
FOREWORD



I am very pleased to present the results of the national monitoring programme for pesticide residues in food carried out in 2007 by the Department of Agriculture, Fisheries and Food's (DAFF) Pesticide Control Service (PCS) under the terms of a service contract with the Food Safety Authority of Ireland (FSAI). Food safety is of great importance to all involved in the food chain and, through the residue monitoring programme, consumers can be assured that they are not exposed to unacceptable pesticide residue levels and that only authorized pesticides are applied to food crops. Samples of food are analysed in the DAFF's Pesticide Control Laboratory which is accredited by the Irish National Accreditation Board (INAB) of Ireland 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 2007.

A handwritten signature in black ink that reads "Trevor Sargent". The signature is written in a cursive style and is positioned above a horizontal line.

Trevor Sargent TD

Minister for Food and Horticulture

Department of Agriculture, Fisheries and Food.

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SUMMARY

1424 routine and targeted samples of fruit, vegetables, cereals and food of animal origin (including organic and processed) were analysed for pesticide residue content in 2007. Samples were analysed for residues for up to 292 analytes (226 pesticides, metabolites and isomers).

For the fruit and vegetable samples in the routine monitoring programme, 41.6% of the samples analysed contained no detectable pesticide residue, 55.4% contained one or more detectable residues and 3.6% contained residues in excess of EU MRLs. This compared with 2.8% of the samples found in 2006 with MRL breaches using a monitoring programme with a lower number of analytes (153 pesticides and metabolites).

In 2007 the five most frequently detected pesticides in fruit and vegetable samples sought were: ethylenebisdithiocarbamates (16.4%); imazalil (16.3%); thiabendazole (14.1%); iprodione (9.1%) and chlorpyrifos (8.5%). The two most frequently found pesticides in cereal samples were pirimiphos methyl (16.1%) and malathion (8.6%).

Two RASFF (rapid alert system food & feed) notifications were issued in 2007 on the basis of MRLs exceedences and risk assessments: one on a sample of pears containing methomyl and the other on apples containing carbendazim.

ORGANISATION OF MONITORING PROGRAMME AND SAMPLING

The 2007 Irish monitoring programme was carried out by the Pesticide Control Service of the Department of Agriculture, Fisheries and Food. This programme was agreed at the end of 2006 following discussions between the Pesticide Control Service and the Food Safety Authority of Ireland (FSAI) as part of a service contract between both bodies.

The programme was designed by taking account of the following

- the current consumption data for Irish adults (IUNA 1996-1998 survey)
- the co-ordinated EU monitoring programme for 2007
- priority given to commodities eaten in the raw state e.g. lettuce
- the capacity of the laboratory to implement the programme
- samples that gave rise to MRL breaches in 2006 are targeted
- the availability of produce on the market at time of sampling.

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

Arising from the MRL breaches detected in 2006, 15 follow up samples were analysed in 2007, one of which, a spinach sample from Ireland, had an MRL breach for chlorothalonil. The residue posed no risk to consumers.

Following RASFF alerts in 2007, 3 statutory samples of pears and 1 of table grapes were analysed. No residues were detected in these samples.

QUALITY ASSURANCE

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

PARTICIPATION IN PROFICIENCY TESTS

The Pesticide Control participated in the EU Proficiency tests, which were organised by the Community Reference Laboratories (CRL) in the pesticide area as well as the FAPAS schemes for fruit, vegetables and cereals. Participation in these tests is used to verify that the laboratory has the capacity and expertise to analyse food samples for the range of pesticide residues controlled by the legislation.

Analytical uncertainty

The Laboratory applies an uncertainty factor to results used to enforce the legislation. The factor currently used is 50% which was agreed at EU level and takes into consideration inter-laboratory variations that occur when the same sample is analysed in different laboratories.

OTHER INFORMATION

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

INTRODUCTION

The monitoring programme for pesticide residues in food undertaken by the Department of Agriculture, Fisheries and Food (DAFF) through its Pesticide Control Service (PCS), at Backweston, Co. Kildare, is aimed at ensuring that consumers are not exposed to unacceptable pesticide residue levels. In addition, it is aimed at ensuring that authorised pesticides are correctly applied to food crops and that the unauthorised use of pesticides is detected.

In accordance with the contractual arrangements between DAFF and the Food Safety Authority of Ireland (FSAI)¹, the annual monitoring programme carried out by the PCS has since 5 July 1999, been agreed with and conducted on behalf of the FSAI.

The monitoring programme in place involves sampling of imported and domestic produce. The analytical part of the monitoring programme reflects pesticide usage patterns both in Ireland and abroad. Some 800 active substances are registered for use in plant protection products around the world, of which between 300 and 400 are in common use. The number of active substances registered for use in plant protection products within the EU continues to fall as a direct result of the review programme being undertaken in accordance with the requirements of Directive 91/414 and it is expected that there will be a maximum of circa 350 active substances authorised for use within the EU in 2008 when this review is complete.

Pesticide residue levels in treated crops and in animal products are regulated through the establishment of Maximum Residue Limits (MRLs). Currently MRLs have been established in Ireland for almost 200 pesticides in fruit and vegetables (including tea), for 170 pesticides in cereals and 120 pesticides in food of animal origin, reflecting relevant European Union (EU) legislation. A new Regulation 396/2005 to control pesticide residues in food has been adopted and has as its objective the establishment of harmonised EU MRLs for all pesticides. With progress in establishing the Annexes of the Regulation being somewhat behind schedule, the Regulation is to become operational on September 1st 2008.

When MRLs are exceeded, officers of the PCS may remove the produce concerned from the market and destroy it at the owner's expense. The Minister may also prosecute offenders. A dietary intake calculation is carried out in all cases where an MRL is exceeded, to determine whether the intake has exceeded the Acceptable Daily Intake (ADI), or the acute reference dose (ARfD), where appropriate for the pesticide in question, 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, a "Rapid Alert"² is issued by the FSAI. A Rapid Alert is issued when residues detected in food are considered to be harmful to the consumer or for information only.

Comment [m1]: May also be issued for "information only"

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

¹ Service Contract between the Food Safety Authority of Ireland and the Department of Agriculture, Fisheries and Food from 2007

² Regulation (EC) No. 178/2002 of the European Parliament and of the Council of 28th of January 2002.

MONITORING PROGRAMMES

Monitoring programmes are in place for the three different food groups for which MRLs have been established, food of plant origin (fruit and vegetables), cereals and food of animal origin (fat, milk, honey, eggs and dairy produce). Officers of the PCS carry out the sampling of food of plant origin and cereals, while members of the Dairy Science and Veterinary Inspectorates of the DAFF carry out the sampling of food of animal origin as required by Directive EC 96/23.

The monitoring programme for 2007, as agreed with the FSAI, takes into consideration -

- i the programme recommended by the European Commission ³,
- ii dietary intake patterns of Irish consumers ⁴,
- 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 total number of routine and targeted samples analysed at 1425, reflected the capacity of the laboratory to process samples submitted in 2007 and are consistent with the number of samples analysed in the previous two years of operations at the new facilities at Backweston. As in previous years significant resources were employed within the laboratory to maintain systems and procedures to support INAB⁵ accreditation of the laboratory in accordance with the requirements of Council Directives 89/397/EEC⁶ and 93/99/EEC⁷. The laboratory is currently accredited to ISO 17025 standard for the analysis of pesticide residues in both foods of plant and of animal origin using gas and liquid chromatographic techniques. The scope of the liquid chromatographic techniques was substantially extended in 2007 with the addition of the multi residue analytical method using HPLC/MS/MS (high performance chromatography with triple quadrupole mass spectrometry). This technique allows for the simultaneous detection of a large number of pesticides at high sensitivity and has replaced the use of the HPLC and DAD (diode array detection), which was used to detect only the benzimidazole residues in previous years. The use of the Q_UeChERs⁸ extraction method was also incorporated into the laboratory programme, allowing for more samples to be extracted and subsequently processed in larger batches on the chromatographic equipment.

The monitoring programme is the primary means of ensuring that plant protection products (pesticides) are used in accordance with *Good Agricultural Practice*. The monitoring programme is essential if the misuse of legal products and the use of illegal products are to be eliminated. Authorised plant protection products can

³ Commission Recommendation of 18th of January 2006, concerning a co-ordinated Community monitoring programme for 2007 to ensure compliance with maximum levels of pesticide residues in and on cereals and certain other products of plant origin (2006/26/EC) OJ No L 19/23..

⁴ IUNA, North South Food Consumption Database, 2001 and National children's Food Survey 2005.

⁵ Irish National Accreditation Board

⁶ Council Directive of 14 June 1989 on the official control of foodstuffs. (89/397/EEC) OJ No. L 186 of 30.6.1989

⁷ Council Directive of 29 October 1993 on the subject of additional measures concerning the official control of foodstuffs. (93/99/EEC) OJ No. L 290 of 24.11.1993

⁸ Quechers Q_Uick Easy Cheap Easy Rugged Safe. A rapid method using solid phase extraction

be misused in various ways, for example, the 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.* illegal uses). When plant protection products are used in accordance with *Good Agricultural Practice* unacceptable levels of pesticide 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 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.

A SAMPLING OF FRUIT AND VEGETABLES

Routine sampling 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 allows action to be taken, where necessary, prior to distribution.

As part of the violation investigation programme, fruit and vegetables of specific origin are targeted for further special attention, where residues at levels in excess of MRLs have been found following routine sampling. When produce is targeted for statutory sampling, whether as a result of information generated through routine monitoring or following a Food Alert issued by the FSAI or a Rapid Alert notification to the FSAI from the EU Commission, the sampled lot is detained pending analysis. The analytical results always dictate 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 the analytical uncertainty of 50%, follow up action may include removal of the product from the market or that legal proceedings may be initiated.

B SAMPLING 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 current 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 point of assembly or storage by authorised officers of the PCS.

C SAMPLING OF FOOD OF ANIMAL ORIGIN

Random samples of bovine, porcine, ovine, poultry, equine, and venison kidney fat samples are taken at a range of meat processing plants around the country. Dairy, eggs and honey produce are sampled at production plants or points of assembly. Samples analysed relate only to domestic produce. Fat samples analysed are from individual animals. Each dairy produce sample taken is representative of a particular bulk consignment. Authorised officers of the Dairy Science and Veterinary Inspectorates of DAFF carry out the sampling of meat, dairy produce, other foods of animal origin and honey.

D SAMPLING OF MISCELLANEOUS PRODUCTS

Complaint or suspect samples are submitted from time to time for analysis by DAFF, other State Services, Local Authorities, consumers and other interested parties.

E ANALYTICAL PROCEDURES

The analytical methods used in most cases are multi-residue in nature, an approach that facilitates the maximisation of laboratory output. Samples are mainly analysed using gas and liquid chromatography. Mass spectrometry is the primary method used for the detection and identification of residues present. In some cases, specific detectors such as electron capture detection with chromatographic columns of different polarity are used for the detection and confirmation of the presence of pesticide residues in food samples and in particular food of animal origin where a high degree of sensitivity is required.

The samples are analysed in batches on the chromatographic systems and compared against bracketed sets of matrix-matched standards on the multi-residue scope. Quantitative determinations are made when residues are found in the samples at or above the LCL (lowest calibration level) when compared to matrix matched calibration curves. References to the analytical methods employed are provided in Annex IV.

F QUALITY ASSURANCE

Routine quality assurance procedures are followed within the laboratory in accordance with the requirements specified to maintain accreditation to the ISO 17025 standard. During 2007 the laboratory participated in 5 proficiency tests funded by the European Commission involving fruit and vegetables, cereal and fat samples. As National Reference Laboratory (NRL) for Pesticides in Fruit and Vegetables, Food of Animal origin, Cereals and Single Residues, the Pesticide Control Service is required to participate in these studies. In 2007 the 4 Community Reference Laboratories organised tests for the NRL and official monitoring laboratories in strawberry (PT09), pear (FV-LC1), rapeseed oil (PT AO1) and two studies in cereal (PTC-1 and SRM2). Apart from a questionable result for azoxystrobin in a cereal sample with a Z score of 2.67, the results obtained by the Pesticide Control Laboratory in these proficiency studies were acceptable. Results in proficiency tests are deemed to be satisfactory when the Z score falls between -2 and +2.

In addition the laboratory participated in 6 proficiency tests (apple, lettuce, 2 peach samples, grape and vegetable oil), organised by Food Analysis Performance Assessment Scheme (FAPAS)⁹. The results obtained by the Pesticide Control Laboratory in these proficiency studies were acceptable in all cases.

In 2007, some 292 pesticides and metabolites were analysed in all 1030 fruit, vegetables and cereal samples with ethylenebisdithiocarbamates (EBDCs) being also determined in a more limited number of samples (183). 63 pesticides were analysed in the 395 samples of animal origin with the exception of the honey samples for which 172 pesticides and 7 PCB congeners was sought. The introduction of new analytical technology and the completion of further method development and validation in 2006 has increased the capacity of the laboratory to analyse for a larger number of pesticide residues with the scope increasing from 153 in 2006 to 292 pesticides in 2007.

Comment [m2]: May need to say how this result was addressed or in what way was it questionable? Elaborate further?

⁹ FAPAS is a registered trade mark of the UK Department of the Environment, Food and Rural Affairs [DEFRA]

RESULTS AND DISCUSSION

In 2007, 907 routine samples: 774 fruit and vegetables samples, 45 organic samples and 88 processed fruit and vegetables samples were taken and analysed by the Pesticide Control Laboratory.

93 cereal samples and 7 processed cereal samples were also taken and analysed by the Pesticide Control Laboratory.

In addition to the routine monitoring programme, 15 targeted, 5 statutory samples and 3 complaint samples were also analysed.

394 samples of food of animal origin were analysed for residues of pesticides and PCBs.

A FRUIT AND VEGETABLES

i. ROUTINE MONITORING PROGRAMME

The results of the 2007 monitoring programme for fruit and vegetables are summarised in Table 1 below. Details of samples analysed and those found to contain pesticide residues are presented in Table 2.

In 2007, 907 samples of 67 different types of fruit and vegetables (fresh or dried) including 45 organic samples and 88 processed samples were analysed for their pesticide residue content. Of the samples taken 19.5% were of domestic origin, 41.6% were imported from other EU countries, 30.0% were imports from countries outside of the EU while a further 8.9% were of unknown origin. The origin of the routine samples is similar to those analysed in 2006 (Figure 1). Samples were analysed for 292 pesticides during 2007. 41.0% of the fruit and vegetables contained no detectable residues; 55.4% contained detectable levels below the MRL level and 3.6% of the samples exceeded the EU MRL.

Figure 1: Source of routine Fruit and Vegetables analysed in 2007

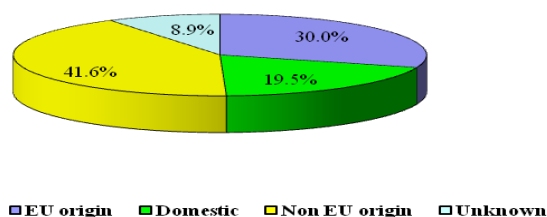
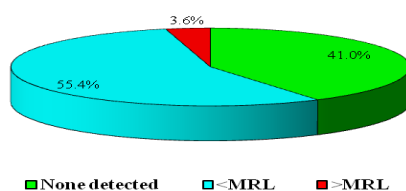


Figure 2: Frequency of samples with no residues detected or with residues detected above and below the MRL in 2007



46.0% of the pesticides in the analytical screening methods (Annex V) were found in the fruit and vegetable samples analysed. The most frequently found pesticides in 2007 were:

imazalil (16.2%), thiabendazole (14.6%) iprodione (9.1%), chlorpyrifos (8.5%), carbendazim (7.0%) diphenylamine (6.5%), captan (5.7%) fenhexamid (5.0%) malathion (4.2%), prochloraz (4.0%), 2,4 D (3.5%), tebuconazole (2.9%), pyrimethanil (2.8%), azoxystrobin (2.7%), fludioxonil (2.5%), thiacloprid (2.5%), chlorothalonil (2.3%), cypermethrin (2.3%), linuron (2.3%) cyprodonil (2.2%) and procymidone (2.1%).

82 other pesticides were detected with frequency ranging from 0.1% to 1.9%.

In comparison to 2006, the relative frequency of imazalil has increased significantly as the screening for this compound started in mid 2006. Imazalil and thiabendazole are used as post harvest fungicides and are most commonly found in citrus and pome fruits.

Of the other significant changes from 2006, the rate of detection of benomyl (carbendazim) increased from 3.9% to 7.0%, malathion from 2.9% to 4.2%, propargite decreased from 2.8% to 1.0%. Fenhexamid, regularly found in kiwi, table grapes and strawberries and tebuconazole found mainly in stone fruits and root vegetables especially parsnips, also showed an increase in detection rate compared to 2006.

Detection rate for folpet decreased from 2.2% in 2006 to 0.5% in 2007, for carbary from 2.1% to 0.4% and for tolyfluanid from 2.0% to 0.8%.

For other pesticides such as chlorpyrifos, diphenylamine and prochloraz, the detection rates were similar to those found in 2006. Of the new pesticides added to the screen in 2007, 2,4 D, found mostly on citrus fruit samples gave a detection rate of 3.5%, placing it in the top ten most frequently found pesticides in the monitoring programme.

183 samples of fruit and vegetables samples were analysed for the ethylenebisdithiocarbamate group fungicides using a single residue analytical method. 16.3% of these samples were found to contain residues of CS₂.

Of the 907 routine samples of fruit and vegetables analysed, 364 (40.1%) contained residues of two pesticides, 134 (14.8%) contained residues of three pesticides, 97 (10.7%) contained residues of four pesticides, 75 (8.3%) contained five pesticides, 26 (2.9%) contained residues of six pesticides, 5 (0.6%) contained residues of seven pesticides, 7 (0.8%) contained residues of eight pesticides and 1 (0.1%) contained residues of nine pesticides.

The sample with the 9 pesticides was a strawberry sample of domestic origin and contained bifenthrin, fenhexamid, iprodione, mepanipyrim, myclobutanil, pirimicarb, pymetrozine, pyraclostrobin and thiacloprid **with all the residues below the MRLs.**

The number of samples containing more than one pesticide residue increased significantly from 2006 due in no small part to the increased range in the analytical scope. For example, the number of samples with five pesticides increased from 1.6% in 2006 to 7.3% in 2007.

Analysis of the monitoring results for fruit and vegetables samples showed that 39.9% had no detectable pesticide residues. 60.1% had quantifiable residues and 3.6% contained residues in excess of the statutory EU MRLs. Of the 1295 pesticides residues detected in the routine samples, 219 (16.9%) were at a concentration between 0.01 and less than 0.02 mg/kg; 254 (19.6%) were between 0.02 and less than 0.05mg/kg; 243 (18.8%) between 0.05 and less than 0.1 mg/kg; 165 (12.7%) were detected between 0.1 and 0.2 mg/kg; 138 (10.7%) between 0.2 and 0.5 mg/kg; 111 (10.7%) between 0.5 and 1 mg/kg. 165 (8.6%) of the results ranged from 1 to 7.61 mg/kg. 55.5% of the pesticides detected were present at a concentration of less than 0.1 mg/kg which indicated a high level of compliance by producers and the sensitivity of the analytical techniques in use in the laboratory.

In 2007 3.6% of samples exceeded the MRL. This compared to a lower value of 2.9% exceeding the MRL in 2006.

Organic fruit and vegetables

In 2007, 45 samples of fruit and vegetables, labelled as organic, were analysed. 41 of these samples were pesticide free but four (8.8%), contained trace pesticide residues at or near the limit of determination. Details of the results of the organic samples analysed are presented in Tables 17 and 18.

Organic products of domestic and imported origin are sampled randomly as part of the monitoring programme by sampling officers of the PCS at retail and wholesaler premises. When pesticides are detected in organic samples, the Unit in DAFF dealing with organic farming are notified of the results.

Processed fruit and vegetables

In 2007 some 88 samples of processed fruit and vegetables were analysed as part of the monitoring programme. Fifty-three samples were of fruit or vegetable juices and the remainder were tinned fruit or vegetables. The analytical results show that the majority of the samples, 86%, contain no detectable pesticide residues. The pesticide residues found in the remaining 13.6% of samples were at very low levels, the highest value being 0.2mg/kg. The presence of such low levels of pesticide residues in these products suggests that there is little transfer of residues from raw fruit or vegetables into the processed product or else that fruit or vegetables used for processing do not receive the same level of pesticide treatment prior to harvest. In all 12 samples (13.6%) were found to contain detectable residues of eight different pesticides that ranged in concentration from 0.01 mg/kg to 0.2 mg/kg. These results confirm data from previous years that indicate a lower incidence and level of pesticide residues in processed products..

The results are presented in Tables 19 and 21.

