	32	45	46	60 - 120
>0.01mg/kg≤0.1 mg/kg	20	22	32	34	70 - 120
>0.1 mg/kg≤1 mg/kg	15	18	23	25	70 - 110
> 1 mg/kg	10	14	16	19	70 - 110

Other Information

In 2006, Hungary did not carry out the homogeneity exercise.

The laboratories of NNII and PPSCS shared the work of testing baby food and drink as follows:

Baby food and drink of plant origin – 103 – PPSCS

Baby food and drink containing also product of animal origin - 38 - NNII

Details of risk assessment: are carried out by Hungarian Food Safety Office. It is the joint work of the CSPPSC and HFSO.

MARD – Ministry of Agriculture and Rural Development

MH – Ministry of Health

NNII - National Food Investigation Institute (NNII)

1. Summary of Results

In the monitoring programme for pesticide residues for 2006, a total of 47 samples were tested for pesticide residues using a multi-residue method which is capable of identifying and quantifying 161 pesticide residues. Commodities of local origin made up 100% (47 samples) of the total samples collected. No samples originating from EU Member States or third countries were sampled and analysed. The percentage of samples with residues above reporting level was 12.8% (6 samples), while the percentage of samples at or below EC and National MRL (Maximum residue level) represented 10.6% (5 samples). 2.1% of the samples collected (1 sample-grapes) contained pesticide residues for chlorpyrifos which exceeded the EC/National MRL¹. 10.6% (5 samples) of all samples tested were of organic origin and 2.1% (1 sample-grapes) contained pesticide residues for dichlofluanid which were below the EC/National MRL². None of the total number of samples collected in 2006 contained more than one pesticide residue.

Sampled commodities included aubergines, cauliflowers, carrots, cherry tomatoes, grapes, greenpeppers lettuce, potatoes, peaches, and melons. In total, 4 different pesticide residues were detected (above reporting level). The frequency of detection was as follows chlorpyrifos: 4.3% (2 samples), chlorpyrifos-methyl: 4.3% (2 samples), dichlofluanid: 2.1% (1 sample) and procymidone: 2.1% (1 sample). No samples contained more than one pesticide residue.

For the first time since the implementation of the control plan for pesticide residues, the programme has resulted in no positive findings being reported for dimethoate residues which in the previous years was a recurrent problem in stone fruit and grapes. Furthermore, the results also indicate a decrease in occurrence of the previously observed trends for chlorothalonil, fenithrothion, iprodione and procymidone residues since these were not detected in the 2006 monitoring plan as opposed to 2005 (chlorothalonil, fenithrothion, dimethoate, iprodione), 2004 (ciprodinil, dimethoate, imazilil), and 2003 (dimethoate, iprodione, procymidone, chlorothalonil, imazilil, pirimethanil) monitoring programmes. The fact that no positive findings were observed for imazilil may be partially explained by the fact that no citrus fruits (on which imazilil residues were relatively commonly encountered in the past) were included in the 2006 programme. The results for 2006 do not indicate any clear trends for the chlorpyrifos or chlorpyrifos-methyl / produce combination when compared to monitoring programmes carried out in the previous years. The monitoring programme for 2006 indicates a decrease in overall percentage of samples containing pesticide residues above reporting level that were encountered compared to those encountered in previous years (year 2003: 30.4%, year 2004: 21.5%, year 2005: 15.4%, year 2006: 12.8%).

2. Organisation of Monitoring programmes and Sampling

The Plant Health Department within the Rural Affairs and Paying Agency (Ministry for Rural Affairs and the Environment) is responsible for the drafting and implementation of the National Monitoring Programme for fresh produce of plant origin. Priorities for drafting the programme were the following:

- the dietary importance of the food commodity (to adults, infants and children);
- domestic production/imports of commodities;
- past findings that may indicate a historical residues problem;

¹ EC MRL transposed into national legislation – Maximum Residue Levels of Pesticides in Produce of Plant Origin Regulations (LN 199/2004)

² EC MRL transposed into national legislation – Maximum Residue Levels of Pesticides in Produce of Plant Origin Regulations (LN 199/2004)

- the currently evolving knowledge of new risks (e.g. knowledge on use of banned pesticides) or other country monitoring schemes.

The sampling was performed by 3 officers from the Plant Health Department. The sampling procedures were those described in Schedule 1 to the European Community Methods of sampling for official Control of pesticide residues in and on Products of Plant and Animal origin Regulations (LN 479/2004) (transposing Commission Directive 2002/63/EC). Sampling of organic produce was carried out in collaboration with 2 officers from the Malta Standards Authority. Sampling points included organised markets for local produce and farms for organic produce. All samples were sealed and double coded. The relevant details of the samples were inserted in a database to ensure that the identity of the samples is protected whilst assuring traceability of samples. Enforcement actions included issuing of warning letters and investigations. Enforcement sampling was not performed mainly due to financial limitations.

3. Quality assurance

Samples were sent for multi-residue Analysis to CEFIT Laboratory (Sicily) which is accredited by Sinal (Sistema Nazionale Accredimento Laboratorii - National System of Laboratory Accreditation), with accreditation number 0194 (attached certificate).

The described methods are based on EU legislation and are based on procedures that are carried out in four stages as described below:

- **Extraction** – pesticide residues are extracted from the sample matrix by employing appropriate solvents in such a way to obtain maximum extraction efficiency and minimum co-extraction of the sample matrix which could interfere with the analysis;
- **Purification** – the purification has the aim of removing interfering materials in such a way to obtain a solvent devoid of interfering substances;
- **Analysis** - the analysis is performed using gas-chromatography technique and using selective detectors: electronic capture device (ECD) for halogenated organic substances, NPD for organophosphates, and organonitrates;
- **Confirmation of results** – in order to confirm residues qualitatively and quantitatively in cases where MRL infringements are observed. In these cases liquid gas chromatography (LC-MS) is employed.

The method used by the sub-contracted laboratory is Method M, a brief description of which is given below:

Extraction with acetone and liquid partitioning/dichloromethane/petroleum ether and if necessary, purification through Florisil. A portion of chopped sample is homogenised with acetone and filtered. An aliquot of the filtrate is extracted with a mixture of petroleum ether/dichloromethane. The organic phase can be injected directly in the gas chromatography equipment with an appropriate detector or purified through a Florisil column. The eluant is concentrated for chromatographic analysis as described in the above section.

CEFIT laboratory is in compliance with the criteria of European standard UNI-EN 45001 (ISO/IEC 17025). The laboratory participates in the Ring-Test Arpa-Ferrara, Ministero Agricoltura (Patologia Vegetale), Roma. The measure of uncertainty of results was communicated on the certificate of analysis and was taken into account for legal purposes, but not taken into consideration for reporting to the European Commission.

NETHERLANDS

1. SUMMARY OF RESULTS

In 2006 a slightly lower percentage of non-compliances was found for non-domestic samples as in previous years (Figure 1). This year again EU product show a decrease in percentage non-compliances. In 2006 imports from third countries too, showed a decrease in MRL-violations. Probably this is related to the transparency policy, publishing violations including information about responsible companies on the internet. However, products from South-East Asia still often violate limits.

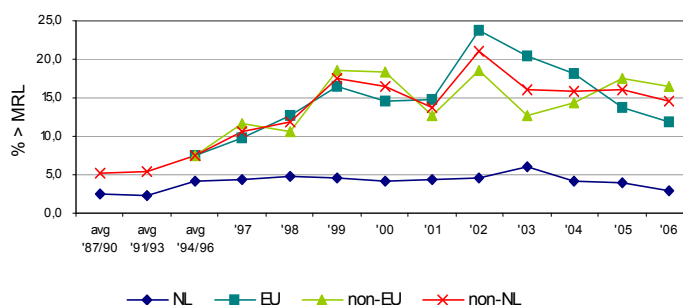


Figure 1. Percentage of MRL violations not including incidents

About 64 % of the residue findings is governed by EU-MRLs (Table 3). Table 1 gives the most frequently non-complying pesticide/crop combinations with the main countries of origin. In 2005 the Netherlands issued sixteen rapid or information alerts on pesticide residues. Table 2 gives an overview. Both at the non-compliances and the RASFF-notifications occurrences of highly toxic obsolete pesticides from third world countries are predominant. It is remarkable that old organophosphates as EPN, monocrotophos and omethoate (without dimethoate) are still in use. Therefore, measures were taken to prevent imports at Schiphol airport.

In about 3350 samples about 6700 residues of 172 different analytes were found. The scope of the coordinated program comprised 69 % of the residues found. For a majority of the results an Acute Reference Dose (ARfD) has been established (table 3).

Table 1. Main products with high percentages of non-compliances, with corresponding pesticides and countries of origin.

Product	Pesticides	%>MRL	Countries
Beans with pod (fresh)	Dimethoate, omethoate, methomyl, epn, carbendazim	60,9	Thailand, Dominican Rep.
Pepper	cypermethrin, carbendazim	35,3	Thailand
Tangerines	pyriproxyfen	10,7	no specific
Endive	no specific	11,9	The Netherlands
Orange	Dimethoate, imazalil	13,1	Egypt
Grape	tebufenpyrad, dimethomorph	20,7	Italy, India
Sweet pepper	Methiocarb	9,4	Spain

Table 2. Alerts to the RASFF system issued by the Netherlands.

