2011

PESTICIDES RESIDUES IN FOOD

Department of
Agriculture,
Food and the Marine
An Roinn
Talmhaíochta,
Bia agus Mara

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ABBREVIATIONS

ADI	Acceptable daily intake
ARfD	Acute Reference Dose
DAFM	Department of Agriculture, Food and the Marine
EC	European Community
EU	European Union
FVO	Food and Veterinary Office
FSAI	Food Safety Authority of Ireland
IUNA	Irish Universities Nutrition Alliance
LOQ	Limit of Quantitation
mg kg^{-1}	milligram per kilogram
MRL	Maximum Residue Level
NCFS	National Children's Food Survey
OJ	Official Journal of the European Union
PCB	Polychlorinated Biphenyl
PCL	Pesticide Control Laboratory
PRCD	Pesticide Registration and Controls Division
RASFF	Rapid Alert System for Food and Feed
S.I.	Statutory Instrument

1 EXECUTIVE SUMMARY

This report on the National Pesticide Residues Control Programme, carried out in 2011 by the Department of Agriculture, Food and the Marine (DAFM), provides details on pesticide residues detected in food available on the Irish market.The Programme enforces EU legislation establishing Maximum Residue Levels (MRLs) and ensures that consumers are not exposed to unacceptable risks from pesticide residues and that pesticides are used in accordance with good agricultural practice.

The planned Programme for 2011 was for the sampling and analysis of 1,460 consignments of fruit, vegetables, cereal, animal products and baby foods for up to 354 pesticides and metabolites to check for compliance with EU and national legislation for plant protection and veterinary products. The Programme was agreed with the Food Safety Authority of Ireland and complied with European legislation. Sampling of domestic and imported foodstuffs was conducted at wholesalers, retailers, grain mills or at meat plants. The Programme also provided for targeted follow-up of non-compliances detected and import control inspections for specific commodities from certain countries.

The number of samples taken exceeded the number in the 2011 Programme. Some 1,518 samples, comprising of 880 fruit and vegetables, 145 cereals, 424 food of animal origin, 40 infant formulae and follow-on formulae and 29 targeted samples, were taken and analysed for pesticide and chemical residues. Almost 80% of the fruit and vegetables sampled and analysed were imported from the EU and elsewhere. Over 60% of the 145 cereal samples analysed during the routine programme were of domestic origin, while at least 98% of the 424 food of animal origin commodities were of domestic origin.

Analyses were conducted at the Pesticide Control Laboratory, which has continued to maintain and extend its accreditation status to ISO 17025 standards.

Overall results show that no residues were detected in 55.3% of the samples, 42.5% of samples contained residues of one or more pesticides which were within acceptable levels and 2.2% (33 samples) contained residues exceeding the MRLs. No residues were detected in eggs, poultry meat, liver or infant formulae samples.

Of the 33 samples exceeding the MRLs, 29 related to fruit and vegetables and the remaining 4 related to cereals. Produce from outside the EU accounted for 16 exceedances, produce of domestic origin accounted for 11 exceedances and produce from other EU countries accounted for the remaining 6 exceedances.

Where non-compliant residues were detected, consumer risk assessments, based on the residue level found and national food consumption data were carried out to estimate the risk to consumers and to guide the follow-up action to be taken. None of the breaches in 2011 posed unacceptable risks to the consumers.

All breaches involving produce of domestic origin were investigated to establish the reasons for the breaches and for appropriate follow-up. In addition, all produce with MRL breaches, both domestic and imported, will be targeted for sampling in 2012, as part of the follow-up enforcement programme.

In summary, the results of the Control Programme confirm that food on the Irish market is safe for consumption from a pesticide residues perspective. However, continued strengthening of the Control Programme for Pesticide Residues, by optimising and expanding the analytical methods for pesticide residues and pursuance of a vigorous investigation programme for improper use and violation of legal standards, will increase the high level of consumer protection from pesticides.

2 INTRODUCTION

Pesticides comprise plant protection products and biocides. Plant protection products are required to protect crops and plant products from damage caused by insects, fungi, weeds and other pests. Production and distribution of sufficient volumes of food to meet consumer demands of quality at reasonable price is not possible without their use. Biocidal products are essential for disinfection of surfaces, implements and machinery used in the food industry and to inhibit the action of a range of harmful organisms.

The manner of use of many plant protection and biocidal products requires their release into the environment, resulting in potential exposure of workers, consumers and the general public to such products or to residual traces remaining in food. It is therefore necessary that such products be tightly regulated.

Pesticide residues are regulated in Ireland through the implementation of European legislation, Regulation (EC) No 396/2005, which establishes EU Maximum Residues Levels (MRLs) for all pesticides in fruit and vegetables, cereals and in food of animal origin. Regulation (EC) No 37/2010 establishes MRLs for certain pesticides used as veterinary products. Commission directives 2006/125/EC and 2006/141/EC establishes MRL for food intended for babies and young infants.

Pesticides are further controlled through legislation implementing Regulation (EC) 1107/2009, which requires that all plant protection products must be registered, before being placed on the market. The Irish registration system specifies the timing, frequency, rates and the crops on which the pesticide may be used. Use of non-registered pesticides is an offence.

Where an MRL is exceeded, a dietary intake calculation is carried out to determine if the residue presents a risk to Irish consumers, both adult and children. The results of the assessments are provided to the FSAI to coordinate a common approach. Where warranted, for example when the pesticide intake exceeds toxicological endpoints, a Rapid Alert[1] is issued by the FSAI and officers of the Pesticide Registration and Control Division (PRCD) of the Department of Agriculture, Food and the Marine (DAFM) take appropriate enforcement action. This may involve removal of the produce concerned from the market and its destruction at the owner's expense. The Minister may also prosecute offenders or apply administrative fines.

'*Pesticide Residues in Food for 2011*' provides details of the results obtained during 2011 from a national programme to monitor food for the presence of pesticide residues, and is the latest report in the series of annual reports.

Explanations of the various technical terms used in this report are provided in a glossary at the end of this report (Annex V).

[1] Regulation (EC) No. 178/2002 of the European Parliament and of the Council of 28th of January 2002.

3 PESTICIDE RESIDUE CONTROL PROGRAMME

The national pesticide residue control programme for pesticide residues is undertaken by the PRCD with laboratory support provided by the Pesticide Control Laboratory (PCL) of the Department of Agriculture, Food and Marine. The programme implements the requirements of Regulation (EC) No 396/2005, and takes into account the requirements set out in the EU *"coordinated multi-annual Community control programme for 2011, 2012 and 2013 to ensure compliance with maximum levels of, and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin"*, (Commission Regulation (EC) No 915/2010). The requirement of the monitoring of food of animal origin for Directive 96/23/EC is also taken into consideration with respect to the determination of organochlorine and organophosphorus pesticides.

The annual control programme is carried out in accordance with contractual arrangements between the DAFM and the FSAI[2] and involves sampling of imported and domestic produce.

The programme ensures that consumers are not exposed to unacceptable pesticide residue levels in food, that plant protection products are correctly applied, and that the unauthorised use of such products in Ireland is controlled.

3.1 Programme design

The programme is designed to monitor different food groups for which MRLs have been established: fruit and vegetables, cereals food of animal origin and baby food. It involves sampling of produce at distribution outlets, collection, storage, processing or slaughter premises and the analysis of those samples for the presence of pesticide residues.

The control programme for 2011 took into consideration

i the co-ordinated programme required by the European Commission [3],
ii dietary intake patterns of Irish consumers[4] (adult and children),
iii the residue profile of commodities as established from the results of the control programme in previous years,
iv findings from the EFSA annual reports on other Member State programmes,
v handling/processing of food prior to consumption.

The planned number of samples (1,460) for the 2011 control programme was agreed with the FSAI. The programme is the primary means of ensuring that plant protection products (pesticides) are used in accordance with *Good Agricultural Practice* and is essential if the misuse of registered products and the use of non-registered products are to be eliminated. Plant protection products, registered under Regulation (EC) 1107/2009, can be misused in various ways, e.g., use of excessive dose rates, failure to respect the minimum periods specified between last application and harvest (i.e. pre-harvest intervals) and use for purposes for which they are not authorised (i.e. non-registered uses). When plant protection products are used in accordance with *Good Agricultural Practice*, unacceptable levels of residues should not occur in treated produce.

In accordance with the European Communities (Prohibition of Certain Active Substances in Plant Protection Products) Regulations, 1981 to 1990, the marketing and use of certain plant protection

[2] Service Contract from 2008 between the Food Safety Authority of Ireland and the Department of Agriculture, Food and the Marine
[3] Commission Regulation of 12th of October 2010, concerning a coordinated multiannual Community control programme for 2011, 2012 and 2013, Commission Regulation (EC) No 915/2010 OJ No L 269/8.
[4] IUNA, Irish Universities Nutrition Alliance. North South Food Consumption Database, 2001 and National Children's Food Survey 2005.

products are prohibited because of risks to human health or the environment associated with their use. The residue control programme also serves as an indicator of the level of compliance with those provisions. The programme also makes provision for targeted follow-up for non-compliances detected in 2010 and border control inspections.

3.2 Monitoring of fruit and vegetables

The plan for monitoring fruit and vegetables is biased in favour of food commodities that are of greater dietary importance. Within particular commodity groups, samples are taken at random. Both domestic and imported produce are sampled, primarily at wholesale level. This approach ensures that samples taken are representative of consumption patterns and facilitates, if necessary, the taking of action prior to consumption. As part of the plan, a limited number of organic products are sampled randomly when encountered at retail and wholesale premises. Authorised officers from PRCD carry out the sampling of food of plant origin and cereals in accordance with the sampling Directive, 2002/63/EC. Samples are labelled with unique sample identity numbers, sealed and brought to the laboratory for analysis.

In 2011, it was planned to take 820 samples of fruit and vegetables, including processed products.

3.3 Monitoring of cereals

The main concern with respect to cereals relates to residues that arise as a result of growth regulators, pre-harvest desiccants and post-harvest application of plant protection products. The sampling plan for cereals is confined, for practical reasons, to the sampling and analysis of grain used in the milling, malting and breakfast cereal industries. Cereals and cereal products of both domestic and imported origin are sampled on a random basis at mills, assembly or storage locations by authorised officers of the PRCD.

In 2011, it was planned to take 120 samples of cereals (raw and processed).

3.4 Monitoring of food of animal origin

Random samples of bovine, porcine, ovine, poultry, equine, and venison kidney fat samples are taken at various meat processing plants around the country in accordance with the monitoring plan organised by the Veterinary Medicine Unit of DAFM. The fat samples analysed are taken from individual animals at meat plants by officers of the Veterinary Inspectorate.

In 2011, it was planned to take 310 bovine, cervine, equine, ovine porcine, and poultry kidney fat samples.

In the case of milk, representative samples of particular bulk consignments were taken by officers of the Dairy Inspectorate. It was planned to take 60 samples in 2011.

It was planned to take 10 honey and 10 eggs samples at production plants or points of assembly by officers from the Veterinary Inspectorate.

These samples are taken in accordance with the requirements of Directive 96/23/EC.

The planned number of samples for food of animal origin was decided in conjunction with the Veterinary Medicine Unit of DAFM, as part of the National Residue Plan required under Directive 96/23/EC.

Fifteen poultry meat and fifteen liver samples were taken by PRCD officers at retail outlets as part of the EU co-ordinated EU programme bringing the total planned number for 2011 to 420. All food of animal origin samples were analysed for pesticides, metabolites as well as PCB marker congeners using the method with mass selective detection. PCBs are persistent environmental contaminants which in the past were released into the environment from industrial sources, but whose use has been discontinued for many years. They are included in the control programme as marker substances because of concerns related to their presence in food and their association with chlorinated dibenzo-dioxins and furans.

3.5 **Infant and follow on formulae**

The planned number of infant and follow on formula samples was 40 for 2011, which were sampled by officers of the Diary Science Laboratory of DAFM. The legislation and the MRLs governing these infant and follow on formula samples are set in Commission Directive 2006/141/EC[5] .

3.6 **Enforcement and follow up**

The repeated occurrence of excessive residue levels in particular food commodities, which result in consumer safety being compromised, is unacceptable. As part of the violation investigation programme, commodities of specific origin are targeted for further special attention. Targeted sampling of produce found, in the monitoring plans, to be in breach of established MRLs is the prime means of determining whether violations that occur result from the systematic misuse of pesticides or are isolated incidents. The violation investigation programme is geared to eliminate any such abuses and to ensure that they are not repeated.

Produce is targeted for statutory sampling on the basis of information generated through the monitoring plans or a Food Alert issued through the Rapid Alert notification circulated by the European Commission. The targeted lot/consignment is detained pending analysis. The analytical result dictates the nature of the follow-up action taken with respect to the detained produce. When the results show a clear breach of an MRL, taking into account an analytical uncertainty of 50%, follow-up action may include the removal from the market and destruction of the product concerned, an administrative fine or the initiation of legal proceedings.

In cases where non-registered use of pesticides is detected, the premises and records of domestic growers concerned are inspected. Produce from those growers is targeted for sampling during the following year to ensure that the offence is not repeated.

Import control inspections on targeted produce from countries listed in Commission Regulation (EC) 669/2009 [6] were planned for 2011. This list identified produce and country of origin with a history of RASFF alerts for pesticide residues and sets down the proportion of imported consignments from specific countries to be taken at national border points. Custom officials at Dublin Port inform officers of PRCD who then sample the consignments, which are held at the port pending the outcome of the analysis carried out at the Pesticide Control Laboratory.

The targeted programme for pesticide residues provided for up to 15 enforcement samples of fruit and vegetables arising from MRL breaches, non-registered uses detected in 2010 and the 2011 import control samples.

[5] Commission Directive 2006/141/EC of 22 December 2006 on infant formulae and follow-on formulae , 30.12.2006 OJ L 401
[6] Commission Regulation (EC) No 669/2009 of 24 July 2009 OJ L 194/11

3.7 Analytical procedures

The analytical methods used in the PCL are in most cases multi-residue in nature, an approach that facilitates the maximising of laboratory output. The modified mini Luke and the QuEChERS[7] methods were used to extract residues from fruit, vegetable, cereal and honey samples in this programme. The Dutch ethyl acetate method was also used in cereal samples. A modified German method, using acetonitrile and acetone, followed by gel permeation cleanup was used to extract the residues from fat samples. A modified QuEChERS method was used for milk and eggs.

Samples were analysed using gas or liquid chromatography with selective ion mass spectrometry as the primary method of detection. A selected number of samples were also analysed for amitraz and the metabolites, chlormequat, mepiquat and dithiocarbamates using single residue methods. References to the analytical methods employed by the laboratory are provided in Annex II.

Annex III provides the list of the pesticide and PCB residues sought using multi residue methods and the limit of quantitation achieved for various matrices.

Annex IV provides the list of the pesticide residues sought using single residue methods and the limit of quantitation achieved.

3.8 Quality assurance

In 2011, the PCL was audited by the Irish National Accreditation Board and its accreditation status to ISO 17025 standards was confirmed and extended. The pesticides in the scope of the accreditation may be viewed on the Irish National Accreditation Board website at www.inab.ie. The PCL registration number is 121T.

The laboratory participated in all 4 of the EU Proficiency studies organised, on behalf of the EU Commission, by the Community Reference Laboratories in the pesticide area. In addition the laboratory participated in 6 proficiency tests (strawberry, grapes, cucumber, hydrogenated vegetable oil, , olive oil , lettuce) organised by the Food Analysis Performance Assessment Scheme (FAPAS)[8]. Routine quality assurance procedures are followed within the laboratory in accordance with the requirements specified to maintain accreditation to the ISO 17025 standard.

3.9 Consumer assessments

In accordance with procedures agreed between the FSAI and DAFM, risk assessments are carried out to assess the impact on consumers, both adults and children, of any sample found to contain pesticide residues that exceed an MRL. In assessing the impact for consumers of exposure to pesticide residues through the diet, it is appropriate to consider both acute exposure and chronic exposure. Estimation of acute exposure to pesticides is based on consumption data over a short period of up to 1 day, while chronic exposure is based on mean consumption data over an extended period. The intake figures used for individual commodities are derived from the 1996-1998 Irish Universities Nutrition Alliance (IUNA) dietary survey for adults and the National Children Food Survey (NCFS) 2003-2005 for children. In these surveys, a large number of people have recorded their eating habits over a number of days. The people in the survey are representative of the Irish population as a whole.

[7] QuEChERS (Quick Easy Cheap Easy Rugged Safe) - a rapid analytical method using solid phase extraction
[8] FAPAS an executive agency of the UK Department of the Environment, Food and Rural Affairs (DEFRA)

Mathematical modelling is used to analyse the available data in order to establish a value that represents the typical expected exposure of a person to a chemical or its residue. Two methods of assessment are used–

- the 'deterministic method' used to estimate the likely exposure to a pesticide arising from a single finding, such as an MRL exceedance, and
- the 'probabilistic method' used to estimate the likely exposure to a pesticide from all foods consumed over a specified period.

3.9.1 'Deterministic method' for risk assessment:

Deterministic assessments are carried out each time an MRL exceedance is detected using point estimates[9] that consider variables, such as single residue value, a single dietary estimate of the quantity of food consumed, etc., as single point values. They are calculated by multiplying the quantity of pesticide present by the quantity of food consumed. For large and medium sized fruit and vegetables (e.g. melons, citrus and pome fruit), a variability factor is applied to take account of a possible uneven distribution of residues in the sample units. Deterministic assessments of exposure can also be further refined by the introduction of processing factors, % of crop treated with the pesticide, % of residue present in the edible portion of the crop, etc. The calculated exposure levels are then compared with the appropriate toxicological endpoint to determine the risk to consumers. This method is internationally accepted as providing a significant over-estimation of the actual acute and chronic exposure of consumers to dietary intake of pesticides.

For the purposes of assessing the effects of acute exposure, the realistic highest levels of exposure likely for consumers (97.5^{th} percentile exposure) over a single day is used in the calculation. The effects on health of such exposure is assessed by comparison with the Acute Reference Dose (ARfD) established for acutely toxic pesticides. The ARfD includes a safety factor to ensure that the elderly, infants and children and those whose systems are under stress due to illness are protected. This method takes into account all but the most extreme intake figures when estimating the acute dietary impact of these residues on Irish consumers.

When assessing chronic exposure, the level of pesticide exposure over a lifetime and the likely effects on health of such exposure is considered. This assessment method is well developed and considers the mean levels of exposure in relation to the Acceptable Daily Intake (ADI) values established for individual pesticides. In the case of consumers exposed to residues of chronically toxic pesticides, their health would only be at risk if their dietary intake exceeded the ADI every day for an extended period.

3.9.2 'Probabilistic method' of risk assessment:

The basic exposure calculation follows the same logic to that used for the deterministic assessment with the exception that the method provides an estimate of the probability of the event occurring. The 'probabilistic method' provides a probability distribution curve to define the likelihood of consumers being at risk due to pesticide residues present in food. All possible eating/exposure options are included in the distribution curve. The curve is prepared by combining data on food consumption, consumer characteristics (e.g. bodyweight), food recipe factors, pesticide occurrence and pesticide concentration data. Exposure to pesticide residues from all food, including samples exceeding the

[9] Guidance document on Notification Criteria to the RASFF Sanco 3346/2001 rev 7

MRLs, is used to generate the probable outcomes of the chronic and acute exposures to pesticide residues.

Pesticide intakes by each person for each day are calculated by adding the pesticide intakes for all meals in that day. A person's average intake over the 7 days in the survey gives an estimate of their chronic exposure, while their day of highest intake gives an estimate of their acute exposure. As in the case of the 'deterministic method', the acute and chronic exposure estimations are compared with the respective ARfD and ADI for the pesticide concerned to determine if further risk management is required.

Because the consumers in the database are representative of the Irish population, the exposure results derived from the probabilistic assessment provide a more realistic estimate of the exposure of the Irish population as a whole.

4 CONTROL PROGRAMME RESULTS

A total of 1,518 samples were taken, consisting of:

- 880 fruit and vegetable samples, including samples of processed and organically labelled products,
- 145 cereal samples,
- 424 samples of food of animal origin (FAO),
- 29 enforcement samples,
- 40 infant and follow on formulae samples.

Table 1 provides a detailed breakdown of the range of commodities and the number of samples planned. The table confirms that, while the number of samples for some commodities fell slightly short of the planned number, the overall number of samples planned in the 2011 programme was exceeded.

Table 1: Number of samples planned and achieved in the 2011 control programme

Commodities	Planned	Achieved
Citrus fruits	130	130
Pome fruits	120	120
Stone fruits	45	43
Berries and small fruits	80	80
Miscellaneous fruits	100	101
Root/ tuber vegetables	85	85
Bulb vegetables	10	9
Fruiting vegetables	60	60
Brassica vegetables	40	40
Leafy vegetables	75	77
Legume vegetables	30	31
Stem vegetables	20	20
Fungi	20	20
Oilseeds/Spice	5	2
Cereals	105	120
Processed fruit and vegs	60	62
Processed cereals	15	25
Food of animal origin	420	424
Baby food	40	40
Enforcement (Targeted)	15+	29
Total	**1460**	**1518**

Table 2 provides a summary of all samples taken in 2011 for both sampling strategies (monitoring and targeted), grouped by source and residues detected. The monitoring samples were sampled randomly according to the 2011 plan and the targeted samples were taken either from sources with a history of non-compliance or as part of the import controls under Regulation (EC) No 669/2009.

Table 2: Summary of all results of the 2011 control programme

			Sample Origin				Residue		
Sampling	**Commodity**	**Total**	**Domestic**	**EU**	**Non EU**	**Unknown**	**<LOQ**	**≤MRL**	**>MRL**
Monitoring	Fruit/veg	880	182	359	295	44	308	543	29
	Cereal	145	90	22	9	24	67	76	2
	Animal origin	424	416	5	0	3	412	12	0
	Baby food	40	40	0	0	0	40	0	0
Targeted	Fruit/veg	20	11	0	9	0	7	13	0
	Cereal	9	7	2	0	0	5	2	2
Total		**1518**	**746**	**388**	**313**	**71**	**839**	**646**	**33**
Total %			**49.1%**	**25.6%**	**20.6%**	**4.7%**	**55.3%**	**42.5%**	**2.2%**

In 2011, 1,518 samples were analysed for up to 354 pesticides and metabolites using the multi-and single residue methods. A selected number of samples were analysed for dithiocarbamates, for the growth regulators, chlormequat and mepiquat, and for amitraz using single residue methods specific for those compounds. Of the samples analysed, 746 (49.1%) were of Irish origin and 701 (46.2%) were imported from known countries of origin, while the remaining 71 (4.7%) were of unknown origin. Some 839 (55.3%) of the samples analysed contained no detectable pesticide residues, 646 (42.5%) contained detectable residues below the MRL and 33 (2.2%) contained detected residues above the MRLs.

4.1 Routine monitoring results for fruit and vegetables

The monitoring sampling strategy involves sampling in an objective or random manner the food commodities that are available on the market. A total of 880 fruit and vegetable samples (445 raw fruits, 323 raw vegetables, 63 processed fruits and vegetables and 49 organic fruits and vegetables) were analysed for up to 347 pesticides and analytes using multi residue analytical methods. In addition, 70 fruit and vegetable samples were analysed for amitraz, 166 for dithiocarbamates pesticides using the CS_2 method, 106 for the growth regulators, chlormequat and mepiquat.

The results presented in the following Tables summarise the origin and residue findings for the various commodities, grouped into unprocessed fruits (Table 3), unprocessed vegetables (Table 5), processed fruit & vegetables (Table 7) and organic fruit & vegetables (Table 9).

Similarly, details of the levels of the pesticide residues detected above the limit of quantitation (LOQ) together with sample identification numbers, country of origin (where known) and the relevant MRL for each substance detected for unprocessed fruits are presented in Table 4, for unprocessed vegetables (Table 6), for processed fruit & vegetables (Table 8) and for the organic fruit & vegetables (Table 10).

Metabolites, where detected, were also expressed as part of the EU harmonised residue definitions. Results are reported in mg kg-1 and rounded to two decimal places. Where no definitive MRL exists, a default value of 0.01 mg kg-1 was applied, except in the case of the synergist, piperonyl butoxide, as this compound is not included in the list of substances in Annexes II or III of Regulation (EC) No 396/2005.

Details of the 20 targeted fruit and vegetables are provided in Chapter 5 of this report.

Table 3 provides a summary of the results for the unprocessed fruit commodities analysed in 2011 and the origin of the samples.

Table 3: Summary of unprocessed fruit samples in the 2011 monitoring programme

Class	Commodity	Number	Domestic	EU	Non EU	Unknown	ND	<MRL	>MRL
Citrus	Grapefruit	8	0	3	5	0	0	8	0
	Lemon	9	0	5	4	0	0	9	0
	Limes	7	0	0	7	0	0	7	0
	Mandarin	10	0	4	6	0	0	10	0
	Minneola	7	0	0	7	0	0	5	2
	Clementine	40	0	26	14	0	0	38	2
	Pomelo	1	0	0	1	0	1	0	0
	Satsuma	7	0	1	6	0	0	6	1
	Oranges	36	0	14	22	0	0	35	1
Pome	Apple	75	4	44	27	0	8	64	3
	Apple cooking	3	3	0	0	0	0	2	1
	Pear	29	0	20	9	0	5	24	0
Stone	Apricot	3	0	3	0	0	0	3	0
	Cherry	4	0	1	3	0	0	3	1
	Nectarine/Peach	14	0	11	3	0	4	10	0
	Plum	20	0	11	9	0	2	18	0
Berry	Table grape	29	0	13	16	0	1	28	0
	Strawberry	26	16	8	2	0	4	22	0
	Blackberry	3	0	0	3	0	1	1	1
	Raspberry	9	2	5	2	0	6	3	0
	Blueberry	10	0	1	9	0	4	5	1
	Cranberry	2	0	0	2	0	2	0	0
	Red currant	1	0	1	0	0	0	1	0
Misc	Fig	2	0	0	2	0	2	0	0
	Kiwi	21	0	11	10	0	10	11	0
	Passion fruit	4	0	0	4	0	0	4	0
	Avocado	7	0	2	5	0	6	1	0
	Banana	18	0	0	18	0	1	17	0
	Mango	15	0	0	15	0	2	13	0
	Papaya	2	0	0	2	0	0	2	0
	Pomegranate	5	0	1	4	0	1	2	2
	Pineapple	11	0	0	11	0	2	9	0
	Dragon fruit	2	0	0	2	0	1	0	1
	Rambutan	1	0	0	1	0	0	1	0
	Sharon fruit	4	0	3	1	0	2	1	1
	Total	**445**	**25**	**188**	**232**	**0**	**65**	**363**	**17**
	Total %	**100%**	**5.6%**	**42.3%**	**52.1%**	**0**	**14.6%**	**81.6**	**3.8%**

Most (94.4%) of the fruit sampled in the monitoring programme was imported from EU member states or from third countries outside the EU. Residues were detected in the majority (85.4%) of the fruit samples of which 3.8% exceeded the MRL.

Table 4 presents details of the levels of pesticide residues detected above the LOQ in the various unprocessed fruits, together with samples identification numbers, country of origin (where known) and the relevant MRL for each substance detected.