Table 1: Summary of the samples of fruit and vegetables analysed for routine monitoring in 2007

Commodity	Number of samples Analysed	Number of Domestic samples	Number of imported samples	Residues		
				>MRL	<MRL	ND
Apple	113	3	110	7	82	24
Apple juice	14	0	14	0	1	13
Apricot	5	0	5	0	5	0
Aubergine	8	0	8	0	6	2
Avocado	10	0	10	0	2	8
Banana	16	0	16	0	10	6
Bean with pod	5	2	3	0	3	2
Bean w/o pod	1	0	1	0	0	1
Blackberry	2	0	2	0	2	0
Blueberry	5	0	5	0	1	4
Blueberry juice	1	0	1	0	0	1
Broccoli	9	0	9	2	2	5
Brussels sprout	2	0	2	0	1	1
Cabbage	18	14	4	0	7	11
Carrot	38	16	22	1	18	19
Cauliflower	6	0	6	0	0	6
Celery	14	0	14	4	4	6
Cherry	8	0	8	0	7	1
Chilli pepper	2	0	2	0	1	1
Clementine	32	0	32	1	31	0
Courgette	8	0	8	0	3	5
Cranberry	1	0	1	0	0	1
Cranberry juice	4	0	4	0	0	4
Cucumber	12	1	11	0	8	4
Endive	3	2	1	1	2	0
Fennel	1	0	1	0	1	0
Garlic	1	0	1	0	0	1
Globe artichoke	1	0	1	0	1	0
Grapefruit	13	0	13	1	11	1
Grapefruit juice	4	0	4	0	0	4
Grape table	23	0	23	1	14	8
Grape juice	2	0	2	0	0	2
Kale	1	1	0	0	0	1
Kiwi	16	0	16	0	14	2
Kumquat	1	0	1	0	0	1
Leek	15	8	7	0	2	13
Lemon	8	0	8	0	8	0
Lettuce	60	44	16	2	40	18

Commodity	Number of samples Analysed	Number of Domestic samples	Number of imported samples	Residues		
				>MRL	<MRL	ND
Lime	6	0	6	0	6	0
Litchi	2	0	2	0	0	2
Loganberry	1	0	1	0	1	0
Mandarin	13	0	13	1	11	1
Mango	10	0	10	1	6	3
Marrow	1	0	1	0	1	0
Melon	4	0	4	0	1	3
Mushroom	21	19	2	0	10	11
Nectarine	13	0	13	0	10	3
Onion	2	0	2	0	0	2
Orange	39	0	39	2	32	5
Orange juice	23	0	23	0	6	17
Parsley	1	1	0	0	0	1
Parsnip	7	6	1	1	5	1
Passion fruit	1	0	1	1	0	0
Pea with pod	3	0	3	0	1	2
Pea without pod	25	10	15	0	1	24
Peach	17	0	17	0	12	5
Peach juice	1	0	1	0	1	0
Pear	39	0	39	2	28	9
Pepper	20	1	19	1	13	6
Pineapple	10	0	10	0	3	7
Plum	15	0	15	0	9	6
Pomegranate	2	0	2	0	2	0
Potato, ware	50	24	26	0	12	38
Raisins	2	0	2	0	1	1
Raspberry	8	0	8	0	1	7
Rhubarb	2	2	0	0	0	2
Rocket	1	0	1	0	1	0
Satsuma	11	0	11	1	10	0
Scarole	1	0	1	0	1	0
Spinach	7	2	5	0	3	4
Spring onion	2	0	2	0	1	1
Strawberry	29	12	17	2	21	6
Sunflower	1	0	1	0	1	0
Sweet potato	4	0	4	0	2	2
Tomato	21	2	19	0	12	9
Tomato juice	1	0	1	0	0	1
Turnip	8	7	1	1	1	6
TOTALS	907	177	730	33	513	361

Table 2: Details of fruit and vegetable samples with residues detected in 2007

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
1. Fruit	1.1 Citrus Fruit		1.1.1 Grapefruit	
70006	ISRAEL	imazalil	1.7	5
		thiabendazole	0.69	5
		2,4-D	0.19	1
		chlorpyrifos	0.12	0.3
70043	CYPRUS	chlorpyrifos	0.06	0.3
		imazalil	1.86	5
		thiabendazole	1.31	5
70137	TURKEY	chlorpyrifos	0.06	0.3
		methidathion	0.61	2
		imazalil	0.17	5
		pyridaben	0.02	No MRL
		2,4-D	0.01	1
70203	CYPRUS	2,4-D	0.1	1
		imazalil	2.85	5
		thiabendazole	2.9	5
		chlorpyrifos	0.03	0.3
70215	CUBA	imazalil	0.31	5
		thiabendazole	1.09	5
70312	SPAIN	imazalil	0.93	5
70533	ISRAEL	imazalil	3.28	5
		thiabendazole	0.98	5
		2,4-D	0.02	1
70619	ARGENTINA	imazalil	1.01	5
		thiabendazole	0.3	5
70623	S AFRICA	chlorpyrifos	0.02	0.3
		captan	0.13	0.02
		methidathion	0.34	2
		trifloxystrobin	0.03	0.3
		imazalil	1.35	5
		pyraclostrobin	0.02	1
70637	ISRAEL	chlorpyrifos	0.05	0.3
		bromopropylate	0.27	2
		imazalil	1.94	5
		thiabendazole	0.75	5
70908	HONDURAS	thiabendazole	0.77	5
70976	TURKEY	chlorpyrifos	0.02	0.3
		imazalil	0.62	5
		thiabendazole	0.26	5
			1.1.2 Lemon	
70087	SPAIN	imazalil	1.39	5
		prochloraz	1.45	10
		fenoxycarb	0.02	No MRL
70271	SPAIN	imazalil	3.12	5
70279	SPAIN	dicofol	0.06	2
		chlorpyrifos	0.03	0.2
		thiabendazole	0.02	5
		imazalil	1.56	5
70307	ITALY	imazalil	0.02	5
		maneb group	0.1	5
		biphenyl	0.03	No MRL
70450	SPAIN	quizalofop	0.01	No MRL
		imazalil	2.33	5
		thiabendazole	0.06	5
		chlorpyrifos	0.05	0.2
		prochloraz	0.58	10

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70529	SPAIN	imazalil	1.45	5
70550	SPAIN	imazalil	0.65	5
70617	ARGENTINA	imazalil	3.08	5
		thiabendazole	0.69	5
1.1.3 Lime				
70002	BRAZIL	imazalil	0.01	5
		thiabendazole	0.07	5
		oxamyl	0.03	No MRL
70046	BRAZIL	imazalil	0.81	5
		2,4-D	0.12	1
		prochloraz	0.43	10
70133	BRAZIL	prochloraz	0.81	10
		imazalil	0.89	5
70155	BRAZIL	prochloraz	0.4	10
		2,4-D	0.06	1
		thiabendazole	0.75	5
		imazalil	0.6	5
70616	BRAZIL	carbendazim	0.04	0.1
		imazalil	0.39	5
		prochloraz	0.42	10
70882	BRAZIL	prochloraz	0.51	10
		carbendazim	0.02	0.5
		imazalil	0.74	5
		oxamyl	0.03	No MRL
		thiophanate-methyl	0.01	0.1
		2,4-D	0.02	1
1.1.4 Clementine				
69990	SPAIN	imazalil	1.65	5
		thiabendazole	0.83	5
		malathion	0.11	2
70044	SPAIN	imazalil	2.23	5
		thiabendazole	1.25	5
70045	SPAIN	chlorpyrifos	0.06	2
		thiabendazole	0.24	5
		dicofol	0.17	2
		imazalil	2.04	5
70060	MOROCCO	chlorpyrifos	0.02	2
		malathion	0.03	2
		carbendazim	0.01	0.1
		imazalil	0.84	5
		thiabendazole	0.25	5
70088	MOROCCO	thiabendazole	0.74	5
		imazalil	3.41	5
		chlorpyrifos	0.03	2
70105	SPAIN	imazalil	1.1	5
		thiabendazole	0.28	5
		malathion	0.04	2
70112	SPAIN	imazalil	4.12	5
		thiabendazole	3.5	5
		dicofol	0.06	2
		chlorpyrifos	0.06	2
70149	SPAIN	thiabendazole	0.02	5
		imazalil	1.37	5
		chlorpyrifos	0.1	2
		malathion	0.11	2
		folpet	0.05	0.1
70152	SPAIN	fenitrothion	0.03	0.01

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
		chlorpyrifos	0.11	2
		malathion	0.14	2
		2,4-D	0.02	1
		imazalil	1.85	5
		thiabendazole	1.1	5
70201	SPAIN	hexythiazox	0.01	No MRL
		dicofol	0.32	2
		chlorpyrifos	0.28	2
70206	SPAIN	chlorpyrifos	0.34	2
		2,4-D	0.03	1
		imazalil	1.8	5
		hexythiazox	0.01	No MRL
		thiabendazole	1.81	5
70214	SPAIN	chlorpyrifos	0.07	2
		imazalil	1.64	5
		thiabendazole	1.6	5
70317	EGYPT	imazalil	1.48	5
		thiabendazole	1.42	5
		malathion	0.11	2
70325	MOROCCO	imazalil	2.27	5
		thiabendazole	3.35	5
		chlorpyrifos	0.03	2
		malathion	0.17	2
70362	SPAIN	chlorpyrifos	0.05	2
		dicofol	0.06	2
		imazalil	1.12	5
		thiabendazole	1.17	5
70433	ARGENTINA	imazalil	1.44	5
		thiabendazole	0.36	5
		prochloraz	3.45	10
		malathion	0.07	2
70568	S AFRICA	methidathion	0.05	2
		2,4-D	0.12	1
		imazalil	3.54	5
		thiabendazole	0.03	5
70592	S AFRICA	methidathion	0.13	2
		2,4-D	0.02	1
		imazalil	0.88	5
		thiabendazole	0.04	5
		fenpropathrin	0.03	No MRL
70599	URUGUAY	imazalil	1.43	5
		prochloraz	1.17	10
70624	S AFRICA	imazalil	0.87	5
		thiabendazole	0.17	5
70632	CHILE	chlorpyrifos	0.06	2
		dicofol	0.51	2
		imazalil	1.17	5
		thiabendazole	0.02	5
70635	S AFRICA	methidathion	0.1	2
		diphenylamine	0.02	0.05
		imazalil	0.64	5
70658	S AFRICA	imazalil	2.41	5
		2,4-D	0.01	1
		methidathion	0.03	2
		tebuconazole	2.08	No MRL
70660	CHILE	imazalil	3.16	5
		thiabendazole	0.17	5
		azinphos-me	0.14	1
		dicofol	1.03	2

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70733	CHILE	dicofol	1.12	2
		chlorpyrifos	0.12	2
		imazalil	1.69	5
		thiabendazole	0.37	5
70746	CHILE	imazalil	1.19	5
		thiabendazole	0.04	5
70802	CHILE	chlorpyrifos	0.03	2
		methidathion	0.09	2
		dicofol	0.65	2
		imazalil	2	5
70884	SPAIN	thiabendazole	0.02	5
		diazinon	0.02	0.02
		chlorpyrifos	0.19	2
		malathion	0.1	2
		phosmet	0.11	No MRL
		dicofol	0.06	2
70928	SPAIN	imazalil	1.96	5
		imazalil	0.76	5
		chlorpyrifos	0.07	2
		malathion	0.03	2
		dicofol	0.08	2
70977	SPAIN	thiabendazole	0.38	5
		malathion	0.08	2
		chlorpyrifos	0.16	2
		dicofol	0.09	2
70978	SPAIN	imazalil	0.72	5
		chlorpyrifos	0.08	2
		imazalil	1.48	5
71019	SPAIN	thiabendazole	1.24	5
		imazalil	1.8	5
		chlorpyrifos	0.03	2
70113	CYPRUS	1.1.5 Mandarin		
		imazalil	5.56	5
		thiabendazole	6.33	5
		bromopropylate	0.24	2
		chlorpyrifos	0.04	2
70231	SPAIN	malathion	0.02	2
		imazalil	1.79	5
70266	CYPRUS	chlorpyrifos	0.03	2
		malathion	0.02	1
		bromopropylate	0.66	2
		2,4-D	0.06	1
		imazalil	0.96	5
		thiabendazole	3.75	2
70340	MOROCCO	imazalil	3.31	5
70413	CYPRUS	bromopropylate	0.32	5
		imazalil	4.78	1
		thiabendazole	4.16	5
		2,4-D	0.03	1
70448	URUGUAY	imazalil	1.97	5
		prochloraz	0.28	10
70451	ARGENTINA	2,4-D	0.04	1
		imazalil	2.04	5
		chlorpyrifos	0.02	2
		prochloraz	2.19	10
		malathion	0.24	2
70636	URUGUAY	prochloraz	0.21	10
		imazalil	1.78	5
70703	PERU	imazalil	1.56	5

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70722	PERU	thiabendazole	0.94	5
		imazalil	0.95	5
		pyridaben	0.02	No MRL
70750	PERU	thiabendazole	0.03	5
		malathion	0.08	2
		pyriproxyfen	0.08	5
		imazalil	2.87	5
		thiabendazole	2.45	5
70795	PERU	2,4-D	0.08	1
		imazalil	2.76	5
		pyridaben	0.01	5
		pyrimethanil	0.82	No MRL
		thiabendazole	1.73	5
		2,4-D	0.13	1
		malathion	0.06	2
1.1.6 Satsuma				
70318	ARGENTINA	2,4-D	0.02	1
		imazalil	1.94	5
		thiabendazole	0.76	5
		prochloraz	0.92	10
		chlorpyrifos	0.04	2
		tetradifon	0.04	No MRL
		malathion	0.08	2
		dicofol	0.14	2
70368	URUGUAY	chlorpyrifos	0.03	2
		prochloraz	0.21	10
		imazalil	1.75	5
70429	ARGENTINA	thiabendazole	0.04	5
		imazalil	2.45	5
		2,4-D	0.07	1
70449	S AFRICA	prochloraz	0.95	10
		malathion	0.18	2
		2,4-D	0.04	1
70488	S AFRICA	imazalil	0.79	5
		malathion	0.03	2
		thiabendazole	0.28	5
70488	S AFRICA	methidathion	0.05	2
		imazalil	1.59	5
70510	S AFRICA	methidathion	0.05	2
		diphenylamine	0.12	0.05
		imazalil	0.89	5
70527	URUGUAY	2,4-D	0.03	1
		prochloraz	0.36	10
		imazalil	3.64	5
70528	PERU	thiabendazole	0.01	5
		imazalil	2.82	5
		pyrimethanil	0.82	No MRL
		thiabendazole	1.47	5
70867	SPAIN	2,4-D	0.05	1
		buprofezin	0.05	No MRL
		chlorpyrifos	0.09	2
		malathion	0.24	2
70881	SPAIN	imazalil	0.86	5
		pyriproxyfen	0.02	No MRL
		chlorpyrifos	0.07	2
		imazalil	1.02	5
70994	SPAIN	carbendazim	0.01	0.5
		chlorpyrifos	0.02	2

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
		dicofol	0.06	2
		malathion	0.11	2
		imazalil	0.44	5
		thiabendazole	0.04	5
1.1.7 Orange				
69995	SPAIN	carbendazim	0.01	0.1
		imazalil	1.59	5
		thiabendazole	0.01	5
		chlorpyrifos	0.19	0.3
70004	SPAIN	imazalil	0.75	5
		chlorpyrifos	0.05	0.3
70008	MOROCCO	imazalil	1.24	5
		thiabendazole	0.04	5
70111	EGYPT	thiabendazole	2.63	5
70114	EGYPT	thiabendazole	3.72	5
		malathion	0.14	2
70134	SPAIN	chlorpyrifos	0.08	0.3
		imazalil	0.67	5
70136	EGYPT	pirimiphos-me	0.04	1
		imazalil	0.81	5
		thiabendazole	0.61	5
70183	SPAIN	malathion	0.2	2
		chlorpyrifos	0.02	0.3
		carbendazim	0.14	0.1
70202	SPAIN	imazalil	2.44	5
		thiabendazole	1.57	5
		malathion	0.05	2
70216	SPAIN	pirimiphos-me	0.04	1
		chlorpyrifos	0.05	0.3
		imazalil	1.06	5
70229	ISRAEL	imidacloprid	0.02	No MRL
		imazalil	1.95	5
		thiabendazole	0.42	5
70265	SPAIN	chlorpyrifos	0.03	0.3
		maneb group	0.02	5
		imazalil	1.84	5
		thiabendazole	2.02	5
70269	ISRAEL	2,4-D	0.08	1
		imazalil	3.18	5
		thiabendazole	0.05	5
70272	EGYPT	imazalil	0.27	5
		thiabendazole	0.11	5
70288	SPAIN	imazalil	1.9	5
		pirimiphos-me	0.26	1
		chlorpyrifos	0.11	0.3
70299	SPAIN	chlorpyrifos	0.03	0.3
		imazalil	1.33	5
		thiabendazole	1.38	5
70316	MOROCCO	imazalil	1.09	5
		thiabendazole	0.57	5
		chlorpyrifos	0.04	0.3
70338	SPAIN	chlorpyrifos	0.04	0.3
		imazalil	1.74	5
		thiabendazole	2.38	5
70352	SPAIN	chlorpyrifos-me	0.04	0.5
		pirimiphos-me	0.11	1
		chlorpyrifos	0.06	0.3
		carbendazim	0.02	0.1

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70404	MOROCCO	imazalil	1.02	5
		methidathion	0.22	2
		imazalil	2.45	5
70405	EGYPT	thiabendazole	0.04	5
		pyriproxyfen	0.02	No MRL
		imazalil	4.29	5
		thiabendazole	1.36	5
70414	MOROCCO	2,4-D	0.02	1
		imazalil	1.01	5
		thiabendazole	0.19	5
70506	MEXICO	chlorpyrifos	0.19	0.3
		imazalil	0.01	5
70507	MOROCCO	thiabendazole	0.44	5
		chlorpyrifos	0.15	0.3
70549	MOROCCO	imazalil	2.19	5
		imazalil	3.24	5
70595	SPAIN	thiabendazole	0.07	5
		carbofuran	0.01	0.3
		imazalil	1.72	5
		thiabendazole	0.02	5
70600	MOROCCO	chlorpyrifos	0.18	0.3
		imazalil	1.43	5
70659	S AFRICA	imazalil	0.48	5
		imidacloprid	0.06	No MRL
		pyraclostrobin	0.01	1
		2,4-D	0.03	1
		imazalil	1.16	5
70803	S AFRICA	imidacloprid	0.06	No MRL
		thiabendazole	0.33	5
		2,4-D	0.02	1
70804	S AFRICA	imazalil	1.15	5
		thiabendazole	0.08	5
		2,4-D	0.04	1
70864	S AFRICA	pyriproxyfen	0.02	No MRL
		captan	0.08	0.02
		imazalil	0.28	5
		thiabendazole	0.44	5
70932	S AFRICA	imazalil	0.52	5
		imidacloprid	0.02	No MRL
		thiabendazole	0.42	5
70975	S AFRICA	methidathion	0.03	2
		pyraclostrobin	0.02	1
		imazalil	0.43	5
70979	S AFRICA	imidacloprid	0.02	No MRL
		imazalil	1.23	5
		thiabendazole	0.68	5
		2,4-D	0.06	1
69997	1.3 Pome Fruit ITALY	azinphos-me	0.22	0.5
		procymidone	0.03	0.02
70003	HOLLAND	triflumuron	0.02	No MRL
		asulam	0.01	No MRL
70005	FRANCE	carbendazim	0.02	0.2
		diphenylamine	0.07	5
		captan	0.07	3
70040	FRANCE	thiabendazole	0.65	5
		phosmet	0.05	No MRL
		tolyfluanid	0.05	No MRL

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
		carbendazim	0.37	0.2
		maneb group	0.5	3
70042	FRANCE	diphenylamine	1.18	5
		thiabendazole	0.38	5
		maneb group	1.74	3
70056	IRELAND	methoxyfenozide	0.02	No MRL
		indoxacarb	0.06	No MRL
		maneb group	1.34	3
		pirimicarb	0.02	No MRL
70065	FRANCE	triflumuron	0.04	No MRL
		buprofezin	0.04	No MRL
		maneb group	1.16	3
70075	FRANCE	captan	0.05	3
70084	GERMANY	carbendazim	0.08	0.2
		indoxacarb	0.01	No MRL
70119	AUSTRIA	captan	0.02	3
		chlorpyrifos	0.03	0.5
		asulam	0.03	No MRL
70120	FRANCE	captan	0.06	3
		carbendazim	0.06	0.2
70147	EQUADOR	asulam	0.02	No MRL
70151	FRANCE	carbendazim	0.1	0.2
70181	FRANCE	carbendazim	0.14	0.2
		thiabendazole	0.01	5
70199	HOLLAND	carbendazim	0.06	0.2
		thiophanate-methyl	0.03	0.5
		tolyfluanid	0.03	No MRL
		captan	0.06	3
		pirimicarb	0.04	No MRL
70200	GERMANY	methoxyfenozide	0.02	No MRL
		carbendazim	0.01	0.2
		trifloxystrobin	0.02	0.5
		captan	0.02	3
70211	UNITED KINGDOM	metalaxyl	0.02	1
		diphenylamine	0.22	5
70257	FRANCE	diphenylamine	3.37	5
		thiabendazole	0.7	5
70259	FRANCE	diphenylamine	0.02	5
		thiabendazole	0.02	5
70260	ITALY	triflumuron	0.04	No MRL
		thiabendazole	0.01	5
70270	IRELAND	diphenylamine	0.24	5
		pyrimethanil	0.03	No MRL
70305	ITALY	maneb group	0.04	3
		asulam	0.03	No MRL
		diphenylamine	0.91	5
70320	FRANCE	thiabendazole	0.2	5
		diphenylamine	0.41	5
		tolyfluanid	0.03	No MRL
70321	FRANCE	carbendazim	0.04	0.2
		diphenylamine	0.28	5
70322	CHINA	carbendazim	0.02	0.2
		diphenylamine	0.8	5
70326	BRAZIL	carbendazim	0.03	0.2
		folpet	0.58	3
70331	FRANCE	thiabendazole	0.3	5
		diphenylamine	1.1	5
70350	FRANCE	pirimicarb	0.08	No MRL
		captan	0.04	3

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
		carbendazim	0.06	0.2
70373	FRANCE	diphenylamine	1.01	5
		propargite	0.21	No MRL
		thiabendazole	1.41	5
70384	FRANCE	propargite	0.8	No MRL
		captan	0.16	3
		carbendazim	0.1	0.2
		thiophanate-methyl	0.04	0.5
70410	ARGENTINA	thiabendazole	0.87	5
		captan	0.13	3
		diazinon	0.03	0.3
70411	FRANCE	diphenylamine	0.46	5
		thiabendazole	0.09	5
70412	FRANCE	diphenylamine	0.66	5
		thiabendazole	1.52	5
		propargite	0.26	No MRL
		carbendazim	0.12	0.2
70426	FRANCE	thiabendazole	0.22	5
		diphenylamine	0.37	5
70428	FRANCE	thiabendazole	0.65	5
		diphenylamine	0.35	5
70432	CHILE	thiabendazole	0.11	5
70446	FRANCE	carbendazim	0.07	0.2
		thiabendazole	0.07	5
		diphenylamine	0.79	5
		propargite	0.37	No MRL
70452	CHILE	thiabendazole	0.27	5
		diphenylamine	0.14	5
		prochloraz	0.02	0.05
70453	NEW ZEALAND	tebufenozide	0.03	No MRL
70508	CHILE	diphenylamine	0.35	5
		thiabendazole	1.79	5
70536	FRANCE	carbendazim	0.09	0.2
		thiabendazole	0.66	5
		diphenylamine	0.99	5
		propargite	0.34	No MRL
70583	UNITED KINGDOM	diphenylamine	0.15	5
		metalaxyl	0.03	1
		carbendazim	2.26	0.2
70588	CHILE	thiacloprid	0.01	No MRL
70613	S AFRICA	diphenylamine	0.03	5
70614	NEW ZEALAND	prochloraz	0.03	0.05
		carbendazim	0.02	0.2
		captan	0.08	3
70615	CHILE	diazinon	0.03	0.3
		azinphos-me	0.11	0.5
		carbaryl	0.05	0.05
		thiabendazole	0.11	5
70622	NEW ZEALAND	thiacloprid	0.01	No MRL
70630	CHILE	thiabendazole	0.04	5
		diphenylamine	0.02	5
70633	CHILE	thiabendazole	0.22	5
		thiacloprid	0.02	No MRL
70649	UNITED KINGDOM	carbendazim	0.45	0.2
		diphenylamine	0.1	5
70661	ARGENTINA	thiabendazole	0.66	5
		diazinon	0.03	0.3
		captan	0.07	3
70663	S AFRICA	diphenylamine	0.63	5