Product	Pesticide	Country
aubergine	omethoate (0,36 mg/kg)	Thailand
chilli pepper	triazophos (0,5 mg/kg)	Thailand
grapes	methomyl (0,18 (mg/kg)	France
lauki	methomyl (0,52 (mg/kg), monocrotophos (0.50 mg/kg)	Dominican Republic
mango	carbendazim (1,1 mg/kg) and fenthion (1,1 mg/kg)	Australia
mango	carbendazim (3,2 mg/kg)	Australia
mango	dimethoate (0,16 mg/kg), omethoate (0,13 mg/kg)	Australia
orange	phentoate (0,37 mg/kg)	Egypt
parsley	EPN (1,2 mg/kg)	Thailand
passion fruit	monocrotophos (0.29 mg/kg)	Colombia
plums	fenthion (0,52 mg/kg)	Spain
sapodilla	triazophos (0,15 mg/kg)	Pakistan
yard long bean	dimethoate (0,7 mg/kg), omethoate (0,16 mg/kg)	Dominican Republic
yard long bean	carbendazim (0,45 mg/kg)	Thailand

yard long bean	EPN (0.13 mg/kg)	Thailand
yard long bean	monocrotophos (0.38 mg/kg)	Dominican Republic

Table 3. Pesticide residues found in the EU-coordinated and Dutch monitoring program.

	active substances	number of residues of pesticides in samples				total
		with ARfD	no ARfD needed	ARfD unknown	with EU-MRL	
EU-coordinated monitoring	55	3157	1485	1	3636	4643
Dutch national program	117	1323	706	24	672	2053
Total	172	4480	2191	25	4308	6696

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

The Food and Consumer Product Safety Authority performs the official monitoring in the Netherlands. The samples are taken without prior information about the presence of pesticides in the sample. Therefore, they represent the situation on the market for the product at that time. However, sampling is directed relatively more to products that need attention because of the violation rate in previous years. Therefore, high violation rates can indicate both an efficient sampling strategy and problems in the agricultural practice.

The Dutch Food and Commodity Law regulates the sampling procedure, i.e. the number of subsamples taken from a lot. This regulation is the implementation of the EC-directive 2002/63/EC. Inspectors of the five regional inspectorates are taking samples.

The main sampling points are the premises of the auction system for Dutch products and importers, warehouses and distribution centres of retail chains for both domestic and non-domestic products. At those inspection points it is clear who is responsible for the product, so that appropriate legal action can be taken in case of non-compliance. In 2006 a number of samples was taken in retail shops as part of a the pilot project to provide public information on samples, results and responsible companies.

3. ANALYSIS AND QUALITY ASSURANCE

One regional laboratory (Northwest, in Amsterdam) performs the analyses of the samples. The general strategy is detecting as many pesticides as possible in one analysis by using Multi-Residue-Methods (MRMs). The Dutch method consists of an acetone extraction, followed by a partition step of the residues into dichloromethane/petroleum ether. The extracts are analysed by a chromatographic separation and selective detection of residues. The main detection methods are Gas Chromatography (GC) - Ion-Trap Mass Spectrometric Detection (GC-ITD) and Liquid Chromatography – tandem Mass Spectrometry (LC-MS/MS). Only for some analytes that are not detectable sensitively enough by ITD, additionally GC with Electron Capture Detection (ECD) is used.

For some pesticides not amenable to the MRM, Single Residue Methods based on LC-MS/MS detection are used. In the 2006 program this was only the case for chlormequat and propamocarb. Dithiocarbamates are analysed as CS₂ using GC-FPD and GC-ITD after decomposing with acidic tin-chloride solution and extraction into iso-octane.

Together the scope of the methods is about 400 analytes.

The validity of the analytical results is governed by a quality assurance system under ISO17025 accreditation. The multi-residue methods are within the scope of the accreditation of the laboratory. The centralised laboratory has implemented the EU Guideline on Analytical Quality Control (SANCO 10232/2006). It takes part in FAPAS and EU proficiency tests.

The average inter-laboratory relative standard deviation (RSDR) is estimated at 25 % based on EU-proficiency tests (see SANCO 10232/2006). The expanded measurement uncertainty applied to reported results is 50 %. In this report, all results above the MRL are considered to be violative. However, legal measures are taken after subtracting the measurement uncertainty from the analytical result.

AUSTRIA

1. SUMMARY OF RESULTS

In 2006 a total of 1895 samples of fresh fruits and vegetables were analysed under the co-ordinated program, the national pesticide monitoring program and as routine samples. Beside that other products like cereals (26 samples), processed products (270 samples) and baby food (108 samples) were analyzed.

38,2 % of all samples of fruits and vegetables were from Austria, 46,1 % from the European market and 15,7 % from third countries. For cereals this rates were 73 %, 12 % and 15 % respectively. The rates for processed food were 71,9 %, 22,8 % and 5,6 %. Baby food was predominantly from the European market including Switzerland (100 %).

In 42,3 % of the samples of fruits and vegetables no pesticide-residues could be detected. 50 % of the samples had residues under the harmonized and/or national Maximum Residue Limits (MRL). In sum 92,3 % of these samples were in compliance with the regulations. 7,8 % of the samples of fruits and vegetables contained one or more pesticide(s) above the national or EU-MRL. 2,3 % of the samples were above the harmonized MRL's.

In all analysed samples (2299) including processed food and baby food the percentages were 50,1 %, 43,3 %, 6,6 % and 2 % respectively.

In 819 samples (35,6 %) more than one pesticide was analysed. Up to 19 pesticides were found in some samples. The samples with more than 9 pesticides were in most cases grapes or peppers.

In the samples were analysed up to 315 different pesticides/substances. Totally 293 different pesticides were sought, of which 128 (43,6 %) were found. The most frequently found residues in fruits and vegetables were in the co-ordinated and national programme and routine samples (percentage): Maneb-group, Fludioxinil, Cyprodinil, Procymidone, Fenhexamid, Azoxystrobin, Iprodione, Imidacloprid, Carbendazim (sum) and Chlorpyrifos-ethyl.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

The national pesticide monitoring is done according to a nation-wide sampling plan designed by the Institute of Applied Statistics and System Analysis (Joanneum Research, Graz) in co-operation with the Federal Minister of Health and Women. The plan was based on data concerning dietary consumption, production and import of fruits and vegetables and results of former measurements. Furthermore the results of earlier monitoring-programs, the analytical possibilities and the budgetary situation were taken into account, too. The co-ordinated programme of the European Commission was of course also done. Samples of leek haven't been analysed under this programme due to a misunderstanding.

The samples were taken by trained officials from the local Food Inspection Service („Lebensmittelaufsicht“).

3. QUALITY ASSURANCE

The analysis of the co-ordinated programme, the national monitoring programme and routine samples also were made by two laboratories for food control (Austrian Agency for Health and Food Safety, Institute for Food Control, Vienna and Institute for Food Control, Innsbruck together with the there located competence-centers for pesticide-analyses). One Laboratory in Vienna (Regional Institute for Food Control in Vienna) and Graz (Austrian Agency for Health and Food Safety, Institute for Food Control, Graz) analysed routine samples.

The analytical methods were adopted from published methods of the Dutch federal laboratories („Analytical Methods for Pesticide Residues in Foodstuffs“, 6th Ed., General Inspectorate for Health Protection, Ministry of Public Health, Welfare and Sport, The Netherlands) and validated in

the laboratories. The fruits and vegetables were analysed up to a maximum of 262 pesticides. The methods used were a GC multimethod with ECD-, NPD- and FPD-detection. GC/MS-methods are primarily applied for confirmation purposes of the other GC methods. New in 2006 was the establishment of the methodology of LC/MS.

All laboratories involved in the co-ordinated programme and the national monitoring programme including the routine samples got the accreditation in the year 1998.

4. OTHER INFORMATION

Due to the fact, that there were some commodities for the national programme isolated, of which higher risk for residues was identified in the last years, these specific data are representative for the Austrian market, but the monitoring has to be seen partially as „targeted monitoring“. It was the aim, to reflect to the results of the last years and to choose special commodities of interest for further examination. This type of monitoring is foreseen for the next years.

Furthermore the routine sampling includes special samples, of which European alerts were given, too and thus the number of exceedance is higher than by doing statistical based sampling over all commodities and time of the year.

1. Summary of Results

In 2006 in Poland, a total of 1468 samples of fruit, vegetables, cereals, processed products and baby foods were analysed for pesticide residues. This includes the samples analysed under the co-ordinated EU programme and the national monitoring programme. The samples were taken from market (retail and wholesale) and in some cases from the border and directly from producers.