Table 4: Details of unprocessed fruit samples with residues > LOQ

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
Citrus Fruit	**Grapefruit**	74374	Cyprus	ortho-phenylphenol	0.59	5	
				imazalil	1.22	5	
				thiabendazole	0.39	5	
				chlorpyrifos	0.03	0.3	
				pyriproxyfen	0.02	0.6	
		74579	Israel	pyriproxyfen	0.03	0.6	
				imazalil	2.06	5	
				thiabendazole	0.12	5	
				2,4-D	0.07	1	
		74601	Cyprus	ortho-phenylphenol	1.04	5	
				pyriproxyfen	0.04	0.6	
				chlorpyrifos	0.10	0.3	
				thiabendazole	0.02	5	
				imazalil	1.64	5	
		74640	Cyprus	imazalil	3.24	5	
				pyrimethanil	0.13	10	
				thiabendazole	1.04	5	
				ortho-phenylphenol	0.68	5	
		74764	S Africa	imazalil	1.01	5	
				thiabendazole	0.02	5	
		74926	S Africa	methidathion	0.01	5	
				imazalil	1.26	5	
				imidacloprid	0.03	1	
		74927	S Africa	chlorpyrifos	0.05	0.3	
				methidathion	0.02	5	
				azoxystrobin	0.03	15	
				imazalil	0.04	5	
				2,4-D	0.03	1	
		75326	United States	fenbuconazole	0.02	1	
				ortho-phenylphenol	1.46	5	
				imazalil	1.16	5	
				pyridaben	0.01	0.5	
				thiabendazole	1.14	5	
	Lemon	74709	Spain	pyriproxyfen	0.01	0.6	
				imazalil	2.83	5	
		74857	Argentina	imazalil	1.03	5	
				pyrimethanil	0.07	10	
				thiabendazole	0.08	5	
				ortho-phenylphenol	1.15	5	
				carbendazim	0.31	0.7	
		74938	Spain	imazalil	2.93	5	
				thiabendazole	0.41	5	
		75070	S Africa	dithiocarbamates	0.07	5	
				imazalil	1.87	5	
				thiabendazole	1.24	5	
				2,4-D	0.06	1	
		75145	Turkey	chlorpyrifos	0.12	0.2	
				buprofezin	0.04	1	
				imazalil	0.25	5	
				ortho-phenylphenol	0.01	5	
		75250	Spain	chlorpyrifos-methyl	0.03	0.3	
				ortho-phenylphenol	0.02	5	
				tebufenpyrad	0.02	0.5	
		75368	Turkey	pyridaben	0.03	0.5	
				chlorpyrifos	0.03	0.2	
				pyriproxyfen	0.01	0.6	
				imazalil	1.56	5	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				thiabendazole	0.94	5	
		75409	Spain	chlorpyrifos	0.07	0.2	
				chlorpyrifos-methyl	0.01	0.3	
				pyriproxyfen	0.02	0.6	
		75457	Spain	pyriproxyfen	0.03	0.6	Part
				2,4,6-trichlorophenol	0.09	10	Part
				prochloraz (sum)	0.17	10	Sum
				pyrimethanil	0.01	10	
				chlorpyrifos-methyl	0.11	0.3	
	Limes	74372	Brazil	prochloraz	0.10	10	Part
				2,4,6-trichlorophenol	0.22	10	Part
				prochloraz (sum)	0.52	10	Sum
				binapacryl	0.02	0.05	
				imazalil	2.00	5	
				2,4-D	0.05	1	
		74475	Brazil	ortho-phenylphenol	0.02	5	
				imazalil	0.29	5	
		74708	Brazil	imazalil	0.26	5	
				ortho-phenylphenol	0.09	5	
		74883	Brazil	carbofuran	0.03	0.3	
				imazalil	0.71	5	
		74937	Mexico	thiabendazole	0.61	5	
		74969	Brazil	prochloraz	0.03	10	Part
				2,4,6-trichlorophenol	0.12	10	Part
				prochloraz (sum)	0.25	10	Sum
				2,4-D	0.08	1	
		75182	Mexico	ortho-phenylphenol	0.01	5	
				imazalil	0.15	5	
	Mandarin	74419	Morocco	chlorpyrifos	0.06	2	
				imazalil	1.52	5	
		74467	Turkey	chlorpyrifos	0.03	2	
				propiconazole	0.02	0.05	
				tau-fluvalinate	0.03	0.1	
				tebuconazole	0.01	3	
				prochloraz	0.36	10	Part
				2,4,6-trichlorophenol	0.06	10	Part
				prochloraz (sum)	0.48	10	Sum
				imazalil	0.07	5	
				thiabendazole	0.04	5	
		74536	Cyprus	ortho-phenylphenol	1.93	5	
				thiabendazole	3.41	5	
				imazalil	4.87	5	
		74578	Spain	chlorpyrifos	0.05	2	
				imazalil	1.03	5	
		74630	Spain	pyriproxyfen	0.02	0.6	
				imazalil	0.63	5	
		74959	Peru	pyrimethanil	0.06	10	
				imazalil	1.70	5	
				thiabendazole	0.29	5	
		75108	Peru	pyriproxyfen	0.03	0.6	
				imazalil	1.26	5	
				pyrimethanil	1.16	10	
				thiabendazole	0.72	5	
				2,4-D	0.03	1	
		75109	Argentina	chlorpyrifos	0.04	2	
				ortho-phenylphenol	0.01	5	
				prochloraz	1.33	10	Part
				2,4,6-trichlorophenol	0.08	10	Part

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				prochloraz (sum)	1.48	10	Sum
				pyrimethanil	0.04	10	
				imazalil	1.49	5	
				pyraclostrobin	0.03	1	
				thiabendazole	0.23	5	
		75110	S Africa	2,4,6-trichlorophenol	0.01	10	Part prochloraz
				prochloraz(sum)	0.02	10	As prochloraz
				imazalil	0.83	5	
				pyrimethanil	1.25	10	
				thiabendazole	0.47	5	
		75122	Spain	dithiocarbamates	0.18	5	
				chlorpyrifos	0.17	2	
				lambda-cyhalothrin	0.01	0.2	
				myclobutanyl	0.96	3	
				propargite	0.31	3	
				pyriproxyfen	0.06	0.6	
				imazalil	0.44	5	
	Minneola	74946	Peru	ortho-phenylphenol	1.88	5	
				pyridaben	0.01	0.5	
				imazalil	0.46	5	
				thiabendazole	0.31	5	
		74972	Peru	buprofezin	0.01	1	
				chlorpyrifos	0.08	2	
				imazalil	3.18	5	
				pyrimethanil	0.79	10	
				thiabendazole	1.91	5	
				2,4-D	0.06	1	
		74981	Peru	imazalil	1.97	5	
				thiabendazole	0.58	5	
		74996	**Peru**	**ortho-phenylphenol**	**5.58**	**5**	**Breach**
				thiabendazole	0.15	5	
				imazalil	0.56	5	
		75056	**Peru**	fenpropathrin	0.04	2	
				pyrimethanil	0.07	10	
				imazalil	2.29	5	
				imidacloprid	0.06	1	
				thiabendazole	1.96	5	
				2,4-D	0.15	1	
				chlorfenapyr	**0.06**	**0.05**	**Breach**
		75061	Peru	pyriproxyfen	0.04	0.6	
				imazalil	1.47	5	
				thiabendazole	0.94	5	
		75069	Peru	ortho-phenylphenol	2.64	5	
				2,4-D	0.03	1	
				imazalil	2.17	5	
				thiabendazole	0.03	5	
	Clementine	74334	Spain	imazalil	1.74	5	
				ortho-phenylphenol	0.31	5	
				pyriproxyfen	0.02	0.6	
				chlorpyrifos-methyl	0.11	1	
				chlorpyrifos	0.05	2	
				pirimicarb desmethyl	0.02	3	Part
				pirimicarb (sum)	0.02	3	Sum
		74339	Spain	ortho-phenylphenol	1.07	5	
				pirimicarb	0.02	3	Part
				pirimicarb desmethyl	0.01	3	Part
				pirimicarb (sum)	0.03	3	Sum
				chlorpyrifos	0.22	2	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				imazalil	0.86	5	
		74347	Morocco	imazalil	2.19	5	
				thiabendazole	0.02	5	
				pirimicarb desmethyl	0.03	3	Part
				pirimicarb (sum)	0.03	3	Sum
		74382	Spain	ortho-phenylphenol	0.34	5	
				pyriproxyfen	0.02	0.6	
				chlorpyrifos	0.22	2	
				imazalil	0.76	5	
				thiabendazole	0.04	5	
		74383	Spain	ortho-phenylphenol	3.26	5	
				imazalil	1.10	5	
				thiabendazole	0.88	5	
				chlorpyrifos	0.02	2	
				chlorpyrifos-methyl	0.01	1	
		74408	Spain	imazalil	1.09	5	
		74411	Morocco	chlorpyrifos	0.09	2	
				malathion	0.01	0.02	
				prochloraz	0.01	10	
				imazalil	0.58	5	
		74436	Morocco	chlorpyrifos	0.08	2	
				dicofol	0.14	2	
				imazalil	1.80	5	
				pyrimethanil	0.56	10	
				thiabendazole	0.01	5	
		74437	Spain	chlorpyrifos	0.11	2	
				ortho-phenylphenol	0.02	5	
				imazalil	0.72	5	
		74454	Spain	chlorpyrifos	0.23	2	
				imazalil	0.89	5	
		74455	Morocco	methidathion	0.03	5	
				pyrimethanil	0.07	10	
				thiabendazole	0.01	5	
				imazalil	1.82	5	
		74463	Spain	ortho-phenylphenol	1.99	5	
				imazalil	1.71	5	
				thiabendazole	0.03	5	
				chlorpyrifos	0.15	2	
		74466	Spain	chlorpyrifos	0.07	2	
				imazalil	1.91	5	
				thiabendazole	1.19	5	
		74484	Spain	ortho-phenylphenol	3.95	5	
				imazalil	2.24	5	
				thiabendazole	2.53	5	
		74485	Morocco	methidathion	0.05	5	
				imazalil	1.05	5	
				thiabendazole	0.05	5	
				pyrimethanil	0.01	10	
		74515	Spain	imazalil	1.12	5	
		74522	Spain	ortho-phenylphenol	0.93	5	
				thiabendazole	0.02	5	
				imazalil	2.33	5	
		74531	Mexico	chlorpyrifos	0.06	2	
				imazalil	1.30	5	
				thiabendazole	1.30	5	
		74589	Morocco	chlorpyrifos	0.03	2	
				ortho-phenylphenol	0.20	5	
				propargite	0.01	3	
				imazalil	1.17	5	
				thiabendazole	0.04	5	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
		74661	Spain	chlorpyrifos	0.01	2	
				imazalil	1.62	5	
		74663	Spain	thiabendazole	1.79	5	
				chlorpyrifos	0.11	2	
				imazalil	3.17	5	
		74702	S Africa	methidathion	0.02	5	
				pyrimethanil	0.97	10	
				thiabendazole	0.40	5	
				imazalil	0.52	5	
		74834	Argentina	ortho-phenylphenol	0.06	5	
				prochloraz	0.02	10	Part
				2,4,6-trichlorophenol	0.01	10	Part
				prochloraz (sum)	0.04	10	Sum
				pyrimethanil	0.08	10	
				thiabendazole	0.29	5	
				imazalil	1.67	5	
		74853	S Africa	imazalil	2.86	5	
		74900	S Africa	methidathion	0.01	5	
				imazalil	1.27	5	
				triflumuron	0.02	1	
		75098	Argentina	chlorpyrifos	0.07	2	
				ortho-phenylphenol	0.05	5	
				prochloraz	0.39	10	Part
				2,4,6-trichlorophenol	0.05	10	Part
				prochloraz (sum)	0.49	10	Sum
				pyrimethanil	0.02	10	
				imazalil	0.83	5	
				pyraclostrobin	0.02	1	
				thiabendazole	0.60	5	
		75140	Spain	chlorpyrifos	0.16	2	
				imazalil	1.90	5	
		75143	Spain	ortho-phenylphenol	0.01	5	
				pyriproxyfen	0.01	0.6	
				metalaxyl	0.02	0.5	
				imazalil	1.09	5	
				thiabendazole	0.83	5	
		75147	Spain	imazalil	1.42	5	
				chlorpyrifos	0.16	2	
				pyriproxyfen	0.01	0.6	
		75195	Spain	chlorpyrifos	0.13	2	
				pyriproxyfen	0.03	0.6	
				imazalil	1.49	5	
				thiabendazole	0.18	5	
		75196	Spain	chlorpyrifos	0.05	2	
				pyriproxyfen	0.01	0.6	
				imazalil	2.66	5	
				thiabendazole	3.63	5	
		75202	**Spain**	chlorpyrifos	0.14	2	
				lambda-cyhalothrin	0.02	0.2	
				ortho-phenylphenol	0.03	5	
				pyriproxyfen	0.02	0.6	
				imazalil	**6.78**	**5**	**Breach**
				tebufenpyrad	0.03	0.5	
				thiabendazole	0.03	5	
		75204	Spain	chlorpyrifos	0.15	2	
				ortho-phenylphenol	0.13	5	
				pyriproxyfen	0.02	0.6	
				fenpyroximate	0.02	0.3	
				hexythiazox	0.01	1	
				imazalil	1.36	5	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				tebufenpyrad	0.03	0.5	
		75247	Spain	chlorpyrifos	0.02	2	
				lambda-cyhalothrin	0.02	0.2	
				ortho-phenylphenol	1.25	5	
				pyriproxyfen	0.02	0.6	
				imazalil	1.39	5	
		75249	Spain	chlorpyrifos	0.03	2	
				malathion	0.01	0.02	
				ortho-phenylphenol	1.42	5	
				propargite	0.02	3	
				imazalil	0.83	5	
				thiabendazole	0.75	5	
		75322	Spain	chlorpyrifos	0.07	2	
				imazalil	1.27	5	
				ortho-phenylphenol	0.24	5	
		75412	Morocco	chlorpyrifos	0.25	2	
				imazalil	1.33	5	
				thiabendazole	0.07	5	
		75432	Spain	ortho-phenylphenol	0.24	5	
				pyriproxyfen	0.06	0.6	
				chlorpyrifos	0.03	2	
				chlorpyrifos-methyl	0.12	1	
				clofentezine	0.01	0.5	
				fenpyroximate	0.03	0.3	
				imazalil	1.49	5	
		75433	**Morocco**	chlorpyrifos	0.16	2	
				diazinon	**0.01**	**0.01**	**Breach [0.013]**
				lambda-cyhalothrin	0.01	0.2	
				imazalil	1.59	5	
		75456	Spain	imazalil	0.95	5	
				thiabendazole	1.10	5	
				metalaxyl	0.01	0.5	
				chlorpyrifos	0.09	2	
	Pomelo	75290	Chile	methidathion	0.02	5	
				buprofezin	0.03	1	
				myclobutanyl	0.01	3	
				prochloraz	0.04	10	
				acetamiprid	0.01	1	
	Satsuma	74639	S Africa	imazalil	3.32	5	
				thiabendazole	1.79	5	
				2,4-D	0.06	1	
		74645	Argentina	imazalil	1.63	5	
				pyraclostrobin	0.01	1	
				thiabendazole	0.97	5	
				2,4-D	0.02	1	
				ortho-phenylphenol	0.09	5	
				prochloraz	1.24	10	Part
				2,4,6-trichlorophenol	0.08	10	Part
				prochloraz (sum)	1.39	10	Sum
		74736	Argentina	prochloraz	1.23	10	Part
				2,4,6-trichlorophenol	0.12	10	Part
				prochloraz (sum)	1.46	10	Sum
				imazalil	2.25	5	
				thiabendazole	2.56	5	
				2,4-d	0.06	1	
		74744	**S Africa**	imazalil	0.78	5	
				imidacloprid	0.26	1	
				thiabendazole	0.45	5	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				2,4-D	0.04	1	
				malathion	**0.03**	**0.02**	**Breach**
		74835	Peru	chlorpyrifos	0.01	2	
				imazalil	3.05	5	
				pyrimethanil	1.90	10	
				thiabendazole	0.06	5	
				2,4-D	0.05	1	
		74872	Peru	2,4-D	0.10	1	
				imazalil	3.82	5	
				pyrimethanil	2.50	10	
				thiabendazole	2.13	5	
		75148	Spain	chlorpyrifos	0.04	2	
				pyriproxyfen	0.02	0.6	
				imazalil	0.84	5	
	Orange	74333	Spain	chlorpyrifos-methyl	0.01	0.5	
				chlorpyrifos	0.02	0.3	
				imazalil	1.07	5	
				pirimicarb desmethyl	0.01	3	Part
				pirimicarb (sum)	0.01	3	As pirimicarb
		74373	Spain	ortho-phenylphenol	4.90	5	
				imazalil	3.08	5	
				thiabendazole	2.43	5	
				chlorpyrifos	0.09	0.3	
				pyriproxyfen	0.03	0.6	
		74421	Morocco	binapacryl	0.02	0.05	
				imazalil	0.96	5	
		74445	Spain	chlorpyrifos	0.08	0.3	
				chlorpyrifos-methyl	0.01	0.5	
				imazalil	0.43	5	
		74453	Egypt	ortho-phenylphenol	0.01	5	
				thiabendazole	0.53	5	
				imazalil	1.53	5	
		74482	Spain	chlorpyrifos	0.11	0.3	
				imazalil	1.67	5	
				carbendazim	0.02	0.5	
		74489	Italy	imazalil	0.73	5	
		74529	Spain	chlorpyrifos	0.02	0.3	
				imazalil	0.57	5	
		74530	Egypt	lambda-cyhalothrin	0.05	0.2	
				ortho-phenylphenol	0.62	5	
				imazalil	0.48	5	
				thiabendazole	0.20	5	
		74537	Spain	imazalil	1.29	5	
				thiabendazole	0.02	5	
		74538	Morocco	imazalil	0.89	5	
				thiabendazole	0.02	5	
		74588	Morocco	chlorpyrifos	0.04	0.3	
				imazalil	1.56	5	
		74628	Argentina	ortho-phenylphenol	0.03	5	
				pyriproxyfen	0.07	0.6	
				2,4,6-trichlorophenol	0.07	10	Part
				prochloraz	1.22	10	Part
				prochloraz (sum)	1.36	10	Sum
				pyrimethanil	0.01	10	
				imazalil	0.39	5	
				thiabendazole	0.33	5	
		74629	Egypt	chlorpyrifos	0.01	0.3	
				ortho-phenylphenol	0.91	5	
				thiabendazole	0.04	5	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				imazalil	1.24	5	
		74638	Spain	chlorpyrifos	0.07	0.3	
				chlorpyrifos-methyl	0.01	0.5	
				imazalil	1.10	5	
				ortho-phenylphenol	1.15	5	
		74655	Morocco	chlorpyrifos	0.09	0.3	
				thiabendazole	0.07	5	
				imazalil	0.40	5	
		74690	Morocco	imazalil	0.92	5	
				thiabendazole	0.03	5	
		74701	Egypt	chlorpyrifos	0.02	0.3	
				pyrimethanil	2.16	10	
				pyriproxyfen	0.01	0.6	
				thiabendazole	0.69	5	
				imazalil	2.88	5	
		74745	Spain	ortho-phenylphenol	0.24	5	
				pyriproxyfen	0.02	0.6	
				chlorpyrifos	0.03	0.3	
				imazalil	0.97	5	
		74750	Morocco	imazalil	1.27	5	
				thiabendazole	0.06	5	
		74762	Morocco	chlorpyrifos	0.02	0.3	
				methidathion	0.02	5	
				imazalil	0.49	5	
		74772	Cyprus	imazalil	1.76	5	
				thiabendazole	0.56	5	
				pyriproxyfen	0.05	0.6	
				ortho-phenylphenol	1.38	5	
		74841	Morocco	chlorpyrifos	0.07	0.3	
				imazalil	0.53	5	
				thiabendazole	0.19	5	
				molinate	0.01	0.05	
		74871	Morocco	imazalil	1.08	5	
				thiabendazole	0.26	5	
		74892	Spain	ortho-phenylphenol	0.04	5	
				imazalil	1.04	5	
				thiabendazole	0.32	5	
		74897	**Morocco**	**chlorpyrifos**	**0.37**	**0.3**	**Breach**
				malathion	**0.03**	**0.02**	**Breach**
				imazalil	1.06	5	
				thiabendazole	0.25	5	
		74925	Morocco	dicofol	0.02	2	
				imazalil	2.11	5	
		74960	Spain	chlorpyrifos	0.12	0.3	
				ortho-phenylphenol	1.49	5	
				imazalil	2.41	5	
				thiabendazole	0.14	5	
		74980	S Africa	imazalil	0.71	5	
		75059	Argentina	chlorpyrifos	0.08	0.3	
				lambda-cyhalothrin	0.02	0.2	
				carbendazim	0.14	0.5	
				imazalil	1.35	5	
				thiabendazole	0.69	5	
				2,4-D	0.03	1	
		75107	S Africa	azoxystrobin	0.01	15	
				imazalil	1.30	5	
				imidacloprid	0.05	1	
				pyrimethanil	0.54	10	
				thiabendazole	0.48	5	
		75215	S Africa	bromacil	0.01	0.01	≯0.01