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70682	UNITED KINGDOM	carbendazim	0.57	0.2
		diphenylamine	0.07	5
		captan	0.02	3
70683	NEW ZEALAND	captan	0.12	3
70685	FRANCE	carbendazim	0.01	0.2
		captan	0.02	3
70686	NEW ZEALAND	tebufenozide	0.08	No MRL
		captan	0.42	3
70704	NEW ZEALAND	captan	0.03	3
		tebufenozide	0.07	No MRL
70705	CHILE	thiabendazole	0.31	5
		thiacloprid	0.02	No MRL
70705	CHILE	diphenylamine	2.07	5
70707	FRANCE	captan	0.04	3
		carbendazim	0.02	0.2
70712	CHILE	carbendazim	0.01	0.2
		thiabendazole	0.61	5
70714	ARGENTINA	iprodione	0.03	5
		captan	0.04	3
		trifloxystrobin	0.02	0.5
70730	CHILE	thiabendazole	0.35	5
70731	FRANCE	chlorpyrifos	0.03	0.5
		fenitrothion	0.03	0.01
		captan	0.12	3
		fluvalinate-tau-l	0.04	No MRL
		azinphos-me	0.11	0.5
70748	NEW ZEALAND	captan	0.02	3
70749	FRANCE	propargite	0.24	No MRL
		diphenylamine	0.22	5
		captan	0.03	3
		thiabendazole	0.76	5
70794	CHILE	carbendazim	0.55	0.2
		thiabendazole	0.64	5
		diphenylamine	1.87	5
70806	S AFRICA	diphenylamine	0.13	5
		azinphos-me	0.07	0.5
70807	FRANCE	captan	0.05	3
		carbendazim	0.06	0.2
		thiacloprid	0.06	0.3
70809	HOLLAND	captan	0.03	3
		tebufenpyrad	0.02	No MRL
70817	UNITED KINGDOM	chlorpyrifos	0.13	0.5
70829	FRANCE	captan	0.02	3
		chlorpyrifos	0.05	0.5
		azinphos-me	0.05	0.5
		thiacloprid	0.02	0.3
70836	FRANCE	thiabendazole	0.01	5
70837	FRANCE	azinphos-me	0.05	0.5
70839	FRANCE	chlorpyrifos	0.09	0.5
		azinphos-me	0.1	0.5
		thiacloprid	0.03	0.3
70865	FRANCE	carbendazim	0.04	0.2
70866	FRANCE	captan	0.02	3
70871	UNKNOWN	pirimicarb	0.07	No MRL
		chlorpyrifos	0.06	0.5
		bifenthrin	0.02	0.3
		carbendazim	0.09	0.2
		thiabendazole	0.17	5
70873	UNKNOWN	captan	0.05	3

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)		
70873	UNKNOWN	fludioxonil	0.02	No MRL		
70879	S AFRICA	iprodione	0.02	5		
70880	FRANCE	diphenylamine	0.37	5		
		diphenylamine	0.11	5		
		pirimicarb	0.02	No MRL		
		chlorpyrifos	0.05	0.5		
		carbendazim	0.03	0.2		
		thiabendazole	0.17	5		
		fludioxonil	0.02	No MRL		
70883	FRANCE	chlorpyrifos	0.13	0.5		
70911	FRANCE	imazalil	0.02	5		
		diphenylamine	0.05	5		
		chlorpyrifos	0.04	0.5		
		carbendazim	0.01	0.2		
70913	FRANCE	thiabendazole	0.01	5		
		diphenylamine	0.57	5		
		thiabendazole	0.2	5		
70914	IRELAND	fludioxonil	0.02	No MRL		
		captan	0.03	3		
		pyrimethanil	0.06	No MRL		
70925	FRANCE	difenoconazole	0.02	No MRL		
		chlorpyrifos	0.03	0.5		
		diphenylamine	0.7	5		
		thiabendazole	0.16	5		
70996	FRANCE	diphenylamine	0.06	5		
		pirimicarb	0.07	No MRL		
		carbendazim	0.02	0.2		
		thiacloprid	0.01	0.3		
		captan	0.03	3		
71016	FRANCE	propargite	0.12	No MRL		
		carbendazim	0.01	0.2		
71017	FRANCE	fenoxycarb	0.01	No MRL		
		thiophanate-methyl	0.11	0.5		
		fludioxonil	0.03	No MRL		
	1.3 Pome Fruit		1.3.2 Pear			
69998	PORTUGAL	teflubenzuron	0.01	No MRL		
		imazalil	0.26	5		
		captan	0.06	3		
		folpet	0.18	3		
		bitertanol	0.07	2		
		diphenylamine	0.59	10		
		phosmet	0.08	No MRL		
		phosalone	0.06	2		
		malathion	0.02	0.5		
		70085	BELGIUM	tolyfluanid	0.04	No MRL
				carbendazim	0.02	0.2
70131	PORTUGAL	pyraclostrobin	0.01	0.02		
		teflubenzuron	0.02	No MRL		
		imazalil	0.31	5		
		thiacloprid	0.04	No MRL		
		phosmet	0.03	No MRL		
70148	PORTUGAL	folpet	0.02	3		
		diphenylamine	0.64	10		
		diphenylamine	0.92	10		
		asulam	0.02	No MRL		
		imazalil	1	5		
		phosmet	0.06	No MRL		
		captan	0.02	3		

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
		folpet	0.95	3
70150	S AFRICA	asulam	0.02	No MRL
70212	HOLLAND	tolyfluanid	0.05	No MRL
		captan	0.04	3
		methoxyfenozide	0.01	No MRL
		carbendazim	0.05	0.2
70261	HOLLAND	captan	0.29	3
		maneb group	0.02	3
		carbendazim	0.08	0.2
70332	S AFRICA	methomyl	0.43	0.2
		diphenylamine	1.28	10
70372	BELGIUM	tolyfluanid	0.08	No MRL
		carbendazim	0.06	0.2
		diethofencarb	0.14	No MRL
		thiophanate-methyl	0.84	0.5
70374	S AFRICA	iprodione	0.02	5
70447	HOLLAND	carbendazim	0.01	0.2
		diphenylamine	0.02	10
		captan	0.05	3
70570	HOLLAND	tolyfluanid	0.1	No MRL
		carbendazim	0.07	0.2
		thiophanate-methyl	0.03	0.5
70584	ARGENTINA	thiabendazole	0.02	5
		lambda-cyhalothrin	0.03	0.1
70621	S AFRICA	azinphos-me	0.08	0.5
		methoxyfenozide	0.19	No MRL
70693	S AFRICA	iprodione	0.47	5
		diphenylamine	1.87	10
70706	FRANCE	fenoxycarb	0.02	No MRL
		thiacloprid	0.03	No MRL
		maneb group	0.09	3
70727	S AFRICA	azinphos-me	0.16	0.5
70728	S AFRICA	diphenylamine	0.2	10
		iprodione	0.9	5
70751	FRANCE	phosmet	0.08	No MRL
70793	BELGIUM	pyraclostrobin	0.03	0.3
		diflubenzuron	0.05	No MRL
70796	PORTUGAL	diazinon	0.05	0.3
		phosmet	0.1	No MRL
70808	PORTUGAL	malathion	0.03	0.5
		teflubenzuron	0.01	No MRL
70838	PORTUGAL	diphenylamine	0.42	10
		folpet	0.33	3
		imazalil	0.7	5
		malathion	0.06	0.5
		phosmet	0.04	No MRL
70861	PORTUGAL	thiacloprid	0.02	0.3
70905	PORTUGAL	malathion	0.06	0.5
		phosmet	0.19	No MRL
		diphenylamine	0.55	10
		imazalil	0.43	5
		folpet	0.61	3
70915	PORTUGAL	diphenylamine	0.1	10
		tebuconazole	0.04	No MRL
		phosmet	0.12	No MRL
		captan	0.03	3
		malathion	0.05	0.5
70916	HOLLAND	carbendazim	0.02	0.2
		thiophanate-methyl	0.02	0.5

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
		captan	0.08	3
70926	PORTUGAL	thiacloprid	0.03	0.3
70931	PORTUGAL	captan	0.11	3
		folpet	0.16	3
		tebuconazole	0.03	No MRL
		phosmet	0.23	No MRL
		diphenylamine	0.92	10
		imazalil	0.32	5
70131	PORTUGAL	imazalil	0.31	5
		thiacloprid	0.04	0.3
		diphenylamine	0.64	10
		folpet	0.02	3
		phosmet	0.03	No MRL
	1.1 Stone Fruit		1.4.1 Apricot	
70431	UNITED STATES	pyraclostrobin	0.04	0.2
		fludioxinil	0.55	No MRL
70494	ISRAEL	2,4-D	0.03	0.05
70530	FRANCE	iprodione	0.2	3
70620	FRANCE	iprodione	0.17	3
		lambda-cyhalothrin	0.02	0.2
70664	FRANCE	cyprodinil	0.03	No MRL
		fludioxonil	0.02	No MRL
		tebuconazole	0.02	No MRL
		iprodione	0.6	3
			1.4.2 Cherry	
70128	CHILE	fenhexamid	0.08	5
		tebuconazole	0.36	No MRL
70486	UNITED STATES	tebuconazole	0.22	No MRL
70503	FRANCE	tebuconazole	0.03	No MRL
		dimethoate	0.03	1
		omethoate	0.03	1
70586	TURKEY	diazinon	0.04	0.3
70702	CANADA	imidacloprid	0.01	No MRL
		iprodione	0.08	3
70737	CANADA	iprodione	0.07	3
71015	UNITED STATES	captan	0.05	5
		carbaryl	0.05	0.05
			1.4.3 Peach	
70408	MOROCCO	fenhexamid	0.01	5
70501	SPAIN	procymidone	0.02	2
70627	FRANCE	tebuconazole	0.02	No MRL
		chlorpyrifos	0.08	0.2
		spinosad a/b	0.02	No MRL
70662	FRANCE	iprodione	0.04	3
		bitertanol	0.03	1
		diphenylamine	0.03	0.05
70680	FRANCE	fludioxonil	0.07	No MRL
		cyprodinil	0.08	No MRL
		spinosad a/b	0.07	No MRL
		thiacloprid	0.03	No MRL
		fenbuconazole	0.05	No MRL
		tebuconazole	0.08	No MRL
		chlorpyrifos	0.06	0.2
70699	ITALY	fludioxonil	0.04	No MRL

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70710	ITALY	triflumuron	0.01	No MRL
		cyprodinil	0.07	No MRL
		phosmet	0.02	No MRL
		bitertanol	0.07	1
		carbendazim	0.04	0.2
		cyprodinil	0.02	No MRL
		thiophanate-methyl	0.04	2
		triflumuron	0.02	No MRL
		procymidone	0.1	2
		tebuconazole	0.03	No MRL
70805	SPAIN	azinphos-me	0.11	0.5
70827	FRANCE	phosmet	0.03	No MRL
		iprodione	0.09	3
70840	SPAIN	phosmet	0.04	No MRL
		azinphos-me	0.05	0.5
		tebuconazole	0.04	No MRL
70863	UNITED STATES	phosmet	0.11	No MRL
		lambda-cyhalothrin	0.02	0.2
		Bitertanol	0.35	1
		fludioxonil	0.08	No MRL
71015	UNITED STATES	methoxyfenozide	0.01	0.3
		fenhexamid	0.13	5
		captan	0.05	5
71018	S AFRICA	carbaryl	0.05	0.05
		iprodione	0.31	3
1.4.4 Nectarine				
69996	S AFRICA	asulam	0.02	No MRL
70067	S AFRICA	iprodione	0.19	5
		fenbuconazole	0.06	No MRL
70115	AUSTRALIA	bifenthrin	0.03	0.2
		iprodione	0.6	5
70223	CHILE	iprodione	1.15	3
70287	CHILE	fenhexamid	0.04	5
		iprodione	1.04	3
		propiconazole	0.02	0.2
		azinphos-me	0.06	0.5
70335	CHILE	iprodione	1.34	3
		azinphos-me	0.06	0.5
70349	ARGENTINA	bifenthrin	0.03	0.2
70551	SPAIN	iprodione	0.04	3
70735	SPAIN	iprodione	0.02	3
70798	SPAIN	iprodione	0.06	3
		tebuconazole	0.03	No MRL
		diphenylamine	0.03	0.05
1.4.5 Plum				
70116	S AFRICA	iprodione	0.04	5
70258	S AFRICA	maneb group	0.02	1
70319	S AFRICA	iprodione	2.24	3
70409	CHILE	iprodione	0.88	3
		fenhexamid	0.05	1
70698	SPAIN	cyprodinil	0.06	No MRL
		procymidone	0.09	2
70724	SPAIN	iprodione	0.03	3
70799	SPAIN	propargite	0.23	No MRL
1.5 Berries and small fruits				
70129	CHILE	tebuconazole	0.04	No MRL
1.5.1 Table grape				

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)	
70153	S AFRICA	fludioxinil	0.06	No MRL	
		cyprodinil	0.04	No MRL	
		dimethoate	0.03	0.02	
		omethoate	0.04	0.02	
		fludioxinil	0.03	No MRL	
70264	S AFRICA	asulam	0.02	No MRL	
		cyprodinil	0.01	No MRL	
70274	S AFRICA	iprodione	0.12	10	
70313	CHILE	iprovalicarb	0.03	2	
		iprodione	0.33	10	
		maneb group	0.05	2	
		fenhexamid	0.21	5	
		fenhexamid	0.05	5	
70333	INDIA	iprodione	0.56	10	
70430	CHILE	buprofezin	0.03	No MRL	
70445	CHILE	cyprodinil	0.09	No MRL	
		fenhexamid	0.03	5	
		fludioxinil	0.12	No MRL	
		chlorpyrifos	0.07	0.5	
		fenhexamid	0.16	5	
70454	INDIA	imidacloprid	0.06	No MRL	
		chlorpyrifos	0.05	0.5	
70485	INDIA	chlorpyrifos	0.07	0.5	
70587	EGYPT	thiacloprid	0.01	No MRL	
70631	EGYPT	lambda-cyhalothrin	0.03	0.2	
		fenhexamid	0.02	5	
70736	ITALY	fenhexamid	0.01	5	
70800	SPAIN	triadimenol	0.03	2	
		fludioxonil	0.04	No MRL	
		cyprodinil	0.04	No MRL	
		spinosad a/b	0.02	No MRL	
		cyprodinil	0.19	No MRL	
70860	SPAIN	fludioxonil	0.12	No MRL	
		Dimethomorph	0.29	No MRL	
		fludioxonil	0.11	No MRL	
		methoxyfenozide	0.02	1	
		cyprodinil	0.06	No MRL	
		lambda-cyhalothrin	0.04	0.2	
		procymidone	0.04	5	
trifloxystrobin	0.07	5			
70059	ISRAEL	azoxystrobin	0.07	2	
		1.5.2 Strawberry			
		iprodione	0.08	10	
		captan	0.11	3	
		bupirimate	0.02	No MRL	
70126	EGYPT	imidacloprid	0.03	No MRL	
		maneb group	0.43	2	
		kresoxim-methyl	0.07	1	
		fenhexamid	0.34	5	
70127	SPAIN	fludioxinil	0.21	No MRL	
		cyprodinil	0.22	No MRL	
70228	ISRAEL	fludioxinil	0.08	No MRL	
		fenarimol	0.09	0.3	
		lambda cyhalothrin	0.02	0.5	
		azoxystrobin	0.07	2	
		cyprodinil	0.11	No MRL	
70228	ISRAEL	fenhexamid	1.96	5	
		iprodione	0.04	15	

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70462	IRELAND	mepanipyrim	0.01	No MRL
		pyrimethanil	0.13	No MRL
		fenhexamid	0.1	5
		iprodione	0.23	15
		azoxystrobin	0.06	2
		bupirimate	0.03	No MRL
		fenhexamid	0.13	5
70471	IRELAND	mepanipyrim	0.01	2
		thiacloprid	0.06	No MRL
		myclobutanil	0.11	1
		pirimicarb	0.32	No MRL
		fenhexamid	0.02	5
		mepanipyrim	0.83	2
		pymetrozine	0.47	0.02
70497	IRELAND	thiacloprid	0.22	No MRL
		iprodione	0.92	15
		bifenthrin	0.03	0.5
		pyraclostrobin	0.06	0.5
		fenhexamid	0.14	5
		mepanipyrim	0.21	2
		pyrimethanil	0.06	No MRL
70552	IRELAND	fenhexamid	0.7	5
		pyraclostrobin	0.07	0.5
		pyrimethanil	0.05	No MRL
70578	IRELAND	iprodione	0.07	15
		iprodione	0.17	15
		fenhexamid	1.5	5
		mepanipyrim	0.02	2
		pyrimethanil	0.36	No MRL
70647	IRELAND	thiacloprid	0.09	No MRL
		iprodione	0.6	15
		myclobutanil	0.07	1
70672	HOLLAND	fenhexamid	0.17	5
		mepanipyrim	0.03	2
		pyraclostrobin	0.01	0.5
70691	UNITED STATES	methomyl	0.07	0.05
70695	IRELAND	captan	0.14	3
		fenhexamid	1.4	5
		mepanipyrim	0.22	2
		pyrimethanil	0.1	No MRL
		iprodione	0.47	15
70697	HOLLAND	bifenthrin	0.05	0.5
		myclobutanil	0.18	1
		fenhexamid	0.08	5
		mepanipyrim	0.02	2
		pyraclostrobin	0.02	0.5
70715	IRELAND	bifenthrin	0.05	0.5
		fenhexamid	0.73	5
		myclobutanil	0.06	1
70721	IRELAND	myclobutanil	0.2	1
		azoxystrobin	0.57	2
		iprodione	0.92	15
		bupirimate	0.34	No MRL
		fenhexamid	1.26	5
		pyrimethanil	0.23	No MRL
		thiacloprid	0.29	No MRL
		pyraclostrobin	0.06	0.5
70792	IRELAND	myclobutanil	0.02	1
		azoxystrobin	0.22	2

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70815	IRELAND	iprodione	0.36	15
		pyraclostrobin	0.02	0.5
		iprodione	0.14	15
		myclobutanil	0.05	1
		azoxystrobin	0.15	2
		bupirimate	0.06	No MRL
		fenhexamid	0.16	5
70852	IRELAND	mepanipyrim	0.06	2
		pyrimethanil	0.09	No MRL
		iprodione	0.2	15
		myclobutanil	0.02	1
70877	UNITED KINGDOM	fenhexamid	0.02	5
		iprodione	0.6	15
		myclobutanil	0.15	1
		bupirimate	0.01	No MRL
70890	UNITED KINGDOM	fenhexamid	0.04	5
		pyrimethanil	0.63	No MRL
		bupirimate	0.28	No MRL
70973	POLAND	pyrimethanil	1.43	No MRL
		procymidone	0.03	5
			1.5.3.1 Blackberry	
70121	MEXICO	chlorothalonil	0.21	10
70456	MEXICO	spinosad a/b	0.02	No MRL
			1.5.3.2 Loganberry	
70130	SPAIN	fenhexamid	0.1	10
		triadimenol	0.02	0.1
			1.5.3.4 Raspberry	
70123	SPAIN	fenhexamid	0.31	10
		iprodione	0.05	5
			1.5.4.1 Blueberry	
70124	CHILE	iprodione	0.17	10
			1.6 Miscellaneous Fruit	
			1.6.1 Avocado	
70308	ISRAEL	asulam	0.05	No MRL
70553	S AFRICA	carbendazim	0.02	0.1
			1.6.2 Banana	
70989	HONDURAS	chlorpyrifos	0.03	3
70496	BELIZE	imazalil	0.45	2
70987	HONDURAS	imazalil	0.13	2
70495	COLOMBIA	thiabendazole	0.03	5
70345	COSTA RICA	imazalil	0.11	2
		thiabendazole	0.11	5
70720	EQUADOR	imazalil	0.06	2
		thiabendazole	0.13	5
70825	COLOMBIA	imazalil	0.19	2
		thiabendazole	0.18	5
70986	BELIZE	imazalil	0.03	2
70988	COLOMBIA	imazalil	0.15	2
		thiabendazole	0.32	5
			1.6.5 Kiwi	
70138	ITALY	asulam	0.02	No MRL
70118	ITALY	fenhexamid	4.54	10

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70184	ITALY	fenhexamid	1.19	10
70204	ITALY	fenhexamid	0.13	10
70263	ITALY	fenhexamid	4.38	10
70273	ITALY	fenhexamid	3.16	10
70280	ITALY	fenhexamid	3.29	10
70285	ITALY	fenhexamid	2.65	10
70329	ITALY	fenhexamid	5.02	10
70366	ITALY	fenhexamid	4.9	10
70378	ITALY	fenhexamid	4.54	10
70406	ITALY	fenhexamid	4.86	10
69992	ITALY	malathion	0.05	0.5
70315	ITALY	fenhexamid	4.88	10
		asulam	0.02	No MRL
1.6.8 Mango				
70047	BRAZIL	prochloraz	0.06	5
70172	PERU	prochloraz	0.03	5
70353	COSTA RICA	prochloraz	0.52	5
70830	ISRAEL	prochloraz	0.2	5
70862	BRAZIL	thiabendazole	0.12	5
70083	EQUADOR	imazalil	0.01	0.02
		thiabendazole	0.09	5
70618	BRAZIL	prochloraz	7.61	5
		thiabendazole	1.35	5
1.6.10 Passion Fruit				
70718	KENYA	ethion	0.05	0.01
		dicofol	0.11	0.02
		carbendazim	0.04	0.1
1.6.11 Pineapple				
70310	COSTA RICA	asulam	0.04	No MRL
		triadimefon	0.25	3
		triadimenol	0.12	3
70324	IVORY COAST	prochloraz	1.02	5
		triadimefon	0.25	3
		triadimenol	0.12	3
70711	COSTA RICA	triadimefon	0.04	3
		triadimenol	0.11	3
1.6.12 Pomegranate				
70435	INDIA	imidacloprid	0.01	No MRL
70841	SPAIN	chlorpyrifos	0.02	0.05
2. Vegetables				
2.1 Root and Tuber Vegetables				
2.1.2 Carrot				
70013	SPAIN	linuron	0.03	0.2
		iprodione	0.07	0.3
70080	SPAIN	linuron	0.08	0.2
70186	SPAIN	endosulfan	0.05	0.05
		linuron	0.03	0.2
		metalaxyl	0.08	0.1
70222	IRELAND	linuron	0.03	0.2
70344	SPAIN	linuron	0.06	0.2
70365	SPAIN	diphenylamine	0.03	0.05
70380	ISRAEL	trifluralin	0.06	No MRL
70498	SPAIN	ethion	0.04	0.01
70515	SPAIN	iprodione	0.02	0.3
70655	FRANCE	linuron	0.02	0.2

