FOREWORD

I am very pleased to present the results of the national monitoring programme for pesticide residues in food carried out in 2009 by the Pesticide Registration and Control Division of the Department of Agriculture, Fisheries and Food , with the co-operation of the Pesticide Control Laboratory, under the terms of a service contract with the Food Safety Authority of Ireland. I am particularly pleased to note that this year's report marks the 20th year of publication of the report and the 10th year of its publication on the website of my Department.

Food safety is of great importance to all involved in the food chain and, through the results of the pesticide residue monitoring programme, consumers can be assured that they are not exposed to unacceptable pesticide residue levels, and that only authorised pesticides are applied to food crops.

I recognise the importance and value of the Irish agri-food industry to the Irish economy and also the importance of this monitoring programme in underpinning confidence in the safety of the agri-food industry. I note particularly that the programme continues to monitor a wide range of food commodities for an ever-increasing number of pesticides and metabolites, providing further reassurance that the food on the Irish market is safe for consumers from a pesticides perspective.

Samples of food are analysed by the Pesticide Control Laboratory which is accredited by the Irish National Accreditation Board to the ISO 17025 standard for the analysis of selected pesticide residues in food of plant and of animal origin. The accreditation status of the laboratory will continue to be extended to cover additional pesticides and food commodities. This report provides detailed information on the results of the sampling and analysis programme for pesticide residues in both imported and domestic food for 2009.

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Minister for Agriculture, Fisheries and Food

Department of Agriculture, Fisheries and Food.

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ABBREVIATIONS

ADI	Acceptable daily intake
ARfD	Acute Reference Dose
DAFF	Department of Agriculture, Fisheries and Food
EC	European Community
EU	European Union
FSAI	Food Safety Authority of Ireland
IUNA	Irish Universities Nutrition Alliance
LOD	Limit of Determination
LOQ	Limit of Quantitation
mg kg^{-1}	milligram per kilogram
MRL	Maximum Residue Level
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 annual report on the National Monitoring Programme for pesticide residues in food, carried out in 2009 by the Department of Agriculture, Fisheries and Food (DAFF), 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 pesticide residues do not pose an unacceptable risk to consumers and that pesticides are used in accordance with *Good Agricultural Practice*. It requires that 1,260 samples of 97 commodities of fruit, vegetables, cereal and animal products are taken and analysed in a laboratory, accredited to ISO 17025 standards, for up to 334 pesticides to check for compliance with EU and national legislation for plant protection products. The programme was agreed with the Food Safety Authority of Ireland and complied with European legislation.

In 2009, some 1,324 monitoring samples (787 fruit and vegetables, 75 cereal and 462 food of animal origin) were taken and analysed for pesticide and chemical residues at the accredited Pesticide Control Laboratory. Sampling was conducted at wholesalers, retailers, grain mills or at meat plants with both domestic and imported foodstuffs being sampled.

Fruit & vegetables

Of the fruit and vegetable sampled, 41% were found to contain no residues, 17.4% contained residue of 1 pesticide and the remainder (41.6%) contained residues of two or more pesticides. Almost 50% of the residues detected in fruit and vegetables were at trace levels of less than, or equal to 0.05 mg kg^{-1}. A sample of strawberries of domestic origin contained residues of 9 pesticides, the highest number of pesticides detected in a single sample. The commodity with the most frequently detected residues was citrus, at 35% of samples. Most of the fruit and vegetables sampled were of EU origin, with Spain being the main source. Imazalil was the most frequently detected pesticide, detected in 18% of samples analysed, mainly citrus fruits. Ten samples contained residues above the legal limit (MRL), while 5 samples contained residues which indicated non-registered use of plant protection products. None of the residues detected resulted in exceedance of the Acceptable Daily Intake (ADI) or the Acute Reference Dose (ARfD) for the pesticides concerned.

Cereals

Sixty one percent of the cereal samples analysed were found to contain no residues. Pirimiphos-methyl, a pesticide used in grain stores, was the most frequently detected pesticide. Some 56% of the samples analysed were of Irish origin. No samples contained residues exceeding the legal limits.

Food of animal origin

Most of the food of animal origin, sampled under the National Residue Plan, was of domestic origin, with 97.4% of the samples containing no residues. Kidney fat samples contained residues in 2.6% of samples, with DDT, probably resulting from contamination due to past use, being the most commonly detected residue. None of the residues were above relevant legal limits. No residues were detected in milk, butter, eggs or honey.

Follow-up

Each non-compliance was appropriately investigated and followed up. Where non-compliant residues are detected, risk assessments, based on the residue level found and national food consumption data, are carried out to determine the risk to consumers and to guide the follow-up action to be taken. Five targeted

samples were taken as part of an investigation programme to follow up on non-compliances detected in 2008. No repeat offences were detected and no further follow-up action was required.

The detection of polychlorinated biphenyls (PCBs) in Irish pork in 2008 triggered the dioxin crisis which had a major negative impact on the consumption and sale of Irish pork. As part of a follow up control programme, 213 cereal and feed samples were analysis for PCBs residues in 2009. No PCB residues were detected in the samples analysed.

The DAFF continues to be committed to strengthening of the monitoring programme. By optimising and expanding the analytical methods for pesticide residues, DAFF will continue to pursue a vigorous investigation programme for improper use and violation of legal standards and provide a high level of protection for consumers.

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 2377/1990 establishes MRLs for certain pesticides used as veterinary products.

Pesticides are further controlled through legislation implementing Council Directive 91/414/EEC, 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 these evaluations are provided to and independently verified by the FSAI. 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, Fisheries and Food (DAFF) 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 2009' provides details of the results obtained during 2009 from a national programme to monitor food for the presence of pesticide residues, and is the 20th 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 II).

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

3 MONITORING PROGRAMME

The national monitoring programme for pesticide residues is undertaken by the PRCD of the DAFF with laboratory support provided by the Pesticide Control Laboratory (PCL). The programme implements the requirements of Regulation (EC) No 396/2005, Regulation (EC) No 2377/1990 and takes into account the requirements set out in the EU *"coordinated multi-annual Community control programme for 2009, 2010 and 2011 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 1213/2008).

The annual monitoring programme is carried out in accordance with contractual arrangements between the DAFF and the Food Safety Authority of Ireland (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 three different food groups for which MRLs have been established: fruit and vegetables, cereals and food of animal origin. 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 monitoring programme for 2009 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 monitoring programme in previous years,
iv findings from other Member State programmes and the EU co-ordinated programme,
v pesticide sales data,
vi handling/processing of food prior to consumption.

The monitoring 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 Directive 91/441/EEC, can be mis-used 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 products

[2] Service Contract between the Food Safety Authority of Ireland and the Department of Agriculture, Fisheries and Food from 2008

[3] Commission Recommendation of 5th of December 2008, concerning a co-ordinated Community monitoring programme for 2008 to ensure compliance with maximum levels of pesticide residues in and on cereals and certain other products of plant origin (2008/1213/EC) OJ No L 328/9.
[4] IUNA, Irish Universities Nutrition Alliance. North South Food Consumption Database, 2001 and National Children's Food Survey 2005.

are prohibited because of risks to human health or the environment associated with their use. The residue monitoring programme also serves as an indicator of the level of compliance with those provisions.

3.2 Monitoring of fruit and vegetables

Monitoring sampling of 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 monitoring programme, organic products may be sampled randomly when encountered at retail and wholesaler 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 2009, it was planned to take 750 samples of fruit and vegetables, including processed products of plant origin.

3.3 Monitoring of cereals

The main concern with respect to cereals relates to residues that arise as a result of post-harvest application of plant protection products. The sampling programme 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 2009, it was planned to take 80 samples of cereals.

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 programme organized by the Veterinary Medicine Unit of DAFF. The fat samples analysed are taken from individual animals at meat plants. Dairy products, eggs, and honey are sampled at production plants or points of assembly. Each dairy product sampled is representative of a particular bulk consignment. Samples of food of animal origin were taken by officers of the Veterinary Inspectorate in the case of the meat, by officers from the Agricultural Inspectorate in the case of eggs and honey, and by officers of the Dairy Inspectorate in the case of dairy products. All samples are taken in accordance with the requirements of Directive 96/23/EC.

In 2009, it was planned to take 430 samples of food of animal origin.

3.5 Monitoring of miscellaneous products

From time to time, other State Services, Local Authorities, consumers and other interested parties submit complaint or suspect samples are submitted to the laboratory for analysis by DAFF. Since it is not

possible to anticipate the number of samples which might be submitted, a provision is included in the planned programme for the submission of up to 5 samples.

3.6 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[5] 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. In some cases, specific detectors such as electron capture or flame photometric detectors were also used to detect and confirm of the presence of some pesticide residues in the fat samples analysed. A selected number of samples were also analysed for chlormequat, mepiquat and dithiocarbamates using single residue methods. The method for chlormequat and mepiquat was added to the procedures in 2009. References to the analytical methods employed by the laboratory are provided in Annex III.

Annex IV provides the list of the pesticide residues sought and the sensitivity of the analytical methods used for food of plant and animal origin.

3.7 Quality assurance

In 2009, the PCL was audited by the Irish National Accreditation Board and its accreditation status to ISO 17025 standards was again confirmed. 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, using cauliflower, butter and 2 cereal matrices. In addition the laboratory participated in 4 proficiency tests (grapes, cucumber, peach and vegetable oil), organised by the Food Analysis Performance Assessment Scheme (FAPAS)[6]. Routine quality assurance procedures are followed within the laboratory in accordance with the requirements specified to maintain accreditation to the ISO 17025 standard.

3.8 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 programme, to be in breach of established MRLs is the prime means of

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

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 programme, or a Food Alert issued by the FSAI or a Rapid Alert notification circulated by the European Commission. The targeted lot/consignment is detained pending analysis. The analytical result dictates the nature of the 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 are detected, the premises and records of the Irish growers concerned are inspected. Produce from those growers is targeted for sampling during the following year to ensure that the offence is not repeated.

The monitoring programme provided for up to 15 enforcement samples of fruit and vegetable arising from MRL breaches and non-registered uses detected in 2008.

3.9 **Consumer assessments**

When a sample is found to contain a pesticide residue that exceeds an MRL, a risk assessment is carried out to assess the impact on consumers, both adults and children. In assessing the impact for consumers of exposure, through the diet, to pesticide residues, it is appropriate to consider both acute exposure and chronic exposure. The dietary intake assessment for chronically toxic pesticides was carried out using mean consumption data over an extended period, while the intake assessment for the acutely toxic pesticides was carried out using consumption data over a short period of up to 1 day.

3.9.1 Acute risk assessment

For the purposes of assessing the effects of acute exposure, the realistic highest levels of exposure likely (97.5th percentile exposure) over a single day and the effects on health of such exposure must be considered. For commodities consisting of large sized units (e.g. melons) or medium sized units (e.g. citrus and pome fruit), a variability factor is applied to take account of a possible uneven distribution of residues in the sample units. In assessing the effects of acute exposure, the level of exposure is compared to the acute reference dose (ARfD) established for individual pesticides. When an ARfD is established it includes a safety factor to ensure that the elderly, infants and children and those whose systems are under stress because of illness are protected. As some pesticides do not exhibit acute toxicity, ARfD values have not been established or required for all pesticides. Assessments are carried out using the conservative deterministic or point estimate[7] which is generally accepted as providing a major overestimation of the actual risk to consumers. Through the use of such calculation and intake figures, all but the most extreme intake figures likely to arise have been taken into account in estimating the acute dietary impact of these residues on Irish consumers. At present the PRCD is working on the development of a more refined risk

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

assessment model using a probabilistic approach to more accurately estimate the exposure of Irish consumers.

3.9.1 Chronic risk assessment

For the purposes of assessing the effects of chronic exposure, the level of exposure over a lifetime and the likely effects on health of such exposure must be considered. The techniques necessary for such assessments are well developed and involve consideration of the mean levels of the likely exposure in relation to the acceptable daily intake (ADI) values established for individual pesticides. ADI values, which are a measure of the maximum level of intake each day over a lifetime adjudged to result in no adverse toxicological effects for consumers. An assessment of the relationship between ADIs and the level of residues present in the samples, exceeding MRLs, demonstrates the risk to Irish consumers (adult and children), associated with dietary intake of such residues. The intake figures used for individual commodities are derived from the 1996-1998 Irish Universities Nutrition Alliance (IUNA) dietary survey for adults and the 2003-2005 IUNA survey for children.

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 of time.

4 MONITORING RESULTS

The planned number of monitoring samples (1,260) for the 2009 monitoring programme was agreed with the FSAI. The planned number of samples for food of animal origin (430) was decided in conjunction with the Veterinary Medicine Unit of DAFF, as part of the National Residue Plan required under Directive 96/23/EC.

A total of 1,324 monitoring samples were taken, consisting of:

- 787 fruit and vegetable samples, including 111 samples of processed products,
- 75 cereal samples,
- 462 samples of food of animal origin.

Table 1 provides a detailed breakdown of the number of samples planned and achieved.

Table 1: Number of samples planned and achieved in the 2009 monitoring programme

Commodity	Planned	Achieved
Berries and small fruits	60	58
Brassica vegetables	20	22
Bulb vegetables	5	5
Cereals	80	75
Citrus fruits	125	114
Fruiting vegetables	40	64
Mushroom	20	19
Leafy vegetables	60	59
Legume vegetables	15	15
Miscellaneous fruits	70	66
Oilseeds/Spice	0	0
Pome fruits	125	121
Potatoes	40	34
Processed food	80	111
Root and tuber vegetables	30	43
Stem vegetables	20	20
Stone fruits	40	36
Food of animal origin	430	462
Total	**1260**	**1324**

4.1 Monitoring results for fruit and vegetables

A total of 787 fruit and vegetable samples were analysed for 331 pesticides and analytes using multi residue analytical methods. In addition, 74 fruit and vegetable samples were analysed for dithiocarbamate pesticides using the CS_2 method and 36 fruit and vegetable samples were analysed for the growth regulators, chlormequat and mepiquat. The completion of method development and validation work in 2008, allowed the analytical capacity of the laboratory to increase from 292 pesticides and metabolites in 2008 to 334 in 2009.

The results and the origin of specific fruit and vegetable commodities are summarised in Table 2.

Table 2: Summary table of fruit and vegetable samples analysed for pesticide residues

Commodity	Number of samples					Residue		
	Total	Domestic	EU	Non-EU	Unknown	<LOQ	≤MRL	>MRL
Apple	84	0	46	37	1	11	71	2
Apple Juice	11	1	2	0	8	11	0	0
Apricot	4	0	4	0	0	1	2	1
Asparagus	4	0	1	2	1	3	1	0
Aubergine	15	0	15	0	0	4	11	0
Avocado	10	0	1	9	0	9	1	0
Banana	16	0	0	16	0	4	12	0
Blueberry	7	0	4	3	0	6	1	0
Bean with pod	1	0	0	1	0	1	0	0
Broccoli	3	0	2	1	0	3	0	0
Carrot	26	6	16	2	2	15	11	0
Carrot Juice	1	0	0	0	1	1	0	0
Cauliflower	15	8	7	0	0	14	1	0
Celery	11	1	8	1	1	3	8	0
Chard	1	0	1	0	0	1	0	0
Cherry	9	0	1	7	1	2	6	1
Chinese Cabbage	2	0	2	0	0	2	0	0
Clementine	25	0	14	11	0	1	24	0
Courgette	4	0	4	0	0	3	1	0
Cranberry	1	0	0	1	0	0	1	0
Cranberry Juice	2	0	0	0	2	2	0	0
Cucumber	5	2	3	0	0	4	1	0
Cultivated Mushroom	19	13	3	0	3	10	9	0
Endive	1	0	1	0	0	0	1	0
Garlic	1	0	1	0	0	0	1	0
Gherkin	1	0	0	1	0	1	0	0
Ginger	1	0	0	1	0	1	0	0
Grape Juice	4	0	0	0	4	4	0	0
Grapefruit	12	0	2	9	1	3	9	0
Grapefruit Juice	2	0	0	0	2	1	1	0
Guava Juice	1	0	0	0	1	1	0	0
Head Cabbage	2	2	0	0	0	0	2	0
Kiwi	18	0	11	7	0	8	10	0
Kumquat	1	0	0	1	0	1	0	0
Lambs Lettuce	1	0	1	0	0	1	0	0
Leek	6	2	4	0	0	3	3	0
Lemon	12	0	5	7	0	1	11	0
Lentil dried	1	0	0	0	1	1	0	0
Lettuce	44	22	22	0	0	13	31	0
Lime	5	0	0	5	0	0	5	0
Lychee	1	0	0	1	0	0	1	0
Mandarin	25	0	10	15	0	1	22	2

Commodity	Number of samples					Residue		
	Total	Domestic	EU	Non-EU	Unknown	<LOQ	≤MRL	>MRL
Mango	12	0	0	12	0	3	9	0
Mango Juice	1	0	0	0	1	1	0	0
Melon	3	0	1	2	0	2	1	0
Mizuna	1	0	1	0	0	0	1	0
Nectarine	6	0	5	1	0	2	4	0
Onion	2	0	1	1	0	2	0	0
Orange	43	0	12	31	0	4	38	1
Orange Juice	18	0	0	2	16	15	3	0
Parsnip	6	3	3	0	0	0	6	0
Passion Fruit	1	0	0	1	0	0	1	0
Peach	8	0	6	1	1	5	3	0
Pear	40	0	22	18	0	17	23	0
Peas with pod	1	0	0	1	0	0	1	0
Peas without pod	15	0	4	0	11	11	4	0
Pepper	17	4	13	0	0	12	5	0
Pineapple	8	0	0	7	1	4	4	0
Pineapple Juice	3	0	0	1	2	3	0	0
Plum	15	0	12	2	1	7	8	0
Pomegranate	4	0	2	2	0	3	1	0
Potato	34	13	16	4	1	26	7	1
Radish	2	0	2	0	0	2	0	0
Raisin	1	0	0	1	0	1	0	0
Raspberry	6	1	5	0	0	1	5	0
Rhubarb	2	2	0	0	0	2	0	0
Rocket	1	0	1	0	0	1	0	0
Satsuma	9	0	0	9	0	0	9	0
Scarole	2	1	1	0	0	1	1	0
Sharon Fruit	1	0	1	0	0	1	0	0
Spinach	11	0	11	0	0	5	6	0
Spring Onion	2	0	0	2	0	2	0	0
Strawberry	22	11	8	3	0	3	19	0
Squash	2	0	0	2	0	2	0	0
Sweet Corn	7	0	1	1	5	6	1	0
Sweet Potato	2	0	0	2	0	2	0	0
Table Grape	23	0	6	17	0	2	21	0
Table Olive	1	0	1	0	0	1	0	0
Tomato	19	2	14	2	1	10	9	0
Tomato Juice	2	0	0	0	2	2	0	0
Turnip	6	6	0	0	0	5	0	1
Wine	10	0	5	5	0	5	5	0
Yam	3	0	0	3	0	1	1	1
Total	**787**	**100**	**345**	**271**	**71**	**323**	**454**	**10**

Table 3 presents details of the levels of pesticide residues detected in the various raw and processed fruit and vegetable commodities, together with sample identification numbers, country of origin (where known)

and the relevant MRL for each substance detected. Where no definitive MRL existed, a default value of 0.01 mg kg^{-1} applied. The Regulation did not apply to ortho-phenyl phenol or piperonyl butoxide in 2009, as no MRLs had been established for these substances.