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				fenpyroximate	0.02	0.5	
				imazalil	0.22	5	
				imidacloprid	0.03	1	
				pyrimethanil	0.01	10	
				thiabendazole	0.09	5	
		75242	S Africa	methidathion	0.01	5	
				imazalil	0.76	5	
		75327	Spain	chlorpyrifos	0.26	0.3	
				ortho-phenylphenol	0.22	5	
				pyriproxyfen	0.02	0.6	
				imazalil	1.14	5	
		75421	Spain	chlorpyrifos	0.06	0.3	
				chlorpyrifos-methyl	0.01	0.5	
				imazalil	0.17	5	
		75455	Senegal	imazalil	0.31	5	
				chlorpyrifos	0.04	0.3	
Pome Fruit	**Apple**	74341	France	boscalid	0.04	2	
				diphenylamine	0.01	5	
				pyraclostrobin	0.03	0.3	
		74342	France	fludioxonil	0.02	5	
		74344	France	fludioxonil	0.05	5	
				diphenylamine	0.70	5	
		74348	France	fludioxonil	0.04	5	
				diphenylamine	1.56	5	
		74361	France	diphenylamine	0.01	5	
				thiabendazole	0.87	5	
		74378	Holland	boscalid	0.06	2	
				pyraclostrobin	0.02	0.3	
				captan	0.02	3	
		74384	France	diphenylamine	1.04	5	
				fludioxonil	0.02	5	
		74385	Holland	trifloxystrobin	0.04	0.5	
				triadimenol	0.01	0.2	
				pirimicarb	0.01	2	
		74386	**France**	diphenylamine	2.80	5	
				fenhexamid	**0.82**	**0.05**	**Breach**
				thiabendazole	0.87	5	
		74404	France	diphenylamine	0.03	5	
				fludioxonil	0.17	5	
		74422	Italy	captan	0.07	3	
				iprodione	0.08	5	
				permethrin	0.01	0.05	
		74425	Italy	boscalid	0.03	2	
				pyraclostrobin	0.01	0.3	
				captan	0.01	3	
		74440	France	captan	0.58	3	
				boscalid	0.03	2	
				pyraclostrobin	0.01	0.3	
		74441	France	diphenylamine	0.36	5	
				fludioxonil	0.01	5	
		74456	Holland	trifloxystrobin	0.02	0.5	
		74457	France	diphenylamine	0.01	5	
				pirimicarb	0.01	2	
				propargite	0.20	3	
				fenazaquin	0.02	0.1	
				chlorpyrifos	0.02	0.5	
				thiabendazole	0.01	5	
				fludioxonil	0.04	5	
		74471	Holland	trifloxystrobin	0.09	0.5	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				carbendazim	0.03	0.2	
		74472	France	boscalid	0.02	2	
				diphenylamine	0.02	5	
				pirimicarb	0.01	2	
		74476	France	fludioxonil	0.02	5	
		74478	France	chlorpyrifos	0.02	0.5	
				diphenylamine	0.76	5	
				pirimicarb	0.01	2	
				boscalid	0.02	2	
				thiabendazole	0.27	5	
				fludioxonil	0.01	5	
		74486	France	diphenylamine	1.18	5	
				imazalil	0.01	2	
				fludioxonil	0.02	5	
		74494	United Kingdom	chlorpyrifos	0.01	0.5	
				diphenylamine	0.26	5	
				cyprodinil	0.21	1	
				fludioxonil	0.04	5	
		74516	United Kingdom	diphenylamine	0.12	5	
		74527	France	fludioxonil	0.04	5	
				propargite	0.20	3	
		74528	Holland	boscalid	0.01	2	
				methoxyfenozide	0.02	2	
		74533	Italy	boscalid	0.04	2	
				pyraclostrobin	0.01	0.3	
				iprodione	0.01	5	
		74534	Italy	boscalid	0.04	2	
				pyraclostrobin	0.02	0.3	
		74539	France	pirimicarb	0.01	2	
				thiabendazole	0.23	5	
				diphenylamine	1.25	5	
		74574	France	thiabendazole	0.42	5	
				fludioxonil	0.03	5	
				diphenylamine	0.32	5	
		74577	France	chlorpyrifos	0.03	0.5	
				ortho-phenylphenol	0.02	0.05	
				diphenylamine	0.01	5	
				carbendazim	0.04	0.2	
				fenoxycarb	0.02	1	
				thiophanate-methyl	0.03	0.5	
		74590	France	boscalid	0.02	2	
		74600	France	fludioxonil	0.02	5	
		74602	France	diphenylamine	0.91	5	
				fludioxonil	0.02	5	
				propargite	0.01	3	
				chlorpyrifos	0.04	0.5	
				thiabendazole	0.35	5	
		74613	France	diphenylamine	0.04	5	
				triadimenol	0.02	0.2	
				fludioxonil	0.02	5	
		74632	Chile	thiabendazole	0.97	5	
				thiacloprid	0.03	0.3	
		74646	France	diphenylamine	0.04	5	
		74654	Brazil	dithiocarbamates	0.38	5	
				phosmet	0.03	0.2	
		74656	Belize	dithiocarbamates	0.20	5	
				chlorothalonil	0.01	1	
				carbendazim	0.02	0.2	
		74659	France	chlorpyrifos	0.03	0.5	
				propargite	0.09	3	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				thiacloprid	0.02	0.3	
		74667	Chile	thiacloprid	0.03	0.3	
		74681	**France**	diphenylamine	0.43	5	
				pyrimethanil	1.04	5	
				omethoate	0.02	0.02	Part
				dimethoate	0.01	0.02	Part
				dimethoate (sum)	**0.03**	**0.02**	**Sum breach**
				chlorpyrifos	0.33	0.5	
				carbendazim	0.04	0.2	
				thiophanate-methyl	0.01	0.5	
		74684	France	diphenylamine	0.04	5	
				ortho-phenylphenol	0.02	0.05	
				thiabendazole	0.12	5	
				fludioxonil	0.02	5	
		74704	S Africa	iprodione	0.06	5	
				diphenylamine	0.26	5	
				methoxyfenozide	0.01	2	
		74705	S Africa	diphenylamine	0.03	5	
				methoxyfenozide	0.15	2	
		74734	Chile	pyrimethanil	0.02	5	
				thiacloprid	0.06	0.3	
		74751	Ireland	diphenylamine	0.30	5	
		74780	United Kingdom	boscalid	0.06	2	
				fludioxonil	0.10	5	
				cyprodinil	0.30	1	
				pyraclostrobin	0.02	0.3	
				diphenylamine	0.27	5	
		74781	Argentina	fludioxonil	0.11	5	
		74816	Ireland	diphenylamine	0.24	5	
				paclobutrazol	0.01	0.5	
				boscalid	0.07	2	
				cyprodinil	0.36	1	
				fludioxonil	0.10	5	
				pyraclostrobin	0.03	0.3	
		74824	Chile	diphenylamine	0.27	5	
				pyrimethanil	0.52	5	
		74827	Chile	pyrimethanil	0.06	5	
				methoxyfenozide	0.01	2	
				thiabendazole	0.26	5	
		74831	Chile	iprodione	0.01	5	
				methoxyfenozide	0.04	2	
				thiabendazole	2.39	5	
		74836	S Africa	diphenylamine	0.24	5	
		74843	Argentina	thiacloprid	0.03	0.3	
				fludioxonil	0.25	5	
		74854	Brazil	dithiocarbamates	0.22	5	
		74856	Brazil	dithiocarbamates	1.48	5	
				phosmet	0.16	0.2	
		74870	Chile	methoxyfenozide	0.02	2	
				pyrimethanil	0.74	5	
		74881	Chile	thiabendazole	1.14	5	
				iprodione	0.01	5	
				pirimicarb	0.01	2	
		74895	S Africa	pyrimethanil	0.23	5	
				methoxyfenozide	0.08	2	
		74928	France	chlorpyrifos	0.01	0.5	
				propargite	0.24	3	
				fludioxonil	0.02	5	
				diphenylamine	0.01	5	
				captan	0.03	3	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
		74932	**Chile**	iprodione	0.04	5	
				acetamiprid	0.01	0.1	
				thiabendazole	0.05	5	
				pyrimethanil	**7.91**	**5**	**Breach**
		74933	S Africa	thiacloprid	0.03	0.3	
				diphenylamine	0.03	5	
		74952	Chile	thiabendazole	0.93	5	
		75022	United Kingdom	chlorpyrifos	0.02	0.5	
				fludioxonil	0.01	5	
		75058	Ireland	dithiocarbamates	0.33	5	
				boscalid	0.01	2	
		75241	France	fludioxonil	0.02	5	
				captan	0.10	3	
		75435	France	fludioxonil	0.02	5	
	Apples Cooking	75004	Ireland	boscalid	0.02	2	
				cyprodinil	0.14	1	
				diphenylamine	0.01	5	
				fludioxonil	0.06	5	
		75068	**Ireland**	dithiocarbamates	0.14	5	
				fenpropimorph	**0.07**	**0.05**	**Breach**
		75113	Ireland	myclobutanyl	0.01	0.5	
	Pear	74340	Portugal	diphenylamine	1.17	10	
				folpet	1.92	3	
				tetraconazole	0.02	0.3	
				imazalil	0.23	2	
				imidacloprid	0.02	0.5	
				thiophanate-methyl	0.02	0.5	
				carbendazim	0.03	0.2	
				chlorpyrifos	0.05	0.5	
				trifloxystrobin	0.01	0.5	
				tebuconazole	0.03	1	
				lambda-cyhalothrin	0.01	0.1	
				phosmet	0.01	0.2	
		74358	Portugal	chlorpyrifos	0.04	0.5	
				tebuconazole	0.03	1	
				diphenylamine	0.08	10	
				ortho-phenylphenol	0.03	0.05	
				imazalil	0.02	2	
				thiabendazole	1.31	5	
				thiacloprid	0.04	0.3	
				teflubenzuron	0.03	1	
		74377	Portugal	diphenylamine	0.83	10	
				lambda-cyhalothrin	0.01	0.1	
				phosmet	0.01	0.2	
				tebuconazole	0.02	1	
				boscalid	0.04	2	
				imazalil	0.28	2	
				folpet	0.22	3	
		74426	China	captan	0.01	3	
				chlorpyrifos	0.09	0.5	
		74490	Holland	cyprodinil	0.13	1	
				fludioxonil	0.07	5	
		74616	S Africa	methoxyfenozide	0.10	2	
		74665	Belgium	boscalid	0.08	2	
				imazalil	0.54	2	
				pyraclostrobin	0.04	0.3	
				pyrimethanil	0.47	5	
				spirodiclofen	0.03	0.8	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
		74682	Holland	boscalid	0.03	2	
				pyraclostrobin	0.02	0.3	
		74731	Chile	iprodione	0.02	5	
				thiacloprid	0.02	0.3	
		74733	S Africa	diphenylamine	0.09	10	
				methoxyfenozide	0.02	2	
		74830	S Africa	lambda-cyhalothrin	0.03	0.1	
		74840	Holland	boscalid	0.07	2	
				cyprodinil	0.01	1	
				pyraclostrobin	0.02	0.3	
				fludioxonil	0.03	5	
		74879	Chile	pyrimethanil	0.07	5	
				thiabendazole	0.14	5	
				iprodione	0.01	5	
		74896	Holland	cyprodinil	0.02	1	
		74973	Portugal	dithiocarbamates	0.50	5	
				chlorpyrifos	0.05	0.5	
				thiacloprid	0.05	0.3	
		74989	Portugal	dithiocarbamates	0.25	5	
				lambda-cyhalothrin	0.01	0.1	
				phosmet	0.05	0.2	
		75054	Portugal	dithiocarbamates	0.27	5	
				chlorpyrifos	0.04	0.5	
				lambda-cyhalothrin	0.03	0.2	
				phosmet	0.06	0.2	
				boscalid	0.01	2	
				carbendazim	0.07	0.2	
				thiophanate-methyl	0.11	0.5	
				tebuconazole	0.02	1	
		75062	Portugal	phosmet	0.11	0.2	
				boscalid	0.06	2	
				diphenylamine	0.21	10	
				imazalil	0.03	2	
				pyraclostrobin	0.02	0.3	
				thiacloprid	0.03	0.3	
				folpet	0.14	3	
		75181	Portugal	phosmet	0.06	0.2	
				diphenylamine	0.81	10	
				folpet	0.56	3	
				imazalil	0.19	2	
		75214	Portugal	thiacloprid	0.05	0.3	
		75234	Portugal	lambda-cyhalothrin	0.01	0.1	
				diphenylamine	0.02	10	
		75310	Portugal	phosmet	0.08	0.2	
				fenbuconazole	0.01	0.2	
		75439	Portugal	diphenylamine	0.92	10	
				teflubenzuron	0.02	1	
				boscalid	0.01	2	
				imidacloprid	0.03	0.5	
				imazalil	0.84	2	
				tebuconazole	0.03	1	
				chlorpyrifos	0.01	0.5	
				lambda-cyhalothrin	0.01	0.1	
				phosmet	0.20	0.2	
				trifloxystrobin	0.02	0.5	
		75458	Portugal	diphenylamine	0.11	10	
				thiabendazole	0.02	5	
				tebuconazole	0.03	1	
				trifloxystrobin	0.01	0.5	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
Stone	**Apricots**	74753	Spain	chlorothalonil	0.46	1	
				cypermethrin	0.02	2	
				iprodione	0.62	3	
				trifloxystrobin	0.02	1	
				thiacloprid	0.02	0.3	
		74875	Spain	fenhexamid	0.08	5	
				chlorothalonil	0.11	1	
				cypermethrin	0.03	2	
				deltamethrin	0.01	0.1	
		74953	Spain	chlorothalonil	0.07	1	
				cypermethrin	0.08	2	
	Cherry	74423	Chile	iprodione	1.20	3	
				tebuconazole	0.10	5	
				fenhexamid	0.01	5	
		74942	Belgium	dithiocarbamates	0.12	2	
				tebuconazole	1.38	5	
				cyprodinil	0.02	1	
				fenhexamid	0.03	5	
		74971	**Turkey**	cypermethrin	0.03	2	
				monocrotophos	**0.04**	**0.01**	**Breach**
		74994	United States	boscalid	0.04	4	
				imidacloprid	0.03	0.5	
				pyraclostrobin	0.02	2	
				quinoxyfen	0.01	0.3	
	Nectarine	74535	Chile	lambda-cyhalothrin	0.01	0.2	
				acetamiprid	0.01	0.1	
				fenhexamid	0.01	5	
				iprodione	0.90	3	
		74746	Spain	chlorothalonil	0.02	1	
				imidacloprid	0.02	0.5	
		75256	S Africa	deltamethrin	0.08	0.1	
				pyrimethanil	0.34	10	
				spinosad	0.03	1	
				spiroxamine	0.02	0.05	
	Peach	74424	S Africa	iprodione	0.08	3	
		74747	Spain	chlorothalonil	0.02	1	
				imidacloprid	0.01	0.5	
		74855	Spain	chlorothalonil	0.07	1	
				fludioxonil	0.04	7	
				cyprodinil	0.05	2	
				fenhexamid	0.03	5	
		74882	Spain	thiabendazole	0.01	0.05	
		74954	Spain	iprodione	0.99	3	
		74970	Spain	deltamethrin	0.01	0.1	
				chlorpyrifos	0.06	0.2	
				cyprodinil	0.07	2	
				fludioxonil	0.05	7	
				fenhexamid	0.07	5	
				trifloxystrobin	0.01	1	
		75141	Spain	deltamethrin	0.01	0.1	
				tebuconazole	0.03	1	
				iprodione	0.42	3	
				lambda-cyhalothrin	0.01	0.2	
				cyprodinil	0.25	2	
				fenhexamid	0.06	5	
				fludioxonil	0.15	7	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
	Plum	74337	S Africa	iprodione	0.03	3	
		74412	S Africa	iprodione	0.03	3	
		74532	Chile	imazalil	0.02	0.05	
				thiabendazole	0.01	0.05	
				iprodione	1.02	3	
		74587	Chile	iprodione	0.54	3	
		74662	Chile	fenhexamid	0.04	1	
				iprodione	0.83	3	
		74732	Chile	iprodione	1.28	3	
		74763	Spain	tau-fluvalinate	0.01	0.3	
				imidacloprid	0.01	0.3	
		74874	Spain	chlorpyrifos	0.01	0.2	
		74906	Spain	fenhexamid	0.01	1	
		75055	Spain	dithiocarbamates	0.17	2	
				chlorpyrifos	0.01	0.2	
				iprodione	0.18	3	
				cyprodinil	0.10	2	
				fenhexamid	0.02	1	
				fludioxonil	0.01	0.5	
		75142	Spain	iprodione	0.22	3	
				lambda-cyhalothrin	0.01	0.2	
				chlorpyrifos	0.01	0.2	
				propargite	0.16	4	
				cyprodinil	0.06	2	
				fenhexamid	0.03	1	
				fludioxonil	0.02	0.5	
		75205	Spain	iprodione	0.12	3	
				propargite	0.16	4	
				cyprodinil	0.03	2	
				fenhexamid	0.01	1	
		75237	Italy	boscalid	0.04	3	
		75239	Spain	iprodione	0.05	3	
		75251	Spain	propargite	0.20	4	
				cyprodinil	0.30	2	
				fludioxonil	0.11	0.5	
		75325	Spain	iprodione	0.31	3	
				acrinathrin	0.02	0.2	
				deltamethrin	0.01	0.1	
				myclobutanyl	0.20	0.5	
				propargite	0.65	4	
				cyprodinil	0.07	2	
				fludioxonil	0.03	0.5	
				fenhexamid	0.02	1	
		75371	Spain	cyprodinil	0.13	2	
				fenhexamid	0.02	1	
				fludioxonil	0.07	0.5	
				propargite	0.24	4	
				lambda-cyhalothrin	0.01	0.1	
				iprodione	0.29	3	
		75407	S Africa	iprodione	0.47	3	
				fenbuconazole	0.02	0.5	
Berries	**Table Grape**	74349	S Africa	penconazole	0.01	0.2	
		74420	S Africa	iprodione	0.02	10	
		74458	S Africa	iprodione	0.11	10	
				boscalid	0.10	5	
		74459	Peru	myclobutanyl	0.13	1	
				iprodione	0.06	10	
				tebuconazole	0.19	2	
				fenhexamid	0.03	5	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				pyrimethanil	0.01	5	
		74491	Argentina	iprodione	0.05	10	
				cyprodinil	0.03	5	
				fludioxonil	0.04	2	
				pyrimethanil	0.06	5	
		74575	Chile	bifenthrin	0.01	0.2	
				fenarimol	0.01	0.3	
				boscalid	0.03	5	
				fenhexamid	0.17	5	
				imidacloprid	0.19	1	
				spinosad	0.04	0.5	
				iprodione	0.02	10	
		74664	Chile	boscalid	0.11	5	
				cyprodinil	0.07	5	
				pyraclostrobin	0.03	1	
				fludioxonil	0.10	2	
				chlorpyrifos	0.05	0.5	
		74689	Chile	boscalid	0.06	5	
				pyraclostrobin	0.02	1	
		74737	India	chlorpyrifos	0.22	0.5	
				fenarimol	0.01	0.3	
				azoxystrobin	0.22	2	
				kresoxim-methyl	0.06	1	
				myclobutanyl	0.02	1	
				pyridaben	0.15	0.5	
		74832	Chile	iprodione	0.58	10	
				fludioxonil	0.04	2	
				boscalid	0.04	5	
				cyprodinil	0.03	5	
				fenhexamid	0.07	5	
				pyraclostrobin	0.01	1	
		74846	India	azoxystrobin	0.02	2	
				spinosad	0.02	0.5	
		74876	Egypt	boscalid	0.03	5	
				fenhexamid	0.01	5	
				imidacloprid	0.03	1	
				lambda-cyhalothrin	0.06	0.2	
				azoxystrobin	0.05	2	
		74878	Spain	cyprodinil	0.03	5	
				spinosad	0.05	0.5	
				chlorpyrifos	0.05	0.5	
				iprodione	0.13	10	
				trifloxystrobin	0.08	5	
				myclobutanyl	0.02	1	
		74899	Egypt	penconazole	0.05	0.2	
				fenhexamid	0.03	5	
				thiabendazole	0.02	0.05	
		74968	Spain	benalaxyl	0.02	0.3	
				triadimenol	0.09	2	
				tebuconazole	0.02	2	
				fenhexamid	0.08	5	
				imidacloprid	0.28	1	
		74995	Spain	dimethomorph	0.01	3	
				fenhexamid	0.19	5	
				lambda-cyhalothrin	0.01	0.2	
				iprodione	0.29	10	
		75024	Greece	chlorpyrifos	0.01	0.5	
				metalaxyl	0.02	2	
				thiamethoxam	0.02	0.5	
		75071	Spain	metalaxyl	0.01	2	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				cyproconazole	0.01	0.2	
				boscalid	0.17	5	
				cyazofamid	0.06	0.5	
				chlorothalonil	0.01	1	
		75081	Greece	dithiocarbamates	0.05	5	
				chlorothalonil	0.01	1	
				iprodione	0.07	10	
				tebuconazole	0.04	2	
				myclobutanyl	0.03	1	
				propargite	0.03	7	
				chlorpyrifos	0.02	0.5	
				thiamethoxam	0.01	0.5	
		75124	Greece	cyprodinil	0.01	5	
				thiamethoxam	0.02	0.5	
				tetraconazole	0.02	0.5	
				myclobutanyl	0.02	1	
		75146	Greece	myclobutanyl	0.01	1	
				propargite	0.04	7	
				chlorpyrifos	0.02	0.5	
				cypermethrin	0.04	0.5	
				iprodione	0.04	10	
				thiamethoxam	0.02	0.5	
				tebuconazole	0.03	2	
		75150	Spain	trifloxystrobin	0.02	5	
				dimethomorph	0.06	3	
		75206	Greece	chlorpyrifos	0.01	0.5	
				lambda-cyhalothrin	0.01	0.2	
				iprodione	0.26	10	
				tetraconazole	0.03	0.5	
				cyprodinil	0.01	5	
				myclobutanyl	0.03	1	
				propargite	0.08	7	
				spiroxamine	0.03	1	
				thiamethoxam	0.02	0.5	
		75207	Spain	metalaxyl	0.01	2	
				boscalid	0.14	5	
				cyazofamid	0.14	0.5	
		75255	Spain	chlorpyrifos	0.01	0.5	
				lambda-cyhalothrin	0.03	0.2	
				iprodione	0.47	10	
				fenhexamid	0.10	5	
				fludioxonil	0.01	5	
		75311	Brazil	lambda-cyhalothrin	0.01	0.2	
				tebuconazole	0.10	2	
				azoxystrobin	0.04	2	
				dimethomorph	0.01	3	
		75323	Brazil	azoxystrobin	0.01	2	
		75324	Spain	cyprodinil	0.02	5	
	Strawberry	74470	Egypt	azoxystrobin	0.15	10	
		74584	Spain	tetraconazole	0.01	0.2	
				myclobutanyl	0.01	1	
		74637	Spain	clofentezine	0.22	2	
				cyprodinil	0.10	5	
				fludioxonil	0.15	3	
		74686	Belgium	boscalid	0.16	10	
				kresoxim-methyl	0.15	1	
				myclobutanyl	0.05	1	
				dimethomorph	0.03	0.7	
				fenhexamid	0.58	5	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				pyraclostrobin	0.03	1	
				penconazole	0.08	0.5	
		74707	Ireland	iprodione	0.26	15	
				pirimicarb	0.20	3	
				myclobutanyl	0.04	1	
				bupirimate	0.03	1	
				fenhexamid	0.29	5	
				quinoxyfen	0.02	0.3	
				thiacloprid	0.11	1	
		74740	Ireland	pirimicarb	0.18	3	
		74742	Ireland	azoxystrobin	0.10	10	
				pirimicarb	0.11	3	
				iprodione	0.22	15	
				fenhexamid	0.03	5	
		74844	Ireland	azoxystrobin	0.02	10	
				myclobutanyl	0.03	1	
				iprodione	0.09	15	
				pyraclostrobin	0.02	0.5	
				boscalid	0.14	10	
				pirimicarb	0.13	3	
		74848	Ireland	iprodione	0.48	15	
				azoxystrobin	0.13	10	
				myclobutanyl	0.11	1	
				pirimicarb	0.38	3	
				fenhexamid	0.14	5	
				mepanipyrim	0.09	2	
				pyraclostrobin	0.05	0.5	
				quinoxyfen	0.02	0.3	
				boscalid	0.36	10	
		74861	Ireland	iprodione	0.10	15	
				pirimicarb	0.13	3	
				azoxystrobin	0.03	10	
				cyprodinil	0.01	5	
				mepanipyrim	0.07	2	
				thiacloprid	0.03	1	
				fludioxonil	0.02	3	
				kresoxim-methyl	0.02	1	
		74865	Ireland	myclobutanyl	0.05	1	
				boscalid	0.02	10	
				cyprodinil	0.02	5	
				fenhexamid	0.02	5	
				mepanipyrim	0.09	2	
				pyrimethanil	0.11	5	
				fludioxonil	0.02	3	
		74867	Holland	cyprodinil	0.01	5	
		74930	Ireland	bupirimate	0.03	1	
				fenhexamid	0.41	5	
				mepanipyrim	0.08	2	
				spinosad	0.07	0.3	
				azoxystrobin	0.08	10	
				myclobutanyl	0.02	1	
		74943	Holland	penconazole	0.01	0.5	
				trifloxystrobin	0.02	0.5	
				boscalid	0.06	10	
				cyprodinil	0.03	5	
				fenhexamid	0.59	5	
				fludioxonil	0.03	3	
		75021	Ireland	chlorothalonil	0.08	3	
				pirimicarb	0.02	3	
				azoxystrobin	0.11	10	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				myclobutanyl	0.42	1	
				dimethomorph	0.01	0.7	
				fenhexamid	0.92	5	
				mepanipyrim	0.13	2	
				pyraclostrobin	0.09	1	
				boscalid	0.44	10	
				cyprodinil	0.81	5	
				pyrimethanil	0.87	5	
				quinoxyfen	0.10	0.3	
				thiacloprid	0.03	1	
				fludioxonil	0.60	3	
		75072	Ireland	chlorothalonil	0.77	3	
				azoxystrobin	0.05	10	
				myclobutanyl	0.36	1	
				fludioxonil	0.11	3	
				boscalid	0.06	10	
				cyprodinil	0.06	5	
				fenhexamid	0.64	5	
				mepanipyrim	0.17	2	
				pyrimethanil	0.55	5	
				pirimicarb	0.03	3	
				quinoxyfen	0.02	0.3	
		75088	Ireland	iprodione	0.04	15	
				azoxystrobin	0.01	10	
				bupirimate	0.01	1	
				kresoxim-methyl	0.03	1	
				fenhexamid	0.07	5	
				mepanipyrim	0.03	2	
		75114	Ireland	iprodione	0.01	15	
				boscalid	0.35	10	
				pyrimethanil	0.30	5	
				pyraclostrobin	0.06	0.5	
		75135	Ireland	iprodione	0.41	15	
				azoxystrobin	0.06	10	
				boscalid	0.18	10	
				fenhexamid	0.18	5	
				pyraclostrobin	0.03	0.5	
		75194	Ireland	iprodione	0.13	15	
				boscalid	0.03	10	
				bupirimate	0.01	1	
				pirimicarb	0.10	3	
				fenhexamid	0.01	5	
				mepanipyrim	0.07	2	
				myclobutanyl	0.03	1	
		75254	Holland	boscalid	0.26	10	
				penconazole	0.03	0.5	
				mepanipyrim	0.10	2	
				pyraclostrobin	0.05	0.5	
				thiacloprid	0.07	1	
		75312	Ireland	iprodione	0.02	15	
				azoxystrobin	0.04	10	
				myclobutanyl	0.03	1	
				mepanipyrim	0.01	2	
	Blackberry	74636	Mexico	fenhexamid	0.03	10	
		75192	**Guatemala**	diazinon	0.01	0.01	
				iprodione	0.01	10	
				azoxystrobin	0.01	5	
				carbaryl	0.05	0.05	≯0.05
				famoxadone	**0.03**	**0.02**	**Breach**

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
	Raspberry	74488	Spain	fenhexamid	0.11	10	
		74901	Ireland	cyprodinil	0.04	10	
				fludioxonil	0.05	5	
				myclobutanyl	0.03	1	
		75329	Spain	iprodione	0.02	10	
				fenhexamid	0.02	10	
	Blueberry	74473	Chile	iprodione	0.02	10	
				phosmet	0.02	10	
		74586	Spain	iprodione	0.12	10	
				phosmet	0.17	10	
				azinphos-me	0.03	0.05	
				fenhexamid	0.05	5	
		74635	Chile	fenhexamid	0.01	5	
		74839	**United States**	**malathion**	**0.04**	**0.02**	**Breach**
		75112	Canada	boscalid	0.07	10	
		75208	Argentina	iprodione	0.04	10	
				boscalid	0.01	10	
				fenhexamid	0.06	5	
	Red Currant	74884	Holland	iprodione	2.43	10	
				pirimicarb	0.04	1	
				triadimenol	0.07	1	
				kresoxim-methyl	0.07	1	
				fenhexamid	0.54	5	
Miscellaneous	**Kiwi**	74345	Italy	fludioxonil	0.03	20	
		74389	Italy	fenhexamid	5.62	10	
		74469	Italy	fludioxonil	0.05	20	
		74657	Italy	fenhexamid	5.58	10	
		74666	Italy	fenhexamid	2.14	10	
		74687	Italy	fenhexamid	4.59	10	
		74710	Italy	fludioxonil	0.02	20	
		75077	New Zealand	ortho-phenylphenol	0.01	0.05	
		75111	Chile	iprodione	0.18	5	
				fenhexamid	0.49	10	
		75139	Chile	fenhexamid	0.87	10	
		75369	Italy	fenhexamid	0.10	10	
	Passion Fruit	74756	S Africa	methomyl	0.01	0.02	
		74902	S Africa	azoxystrobin	0.04	4	
		75235	Colombia	azoxystrobin	0.03	4	
		75253	Kenya	cypermethrin	0.05	0.05	
				carbendazim	0.02	0.1	
	Avocados	75060	S Africa	prochloraz	0.05	5	
	Banana	74748	Belize	chlorpyrifos	0.01	3	
				imazalil	0.39	2	
		74873	Dom Rep	imazalil	0.27	2	
				chlorpyrifos	0.08	3	
		74916	Belize	chlorpyrifos	0.01	3	
				bitertanol	0.12	3	
				azoxystrobin	0.24	2	
				imazalil	0.27	2	
		74917	Belize	azoxystrobin	0.10	2	
				imazalil	0.22	2	
		74924	Costa Rica	chlorpyrifos	0.04	3	
				bifenthrin	0.02	0.1	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				azoxystrobin	0.10	2	
				thiabendazole	0.12	5	
		75002	Belize	azoxystrobin	0.18	2	
				imazalil	0.54	2	
		75091	Honduras	chlorpyrifos	0.02	3	
				azoxystrobin	0.03	2	
		75106	Costa Rica	bifenthrin	0.02	0.1	
				azoxystrobin	0.33	2	
				thiabendazole	0.13	5	
		75134	Colombia	azoxystrobin	0.03	2	
		75189	Colombia	azoxystrobin	0.09	2	
		75284	Costa Rica	imazalil	0.46	2	
				thiabendazole	0.26	5	
		75285	Belize	chlorpyrifos	0.04	3	
				bitertanol	0.02	3	
				azoxystrobin	0.60	2	
				imazalil	1.37	2	
		75286	Colombia	azoxystrobin	0.12	2	
				myclobutanyl	0.01	2	
				imazalil	0.18	2	
				thiabendazole	0.02	5	
		75287	Honduras	chlorpyrifos	0.01	3	
				azoxystrobin	0.04	2	
				imazalil	0.15	2	
				thiabendazole	0.10	5	
		75288	Honduras	bifenthrin	0.03	0.1	
				imazalil	0.51	2	
				thiabendazole	0.31	5	
		75313	Equador	imazalil	0.27	2	
				thiabendazole	0.23	5	
		75314	Colombia	bitertanol	0.07	3	
				imazalil	0.02	2	
				thiabendazole	0.01	5	
	Mangoes	74343	Brazil	thiabendazole	0.21	5	
		74365	Brazil	prochloraz	0.45	5	Part
				2,4,6-trichlorophenol	0.02	5	Part
				prochloraz (sum)	0.48	5	Sum
		74540	Brazil	paclobutrazol	0.01	0.5	
				thiabendazole	0.88	5	
		74545	Peru	thiabendazole	0.20	5	
		74735	Belize	prochloraz	0.98	5	Part
				2,4,6-trichlorophenol	0.04	5	Part
				prochloraz (sum)	1.06	5	Sum
		74880	Nicaragua	thiabendazole	0.34	5	
		74965	Brazil	prochloraz	0.04	5	
				thiabendazole	0.25	5	
		74967	Senegal	molinate	0.01	0.05	
		74992	Puerto Rico	dithiocarbamates	0.21	2	
				thiabendazole	0.06	5	
		75083	Brazil	prochloraz	0.03	5	
		75232	Brazil	azoxystrobin	0.06	0.7	
				thiabendazole	0.45	5	
				prochloraz	0.05	5	
		75295	Equador	thiabendazole	0.28	10	
				prochloraz	0.26	5	Part
				2,4,6-trichlorophenol	0.02	5	Part
				prochloraz (sum)	0.29	5	Sum
		75411	Brazil	prochloraz	1.29	5	Part
				2,4,6-trichlorophenol	0.07	5	Part

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				prochloraz (sum)	1.42	5	Sum
	Papaya	74513	Equador	endosulfan-sulphate	0.03	0.05	Part
				endosulphan (sum)	0.03	0.05	Sum
				prochloraz	0.04	5	
				imidacloprid	0.01	0.05	
				thiabendazole	0.10	10	
		75296	Equador	myclobutanyl	0.01	0.02	
				thiabendazole	0.33	10	
				pyridaben	0.01	0.5	
	Pomegranate	**74366**	**Egypt**	dimethoate	0.01	0.02	Part
				omethoate	0.03	0.02	Part breach
				dimethoate (sum)	**0.04**	**0.02**	**Breach**
				methomyl	**0.03**	**0.02**	**Breach**
		74975	Chile	imidacloprid	0.02	1	
				fludioxonil	0.14	3	
		74999	**Egypt**	lambda-cyhalothrin	0.02	0.02	
				ethion	**0.04**	**0.01**	**Breach**
		75258	Spain	cypermethrin	0.03	0.05	
				imidacloprid	0.04	1	
	Pineapples	74647	Costa Rica	piperonyl butoxide	0.02	no MRL	
				triadimefon	0.03	3	Part
				triadimenol	0.05	3	Part
				triadimefon+triadimenol	0.08	3	Sum
		74877	Costa Rica	triadimefon	0.06	3	Part
		74910	Costa Rica	carbaryl	0.02	0.05	
				triadimefon	0.01	3	Part
				triadimenol	0.03	3	Part
				triadimefon+triadimenol	0.04	3	Sum
		75078	Costa Rica	triadimefon	0.11	3	Part
				triadimenol	0.17	3	Part
				triadimefon+triadimenol	0.27	3	Sum
		75129	Costa Rica	piperonyl butoxide	0.13	no MRL	
				triadimefon	0.11	3	Part
				triadimenol	0.22	3	Part
				triadimefon+triadimenol	0.33	3	Sum
		75149	Costa Rica	triadimefon	0.01	3	Part
				triadimenol	0.02	3	Part
				triadimefon+triadimenol	0.03	3	Sum
		75197	Costa Rica	piperonyl butoxide	0.08	no MRL	
				triadimefon	0.07	3	Part
				triadimenol	0.37	3	Part
				triadimefon+triadimenol	0.44	3	Sum
		75410	Costa Rica	triadimefon	0.17	3	Part
				triadimenol	0.22	3	Part
				triadimefon+triadimenol	0.39	3	Sum
		75436	Costa Rica	piperonyl butoxide	0.67	no MRL	
				triadimefon	0.11	3	Part
				triadimenol	0.23	3	Part
				triadimefon+triadimenol	0.34	3	Sum
	Dragon Fruit	75233	**Vietnam**	**cypermethrin**	**0.06**	**0.05**	**Breach**
	Rambutan	75212	Vietnam	cypermethrin	0.03	2	
				carbendazim	0.02	0.1	
	Sharon Fruit	74360	Israel	bifenthrin	0.01	0.05	
		75231	**Spain**	**iprodione**	**0.03**	**0.02**	**Breach**

Table 5 provides a summary of the results for the unprocessed vegetable commodities analysed in 2011 and the origin of the samples.

Table 5: Summary of unprocessed vegetable samples in the 2011 monitoring programme

Class	Commodity	Number	Domestic	EU	Non EU	Unknown	ND	<MRL	>MRL
Root/tuber	Potato	49	37	12	0	0	38	11	0
	Sweet potato	2	0	1	1	0	2	0	0
	Eddoe (cassava)	1	0	0	1	0	1	0	0
	Carrot	17	5	12	0	0	8	9	0
	Parsnip	6	6	0	0	0	1	5	0
	Swede	2	2	0	0	0	0	2	0
	Turnip	5	4	1	0	0	1	2	2
Bulb	Onion	5	0	4	1	0	5	0	0
	Shallot	1	0	1	0	0	0	1	0
	Spring onion	3	1	0	2	0	2	1	0
Fruiting	Tomato	9	1	6	2	0	0	9	0
	Pepper	14	1	9	3	1	2	12	0
	Aubergine	4	0	4	0	0	2	2	0
	Physalis	1	0	0	1	0	0	1	0
	Cucumber	14	9	5	0	0	7	7	0
	Courgette	5	2	3	0	0	3	2	0
	Melon	3	0	2	1	0	2	1	0
	Squash	1	0	0	1	0	0	1	0
	Sweet corn	1	0	1	0	0	1	0	0
	Chayote	1	0	0	1	0	0	0	1
Brassica	Broccoli	9	3	6	0	0	7	2	0
	Cauliflower	6	3	3	0	0	6	0	0
	Brussels sprout	2	2	0	0	0	1	1	0
	Head cabbage	16	13	2	0	1	7	7	2
	Chinese cabbage	4	1	3	0	0	1	3	0
Leafy	Lettuce	50	25	25	0	0	15	34	1
	Batavia (lettuce)	1	0	1	0	0	0	1	0
	Scarole	3	1	2	0	0	1	2	0
	Endive	2	1	1	0	0	1	1	0
	Rocket	3	0	3	0	0	1	2	0
	Spinach	9	5	3	0	1	4	5	0
	Whitloof	1	0	1	0	0	1	0	0
	Coriander leave	1	0	0	1	0	0	1	0
Legume	Beans + pod	15	4	2	9	0	4	8	3
	Peas + pod	8	0	0	8	0	3	4	1
	Peas - pod	8	0	3	0	5	7	1	0
Stem	Asparagus	1	0	1	0	0	1	0	0
	Celery	13	6	7	0	0	3	8	2
	Leek	4	2	2	0	0	2	2	0
	Rhubarb	1	1	0	0	0	1	0	0
Fungi	Mushroom	20	18	0	0	2	11	9	0
Seed	Sunflower	1	0	1	0	0	1	0	0
	Chia	1	0	0	1	0	1	0	0
Total		**323**	**153**	**127**	**33**	**10**	**154**	**157**	**12**
Total %			**47.4%**	**39.3%**	**10.2%**	**3.1%**	**47.7%**	**48.6%**	**3.7%**

Nearly half of the raw conventional vegetables samples (47.3%) were of domestic origin and residues were detected in 53.3%, of which 3.7% were above the MRL.

Table 6 presents details of the levels of pesticide residues detected above the LOQ in the various unprocessed vegetables, together with samples identification numbers, country of origin (where known) and the relevant MRL for each substance detected.