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70667	ITALY	linuron	0.05	0.2
70675	FRANCE	linuron	0.02	0.2
70743	IRELAND	linuron	0.02	0.2
70787	IRELAND	tebuconazole	0.06	No MRL
70812	IRELAND	linuron	0.02	0.2
70833	IRELAND	linuron	0.05	0.2
70855	IRELAND	chlorfenvinphos	0.21	0.5
		trifluralin	0.04	No MRL
70902	IRELAND	chlorfenvinphos	0.04	0.5
		trifluralin	0.13	No MRL
70935	IRELAND	linuron	0.02	0.2
2.1.7 Parsnip				
70071	IRELAND	tebuconazole	0.1	No MRL
		chlorfenvinphos	0.66	0.5
		linuron	0.02	0.2
		trifluralin	0.06	No MRL
		azoxystrobin	0.05	0.2
70187	IRELAND	linuron	0.02	0.2
		trifluralin	0.1	No MRL
70221	IRELAND	linuron	0.06	0.2
		chlorfenvinphos	0.43	0.5
		tebuconazole	0.08	No MRL
		trifluralin	0.25	No MRL
		metalaxyl	0.02	0.1
70818	IRELAND	metalaxyl	0.03	0.1
		chlorfenvinphos	0.22	0.5
		trifluralin	0.09	No MRL
		tebuconazole	0.21	No MRL
		azoxystrobin	0.05	0.2
		linuron	0.04	0.2
70907	IRELAND	tebuconazole	0.03	No MRL
		trifluralin	0.08	No MRL
2.1.11 Sweet Potato				
70001	ISRAEL	asulam	0.02	No MRL
70104	HONDURAS	bifenthrin	0.03	0.05
2.1.13 Turnip				
70644	IRELAND	chlorpyrifos	0.04	0.05
70936	IRELAND	chlorpyrifos	0.07	0.05
2.2 Bulb Vegetables				
70673	MEXICO	azoxystrobin	0.1	2
2.2.4 Spring Onion				
2.3.1 Fruiting vegetables - Solanacea				
69989	CANARY ISLANDS	bromopropylate	0.22	1
		tebuconazole	0.06	No MRL
70051	MOROCCO	oxamyl	0.08	No MRL
		maneb group	0.89	3
		chlorothalonil	0.1	2
		endosulfate	0.02	0.5
		folpet	0.12	3
70064	SPAIN	chlorothalonil	0.02	2
		triadimenol	0.02	0.3
		endosulfan	0.04	0.5
	SPAIN	endosulfan	0.04	0.5
		teflubenzuron	0.02	No MRL

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
		maneb group	0.8	3
70098	SPAIN	fludioxinil	0.01	No MRL
		chlorothalonil	0.02	2
		maneb group	2.41	3
70135	SPAIN	iprodione	0.07	5
		endosulfan	0.17	0.5
		cyprodinil	0.01	No MRL
		pyrimethanil	0.09	No MRL
70154	CANARY ISLANDS	iprodione	0.03	5
70182	SPAIN	procymidone	0.07	2
		chlorothalonil	0.02	2
70209	SPAIN	triadimenol	0.04	0.3
70213	SPAIN	chlorothalonil	0.06	2
		cyprodinil	0.03	No MRL
		pyrimethanil	0.03	No MRL
70262	SPAIN	chlorothalonil	0.37	2
		buprofezin	0.07	No MRL
		procymidone	0.05	2
		maneb group	0.25	3
		carbendazim	0.02	0.5
		pyrimethanil	0.03	No MRL
		thiacloprid	0.03	No MRL
		thiophanate-methyl	0.08	2
70427	CANARY ISLANDS	procymidone	0.08	2
70441	IRELAND	azoxystrobin	0.06	2
		carbendazim	0.05	0.5
		diethofencarb	0.02	No MRL
2.3.1.2 Pepper				
70000	ISRAEL	methoxyfenozide	0.01	No MRL
70010	SPAIN	imidacloprid	0.43	No MRL
		methiocarb	0.1	No MRL
		dichlorvos	0.02	0.1
		malathion	0.05	3
70061	SPAIN	procymidone	0.04	2
		bupirimate	0.03	No MRL
		imidacloprid	0.03	No MRL
		methomyl	0.02	0.05
		oxamyl	0.02	No MRL
70096	SPAIN	imidacloprid	0.22	No MRL
		chlorothalonil	0.02	2
		pyrimethanil	0.03	No MRL
70110	SPAIN	cypermethrin	0.06	0.5
		imidacloprid	0.06	No MRL
70193	SPAIN	tebuconazole	0.05	No MRL
		imidacloprid	0.13	No MRL
		pyrimethanil	0.08	No MRL
		methiocarb	0.05	No MRL
70207	SPAIN	procymidone	0.03	2
		deltamethrin	0.07	0.2
		chlorothalonil	0.07	2
		malathion	0.1	3
		methiocarb	0.14	No MRL
70217	SPAIN	imidacloprid	0.06	No MRL
		pirimiphos-me	0.06	1
		procymidone	0.04	2
		imidacloprid	0.04	No MRL
70224	SPAIN	methiocarb	0.22	No MRL
		imidacloprid	0.13	No MRL

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
		methomyl	0.04	0.05
		pyrimethanil	0.02	No MRL
		procymidone	0.14	2
		chlorothalonil	0.05	2
70254	SPAIN	imidacloprid	0.08	No MRL
		methiocarb	0.05	No MRL
		procymidone	0.12	2
70276	ISRAEL	iprodione	0.22	5
		myclobutanil	0.03	0.5
		triadimenol	0.03	0.5
		tebuconazole	0.09	No MRL
70304	ISRAEL	methomyl	0.14	0.05
		thiacloprid	0.04	No MRL
		iprodione	0.11	5
70857	HOLLAND	bifenthrin	0.05	0.2
70992	SPAIN	chlorothalonil	0.02	2
			2.3.1.2 Chilli Pepper	
70082	ISRAEL	myclobutanil	0.16	0.5
		azoxystrobin	0.22	2
		spinosad a/b	0.15	No MRL
			2.3.1.3 Aubergine	
70158	SPAIN	imidacloprid	0.09	No MRL
70258	SPAIN	chlorothalonil	0.05	2
		imidacloprid	0.03	No MRL
		pyrimethanil	0.01	No MRL
70605	HOLLAND	imidacloprid	0.07	No MRL
70700	HOLLAND	imidacloprid	0.01	No MRL
70717	HOLLAND	imidacloprid	0.03	No MRL
70790	HOLLAND	oxamyl	0.06	No MRL
			2.3.2 Fruiting Vegetables Cucurbits edible peel	
			2.3.2.1 Cucumber	
70017	SPAIN	imidacloprid	0.02	No MRL
		chlorothalonil	0.04	1
70050	SPAIN	carbendazim	0.03	0.1
		dimethomorph	0.03	No MRL
		imidacloprid	0.02	No MRL
		spinosad a/b	0.01	No MRL
		thiophanate-methyl	0.04	0.1
70100	SPAIN	chlorothalonil	0.19	1
		fludioxinil	0.01	No MRL
		carbendazim	0.03	0.1
		imidacloprid	0.03	No MRL
70146	SPAIN	fludioxinil	0.05	No MRL
		imidacloprid	0.02	No MRL
		cyprodinil	0.1	No MRL
		chlorothalonil	0.03	1
70255	SPAIN	pyrimethanil	0.03	No MRL
70277	SPAIN	chlorothalonil	0.41	1
		triadimenol	0.1	0.1
70465	HOLLAND	carbendazim	0.04	0.1
70859	HOLLAND	metalaxyl	0.02	0.5
		triadimenol	0.02	0.1
			2.3.2.2 Courgette	
70007	SPAIN	imidacloprid	0.13	No MRL
		oxamyl	0.05	No MRL
70009	SPAIN	imidacloprid	0.05	No MRL

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
		iprodione	0.05	2
70442	SPAIN	imidacloprid	0.02	No MRL
			2.3.2.2 Marrow	
70300	SPAIN	imidacloprid	0.01	No MRL
			2.3.3 Fruiting Vegetables Cucurbits inedible peel	
			2.3.3.1 Melon	
70337	HONDURAS	imazalil	0.08	2
		methomyl	0.03	0.05
		thiabendazole	0.01	0.05
			2.4.1 Brassica Vegetables - Flowering	
			2.4.1.1 Broccoli	
70012	SPAIN	chlorothalonil	0.2	3
70191	SPAIN	metalaxyl	0.03	0.1
70247	GUATEMALA	dimethoate	0.04	0.02
		omethoate	0.03	0.02
		permethrin	0.03	0.05
		indoxacarb	0.02	No MRL
		spinosad a/b	0.05	No MRL
70275	SPAIN	carbaryl	0.06	0.05
		maneb group	0.06	1
			2.4.2 Brassica Vegetables - Head	
			2.4.2.1 Brussel sprout	
70444	MOROCCO	linuron	0.03	0.05
			2.4.2.2 Head cabbage	
70102	IRELAND	maneb group	0.21	1
70464	SPAIN	indoxacarb	0.04	No MRL
		cypermethrin	0.05	0.5
		maneb group	0.04	1
70472	IRELAND	tebuconazole	0.04	No MRL
70513	IRELAND	metalaxyl	0.02	1
		tebuconazole	0.02	No MRL
70519	IRELAND	difenoconazole	0.04	No MRL
70522	SPAIN	lambda-cyhalothrin	0.05	0.2
70645	IRELAND	tebuconazole	0.04	No MRL
			2.5.1 Leafy Vegetables- Lettuce & similar	
			2.5.1.3 Lettuce	
70015	SPAIN	dimethomorp	0.02	No MRL
		maneb group	2.8	5
70016	IRELAND	pymetrozine	0.52	2
		pyraclostrobin	0.45	2
		maneb group	4.6	5
		iprodione	6.49	10
		propyzamide	2.32	1
		demeton-s-me-sulfone	0.03	0.05
70018	IRELAND	iprodione	0.02	10
		propyzamide	0.03	1
		maneb group	2.86	5
70070	IRELAND	tolchlofos-me	0.1	No MRL
		iprodione	0.08	10
		propyzamide	0.03	1
		cypermethrin	0.34	2
		pyrimethanil	0.03	No MRL
		demeton-s-me-sulfone	0.03	0.05
		maneb group	3.26	5
70077	IRELAND	propyzamide	0.06	1
70099	SPAIN	carbendazim	0.05	0.1

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70101	SPAIN	methomyl	0.06	0.3
		maneb group	1.93	5
	IRELAND	tolchlofos-me	0.59	No MRL
		iprodione	4.15	10
		azoxystrobin	1.62	3
		propyzamide	0.08	1
		omethoate	0.1	0.5
		dimethoate	0.13	0.5
		cypermethrin	0.14	2
		pirimicarb	0.05	No MRL
70103	IRELAND	maneb group	2.85	5
		pymetrozine	2	2
		dimethoate	0.28	0.5
		omethoate	0.12	0.5
		azoxystrobin	0.48	3
		propyzamide	0.39	1
		tolchlofos-me	0.19	No MRL
		iprodione	0.02	10
		cypermethrin	0.22	2
		maneb group	3.41	5
70139	SPAIN	imidacloprid	0.03	No MRL
70142	SPAIN	methomyl	0.02	0.3
		metalaxyl	0.03	2
70143	SPAIN	folpet	0.13	2
		procymidone	0.04	5
		dimethomorph	0.18	No MRL
		fludioxinil	0.06	No MRL
		imidacloprid	0.22	No MRL
70219	IRELAND	cyprodinil	0.06	No MRL
		cypermethrin	0.15	2
		folpet	0.08	2
		iprodione	0.26	10
		propyzamide	0.1	1
70253	IRELAND	demeton-s-me-sulfone	0.17	0.05
		azoxystrobin	1.34	3
		iprodione	0.36	10
		tolchlofos-me	0.04	No MRL
		cypermethrin	0.14	2
70301	IRELAND	iprodione	0.02	10
70302	IRELAND	propyzamide	0.03	1
70303	IRELAND	pymetrozine	0.18	2
70357	IRELAND	tolchlofos-me	0.13	No MRL
70377	SPAIN	chlorthal dimethyl	0.02	No MRL
		procymidone	0.02	5
		cypermethrin	0.16	2
		folpet	0.24	2
		acetamiprid	0.13	No MRL
		imidacloprid	0.11	No MRL
		methomyl	0.15	0.3
		cypermethrin	0.05	2
		pymetrozine	0.13	2
		70401	IRELAND	azoxystrobin
70402	IRELAND	iprodione	0.08	10
		demeton-s-m-sulfoxid	0.12	No MRL
70407	SPAIN	bifenthrin	0.03	2
70424	IRELAND	phosalone	0.08	1
		iprodione	0.26	10
70436	IRELAND	tolclofos-methyl	0.02	No MRL
		demeton-s-m-sulfoxid	0.14	No MRL

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
		metalaxyl	0.02	2
		iprodione	0.02	10
		propyzamide	0.03	1
		maneb group	0.25	5
70491	SPAIN	cypermethrin	0.08	2
		imidacloprid	0.13	No MRL
70499	IRELAND	pymetrozine	0.05	2
		cypermethrin	0.38	2
70520	IRELAND	tolclofos-methyl	0.04	No MRL
		iprodione	0.03	10
		propyzamide	0.02	1
70521	IRELAND	iprodione	0.19	10
		propyzamide	0.06	1
		azoxystrobin	0.05	3
		tolclofos-methyl	0.72	No MRL
70567	IRELAND	pymetrozine	0.13	2
		omethoate	0.03	0.5
		iprodione	0.26	10
70597	IRELAND	pymetrozine	0.11	2
		cypermethrin	0.11	2
70642	IRELAND	tolclofos-methyl	0.51	No MRL
		iprodione	0.17	10
		cypermethrin	0.05	2
		deltamethrin	0.18	0.5
		propyzamide	0.03	1
		azoxystrobin	0.27	3
		prochloraz	0.02	5
70643	IRELAND	iprodione	0.02	10
70669	IRELAND	dimethoate	0.04	0.5
70670	IRELAND	iprodione	0.11	10
		pymetrozine	0.02	2
70692	IRELAND	pymetrozine	0.6	2
		iprodione	0.11	10
		cypermethrin	0.45	2
70701	IRELAND	pymetrozine	0.06	2
70754	IRELAND	iprodione	0.03	10
70791	IRELAND	pirimicarb	0.18	No MRL
		iprodione	1.67	10
		cypermethrin	0.93	2
		propyzamide	0.65	1
		procymidone	2.42	5
70813	IRELAND	pymetrozine	0.87	2
		tolclofos-methyl	0.02	No MRL
		cypermethrin	0.1	2
		maneb group	0.11	5
70876	IRELAND	demeton-s-m-sulfoxid	0.02	No MRL
		propyzamide	0.02	1
70888	IRELAND	propyzamide	0.49	1
		iprodione	0.13	10
70903	IRELAND	metalaxyl	0.03	2
		acetamiprid	0.13	5
70904	IRELAND	propyzamide	0.02	1
		methiocarb	0.12	No MRL
			2.5.1.4.Scarole	
70066	SPAIN	procymidone	0.59	5
		pirimicarb	0.09	No MRL
		maneb group	2.50	5

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
2.5.1.5 Endive				
70140	SPAIN	lambda cyhalothrin	0.03	1
70437	IRELAND	iprodione	0.07	10
		maneb group	0.82	5
		deltamethrin	0.57	0.5
70565	IRELAND	demeton-s-m-sulfoxid	0.16	No MRL
		iprodione	0.07	10
		cypermethrin	0.06	2
		deltamethrin	0.5	0.5
		demeton-s-me-sulfone	0.04	0.05
		malathion	0.05	3
2.5.1.6 Rocket				
70141	SPAIN	iprovalicarb	0.05	0.05
		dichloran	0.12	No MRL
2.5.2 Leafy Vegetables- Spinach & similar			2.5.2.1 Spinach	
70068	SPAIN	carbendazim	0.02	0.1
		thiophanate-methyl	0.03	0.1
70564	IRELAND	cypermethrin	0.05	0.5
		chlorpropham	0.03	0.05
70596	UNITED KINGDOM	cypermethrin	0.08	0.5
2.6. Legume Vegetables			2.6.1 Beans with pods	
70041	KENYA	fenthion sulfone	0.01	0.01
70638	IRELAND	vinclozolin	0.09	2
70671	IRELAND	iprodione	0.05	5
2.6.3 Peas with pods				
70509	KENYA	chlorothalonil	0.02	2
		dimethoate	0.05	1
		omethoate	0.02	1
2.6.4 Peas without pods				
70842	IRELAND	fluazifop acid	0.01	No MRL
2.7 Stem Vegetables			2.7.3 Celery	
70014	SPAIN	azoxystrobin	0.05	5
70097	SPAIN	fenitrothion	0.05	0.01
		carbendazim	0.08	0.1
		thiophanate-methyl	0.30	0.1
70144	SPAIN	malathion	0.03	3
		fenitrothion	0.04	0.01
70196	SPAIN	fenitrothion	0.05	0.01
70252	SPAIN	fenitrothion	0.05	0.01
70306	SPAIN	cyprodinil	0.02	No MRL
		difenoconazole	0.12	No MRL
		malathion	0.13	3
70422	SPAIN	chlorothalonil	0.1	10
70537	SPAIN	linuron	0.08	0.1
2.7.4 Fennel				
70052	ITALY	linuron	0.04	0.05
2.7.5 Globe artichoke				
70291	SPAIN	chlorpyrifos	0.12	1
		pirimicarb	0.03	No MRL

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
2.7.6 Leek				
70906	HOLLAND	kresoxim methyl	0.41	5
		pyraclostrobin	0.01	0.5
70937	HOLLAND	kresoxim methyl	0.07	5
2.8 Fungi				
2.8.1 Cultivated mushroom				
70190	IRELAND	prochloraz	0.05	2
		bendiocarb	0.016	No MRL
70629	IRELAND	carbendazim	0.09	0.1
70648	IRELAND	prochloraz	0.03	2
70651	IRELAND	prochloraz	0.03	2
70687	IRELAND	bendiocarb	0.01	No MRL
70814	IRELAND	prochloraz	0.14	2
70887	IRELAND	prochloraz	0.14	2
70930	IRELAND	prochloraz	0.02	2
71030	IRELAND	prochloraz	0.03	2
4 Oilseeds				
4.5 Sunflower				
70560	CHINA	imazalil	0.01	0.02
5 Potatoes				
5.2 Ware potatoes				
70197	IRELAND	thiabendazole	0.01	15
70267	UNITED KINGDOM	asulum	0.04	No MRL
		imazalil	0.06	5
		thiabendazole	0.01	15
70298	CYPRUS	asulum	0.04	No MRL
70383	ITALY	asulum	0.01	No MRL
70394	IRELAND	imazalil	0.13	5
70415	FRANCE	chlorpropham	3.51	10
70416	UNITED KINGDOM	imazalil	0.11	5
		pencyuron	0.07	No MRL
70418	IRELAND	chlorpropham	0.02	10
70468	UNITED KINGDOM	chlorpropham	0.31	10
70544	IRELAND	chlorpropham	0.67	10
70547	IRELAND	imazalil	0.03	5
70933	IRELAND	chlorpropham	0.03	10

ii. TARGETED / STATUTORY SAMPLING PROGRAMME

Targeted sampling of produce found to be in breach of established MRLs is the prime means of determining whether violations that occur result from the systematic misuse of pesticides or are isolated incidents. The repeated occurrence of excessive residue levels in particular food commodities, which would result in consumer safety being compromised, is clearly unacceptable. The violation investigation programme is geared to eliminate any such abuses. The programme is also designed to ensure that incidents, where MRLs are exceeded, are not repeated.

Fifteen targeted samples of fruit and vegetables were taken during 2007 as a follow up to MRL exceedances or unauthorised use in Ireland that occurred in 2006 and 2007.

From the 15 targeted samples, 4 were found not to have detectable residues and 10 samples to have pesticide residues above the limit of determination. 1 spinach sample of domestic origin was found to have chlorothalonil residues in excess of the MRL. A follow up investigation with the grower determined that the grower had bought spinach from another source so it was not possible to proceed with legal proceedings. Spinach samples are to be subject to future targeting. The residue present posed no risk to consumers.