Table 3: Details of pesticide residues detected in fruit and vegetable samples

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg^{-1})	MRL (mg kg^{-1})
1 Fruit	**1.1 Citrus Fruit**	**1.1001 Grapefruit**		
72538	Israel	Imazalil	2.41	5
		Thiabendazole	0.92	5
		2,4-D	0.04	1
72575	Cyprus	Ortho-Phenylphenol	0.09	No MRL
		Chlorpyrifos	0.06	0.3
		Imazalil	2.09	5
		Thiabendazole	0.78	5
72667	Spain	Imazalil	1.22	5
		Pyrimethanil	1.26	10
		Ortho-Phenylphenol	0.31	No MRL
72751	Israel	Ortho-Phenylphenol	0.11	No MRL
		Imazalil	1.01	5
		Imidacloprid	0.03	1
		Thiabendazole	0.48	5
72880	S Africa	Imazalil	0.18	5
		Imidacloprid	0.01	1
		Thiabendazole	0.73	5
72913	S Africa	Chlorpyrifos	0.02	0.3
		Trifloxystrobin	0.03	0.3
		Imazalil	0.60	5
		Pyraclostrobin	0.01	1
72952	S Africa	Imazalil	0.58	5
		Pyraclostrobin	0.07	1
		2,4-D	0.20	1
72955	Swaziland	Imazalil	0.94	5
		2,4-D	0.04	1
		Trifloxystrobin	0.03	0.3
73280	Turkey	Imazalil	1.39	5
		Thiabendazole	0.04	5
		Chlorpyrifos	0.03	0.3
73307*	Unknown	Imazalil	0.01	5
		1.1002 Orange		
72503	Spain	Pyriproxyfen	0.02	0.6
		Prochloraz	0.33	10
		Chlorpyrifos	0.16	0.3
		Fenthion	0.08	3
		Imazalil	1.07	5
		Pyrimethanil	1.19	10
72531	Spain	Chlorpyrifos	0.03	0.3

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Imazalil	1.12	5
72585*	Unknown	Ortho-Phenylphenol	0.03	No MRL
		Imazalil	0.06	5
		Thiabendazole	0.02	5
72596	Egypt	Imazalil	3.43	5
		Thiabendazole	1.23	5
		2,4-D	0.05	1
72635	Morocco	Imazalil	0.94	5
		Chlorpyrifos	0.20	0.3
72663	Egypt	Imazalil	1.25	5
		Thiabendazole	1.86	5
		Ortho-Phenylphenol	4.54	No MRL
		Pirimiphos-Methyl	0.04	1
72694	Morocco	Methidathion	0.44	5
		Imazalil	1.35	5
72699	Israel	Malathion	0.05	7
		Ortho-Phenylphenol	1.00	No MRL
		Imazalil	2.96	5
		Thiabendazole	2.39	5
		2,4-D	0.09	1
72721	Morocco	Chlorpyrifos	0.13	0.3
		Imazalil	1.69	5
72729	Morocco	Chlorpyrifos	0.08	0.3
		Imazalil	0.12	5
		Thiabendazole	1.91	5
72736	Spain	Chlorpyrifos	0.06	0.3
		Imazalil	3.24	5
72831	Morocco	Imazalil	1.59	5
72856	Morocco	Chlorpyrifos	0.06	0.3
		Imazalil	3.06	5
		Thiabendazole	0.04	5
72863	Egypt	Imazalil	0.21	5
		Thiabendazole	0.26	5
		Ortho-Phenylphenol	1.71	No MRL
		Pirimiphos-Methyl	0.03	1
72907	Morocco	Chlorpyrifos	0.16	0.3
		Imazalil	3.57	5
		Thiabendazole	0.03	5
72911	Morocco	Chlorpyrifos	0.09	0.3
		Imazalil	1.50	5
72920	Egypt	Imazalil	3.35	5
		Thiabendazole	1.11	5
72945	Egypt	Imazalil	2.07	5
		Thiabendazole	1.15	5
		Malathion	0.04	7
72949	Spain	Imazalil	0.74	5
		Chlorpyrifos	0.03	0.3
72950	Egypt	Imazalil	0.15	5
		Thiabendazole	0.42	5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Ortho-Phenylphenol	1.04	No MRL
72951	Morocco	Imazalil	0.87	5
		Chlorpyrifos	0.02	0.3
72954	Egypt	Imazalil	1.49	5
		Thiabendazole	0.42	5
		Malathion	0.02	7
		Ortho-Phenylphenol	0.51	No MRL
72957	Brazil	Carbendazim	0.05	0.5
		Imazalil	1.93	5
		Thiabendazole	0.11	5
72958	Egypt	Imazalil	0.19	5
		Thiabendazole	0.64	5
		Malathion	0.04	7
		Ortho-Phenylphenol	1.47	No MRL
72987	Israel	Ortho-Phenylphenol	1.25	No MRL
		Imazalil	0.12	5
		Thiabendazole	0.03	5
72989	Egypt	Metalaxyl	0.07	0.5
		Malathion	0.13	7
		Lambda-Cyhalothrin	0.03	0.1
		Ortho-Phenylphenol	2.97	No MRL
		Imazalil	0.69	5
		Thiabendazole	0.87	5
72997	S Africa	Chlorpyrifos	0.05	0.3
		Imazalil	2.04	5
		Imidacloprid	0.05	1
		Thiabendazole	0.36	5
		2,4-D	0.10	1
73000	Spain	Ortho-Phenylphenol	0.04	No MRL
		Imazalil	3.67	5
73023	Argentina	Ortho-Phenylphenol	0.12	No MRL
		Myclobutanyl	0.03	3
		Malathion	0.08	7
		Imazalil	0.94	5
		Pyrimethanil	0.46	10
		Thiabendazole	0.46	5
73074	S Africa	Trifloxystrobin	0.02	0.3
		Imazalil	0.89	5
		Thiabendazole	3.88	5
73112	S Africa	Imazalil	1.70	5
		Imidacloprid	0.01	1
		Pyraclostrobin	0.01	1
		Cypermethrin	0.08	2
		2,4-D	0.18	1
73122	**Brazil**	**Dimethoate**	**0.05**	**0.02**
		Methidathion	0.17	5
		Propargite	0.33	3
		Carbendazim	0.02	0.5
		Imazalil	0.78	5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Thiabendazole	0.12	5
		Malathion	0.04	7
73151	S Africa	Imazalil	0.76	5
		Imidacloprid	0.02	1
		Thiabendazole	2.66	5
73184*	Unknown	Imazalil	0.01	5
		Thiabendazole	0.01	5
73200	S Africa	Imazalil	1.61	5
73209	S Africa	Malathion	0.03	7
		Imazalil	0.46	5
		Pyraclostrobin	0.02	1
		2,4-D	0.06	1
73274	S Africa	Imazalil	1.76	5
		Imidacloprid	0.02	1
		Pyraclostrobin	0.01	1
73288	Spain	Imazalil	0.89	5
		Myclobutanyl	0.53	3
		Chlorpyrifos	0.02	0.3
73329*	Unknown	Carbendazim	0.13	0.5
73334	Spain	Chlorpyrifos	0.02	0.3
		Lambda-Cyhalothrin	0.03	0.1
		Imazalil	2.00	5
73380	Spain	Imazalil	0.98	5
		Chlorpyrifos	0.09	0.3
73383	Spain	Imazalil	0.28	5
		Myclobutanyl	0.58	3
		Chlorpyrifos	0.05	0.3
		1.1003 Lemon		
72737	Spain	Imazalil	0.36	5
		Pyrimethanil	0.01	10
72897	Spain	Chlorpyrifos	0.02	0.2
		Pyriproxyfen	0.03	0.6
		Imazalil	1.80	5
72953	Spain	Imazalil	0.75	5
		Pyriproxyfen	0.03	0.6
72991	Argentina	Imazalil	1.16	5
		Thiabendazole	0.08	5
		2,4-D	0.02	1
73136	Uruguay	Imazalil	1.17	5
73185	Argentina	Chlorpyrifos	0.03	0.2
		Imazalil	1.39	5
		Pyrimethanil	0.58	10
		Ortho-Phenylphenol	0.81	No MRL
		Prochloraz	0.67	10
73201	Turkey	Chlorpyrifos	0.03	0.2
		Ortho-Phenylphenol	0.05	No MRL
		Imazalil	1.48	5
		Thiabendazole	2.20	5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
73246	Turkey	Imazalil	1.45	5
73310	Spain	Chlorpyrifos	0.07	0.2
		Dicofol	0.15	2
		Pyriproxyfen	0.04	0.6
		Prochloraz	0.37	10
		Imazalil	1.13	5
		Hexythiazox	0.01	1
73381	Turkey	Imazalil	0.30	5
		Bromopropylate	0.54	2
		Pyriproxyfen	0.02	0.6
		Chlorpyrifos	0.09	0.2
73382	Spain	Imazalil	0.79	5
		Fenpyroximate	0.02	0.3
		Pyriproxyfen	0.02	0.6
		Prochloraz	0.19	10
		Chlorpyrifos	0.03	0.2
		Propargite	0.36	3
		1.1004 Lime		
72501	Brazil	Prochloraz	0.51	10
		Imazalil	0.02	5
		2,4-D	0.07	1
73022	Mexico	Ortho-Phenylphenol	0.03	No MRL
		Imazalil	0.63	5
		Thiabendazole	0.44	5
72620	Brazil	Prochloraz	0.98	10
		Methidathion	0.07	5
72797	Brazil	2,4-D	0.16	1
72956	Brazil	2,4-D	0.09	1
		Prochloraz	0.28	10
		1.1005 Mandarin		
72511	Morocco	Chlorpyrifos	0.32	2
		Imazalil	1.35	5
72520	Morocco	Chlorpyrifos	0.03	2
		Thiabendazole	0.01	5
		Imazalil	0.81	5
72537	Spain	Chlorpyrifos	0.08	2
		Hexythiazox	0.01	1
		Imazalil	1.09	5
72576	Morocco	Chlorpyrifos	0.09	2
		Imazalil	1.12	5
72577	Morocco	Chlorpyrifos	0.03	2
		Imazalil	0.91	5
		Thiabendazole	0.07	5
72597	Morocco	Imazalil	1.30	5
		Thiabendazole	0.06	5
72599	Spain	Imazalil	1.44	5
		Thiabendazole	2.90	5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Chlorpyrifos	0.02	2
		Ortho-Phenylphenol	0.02	No MRL
72648	Morocco	Hexythiazox	0.01	1
		Imazalil	1.51	5
		Thiabendazole	0.02	5
		Propargite	0.09	3
		Chlorpyrifos	0.03	2
72695	Spain	Chlorpyrifos	0.03	2
		Imazalil	1.83	5
72703	**Spain**	**Captan**	**0.06**	**0.02**
		Myclobutanyl	0.02	3
		Ortho-Phenylphenol	0.15	No MRL
		Imazalil	2.99	5
72705	Spain	Imazalil	0.58	5
		Thiabendazole	0.03	5
72720	Peru	Pyriproxyfen	0.03	0.6
		Prochloraz	0.75	10
		Fenpyroximate	0.03	0.3
		Hexythiazox	0.02	1
		Pyrimethanil	0.06	10
		Thiabendazole	3.17	5
		Imazalil	3.25	5
		2,4-D	0.30	1
72735	**Cyprus**	**Thiabendazole**	**5.47**	**5**
		Ortho-Phenylphenol	2.01	No MRL
		Bromopropylate	0.11	2
		Imazalil	3.04	5
		Chlorpyrifos	0.03	2
72756	Cyprus	Imazalil	0.68	5
		Thiabendazole	0.94	5
		Ortho-Phenylphenol	2.93	No MRL
72772	Argentina	Chlorpyrifos	0.02	2
		Imazalil	3.72	5
		Pyraclostrobin	0.01	1
		Thiabendazole	3.07	5
		2,4-D	0.07	1
		Ortho-Phenylphenol	0.28	No MRL
72780	Spain	Etofenprox	0.07	1
		Imazalil	1.83	5
		Ortho-Phenylphenol	0.41	No MRL
		Chlorpyrifos	0.04	2
73066	Peru	Ortho-Phenylphenol	1.16	No MRL
		Thiabendazole	0.27	5
		Imazalil	2.08	5
73134	Argentina	Prochloraz	0.28	10
		Imazalil	2.19	5
		Thiabendazole	3.14	5
		2,4-D	0.10	1
73194	S Africa	Imazalil	1.09	5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Thiabendazole	0.82	5
		Azoxystrobin	0.05	1
73195	Uruguay	Imazalil	2.20	5
		Pyrimethanil	0.13	10
		Ortho-Phenylphenol	0.24	No MRL
		Prochloraz	0.39	10
73203	Australia	Imazalil	2.76	5
		Thiabendazole	0.98	5
		2,4-D	0.02	1
73206	S Africa	Imazalil	2.24	5
		Thiabendazole	1.38	5
		2,4-D	0.05	1
73226	Uruguay	Imazalil	1.67	5
		Ortho-Phenylphenol	1.48	No MRL
73279	Spain	Imazalil	0.36	5
		Myclobutanyl	0.73	3
		1.1005 Clementine		
72590	Spain	Imazalil	0.72	2
72591	Spain	Imazalil	2.08	5
		Thiabendazole	0.16	5
72636	Spain	Imazalil	1.43	5
		Thiabendazole	1.12	5
		Chlorpyrifos	0.15	2
		Ortho-Phenylphenol	1.94	No MRL
72921	Argentina	Chlorpyrifos	0.05	2
		Ortho-Phenylphenol	0.06	No MRL
		Prochloraz	0.03	10
		Imazalil	3.63	5
		Pyrimethanil	1.15	10
		Thiabendazole	0.85	5
72988	S Africa	Imazalil	1.63	5
		Thiabendazole	0.53	5
		2,4-D	0.10	1
73021	S Africa	2,4-D	0.09	1
		Imazalil	2.10	5
		Thiabendazole	2.09	5
73040	S Africa	2,4-D	0.27	1
		Imazalil	0.94	5
		Thiabendazole	0.17	5
73061	Argentina	Ortho-Phenylphenol	0.13	No MRL
		Malathion	0.24	7
		Chlorpyrifos	0.12	2
		Imazalil	1.89	5
		Thiabendazole	3.60	5
		2,4-D	0.13	1
73062	S Africa	Imazalil	3.08	5
		Imidacloprid	0.04	1
		Pyraclostrobin	0.02	1

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Thiabendazole	0.22	5
		2,4-D	0.33	1
73067	Uruguay	Ortho-Phenylphenol	0.26	No MRL
		Prochloraz	0.88	10
		Imazalil	0.79	5
		2,4-D	0.02	1
73078	S Africa	Methidathion	0.07	5
		Imazalil	2.46	5
		Thiabendazole	0.30	5
		2,4-D	0.03	1
73140	Argentina	Ortho-Phenylphenol	0.09	No MRL
		Prochloraz	0.04	10
		Chlorpyrifos	0.11	2
		Malathion	0.17	7
		Imazalil	0.72	5
		Pyrimethanil	0.03	10
		Thiabendazole	0.58	5
73143	S Africa	Imazalil	1.43	5
		Thiabendazole	0.06	5
		2,4-D	0.08	1
73224	Spain	Imazalil	3.04	5
		Thiabendazole	3.32	5
		Chlorpyrifos	0.04	2
		Lambda-Cyhalothrin	0.02	0.2
		Ortho-Phenylphenol	0.04	No MRL
73242	Spain	Imazalil	0.96	5
		Dicofol	0.21	2
		Ortho-Phenylphenol	0.03	No MRL
		Chlorpyrifos	0.06	2
		4,4-Dichlorobenzophenone	0.02	No MRL
73273	Spain	Imazalil	1.71	5
73282	Spain	Imazalil	0.68	5
		Tebufenpyrad	0.04	0.5
		Chlorpyrifos	0.10	2
		Chlorpyrifos-Methyl	0.03	1
73296	Senegal	Imazalil	2.27	5
		4,4-Dichlorobenzophenone	0.03	No MRL
		Dicofol	0.27	2
73301	Spain	Imazalil	0.83	5
		Chlorpyrifos	0.10	2
		Lambda-Cyhalothrin	0.04	0.2
		Malathion	0.04	7
		Ortho-Phenylphenol	0.20	No MRL
73308	Spain	Chlorpyrifos	0.04	2
		Imazalil	2.04	5
73325	Spain	Imazalil	1.81	5
		Ortho-Phenylphenol	0.28	No MRL
		Chlorpyrifos	0.47	2
73335	Spain	Chlorpyrifos	0.03	2

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Chlorpyrifos-Methyl	0.02	1
		Imazalil	1.21	5
73338	Spain	Imazalil	2.20	5
		Thiabendazole	1.67	5
		Ortho-Phenylphenol	0.18	No MRL
73386	Spain	Imazalil	1.40	5
		Ortho-Phenylphenol	0.07	No MRL
		Chlorpyrifos	0.13	2
		1.1005 Satsuma		
72774	Peru	Imazalil	2.56	5
		Pyrimethanil	0.05	10
		Thiabendazole	1.74	5
		2,4-D	0.22	1
		Prochloraz	0.72	10
72800	S Africa	2,4-D	0.05	1
		Imazalil	0.79	5
		Pyraclostrobin	0.03	1
		Thiabendazole	1.31	5
72823	S Africa	Imazalil	1.82	5
		Imidacloprid	0.03	1
		Thiabendazole	0.53	5
		2,4-D	0.16	1
		Malathion	0.02	7
72876	S Africa	Imazalil	2.06	5
		Thiabendazole	2.91	5
		2,4-D	0.09	1
72882	S Africa	Ortho-Phenylphenol	0.02	No MRL
		Imazalil	2.04	5
		Thiabendazole	1.92	5
		2,4-D	0.09	1
72887	S Africa	Imazalil	1.02	5
		Imidacloprid	0.02	1
		Thiabendazole	0.11	5
		2,4-D	0.06	1
72912	S Africa	Methidathion	0.25	5
		Imazalil	3.02	5
		Thiabendazole	0.03	5
72943	S Africa	Imazalil	0.49	5
		Imidacloprid	0.01	1
		Pyrimethanil	0.34	10
		Thiabendazole	0.11	5
		2,4-D	0.03	1
		Methidathion	0.04	5
		Malathion	0.04	7
72946	S Africa	Imazalil	3.69	5
		Thiabendazole	0.04	5
		2,4-D	0.03	1
		Triflumuron	0.04	1