In the overall monitoring programme 75% of samples were fresh (including frozen) fruit and vegetables, while 8,5% of samples were food for infants and babies including cereal products, milk-cereal products and vegetable-meat preserves. The percentage of samples analysed in the frame of coordinated EU monitoring was equal to 27%. In 2006, within the co-ordinated monitoring also 5 samples of organic products (ecological crops) were analysed: fruit (1 sample) and cereals (4 samples).

70% of analysed samples were of domestic origin; the remaining samples originated from other EU Countries (19%) and third countries (11%). Among all analysed samples, 82% did not contain any pesticide residues (including organic products) and in 15% cases the pesticide residues were found at levels over the reporting limits - below or equal the MLRs.

In the overall 2006 monitoring, 40 of the samples (only fruit and vegetables) contained residues exceeding the national MRLs (UE MRLs have been violated in case of 37 of above 40 samples). Those samples included: spinach (4 samples), lettuce (3 samples), carrots (10 samples), cucumber (1 sample), potatoes (1 sample), beans (2 samples), strawberries (5 samples), black currant (1 sample), grapes (2 samples), apples (6 samples), tangerine (2 samples), peaches and nectarines (3 samples). The majority of samples (31) with MRLs violations were foodstuffs of domestic origin.

The above mentioned MRLs exceedances were found for residues of the following pesticides: *maneb group*, *benomyl group*, *fenpropathrine*, *bromopropylate*, *chlorpyrifos*, *cyprodinil*, *dicofol*, *dimethoate*, *mecarbam*, *pirimicarb*, *procymidone*, *propyzamide*, *pyrimetanil*, *tolyfluanid*.

Moreover, within the follow-up official control, 34 samples were tested for pesticide residues (35% of domestic origin and 65% imported). Among those samples, in 88% no pesticide residues were found. The residues at or below the MRLs were found in 3 samples of fruit and vegetables. In 1 sample of Polish radish analysed for the purpose of follow-up official control MRL exceedance were noted for *Lambda-cyhalothrin*.

2. Organisation of Monitoring programmes and Sampling

The State Sanitary Inspection (SSI), subordinated to the Ministry of Health, is responsible for the organization and the supervision of monitoring of pesticide residues in foodstuffs of plant origin. However, monitoring plans are developed on its merits by the experts from the National Institute of Hygiene (NIH) (Państwowy Zakład Higieny PZH), also belonging to the Ministry of Health, and then handed over to the SSI, which authorises and distributes those plans to the Voivodship Sanitary Epidemiological Stations (VSES).

Monitoring plans take into account the co-ordinated EU monitoring according to the Commission recommendations and also include national monitoring as well as the official control of food for compliance with MRLs. In this last case the specific conditions of Polish agriculture and consumption data as well as product for infants and babies as a group of special susceptibility for pesticide residues were also considered.

The 16 laboratories of VSES took part in realization of the monitoring plan. Specially trained staff of Poviats Sanitary Epidemiological Stations collected food samples according to the guidelines published in the Regulation of the Minister of Health (*Regulation of the Minister of Health of 20 April 2004 on sampling of food for the analysis of the residues of plant protection products* (Polish O.J. 2004, No. 86, item 810), which implemented the provisions of *Commission Directive 2002/63/EC*.

3. Quality assurance

Among 16 integrated regional laboratories of SSI participated in monitoring and official food control most of them were accredited according to *PN-EN ISO/IEC 17025*; the certificates were issued by the Polish Centre for Accreditation. The scope of accreditation covers different number of pesticide residues that each of those laboratories is able to analyse in food.

To analyse the pesticide residues belonging to different chemical groups, the analytical methods published in Polish versions of the European Standards, an in-house validated methods published in Polish language in the *Wydawnictwa Metodyczne PZH* as well as methods published in recognized analytical journals were used.

All laboratories participating in monitoring and official food control of pesticide residues in food apply internal quality control of results and some of them participate in proficiency trials organized by CRLs. Additionally, in 2006, 13 laboratories participated in proficiency trials organized by the National Institute of Hygiene in Warsaw, which was appointed by the Ministry of Health as the reference laboratory for VSES.

All methods used by VSES laboratories have been validated. Validation parameters include also uncertainty. The methods were validated according to guideline published in a handbook: *“Validation of analytical methods and assessment of uncertainty of results in analysis of chemical contaminants in food”* (in Polish) developed by the experts from the National Institute of Hygiene on the basis of document DG SANCO *“Quality control Procedures for Pesticide Residues Analysis”*, 2000 and published in the *Wydawnictwa Metodyczne PZH*: 2003.

4. Other information

The monitoring and official control of pesticide residues in food are performed in Poland in order to check compliance with the MRLs as set in the Regulation of the Minister of Health of 16 April 2004 on maximum residue levels of chemical plant protection products that may be present in food commodities or on their surface (Polish O.J. 2004, No 85, item 801, as amended). This regulation implements all EU MRLs and additionally includes national MRLs for some of those active substances for which no EU MRLs have been set..

For 13 samples with stated MRLs exceedance, the administrative measures have been taken. In 8 cases of MRL violation the above mentioned measures have not been taken, after taking into account the whole budget of uncertainty of results. For 11 samples in which the administrative measures were taken, the decision has been taken not to report these cases to the RASFF system after taking into account the risk analysis results.

In some cases the combinations of the matrix/MRL have been changed during the 2006, and therefore the same levels of pesticide residues could be recognized as the MRL violation or not, depending on the time of analysis. In the tables B and C the information concerning above mentioned situation has been highlighted by presenting two values in the column concerning information on MRLs, in order their being in force.

Moreover, in case of one sample of apples with residues of dimethoate at level above MRL, the homogeneity exercise has been carried out.

PORTUGAL

1 – SUMMARY OF RESULTS

In 2006, a total of 708 samples were analysed for residues of up to 140 pesticides and to groups (benomyl and maneb), amounting to over 160 analytes. This number of samples comprised 574 fruits and vegetables, 42 cereals, 30 baby foods and 62 processed products, other than baby fruits. The number of fruits and vegetables above includes eight enforcement samples. The majority of samples were analysed in the framework of the EU co-ordinated monitoring sampling. Residues of at least one pesticide were found in about 23% of the fresh commodities analysed (fruits, vegetables and cereals) in the framework of surveillance sampling, and occurrences of multiple residues were detected in 38 samples of the same commodities (about 6% of the sampling). In total, 38 different pesticides occurred in fruits and vegetables. The 10 most frequent pesticides in fruits and vegetables were, by decreasing order, imidacloprid, captan/folpet, carbendazim (sum), dimethoate (sum), maneb group, cyprodinil, fludioxonil, acrinathrin, procymidone and lambda-cyhalothrin. In cereals, the only pesticides found were malathion, pirimiphos-methyl and dichlorvos, and in no case a violative sample was found. Infringements to EC and national MRLs in the surveillance samples of fruits and vegetables accounted for 4,8% and 5,7% of the sampling, respectively. The higher rate of exceedences to EC or national MRLs was found in domestic bananas, which is specially due to the lack of authorised products for the protection of this crop. The pesticide which accounted for more infringements in the total sampling was dimethoate+omethoate. Processed foods analysed, other than baby food, showed no residues or very low residues compared to the MRLs set for the raw commodities. One sample of baby food from a third country showed a violative residue of thiabendazole (0,09 mg/kg).

2 – ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

From December 2005, monitoring programmes and sampling became a joint responsibility of the Ministry of Agriculture and the Ministry of Economy, except for baby foods, for which the Ministry of Health is responsible. For products of vegetable origin the responsible bodies were the new Agency for Food and Economic Safety (ASAE) and Directorate General for Crop Protection (DGPC). Sampling in the mainland was carried out by ASAE both at central level and through their regional bodies. In the autonomic region of Madeira sampling was carried out by the Regional Inspectorate of Economical Activities (IRAE). The autonomic region of Açores also participated in the programme, with sampling carried out by the Regional Department of Agriculture and shipment of samples to DGPC laboratory. Results obtained for products sampled in the mainland were reported by the laboratories to ASAE and, in case of violations, risk assessment was carried out by DGPC. ASAE is also the body responsible for enforcement actions, such as official warnings, levying of fines or preparation of prosecutions by the court, according to the severity of infringements. In the autonomic regions, Madeira IRAE and Açores IRAE are responsible for these actions. Monitoring programmes are elaborated in a meeting with the participation of representatives of the intervening bodies (sampling inspectors and analysts). The national programme for 2006 was based on the EU coordinated monitoring programme, which was extended to other pesticides according to the capabilities of the laboratories and to other commodities highly consumed, mainly strawberries, peppers, lettuce and spinach, as a result of infringements found in previous years. In the Autonomic Regions of Madeira and Açores some crops, namely custard apples, carrots and melons, were included also due to their economical importance. Sampling was carried out by trained officers, according to the procedures laid down in directive 2002/63/EC. Samples were taken both at wholesale commerce, wholesaler's warehouses and retail.