Table 3: Summary of targeted samples taken in 2007

Commodity	Follow up to sample number	Number of samples Analysed	Number of Domestic Samples	Number of imported Samples	Residues		
					>MRL	<MRL	ND
Carrot	69434	1	1	0	0	0	1
Celery	68967	1	0	1	0	0	1
Courgette	68640	1	0	1	0	1	0
Endive	70437	1	1	0	0	1	0
Kiwi	69697	1	0	1	0	1	0
Lettuce	69443	2	2	0	0	2	0
Parsnip	68669	2	2	0	0	2	0
Peach	69157	1	0	1	0	0	1
Pepper	70304	1	0	1	0	0	1
Satsuma	69124	2	0	2	0	2	0
Spinach	69280	1	1	0	1	0	0
Strawberry	69441	1	1	0	0	1	0
Total		15	8	7	1	10	4

Table 4: Details of targeted samples with pesticide residues detected in 2007

Sample Number	Country of origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
Strawberries				
70681	IRELAND	fenhexamid	0.22	5
		mepanipyrim	0.5	2
		pyraclostrobin	0.07	0.5
		pyrimethanil	0.74	No MRL
		thiacloprid	0.03	No MRL
		myclobutanil	0.17	1
		azoxystrobin	0.1	2
Kiwi				
70076	ITALY	fenhexamid	0.29	10
Spinach				
70639	IRELAND	chlorothalonil	0.07	0.01
Satsumas				
70403	PERU	chlorpyrifos	0.05	2
		imazalil	2.55	5
		prochloraz	0.79	10
70502	PERU	imazalil	3.91	5
		pyrimethanil	1.03	No MRL
Parsnip				
70159	IRELAND	trifluralin	0.06	No MRL
		chlorfenvinphos	0.04	0.5
		tebuconazole	0.04	No MRL
70744	IRELAND	chlorfenvinphos	0.07	0.5
		metalaxyl	0.03	0.1
		trifluralin	0.13	No MRL
		linuron	0.03	0.2
Lettuce				
70385	IRELAND	methiocarb	0.05	No MRL
70677	IRELAND	cypermethrin	0.06	2
		azoxystrobin	0.12	3
		iprodione	0.4	10
Endive				
70740	IRELAND	chlorpyrifos	0.02	0.05
		deltamethrin	0.05	0.5
Courgettes				
70069	SPAIN	imidacloprid	0.06	No MRL
		thiophanate-methyl	0.03	0.1

Statutory samples were taken and analysed due to a suspicion of an unauthorised use of chlorpyrifos on endive in Ireland, the detection of methomyl in pears from South Africa and from a series of RASFF alerts for grapes from Brazil. No pesticide residues were detected in any of the five statutory samples analysed.

Table 5: Summary of statutory sampling of fruit and vegetables in 2007

Commodity	Sample number	Number of samples Analysed	Number of Domestic Samples	Number of Imported Samples	Residues		
					>MRL	<MRL	ND
Endive	70810	1	1	0	0	0	1
Grape	71032	1	0	1	0	0	1
Pear	70341	3	0	3	0	0	3
Total		5	1	4	0	0	5

B CEREAL SAMPLES

i. Routine monitoring programme

In 2007, 93 routine cereal samples (wheat, barley, oats and rice) and 7 processed cereal samples were analysed for 292 pesticides and metabolites. No MRL breach was found and there was no targeted or statutory sampling carried out in 2007.

Table 6: Summary of cereal samples for routine monitoring in 2007

Commodity	No of samples Analysed	Number of Domestic Samples	Number of Imported Samples	Residues		
				>MRL	<MRL	ND
Barley	20	20	0	0	4	16
Oat	31	31	0	0	4	27
Rice	10	0	10	0	4	6
Wheat	32	6	26	0	17	15
Barley flake	1	0	1	0	0	1
Corn flake	1	0	1	0	0	1
Oat bran	1	1	0	0	0	1
Oat flake	1	1	0	0	0	1
Popcorn	1	0	1	0	0	1
Wheat flake	2	2	0	0	0	2
Total	100	61	39	0	29	71

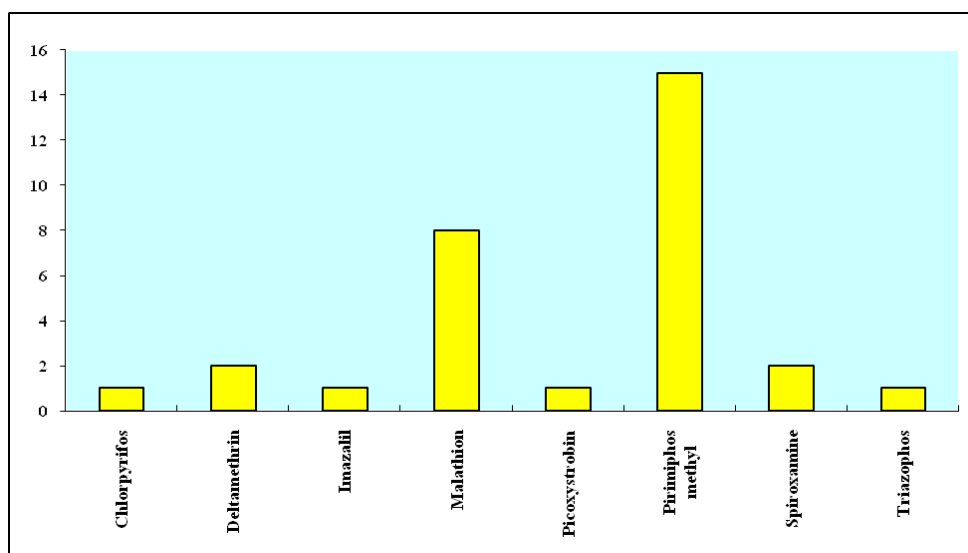
Table 7: Cereal samples with detected pesticide residues in 2007

Sample Number	Country of origin	Residue detected	Residue (mg/kg)	MRL (mg/kg)
Barley				
70235	IRELAND	pirimiphos-me	0.03	5
70238	IRELAND	pirimiphos-me	0.05	5
70239	IRELAND	pirimiphos-me	0.04	5
70241	IRELAND	pirimiphos-me	0.07	5
Oats				
70757	IRELAND	tebuconazole	0.05	No MRL
70758	IRELAND	tebuconazole	0.03	No MRL
70785	IRELAND	picoxystrobin	0.08	0.2
		spiroxamine	0.03	No MRL
70998	IRELAND	spiroxamine	0.01	No MRL
Rice				
70162	THAILAND	imazalil	0.02	0.02
70165	UNKNOWN	triazophos	0.02	0.02
70166	UNKNOWN	chlorpyrifos	0.05	0.05
70170	THAILAND	chlorpyrifos	0.03	0.05
Wheat				
70019	FRANCE	malathion	0.19	8
70020	FRANCE	malathion	0.17	8
70021	FRANCE	malathion	0.12	8
70023	FRANCE	malathion	0.2	8
		deltamethrin	0.05	2
70025	GERMANY	pirimiphos-me	0.26	5
70475	UNITED KINGDOM	pirimiphos-me	0.03	5
70478	UNITED KINGDOM	pirimiphos-me	0.05	5
70482	FRANCE	deltamethrin	0.04	2
		malathion	0.12	8
70819	UNITED KINGDOM	pirimiphos-me	0.63	5
70820	UNITED KINGDOM	pirimiphos-me	0.68	5
70821	UNITED KINGDOM	pirimiphos-me	0.19	5
70822	FRANCE	pirimiphos-me	0.18	5
70823	IRELAND	pirimiphos-me	0.19	5
71020	UNITED KINGDOM	pirimiphos-me	0.11	5
71022	CANADA	malathion	0.03	8
71024	FRANCE	pirimiphos-me	0.32	5
		malathion	0.05	8
71025	FRANCE	pirimiphos-me	0.03	5
		malathion	0.5	8

Comment [m3]: In previous tables, MRL for imazalil is given as 5, not 0.02. Which is correct?

71% of the samples analysed contained no detectable pesticide residues while 29% (29) contained residues less than the MRL. There was no breach of an MRL in cereal samples in 2007.

Figure 3: Frequency of pesticides found in cereal samples in 2007



The most commonly found pesticides in cereal were pirimiphos methyl which was detected in 15 cereal samples with values ranging from 0.03 to 0.63 mg/kg and malathion with values ranging from 0.03 to 0.5 mg/kg. Pirimiphos methyl and Malathion are commonly used to control pests in cereals during storage.

ii. Targeted sampling programme

In 2006, two incidences occurred with oats samples containing unacceptable residues of diazinon and chlorpropham. Following investigations carried out in 2006, it was concluded that these residues were associated with specific contamination incidents that were unlikely to be repeated. It was considered that the routine sampling programme would be sufficient to confirm that these issues had been addressed.

C FOOD OF ANIMAL ORIGIN

The monitoring programme for food of animal origin in 2007 involved the analysis of bovine, porcine, ovine poultry, equine and venison kidney fat samples, milk, honey and eggs as part of the control programme under Directive 96/23 EC. The fat, milk and egg samples were analysed for residues of 63 pesticides as well as the polychlorinated biphenyl (PCB) congeners, numbers 28, 52, 101, 118, 138, 153 and 180 (Annex V). The 12 honey samples were analysed for the pesticides using the gas chromatography as well as for the 7 PCB marker congeners. 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. These are included as marker substances in the residue monitoring programme because of concerns associated with their presence in food and their association with polychlorinated dibenzodioxins and furans.

The milk, honey and egg samples analysed did not contain detectable pesticide or PCB residues.

Table 8: Summary of samples of food of animal origin for routine monitoring in 2007

Commodity	Number of samples analysed	Number of domestic samples	Number of imported samples	Residues		
				>MRL	<MRL	ND
Bovine fat	112	112	0	0	4	108
Equine fat	8	8	0	0	1	7
Ovine fat	85	85	0	0	7	78
Porcine fat	74	74	0	0	7	67
Poultry fat	23	23	0	0	1	22
Venison fat	12	12	0	0	6	6
Eggs	11	11	0	0	0	11
Honey	12	10	2	0	0	12
Milk	57	57	0	0	0	57
Totals	394	392	2	0	26	368

i. Bovine

Routine Monitoring Programme

In bovine samples, 4 (3.6%), contained residues of the organochlorine pesticides DDT (present as the metabolite of DDE) and dieldrin with levels ranging from 0.005 to 0.035 mg/kg. These residues are considered to have resulted from background levels in soil as a consequence of former use or from intake of trace levels in feed. In 2006 3.5% of the bovine samples were found to contain residues of organochlorine pesticides.

Targeted sampling programme

As there was no violation of MRLs in bovine samples in 2006, no targeted sampling of bovine fat was undertaken in 2007.

Table 9: Residues detected in bovine kidney fat samples in 2007

Sample Number	Country of origin	Residue detected	Residue (mg/kg)	MRL (mg/kg)
79054	IRELAND	pp'-DDE	0.005	1
79106	IRELAND	pp'-DDE	0.005	1
79152	IRELAND	Dieldrin	0.007	0.2
79193	IRELAND	Dieldrin	0.035	0.2

ii. Equine**Routine Monitoring Programme**

1 out of 8 equine samples analysed contained residue of DDT (present as pp'-DDE) at a level of 0.009 mg/kg.

Targeted sampling Programme

In 2006 no pesticide residue greater than an MRL was detected so no targeted sampling was carried out in 2007.

Table 10: Residues detected in equine kidney fat samples in 2007

Sample Number	Country of origin	Residue detected	Residue (mg/kg)	MRL (mg/kg)
79209	IRELAND	pp'-DDE	0.009	1

iii. Ovine**Routine Monitoring Programme**

8.2% of ovine samples, 7 out of 85, contained residues of HCB, dieldrin, metabolites of DDT and PCB153 ranging in concentration from 0.005 to 0.012 mg/kg. One sample contained residues of diazinon, which used to be authorised for use in sheep dipping and did not exceed the MRL. A low level of PCB congener 153 was detected in an ovine sample. This was not considered significant as it was not accompanied by the normal cluster of PCB congeners that would be required to indicate the presence of PCB or dioxin contamination. The % of samples found to contain residues is less than the level found in 2006 (9.7%).

Targeted sampling Programme

No MRL exceedances were detected in 2006 so no targeted sampling took place in 2007.

Table 11: Residues detected in ovine kidney fat samples in 2007

Sample Number	Country of origin	Residue detected	Residue (mg/kg)	MRL (mg/kg)
67970	IRELAND	HCB	0.005	0.2
67974	IRELAND	Dieldrin	0.007	0.2
79001	IRELAND	pp'-DDE	0.005	1
79057	IRELAND	HCB	0.006	0.2
79140	IRELAND	PCB 153	0.012	No MRL
79199	IRELAND	Diazinon	0.6	0.7
79332	IRELAND	Dieldrin	0.006	0.2

iv. Porcine**Routine Monitoring Programme**

9.5% of porcine samples analysed, 7 out of 74, contained residues of DDT (present as pp'-DDT and pp'-DDE) and lindane ranging from 0.005 to 0.064 mg/kg. This contrasted to 2006 and 2005 where 4.8% and 4.3% respectively of samples contained residues. Compared to the other animals, the porcine samples contained the highest levels of DDT at 0.09 mg/kg, and the presence of the pp'-DDT metabolite indicate possible recent uses of DDT.

Targeted sampling Programme

No targeted sampling took place in 2007.

Table 12: Pesticide residues detected in porcine kidney fat samples in 2007

Sample Number	Country of origin	Residue detected	Residue (mg/kg)	MRL (mg/kg)
79078	IRELAND	Lindane	0.006	0.02
79097	IRELAND	Lindane	0.005	0.02
79185	IRELAND	pp'-DDT	0.005	1
79272	IRELAND	Lindane	0.006	0.02
79278	IRELAND	pp' DDT	0.007	1
79283	IRELAND	pp'-DDT	0.06	1
	IRELAND	pp'-DDE	0.03	1
79284	IRELAND	pp'-DDE	0.01	1
		pp'-DDT	0.05	1

v. Poultry**Routine Monitoring Programme**

4.3% of poultry samples, 1 out of 23, contained residue of DDT (as pp'-DDE). This compared to the level of 8.7% found with detectable residues in 2006.

Targeted sampling Programme

As no MRL exceedances occurred in 2006 no targeted sampling took place in 2007.

Table 13: Residues detected in poultry kidney fat samples in 2007

Sample Number	Country of origin	Residue detected	Residue (mg/kg)	MRL (mg/kg)
79326	IRELAND	pp'-DDE	0.006	1

vi. Venison**Routine Monitoring Programme**

6 of the 12 venison samples analysed contained residues of either lindane or pp'-dde with values ranging from 0.005 to 0.017 mg/kg.

Targeted sampling programme.

As no MRL exceedances occurred in 2006 no targeted sampling took place in 2007.

Table 14: Residues detected in venison kidney fat samples in 2007

Sample Number	Country of origin	Residue detected	Residue (mg/kg)	MRL (mg/kg)
79034	IRELAND	Lindane	0.005	0.01
79130	IRELAND	pp'-DDE	0.006	1
79131	IRELAND	pp'-DDE	0.007	1
79132	IRELAND	pp'-DDE	0.008	1
79133	IRELAND	pp'-DDE	0.017	1
79134	IRELAND	pp'-DDE	0.008	1

vii Egg, Milk and Honey

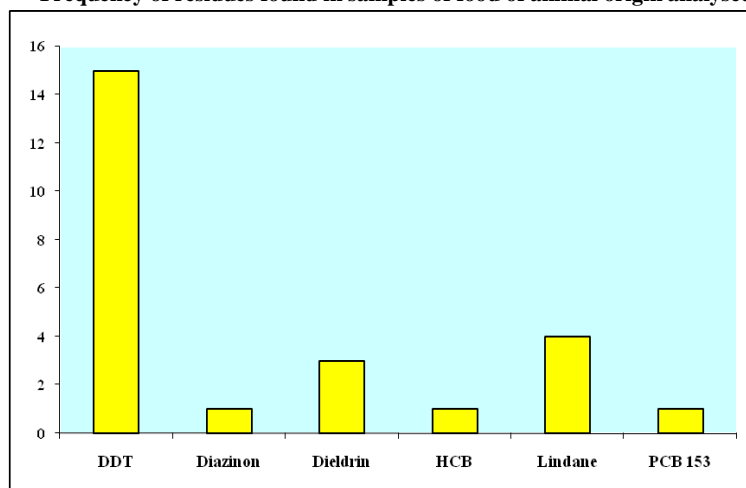
No residues were found in the milk, egg or honey samples. This is consistent with the results of the monitoring programme in previous years. No targeted sampling of these products were carried out in 2007.

Conclusions

Of the 394 samples of food of animal origin analysed, 26 (6.6%) contained residues ranging from 0.005 mg/kg to 0.6 mg/kg. The highest level found was for diazinon in an ovine fat sample.

For the persistent organochlorine pesticides the values ranged from 0.005 to 0.09 mg/kg.

In the 26 samples of food of animal origin containing residues, DDT (mainly as the pp'-DDE metabolite), dieldrin and lindane were the most common residues found. However high levels of pp'-DDT were detected in 2 porcine samples below the MRL.

Figure 4: Frequency of residues found in samples of food of animal origin analysed in 2007

D MISCELLANEOUS SAMPLES

Four samples were submitted for analysis based on consumer concerns that the products may have contained unacceptable levels of pesticides residues. A sample of goji berry contained two pesticides at the limit of quantitation while the other 3 samples contained no detectable residues. In all cases, the persons submitting the samples were informed of the results and no further action was required.

Table 15: Summary of miscellaneous samples submitted by the public

Commodity	Number of samples Analysed	Number of Domestic Samples	Number of Imported Samples	Residues		
				>MRL	<MRL	ND
Beef liver	1	1	0	0	0	1
Cauliflower	1	1	0	0	0	1
Corn	1	0	1	0	0	1
Goji berry	1	0	1	0	1	0
Total	4	2	2	0	1	3

Table 16: Details of miscellaneous samples with detectable residues

Sample no	Country	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
	Fruiting vegetables		Goji berries	
70425	TIBET	lambda cyhalothrin	0.02	0.02
		acetamiprid	0.02	No MRL

E ORGANIC PRODUCTS

In 2007, 45 samples of fruit and vegetables, labelled as organic, were analysed for pesticide residues. Three samples were of domestic origin, 19 samples were taken from produce originating in the EU and the remainder were taken from produce from outside the EU.

Of the 45 samples analysed, 41 were pesticide free but four (8.9%), three from outside the EU and one from the United Kingdom contained traces of pesticides. This compared favourably to the 16.3% of organic labelled samples found to contain pesticides in 2006. The presence of these pesticide residues suggests either the use of some plant protection products early in the growing cycle of these crops or that the samples were contaminated in some way with pesticides. The presence of pp'-DDE a metabolite of DDT in a sample of parsnip is indicative of contamination of the soil used in organic farming. In any case the residues found, while raising questions about the production systems used, present no risk to consumers of these fruit and vegetables. Details of the results of the organic samples analysed are presented in Tables 17 and 18. These results were forwarded to the Unit in the Department of Agriculture, Fisheries and Food, responsible for the regulation of organic produce. Spinosad a/b, which was detected in a strawberry sample from the United States, is registered for use on organic produce and so this result was not an issue.

Table 17: Summary of organic samples analysed in 2007

Commodity	Number of samples analysed	Number of sample of Domestic origin	Number of Imported samples	Residues		
				>MRL	<MRL	ND
Apple	9	0	9	0	1	8
Avocado	2	0	2	0	0	2
Banana	4	0	4	0	0	4
Blueberry	1	0	1	0	0	1
Broccoli	1	0	1	0	0	1
Carrot	3	1	2	0	0	3
Celery	3	0	3	0	0	3
Courgette	2	0	2	0	0	2
Cucumber	1	0	1	0	0	1
Grapefruit	1	0	1	0	0	1
Kiwi	2	0	2	0	0	2
Leek	2	0	2	0	0	2
Lettuce	2	2	0	0	0	2
Mushroom	1	0	1	0	1	0
Orange	3	0	3	0	0	3
Parsnip	1	0	1	0	1	0
Pear	1	0	1	0	0	1
Pepper	2	0	2	0	0	2
Spinach	1	0	1	0	0	1
Strawberry	1	0	1	0	1	0
Tomato	2	0	2	0	0	2
Totals	45	3	42	0	4	41

Table 18: Details of organic produce with pesticide residues

Sample no	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
70708	Pome Fruit NEW ZEALAND	maneb group	Apple 0.06	3
70458	Berries UNITED STATES	spinosad a/b	Strawberries 0.07	No MRL
70569	Root and Tuber ISRAEL	pp'-DDE	Parsnip 0.02	0.05
70594	Fungi UNITED KINGDOM	carbendazim	Mushroom 0.01	0.1
		prochloraz	0.07	2

F PROCESSED PRODUCTS (FRUIT, VEGETABLES AND CEREALS)

In 2007, 95 processed samples (88 fruit and vegetables and 7 cereals) were analysed for their pesticide residue content. Table 19 is a summary of the commodities analysed, origin of the samples and a comparison of the residues detected relative to the MRL. The MRL levels are the same as for the raw commodities. Processing factors can be applied to these MRLs if an MRL exceedance is detected.

Table 19: Summary of processed fruit and vegetable samples analysed in 2007

Processed commodity	Number of samples Analysed	Number of Domestic Samples	Number of Imported samples	Residues		
				>MRL	<MRL	ND
Apple	1	0	1	0	0	1
Apple juice	14	0	14	0	1	13
Banana	2	0	2	0	1	1
Bean without pods	1	0	1	0	0	1
Blueberry juice	1	0	1	0	0	1
Cherry	2	0	2	0	1	1
Cranberry juice	4	0	4	0	0	4
Grape juice	2	0	2	0	0	2
Grapefruit juice	4	0	4	0	0	4
Mandarin	1	0	1	0	0	1
Orange juice	23	0	23	0	6	17
Peach	3	0	3	0	0	3
Peach juice	1	0	1	0	1	0
Pear	2	0	2	0	0	2
Pea without pod	13	0	13	0	0	13
Pineapple	3	0	3	0	0	3
Pineapple juice	3	0	3	0	0	3
Plum	2	0	2	0	1	1
Raisins	2	0	2	0	1	1
Raspberry	1	0	1	0	0	1
Strawberry	2	0	2	0	0	2
Tomato juice	1	0	1	0	0	1
TOTALS	88	0	88	0	12	76

Table 20: Summary of processed cereal samples analysed in 2007

Processed commodity	Number of samples Analysed	Number of Domestic Samples	Number of Imported samples	Residues		
				>MRL	<MRL	ND
Barley flake	1	0	1	0	0	1
Corn flake	1	0	1	0	0	1
Oat bran	1	1	0	0	0	1
Oat flake	1	1	0	0	0	1
Popcorn	1	0	1	0	0	1
Wheat flake	2	2	0	0	0	2
TOTALS	7	4	3	0	0	7

Table 21: Details of processed samples with pesticide residues detected in 2007

Sample Number	Country of Origin	Pesticide detected	Residue (mg/kg)	MRL (mg/kg)
	Citrus	Orange Juice		
70463	UNKNOWN	carbendazim	0.01	0.5
70107	UNKNOWN	maneb	0.11	5
70775	UNKNOWN	imazalil	0.02	5
70894	UNKNOWN	thiabendazole	0.04	5
		imazalil	0.06	5
70897	UNKNOWN	carbendazim	0.03	0.5
		imazalil	0.04	5
70950	UNKNOWN	imazalil	0.02	5
	Pome	Apple juice		
70895	UNKNOWN	carbendazim	0.08	0.2
	Stone Fruit	Peach juice		
70891	UNKNOWN	carbendazim	0.01	0.1
		Cherry (canned)		
71015	UNITED STATES	captan	0.05	5
		carbaryl	0.05	0.05
		Plum (canned)		
71010	UNKNOWN	iprodione	0.09	3
	Miscellaneous	Banana (processed)		
70993	UNKNOWN	azoxystrobin	0.22	2
		imazalil	0.04	2
	Berries	Raisin		
70874	UNITED STATES	propargite	0.02	No MRL

Of the 95 processed fruit, vegetable and cereal samples analysed, 12 (12.6%) contained detectable residues of pesticides which is at a higher rate than that found in 2006 when 7.6% of the processed samples contained

detectable residues. This may be due to the increase in the analytical scope and sensitivity of the equipment. The levels found ranged from 0.01 to 0.22 mg/kg, far lower than those found in the unprocessed commodities.