Table 6: Details of unprocessed vegetable samples with residues > LOQ

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
Root	**Potatoes**	74599	Ireland	chlorpropham	0.61	10	
				3-chloroaniline	0.07	10	
		74817	Ireland	imazalil	0.17	3	
				chlorpropham	0.04	10	
		74845	Ireland	pencycuron	0.07	0.1	
		74886	Spain	metalaxyl	0.01	0.05	
		74889	UK	azoxystrobin	0.01	1	
				pencycuron	0.03	0.1	
		74919	Ireland	3-chloroaniline	0.02	10	
				chlorpropham	1.51	10	
				imazalil	0.32	3	
		74956	Ireland	chlorpropham	0.56	10	
		75001	Ireland	3-chloroaniline	0.02	10	
				chlorpropham	1.38	10	
		75092	Ireland	pencycuron	0.01	0.1	
		75138	Ireland	flutolanil	0.01	0.5	
		75316	UK	3-chloroaniline	0.02	10	
				chlorpropham	2.03	10	
	Carrots	74405	Ireland	tebuconazole	0.04	0.5	
		74409	Spain	linuron	0.10	0.2	
		74410	Ireland	boscalid	0.01	1	
		74464	Spain	linuron	0.03	0.2	
		74541	Spain	chlorothalonil	0.04	1	
				ppdde	0.02	0.05	
				linuron	0.04	0.2	
		74596	UK	iprodione	0.01	0.5	
		74643	UK	linuron	0.01	0.2	
				tebuconazole	0.02	0.5	
		74769	France	linuron	0.08	0.2	
		74818	France	linuron	0.02	0.2	
	Parsnips	74497	Ireland	boscalid	0.02	1	
		74598	Ireland	trifluralin	0.04	0.5	
				boscalid	0.03	1	
		74768	Ireland	boscalid	0.19	1	
				linuron	0.04	0.2	
				tebuconazole	0.03	0.5	
		74819	Ireland	tebuconazole	0.03	0.5	
				boscalid	0.02	1	
		75372	Ireland	tebuconazole	0.05	0.5	
	Swedes	74909	Ireland	chlorpyrifos	0.02	0.05	
		74923	Ireland	chlorpyrifos	0.01	0.05	
	Turnips	74860	Ireland	chlorpyrifos	0.05	0.05	≯0.05
		74922	**Ireland**	**chlorpyrifos**	**0.19**	**0.05**	**Breach**
				pirimicarb	0.01	0.5	
		74945	**UK**	**chlorpyrifos**	**0.11**	**0.05**	**Breach**
		75309	Ireland	chlorpyrifos	0.01	0.05	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
Bulb Veg	**Shallots**	75464	France	thiophanate-methyl	0.03	0.1	
	Spring Onion	74551	Egypt	lambda-cyhalothrin	0.03	0.2	
Fruiting	**Tomato**	74346	Spain	pyridaben	0.01	0.3	
				pyriproxyfen	0.01	1	
		74369	Spain	chlorothalonil	0.01	2	
		74402	Spain	iprodione	0.06	5	
				tebuconazole	0.02	1	
				pyridaben	0.01	0.3	
				dimethomorph	0.02	1	
		74446	Spain	metalaxyl	0.02	0.2	
				pyrimethanil	0.02	1	
		74477	Morocco	chlorothalonil	0.03	2	
				benalaxyl	0.13	0.5	
				famoxadone	0.01	1	
				pyrimethanil	0.22	1	
				pyriproxyfen	0.06	1	
		74542	Morocco	famoxadone	0.01	1	
		74576	Canary Islands	chlorothalonil	0.04	2	
				benalaxyl	0.02	0.5	
				pyridaben	0.02	0.3	
				pyrimethanil	0.02	1	
				pyriproxyfen	0.01	1	
				mepanipyrim	0.02	1	
		74660	Spain	chlorothalonil	0.02	2	
		74754	Ireland	azoxystrobin	0.02	3	
				iprodione	0.24	5	
	Pepper	74355	Spain	fenhexamid	0.01	2	
		74362	Spain	flutriafol	0.02	1	
		74444	Spain	chlorothalonil	0.10	2	
				fludioxonil	0.03	2	
		74468	Spain	fludioxonil	0.02	2	
		74495	Spain	iprodione	0.03	5	
				flutriafol	0.03	1	
				fludioxonil	0.01	2	
		74550	Spain	chlorothalonil	0.02	2	
		74580	Spain	chlorothalonil	0.01	2	
				bupirimate	0.01	2	
				fludioxonil	0.03	2	
				flutriafol	0.14	1	
				triadimenol	0.01	1	
		74631	Israel	metalaxyl	0.01	0.5	
		74692	Morocco	trifloxystrobin	0.01	0.3	
				kresoxim-methyl	0.05	1	
		74703	Israel	acetamiprid	0.01	0.3	
		75198	Holland	imidacloprid	0.01	1	
				indoxacarb	0.02	0.3	
				methoxyfenozide	0.02	1	
		75238	Italy	bupirimate	0.02	2	
	Aubergines	74518	Spain	acrinathrin	0.02	0.2	
				cyprodinil	0.07	1	
				fludioxonil	0.06	1	
				tebuconazole	0.02	0.5	
		74548	Spain	diethofencarb	0.01	1	
	Physalis	74991	Colombia	pyrimethanil	0.02	1	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
	Cucumbers	74338	Spain	chlorothalonil	0.07	1	
		74371	Spain	cyprodinil	0.05	0.5	
				fenhexamid	0.01	1	
				fludioxonil	0.01	1	
		74390	Spain	cyprodinil	0.04	0.5	
		74759	Holland	acetamiprid	0.01	0.3	
		74766	Ireland	pymetrozine	0.04	0.5	
		74810	Ireland	pymetrozine	0.02	0.5	
		75248	Ireland	chlorothalonil	0.17	1	
				azoxystrobin	0.03	1	
	Courgettes	74447	Spain	fludioxonil	0.05	1	
		74984	Ireland	azoxystrobin	0.01	1	
	Melons	74765	Spain	alpha-endosulfan	0.01	0.05	Part
				beta-endosulfan	0.01	0.05	Part
				endosulfan-sulphate	0.02	0.05	Part
				endosulphan (sum)	0.04	0.05	Sum
	Squash	74583	S Africa	imazalil	0.01	0.2	
	Chayote	**74950**	**Costa Rica**	**thiamethoxam**	**0.39**	**0.05**	**Breach**
Brassica	**Broccoli**	74376	Spain	chlorothalonil	0.02	3	
		74392	Spain	metalaxyl	0.01	0.2	
	Brussel Sprout	75437	Ireland	tebuconazole	0.04	0.5	
				difenoconazole	0.02	0.2	
				boscalid	0.02	5	
	Cabbage	74481	Spain	cypermethrin	0.09	1	
		74523	Ireland	difenoconazole	0.01	0.2	
		74592	Ireland	boscalid	0.01	2	
		74739	Ireland	bifenthrin	0.01	1	
				metalaxyl	0.06	1	
				tebuconazole	0.05	1	
		74782	Ireland	tebuconazole	0.01	1	
		74859	Ireland	metalaxyl	0.03	1	
		74908	Ireland	difenoconazole	0.01	0.2	
		75379	**Ireland**	omethoate	0.03	0.02	Part - breach
				dimethoate (sum)	**0.03**	**0.02**	**Sum - breach**
				difenoconazole	0.01	0.2	
				metalaxyl	0.01	1	
		75461	**Ireland**	azoxystrobin	0.03	5	
				difenoconazole	0.01	0.2	
				tebuconazole	0.19	1	
				lambda-cyhalothrin	0.01	0.2	
				metalaxyl	0.02	1	
				deltamethrin	0.01	0.1	
				omethoate	0.06	0.02	Part - breach
				dimethoate (sum)	**0.06**	**0.02**	**Sum - breach**
Brassica	**Chinese Cabbage**	74465	Spain	imidacloprid	0.02	0.5	
		74611	Spain	chlorpyrifos	0.03	0.5	
				ortho-phenylphenol	0.01	0.05	
		74982	Holland	dithiocarbamates	0.21	0.5	
Leafy	**Lettuce**	74353	Spain	dimethomorph	0.09	10	
				imidacloprid	0.03	2	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				fenhexamid	0.07	40	
		74380	Spain	imidacloprid	0.02	2	
				pyrimethanil	0.03	10	
		74403	Ireland	propyzamide	0.06	1	
				azoxystrobin	2.57	3	
				lambda-cyhalothrin	0.44	0.5	
				cypermethrin	0.31	2	
		74415	Spain	metalaxyl	0.07	2	
				bifenthrin	0.04	2	
		74418	Spain	cyfluthrin	0.14	1	
				imidacloprid	0.31	2	
				lambda-cyhalothrin	0.12	0.5	
		74462	Ireland	tolclofos-methyl	0.01	2	
				boscalid	0.01	10	
				iprodione	0.04	10	
		74480	Spain	dimethomorph	0.01	10	
		74498	Ireland	propyzamide	0.05	1	
				boscalid	0.01	10	
				iprodione	0.01	10	
		74517	Spain	imidacloprid	0.03	2	
				metalaxyl	0.06	2	
		74520	Spain	imidacloprid	0.03	2	
				fenhexamid	0.02	40	
		74521	Spain	fenhexamid	0.10	40	
				boscalid	0.01	10	
		74525	Spain	boscalid	0.01	10	
				imidacloprid	0.06	2	
				iprodione	0.17	10	
		74581	Ireland	boscalid	0.03	10	
		74594	France	acetamiprid	0.07	5	
		74609	Spain	imidacloprid	0.02	2	
				fludioxonil	0.05	10	
				cyprodinil	0.03	10	
		74671	Ireland	boscalid	0.06	10	
		74685	Ireland	boscalid	0.07	10	
		74767	Ireland	boscalid	0.10	10	
		74809	Ireland	acetamiprid	0.04	5	
				boscalid	0.06	10	
				azoxystrobin	0.01	3	
		74813	UK	lenacil	0.01	0.1	
				spinosad	0.36	10	
				deltamethrin	0.03	0.5	
		74863	**Ireland**	dimethoate	0.13	0.02	Part breach
				omethoate	0.04	0.02	Part - breach
				dimethoate (sum)	**0.17**	**0.02**	**Breach**
		74912	Ireland	lambda-cyhalothrin	0.01	0.5	
				pendimethalin	0.02	0.05	
				dithiocarbamates	0.30	5	
		74920	Ireland	azoxystrobin	0.02	3	
				boscalid	0.02	10	
				iprodione	0.21	10	
		74940	Holland	deltamethrin	0.02	0.5	
				boscalid	0.69	10	
				pyraclostrobin	0.06	2	
				dithiocarbamates	0.28	5	
		74987	Ireland	cypermethrin	0.32	2	
				propyzamide	0.01	1	
				pymetrozine	0.30	2	
				pyraclostrobin	0.09	2	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				boscalid	2.04	10	
		75047	Ireland	boscalid	0.02	30	MRL increased during 2011
				iprodione	0.01	10	
				thiamethoxam	0.02	5	
				azoxystrobin	0.02	3	
		75087	Ireland	boscalid	0.02	30	
				cypermethrin	0.02	2	
				iprodione	0.17	10	
		75100	Ireland	boscalid	0.06	30	
		75152	Ireland	pyraclostrobin	0.03	2	
				cypermethrin	0.36	2	
				propyzamide	0.05	1	
				boscalid	0.34	30	
				tolclofos-methyl	0.46	2	
				pymetrozine	0.10	2	
		75224	UK	fludioxonil	0.48	10	
				imidacloprid	0.03	2	
				cyprodinil	0.35	10	
		75225	UK	acetamiprid	0.04	5	
		75245	Spain	acetamiprid	0.03	5	
				fenhexamid	0.02	40	
				imidacloprid	0.03	2	
				chlorpyrifos	0.01	0.05	
		75294	Ireland	propyzamide	0.06	1	
				azoxystrobin	0.14	3	
				boscalid	0.10	10	
				cypermethrin	0.04	2	
				tolclofos-methyl	0.07	2	
				iprodione	0.66	10	
		75328	France	acetamiprid	0.02	5	
				pyraclostrobin	0.03	2	
				boscalid	0.21	30	
		75462	Ireland	pyraclostrobin	0.03	2	
				propyzamide	0.02	1	
				cypermethrin	0.03	2	
				iprodione	0.60	10	
				azoxystrobin	0.03	3	
				boscalid	0.40	30	
	Red Batavia	74812	UK	thiamethoxam	0.02	5	
				lambda-cyhalothrin	0.02	1	
	Scarole	74416	Spain	imidacloprid	0.02	1	
		74414	Spain	cyfluthrin	0.01	1	
	Endive	74417	Spain	chlorthal dimethyl	0.06	0.5	
				flufenoxuron	0.04	0.05	
				indoxacarb	0.02	2	
				pirimicarb desmethyl	0.01	1	Part
				pirimicarb (sum)	0.01	1	Sum
				bifenthrin	0.02	2	
	Rocket	74413	Italy	fludioxonil	0.55	10	
				cyprodinil	0.09	10	
		74811	UK	metalaxyl	0.06	2	
				propyzamide	0.02	1	
				azoxystrobin	0.30	3	
				acetamiprid	0.01	5	
				boscalid	0.15	30	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				dimethomorph	0.04	10	
				pyraclostrobin	0.01	2	
				deltamethrin	0.08	0.5	
	Spinach	74850	Ireland	lambda-cyhalothrin	0.01	0.5	
		74869	Ireland	lenacil	0.01	0.1	
		74904	Ireland	lambda-cyhalothrin	0.02	0.5	
		74941	Ireland	deltamethrin	0.07	0.5	
				spinosad	0.01	10	
				lenacil	0.01	0.1	
		75226	UK	boscalid	0.02	30	
	Coriander	75082	Kenya	chlorpyrifos	0.01	0.05	
				iprodione	0.05	10	
				difenoconazole	0.49	10	
				spinosad	0.02	10	
				chlorothalonil	0.02	5	
Legume	**Beans With Pods**	**74387**	**Kenya**	profenofos	0.02	0.05	
				methomyl	**0.05**	**0.02**	**Breach**
				cypermethrin	0.06	0.7	
		74608	**Morocco**	beta-endosulfan	0.02	0.05	Part
				alpha-endosulfan	0.03	0.05	Part
				endosulfan-sulphate	0.04	0.05	Part
				endosulphan (sum)	**0.09**	**0.05**	**Sum - breach**
				iprodione	0.02	5	
		74728	Morocco	cypermethrin	0.03	0.7	
				carbendazim	0.06	0.2	
				flutriafol	0.04	0.05	
		74998	Kenya	lambda-cyhalothrin	0.02	0.2	
		75046	Ireland	azoxystrobin	0.14	3	
				chlorothalonil	1.13	5	
		75079	Kenya	pirimicarb	0.05	1	
		75080	**Ireland**	chlorothalonil	0.69	5	
				dimethoate	0.02	0.02	Part ≯ 0.02
				omethoate	0.03	0.02	Part - breach
				dimethoate (sum)	**0.05**	**0.02**	**Sum - breach**
				azoxystrobin	0.02	3	
		75125	Kenya	dimethoate	0.01	0.02	
		75130	UK	iprodione	0.04	5	
				azoxystrobin	0.02	3	
				fludioxonil	0.01	1	
		75132	UK	iprodione	0.05	5	
				azoxystrobin	0.02	3	
		75246	Morocco	cypermethrin	0.20	0.7	
				permethrin	0.05	0.05	≯0.05
				hexaconazole	0.02	0.02	≯0.02
	Peas With Pods	74749	Guatemala	chlorothalonil	0.49	2	
		75240	Kenya	tebuconazole	0.13	2	
		75416	Peru	chlorothalonil	0.02	2	
				tebuconazole	0.01	2	
		74388	**Guatemala**	dimethoate	0.08	0.02	Part – breach
				omethoate	0.03	0.02	Part - breach
				dimethoate (sum)	**0.11**	**0.02**	**Sum - breach**
				chlorothalonil	0.01	2	
		75257	Kenya	chlorothalonil	0.08	2	
	Peas Without Pods	75406	Unknown	iprodione	0.09	0.3	Part

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				3,5-dichloraniline	0.01	0.3	Part
				iprodione	0.10	0.3	Sum
Stem	**Celery**	74354	Spain	chlorothalonil	0.03	10	
				difenoconazole	0.01	5	
		74407	Spain	chlorothalonil	0.05	10	
				difenoconazole	0.03	5	
				linuron	0.02	0.1	
		74519	Spain	azoxystrobin	0.25	5	
				difenoconazole	0.17	5	
				lambda-cyhalothrin	0.03	0.3	
				chlorothalonil	1.56	10	
		74823	Spain	difenoconazole	0.02	5	
		74868	**Ireland**	dimethoate	0.02	0.02	Part ≥0.02
				omethoate	0.01	0.02	Part
				dimethoate (sum)	**0.03**	**0.02**	**Sum - breach**
				boscalid	0.17	7	
				difenoconazole	0.01	5	
				linuron	0.10	0.1	
				pyraclostrobin	0.01	0.02	
		75200	**Ireland**	**dithiocarbamates**	**0.17**	**0.05**	**Breach**
				azoxystrobin	0.33	5	
				difenoconazole	0.02	5	
				linuron	0.02	0.1	
		75279	Ireland	difenoconazole	0.09	5	
				linuron	0.02	0.1	
		75380	Ireland	difenoconazole	0.01	5	
		75438	Ireland	difenoconazole	0.09	5	
		75441	Ireland	difenoconazole	0.01	5	
	Leek	74524	Holland	chlorothalonil	0.09	10	
		75199	Holland	chlorothalonil	0.01	10	
				tebuconazole	0.03	1	
				azoxystrobin	0.02	10	
				kresoxim-methyl	0.09	5	
				boscalid	0.02	5	
				difenoconazole	0.02	0.5	
Fungi	**Mushroom**	74642	Ireland	ortho-phenylphenol	0.02	0.05	
				carbendazim	0.19	1	
		74814	Ireland	ortho-phenylphenol	0.02	0.05	
				prochloraz	0.02	3	
		74893	Ireland	ortho-phenylphenol	0.01	0.05	
		74905	Ireland	prochloraz	0.02	3	
		75023	Ireland	prochloraz	0.03	3	
		75089	Ireland	ortho-phenylphenol	0.03	0.05	
		75362	Ireland	prochloraz	0.10	3	
		75440	Ireland	ortho-phenylphenol	0.02	0.05	
		75442	Ireland	prochloraz	0.02	3	

Table 7 provides a summary of the results for the processed fruit and vegetable commodities analysed in 2011 and the origin of the samples.

Table 7: Summary of processed fruit and vegetable samples in the 2011 monitoring programme

Class	Commodity	Number	Domestic	EU	Non EU	Unknown	ND	<MRL	>MRL
Citrus	Grapefruit juice	2	0	0	0	2	1	1	0
	Grapefruit tinned	1	0	0	1	0	1	0	0
	Orange juice	19	0	4	1	14	15	4	0
Pome	Apple juice	11	0	1	0	10	9	2	0
	Pear (tinned)	1	0	0	1	0	1	0	0
Stone	Cherry (tinned)	1	0	0	0	1	0	1	0
	Peach (tinned)	2	0	0	2	0	2	0	0
	Prune juice	1	0	0	0	1	0	1	0
Berries	Raisin	1	0	0	1	0	1	0	0
	Sultana	1	0	0	1	0	0	1	0
	Wine	10	0	3	7	0	4	6	0
	Strawberry (tinned)	1	0	1	0	0	0	1	0
Misc	Pineapple (processed)	3	0	0	2	1	3	0	0
	Pineapple juice	2	0	0	0	2	2	0	0
Bulb	Onion (processed)	1	0	0	1	0	1	0	0
Fruiting	Tomato juice	1	0	0	0	1	1	0	0
	Pepper (processed)	1	0	0	0	1	1	0	0
	Sweet corn (tinned)	1	0	0	0	1	1	0	0
Legume	Pea-pod (processed)	1	0	1	0	0	1	0	0
Oilfruit	Olive (tinned)	1	0	1	0	0	1	0	0
Fungi	Mushroom (processed)	1	0	0	0	1	1	0	0
Total		**63**	**0**	**11**	**17**	**35**	**46**	**17**	**0**
% Total			**0%**	**17.5%**	**27%**	**55.5%**	**73%**	**27%**	**0**

Just over a quarter (27%) of processed fruit contained detectable residues above the LOQ, which is significantly less than the percentage found in the unprocessed commodities. This is to be expected as processing methods, such as juicing, can significantly reduce the residue levels in the raw commodities. None of the processed vegetables contained detectable residues. There was no MRL exceedence detected in the processed samples.

Table 8 presents details of the levels of pesticide residues detected above the LOQ in the various processed fruit and vegetables, together with samples identification numbers, country of origin (where known) and the relevant MRL for each substance detected.

Table 8: Details of processed fruit and vegetables with residues > LOQ

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
Citrus	**Grapefruit**	74351	Unknown	thiabendazole	0.01	5	Juice
				imazalil	0.02	5	
	Orange	74350	Unknown	carbendazim	0.03	0.5	Juice
				imazalil	0.15	5	
				thiabendazole	0.03	5	Juice
		74626	Unknown	imazalil	0.02	5	Juice
		75321	Spain	imazalil	0.02	5	Juice
		75389	Spain	imazalil	0.01	5	
Pome	**Apple**	74400	Unknown	imazalil	0.01	2	Juice

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
		74427	UK	pirimicarb	0.02	2	Juice
Stone	**Cherry**	74395	Unknown	cypermethrin	0.05	2	Tinned
				carbendazim	0.03	0.5	
	Plum	75387	Unknown	iprodione	0.06	3	Juice
				carbaryl	0.12	0.05	Processing Factor (x5)
				3,5 dichloraniline	0.01	0.05	
Berries	**Table grape**	75357	Turkey	chlorpyrifos	0.01	0.5	Sultana
				myclobutanyl	0.02	1	
				propargite	0.04	7	
				boscalid	0.05	5	
				cyprodinil	0.13	5	
				flufenoxuron	0.08	1	
				indoxacarb	0.13	2	
				pyraclostrobin	0.02	1	
				pyrimethanil	0.36	5	
				fludioxonil	0.03	2	
				methoxyfenozide	0.02	1	
				lambda cyhlaothrin	0.1	0.2	
				cypermethrin	0.08	0.5	
				deltamethrin	0.02	0.2	
				fenvalerate	0.03	0.1	
				iprodione	0.15	10	
				metalaxyl	0.02	2	
				trifloxystrobin	0.02	5	
				azoxystrobin	0.04	2	
				triadimenol	0.03	2	Part
	Wine grape	75422	New Zealand	iprodione	0.02	10	Wine
				boscalid	0.02	5	
				cyprodinil	0.01	5	
				pyrimethanil	0.03	5	
		75425	United States	methoxyfenozide	0.04	1	Wine
		75426	Spain	carbendazim	0.07	0.5	Wine
		75427	Italy	iprovalicarb	0.01	2	Wine
				fenhexamid	0.01	5	
				pyrimethanil	0.03	5	
		75428	France	iprovalicarb	0.02	2	Wine
				carbendazim	0.02	0.5	
				dimethomorph	0.01	3	
				fenhexamid	0.01	5	
				pyrimethanil	0.01	5	
				thiophanate-methyl	0.02	3	
		75430	Australia	iprodione	0.05	10	Wine
	Strawberry	74698	Spain	triadimenol	0.02	0.5	Tinned
				cypermethrin	0.08	0.5	
				deltamethrin	0.02	0.2	
				fenvalerate	0.03	0.1	
				iprodione	0.15	10	
				metalaxyl	0.02	2	
				trifloxystrobin	0.02	5	
				azoxystrobin	0.04	2	
				triadimenol	0.03	2	

Pending the establishment at EU level of Annex VI to Regulation (EC) No 396/2005, which lists the processing factors that may be applied to the MRLs for processed products on a case-by-case basis, the MRL for the unprocessed commodity is used as a default. In the case of a sample of prune juice (Sample No. 75387), which was processed from plum, a processing factor of 5 was applied to the plum MRL of 0.05 mg kg^{-1}. This processing factor is the same as that adopted by the EU Standing Committee on the Food Chain and Animal Health for olive oil. Thus the residue detected at 0.12 mg kg^{-1} was not considered to be a breach.

Table 9 provides a summary of the results for the organically produced fruit commodities analysed in 2011 and the origin of the samples.

Table 9: Summary of organic fruit samples in the 2011 monitoring programme

Class	Commodity	Number	Domestic	EU	Non EU	Unknown	ND	<MRL	>MRL
Citrus	Grapefruit	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**0**
	clementine	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
	Orange	**3**	**0**	**3**	**0**	**0**	**2**	**1**	**0**
Pome	Apple	**6**	**1**	**3**	**2**	**0**	**6**	**0**	**0**
	Pear	**7**	**0**	**4**	**3**	**0**	**6**	**1**	**0**
Stone	Nectarine/Peach	**2**	**0**	**2**	**0**	**0**	**2**	**0**	**0**
Misc	Avocado	**2**	**0**	**0**	**2**	**0**	**2**	**0**	**0**
	Kiwi	**5**	**0**	**5**	**0**	**0**	**4**	**1**	**0**
	Banana	**2**	**0**	**0**	**2**	**0**	**2**	**0**	**0**
	Total	**29**	**1**	**18**	**10**	**0**	**26**	**3**	**0**
	%Total		**3.4%**	**62.1%**	**34.5%**	**0**	**89.7%**	**10.3%**	**0**

Table 10 provides a summary of the results for the organically produced vegetable commodities analysed in 2011 and the origin of the samples.

Table 10: Summary of organic vegetable samples in the 2011 monitoring programme

Class	Commodity	Number	Domestic	EU	Non EU	Unknown	ND	<MRL	>MRL
Root	Potato	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
	Carrot	**2**	**0**	**2**	**0**	**0**	**2**	**0**	**0**
Fruiting	Tomato	**3**	**0**	**2**	**1**	**0**	**3**	**0**	**0**
	Pepper	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**0**
	Cucumber	**2**	**2**	**0**	**0**	**0**	**2**	**0**	**0**
	Courgette	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
Brassica	Broccoli	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**0**
	Cauliflower	**2**	**0**	**2**	**0**	**0**	**1**	**1**	**0**
Leafy	Lettuce	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
	Rocket	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
	Spinach	**4**	**1**	**3**	**0**	**0**	**4**	**0**	**0**
Stem	Leek	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
	Total	**20**	**3**	**15**	**2**	**0**	**18**	**2**	**0**
	%Total		**15.0%**	**75.0%**	**10.0%**	**0**	**90.0%**	**10.0%**	**0**

In 2011, a total of 49 samples of fruit and vegetables, labelled as organic, were sampled and analysed for pesticide residues. Some 45 (91.8%) of the organic fruit and vegetable samples were taken from imported consignments, with 5 (10.2%) of the samples, (orange, pear, kiwi, broccoli and cauliflower), containing residues above the LOQ, none of which exceeded the MRL. The percentage of organic labelled samples found to contain pesticides (10.2%) was higher compared to previous years, (5% in 2009 and 8.3% in 2010).

Table 11 presents details of the levels of pesticide residues detected above the LOQ in the various organically produced fruit and vegetables, together with samples identification numbers, country of origin and the relevant MRL for each substance detected.

Table 11: Details of organic fruit and vegetables with residues > LOQ

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
Citrus	Orange	74363	Spain	molinate	0.01	0.05	organic
Pome	Pear	75084	Portugal	chlorpyrifos	0.01	0.5	organic
Misc	Kiwi	75293	Italy	pyridaben	0.01	0.5	organic
Brassica	Broccoli	74435	Spain	metalaxyl	0.01	0.2	organic
	Cauliflower	74986	United Kingdom	piperonyl butoxide	0.08	no MRL	organic

Notes
Part- Parent or metabolite as detected as part of the residue ldefinition set in Regulation (EC) No 396/2005
Sum - summed residue level in accordance with the residue definition and, if required, corrected for molecular weights
Breach is flagged when the level residue exceeds the MRL.

4.2 Routine monitoring results for cereals in 2011

In 2011, 145 samples of barley, oats and wheat and including 25 samples of processed cereals were analysed for up to 347 pesticides and metabolites using the multi-residue methods. In addition, 19 cereal samples were analysed for dithiocarbamate pesticides using the single residue method, and 63 were analysed for the growth regulators, chlormequat and mepiquat, using a method specific for these compounds.

Table 12 presents a summary of the results of the cereal samples, grouped by origin, taken in 2011.

Table 12: Summary of cereal samples from the 2011 monitoring programme

			Origin				Residues		
Class	**Commodity**	**Number**	**Domestic**	**EU**	**Non EU**	**Unknown**	**ND**	**<MRL**	**>MRL**
Cereal	Barley	39	39	0	0	0	28	11	0
	Oats	33	32	1	0	0	15	17	1
	Rice	15	0	3	8	4	12	3	0
	Wheat	32	18	13	1	0	5	27	0
Processed	Barley flakes	1	0	1	0	0	0	1	0
	Wheat flakes	2		2			2	0	0
	Wheat flour	22	0	2	0	20	4	17	1
Organic	Oat	1	1	0	0		1	0	0
	Total	**145**	**90**	**22**	**9**	**24**	**67**	**76**	**2**
	% of total		**62.1%**	**15.2%**	**6.2%**	**16.5%**	**46.2%**	**52.4%**	**1.4%**

Of the cereal samples analysed, 90 (62.1%) were of Irish origin and 31 (21.4%) were imported from known countries of origin (EU and non-EU), while the remaining 24 were of unknown origin. Just over half of the cereal samples analysed, 78 (53.8%), contained detectable pesticide residues above the LOQ, while 67 (46.2%) contained no detectable residues above the LOQ. Two cereal samples, an oat grain and a composite wheat flour sample contained residues above the MRLs.

Table 13 provides details of the unprocessed cereal samples in which pesticide residues were detected, together with the countries of origin, the level of residue detected and the relevant MRL.

Table 13: Details of cereal sample with residues > LOQ

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
Cereal	**Barley**	74499	Ireland	pirimiphos-methyl	0.02	5	
				chlormequat	0.11	2	
		74504	Ireland	boscalid	0.01	3	
		74505	Ireland	chlormequat	0.03	2	
		74562	Ireland	pirimiphos-methyl	0.04	5	
		74565	Ireland	chlormequat	0.11	2	
		74569	Ireland	chlormequat	0.05	2	
		74720	Ireland	mecoprop-p	0.01	0.05	
		75018	Ireland	boscalid	0.07	3	
				chlorothalonil	0.01	0.3	
		75266	Ireland	fenpropidin	0.01	0.5	
		75394	Ireland	boscalid	0.01	3	
		75398	Ireland	boscalid	0.02	3	
	Oats	74500	Ireland	pirimiphos-methyl	0.09	5	
				chlormequat	4.10	5	
		74503	Ireland	chlormequat	2.23	5	
		74507	**Ireland**	tebuconazole	0.03	2	
				chlormequat	**8.30**	**5**	**Breach**
		74508	Ireland	chlormequat	4.10	5	
		74555	Ireland	chlormequat	2.10	5	
		74557	Ireland	chlormequat	3.90	5	
		74560	Ireland	pirimiphos-methyl	0.02	5	
				chlormequat	2.90	5	
		74566	Ireland	pirimiphos-methyl	0.03	5	
				chlormequat	2.50	5	
		74570	Ireland	chlormequat	2.10	5	
		74571	Ireland	chlormequat	2.80	5	
		75016	Ireland	pyraclostrobin	0.01	0.3	
		75034	Ireland	tebuconazole	0.01	2	
				pyraclostrobin	0.02	0.3	
		75038	Ireland	tebuconazole	0.01	2	
		75039	Ireland	boscalid	0.04	3	
				pyraclostrobin	0.01	0.3	
		75041	Ireland	dimethoate	0.01	0.02	
		75042	Ireland	tebuconazole	0.01	2	
				pyraclostrobin	0.01	0.3	
		75043	Ireland	pyraclostrobin	0.01	0.3	
		75045	Ireland	pyraclostrobin	0.02	0.3	
	Rice	75173	India	buprofezin	0.01	0.5	
		75175	Spain	piperonyl butoxide	0.71	no MRL	
				tebuconazole	0.02	2	
				deltamethrin	0.09	2	
		75373	India	propiconazole	0.02	0.05	
				buprofezin	0.01	0.5	
	Wheat	74501	Ireland	chlormequat	0.31	2	
		74502	Ireland	chlormequat	0.21	2	
		74506	Ireland	cypermethrin	0.34	2	
				chlormequat	0.34	2	
		74554	Ireland	chlormequat	0.20	2	
		74556	Ireland	chlormequat	0.34	2	
				mepiquat	0.05	2	
		74559	Ireland	chlormequat	0.22	2	
		74561	Ireland	chlormequat	0.25	2	
		74564	Ireland	chlormequat	0.16	2	
		74568	Ireland	pirimiphos-methyl	0.03	5	
				chlorothalonil	0.01	0.1	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				piperonyl butoxide	0.02	no MRL	
				chlormequat	0.14	2	
		74572	Ireland	chlormequat	0.13	2	
		75298	Ireland	boscalid	0.01	0.5	
		75299	France	permethrin	0.03	0.05	
				chlorpyrifos-methyl	0.01	3	
				deltamethrin	0.22	2	
				pirimiphos-methyl	0.20	5	
				piperonyl butoxide	1.33	no MRL	
		75300	Ireland	permethrin	0.02	0.05	
		75302	United Kingdom	pirimiphos-methyl	0.53	5	
				chlorpropham	0.01	0.02	
		75303	Ireland	piperonyl butoxide	0.03	no MRL	
		75304	United Kingdom	pirimiphos-methyl	0.81	5	
				piperonyl butoxide	0.03	no MRL	
		75305	Ireland	deltamethrin	0.02	2	
				chlorpropham	0.02	0.02	
				permethrin	0.04	0.05	
				piperonyl butoxide	0.14	no MRL	
		75306	Ireland	piperonyl butoxide	0.02	no MRL	
		75308	France	deltamethrin	0.23	2	
				pirimiphos-methyl	0.23	5	
				piperonyl butoxide	1.43	no MRL	
		75445	United Kingdom	pirimiphos-methyl	0.94	5	
				chlorpropham	0.02	0.02	
		75446	United Kingdom	piperonyl butoxide	0.01	no MRL	
				pirimiphos-methyl	0.03	5	
		75448	United Kingdom	piperonyl butoxide	0.21	no MRL	
				deltamethrin	0.04	2	
		75449	United Kingdom	piperonyl butoxide	0.04	no MRL	
				pirimiphos-methyl	0.54	5	
		75450	France	piperonyl butoxide	1.06	no MRL	
				deltamethrin	0.20	2	
				pirimiphos-methyl	0.11	5	
		75451	France	piperonyl butoxide	1.07	no MRL	
				deltamethrin	0.19	2	
				pirimiphos-methyl	0.02	5	
		75452	Germany	piperonyl butoxide	0.06	no MRL	
				pirimiphos-methyl	0.03	5	
		75454	United Kingdom	pirimiphos-methyl	0.03	5	

Table 14 provides details of the processed cereal samples in which pesticide residues were detected, together with the countries of origin, the level of residue detected and the relevant MRL.