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Ortho-Phenylphenol	0.03	No MRL
	1.3 Pome Fruit	**1.3001 Apple**		
72515	France	Propargite	0.25	3
		Pirimicarb	0.02	2
		Fludioxonil	0.03	5
72516	France	Boscalid	0.08	2
		Pyraclostrobin	0.02	0.3
72534	France	Diphenylamine	0.03	5
		Carbendazim	0.02	0.2
		Thiacloprid	0.02	0.3
72588	France	Propargite	0.04	3
		Carbendazim	0.03	0.2
72592	Holland	Boscalid	0.15	2
		Fenoxycarb	0.02	1
		Methoxyfenozide	0.03	2
		Pyraclostrobin	0.08	0.3
72598	France	Carbendazim	0.14	0.2
		Fludioxonil	0.01	5
		Diphenylamine	0.85	5
72600	France	Fludioxonil	0.12	5
		Chlorpyrifos	0.04	0.5
72634	France	Thiacloprid	0.01	0.3
		Fludioxonil	0.04	5
72647	France	Carbendazim	0.02	0.2
		Diphenylamine	0.09	5
		Chlorpyrifos	0.02	0.5
		Pirimicarb	0.04	2
72649	Italy	Boscalid	0.05	2
		Etofenprox	0.02	1
72651	France	Diphenylamine	0.03	5
		Chlorpyrifos	0.02	0.5
72664	Italy	Captan	0.10	3
72679*	Unknown	Chlorpyrifos	0.03	0.5
72687	France	Captan	0.02	3
		Carbendazim	0.05	0.2
		Thiacloprid	0.01	0.3
		Thiophanate-Methyl	0.02	0.5
72698	France	Captan	0.32	3
		Propargite	0.40	3
		Fludioxonil	0.04	5
72701	Germany	Captan	0.05	3
		Methoxyfenozide	0.06	2
72704	Italy	Boscalid	0.04	2
		Pyraclostrobin	0.01	0.3
72706	United Kingdom	Diphenylamine	0.38	5
72730	France	Captan	0.07	3
		Carbendazim	0.03	0.2
		Flufenoxuron	0.02	0.5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
72739	France	Cyfluthrin	0.04	0.2
		Diphenylamine	0.31	5
		Thiabendazole	0.40	5
		Thiacloprid	0.01	0.3
72742	**United States**	**Fenpropathrin**	**0.03**	**0.01**
		Captan	0.64	3
		Carbendazim	0.02	0.2
		Diphenylamine	0.49	5
		Thiabendazole	0.52	5
72757	France	Boscalid	0.02	2
		Pyraclostrobin	0.01	0.3
		Captan	0.17	3
72762	Holland	Boscalid	0.06	2
		Pyraclostrobin	0.02	0.3
		Captan	0.39	3
72775	United States	Pyrimethanil	0.64	5
72799	Chile	Acetamiprid	0.01	0.1
		Thiabendazole	0.74	5
72801	Brazil	Chlorpyrifos	0.05	0.5
72802	Brazil	Captan	0.10	3
		Carbendazim	0.02	0.2
72825	Brazil	Folpet	0.15	3
		Phosmet	0.02	0.2
		Carbendazim	0.07	0.2
72828	Chile	Phosmet	0.03	0.2
		Acetamiprid	0.10	0.1
72828	Chile	Methoxyfenozide	0.03	2
		Thiabendazole	1.51	5
72860	Chile	Indoxacarb	0.02	0.5
		Thiabendazole	0.06	5
		Thiacloprid	0.03	0.3
		Iprodione	0.03	5
		Phosmet	0.04	0.2
72861	Brazil	Carbendazim	0.02	0.2
		Captan	0.06	3
72875	United States	Thiabendazole	0.82	5
		Diphenylamine	0.39	5
		Phosmet	0.11	0.2
72888	Chile	Acetamiprid	0.03	0.1
		Thiabendazole	0.23	5
		Thiacloprid	0.01	0.3
		Diphenylamine	1.51	5
72891	Chile	Diphenylamine	0.04	5
		Spirodiclofen	0.05	0.8
		Indoxacarb	0.02	0.5
		Thiabendazole	0.23	5
		Thiacloprid	0.03	0.3
72894	United Kingdom	Iprodione	0.03	5
		Diphenylamine	0.08	5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Carbendazim	0.03	0.2
72908	**Brazil**	**Dimethoate**	**0.05**	**0.02**
72914	United Kingdom	Diphenylamine	0.14	5
		Cyprodinil	0.57	1
		Fludioxonil	0.12	5
72922	S Africa	Diphenylamine	0.03	5
		Imazalil	0.02	2
		Methoxyfenozide	0.19	2
		Thiacloprid	0.02	0.3
72923	Chile	Indoxacarb	0.02	0.5
		Thiabendazole	0.27	5
		Imazalil	0.01	2
		Diphenylamine	0.95	5
72939	Brazil	Tebufenozide	0.01	1
		Chlorpyrifos	0.05	0.5
72947	France	Carbendazim	0.04	0.2
		Thiacloprid	0.01	0.3
		Diphenylamine	0.46	5
72967	United Kingdom	Boscalid	0.02	2
		Cyprodinil	0.12	1
		Fludioxonil	0.04	5
		Diphenylamine	0.70	5
72973	Chile	Acetamiprid	0.02	0.1
		Indoxacarb	0.03	0.5
		Pyrimethanil	0.79	5
		Thiabendazole	0.01	5
72978	Chile	Methoxyfenozide	0.05	2
		Thiabendazole	0.02	5
		Thiacloprid	0.01	0.3
		Spirodiclofen	0.02	0.8
72979	Chile	Acetamiprid	0.03	0.1
		Thiabendazole	0.07	5
		Diphenylamine	0.11	5
72990	Chile	Diphenylamine	0.52	5
		Thiabendazole	0.24	5
72995	Chile	Diphenylamine	0.62	5
		Acetamiprid	0.02	0.1
		Thiacloprid	0.02	0.3
		Thiabendazole	0.39	5
72996	Belize	Phosmet	0.06	0.2
73028	S Africa	Diphenylamine	0.72	5
73060	Brazil	Dithiocarbamates	0.50	5
73064	Brazil	Dithiocarbamates	0.47	5
73082	France	Chlorpyrifos	0.04	0.5
		Propargite	0.21	3
73085	France	Boscalid	0.07	2
		Fenoxycarb	0.01	1
		Flufenoxuron	0.04	0.5
		Pyraclostrobin	0.02	0.3

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Pirimicarb	0.09	2
		Captan	0.20	3
73104	France	Bifenthrin	0.02	0.3
		Chlorpyrifos	0.02	0.5
73111	United Kingdom	Captan	0.16	3
		Myclobutanyl	0.02	0.5
		Bupirimate	0.07	0.2
		Indoxacarb	0.02	0.5
		Pyraclostrobin	0.01	0.3
		Chlorpyrifos	0.20	0.5
73138	France	Dithiocarbamates	0.06	5
		Acetamiprid	0.01	0.1
73139	S Africa	Dithiocarbamates	0.06	5
		Diphenylamine	1.60	5
		Propargite	0.76	3
		Methoxyfenozide	0.01	2
		Thiacloprid	0.03	0.3
73145	France	Pirimicarb	0.03	2
		Acetamiprid	0.02	0.1
73149	France	Chlorpyrifos	0.10	0.5
		Thiacloprid	0.04	0.3
		Propargite	0.69	3
73150	New Zealand	Thiacloprid	0.02	0.3
73197	France	Captan	0.04	3
		Pirimicarb	0.05	2
73199	France	Captan	0.03	3
73204	S Africa	Methoxyfenozide	0.05	2
73207	France	Chlorpyrifos	0.03	0.5
		Acetamiprid	0.01	0.1
		Thiacloprid	0.02	0.3
73221	France	Thiacloprid	0.01	0.3
73227	Italy	Iprodione	0.11	5
		Captan	0.02	3
73231	United Kingdom	Diphenylamine	0.09	5
		Boscalid	0.02	2
		Difenoconazole	0.01	0.5
73247	France	Fenoxycarb	0.02	1
		Pirimicarb	0.02	2
73248	France	Captan	0.03	3
73270	France	Captan	0.03	3
		Boscalid	0.01	2
		Propargite	0.28	3
73271	Portugal	Folpet	0.16	3
		Chlorpyrifos	0.02	0.5
		Imazalil	0.09	2
73287	Italy	Indoxacarb	0.02	0.5
		Spirodiclofen	0.05	0.8
73311	France	Diphenylamine	0.03	5
		Captan	0.04	3

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Thiacloprid	0.01	0.3
		Fludioxonil	0.01	5
		1.3002 Pear		
72518	Portugal	Diphenylamine	0.99	10
		Folpet	0.30	3
		Imazalil	0.26	2
		Thiacloprid	0.02	0.3
72593	Portugal	Imazalil	0.40	2
		Thiacloprid	0.02	0.3
		Phosmet	0.03	0.2
		Diphenylamine	0.37	10
		Folpet	0.04	3
72637	Portugal	Imazalil	0.45	2
		Diphenylamine	0.97	10
		Folpet	0.86	3
		Captan	0.02	3
72660	S Africa	Thiacloprid	0.05	0.3
		Methoxyfenozide	0.17	2
72678*	Spain	Imazalil	0.01	2
		Diphenylamine	0.18	10
72707	Italy	Chlorpyrifos	0.04	0.5
		Chlorpyrifos-Methyl	0.02	0.5
		Phosmet	0.07	0.2
		Captan	0.03	3
		Boscalid	0.17	2
		Teflubenzuron	0.01	1
		Triflumuron	0.06	0.5
72755	S Africa	Iprodione	0.10	5
72794	S Africa	Methoxyfenozide	0.09	2
		Captan	0.03	3
		Thiacloprid	0.01	0.3
72899	Holland	Boscalid	0.14	2
		Pyraclostrobin	0.07	0.3
72942	S Africa	Acetamiprid	0.02	0.1
72959	S Africa	Triadimenol	0.03	0.1
72963	S Africa	Thiacloprid	0.03	0.3
		Iprodione	0.04	5
72994	S Africa	Diphenylamine	0.06	10
		Methoxyfenozide	0.11	2
		Thiacloprid	0.03	0.3
73065	S Africa	Diphenylamine	0.04	10
		Iprodione	1.35	5
		Dithiocarbamates	0.17	5
		Imazalil	0.11	2
		Pyrimethanil	0.09	5
		Thiacloprid	0.01	0.3
		Methoxyfenozide	0.15	2
73110	France	Tebufenozide	0.01	1

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Thiacloprid	0.01	0.3
73141	Portugal	Diphenylamine	0.02	10
		Captan	0.04	3
		Thiabendazole	0.01	5
73152	Portugal	Thiacloprid	0.02	0.3
73210	Portugal	Tebuconazole	0.06	1
		Phosmet	0.07	0.2
		Teflubenzuron	0.01	1
73225	Portugal	Imazalil	0.32	2
		Imidacloprid	0.02	0.5
		Chlorpyrifos	0.04	0.5
		Phosmet	0.11	0.2
		Diphenylamine	0.48	10
		Folpet	0.06	3
73245	Portugal	Thiabendazole	0.01	5
		Diphenylamine	0.07	10
73249	Portugal	Imazalil	0.50	2
		Thiabendazole	0.01	5
		Thiacloprid	0.01	0.3
		Phosmet	0.15	0.2
		Diphenylamine	0.89	10
		Folpet	0.03	3
73272	Belgium	Boscalid	0.02	2
		Indoxacarb	0.01	0.3
		Chlormequat	0.10	0.1
73385	Portugal	Imazalil	0.21	2
		Thiabendazole	0.02	5
		Diphenylamine	0.55	10
		Folpet	0.17	3
		Phosmet	0.04	0.2
	1.4 Stone Fruit	**1.4001 Apricot**		
72866	Spain	Imidacloprid	0.02	0.5
72993	**France**	**Chlorpyrifos**	**0.10**	**0.05**
		Captan	0.20	3
73068	France	Fludioxonil	0.02	5
		1.4002 Cherry		
72513	Chile	Iprodione	0.81	3
72527	Argentina	Iprodione	0.54	3
72878	United States	Tebuconazole	0.02	5
72941	Greece	Dimethoate	0.19	1
		Iprodione	0.89	3
		Tebuconazole	0.02	5
73063	Guatemala	Cypermethrin	0.06	1
73079	**United States**	**Carbaryl**	**0.07**	**0.05**
		Triflumizole	0.02	1.5
		Boscalid	0.04	3
		Pyraclostrobin	0.03	0.3

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
73337	Chile	Fenhexamid	0.01	5
		Iprodione	1.03	3
		Tebuconazole	0.05	5
		1.4003 Peach		
72983	Spain	Chlorpyrifos	0.02	0.2
		Chlorpyrifos-Methyl	0.03	0.5
73032*	Greece	Captan	0.02	0.02
73202	Spain	Chlorpyrifos	0.02	0.2
		Iprodione	0.73	3
		Lambda-Cyhalothrin	0.03	0.2
		Tebuconazole	0.02	1
		Fenhexamid	0.52	5
		Methoxyfenozide	0.01	0.3
		Spinosad	0.02	1
		1.4003 Nectarine		
72738	Chile	Iprodione	0.69	3
		Lambda-Cyhalothrin	0.02	0.2
		Fenhexamid	0.04	5
72859	Spain	Carbendazim	0.02	0.2
73133	Italy	Tebuconazole	0.02	1
		Etofenprox	0.01	0.5
		Fenhexamid	0.02	5
		Triflumuron	0.03	1
73229	Italy	Fenhexamid	0.02	5
		1.4004 Plum		
72652	S Africa	Iprodione	0.70	3
72865	Spain	Iprodione	0.03	3
72910	Spain	Iprodione	0.03	3
73208	Spain	Propargite	0.07	4
		Cyprodinil	0.02	2
73284	Spain	Iprodione	0.05	3
		Propargite	0.08	4
73297	Italy	Etofenprox	0.10	1
73339	Italy	Fenhexamid	0.27	1
73388	Italy	Cyprodinil	0.04	2
		Etofenprox	0.12	1
	1.5 Berries And Small Fruits	**1.5101 Table Grape**		
72540	S Africa	Iprodione	0.53	10
72662	Chile	Fenhexamid	0.78	5
		Imidacloprid	0.14	1
		Quinoxyfen	0.01	1
		Bifenthrin	0.04	0.2
		Phosmet	0.03	0.05
		Azoxystrobin	0.09	2

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
72696	Chile	Boscalid	0.08	5
		Fenhexamid	0.09	5
		Imidacloprid	0.18	1
		Pyraclostrobin	0.02	1
		Pyrimethanil	0.26	5
72740	Chile	Phosmet	0.05	0.05
		Cyprodinil	0.05	5
		Fludioxonil	0.05	2
		Imidacloprid	0.15	1
72758	India	Triadimenol	0.03	2
72778	Chile	Fenhexamid	0.13	5
		Imidacloprid	0.07	1
		Iprodione	0.07	10
72804	India	Imidacloprid	0.02	1
		Spinosad	0.02	0.5
		Triadimenol	0.06	2
		Myclobutanil	0.02	1
72805	Chile	Cyprodinil	0.08	5
		Thiametoxam	0.01	0.5
		Fludioxonil	0.14	2
		Azoxystrobin	0.16	2
72840	Chile	Boscalid	0.25	5
		Cyprodinil	0.04	5
		Fenhexamid	0.12	5
		Imidacloprid	0.12	1
		Pyraclostrobin	0.07	1
		Pyrimethanil	0.03	5
		Fludioxonil	0.06	2
		Tebuconazole	0.04	2
72862	India	Dimethomorph	0.02	3
		Thiophanate-Methyl	0.01	0.1
		Chlorpyrifos	0.05	0.5
		Iprodione	0.05	10
72905	Egypt	Boscalid	0.01	5
72927	Egypt	Lambda-Cyhalothrin	0.05	0.2
		Cyprodinil	0.18	5
		Fludioxonil	0.08	2
72932	Israel	Imidacloprid	0.03	1
72944	Egypt	Cyprodinil	0.05	5
		Fludioxonil	0.05	2
72977	Morocco	Fenhexamid	0.18	5
		Dimethomorph	0.01	3
		Azoxystrobin	0.05	2
		Iprodione	0.38	10
73106	Spain	Imidacloprid	0.07	1
		Spinosad	0.05	0.5
		Myclobutanyl	0.05	1
		Trifloxystrobin	0.03	5
73146	Greece	Chlorpyrifos	0.29	0.5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
73228	Spain	Cyprodinil	0.08	5
73236	Senegal	Trifloxystrobin	0.04	5
		Fludioxonil	0.26	2
		Cyprodinil	0.66	5
		Imidacloprid	0.02	1
		Propargite	1.23	7
73240	Greece	Chlorpyrifos	0.05	0.5
		Bifenthrin	0.03	0.2
		Boscalid	0.02	5
		Methiocarb	0.04	0.3
73313	Italy	Boscalid	0.55	5
		Dimethomorph	0.04	3
		Fenhexamid	0.51	5
		Pyrimethanil	0.41	5
		1.5102 Wine		
73367*	Chile	Boscalid	0.01	5
		Fenhexamid	0.05	5
		Pyrimethanil	0.02	5
73369*	Chile	Iprodione	0.02	10
73370*	Italy	Carbendazim	0.03	0.5
		Thiophanate-Methyl	0.02	3
73371*	Chile	Iprodione	0.08	10
73372*	New Zealand	Pyrimethanil	0.01	5
		Iprodione	0.30	10
		1.5102 Strawberry		
72602	Egypt	Fludioxonil	0.01	3
72615	Egypt	Fenhexamid	0.04	5
72743	Spain	Myclobutanyl	0.04	1
		Cyprodinil	0.01	5
		Fludioxonil	0.02	3
72753	Spain	Clofentezine	0.02	2
		Cyprodinil	0.01	5
72777	Spain	Boscalid	0.03	10
		Fenhexamid	0.09	5
72843	Spain	Bupirimate	0.02	1
		Iprodione	0.05	15
		Acrinathrin	0.03	0.2
72883	Ireland	Boscalid	0.02	10
		Fenhexamid	0.02	5
		Mepanipyrim	0.19	2
		Pirimicarb	0.38	3
72884	Ireland	Azoxystrobin	0.12	2
		Pirimicarb	0.10	3
		Iprodione	0.10	15
		Bifenthrin	0.03	0.5
		Boscalid	0.01	10
		Fenhexamid	0.36	5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Mepanipyrim	0.16	2
		Pyrimethanil	1.18	5
		Thiacloprid	0.08	0.5
72917	Ireland	Myclobutanyl	0.04	1
		Azoxystrobin	0.14	2
		Boscalid	0.04	10
		Fenhexamid	0.17	5
		Mepanipyrim	0.07	2
		Pyrimethanil	0.13	5
		Thiacloprid	0.01	0.5
		Iprodione	0.33	15
72926	Ireland	Iprodione	0.08	15
		Boscalid	0.03	10
		Fenhexamid	0.06	5
72929	Holland	Kresoxim-Methyl	0.09	1
		Pirimicarb	0.02	3
		Boscalid	0.64	10
		Pyraclostrobin	0.10	0.5
		Cyprodinil	0.01	5
		Fludioxonil	0.02	3
72933	Ireland	Myclobutanyl	0.02	1
		Azoxystrobin	0.05	2
		Pirimicarb	0.07	3
		Iprodione	0.06	15
		Boscalid	0.03	10
		Mepanipyrim	0.04	2
		Pyrimethanil	0.21	5
72966	Ireland	Boscalid	0.34	10
		Fenhexamid	0.07	5
		Mepanipyrim	0.44	2
		Pyraclostrobin	0.05	0.5
		Quinoxyfen	0.01	0.3
		Pirimicarb	0.04	3
72968	Ireland	Boscalid	1.21	10
		Pyraclostrobin	0.14	0.5
		Myclobutanyl	0.04	1
72985	Ireland	Boscalid	0.04	10
		Dimethomorph	0.02	0.05
		Mepanipyrim	0.19	2
		Pyrimethanil	0.03	5
		Thiacloprid	0.07	0.5
		Azoxystrobin	0.16	2
73019	Holland	Boscalid	0.18	10
		Bupirimate	0.02	1
		Fenhexamid	0.05	5
		Pyraclostrobin	0.02	0.5
73080	Ireland	Pirimicarb	0.10	3
		Myclobutanyl	0.05	1
		Azoxystrobin	0.68	2