3 - QUALITY ASSURANCE

The following pesticide residue laboratories contributed to the national monitoring programme: DGPC (lab 1), Regional Agricultural Directorate of Madeira (lab 2), Regional Agricultural Directorate of Entre Douro e Minho (lab 3), and Regional Agricultural Directorate of Algarve (lab

4). Lab 1 is accredited since June 2005 for the majority of compounds analysed by GC-multi-residue method (GC-MRM) and N-methylcarbamates and was successfully audited for extension near the end of 2006. Lab 4 was successfully audited in 2006 for accreditation of the dithiocarbamates CS2 method. Implementation of EU quality control procedures is ongoing as shown in Table G. The GC multi-residue methods used are method P (labs 1 and 3) and method M (lab 2) in European Standard 12393. The determination of maneb group is based in European Standards 12396-1 (labs 1, 3 and 4) and 12396-2 (lab 2). The benomyl group is determined by HPLC after ethyl acetate extraction and acid-base partition (labs 1 and 4). N-methylcarbamates are determined by HPLC-FLD with on-line OPA derivatization, after extraction and clean-up identical to method P above (lab 1). Organophosphorus insecticides precursors of sulphoxides and sulphones are analysed by oxidation of the cleaned extract obtained according to method P (lab 1). In 2006 labs 1 and 2 have both participated in the 8th EU proficiency test. Lab 1 also participated in one FAPAS exercise (MRM) and in an APLAC exercise dealing with organochlorines in ginseng powder. Lab 4 participated in TESTQUAL exercises for dithiocarbamates and MRM. In labs 1 and 2 values detected above MRL (mean of at least 2 separate analyses) are reported as infringements, for a confidence level of 95%, when the confidence interval defined by the mean value quantified and the standard uncertainty is totally above the MRL. As a rule, these labs apply uncertainties estimated from intralaboratory (validation and quality control) and interlaboratory data. In their absence, lab 1 uses the uncertainty default value of 50%. A detailed and refined approach is available in lab 1, which is used when the infringement can pose a potential risk to consumers.

4 - OTHER INFORMATION

For all samples where infringements found related to pesticides for which an acute reference dose (ARfD) has been set, or with relevant acute toxicity, risk assessment was carried out by DGPC both for adults and children, according to the UK model. In the sample of bananas with the highest residue of dimethoate the ARfD was exceeded for children (128%), but probably the residue in the pulp would be rather lower, although the systemic characteristics of the compound. A similar situation in bananas was found for a violative residue of methomyl. In a sample of lettuce from southern EU with 15 mg/kg CS2 risk assessment was carried out considering different dithiocarbamate compounds (with different ARfD) as CS2 precursors: ziram, propineb, maneb and mancozeb. Should the dithiocarbamate present be ziram, maneb or propineb, a health risk for children and even for adults could not be excluded. However, according to good agricultural practice in lettuce in southern Europe, the highest probability is the presence of mancozeb, in which case a risk to consumers would be excluded.

1. SUMMARY OF RESULTS

In the Republic of Slovenia in 2006 totally 1420 samples of foodstuffs were analysed, out of it 1398 surveillance samples, 5 follow-up enforcement samples and 17 samples from organic production. Surveillance samples included: 1165 samples of vegetables and fruits, 77 samples of cereals, 96 samples of processed products of plant and fruit base and 60 samples of baby food.

Totally, there were 752 samples without detectable residues, 614 samples with residues at or below MRL (national or EC) or for which no MRL is set, 32 samples with residues exceeding the MRL (national or EC) out of it 21 samples with residues exceeding EC-MRLs.

Follow up activities were carried out always after infringements were found (additional inspection including sampling, taking proper official measures to prevent public health, including communication of information). Follow-up enforcement samples included 5 samples of vegetables and fruits, none of them exceeded MRL.

Samples from organic production included 10 samples of vegetables and fruits and 7 samples of cereals. 3 samples were with residues at or below MRL (national or EC) or for which no MRL is set.

Samples of fresh and frozen fruits and vegetables were analysed for the presence of up to 162 pesticides, residues of 90 pesticides were detectable (55,6 %). Most frequently detectable residues were Maneb-grup > Chlorpyrifos > Phosalone > Cyprodinil > Pyrimethanil > Diazinon > Imazalil > Benomyl group > Tolyfluanid > Diphenylamine.

Samples of cereals were analysed on presence of up to 152 pesticides, residues of 5 pesticides were detectable (3,3 %). Most frequently detectable residues were Chlormequat > Malathion > Chlorpyrifos > Chlorpyrifos-methyl > Pirimiphos - methyl.

Samples of baby food were analysed for the presence of up to 158 pesticides, depending on the composition. No residues were detected.

Samples of processed food have been analysed on presence of up to 153 pesticides, depending on type of food. There were 64 samples without detectable residues, 31 samples with residues at or below MRL (national or EC) or for which no MRL is set and 1 sample with residues exceeding the MRL (EC).

More than one residue were detected in samples taken out of apples, apricots, aubergines, bananas, bilberries, broccoli, cauliflower, celery, cherries, grapefruits, grapes, lemons, lettuces, mandarins, melons, nectarines, oranges, parsley, peaches, peppers, pineapples, pumpkins, radish, raspberries, strawberries, tomatoes and wheat .

Samples of grapes were taken for homogeneity test. Factor for the homogeneity of the sample was between 1,00 and 2,14.

In one sample of apples, grape and lettuce calculated value for PSTI exceeded the ARfD and one sample of seeds residues of banned pesticide was detected. In these cases RASFF notification was launched.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

Responsibilities

There are two authorities competent in the field of official control of pesticide residues in products of plant origin: Inspectorate for Agriculture, Forestry and Food (IRSAFF) and Health Inspectorate of the Republic of Slovenia (HIRS):

- IRSAFF is responsible for the control at the very first step of placing on the market of primary products by the primary producers. Trade with registered pesticides and their use is also a part of official control of IRSAFF.
- HIRS is responsible for the control of all foodstuffs, including baby food and infant formulae, in all other stages of the production chain, including importation.

The competent authorities for the transposition of EU MRL legislation is the Ministry of Health (MH) in cooperation with Ministry of Agriculture, Forestry and Food (MAFF).

Ministry of Health - Sector for safety and health suitability of food at the Directorate for Public Health is responsible for the preparation of detailed pesticide residues monitoring programme for foodstuffs under its responsibility in cooperation with HIRS, the laboratories and other stakeholders. The program covers also the EU co-ordinated monitoring programme.

This programme is merged and combined with the MAFF/IRSAFF's monitoring programme of pesticide residues (prepared for the control at the very first step of putting on the market of primary products) into a national monitoring programme, which is discussed and confirmed by the panel established by MH and MAFF.

In the panel there are representatives from MH, MAFF, IRSAFF, HIRS, Phytosanitary Administration of the Republic of Slovenia, Veterinary administration of the Republic of Slovenia, National Chemicals Bureau, consumers association, official laboratories. This panel prepares the final opinion on the national monitoring programme.

Designing of Programmes (priorities, targeting)

Various reference sources are used to determine which commodities are to be surveyed: information on commodities surveyed during last six years; results of national programme carried out in the previous year; data of Statistical Office of the Republic of Slovenia on average annual quantity of purchased food and beverages per household member; data on the area of production and volume of crops, GEMS/food regional diets; European Commission Rapid Alert System for Food and Feed (RASFF); Commission Recommendations concerning a coordinated Community monitoring programme; a summary of the European Monitoring programme for pesticides residues. The programme is designed to generate information on typical residue profiles of particular types of products and on major trends in the incidence and levels of pesticides.

The choice of pesticides to be sought is primarily influenced by pesticide use; potential for residues based on use pattern and the physical-chemical properties of the pesticide; toxicological profile of the pesticide; analytical capabilities.

The number of samples per survey in general varies between 5-30 samples. Special survey of 300 samples was made on apples.

Sampling: personnel, procedures, sampling points

Programmes are designed with participation of stakeholders; administrative bodies, official control bodies, analytics, risk assessors and consumer organisations. Programmes in the field of foodstuffs are developed considering: dietary staples, rolling programme, EU surveys, follow-up surveys and additional surveys.

Enforcement action

According to the provisions of the Inspection Act, Health Inspection Act, Act Regulating the Sanitary Suitability of Foodstuffs and Products and Materials Coming in Contact with Foodstuffs, Act on Plant Protection Products, Decree on the implementation of parts of certain parts of EU Regulations regarding foodstuffs, food hygiene and official control of foodstuffs and Decree on the implementation of parts of certain parts of EU Regulations regarding official control and obligations of business operators in primary production of foodstuffs and feedstuffs, there are the following possible administrative measures to be taken by the competent authorities in the cases of detected infringements: warning, temporarily prohibiting the production and trade, ordering the removal of deficiencies in the production and trade, prohibiting the production and trade, ordering the foodstuffs, which endanger public health to be seized and safely destroyed at the expense of the legal or natural person at whose premises such product were discovered, sealing establishments, work areas, equipment and items, or prohibiting the use of an establishment, working areas, equipment and items in case the determined deficiencies representing a threat to sanitary safety of foodstuffs. According to the Offence Act the inspectors are since the beginning of the year 2005 also pronouncing offences. Possible options, related to the level of offence are: verbal warning, order to pay.