Table 14: Details of processed cereal samples with residues > LOQ

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
	Barley flakes	75353	UK	cyprodinil	0.01	3	
	Wheat flour	74673	Unknown	pirimiphos-methyl	0.01	5	
				chlormequat	0.16	2	
		74674	Unknown	chlormequat	0.12	2	
		74676	Italy	piperonyl butoxide	0.02	no MRL	
				pirimiphos-methyl	0.23	5	
		74677	Unknown	piperonyl butoxide	0.01	no MRL	

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
				pirimiphos-methyl	0.11	5	
				chlormequat	0.23	2	
		74678	Unknown	piperonyl butoxide	0.19	no MRL	
				deltamethrin	0.02	2	
				pirimiphos-methyl	0.02	5	
				chlormequat	0.14	2	
		74680	Unknown	chlormequat	0.11	2	
		75064	Unknown	chlorpropham	0.09	0.02	Note 1
				pirimiphos-methyl	0.03	5	
		75065	**Unknown**	**chlorpropham**	**0.33**	**0.02**	**Note 1**
				pirimiphos-methyl	0.05	5	
		75066	Unknown	chlorpropham	0.13	0.02	Note 1
				pirimiphos-methyl	0.02	5	
		75067	Unknown	chlorpropham	0.09	0.02	Note 1
				pirimiphos-methyl	0.04	5	
		75073	Unknown	chlorpropham	0.22	0.02	Note 1
		75074	Unknown	chlorpropham	0.15	0.02	Note 1
		75075	Unknown	chlorpropham	0.13	0.02	Note 1
		75162	Unknown	piperonyl butoxide	0.04	no MRL	
		75163	Unknown	piperonyl butoxide	0.26	no MRL	
				deltamethrin	0.05	2	
				pirimiphos-methyl	0.02	5	
				chlormequat	0.06	2	
		75164	Unknown	chlorpropham	0.02	0.02	[0.017]
				piperonyl butoxide	0.03	no MRL	
				permethrin	0.03	0.05	
				pirimiphos-methyl	0.03	5	
				chlormequat	0.05	2	
		75165	Unknown	pirimiphos-methyl	0.04	5	
				chlormequat	0.04	2	
		75166	Unknown	chlormequat	0.06	2	

Note 1: The 7 wheat flour samples containing chloropropham exceeding the MRL came from the same consignment. Consequently, the samples were considered as a composite sample with a single breach, rather than as 7 different breaches. Sample 76065 which had the highest residue level is reported as the sample with the MRL exceedence.

4.3 Routine monitoring results for food of animal origin

A total of 424 samples of food of animal origin, comprising 309 animal fats, 59 milk, 13 egg, 15 poultry meat, 15 liver and 13 honey were tested for the presence of pesticide and contaminant residues.

While the monitoring programme for food of animal origin provides for the analysis of samples for either organochlorine or organophosphorus pesticides and PCBs according to Directive 96/23/EC, all 424 samples of food of animal origin were routinely analysed for both organochlorine and organophosphate pesticides together with other pesticides in the multi-residue screens using gas chromatography (GC) and liquid chromatography (LC) and mass detection bringing the analytical scope to 354 analytes.

Liver and poultry meat were added to the programme as part of the requirement for the EU coordinated programme for 2011 set in Regulation (EU) No 914 /2010.

With the exception of 8 samples, including 3 of unknown origin, all the samples of food of animal origin analysed in 2011 were of domestic origin.

Table 15 provides a summary the source and the results of all food of animal origin samples taken in 2011.

Table 15: Summary of source and results of food of the animal origin samples in 2011

			Origin				Residues		
Class	**Commodity**	**Number**	**Domestic**	**EU**	**Non EU**	**Unknown**	**ND**	**<MRL**	**>MRL**
Bovine	fat	121	121	0	0	0	118	3	0
Cervine	fat	13	13	0	0	0	13	0	0
Equine	fat	8	8	0	0	0	7	1	0
Ovine	fat	82	82	0	0	0	78	4	0
Porcine	fat	60	60	0	0	0	60	0	0
Poultry	fat	25	25	0	0	0	23	2	0
Bovine	liver	1	1	0	0	0	1	0	0
Ovine	liver	14	13	1	0	0	14	0	0
Poultry	meat	15	10	4	0	1	15	0	0
Poultry	egg	13	13	0	0	0	13	0	0
Bee	honey	13	11	0	0	2	12	1	0
Bovine	milk	59	59	0	0	0	58	1	0
	Total	**424**	**416**	**5**	**0**	**3**	**412**	**12**	**0**
	% Total		**98.1%**	**1.2%**	**0%**	**0.7%**	**97.2%**	**2.8%**	**0%**

Overall, 12 samples (2.8%) had detectable residues and one honey sample, while breaching the MRL set in Regulation (EC) No 396/2005, was compliant with Regulation (EU) No 37/2010[10], which establishes the MRLs for compounds used as veterinary medicine products. These samples of food of animal origin were taken in the framework of Directive 96/23/EC, rather than Regulation (EC) No 396/2005 which controls residues of products used as plant protection products.

No pesticide residue above the limit of quantification (LOQ) was detected in any of the cervine, porcine, egg, liver or poultry meat samples in 2011.

Table 16 provides details of the 12 samples in which pesticide residues were detected, together with origin, the identity and level of residue detected and the relevant MRLs.

Table 16: Details of food of animal origin samples with residues > LOQ

Species	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
Bovine	fat	800073	Ireland	ppdde	0.07	1	
		800075	Ireland	lambda-cyhalothrin	0.04	0.5	Note 1
		800083	Ireland	lambda-cyhalothrin	0.03	0.5	Note 1
				permethrin	0.07	0.5	Note 1
Equine	fat	800087	Ireland	hexachlorobenzene	0.01	0.2	
Ovine	fat	800181	Ireland	diazinon	0.01	0.05	Note 1
		800231	Ireland	hexachlorobenzene	0.01	0.2	
		800283	Ireland	diazinon	0.02	0.7	Note 1
		800309	Ireland	diazinon	0.02	0.7	Note 1
Poultry	fat	800200	Ireland	lindane	0.01	0.02	
				dieldrin	0.04	0.2	
		800202	Ireland	dieldrin	0.01	0.2	

[10] Regulation (EU) No 37/2010 OJ L 15.1 of 20.1.2010

Species	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes
Bees	honey	79189	Unknown	coumaphos	0.03	0.1	Note 2
Bovine	milk	800154	Ireland	lambda-cyhalothrin	0.02	0.05	Note 1
				iprovalicarb	0.02	0.05	
				bifenthrin	0.01	0.01	≯0.01

Note 1: The MRL established in Regulation (EU) No 37/2010 was applied.
Note 2: Sample was taken at the end of 2010 and analysed in 2011. The MRL of 0.1 mg kg^{-1}set in Regulation (EU) No 37/2010 was applied.

5 ENFORCEMENT AND FOLLOW UP SAMPLES

In contrast to the routine sampling programme, which does not specify the origin of the produce to be sampled, the enforcement programme is targeted at the producers of specific commodities as follow up to detected MRL breaches, non-registered uses detected in domestic samples and import controls carried out under Commission Regulation (EC) No 669/2009.

While a targeted or enforcement sample is being analysed, the consignment is detained pending receipt of the analytical result. Consignments of products shown to be non-compliant are removed from the market and legal or administrative proceedings are initiated.

In 2011, 29 targeted samples were taken as follow up to non-compliant consignments detected in 2010 and 2011 and to enforce the import controls under Commission Regulation (EC) No 669/2009.

A summary of the results and the origin of the consignments are provided in Table 17.

Table 17: Summary of results of all targeted samples taken in 2011

			Origin				Residues		
Class	**Commodity**	**Number**	**Domestic**	**EU**	**Non EU**	**Unknown**	**ND**	**<MRL**	**>MRL**
Targeted Fruit	Clementine	1	0	0	1	0	0	1	0
	Mandarin	1	0	0	1	0	0	1	0
	Orange	2	0	0	2	0	0	2	0
	Satsuma	1	0	0	1	0	0	1	0
	Table grape	1	0	0	1	0	0	1	0
	Strawberry	1	1	0	0	0	0	1	0
Targeted Vegetable	Turnip	1	1	0	0	0	1	0	0
	Parsnip	2	2	0	0	0	0	2	0
	Marrow	1	1	0	0	0	1	0	0
	Pepper	4	1	0	3	0	4	0	0
	Tomato	1	1	0	0	0	0	1	0
	Lettuce	2	2	0	0	0	0	2	0
	Mushroom	2	2	0	0	0	1	1	0
Cereal	Barley	1	1	0	0	0	1	0	0
	Oats	2	2	0	0	0	0	0	2
	Wheat	6	4	2	0	0	4	2	0
	Total	29	18	2	9		12	15	2
	% Total		62.1%	6.9%	31.0%		41.4%	51.7%	6.9%

5.1 Targeted sampling of fruit & vegetables samples

As a follow-up to the 28 MRL breaches which were detected in 2010, 7 samples (4 imported and 3 domestic) were taken in 2011. The other planned samples, based on non-compliant results from 2010, were not taken because produce from the specific origins were not located or available on the Irish market in 2011. There was no repeated non-compliance and no further actions were required.

Regarding the 12 non-registered uses of plant protection products detected during the 2010 monitoring programme, 9 targeted samples of vegetables were taken and analysed in 2011. There was no repeated non-compliance and no further action was required.

Controls on imports into the EU from specified third countries, listed in the Annex to Regulation (EC) No 669/2009, resulted in the sampling of 3 consignments of Turkish peppers and 2 consignments of

Egyptian oranges. No non-compliance was detected and the five consignments were permitted onto the EU market.

Table 18 presents the results of the 20 targeted fruit and vegetable samples taken in 2011 with details of origin, residues detected, the relevant MRL and the reasons for the targeting.

Table 18: Details of targeted fruit and vegetables taken in 2011

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes for targeting
Citrus Fruit	**Clementine**	75128	Peru	chlorpyrifos	0.14	2	74042 (2010 breach)
				imazalil	2.55	5	
				pyrimethanil	0.02	10	
				thiabendazole	2.09	5	
				2,4-D	0.16	1	
	Mandarin	75076	Peru	chlorpyrifos	0.01	2	73753 (2010 breach)
				o-phenylphenol	2.56	5	
				iprodione	0.02	1	
				imazalil	0.52	5	
				thiabendazole	0.29	5	
	Orange	74563	Egypt	o-phenylphenol	0.89	5	Import 669/2009
				imazalil	1.36	5	
				chlorpyrifos	0.08	0.3	
				thiabendazole	1.20	5	
		74603	Egypt	imazalil	1.50	5	Import 669/2009
				thiabendazole	0.02	5	
				chlorpyrifos	0.03	0.3	
				o-phenylphenol	0.87	5	
	Satsuma	74898	Peru	pyrimethanil	1.96	10	73753 (2010 breach)
				thiabendazole	1.79	5	
				2,4-D	0.21	1	
				imazalil	4.49	5	
Berries	**Grape**	74668	India	pyraclostrobin	0.01	1	73553 (2010 breach)
				lambda-cyhalothrin	0.03	0.2	
				triadimenol	0.02	2	
				myclobutanyl	0.01	1	
				azoxystrobin	0.03	2	
	Strawberry	75031	Ireland	iprodione	0.63	15	73988 non registered use
				azoxystrobin	0.16	10	
				myclobutanyl	0.14	1	
				mepanipyrim	0.05	2	
				pyrimethanil	0.24	5	
				fenpropimorph	0.17	1	
Root Veg	**Parsnips**	75020	Ireland	boscalid	0.04	1	73467 non registered use
		74612	Ireland	boscalid	0.02	1	73604 non registered use
	Turnip	74849	Ireland	none detected			73775 (2010 breach)
Fruiting Veg	**Tomato**	75057	Ireland	chlorothalonil	0.11	2	73804 non registered use
				fenhexamid	0.01	1	
	Marrow	75063	Ireland	none detected			74080 (2010 breach)

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes for targeting
	Pepper	74722	Ireland	None detected			73709 non registered use
		74433	Turkey	None detected			Import 669/2009
		74725	Turkey	None detected			Import 669/2009
		74822	Turkey	None detected			Import 669/2009
Leafy Veg	**Lettuce**	74356	Ireland	pirimicarb	0.17	5	73432 (2010 breach)
				pirimicarb desmethyl	0.33	5	
				pirimicarb (sum)	0.52	5	Sum
				boscalid	0.03	10	
				cyprodinil	0.30	10	
				fenhexamid	1.94	40	
				fludioxonil	0.38	10	
		75019	Ireland	piperonyl butoxide	0.03	no MRL	73932 non registered use
				boscalid	0.04	10	
Fungi	**Mushroom**	74862	Ireland	None detected			73969 non registered use
		75236	Ireland	o-phenylphenol	0.01	0.05	74015 non registered use
				prochloraz	0.01	3	

5.2 Targeted sampling of cereals

As a follow up to an oat sample (No 74507) containing chlormequat above the MRL in 2011, two targeted samples of oats were analysed and were also found to have excessive levels of chlormequat. The remainder of the crop, originally destined to be used as feed, was instead diverted for use as biofuel.

Following the detection of chlorpropham in wheat flour sampled in a retail outlet in 2011, 6 follow up wheat samples and a barley sample were analysed and the source of the residue was traced to a consignment of wheat which originated in the United Kingdom. The remainder of the consignment was removed from the market. While there was no unacceptable risk to consumers, the non-compliant flour was removed from the human food chain and was used instead in the production of pet food.

Following the PCB/dioxin food incident that occurred in late 2008, when a porcine sample was detected with high levels of PCB congeners and subsequently was found to contain unacceptable levels of polychlorinated dioxins and dibenzofurans, a follow up programme to monitor PCB levels in animal feeds was put in place in 2009, 2010 and 2011. Two hundred and ten samples feed and cereal samples were taken by the Feedingstuffs Fertilisers, Grain and Poultry Division of DAFM for PCB analysis. No detectable level of PCB was found in any of the samples analysed.

Table 19 lists the 9 targeted cereal samples taken in 2011 with details of origin, residues detected, the relevant MRL and the reasons for the targeting.

Table 19: Details of all targeted cereal samples taken in 2011

Type	Commodity	Sample ID.	Origin	Pesticide	Residue mg kg^{-1}	MRL	Notes for targeting	
Cereal	Barley	74618	Ireland	none detected			74507 (2011 breach)	
	Oats	**74604**	**Ireland**	**chlormequat**	**14.90**	**5**	**74507 (2011 breach)**	
		74605	**Ireland**	**chlormequat**	**16.30**	**5**	**74507 (2011 breach)**	
	Wheat	74619	Ireland	chlormequat	0.53	2	74605 (2011 breach)	
		75116	UK	chlorpropham	0.46	0.02	75065 (2011 breach)	Note 1
		75115	Ireland	None detected			75065 (2011 breach)	
		75117	Ireland	None detected			75065 (2011 breach	
		75118	Ireland	None detected			75065 (2011 breach)	
		75119	France	None detected			75065 (2011 breach)	

Note 1: Sample was taken as part of the internal control procedure at the mill and was not sampled in accordance with the sampling Directive 2002/63/EC. The breach is regarded as indicative as there was none of the original wheat consignment remaining.
Sum: Sum of Pirimicarb and Pirimicarb desmethyl expressed as Pirimicarb

5.3 Targeted and statutory sampling of food of animal origin

There was no targeted sampling of food of animal origin for pesticide residue in 2011, as no MRL breach was detected in these samples in 2010.

5.4 Organic labelled samples with detected pesticide residues

There were no MRL breaches but the results and available details on the 5 samples which contained residues above the LOQ were forwarded, through the Organic Unit of DAFM, to the EU Organic Farming Information System with a view to follow up investigations being carried out in the countries of origin.

6 DISCUSSION

The total number of samples analysed in the Pesticide Control Laboratory increased from 1,410 in 2008 to 1518 in 2011. Over the same period, the mean of 59% of samples were without detectable residues, varying from 62% in 2009 to 55% in 2011.

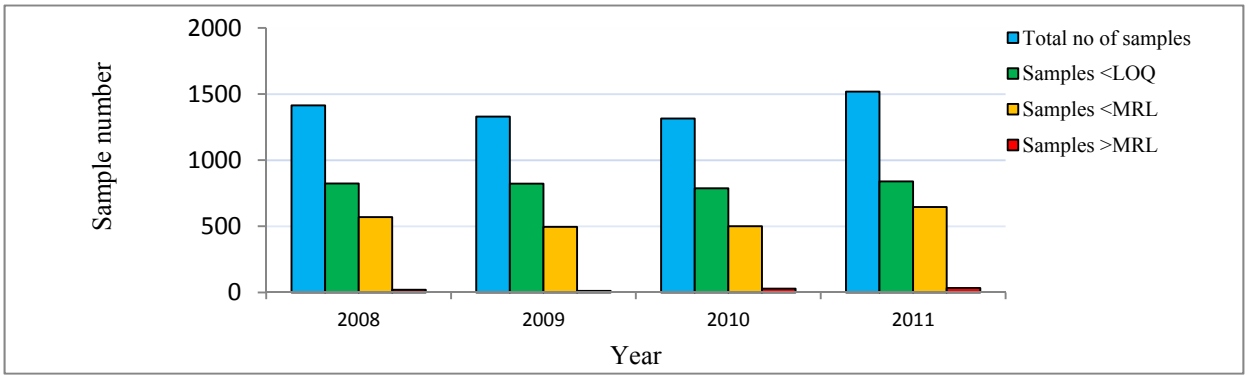

Figure 1: The number of samples of all commodities analysed per annum from 2008-2011 and number of samples with residues <LOQ, <MRL and >MRL.

Figure 1 indicates a small decrease in the number of samples without detectable residues in 2011. This is possibly due to the increases in the analytical scopes and sensitivity of the various single and multi residue methods.

There has been a very significant increase over the past 3 years in the number of substances in the analytical screen used for all foods at an average of 350 substances

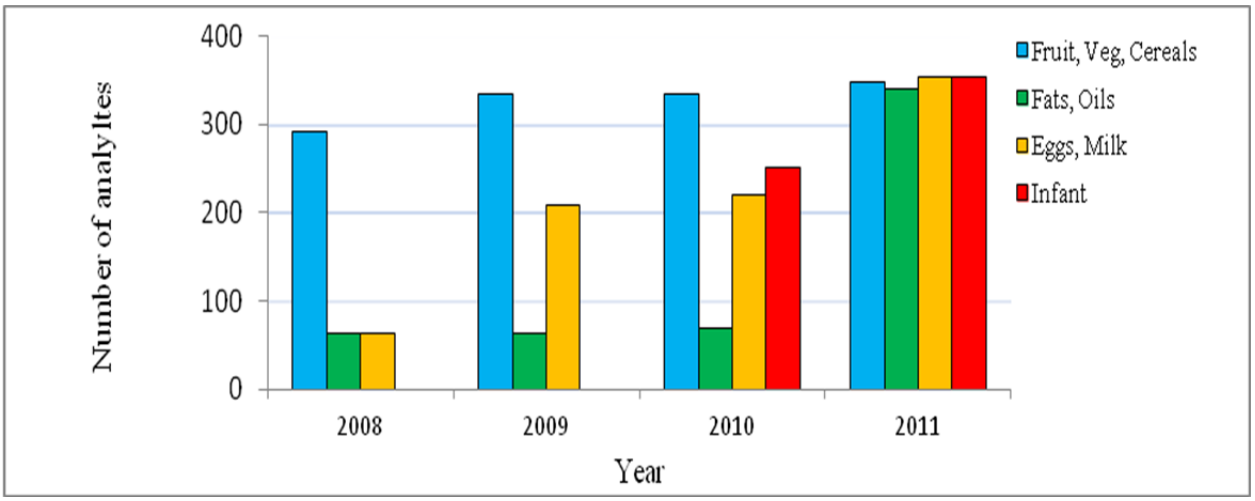

Figure 2: Number of analytes (pesticides and metabolites) in the multi analytical scopes for the various matrices from 2008 to 2011

Figure 2 indicates graphically, that 347 pesticides and metabolites were in the analytical scope for the fruit, vegetable and cereal method in 2011, an increase of 13 over 2010. Likelwise, the 340 pesticides and metabolites in the analytical scope for the fat/oil method represents a significant increase from 69 in 2010. A 3rd multiresidue method, with a scope of 354 pesticide and metabolites was applied to

milk, egg (an increase from 220 in 2010) and infant formula samples (an increase from 254 in 2010). Details of the scopes and the limits of quantitation for the different analytical methods used in the Pesticide Control Laboratory (PCL) listing pesticides and metabolites are in Annex IV of this report.

6.1 Fruit and vegetables

Of the 880 fruit and vegetables sampled routinely, 445 were unprocessed fruit products, 56 were processed fruit products and 29 were organic fruits. The remaining 350 samples comprised of 323 unprocessed vegetables, 7 processed vegetables and 20 organic vegetables. A further 20 fruit and vegetable products were targeted for analysis. Some 308 samples (35%) contained no detectable pesticide residue, 543 samples (61.7%) contained one or more detectable residues at or below the MRL and 29 samples (3.3%) contained residues in excess of EU MRLs.

Despite an increase in the number of pesticides being sought by the laboratory and a general lowering of the LOQs since 2008, the percentage of samples with detectable residues has remained broadly consistent at circa 60%. Since 2008, the percentages of MRL breaches detected in the fruit and vegetables were 2.2% in 2008, 1.3% in 2009, 3.3% in 2010 and 3.3% in 2011. Many MRLs have changed during that period; some have decreased, such as when authorised uses are not supported, while others have increased, for example, where new or modified uses in the EU and import tolerances were granted. See Section 6.4 for enforcement and follow-up and Section 6.5 for consumer risk assessments relating to the exceedances detected in 2011.

Overall, MRLs, already set at the limit of quantitation, are being set to even lower levels following reviews of existing MRLs since 2010 under Article 12 of Regulation (EC) No 396/2005. Figure 3 provides a graphic display of the number of samples of fruit and vegetables analysed from 2008-2011 and the residues detected below the LOQ, below the MRL and above the MRL.

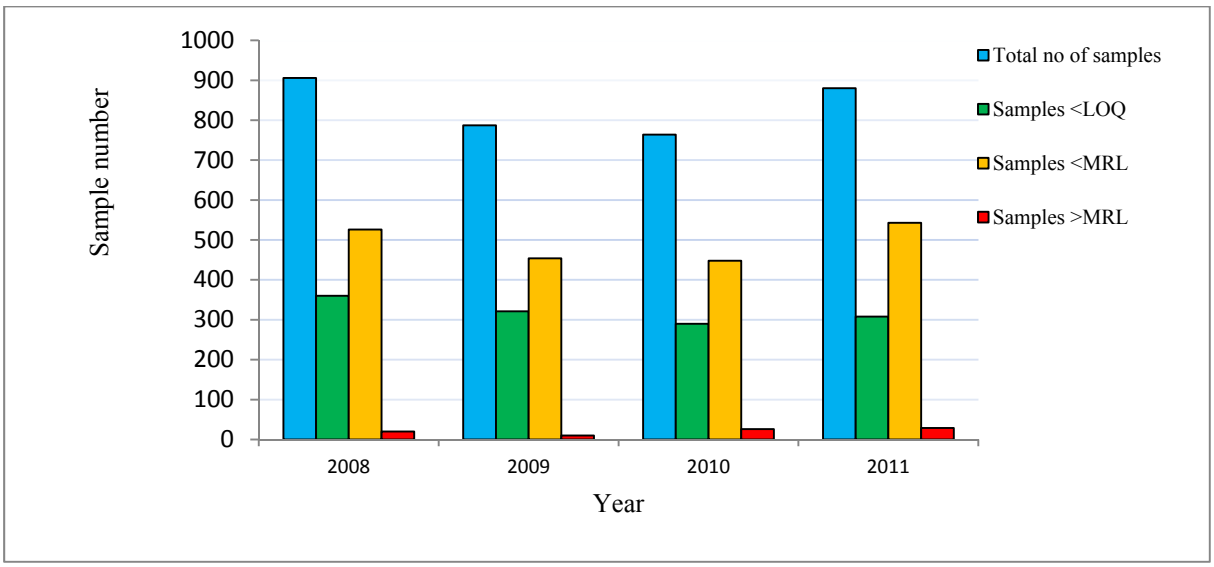

Figure 3: Number of samples of fruit and vegetables with residues <LOQ, <MRL and >MRL from 2008 to 2011

6.1.1 Most frequently found pesticides in fruit & vegetables

Table 20 identifies, in order of frequency, the 10 most frequently detected pesticides and the fruit and vegetable commodities on which they are most frequently found.

Table 20: Ten most frequently detected peticides in fruit and vegetables

Pesticide	Frequency no	% Frequency	Commodities detected in
Imazalil	149	16.9%	Citrus and pome fruits
Thiabendazole	113	12.8%	Citrus and pome fruits
Chlorpyrifos	106	12.0%	Citrus, pome fruits and table grapes
Iprodione	78	8.9%	Pome, stone fruits, table grapes, and berries
Boscalid	76	8.6%	Pome fruits, berries and lettuce
Fludioxonil	64	7.3%	Apples
Fenhexamid	57	6.5%	Berries, stone fruit and kiwi
Ortho-Phenylphenol	55	6.3%	Citrus fruit
Azoxystrobin	53	6.0%	Banana and strawberries
pyrimethanil	46	5.2%	Citrus, some fruits and berries

The majority of the pesticides were detected on pome and citrus fruits. The most frequently detected pesticides were the fungicidal substances, imazalil and thiabendazole, which are used mainly in post-harvest treatments and were mainly found in/on citrus fruit and, to a lesser extent, on pome fruit.

The most commonly detected insecticide was the organophorophous pesticide, chlorpyrifos, which was detected mainly in citrus and, to a lesser extent, in pome fruit and table grapes.

Iprodione was found on a variety of commodities, such as pome and stone fruits, table grapes and other berries. Boscalid was most commonly detected pesticide in apples, lettuce, strawberries and berries.

In the limited number of samples (166) analysed using single residue methods, dithiocarbamates were detected in 19 samples analysed for these substances. Amitraz, , was not detected in any of the 70 samples analysed as part of a special EU investigation, while chlormequat and mepiquat were not detected in any of the 106 samples of fruit and vegetables analysed using the methods specific for these pesticides.

Overall, there were 121 different pesticides and metabolites detected in fruit and vegetable samples during 2011. This represents 34.5% of the 362 pesticides and metabolites sought by the PCL laboratory using all analytical methods in. Currently the EU Pesticide database at http://ec.europa.eu/sanco_pesticides/public/index.cfm?event=substance.selection contains information on MRLs and authorised uses in the EU for up to 514 different active substances.

6.1.2 Countries of origin

The 880 fruit and vegetable samples taken in 2011 comprised 180 (20.7%) of domestic origin, 359 (40.8%) imported from other EU countries, 295 (33.5%) imported from countries outside of the EU and a further 44 (5%) of unknown origin. Most of the samples of unknown origin were processed products. At 20.7%, most of fruit and vegetables sampled in the monitoring plan were of domestic origin, with vegetables being the main contributor to the total. Spain, at 20.5%, was the next most important source of sampled produce, mainly due to the amount of fruit imported into Ireland from Spain.

Table 21 provides a breakdown, by country of origin, the number of samples, the percentage of samples taken; the percentage of samples with residues below the LOQ (limit of quantitation), at or below the MRL and above the MRL for the 10 countries of origin most frequently sampled. These 10 countries account for over 70% of all samples of fruit and vegetables taken in 2011. Table 21 also shows that nearly half (47.8%) of the samples of domestic produce, mainly vegetables, have no detectable residues, compared to a quarter (25.0%) of the samples of Spanish origin. It is further noted that samples from countries exporting commodities which normally receive post-harvest treatments have a significantly lower frequency of non-detectable residues.

Table 21: Countries of origin of fruit and vegetables most frequently sampled with residues < LOQ, < MRL and > MRL

Countries of origin	Number of samples	% of fruit & vegetable samples	% < LOQ	% < MRL	% > MRL
Ireland	182	20.7%	47.8%	48.4%	3.8%
Spain	180	20.5%	25.0%	74.4%	0.6%
South Africa	46	5.2%	26.1%	71.7%	2.2%
France	44	5.0%	18.2%	77.3%	4.5%
Italy	41	4.7%	56.1%	43.9%	0.0%
United Kingdom	38	4.3%	50.0%	47.4%	2.6%
Chile	36	4.1%	22.2%	75.0%	2.8%
Morocco	29	3.3%	10.3%	79.3%	10.3%
Netherlands	24	2.7%	20.8%	79.2%	0.0%
Brazil	22	2.5%	22.7%	77.3%	0.0%

6.1.3 Multiple Residues

Of the 880 fruit and vegetable samples analysed in 2011, 308 (38%) samples contained residues at less than the LOQ and 176 (20%) contained residue of a single pesticide. The remaining 396 samples (42%) contained two or more pesticides in a single sample.