Seven processed cereal samples were analysed for pesticide residues, none contained any detectable residue. These results indicate that either there is a reduced rate of application of plant protection products on the fruit and vegetables designated for processing in comparison to those sold directly to the consumers or that processing leads to the reduction of the level of pesticides present in the raw commodities. Imazalil and Carbendazim were the most commonly found pesticide residues in processed fruit with the highest rate of occurrence being in the orange juice samples analysed.

CONCLUSIONS

A INTRODUCTION.

An evaluation of the monitoring data for 2007, which involved the analysis of some 1401 routine samples, 15 targeted samples, 5 statutory samples and 4 complaint samples showed that 50% of the routine samples contain no detectable pesticide residues. The majority of the residues detected were in fruit and vegetables compared to food of animal origin. For the fruit and vegetables 42% of the samples analysed contained no detectable pesticide residue, 55.4% contained one or more detectable residues and 3.6% contained residues in excess of EU MRLs. For the samples containing detectable pesticide residues, 55.5% were at a concentration of less than 0.1 mg/kg which indicated a high level of compliance by producers with the recommended agricultural practices for the use of plant protection products.

When samples exceed the MRLs, which indicate incorrect or unauthorised use of plant protection products, risk assessments are carried out to assess the impact of such intake on consumers.

In assessing the impact for consumers of exposure through diet to pesticide residues, it is appropriate to consider the effects of both chronic exposure and acute exposure. 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 exposure likely 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 over a lifetime adjudged to result in no adverse toxicological effects, include a safety factor to ensure that the elderly, infants and children, and those whose systems are under stress because of illness are protected.

For the purposes of assessing the effects of acute exposure, the 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), it is necessary to apply a variability so that the residues in individual commodity units be taken into account. In assessing the effects of acute exposure, the level of exposure must be considered in relation to the acute reference dose (ARfD) value established for individual pesticides. ARfD values, which are a measure of the maximum level of intake over a day, judged to result in no adverse toxicological effects, include a safety factor to ensure that the elderly, infants and children and those whose systems are under stress because of illness are protected. ARfD values have not been established for all pesticides as some of them do not exhibit acute toxicity.

In 2007 some 33 routine samples of fruit and vegetables were found to contain pesticide residues in excess of an MRL. 6 (18.2%) samples of Irish origin, 16 (48.5%) samples sourced from other EU countries and 11 (33.3%) samples produced in non-EU countries had residues in excess of an MRL.

21 of these 33 routine samples exceeded an MRL that was established at the limit of determination (LOD). Two of these were of Irish origin, 10 from other EU countries and the remainder from outside the EU. The MRL exceedances for these 2 Irish samples were the result of an unauthorised use of a plant protection product. In the case of pesticides which are not authorised for use in the EU but which may be authorised outside the EU, MRLs are often established at the limit of determination (LOD), reflecting the non-use within the EU.

Table 22: Summary of routine samples containing pesticide residues exceeding the MRLs in 2007

Commodity	Sample no	Country of origin	Residue detected	Residue (mg/kg)	MRL (mg/kg)
Apple	69997	Italy	Procymidone	0.22	0.02*
Apple	70040	France	Carbendazim	0.37	0.2
Apple	70583	United Kingdom	Carbendazim	2.26	0.2
Apple	70649	United Kingdom	Carbendazim	0.45	0.2
Apple	70682	United Kingdom	Carbendazim	0.57	0.2
Apple	70731	France	Fenitrothion	0.03	0.01*
Apple	70794	Chile	Carbendazim	0.55	0.2
Broccoli	70247	Guatemala	Dimethoate	0.04	0.02*
			Omethoate	0.03	0.02*
Broccoli	70275	Spain	Carbaryl	0.06	0.05*
Carrot	70498	Spain	Ethion	0.04	0.01*
Celery	70097	Spain	Thiophanate methyl	0.3	0.1*
Celery	70196	Spain	Fenitrothion	0.05	0.01*
Celery	70252	Spain	Fenitrothion	0.05	0.01*
Celery	70144	Spain	Fenitrothion	0.04	0.01*
Clementine	70152	Spain	Fenitrothion	0.03	0.01*
Endive	70437	Ireland	Deltamethrin	0.57	0.5
Grapefruit	70623	South Africa	Captan	0.13	0.02*
Lettuce	70016	Ireland	Propyzamide	2.32	1
Lettuce	70219	Ireland	Oxydemeton methyl	0.17	0.05
Mandarin	70113	Cyprus	Thiabendazole	6.33	5
Mango	70618	Brazil	prochloraz	7.61	5
Orange	70183	Spain	Carbendazim	0.14	0.1*
Orange	70864	South Africa	Captan	0.08	0.02*
Parsnip	70071	Ireland	Chlorfenvinphos	0.66	0.5
Passion Fruit	70718	Kenya	Dicofol	0.11	0.02*
			Ethion	0.05	0.01*
Pear	70332	South Africa	Methomyl	0.43	0.05*
Pear	70372	Belgium	thiophanate-methyl	0.84	0.5
Pepper	70304	Israel	Methomyl	0.14	0.05*
Satsuma	70510	S Africa	Diphenylamine	0.12	0.05*
Strawberry	70471	Ireland	Pymetrozine	0.47	0.02*
strawberry	70691	United States	Methomyl	0.07	0.05*
Table grape	70153	South Africa	Dimethoate	0.03	0.02*
			Omethoate	0.04	0.02*
Turnip	70936	Ireland	Chlorpyrifos	0.07	0.05*

*LOD limit of determination

In 2007, 9 of the 11 MRL exceedances in produce imported from countries outside of the EU corresponded to situations where the EU MRL was established at the LOD. In the other two non-EU samples, higher CODEX MRLs have been established for prochloraz residues in mango and for carbendazim residues in apples. For the mango sample the residue found exceeded both the EU and the Codex levels.

MRL breaches in fruit and vegetables normally occur due to a grower's failure to comply with the label instructions for the use of an authorised plant protection product. For Irish produce this was the case for deltamethrin on endive, propyzamide on lettuce and chlorfenvinphos on carrot. The other Irish breaches were due to the unauthorised use of products containing chlorpyrifos on turnip, and for pymetrozine on

strawberries. All Irish growers who had produce on the market that exceeded an MRL were each subjected to an official investigation by inspectors from the PCS of DAFF to determine the reason for the MRL breach. These growers will be subjected to special targeted sampling in 2008.

EU MRLs for some pesticides such as carbendazim, thiophanate- methyl, carbaryl, fenitrothion and ethion were reduced to lower levels in 2007. It is likely that several MRL breaches for the EU sourced samples were due to such recent changes, reflecting the limited time for growers to react. A breach of thiabendazole on mandarins from Cyprus probably indicated incorrect post harvest application.

It has been noted, during 2007, that there were higher CODEX MRLs (CXLs) than the EU MRLs established for methomyl on pears and peppers, and carbendazim on apple. A number of EU MRL exceedances for these pesticides/commodities were in compliance with these CODEX limits. Such anomalies should not arise and should be resolved in due course by the World Trade Organisation (WTO) and by continuing co-operation between the EU and producer groups in third countries.

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 action.

An assessment of the relationship between ADIs and the level of residues present in routine samples, exceeding MRLs (Tables 24 and 25), demonstrates the risk to Irish adult and children consumers associated with dietary intake of such residues. The intake figures used for individual commodities are derived from the 1996-1998 IUNA dietary survey for adults and the 2003-2005 IUNA survey for children. The dietary intake assessment for chronically toxic pesticides was carried out using mean consumption data while the intake assessment for the acutely toxic pesticides was carried out using the higher 97.5th percentile intake. The calculations are based on the conservative deterministic or point estimate¹⁰ which is generally accepted as providing a major overestimation of the actual risk to consumers. Through 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 for Irish consumers. At present the PCS is working on the development of a more refined risk assessment model using a probabilistic approach to more accurately estimate the exposure of Irish consumers.

In 2007 there were three situations where the risk assessment indicated that consumer exposure would exceed one or other of the toxicological endpoints, see Table 23 below.

- In the first case pears from South Africa contained methomyl residues at a level of 0.43 mg/kg. The risk assessment indicated a potential unacceptable intake concern for children with a 450% exceedence of the ARfD. A RASFF notification¹⁰ was issued for this sample to inform other member states of this situation. In a follow-up control action three further samples of South African pears, from the same supplier, were analysed. No further residues of methomyl were detected however. Taking into consideration that a safety factor of 500 is included in the consumer intake assessment performed, no adverse health effects would be expected for Irish consumers of such pears.

¹⁰ Guidance document on Notification Criteria to the RASFF Sanco 3346/2001 rev 7

- In the case of the sample of mangoes that exceeded the ADI by 190% there was no risk to Irish consumers as in excess of 90% of this residue remains on the peel of the mango which is not consumed.
- In the case of the apples, from Chile, that contained carbendazim residues at 0.55 mg/kg the intake assessment indicated a 124% exceedance of the ARfD for the children. A rapid alert (RASFF) notification was issued as is required when such exceedances are detected. There were no apples from the affected consignment left on the market, when the MRL breach was detected, so the enforcement action taken was to target Chilean apples from the same producer in 2008. Again taking into consideration the safety factor of 500 used in the risk assessment calculation this exceedance was not considered to pose an unacceptable risk to consumers of these apples.

Figure 5: Frequency of pesticides and origin of samples exceeding the MRLs

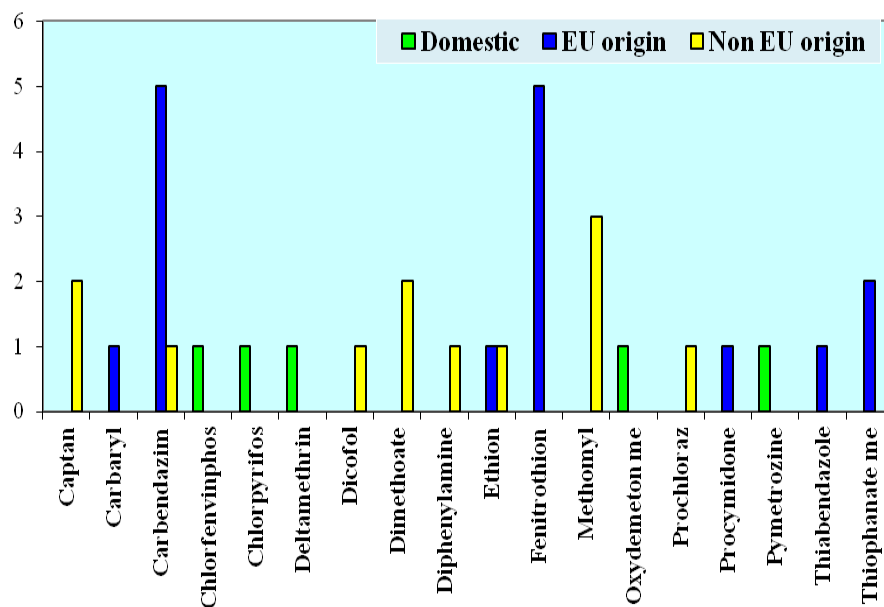


Table 23: Relationships between excessive residue levels found and the ADI and the ARfD for Irish adults and children

COMMODITY	Sample No.	IUNA Consumption data: adults/ Children	ORIGIN OF ORIGIN	PESTICIDE	EU MRL mg/kg	Residue found mg/kg	Irish Mean consumption kg/bw/day	ADI mg/kg/bw/day	% of ADI	97.5 % ile consumption kg/bw/day	ARfD mg/kg/bw/day	% of ARfD
Apple	69997	adult	Italy	Procymidone	0.02*	0.22	0.001	0.025	0.9%	0.003	0.035	6.8%
		children	Italy	Procymidone	0.02*	0.22	0.005	0.025	4.2%	0.009	0.035	25.1%
Lettuce	70016	adult	Ireland	Propyzamide	1	2.32	0.0001	0.085	0.3%		NR	
		children	Ireland	Propyzamide	1	2.32	0.0005	0.085	1.4%		NR	
Apple	70040	adult	France	Carbendazim	0.2	0.37	0.001	0.02	2.0%	0.003	0.02	20.0%
		children	France	Carbendazim	0.2	0.37	0.005	0.02	2.0%	0.009	0.02	74.0%
Parsnip	70071	adult	Ireland	Chlorfenvinphos	0.5	0.66	0.00022	0.001	14.5%	0.0008	0.01	26.4%
		children	Ireland	Chlorfenvinphos	0.5	0.66	0.0007	0.001	46.2%	0.0019	0.01	62.7%
Celery	70097	adult	Spain	Thiophanate methyl	0.1*	0.3	0.0000017	0.08	0.0%	0.00001	0.2	0.0%
		children	Spain	Thiophanate methyl	0.1*	0.3	0.0008	0.08	0.3%	0.0019	0.2	1.4%
		adult	Spain	Fenitrothion	0.01*	0.05	0.0000017	0.005	0.0%	0.00001	0.04	0.0%
		children	Spain	Fenitrothion	0.01*	0.05	0.0008	0.005	0.8%	0.0019	0.04	1.2%
Orange	70183	adult	Spain	Carbendazim	0.1*	0.14	0.0013	0.02	0.9%	0.0046	0.02	10.8%
		children	Spain	Carbendazim	0.1*	0.14	0.0044	0.02	2.0%	0.0108	0.02	35.6%
Mandarin	70113	adult	Cyprus	Thiabendazole	5	6.33	0.00072	0.1	4.6%		NR	
		children	Cyprus	Thiabendazole	5	6.33	0.0034	0.1	21.5%		NR	
		adult	Cyprus	Imazalil	5	5.56	0.00072	0.03	13.3%		NR	
		children	Cyprus	Imazalil	5	5.56	0.0034	0.03	63.0%		NR	
Clementine	70152	adult	Spain	Fenitrothion	0.01*	0.03	0.0007	0.005	0.4%	0.0025	0.04	0.9%
		children	Spain	Fenitrothion	0.01*	0.03	0.0034	0.005	2.0%	0.0097	0.04	3.6%
Table grape	70153	adult	South Africa	Dimethoate+Omethoate	0.02*	0.07	0.0003	0.002	5.0%	0.0023	0.03	13.3%
		children	South Africa	Dimethoate+Omethoate	0.02*	0.07	0.003	0.002	44.5%	0.0121	0.03	69.8%
Celery	70196	adult	Spain	Fenitrothion	0.01*	0.05	0.0000017	0.005	0.0%	0.00001	0.04	0.0%
		children	Spain	Fenitrothion	0.01*	0.05	0.0008	0.005	0.8%	0.0019	0.04	1.2%
Celery	70252	adult	Spain	Fenitrothion	0.01*	0.05	0.0000017	0.005	0.0%	0.00001	0.04	0.0%
		children	Spain	Fenitrothion	0.01*	0.05	0.0008	0.005	0.8%	0.0019	0.04	1.2%
Lettuce	70219	adult	Ireland	Oxydemeton methyl	0.05	0.17	0.00011	0.0003	6.2%	0.00044	0.002	18.7%
		children	Ireland	Oxydemeton methyl	0.05	0.17	0.0005	0.0003	28.3%	0.0016	0.002	68.0%
Broccoli	70247	adult	Guatemala	Dimethoate+Omethoate	0.02*	0.07	0.00026	0.002	3.6%	0.0008	0.03	3.8%
		children	Guatemala	Dmethoate+ Omethoate	0.02*	0.07	0.0015	0.002	21.0%	0.0033	0.03	15.4%
Broccoli	70275	adult	Spain	Carbaryl	0.05*	0.06	0.00026	0.007	0.2%	0.0008	0.03	0.8%
		children	Spain	Carbaryl	0.05*	0.06	0.0015	0.007	1.3%	0.0033	0.03	3.3%

COMMODITY	Sample No.	IUNA Consumption data: adults/ Children	ORIGIN OF ORIGIN	PESTICIDE	EU MRL mg/kg	Residue found mg/kg	Irish Mean consumption kg/bw/day	ADI mg/kg/bw/day	% of ADI	97.5 % ile consumption kg/bw/day	ARfD mg/kg/bw/day	% of ARfD
Pepper	70304	adult	Israel	Methomyl	0.05*	0.14	0.00136	0.0025	7.6%	0.00059	0.0025	16.5%
		children	Israel	Methomyl	0.05*	0.14	0.0015	0.0025	8.4%	0.0055	0.0025	154.0%
Pear	70332	adult	South Africa	Methomyl	0.05*	0.43	0.00067	0.0025	11.5%	0.0022	0.0025	168.6%
		children	South Africa	Methomyl	0.05*	0.43	0.0038	0.0025	65.4%	0.0075	0.0025	452.4%
Celery	70144	adult	Spain	Fenitrothion	0.01*	0.04	0.0000017	0.005	0.1%	0.00001	0.04	0.2%
		children	Spain	Fenitrothion	0.01*	0.04	0.0008	0.005	0.6%	0.0019	0.04	0.6%
Pear	70372	adult	Belgium	thiophanate-methyl	0.5	0.84	0.00067	0.08	0.7%	0.0022	0.2	4.1%
		children	Belgium	Thiophanate-methyl	0.5	0.84	0.0038	0.08	4.0%	0.0075	0.2	11.0%
Endive	70437	adult	Ireland	Deltamethrin	0.5	0.57	0.00009	0.01	0.5%	0.00035	0.01	10.0%
		children	Ireland	Deltamethrin	0.5	0.57	0.0005	0.01	2.9%	0.0016	0.01	45.6%
Strawberry	70471	adult	Ireland	Pymetrozine	0.02*	0.47	0.0002	0.03	0.3%	0.0014	0.1	0.7%
		children	Ireland	Pymetrozine	0.02*	0.47	0.0024	0.03	3.8%	0.0054	0.1	2.5%
Satsuma	70510	adult	S Africa	Diphenylamine	0.05*	0.12	0.00057	0.03	0.2%		NR	
		children	South Africa	Diphenylamine	0.05*	0.12	0.0034	0.03	1.4%		NR	
Carrot	70498	adult	Spain	Ethion	0.01*	0.04	0.0003	0.002	0.6%	0.001	0.002	10.0%
		children	Spain	Ethion	0.01*	0.04	0.0018	0.002	3.6%	0.0049	0.002	49.0%
Apple (cooking)	70583	adult	United Kingdom	Carbendazim	0.2	2.26	0.000265	0.02	3.0%	0.00135	0.02	15.3%
		children	UK (NI)	Carbendazim	0.2	2.26	0.00093	0.02	2.0%	0.00365	0.02	41.2%
Mango	70618	adult	Brazil	Prochloraz	5	7.61	0.00026	0.01	19.8%		NR	
		children	Brazil	Prochloraz	5	7.61	0.0025	0.01	190.3%		NR	
Grapefruit	70623	adult	South Africa	Captan	0.02*	0.13	0.00098	0.1	0.1%	0.0018	0.1	1.2%
		children	South Africa	Captan	0.02*	0.13	0.0053	0.1	0.7%	0.0066	0.1	4.3%
Apple (cooking)	70649	adult	United Kingdom	Carbendazim	0.2	0.45	0.00026	0.02	0.6%	0.00135	0.02	3.0%
		children	UK (NI)	Carbendazim	0.2	0.45	0.00093	0.02	2.0%	0.00365	0.02	8.2%
Passion Fruit	70718	adult	Kenya	Dicofol	0.02*	0.11	0.0002	0.002	1.1%		NR	
		children	Kenya	Dicofol	0.02*	0.11	0.0002	0.002	1.1%		NR	
		adult	Kenya	Ethion	0.01*	0.05	0.0002	0.002	0.5%	0.0002	0.002	0.5%
		children	Kenya	Ethion	0.01*	0.05	0.0011	0.002	2.8%	0.0011	0.002	2.8%
Strawberry	70691	adult	United States	Methomyl	0.05*	0.07	0.0002	0.0025	0.6%	0.0014	0.0025	3.9%
		children	United States	Methomyl	0.05*	0.07	0.0024	0.0025	6.7%	0.0054	0.0025	15.1%
Apple (cooking)	70682	adult	United	Carbendazim	0.2	0.57	0.00026	0.02	0.7%	0.00135	0.02	3.8%

COMMODITY	Sample No.	IUNA Consumption data: adults/ Children	ORIGIN OF ORIGIN	PESTICIDE	EU MRL mg/kg	Residue found mg/kg	Irish Mean consumption kg/bw/day	ADI mg/kg/bw/day	% of ADI	97.5 % ile consumption kg/bw/day	ARfD mg/kg/bw/day	% of ARfD
			Kingdom									
		children	United Kingdom	Carbendazim	0.2	0.57	0.00093	0.02	2.0%	0.00365	0.02	10.4%
Apple	70731	adult	France	Fenitrothion	0.01*	0.03	0.00071	0.005	0.4%	0.0025	0.04	0.9%
		children	France	Fenitrothion	0.01*	0.03	0.0068	0.005	4.1%	0.019	0.04	7.1%
Apple	70794	adult	Chile	Carbendazim	0.2	0.55	0.0007	0.02	2.0%	0.0025	0.02	34.4%
		children	Chile	Carbendazim	0.2	0.55	0.0068	0.02	18.7%	0.009	0.02	123.8%
Orange	70864	adult	South Africa	Captan	0.02*	0.08	0.0013	0.02	0.005%	0.0046	0.1	1.2%
		children	South Africa	Captan	0.02*	0.08	0.0044	0.1	0.02	0.0108	0.1	4.1%
Turnip	70936	adult	Ireland	Chlorpyrifos	0.05*	0.07	0.0022	0.01	1.5%	0.00065	0.1	0.2%
		children	Ireland	Chlorpyrifos	0.05*	0.07	0.002	0.01	2.0%	0.0057	0.1	2.0%
Spinach	70639	adult	Ireland	Chlorothalonil	0.01*	0.07	0.000125	0.015	0.1%	0.00052	0.6	0.4%
		children	Ireland	Chlorothalonil	0.01*	0.07	0.0005	0.015	0.2%	0.0016	0.6	1.3%

- MRL at limit of determination
Dimethoate sum of Dimethoate and Omethoate

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. Nevertheless, the fact that abuses occur and that residue levels in excess of the MRL continue to be detected, points to the need for the continuation and strengthening of the monitoring and violation investigation programmes. The PCS urges users of plant protection products to observe Good Agricultural Practice when applying them, in order to ensure that unacceptable levels of pesticide residues do not occur in treated produce.

