Department for Environment, Food and Rural Affairs

The Expert Committee on Pesticide Residues in Food (PRiF)

Report on the pesticide residues monitoring programme: Quarter 2 2016

December 2016

Contents

Summary findings

PRiF is an expert committee of Defra. This is our second quarterly report for 2016. During this year's surveillance programme we are looking for a range of up to 372 pesticides in our fruit and vegetable surveys.

This quarter's programme surveyed 581 samples of 17 different foods: apples, beans with pods, cabbage, cooked meat, fish (sea), free-from products, grapefruit, grapes, honey, leeks, lettuce, pasta, pears, potatoes, prepared fresh fruit, strawberries and tomatoes. The results show 13 samples contained residues above the maximum permitted levels.

A screening risk assessment is done for each residue in each commodity to identify residue levels that could lead to intakes above the relevant reference doses. Detailed risk assessments are then produced for every case where the actual residue level found could lead to an intake above the acute reference dose. We have looked carefully at all these findings including the risk assessments provided by the Health and Safety Executive's Chemicals Regulation Division (CRD).

In most cases the presence of the residues found would be unlikely to have had any effect on the health of the people who ate the food. In the case of grapefruit, we found a residue in one sample where short-lived effects were possible if all the peel were eaten with the fruit. However if the peel were not eaten no effect on health would be expected.

We have published full details of suppliers and retailers of the food sampled in an annex to this report. We have asked suppliers and the authorities of the exporting countries for an explanation of our findings – any responses we received are at Appendix D.

Thanks go to all of those individuals and organisations responsible for helping us put this report together. These include our Secretariat and scientists (both based at the Health and Safety Executive), the samplers from the market research organisation and Defra officials who have collected the samples and laboratory staff across the UK who undertook the analysis.

Dr Paul Brantom
Chairman of the Expert Committee on Pesticide Residues in Food

Section I - Introduction

Background

Food safety is important. Modern food production processes have given us plentiful supplies of a wide range of good quality affordable produce.

In the food industry of today the production environment can be managed from the preparation of seeds used for crops, through to growth, harvesting and storage of the produce.

One of the ways the food industry controls the environment in which foodstuffs are produced is by applying pesticides. They help farmers and growers maximise the production of food stuffs by, for example, preventing weeds inhibiting the growth of the crop, or insects destroying or infesting them. Pesticides can also be used to help protect seeds, or prolong the life of crops after they have been harvested. Biological and physical (cultural) controls are also used to protect crops or as part of an integrated system.

As pesticides are used to control unwanted pests, weeds and diseases, they can potentially also harm people, wildlife and the environment. This is why the UK, in common with most other countries, imposes legally enforceable conditions as to how and when pesticides can be used. No pesticide can be supplied or used on a food or ornamental crops in the UK without Government authorisation. To obtain this authorisation the manufacturer of the pesticide must show that it does not present a concern for people's health or the environment. Naturally derived and synthetic pesticides are subject to the same regulation.

Once the authorisation has been granted Government authorities carry out follow up checks to ensure that the authorisation is providing the necessary degree of protection to users, consumers and the environment and that those who use pesticides are complying with conditions specified within it.

The Government authority responsible for checking pesticide residues in foodstuffs is the Health and Safety Executive. Defra's Expert Committee on Pesticide Residues in Food (PRiF) oversees and provides an independent check on this work. We know that the use of pesticides on crops may lead to traces (residues) of these chemicals in food and we expect to find these in our monitoring programme.

Defra's Expert Committee on Pesticide Residues in Food (PRiF)

The Expert Committee on Pesticide Residues in Food was established in 2011. Our members have a broad range of expertise relating to the food supply industry. The main function of the Committee is to oversee Government's £2 million pesticide residues surveillance programme. Previously this work was carried out by the Pesticide Residues Committee.

Our Chairman, Dr Paul Brantom is an independent consultant in toxicological risk assessment. The Committee also includes members with expertise in toxicology, food production and supply as well as two public interest experts.

Information on the membership of the PRiF is also available on the PRiF's website: https://www.gov.uk/government/groups/expert-committee-on-pesticide-residues-in-food-prif

Our role is to advise Ministers, the Director of the Health and Safety Executive (HSE) and the Chief Executive of the Food Standards Agency (FSA) on:

- the planning of surveillance programmes for pesticide residues in the UK food supply and the evaluation of the results;
- Procedures for sampling, sample processing, new methods of analysis, the assessment of variability of pesticide residues in food and related issues.

Surveillance programme

The pesticide residues surveillance programme is designed to enable us to check that:

- maximum residue levels of pesticides are being respected;
- users of pesticides are complying with conditions of use specified in the authorisation; and
- People's intakes of residues are within acceptable limits.

We do this by collecting samples of foodstuffs from a range of points in the supply chain (including supermarkets, corner shops, markets, distribution and supply depots). Each sample is then analysed in carefully selected certified laboratories for residues of up to 393 pesticides. This list is updated each calendar year which means that direct comparison with previous surveys is not always possible for new pesticides added to the list.

All EU countries are required to monitor food for pesticide residues and to carry out a number of specific surveys each year. In 2016 the EU surveys are of: apples, cabbage, leeks, lettuce, milk, peaches & nectarines, rye, strawberries, tomatoes and wine. The number of samples to be analysed is greater for the countries with larger populations (such as the UK). Results from the EU surveys are published as a single report. The reports from 1996-2006 are on the Commission's website at http://ec.europa.eu/food/fvo/specialreports/pesticides_index_en.htm. The survey results for 2013 can be found on EFSA's website at http://www.efsa.europa.eu/en/efsajournal/pub/4038.htm and those for 2014 at https://www.efsa.europa.eu/en/efsajournal/pub/4611.

All EU countries also have a national monitoring programme. The UK programme ensures all the major components of our national diet are sampled (milk, bread, potatoes, fruit and vegetables, cereals and related products, and animal products). The programme is not designed to provide a representation of residues in our diet – it is risk based and looks more at those commodities likely to contain residues. Some commodities are surveyed every year, whilst others are surveyed less frequently, for example once every three years; this is what we call the rolling programme.

The sampling and analysis is carried out in accordance with stringent international standards.

Reporting the results

Results by food commodity

- We include information about the survey (for instance where samples came from) for each commodity
- Detailed tabulated results are at the back of this report - these tables are also available for download from our website
- We summarise our findings and any follow-up action taken.

Risk assessments – single residues

- All results are screened by HSE to check for intakes above the Acute Reference Dose (ARfD). HSE assumes a relatively high level of intake and also assumes that most produce is eaten whole including peel/skin even when these are rarely consumed
- Where intakes above the ARfD are identified, we consider a detailed risk assessment prepared by HSE (at Section II of this report).
- Our observations and the follow-up action taken are summarised in the section for that food.

Risk assessments – multiple combined residues

- Residues of more than one pesticide from the same category/class of particular categories of pesticides, which have a similar toxicological mode of action, are screened by HSE to check for intakes above the combined Acute Reference Dose (ARfD).
- Where combined intakes above the combined ARfD are identified, we consider a detailed combined risk assessment prepared by HSE (at Section II of this report).
- Our observations and any follow-up action taken are summarised in the section for that food commodity.

Risk assessment - conclusions

- Where, in the light of current knowledge and considering the usual level of scientific uncertainty (or precaution) the intake will not cause ill health the conclusion will say no effect on health is expected.
- Where, in the light of current knowledge and considering a slightly higher level of scientific uncertainty (or less precaution) the intake is not likely to cause ill health, the conclusion will be less definite and state that an effect on health is unlikely.
- Where scientific uncertainty is greater more information is provided.

Residues in UK produce of pesticides which are not approved for use on that crop in the UK.

- All residues found in UK-produced foods are checked by HSE to make sure the pesticide is approved for use.
- Where no UK approval is identified, details of the sample are referred to HSE's Enforcement Section for follow up.
- Our observations and any follow-up action taken to date are summarised in the section for that food commodity. We may have to withhold details of samples while investigations are underway, in which case the details will be published in a later report.

Residues above the MRL, after taking into account measurement uncertainty

- Samples containing residues above the MRL are listed at Appendix B, and those which are clearly above the MRL after taking into account measurement uncertainty of plus or minus 50% are highlighted.
- Our observations and any follow-up action taken are summarised in the section for that food commodity.

The results in our reports are rounded for publication but not adjusted for measurement uncertainty.

We apply measurement uncertainty only to decide whether to highlight a result as over the MRL in the brand name annex. To do this we use the actual value reported by the laboratory before rounding. If after taking measurement uncertainty into account that value is found to be over the MRL the result will be highlighted in the brand name annex.

For example:

- The lab reports the results of duplicate analysis of a residue above an MRL at 0.023 mg/kg and 0.025 mg/kg giving an average value of 0.024mg/kg. For reporting purpose this value would be 0.02 mg/kg.
- If measurement uncertainty is then applied to the reported value of 0.02 mg/kg it could take the value to between 0.01 - 0.03 mg/kg. If the MRL is 0.01 mg/kg the lower value would be at the MRL and there is no exceedance.
- However if measurement uncertainty is applied to the measured result, eg 0.024 mg/kg the value could then be in the range of 0.012 – 0.036 mg/kg. In this case the lower value is above the MRL and so will be treated as an exceedance.

Residues in organic food

- We monitor pesticide residues in all the UK food supply, including organic food.
- We are not responsible for checking compliance with the rules associated with organic production. However, when we do detect residues in an organic food we explain whether or not those residues indicate a breach of the rules and inform Defra's Organic Farming Branch.

Brand Name Annex

- Full brand name details for samples included in this report are published in a brand name annex. Within this annex, samples with results of interest are highlighted.
- Brand name details are only published when enough follow-up work is completed for us to be reasonably sure whether a breach of the law or good practice has occurred. Therefore sometimes brand name details are withheld pending completion of this work but are published in a later report.

Current issues

Chlorate

We are testing a limited number of foods for chlorate for the first time in 2016, to provide evidence that it is necessary to review the existing default MRL in order to take account of non-pesticide sources. The pesticide sodium chlorate is a residual broad action weed killer, which is not authorised for use in the EU.
Far more likely sources in food are from chlorine-based treatments of drinking and irrigation water as well as chlorine-based surface disinfectants, which are widely used to ensure microbiological safety. We agree with HSE and the FSA that the current MRL needs to take account of these often essential and unavoidable sources.

Our results will add to a growing body of evidence, from both official monitoring across the EU and from the food and farming industries

Meanwhile we are advised by HSE that the statutory default level of 0.01 mg/kg applies to chlorate in all foods under Regulation 396/2005, although Member State authorities can exercise judgement on whether goods they find in exceedance of the MRL can be marketed in their territories. Those judgements are based on specific assessments of risk for the consumer, as allowed for in Article 14 of EC Regulation 178/2002 (laying down the general principles of EU food law and food safety). In particular, consideration of the safety of any residues detected will take into account the 2015 opinion of the EFSA Panel on Contaminants in the Food Chain Risks for public health related to the presence of chlorate in food[1]

In the meantime, Member States and trade bodies have submitted sets of monitoring data to support the future setting of substantive MRLs. These data are being considered by the Commission and EFSA. They were due to be discussed at the June meeting of the Standing Committee on Plants Animals Feed and Food (Pesticide Residues section)[2]; but this was not possible due to other pressing issues. Chlorate was again posted on the agenda for the September meeting, although again no substantial developments were reported.
The continuing suspension of the enforcement of chlorate MRLs means that more time is available to generate additional data and to refine national positions.
HSE and FSA continue to encourage those UK trading bodies and individual companies interested in the outcome of the MRL setting process to generate data in support of appropriate MRLs. If additional data are generated they should ideally cover residues arising across the EU rather than limited to the UK and, where possible, data should identify the treatment histories (timing and nature of sanitation practices etc.) that have contributed to the residues arising.

The Commission has indicated that trade bodies will be formally consulted on any substantive levels that are proposed, which may give further opportunities to submit data and/or reasoned arguments. The Commission has not stated when the consultation is likely to take place. HSE and the Food Standards Agency are providing updates on this process.[3]

Both the PRiF and Advisory Committee on Microbiological Safety of Food (ACMSF) are taking an active interest in these on-going developments, as well as the separate discussions on the setting of MRLs for biocides.

Residues below the MRL that exceed the ARfD

When MRLs are agreed at the EU level they are set at levels that are compatible with consumer safety. Occasionally, assessment of PRiF monitoring samples containing residues below or at the MRL will show consumer intakes could potentially be above the ARfD. This situation typically arises because of one of three reasons:

[11] EFSA Journal 2015;13(6):4135 [103 pp.]
http://ec.europa.eu/food/plant/standing_committees/sc_phytopharmaceuticals/index_en.htm
[2] (Agendas and summaries are published by eth European Commision at
http://ec.europa.eu/food/plant/standing_committees/sc_phytopharmaceuticals/index_en.htm

the ARfD may have been lowered because of new information but there is a delay before MRLs have been reassessed or new MRLs are put in place;
during the MRLs process the risk assessments are currently based on the highest residue level observed in residues trials used to support the MRL which will often be less than the actual MRL (it is expected that most residues found will be below the MRL, and if for this reason there are later samples which give intakes above the ARfD the numbers are expected to be low);
the agreed EU approach might assume the commodity is peeled and data are used to reduce the intake in the risk assessment at the time of setting MRLs, whereas in the PRiF work risk assessments for the whole commodity are presented as routine and, if information showing the effects of processing on residues level is available to PRiF, a refined assessment is presented.

The first two of these reasons are common to EU assessments and the third represents a difference between the approach used by HSE for the risk assessment and that used at the time the MRL is set. We will highlight how our assessments differ from that done at the EU level so that readers are aware of the basis of the evaluation.

Apple results

Introduction
We have surveyed apples every year since 1995 due to their importance in our diet. The survey includes both eating (dessert) and cooking apples. This year apples are being monitored across the EU as part of the EU co-ordinated multi-annual control programme.

Survey design
We are sampling and reporting apples in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

A market research company bought the apple samples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 5 at page 57
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and June 2016

Number of samples
24 samples were tested for up to 369 pesticide residues

Origin of samples
Eating

- 5 samples came from the UK
- 7 samples were imported from outside the EU
- 12 samples came from the EU

Residues found

- 1 sample contained no residues from those sought
- 23 samples contained residues above the reporting level
- None of the samples contained residues above the MRL
- None of the samples were labelled as organic.

Multiple residues
20 samples contained residues of more than one pesticide

- 5 samples contained 2 residues
- 8 samples contained 3 residues
- 4 samples contained 4 residues
- 1 sample contained 5 residues
- 1 sample contained 6 residues
- 1 sample contained 7 residues

Risk assessments

Number of risk assessments
The laboratory detected 20 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Some samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Beans with pods results

Introduction
We have surveyed beans with pods every year since 2008 as we continue to find a high incidence of issues with this commodity.

The survey covers both green beans (runner, French, dwarf and string) and speciality beans (yard long, lima, guar and valore). The speciality beans are varieties that are not commonly grown in Europe.

Due to the high incidents of non-compliance in beans with pods additional import controls have been placed on beans from certain countries before entry in to the EU. When the samples in this report were collected, import controls were in place for yard long beans from Dominican Republic and Thailand, which are subject to 20% import control checks for pesticide residues and 50% of yard long beans from Cambodia are subject to import control checks.

Survey design
We are sampling and reporting beans with pods in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

The bean samples were either collected by the Rural Payment Agency's Horticultural Marketing Inspectors from a range of points in the supply chain (wholesale markets, retail depots, ports and import points) or they were bought by a market research company from retail outlets across the UK.

We are publishing results for this survey on our website as part of the rolling reporting programme. The results in this report may have already been published.

Further details
Full details of pesticides we looked for and the residues we found are in Table 6 at page 65
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Monocrotophos residues
We found a residue of monocrotophos at 0.2 mg/kg, in a sample of guar beans from India. Monocrotophos is an insecticide that has not been authorised for use in the EU since 2003. There is uncertainty about the potential for monocrotophos to cause genetic damage; therefore, on a precautionary basis we consider any findings of monocrotophos in food as not desirable. However, considering the very low intakes any risks are likely to be low.

A more detailed explanation is with the risk assessments on page 46.

Results

When samples were taken
Between April and June 2016

Number of samples
38 samples were tested for up to 360 pesticide residues

Origin of samples
Green Beans
- 19 samples were imported from outside the EU

Speciality Beans
- 18 samples were imported from outside the EU
- 1 sample came from the EU

Residues found
- 16 samples contained no residues from those sought

- 22 samples contained residues above the reporting level
- 7 samples contained residues above the MRL
- None of the samples were labelled as organic.

Multiple residues
10 samples contained residues of more than one pesticide
- 3 samples contained 2 residues
- 4 samples contained 3 residues
- 2 samples contained 7 residues
- 1 sample contained 12 residues

Residues measured above the MRL (see Appendix B)
The laboratory detected 14 residues above the MRL in beans with pods
- 1 sample from Morocco contained a residue of dimethoate at 0.1 mg/kg. The MRL is 0.02* mg/kg.
- 1 sample from Dominican Republic contained a residue of dithiocarbamates at 2 mg/kg. The MRL is 1 mg/kg.
- 1 sample from Malaysia contained residues of :
    - amitraz at 0.1 mg/kg, the MRL is 0.05* mg/kg;
    - chlorfenapyr at 0.09 mg/kg, the MRL is 0.01* mg/kg;
    - dithiocarbamates at 2.3 mg/kg, the MRL is 1 mg/kg; and
    - tolfenpyrad at 0.1 mg/kg, the MRL is 0.01* mg/kg.
- 1 sample from India contained residues of:
    - Dithiocarbamates at 1.3 mg/kg, the MRL is 1 mg/kg; and
    - triazophos at 0.03 mg/kg, the MRL is 0.01* mg/kg.
- 1 sample from India contained a residue of monocrotophos at 0.2 mg/kg. The MRL is 0.01* mg/kg.
- 1 sample from Malaysia contained residues of:
    - diafenthiuron at 0.09 mg/kg, the MRL is 0.01* mg/kg;
    - dimethoate at 0.04 mg/kg, the MRL is 0.02* mg/kg;
    - dithiocarbamates at 2.8 mg/kg, the MRL is 1 mg/kg; and
    - fipronil at 0.01 mg/kg, the MRL is 0.005* mg/kg.
- 1 sample from India contained a residue of dimethoate at 0.03 mg/kg. The MRL is 0.02* mg/kg.

Risk assessments

Number of risk assessments
The laboratory detected 29 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Some samples contained residues of more than one pesticide. Some of these residues are from pesticides which belong to similar chemical groups, and may have similar toxicological effects. So the risk assessors needed to consider their possible impacts on human health, both on their own and in combination.

HSE carried out a combined risk assessment of the relevant samples. We would not expect any of these combinations to have an effect on health.

Follow up action

Letters sent
The Secretariat has written to the suppliers of the samples with residues above the MRL.

Any comments received are at Appendix D.

Cabbage results

Introduction
We last surveyed cabbage in 2013. This year cabbage is being surveyed across the EU as part of the EU co-ordinated multi-annual control programme.

The survey is of head cabbage only, that is types in which the central leaves form a head, such as white, red, savoy, green and pointed cabbages. It does not include similar vegetables that form no head or only a very loose head, such as kale, borekale, spring greens or collard greens.

Survey design
We are sampling and reporting on cabbages in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

A market research company bought all the cabbage samples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 7 at page 73
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and June 2016

Number of samples
24 samples were tested for up to 358 pesticide residues

Origin of samples
- 17 samples came from the UK
- 7 samples came from the EU

Residues found
- 20 samples contained no residues from those sought
- 4 samples contained residues above the reporting level
- None of the samples contained residues above the MRL
- 1 sample was labelled as organic. It didn't contain any residues from those sought.

Multiple residues
1 sample contained residues of more than one pesticide
- 1 sample contained 3 residues

Risk assessments

Number of risk assessments
The laboratory detected 5 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
One sample contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Cooked meat results

Introduction
This survey includes any cooked ready to eat meats. This is the first survey of cooked meats and includes; ham, beef, chicken, pork, turkey and pastrami. Samples do not include any other added ingredients such as breadcrumbs.

Survey design
We are sampling and reporting on cooked meat in quarters two and four of 2016. This is the first part of the report and covers samples collected between April and June.