Table 22 provides a breakdown of the frequency of multiple residues and the commodities with two or more different pesticides found in a single sample. A sample of sultanas was found to contain 20 different pesticides - the highest number of multiple pesticides detected in a single sample during 2011. It is likely that the sampled consignment comprised of sultanas from a number of growers, each following different crop protection programmes and the sample should be considered as a composite sample from different sources. Strawberries and pears frequently contained high numbers of multiple residues, while table grapes, plums and rocket were also sources of eight or more different pesticides.

Table 22: Number of samples with more than 2 different pesticide residues detected in the fruit and vegetables

Number of pesticide residues	Number of samples	Commodites detected with 8 or more different pesticides
2	130	
3	97	
4	68	
5	41	
6	27	
7	20	
8	6	Pear (2) plum (1) grape (1) strawberry (1) rocket (1)
9	2	grape (1) strawberry (1)

Number of pesticide residues	Number of samples	Commodites detected with 8 or more different pesticides
10	1	pear
11	1	strawberry
12	1	pear
14	1	strawberry
20	1	sultana

6.2 Cereals

Of the 145 cereal and processed cereal samples analysed in the 2011 programme, no detectable pesticide residues were found in 67 (46%), a reduced frequency compared to previous years – 81% in 2008, 61% in 2009 and 75% in 2010. This may, in part, be due to the increase in the analytical scope from 292 analytes in 2008 to 347 analytes for the single and multi residue methods in 2011. Over 52% of the samples contained residues above the LOQ but below the MRL, while 2 (1.4%) samples contained residues exceeding the MRL. See Section 6.4 for enforcement and follow-up and Section 6.5 for consumer risk assessments relating to these exceedances.

Figure 4 provides a graphic display of the number of samples of cereals analysed from 2008 to 2011 and a summary of the findings.

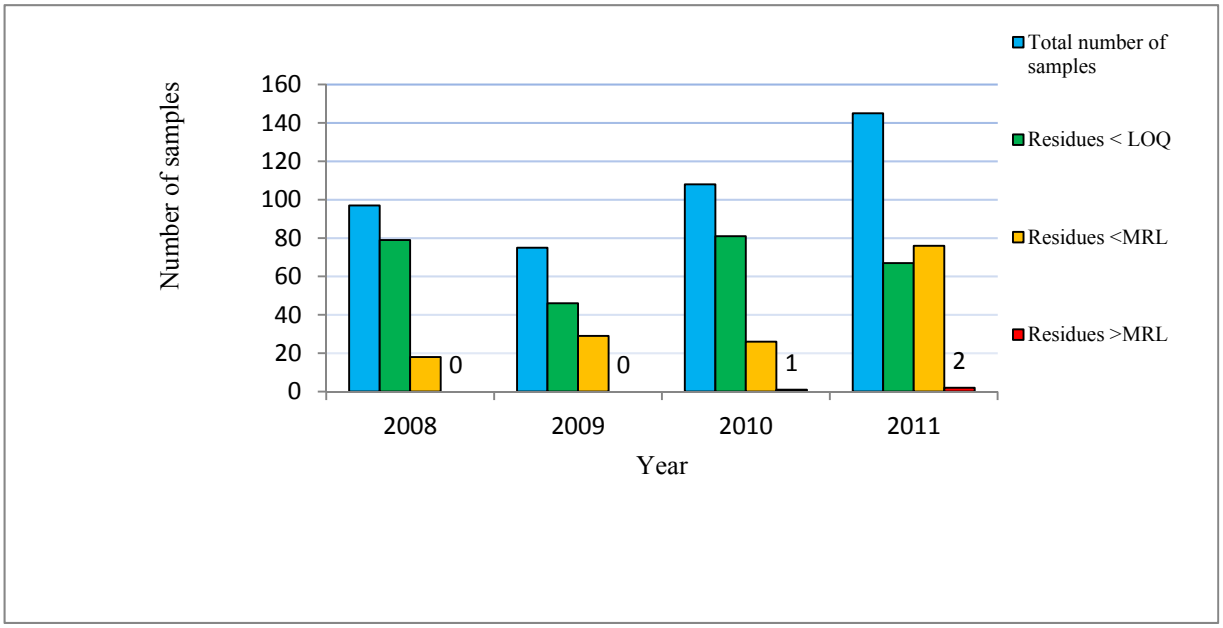

Figure 4: Number of cereal samples with residues <LOQ, <MRL and >MRL from 2008 to 2011

Chlormequat, authorised as a growth promoter, was the most frequently detected pesticide (52.4%), because just 63 (43.4%) samples were analysed for chlormequat using the single residue method. Pirimiphos-methyl, authorised for use as post-harvest treatment of cereals in stores, was the second most frequently detected pesticide in 2011 and was the most commonly detected in previous years. In 2011, a number of samples were taken at the point of delivery and prior to storage, which may explain the reduction in the frequency of detection of pirimiphos-methyl.

Table 23 identifes the 10 most frequently detected pesticides in cereal and processed cereal samples in 2011, the number of samples analysed for those pesticides and the frequency of detection of residues.

Table 23: Ten most frequently detected pesticides in the cereal and processed cereal samples in 2011

Pesticide	No. samples analysed	Frequency no	% Frequency
Chlormequat	63	33	52.4%
Pirimiphos-Methyl	145	28	19.3%
Chlorpropham	145	11	7.6%
Deltamethrin	145	9	6.2%
Pyraclostrobin	145	6	4.1%
Boscalid	145	6	4.1%
Tebuconazole	145	5	3.4%
Permethrin	145	4	2.8%
Buprofezin	145	2	1.4%

6.3 Food of animal origin

Of the 424 food of animal origin samples analysed in 2011, 412 (97.2%) contained residues at less than the LOQ. Half of the samples containing residues above the LOQ but less than the MRL were kidney fat samples. These samples were collected as part of the national residue plan for food of animal origin under Directive 96/23/EC. No sample contained residues in excess of the MRL, therefore, no enforcement or consumer risk assessments were triggered..

The analytical scope remained unchanged between 2008 and 2010, while the percentage of kidney fat samples found to contain residues was 7.9%, 3.6%, and 4.2% for 2008, 2009 and 2010 respectively. In 2011, the percentage of kidney fat samples from various animal species found to conatin residues decreased further to 2.8%, while there was a significant increase in the analytical scope from 69 to 340 pesticides, metabolites and contaminants. Figure 5 illustrates the kidney fat samples in the food of animal origin programme and indicates a downward trend in the number of samples with detectable residues.

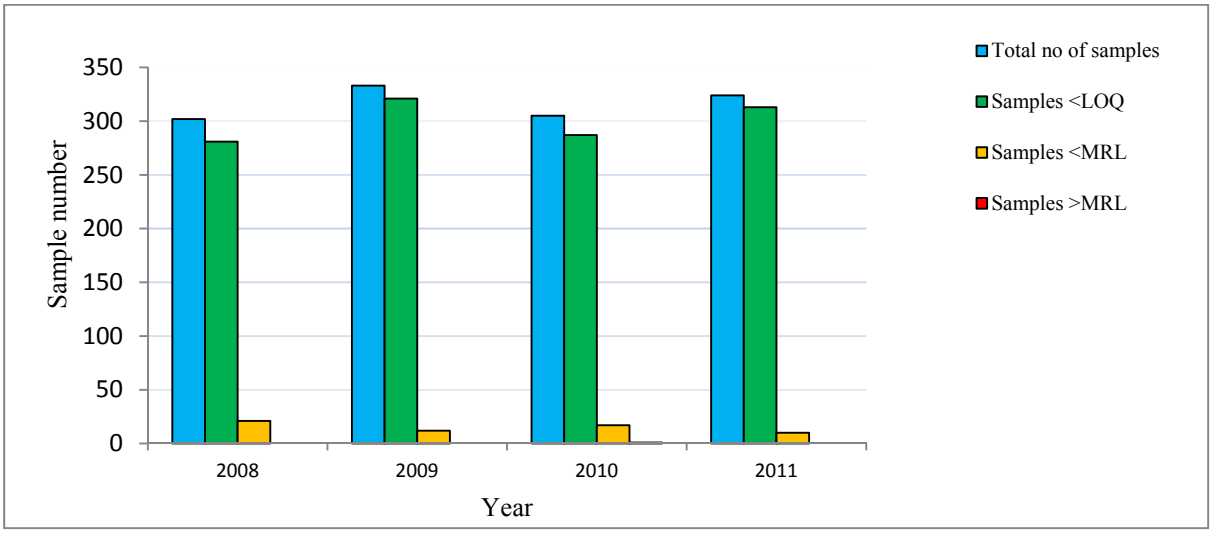

Figure 5: Number of kidney fat samples with residues <LOQ, <MRL and >MRL from 2008 to 2011

Three (2.5%) of the 121 bovine kidney fat samples tested contained residues of DDE, lambda cyhalothrin and permethrin, the latter two resulting from use as veterinary products, while the DDE is a metabolite resulting from the past use of DDT.

Three (3.7%) of the 82 ovine kidney fat samples contained detectable residues of diazinon due, possibly, to products containing diazinon being used as veterinary products in the dipping of sheep.

One equine (12.5%), one (1.2%) ovine and two (8%) poultry kidney fat samples analysed, contained trace residues of hexachlorobenzene, lindane or dieldrin. These persistent organochlorine residues are likely to be the result of background levels in the environment.

One (7.7%) of the 13 samples of honey contained residues of coumaphos and 1 (1.7%) of the 59 samples of milk contained residues above the LOQ but below the MRL.

Diazinon and lambda-cyhalothrin have replaced DDT as the most frequently detected pesticides in animal fat samples during 2011 (Table 24).

Table 24: Residues detected in food of animal origin during 2011

Pesticide	frequency no	% frequency
Diazinon	3	0.7%
Lambda-cyhalothrin	3	0.7%
Dieldrin	2	0.5%
Hexachlorobenzene	2	0.5%
Coumaphos	1	0.2%
Iprovalicarb	1	0.2%
Lindane	1	0.2%
Permethrin	1	0.2%
DDT	1	0.2%
Bifenthrin	1	0.2%

6.4 Enforcement and follow up

6.4.1 MRL breaches

Thirty three (2.2%) of all 1518 routine and targeted samples taken in 2011 contained residues above the legal limit (MRL) set in Regulation (EC) No 396/2005 and Commission Regulation (EU) No 37/2010. Eleven samples were of domestic origin, 6 were from other EU countries and the remaining 16 samples originated from non-EU countries. The majority (29) of the breaches were found in fruit and vegetable samples taken as part of the routine programme, but there was no breach detected in the targeted or follow-up fruit and vegetable samples. The other 4 breaches related to cereals, 2 of which were taken as part of the routine programme and the other 2 taken as part of the targeted and follow-up enforcement sampling strategy.

In the case of each of the 9 breaches of the MRLs involving commodities/produce of domestic origin, inspections of the grower's premises and pesticide use records are carried out, the grower was interviewed and recommendations were made for corrective action. Produce from the grower concerned was targeted for further sampling for a 12-month period.

Follow-up to the 2 targeted cereal samples involved the removal of the remainder of the consignment from the food chain – the oats, containing chlormequat, was diverted to bio-fuel and the wheat flour, containing chlorpropham, was used in petfood. A summary of the known reasons for the breaches numerically exceeding the MRLs is provided in Table 25 below.

Regarding the imported samples with MRL breaches, it was not possible to establish the reasons for breaches without having details on the pesticide uses authorised in the countries of origin. Where an imported product contained a residue in excess of an MRL, the authorities in the country of origin, and the Irish importer, were informed of the MRL breach. They were also informed that further produce from the same source encountered on the Irish market, would be targeted for special analysis and, if necessary, subjected to statutory actions.

Overall, the majority (26) of the MRL breaches related to substances where the MRL has been set to the LOQ, and the breach reflects non-registered use, cross contamination or the absence of an import tolerance for a registered use outside the EU.

Table 25: Summary of MRL exceedances in 2011 with reasons for breaches (if known)

Commodity	Sample ID	Country	Pesticide	MRL	Residue exceeding MRL	Reasons for MRL breach
Apple	74386	France	Fenhexamid	0.05*	0.82	Reason for non compliance not established.
Apple	74681	France	Dimethoate **(sum)**	0.02*	0.03	Reason for non compliance not established
Apple	74932	Chile	Pyrimethanil	0.01*	7.91	Reason for non compliance not established.
Apple cooking	75068	Ireland	Fenpropimorph	0.05*	0.72	Possible drift from neighbouring cereal plot treated with fenpropimorph
Bean with pod	74387	Kenya	Methomyl	0.02*	0.05	Reason for non compliance not established.
Bean with pod	74608	Morocco	Endosulphan	0.05*	0.08	Reason for non compliance not established.
Bean with pod	75080	Ireland	Dimethoate(sum)	0.02*	0.05	Sprayer not sufficiently washed out after use on sunflower
Blackberry	75192	Guatemala	Famoxadone	0.02*	0.03	Imported produce from non-EU MS. Reason for non compliance not established.
Blueberry	74839	USA	Malathion	0.02*	0.04	Reason for non compliance not established.
Cabbage	75379	Ireland	Omethoate	0.02*	0.03	GAP not followed with PHI not observed
Cabbage	75461	Ireland	Dimethoate	0.02*	0.06	Investigation inconclusive, contamination possible due to drift
Celery	74868	Ireland	Dimethoate(sum)	0.02*	0.03	Possible drift from neighbouring plot of Chinese cabbage treated with dimethoate
Celery	75200	Ireland	Dithiocarbamate	0.05*	0.17	Non registered use on celery
Chayote	74950	Costa Rica	Thiametoxam	0.3	0.39	Reason for non compliance not established.
Cherry	74950	Turkey	Monocrotophos	0.01*	0.04	Reason for non compliance not established.
Clementine	75202	Spain	Imazalil	5	6.78	Reason for non compliance not established.
Clementine	75433	Morocco	Diazinon	0.01*	0.01	Reason for non compliance not established.
Dragon fruit	75233	Vietnam	Cypermethrin	0.05*	0.06	Reason for non compliance not established.
Lettuce	74863	Ireland	Dimethoate (sum)	0.02*	0.16	Possible cross contamination of sprayer equipment or mixing drums between spraying programmes
Minneola	74996	Peru	Orthophenylphenol	5	5.58	Reason for non compliance not established.
Minneola	75056	Peru	Chlorenpyr	0.05*	0.06	Reason for non compliance not established.
Pea with pod	74388	Guatemala	Dimethoate (sum)	0.02*	0.11	Reason for non compliance not established.
Pomegranate	74366	Egypt	Omethoate	0.02*	0.03	Reason for non compliance not established.
			Methomyl	0.02*	0.03	
Pomegranate	74999	Egypt	Ethion	0.01*	0.04	Reason for non compliance not established.
Oat	74507	Ireland	Chlormequat	5	8.3	For feed only. Remainder of crop used as bio fuel
Oat	74604	Ireland	Chlormequat	5	14.9	For feed only. Remainder of crop used as bio fuel
Oat	74605	Ireland	Chlormequat	5	16.3	For feed only. Remainder of crop used as bio fuel
Orange	74897	Morocco	Chlorpyrifos	0.3	0.37	Reason for non compliance not established.

Commodity	Sample ID	Country	Pesticide	MRL	Residue exceeding MRL	Reasons for MRL breach
			Malathion	0.02*	0.03	Reason for non compliance not established.
Satsuma	74744	S Africa	Malathion	0.02*	0.03	Reason for non compliance not established.
Sharon fruit	75231	Spain	Iprodione	0.02*	0.03	Un-authorised use. Grower unaware of current permitted uses.
Turnip	74922	Ireland	Chlorpyrifos	0.05*	0.19	Reason for non compliance not established.
Turnip	74945	UK (NI)	Chlorpyrifos	0.05*	0.11	Reason for non compliance not established.
Wheat flour	75065	UK	Chlorpropham	0.02*	0.33	Reason for non compliance not established.

* MRL at limit of quantitation. This is equivalent to the term limit of determination used in the Regulation (EC) No 396/2005

6.4.2 Non registered uses

In 2011, 11 samples of produce of domestic origin contained residues, while less than the relevant MRL, indicating that non-registered uses of pesticides by Irish producers had taken place. While the levels detected indicated that there was no unacceptable risk to consumers, inspections of the growers' premises and pesticide use records are carried out, the growers were interviewed and recommendations were made for corrective action. Produce from the growers concerned was targeted for further sampling for a 12-month period.

6.5 Consumer assessments of MRL breaches

6.5.1 Deterministic risk assessment - acute

An acute risk assessment for Irish consumers, adult and children, was conducted for each MRL exceedance in 2011. The highest acute intake, expressed as a percentage of the ARfD, was identified in a sample of domestic cabbage which contained a residue of dimethoate at 0.61 mg kg^{-1} and leading to a worst-case pesticide intake of 79% of the ARfD for Irish children. Table 26 provides a summary of the deterministic acute risk assessments for each MRL breach detected in 2011. No acute intake concern was identified with any of the 33 breaches detected in 2011.

Table 26: Deterministic acute risk assessments for samples exceeding the MRL in 2011

Commodity	Country	Pesticide	MRL	Residue exceeding MRL	Risk assessments 2011	P97.5 consumption (kg/bw/d)	ARfD (mg/kg/bw/day)	Acute Intake as % ARfD
74386 Apple	France	Fenhexamid	0.05	0.82	adult	0.0057	0.2	**4.7%**
					child	0.0125		**25.6%**
74681 Apple	France	Dimethoate	0.02	0.01	adult	0.0057	0.01	**1.1%**
					child	0.0125		**6.2%**
		Omethoate	0.02	0.02	adult	0.0057	0.002	**11.4%**
					child	0.0125		**13.2%**
		Dimethoate **(sum)**	0.02	0.03	adult			**12.5%**
					child			**19.4%**
74932 Apple	Chile	Pyrimethanil	0.01	7.91	adult	0.0057	NR	
					child	0.0125		
75068 Apples cooking	Ireland	Fenpropimorph	0.05	0.72	adult	0.002167	0.03	**2.0%**
					child	0.00366		**4.2%**
74387 Bean with pod	Kenya	Methomyl	0.02	0.05	adult	0.0019	0.003	**4.0%**
					child	0.00266		**5.6%**
74608 Bean with pod	Morocco	Endosulphan	0.05	0.08	adult	0.0019	0.02	**0.8%**
					child	0.00266		**1.2%**
75080 Bean with pod	Ireland	Dimethoate	0.02	0.05	adult	0.0019	0.01	**0.3%**
					child	0.00266		**0.4%**
		Omethoate	0.02	0.03	adult	0.0019	0.002	**3.2%**

Commodity	Country	Pesticide	MRL	Residue exceeding MRL	Risk assessments 2011	P97.5 consumption (kg/bw/d)	ARfD (mg/kg/bw/day)	Acute Intake as % ARfD
					child	0.00266		**4.5%**
		Dimethoate (sum)	0.02	0.05	adult			**3.5%**
					child			**4.9%**
75192 Blackberry	Guatemala	Famoxadone	0.02	0.03	adult	0.0024	0.2	**0.0%**
					child	0.0087		**0.1%**
74839 Blueberry	USA	Malathion	0.02	0.04	adult	0.00229	0.3	**0.0%**
					child	0.00006(est)		**0.0%**
75379 Cabbage	Ireland	Omethoate	0.02	0.03	adult	0.002577	0.002	**16.1%**
					child	0.00516		**32.3%**
75461 Cabbage	Ireland	Omethoate	0.02	0.061	adult	0.002577	0.002	**39.3%**
					child	0.00516		**78.8%**
74868 Celery	Ireland	Dimethoate	0.02	0.02	adult	0.001	0.01	**0.6%**
					child	0.0019		**1.5%**
		Omethoate		0.01	adult	0.001	0.002	**1.9%**
					child	0.0019		**5.1%**
		Dimethoate (sum)	0.02	0.03	adult			**2.5%**
					child			**6.6%**
75200 Celery	Ireland	Dithiocarbamate	0.05	0.17	adult	0.001	0.6	**0.1%**
					child	0.0019		**0.3%**
74950 Chayote	Costa Rica	Thiametoxam	0.3	0.39	adult	0.00198	0.5	**1.1%**
					child			**0.4%**
74971 Cherry	Turkey	Monocrotophos	0.01	0.04	adult	0.000065	0.002	**3.2%**
					child	0.003		**5.4%**
75202 Clementine	Spain	Imazalil	5	6.78	adult	0.00524	0.05	**11.5%**
					child	0.00534		**25.9%**
75433 Clementine	Morocco	Diazinon	0.01	0.01	adult	0.00524	0.025	**0.6%**
					child	0.00534		**1.4%**
75233 Dragon fruit	Vietnam	Cypermethrin	0.05	0.06	adult	0.00031(est)	0.2	**0.3%**
					child	0.0041(est)		**0.6%**
74863 Lettuce	Ireland	Dimethoate	0.02	0.13	adult	0.00122	0.01	**5.6%**
					child	0.0015		**9.6%**
		Omethoate	0.02	0.04	adult	0.00122	0.002	**7.7%**
					child	0.0015		**13.3%**
		Dimethoate (sum)	0.02	0.16	adult			**13.3%**
					child			**22.8%**
74996 Minneola	Peru	Orthophenylphenol	5	5.58	adult	0.00198	NR	
					child	0.0062		
75056 Minneola	Peru	Chlorenpyr	0.05	0.06	adult	0.00198	0.015	**2.7%**
					child	0.0062		**11.8%**
74388 Pea with pod	Guatemala	Dimethoate	0.02	0.08	adult	0.000123	0.01	**1.2%**
					child	0.00034		**0.3%**
		Omethoate	0.02	0.03	adult	0.00005	0.002	**2.5%**
					child	0.000337		**0.6%**
		Dimethoate (sum)	0.02	0.11	adult			**3.7%**
					child			**0.9%**
74366 Pomegranate	Egypt	Omethoate	0.02	0.03	adult	0.00112	0.002	**8.9%**
					child	0.0041 (est)		**32.7%**
		Methomyl	0.02	0.03	adult	0.00112	0.0025	**7.6%**
					child	0.0041 (est)		**27.8%**
74999 Pomegranate	Egypt	Ethion	0.01	0.04	adult	0.00112	0.002	**12.0%**
					child	0.0041 (est)		**43.9%**
74507 Oat	Ireland	Chlormequat	5	8.3	adult	0.0011	0.09	**9.9%**
					child	0.0017		**16.0%**
74604 Oat	Ireland	Chlormequat	5	14.9	adult	0.0011	0.09	**17.7%**
					child	0.0017		**28.7%**
74605 Oat	Ireland	Chlormequat	5	16.3	adult	0.0011	0.09	**31.4%**
					child	0.0017		**28.7%**
74897 Orange	Morocco	Chlorpyrifos	0.3	0.37	adult	0.0095	0.1	**6.9%**

Commodity	Country	Pesticide	MRL	Residue exceeding MRL	Risk assessments 2011	P97.5 consumption (kg/bw/d)	ARfD (mg/kg/bw/day)	Acute Intake as % ARfD
					child	0.013		**24.1%**
		Malathion	0.02	0.03	adult	0.0095	0.3	**0.2%**
					child	0.013		**0.7%**
74744 Satsuma	S Africa	Malathion	0.02	0.03	adult	0.0065	0.3	**0.1%**
					child	0.012		**0.6%**
75231 Sharon fruit	Spain	Iprodione	0.02	0.03	adult	0.0032	NR	
					child	0.0041		
74922 Turnip	Ireland	Chlorpyrifos	0.05	0.19	adult	0.00031	0.1	**3.1%**
					child	0.00544	0.1	**5.4%**
74945 Turnip	UK (NI)	Chlorpyrifos	0.05	0.11	adult	0.00031	0.1	**1.8%**
					child	0.00544		**3.1%**
75065 Wheat flour	UK	Chlorpropham	0.02	0.33	adult	0.00452	0.5	**0.3%**
					child	0.0159		**1.1%**

6.5.2 Deterministic risk assessment - chronic

The calculation of the chronic exposure assessment in Table 27 is based on the assumption that the commodities with the MRL breaches are consumed on a daily basis, with those levels of pesticides, over a lifetime. Therefore, it is regarded as an overestimate of the real exposure to pesticides. The highest chronic intake as a percentage of the ADI was less than 10% was an oat sample, which was designated for the animal feed market. No chronic risk was identified for any of the MRL breaches detected in 2011.

Table 27: Deterministic chronic risk assessments of samples exceeding the MRL in 2011

Commodity	Country	Pesticide	MRL	Residue exceeding MRL	Risk assessment 2011	Mean Consumption kg/bw	ADI mg kg^{-1} bw day	Chronic Intake as % ADI
74386 Apple	France	Fenhexamid	0.05	0.82	adult	0.00066	0.2	**0.2%**
					child	0.00183		**0.8%**
74681 Apple	France	Dimethoate	0.02	0.01	adult	0.00066	0.001	**0.7%**
					child	0.00183		**1.8%**
		Omethoate	0.02	0.02	adult	0.00066	0.0003	**4.4%**
					child	0.00183		**1.9%**
		Dimethoate **(sum)**	0.02	0.03	adult			**5.1%**
					child			**3.7%**
74932 Apple	Chile	Pyrimethanil	0.01	7.91	adult	0.00066	0.17	**0.5%**
					child	0.00183		**0.8%**
75068 Apples cooking	Ireland	Fenpropimorph	0.05	0.72	adult	0.000173	0.003	**0.4%**
					child	0.000299		**0.7%**
74387 Bean with pod	Kenya	Methomyl	0.02	0.05	adult	0.000156	0.0025	**0.3%**
					child	0.000237		**0.5%**
74608 Bean with pod	Morocco	Endosulphan	0.05	0.08	adult	0.000156	0.006	**0.2%**
					child	0.000237		**0.3%**
75080 Bean with pod	Ireland	Dimethoate	0.02	0.05	adult	0.000156	0.001	**0.3%**
					child	0.000237		**0.4%**
		Omethoate	0.02	0.03	adult	0.000156	0.0003	**1.8%**
					child	0.000237		**2.7%**
		Dimethoate(sum)	0.02	0.05	adult			**2.2%**
					child			**3.3%**
75192 Blackberry	Guatemala	Famoxadone	0.02	0.03	adult	0.00014		**0.0%**
					child	0.00043	0.012	**0.1%**
74839 Blueberry	USA	Malathion	0.02	0.04	adult	0.000096	0.03	**0.0%**
					child	0.000006(est)		**0.0%**
75379 Cabbage	Ireland	Omethoate	0.02	0.03	adult	0.000188	0.0003	**1.6%**

Commodity	Country	Pesticide	MRL	Residue exceeding MRL	Risk assessment 2011	Mean Consumption kg/bw	ADI mg kg^{-1} bw day	Chronic Intake as % ADI
					child	0.000256		**2.1%**
75461 Cabbage	Ireland	Dimethoate	0.02	0.061	adult	0.000188	0.0003	**3.8%**
					child	0.000256		**5.2%**
74868 Celery	Ireland	Dimethoate	0.02	0.02	adult	0.00005	0.001	**0.1%**
					child	0.00008		**0.1%**
		Omethoate		0.01	adult	0.00005	0.0003	**0.2%**
					child	0.00008	0.0003	**0.3%**
		Dimethoate(sum)	0.02	0.03	adult			**0.2%**
					child			**0.4%**
75200 Celery	Ireland	Dithiocarbamate	0.05	0.17	adult	0.00005	0.01	**0.1%**
					child	0.00008		**0.1%**
74950 Chayote	Costa Rica	Thiametoxam	0.3	0.39	adult	0.000112	0.026	**0.1%**
					child			**0.1%**
74971 Cherry	Turkey	Monocrotophos	0.01	0.04	adult	0.00012	0.0006	**0.7%**
					child	0.00025		**1.5%**
75202 Clementine	Spain	Imazalil	5	6.78	adult	0.0074	0.025	**1.4%**
					child	0.001		**2.0%**
75433 Clementine	Morocco	Diazinon	0.01	0.01	adult	0.0074	0.0002	**4.8%**
					child	0.001		**6.7%**
75233 Dragon fruit	Vietnam	Cypermethrin	0.05	0.06	adult	0.00039(est)	0.05	**0.0%**
					child	0.00058(est)		**0.1%**
74863 Lettuce	Ireland	Dimethoate	0.02	0.13	adult	0.000096	0.001	**1.3%**
					child	0.00016		**2.1%**
		Omethoate	0.02	0.04	adult	0.000096	0.0003	**1.2%**
					child	0.00016		**1.9%**
		Dimethoate (sum)	0.02	0.16	adult			**2.4%**
					child			**4.0%**
74996 Minneola	Peru	Orthophenylphenol	5	5.58	adult	0.000099	0.4	**0.1%**
					child	0.00088		**1.2%**
75056 Minneola	Peru	Chlorenpyr	0.05	0.06	adult	0.000099	0.015	**0.0%**
					child	0.00088		**0.3%**
74388 Pea with pod	Guatemala	Dimethoate	0.02	0.08	adult	0.000104	0.001	**0.9%**
					child	0.000037		**0.3%**
		Omethoate	0.02	0.03	adult	0.000104	0.0003	**1.2%**
					child	0.000037		**0.4%**
		Dimethoate (sum)	0.02	0.11	adult			**2.1%**
					child			**0.7%**
74366 Pomegranate	Egypt	Omethoate	0.02	0.03	adult	0.00032	0.0003	**3.4%**
					child	0.00002 (est		**6.3%**
		Methomyl	0.02	0.03	adult	0.00032	0.0025	**0.4%**
					child	0.00002 (est		**0.8%**
74999 Pomegranate	Egypt	Ethion	0.01	0.04	adult	0.00032	0.002	**0.7%**
					child	0.00002 (est		**1.3%**
74507 Oat	Ireland	Chlormequat	5	8.3	adult	0.00019	0.04	**4.0%**
					child	0.000234		**4.9%**
74604 Oat	Ireland	Chlormequat	5	14.9	adult	0.00019	0.04	**7.1%**
					child	0.000234		**8.7%**
74605 Oat	Ireland	Chlormequat	5	16.3	adult	0.00019	0.04	**9.5%**
					child	0.000234		**8.7%**
74897 Orange	Morocco	Chlorpyrifos	0.3	0.37	adult	0.000097	0.01	**3.6%**
					child	0.0007		**2.6%**
		Malathion	0.02	0.03	adult	0.000097	0.03	**0.1%**
					child	0.0007		**0.1%**
74744 Satsuma	S Africa	Malathion	0.02	0.03	adult	0.00062	0.03	**0.1%**
					child	0.0011		**0.1%**
75231 Sharon fruit	Spain	Iprodione	0.02	0.03	adult	0.0000132	0.06	**0.0%**
					child	0.00059		**0.0%**
74922 Turnip	Ireland	Chlorpyrifos	0.05	0.19	adult	0.000141	0.01	**0.3%**

Commodity	Country	Pesticide	MRL	Residue exceeding MRL	Risk assessment 2011	Mean Consumption kg/bw	ADI mg kg^{-1} bw day	Chronic Intake as % ADI
					child	0.000369	0.01	**0.7%**
74945 Turnip	UK (NI)	Chlorpyrifos	0.05	0.11	adult	0.000141	0.01	**0.2%**
					child	0.000369		**0.4%**
75065 Wheat flour	UK	Chlorpropham	0.02	0.33	adult	0.000568	0.05	**0.4%**
					child	0.0038		**2.5%**

6.5.3 Probabilistic risk assessment – acute

Acute probabilistic exposures for adults and children, applying the maximum 24 hour exposure over a seven day period, were calculated using the IUNA Adults' Survey (18-65 years) and the National Children's Food Survey (5-8 years) food consumption surveys and the all the pesticide concentration data from different foods in the 2011 monitoring programme. Fruit and vegetables made up the majority of samples but other foods such as honey, poultry, fats, eggs, and milk products were also used.