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Bupirimate	0.12	1
		Boscalid	0.51	10
		Fenhexamid	2.19	5
		Pyraclostrobin	0.07	0.5
		Pyrimethanil	0.02	5
73135	Ireland	Iprodione	0.13	15
		Fenhexamid	0.56	5
		Spinosad	0.03	0.3
73215	Ireland	Mepanipyrim	0.01	2
		Pyrimethanil	0.03	5
		Iprodione	0.14	15
		Myclobutanyl	0.04	1
		1.5303 Raspberry		
72601	Spain	Fenhexamid	0.21	10
72925	Portugal	Fenhexamid	0.10	10
72998	Ireland	Fenhexamid	0.03	10
73034*	Greece	Pyrimethanil	0.01	10
73230	Spain	Chlorpyrifos	0.07	0.5
		Cypermethrin	0.27	0.5
		1.5401 Blueberry		
72924	Spain	Prothioconazole	0.01	0.02
		1.5402 Cranberry		
73392	Canada	Chlorothalonil	0.03	2
	1.6 Miscellaneous Fruit	**1.6201 Kiwi**		
72514	Italy	Fenhexamid	3.65	10
72650	Italy	Buprofezin	0.12	1
		Fenhexamid	5.71	10
72665	Greece	Ortho-Phenylphenol	0.07	No MRL
72700	Italy	Fenhexamid	7.12	10
72702	Israel	Fenhexamid	1.50	10
72773	Italy	Fenhexamid	5.41	10
		Iprodione	0.05	5
72919	Chile	Chlorpyrifos	0.05	2
73137	Chile	Iprodione	0.02	5
		Fenhexamid	0.30	10
73147	Chile	Iprodione	0.28	5
		Fenhexamid	0.98	10
73269	Greece	Iprodione	0.03	5
		1.6202 Lychee		
72680*	Thailand	Ortho-Phenylphenol	0.03	No MRL
		1.6203 Passion Fruit		
72574	Colombia	Difenoconazole	0.03	0.1

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		1.6302 Banana		
72776	Costa Rica	Bifenthrin	0.03	0.1
72824	Belize	Imazalil	0.13	2
		Thiabendazole	0.09	5
		Bifenthrin	0.04	0.1
72848	Costa Rica	Fenpropimorph	0.01	2
		Imazalil	0.63	2
		Thiabendazole	0.69	5
72928	Panama	Imazalil	0.37	2
		Thiabendazole	0.41	5
73002	Belize	Azoxystrobin	0.06	2
73003	Costa Rica	Imazalil	0.85	2
		Thiabendazole	1.18	5
73004	Belize	Imazalil	0.28	2
		Azoxystrobin	0.12	2
73005	Costa Rica	Imazalil	0.42	2
		Thiabendazole	0.60	5
		Bifenthrin	0.03	0.1
73198	Belize	Azoxystrobin	0.29	2
73223	Dom Rep	Imazalil	0.32	2
		Chlorpyrifos	0.07	3
73285	Cameroon	Imazalil	0.22	2
		Thiabendazole	0.17	5
73286	Belize	Imazalil	0.40	2
		Thiabendazole	0.11	5
		1.6303 Mango		
72532	Brazil	Thiabendazole	0.72	5
		Prochloraz	0.33	5
72722	Brazil	Prochloraz	0.24	5
		Thiabendazole	0.29	5
72864	Brazil	Thiabendazole	0.01	5
		Prochloraz	0.18	5
72906	Brazil	Prochloraz	0.78	5
73081	Gambia	Prochloraz	0.17	5
73121	Brazil	Prochloraz	0.13	5
		Thiabendazole	0.03	5
73205	Brazil	Prochloraz	0.08	5
		Thiabendazole	0.01	5
73315	Brazil	Thiabendazole	0.26	5
73389	Brazil	Prochloraz	0.61	5
		Imidacloprid	0.02	0.2
		1.6305 Pomegranate		
73148	Spain	Thiacloprid	0.01	0.02
		1.6308 Pineapple		
72506	Costa Rica	Triadimefon	0.24	3
72830	Costa Rica	Triadimefon+Triadimenol	0.09	3

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
73030*	Thailand	Ortho-Phenylphenol	0.04	No MRL
73109	Costa Rica	Triadimefon	0.15	3
2 Vegetables	**2.1 Root And Tuber Vegetables**	**2.1100 Potato**		
72792*	S Africa	Chlorpropham	0.02	10
72877	France	Chlorpropham	3.39	10
72934	Ireland	Pencycuron	0.02	0.1
73009	United Kingdom	Pencycuron	0.01	0.1
73010	Ireland	Chlorpropham	0.48	10
73011	**Spain**	**Pencycuron**	**0.17**	**0.1**
73053*	Unknown	Chlorpropham	0.20	10
73193	United Kingdom	Pencycuron	0.03	0.1
	2.12 Tropical Root And Tuber Vegetable	**2.1203 Yam**		
72745	United States	Fludioxonil	0.03	0.05
72811	**United States**	**Fludioxonil**	**0.07**	**0.05**
	2.13 Other Root And Tuber Vegetable	**2.1302 Carrot**		
72517	Spain	Iprodione	0.04	0.5
		Linuron	0.08	0.2
72640	Spain	Linuron	0.16	0.2
72644	Spain	Linuron	0.20	0.2
72747	Ireland	Linuron	0.01	0.2
72781	Holland	Boscalid	0.02	1
72795	Spain	Pp-dde	0.02	0.05
72821	Holland	Boscalid	0.04	1
		Difenoconazole	0.02	0.3
72874	Israel	Chlorpropham	0.02	0.05
72903	France	Linuron	0.03	0.2
73042	Ireland	Linuron	0.01	0.2
73233	Ireland	Linuron	0.01	0.2
		2.1306 Parsnip		
72530	United Kingdom	Trifluralin	0.07	0.5
		Linuron	0.06	0.2
72571	Ireland	Tebuconazole	0.08	0.5
		Trifluralin	0.17	0.5
		Azoxystrobin	0.07	0.2
72761	Ireland	Linuron	0.02	0.2
		Trifluralin	0.26	0.5
		Tebuconazole	0.09	0.5
72765	United Kingdom	Tebuconazole	0.04	0.5
		Trifluralin	0.14	0.5
72909	Spain	pp'-dde	0.03	0.05
73156	Ireland	Linuron	0.01	0.2
		2.1311 Turnip		

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
73018	**Ireland**	**Chlorpyrifos**	**0.13**	**0.05**
		Carbofuran	0.02	0.02
	2.2 Bulb Vegetable	**2.2001 Garlic**		
72510	Spain	Iprodione	0.03	0.2
	2.3 Fruiting Vegetable	**2.3101 Tomato**		
72507	Israel	Boscalid	0.04	1
		Thiacloprid	0.02	0.5
72619	Senegal	Boscalid	0.03	1
		Indoxacarb	0.02	0.5
72633	Spain	Cyprodinil	0.02	1
		Chlorothalonil	0.02	2
72666	Spain	Iprodione	0.04	5
		Chlorothalonil	0.02	2
72697	Spain	Chlorothalonil	0.05	1
72708	Spain	Chlorothalonil	0.06	2
72733	Holland	Boscalid	0.03	1
72867	Ireland	Iprodione	0.06	5
		Chlorothalonil	0.06	2
		Azoxystrobin	0.16	2
72975	Ireland	Iprodione	0.07	5
		Imazalil	0.01	0.5
		2.3102 Pepper		
72505	Spain	Triadimenol	0.03	0.5
72565	Spain	Myclobutanyl	0.02	0.5
		Triadimenol	0.04	0.5
		Fludioxonil	0.02	2
		Tebufenozide	0.01	1
72715	Spain	Chlorothalonil	0.13	2
		Triadimenol	0.02	0.5
73239	Holland	Boscalid	0.27	2
		Pyraclostrobin	0.04	0.5
73260	Holland	Indoxacarb	0.01	0.3
		2.3103 Aubergine		
72529	Spain	Chlorothalonil	0.18	2
		Cyprodinil	0.02	1
		Fludioxonil	0.01	1
72613	Spain	Pyriproxyfen	0.15	1
		Thiacloprid	0.16	0.5
72622	Spain	Chlorothalonil	0.04	2
		Cyprodinil	0.05	1
72766	Holland	Thiacloprid	0.02	0.5
72771	Holland	Imidacloprid	0.06	0.5
72976	Holland	Imidacloprid	0.05	0.5
		Triadimenol	0.04	0.1
73014	Holland	Imidacloprid	0.05	0.5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Triadimenol	0.08	0.1
73101	Holland	Imidacloprid	0.13	0.5
		Spinosad	0.01	1
73211	Holland	Imidacloprid	0.14	0.5
		Pyridaben	0.06	0.2
73238	Holland	Methoxyfenozide	0.02	0.5
		Imidacloprid	0.01	0.5
73290	Holland	Triadimenol	0.05	0.1
		Teflubenzuron	0.02	0.5
		2.3203 Courgette		
72885**	France	Dieldrin	0.02	0.05
		2.3301 Melon		
72692	Honduras	Imazalil	0.30	2
		2.3400 Sweet Corn		
73055*	Unknown	Ortho-Phenylphenol	0.03	No MRL
	2.4 Brassica	**2.4102 Cauliflower**		
73259	Ireland	Boscalid	0.02	1
		Difenoconazole	0.02	0.2
		2.4202 Head Cabbage		
72734	Ireland	Iprodione	0.03	5
		Tebuconazole	0.12	1
73072	Ireland	Omethoate	0.03	1
		Cypermethrin	0.06	0.5
	2.5 Leafy Vegetable	**2.5102 Lettuce**		
72558	Spain	Cypermethrin	0.05	2
		Dimethomorph	0.03	10
		Fenhexamid	0.05	30
72563	Ireland	Propyzamide	0.15	1
		Boscalid	0.18	10
72568	France	Lambda-Cyhalothrin	0.05	0.5
		Acetamiprid	0.04	5
		Cyprodinil	0.45	10
		Fludioxonil	0.23	10
72614	Spain	Chlorthal Dimethyl	0.06	0.5
		Folpet	0.05	2
		Iprodione	0.05	10
72646	Spain	Imidacloprid	0.07	2
72688	France	Iprodione	0.05	10
		Deltamethrin	0.11	0.5
72713	Ireland	Pymetrozine	0.01	2
		Boscalid	0.01	10
72717	Spain	Difenoconazole	0.01	3
		Imidacloprid	0.01	2

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
72719	Ireland	Boscalid	0.01	10
72763	Spain	Imidacloprid	0.02	2
72768	Ireland	Acetamiprid	0.02	5
		Boscalid	0.15	10
		Pyraclostrobin	0.01	2
72770	Spain	Imidacloprid	0.02	2
72796	Spain	Thiametoxam	0.01	5
72808	Ireland	Boscalid	1.48	10
		Pyraclostrobin	0.19	2
72853	Ireland	Iprodione	0.05	10
72872	Ireland	Boscalid	0.22	10
		Iprodione	0.02	10
72972	Ireland	Boscalid	0.03	10
		Tolclofos-Methyl	0.09	2
		Cypermethrin	0.08	2
		Azoxystrobin	0.09	3
		Iprodione	0.31	10
73017	Ireland	Boscalid	0.02	10
73043	Ireland	Boscalid	0.03	10
		Iprodione	0.03	10
73086	Ireland	Boscalid	0.53	10
73094	United Kingdom	Deltamethrin	0.11	0.5
		Fenhexamid	0.88	30
73116	Ireland	Cypermethrin	0.09	2
		Boscalid	0.03	10
73155	Holland	Clothianidin	0.01	5
		Thiametoxam	0.07	5
		Iprodione	0.30	10
		Deltamethrin	0.18	0.5
73213	Ireland	Iprodione	0.13	10
		Boscalid	0.03	10
73234	Ireland	Tolclofos-Methyl	0.05	2
		Iprodione	0.03	10
		Deltamethrin	0.05	0.5
		Boscalid	0.02	10
73237	Ireland	Boscalid	0.16	10
73244	Ireland	Iprodione	2.05	10
73289	Ireland	Tolclofos-Methyl	0.04	2
		Boscalid	0.14	10
73300	Spain	Imidacloprid	0.07	2
		Indoxacarb	0.16	2
		Metalaxyl	0.02	2
		Iprodione	0.09	10
		Lambda-Cyhalothrin	0.04	0.5
		Folpet	1.96	2
73324	Ireland	Fenhexamid	0.15	30
		Iprodione	0.02	10
		Folpet	0.12	2
73326	Spain	Boscalid	0.76	10

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Pyraclostrobin	0.03	2
		Azoxystrobin	1.78	3
		Cypermethrin	0.93	2
		Propyzamide	0.03	1
		Tolclofos-Methyl	0.03	2
		Iprodione	9.90	10
		2.5103 Scarole		
72984	Ireland	Boscalid	0.07	10
		2.5108 Mizuna		
72689	France	Iprodione	0.09	10
		2.5201 Spinach		
72559	Spain	Lambda-Cyhalothrin	0.05	0.5
		Alpha-Cypermethrin	0.22	0.5
72643	Spain	Imidacloprid	0.02	0.05
		Lambda-Cyhalothrin	0.06	0.5
72690	Italy	Imidacloprid	0.02	0.05
72714	Spain	Lambda-Cyhalothrin	0.03	0.5
		Imidacloprid	0.02	0.05
72746**	Spain	Piperonyl Butoxide	0.02	No MRL
73178*	France	Diphenylamine	0.02	0.05
		Fluazifop	0.18	1
	2.6 Legume	**2.6003 Peas With Pods**		
72782	Kenya	Tebuconazole	0.11	2
		Dimethoate	0.15	1
		2.6004 Peas Without Pods		
73343*	Unknown	Carbendazim	0.04	0.1
		Pyrimethanil	0.02	0.2
		Thiophanate-Methyl	0.04	0.1
73377*	Unknown	Pyrimethanil	0.04	0.2
73378*	Unknown	Pyrimethanil	0.02	0.2
73384*	Unknown	Carbendazim	0.01	0.1
		Pyrimethanil	0.01	0.2
		Thiophanate-Methyl	0.01	0.1
	2.7 Stem Vegetable	**2.7001 Asparagus**		
72791*	Peru	Chlorpyrifos	0.04	0.05
		2.7003 Celery		
72553	Spain	Difenoconazole	0.04	5
		Chlorothalonil	0.19	10
72562	Spain	Difenoconazole	0.15	5
72642	Spain	Difenoconazole	0.03	5
		Linuron	0.01	0.1
72645	Spain	Difenoconazole	0.01	5

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
		Imidacloprid	0.01	2
		Linuron	0.01	0.1
		Chlorothalonil	0.22	10
72869	Spain	Linuron	0.02	0.1
72892	Spain	Azoxystrobin	0.08	5
		Imidacloprid	0.02	2
		Linuron	0.07	0.1
72971	Ireland	Linuron	0.01	0.1
73052	Unknown	Difenoconazole	0.02	5
	2.8 Fungi	**2.8001 Cultivated Mushroom**		
72528	Ireland	Ortho-Phenylphenol	0.23	No MRL
72638	Ireland	Prochloraz	0.03	2
72817	Ireland	Ortho-Phenylphenol	0.02	No MRL
		Carbendazim	0.09	1
72855	Ireland	Carbendazim	0.03	1
		Ortho-Phenylphenol	0.05	No MRL
72895	Ireland	Ortho-Phenylphenol	0.03	No MRL
		Prochloraz	0.04	2
72918	Ireland	Ortho-Phenylphenol	0.02	No MRL
72961	Ireland	Prochloraz	0.03	2
73087	Ireland	Ortho-Phenylphenol	0.31	No MRL
73174*	Unknown	Diflubenzuron	0.02	2

* Indicates that sample was processed.
** Indicates that sample was labelled as organic.

4.1.1 Countries of origin

The 787 fruit and vegetable samples taken in 2009 comprised 100 (12.7%) of domestic origin, 345 (43.8%) imported from other EU countries, 271 (34.4%) imported from countries outside of the EU and a further 71 (9.0%) of unknown origin. Most of the samples of unknown origin were processed products. As in previous years, the principal source of fruit and vegetables sampled in the monitoring programme was Spain, at 19.2%. Table 4 provides a breakdown, by country of origin, of the samples of fruit and vegetables taken in 2009.