A market research company bought the cooked meat samples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 8 at page 78
Suppliers details are in the Brand Name Annex

Summary statement

No residues were detected at or above the reporting limit.

Results

When samples were taken
Between April and May 2016

Number of samples
30 samples were tested for up to 35 pesticide residues

Origin of samples
Beef
- 1 sample came from the UK
- 1 sample was imported from outside the EU

Chicken
- 8 samples came from the UK
- 3 samples were imported from outside the EU

Ham
- 11 samples came from the UK
- 3 samples came from the EU

Pork
- 1 sample came from the UK

Turkey
- 2 samples came from the UK

The country of origin on the packaging does not necessarily indicate where the animal was raised. It may be where the meat was processed or where it was packed.

Residues found
- 30 samples contained no residues from those sought
- None of the samples contained residues above the reporting level
- None of the samples contained residues above the MRL
- None of the samples were labelled as organic.

Multiple residues
None of the samples contained residues of more than one pesticide

Risk assessments

Number of risk assessments
The laboratory did not detect any residues, so we did not do a risk assessment.

Fish (sea) results

Introduction
This is the first time we have done a specific sea fish survey; however the types of fish included in the survey have been sampled in other surveys such as the white fish in 2014. This survey can include any wild or farmed varieties such as bass, cod, coley, haddock, hake, halibut, monkfish, plaice, seabream and whiting.

Survey design
We are sampling and reporting sea fish in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

A market research company bought the sea fish samples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 9 at page 80
Suppliers details are in the Brand Name Annex

Summary statement

No residues were detected at or above the reporting limit.

Results

When samples were taken
Between April and June 2016

Number of samples
31 samples were tested for up to 35 pesticide residues

Origin of samples
Cod
- 2 samples came from the UK
- 12 samples were imported from outside the EU

Dover sole
- 1 sample came from the UK

Haddock
- 2 samples came from the UK
- 6 samples were imported from outside the EU
- 1 sample came from the EU

Plaice
- 1 sample was imported from outside the EU

Pollock
- 1 sample was imported from outside the EU

Red snapper
- 1 sample was imported from outside the EU

River Cobbler
- 1 sample was imported from outside the EU

Sea bass
- 1 sample came from the EU

Sea bream
- 1 sample was imported from outside the EU

White Fish
- 1 sample was imported from outside the EU

The country of origin on the packaging does not necessarily indicate where the fish was caught. It may be where the fish was prepared or where it was packed.

Residues found
- 31 samples contained no residues from those sought

- None of the samples contained residues above the reporting level
- None of the samples contained residues above the MRL
- None of the samples were labelled as organic.

Multiple residues
None of the samples contained residues of more than one pesticide

Risk assessments

Number of risk assessments
The laboratory did not detect any residues, so we did not do a risk assessment.

Gluten-free products results

Introduction
We surveyed gluten-free breads in Quarter 2 2015, but this is the first time we have surveyed other gluten-free foods. . The survey included any breakfast cereals, flour products and pastas that are labelled as gluten-free.

Survey design
We are sampling and reporting gluten-free products in quarter two of 2016. This survey covers samples collected between April and June.

A market research company bought the gluten-free products samples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 10 at page 82
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and June 2016

Number of samples
74 samples were tested for up to 368 pesticide residues

Origin of samples
Gluten-free cereal
- 15 samples came from the UK
- 4 samples were imported from outside the EU
- 2 samples came from the EU

Gluten-free flour products
- 39 samples came from the UK
- 2 samples came from the EU

Gluten-free pasta
- 1 sample was imported from outside the EU
- 11 samples came from the EU

The country of origin on the packaging does not necessarily indicate where the ingredients are from. It may be where the product was processed or where it was packed.

Residues found
- 56 samples contained no residues from those sought
- 18 samples contained residues above the reporting level
- 10 samples were labelled as organic. None contained residues from those sought

Multiple residues
8 samples contained residues of more than one pesticide
- 5 samples contained 2 residues
- 3 samples contained 3 residues

Risk assessments

Number of risk assessments
The laboratory detected 10 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Some samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Grapefruit results

Introduction
Grapefruit are being surveyed as part of the rolling programme of commodities, it was last surveyed in 2009.

Survey design
We are sampling grapefruit in every quarter of 2016 and reporting in quarters two and four. This is the first part of the survey and covers samples collected between January and June.

The Rural Payment Agency's Horticultural Marketing Inspectors collected the grapefruit samples from a range of points in the supply chain (wholesale markets, retail deports, ports and import points).

Further details
Full details of pesticides we looked for and the residues we found are in Table 11 at page 88
Risk assessments carried out by HSE are at page 46
Suppliers details are in the Brand Name Annex

Summary statement

Prochloraz
Four samples of grapefruit contained a residue of prochloraz at levels where the effect on health needed to be considered in more detail. The highest level detected was 1.3 mg/kg. HSE undertook a risk assessment and concluded that any effect on health would be minor, short-lived and reversible assuming that all the peel was eaten with the fruit. However if the peel was not eaten no effect on health would be expetected.

Results

When samples were taken
Between January and June 2016

Number of samples
54 samples were tested for up to 358 pesticide residues

Origin of samples
- 40 samples were imported from outside the EU
- 14 samples came from the EU

Residues found
- All samples contained residues
- 2 samples contained residues above the MRL
- None of the samples were labelled as organic.

Multiple residues
53 samples contained residues of more than one pesticide
- 1 sample contained 2 residues
- 9 samples contained 3 residues
- 5 samples contained 4 residues
- 5 samples contained 5 residues
- 11 samples contained 6 residues
- 12 samples contained 7 residues
- 5 samples contained 8 residues
- 3 samples contained 9 residues
- 1 sample contained 10 residues
- 1 sample contained 11 residues

Residues measured above the MRL (see Appendix B)
The laboratory detected 2 residues above the MRL in grapefruit

- 1 sample from Turkey contained a residue of imazalil at 6.2 mg/kg. The MRL is 5 mg/kg.
- 1 sample from Turkey contained a residue of fenvalerate & esfenvalerate at 0.04 mg/kg. The MRL is 0.02* mg/kg.

Risk assessments (see Section II on page Error! Bookmark not defined. for full risk assessments)

Number of risk assessments
The laboratory detected 27 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we consider an effect on health to be unlikely.

Imazalil risk assessment
38 samples contained imazalil at levels where we need to consider the effect on health in more detail. The highest level detected was 6.2 mg/kg

Grapefruit flesh after peeling
The EU MRL risk assessment assumes that grapefruits are peeled before consumption. After peeling only 7% of the residue remains (EU, 2010), the highest intake is below 0.05 mg/kg bw/d, and there are no exceedances of either ARfD.

Whole grapefruit, including all the peel
However, assuming that consumers eat all the peel, intakes for infants and 7-10 year old children exceed the acute reference dose of 0.1 mg/kg bw/day (for the general population excluding pregnant and nursing women). It is noted that in consumer groups aged over 11 years intakes for adults, (elderly), and 11-14 year old children exceed the acute reference dose of 0.05 mg/kg bw/day (for pregnant and nursing women).

Pregnant and nursing women
The intakes for adults, (elderly) and 11-14 year old children, exceeded the ARfD of 0.05 mg/kg bw/d for pregnant and nursing females. The highest intake was for adults.

If adults ate large portions of grapefruit containing imazalil at 6.2 mg/kg their intake could be 180% of the Acute Reference Dose of 0.05 mg/kg bw/day. This intake is 55 times lower than a dose which caused no observed adverse effects in a 13 day repeat dose rabbit developmental study (the ARfD is based on a NOAEL of 5 mg/kg bw/day for fetal toxicity (increased resorptions)). The European Food Safety Authority used this study as the basis of the ARfD.

Toxicologists usually apply a factor of 100 to this dose to take into account the uncertainties caused by using animal data and possible differences in susceptibility between people. We consider the reduced factor of 55 still enough to make an effect on health unlikely.

General population
The intakes for infants and 7-10 year old children exceed the ARfD of 0.1 mg/kg bw/d for the general population. The highest intake was for infants.

If infants ate large portions of grapefruit containing imazalil at 6.2 mg/kg their intake could be 340% of the Acute Reference Dose of 0.1 mg/kg bw/day. This intake is 29 times lower than a dose which caused no observed adverse effects in a rabbit developmental study, used as the basis of the ARfD (the ARfD is based on a NOAEL of 10 mg/kg bw/day for reduced bodyweight gain and food consumption in dams). The European Food Safety Authority used this study as the basis of the ARfD.

Toxicologists usually apply a factor of 100 to this dose to take into account the uncertainties caused by using animal data and possible differences in susceptibility between people. We consider the likelihood of an effect on health to be low, given the remaining factor of 29. This is because an adverse effect on health would rely on

1) a susceptible individual eating a large quantity of the product, with the peel, which in turn had the highest levels of residue (i.e. 7 times the maximum value found in monitoring) ; and
2) the actual difference in susceptibility between that individual and rabbits used to derive the critical NOAEL, being higher than the factor we are left with in this situation; and

3) the critical NOAEL being close to the actual doses needed to produce an adverse effect in the animals studied.

Also it is noted that an ARfD based on maternal toxicity in a developmental study with repeated dosing (13 days) might be over-protective for the general population.

Conclusion
In conclusion, we consider that some people might experience nausea after eating large portions (97.5th percentile consumption) of grapefruit containing the highest levels found in this report , but we consider the likelihood of an effect on health to be low. Such effects would be expected to be minor, short-lived, and reversible.

This estimate assumes that peel of the fruit is consumed. However if the peel is not consumed then the risk assessment that is the basis for the MRL applies (see the first paragraph of this assessment) and intakes in all groups are within both ARfDs and an effect on health is not expected.

Prochloraz risk assessment
Four samples contained prochloraz at levels where we need to consider the effect on health in more detail. The highest level detected was 1.3 mg/kg

Grapefruit flesh after peeling
The EU MRL risk assessment assumes that grapefruits are peeled before consumption. After peeling only 10% of the residue remains (JMPR, 2004), the highest intake is below 0.05 mg/kg bw/d, and there are no exceedances of either ARfD.

Whole grapefruit, including all the peel
However, assuming that consumers eat all the peel, intakes for infants exceeded the ARfD.

If infants ate large portions of grapefruit containing prochloraz at 1.3 mg/kg, their intake of prochloraz could be 284% of the Acute Reference Dose. This intake is 35 times lower than a dose which caused no observed adverse effect in a 90-day dog study, a multigeneration rat study and 14-day dog study. The European Food Safety Authority used this study as the basis of the ARfD.

Toxicologists usually apply a factor of 100 to this dose to take into account the uncertainties caused by using animal data and possible differences in susceptibility between people. We consider the likelihood of an effect on health to be low, given the remaining factor of 35. This is because an adverse effect on health would rely on

1) a susceptible individual eating a large quantity of the product which in turn had the highest levels of residue (i.e. 7 times the maximum value found in monitoring; and
2) the actual difference in susceptibility between that individual and dogs and/or rats being higher than the factor we are left with in this situation; and
3) the critical NOAEL being close to the actual doses needed to produce an adverse effect in the animals studied.

Conclusion
In conclusion, we consider that some people might experience gastrointestinal disturbance (salivation, soft faeces, vomiting) after eating large portions (97.5th percentile consumption) of grapefruit containing the highest levels found in this report, but we consider the likelihood of an effect on health to be low. Such effects would be expected to be minor, short-lived and reversible.

All these estimates assume that peel of the fruit is consumed. In the EU grapefruit is classified as having inedible peel. However if the peel is not consumed then the risk assessment approach that forms the basis of MRL assessment applies (see the first paragraph of this assessment) and intakes in all groups are within both ARfDs and an effect on health is not expected.

Chlorpyrifos risk assessment
19 samples contained chlorpyrifos at levels where we need to consider the effect on health in more detail. The highest level detected was 0.2 mg/kg

The risk assessments detailed below refer to the EU acute Reference Dose 2015 value but also consider the risks based on the existing JMPR value which was based on data which examined impacts upon humans. HSE accept that relevant human toxicology data can be used to calculate the possible impacts of residues in food on humans and based on this assessment do not expect an effect on health.

Assessment A using the ARfD set in the EU

Grapefruit flesh after peeling
EU MRL risk assessment usually assumes that grapefruits are peeled before consumption. After peeling only 3% of the residue remains (EFSA, 2015), the highest intake is below 0.005 mg/kg bw/d, and there are no exceedances of the ARfD.

Whole grapefruit, including all the peel
However, assuming that consumers eat all the peel, intakes for infants exceed the acute reference dose of 0.005 mg/kg bw/day.

The intakes for infants exceeded the EU ARfD. If infants ate large portions of grapefruit containing chlorpyrifos at 0.2 mg/kg, their intake of chlorpyrifos could be 220% of the EU Acute Reference Dose. This intake is 45 times lower than a dose which caused no observed adverse effects in a single dose rat study. The European Food Safety Authority used this study as the basis of the ARfD.

Toxicologists usually apply a factor of 100 to this dose to take into account the uncertainties caused by using animal data and possible differences in susceptibility between people. We consider the likelihood of an effect on health to be low, given the remaining factor of 45. This is because an adverse effect on health would rely on

1) a susceptible individual eating a large quantity of the product which in turn had the highest levels of residue (i.e. 7 times the maximum value found in monitoring) ; and
2) the actual difference in susceptibility between that individual and rats being higher than the factor we are left with in this situation; and
3) the critical NOAEL being close to the actual doses needed to produce an adverse effect in the animals studied.

Furthermore, the ARfD derived is considered to have been set using a precautionary approach since red blood cell cholinesterase inhibition was used as the end-point. This is a sensitive way to assess adverse effects due to cholinesterase inhibition.

In conclusion we consider that some people might experience salivation, intestinal disturbances or sweating after eating large portions (97.5th percentile consumption) of grapefruit containing the highest levels found in this report, but we consider the likelihood of an effect on health to be low. Such effects would be expected to be minor, short-lived, and reversible.

Assessment B with reference to the ARfD set by the JMPR

The intakes for infants exceeded the EU ARfD. If infants ate large portions of grapefruit, including all of the peel, containing chlorpyrifos at 0.2 mg/kg, their intake of chlorpyrifos could be 220% of the Acute Reference Dose. However, the EU ARfD was set without taking into account scientifically valid human data. The JMPR (Joint FAO/WHO meetings on pesticides) has recommended a higher Acute Reference Dose (ARfD) of 0.1 mg/kg bw/d using that human data. It allows an appropriate factor (10) to account for possible differences in susceptibility between people. Intakes in all groups are within the JMPR ARfD. Based on this assessment we do not expect an effect on health.

Conclusion
HSE accept that relevant human toxicology data can be used to calculate the possible impacts of residues in food on humans and based on this assessment do not expect an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Some samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the

Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Follow up action

Letters sent
The Secretariat has written to the suppliers of the samples with residues above the MRL.

Any comments received are at Appendix D.

RASFFs issued
HSE notified the FSA of the following sample, with a notification for the EC's Rapid Alert System for Food and Feed (RASFF) (see glossary for more details). As the residue was below the MRL after measurement uncertainty had been taken in to account, the RASFF notification was not issued.

- 1 sample from Turkey containing imazalil at 6.2 mg/kg.

Grape results

Introduction
We have been surveying grapes every year since 2001. We continue to monitor grapes as a large number of pesticides are used on the crop.

In 2015, 58 samples contained a residue of ethephon, 3 of those samples were above the MRL. Ethephon is used to ripen red grapes on the vine.

Survey design
We are sampling and reporting grapes in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

The grape samples were either collected by the Rural Payment Agency's Horticultural Marketing Inspectors from a range of points in the supply chain (wholesale markets, retail depots, ports and import points) or they were bought by a market research company from retail outlets across the UK.

We are publishing results for this survey on our website as part of the rolling reporting programme. The results in this report may have already been published.

Further details
Full details of pesticides we looked for and the residues we found are in Table 12 at page 95
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and June 2016

Number of samples
27 samples were tested for up to 372 pesticide residues

Origin of samples
- 25 samples were imported from outside the EU
- 2 samples came from the EU

Residues found
- 1 sample contained no residues from those sought
- 26 samples contained residues above the reporting level
- None of the samples contained residues above the MRL
- None of the samples were labelled as organic.

Multiple residues
24 samples contained residues of more than one pesticide
- 8 samples contained 2 residues
- 5 samples contained 3 residues
- 3 samples contained 5 residues
- 4 samples contained 6 residues
- 3 samples contained 7 residues
- 1 sample contained 8 residues

Risk assessments

Number of risk assessments
The laboratory detected 35 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Some samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Honey results

Introduction
This is the second time honey has been surveyed for pesticide residues, we last surveyed honey in 2011. All types of honey are being looked at except those containing honeycombs.

Survey design
These results are for the entire survey and cover samples collected between April and June 2016.

A market research company bought all the honey samples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 13 at page 103
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and June 2016

Number of samples
48 samples were tested for up to 365 pesticide residues

Origin of samples

- 33 samples came from the UK
- 10 samples were imported from outside the EU
- 5 samples came from the EU

The country of origin on the packaging does not necessarily indicate where the honey was from. It may be where it was blended or where it was packed.

Residues found

- 42 samples contained no residues from those sought
- 6 samples contained residues above the reporting level
- 1 sample contained residues above the MRL
- 1 sample was labelled as organic. It didn't contain any residues from those sought

Multiple residues
2 samples contained residues of more than one pesticide

- 2 samples contained 2 residues

Residues measured above the MRL (see Appendix B)
The laboratory detected 1 residue above the MRL in honey

- 1 sample from Romania contained a residue of amitraz at 0.03 mg/kg. The MRL is 0.01* mg/kg. However, amitraz is an authorised veterinary medicine for use in hives.

Risk assessments

Number of risk assessments
The laboratory detected 6 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Two samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Follow up action

Letters sent
The Secretariat has written to the suppliers of the samples with residues above the MRL.

The Secretariat have written to the Veterinary Medicines Directorate (VMD) about the finding of amitraz.

Any comments received are at Appendix D.

Leek results

Introduction
Leeks were last surveyed in 2013. This year they are being surveyed across the EU as part of the EU co-ordinated monitoring programme. The survey covers both leeks and mini or baby leeks.

Survey design
We are sampling and reporting leeks in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

A market research company bought all the leek samples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 14 at page 108
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and June 2016

Number of samples
24 samples were tested for up to 359 pesticide residues

Origin of samples
- 15 samples came from the UK
- 9 samples came from the EU

Residues found
- 15 samples contained no residues from those sought
- 9 samples contained residues above the reporting level
- None of the samples contained residues above the MRL
- None of the samples were labelled as organic.

Multiple residues
2 samples contained residues of more than one pesticide
- 2 samples contained 4 residues

Risk assessments

Number of risk assessments
The laboratory detected 9 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Two samples contained residues of more than one pesticide. Some of these residues are from pesticides which belong to similar chemical groups, and may have similar toxicological effects. So the risk assessors needed to consider their possible impacts on human health, both on their own and in combination.

HSE carried out a combined risk assessment of the relevant samples. We would not expect any of these combinations to have an effect on health.

Lettuce results

Introduction
We have surveyed lettuce every year since 1990s when residues of unapproved pesticides were detected in the UK grown lettuces. This issue was subsequently resolved, we continue to monitor lettuces as a large number of pesticides are used on the crop. The survey covers both UK grown and imported lettuces.

This year lettuce is being surveyed across the EU as part of the EU co-ordinated multi-annual control programme.

Survey design
We are sampling and reporting lettuce in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

A market research company bought the lettuce samples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 15 at page 113
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and May 2016

Number of samples
20 samples were tested for up to 367 pesticide residues

Origin of samples
Iceberg
- 4 samples came from the UK
- 8 samples came from the EU

Little Gem
- 5 samples came from the UK
- 1 sample came from the EU

Romaine
- 2 samples came from the UK

Residues found
- 3 samples contained no residues from those sought
- 17 samples contained residues above the reporting level
- None of the samples contained residues above the MRL
- None of the samples were labelled as organic.

Multiple residues
8 samples contained residues of more than one pesticide
- 6 samples contained 2 residues
- 1 sample contained 3 residues
- 1 sample contained 4 residues

Risk assessments

Number of risk assessments
The laboratory detected 7 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Some samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Pasta results

Introduction
Pasta is sampled every few years as part of the rolling programme of commodities. It was last sampled in 2009 when we looked at dried pasta. This survey includes samples of both dried and fresh pasta.