As only 2 of the 5 most commonly detected pesticides have established ARfDs (Table 28), other less frequently detected pesticides, with more acute endpoints (dimethoate, methomyl and prochloraz), were investigated (Table 29). For probabilistic assessment, different approaches were adopted to appropriately assess results which were less than the LOQ. For those pesticides that were seldom detected, results below the LOQ were treated as 'zeros', as they were deemed unlikely to be present, while, for the most frequently detected pesticides, results below the LOQ were deemed to be present at levels of 10% of the LOQ.

Table 28: Five most commonly detected pesticides in 2011 and their toxicological endpoints

Pesticide	ARfD (mg/kg bw)	ADI (mg/kg bw)
Boscalid	*NR*	0.04
Chlorpyrifos	0.1	0.01
Imazalil	0.05	0.025
Iprodione	*NR*	0.06
Thiabendazole	*NR*	0.1

NR = not required

Table 29: Pesticides with very acute toxicological endpoints detected in 2011

Pesticide	ARfD (mg/kg bw)	ADI (mg/kg bw)
Dimethoate	0.01	0.001
Omethoate	0.002	0.0003
Methomyl	0.0025	0.0025
Prochloraz	0.025	0.01

Table 30 shows the % of adults that are exposed to specific levels for 2 of the 5 of the most frequently detected pesticides in 2011 - imazalil and chlorpyrifos. An estimate was not required for the other 3 pesticides that do not have established ARfDs. The Table shows that the exposure assessment predicts that 61.2% of the adult population will consume 1% of the ARfD (0.05 mg kg^{-1} bw day). Furthermore, it predicts that, without refinements, 1.5% of adult intake will consume a level which is equivalent to the ARfD on a particular day. However, citrus fruit, which is normally consumed after peeling, is the food contributing most to the intake of imazalil. Since imazilil is used as a post-harvest non-systemic fungicide, residues of imazalil remain on the peel. Consequently, the calculated intake of imazalil by consumers is an over-estimation.

Table 30: Acute exposure in adults to the most detected pesticides - % of ARfD

Exposure Level	Population Exposure Level (%)	
	Imazalil	Chlorpyrifos
1% of ARfD	61.2±1.35	4.79±0.67
10% of ARfD	18.78±1.06	0.15±0.0
20% of ARfD	9.5±0.85	0.07±0.0
50% of ARfD	3.05±0.58	0.0±0.0
100% of ARfD	1.45±0.38	0.0±0.0
200% of ARfD	0.36±0.04	0.0±0.0

Table 31 shows the % of children that are exposed to specific levels for 2 of the 5 of the most frequently detected in 2011 -imazalil and chlorpyrifos. The Table shows that the exposure assessment predicts that 45.6% of the child population will consume 1% of the ARfD for imazalil (0.05 mg kg^{-1} bw day). Furthermore, it predicts that, without refinements, none of the child population will consume a level which is equivalent to the ARfD for imazalil on a particular day.

Table 31: Acute exposure in children to the most detected pesticides in 2011 - % of ARfD

Exposure Level	Population Exposure Level (%)	
	Imazalil	Chlorpyrifos
1% of ARfD	45.6±2.97	4.39±1.11
10% of ARfD	11.49±1.86	0.68±0.51
20% of ARfD	5.4±1.32	0.±0.0
50% of ARfD	0.68±0.05	0.0±0.0
100% of ARfD	0.0±0	0.0±0.0
200% of ARfD	0.0 ±0	0.0±0.0

Probabilistic assessments were also carried out for adults and children for 3 less frequentlydetected pesticides with acute endpoints, dimethoate and its metabolite omethoate, methomyl and prochloraz. Table 32 predicts a worst case that, without refinements for cooking or processing, 1 (0.07%) of an adult population of 1,379 would consume a level of omethoate which is equivalent to the ARfD of 0.002 mg kg^{-1} bw day. Anayisis of the result indicated that the source of the estimated omethoate intake above the ARfD came from one cabbage sample with mean value of omethoate at 0.061 mg kg^{-1}. Omethoate was detected in 8 samples in 2011, including 2 samples of cabbage. These cabbage samples contributed 83% of the ARfD to the mean adult acute intake. Since there is a 100-fold safety margin built into the establishment of the ARfD for omethoate, it was concluded that there was no risk to the consumer in this instance.

Table 32: Acute exposure in adults to specified pesticides - % of ARfD

Exposure Level	Population Exposure Level (%)			
	Prochloraz	Methomyl	Dimethoate	Omethoate
1% of ARfD	4.35±0.65	0.8±0.42	0.44±0.0	6.24±0.71
10% of ARfD	0.94±0.49	0.07±0.0	0.0±0.0	0.8±0.41
20% of ARfD	0.36±0.0	0.0±0.0	0.0±0.0	0.36±0.0
50% of ARfD	0.07±0.0	0.0±0.0	0.0±0.0	0.15±0.0
100% of ARfD	0.0±0.0	0.0±0.0	0.0±0.0	0.07±0.0
200% of ARfD	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0

Table 33 predicts a worst case that, without refinements for cooking or processing, 0.34% of the child population will consume a level of omethoate equivalent to 20% of the ARfD for omethoate. Furthermore, it predicts that, without refinements, none of the child population would consume more than 50% of the ARfD for omethoate.

Table 33: Acute exposure in children to specified pesticides - % of ARfD

Exposure Level	Population Exposure Level (%)			
	Prochloraz	Methomyl	Dimethoate	Omethoate
1% of ARfD	2.03±0.9	0.0	1.01±0.66	3.38±1.08
10% of ARfD	0.34±0.28	0.0	0.0±0.0	0.34±0.28
20% of ARfD	0.0±0.0	0.0	0.0±0.0	0.34±0.28
50% of ARfD	0.0±0.0	0.0	0.0±0.0	0.0±0.0
100% of ARfD	0.0±0.0	0.0	0.0±0.0	0.0±0.0
200%of ARfD	0.0±0.0	0.0	0.0±0.0	0.0±0.0

6.5.4 Probabilistic risk assessment – chronic

Probabilistic assessments for adults and children were conducted for chronic exposure to the 5 most detected pesticides in 2011, imazalil, chlorpyrifos, thiabendazole, iprodione and boscalid. The chronic assessment used the average food consumed over the 7 days in the adults' and childrens' food surveys and the residue data from the 2011 monitoring programme.

Table 34 shows the % of adults that are expected to be exposed to specific levels of the 5 pesticides. It shows that, in the case of imazalil, the exposure assessment predicts that 64.03% of adults are expected to have an intake equivalent to 1% of the ADI (0.025 mg kg^{-1} bw day). Furthermore, the results predict that, without refinements for cooking or processing, none of the adult population will consume the equivalent to the ADI for any of the most frequently detected pesticides.

Table 34: Chronic exposure in adults to the 5 most frequently detected pesticides - % of ADI

Exposure Level	Population Exposure Level (%)				
	Imazalil	Chlorpyrifos	Thiabendazole	Iprodione	Boscalid
1% of ADI	64.03±1.36	12.47±0.91	5.51±0.71	0.29±0.0	0.22±0.0
10% of ADI	9.5±0.87	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
20% of ADI	1.45±0.33	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
50% of ADI	0.07±0.0	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
100% of ADI	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
200% of ADI	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0

Table 35 shows the % of children that are expected to be exposed to specific levels of the 5 pesticides. It shows that, in the case of imazalil, the exposure assessment predicts that 52.7% of children are expected to consume the equivalent of 1% of the ADI (0.025 mg kg^{-1} bw day). Furthermore, the results predict that, without refinements for cooking or processing, none of the child population will consume the equivalent to the ADI for any of the most frequently detected pesticide.

Table 35: Chronic Exposure in Children's to the top five detected pesticides - % of ADI

Exposure Level	Population Exposure Level (%)				
	Imazalil	Chlorpyrifos	Thiabendazole	Iprodione	Boscalid
1% of ADI	52.7±2.82	11.82±1.84	6.42±1.43	2.03±0.88	0.34±0.27
10% of ADI	3.72±1.1	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
20% of ADI	1.01±0.66	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
50% of ADI	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
100% of ADI	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0
200% of ADI	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0

6.6 **Concluding remarks**

During an audit in 2011[11], the FVO reported that "*there is a well developed and implemented control system in place both for the use of pesticides and the control of pesticide residues in food*" by the Pesticide Control Laboratory and the Pesticide Registration and Control Division of DAFM. However, DAFM and the FSAI continue to be committed to strengthening the control programme for pesticide residues in food, ensuring the safety of food for consumers and ensuring the quality of produce offered for sale.

The PCL and PRCD of DAFM and the FSAI continue to have an ongoing dialogue, as part of the service contract between both organisations, with a view to optimising the annual control programme for pesticide residues in food and assessing the possible risk of such residues for consumers. The programme will continue to take account of the opinion of the European Commission with respect to the range of crops and pesticides to be included in the programme.

For the immediate future, DAFM will focus on further increasing the capacity of the laboratory to screen for an ever-increasing number of pesticides using multi and single residue methods over a wider range of food commodities.

The analytical results were generated by J. Garvey, F. O Regan, J. McGannon, T. Walsh, M. Kelly, D. Smyth, E. Connolly, J. Coloe, W. Cummins, M. Graham, A. Ryan, C.O Connor, T.O Hara and D. Harris of the Pesticide Control Laboratory.
P. Carey and P. Killarney carried out the sampling; D McGilloway effected the violation investigations. This report was compiled through the efforts of J. Acton, and D. Sheridan.

[11] Final report of an audit carried out in Ireland from 26 to 30th September 2011 in order to evaluate control of pesticides in food of plant origin - Food and Veterinary Office DG (Sanco) 2011 8990

7 ANNEXES

7.1 ANNEX I Regulations fixing maximum levels for pesticide residues

Regulation (EC) No 396/2005 came into force on 01.09.2008, 6 months after publication of the last of the Regulations establishing Annexes I, II, III and IV. On the same date, Council Directives 76/895/EEC, 86/362/EEC and 86/363/EEC were repealed.

Regulation (EC) No 396/2005	OJ L70 of 16.03.2005
Regulation (EC) No 299/2008	OJ L97 of 09.04.2008

For Annex I of Regulation (EC) No 396/2005

Commission Regulation (EC) No 178/2006	OJ L29 of 02.02.2006
Commission Regulation (EC) No 600/2010	OJ L184 of 09.07.2010

For Annexes II, III and IV of Regulation (EC) No 396/2005

Commission Regulation (EC) No 149/2008	OJ L58 of 01.03.2008
Corrigendum to Commission Regulation (EC) No149/2008	OJ L240 of 09.09.2008
Commission Regulation (EC) No 839/2008	OJ L234 of 30.08.2008
Commission Regulation (EC) No 256/2009	OJ L81 of 27.03.2009
Commission Regulation (EC) No 822/2009	OJ L329 of 10.09.2009
Commission Regulation (EC) No 1050/2009	OJ L290 of 06.11.2009
Commission Regulation (EC) No 1097/2009	OJ L301 of 17.11.2009
Commission Regulation (EU) No 304/2010	OJ L94 of 15.04.2010
Commission Regulation (EU) No 459/2010	OJ L129 of 28.05.2010
Commission Regulation (EU) No 750/2010	OJ L220 of 21.08.2010
Commission Regulation (EU) No 893/2010	OJ L266 of 09.10.2010
Commission Regulation (EU) No 310/2011	OJ L86 of 01.04.2011
Commission Regulation (EU) No 460/2011	OJ L124 of 13.05.2011
Commission Regulation (EU) No 508/2011	OJ L137 of 25.05.2011
Commission Regulation (EU) No 520/2011	OJ L140 of 27.05.2011
Commission Regulation (EU) No 524/2011	OJ L142 of 28.05.2011
Commission Regulation (EU) No 559/2011	OJ L152 of 11.06.2011
Commission Regulation (EU) No 812/2011	OJ L208 of 13.08.2011
Commission Regulation (EU) No 813/2011	OJ L208 of 13.08.2011
Commission Regulation (EU) No 978/2011	OJ L258 of 04.10.2011

For Annex VII of Regulation (EC) No 396/2005

Commission Regulation (EC) No 260/2008	OJ L76 of 19.03.2008

The regulation and its amendments were transposed into Irish legislation with the following statutory instruments:
S.I. 565/2008
S.I 302/2011

Veterinary medicinal products in food of animal origin

Directive 96/23/EC	OJ L125 of 26.05.1996
Council Regulation (EC) No 37/2010	OJ L15/1 of 20.1.2010

Infant formulae and follow-on formulae

Commission Directive 2006/125/EC	OJ L339 of 06.12.2006
Commission Directive 2006/141/EC	OJ L401 of 30.12.2006

7.2 ANNEX II Analytical methods used

Multi residue method 1 in food of plant and animal origin
Extraction method based on *Analytical Methods for Pesticide Residues in Foodstuffs*, 6th edition, 1996, Ministry of Public Health, Welfare and Sport, The Netherlands.
Detection GC/MSD.

Multiresidue method 2 in food of animal origin
Extraction based on clean-up method No. 5 of the *Manual of Pesticide Residue Analysis* DFG Deutche Forchungsgemeinscaft ,Volume 1, 1987 which involves the extraction with acetonitrile and acetone, clean-up using gel permeation chromatography column and alumina/silver nitrate micro columns (for organochlorine pesticides only).
Detection GC /MSD

Multi residue method 3 in food of plant and animal origin
S.J. Lehotay, K. Mastovska, A.R. Lightfield, *Use of Buffer and Other Means to Improve Results of Problematic Pesticides in a Fast and Easy Method forResidue Analysis of Fruits and Vegetables,* JAOAC-Int., 88(2): 615-629. 2005.
Detection HPLC/MS/MS.

Single residue method 1: Chlormequat and mepiquat in food of plant origin
The method is available on the EU Community Reference Laboratory (CRL) Website at http://www.crl-pesticides.eu/library/docs/srm/meth_ChlormequatMepiquat_CrlSrm.pdf.
Detection by HPLC-MS/MS.

Single residue method 2: Dithiocarbamates in food of plant origin
Residues of dithiocarbamates are determined as CS_2 following acid digestion degradation with tin chloride and hydrochloric acid. and liquid liquid extraction with trimethyl pentane.
CSL York UK Project FD 98/46.
Detection by GC/MSD.

Single residue method 3: Amitraz in food of plant and animal origin
Screening and confirmation of amitraz and its metabolites in food of plant origin is based on the S.J. Lehotay, K. Mastovska, A.R. Lightfield„ JAOAC-Int., 88(2): 615-629. 2005.
Detection by LC-MS/MS.

7.3 ANNEX III Analytical scopes of multiresidue methods used

Fruit and Veg., cereals	LOQ	Honey	LOQ	Fats and Oils	LOQ	Milk, Eggs and Infant Formula	LOQ
2,4,6-Trichlorophenol	0.01	2,4,6-Trichlorophenol	0.01	2,4,6-Trichlorophenol	0.01	2,4,6-Trichlorophenol	0.005
2,4-D	0.02	2,4-D	**0.02**	3,5-Dichloroaniline	0.01	2,4-D	0.02
2,4-DB	0.05	2,4-DB	**0.05**	3-Chloroaniline	0.005	2,4-DB	0.05
3,5-Dichloroaniline	0.01	3,5-Dichloroaniline	0.01	4,4-Dichlorobenzophenone	0.01	3,5-Dichloroaniline	0.01
3-Chloroaniline	0.01	3-Chloroaniline	0.01	Acephate	0.05	3-Chloroaniline	0.005
4,4-Dichlorobenzophenone	0.01	4,4-Dichlorobenzophenone	0.01	Acetamiprid	0.01	4,4-Dichlorobenzophenone	0.005
Acephate	0.01	Acephate	0.01	Aclonifen	0.02	Acephate	0.05
Acetamiprid	0.01	Acetamiprid	0.01	Acrinathrin	0.01	Acetamiprid	0.01
Aclonifen	0.01	Aclonifen	0.01	Alachlor	0.01	Aclonifen	0.02
Acrinathrin	0.01	Acrinathrin	0.01	Aldicarb	0.01	Acrinathrin	0.005
Alachlor	0.01	Alachlor	0.01	Aldicarb sulfone	0.01	Alachlor	0.005
Aldicarb	0.02	Aldicarb	0.02	Aldicarb-sulfoxide	0.010	Aldicarb	0.02
Aldicarb sulfone	0.01	Aldicarb sulfone	0.01	Aldrin	0.01	Aldicarb sulfone	0.01
Aldicarb-sulfoxide	0.02	Aldicarb-sulfoxide	0.02	alpha Endosulfan	0.010	Aldicarb-sulfoxide	0.02
Aldrin	0.01	Aldrin	0.01	alpha-HCH	0.01	Aldrin	0.005
alpha Endosulfan	0.01	alpha Endosulfan	0.01	Ametryn	0.01	alpha Endosulfan	0.01
alpha-HCH	0.01	alpha-HCH	0.01	Amidosulfuron	0.01	alpha-HCH	0.005
Ametryn	0.01	Ametryn	0.01	Aminocarb	0.01	Ametryn	0.01
Amidosulfuron	0.01	Amidosulfuron	0.01	Amitrole	0.02	Amidosulfuron	0.01
Aminocarb	0.01	Aminocarb	0.01	Asulam	0.01	Aminocarb	0.01
Asulam	0.02	Asulam	0.02	Atrazine	0.01	Asulam	0.02
Atrazine	0.01	Atrazine	0.01	Azaconazole	0.01	Atrazine	0.005
Azaconazole	0.01	Azaconazole	0.01	Azamethiphos	0.01	Azaconazole	0.005
Azamethiphos	0.01	Azamethiphos	0.01	Azinphos-ethyl	0.01	Azamethiphos	0.01
Azinphos-ethyl	0.01	Azinphos-ethyl	0.01	Azinphos-methyl	0.01	Azinphos-ethyl	0.005
Azinphos-methyl	0.01	Azinphos-methyl	0.01	Azoxystrobin	0.01	Azinphos-methyl	0.01
Azoxystrobin	0.01	Azoxystrobin	0.01	Benalaxyl	0.01	Azoxystrobin	0.01
Benalaxyl	0.01	Benalaxyl	0.01	Bendiocarb	0.02	Benalaxyl	0.01
Bendiocarb	0.01	Bendiocarb	0.01	beta Endosulfan	0.01	Bendiocarb	0.01
Bentazone	0.01	Bentazone	0.01	beta-HCH	0.005	Bentazone	0.01
beta Endosulfan	0.01	beta Endosulfan	0.01	Bifenthrin	0.005	beta Endosulfan	0.01
beta-HCH	0.01	beta-HCH	0.01	Binapacryl	0.01	beta-HCH	0.005
Bifenthrin	0.01	Bifenthrin	0.01	Biphenyl	0.01	Bifenthrin	0.005
Binapacryl	0.01	Binapacryl	0.01	Bitertanol	0.01	Binapacryl	0.005
Biphenyl	0.01	Biphenyl	0.01	Boscalid	0.01	Biphenyl	0.005
Bitertanol	0.01	Bitertanol	0.01	Bromacil	0.02	Bitertanol	0.005
Boscalid	0.01	Boscalid	0.01	Bromophos-ethyl	0.005	Boscalid	0.02
Bromacil	0.01	Bromacil	0.01	Bromophos-methyl	0.01	Bromacil	0.01
Bromophos-ethyl	0.01	Bromophos-ethyl	0.01	Bromopropylate	0.01	Bromophos-ethyl	0.005
Bromophos-methyl	0.01	Bromophos-methyl	0.01	Bromuconazole	0.02	Bromophos-methyl	0.005
Bromopropylate	0.01	Bromopropylate	0.01	Bupirimate	0.01	Bromopropylate	0.005
Bromoxynil	0.01	Bromoxynil	0.01	Buprofezin	0.01	Bromoxynil	0.01
Bromuconazole	0.01	Bromuconazole	0.01	Butocarboxim-sulfoxide	0.05	Bromuconazole	0.01
Bupirimate	0.01	Bupirimate	0.01	Butoxycarboxim	0.010	Bupirimate	0.01
Buprofezin	0.01	Buprofezin	0.01	Cadusafos	0.01	Buprofezin	0.01
Butocarboxim-sulfoxide	0.01	Butocarboxim-sulfoxide	0.01	Captafol	0.01	Butocarboxim-sulfoxide	0.01
Butoxycarboxim	0.01	Butoxycarboxim	0.01	Captan	0.01	Butoxycarboxim	0.01
Cadusafos	0.01	Cadusafos	0.01	Carbaryl	0.01	Cadusafos	0.005
Captafol	0.01	Captafol	0.01	Carbendazim	0.01	Captafol	0.02
Captan	0.01	Captan	0.01	Carbofuran	0.01	Captan	0.005
Carbaryl	0.01	Carbaryl	0.01	Carbofuran-3-hydroxy	0.01	Carbaryl	0.01
Carbendazim	0.02	Carbendazim	0.02	Carbosulfan	0.01	Carbendazim	0.02
Carbofuran	0.01	Carbofuran	0.01	Carboxin	0.02	Carbofuran	0.01
Carbofuran-3-hydroxy	0.01	Carbofuran-3-hydroxy	0.01	Chlorantraniliprole	0.01	Carbofuran-3-hydroxy	0.01
Carbosulfan	0.01	Carbosulfan	0.01	Chlorbromuron	0.010	Carbosulfan	0.01
Carboxin	0.01	Carboxin	0.01	Chlorbufam	0.01	Carboxin	0.01
Chlorbromuron	0.01	Chlorbromuron	0.01	Chlorfenapyr	0.02	Chlorbromuron	0.01
Chlorbufam	0.01	Chlorbufam	0.01	Chlorfenvinphos	0.01	Chlorbufam	0.005
Chlorfenapyr	0.01	Chlorfenapyr	0.01	Chlorobenzilate	0.005	Chlorfenapyr	0.02
Chlorfenvinphos	0.01	Chlorfenvinphos	0.01	Chlorothalonil	0.01	Chlorfenvinphos	0.005
Chlorfluazuron	0.01	Chlorfluazuron	0.01	Chlorpropham	0.005	Chlorfluazuron	0.01

Fruit and Veg., cereals	LOQ	Honey	LOQ	Fats and Oils	LOQ	Milk, Eggs and Infant Formula	LOQ
Chlorobenzilate	0.01	Chlorobenzilate	0.01	Chlorpyrifos	0.005	Chlorobenzilate	0.005
Chlorothalonil	0.01	Chlorothalonil	0.01	Chlorpyrifos-methyl	0.01	Chlorothalonil	0.005
Chlorpropham	0.01	Chlorpropham	0.01	Chlorthal-dimethyl	0.005	Chlorpropham	0.005
Chlorpyrifos	0.01	Chlorpyrifos	0.01	Chlozolinate	0.005	Chlorpyrifos	0.005
Chlorpyrifos-methyl	0.01	Chlorpyrifos-methyl	0.01	cis-Chlordane	0.01	Chlorpyrifos-methyl	0.005
Chlorthal-dimethyl	0.01	Chlorthal-dimethyl	0.01	Clethodim	0.01	Chlorthal-dimethyl	0.005
Chlozolinate	0.01	Chlozolinate	0.01	Clofentezine	0.01	Chlozolinate	0.005
cis-Chlordane	0.01	cis-Chlordane	0.01	Clopyralid	0.05	cis-Chlordane	0.005
Clethodim	0.01	Clethodim	0.01	Coumaphos	0.01	Clethodim	0.01
Clofentezine	0.01	Clofentezine	0.01	Cyanazine	0.01	Clofentezine	0.01
Clothianidin	0.01	Clothianidin	0.01	Cyanofenphos	0.01	Clothianidin	0.01
Coumaphos	0.01	Coumaphos	0.01	Cyanophos	0.01	Coumaphos	0.005
Cyanazine	0.01	Cyanazine	0.01	Cyazofamid	0.01	Cyanazine	0.01
Cyanofenphos	0.01	Cyanofenphos	0.01	Cyfluthrin	0.02	Cyanofenphos	0.005
Cyanophos	0.02	Cyanophos	0.02	Cymoxanil	0.01	Cyanophos	0.01
Cyazofamid	0.01	Cyazofamid	0.01	Cypermethrin	0.05	Cyazofamid	0.01
Cyclanilide	0.01	Cyclanilide	0.01	Cyproconazole	0.01	Cyclanilide	0.01
Cycloxydim	0.10	Cycloxydim	0.10	Cyprodinil	0.01	Cycloxydim	0.10
Cyfluthrin	0.01	Cyfluthrin	0.01	delta-HCH	0.01	Cyfluthrin	0.02
Cymoxanil	0.01	Cymoxanil	0.01	Deltamethrin	0.02	Cymoxanil	0.01
Cypermethrin	0.02	Cypermethrin	0.02	Demeton-S-me-Sulfone	0.01	Cypermethrin	0.05
Cyproconazole	0.01	Cyproconazole	0.01	Demeton-s-methyl sulfoxide	0.01	Cyproconazole	0.005
Cyprodinil	0.01	Cyprodinil	0.01	Diazinon	0.005	Cyprodinil	0.01
delta-HCH	0.01	delta-HCH	0.01	Dichlobenil	0.005	delta-HCH	0.005
Deltamethrin	0.01	Deltamethrin	0.01	Dichlofluanid	0.005	Deltamethrin	0.02
Demeton-S-me-Sulfone	0.01	Demeton-S-me-Sulfone	0.01	Dichlorvos	0.01	Demeton-S-me-Sulfone	0.005
Demeton-s-methyl sulfoxide	0.01	Demeton-s-methyl sulfoxide	0.01	Diclobutrazol	0.01	Demeton-s-methyl sulfoxide	0.01
Diazinon	0.01	Diazinon	0.01	Dicloran	0.01	Diazinon	0.005
Dichlobenil	0.01	Dichlobenil	0.01	Dicofol	0.01	Dichlobenil	0.005
Dichlofluanid	0.01	Dichlofluanid	0.01	Dicrothophos	0.01	Dichlofluanid	0.005
Dichlorprop-P	0.01	Dichlorprop-P	0.01	Dieldrin	0.01	Dichlorprop-P	0.01
Dichlorvos	0.01	Dichlorvos	0.01	Diethofencarb	0.01	Dichlorvos	0.005
Diclobutrazol	0.01	Diclobutrazol	0.01	Difenoconazole	0.01	Diclobutrazol	0.01
Dicloran	0.01	Dicloran	0.01	Dimethenamid	0.01	Dicloran	0.005
Dicofol	0.01	Dicofol	0.01	Dimethoate	0.01	Dicofol	0.005
Dieldrin	0.01	Dieldrin	0.01	Dimethomorph	0.01	Dieldrin	0.01
Diethofencarb	0.01	Diethofencarb	0.01	Dimoxystrobin	0.01	Diethofencarb	0.01
Difenoconazole	0.01	Difenoconazole	0.01	Diniconazole	0.02	Difenoconazole	0.01
Diflubenzuron	0.01	Diflubenzuron	0.01	Diphenylamine	0.01	Diflubenzuron	0.01
Dimethenamid	0.01	Dimethenamid	0.01	Diuron	0.01	Dimethenamid	0.01
Dimethoate	0.01	Dimethoate	0.01	DMSA	0.005	Dimethoate	0.005
Dimethomorph	0.01	Dimethomorph	0.01	DMST	0.01	Dimethomorph	0.01
Dimoxystrobin	0.01	Dimoxystrobin	0.01	Dodine	0.01	Dimoxystrobin	0.005
Diniconazole	0.01	Diniconazole	0.01	Endosulfan ether	0.01	Diniconazole	0.01
Dinoseb	0.02	Dinoseb	**0.02**	Endosulfan lacton	0.02	Dinoseb	0.02
Dinoterb	0.02	Dinoterb	**0.02**	Endosulfan sulfate	0.02	Dinoterb	0.02
Diphenylamine	0.01	Diphenylamine	0.01	Endrin	0.01	Diphenylamine	0.005
Diuron	0.01	Diuron	0.01	EPN	0.01	Diuron	0.01
DMSA	0.02	DMSA	0.02	Epoxiconazole	0.01	DMSA	0.005
DMST	0.02	DMST	0.02	Ethiofencarb	0.05	DMST	0.005
DNOC	0.01	DNOC	0.01	Ethiofencarb sulfone	0.05	DNOC	0.01
Endosulfan ether	0.01	Endosulfan ether	0.01	Ethiofencarb sulfoxide	0.050	Endosulfan ether	0.005
Endosulfan lacton	0.01	Endosulfan lacton	0.01	Ethion	0.01	Endosulfan lacton	0.02
Endosulfan sulfate	0.02	Endosulfan sulfate	0.02	Ethirimol	0.01	Endosulfan-sulfate	0.02
Endrin	0.01	Endrin	0.01	Ethofumesate	0.01	Endrin	0.01
EPN	0.01	EPN	0.01	Ethoprophos	0.01	EPN	0.005
Epoxiconazole	0.01	Epoxiconazole	0.01	Etofenprox	0.020	Epoxiconazole	0.005
Ethiofencarb	0.01	Ethiofencarb	0.01	Etoxazole	0.005	Ethiofencarb	0.01
Ethiofencarb sulfone	0.02	Ethiofencarb sulfone	0.02	Etridiazole	0.005	Ethiofencarb sulfone	0.02
Ethiofencarb sulfoxide	0.02	Ethiofencarb sulfoxide	0.02	Etrimfos	0.01	Ethiofencarb sulfoxide	0.02
Ethion	0.01	Ethion	0.01	Famoxadone	0.05	Ethion	0.005
Ethofumesate	0.01	Ethofumesate	0.01	Fenamidone	0.01	Ethofumesate	0.01
Ethoprophos	0.01	Ethoprophos	0.01	Fenamiphos	0.010	Ethoprophos	0.005