3. QUALITY ASSURANCE

Status of accreditation of laboratories; number of laboratories

There are three institutes nominated for performing the analyses of samples of foodstuffs taken within monitoring programmes - National Public Health Institute, Trubarjeva 2, 1000 Ljubljana (achieved accreditation on 22 August 2003), and Regional Public Health Institute of Maribor, Prvomajska ulica 1, 2000 Maribor (achieved accreditation on 14 November 2001) for execution of the program prepared at MH. The third laboratory - Central Laboratories of Agricultural Institute of Slovenia, Hacquetova 17, 1000 Ljubljana, is executing the program prepared at MAFF since 2006. The laboratory achieved accreditation for determination of pesticide residues on 2 June 2005.

Analytical methods used

Samples are analysed using analytical methods, mainly multiresidue methods based on gas and liquid chromatographic techniques employing element-selective and mass-spectrometric detection systems (with increasing share of LC/MS and LC/LS/MS/MS), which have been validated according to the procedures described in the Guidelines for Residues Monitoring in the European Union and comply with the relevant minimum required performance criteria of the EU Recommendations and Quality Control documents. Agricultural Institute of Slovenia uses two multiresidual methods (one GC-MS and the other one LC/MS/MS), method for determination of benzimidazoles and method for determination of dithiocarbamates. The methods have been validated according to the requirements of COFRAC accreditation body.

Participation in proficiency test

National Public Health Institute and Regional Public Health Institute of Maribor participate in few proficiency testing schemes. Basic ones are FAPAS and EUPT-6 (European Commission's Proficiency Test on Pesticide Residues in Fruit Vegetables), within both of them, 5 – 8 different testing per year are performed.

Agricultural Institute of Slovenia participates in the proficiency testing scheme BIPEA (Bureau Interprofessionnel d'Etudes Analytiques) by analysing 14 samples per year and in EUPT-7 (European Commission's Proficiency Test on Pesticide Residues in Fruit Vegetables) by analysing one sample.

Implementation of EU quality control procedure

With respect to quality of data generated in the frame of the EU residue coordinated programme, the results of the analysis of foodstuffs are obtained by analytical laboratories which are in compliance with the requirements of Directive 1993/99/EEC, its Article 3, applying Quality Control Procedures for Pesticide Residue Analysis and accredited according to the ISO17025. The pesticide analyses of foodstuffs are performed following entirely the guidelines of Quality control procedures for pesticide residues analysis, Document N° SANCO/10476/2003, 5 February 2004 (and updating issues). Others documents are taking in to account, for example, EURACHEM/CITAC Guide Quantifying Uncertainty in Analytical Measurement, QUAM: 2000.P1, Second Edition: QUAM: 2000.P1.

Analytical uncertainty

Residue analytical results have a relatively large inherent uncertainty depending on the concentration of the analyte (the relative uncertainty of analysis, realistically expected, is to be around 25% in the residue range of 0.001-10 mg/kg). These results are in agreement with Horwitz's findings indicating a relative uncertainty of about 17% for average residues of 0.1 mg/kg (Horwitz *et al.*, 2001). According to the Commission Directive 2002/63/EC analytical the result x is stated together with the expanded uncertainty U calculated using a coverage factor Quantifying Uncertainty Reporting Uncertainty QUAM:2000.P1 (which gives a level of confidence of approximately 95%).

Agricultural Institute of Slovenia has uncertainty of 90% in the concentration range ≤ 0.01 mg/kg, 64% in the concentration range > 0.01 mg/kg to ≤ 0.1 mg/kg, 46% in the concentration range > 0.1 mg/kg to ≤ 1 mg/kg and 32% in the concentration range > 1 mg/kg (Principles and Practices of method Validation, ed.: A. Fajgelj, A. Ambrus, The Royal Society of Chemistry 2000).

4. OTHER INFORMATION

Details on reporting level

In the table A2 Part II - Fruits and vegetables in the 5th column the range of reporting levels is indicated for certain pesticide residues due to different reporting level which were used for matrix concerned.

Details of homogeneity exercise

Homogeneity exercise was performed following entirely the Guidelines of quality control procedures for pesticide residues analysis, Document N° SANCO/10476/2003, 5/February/2004 (and updating issues) and Commission Directive 2002/63/EC establishing Community methods of sampling for the official control of pesticide residues in and on products of plant and animal origin and repealing Directive 79/700/EEC.

Details of risk assessment

To assess acute risk, we use the UK Consumer Exposure model for determination of short time exposure using high portion consumption (97,5 percentile of food consumption) for toddlers and adult persons, the observed residue in the sample and variability factor (depending of the weight of the commodity unit). The pesticide intake/exposure is compared to the ARfD or ADI when ARfD is not determined (DG SANCO/3346/2001 recommended methodology for the evaluation of the risk to the consumers).

For chronic risk assessment we use the data of average food consumption /day/person (data from Slovene Statistic Office – Yearly Household Budget Survey or data from WHO European Diet when there is a lack of Slovene data for a specific commodity) and average pesticide residue (sometimes 90,0 percentile), compared to the ADI (%ADI).

Agricultural Institute of Slovenia calculated acute risk assessment with UK Consumer Exposure model for determination of short time exposure using high portion consumption (97,5 percentile of food consumption) for adult, infant, toddler, children 4-6 year old, children 7-10 year old, children 11-14 year old, children 15-18 year old, vegetarians, elderly who live at home and elderly-residential people. The pesticide intake/exposure is compared to the ARfD or ADI when ARfD is not determined.

SLOVAK REPUBLIC

SUMMARY OF RESULTS

In 2006, pesticide residue monitoring in samples of plant origin was carried out under the National Pesticide Residue Monitoring Plan, implementing Commission Recommendation governing the EU monitoring program for 2006. A total of 1 227 samples were analyzed; thereof 1060 fruit and vegetables, 95 cereals, 18 selected processed products and 54 baby food (Table 1). The national or EU harmonized maximum residue limit (national or EU harmonized MRL) was exceeded in 88 fruit or vegetable samples (8,3%), 1 cereal sample (0,1%), and 1 baby food sample (1,8%).

Table 1: Overview of Pesticide Residue Monitoring Results in the Slovak Republic

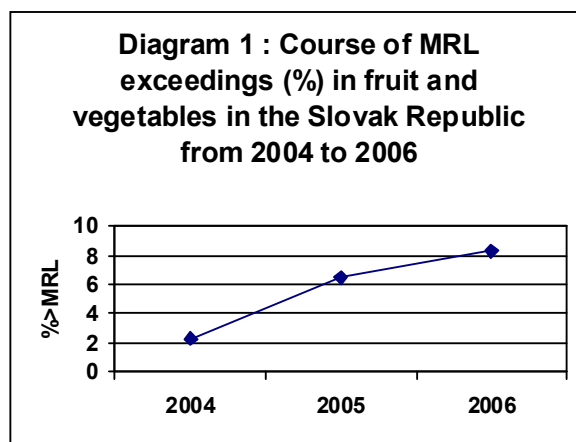
Samples	Analyzed	Without residues	With residues <MRL	With residues >MRL	With residues >MRL (%)	Country of origin *					
						SK		EU		Third countries	
						Total	> MRL	Total	>MRL	Total	>MRL
Fruit and vegetables	1060	584	388	88	8,3	335	7	469	43	229	15
Cereals	95	64	30	1	0,1	*Country of origin unknown for 27 samples of fruit and vegetables					
Processed products	18	16	2	0	0						
Baby food	54	48	5	1	1,8						
Total	1227	712	425	90	7,4						

Fruit and vegetables: In 2006, 1060 samples of fresh or frozen fruit and vegetables were taken. No pesticide residues were found in 55,1% of samples. MRL exceedings were observed in 8,3% of samples (EU harmonized or national MRLs). Comparing with the year 2005, MRL exceedings increased by 1,8%. Infringements related to MRLs were most frequently observed in aubergines, peppers (*Capsicum*), apples, citrus fruit, peaches and lettuces. Out of a list of 138 different pesticide residues sought in fruit and vegetables, a total of 74 were found at least once during the monitoring program. The most frequently found pesticide residues are: chlorpyrifos-ethyl, imazalil, thiabendazole, procymidone, fenhexamid and maneb group. Several factors have to be taken into account for results interpreting:

1. In the total number of samples exceeding the MRLs are also included infringements of national MRLs that cannot be applied in full measure to the samples originating in EC countries.
2. Under the Commission's guidance a tolerance of 50% should be included for interpreting the results – within the above-mentioned data this tolerance had not been included.
3. Considering points 1 and 2, the rate of MRL exceedings in fruit and vegetables observed in 2006 falls to 2,4%.
4. Rising number of new analyzed pesticide residues had participated in an increased share of samples exceeding the MRLs (the rate of new analyzed pesticides rose by 27 in 2006).

Re: The problem about application of national limits will be withdrawn at the moment of full applying Regulation (EC) No 396/2005 – i.e. it will come to the harmonization of all MRLs within the Community.

Cereals: 1 sample (rice) out of 95 analyzed samples was above the MRL.