An evaluation of the monitoring data shows that residue results obtained in 2007 remain broadly in line to those obtained in previous years. The number of samples of fruit and vegetables containing no detectable pesticide residues increased from 43% in 2005 to 48.2% in 2006 but decreased to 40% in 2007. Apart from 2006, the general trend in the frequency of residue detection is in line with the increased laboratory analytical capacity that allowed samples to be analysed for 292 pesticides in 2007, 153 in 2006 and 148 in 2005. It is interesting to note in the EC Commission 2006 Annual report for Pesticide Monitoring in products of plant origin, that the number of samples with no detectable residues was at 51%, which was similar to the value obtained by PCS in 2006.

In 2005, 2006 and 2007 the number of routine samples of food of animal origin analysed were 376, 367 and 395 respectively. In food of animal origin the number and range of pesticides found in 2007 at 6.3% of samples was consistent with those found in previous years. In 2007 no MRL exceedences were detected in animal products compared to 2006 when there were two MRL exceedences detected, one in sheep fat and one in pork fat.

In the cereal samples analysed there was a decrease in the number of samples containing pesticide residues in 2007 at 29% compared to 2006 with 38% but is still a significant increase compared to 2005 when 17% of the cereal samples contained detectable residues of pesticides. The higher detection rate in 2006 was mainly related to a specific contamination incident and the trend between 2005 and 2007 is mainly due to the increased number of pesticide residues being analysed for in samples. In 2007, 9 (15%) of the 61 domestic cereal samples and 20 (51%) of the 39 imported cereal analysed contained detectable residues. The most commonly detected pesticide was pirimiphos methyl which is used post harvest.

The pesticide residue pattern in fruit and vegetables from 2007 remains broadly similar to that found in 2006 and previous years when one takes into account that the laboratory is analysing samples for an increased number of pesticide residues.

68 different varieties of fruit and vegetables were analysed in 2007 as opposed to 76 in 2006 and 71 in 2005.

There was a significant increase in the number of pesticide residues detected in samples analysed in 2007 where 104 (46% of pesticides sought) different compounds were found compared to 73 in 2006 and 75 in 2005.

The percentage of imported produce sampled and analysed in 2007 at 80.4% is very similar to the percentage in 2006 which was at 81.5% and is greater than the number analysed in 2005 at 77%.

The percentage of raw fruit and vegetables found to contain pesticide residues, in the routine monitoring programme, at 59% is greater than in previous years. This is due to the increase in the analytical scope. The percentages found in previous years: 48% in 2006 and 56% in 2005.

The percentage of samples of fruit and vegetables containing pesticide residues greater than the MRL for 2007 at 3.6% is greater than for 2006 at 2.9% but is less than the 2005 value of 5.1%. However it is consistent with the percentage obtained in both 2004 and in 2003 where values of 3.5% and 3.6% respectively were recorded. This rate of exceedance is consistent with the rate found in other EU countries.

The frequency at which individual pesticides were detected in fruit and vegetables during 2007 corresponds with the pattern detected in 2006, 2005, 2004 and 2003 in that the most commonly detected pesticides, thiabendazole, iprodione, chlorpyrifos, diphenylamine (introduced in 2005) and captan continued to be detected. In the case of carbendazim it is significant that the frequency of residue detection was 7%, an increase from 3.9% in 2006 after a reduction from 10.4% in 2005. This reflects changed usage patterns for Carbendazim in line with changes to the legislation. Imazalil, which was first

introduced into the analytical scope in 2006, has a high detection frequency of 16.2% and residues are found mainly on citrus fruit where it is used as a post harvest treatment.

During 2007, 45 samples of organic fruit and vegetables were analysed as part of the monitoring programme. Four of these samples were found to contain detectable levels of pesticide residues. This frequency of pesticide residue detection, at 9%, is a decrease in the corresponding values found in 2006 but to 2005 and in 2004 when the corresponding values were 7.5% and 9% respectively. The positive results were forwarded to the Organic Unit within DAFF responsible for the control of organic production with a view to the appropriate action being taken. 50% of organic produce sampled originated from outside the EU. No issue of consumer safety was involved with these residues, as they were present at very low levels.

In 2007, 95 samples of processed products, of which 88 were processed fruit and vegetables and 7 were processed cereal samples were analysed for their pesticide residue content. 12 processed samples (12.6%) had detectable residues which is at a greater frequency than the 7% of the samples analysed in 2006 but is somewhat less than the 14% found to have residues in 2005.

The scope of the pesticide monitoring programme was increased significantly to 292 in 2007 from 153 different pesticide and their metabolites in 2006. This compares with the 148 analysed in 2005, 118 analysed in 2004 and the 89 determined in samples in 2003.

Two RASFF notifications were issued by the Rapid Alert Unit of the FSAI based on the deterministic risk assessments exceeding the respective ARfD endpoints. No adverse health effects would be expected in both cases.

For the immediate future the focus of the PCS will be to further increase the capacity of the laboratory to determine an ever increasing number of pesticide residues in food samples.

The PCS of the DAFF and the FSAI will 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. This 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.

C VIOLATION INVESTIGATION PROGRAMME

Targeted sampling of produce found to be in breach of established MRLs is the prime means of determining whether violations that occur result from the systematic misuse of pesticides or are isolated incidents. The repeated occurrence of excessive residue levels in particular food commodities, which would result in consumer safety being compromised, is clearly unacceptable. The violation investigation programme is geared to eliminate any such abuses. The programme is also designed to ensure that incidents, where MRLs are exceeded, are not repeated.

From the 15 targeted samples resulting from MRL breaches in 2006, 4 were found not to have detectable residues and 10 samples had pesticide residues above the limit of determination. 1 spinach sample of domestic origin was found to have chlorothalonil residues in excess of the MRL. Chlorothalonil is not approved for use on spinach in Ireland. Following an investigation, no legal proceedings were initiated against the grower, as the sample may not have originated from the farm. It was recommended that further targeted sampling of spinach be initiated and a written warning was issued to the grower indicating that proper traceability system should be put in place to ensure that all food is fully traceable.

4 statutory samples were taken as follow up controls to Irish RASFF notifications that related to specific consignments of grapes and pears. No pesticide residue, above the limit of determination, was detected in any of the samples and no additional follow up action was required.

D CONCLUDING REMARKS

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

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ANNEX 1

REGULATIONS FIXING MAXIMUM LEVELS FOR PESTICIDE RESIDUES IN AGRICULTURAL PRODUCE

- 1 European Communities (Pesticide Residues) (Fruit and Vegetables) Regulations 1989, S.I. No. 105 of 1989
- 2 European Communities (Pesticide Residues) (Fruit and Vegetables) (Amendment) Regulations 1997, S.I. No. 218 of 1997
- 3 European Communities (Pesticide Residues) (Fruit and Vegetables) (Amendment) Regulations 1998, S.I. No. 563 of 1998
- 4 European Communities (Pesticide Residues) (Fruit and Vegetables) (Amendment) Regulations 2002, S.I. No. 526 of 2002
- 5 European Communities (Pesticide Residues) (Fruit and Vegetables) (Amendment) Regulations 2003, S.I. No. 356 of 2003
- 6 European Communities (Pesticide Residues) (Fruit and Vegetables) (Amendment) Regulations 2004, S.I. No. 120 of 2004
- 7 European Communities (Pesticide Residues) (Feeding stuffs) Regulations 1992, S.I. No. 40 of 1992
- 8 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) Regulations 1999, S.I. No. 179 of 1999
- 9 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 1999, S.I. No. 458 of 1999
- 10 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2000, S.I. No. 461 of 2000.
- 11 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2000, S.I. No. 462 of 2000.
- 12 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2001, S.I. No. 256 of 2001.
- 13 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2001, S.I. No. 621 of 2001
- 14 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2002, S.I. No. 535 of 2002
- 15 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2003, S.I. No. 271 of 2003
- 16 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2003, S.I. No. 384 of 2003

- 17 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2004, S.I. No. 134 of 2004
- 18 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2004, S.I. No. 231 of 2004
- 19 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2005, S.I. No. 173 of 2005
- 20 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2005, S.I. No. 551 of 2005
- 21 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2005, S.I. No. 696 of 2005
- 22 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2005, S.I. No. 266 of 2006
- 23 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2005, S.I. No. 464 of 2006
- 24 European Communities (Pesticide Residues) (Products of Plant Origin, including Fruit and Vegetables) (Amendment) Regulations 2005, S.I. No. 107 of 2006
- 25 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) Regulations 1999, S.I. No. 180 of 1999
- 26 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 1999, S.I. No. 460 of 1999
- 27 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2000, S.I. No. 460 of 2000
- 28 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2000, S.I. No. 249 of 2001.
- 29 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2000, S.I. No. 620 of 2001
- 30 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2002, S.I. No. 534 of 2002
- 31 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2003, S.I. No. 270 of 2003
- 32 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2003, S.I. No. 385 of 2003

- 33 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2004, S.I. No. 118 of 2004
- 34 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2004, S.I. No. 239 of 2004
- 35 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2005, S.I. No. 698 of 2005
- 36 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2005, S.I. No. 106 of 2006
- 37 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2005, S.I. No. 259 of 2006
- 38 European Communities (Pesticide Residues) (Foodstuffs of Animal Origin) (Amendment) Regulations 2005, S.I. No. 489 of 2006
- 39 European Communities (Pesticide Residues) (Cereals) Regulations 1999, S.I. No. 181 of 1999
- 40 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 1999, S.I. No. 459 of 1999
- 41 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2000, S.I. No. 459 of 2000
- 42 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2001, S.I. No. 250 of 2001.
- 43 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2001, S.I. No. 622 of 2001
- 44 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2002, S.I. No. 533 of 2002.
- 45 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2003, S.I. No. 386 of 2003.
- 46 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2004, S.I. No. 119 of 2004
- 47 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2004, S.I. No. 240 of 2004
- 48 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2005, S.I. No. 552 of 2005
- 49 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2005, S.I. No. 697 of 2005

- 50 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2005, S.I. No. 108 of 2006
- 51 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2005, S.I. No. 260 of 2006
- 52 European Communities (Pesticide Residues) (Cereals) (Amendment) Regulations 2005, S.I. No. 492 of 2006
- 53 European Communities (Pesticide Residues) Regulations 2005, S.I. No. 654 of 2006
- 54 European Communities (Pesticide Residues) (Amendments) Regulations 2007, S.I. No. 104 of 2007
- 55 European Communities (Pesticide Residues) (Amendments) (No.2) Regulations 2007, S.I. No. 685 of 2007
- 56 European Communities (Pesticide Residues) (Amendments) (No.3) Regulations 2007, S.I. No. 817 of 2007

ANNEX II**EC DIRECTIVES FIXING MAXIMUM LEVELS FOR PESTICIDE RESIDUES
IN AGRICULTURAL PRODUCE**

- 1 Council Directive of 23 November 1976 relating to the fixing of maximum levels for pesticide residues in and on fruit and vegetables. (76/895/EEC) OJ No. L340 of 9.12.1976, and amending Directives -
 - 79/700/EEC of 24 July 1979 OJ No. L207 of 15.8.1979
 - 80/428/EEC of 28 March 1980 OJ No. L102 of 19.4.1980
 - 81/36/EEC of 9 February 1981 OJ No. L46 of 19.2.1981
 - 82/528/EEC of 19 July 1982 OJ No. L234 of 9.8.1982
 - 88/298/EEC of 16 May 1988 OJ No. L126 of 20.5.1988
 - 89/186/EEC of 6 March 1989 OJ No. L66 of 10.3.1989
 - 93/58/EEC of 29 June 1993 OJ No. L211 of 23.8.1993
 - Corrigendum to 93/58/EEC OJ No. L219 of 24.8.1994
 - 96/32/EC of 21 May 1996 OJ No. L144 of 18.6.1996
 - 97/41/EC of 25 June 1997 OJ No. L184 of 12.7.1997
 - 2000/24/EC of 28 of April 2000 OJ No. L107 of 04.05.2000
 - 2000/42/EC of 22 of June 2000 OJ No. L158 of 30.06.2000
 - 2000/48/EC of 25 of July 2000 OJ No. L197 of 03.08.2000
 - 2000/57/EC of 22 of Sept 2000 OJ No. L244 of 29.09.2000
 - 2000/82/EC of 20 of Dec. 2000 OJ No. L3 of 06.01.2001
 - 2002/66/EC of 16 of July 2002 OJ No. L192 of 20.07.2002
 - 2002/71/EC of 19 of August 2002 OJ No. L225 of 22.08.2002
 - 2002/79/EC of 02 of October 2002 OJ No. L291 of 28.10.2002
 - 2003/60/EC of 18 of June 2003 OJ No. L155 of 24.06.2003
 - 2003/118/EC of 05 of Dec 2003 OJ No. L324 of 11.12.2003
 - 2005/37/EC of 03 of June 2005 OJ No. L141 of 04.06.2005
 - 2005/46/EC of 08 of July 2005 OJ No. L177 of 09.07.2005
 - 2005/70/EC of 20 of Oct 2005 OJ No. L276 of 21.10.2005
 - 2006/59/EC of 28 of Jun 2006 OJ No. L175 of 29.06.2006
 - 2006/62/EC of 12 of July 2006 OJ No. L206 of 27.07.2006
 - 2006/92/EC of 09 of Nov 2006 OJ No. L311 of 10.11.2006
 - 2007/8/EC of 20 of Feb 2007 OJ No L63 of 01.03.2007
 - 2007/55/EC of 17 of Sep 2007 (from 18.04.2008) OJ No.L243 of 18.09.2007
 - 2007/57/EC of 17 of Sep 2007 OJ No. L243 of 18.09.2007
- 2 Council Directive of 24 July 1986 on the fixing of maximum levels for pesticide residues in and on cereals. (86/362/EEC) OJ No. 221 of 7.8.1986 and amending Directives -
 - 88/298/EEC of 16 May 1988 OJ No. L126 of 20.5.1988
 - 93/57/EEC of 29 June 1993 OJ No. L211 of 23.8.1993
 - 94/29/EC of 23 June 1994 OJ No. L189 of 23.7.1994
 - 95/39/EC of 17 July 1995 OJ No. L197 of 22.8.1995
 - Corrigendum to 95/39/EC OJ No. L164 of 3.7.1996
 - 96/33/EC of 21 May 1996 OJ No. L144 of 18.6.1996
 - 97/41/EC of 25 June 1997 OJ No. L184 of 12.7.1997
 - 97/71/EC of 15 December 1997 OJ No. L347 of 18.12.1997
 - 98/82/EC of 27 October 1998 OJ No. L290 of 29.10.1998

1999/65/EC of 24 June 1999	OJ No. L172 of 8.7.1999
1999/71/EC of 14 July 1999	OJ No. L194 of 27.7.1999
2000/24/EC of 28 of April 2000	OJ No. L107 of 04.05.2000
2000/42/EC of 22 of June 2000	OJ No. L158 of 30.06.2000
2000/48/EC of 25 of July 2000	OJ No. L197 of 03.08.2000
2000/58/EC of 22 of Sept 2000	OJ No. L244 of 29.09.2000
2000/82/EC of 20 of Dec 2000	OJ No. L3 of 06.01.2001
2001/39/EU of 23 of May 2001	OJ No. L148 of 01.05.2001
2001/48/EU of 28 of June 2001	OJ No. L180 of 03.07.2001
2001/57/EU of 25 of July 2001	OJ No. L208 of 01.08.2001
2002/23/EU of 26 of Feb 2002	OJ No. L64 of 07.03.2002
2002/42/EU of 17 of May 2002	OJ No. L134 of 22.05.2002
2002/66/EU of 16 of July 2002	OJ No. L192 of 20.07.2002
2002/71/EC of 19 of August 2002	OJ No. L225 of 22.08.2002
2002/76/EC of 06 of September 2002	OJ No. L240 of 07.09.2002
2002/79/EC of 02 of October 2002	OJ No. L291 of 28.10.2002
2002/97/EC of 16 of December 2002	OJ No. L343 of 18.12.2002
2003/60/EC of 18 of June 2003	OJ No. L155 of 24.06.2003
2003/62/EC of 20 of June 2003	OJ No. L154 of 21.06.2003
2003/69/EC of 11 of July 2003	OJ No. L175 of 15.07.2003
2003/113/EC of 3 of December 2003	OJ No. L324 of 11.12.2003
2003/118/EC of 5 of December 2003	OJ No. L327 of 16.12.2003
2004/2/EC of 9 of January 2004	OJ No. L014 of 21.01.2004
2004/61/EU of 26 of April 2005	OJ No. L127 of 29.04.2004
2005/46/EU of 08 of July 2005	OJ No. L177 of 09.07.2005
2005/48/EC of 23 of August 2005	OJ No L219 of 24.8.2005
2005/70/EC of 20 of Oct 2005	OJ No. L276 of 21.10.2005
2005/76/EC of 08 of Nov 2005	OJ No. L293 of 09.11.2005
2006/4/EC of 26 of Jan 2006	OJ No. L23 of 27.01.2006
2006/30/EC of 13 of Mar 2006	OJ No. L75 of 14.03.2006
2006/59/EC of 28 of Jun 2006	OJ No. L175 of 29.06.2006
2006/61/EC of 07 of July 2006	OJ No. L206 of 27.07.2006
2006/62/EC of 12 of July 2006	OJ No. L206 of 27.07.2006
2006/92/EC of 09 of Nov 2006	OJ No. L311 of 10.11.2006
2007/7/EC of 14 of Feb 2007	OJ No. L43 of 15.02.2007
2007/8/EC of 20 of Feb 2007	OJ No. L63 of 01.03.2007
2007/11/EC of 21 of Feb 2007	OJ No. L63 of 01.03.2007.
2007/27/EC of 15 of May 2007 corrigenda	OJ No. L140 of 01.06.2007
2007/55/EC of 17 of Sep 2007	OJ No L243 of 18.09.2007
2007/56/EC of 17 of Sep 2007 (from 05.04.2008)	OJ No L243 of 18.09.2007
2007/57/EC of 17 of Sep 2007 (from 05.04.2008)	OJ No L243 of 18.09.2007
2007/62/EC of 04 of Oct 2007 (from 15.06.2008)	OJ No. L260 of 05.10.2007
2007/73/EC of 13 of Dec 2007	OJ No. L329 of 14.12.2007

- 3 Council Directive of 24 July 1986 on the fixing of maximum levels for pesticide residues in and on foodstuffs of animal origin. (86/363/EEC) OJ No. L221 of 7.8.1986
and amending Directives -
93/57/EEC of 29 June 1993 OJ No. L211 of 23.8.1993
94/29/EC of 23 June 1994 OJ No. L189 of 23.7.1994

95/39/EC of 17 July 1995	OJ No. L197 of 22.8.1995
Corrigendum of 95/39/EC	OJ No. L164 of 3.7.1996
96/33/EC of 21 May 1996	OJ No. L144 of 18.6.1996
97/41/EC of 25 June 1997	OJ No. L184 of 12.7.1997
97/71/EC of 15 December 1997	OJ No. L347 of 18.12.1997
98/82/EC of 27 October 1998	OJ No. L290 of 29.10.1998
1999/71/EC of 14 July 1999	OJ No. L194 of 27.7.1999
2000/24/EC of 28 of April 2000	OJ No. L107 of 04.05.2000
2000/42/EC of 22 of June 2000	OJ No. L158 of 30.06.2000
2000/58/EC of 22 of Sept 2000	OJ No. L244 of 29.09.2000
2000/82/EC of 20 of Dec 2000	OJ No. L3 of 06.01.2001
2001/39/EU of 23 of May 2001	OJ No. L148 of 01.05.2001
2001/57/EU of 25 of July 2001	OJ No. L208 of 01.08.2001
2002/23/EU of 26 of Feb 2002	OJ No. L64 of 07.03.2002
2002/42/EU of 17 of May 2002	OJ No. L134 of 22.05.2002
2002/66/EU of 16 of July 2002	OJ No. L192 of 20.07.2002
2002/71/EC of 19 of August 2002	OJ No. L225 of 22.08.2002
2002/79/EC of 02 of October 2002	OJ No. L291 of 28.10.2002
2002/97/EC of 16 of December 2002	OJ No. L343 of 18.12.2002
2003/60/EC of 18 of June 2003	OJ No. L155 of 24.06.2003
2003/113/EC of 3 of December 2003	OJ No. L324 of 11.12.2003
2003/118/EC of 5 of December 2003	OJ No. L327 of 16.12.2003
2004/2/EC of 9 of January 2004	OJ No. L014 of 21.01.2004
2004/61/EU of 26 of April 2005	OJ No. L127 of 29.04.2004
2004/95/EU of 24 of Sept 2004	OJ No. L301 of 28.09.2004
2005/46/EU of 08 of July 2005	OJ No. L177 of 09.07.2005
2005/48/EC of 23 of August 2005	OJ No L219 of 24.8.2005
2005/70/EC of 20 of Oct 2005	OJ No. L276 of 21.10.2005
2006/30/EC of 13 of Mar 2006	OJ No. L75 of 14.03.2006
2006/59/EC of 28 of Jun 2006	OJ No. L175 of 29.06.2006
2006/61/EC of 07 of July 2006	OJ No. L206 of 27.07.2006
2006/62/EC of 12 of July 2006	OJ No. L206 of 27.07.2006
2006/92/EC of 09 of Nov 2006	OJ No. L311 of 10.11.2006
2007/11/EC of 21 of Feb 2007	OJ No. L63 of 01.03.2007
2007/27/EC of 15 of May 2007corrigenda	OJ No. L140 of 01.06.2007
2007/28/EC of 25 of May 2007	OJ No. L135 of 26.05.2007
2007/56/EC of 17 of Sep 2007	OJ No. L243 of 18.09.2007
2007/55/EC of 17 of Sep 2007 (from 18.04.2008)	OJ No. L243 of 18.09.2007
2007/57/EC of 17 of Sep 2007	OJ No. L243 of 18.09.2007