Fruit and Veg., cereals	LOQ	Honey	LOQ	Fats and Oils	LOQ	Milk, Eggs and Infant Formula	LOQ
Etofenprox	0.01	Etofenprox	0.01	Fenarimol	0.01	Etofenprox	0.01
Etoxazole	0.01	Etoxazole	0.01	Fenazaquin	0.01	Etoxazole	0.005
Etridiazole	0.01	Etridiazole	0.01	Fenbuconazole	0.01	Etridiazole	0.005
Etrimfos	0.01	Etrimfos	0.01	Fenbutatin oxide	0.010	Etrimfos	0.005
Famoxadone	0.01	Famoxadone	0.01	Fenchlorphos	0.01	Famoxadone	0.01
Fenamidone	0.01	Fenamidone	0.01	Fenhexamid	0.01	Fenamidone	0.005
Fenamiphos	0.01	Fenamiphos	0.01	Fenitrothion	0.01	Fenamiphos	0.01
Fenarimol	0.01	Fenarimol	0.01	Fenoxycarb	0.01	Fenarimol	0.005
Fenazaquin	0.01	Fenazaquin	0.01	Fenpiclonil	0.01	Fenazaquin	0.01
Fenbuconazole	0.01	Fenbuconazole	0.01	Fenpropathrin	0.01	Fenbuconazole	0.005
Fenbutatin oxide	0.01	Fenbutatin oxide	0.01	Fenpropidin	0.02	Fenbutatin oxide	0.01
Fenchlorphos	0.01	Fenchlorphos	0.01	Fenpropimorph	0.05	Fenchlorphos	0.005
Fenhexamid	0.01	Fenhexamid	0.01	Fenpyroximate	0.01	Fenhexamid	0.01
Fenitrothion	0.01	Fenitrothion	0.01	Fenthion	0.01	Fenitrothion	0.005
Fenoxycarb	0.01	Fenoxycarb	0.01	Fenthion sulfone	0.01	Fenoxycarb	0.01
Fenpiclonil	0.01	Fenpiclonil	0.01	Fenthion sulfoxide	0.01	Fenpiclonil	0.01
Fenpropathrin	0.01	Fenpropathrin	0.01	Fenvalerate	0.01	Fenpropathrin	0.005
Fenpropidin	0.01	Fenpropidin	0.01	Flamprop Isopropyl	0.01	Fenpropidin	0.01
Fenpropimorph	0.01	Fenpropimorph	0.01	Flazasulfuron	0.01	Fenpropimorph	0.01
Fenpyroximate	0.01	Fenpyroximate	0.01	Florasulam	0.01	Fenpyroximate	0.01
Fenthion	0.01	Fenthion	0.01	Flucythrinate	0.01	Fenthion	0.01
Fenthion sulfone	0.01	Fenthion sulfone	0.01	Fludioxinil	0.01	Fenthion sulfone	0.01
Fenthion sulfoxide	0.01	Fenthion sulfoxide	0.01	Flufenacet	0.01	Fenthion sulfoxide	0.01
Fenvalerate	0.01	Fenvalerate	0.01	Flufenoxuron	0.02	Fenvalerate	0.01
Fipronil	0.01	Fipronil	0.01	Fluopyram	0.01	Fipronil	0.01
Fipronil desulfinyl	0.01	Fipronil desulfinyl	0.01	Fluquinconazole	0.01	Fipronil desulfinyl	0.01
Fipronil sulfide	0.01	Fipronil sulfide	0.01	Flurtamone	0.005	Fipronil sulfide	0.01
Fipronil sulfone	0.01	Fipronil sulfone	0.01	Flusilazole	0.01	Fipronil sulfone	0.01
Flamprop Isopropyl	0.01	Flamprop Isopropyl	0.01	Flutolanil	0.01	Flamprop Isopropyl	0.005
Flazasulfuron	0.01	Flazasulfuron	0.01	Flutriafol	0.02	Flazasulfuron	0.01
Florasulam	0.01	Florasulam	0.01	Folpet	0.005	Florasulam	0.01
Fluazifop (free acid)	0.02	Fluazifop (free acid)	**0.02**	Fonofos	0.01	Fluazifop (free acid)	0.02
Fluazinam	0.01	Fluazinam	0.01	Formothion	0.01	Fluazinam	0.01
Flucythrinate	0.01	Flucythrinate	0.01	Fosthiazate	0.01	Flucythrinate	0.005
Fludioxonil	0.01	Fludioxonil	0.01	Fuberidazole	0.010	Fludioxonil	0.01
Flufenacet	0.01	Flufenacet	0.01	Furalaxyl	0.01	Flufenacet	0.01
Flufenoxuron	0.01	Flufenoxuron	0.01	Furathiocarb	0.01	Flufenoxuron	0.01
Fluquinconazole	0.01	Fluquinconazole	0.01	Furmecyclox	0.01	Fluquinconazole	0.01
Flurtamone	0.01	Flurtamone	0.01	Heptachlor	0.005	Flurtamone	0.005
Flusilazole	0.01	Flusilazole	0.01	Heptachlor-endo-epoxide	0.005	Flusilazole	0.005
Flutolanil	0.01	Flutolanil	0.01	Heptachlor-exo-epoxide	0.005	Flutolanil	0.01
Flutriafol	0.02	Flutriafol	0.02	Heptenophos	0.005	Flutriafol	0.02
Folpet	0.01	Folpet	0.01	Hexachlorobenzene	0.01	Folpet	0.005
Fonofos	0.01	Fonofos	0.01	Hexaconazole	0.01	Fonofos	0.005
Formothion	0.01	Formothion	0.01	Hexythiazox	0.01	Formothion	0.005
Fosthiazate	0.01	Fosthiazate	0.01	Imazalil	0.01	Fosthiazate	0.01
Fuberidazole	0.01	Fuberidazole	0.01	Imazaquin	0.01	Fuberidazole	0.01
Furalaxyl	0.01	Furalaxyl	0.01	Imidacloprid	0.01	Furalaxyl	0.005
Furathiocarb	0.01	Furathiocarb	0.01	Indoxacarb	0.010	Furathiocarb	0.01
Furmecyclox	0.01	Furmecyclox	0.01	Iodofenphos	0.01	Furmecyclox	0.01
Haloxyfop	0.02	Haloxyfop	**0.02**	Iodosulfuron-methyl-sodium	0.01	Haloxyfop	0.02
Heptachlor	0.01	Heptachlor	0.01	Iprodione	0.01	Heptachlor	0.005
Heptachlor-endo-epoxide	0.01	Heptachlor-endo-epoxide	0.01	Iprovalicarb	0.02	Heptachlor-endo-epoxide	0.005
Heptachlor-exo-epoxide	0.01	Heptachlor-exo-epoxide	0.01	Isazofos	0.01	Heptachlor-exo-epoxide	0.005
Heptenophos	0.01	Heptenophos	0.01	Isocarbofos	0.01	Heptenophos	0.005
Hexachlorobenzene	0.01	Hexachlorobenzene	0.01	Isodrin	0.005	Hexachlorobenzene	0.005
Hexaconazole	0.01	Hexaconazole	0.01	Isofenphos	0.01	Hexaconazole	0.005
Hexaflumuron	0.01	Hexaflumuron	0.01	Isofenphos	0.01	Hexaflumuron	0.01
Hexythiazox	0.01	Hexythiazox	0.01	Isofenphos-methyl	0.005	Hexythiazox	0.01
Imazalil	0.01	Imazalil	0.01	Isofenphos-oxon	0.01	Imazalil	0.01
Imazaquin	0.01	Imazaquin	0.01	Isoprocarb	0.01	Imazaquin	0.01
Imidacloprid	0.01	Imidacloprid	0.01	Isoprothiolane	0.01	Imidacloprid	0.01

Fruit and Veg., cereals	LOQ	Honey	LOQ	Fats and Oils	LOQ	Milk, Eggs and Infant Formula	LOQ
Indoxacarb	0.01	Indoxacarb	0.01	Isoproturon	0.01	Indoxacarb	0.01
Iodofenphos	0.01	Iodofenphos	0.01	Kresoxim-Methyl	0.005	Iodofenphos	0.005
Iodosulfuron-methyl-sodium	0.01	Iodosulfuron-methyl-sodium	0.01	l-Cyhalothrin	0.01	Iodosulfuron-methyl-sodium	0.01
Ioxynil	0.01	Ioxynil	0.01	Lenacil	0.005	Ioxynil	0.01
Iprodione	0.01	Iprodione	0.01	Lindane	0.01	Iprodione	0.005
Iprovalicarb	0.01	Iprovalicarb	0.01	Linuron	0.01	Iprovalicarb	0.02
Isazofos	0.01	Isazofos	0.01	Lufenuron	0.05	Isazofos	0.005
Isodrin	0.01	Isodrin	0.01	Malaoxon	0.005	Isodrin	0.005
Isofenphos	0.02	Isofenphos	0.02	Malathion	0.01	Isofenphos	0.02
Isofenphos-methyl	0.01	Isofenphos-methyl	0.01	Mandipropamid	0.01	Isofenphos-methyl	0.005
Isofenphos-oxon	0.01	Isofenphos-oxon	0.01	MCPA Methyl Ester	0.01	Isofenphos-oxon	0.005
Isoprocarb	0.01	Isoprocarb	0.01	Mecarbam	0.01	Isoprocarb	0.01
Isoprothiolane	0.01	Isoprothiolane	0.01	Mepanipyrim	0.01	Isoprothiolane	0.01
Isoproturon	0.01	Isoproturon	0.01	Mephosfolan	0.01	Isoproturon	0.01
Kresoxim-Methyl	0.01	Kresoxim-Methyl	0.01	Mepronil	0.01	Kresoxim-Methyl	0.005
l-Cyhalothrin	0.01	l-Cyhalothrin	0.01	Mesosulfuron-methyl	0.010	l-Cyhalothrin	0.005
Lenacil	0.01	Lenacil	0.01	Metalaxyl	0.01	Lenacil	0.005
Lindane	0.01	Lindane	0.01	Metamitron	0.01	Lindane	0.005
Linuron	0.01	Linuron	0.01	Metazachlor	0.01	Linuron	0.01
Lufenuron	0.01	Lufenuron	0.01	Metconazole	0.02	Lufenuron	0.01
Malaoxon	0.01	Malaoxon	0.01	Methacrifos	0.005	Malaoxon	0.005
Malathion	0.01	Malathion	0.01	Methamidophos	0.005	Malathion	0.005
MCPA Methyl Ester	0.01	MCPA	**0.02**	Methidathion	0.01	MCPA Methyl Ester	0.005
MCPB	0.01	MCPA Methyl Ester	0.01	Methiocarb	0.01	MCPB	0.01
Mecarbam	0.01	MCPB	0.01	Methiocarb sulfone	0.01	Mecarbam	0.005
Mecoprop-P	0.01	Mecarbam	0.01	Methiocarb sulfoxide	0.01	Mecoprop-P	0.01
Mepanipyrim	0.01	Mecoprop-P	0.01	Methomyl	0.01	Mepanipyrim	0.01
Mephosfolan	0.01	Mepanipyrim	0.01	Methoxychlor	0.02	Mephosfolan	0.01
Mepronil	0.01	Mephosfolan	0.01	Methoxyfenozide	0.05	Mepronil	0.01
Mesosulfuron-methyl	0.01	Mepronil	0.01	Metobromuron	0.01	Mesosulfuron-methyl	0.01
Metalaxyl	0.01	Mesosulfuron-methyl	0.01	Metolachlor	0.005	Metalaxyl	0.005
Metamitron	0.01	Metalaxyl	0.01	Metribuzin	0.005	Metamitron	0.01
Metazachlor	0.01	Metamitron	0.01	Mevinphos	0.01	Metazachlor	0.01
Metconazole	0.01	Metazachlor	0.01	Mirex	0.01	Metconazole	0.01
Methacrifos	0.01	Metconazole	0.01	Molinate	0.02	Methacrifos	0.005
Methamidophos	0.01	Methacrifos	0.01	Monocrotophos	0.01	Methamidophos	0.005
Methidathion	0.01	Methamidophos	0.01	Myclobutanil	0.01	Methidathion	0.005
Methiocarb	0.01	Methidathion	0.01	Napropamide	0.02	Methiocarb	0.01
Methiocarb sulfone	0.01	Methiocarb	0.01	Nitenpyram	0.01	Methiocarb sulfone	0.01
Methiocarb sulfoxide	0.01	Methiocarb sulfone	0.01	Nitrofen	0.02	Methiocarb sulfoxide	0.01
Methomyl	0.01	Methiocarb sulfoxide	0.01	Nuarimol	0.005	Methomyl	0.01
Methoxychlor	0.01	Methomyl	0.01	Omethoate	0.005	Methoxychlor	0.02
Methoxyfenozide	0.01	Methoxychlor	0.01	op DDD	0.005	Methoxyfenozide	0.01
Metobromuron	0.01	Methoxyfenozide	0.01	op DDE	0.01	Metobromuron	0.01
Metolachlor	0.01	Metobromuron	0.01	op DDT	0.01	Metolachlor	0.005
Metribuzin	0.01	Metolachlor	0.01	o-Phenylphenol	0.01	Metribuzin	0.005
Mevinphos	0.01	Metribuzin	0.01	Oxadixyl	0.01	Mevinphos	0.005
Mirex	0.01	Mevinphos	0.01	Oxamyl	0.01	Mirex	0.005
Molinate	0.01	Mirex	0.01	Oxamyl-oxime	0.01	Molinate	0.02
Monocrotophos	0.02	Molinate	0.01	Oxy-chlordane	0.01	Monocrotophos	0.005
Myclobutanil	0.01	Monocrotophos	0.02	Paclobutrazol	0.01	Myclobutanil	0.005
Napropamide	0.01	Myclobutanil	0.01	Paraoxon-ethyl	0.005	Napropamide	0.02
Nitenpyram	0.01	Napropamide	0.01	Paraoxon-methyl	0.005	Nitenpyram	0.01
Nitrofen	0.01	Nitenpyram	0.01	Parathion-ethyl	0.005	Nitrofen	0.02
Nuarimol	0.01	Nitrofen	0.01	Parathion-methyl	0.01	Nuarimol	0.005
Omethoate	0.01	Nuarimol	0.01	PCB No. 101	0.01	Omethoate	0.005
op DDD	0.01	Omethoate	0.01	PCB No. 118	0.01	op DDD	0.005
op DDE	0.01	op DDD	0.01	PCB No. 138	0.01	op DDE	0.005
op DDT	0.01	op DDE	0.01	PCB No. 153	0.01	op DDT	0.01
o-Phenylphenol	0.01	op DDT	0.01	PCB No. 180	0.01	o-Phenylphenol	0.005
Oxadixyl	0.01	o-Phenylphenol	0.01	PCB No. 28	0.01	Oxadixyl	0.005
Oxamyl	0.01	Oxadixyl	0.01	PCB No. 52	0.01	Oxamyl	0.01
Oxamyl-oxime	0.01	Oxamyl	0.01	Penconazole	0.01	Oxamyl-oxime	0.01
Oxy-chlordane	0.01	Oxamyl-oxime	0.01	Pencycuron	0.01	Oxy-chlordane	0.005
Paclobutrazol	0.01	Oxy-chlordane	0.01	Pendimethalin	0.005	Paclobutrazol	0.005

Fruit and Veg., cereals	LOQ	Honey	LOQ	Fats and Oils	LOQ	Milk, Eggs and Infant Formula	LOQ
Paraoxon-ethyl	0.01	Paclobutrazol	0.01	Pentachloroanaline	0.01	Paraoxon-ethyl	0.005
Paraoxon-methyl	0.01	Paraoxon-ethyl	0.01	Permethrin	0.02	Paraoxon-methyl	0.005
Parathion-ethyl	0.01	Paraoxon-methyl	0.01	Phenmedipham	0.01	Parathion-ethyl	0.005
Parathion-methyl	0.01	Parathion-ethyl	0.01	Phenthoate	0.01	Parathion-methyl	0.005
Penconazole	0.01	Parathion-methyl	0.01	Phorate sulfoxide	0.01	PCB No. 101	0.005
Pencycuron	0.01	PCB No. 101	0.01	Phosalone	0.005	PCB No. 118	0.005
Pendimethalin	0.01	PCB No. 118	0.01	Phosmet	0.01	PCB No. 138	0.005
Pentachloroanaline	0.01	PCB No. 138	0.01	Phosphamidon	0.01	PCB No. 153	0.005
Permethrin	0.01	PCB No. 153	0.01	Phoxim	0.01	PCB No. 180	0.005
Phenmedipham	0.01	PCB No. 180	0.01	Picoxystrobin	0.01	PCB No. 28	0.005
Phenthoate	0.01	PCB No. 28	0.01	Piperonyl butoxide	0.01	PCB No. 52	0.005
Phorate sulfoxide	0.01	PCB No. 52	0.01	Pirimicarb	0.01	Penconazole	0.005
Phosalone	0.01	Penconazole	0.01	Pirimicarb desmethyl	0.005	Pencycuron	0.01
Phosmet	0.01	Pencycuron	0.01	Pirimifos-ethyl	0.005	Pendimethalin	0.005
Phosphamidon	0.01	Pendimethalin	0.01	Pirimifos-methyl	0.005	Pentachloroanaline	0.005
Phoxim	0.01	Pentachloroanaline	0.01	pp DDD	0.005	Permethrin	0.02
Picoxystrobin	0.01	Permethrin	0.01	pp DDE	0.01	Phenmedipham	0.01
Piperonyl butoxide	0.01	Phenmedipham	0.01	pp DDT	0.01	Phenthoate	0.005
Pirimicarb	0.01	Phenthoate	0.01	Prochloraz	0.005	Phorate sulfoxide	0.01
Pirimicarb desmethyl	0.01	Phorate sulfoxide	0.01	Procymidone	0.01	Phosalone	0.005
Pirimifos-ethyl	0.01	Phosalone	0.01	Profenophos	0.01	Phosmet	0.005
Pirimifos-methyl	0.01	Phosmet	0.01	Prometryn	0.01	Phosphamidon	0.01
pp DDD	0.01	Phosphamidon	0.01	Propachlor	0.01	Phoxim	0.01
pp DDE	0.01	Phoxim	0.01	Propanil	0.01	Picoxystrobin	0.005
pp DDT	0.01	Picoxystrobin	0.01	Propargite	0.005	Piperonyl butoxide	0.005
Prochloraz	0.01	Piperonyl butoxide	0.01	Propetamphos	0.01	Pirimicarb	0.005
Procymidone	0.01	Pirimicarb	0.01	Propham	0.01	Pirimicarb desmethyl	0.005
Profenophos	0.01	Pirimicarb desmethyl	0.01	Propiconazole	0.01	Pirimifos-ethyl	0.005
Prometryn	0.01	Pirimifos-ethyl	0.01	Propoxur	0.01	Pirimifos-methyl	0.005
Propachlor	0.01	Pirimifos-methyl	0.01	Propoxycarbazone sodium	0.01	pp DDD	0.005
Propanil	0.01	pp DDD	0.01	Propyzamide	0.01	pp DDE	0.005
Propargite	0.01	pp DDE	0.01	Prothioconazole desthio	0.010	pp DDT	0.01
Propetamphos	0.01	pp DDT	0.01	Prothiophos	0.01	Prochloraz	0.005
Propham	0.01	Prochloraz	0.01	Pymetrozine	0.01	Procymidone	0.005
Propiconazole	0.01	Procymidone	0.01	Pyraclostrobin	0.01	Profenophos	0.005
Propoxur	0.01	Profenophos	0.01	Pyrazophos	0.01	Prometryn	0.01
Propoxycarbazone sodium	0.01	Prometryn	0.01	Pyrethrins	0.05	Propachlor	0.005
Propyzamide	0.01	Propachlor	0.01	Pyridaben	0.02	Propanil	0.005
Prothiophos	0.01	Propanil	0.01	Pyridaphenthion	0.01	Propargite	0.005
Pymetrozine	0.02	Propargite	0.01	Pyrifenox	0.01	Propetamphos	0.005
Pyraclostrobin	0.01	Propetamphos	0.01	Pyrimethanil	0.01	Propham	0.005
Pyrazophos	0.01	Propham	0.01	Pyriproxyfen	0.01	Propiconazole	0.005
Pyrethrins	0.05	Propiconazole	0.01	Quinalphos	0.01	Propoxur	0.005
Pyridaben (LC)	0.01	Propoxur	0.01	Quinoxyfen	0.02	Propoxycarbazone sodium	0.01
Pyridaphenthion	0.01	Propoxycarbazone sodium	0.01	Quintozene	0.01	Propyzamide	0.005
Pyrifenox	0.02	Propyzamide	0.01	Quizalofop	0.01	Prothiophos	0.005
Pyrimethanil	0.01	Prothiophos	0.01	Resmethrin	0.10	Pymetrozine	0.02
Pyriproxyfen	0.01	Pymetrozine	0.02	Rimsulfuron	0.01	Pyraclostrobin	0.01
Quinalphos	0.01	Pyraclostrobin	0.01	RL - reporting limit		Pyrazophos	0.005
Quinoxyfen	0.01	Pyrazophos	0.01	Rotenone	0.02	Pyrethrins	0.05
Quintozene	0.01	Pyrethrins	**0.05**	Silthiofam	0.01	Pyridaben	0.01
Quizalofop	0.02	Pyridaben	0.01	Simazine	0.01	Pyridaphenthion	0.01
Resmethrin	0.10	Pyridaphenthion	0.01	Spinosad	0.01	Pyrifenox	0.01
Rimsulfuron	0.01	Pyrifenox	0.02	Spirodiclofen	0.02	Pyrimethanil	0.01
Rotenone	0.01	Pyrimethanil	0.01	Spiromesifen	0.01	Pyriproxyfen	0.005
Silthiofam	0.01	Pyriproxyfen	0.01	Spiroxamine	0.02	Quinalphos	0.005
Simazine	0.01	Quinalphos	0.01	tau-Fluvalinate	0.02	Quinoxyfen	0.01
Spinosad	0.01	Quinoxyfen	0.01	Tebuconazole	0.01	Quintozene	0.005
Spirodiclofen	0.01	Quintozene	0.01	Tebufenozide	0.05	Quizalofop	0.02
Spiroxamine	0.01	Quizalofop	0.02	Tebufenpyrad	0.02	Resmethrin	0.1
Sulfentrazone	0.01	Resmethrin	**0.10**	Tecnazene	0.005	Rimsulfuron	0.01
tau-Fluvalinate	0.01	Rimsulfuron	0.01	Tefluthrin	0.01	Rotenone	0.01

Fruit and Veg., cereals	LOQ	Honey	LOQ	Fats and Oils	LOQ	Milk, Eggs and Infant Formula	LOQ
Tebuconazole	0.01	Rotenone	0.01	Terbuthylazine	0.01	Silthiofam	0.005
Tebufenozide	0.01	Silthiofam	0.01	Tetraconazole	0.005	Simazine	0.005
Tebufenpyrad	0.01	Simazine	0.01	Tetradifon	0.01	Spinosad	0.01
Tecnazene	0.01	Spinosad	0.01	Tetramethrin	0.02	Spirodiclofen	0.02
Teflubenzuron	0.01	Spirodiclofen	0.01	Thiabendazole	0.01	Spiroxamine	0.01
Tefluthrin	0.01	Spiroxamine	0.01	Thiacloprid	0.01	Sulfentrazone	0.01
Terbuthylazine	0.01	Sulfentrazone	0.01	Thiamethoxam	0.01	tau-Fluvalinate	0.02
Tetraconazole	0.01	tau-Fluvalinate	0.01	Thiofanox-sulfoxide	0.01	Tebuconazole	0.005
Tetradifon	0.01	Tebuconazole	0.01	Thiophanate -ethyl	0.01	Tebufenozide	0.01
Tetramethrin	0.02	Tebufenozide	0.01	Thiophanate-methyl	0.01	Tebufenpyrad	0.01
Thiabendazole	0.01	Tebufenpyrad	0.01	Tolclofos-methyl	0.005	Tecnazene	0.005
Thiacloprid	0.02	Tecnazene	0.01	Tolyfluanid	0.005	Teflubenzuron	0.01
Thiamethoxam	0.01	Teflubenzuron	0.01	trans-Chlordane	0.01	Tefluthrin	0.005
Thiofanox-sulfoxide	0.01	Tefluthrin	0.01	trans-Nonachlor	0.01	Terbuthylazine	0.005
Thiophanate -ethyl	0.01	Terbuthylazine	0.01	Triadimefon	0.01	Tetraconazole	0.005
Thiophanate-methyl	0.01	Tetraconazole	0.01	Triadimenol	0.02	Tetradifon	0.005
Tolclofos-methyl	0.01	Tetradifon	0.01	Triazophos	0.01	Tetramethrin	0.02
Tolyfluanid	0.01	Tetramethrin	0.02	Trichlorfon	0.02	Thiabendazole	0.01
trans-Chlordane	0.01	Thiabendazole	0.01	Tricyclazole	0.010	Thiacloprid	0.02
trans-Nonachlor	0.01	Thiacloprid	0.02	Trifloxystrobin	0.01	Thiamethoxam	0.01
Triadimefon	0.01	Thiamethoxam	0.01	Triflumizole	0.01	Thiofanox-sulfoxide	0.01
Triadimenol	0.01	Thiofanox-sulfoxide	0.01	Trifluralin	0.01	Thiophanate -ethyl	0.01
Triazophos	0.01	Thiophanate -ethyl	0.01	Triflusulfuron-methyl	0.01	Thiophanate-methyl	0.01
Trichlorfon	0.02	Thiophanate-methyl	0.01	Triticonazole	0.01	Tolclofos-methyl	0.005
Triclopyr	0.01	Tolclofos-methyl	0.01	Vamidothion	0.01	Tolyfluanid	0.005
Trifloxystrobin	0.01	Tolyfluanid	0.01	Vinclozolin	0.005	trans-Chlordane	0.005
Triflumizole	0.01	trans-Chlordane	0.01	Zoxamide	0.005	trans-Nonachlor	0.005
Triflumuron	0.01	trans-Nonachlor	0.01			Triadimefon	0.005
Trifluralin	0.01	Triadimefon	0.01			Triadimenol	0.02
Triflusulfuron-methyl	0.01	Triadimenol	0.01			Triazophos	0.005
Triticonazole	0.01	Triazophos	0.01			Trichlorfon	0.02
Vamidothion	0.01	Trichlorfon	0.02			Triclopyr	0.01
Vinclozolin	0.01	Triclopyr	0.01			Trifloxystrobin	0.005
Zoxamide	0.01	Trifloxystrobin	0.01			Triflumizole	0.005
		Triflumizole	0.01			Triflumuron	0.01
		Triflumuron	0.01			Trifluralin	0.005
		Trifluralin	0.01			Triflusulfuron-methyl	0.01
		Triflusulfuron-methyl	0.01			Triticonazole	0.005
		Triticonazole	0.01			Vamidothion	0.01
		Vamidothion	0.01			Vinclozolin	0.005
		Vinclozolin	0.01			Zoxamide	0.005
		Zoxamide	0.01				

7.4 ANNEX IV Analytical scopes of single residue methods used

Pesticide name	LOQ
Dithiocarbamates	0.05
Chlormequat	0.02
Mepiquat	0.02
Amitraz	0.01
DMPF	0.01
DMF	0.01
DMA	0.03

7.5 ANNEX V Glossary of terms

Acceptable Daily Intake (ADI)	An ADI is an estimate of the amount of a residue in food or drinking water, expressed on a body weight basis that can be ingested daily over a lifetime without appreciable health risk. The particular vulnerability of infants, children, the elderly and those whose systems are under stress because of ill-health, are taken into account, through application of a safety factor, when ADI values are established. ADI values are based on the no-adverse-effect level in the most sensitive animal species used in the toxicological experiments, or if appropriate data are available, in humans. Invariably, a safety factor to account for inter-species and intra-species variations is applied. Studies used as a basis for the identification of the relevant no-adverse-effect levels and hence for deriving ADI values, are conducted using active substance as manufactured. Accordingly the toxicological effects of impurities present in active substances are included in the assessment. Account is also taken of metabolites that may influence the toxicological significance of the residue reaching the consumer.
Acute Reference Dose (ARfD)	An ARfD is similar in nature to an ADI but it relates to intake of residues at one meal or on one day. The particular vulnerability of infants, children, the elderly and those whose systems are under stress because of ill-health, are taken into account, through application of a safety factor, when ARfD values are established. ARfD values are based on the no-adverse effect level in the most sensitive animal species used in the toxicological experimentation, or if appropriate data are available, in humans. ARfD values are derived from the results of those toxicological studies that are most relevant to short term exposure.
Good Agricultural Practice (GAP)	GAP in the use of a plant protection product (pesticide) includes authorised use under practical conditions necessary for effective control of harmful organisms. It encompasses a range of levels of application up to the highest level authorised, applied in a manner that leaves a residue that is the smallest amount practicable.
Limit of Quantitation (LOQ)	The LOQ is the lowest concentration of a pesticide residue or contaminant that can be identified and quantitatively measured in specified food, agricultural commodity or animal feed, with an acceptable degree of certainty by a method of analysis.

Maximum Residue Level (MRL)	An MRL is the maximum concentration of a pesticide residue, expressed in milligrams per kilogram, legally permitted in or on food commodities and animal feeds. MRLs are based on supervised residues trials data that reflect Good Agricultural Practice (GAP). MRLs established for particular food commodities are such that potential consumer exposure to residues is judged to be toxicologically acceptable. MRLs are fixed at or about the limit of determination, where there are no approved uses. MRLs are established on the basis of sound scientific knowledge. They are only established for those pesticides for which acceptable daily intake (ADI) values exist.
Pesticide Residue	Any trace of a pesticide found in a sample, including any specified derivatives such as degradation and conversion products, metabolites and impurities, which are considered to be of toxicological significance and are included in the residue definition

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The results in this report relate only to samples tested.