Table 4: Details of the source of the fruit and vegetables sampled

Countries of origin	Number of samples	%	Countries of origin	Number of samples	%
Argentina	13	1.7	Israel	14	1.8
Australia	2	0.3	Italy	45	5.7
Belgium	4	0.5	Kenya	4	0.5
Belize	6	0.8	Mexico	6	0.8
Brazil	30	3.8	Morocco	17	2.2
Cameroon	1	0.1	Netherlands	33	4.2
Canada	1	0.1	New Zealand	9	1.1
Chile	31	3.9	Panama	1	0.1
China	3	0.4	Peru	6	0.8
Columbia	1	0.1	Philippines	1	0.1
Costa Rica	8	1.0	Poland	2	0.3
Cyprus	5	0.6	Portugal	12	1.5
Dominican Republic	2	0.3	Senegal	4	0.5
Ecuador	2	0.3	South Africa	56	7.1
Egypt	16	2.0	Spain	151	19.2
France	52	6.6	Swaziland	3	0.4
Gambia	1	0.1	Thailand	3	0.4
Germany	1	0.1	Turkey	7	0.9
Greece	8	1.0	United Kingdom	32	4.1
Guatemala	1	0.1	United States	10	1.3
Honduras	1	0.1	Uruguay	5	0.6
India	5	0.6	Vietnam	1	0.1
Ireland	100	12.7	Unknown	71	9.0

4.1.2 Most frequently found pesticides

The most frequently detected pesticides were the fungicides imazalil and thiabendazole, found mainly in citrus fruits (see Table 5). The most commonly detected organophorophous pesticide was chlorpyrifos which was frequently detected in citrus and pome fruits. Other commonly detected pesticides were iprodione and boscalid, the former detected mainly in berries, pome fruits and leafy vegetables and the latter in pome fruits, lettuce, strawberries and grapes. Boscalid has shown a significant increase in detection frequency since it was introduced to the programme in 2007. Pesticides were detected most frequently on citrus fruit, at 35% of samples, largely resulting from post-harvest use of imazalil and thiabendazole. Table 5 summarises the 10 most frequently detected pesticides in fruit and vegetable produce.

Table 5: Summary of the 10 most frequently detected pesticides in fruit and vegetables

Pesticide	Frequency	%
Imazalil	141	17.9
Thiabendazole	98	12.5
Chlorpyrifos	69	8.8
Boscalid	57	7.2
Iprodione	50	6.4
Orthophenylphenol	48	6.1
Imidacloprid	38	4.8
Fenhexamid	36	4.6
Thiacloprid	34	4.3
Diphenylamine	33	4.2

In the limited number of samples analysed for pesticides using single residue methods, dithiocarbamates were detected in 5 samples (4 apple and 1 pear) out of 74 samples analysed and chlormequat was detected in 1 pear sample out of 36 samples analysed. Mepiquat was not detected in any fruit and vegetable sample.

4.1.3 Multiple Residues

Of the fruit and vegetable samples analysed in 2009, 549 (46.1%) of the residues detected contained residues at less than or equal to 0.05 mg kg^{-1}. Some 327 samples (41.6%) contained two or more pesticides in a single sample. One strawberry sample of domestic origin contained detectable residues of 9 pesticides, the highest number found in this year's programme. Four samples (1 table grape, 2 strawberry, and 1 mandarin) were found to contain residues of 8 different pesticides. In 2008, one strawberry sample was found to contain 9 pesticides and 3 samples contained 8 pesticides. Table 6 provides a breakdown of the frequency that multiple residues were detected in fruit and vegetables.

Table 6: Frequency of multiple pesticide residues detected in fruit and vegetable samples

No of pesticides detected	No of samples	%
with 0 pesticide residue	323	41.0
with 1 pesticide residue	137	17.4
with 2 pesticide residues	128	16.5
with 3 pesticide residues	90	11.4
with 4 pesticide residues	57	7.2
with 5 pesticide residues	20	2.5
with 6 pesticide residues	19	2.4
with 7 pesticide residues	8	1.1
with 8 pesticide residues	4	0.6
with 9 pesticide residues	1	0.1

4.2 Monitoring results for cereals

In 2009, 75 cereal samples (barley, oats, rice, rye and wheat) were analysed for up to 331 pesticides and metabolites using the multi-residue methods. In addition, 37 cereal samples were analysed for dithiocarbamate pesticides using the dithiocarbamate (CS_2) single residue method, and 11 were analysed for the growth regulators, chlormequat and mepiquat, using methods selective for these compounds.

Of the cereal samples analysed, 56% were of Irish origin and 44% were imported. The majority of cereal samples analysed (61.3%), contained no detectable pesticide residues, while 38.7% contained residues below the MRL (Table 7). No MRL breaches were detected in the cereal samples analysed.

Table 7: Summary of cereal samples taken

Cereal	Number of samples			Residues		
	Total	Domestic	Imported	<LOQ	<MRL	>MRL
Barley	22	21	1	19	3	0
Oats	18	16	2	11	7	0
Rice	5	0	5	4	1	0
Rye	1	0	1	1	0	0
Wheat	29	5	24	11	18	0
Total	**75**	**42**	**33**	**46**	**29**	**0**

Residues were detected in 8 samples of the 11 samples which were analysed by the single residue method for the growth regulator, mepiquat. Pirimiphos-methyl was the most frequently found pesticide in cereal samples, detected in 1 barley and 8 wheat samples. Residue levels ranged from 0.03 to 0.07 mg kg^{1}. Eleven other pesticides were detected - mepiquat in 8 samples, pyraclostrobin in 6 samples, chlormequat in 3 samples and boscalid, cyprodonil, deltamethrin and imidacloprid were detected once. The presence of imazalil and thiabendazole in an imported sample of wheat was un-expected and may have resulted from contamination during handling, transport or storage. Pirimiphos-methyl and deltamethrin, which are likely to have resulted from authorised post-harvest use, while the other growth regulator and fungicide pesticides detected are likely to have resulted from field use. Piperonyl butoxide, a synergist, was detected in 8 samples and suggests the use of plant protection products containing pyrethroids or pyrethrins. Table 8 provides details of the samples in which pesticide residues were detected, together with origin of the cereal, the level of residue detected and the relevant MRL.

Table 8: Cereal samples with detected pesticide residues

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg^{-1})	MRL (mg kg^{1})
5. Cereal		**5.0001 Barley**		
72545	Ireland	Cyprodinil	0.02	3
72629	Ireland	Pirimiphos-Methyl	0.03	5
73364	Ireland	Boscalid	0.01	3
		5.0005 Oat		
72623	Ireland	Pyraclostrobin	0.02	0.3

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg^{-1})	MRL (mg kg^{1})
72624	Ireland	Pyraclostrobin	0.02	0.3
72625	Ireland	Pyraclostrobin	0.01	0.3
72626	Ireland	Pyraclostrobin	0.02	0.3
72627	Ireland	Pyraclostrobin	0.01	0.3
72628	Ireland	Pyraclostrobin	0.01	0.3
73076	Ireland	Fenpropidin	0.03	0.5
		5.0006 Rice		
73277	India	Imidacloprid	0.03	0.05
		5.0009 Wheat		
73126	United Kingdom	Piperonyl Butoxide	0.37	No MRL
		Deltamethrin	0.08	2
73127	United Kingdom	Piperonyl Butoxide	0.26	No MRL
73129	Germany	Pirimiphos-Methyl	0.03	5
73130	Germany	Pirimiphos-Methyl	0.04	5
73132	France	Pirimiphos-Methyl	0.04	5
		Piperonyl Butoxide	0.12	No MRL
73250	United Kingdom	Imazalil	0.02	0.02
		Thiabendazole	0.04	0.05
		Mepiquat	0.18	2
73251	Ireland	Chlormequat	0.10	2
		Mepiquat	0.14	2
73252	United Kingdom	Pirimiphos-Methyl	0.03	5
		Piperonyl Butoxide	0.09	No MRL
		Mepiquat	0.11	2
73253	Ireland	Chlormequat	0.06	2
		Mepiquat	0.14	2
73254	Ireland	Mepiquat	0.19	2
73255	United Kingdom	Mepiquat	0.10	2
73256	United Kingdom	Piperonyl Butoxide	0.11	No MRL
		Chlormequat	0.05	2
		Mepiquat	0.12	2
73257	United Kingdom	Mepiquat	0.28	2
73352	United Kingdom	Piperonyl Butoxide	0.21	No MRL
73353	France	Piperonyl Butoxide	0.13	No MRL
		Pirimiphos-Methyl	0.05	5
73354	France	Piperonyl Butoxide	0.17	No MRL
		Pirimiphos-Methyl	0.06	5
73355	Germany	Pirimiphos-Methyl	0.03	5
73357	Germany	Pirimiphos-Methyl	0.07	5

4.3 Monitoring results for food of animal origin

Animal fats were analysed for 56 pesticides and metabolites, and the 7 PCB marker congeners using the GC method with electron capture 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 monitoring programme as marker substances because of concerns related to their presence in food and their association with dioxins and furans.

The analytical scope for milk and egg samples was increased from 56 and the 7 PCB congeners to 193 pesticides and metabolites, through the addition of the pesticides that are detectable by a multi-residue method using liquid chromatography with triple quadrupole mass detection.

The honey samples were analysed for 331 pesticides and metabolites using the gas chromatography and liquid chromatography multi-residue methods. No single residue methods were used to analyse the honey samples for dithiocarbametes, chlormequat and mepiquat.

A total of 462 samples of food of animal origin, comprising 333 animal fats, 86 milk, 15 butter, 16 egg and 12 honey samples were tested for the presence of pesticide residues. The numbers of samples of the various commodities of animal origin which were planned and taken are provided in Table 9. While the monitoring programme is designed to analyse samples for either organochlorine or organophosphorus pesticides according to Directive 96/23/EC, all 462 samples of food of animal origin were routinely analysed for both organochlorine and organophosphorous pesticides.

Table 9: Number of samples planned and achieved in the National Residue Plan

Commodity	Planned number for organochlorine compounds	Planned number for organophosphorous compounds	Achieved number for organochlorine and organophosphorus compounds
Bovine fat	60	60	130
Equine fat	4	4	6
Ovine fat	40	40	89
Pork fat	30	30	71
Poultry fat	25	0	26
Venison	12	0	11
Butter	0	0	15
Eggs	10	0	16
Milk	53	53	86
Honey	9	0	12
Total	**243**	**187**	**462**

With the exception of 1 sample of honey, which was sampled at the Border Inspection Post at Dublin Port, all the samples of food of animal origin, analysed in 2009, were of domestic origin.

Overall, only 12 samples (2.6%) had detectable pesticide residues, one of which breached the MRL set in Regulation (EC) No 396/2005, (Table 10).

Table 10: Summary of food of animal origin samples in the 2009 monitoring programme

Commodity	Number of Samples			Residues		
	Total	Domestic	Imported	<LOQ	<MRL	>MRL
Bovine fat	130	130	0	127	3	0
Equine fat	6	6	0	4	2	0
Ovine fat	89	89	0	82	6	1
Porcine fat	71	71	0	71	0	0
Poultry fat	26	26	0	26	0	0
Venison fat	11	11	0	11	0	0
Bovine milk	79	79	0	79	0	0
Caprine milk	5	5	0	5	0	0
Ovine milk	2	2	0	2	0	0
Butter	15	15	0	15	0	0
Eggs	16	16	0	16	0	0
Honey	12	11	1	12	0	0
Total	**462**	**461**	**1**	**450**	**11**	**1**

Three (2.3%) of the 130 bovine samples tested contained residues of the organochlorine pesticides, dieldrin or lindane, with levels ranging from 0.007 to 0.013 mg kg^{-1}.

Two of the 6 equine samples analysed contained trace residues of hexachlorobenzene and pp'-dde, a DDT metabolite.

Seven of the 89 ovine samples contained detectable residues of pp'-dde, lindane or diazinon. One sample of ovine fat, while compliant with the MRL of 0.7 mg kg^{-1}, set for diazinon in Council Regulation (EEC) No 2377/1990, when used as a veterinary medicine product, was non-compliant with the MRL of 0.05 mg kg^{-1} set for diazinon in Regulation (EC) No 396/2005. As diazinon products are authorised for use in Ireland as veterinary products in the dipping of sheep, the MRL of 0.7 mg kg^{-1} is appropriate. It would, therefore, be desirable for the European Commission to clarify the MRL, by amending the MRL in Regulation (EC) No 396/2005 to take account of the veterinary legislation.

No pesticide residue above the limit of quantification (LOQ) was detected in any of the cervine, porcine, poultry, egg, milk or honey samples in 2009.

Table 11 provides details of the samples in which pesticide residues were detected, together with origin, the level of residue detected and the relevant MRL.

Table 11: Residues detected in food of animal origin samples in 2009

Sample ID.	Country of Origin	Pesticide detected	Residue (mg kg $^{-1}$)	MRL (mg kg $^{-1}$)
10. Animal origin				
		10.12 Bovine	**10.1202 Fat**	
78451	Ireland	Dieldrin	0.007	0.2
78494	Ireland	Lindane	0.006	0.02
78551	Ireland	Dieldrin	0.013	0.2
		10.13 Ovine	**10.1302 Fat**	
78357	Ireland	Lindane	0.006	0.02
78368	Ireland	op'-dde	0.008	1
78388	Ireland	op'-dde	0.005	1
78440	Ireland	Lindane	0.006	0.02
78486	Ireland	op'-dde	0.008	1
78577	Ireland	Diazinon	0.2	0.05 *
78760	Ireland	Diazinon	0.03	0.05*
		10.15 Equine	**10.1502 Fat**	
78435	Ireland	Hexachlorobenzene	0.005	0.2
78436	Ireland	op'-dde	0.006	1

* 0.05 mg kg $^{-1}$ in Regulation (EC) No 396/2005 and 0.7 mg kg $^{-1}$ in Council Regulation (EEC) No 2377/1990

4.4 Results for miscellaneous samples

No sample was submitted in 2009 for analysis by consumers or by DAFF, other State Services, Local Authorities, or other interested parties based on concerns that the products may have contained unacceptable levels of pesticides residues.

4.5 Results for organic products

In 2009, 40 samples of fruit, vegetables and cereals, labelled as organic, were sampled and analysed for pesticide residues. All were samples were taken from imported produce. Two samples (5%) contained trace quantities of pesticide residues (Table 12). This compares favourably with the percentage of organic labelled samples found to contain pesticides in 2006 (16%), 2007 (9%) and in 2008 (9%). These results were forwarded to the DAFF unit which regulates organic produce and indicated a more favourable picture compared to previous years.

Table 12: Summary of organic samples analysed in 2009 (extracted from Table 3)

Commodity	Number of Samples			Residues		
	Total	Domestic	Imported	<LOQ	<MRL	>MRL
Apple	2	0	2	2	0	0
Apple juice	1	0	1	1	0	0
Avocado	2	0	2	2	0	0
Banana	3	0	3	3	0	0
Blueberry	1	0	1	1	0	0
Carrot	2	0	2	2	0	0
Carrot juice	1	0	1	1	0	0
Celery	2	0	2	2	0	0
Clementine	1	0	1	1	0	0
Courgette	1	0	1	0	1	0
Kiwi	1	0	1	1	0	0
Lemon	1	0	1	1	0	0
Orange	4	0	4	4	0	0
Orange juice	2	0	2	2	0	0
Pear	8	0	8	8	0	0
Pepper	1	0	1	1	0	0
Potato	1	0	1	1	0	0
Rocket	1	0	1	1	0	0
Spinach	3	0	3	2	1	0
Tomato	2	0	2	2	0	0
Total	**40**	**0**	**40**	**38**	**2**	**0**

Details for the organically labelled samples which were found to contain residues are presented in Table 13.

Table 13: Details of organic produce with pesticide residues detected in 2009

Sample ID	Country of Origin	Pesticide detected	Residue (mg kg^{-1})	MRL (mg kg^{-1})
2 Vegetables	**2.32 Cucurbits - edible peel**	**2.3203 Courgette**		
72885	France	Dieldrin	0.02	0.05
	2.52 Spinach and similar	**2.5201 Spinach**		
72746	Spain	Piperonyl Butoxide	0.02	No MRL

The use of dieldrin has been banned for many years. The presence of dieldrin in the courgette sample is likely to have resulted from residues persisting in the soil from its use, or the use of aldrin, in the past. Piperonyl butoxide is used as a synergist in plant protection products containing pyrethrins and pyrethoids, and its detection indicates use of such products. Use of pyrethrins is permitted in organic farming.

4.6 **Results for processed products (fruit, vegetables and cereals)**

In 2009, 111 samples of processed fruit and vegetables were analysed as part of the monitoring programme. Fifty five samples comprised fruit or vegetable juices, the remainder being canned or peeled fruit or vegetables. Analytical results show the majority of the samples (81.1%), contained no detectable pesticide residues, while 18.9% of the samples were found to contain detectable residues of 15 different pesticides, ranging in concentration from 0.01 to 0.3 mg kg^{-1}. The MRLs for raw commodities are currently applied to the processed commodities, taking account of the dilution or concentration factors that may arise during processing. There was no MRL exceedance detected in the processed commodities.

A summary of the processed fruit and vegetable samples and details of the processed samples of fruit and vegetables with residues detected is extracted from Table 3 and are presented in Table 14 and Table 15 respectively.