Processed products: 1 sample out of 70 samples of processed products including baby food was above the MRL - 1 sample of baby food (exceeded MRL for propargite).

ORGANISATION OF MONITORING PROGRAMS AND SAMPLING

- § **Responsibilities:** The State Veterinary and Food Administration of the SR under the responsibility of the Ministry of Agriculture is the competent authority for the monitoring of pesticide residues in foodstuffs of plant origin. The Public Health Authority of the SR under the Ministry of Health of the SR is a competent authority for the monitoring of baby food, taking and analyzing 39 samples in 2006.
- § **Drafting of the national plan:** Certain criteria as are consumption and production of a given commodity in Slovakia, observations from sample analyses in the previous year, and the RASSF messages were identified for selection of samples as well as their number. The selection of commodities was based on fresh fruit and vegetables. The number of taken samples was limited by analytical and budgetary possibilities. The coordinated program of the EU was included in the national program. In terms of its requirements also 18 samples of organic agricultural products were taken and analyzed.
- § **Sampling:** The sampling methods were in compliance with Commission Directive 2002/63/EC that has been implemented into the Slovak food legislation. Sampling was done by trained inspectors based at 40 District Veterinary and Food Administrations, mainly at producer sites (samples from domestic production), in packing stations (nuts, dry fruits), wholesale storehouses, retail shops as well as under the checking of food import from third countries at the points of entry (except for 39 samples of baby food that were taken by competent officials under the Ministry of Health of the SR).
- § **Enforcement:** In case of infringement related to MRL (considering uncertainty of measurement), the inspectors had followed the legislation of the SR. After sending a notification to the national contact point for the RASSF a risk analysis was performed.

QUALITY ASSURANCE

The National Reference Laboratory for Pesticide Residues in Foods of Plant Origin – The State Veterinary and Food Institute in Bratislava – was authorized to perform sample analyses. This laboratory analyzed all samples, except for 39 samples of baby food. A general strategy for determination of the widest possible spectrum of pesticides by multiresidual method (MRM) was adopted. The principal of the method is extraction into ethylacetate followed by purification and gel permeation chromatography in ethylacetate/cyclohexane system. The detection was performed by GC/ECD, FPD and NPD. Other part of the spectrum of monitored residues was determined by MRM, using the method QUECHERS for extraction and clean-up and the determination itself is performed by GC/MSMS. The positive results are confirmed with MSD. A modified method for measurement by HPLC/DAD/FLD system was used for three fungicides (benomyl group, thiabendazol and imidacloprid). A separate method of derivatization to CS₂, followed by GC/ECD detection was used for determination of maneb group. LC/MS/MS was used for determination of aldicarb and methomyl. The quality of analytical methods was in compliance with the requirements of SANCO/10476/2003 document. The laboratory is accredited according to the standard STN EN ISO/IEC 17 025 by the Slovak National Accreditation Service (SNAS). The laboratory had participated in the relevant FAPAS performance verification schemes (0944, 1962, 1964) and in the EU-proficiency test No 8. The laboratory of the Public Health Authority that had analyzed 39 samples of baby food is accredited according to the standard STN EN ISO/IEC 17 025 by the Slovak National Accreditation Service.

Other information

- MRLs are not safety limits, and exposure to residues in excess of an MRL does not automatically imply a hazard to health. When a pesticide residue is found at a level higher than that set for the MRL it gives an indication that in production of fruit or other commodities the criteria for Good Agricultural Practice were not met.
- In respect to Annex (tables TAB A2-I and TAB A2-II), we suggest increasing the number of decimal places in the column “reporting limit” because the rounding of low limits with three decimal places (e.g. 0,002) results in zero.

FINLAND

1. SUMMARY OF RESULTS

In 2006, a total of 2024 samples of fruit, vegetables, cereals, processed products and baby foods were analysed for residues of 236 pesticides. 352 samples were of domestic origin, 806 from other EU countries and 866 from third countries. The total number of samples includes 101 enforcement samples collected as follow-up of violations.

Pesticide residues above the reporting limits were found in 49 % of the surveillance samples. The frequency of samples with residues was 55 % for fruit and vegetables, 38 % for cereals, and 34 % for processed products. Only one baby-food sample out of 25 had detectable residues. The number of samples taken from organic products was 106, and residues were detected in seven samples. Pesticide residues were found in 28 % of the domestic samples, in 47 % of the samples from other member states, and in 59 % of the third country samples.

The maximum residue levels (MRLs) were exceeded in 69 surveillance samples (3.6 %), of which 39 were from third countries and 30 from other member states. No violations were found in the domestic samples. Residues exceeding the MRLs were found in 47 enforcement samples.

2. ORGANISATION OF THE MONITORING PROGRAMMES AND SAMPLING

Responsibilities

Finnish Food Safety Authority Evira is the central competent authority for the planning and control of pesticide residues. The control of non-domestic foodstuffs has been assigned to Customs administration while municipalities and Evira are responsible for the control of domestic products. The control of pesticide residues in alcoholic beverages is the responsibility of National Product Agency for Welfare and Health (STTV).

Design of the programmes (priorities, targeting)

The annual monitoring programme is worked out in co-ordination by Evira, and provides a sampling plan for the residue control of fruit and vegetables, cereals, processed products of plant origin, baby-food and organic products including the commodities and pesticides required in the EU co-ordinated programme. Control is designed to cover all important dietary commodities. The sampling frequency of different commodities is determined by the results of previous monitoring programmes, and priorities are also set according to known residue problems. A special survey of residues in breads and oils was carried out.

Sampling: personnel, procedures, sampling points

Domestic samples are collected by local health inspectors from wholesalers, packing companies, retail shops or farms according to the annual sampling plan and guide prepared by Evira. The samples of non-domestic foodstuffs are collected by customs inspectors from wholesalers. Samples of alcoholic beverages are collected by inspectors of the STTV. Inspectors have theoretical and practical training in sampling organised by Evira, the Customs or the STTV. The sampling directive 2002/63/EEC is followed.

Enforcement

For surveillance samples exceeding the MRL, the holder of the product is requested to prevent further distribution and selling of the lot. On subsequent lots of the same origin, follow-up samples are taken (enforcement samples). In case of enforcement sampling, the lots are detained for the duration of the investigation, and lots confirmed to exceed the MRLs are to be destroyed. Under certain conditions and by permission of the authorities, a non-complying lot may be returned to the

seller or to a third country or rendered compliant to regulations (e.g. aeration to decrease the level of fumigant residues).

3. QUALITY ASSURANCE

Status of accreditation of laboratories; number of laboratories

The analyses were carried out in two accredited (FINAS) laboratories: Finnish Customs Laboratory (90 % of samples) and Environmental Laboratory of the City of Helsinki (10 % of samples). Both laboratories have accreditation according to ISO17025 for the main analytical methods but some single residue methods are not accredited.

Analytical methods used

Virtually all samples were analysed by the multiresidue method. This method is based on acetone extraction of samples, partitioning with petroleum ether and dichloromethane and detection by GCEC, GCNP, GCMS and LCMSMS. The number of pesticides monitored for by the multiresidue method is 225 in Customs laboratory and 72 in the Helsinki City laboratory. In addition, chlormequat, diquat, dithionon, maleic hydrazide, inorganic bromides and hydrogen phosphide were analysed from selected samples in the Customs Laboratory.

Participation in proficiency tests

Both laboratories participated in the proficiency test organised by EU (PT8). Customs Laboratory participated also in four proficiency tests of pesticide residues organised by FAPAS and one organised by the APLAC.

Implementation of EU quality control procedures

The EU quality control guidelines (SANCO/10476/2003) have been implemented in both laboratories, albeit only partly for some elements.

Analytical uncertainty

The analytical uncertainty is determined from the daily quality control samples. Two times relative standard deviation is used as the measure of uncertainty. All results even slightly above the MRLs are defined in this report as exceedances, however, enforcement action is taken only if the result, subtracted by the uncertainty value, still exceeds the MRL.

4. OTHER INFORMATION

Details of homogeneity exercise

Only one sample with residues of chlorpyrifos, was subjected to analysis of individual units of the second laboratory sample. The sample was taken from a lot where the grower could not be identified, and it may have been a mixed lot.

RASFF notifications

4 notifications were sent in 2006 following the results of pesticide residue monitoring.

SWEDEN

1. SUMMARY OF RESULTS

In 2006, a total of 1 511 surveillance samples of fruits, vegetables, juices, fruit drinks, cereal grains, cereal products and vegetable oils were analysed for residues of 273 pesticides (322 analytes). National or EU harmonised Maximum Residue Limits (EC-MRLs) were exceeded by 59 samples (3.9 %).

Aubergines, bananas, cauliflower, grapes, orange juice, peas, peppers and wheat, in all 380 samples, were analysed in the 2006 EU co-ordinated programme. Two of these samples exceeded the EC-MRLs for the pesticides that were included in the co-ordinated programme.

A total of 238 samples of cereal grains were analysed. Most of the samples contained no residues and none of the samples exceeded any MRLs.

No residues were found in the 40 samples of foods for infants and young children.