Survey design
We are sampling and reporting on pasta in quarters two and four of 2016. This is the second part of the report and covers samples collected between April and June.

A market research company bought the pastasamples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 16 at page 119
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and May 2016

Number of samples
36 samples were tested for up to 366 pesticide residues

Origin of samples
36 samples came from the EU

The country of origin on the packaging does not necessarily indicate where the wheat was grown. It may be where the pasta was made or where it was packed.

Residues found

- 29 samples contained no residues from those sought
- 7 samples contained residues above the reporting level
- None of the samples contained residues above the MRL. We have taken account of how processing affects residue levels by adjusting the relevant grain MRLs using processing factors (a MRL with a flour processing factor has been used as this is the most appropriate value, see table 16d on page 124 for details).
- None of the samples were labelled as organic.

Multiple residues
2 samples contained residues of more than one pesticide

- 2 samples contained 2 residues

Risk assessments

Number of risk assessments
The laboratory detected 3 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Two samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Pear results

Introduction
We have surveyed pears every year since 2002 as they are widely consumed.

Survey design
We are sampling and reporting pears in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

The pear samples were either collected by the Rural Payments Agency's Horticultural Marketing Inspectors from a range of points in the supply chain (wholesale markets, retail depots, ports and import points) or purchased from retail outlets across the UK by a market research company.

Further details
Full details of pesticides we looked for and the residues we found are in Table 17 at page 125
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and June 2016

Number of samples
30 samples were tested for up to 367 pesticide residues

Origin of samples

- 4 samples came from the UK
- 13 samples were imported from outside the EU
- 13 samples came from the EU

Residues found

- 4 samples contained no residues from those sought
- 26 samples contained residues above the reporting level
- None of the samples contained residues above the MRL
- 3 samples were labelled as organic. None contained residues from those sought

Multiple residues
23 samples contained residues of more than one pesticide

- 6 samples contained 2 residues
- 8 samples contained 3 residues
- 4 samples contained 4 residues
- 5 samples contained 5 residues

Risk assessments

Number of risk assessments
The laboratory detected 15 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Some samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Potato results

Introduction
We monitor potatoes annually due to their importance as a staple part of the diet. The survey covers both maincrop (or ware) and new potatoes.

Survey design
We are sampling and reporting potatoes in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

The Animal and Plant Health Agency's Plant Health and Seed Inspectors collected the potato samples from a range of points in the supply chain (wholesalers, potato processors, ports and import points).

We are publishing results for this survey in our website as part of the rolling reporting programme. The results in this report may have already been published.

Further details
Full details of pesticides we looked for and the residues we found are in Table 18 at page 131
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between March and June 2016

Number of samples
43 samples were tested for up to 368 pesticide residues

Origin of samples
Maincrop
- 26 samples came from the UK

New
- 12 samples came from the UK
- 5 samples were imported from outside the EU

Residues found
- 6 samples contained no residues from those sought
- 37 samples contained residues above the reporting level
- None of the samples contained residues above the MRL
- 3 samples were labelled as organic. None contained residues from those sought

Multiple residues
18 samples contained residues of more than one pesticide
- 17 samples contained 2 residues
- 1 sample contained 3 residues

Risk assessments

Number of risk assessments
The laboratory detected 6 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Some samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the

Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Prepared fresh fruit results

Introduction
We started surveying prepared fresh fruit in 2015. The survey can include any single fruit or mixed fruit that has been pre-prepared, for example fruit salad, sliced melon, pineapple cubes. The samples must all be fresh fruit and cannot included any tinned or jarred products.

This survey is being carried out as a follow-up from previous results from 2015 which found a high number of samples containing BAC & DDAC residues from their use as disinfectants, therefore we are only testing the samples in this survey for BAC, DDAC and Chlorate.

Survey design
We are sampling and reporting prepared fresh fruit in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

A market research company bought the prepared fresh fruit samples from retail outlets across the UK.

We are publishing results for this survey in our website as part of the rolling reporting programme. The results in this report may have already been published.

Further details
Full details of pesticides we looked for and the residues we found are in Table 19 at page 136
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Chlorate
We found chlorate over the default MRL in 2 UK samples. However we do not think that these findings should be treated as breaches of the legislation, and we have not highlighted them as such in the brand name annex.

We are testing a limited number of foods for chlorate for the first time in 2016, to provide evidence on consumer safety and confirm that it is necessary to review the existing default MRL in order to take account of non-pesticide sources. In particular chlorine-based treatments of drinking and irrigation water as well as chlorine-based surface disinfectants are widely used to ensure microbiological safety. We agree with HSE and the FSA that the current MRL does not take account of these often unavoidable sources.

This adds to a growing body of evidence, from both official monitoring across the EU and from the food and farming industries.

Following the HSE's risk assessment, we do not expect any of the residues we found to have an effect on health. The residues are more likely to come from key microbiological safety practices rather than pesticide use, so we do not think any change in production practice by the brand-owners or manufacturers is needed in response to these findings. More information on chlorate is available on page 7.

Results

When samples were taken
Between April and June 2016

Number of samples
30 samples were tested for up to 3 pesticide residues

Origin of samples
Apple
- 1 sample came from the UK

Mango

- 2 samples came from the UK
- 1 sample was imported from outside the EU

Melon
- 3 samples came from the UK

Mixed
- 9 samples came from the UK

Pineapple
- 10 samples came from the UK
- 3 samples were imported from outside the EU

Watermelon
- 1 sample came from the UK

The country of origin on the packaging does not necessarily indicate where the fruit was grown. It may be where it was prepared or where it was packed.

Residues found
- 23 samples contained no residues from those sought
- 7 samples contained residues above the reporting level
- 2 samples contained residues above the MRL
- None of the samples were labelled as organic

Multiple residues
1 sample contained residues of more than one pesticide
- 1 sample contained 2 residues

Residues measured above the MRL (see Appendix B)
The laboratory detected 2 residues above the MRL in prepared fresh fruit
- 2 samples from UK contained a residue of chlorate at 0.05 mg/kg and 0.3 mg/kg. The MRL is 0.01* mg/kg.

However, we do not think that these findings should be treated as breaches of the legislation – see our conclusions box above.

Risk assessments

Number of risk assessments
The laboratory detected 3 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
One sample contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Follow up action

Letters sent
The Secretariat has written to the suppliers of the samples with residues above the MRL.

Any comments received are at Appendix D.

Strawberry results

Introduction
We last surveyed strawberries in 2013. This year, strawberries are being surveyed across the EU as part of the EU co-ordinated multi-annual control programme.

Survey design
We are sampling and reporting strawberries in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

A market research company bought all the strawberry samples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 20 at page 140
Suppliers details are in the Brand Name Annex

Summary statement
None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and June 2016

Number of samples
24 samples were tested for up to 360 pesticide residues

Origin of samples
- 17 samples came from the UK
- 7 samples came from the EU

Residues found
- All samples contained residues
- None of the samples contained residues above the MRL
- None of the samples were labelled as organic.

Multiple residues
22 samples contained residues of more than one pesticide
- 6 samples contained 2 residues
- 2 samples contained 3 residues
- 4 samples contained 4 residues
- 1 sample contained 5 residues
- 2 samples contained 6 residues
- 1 samples contained 7 residues
- 2 samples contained 8 residues
- 2 samples contained 9 residues
- 1 sample contained 10 residues
- 1 sample contained 12 residues

Risk assessments

Number of risk assessments
The laboratory detected 29 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 43 for more information on the methodology used)
Some samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Follow up action

Further investigation: suspected illegal use
We have passed details of 1 sample from the UK that contained a residue of fluopyram which was not approved for use on strawberries in the UK when the sample was collected to HSE. HSE is investigating; brand name details will not be published until the investigations are complete.

Tomato results

Introduction
We last surveyed tomatoes in 2013. This year they are being surveyed across the EU as part of the EU co-ordinated multi-annual control programme.

The survey covers beefsteak, plum, round, salad and tomatoes sold on the vine.

Survey design
We are sampling and reporting tomatoes in every quarter of 2016. This is the second part of the survey and covers samples collected between April and June.

A market research company bought all the tomato samples from retail outlets across the UK.

Further details
Full details of pesticides we looked for and the residues we found are in Table 21 at page 148
Suppliers details are in the Brand Name Annex

Summary statement

None of the residues detected by the laboratory would be expected to have an effect on health.

Results

When samples were taken
Between April and June 2016

Number of samples
24 samples were tested for up to 371 pesticide residues

Origin of samples
Beefsteak
- 1 sample came from the EU

Cherry
- 1 sample came from the UK
- 1 sample was imported from outside the EU

Plum
- 1 sample was imported from outside the EU

Round
- 1 sample came from the UK
- 3 samples were imported from outside the EU
- 15 samples came from the EU

Vine
- 1 sample came from the EU

Residues found
- 9 samples contained no residues from those sought
- 15 samples contained residues above the reporting level
- None of the samples contained residues above the MRL
- None of the samples were labelled as organic.

Multiple residues
5 samples contained residues of more than one pesticide
- 1 sample contained 2 residues
- 2 samples contained 3 residues
- 1 sample contained 4 residues
- 1 sample contained 5 residues

Risk assessments

Number of risk assessments
The laboratory detected 14 different pesticide residues. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health.

Combined risk assessments (see page 38 for more information on the methodology used)
Some samples contained residues of more than one pesticide. The pesticide residues found are not chemically related to each other and do not have the same toxicological effects. Following the Health and Safety Executive (HSE)'s risk assessment, we do not expect these residues to have an effect on health, either separately or in combination.

Supplier Details

Introduction
The following information is available on each sample collected this quarter:

- Date and place of collection
- Description (e.g. 'runner bean', organic milk);
- Country of origin or manufacture;
- Brand name and packer/manufacturer; and
- Residues detected (results shown in green indicate residues above the MRL).

The Government's 'brand naming' policy
The Government has decided that brand name information should be published as part of the Government food chemical surveillance programme. Brand names have been published for most pesticide residue surveys since 1998. Certain samples are excluded from the release of brand name information. These include samples taken as part of any pesticide residues enforcement programme and those taken as part of surveys to study individual people/farms. This policy was reviewed in 2000/1, when Ministers agreed to its continuation.

Where we find residues above an MRL or the presence of non-approved pesticides brand owners/retailers/ growers are notified of the result in advance of publication of reports and given four weeks to comment. Any responses we receive are included in Appendix D.

Interpreting brand name information
There is no ready definition of what constitutes a brand in all cases. For clearly branded produce like breakfast cereals or biscuits the "brand owner" is shown. In the case of "own brand" goods this may be one of the multiple retailers. For fruit and vegetables the retailer is generally shown. For meat, milk and most other animal products the retailer is also generally shown. Finally, for all commodities the country of origin is shown where this was displayed either on the produce or in the store.

Our programme takes samples of produce in approximate proportion to the market share of the main retailers. This has been done to ensure we obtain an accurate representation of a sector (e.g. fruit and vegetables).

Individual programmes are not capable of generating statistically valid information on residues in particular crops from particular retailers. This would require the collection of a much larger number of samples: either substantially increasing costs or greatly reducing the range of different foods sampled in any one year. Therefore, results from an individual survey cannot be taken as a fair representation of the residues status of any particular brand.

However, we do collect samples from a variety of outlets in a range of locations, over a period of years. Successive programmes should therefore help generate information on the typical residues profile of particular types of produce and on major trends in the incidence and levels of pesticides. It should be noted that this quarterly report is not intended to give a comprehensive comparison with previous surveys of the same commodities.

A particular issue arises in relation to the country of origin of fruit and vegetables. The origins included in the reports are those recorded either on the produce or in the store. However, it is not uncommon for mixing to occur on shop shelves. We have responded by increasing the proportion of pre-packed goods sampled. However, pre-packed samples are not available for some produce in some stores and it could also introduce bias to surveys if loose produce were not sampled. Loose produce is therefore sampled but the origin of the sample should be interpreted with a degree of caution.

Section II: HSE assessment of risk

The surveillance programme is designed to enable the regulatory authorities to check that:

- specified pesticide MRLs are being respected;
- users of pesticides are complying with conditions of use specified in the authorisation;
- Dietary intakes of residues are within acceptable limits.

This section details how risks from dietary intakes are assessed.

When assessments are carried out
A screening assessment is done for each residue and commodity combination to identify residue levels that would lead to intakes above the relevant reference doses. Further information on this screening approach is available on request from HSE. Detailed assessments are then produced for every case where the actual residue level found could lead to an intake by any group above the reference dose.

Assessing Dietary intakes
Assessing the acceptability of dietary intakes is complicated. Consumer risk assessments are carried out for both short-term (peak) and long-term intakes. These assessments use information on food consumption collected in UK dietary surveys in conjunction with the residue levels we find. Occasionally, additional pesticide specific information on the losses of residues that occur during preparation and/or cooking of food is also used.

How the assessment is carried out
Short-term intakes (also called NESTIs) are calculated using consumption data for high-level consumers, based on single-day consumption values and the highest residue found in a food commodity. The residue found is multiplied by a variability factor to take account of the fact that residues may vary between individual items that make up the sample analysed. The estimated intake is compared to the Acute Reference Dose (ARfD). This is done for ten consumer groups; adults, infants, toddlers, 4-6 year olds, 7-10 year olds, 11-14 year olds, 15-18 year olds, vegetarians, elderly living in residential homes and elderly living in their own homes.

Long-term intakes (NEDI) are also calculated for high-level consumers, but in this case the consumption data are high-level long-term values rather than peak single-day events, and similarly the residue values used reflect long-term average levels rather than occasional high values. Again these estimates are made for the ten consumer groups. In this case the estimated intake is compared to the Acceptable Daily Intake (ADI). More information on intake assessments is available on HSE's website: www.pesticides.gov.uk/guidance/industries/pesticides/topics/pesticide-approvals/pesticides-registration/data-requirements-handbook/consumer-intake-assessments-new-intake-calculation-models.

The reference doses (ADI, ARfD) are set by the Advisory Committee on Pesticides (ACP), or agreed within the EC (an increasing proportion of UK pesticide authorisations are now carried out in accordance with harmonised EU processes). However, where neither the UK nor the EC has set a reference dose, levels set by regulatory authorities in other countries may be used. For a small number of pesticides the reference doses used have been determined by HSE. These have not been independently peer-reviewed and should therefore be regarded as provisional. Reference dose values are available on the EU website: http://ec.europa.eu/sanco_pesticides/public/index.cfm?event=activesubstance.selection.

Although MRLs are not safety levels, an MRL would not be established if the residue concentrations measured in the supervised trials used to support the MRL would give rise to health concerns. In most cases residues present at the MRL result in intakes below the ARfD and the ADI. So even if the MRL is exceeded this does not always lead to an intake above the ARfD or ADI.

In addition, an estimated intake that exceeds the ADI or ARfD does not automatically result in concerns for consumer health, because a protective approach is used in setting the ADI and ARfD.

In the unusual circumstance of an intake exceeding the ADI or ARfD, an evaluation of the toxicological data is made, and details of this assessment would be presented.

Most consumer intake assessments are for short-term exposure rather than chronic exposure. This is because in most cases the monitoring data show the majority of samples to contain residues below the reporting limit and so chronic exposure would not present a concern. Long-term risk assessments have been carried out on a case-by-case basis, but are not routinely reported. Long-term exposure assessments are done using median residue levels, rather than using the highest residues found. Therefore, long-term risk assessments would only need to be carried out where data indicated a high proportion of samples contained residues above the MRL (this would result in a higher median residue level than that previously assessed when setting the MRL), or where there is no MRL and acute toxicology is not considered relevant for the particular pesticide concerned.

Where intakes exceed a reference dose, it is necessary for the underlying toxicological studies (animal studies) to be considered to enable the significance of such an exceedance to be understood. Toxicological studies are conducted using different doses to determine the nature of any ill health effects as well as the levels at which such effects can be expected to occur.

Toxicological studies are conducted using test animals to identify the highest experimental dose that causes no detectable adverse effects (the NOAEL). Where there is more than one relevant toxicological study, the lowest appropriate NOAEL for the most sensitive adverse effect is typically used. There is some uncertainty in extrapolating between animals and people and it is therefore important to use a 'safety factor' to account for sources of variation. This safety factor is incorporated (by dividing the NOAEL by the safety factor) in deriving a reference dose, either an ADI or an ARfD, to which consumer intakes are compared. A safety factor therefore extrapolates from the animal testing to the general population. Factors in the order of x100 are commonly used, x 10 for animal to man, and x10 for within human population differences in sensitivity. However, toxicologists may propose different values (e.g. from 5 to 1000) based on scientific reasoning in accordance with study designs and the quality of the data that has been generated from the studies.

In order to ensure exposures to pesticides do not pose unacceptable risk to humans a wide range of investigations are performed. Most of these are performed on experimental animals because the only end-points that can be examined in human volunteers are those involving observation or blood and urine sampling. Human volunteer studies involving pesticides are not generated in current regulatory work. There is debate at the international level as to whether human studies that have been generated should be used for risk assessment purposes. In the EU, the policy is not to use these data in assessments; the JMPR chose to apply judgement in the appropriate use of these data if available. The HSE risk assessments will usually refer to test animal species, such as dog, rat, and rabbit. All toxicological work is undertaken based on principles of minimising animal distress. Where scientifically valid human data are available the risk assessments will refer to these as they reduce the uncertainty in the assessment. Therefore, human data is only referred to in more limited circumstances.

Acute (short term) toxicology is not a concern for all pesticides, as some are not acutely toxic. In terms of the pesticides that have been found in fruit and vegetables through the surveillance programme an acute risk assessment would not be necessary on the following: tecnazene, maleic hydrazide, diphenylamine, furalaxyl, iprodione, kresoxim-methyl, pendimethalin, propargite, propyzamide, quintozene and tolclofos-methyl.

As the surveillance programme monitors residues in all types of food, from raw commodities (e.g. potatoes) to processed (e.g. wine), dried (e.g. dried fruit) and composite foods (e.g. fruit bread), consumer risk assessments are specifically tailored to address processed and mixed food products. MRLs are generally set for raw commodities, although when MRLs are established the assessment of dietary intakes takes into account the potential for residues to remain in processed foods produced from the raw agricultural commodities. MRLs have been set for processed infant foods, and in future may be extended to other processed food products.

Residues are usually reduced during food processing and occasionally may concentrate. The alteration of residues can be considered in consumer risk assessments, for example, in oil seed rape a fat-soluble pesticide may result in higher residues in the oil compared to residues in the raw seed. Consumption data are available for many major processed food items such as boiled potatoes, crisps, fruit juice, sugar, bread, and wine. Where such consumption data are not available, the intake estimates are based on the total consumption of the raw commodity, which would represent the worst-case (for example, breakfast cereals consumption would be based on total cereal products consumption). In the case of composite products a suitable worst-case alternative would be used, for example total bread consumption for fruit bread consumption.

Probabilistic Modelling
The standard calculations of consumer exposure use realistic consumption data and residue levels. However, they tend to overestimate intakes in most circumstances. This is due to the assumptions used; fruit and vegetables would contain high levels of residue in an individual unit and that these would be consumed by high-level consumers. They do not take into account the possible range of residue levels and consumption distributions that may occur in reality. These possible combinations of residues and consumption levels can be taken into account using modelling/simulation techniques to produce probability distributions of residue intake levels to indicate the range of consumer intakes, presented as a probabilistic assessment of consumer exposure. These techniques are not yet routinely used to estimate dietary intakes of pesticide residues in the EC.

Multiple residues
The risk assessment process is not standing still. We are aware that some consumers are concerned by the 'cocktail effect'- the possible implications of residues of more than one chemical occurring in, say, a single portion of fruit or vegetables or the interaction between mixtures of pesticides and veterinary medicines at residue levels.

Where more than one pesticide residue is found in a sample, we produce a separate table which identifies each sample and what was found (see Appendix D). If more than one organophosphate/carbamate is found we will undertake an additional risk assessment. If the combination of pesticides found is either unusual or gives cause for concern then this will be detailed in the report.