Table 14: Summary of processed fruit and vegetable samples analysed

Process	Commodity	Sample Number			Residues		
		Total	Domestic	Imported	<LOQ	<MRL	>MRL
Juice	Apple (1*)	11	1	10	11	0	0
	Carrot*	1	0	1	1	0	0
	Cranberry	2	0	2	2	0	0
	Grapefruit	2	0	2	1	1	0
	Guava	1	0	1	1	0	0
	Mango	1	0	1	1	0	0
	Orange (2*)	18	0	18	15	3	0
	Pineapple	3	0	3	3	0	0
	Table Grape	4	0	4	4	0	0
	Tomato	2	0	2	2	0	0
Wine	Wine	10	0	10	5	5	0
Other processes canned/peeled	Apple	2	0	2	1	1	0
	Asparagus	2	0	2	1	1	0
	Broccoli	1	0	1	1	0	0
	Carrot	3	0	3	3	0	0
	Celery	1	0	1	1	0	0
	Cherry	2	0	2	2	0	0
	Gherkins	1	0	1	1	0	0
	Grapefruit	3	0	3	3	0	0
	Leek	1	0	1	1	0	0
	Lentil (dried)	1	0	1	1	0	0
	Lychee	1	0	1	0	1	0
	Mandarin	1	0	1	1	0	0
	Mango	1	0	1	1	0	0
	Mushroom	4	0	4	3	1	0
	Onions	1	0	1	1	0	0
	Peach	3	0	3	2	1	0

Process	Commodity	Sample Number			Residues		
		Total	Domestic	Imported	<LOQ	<MRL	>MRL
	Pear	3	0	3	2	1	0
	Peas without pods	15	0	15	11	4	0
	Pineapple	5	0	5	4	1	0
	Plum	1	0	1	1	0	0
	Potato	2	0	2	0	2	0
	Raisin	1	0	1	1	0	0
	Raspberry	1	0	1	0	1	0
	Spinach	2	0	2	1	1	0
	Strawberry	1	0	1	1	0	0
	Sweet Corn	6	0	6	5	1	0
	Table Olive	1	0	1	1	0	0
	Tomato	3	0	3	3	0	0
	Total	**124**	**1**	**123**	**90**	**25**	**0**

* Also labelled as organic

Table 15: Details of processed samples with pesticide residues detected

Process	Sample ID	Country of Origin	Pesticide detected	Residue (mg kg^{-1})	MRL (mg kg^{-1})
			1.1001 Grapefruit		
Juiced	73307	Unknown	Imazalil	0.01	5
			1.1002 Orange		
Juiced	72585	Unknown	Ortho-Phenylphenol	0.03	No MRL
			Imazalil	0.06	5
			Thiabendazole	0.02	5
Juiced	73184	Unknown	Imazalil	0.01	5
			Thiabendazole	0.01	5
Juiced	73329	Unknown	Carbendazim	0.13	0.5
			1.3001 Apple		
Canned	72679	Unknown	Chlorpyrifos	0.03	0.5
			1.3002 Pear		
Canned	72678	Spain	Imazalil	0.01	2
			Diphenylamine	0.18	10
			1.4003 Peach		
Canned	73032	Greece	Captan	0.02	0.02
Wine			**1.5102 Wine**		
Wine	73367	Chile	Boscalid	0.01	5
			Fenhexamid	0.05	5
			Pyrimethanil	0.02	5
Wine	73369	Chile	Iprodione	0.02	10
Wine	73370	Italy	Carbendazim	0.03	0.5
			Thiophanate-Methyl	0.02	3

Process	Sample ID	Country of Origin	Pesticide detected	Residue (mg kg^{-1})	MRL (mg kg^{-1})
Wine	73371	Chile	Iprodione	0.08	10
Wine	73372	New Zealand	Pyrimethanil	0.01	5
			Iprodione	0.30	10
			1.5303 Raspberry		
Canned	73034	Greece	Pyrimethanil	0.01	10
			1.6202 Lychee		
Canned	72680	Thailand	Ortho-Phenylphenol	0.03	No MRL
			1.6308 Pineapple		
Canned	73030	Thailand	Ortho-Phenylphenol	0.04	No MRL
			2.1100 Potato		
Peeled/Frozen	72792	S Africa	Chlorpropham	0.02	10
Canned	73053	Unknown	Chlorpropham	0.20	10
			2.3000 Sweet Corn		
Canned	73055	Unknown	Ortho-Phenylphenol	0.03	No MRL
			2.5201 Spinach		
Canned	73178	France	Diphenylamine	0.02	0.05
			Fluazifop	0.18	1
			2.6004 Peas without pods		
Processed	73343	Unknown	Carbendazim	0.04	0.1
			Pyrimethanil	0.02	0.2
			Thiophanate-Methyl	0.04	0.1
	73377	Unknown	Pyrimethanil	0.04	0.2
	73378	Unknown	Pyrimethanil	0.02	0.2
	73384	Unknown	Carbendazim	0.01	0.1
			Pyrimethanil	0.01	0.2
			Thiophanate-Methyl	0.01	0.1
			2.7001 Asparagus		
Peeled/Frozen	72791	Peru	Chlorpyrifos	0.04	0.05
			2.8001 Cultivated Mushroom		
Canned	73174	Unknown	Diflubenzuron	0.02	2

5 ENFORCEMENT AND FOLLOW UP

5.1 Targeted and statutory sampling of fruit and vegetables

5.1.1 MRL breaches in 2008

As a follow-up to MRL breaches that occurred in 2008, 5 targeted samples of fruit and vegetables were taken and analysed during 2009. The remaining 10 samples, which were planned on the basis of results from 2008, were not taken because produce from the specific origin was not located on the Irish market in 2009. Targeted samples were taken from all of the Irish growers concerned. Table 16 lists the samples taken in 2009 and the reasons for the targeted sampling.

Two of the 5 targeted samples were found to have no detectable residues and 3 were found to have pesticide residues above the lowest calibration level (LCL). No targeted sample was found to have exceeded the MRL and no further follow-up action was required.

Table 16: Details of targeted and statutory samples taken in 2009

Commodity	Sample ID	Country of Origin	Pesticide detected	Residue mg kg $^{-1}$	MRL mg kg $^{-1}$	Reasons
Table Grape	73336	United States	Pyraclostrobin Boscalid	0.07 0.28	1 5	Sample ID 71965 - MRL breach in 2008 - methomyl at 0.08 mg kg^{-1}
Head Cabbage	73072	Ireland	Omethoate Cypermethrin	0.03 0.06	1 0.5	Sample ID 71710 - MRL breach in 2008 - deltamethrin at 0.12 mg kg^{-1} due to incorrect GAP.
Chinese Cabbage	72519	Ireland	Pirimicarb	0.03	2	Sample ID 71083 - MRL breach - chlorthalonil at 1.24 mg kg^{-1}, non-registered use
Turnip	72893	Ireland	None Detected			Sample ID 71605 MRL breach - chlorpyrifos at 0.06 mg kg $^{-1}$, non-registered use
Pear	73222	Portugal	None Detected			Sample ID 71963 MRL breach - dimethoate at 0.02 mg kg^{-1}

Following reports from Germany of the detection of unacceptable levels of amitraz in consignments of pears from Turkey, Commission Decision 2009/835/EC required EU member states to target sample consignments of pears originating from Turkey and to check for the presence of amitraz. No consignments of Turkish pears were encountered on the Irish market.

5.1.2 Non registered uses

Produce from 2 Irish growers was targeted for sampling following detection of non-registered uses in 2008. The samples were compliant and showed no indication of non-registered use of pesticides. No further follow-up action was required.

5.2 Targeted and statutory sampling of cereals

There was no targeted sampling of cereals for pesticide residues in 2009, as no MRL breach occurred for cereal samples in 2008.

However, 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. Feed and cereal samples (213) were taken by the Feedingstuffs Division of the DAFF for PCB analysis. There was no detectable level of PCB in any of the samples analysed.

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 2009, as no MRL breach was detected in samples in 2008.

However, an ovine sample, with diazinon levels of 0.2 mg kg^{-1}, was found to be not in compliance with Regulation (EC) No 396/2005, but was in compliance with Council Regulation (EEC) No 2377/1990, which established the MRLs for the authorised uses of veterinary products, including the use of diazinon in sheep dipping.

5.4 MRL breaches

In 2009, some 10 samples of fruit and vegetables were found to contain pesticide residues in excess of an MRL. One sample was of Irish origin, 4 were from other EU countries, with the remaining 5 samples originating from non-EU countries. Of the 10 breaches detected, 8 related to breaches of MRLs which are set at the Limit of Determination (LOD). A summary of the findings is presented in Table 17.

Table 17 Summary of samples with MRL exceedances in 2009

Commodity	Sample ID	Country of origin	Pesticide	Residue > MRL (mg kg^{-1})	MRL (mg kg^{-1})
Apple	72742	United States	Fenpropathrin	0.03	0.01*
Apple	72908	Brazil	Dimethoate	0.05	0.02*
Apricot	72993	France	Chlorpyrifos	0.10	0.05*
Cherry	73079	USA	Carbaryl	0.07	0.05*
Mandarin	72703	Spain	Captan	0.06	0.02*
Mandarin	72735	Cyprus	Thiabendazole	5.47	5
Orange	73122	Brazil	Dimethoate	0.05	0.02*
Potato	73011	Spain	Pencycuron	0.17	0.1
Yam	72811	United States	Fludioxonil	0.07	0.05*
Turnip	73018	Ireland	Chlorpyrifos	0.13	0.05*

* MRL at limit of determination

In the case of the sample of Irish origin, follow up official investigations were carried out by an inspector from the PRCD, who established that there was use of a non-registered product containing carbofuran and non-registered use of a registered product containing chlorpyrifos on turnips. While the levels found indicated that there was no unacceptable risk to the consumers, it was recommended that targeted sampling be carried out during the next growing season.

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, along with 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.

MRLs, which are sometimes higher than EU MRLs, have been established for a number of these pesticides by the CODEX Alimentarius Commission. A number of the samples with breaches of the EU MRLs were in compliance with CODEX limits - fenpropathrin in pome fruits at 5 mg kg^{-1}; carbaryl in cherries at 10 mg kg^{-1} and dimethoate in citrus at 5 mg kg^{-1}. Such anomalies are due to differences between the EU and CODEX in the interpretation of the toxicological, metabolism and residue data and risk assessments. These anomalies should be resolved in due course by the World Trade Organisation and by continuing co-operation between the EU and producer groups in Third Countries at the CODEX Committee in Pesticide Residues plenary meetings. No CODEX MRL was established for dimethoate in apple or for fludioxonil in yam.

5.5 **Non-registered uses**

A total of 5 samples contained residues which, though compliant with MRL legislation, indicated that non-registered use of pesticides took place. Follow-up inspections visits were undertaken and warning letters were issued to the growers concerned. While the levels found indicated that there was no unacceptable risk to the consumers, it was recommended that targeted sampling of produce from these growers be carried out during the next growing season.

6 DISCUSSION

Evaluation of the monitoring data for 2009, shows that 819 (61.8%) of all 1324 monitoring samples contained no detectable pesticide residues and the remaining 505 samples (38.2%) were found to contain residues of one or more pesticides. The majority of the residues were detected in fruit and vegetables, as opposed to cereals and foods of animal origin. The number of pesticides included in the analytical scope for fruit, vegetables, cereals, milk, eggs and honey increased from 134 pesticides in 2005 to 334 pesticides in 2009. During the same period, the number of pesticides in the analytical scope for other food of animal origin increased from 58 pesticides to 63 pesticides (Figure 1). The significant increase in the number of pesticides in the analytical scope has resulted in only a modest increase in the overall rate of detection of pesticide residues.

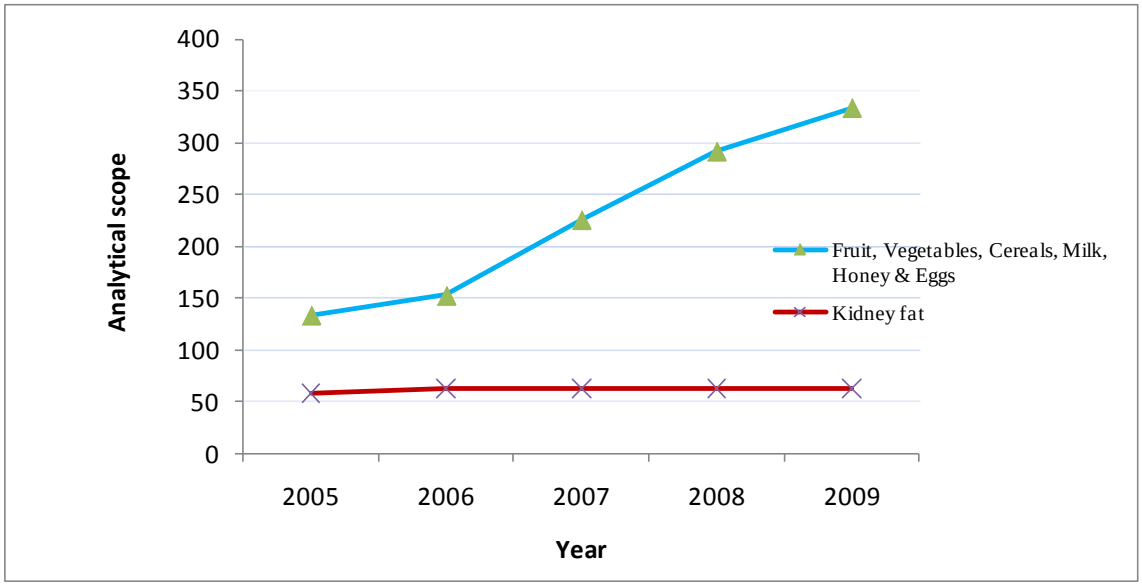

Figure 1: Number of pesticides in the analytical scope for fruit and vegetables (FV), cereal and food of animal origin (FAO) samples from 2005 to 2009.

6.1 Fruit and vegetables

Of the 787 fruit and vegetable samples analysed, 323 (41%) contained no detectable pesticide residue, 464 (59%) contained one or more detectable residues of which 10 samples (1.3%) contained residues in excess of EU MRLs. Almost 50% of the residues detected in fruit and vegetables were at levels of less than, or equal to 0.05 mg kg^{-1}. Some 35% of citrus samples contained detectable levels of pesticide residues. Indications in Figure 2 suggest a downward trend in the number of MRL breaches, between 2005 and 2009. Despite the increase in the number of pesticides sought in the analytical scope (Figure 1) and allowing for the slight decrease in the overall number of samples analysed, the number of MRL breaches has decreased from 29 breaches in 2005 to 10 breaches in 2009.

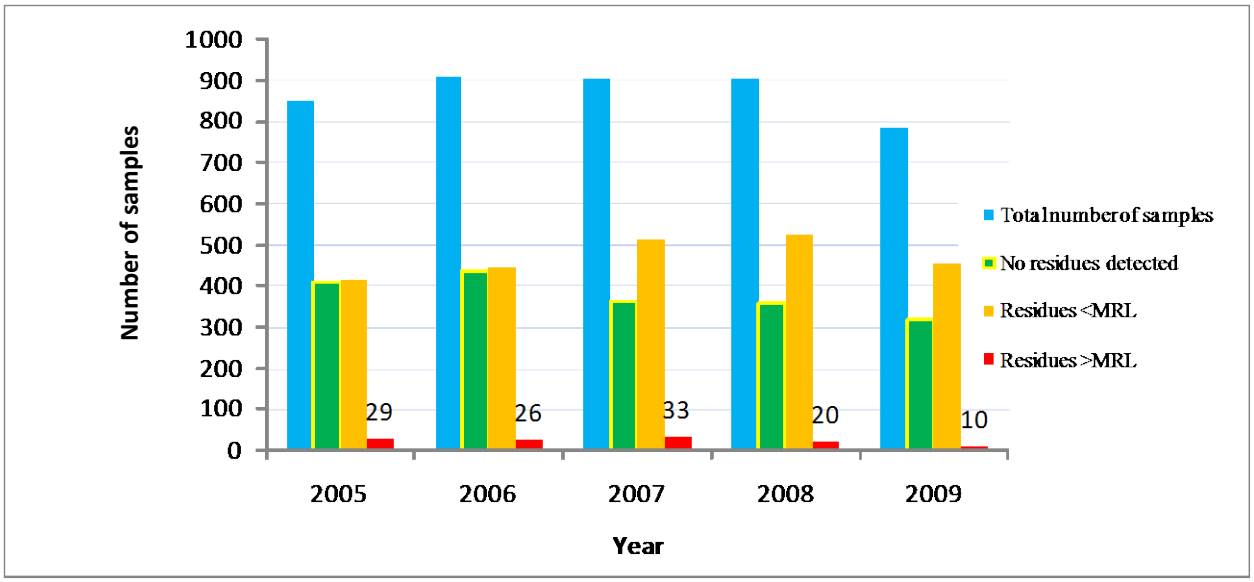

Figure 2: Number of fruit and vegetable samples analysed (2005 to 2009), number with no residues detected (less than the LOQ), below MRL (<MRL), above MRL (>MRL).

Since its introduction into the analytical scope in mid-2006, imazalil has replaced thiabendazole as the most frequently detected pesticide in fruit and vegetable samples. Iprodione, chlorpyrifos and carbendazim have also been found consistently over the last 4 years. Imazalil and thiabendazole are used mainly as a post harvest fungicides and 95% of their residues were found in/on citrus, pome fruit and on bananas. Chlorpyrifos was frequently found on citrus and pome fruits, while iprodione was found on a variety of commodities such as strawberries and other berries, table grapes, lettuce, pears and nectarines. Boscalid, which was added to the analytical scope in 2007, was the fourth most commonly detected pesticide in 2009 and was detected mainly in pome fruits, lettuce, strawberries and table grapes.

Table 18: The ten most common pesticides detected in fruit and vegetables (2007-2009)

2007	%	2008	%	2009	%
Imazalil	16.2	Imazalil	16.2	Imazalil	17.9
Thiabendazole	14.6	Thiabendazole	12.5	Thiabendazole	12.5
Iprodione	9.1	Chlorpyrifos	9.1	Chlorpyrifos	8.8
Chlorpyrifos	8.5	Iprodione	6.5	Boscalid	7.2
Carbendazim	7.0	Carbendazim	6.0	Iprodione	6.4
Diphenylamine	6.5	Diphenylamine	6.0	O Phenylphenol	6.1
Captan	5.7	Imidacloprid	4.6	Imidacloprid	4.8
Fenhexamid	5.0	Fenhexamid	4.2	Fenhexamid	4.6
Malathion	4.2	2,4 D	4.1	Thiacloprid	4.3
Prochloraz	4.0	Captan	3.9	Diphenylamine	4.2

There were 93 different pesticides detected in fruit and vegetable samples during 2009. This represented 30.7% of the number of pesticides sought. In 2008, 102 different pesticides were detected, representing 35% of the pesticides sought.

6.2 Cereals

The same analytical pesticide scope of 334 pesticides is used for the cereal samples as was used for the fruit and vegetable samples. As in the previous 3 years, pirimiphos-methyl was the most frequently detected pesticide in cereal samples, (Table 19), although mepiquat was detected in the highest proportion of samples, in 8 out of 11 samples analysed (72.7%). No MRL exceedance was detected in 2009.

Table 19: Most frequently detected pesticides in cereal samples (2007 – 2009)

2007	%	2008	%	2009	%
Pirimiphos Methyl	14.0	Pirimiphos Methyl	16.5	Pirimiphos Methyl	12.0
Malathion	7.0	Piperonyl Butoxide	2.1	Piperonyl Butoxide	10.7
Chlorpyrifos	2.0	Bendiocarb	1.0	Deltamethrin	10.7
Deltamethrin	1.0	Metribuzin	1.0	Mepiquat*	10.7

* Not sought in all samples

The percentage of cereal samples containing pesticide residues in 2009 was 38.6%, a higher frequency than that found for the previous two years (29% in 2007 and 22.7% in 2008), (Figure 2). The addition of mepiquat to the analytical screen in 2009 (detected in 10.7% of all cereal samples) may be a possible explanation for the higher frequency of detection.