- 4 Council Directive of 27 November 1990 on the fixing of maximum levels for pesticide residues in an on certain products of plant origin, including fruit and vegetables. (90/642/EEC) OJ No. L350 of 14.12.1990

and amending Directives -

93/58/EEC of 29 June 1993	OJ No. L211 of 23.8.1993
Corrigendum to 93/58 EEC	OJ No. L219 of 24.8.1994
94/30/EC of 23 June 1994	OJ No. L189 of 23.7.1994
95/38/EC of 17 July 1995	OJ No. L197 of 22.8.1995
Corrigendum to 95/38/EEC	OJ No. L155 of 28.6.1996

95/61/EC of 29 November 1995	OJ No. L292 of 7.12.1995
96/32/EC of 21 May 1996	OJ No. L144 of 18.6.1996
97/41/EC of 25 June 1997	OJ No. L184 of 12.7.1997
97/71/EC of 15 December 1997	OJ No. L347 of 18.12.1997
98/82/EC of 27 October 1998	OJ No. L290 of 29.10.1998
1999/65/EC of 24 June 1999	OJ No. L172 of 8.7.1999
1999/71/EC of 14 July 1999	OJ No. L194 of 27.7.1999
2000/24/EC of 28 of April 2000	OJ No. L107 of 04.05.2000
2000/42/EC of 22 of June 2000	OJ No. L158 of 30.06.2000
2000/48/EC of 25 of July 2000	OJ No. L197 of 03.08.2000
2000/57/EC of 22 of Sept 2000	OJ No. L244 of 29.09.2000
2000/58/EC of 22 of Sept 2000	OJ No. L244/78 of 29.09.2000
2000/82/EC of 20 of Dec 2000	OJ No. L3/18 of 06.01.2001
2001/35/EU of 11 of May 2001	OJ No. L136 of 18.05.2001
2001/39/EU of 23 of May 2001	OJ No. L148 of 01.05.2001
2001/48/EU of 28 of June 2001	OJ No. L180 of 03.07.2001
2001/57/EU of 25 of July 2001	OJ No. L208 of 01.08.2001
2002/5/EU of 30 of Jan 2002	OJ No. L34 of 05.02.2002
2002/23/EU of 26 of Feb 2002	OJ No. L64 of 07.03.2002
2002/42/EU of 17 of May 2002	OJ No. L134 of 22.05.2002
2002/66/EU of 16 of July 2002	OJ No. L192 of 20.07.2002
2002/71/EC of 19 of August 2002	OJ No. L225 of 22.08.2002
2002/76/EC of 06 of September 2002	OJ No. L240 of 07.09.2002
2002/79/EC of 02 of October 2002	OJ No. L291 of 28.10.2002
2002/97/EC of 16 of December 2002	OJ No. L343 of 18.12.2002
2003/60/EC of 18 of June 2003	OJ No. L155 of 24.06.2003
2003/62/EC of 20 of June 2003	OJ No. L154 of 21.06.2003
2003/69/EC of 11 of July 2003	OJ No. L175 of 15.07.2003
2003/113/EC of 3 of December 2003	OJ No. L324 of 11.12.2003
2003/118/EC of 5 of December 2003	OJ No. L327 of 16.12.2003
2004/2/EC of 9 of January 2004	OJ No. L014 of 21.01.2004
2004/59/EC of 23 of April 2004	OJ No. L120 of 24.04.2004
2004/61/EU of 26 of April 2004	OJ No. L127 of 29.04.2004
2004/95/EU of 24 of September 2004	OJ No. L301 of 28.09.2004
2005/37/EU of 03 of June 2005	OJ No. L141 of 04.06.2005
2005/46/EU of 08 of July 2005	OJ No. L177 of 09.07.2005
2005/48/EC of 23 of August 2005	OJ No L219 of 24.8.2005
2005/70/EC of 20 of Oct 2005	OJ No. L276 of 21.10.2005
2005/74/EC of 25 of Oct 2005	OJ No. L282 of 26.10.2005
2005/76/EC of 08 of Nov 2005	OJ No. L293 of 09.11.2005
2006/4/EC of 26 of Jan 2006	OJ No. L23 of 27.01.2006
2006/9/EC of 23 of Jan 2006	OJ No. L22 of 26.01.2006
2006/30/EC of 13 of Mar 2006	OJ No. L75 of 14.03.2006
2006/53/EC of 07 of Jun 2006	OJ No. L154 of 08.06.2006
2006/59/EC of 28 of Jun 2006	OJ No. L175 of 29.06.2006
2006/60/EC of 07 of July 2006	OJ No. L206 of 27.07.2006
2006/61/EC of 07 of July 2006	OJ No. L206 of 27.07.2006
2006/62/EC of 12 of July 2006	OJ No. L206 of 27.07.2006
2006/92/EC of 09 of Nov 2006	OJ No. L311 of 10.11.2006
2007/7/EC of 14 of Feb 2007	OJ No L43 of 15.02.2007

2007/8/EC of 20 of Feb 2007	OJ No. L63 of 01.03.2007
2007/9/EC of 20 of Feb 2007	OJ No. L63 of 01.03.2007
2007/11/EC of 21 of Feb 2007	OJ No. L63 of 01.03.2007
2007/27/EC of 15 of May 2007	OJ No. L128 of 16.05.2007
2007/28/EC of 25 of May 2007	OJ No. L135 of 26.05.2007
2007/39/EC of 26 of June 2007	OJ No. L165 of 27.06.2007
2007/56/EC of 17 of Sep 2007	OJ No. L243 of 18.09.2007
2007/55/EC of 17 of Sep 2007 (from 18.04.2008)	OJ No. L243 of 18.09.2007
2007/57/EC of 17 of Sep 2007	OJ No. L243 of 18.09.2007
2007/62/EC of 04 of Oct 2007 (from 05.04.2008)	OJ No. L260 of 05.10.2007
2007/73/EC of 13 of Dec 2007	OJ No. L329 of 14.12.2008

- 5 Council Directive of 4 March 1991, amending Directive 74/63/EEC on undesirable substances and products in animal nutrition. (91/132/EEC) OJ No. L66 of 13.3.1991

ANNEX III

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 AO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards

	<p>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.</p>
Good Agricultural Practice (GAP)	<p>GAP in the use of a plant protection product (pesticide) includes authorized use under practical conditions necessary for effective control of harmful organisms. It encompasses a range of levels of application up to the highest level authorized, applied in a manner that leaves a residue that is the smallest amount practicable.</p>
Lowest Calibrated Level (LCL)	<p>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.</p>
Limit of Determination (LOD)	<p>The LOD is the lowest concentration of a pesticide residue or contaminant that can be identified and quantitatively measured in aspecified food, agricultural commodity or animal feed, with an acceptable degree of certainty by a method of analysis.</p>
Matrix Matched Calibration	<p>A system involving use of calibration solutions to ensure that all constituents (other than the analyte) are similar to, or produce the same effect on analytical response as the equivalent solutions generated from the samples to be analyzed.</p> <p>The objectives of matrix-matched calibration are to compensate for analyte response enhancement or suppression effects induced by sample co-extractives and to provide a chromatogram that has underlying interference comparable to that of the sample.</p> <p>Matrix blanks are prepared using solvents, reagents and clean-up procedures similar to those used for analysis of samples to be analyzed. In practice the pesticide is added to a blank extract of a matrix similar to that to be analyzed. The matrix used may differ from that of the samples if it is shown to achieve the stated objectives.</p>
Maximum Residue Limit (MRL)	<p>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).</p>

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

No-adverse-effect Level

The no-adverse-effect level is the highest level of continual exposure to a chemical that causes no significant adverse effect on morphology, biochemistry, functional capacity, growth, development, or life span of individuals of the target species that may be animal or human.

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.

LIST OF ABBREVIATIONS

CXL	Codex MRL
DAD	Diode Array Detection
FAO	Food and Agriculture Organisation
HPLC	High Performance Liquid Chromatography
INAB	Irish National Accreditation Board
ISO	International Standard Organisation
JMPR	Joint Meeting of the Pesticide Residue.
LC	Liquid Chromatography
MRM	Multi residue methods
MS	Mass Spectrometry
RASFF	Rapid Alert System for Food and Feed. This was set up by the EU Commission to allow for effective communication and control of issues related to food safety.
SRM	Single Residue method for analysing one pesticide
WHO	World health Organisation

ANNEX IV ANALYTICAL METHODS AND PROCEDURES EMPLOYED FOR THE DETERMINATION OF PESTICIDE RESIDUES IN FOODSTUFFS

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. The method is used to determine residues of organophosphorous, organochlorine and benzimidazole pesticides in food of plant origin.

Note: A variation of the method is used. The variation involves addition of sodium sulphate at the time of sample extraction to facilitate the extraction of polar organophosphorous pesticides.

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. The variation of the method uses ethyl acetate as the extraction solvent and is used for the analysis of residues of organophosphorous, organochlorine and benzimidazole pesticides in cereals.

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).

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.

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.

Annex V PESTICIDES DETERMINED IN FOOD OF PLANT ORIGIN, CEREAL AND HONEY

Pesticide	LCL (mg/kg)	Pesticide	LCL (mg/kg)	Pesticide	LCL (mg/kg)
Acephate	0,05	Carbendazim	0,01	Diphenylamine	0,02
2,4-D	0,01	Carbofuran	0,02	Dithianon	0,01
2,4-DB	0,01	Carbosulfan	0,01	Dithiocarbamates	0,01
4-CPA	0,01	Carboxin	0,01	DNOC	0,01
a-BHC	0,02	Chlorbenzilate	0,02	Endosulfan (alpha isomer)	0,02
Acetamiprid	0,01	Chlorbromuron	0,01	Endosulfan (beta isomer)	0,02
Acrinathrin	0,01	Chlorfenvinphos	0,02	Endosulfan Ether	0,02
a-Cypermethrin	0,05	Chlorfluazuron	0,01	Endosulfan Lactone	0,02
Alachlor	0,02	Chlorothalonil	0,02	Endosulfan sulfate	0,02
Aldicarb	0,01	Chlorpropham	0,02	Endrin	0,02
Aldicarb sulfone	0,01	Chlorpyrifos	0,02	Epoxyconazole	0,05
Aldicarb-sulfoxide	0,01	Chlorpyrifos Methyl	0,02	Esfenvalerate	0,05
Aldrin	0,02	Chlorthal Dimethyl	0,02	Ethiofencarb	0,01
Ametryn	0,01	cis-Chlordane	0,02	Ethiofencarb sulfone	0,01
Amidosulfuron	0,01	Clethodim	0,01	Ethiofencarb sulfoxide	0,01
Aminocarb	0,01	Clofentazine	0,01	Ethion	0,02
Asulam	0,01	Coumaphos	0,02	Ethofumesate	0,01
Atrazine	0,02	Cyanazine	0,01	Ethoprophos	0,02
Azaconazole	0,02	Cyanofenphos	0,02	Etrimfos	0,02
Azamephiphos	0,01	Cyanophos	0,05	Fenamiphos	0,01
Azinphos-ethyl	0,02	Cyclanilide	0,01	Fenarimol	0,02
Azinphos-methyl	0,05	Cycloxydim	0,01	Fenbuconazole	0,05
Azoxystrobin	0,05	Cyfluthrin	0,02	Fenchlorphos	0,02
b-BHC	0,02	Cypermethrin	0,05	Fenhexamide	0,01
b-Cyfluthrin	0,02	Cyproconazole	0,05	Fenitrothion	0,02
Benalaxyl	0,02	Cyprodinil	0,01	Fenoxycarb	0,01
Bendiocarb	0,01	Deltamethrin	0,05	Fenpropathrin	0,02
Bentazone	0,01	Demetonmethyl sulfone	0,02	Fenpropidin	0,01
Bifenthrin	0,02	Demetonmethylsulfoxide	0,01	Fenpropimorph	0,01
Binapacryl	0,02	d-HCH	0,02	Fenpyroximate	0,01
Biphenyl	0,02	Diazinon	0,02	Fenthion	0,02
Bitertanol	0,02	Dichlofluanid	0,02	Fenthion sulfone	0,01
Bromacil	0,01	Dichloran	0,05	Fenthion sulfoxide	0,05
Bromophos	0,02	Dichlorprop-P	0,01	Fenvalerate	0,02
Bromophos-ethyl	0,02	Dichlorvos	0,02	Fipronil	0,01
Bromopropylate	0,02	Diclobutrazol	0,01	Fipronil desulfinyl	0,01
Bromoxynil	0,01	Dicofol	0,05	Fipronil sulfide	0,01
Bromuconazole	0,01	Dieldrin	0,02	Fipronil sulfone	0,01
Bupirimate	0,02	Diethofencarb	0,01	Flamprop Isopropyl	0,02
Buprofezin	0,01	Difenoconazole	0,01	Florasulam	0,01
Butocarboxim	0,01	Diflubenzuron	0,01	Fluazifop (free acid)	0,01
ButocarboximSO	0,01	Dimethoate	0,02	Fluazinam	0,01
Butoxycarboxim	0,01	Dimethomorph	0,01	Fludioxonil	0,02
Captafol	0,02	Diniconazole	0,01	Flusilazole	0,02
Captan	0,02	Dinoseb	0,01	Folpet	0,02
Carbaryl	0,02	Dinoterb	0,01	Fonofos	0,05
Fuberidazole	0,01	Methyl parathion	0,02	Pyrifenox	0,02
Furathiocarb	0,01	Metobromuron	0,01	Pyrimethanil	0,02

Pesticide	LCL (mg/kg)	Pesticide	LCL (mg/kg)	Pesticide	LCL (mg/kg)
Furmecyclox	0,01	Metolachlor	0,02	Pyriproxyfen	0,02
Haloxyfop	0,01	Mevinphos	0,02	Qinoxyfen	0,01
Heptachlor	0,02	Mirex	0,02	Quinalphos	0,02
Heptachlor exo-epoxide	0,02	Monocrotophos	0,02	Quintozene	0,02
Heptenophos	0,02	Myclobutanil	0,02	Quizalfop (free acid)	0,01
Hexachlorobenzene	0,02	Napropamide	0,05	Rimsulfuron	0,01
Hexaconazole	0,02	o,p'-DDD	0,02	Simazine	0,02
Hexaflumuron	0,01	o,p'-DDE	0,02	Spinosad A/B	0,01
Hexythiazox	0,01	o,p'-DDT	0,02	Spiroxamine	0,01
Imazalil	0,01	Omethoate	0,02	Sulfentrazone	0,01
Imidacloprid	0,01	Oxadixyl	0,02	tau-Fluvalinate	0,02
Indoxacarb	0,01	Oxamyl	0,01	Tebuconazole	0,02
Iodofenphos	0,02	p,p'-DDD	0,02	Tebufenozide	0,01
Ioxynil	0,01	p,p'-DDE	0,02	Tebufenpyrad	0,01
Iprodione	0,02	p,p'-DDT	0,02	Tecnazene	0,02
Iprovalicarb	0,02	Paclbutrazol	0,01	Teflubenzuron	0,01
Isazophos	0,02	Paraoxon	0,02	Tetraconazole	0,05
Isodrin	0,02	Paraoxon-ethyl	0,01	Tetradifon	0,02
Isofenphos	0,05	Parathion	0,02	Thiabendazole	0,01
Isofenphos Methyl	0,02	Penconazole	0,02	Thiacloprid	0,01
Isoproturon	0,01	Pencycuron	0,01	Thiofanox-sulfone	0,01
Kresoxim Methyl	0,02	Pendimethalin	0,02	Thiophanate -ethyl	0,01
l-Cyhalothrin	0,02	Permethrin	0,02	Thiophanate-methyl	0,01
Lenacil	0,05	Phorate sulfoxide	0,01	Tolclofos-methyl	0,02
Lindane	0,02	Phosalone	0,02	Tolyfluanid	0,02
Linuron	0,02	Phosmet	0,02	trans-Chlordane	0,02
Malaaxon	0,02	Phosphamidon	0,02	trans-Nonachlor	0,02
Malathion	0,02	Picoxystrobin	0,02	Triadimefon	0,02
MCPA	0,01	Pirimcarb	0,02	Triadimenol	0,02
MCPA Methyl Ester	0,02	Pirimiphos-ethyl	0,02	Triazophos	0,02
MCPB	0,01	Pirimiphos-methyl	0,02	Trifloxystrobin	0,02
Mecarbam	0,02	Prochloraz	0,02	Triflumuron	0,01
Mecoprop-P	0,01	Procymidone	0,02	Trifluralin	0,05
Mepanipyrim	0,01	Profenophos	0,02	Vamidotion	0,01
Mephosfolan	0,01	Propachlor	0,02	Vinclozolin	0,02
Metalaxyl	0,02	Propanil	0,02		
Metamidaphos	0,05	Propargite	0,02		
Metazochlor	0,02	Propetamphos	0,02		
Metconazole	0,01	Propham	0,05		
Methacrifos	0,02	Propiconazole	0,02		
Methamidophos	0,01	Propoxur	0,02		
Methidathion	0,02	Propyzamide	0,02		
Methiocarb	0,02	Pymetrozine	0,01		
Methomyl	0,01	Pyraclostrobin	0,01		
Methoxychlor	0,02	Pyrazophos	0,02		
Methoxyfenozide	0,01	Pyridaben	0,01		
Methyl paraoxon	0,05	Pyridaphenthion	0,01		

Annex VI

PESTICIDES DETERMINED IN FAT

Organochlorine compounds & PCB congeners	Lowest Calibrated Level (LCL) (in milligrams per kilogram of fat)
	used as internal standard
Aldrin	0.005
Chlorbenzilate	0.005
α -Chlordane	0.005
γ -Chlordane	0.005
pp'DDT	0.005
op'DDT	0.005
pp'DDE	0.005
op'DDE	0.005
pp'DDD	0.005
op'DDD	0.005
Dieldrin	0.005
Dicofol	0.005
α -Endosulfan	0.005
β -Endosulfan	0.005
Endrin	0.005
HCB	0.005
α -HCH	0.005
β -HCH	0.01
δ -HCH	0.005
Heptachlor	0.005
Heptachlor-cis-epoxide	0.005
Lindane (γ -HCH)	0.005
PCB 28	0.01
PCB 52	0.01
PCB 101	0.01
PCB 118	0.01
PCB 138	0.01
PCB 153	0.01
PCB 180	0.01
Permethrin	0.04
Quintozene	0.005
Tecnazene	0.005
Organophosphorus Compounds.	Lowest Calibrated Level (LCL) (in milligrams per kilogram of fat – ppm)
Azinphos-Ethyl	0.2
Azinphos-Methyl	0.06
Bromophos-Ethyl	0.07
Bromophos-Methyl	0.07
Chlorfenvinphos	0.06
Chlorpyrifos	0.05
Chlorpyrifos-Methyl	0.05
Diazinon	0.05
Dichlorvos	0.05
Dimethoate	0.05
Ethion	0.05
Fenchlorphos	0.05
Fonofos	0.06
Iodofenphos	0.1
Malathion	0.05
Methidathion	0.04

Organophosphorus Compounds.	Lowest Calibrated Level (LCL) (in milligrams per kilogram)
Mevinphos	0.05
Parathion	0.1
Parathion-methyl	0.05
Phosalone	0.13
Pirimifos-ethyl	0.1
Pirimifos-methyl	0.07
Propetamphos	0.05
Triazophos	0.05

Annex VII

PESTICIDES DETERMINED IN MILK AND EGG

Organochlorine compounds & PCB congeners

**Lowest Calibrated Level (LCL)
(in milligrams per kilogram)**

Aldrin	---
Chlorbenzilate	0.005
α-Chlordane	0.005
γ-Chlordane	0.005
γ-Cyhalothrin	0.005
Cypermethrin	0.05
Dieldrin	0.005
ppDDT	0.005
opDDT	0.005
ppDDE	0.005
opDDE	0.005
ppDDD	0.004
opDDD	0.005
Deltamethrin	0.05
Dicofol	0.005
α-Endosulfan	0.005
β-Endosulfan	0.005
Endrin	0.005
HCB	0.005
α-HCH	0.005
β-HCH	0.01
δ-HCH	0.005
Methoxychlor	0.005
Heptachlor	0.005
Heptachlor-cis-epoxide	0.005
Lindane (γ-HCH)	0.005
PCB 28	0.01
PCB 52	0.01
PCB 101	0.01
PCB 118	0.01
PCB 138	0.01
PCB 153	0.01
PCB 180	0.01
Permethrin	0.04
Quintozene	0.005
Tecnazene	0.005

Organophosphorus Compounds.

**Lowest Calibrated Level (LCL)
(in milligrams per kilogram)**

Azinphos-Ethyl	0.2
Azinphos-Methyl	0.06
Bromophos-Ethyl	0.07
Bromophos-Methyl	0.07
Chlorfenvinphos	0.06
Chlorpyrifos	0.05
Chlorpyrifos-Methyl	0.05
Coumaphos	0.01
Diazinon	0.05
Dichlorvos	0.05
Dimethoate	0.05
Ethion	0.05
Fenclorphos	0.05
Fonofos	0.06
Iodofenphos	0.1
Malathion	0.05
Methodathion	0.04
Mevinphos	0.05

Organophosphorus Compounds.	Lowest Calibrated Level (LCL) (in milligrams per kilogram)
Parathion	0.1
Parathion-Methyl	0.05
Phosalone	0.13
Pirimifos-ethyl	0.1
Pirimifos-methyl	0.07
Propetamphos	0.05
Triazophos	0.05

The pesticides that are on the accreditation scope can be viewed at the Irish National Accreditation Board website at www.inab.ie . PCS registration number is 121T

Results included in the above report were generated by the

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