The Food Standards Agency (FSA) asked the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment to assess these concerns. Their report 2Risk Assessment of Mixtures of Pesticides and Veterinary Medicines" was published in 2002. The Committee concluded that the probability of any health hazard from exposures to mixtures is likely to be small. Nonetheless, it identified areas of uncertainty in the risk assessment process and made recommendations for further work. These fell under the broad headings of regulatory, surveillance, research and public information issues. An action plan to take forward the recommendations has been published on the FSA website at: http://www.food.gov.uk/safereating/chemsafe/pesticides/pestmixbranch/. A number of research projects have been commissioned by the FSA to help progress the action plan; details can be found at http://www.food.gov.uk/multimedia/pdfs/ressurprjlistsep07 and http://www.food.gov.uk/science/research/researchinfo/researchportfolio/

Scientific methodologies have yet to be developed to deal with mixtures from groups of pesticides identified by the Committee. However, the Advisory Committee on Pesticides (ACP) has developed an approach for the anticholinesterase compounds. They have also recommended an approach for assessing compounds that might have combined toxicity. This includes a consideration of the proportion of the respective reference doses taken up by the predicted exposures to each active substance. If this is only a small proportion (e.g. <50% if there are two components; <33% for 3 etc) then assuming simple additivity the risks would still be acceptable. However if exposures to each active substance represent a high proportion of the respective reference doses and the total exceeds 100% a more detailed consideration is needed (www.pesticides.gov.uk/guidance/industries/pesticides/topics/pesticide-approvals/pesticides-registration/data-requirements-handbook/toxicity-assessment-of-combinations-of-2-or-more-compounds-in-a-formulation).

We are keen to ensure our reports reflect consumer concerns. We therefore now regularly assess findings showing multiple residues of organophosphate and carbamate pesticides. Combined assessment is a new development in risk assessment, which is being taken forward at the international level, e.g. the European Food Safety Authority (EFSA) held a colloquium in 2006 and has set-up two working groups to help develop the methodology (http://www.efsa.europa.eu/en/events/event/colloque061128.htm; http://www.efsa.europa.eu/en/supporting/pub/117e.htm; http://www.efsa.europa.eu/en/efsajournal/pub/705.htm; http://www.efsa.europa.eu/en/efsajournal/pub/1167.htm). Further advances in risk assessment methodology will be taken into account in developing the approach to multiple risk assessments in the future.

Assessment of Risk to Human Health

Table 1: Short-term intake estimates

Screening assessments have been done for all acutely toxic and potentially acutely toxic pesticides to check that predicted intakes are within the ARfD (or ADI, as appropriate, where an ARfD is not available). An acute exposure assessment is not done for pesticides which are not acutely toxic where it has been established that an ARfD is not required. Toxicological endpoints can be found in the DG SANCO EU Pesticides database which is available at http://ec.europa.eu/food/plant/protection/evaluation/database_act_subs_en.htm

The screening assessment uses the internationally agreed approach to short-term (acute) consumer exposure assessment with UK food consumption data as detailed within the UK NESTI model which is available on the HSE website at http://www.pesticides.gov.uk/approvals.asp?id=1687.

A paper to explain the assessment of acute intakes can be found on our website:
http://www.pesticides.gov.uk/Resources/CRD/PRiF/Documents/Other/2013/PRiF%20Intake%20Assessments%20290113.pdf

For the Q2 (2016) assessments, the following approaches have been taken to refine the NESTI according to case-by-case issues and to ensure that appropriate consumption values are used for less frequently consumed commodities where available food consumption data may be limited:

- New consumption values were obtained from the Food Standards Agency for grapefruit in order to identify the various contributions of grapefruit in the diet. The consumption values used here are the new values and cover consumption for fresh grapefruit excluding juice, canned grapefruit and grapefruit consumed in other recipe forms. For the current assessments, the consumer groups covered represent infants (4 to 18 months old), toddlers (1.5 to 3 years), 4-6 year olds, 7-10 year olds, 11-14 year olds, 15-18 year olds, and elderly. These are slightly different to the groups used previously. For the new survey data vegetarians, elderly residential and elderly in their own home are not reported separately. For some of the consumer subgroups, the number of grapefruit consumers in the surveys (from years 2008 to 2012) are very low e.g. infants which is not unexpected. Despite this, these data are used as they represent the best up to date data available for use. Adults and elderly consume fresh grapefruit at a higher frequency (a higher number of consumers) than the other consumer groups, and of these adults is the most critical consumer. The highest number of young consumers out of all the young consumer groups was three persons for infants (3 out of 2863 infant consumers).
- For grapes/pyraclostrobin a variability factor of 3 was used, based on specific residues variability data for individual bunches of grapes (EU 2004).
- For all forms of pre-prepared fruits, data on apples without the use of a variability factor were used for screening purposes. As fruit pieces are small, a whole fruit consideration which takes account of unit to unit variability does not seem so relevant; the consumption values for a range of different fruits were considered and consumption values for apple are likely to be reasonably protective to cover the range of fruits consumed in this way. Further to the initial screen, the risk assessment was further refined using more specific consumption data, without the use of a variability factor, where suitable data were available.
- Data on wheat were used for all forms of pasta and data on wheat, oats and maize were used for all ‘free-from’ cereal products.
- For potato/chlorpropham a variability factor of 3 was used, based on specific residues variability data for individual potato tubers.

- For pear/imazalil a variability factor of 1.5 was used based on specific residues variability data available, generated using imazalil in apples (EU MRL, 2007).

Monocrotophos residues

Monocrotophos was found in beans with pods (Guar beans) at a level of 0.2 mg/kg. The highest residue gives a highest estimated short term intake of 0.0010 mg/kg bw/day for infants and toddlers. Authorisation for use in the EU were withdrawn in 2003 and EU reference values have not been set. The EFSA use JMPR reference values, set in 1995, to assess risks from monocrotophos residues. This intake is less than both the ARfD of 0.002 mg/kg bw/day and ADI of 0.0006 mg/kg bw/day. However, studies in laboratory animals at doses orders of magnitude higher which were toxic to the animals have indicated that monocrotophos can damage genetic material. It is not known if lower doses which are not toxic also have this effect. Monocrotophos did not increase cancer incidence in long term feeding studies in rats or mice or cause dominant lethal mutations in mice and these findings provide some reassurance that any risks from exposure are likely to be small. Nevertheless, because of uncertainty about the potential for genetic damage at low doses, on a precautionary basis any findings of monocrotophos in food are not desirable.

Grapefruit risk assessments

Crop	Pesticide	Highest residue (mg/kg)	Intake (mg/kg bw/day)		ARfD (mg/kg bw/day)	Source
			Adult	Critical group†		
Grapefruit	Imazalil	6.2	0.090	0.34 (infants) 0.11 (7-10 year olds) 0.090 (adults) 0.067 (elderly) 0.066 (11-14 year olds)	General population 0.1 Pregnant and nursing females 0.05	EFSA, 2007

Comment on risk assessment

Grapefruit flesh after peeling

The EU MRL risk assessment assumes that grapefruits are peeled before consumption. After peeling only 7% of the residue remains (EU, 2010), the highest intake is below 0.05 mg/kg bw/d, and there are no exceedances of either ARfD.

Whole grapefruit, including all the peel

However, assuming that consumers eat all the peel, intakes for infants and 7-10 year old children exceed the acute reference dose of 0.1 mg/kg bw/day (for the general population excluding pregnant and nursing women). It is noted that in consumer groups aged over 11 years intakes for adults, (elderly), and 11-14 year old children exceed the acute reference dose of 0.05 mg/kg bw/day (for pregnant and nursing women).

Pregnant and nursing women

The intakes for adults, (elderly) and 11-14 year old children, exceeded the ARfD of 0.05 mg/kg bw/d for pregnant and nursing females. The

highest intake was for adults.

If adults ate large portions of grapefruit containing imazalil at 6.2 mg/kg their intake could be 180% of the Acute Reference Dose of 0.05 mg/kg bw/day. This intake is 55 times lower than a dose which caused no observed adverse effects in a 13 day repeat dose rabbit developmental study (the ARfD is based on a NOAEL of 5 mg/kg bw/day for fetal toxicity (increased resorptions)). The European Food Safety Authority used this study as the basis of the ARfD.

Toxicologists usually apply a factor of 100 to this dose to take into account the uncertainties caused by using animal data and possible differences in susceptibility between people. We consider the reduced factor of 55 still enough to make an effect on health unlikely.

General population

The intakes for infants and 7-10 year old children exceed the ARfD of 0.1 mg/kg bw/d for the general population. The highest intake was for infants.

If infants ate large portions of grapefruit containing imazalil at 6.2 mg/kg their intake could be 340% of the Acute Reference Dose of 0.1 mg/kg bw/day. This intake is 29 times lower than a dose which caused no observed adverse effects in a rabbit developmental study, used as the basis of the ARfD (the ARfD is based on a NOAEL of 10 mg/kg bw/day for reduced bodyweight gain and food consumption in dams). The European Food Safety Authority used this study as the basis of the ARfD.

Toxicologists usually apply a factor of 100 to this dose to take into account the uncertainties caused by using animal data and possible differences in susceptibility between people. We consider the likelihood of an effect on health to be low, given the remaining factor of 29. This is because an adverse effect on health would rely on

1) a susceptible individual eating a large quantity of the product, with the peel, which in turn had the highest levels of residue (i.e. 7 times the maximum value found in monitoring) ; and
2) the actual difference in susceptibility between that individual and rabbits used to derive the critical NOAEL, being higher than the factor we are left with in this situation; and
3) the critical NOAEL being close to the actual doses needed to produce an adverse effect in the animals studied.

Also it is noted that an ARfD based on maternal toxicity in a developmental study with repeated dosing (13 days) might be over-protective for the general population.

Conclusion

In conclusion, we consider that some people might experience nausea after eating large portions (97.5^{th} percentile consumption) of grapefruit containing the highest levels found in this report , but we consider the likelihood of an effect on health to be low. Such effects would be expected to be minor, short-lived, and reversible.

This estimate assumes that peel of the fruit is consumed. However if the peel is not consumed then the risk assessment that is the basis for the MRL applies (see the first paragraph of this assessment) and intakes in all groups are within both ARfDs and an effect on health is not

expected.

Crop	Pesticide	Highest residue (mg/kg)	Intake (mg/kg bw/day)		ARfD (mg/kg bw/day)	Source
			Adult	Critical group†		
Grapefruit	Prochloraz	1.3	0.019	0.071 (infants)	0.025	EFSA, 2011

Comment on risk assessment

Grapefruit flesh after peeling

The EU MRL risk assessment assumes that grapefruits are peeled before consumption. After peeling only 10% of the residue remains (JMPR, 2004), the highest intake is below 0.05 mg/kg bw/d, and there are no exceedances of either ARfD.

Whole grapefruit, including all the peel

However, assuming that consumers eat all the peel, intakes for infants exceeded the ARfD.

If infants ate large portions of grapefruit containing prochloraz at 1.3 mg/kg, their intake of prochloraz could be 284% of the Acute Reference Dose. This intake is 35 times lower than a dose which caused no observed adverse effect in a 90-day dog study, a multigeneration rat study and 14-day dog study. The European Food Safety Authority used this study as the basis of the ARfD.

Toxicologists usually apply a factor of 100 to this dose to take into account the uncertainties caused by using animal data and possible differences in susceptibility between people. We consider the likelihood of an effect on health to be low, given the remaining factor of 35. This is because an adverse effect on health would rely on

1) a susceptible individual eating a large quantity of the product which in turn had the highest levels of residue (i.e. 7 times the maximum value found in monitoring; and
2) the actual difference in susceptibility between that individual and dogs and/or rats being higher than the factor we are left with in this situation; and
3) the critical NOAEL being close to the actual doses needed to produce an adverse effect in the animals studied.

Conclusion

In conclusion we consider that some people might experience gastrointestinal disturbance (salivation, soft faeces, vomiting) after eating large portions (97.5th percentile consumption) of grapefruit containing the highest levels found in this report , but we consider the likelihood of an effect on health to be low. Such effects would be expected to be minor, short-lived and reversible.

All these estimates assume that peel of the fruit is consumed. In the EU grapefruit is classified as having inedible peel. However if the peel is not consumed then the risk assessment approach that forms the basis of MRL assessment applies (see the first paragraph of this assessment) and intakes in all groups.

Crop	Pesticide	Highest residue (mg/kg)	Intake (mg/kg bw/day)		ARfD (mg/kg bw/day)	Source
			Adult	Critical group†		
Grapefruit	Chlorpyrifos	0.2	0.0029	0.011 (infants)	0.005	EU, 2015

Comment on risk assessment

The risk assessments detailed below refer to the EU acute Reference Dose 2015 value but also consider the risks based on the existing JMPR value which was based on data which examined impacts upon humans. HSE accept that relevant human toxicology data can be used to calculate the possible impacts of residues in food on humans and based on this assessment do not expect an effect on health.

Assessment A using the ARfD set in the EU

Grapefruit flesh after peeling

EU MRL risk assessment usually assumes that grapefruits are peeled before consumption. After peeling only 3% of the residue remains (EFSA, 2015), the highest intake is below 0.005 mg/kg bw/d, and there are no exceedances of the ARfD.

Whole grapefruit, including all the peel

However, assuming that consumers eat all the peel, intakes for infants exceed the acute reference dose of 0.005 mg/kg bw/day.

The intakes for infants exceeded the EU ARfD. If infants ate large portions of grapefruit containing chlorpyrifos at 0.2 mg/kg, their intake of chlorpyrifos could be 220% of the EU Acute Reference Dose. This intake is 45 times lower than a dose which caused no observed adverse effects in a single dose rat study. The European Food Safety Authority used this study as the basis of the ARfD.

Toxicologists usually apply a factor of 100 to this dose to take into account the uncertainties caused by using animal data and possible differences in susceptibility between people. We consider the likelihood of an effect on health to be low, given the remaining factor of 45. This is because an adverse effect on health would rely on

1) a susceptible individual eating a large quantity of the product which in turn had the highest levels of residue (i.e. 7 times the maximum value found in monitoring) ; and
2) the actual difference in susceptibility between that individual and rats being higher than the factor we are left with in this situation; and
3) the critical NOAEL being close to the actual doses needed to produce an adverse effect in the animals studied.

Furthermore, the ARfD derived is considered to have been set using a precautionary approach since red blood cell cholinesterase inhibition was used as the end-point. This is a sensitive way to assess adverse effects due to cholinesterase inhibition.

In conclusion we consider that some people might experience salivation, intestinal disturbances or sweating after eating large portions

(97.5th percentile consumption) of grapefruit containing the highest levels found in this report, but we consider the likelihood of an effect on health to be low. Such effects would be expected to be minor, short-lived, and reversible.

Assessment B with reference to the ARfD set by the JMPR

The intakes for infants exceeded the EU ARfD. If infants ate large portions of grapefruit, including all of the peel, containing chlorpyrifos at 0.2 mg/kg, their intake of chlorpyrifos could be 220% of the Acute Reference Dose. However, the EU ARfD was set without taking into account scientifically valid human data. The JMPR (Joint FAO/WHO meetings on pesticides) has recommended a higher Acute Reference Dose (ARfD) of 0.1 mg/kg bw/d using that human data. It allows an appropriate factor (10) to account for possible differences in susceptibility between people. Intakes in all groups are within the JMPR ARfD. Based on this assessment we do not expect an effect on health.

Conclusion

HSE accept that relevant human toxicology data can be used to calculate the possible impacts of residues in food on humans and based on this assessment do not expect an effect on health.

†Highest intake of all ten consumer groups, or intakes for all consumer groups that exceed the ARfD. In the case of grapefruit, not all ten consumer groups were covered as the new fresh grapefruit consumption values were available in slightly different consumer group formats (see the bullet point above the table for a further explanation of the grapefruit consumption data used).

Acute risk assessments for samples containing more than one organophosphorus/carbamate or captan/folpet or triazoles or carbendazim/thiophanate methyl following screening assessment.

Some samples contained residues of more than one pesticide. Whenever toxicologists expect these to add to each other's effect, (have the same toxicological mode of action), HSE carries out a risk assessment of the combined results. Where the sum of the individual intakes, expressed as a percentage of the respective ARfDs, is above 100% then the risk assessment is published in full.

The screening assessment of samples, which contained more than one pesticide from the above groups, did not indicate any exceedances of the ARfD

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Appendix A

Table 2: Summary of Results

Food	Analysed	With residues at or below the MRL	With residues above the MRL	With residues of non-approved pesticides (UK only)	With multiple residues	Organic samples tested	Organic samples with residues
Apples	24	23	0	0	20	0	0
Beans with pods	38	15	7	0	10	0	0
Cabbage	24	4	0	0	1	1	0
Cooked meat	30	0	0	0	0	0	0
Fish (sea)	31	0	0	0	0	0	0
Gluten-free foods	74	21	0	0	10	10	0
Grapefruit	54	52	2	0	53	0	0
Grapes	27	26	0	0	24	0	0
Honey	48	5	1	0	2	1	0
Leeks	24	9	0	0	2	1	0
Lettuce	20	17	0	0	8	0	0
Pasta	36	17	0	0	2	0	0
Pears	30	26	0	0	23	3	0
Potatoes	43	37	0	0	18	3	0
Prepared fresh fruit	30	5	2	0	1	0	0
Strawberries	24	24	0	1	22	0	0
Tomatoes	24	15	0	0	5	0	0

*Maximum Residue Levels (MRLs) reflect levels of pesticides that could occur in produce, which has been treated in accordance with good agricultural practice. Where pesticides do not give rise to readily detectable residues, or are not approved for use on particular commodities, MRLs are set at the lowest level which can be identified in routine laboratory analysis. Thus, they provide a mechanism for statutory controls on pesticides in produce which is put into circulation and for monitoring correct use of these chemicals.
If no use of a pesticide on a crop is identified when MRLs are set the tolerance for that pesticide/crop combination is set at the limit of determination (effectively zero). Limit of determination MRL are marked by a '*' in Part 2.
MRLs are established under the Pesticides (Maximum Residue Levels in Crops, Food and Feeding Stuffs) (England and Wales) Regulations 1999 (as amended), the Pesticides (Maximum Residue Levels in Crops, Food and Feeding Stuffs) (Scotland) Regulations 2000 and the Pesticides (Maximum Residue Levels in Crops, Food and Feeding Stuffs) Regulations (Northern Ireland) 2002. These Regulations list all statutory MRLs established under UK national or EC procedures. Today, virtually all these MRLs are set under an ongoing EC programme and the Regulations are amended periodically as levels are set for increasing numbers of pesticides.

There are a number of pesticides which do not yet have statutory MRLs. In the absence of such MRLs we advise suppliers to adhere to any appropriate levels established by the Codex Alimentarius Commission (CAC) a United Nations body established to promote global trading standards. Codex MRLs are not statutory but have been risk-assessed when set and provide a suitable standard in the absence of a statutory MRL.
MRLs may be extended to composite and processed products but levels are not specifically laid down in legislation. They are derived by calculation on an individual basis.

Appendix B

Table 3: Summary of Rapid Alerts Issued and samples with residues above the MRL

Sample ID	Date of Sampling	Description	Country of Origin	Retail Outlet	Address	Brand Name	Packer / Manufacturer	Pesticide residues found in mg/kg (MRL)
3574/2016	29/02/2016	Star Ruby Grapefruit	Turkey	Aldi Stores Limited Depot	Scimitar Way, South Marston, Swindon SN3 4AL		MM (UK) Limited Frans House, Fenton Way, Chatteris PE16 6UP	2-phenylphenol 3.6 (MRL = 5) acetamiprid 0.1 (MRL = 0.9) buprofezin 0.03 (MRL = 1) chlorpyrifos 0.1 (MRL = 0.3) imazalil 6.2 (MRL = 5) propiconazole 0.1 (MRL = 6) pyridaben 0.04 (MRL = 0.5) pyriproxifen 0.02 (MRL = 0.6) thiabendazole 0.9 (MRL = 5)

*** Maximum Residue Levels set at the LOD (LOD MRL):** These MRLs are set at a default level, i.e. at the limit of determination (LOD) where analytical methods can reasonably detect the presence of the pesticide. Either insufficient trials data are available on which to set a maximum residue level or there may be no use of the pesticide on that crop in the EU. However they may be permitted elsewhere.