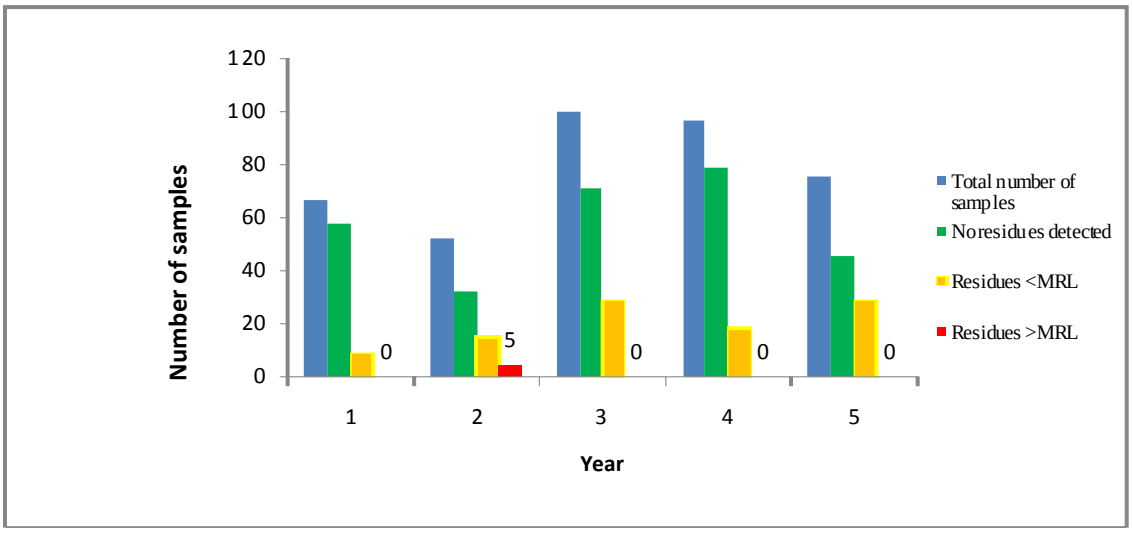

Figure 3: Number of cereal samples analysed (2005 to 2009), number with no residues detected (less than the LOQ), below MRL (<MRL), above MRL (>MRL).

6.3 Food of animal origin

Over the period from 2005 to 2009, the percentage of animal kidney fat samples containing residues was 6.5, 5.9, 9.0, 7.9 and 3.6% in 2005, 2006, 2007, 2008 and 2009 respectively. The analytical scope was the same from 2006 to 2009 for the animal fat samples.

For other food of animal origin, there was a significant increase in the analytical scope for the milk and egg samples in 2009 to incorporate the pesticides that are amenable to analysis using liquid chromatography.

No residues were detected in milk, egg, butter or honey samples.

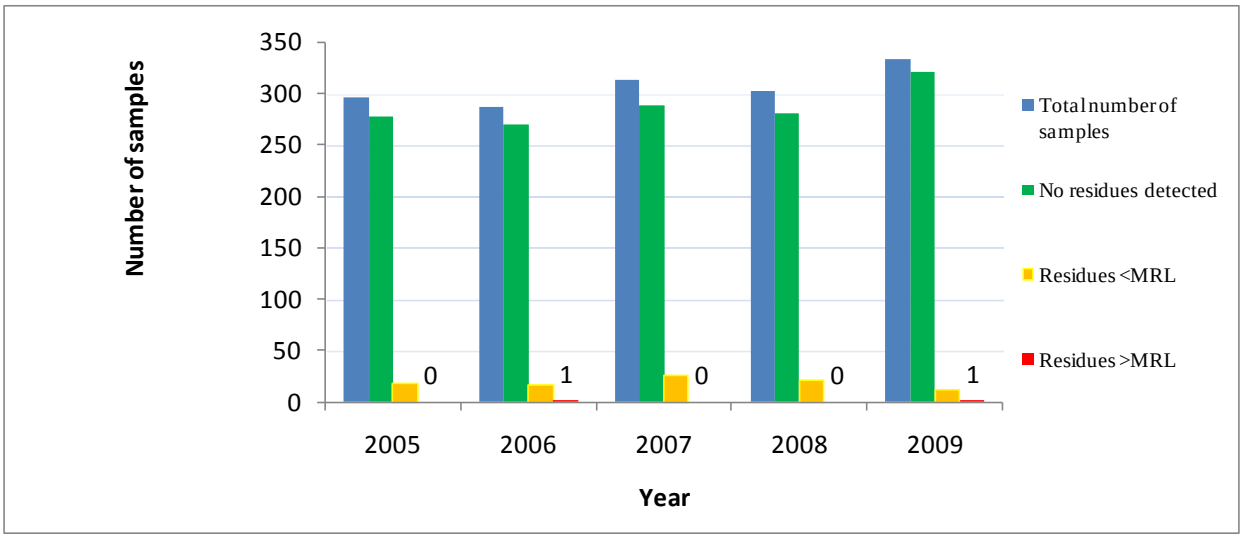

Figure 4: Number of food of animal origin samples (kidney fat sample only) analysed (2005 - 2009), number with no residues detected (less than the LOQ), below MRL (<MRL), above MRL (>MRL).

As in all previous years, DDT was the most frequently detected pesticide in animal fat samples during 2009, (Table 20). Most of the residues detected relate to persistent pesticides which are likely to have arisen from intake of trace levels in feed or from the ingestion of contaminated soil, as a consequence of former use.

Table 20: Most frequently detected pesticides in kidney fat samples (2005 – 2009)

2005	Frequency %	2006	Frequency %	2007	Frequency %	2008	Frequency %	2009	Frequency %
DDT	3.7	DDT	2.5	DDT	4.5	DDT	1.7	DDT	1.2
Dicofol	1.7	Lindane	0.7	Dieldrin	1.3	Lindane	1.7	Lindane	0.9
Dieldrin	0.3	Diazinon	0.7	Lindane	1.3	HCB	1.3	Dieldrin	0.6
Lindane	0.3	Dieldrin	0.4	Diazinon	0.3	PCB 153	1.3	Diazinon	0.6
PCB 153	0.3	Dicofol	0.4	PCB 153	0.3	Dieldrin	0.3	HCB	0.3

6.4 Consumer assessments

6.4.1 Acute risk assessment

An acute risk assessment for Irish consumers, adult and children, was conducted for each case of an MRL exceedance in 2009. The risk assessments indicated that none of the MRL exceedances resulted in consumer exposure which exceeded the ARfD, (Table 21). It is noted that 8 of the 10 MRL breaches resulted from exceedance of MRLs which were set at the LOD. This indicates that use of the detected pesticide on the commodity concerned is not registered in the EU and an import tolerance had not been sought or granted.

Table 21: Relationship between MRL breaches and the ARfD for Irish adults and children

Commodity	Sample ID	Country	Pesticide	Risk assessment 2009	MRL (mg kg^{-1})	Residue (mg kg^{-1})	P97.5 consump-tion (kg/bw/d)	ARfD (mg/kg bw/day)	% ARfD intake
Mandarin	72703	Spain	Captan	adult	0.02*	0.06	0.003	0.1	**0.6**
				child			0.010		**2.3**
Mandarin	72735	Cyprus	Thiabendazole	adult	5	5.47	0.003	0.3	**17.0**
				child			0.010		**20.6**
Apple	72742	United States	Fenpropathrin	adult	0.01*	0.03	0.003	0.03	**0.9**
				child			0.010		**3.2**
Yam	72811	United States	Fludioxonil	adult	0.05*	0.07	0.001	0.37 (ADI)	**0.0**
				child			0.001		**0.0**
Potato	73011	Spain	Pencycuron	adult	0.1	0.17	0.010	0.018(ADI)	**20.8**
				child			0.009		**34.8**
Apricots	72993	France	Chlorpyrifos	adult	0.05*	0.10	0.000	0.1	**0.4**
				child			0.000		**2.0**
Turnip	73018	Ireland	Chlorpyrifos	adult	0,05*	0.13	0.007	0.1	**1.6**
				child			0.004		**2.5**
Apple	72908	Brazil	Dimethoate	adult	0.02*	0.05	0.003	0.01	**4.3**
				child			0.009		**16.2**
Cherry	73079	USA	Carbaryl	adult	0.05*	0.07	0.000	0.01	**0.6**
				child			0.001		**3.6**
Orange	73122	Brazil	Dimethoate	adult	0.02*	0.05	0.004	0.01	**4.5**
				child			0.011		**15.7**

* indicates MRL set at LOD

6.4.2 Chronic assessment

In Table 22, the calculation of the chronic exposure assessment is based on the conservative assumption of daily consumption of the food with the MRL breaches, over an extended period and, therefore, is regarded as an overestimate of the real exposure to pesticides. There was no exceedance of the ADI, leading to an unacceptable chronic intake, for any of the 10 samples with MRL breaches.

Table 22 Relationship between MRL breaches and the ADI for Irish adults and children

Commodity	Sample no	Country	Pesticide	Risk assessments 2009	MRL (mg kg^{-1})	Residue exceeding MRL (mg kg^{-1})	Mean Consumption kg/bw	ADI mg/kg bw/d	% ADI intake
Mandarin	72703	Spain	Captan	adult	0.02*	0.06	0.00072	0.1	**0.0**
				child			0.0034		**0.2**
Mandarin	72735	Cyprus	Thiabendazole	adult	5	5.47	0.00072	0.1	**3.9**
				child			0.0034		**18.6**
Apple	72742	United States	Fenpropathrin	adult	0.01*	0.03	0.00071	0.03	**0.1**
				child			0.0048		**0.5**
Yam	72811	United States	Fludioxonil	adult	0.05*	0.07	0.00015	0.37	**0.0**
				child			0.00015		**0.0**
Potato	73011	Spain	Pencycuron	adult	0.1	0.17	0.003	0.018	**3.1**
				child			0.0048		**4.5**
Apricots	72993	France	Chlorpyrifos	adult	0.05*	0.10	0.000152	0.01	**0.2**
				child			0.0008		**0.8**
Turnip	73018	Ireland	Chlorpyrifos	adult	0,05*	0.13	0.00022	0.01	**0.3**
				child			0.00137		**1.8**
Apple	72908	Brazil	Dimethoate	adult	0.02*	0.05	0.00071	0.001	**3.6**
				child			0.0048		**24.0**
Cherry	73079	USA	Carbaryl	adult	0.05*	0.07	0.000033	0.0075	**0.0**
				child			0.000188		**0.2**
Orange	73122	Brazil	Dimethoate	adult	0.02*	0.05	0.001	0.001	**5.0**
				child			0.0044		**22.4**

6.5 Violation investigation programme

Of the 5 targeted and statutory samples resulting from MRL breaches in 2008, 2 were found to have no detectable residues and 3 samples had pesticide residues above the limit of determination. In no case was there a residue in excess of the MRL and, therefore, no further follow up action was warranted.

However, the fact that residue levels in excess of the MRL and a small number of non-registered uses of pesticides continue to be detected, points to a need for continuation and strengthening of the monitoring and violation investigation programmes. The PRCD urges users of plant protection products to observe *Good Agricultural Practice* when applying such products, in order to ensure that unacceptable levels of pesticide residues do not occur in treated produce.

6.6 Concluding remarks

DAFF and the FSAI continue to be committed to strengthening the pesticide residue monitoring programme in food, insofar as pesticide residues are concerned, ensuring the safety of food for consumers and ensuring the quality of produce offered for sale.

The PCL and PRCD of DAFF 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 monitoring 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, DAFF will focus on further increasing the capacity of the laboratory to determine an ever increasing number of pesticide residues in food samples and to analyse a greater range of commodities.

The analytical results were generated by J. Garvey, F. O Regan, J. McGannon, F. Morrin, 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 and G.Rennick, D.O Shea and D. Sheridan effected the violation investigations. This report was compiled through the efforts of J. Acton, M Hickey, and D. Sheridan.

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	
Commission Regulation (EC) No 178/2006	OJ L29 of 02.02.2006
For Annexes II, III and IV	
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
For Annex VII	
Commission Regulation (EC) No 260/2008	OJ L76 of 19.03.2008
For Food of animal origin	
Council Regulation (EC) No 2377/1990	OJ L224 of 18.08.1990

7.2 ANNEX II 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.
CODEX	The Codex Alimentarius Commission was created in 1963 by the FAO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme. The main purposes of this Programme are protecting health of the consumers and ensuring fair trade practices in the food trade, and promoting coordination of all food standards work undertaken by international governmental and non-governmental organizations.
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.

Lowest Calibrated Level (LCL)	The lowest concentration of a pesticide residue with which the detection system is calibrated for the purposes of determining the presence or absence of measurable residues. It normally also serves to define the reporting limit for individual pesticide residues.
Limit of Determination (LOD**)**	The LOD 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

7.3 ANNEX III Analytical methods and procedures used

Multi residue method 1, *Analytical Methods for Pesticide Residues in Foodstuffs*, 6th edition, 1996, General Inspectorate for Health Problems, Ministry of Public Health, Welfare and Sport, The Netherlands.
Note: A variation of the method is used involving addition of sodium sulphate at the time of sample extraction to facilitate the extraction of polar organophosphorous pesticides.

Multi residue method 2, *Analytical Methods for Pesticide Residues in Foodstuffs*, 6th edition, 1996, General Inspectorate for Health Problems, Ministry of Public Health, Welfare and Sport, The Netherlands. The variation of the method uses ethyl acetate as the extraction solvent and is used for the analysis of pesticide residues in cereals.

Multi-residue method 3 - Michelangelo Anastassiades, Steven J. Lehotay, Darinka Štajnbaher, Frank J. Schenck, *Fast and Easy Multiresidue Method Employing Acetonitrile Extraction/Partitioning and Dispersive Solid-Phase Extraction for the Determination of Pesticide Residues in Produce*, J AOAC International, 2003, vol. 86(22), pp.412-431.

The Becker method, *A multi residue method for the simultaneous determination of plant protection chemicals in plant material*, Dtsch. Lebensm. Rundsch. 75, 148-152, 1979, using a gel permeation column instead of the silica gel/activated charcoal column specified.

The method in use for the determination of organochlorine and organophosphorous residues in samples of fat is based on clean-up method number 5 of the German Manual of Pesticide Residue Analysis (Volume 1 of 1987) and involves extraction with a mixture of acetonitrile and acetone, followed by clean-up using gel permeation chromatography column and alumina/silver nitrate micro columns (for organochlorine pesticides only).

Residues of dithiocarbamates are determined as CS2 following acid digestion degradation with tin chloride and hydrochloric acid. This method is based on the work carried out in the CSL York UK Project FD 98/46 and involves liquid liquid extraction with trimethyl pentane.

Chlormequat and Mepiquat are analysed by a method published on the Community Reference Laboratory (CRL) Website at
http://www.crl-pesticides.eu/library/docs/srm/meth_ChlormequatMepiquat_CrlSrm.pdf

7.4 ANNEX IV Analytical scope and methods used in various foodstuffs

Pesticide	Food of plant origin	LOQ mg kg^{-1}	Fat samples	LOQ mg kg^{-1}	Milk and eggs	LOQ mg kg^{-1}	Honey	LOQ mg kg^{-1}
2,4 DB	✓	0.01			✓	0.01	✓	0.01
2,4-D	✓	0.02			✓	0.02	✓	0.02
Acephate	✓	0.05					✓	0.05
Acetamiprid	✓	0.01			✓	0.01	✓	0.01
Aclonifen	✓	0.02					✓	0.02
Acrinathrin	✓	0.02					✓	0.02
Alachlor	✓	0.02					✓	0.02
Aldicarb	✓	0.01			✓	0.01	✓	0.01
Aldicarb sulfoxide	✓	0.01			✓	0.01	✓	0.01
Aldicarb sulfone	✓	0.01			✓	0.01	✓	0.01
Aldrin	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Ametryn	✓	0.01			✓	0.01	✓	0.01
Amidosulfuron	✓	0.01			✓	0.01	✓	0.01
Aminocarb	✓	0.01			✓	0.01	✓	0.01
Asulam	✓	0.02			✓	0.02	✓	0.02
Atrazine	✓	0.02					✓	0.02
Azaconazole	✓	0.02					✓	0.02
Azamethiphos	✓	0.02					✓	0.02
Azinphos-ethyl	✓	0.02	✓	0.2	✓	0.2	✓	0.02
Azinphos-methyl	✓	0.05	✓	0.06	✓	0.06	✓	0.05
Azoxystrobin	✓	0.05			✓	0.05	✓	0.05
Benalaxyl	✓	0.02					✓	0.02
Bendiocarb	✓	0.01			✓	0.01	✓	0.01
Bentazone	✓	0.01			✓	0.01	✓	0.01
Bifenthrin	✓	0.02					✓	0.02
Binapacryl	✓	0.02					✓	0.02
Biphenyl	✓	0.02					✓	0.02
Bitertanol	✓	0.02					✓	0.02
Boscalid	✓	0.01			✓	0.01	✓	0.01
Bromacil	✓	0.01			✓	0.01	✓	0.01
Bromophos	✓	0.02	✓	0.07	✓	0.07	✓	0.02
Bromophos-ethyl	✓	0.02	✓	0.07	✓	0.07	✓	0.02
Bromopropylate	✓	0.02					✓	0.02
Bromoxynil	✓	0.01			✓	0.01	✓	0.01
Bromuconazole	✓	0.01			✓	0.01	✓	0.01
Bupirimate	✓	0.01			✓	0.01	✓	0.01
Buprofezin	✓	0.02			✓	0.01	✓	0.02
Butocarboxim-Sulfoxide	✓	0.01			✓	0.01	✓	0.01
Butoxycarboxim	✓	0.01			✓	0.01	✓	0.01
Cadusafos	✓	0.02					✓	0.02
Captafol	✓	0.02					✓	0.02
Captan	✓	0.02					✓	0.02
Carbaryl	✓	0.02			✓	0.02	✓	0.02
Carbendazim	✓	0.01			✓	0.01	✓	0.01