In the enforcement sampling 43 samples of fruits and vegetables were collected and 9 lots were prohibited from being sold.

The short-term intake was estimated for all pesticides with an acute reference dose (ARfD) set by EU, WHO or US-EPA. The calculation was based on the residue found in a surveillance (composite) sample and UK consumption data. In two cases the Commission was notified and RASFF was sent out.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

Responsibilities

The National Food Administration (NFA) is the responsible authority for the monitoring of pesticide residues in foods.

Design of the programmes (priorities, targeting, criteria for the percentage of samples to be taken from the organic sector)

The number of samples to be collected of each food is risk related and partly linked to the foods consumption rate and takes into account both the amount of domestic production and the amount of imports from EU-countries and third countries. However, the number is also based on the importance of the foodstuff in the diets of infants and young children as well as residues found in prior samples. The number of samples from the organic sector was roughly dependent on its share of the market and availability on the market.

Sampling: personnel, procedures, sampling points

Samples collected in accordance with the monitoring programme were defined as surveillance samples i.e. there were no suspicions about excessive amounts of pesticide residues in the lots prior to sampling

Personnel: Plant inspectors from the National Board of Agriculture collected most of the samples in accordance with instructions from NFA.

Procedures: The sampling was done according to Commission Directive 2002/63/EEC. Each sample was sealed and labelled with a unique sample identity.

Sampling points: Fresh fruit and vegetables were sampled at wholesalers' warehouses in the first trade channel. The imported cereal grains were sampled at the port where the shipment was discharged. Samples of domestic produced cereal grains were collected at the milling plants. Most of the samples of processed or frozen fruit and vegetables, juices, fruit drinks, rice, cereal products and vegetable oils were collected in retail shops or department stores.

Enforcement action

When a surveillance sample contained a pesticide residue above national or EC-MRL (see uncertainty), the National Food Administration prescribed a condition for the offering for sale

or other handling of the food or lot to which the food belonged. The remaining part of the lot, if any, was prohibited for being put on the market. As a follow-up, next lots of the commodity from the grower/exporter were detained and enforcement samples were collected.

3. QUALITY ASSURANCE

Status of accreditation of laboratories; number of laboratories

All analyses were carried out at Lantmännen Analycen AB, Lidköping. The laboratory is accredited by the Swedish accreditation authority SWEDAC for all analytical methods used for the NFA's official control of pesticide residues in food of plant origin.

Analytical methods used

Practically all samples of fruit and vegetables were analysed by the multi-residue method. By this method, the samples were extracted with ethyl acetate after addition of sodium hydrogen carbonate. GPC clean up was only used for extracts prior to GC determination. The uncleaned extracts were determined by LC-MS/MS.

In all, by using both multi-residue methods and single residue methods it was possible to determine 273 pesticides corresponding to 322 analytes. About 298 000 individual pesticide residues determinations were carried out (Table A2-Part I-II).

Participation in proficiency tests

The laboratory has participated in three proficiency tests organised by EU and in 15 tests organised by FAPAS, UK (Table G).

Implementation of EU quality control procedures

The EC guidelines SANCO/10232/2006 "Quality Control Procedures for Pesticide Residue Analysis" have been implemented as far as practicable (Table G).

Analytical uncertainty

The residue figures found are compared with the MRLs. If the figures, without any correction, are mathematically above the MRL, the sample is defined as an exceeding. However, before any enforcement actions are taken the analytical uncertainty is subtracted from the measured value (95 percent confidence interval). If the corrected figure still exceeds the MRL enforcement actions could be taken. As a general rule, the figure 50% is used as a default uncertainty for enforcement purposes.

4. OTHER INFORMATION

Details of homogeneity exercise

In the EU co-ordinated programme the homogeneity factor should be determined for at least certain pesticide/commodity combinations. None of these combinations were found or could be reanalysed. However, the homogeneity factor was calculated for oxamyl in cucumbers and carbendazim in apples (Table F).

Background on legislation

Sweden has implemented all EC-MRLs. For some other pesticide/commodity combinations National limits are in force.

Details of risk assessment

The short-term intake has been calculated for those pesticides that have an ARfD assigned by EU, WHO or US-EPA. In two cases the Commission was notified and RASFF was sent out.

UNITED KINGDOM

1. SUMMARY OF RESULTS

In 2006 a total of 3562 samples were analysed for up to 159 pesticide residues. This was composed of 1791 fruit and vegetables, 1007 animal products, 288 groceries (processed products), 72 baby food, and 404 cereal samples. This includes the samples analysed under the co-ordinated EU programme and the national monitoring programme.

Category	Number of samples analysed	No residues found	Residues at or below the MRL found	Residues above the MRL (EU, UK or Codex)
Fruit and vegetables	1791	887	845	59
Animal products	1007	952	55	0
Groceries	288	255	33	0
Cereal products	404	159	244	1
Baby food	72	70	2	0
Total	3562	2323	1179	60

In the overall monitoring programme 60 (1.7%) of the samples contained residues exceeding the MRL (EU, UK or Codex). The greatest proportion in the yams and speciality fruit surveys. In all cases where MRLs were exceeded, or where there were potential intake issues, a consumer risk assessment was carried out to establish whether the level of residues present would represent a risk to human health. The risk assessments are published and indicated that the residues found were unlikely to effect health.

43.4% of the samples were UK origin, 28.3% were from other member states, and 28.3% from third countries. 14.1% of samples contained residues of more than one pesticide. 6% of samples were labelled as organic.

An additional enforcement survey of 42 speciality beans was carried out. 42.5% contained residues above the MRL.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

Responsibilities

The UK monitoring programme is overseen by the independent Pesticide Residues Committee (PRC). The purpose of the UK monitoring is to:

- back up the statutory approvals process for pesticides by checking that no unexpected residues are occurring;
- check that residues do not exceed statutory EU and UK MRLs; and
- check that human dietary intakes of residues are at acceptable levels.

Design of Programmes

In addition to cost, the food chosen to include in our surveys takes account of:

- § foods covered by the EU programme of surveys;
- § the importance of the food within UK diet, and the balance of food types;
- § information on use of pesticides and evidence of residues in earlier surveys;
- § the time that has passed since they were last tested.

Around 84 % of samples were obtained at retail level from 24 towns/cities spread throughout the twelve regions of the UK, including Scotland, Wales and Northern Ireland. The places selected are changed each year. Official inspectors from Department for Environment, Food and Rural Affairs (Defra) also collected samples at non-retail sources for: apples, bananas, grapes, and potatoes.

Samples were taken, prepared and analysed according to Commission Directive 2002/63/EC.

Follow-up action

Brand naming

All monitoring results are published in full on the PRC website (www.prc-uk.org) for consumer and stakeholder information, including:

- date and place of collection
- country of origin or manufacture;
- brand name and packer/manufacturer; and
- residues detected.

When the level of pesticide residues found indicated use of a non-approved pesticide, or the use of a pesticide not in accordance with the conditions of its approval, the source of the sample was investigated to establish the cause of the residues. Further targeted surveillance is carried out to check whether the result represented an isolated incident. If problems are identified in retail samples of produce of EU or third country origin, the details are reported to the Member State or exporting country concerned.

Pesticides Safety Directorate commissioned targeted enforcement survey of specialty beans. 42 samples of speciality beans were tested for 27 residues. They were collected at import points by Defra inspectors. 20 samples contained residues above the MRL. 14 samples did not contain residues from those sought and 8 contained residues within the MRL.

3. QUALITY ASSURANCE

Analytical methods comply with the 3rd edition (SANCO/10232/2006) of the EU Quality Control Procedures for Pesticide Residues Analysis (Guidelines for Residues Monitoring in the European Union). Five laboratories are commissioned to carry out the analysis; one undertook analysis of animal products only and therefore is not listed in Table G. All of the laboratories meet the requirements of a recognised accreditation scheme, such as the United Kingdom Accreditation Service (UKAS) or the requirements of Good Laboratory Practice (GLP). Methods are validated in accordance with ISO 17025 or IUPAC harmonised guidelines. The residues data provided were not corrected for recovery and are expressed on the basis of the fresh weight of the sample and as defined by the MRL.

All laboratories carrying out work have taken part in proficiency testing exercises, including European Union Proficiency Testing (EU PT). Defra undertakes its own proficiency testing programme known as the Food Analysis Performance Assessment Scheme (FAPAS) which the laboratories participate in.

4. OTHER INFORMATION

In 2006, the UK did not carry out the homogeneity exercise.

The results for grapes were reported to PSD monthly and published on the PRC website.

NORWAY

1. SUMMARY OF RESULTS

A total of 1439 samples of fresh and frozen fruit, vegetables and cereals, both imported (65.5 %) and domestically produced (34.5 %) were analysed in the monitoring programme for 2006. In addition, the monitoring programme included 133 samples of processed products (88) and baby food (45). The processed products were 68 samples of beer and 20 samples of orange juice. Thirteen follow-up samples were taken in 2006, seven samples from Thailand, three domestic samples. The consignments were suspended until the results of the analysis were available. Seven of the consignments were not released.