Table 4: Summary of MRL Exceedances

Sample ID	Food	Country of Origin	Pesticide Detected	Residue Detected (mg/kg)	MRL (mg/kg)	MRL exceedance after allowing for measurement uncertainty
			Beans with pods			
2516/2016	**Green Beans**	**Morocco**	**dimethoate (sum)**	**0.1**	**0.02***	**Yes**
3596/2016	**Speciality Beans**	**India**	dithiocarbamates	1.3	1	No
			triazophos	**0.03**	**0.01***	**Yes**
3611/2016	Speciality Beans	India	dimethoate (sum)	0.03	0.02*	No
3612/2016	**Speciality Beans**	**Malaysia**	**diafenthiuron**	**0.09**	**0.01***	**Yes**
			dimethoate (sum)	**0.04**	**0.02***	**Yes**
			dithiocarbamates	**2.8**	**1**	**Yes**
			fipronil (sum)	**0.01**	**0.005***	**Yes**
3766/2016	**Speciality Beans**	**Malaysia**	**amitraz**	**0.1**	**0.05***	**Yes**
			chlorfenapyr	**0.09**	**0.01***	**Yes**
			dithiocarbamates	**2.3**	**1**	**Yes**
			tolfenpyrad	**0.1**	**0.01***	**Yes**
3925/2016	**Speciality Beans**	**Dominican Republic**	**dithiocarbamates**	**2**	**1**	**Yes**
4072/2016	**Speciality Beans**	**India**	**monocrotophos**	**0.2**	**0.01***	**Yes**
			Grapefruit			
3574/2016	Star Ruby Grapefruit	Turkey	imazalil	6.2	5	No
3951/2016	**Star Ruby Grapefruit**	**Turkey**	**fenvalerate & esfenvalerate (all isomers)**	**0.04**	**0.02***	**Yes**
			Honey			
2523/2016	**Poliflower Honey**	**Romania**	**amitraz**	**0.03**	**0.01***	**Yes**
			Prepared fresh fruit			
0420/2016	**Strawberry, Mango & Melon Fingers**	**UK**	**Chlorate**	**0.3**	**0.01***	**Yes**
0438/2016	**Pineapple, Melon, Mango & Grapes**	**UK**	**Chlorate**	**0.05**	**0.01***	**Yes**

*** Maximum Residue Levels set at the LOD (LOD MRL):** These MRLs are set at a default level, i.e. at the limit of determination (LOD) where analytical methods can reasonably detect the presence of the pesticide. Either insufficient trials data are available on which to set a maximum residue level or there may be no use of the pesticide on that crop in the EU. However they may be permitted elsewhere.

Appendix C: Pesticides Sought and Found in Individual Foodstuffs

Table 5a. Residues detected in retail samples of APPLES purchased between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
APPLES, EATING UK: 5 samples analysed		
boscalid	<0.01 (i.e. not found)	0
(MRL = 2)	0.05 - 0.2	5
captan and folpet	<0.02 (i.e. not found)	4
(MRL = 3)	0.04	1
ethirimol	<0.01 (i.e. not found)	4
(MRL = 0.1)	0.01	1
flonicamid (sum)	<0.01 (i.e. not found)	3
(MRL = 0.2)	0.02, 0.04	2
fludioxonil	<0.01 (i.e. not found)	4
(MRL = 5)	0.03	1
indoxacarb	<0.01 (i.e. not found)	4
(MRL = 0.5)	0.03	1
myclobutanil	<0.01 (i.e. not found)	4
(MRL = 0.5)	0.03	1
paclobutrazol	<0.01 (i.e. not found)	4
(MRL = 0.5)	0.01	1
pyraclostrobin	<0.01 (i.e. not found)	0
(MRL = 0.5)	0.02 - 0.05	5
APPLES, EATING Imported (Non-EC): 7 samples analysed		
acetamiprid	<0.01 (i.e. not found)	4
(MRL = 0.8)	0.03 - 0.05	3
captan and folpet	<0.02 (i.e. not found)	5
(MRL = 3)	0.06	2
chlorantraniliprole	<0.01 (i.e. not found)	6
(MRL = 0.5)	0.01	1
dithiocarbamates	<0.05 (i.e. not found)	4
(MRL = 5)	0.1 - 0.2	3
etofenprox	<0.01 (i.e. not found)	6
(MRL = 1)	0.02	1
flonicamid (sum)	<0.01 (i.e. not found)	6
(MRL = 0.2)	0.01	1
flubendiamide	<0.01 (i.e. not found)	6
(MRL = 0.8)	0.04	1
indoxacarb	<0.01 (i.e. not found)	6

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
(MRL = 0.5)	0.05	1
pyrimethanil	<0.01 (i.e. not found)	5
(MRL = 15)	0.2, 1.1	2
thiacloprid	<0.01 (i.e. not found)	6
(MRL = 0.3)	0.01	1
APPLES, EATING Imported (EC): 12 samples analysed		
boscalid	<0.01 (i.e. not found)	8
(MRL = 2)	0.01 - 0.2	4
captan and folpet	<0.02 (i.e. not found)	7
(MRL = 3)	0.1 - 0.4	5
chlorantraniliprole	<0.01 (i.e. not found)	11
(MRL = 0.5)	0.02	1
cyprodinil	<0.02 (i.e. not found)	11
(MRL = 1.5)	0.06	1
dithianon	<0.02 (i.e. not found)	5
(MRL = 3)	0.03 - 0.2	7
dithiocarbamates	<0.05 (i.e. not found)	11
(MRL = 5)	0.09	1
dodine	<0.02 (i.e. not found)	10
(MRL = 0.9)	0.02, 0.05	2
flonicamid (sum)	<0.01 (i.e. not found)	8
(MRL = 0.2)	0.01 - 0.07	4
fludioxonil	<0.01 (i.e. not found)	5
(MRL = 5)	0.01 - 0.1	7
pirimicarb (sum)	<0.01 (i.e. not found)	11
(MRL = 2)	0.03	1
pyraclostrobin	<0.01 (i.e. not found)	10
(MRL = 0.5)	0.06, 0.09	2
pyrimethanil	<0.01 (i.e. not found)	11
(MRL = 15)	4.3	1
thiacloprid	<0.01 (i.e. not found)	11
(MRL = 0.3)	0.01	1

Imported (EC) samples of apples were from Belgium (1), France (8), Italy (2), the Netherlands (1).
Imported (Non-EC) samples of apples were from Brazil (1), Chile (1), New Zealand (2), South Africa (2), USA (1).
UK samples of apples (5).

Residues were distributed by country of origin, as follows:

acetamiprid	Chile (1), South Africa (1), USA (1)
boscalid	Belgium (1), France (3), UK (5)
captan and folpet	Belgium (1), France (2), Italy (1), New Zealand (1), the Netherlands (1), UK (1), USA (1)
chlorantraniliprole	Brazil (1), France (1)
cyprodinil	Belgium (1)
dodine	Italy (2)
dithiocarbamates	Brazil (1), France (1), South Africa (2)

dithianon	Belgium (1), France (5), Italy (1)
etofenprox	Brazil (1)
ethirimol	UK (1)
flubendiamide	USA (1)
flonicamid (sum)	France (3), the Netherlands (1), UK (2), USA (1)
fludioxonil	Belgium (1), France (5), the Netherlands (1), UK (1)
indoxacarb	South Africa (1), UK (1)
myclobutanil	UK (1)
paclobutrazol	UK (1)
pirimicarb (sum)	Belgium (1)
pyraclostrobin	Belgium (1), France (1), UK (5)
pyrimethanil	Chile (1), France (1), South Africa (1)
thiacloprid	Brazil (1), France (1)

Residues were found in all of the 5 UK eating samples
No residues were found in 1 of the 7 Imported (Non-EC) eating samples
Residues were found in all of the 12 Imported (EC) eating samples

Table 5b. Residues detected in retail samples of APPLES purchased between April and June 2016

Residues (1-7 compounds) were found in 23 of the 24 samples as follows:

Number of residues	Sample ID	Type of APPLES	Residues found (mg/kg)																			Country of origin
			ACET	BOS	CPFOL	CTP	CYD	DOD	DTC	DTN	EFX	EHM	FLB	FLC	FLUD	IDX	MYC	PAC	PIR	PYC	PYM	THC	
(1)	1791/2016	EATING	-	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	New Zealand
	1382/2016	EATING	-	-	-	-	-	-	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	France
	1786/2016	EATING	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Italy
(2)	1780/2016	EATING	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	-	UK
	1340/2016	EATING	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	Chile
	0416/2016	EATING	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	1.1	-	South Africa
	0152/2016	EATING	-	-	-	-	-	-	-	0.1	-	-	-	-	0.01	-	-	-	-	-	-	-	France
	1988/2016	EATING	-	-	-	-	-	-	-	-	-	-	-	0.01	0.02	-	-	-	-	-	-	-	France
(3)	0032/2016	EATING	-	0.2	-	-	-	-	-	-	-	-	-	0.04	-	-	-	-	-	0.05	-	-	UK
	0051/2016	EATING	-	0.1	-	-	-	-	-	-	-	-	-	0.02	-	-	-	-	-	0.04	-	-	UK
	0143/2016	EATING	0.03	-	-	-	-	-	0.2	-	-	-	-	-	-	0.05	-	-	-	-	-	-	South Africa
	0390/2016	EATING	-	0.02	0.4	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	France
	1603/2016	EATING	-	0.01	-	-	-	-	-	0.1	-	-	-	-	0.07	-	-	-	-	-	-	-	France
	1808/2016	EATING	-	-	-	0.02	-	-	0.09	-	-	-	-	-	-	-	-	-	-	-	4.3	-	France
	2508/2016	EATING	-	-	0.2	-	-	0.05	-	0.07	-	-	-	-	-	-	-	-	-	-	-	-	Italy
	1549/2016	EATING	-	-	0.1	-	-	-	-	-	-	-	-	0.05	0.1	-	-	-	-	-	-	-	the Netherlands
(4)	1573/2016	EATING	-	0.1	0.04	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	0.04	-	-	UK
	1934/2016	EATING	-	-	-	0.01	-	-	0.2	-	0.02	-	-	-	-	-	-	-	-	-	-	0.01	Brazil
	0064/2016	EATING	0.03	-	0.06	-	-	-	-	-	-	-	0.04	0.01	-	-	-	-	-	-	-	-	USA
	1902/2016	EATING	-	0.1	-	-	-	-	-	0.04	-	-	-	0.01	-	-	-	-	-	0.06	-	-	France
(5)	0470/2016	EATING	-	-	0.1	-	-	-	-	0.2	-	-	-	0.07	0.02	-	-	-	-	-	-	0.01	France
(6)	0364/2016	EATING	-	0.08	-	-	-	-	-	-	-	0.01	-	-	0.03	-	0.03	0.01	-	0.04	-	-	UK
(7)	0440/2016	EATING	-	0.2	0.1	-	0.06	-	-	0.03	-	-	-	-	0.04	-	-	-	0.03	0.09	-	-	Belgium

The abbreviations used for the pesticide names are as follows:

ACET	acetamiprid	BOS	boscalid	CPFOL	captan and folpet
CTP	chlorantraniliprole	CYD	cyprodinil	DOD	dodine
DTC	dithiocarbamates	DTN	dithianon	EFX	etofenprox
EHM	ethirimol	FLB	flubendiamide	FLC	flonicamid (sum)
FLUD	fludioxonil	IDX	indoxacarb	MYC	myclobutanil
PAC	paclobutrazol	PIR	pirimicarb (sum)	PYC	pyraclostrobin
PYM	pyrimethanil	THC	thiacloprid		

Table 5c. Residues sought but not found in retail samples of APPLES purchased between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.01)
2,4-DB (0.01)
2-phenylphenol (0.02)
6-benzyladenine (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.02)
acrinathrin (0.02)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.02)
alpha-HCH (0.01)
ametoctradin (0.01)
amidosulfuron (0.01)
amitraz (0.01)
asulam (0.02)
atrazine (0.01)
azinphos-ethyl (0.02)
azinphos-methyl (0.02)
azoxystrobin (0.01)
BAC (sum) (0.05)
benalaxyl (0.01)
bendiocarb (0.01)
benfuracarb (0.001)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenox (0.02)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.01)
bixafen (0.01)
bromophos-ethyl (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butachlor (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.02)
carbofuran (sum) (0.001)
carbosulfan (0.001)
carboxin (0.02)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenapyr (0.01)
chlorfenvinphos (0.01)
ethiofencarb (parent) (0.01)
ethion (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etoxazole (0.01)
etridiazole (0.02)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.02)
fenhexamid (0.02)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.005)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flucythrinate (0.01)
flufenacet (0.01)
flufenoxuron (0.02)
fluometuron (0.01)
fluopicolide (0.01)
fluopyram (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flurochloridone (0.02)
fluroxypyr (sum) (0.02)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
fonofos (0.01)
formetanate (0.01)
fosthiazate (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
furmecyclox (0.01)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
nitrothal-isopropyl (0.01)
Novaluron (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.02)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.02)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
pentanochlor (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.02)
phenthoate (0.01)
phorate (partial sum) (0.01)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propachlor (0.01)
propamocarb (0.01)
propanil (0.02)
propaquizafop (0.02)
propargite (0.01)
propetamphos (0.01)
propham (0.02)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyrazophos (0.01)
pyrethrins (0.01)

chloridazon (0.01)
chlorobenzilate (0.02)
chlorothalonil (0.01)
chlorpropham (sum) (0.01)
chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlortoluron (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
clethodim (0.02)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
cyanazine (0.02)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.02)
cyflufenamid (0.01)
cyfluthrin (0.02)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)

cypermethrin (0.02)
cyproconazole (0.01)
cyromazine (0.02)
DDAC (sum) (0.05)

DDT (sum) (0.01)
deltamethrin (0.02)
demeton-S-methyl (0.01)
desmedipham (0.02)
diafenthiuron (0.02)
diazinon (0.01)
dichlobenil (0.01)
dichlofluanid (0.01)
dichlofluanid and DMSA (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.01)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethenamid (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinotefuran (0.01)
diphenylamine (0.02)
disulfoton (sum) (0.01)
diuron (0.01)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.02)
EPN (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethephon (0.05)

hexaconazole (0.01)
hexazinone (0.02)
hexythiazox (0.01)
imazalil (0.02)
imidacloprid (0.01)
ioxynil (0.01)
iprodione (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lambda-cyhalothrin (0.02)
lenacil (0.01)
lindane (0.01)
linuron (0.01)

lufenuron (0.02)
malathion (0.01)
mandipropamid (0.01)
MCPA, MCPB and MCPA thioethyl expressed (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mephosfolan (0.02)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.02)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.02)
metconazole (0.01)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.02)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
napropamide (0.02)
nitenpyram (0.01)
nitrofen (0.02)

pyridaben (0.01)
pyridalyl (0.01)
pyridaphenthion (0.01)
pyrifenox (0.02)
pyriproxifen (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.02)
Quinoclamine (0.01)
quinomethionate (0.02)
quinoxyfen (0.01)
quintozene (sum) (0.01)
resmethrin (0.02)
rimsulfuron (0.01)
rotenone (0.01)
simazine (0.02)
spinosad (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sulcotrione (0.02)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)
tebufenpyrad (0.01)

tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
tepraloxydim (0.02)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbuthylazine (0.02)
terbutryn (0.02)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.02)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.02)
triasulfuron (0.02)
triazamate (0.01)
triazophos (0.01)
triclopyr (0.02)
tricyclazole (0.01)
trifloxystrobin (0.01)
triflumizole (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.01)
triticonazole (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

Table 6a. Residues detected in samples of BEANS WITH PODS obtained between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
GREEN BEANS Imported (Non-EC): 19 samples analysed		
azoxystrobin	<0.01 (i.e. not found)	15
(MRL = 3)	0.02 - 0.2	4
BAC (sum)	<0.01 (i.e. not found)	18
(MRL = 0.1)	0.01	1
chlorantraniliprole	<0.01 (i.e. not found)	18
(MRL = 0.8)	0.02	1
chlorothalonil	<0.01 (i.e. not found)	18
(MRL = 5)	0.2	1
cypermethrin	<0.01 (i.e. not found)	17
(MRL = 0.7)	0.02, 0.1	2
dimethoate (sum)	<0.01 (i.e. not found)	18
(MRL = 0.02*)	0.1	1
dithiocarbamates	<0.05 (i.e. not found)	18
(MRL = 1)	0.6	1
fluopyram	<0.01 (i.e. not found)	18
(MRL = 0.9)	0.07	1
lambda-cyhalothrin	<0.01 (i.e. not found)	17
(MRL = 0.2)	0.01, 0.04	2
SPECIALITY BEANS Imported (Non-EC): 18 samples analysed		
acetamiprid	<0.01 (i.e. not found)	17
(MRL = 0.15)	0.03	1
amitraz	<0.01 (i.e. not found)	17
(MRL = 0.05*)	0.1	1
azoxystrobin	<0.01 (i.e. not found)	16
(MRL = 3)	0.01, 0.07	2
chlorantraniliprole	<0.01 (i.e. not found)	14
(MRL = 0.8)	0.01 - 0.05	4
chlorfenapyr	<0.01 (i.e. not found)	17
(MRL = 0.01*)	0.09	1
chlorpyrifos	<0.01 (i.e. not found)	17
(MRL = 0.05*)	0.03	1
cypermethrin	<0.01 (i.e. not found)	14
(MRL = 0.7)	0.01 - 0.05	4
cyromazine	<0.01 (i.e. not found)	17
(MRL = 5)	0.03	1
deltamethrin	<0.01 (i.e. not found)	17
(MRL = 0.2)	0.01	1
diafenthiuron	<0.01 (i.e. not found)	17

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
(MRL = 0.01*)	0.09	1
dimethoate (sum)	<0.01 (i.e. not found)	14
(MRL = 0.02*)	0.01, 0.02	2
	0.03, 0.04	2
dithiocarbamates	<0.05 (i.e. not found)	13
(MRL = 1)	0.07	1
	1.3 - 2.8	4
emamectin benzoate	<0.01 (i.e. not found)	17
(MRL = 0.01*)	0.01	1
fenpropathrin	<0.01 (i.e. not found)	17
(MRL = 0.01*)	0.01	1
fipronil (sum)	<0.005 (i.e. not found)	17
(MRL = 0.005*)	0.01	1
imidacloprid	<0.01 (i.e. not found)	17
(MRL = 2)	0.02	1
indoxacarb	<0.01 (i.e. not found)	16
(MRL = 0.5)	0.01, 0.1	2
lambda-cyhalothrin	<0.01 (i.e. not found)	16
(MRL = 0.2)	0.01, 0.09	2
methomyl (sum)	<0.01 (i.e. not found)	17
(MRL = 0.02*)	0.01	1
monocrotophos	<0.01 (i.e. not found)	17
(MRL = 0.01*)	0.2	1
myclobutanil	<0.01 (i.e. not found)	17
(MRL = 0.3)	0.09	1
permethrin	<0.01 (i.e. not found)	17
(MRL = 0.05*)	0.03	1
propamocarb	<0.01 (i.e. not found)	17
(MRL = 0.1)	0.01	1
spinosad	<0.01 (i.e. not found)	17
(MRL = 0.3)	0.1	1
tolfenpyrad	<0.01 (i.e. not found)	17
(MRL = 0.01*)	0.1	1
triazophos	<0.01 (i.e. not found)	17
(MRL = 0.01*)	0.03	1
SPECIALITY BEANS Imported (EC): 1 sample analysed		
None found	-	1

NOTE: * Indicates MRL is set to the Limit of Determination.

Imported (EC) samples of beans with pods were from Spain (1).
Imported (Non-EC) samples of beans with pods were from Bangladesh (1), Dominican Republic (3), Egypt (5), Guatemala (1), India (11), Kenya (9), Malaysia (2), Morocco (4), Senegal (1).