Pesticide	Food of plant origin	LOQ mg kg^{-1}	Fat samples	LOQ mg kg^{-1}	Milk and eggs	LOQ mg kg^{-1}	Honey	LOQ mg kg^{-1}
Carbofuran	✓	0.02			✓	0.02	✓	0.02
Carbofuran 3OH	✓	0.02			✓	0.02	✓	0.02
Carbosulfan	✓	0.01			✓	0.01	✓	0.01
Carboxin	✓	0.01			✓	0.01	✓	0.01
Chlorbromuron	✓	0.01			✓	0.01	✓	0.01
Chlordane, cis-	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Chlordane, trans-	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Chlorfenapyr	✓	0.02					✓	0.02
Chlorfenvinphos	✓	0.02	✓	0.06	✓	0.06	✓	0.02
Chlorfluazuron	✓	0.01					✓	0.01
Chlormequat	✓	0.05					✓	0.05
Chlorobenzilate	✓	0.02	✓	0.005	✓	0.05	✓	0.02
Chlorothalonil	✓	0.02					✓	0.02
Chlorpropham	✓	0.02					✓	0.02
Chlorpyrifos	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Chlorpyrifos-methyl	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Chlorthal-dimethyl	✓	0.02					✓	0.02
Chlozolinate	✓	0.02					✓	0.02
Clethodim	✓	0.01			✓	0.01	✓	0.01
Clofentezine	✓	0.01			✓	0.01	✓	0.01
Clothianidin	✓	0.01			✓	0.01	✓	0.01
Coumaphos	✓	0.02					✓	0.02
Cyanazine	✓	0.01			✓	0.01	✓	0.01
Cyanofenphos	✓	0.02					✓	0.02
Cyanophos	✓	0.05					✓	0.05
Cyazofamid	✓	0.01			✓	0.01	✓	0.01
Cyclanilide	✓	0.01			✓	0.01	✓	0.01
Cycloxydim	✓	0.05			✓	0.05	✓	0.05
Cyfluthrin	✓	0.02					✓	0.02
β Cyfluthrin	✓	0.02					✓	0.02
Cymoxanil	✓	0.01			✓	0.01	✓	0.01
Cypermethrin	✓	0.05	✓	0.05	✓	0.05	✓	0.05
α Cypermethrin	✓	0.05	✓	0.05	✓	0.05	✓	0.05
Cyproconazole	✓	0.05					✓	0.05
Cyprodinil	✓	0.01			✓	0.01	✓	0.01
DDD o,p'	✓	0.02	✓	0.005	✓	0.005	✓	0.02
DDE o.p'	✓	0.02	✓	0.005	✓	0.005	✓	0.02
DDT o.p'	✓	0.02	✓	0.005	✓	0.005	✓	0.02
DDD p.p'	✓	0.02	✓	0.005	✓	0.005	✓	0.02
DDE p.p'	✓	0.02	✓	0.005	✓	0.005	✓	0.02
DDTp.p'	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Deltamethrin	✓	0.05					✓	0.05
Demeton-S-MethylSO2	✓	0.01			✓	0.01	✓	0.01
Demeton-S-Methyl SO	✓	0.02			✓	0.02	✓	0.02
Diazinon	✓	0.02	✓	0.05	✓	0.05	✓	0.02

Pesticide	Food of plant origin	LOQ mg kg^{-1}	Fat samples	LOQ mg kg^{-1}	Milk and eggs	LOQ mg kg^{-1}	Honey	LOQ mg kg^{-1}
Dichlobenil	✓	0.02					✓	0.02
Dichlofluanid	✓	0.02					✓	0.02
Dichlorobenzo-phenone 4.4'	✓	0.02					✓	0.02
Dichlorprop	✓	0.01			✓	0.01	✓	0.01
Dichlorvos	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Diclobutrazol	✓	0.01			✓	0.01	✓	0.01
Dicloran	✓	0.05					✓	0.05
Dicofol	✓	0.05	✓	0.005	✓	0.005	✓	0.05
Dieldrin	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Diethofencarb	✓	0.01			✓	0.01	✓	0.01
Difenoconazole	✓	0.01			✓	0.01	✓	0.01
Diflubenzuron	✓	0.01			✓	0.01	✓	0.01
Dimethenamid	✓	0.01			✓	0.01	✓	0.01
Dimethoate	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Dimethomorph	✓	0.01			✓	0.01	✓	0.01
Diniconazole	✓	0.01			✓	0.01	✓	0.01
Dinoseb	✓	0.01			✓	0.01	✓	0.01
Dinoterb	✓	0.01			✓	0.01	✓	0.01
Diphenylamine	✓	0.02					✓	0.02
Dithiocarbamates	✓	0.1					✓	0.1
Diuron	✓	0.01			✓	0.01	✓	0.01
DMSA	✓	0.02					✓	0.02
DMST	✓	0.02					✓	0.02
DNOC	✓	0.01			✓	0.01	✓	0.01
Endosulfan	✓	0.02	✓	0.005	✓	0.005	✓	0.02
β –Endosulfan	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Endosulfan ether	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Endosulfan lactone	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Endosulfan sulphate	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Endrin	✓	0.02	✓	0.005	✓	0.005	✓	0.02
EPN	✓	0.02					✓	0.02
Epoxiconazole	✓	0.05					✓	0.05
Ethiofencarb	✓	0.01			✓	0.01	✓	0.01
Ethiofencarb SO2	✓	0.01			✓	0.01	✓	0.01
Ethiofencarb SO	✓	0.01			✓	0.01	✓	0.01
Ethion	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Ethofumesate	✓	0.01			✓	0.01	✓	0.01
Ethoprophos	✓	0.02					✓	0.02
Etofenprox	✓	0.01			✓	0.01	✓	0.01
Etoxazole	✓	0.02					✓	0.02
Etridiazole	✓	0.02					✓	0.02
Etrimfos	✓	0.02					✓	0.02
Famoxadone	✓	0.02					✓	0.02
Fenamidone	✓	0.02					✓	0.02
Fenamiphos	✓	0.01			✓	0.01	✓	0.01

Pesticide	Food of plant origin	LOQ mg kg^{-1}	Fat samples	LOQ mg kg^{-1}	Milk and eggs	LOQ mg kg^{-1}	Honey	LOQ mg kg^{-1}
Fenarimol	✓	0.02					✓	0.02
Fenazaquin	✓	0.02					✓	0.02
Fenbuconazole	✓	0.05					✓	0.05
Fenchlorphos	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Fenhexamid	✓	0.01			✓	0.01	✓	0.01
Fenitrothion	✓	0.02					✓	0.02
Fenoxycarb	✓	0.01			✓	0.01	✓	0.01
Fenpiclonil	✓	0.01			✓	0.01	✓	0.01
Fenpropathrin	✓	0.02					✓	0.02
Fenpropidin	✓	0.01			✓	0.01	✓	0.01
Fenpropimorph	✓	0.01			✓	0.01	✓	0.01
Fenpyroximate	✓	0.01			✓	0.01	✓	0.01
Fenthion	✓	0.02			✓	0.01	✓	0.02
Fenthion sulphone	✓	0.02			✓	0.01	✓	0.02
Fenthion sulphoxide	✓	0.02			✓	0.01	✓	0.02
Fenvalerate	✓	0.02					✓	0.02
Esfenvalerate	✓	0.02					✓	0.02
Fipronil	✓	0.01			✓	0.01	✓	0.01
Fipronil desulfinyl	✓	0.01			✓	0.01	✓	0.01
Fipronil sulphide	✓	0.01			✓	0.01	✓	0.01
Fipronil sulphone	✓	0.01			✓	0.01	✓	0.01
Flamprop-M-Isopropyl	✓	0.02					✓	0.02
Flazasulfuron	✓	0.01			✓	0.01	✓	0.01
Florasulam	✓	0.01			✓	0.01	✓	0.01
Fluazifop	✓	0.01			✓	0.01	✓	0.01
Fluazinam	✓	0.01			✓	0.01	✓	0.01
Flucythrinate	✓	0.02					✓	0.02
Fludioxonil	✓	0.01			✓	0.01	✓	0.01
Flufenacet	✓	0.01			✓	0.01	✓	0.01
Flufenoxuron	✓	0.01			✓	0.01	✓	0.01
Fluquinconazole	✓	0.01			✓	0.01	✓	0.01
Flurtamone	✓	0.02					✓	0.02
Flusilazole	✓	0.02					✓	0.02
Flutolanil	✓	0.02			✓	0.01	✓	0.02
Flutriafol	✓	0.01			✓	0.01	✓	0.01
Folpet	✓	0.02					✓	0.02
Fonofos	✓	0.05	✓	0.06	✓	0.06	✓	0.05
Fuberidazole	✓	0.01			✓	0.01	✓	0.01
Furalaxyl	✓	0.02					✓	0.02
Furathiocarb	✓	0.01			✓	0.01	✓	0.01
Furmecyclox	✓	0.01			✓	0.01	✓	0.01
Haloxyfop	✓	0.02			✓	0.02	✓	0.02
HCH	✓	0.02	✓	0.005	✓	0.005	✓	0.02
α-HCH	✓	0.02	✓	0.005	✓	0.005	✓	0.02
β –HCH	✓	0.02	✓	0.005	✓	0.005	✓	0.02

Pesticide	Food of plant origin	LOQ mg kg^{-1}	Fat samples	LOQ mg kg^{-1}	Milk and eggs	LOQ mg kg^{-1}	Honey	LOQ mg kg^{-1}
δ-HCH	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Heptachlor	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Heptachlor epoxide	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Heptenophos	✓	0.02					✓	0.02
Hexachlorobenzene	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Hexaconazole	✓	0.02					✓	0.02
Hexaflumuron	✓	0.01			✓	0.01	✓	0.01
Hexythiazox	✓	0.01			✓	0.01	✓	0.01
Imazalil	✓	0.01			✓	0.01	✓	0.01
Imidacloprid	✓	0.01			✓	0.01	✓	0.01
Indoxacarb	✓	0.01			✓	0.01	✓	0.01
Iodosulfuron-methyl	✓	0.01			✓	0.01	✓	0.01
Ioxynil	✓	0.01			✓	0.01	✓	0.01
Iprodione	✓	0.02					✓	0.02
Iprovalicarb	✓	0.02					✓	0.02
Isazofos	✓	0.02					✓	0.02
Isodrin	✓	0.02					✓	0.02
Isofenphos	✓	0.05	✓	0.1	✓	0.1	✓	0.05
Isofenphos-Methyl	✓	0.02					✓	0.02
Isoproturon	✓	0.01			✓	0.01	✓	0.01
Jodfenphos	✓	0.02					✓	0.02
Kresoxim-methyl	✓	0.02					✓	0.02
Lambda-Cyhalothrin	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Lenacil	✓	0.05					✓	0.05
Lindane	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Linuron	✓	0.01			✓	0.01	✓	0.01
Lufenuron	✓	0.01			✓	0.01	✓	0.01
Malathion	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Malaoxon	✓	0.02	✓	0.05	✓	0.05	✓	0.02
MCPA Me ester	✓	0.01			✓	0.01	✓	0.01
MCPB	✓	0.01			✓	0.01	✓	0.01
Mecarbam	✓	0.02					✓	0.02
Mecoprop	✓	0.01			✓	0.01	✓	0.01
Mepanipyrim	✓	0.01			✓	0.01	✓	0.01
Mepiquat	✓	0.05					✓	0.05
Mephosfolan	✓	0.01			✓	0.01	✓	0.01
Mepronil	✓	0.01			✓	0.01	✓	0.01
Mesosulfuron-methyl	✓	0.01			✓	0.01	✓	0.01
Metalaxyl	✓	0.02					✓	0.02
Metamitron	✓	0.01			✓	0.01	✓	0.01
Metazachlor	✓	0.02					✓	0.02
Metconazole	✓	0.01			✓	0.01	✓	0.01
Methacrifos	✓	0.02					✓	0.02
Methamidophos	✓	0.05					✓	0.05
Methidathion	✓	0.02	✓	0.04	✓	0.04	✓	0.02

Pesticide	Food of plant origin	LOQ mg kg^{-1}	Fat samples	LOQ mg kg^{-1}	Milk and eggs	LOQ mg kg^{-1}	Honey	LOQ mg kg^{-1}
Methiocarb	✓	0.02					✓	0.02
Methomyl	✓	0.01			✓	0.01	✓	0.01
Methoxychlor	✓	0.02					✓	0.02
Methoxyfenozide	✓	0.01			✓	0.01	✓	0.01
Metobromuron	✓	0.01			✓	0.01	✓	0.01
Metolachlor	✓	0.02					✓	0.02
Metribuzin	✓	0.02					✓	0.02
Mevinphos	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Mirex	✓	0.02					✓	0.02
Molinate	✓	0.02					✓	0.02
Monocrotophos	✓	0.02					✓	0.02
Myclobutanil	✓	0.02					✓	0.02
Napropamide	✓	0.02					✓	0.02
Nitenpyram	✓	0.01			✓	0.01	✓	0.01
Nonachlor-Trans	✓	0.02					✓	0.02
Nuarimol	✓	0.02					✓	0.02
Orthophenylphenol	✓	0.02					✓	0.02
Oxadixyl	✓	0.02					✓	0.02
Omethoate	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Oxamyl	✓	0.01			✓	0.01	✓	0.01
Paclobutrazol	✓	0.05					✓	0.05
Paraoxon	✓	0.02	✓	0.1	✓	0.1	✓	0.02
Parathion	✓	0.02	✓	0.1	✓	0.1	✓	0.02
Paraoxon methyl	✓	0.02	✓	0.1	✓	0.1	✓	0.02
Parathion-methyl	✓	0.02	✓	0.05	✓	0.05	✓	0.02
PCB 28			✓	0.01	✓	0.01		
PCB 52			✓	0.01	✓	0.01		
PCB 101			✓	0.01	✓	0.01		
PCB 118			✓	0.01	✓	0.01		
PCB 138			✓	0.01	✓	0.01		
PCB 153			✓	0.01	✓	0.01		
PCB 180			✓	0.01	✓	0.01		
Penconazole	✓	0.02					✓	0.02
Pencycuron	✓	0.01			✓	0.01	✓	0.01
Pendimethalin	✓	0.02					✓	0.02
Permethrin	✓	0.02	✓	0.04	✓	0.04	✓	0.02
Phenthoate	✓	0.02					✓	0.02
Phorate-sulfoxide	✓	0.01			✓	0.01	✓	0.01
Phosalone	✓	0.02	✓	0.13	✓	0.13	✓	0.02
Phosmet	✓	0.02					✓	0.02
Phosphamidon	✓	0.02					✓	0.02
Picoxystrobin	✓	0.01			✓	0.01	✓	0.01
Piperonyl Butoxide	✓	0.02					✓	0.02
Pirimicarb	✓	0.02					✓	0.02
Pirimiphos-ethyl	✓	0.02	✓	0.07	✓	0.07	✓	0.02
Pirimiphos-methyl	✓	0.02	✓	0.05	✓	0.05	✓	0.02

Pesticide	Food of plant origin	LOQ mg kg^{-1}	Fat samples	LOQ mg kg^{-1}	Milk and eggs	LOQ mg kg^{-1}	Honey	LOQ mg kg^{-1}
Prochloraz	✓	0.02					✓	0.02
Procymidone	✓	0.02					✓	0.02
Profenofos	✓	0.02					✓	0.02
Prometryn	✓	0.01			✓	0.01	✓	0.01
Propachlor	✓	0.02					✓	0.02
Propanil	✓	0.02					✓	0.02
Propargite	✓	0.02					✓	0.02
Propetamphos	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Propham	✓	0.05					✓	0.05
Propiconazole	✓	0.02					✓	0.02
Propoxur	✓	0.02					✓	0.02
Propoxycarbazone	✓	0.01			✓	0.01	✓	0.01
Propyzamide	✓	0.02					✓	0.02
Prothioconazole	✓	0.01			✓	0.01	✓	0.01
Prothiofos	✓	0.02					✓	0.02
Pymetrozine	✓	0.01			✓	0.01	✓	0.01
Pyraclostrobin	✓	0.01			✓	0.01	✓	0.01
Pyrazophos	✓	0.02					✓	0.02
Pyridaben	✓	0.02					✓	0.02
Pyridaphenthion	✓	0.01			✓	0.01	✓	0.01
Pyrifenox	✓	0.05					✓	0.05
Pyrimethanil	✓	0.01			✓	0.01	✓	0.01
Pyriproxyfen	✓	0.02					✓	0.02
Quinalphos	✓	0.02					✓	0.02
Quinoxyfen	✓	0.01			✓	0.01	✓	0.01
Quintozene	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Quizalofop	✓	0.01			✓	0.01	✓	0.01
Rimsulfuron	✓	0.01			✓	0.01	✓	0.01
Rotenone	✓	0.01			✓	0.01	✓	0.01
Simazine	✓	0.02					✓	0.02
Spinosad	✓	0.01			✓	0.01	✓	0.01
Spirodiclofen	✓	0.02					✓	0.02
Spiroxamine	✓	0.01			✓	0.01	✓	0.01
Sulfentrazone	✓	0.01			✓	0.01	✓	0.01
tau-Fluvalinate	✓	0.02					✓	0.02
Tebuconazole	✓	0.02					✓	0.02
Tebufenozide	✓	0.01			✓	0.01	✓	0.01
Tebufenpyrad	✓	0.01			✓	0.01	✓	0.01
Tecnazene	✓	0.02	✓	0.005	✓	0.005	✓	0.02
Teflubenzuron	✓	0.01			✓	0.01	✓	0.01
Terbuthylazine	✓	0.02					✓	0.02
Tetraconazole	✓	0.02					✓	0.02
Tetradifon	✓	0.05					✓	0.05
Thiabendazole	✓	0.01			✓	0.01	✓	0.01
Thiacloprid	✓	0.01			✓	0.01	✓	0.01
Thiamethoxam	✓	0.01			✓	0.01	✓	0.01

Pesticide	Food of plant origin	LOQ mg kg^{-1}	Fat samples	LOQ mg kg^{-1}	Milk and eggs	LOQ mg kg^{-1}	Honey	LOQ mg kg^{-1}
Thiofanox-Sulfoxide	✓	0.01			✓	0.01	✓	0.01
Thiophanate-ethyl	✓	0.01			✓	0.01	✓	0.01
Thiophanate-methyl	✓	0.01			✓	0.01	✓	0.01
Tolclofos-methyl	✓	0.02					✓	0.02
Tolylfluanid	✓	0.02					✓	0.02
Triadimefon	✓	0.02					✓	0.02
Triadimenol	✓	0.02					✓	0.02
Triazophos	✓	0.02	✓	0.05	✓	0.05	✓	0.02
Triclopyr	✓	0.01			✓	0.01	✓	0.01
Trifloxystrobin	✓	0.02					✓	0.02
Triflumizole	✓	0.02					✓	0.02
Triflumuron	✓	0.01			✓	0.01	✓	0.01
Trifluralin	✓	0.02					✓	0.02
Triflusulfuron-Methyl	✓	0.01			✓	0.01	✓	0.01
Triticonazole	✓	0.05					✓	0.05
Vamidothion	✓	0.01			✓	0.01	✓	0.01
Vinclozolin	✓	0.02					✓	0.02
Zoxamide	✓	0.02					✓	0.02

Results included in the above report were generated by the

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The results in this report relate only to samples tested.