A total of 100 different commodities of fresh and frozen fruit, vegetables and cereals were analysed. The monitoring programme covered 244 pesticides including some isomers and breakdown products. Of these, 104 compounds were found.

Analysis of fresh fruit and vegetables, including potatoes, showed that 56 % were without detectable pesticide residues. The EC-MRLs were exceeded in 4.7 % of the samples.

Analysis of 45 samples of baby food showed that none had detectable pesticide residues.

A total of 94 samples of cereals were analysed. Of these, 61 (65 %) had no detectable pesticide residues. One sample of domestic rye exceeded the MRL for the growth regulator chlormequat.

A total of 159 samples were marked and sold as organic grown products. Three of the samples had detectable pesticide residues. One sample (apples from Argentina) had residue of dimethoate exceeding the EC-MRLs.

Eight consignments (seven from Thailand) contained residues in amounts that were considered to represent a health risk (dimethoate/dimethoate and EPN) and were notified via RASFF.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

The Norwegian monitoring program was designed and managed by The Norwegian Food Safety Authority, National Centre of Plants and Vegetable Food in cooperation with The Norwegian Institute for Agricultural and Environmental Research.

The samples were mainly taken at importers and wholesaler's warehouse in different parts of Norway. Some samples were taken at retailers, farms or at marked places. The number of samples of each commodity does not reflect their share of the market as more samples were taken of commodities suspected to contain residues for instance herbs and beans from Thailand. The share of organic samples is reflecting the marked for organic products in Norway.

Trained inspectors from the NFSAs District Offices were responsible for taking samples in accordance with a national sample plan and official guidelines for sampling (Comm. Dir. 2002/63/EC).

3. QUALITY ASSURANCE

The Norwegian Institute for Agricultural and Environmental Research, Bioforsk Laboratory, was responsible for the analyses. The laboratory has been accredited for pesticide residue analyses since April 1st 1997. The EC guidelines SANCO/10232/2006 "Quality Control Procedures for Pesticide Residue Analysis" have been implemented as far as practicable (Table G). The laboratory has participated in 3 proficiency tests organised by CRL's for Pesticide Residues and in 3 tests organised by FAPAS (Table G).

All samples of fruit and vegetables were analysed using a GC multi-residue method based on extraction with acetone (Luke method). From May 2006 the method was changed from using NPD/ECD to MSD, and the number of analytes increased from 167 to 183. An LC-MS/MS multi-residue method covering 73 pesticides and using the same extraction method was applied on selected samples. LC-MS/MS was also used for analysis of diquat. Chlormequat/mepiquat and propamocarb were determined using LC-MS. Phenoxyacid herbicides and glyphosate/AMPA were analysed by GC-MS after derivatization. The dithiocarbamates were determined with a spectrophotometric method after distillation of CS₂. The reporting levels are the limit of quantification for all methods.

When a pesticide residue exceeds the MRL, quantitative determination is carried out on three replicate samples using three-level calibration. Recovery is checked and the identity of the pesticide confirmed by GC-MS or LC-MS/(MS).

The pesticide residues figures found are compared with the MRLs. If the results are above the MRL, the sample is defined as an exceeding. However, before any enforcement action is taken, the analytical uncertainty (95 % confidence interval) is subtracted from the measured value. If this figure still exceeds the MRL, enforcement action could be taken.

ICELAND

1. SUMMARY OF RESULTS

This report summarizes the results of the monitoring of pesticide residues in fruits, and vegetables in Iceland. A total of 310 samples were taken in the year 2006, approximately 27% of domestic commodities, 73% of imported commodities, there of 29% imported commodities from third countries. 300 samples were taken of fresh fruits and vegetables, special attention was paid to exotic vegetables and fruits this year. A total of 15 samples were taken both at wholesale and retail stage.

58% of the samples of fruit and vegetables were without detectable residues, 38% were with residues at or below MRL and 11% had residues, which exceeded the MRL. Of the samples of exotic vegetables and fruits 5 had residues that exceeded the MRL. Commodities originated from 24 countries, most of them came from The Netherlands and Spain.

As a main rule the maximum residue limits (MRL's) conform to EU directives, but in few cases, where EU has not set any limits, they are in accordance with either CODEX or regulations from other Nordic countries. When a pesticide residue exceeds MRL, a new sample is analysed to confirm the results. No actions are taken unless the value exceeds the MRL plus a standard deviation.

Iceland only participated partly in the co-ordinated program.

2. ORGANISATION OF MONITORING PROGRAMMES AND SAMPLING

- The responsibility for the sampling is in The Environmental and Food agency.
- Sampling plan is made every year based on information on import volumes and domestic production. Experience is also taken into account, as to what pesticide residues are most often analysed in a particular product. In 2006, special emphasis was laid on samples from Thailand.
- Samples were collected according to national regulation no 736/2003 on sampling methods for contaminants in foodstuffs which is based on EC directives. Samples were taken at wholesaler's warehouses in Reykjavik and occasionally at retailer's stage. The Environmental health and protection office in Reykjavik collects the samples. Chemical analysis of fruit and vegetables was done at the laboratory of the Environment and food agency of Iceland. The most frequently found residues were: imazalil, chlorpyrifos, thiamendasol, orthophenylphenol, prochloraz, iprodion, tolyfluanid, malathion, dicofol, cyprodilil, carbaryl and chlorotalonil.
- Enforcement action is taken if the pesticide residues are over MRL plus deviation.

3. QUALITY ASSURANCE

- The Laboratory of the Environment and food agency of Iceland is accredited for certain methods. For further information concerning accreditation see Table G.
- Analytical methods used: Extraction with organic solvents followed by GC-MS analysis.
- Participation in proficiency tests: The laboratory of the Environmental and Food Agency takes part in FAPAS.
- Implementation of EU quality control procedures: The following parts of EU quality control procedures were followed: Sampling, transport, processing and storage of samples, pesticide, standards, calibration, solution, extraction and concentration, contamination and inference, analytical calibration and chromatographic integration, analytical methods and analytical performance and proficiency testing and analysis of reference material. Analytical uncertainty estimation is applied on results.

LIECHTENSTEIN

1. Summary of Results

This report summarizes the results of the coordinated and the national pesticide monitoring program in fruits, vegetables and cereals on the Liechtenstein market in 2006. This report has been prepared according to the recommendation of the ESA as far as technically possible.

In total 27 samples were analyzed out of which 7 samples were fruits, 18 vegetables and 2 cereals. In 19 samples no pesticide residues were detected, 8 samples showed pesticide residues below national and EC MRLs.

All samples were analyzed for 69 pesticide residues. Residues of 6 different pesticides were found in vegetables and fruits, belonging to the categories of fungicides (5) and insecticides (1).

Summary of results:

	Total number of samples analyzed	Number of samples without residues	Number of samples with residues at or below the MRL	Number of exceedings of EC-MRLs	Number of exceedings of N-MRLs
Coordinated and national program, fruits, vegetables and cereals	27	19	8	0	0

2. Organisation of Monitoring Program and Sampling

The samples were collected according to the annual sampling plan prepared by the Office of Food Inspection and Veterinary Affairs (OFV). The sampling plan is based on the domestic production situation in the agricultural sector and on the ESA recommendation for a coordinated monitoring program. The program started in summer 2006.

Samples of fresh fruits, vegetables and cereals were collected mostly from retailers (13), but also directly at farms (9) and at food processing plants (5). Samples were taken by trained staff-members of the OFV, mostly according to directive 2002/63/EC. The size of a laboratory sample was at least 1 kg.

3. Quality Assurance

Analyses have been carried out to 100 % in the Labor Dr. Matt AG, Im alten Riet 36, FL-9494 Schaan, a private laboratory, with which the OFV has a contract defining the cooperation, the tasks and the obligations. The laboratory is accredited in accordance with the provisions of article 3 of directive 93/99 (according to DIN EN ISO/IEC 17025 - see copy of accreditation certificate in the annex).

Most samples were analyzed by a gas chromatographic multiresidue method (modified German official method DFG S19). This method consists of an acetone/cyclohexane/ethylacetate extraction and a clean-up on a bio beads S-X3 gel permeation column. The extract was analyzed by GC-MS. Polar pesticides, after a QuEChERS sample extraction according to Chemisches- und Veterinäruntersuchungsamt Stuttgart, were analyzed by LC-MS-MS.

Dithiocarbamates were also determined on each sample by using a CS₂ evolution method. The CS₂ is determined by headspace analyzing using GC with ECD (DIN 12396-2).

The laboratory carrying out the analyses participates in proficiency tests as part of its quality assurance program.

The analytical results are governed by a quality assurance system. As far as it is possible for a laboratory of its size, the Labor Dr. Matt AG takes into account the document "Quality control Procedures for Pesticide Residues Analysis"(Document N° SANCO/10232/2006, 24/March/2006).

The reporting levels are the same as the limits of quantification (generally in the range of 0,005 - 0,05 mg/kg). The limits of quantification are determined by recovery tests.

Analytical uncertainty applied on the results varies depending on substance and method between 10 to 15 %.