Residues were distributed by country of origin, as follows:

acetamiprid	Malaysia (1)
amitraz	Malaysia (1)
azoxystrobin	Guatemala (1), Kenya (1), Malaysia (2), Morocco (1), Senegal (1)
BAC (sum)	Kenya (1)
chlorfenapyr	Malaysia (1)
chlorothalonil	Guatemala (1)
chlorpyrifos	India (1)
chlorantraniliprole	Bangladesh (1), India (2), Malaysia (1), Morocco (1)
cypermethrin	Dominican Republic (1), Egypt (2), India (2), Malaysia (1)
cyromazine	Malaysia (1)
deltamethrin	Malaysia (1)
diafenthiuron	Malaysia (1)
dimethoate (sum)	India (2), Kenya (1), Malaysia (1), Morocco (1)
dithiocarbamates	Dominican Republic (1), India (2), Malaysia (2), Morocco (1)
emamectin benzoate	Dominican Republic (1)
fipronil (sum)	Malaysia (1)
fenpropathrin	India (1)
fluopyram	Morocco (1)
indoxacarb	Malaysia (2)
imidacloprid	Dominican Republic (1)
lambda-cyhalothrin	Dominican Republic (1), Guatemala (1), Kenya (1), Malaysia (1)
methomyl (sum)	Kenya (1)
monocrotophos	India (1)
myclobutanil	India (1)
propamocarb	Malaysia (1)
permethrin	India (1)
spinosad	Dominican Republic (1)
tolfenpyrad	Malaysia (1)
triazophos	India (1)

No residues were found in 10 of the 19 Imported (Non-EC) green beans samples
No residues were found in 5 of the 18 Imported (Non-EC) speciality beans samples
No residues were found in any of the Imported (EC) speciality beans samples

Table 6b. Residues detected in samples of BEANS WITH PODS obtained between April and June 2016

Residues (1-12 compounds) were found in 22 of the 38 samples as follows:

Number of residues	Sample ID	Type Of BEANS WITH PODS	Residues found (mg/kg)																		
			ACET	AMI	AZOX	BACSM	CFR	CLN	CPF	CTP	CYP	CYZ	DEL	DFT	DIMSM	DTC	EMB	FIP	FNPP	FPYM	IDX	IMI
(1)	3598/2016	Speciality Beans	-	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-
	3925/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
	0378/2016	Green Beans	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-
	1687/2016	Green Beans	-	-	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-
	3599/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3611/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	-	-	-	0.03	-	-	-	-	-	-	-
	3613/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-
	4076/2016	Speciality Beans	-	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-
	0052/2016	Green Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0149/2016	Green Beans	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1166/2016	Green Beans	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	0008/2016	Green Beans	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(2)	3601/2016	Speciality Beans	-	-	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	-
	4075/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-
	2509/2016	Green Beans	-	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	0.07	-	-
(3)	4031/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	0.02
	1026/2016	Green Beans	-	-	0.04	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4072/2016	Speciality Beans	-	-	-	-	-	-	-	-	0.03	-	-	-	-	0.07	-	-	-	-	-	-

Number of residues	Sample ID	Type Of BEANS WITH PODS	Residues found (mg/kg)																		
			ACET	AMI	AZOX	BACSM	CFR	CLN	CPF	CTP	CYP	CYZ	DEL	DFT	DIMSM	DTC	EMB	FIP	FNPP	FPYM	IDX	IMI
	2516/2016	Green Beans	-	-	0.2	-	-	-	-	-	-	-	-	-	0.1	0.6	-	-	-	-	-	-
(7)	3596/2016	Speciality Beans	-	-	-	-	-	-	0.03	0.01	0.03	-	-	-	-	1.3	-	-	0.01	-	-	-
	3766/2016	Speciality Beans	-	0.1	0.07	-	0.09	-	-	-	-	-	0.01	-	-	2.3	-	-	-	-	0.01	-
(12)	3612/2016	Speciality Beans	0.03	-	0.01	-	-	-	-	0.05	0.01	0.03	-	0.09	0.04	2.8	-	0.01	-	-	0.1	-

Number of residues	Sample ID	Type Of BEANS WITH PODS	Residues found (mg/kg)									Country of Origin
			LCY	METHS	MON	MYC	PCB	PER	SPN	TFPD	TRI	
(1)	3598/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	Bangladesh
	3925/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	Dominican Republic
	0378/2016	Green Beans	-	-	-	-	-	-	-	-	-	Egypt
	1687/2016	Green Beans	-	-	-	-	-	-	-	-	-	Egypt
	3599/2016	Speciality Beans	-	-	-	-	-	0.03	-	-	-	India
	3611/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	India
	3613/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	India
	4076/2016	Speciality Beans	-	-	-	-	-	-	-	-	-	India
	0052/2016	Green Beans	0.01	-	-	-	-	-	-	-	-	Kenya
	0149/2016	Green Beans	-	-	-	-	-	-	-	-	-	Kenya
	1166/2016	Green Beans	-	-	-	-	-	-	-	-	-	Kenya
	0008/2016	Green Beans	-	-	-	-	-	-	-	-	-	Senegal

Number of residues	Sample ID	Type Of BEANS WITH PODS	Residues found (mg/kg)									Country of Origin
			LCY	METHS	MON	MYC	PCB	PER	SPN	TFPD	TRI	
(2)	3601/2016	Speciality Beans	-	-	-	-	-	-	0.1	-	-	Dominican Republic
	4075/2016	Speciality Beans	-	0.01	-	-	-	-	-	-	-	Kenya
	2509/2016	Green Beans	-	-	-	-	-	-	-	-	-	Morocco
(3)	4031/2016	Speciality Beans	0.09	-	-	-	-	-	-	-	-	Dominican Republic
	1026/2016	Green Beans	0.04	-	-	-	-	-	-	-	-	Guatemala
	4072/2016	Speciality Beans	-	-	0.2	-	-	-	-	-	-	India
	2516/2016	Green Beans	-	-	-	-	-	-	-	-	-	Morocco
(7)	3596/2016	Speciality Beans	-	-	-	0.09	-	-	-	-	0.03	India
	3766/2016	Speciality Beans	-	-	-	-	-	-	-	0.1	-	Malaysia
(12)	3612/2016	Speciality Beans	0.01	-	-	-	0.01	-	-	-	-	Malaysia

The abbreviations used for the pesticide names are as follows:

ACET	acetamiprid	AMI	amitraz	AZOX	azoxystrobin
BACSM	BAC (sum)	CFR	chlorfenapyr	CLN	chlorothalonil
CPF	chlorpyrifos	CTP	chlorantraniliprole	CYP	cypermethrin
CYZ	cyromazine	DEL	deltamethrin	DFT	diafenthiuron
DIMSM	dimethoate (sum)	DTC	dithiocarbamates	EMB	emamectin benzoate
FIP	fipronil (sum)	FNPP	fenpropathrin	FPYM	fluopyram
IDX	indoxacarb	IMI	imidacloprid	LCY	lambda-cyhalothrin
METHS	methomyl (sum)	MON	monocrotophos	MYC	myclobutanil
PCB	propamocarb	PER	permethrin	SPN	spinosad
TFPD	tolfenpyrad	TRI	triazophos		

Table 6c. Residues sought but not found in samples of BEANS WITH PODS obtained between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.02)
2,4-DB (0.01)
2-phenylphenol (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.01)
acrinathrin (0.01)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.01)
alpha-HCH (0.01)
ametoctradin (0.01)
aminocarb (0.01)
atrazine (0.01)
azinphos-ethyl (0.01)
azinphos-methyl (0.01)
benalaxyl (0.01)
bendiocarb (0.01)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.05)
boscalid (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan and folpet (0.01)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.01)
carbofuran (sum) (0.001)
carboxin (0.01)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenvinphos (0.01)
chlorfluazuron (0.01)
chloridazon (0.01)
chlorobenzilate (0.01)
chlorotoluron (0.01)
chlorpropham (sum) (0.05)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
cinidon-ethyl (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.01)
fenhexamid (0.01)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenthion (sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
fludioxonil (0.01)
flufenacet (0.01)
flufenoxuron (0.01)
fluometuron (0.01)
fluopicolide (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
fonofos (0.01)
formetanate (0.01)
formothion (0.01)
fosthiazate (0.01)
fuberidazole (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Haloxyfop-R methyl (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
hexaconazole (0.01)
hexaflumuron (0.01)
hexazinone (0.01)
hexythiazox (0.01)
imazalil (0.01)
ioxynil (0.01)
iprodione (0.01)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.01)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
penthiopyrad (0.01)
phenmedipham (0.01)
phenthoate (0.01)
phorate (sum) (0.02)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propanil (0.01)
propaquizafop (0.01)
propargite (0.01)
propetamphos (0.01)
propham (0.01)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyraclostrobin (0.01)
pyrazophos (0.01)
pyrethrins (0.01)
pyridaben (0.01)
pyridaphenthion (0.01)
pyrifenox (0.01)
pyrimethanil (0.01)
pyriproxifen (0.01)
pyroxsulam (0.01)
quassia (0.01)

clethodim (0.01)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
crufomate (0.01)
cyanazine (0.01)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.01)
cyflufenamid (0.01)
cyfluthrin (0.01)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)
cyproconazole (0.01)
cyprodinil (0.01)
DDAC (sum) (0.01)
DDT (sum) (0.01)
desmedipham (0.01)
desmetryn (0.01)
diazinon (0.01)
dichlofluanid (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.02)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinocap (0.01)
dinotefuran (0.01)
dioxathion (0.01)
diphenylamine (0.05)
disulfoton (sum) (0.01)
diuron (0.01)
dodine (0.05)
endosulfan (sum) (0.01)
endrin (0.01)
EPN (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)
ethion (0.01)
ethirimol (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)
etrimfos (0.01)
famoxadone (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lenacil (0.01)
lindane (0.01)
linuron (0.01)
lufenuron (0.01)
malathion (0.01)
mandipropamid (0.01)
MCPA (sum) (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.01)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.01)
metconazole (0.01)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.01)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monolinuron (0.01)
Monuron (0.01)
napropamide (0.01)
neburon (0.01)
nitenpyram (0.01)
nitrothal-isopropyl (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.01)
quinalphos (0.01)
quinmerac (0.01)
Quinoclamine (0.01)
quinoxyfen (0.01)
quintozene (sum) (0.01)
Quizalofop, incl. quizalfop-P (0.01)
rotenone (0.01)
simazine (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)
tebufenpyrad (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
terbacil (0.01)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbumeton (0.01)
terbuthylazine (0.01)
terbutryn (0.01)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.01)
thiacloprid (0.01)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.01)
triasulfuron (0.01)
triazamate (0.01)
triazamate (acid) (0.01)
triazamate (ester) (0.01)
trichlorfon (0.01)
triclopyr (0.05)
tricyclazole (0.01)
trifloxystrobin (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.05)
triticonazole (0.01)
tritosulfuron (0.01)
vamidothion (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

Table 7a. Residues detected in retail samples of CABBAGE purchased between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
CABBAGE, UK: 17 samples analysed		
boscalid	<0.01 (i.e. not found)	16
(MRL = 5)	0.03	1
iprodione	<0.01 (i.e. not found)	16
(MRL = 15)	0.01	1
CABBAGE, Imported (EC): 7 samples analysed		
etofenprox	<0.01 (i.e. not found)	6
(MRL = 2)	0.04	1
imidacloprid	<0.01 (i.e. not found)	5
(MRL = 0.5)	0.01, 0.07	2
pirimicarb (sum)	<0.01 (i.e. not found)	6
(MRL = 1)	0.06	1

Imported (EC) samples of cabbage were from Spain (6), the Netherlands (1).
UK samples of cabbage (17).

Residues were distributed by country of origin, as follows:

boscalid	UK (1)
etofenprox	Spain (1)
imidacloprid	Spain (2)
iprodione	UK (1)
pirimicarb (sum)	Spain (1)

No residues were found in 15 of the 17 UK samples
No residues were found in 5 of the 7 Imported (EC) samples

Table 7b. Residues detected in retail samples of CABBAGE purchased between April and June 2016

Residues (1-3 compounds) were found in 4 of the 24 samples as follows:

Number of residues	Sample ID	Residues found (mg/kg)					Country of origin
		BOS	EFX	IMI	IPR	PIR	
(1)	0054/2016	-	-	-	0.01	-	UK
	0372/2016	0.03	-	-	-	-	UK
	0140/2016	-	-	0.01	-	-	Spain
(3)	0273/2016	-	0.04	0.07	-	0.06	Spain

The abbreviations used for the pesticide names are as follows:

BOS	boscalid	EFX	etofenprox	IMI	imidacloprid
IPR	iprodione	PIR	pirimicarb (sum)		

Table 7c. Residues sought but not found in retail samples of CABBAGE purchased between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.02)
2,4-DB (0.01)
2-phenylphenol (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetamiprid (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.01)
acrinathrin (0.01)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.01)
alpha-HCH (0.01)
ametoctradin (0.01)
aminocarb (0.01)
amitraz (0.01)
atrazine (0.01)
azinphos-ethyl (0.01)
azinphos-methyl (0.01)
azoxystrobin (0.01)

BAC (sum) (0.01)
benalaxyl (0.01)
bendiocarb (0.01)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.05)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan (0.01)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.01)
carbofuran (sum) (0.01)
carboxin (0.01)
chlorantraniliprole (0.01)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenapyr (0.01)
chlorfenvinphos (0.01)
chlorfluazuron (0.01)
chloridazon (0.01)
chlorobenzilate (0.01)
chlorothalonil (0.01)
chlorotoluron (0.01)
chlorpropham (sum) (0.05)
ethoprophos (0.01)
etoxazole (0.01)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.01)
fenhexamid (0.01)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenthion (sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.01)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
fludioxonil (0.01)
flufenacet (0.01)
flufenoxuron (0.01)
fluometuron (0.01)
fluopicolide (0.01)
fluopyram (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
folpet (0.01)
fonofos (0.01)
formetanate (0.01)
formothion (0.01)
fosthiazate (0.01)
fuberidazole (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Haloxyfop-R methyl (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.01)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.01)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.01)
phenthoate (0.01)
phorate (sum) (0.02)
phosalone (0.01)

phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propamocarb (0.01)
propanil (0.01)
propaquizafop (0.01)
propargite (0.01)
propetamphos (0.01)
propham (0.01)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyraclostrobin (0.01)
pyrazophos (0.01)
pyrethrins (0.01)
pyridaben (0.01)
pyridaphenthion (0.01)
pyrifenox (0.01)

(0.01)
chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
cinidon-ethyl (0.01)
clethodim (0.01)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
crufomate (0.01)
cyanazine (0.01)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.01)
cyflufenamid (0.01)
cyfluthrin (0.01)

cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)
cypermethrin (0.01)
cyproconazole (0.01)
cyprodinil (0.01)
cyromazine (0.01)
DDAC (sum) (0.01)
DDT (sum) (0.01)
deltamethrin (0.01)
desmedipham (0.01)
desmetryn (0.01)
diazinon (0.01)
dichlofluanid (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.02)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinocap (0.01)
dinotefuran (0.01)
dioxathion (0.01)
diphenylamine (0.05)
disulfoton (sum) (0.01)
diuron (0.01)
dodine (0.05)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.01)
EPN (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)
ethion (0.01)
ethirimol (0.01)
ethofumesate (0.01)
hexaconazole (0.01)
hexaflumuron (0.01)
hexazinone (0.01)
hexythiazox (0.01)
imazalil (0.01)
indoxacarb (0.01)
ioxynil (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)

kresoxim-methyl (0.01)
lambda-cyhalothrin (0.01)
lenacil (0.01)
lindane (0.01)
linuron (0.01)
lufenuron (0.01)
malathion (0.01)
mandipropamid (0.01)
MCPA (sum) (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.01)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.01)
metconazole (0.02)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.01)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
myclobutanil (0.01)
napropamide (0.01)
neburon (0.01)
nitenpyram (0.01)
nitrothal-isopropyl (0.01)
pyrimethanil (0.01)
pyriproxifen (0.01)
pyroxsulam (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.01)
Quinoclamine (0.01)
quinoxyfen (0.01)
quintozene (sum) (0.01)
Quizalofop, incl. quizalfop-P (0.01)
rotenone (0.01)
simazine (0.01)
spinosad (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)
tebufenpyrad (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
terbacil (0.01)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbumeton (0.01)
terbuthylazine (0.01)
terbutryn (0.01)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.01)
thiacloprid (0.01)
thiamethoxam (sum) (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.01)
triasulfuron (0.01)
triazamate (0.01)
triazamate (acid) (0.01)
triazamate (ester) (0.01)
triazophos (0.01)
trichlorfon (0.01)
triclopyr (0.05)
tricyclazole (0.01)
trifloxystrobin (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.05)
triticonazole (0.01)
tritosulfuron (0.01)
vamidothion (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

Table 8a. Residues detected in retail samples of COOKED MEAT purchased between April and May 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
BEEF UK: 1 sample analysed		
None found	-	1
CHICKEN UK: 8 samples analysed		
None found	-	8
HAM UK: 11 samples analysed		
None found	-	11
PORK UK: 1 sample analysed		
None found	-	1
TURKEY UK: 2 samples analysed		
None found	-	2
BEEF Imported (Non-EC): 1 sample analysed		
None found	-	1
CHICKEN Imported (Non-EC): 3 samples analysed		
None found	-	3
HAM Imported (EC): 3 samples analysed		
None found	-	3

Imported (EC) samples of cooked meat were from Denmark (1), Ireland (2).
Imported (Non-EC) samples of cooked meat were from Brazil (2), Thailand (2).
UK samples of cooked meat (23).

No residues were found in any of the UK beef samples
No residues were found in any of the UK chicken samples
No residues were found in any of the UK ham samples
No residues were found in any of the UK pork samples
No residues were found in any of the UK turkey samples
No residues were found in any of the Imported (Non-EC) beef samples
No residues were found in any of the Imported (Non-EC) chicken samples
No residues were found in any of the Imported (EC) ham samples

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

aldrin and dieldrin (0.002)
alpha-HCH (0.002)
azinphos-ethyl (0.002)
beta-HCH (0.002)
bifenthrin (0.005)
chlordane (animal products) (0.002)
chlorfenvinphos (0.002)
chlorobenzilate (0.002)
chlorpyrifos (0.002)
chlorpyrifos-methyl (0.002)
cyfluthrin (0.005)
DDT (sum) (0.002)
deltamethrin (0.005)
diazinon (0.002)
endosulfan (sum) (0.002)
endrin (0.002)
fenvalerate & esfenvalerate (all isomers (0.005)
Heptachlor (sum) (0.002)
hexachlorobenzene (0.002)
lindane (0.002)
methacrifos (0.002)
methidathion (0.002)
nitrofen (0.002)
parathion (0.002)
parathion-methyl (sum) (0.002)
permethrin (0.005)
pirimiphos-methyl (0.002)
profenofos (0.002)
pyrazophos (0.002)
quintozene (sum) (0.002)
resmethrin (0.005)
tecnazene (0.002)
triazophos (0.002)

cypermethrin (0.005) methoxychlor (0.002)

Table 9a. Residues detected in retail samples of SEA FISH purchased between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
COD UK: 2 samples analysed		
None found	-	2
DOVER SOLE UK: 1 sample analysed		
None found	-	1
HADDOCK UK: 2 samples analysed		
None found	-	2
COD Imported (Non-EC): 12 samples analysed		
None found	-	12
HADDOCK Imported (Non-EC): 6 samples analysed		
None found	-	6
PLAICE Imported (Non-EC): 1 sample analysed		
None found	-	1
POLLOCK Imported (Non-EC): 1 sample analysed		
None found	-	1
RED SNAPPER Imported (Non-EC): 1 sample analysed		
None found	-	1
RIVER COBBLER Imported (Non-EC): 1 sample analysed		
None found	-	1
SEA BREAM Imported (Non-EC): 1 sample analysed		
None found	-	1
WHITE FISH Imported (Non-EC): 1 sample analysed		
None found	-	1
HADDOCK Imported (EC): 1 sample analysed		
None found	-	1
SEA BASS Imported (EC): 1 sample analysed		
None found	-	1

Imported (EC) samples of sea fish were from Greece (1), Poland (1).
Imported (Non-EC) samples of sea fish were from Barents Sea (2), China (1), North East Atlantic (14), Norwegian Sea (1), Pacific Ocean (3), Russian Federation (1), Turkey (1), Vietnam (1).
UK samples of sea fish (5).

No residues were found in any of the UK cod samples
No residues were found in any of the UK dover sole samples
No residues were found in any of the UK haddock samples
No residues were found in any of the Imported (Non-EC) cod samples
No residues were found in any of the Imported (Non-EC) haddock samples
No residues were found in any of the Imported (Non-EC) plaice samples
No residues were found in any of the Imported (Non-EC) pollock samples
No residues were found in any of the Imported (Non-EC) red snapper samples
No residues were found in any of the Imported (Non-EC) river cobbler samples
No residues were found in any of the Imported (Non-EC) sea bream samples
No residues were found in any of the Imported (Non-EC) white fish samples
No residues were found in any of the Imported (EC) haddock samples
No residues were found in any of the Imported (EC) sea bass samples

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

aldrin and dieldrin (0.002)
alpha-HCH (0.002)
azinphos-ethyl (0.002)
beta-HCH (0.002)
bifenthrin (0.005)
chlordane (animal products) (0.002)
chlorfenvinphos (0.002)
chlorobenzilate (0.002)
chlorpyrifos (0.002)
chlorpyrifos-methyl (0.002)
cyfluthrin (0.005)
cypermethrin (0.005)
DDT (sum) (0.002)
deltamethrin (0.005)
diazinon (0.002)
endosulfan (sum) (0.002)
endrin (0.002)
fenvalerate & esfenvalerate (all isomers (0.005)
Heptachlor (sum) (0.002)
hexachlorobenzene (0.002)
lindane (0.002)
methacrifos (0.002)
methidathion (0.002)
methoxychlor (0.002)
nitrofen (0.002)
parathion (0.002)
parathion-methyl (sum) (0.002)
permethrin (0.005)
pirimiphos-methyl (0.002)
profenofos (0.002)
pyrazophos (0.002)
quintozene (sum) (0.002)
resmethrin (0.005)
tecnazene (0.002)
triazophos (0.002)

Table 10a. Residues detected in retail samples of GLUTEN-FREE FOODS purchased between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
GLUTEN-FREE CEREAL UK: 9 samples analysed		
chlormequat	<0.02 (i.e. not found)	3
(No MRL)	0.02 - 1.7	6
deltamethrin	<0.02 (i.e. not found)	13
(No MRL)	0.1, 0.3	2
diphenylamine	<0.02 (i.e. not found)	14
(No MRL)	0.03	1
glyphosate	<0.1 (i.e. not found)	6
(No MRL)	0.1 - 1.2	3
mepiquat	<0.02 (i.e. not found)	7
(No MRL)	0.03, 0.1	2
tebuconazole	<0.01 (i.e. not found)	13
(No MRL)	0.02, 0.04	2
tricyclazole	<0.01 (i.e. not found)	13
(No MRL)	0.05, 0.09	2
GLUTEN-FREE FLOUR PRODUCTS UK: 39 samples analysed		
chlorpyrifos-methyl	<0.01 (i.e. not found)	37
(No MRL)	0.01, 0.02	2
haloxyfop (sum)	<0.01 (i.e. not found)	33
(No MRL)	0.01 - 0.04	6
pirimiphos-methyl	<0.01 (i.e. not found)	38
(No MRL)	0.3	1
tricyclazole	<0.01 (i.e. not found)	38
(No MRL)	0.09	1
GLUTEN-FREE CEREAL Imported (Non-EC): 4 samples analysed		
None found	-	4
GLUTEN-FREE PASTA Imported (Non-EC): 1 sample analysed		
None found	-	1
GLUTEN-FREE CEREAL Imported (EC): 2 samples analysed		
None found	-	2
GLUTEN-FREE FLOUR PRODUCTS Imported (EC): 2 samples analysed		
None found	-	2
GLUTEN-FREE PASTA Imported (EC): 11 samples analysed		
pirimiphos-methyl	<0.01 (i.e. not found)	10
(No MRL)	0.02	1

Imported (EC) samples of gluten-free foods were from Denmark (1), Italy (14).
Imported (Non-EC) samples of gluten-free foods were from China (1), Switzerland (1), USA (3).
UK samples of gluten-free foods (54).

Residues were distributed by country of origin, as follows:

chlormequat	UK (6)
chlorpyrifos-methyl	UK (2)
deltamethrin	UK (2)
diphenylamine	UK (1)
glyphosate	UK (3)
haloxyfop (sum)	UK (6)
mepiquat	UK (2)
pirimiphos-methyl	Italy (1), UK (1)
tebuconazole	UK (2)
tricyclazole	UK (3)

No residues were found in 6 of the 15 UK gluten-free cereal samples
No residues were found in 31 of the 39 UK gluten-free flour products samples
No residues were found in any of the Imported (Non-EC) gluten-free cereal samples
No residues were found in any of the Imported (Non-EC) gluten-free pasta samples
No residues were found in any of the Imported (EC) gluten-free cereal samples
No residues were found in any of the Imported (EC) gluten-free flour products samples
No residues were found in 10 of the 11 Imported (EC) gluten-free pasta samples

Those foods which were composed of cereals were tested for a broad suite plus pesticides such as glyphosate, chlormequat and mepiquat that are routinely applied to cereals.

Those foods which were composed of potato products were tested for a broad suite of pesticides plus pesticides specifically applied to potato such as maleic hydrazide.

Table 10b. Residues detected in retail samples of GLUTEN-FREE FOODS purchased between April and June 2016

Residues (1-3 compounds) were found in 18 of the 74 samples as follows:

Number of residues	Sample ID	Type of GLUTEN-FREE FOODS	Residues found (mg/kg)										Country of origin
			CLQ	CPFME	DEL	DPA	GLY	HXFSM	MPQ	PIM	TBC	TCY	
(1)	0397/2016	Gluten-free Flour Products	-	-	-	-	-	0.02	-	-	-	-	UK
	1505/2016	Gluten-free Cereal	0.4	-	-	-	-	-	-	-	-	-	UK
	1508/2016	Gluten-free Flour Products	-	-	-	-	-	-	-	0.3	-	-	UK
	1513/2016	Gluten-free Flour Products	-	-	-	-	-	0.02	-	-	-	-	UK
	1519/2016	Gluten-free Cereal	0.4	-	-	-	-	-	-	-	-	-	UK
	1524/2016	Gluten-free Flour Products	-	-	-	-	-	0.01	-	-	-	-	UK
	1624/2016	Gluten-free Flour Products	-	-	-	-	-	-	-	-	-	0.09	UK
	1625/2016	Gluten-free Flour Products	-	-	-	-	-	0.04	-	-	-	-	UK
	1633/2016	Gluten-free Cereal	1.7	-	-	-	-	-	-	-	-	-	UK
	0394/2016	Gluten-free Pasta	-	-	-	-	-	-	-	0.02	-	-	Italy
(2)	0500/2016	Gluten-free Cereal	0.8	-	-	-	0.2	-	-	-	-	-	UK
	1504/2016	Gluten-free Cereal	0.8	-	-	-	0.1	-	-	-	-	-	UK
	1509/2016	Gluten-free Flour Products	-	0.01	-	-	-	0.02	-	-	-	-	UK
	1521/2016	Gluten-free Flour Products	-	0.02	-	-	-	0.02	-	-	-	-	UK
	1775/2016	Gluten-free Cereal	-	-	-	-	1.2	-	0.1	-	-	-	UK
(3)	1621/2016	Gluten-free Cereal	-	-	0.1	-	-	-	-	-	0.02	0.05	UK
	1773/2016	Gluten-free Cereal	-	-	0.3	-	-	-	-	-	0.04	0.09	UK
	1967/2016	Gluten-free Cereal	0.02	-	-	0.03	-	-	0.03	-	-	-	UK

The abbreviations used for the pesticide names are as follows:

CLQ	chlormequat	CPFME	chlorpyrifos-methyl	DEL	deltamethrin
DPA	diphenylamine	GLY	glyphosate	HXFSM	haloxyfop (sum)
MPQ	mepiquat	PIM	pirimiphos-methyl	TBC	tebuconazole
TCY	tricyclazole				

Table 10c. Residues sought but not found in retail samples of GLUTEN-FREE FOODS purchased between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.01)
2,4-DB (0.01)
2-phenylphenol (0.02)
6-benzyladenine (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetamiprid (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.02)
acrinathrin (0.02)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.02)
alpha-HCH (0.01)
ametoctradin (0.01)
amidosulfuron (0.01)
amitraz (0.01)
asulam (0.02)
atrazine (0.01)
azinphos-ethyl (0.02)
azinphos-methyl (0.02)
azoxystrobin (0.01)
BAC (sum) (0.05)
benalaxyl (0.01)
bendiocarb (0.01)
benfuracarb (0.001)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenox (0.02)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.01)
bixafen (0.01)
boscalid (0.01)
bromophos-ethyl (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butachlor (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan (0.02)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.02)
carbofuran (sum) (0.001)
carbosulfan (0.001)
carboxin (0.02)
chlorantraniliprole (0.01)
chlorbufam (0.01)
chlordane (sum) (0.01)
ethirimol (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)
etridiazole (0.02)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.02)
fenhexamid (0.02)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.005)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
fludioxonil (0.01)
flufenacet (0.01)
flufenoxuron (0.02)
fluometuron (0.01)
fluopicolide (0.01)
fluopyram (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flurochloridone (0.02)
fluroxypyr (sum) (0.02)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
folpet (0.01)
fonofos (0.01)
formetanate (0.01)
fosthiazate (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
furmecyclox (0.01)
halofenozide (0.01)
halosulfuron-methyl (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
napropamide (0.02)
nitenpyram (0.01)
nitrofen (0.02)
nitrothal-isopropyl (0.01)
Novaluron (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.02)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.02)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
pentanochlor (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.02)
phenthoate (0.01)
phorate (partial sum) (0.01)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propachlor (0.01)
propamocarb (0.01)
propanil (0.02)
propaquizafop (0.02)
propargite (0.01)
propetamphos (0.01)
propham (0.02)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyraclostrobin (0.01)

chlorfenapyr (0.01)
chlorfenvinphos (0.01)
chloridazon (0.01)
chlorobenzilate (0.02)
chlorothalonil (0.01)
chlorpropham (sum) (0.01)
chlorpyrifos (0.01)
chlorthal-dimethyl (0.01)
chlortoluron (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
clethodim (0.02)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
cyanazine (0.02)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.02)
cyflufenamid (0.01)
cyfluthrin (0.02)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)
cypermethrin (0.02)

cyproconazole (0.01)
cyprodinil (0.02)
cyromazine (0.02)
DDAC (sum) (0.05)
DDT (sum) (0.01)

demeton-S-methyl (0.01)
desmedipham (0.02)
diafenthiuron (0.02)
diazinon (0.01)
dichlobenil (0.01)
dichlofluanid and DMSA (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.01)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethenamid (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinotefuran (0.01)
disulfoton (sum) (0.01)
diuron (0.01)
dodine (0.02)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.02)
EPN (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)
hexachlorocyclohexane (sum) (0.01)
hexaconazole (0.01)
hexazinone (0.02)
hexythiazox (0.01)
imazalil (0.02)
imidacloprid (0.01)
indoxacarb (0.01)
ioxynil (0.01)
iprodione (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lambda-cyhalothrin (0.02)
lenacil (0.01)
lindane (0.01)
linuron (0.01)

lufenuron (0.02)
malathion (0.01)
maleic hydrazide (1)
mandipropamid (0.01)
MCPA, MCPB and MCPA thioethyl expressed (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mephosfolan (0.02)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.02)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.02)
metconazole (0.01)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.02)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
myclobutanil (0.01)
pyrazophos (0.01)
pyrethrins (0.01)
pyridaben (0.01)
pyridalyl (0.01)
pyridaphenthion (0.01)
pyrifenox (0.02)
pyrimethanil (0.01)
pyriproxifen (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.02)
Quinoclamine (0.01)
quinoxyfen (0.01)
quintozene (sum) (0.01)
resmethrin (0.02)
rimsulfuron (0.01)
rotenone (0.01)
simazine (0.02)
spinosad (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sulcotrione (0.02)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebufenozide (0.01)
tebufenpyrad (0.01)
tebuthiuron (0.01)
tecnazene (0.01)

teflubenzuron (0.01)
tefluthrin (0.01)
tepraloxydim (0.02)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbuthylazine (0.02)
terbutryn (0.02)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.02)
thiacloprid (0.01)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.02)
triasulfuron (0.02)
triazamate (0.01)
triazophos (0.01)
triclopyr (0.02)
trifloxystrobin (0.01)
triflumizole (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.01)
triticonazole (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

ethion (0.01)

Table 11a. Residues detected in samples of GRAPEFRUIT obtained between January and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
GRAPEFRUIT, Imported (Non-EC): 40 samples analysed		
2,4-D (sum)	<0.02 (i.e. not found)	31
(MRL = 1)	0.03 - 0.4	9
2-phenylphenol	<0.01 (i.e. not found)	26
(MRL = 5)	0.02 - 3.6	14
acetamiprid	<0.01 (i.e. not found)	25
(MRL = 0.9)	0.02 - 0.3	15
biphenyl	<0.01 (i.e. not found)	39
(MRL = 0.01*)	0.01	1
buprofezin	<0.01 (i.e. not found)	36
(MRL = 1)	0.02 - 0.04	4
carbendazim	<0.01 (i.e. not found)	38
(MRL = 0.2)	0.01, 0.02	2
chlorpyrifos	<0.01 (i.e. not found)	13
(MRL = 0.3)	0.01 - 0.2	27
cypermethrin	<0.01 (i.e. not found)	36
(MRL = 2)	0.01 - 0.04	4
diflubenzuron	<0.01 (i.e. not found)	35
(MRL = 1)	0.02 - 0.05	5
dithiocarbamates	<0.05 (i.e. not found)	35
(MRL = 5)	0.05 - 0.3	5
fenbutatin oxide	<0.01 (i.e. not found)	29
(MRL = 5)	0.01 - 0.4	11
fenvalerate & esfenvalerate (all isomers)	<0.01 (i.e. not found)	38
(MRL = 0.02*)	0.02	1
	0.04	1
imazalil	<0.01 (i.e. not found)	2
(MRL = 5)	0.01 - 3.5	37
	6.2	1
imidacloprid	<0.01 (i.e. not found)	33
(MRL = 1)	0.01 - 0.03	7
lufenuron	<0.01 (i.e. not found)	39
(MRL = 1)	0.01	1
Prochloraz (sum)	<0.01 (i.e. not found)	0
(No MRL)	0.4 - 1.3	4
propiconazole	<0.01 (i.e. not found)	34
(MRL = 6)	0.01 - 0.2	6
pyraclostrobin	<0.01 (i.e. not found)	33
(MRL = 1)	0.02 - 0.06	7

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
pyridaben	<0.01 (i.e. not found)	32
(MRL = 0.5)	0.01 - 0.07	8
pyrimethanil	<0.01 (i.e. not found)	18
(MRL = 8)	0.04 - 4	22
pyriproxifen	<0.01 (i.e. not found)	24
(MRL = 0.6)	0.01 - 0.06	16
tau-fluvalinate	<0.01 (i.e. not found)	38
(MRL = 0.1)	0.01, 0.03	2
tebuconazole	<0.01 (i.e. not found)	39
(MRL = 5)	0.1	1
thiabendazole	<0.01 (i.e. not found)	7
(MRL = 5)	0.01 - 2.6	33
trifloxystrobin	<0.01 (i.e. not found)	39
(MRL = 0.3)	0.03	1
GRAPEFRUIT, Imported (EC): 14 samples analysed		
2,4-D (sum)	<0.02 (i.e. not found)	6
(MRL = 1)	0.2 - 0.5	8
2-phenylphenol	<0.01 (i.e. not found)	4
(MRL = 5)	0.02 - 2.7	10
acetamiprid	<0.01 (i.e. not found)	10
(MRL = 0.9)	0.02 - 0.03	4
buprofezin	<0.01 (i.e. not found)	13
(MRL = 1)	0.02	1
chlorpyrifos	<0.01 (i.e. not found)	6
(MRL = 0.3)	0.02 - 0.2	8
cypermethrin	<0.01 (i.e. not found)	13
(MRL = 2)	0.02	1
imazalil	<0.01 (i.e. not found)	0
(MRL = 5)	0.4 - 2.7	14
imidacloprid	<0.01 (i.e. not found)	12
(MRL = 1)	0.1	2
pyrimethanil	<0.01 (i.e. not found)	6
(MRL = 8)	0.3 - 3	8
pyriproxifen	<0.01 (i.e. not found)	13
(MRL = 0.6)	0.01	1
tebufenpyrad	<0.01 (i.e. not found)	13
(MRL = 0.6)	0.02	1
thiabendazole	<0.01 (i.e. not found)	4
(MRL = 5)	0.01 - 1.3	10

NOTE: * Indicates MRL is set to the Limit of Determination.

Imported (EC) samples of grapefruit were from Cyprus (10), Spain (4).
Imported (Non-EC) samples of grapefruit were from Israel (13), South Africa (5), Swaziland (1), Turkey (15), USA (6).

Residues were distributed by country of origin, as follows:

2,4-D (sum)	Cyprus (8), Israel (5), South Africa (3), Swaziland (1)
2-phenylphenol	Cyprus (10), Israel (2), Turkey (6), USA (6)
acetamiprid	Cyprus (4), South Africa (1), Turkey (14)
biphenyl	Turkey (1)
buprofezin	Spain (1), Turkey (4)
carbendazim	South Africa (1), Turkey (1)
chlorpyrifos	Cyprus (8), Israel (8), Turkey (14), USA (5)
cypermethrin	Cyprus (1), Turkey (4)
diflubenzuron	USA (5)
dithiocarbamates	South Africa (2), Turkey (3)
fenbutatin oxide	Israel (2), Turkey (6), USA (3)
fenvalerate & esfenvalerate (all isomers	Turkey (2)
imidacloprid	Israel (2), South Africa (2), Spain (2), Turkey (1), USA (2)
imazalil	Cyprus (10), Israel (13), South Africa (5), Spain (4), Swaziland (1), Turkey (13), USA (6)
lufenuron	Turkey (1)
propiconazole	Turkey (6)
Prochloraz (sum)	Turkey (4)
pyridaben	Turkey (8)
pyraclostrobin	South Africa (3), Swaziland (1), USA (3)
pyrimethanil	Cyprus (8), Israel (10), South Africa (3), Turkey (9)
pyriproxifen	Israel (4), South Africa (1), Spain (1), Swaziland (1), Turkey (9), USA (1)
tau-fluvalinate	Turkey (2)
tebuconazole	Turkey (1)
thiabendazole	Cyprus (10), Israel (12), South Africa (3), Turkey (12), USA (6)
tebufenpyrad	Spain (1)
trifloxystrobin	Turkey (1)

Residues were found in all of the 40 Imported (Non-EC) samples
Residues were found in all of the 14 Imported (EC) samples

Table 11b. Residues detected in samples of GRAPEFRUIT obtained between January and June 2016

Residues (1-11 compounds) were found in 54 of the 54 samples as follows:

Number of residues	Sample ID	Residues found (mg/kg)																									Country of origin
		24DS	2PP	ACET	BPY	BUF	CBZ	CPF	CYP	DIF	DTC	FNBT	FNV	IMI	IMZ	LFN	PCZ	PRZS	PYB	PYC	PYM	PYX	TAUF	TBC	TBZ	TEBF	TRFL	
(1)	3622/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	2.6	-	-	-	-	-	-	-	-	-	-	-	-	Spain
(2)	3571/2016	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.4	-	-	-	-	-	-	-	-	-	-	-	-	Spain
(3)	3510/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	-	-	-	-	0.1	-	-	-	1.1	-	-	Israel
	3513/2016	-	-	-	-	-	-	0.1	-	-	-	-	-	-	2.4	-	-	-	-	-	-	-	-	-	1.1	-	-	Israel
	3514/2016	-	-	-	-	-	-	0.07	-	-	-	-	-	-	0.07	-	-	-	-	-	0.05	-	-	-	-	-	-	Israel
	3518/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	-	-	-	-	-	0.9	-	-	-	1.3	-	-	Israel
	3560/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	-	-	-	-	0.04	-	-	-	-	1.4	-	-	South Africa
	4142/2016	-	-	-	-	-	-	-	-	-	0.1	-	-	-	1.6	-	-	-	-	0.05	-	-	-	-	-	-	-	South Africa
	3891/2016	-	1.1	-	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	0.3	-	-	Cyprus
	3957/2016	-	-	-	-	0.02	-	-	-	-	-	-	-	-	2.4	-	-	-	-	-	-	0.01	-	-	-	-	-	Spain
	4026/2016	-	-	-	-	-	-	-	-	-	-	-	-	0.1	1.8	-	-	-	-	-	-	-	-	-	-	0.02	-	Spain
(4)	3508/2016	-	-	-	-	-	-	0.01	-	-	-	-	-	-	3	-	-	-	-	-	2.2	-	-	-	2.6	-	-	Israel
	4141/2016	-	-	-	-	-	-	-	-	-	-	-	-	0.03	2.1	-	-	-	-	-	2.2	-	-	-	1.3	-	-	Israel
	3592/2016	0.2	-	0.04	-	-	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	1.5	-	-	-	-	-	-	South Africa
	3630/2016	0.1	-	-	-	-	-	-	-	-	-	-	-	-	1.7	-	-	-	-	0.06	-	0.03	-	-	-	-	-	Swaziland
	4068/2016	-	2.7	-	-	-	-	0.1	-	-	-	-	-	-	2.1	-	-	-	-	-	-	-	-	-	0.9	-	-	Cyprus
(5)	3507/2016	0.05	-	-	-	-	-	-	-	-	-	0.4	-	-	1.3	-	-	-	-	-	-	0.06	-	-	1.5	-	-	Israel
	3512/2016	-	-	-	-	-	-	0.03	-	-	-	0.01	-	-	1.8	-	-	-	-	-	1.5	-	-	-	0.5	-	-	Israel
	3544/2016	-	-	-	-	-	-	0.02	-	-	-	-	-	-	3.5	-	-	-	-	-	2.6	0.01	-	-	2.5	-	-	Israel
	4133/2016	0.3	-	-	-	-	-	0.05	-	-	-	-	-	-	2.5	-	-	-	-	-	-	0.05	-	-	0.2	-	-	Israel
	3540/2016	-	0.4	-	-	-	-	-	-	0.03	-	0.07	-	-	1.1	-	-	-	-	-	-	-	-	-	1.3	-	-	USA
(6)	3509/2016	0.2	0.1	-	-	-	-	-	-	-	-	-	-	0.01	3.5	-	-	-	-	-	4	-	-	-	1.2	-	-	Israel
	3578/2016	0.07	0.1	-	-	-	-	0.1	-	-	-	-	-	-	1.9	-	-	-	-	-	0.5	-	-	-	1.9	-	-	Israel
	3809/2016	0.03	-	-	-	-	-	0.07	-	-	-	-	-	-	2.8	-	-	-	-	-	2.6	0.02	-	-	1	-	-	Israel
	3807/2016	0.4	-	-	-	-	0.02	-	-	-	-	-	-	0.03	1.6	-	-	-	-	-	0.9	-	-	-	1.1	-	-	South Africa
	3515/2016	-	0.5	-	-	-	-	0.03	-	0.04	-	-	-	-	0.4	-	-	-	-	0.04	-	-	-	-	0.6	-	-	USA
	4074/2016	-	0.5	-	-	-	-	0.02	-	-	-	-	-	-	1.1	-	-	-	-	0.03	-	0.01	-	-	0.7	-	-	USA
	4132/2016	-	0.7	-	-	-	-	0.03	-	0.05	-	-	-	-	0.3	-	-	-	-	0.06	-	-	-	-	0.6	-	-	USA
	3551/2016	0.4	0.02	-	-	-	-	0.02	-	-	-	-	-	-	2.7	-	-	-	-	-	0.3	-	-	-	1	-	-	Cyprus
	3580/2016	0.3	0.4	-	-	-	-	0.2	-	-	-	-	-	-	2.1	-	-	-	-	-	2.3	-	-	-	0.2	-	-	Cyprus
	3955/2016	0.5	0.6	-	-	-	-	-	0.02	-	-	-	-	-	2.4	-	-	-	-	-	3	-	-	-	0.4	-	-	Cyprus
	4021/2016	0.2	0.2	-	-	-	-	0.02	-	-	-	-	-	-	0.7	-	-	-	-	-	0.7	-	-	-	0.02	-	-	Cyprus
(7)	3546/2016	-	-	0.02	-	-	-	0.08	-	-	-	-	-	-	0.5	-	-	-	-	-	0.8	0.02	0.01	-	0.07	-	-	Turkey
	3549/2016	-	0.1	0.09	0.01	-	0.01	0.02	-	-	-	0.05	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-	Turkey

Number of residues	Sample ID	Residues found (mg/kg)																								Country of origin
		24DS	2PP	ACET	BPY	BUF	CBZ	CPF	CYP	DIF	DTC	FNBT	FNV	IMI	IMZ	LFN	PCZ	PRZS	PYB	PYC	PYM	PYX	TAUF	TBC	TBZ	TEBF	TRFL	
	3608/2016	-	0.02	0.06	-	-	-	0.06	-	-	-	-	-	-	1.3	-	-	0.4	-	-	0.6	-	-	-	0.5	-	-	Turkey
	3896/2016	-	-	0.03	-	-	-	0.07	0.01	-	-	-	-	-	-	-	0.02	-	0.02	-	-	0.04	-	-	0.09	-	-	Turkey
	3951/2016	-	-	0.08	-	-	-	0.1	-	-	-	0.4	0.04	-	0.7	-	-	-	0.01	-	0.04	-	-	-	-	-	-	Turkey
	4116/2016	-	-	0.02	-	-	-	0.08	0.01	-	-	-	-	-	-	-	0.01	-	0.03	-	-	0.04	-	-	0.1	-	-	Turkey
	3511/2016	-	0.3	-	-	-	-	0.04	-	0.02	-	0.06	-	0.01	0.09	-	-	-	-	-	-	-	-	-	0.6	-	-	USA
	3558/2016	-	0.1	-	-	-	-	0.05	-	0.04	-	0.07	-	0.01	0.1	-	-	-	-	-	-	-	-	-	0.6	-	-	USA
	3523/2016	0.3	0.7	0.02	-	-	-	0.06	-	-	-	-	-	-	1.1	-	-	-	-	-	1.6	-	-	-	0.04	-	-	Cyprus
	3971/2016	0.3	0.4	0.02	-	-	-	0.02	-	-	-	-	-	-	1.3	-	-	-	-	-	1.6	-	-	-	0.02	-	-	Cyprus
	4127/2016	0.3	0.4	0.03	-	-	-	0.2	-	-	-	-	-	-	1.4	-	-	-	-	-	1.6	-	-	-	0.01	-	-	Cyprus
	4144/2016	0.3	0.6	0.03	-	-	-	0.2	-	-	-	-	-	-	1.8	-	-	-	-	-	2	-	-	-	1.3	-	-	Cyprus
(8)	3623/2016	0.3	-	-	-	-	-	-	-	-	0.3	-	-	0.02	1.7	-	-	-	-	0.02	2.3	0.01	-	-	0.9	-	-	South Africa
	3539/2016	-	-	0.03	-	-	-	0.09	-	-	0.08	0.02	-	-	0.3	-	-	-	-	-	0.05	0.01	-	-	0.02	-	-	Turkey
	3545/2016	-	0.1	0.05	-	-	-	0.04	-	-	-	-	-	-	0.05	-	-	-	0.02	-	0.4	-	-	0.1	0.01	-	-	Turkey
	3569/2016	-	0.03	-	-	-	-	-	-	-	-	0.07	-	-	0.1	-	0.02	-	0.07	-	1	-	-	-	0.3	-	0.03	Turkey
	3892/2016	-	-	0.04	-	-	-	0.1	-	-	0.05	0.01	-	-	0.4	-	-	-	-	-	1.1	0.02	-	-	0.05	-	-	Turkey
(9)	3574/2016	-	3.6	0.1	-	0.03	-	0.1	-	-	-	-	-	-	6.2	-	0.1	-	0.04	-	-	0.02	-	-	0.9	-	-	Turkey
	3602/2016	-	-	0.06	-	-	-	0.1	0.04	-	-	-	0.02	-	0.01	-	0.2	0.5	0.02	-	-	0.01	-	-	-	-	-	Turkey
	3616/2016	-	0.2	0.06	-	0.02	-	0.2	-	-	-	-	-	-	1.9	0.01	0.03	1.3	-	-	-	-	-	-	0.1	-	-	Turkey
(10)	3563/2016	-	-	0.06	-	0.04	-	0.2	0.02	-	-	-	-	0.01	0.5	-	-	-	-	-	2.1	0.02	0.03	-	0.08	-	-	Turkey
(11)	4145/2016	-	-	0.3	-	0.04	-	0.2	-	-	0.1	0.04	-	-	1.8	-	-	0.5	0.03	-	0.2	0.01	-	-	0.06	-	-	Turkey

The abbreviations used for the pesticide names are as follows:

24DS	2,4-D (sum)	2PP	2-phenylphenol	ACET	acetamiprid
BPY	biphenyl	BUF	buprofezin	CBZ	carbendazim
CPF	chlorpyrifos	CYP	cypermethrin	DIF	diflubenzuron
DTC	dithiocarbamates	FNBT	fenbutatin oxide	FNV	fenvalerate & esfenvalerate (all isomers)
IMI	imidacloprid	IMZ	imazalil	LFN	lufenuron
PCZ	propiconazole	PRZS	Prochloraz (sum)	PYB	pyridaben
PYC	pyraclostrobin	PYM	pyrimethanil	PYX	pyriproxifen
TAUF	tau-fluvalinate	TBC	tebuconazole	TBZ	thiabendazole
TEBF	tebufenpyrad	TRFL	trifloxystrobin		

Table 11c. Residues sought but not found in samples of GRAPEFRUIT obtained between January and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-DB (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.01)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.01)
alpha-HCH (0.01)
ametoctradin (0.01)
aminocarb (0.01)
amitraz (0.01)
atrazine (0.01)
azinphos-ethyl (0.01)
azinphos-methyl (0.01)
azoxystrobin (0.01)
BAC (sum) (0.01)
benalaxyl (0.01)
bendiocarb (0.01)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenthrin (0.01)
bispyribac-sodium (0.01)
bitertanol (0.05)
boscalid (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan (0.01)
carbaryl (0.01)
carbetamide (0.01)
carbofuran (sum) (0.01)
carboxin (0.01)
chlorantraniliprole (0.01)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenapyr (0.01)
chlorfenvinphos (0.01)
chlorfluazuron (0.01)
chloridazon (0.01)
chlorobenzilate (0.01)
chlorothalonil (0.01)
chlorotoluron (0.01)
chlorpropham (sum) (0.05)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
cinidon-ethyl (0.01)
clethodim (0.01)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenhexamid (0.01)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenthion (sum) (0.01)
fipronil (sum) (0.01)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
fludioxonil (0.01)
flufenacet (0.01)
flufenoxuron (0.01)
fluometuron (0.01)
fluopicolide (0.01)
fluopyram (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
folpet (0.01)
fonofos (0.01)
formetanate (0.01)
formothion (0.01)
fosthiazate (0.01)
fuberidazole (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Haloxyfop-R methyl (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
hexaconazole (0.01)
hexaflumuron (0.01)
hexazinone (0.01)
hexythiazox (0.01)
nitenpyram (0.01)
nitrothal-isopropyl (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.01)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.01)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.01)
phenthoate (0.01)
phorate (sum) (0.02)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propamocarb (0.01)
propanil (0.01)
propaquizafop (0.01)
propargite (0.01)
propetamphos (0.01)
propham (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyrazophos (0.01)
pyrethrins (0.01)
pyridaphenthion (0.01)
pyrifenox (0.01)

clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
crufomate (0.01)
cyanazine (0.01)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.01)
cyflufenamid (0.01)
cyfluthrin (0.01)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)
cyproconazole (0.01)
cyprodinil (0.01)
cyromazine (0.01)

DDAC (sum) (0.01)
DDT (sum) (0.01)
deltamethrin (0.01)
desmedipham (0.01)
desmetryn (0.01)
diafenthiuron (0.01)
diazinon (0.01)
dichlofluanid (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.02)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflufenican (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinotefuran (0.01)
dioxathion (0.01)
diphenylamine (0.05)
disulfoton (sum) (0.01)
dithianon (0.01)
diuron (0.01)
dodine (0.05)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)
ethion (0.01)
ethirimol (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)

indoxacarb (0.01)
ioxynil (0.01)
iprodione (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lambda-cyhalothrin (0.01)

lenacil (0.01)
lindane (0.01)
linuron (0.01)
malathion (0.01)
mandipropamid (0.01)
MCPA (sum) (0.01)
MCPA only (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.01)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.01)
metconazole (0.02)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.01)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
myclobutanil (0.01)
napropamide (0.01)
neburon (0.01)

pyroxsulam (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.01)
Quinoclamine (0.01)
quinoxyfen (0.01)
quintozene (sum) (0.01)
Quizalofop, incl. quizalfop-P (0.01)
rotenone (0.01)
simazine (0.01)
spinosad (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sum of butocarboxim and butocarboxim sul (0.01)
tebufenozide (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
terbacil (0.01)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbumeton (0.01)
terbuthylazine (0.01)
terbutryn (0.01)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetramethrin (0.01)
thiacloprid (0.01)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.01)
triasulfuron (0.01)
triazamate (0.01)
triazamate (acid) (0.01)
triazamate (ester) (0.01)
triazophos (0.01)
trichlorfon (0.01)
triclopyr (0.05)
tricyclazole (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.05)
triticonazole (0.01)
tritosulfuron (0.01)
vamidothion (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

Table 12a. Residues detected in samples of GRAPES obtained between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
GRAPES, Imported (Non-EC): 25 samples analysed		
acetamiprid	<0.01 (i.e. not found)	23
(MRL = 0.5)	0.03, 0.08	2
ametoctradin	<0.01 (i.e. not found)	24
(MRL = 6)	0.4	1
azoxystrobin	<0.01 (i.e. not found)	21
(MRL = 2)	0.01 - 0.2	4
boscalid	<0.01 (i.e. not found)	18
(MRL = 5)	0.01 - 1.2	7
buprofezin	<0.01 (i.e. not found)	23
(MRL = 1)	0.01, 0.03	2
chlormequat	<0.02 (i.e. not found)	24
(MRL = 0.05*)	0.03	1
clothianidin	<0.01 (i.e. not found)	24
(MRL = 0.7)	0.01	1
cyprodinil	<0.02 (i.e. not found)	21
(MRL = 3)	0.03 - 0.3	4
difenoconazole	<0.01 (i.e. not found)	22
(MRL = 3)	0.02 - 0.05	3
dimethomorph	<0.01 (i.e. not found)	23
(MRL = 3)	0.03, 0.4	2
dithiocarbamates	<0.05 (i.e. not found)	19
(MRL = 5)	0.06 - 0.2	6
ethephon	<0.05 (i.e. not found)	17
(MRL = 1)	0.07 - 0.7	8
fenamidone	<0.01 (i.e. not found)	23
(MRL = 0.6)	0.03, 0.04	2
fenhexamid	<0.02 (i.e. not found)	17
(MRL = 15)	0.2 - 1.5	8
fludioxonil	<0.01 (i.e. not found)	22
(MRL = 5)	0.01 - 0.1	3
fluopicolide	<0.01 (i.e. not found)	24
(MRL = 2)	0.2	1
fluopyram	<0.01 (i.e. not found)	20
(MRL = 1.5)	0.05 - 0.2	5
imidacloprid	<0.01 (i.e. not found)	22
(MRL = 1)	0.01 - 0.09	3
iprovalicarb	<0.01 (i.e. not found)	24
(MRL = 2)	0.01	1

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
mandipropamid	<0.01 (i.e. not found)	24
(MRL = 2)	0.01	1
myclobutanil	<0.01 (i.e. not found)	21
(MRL = 1)	0.02	4
penconazole	<0.01 (i.e. not found)	24
(MRL = 0.2)	0.01	1
Prochloraz (sum)	<0.01 (i.e. not found)	0
(MRL = 0.05*)	0.04	1
proquinazid	<0.01 (i.e. not found)	24
(MRL = 0.5)	0.02	1
pyraclostrobin	<0.01 (i.e. not found)	23
(MRL = 1)	0.04, 0.5	2
pyrimethanil	<0.01 (i.e. not found)	21
(MRL = 5)	0.01 - 1.1	4
quinoxyfen	<0.01 (i.e. not found)	24
(MRL = 1)	0.01	1
spinosad	<0.01 (i.e. not found)	21
(MRL = 0.5)	0.01 - 0.06	4
spirotetramat (sum)	<0.01 (i.e. not found)	23
(MRL = 2)	0.05, 0.1	2
tetraconazole	<0.01 (i.e. not found)	24
(MRL = 0.5)	0.1	1
thiamethoxam (sum)	<0.01 (i.e. not found)	23
(MRL = 0.9)	0.2, 0.3	2
triadimefon & triadimenol	<0.01 (i.e. not found)	24
(MRL = 2)	0.05	1
trifloxystrobin	<0.01 (i.e. not found)	24
(MRL = 3)	0.02	1
GRAPES, Imported (EC): 2 samples analysed		
boscalid	<0.01 (i.e. not found)	1
(MRL = 5)	0.05	1
dimethomorph	<0.01 (i.e. not found)	1
(MRL = 3)	0.2	1
dithiocarbamates	<0.05 (i.e. not found)	1
(MRL = 5)	0.06	1
iprodione	<0.01 (i.e. not found)	1
(MRL = 20)	0.7	1
metrafenone	<0.01 (i.e. not found)	1
(MRL = 7)	0.03	1
myclobutanil	<0.01 (i.e. not found)	1
(MRL = 1)	0.04	1
penconazole	<0.01 (i.e. not found)	1
(MRL = 0.2)	0.1	1

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
spinosad	<0.01 (i.e. not found)	1
(MRL = 0.5)	0.04	1
spirotetramat (sum)	<0.01 (i.e. not found)	0
(MRL = 2)	0.07, 0.08	2
trifloxystrobin	<0.01 (i.e. not found)	1
(MRL = 3)	0.2	1

NOTE: * Indicates MRL is set to the Limit of Determination.

Imported (EC) samples of grapes were from Italy (1), Spain (1).
Imported (Non-EC) samples of grapes were from Chile (5), Egypt (5), India (7), Israel (2), Morocco (1), South Africa (5).

Residues were distributed by country of origin, as follows:

acetamiprid	Chile (2)
ametoctradin	India (1)
azoxystrobin	Egypt (1), India (2), Morocco (1)
boscalid	Chile (4), Egypt (3), Spain (1)
buprofezin	India (2)
chlormequat	India (1)
clothianidin	Chile (1)
cyprodinil	Chile (1), Egypt (1), Morocco (1), South Africa (1)
difenoconazole	India (3)
dimethomorph	India (2), Italy (1)
dithiocarbamates	India (3), Israel (2), South Africa (1), Spain (1)
ethephon	Chile (1), Egypt (3), South Africa (4)
fludioxonil	Chile (1), Egypt (1), South Africa (1)
fenamidone	Israel (2)
fenhexamid	Chile (5), Egypt (1), South Africa (2)
fluopicolide	Morocco (1)
fluopyram	Morocco (1), South Africa (4)
imidacloprid	Egypt (1), India (1), Morocco (1)
iprodione	Italy (1)
iprovalicarb	India (1)
mandipropamid	South Africa (1)
metrafenone	Italy (1)
myclobutanil	Egypt (1), India (3), Spain (1)
penconazole	Italy (1), South Africa (1)
proquinazid	Israel (1)
Prochloraz (sum)	Egypt (1)
pyraclostrobin	Chile (1), Egypt (1)
pyrimethanil	Chile (4)
quinoxyfen	Chile (1)
spinosad	Chile (2), Egypt (1), India (1), Spain (1)
spirotetramat (sum)	Chile (1), Italy (1), Morocco (1), Spain (1)
thiamethoxam (sum)	Chile (2)
trifloxystrobin	Morocco (1), Spain (1)
triadimefon & triadimenol	India (1)
tetraconazole	India (1)

No residues were found in 1 of the 25 Imported (Non-EC) samples
Residues were found in all of the 2 Imported (EC) samples

Table 12b. Residues detected in samples of GRAPES obtained between April and June 2016

Residues (1-8 compounds) were found in 26 of the 27 samples as follows:

Number of residues	Sample ID	Residues found (mg/kg)																			
		ACET	AMTD	AZOX	BOS	BUF	CLQ	CTH	CYD	DIFC	DMR	DTC	ETH	FLUD	FMD	FNHX	FPC	FPYM	IMI	IPR	IPV
(1)	3883/2016	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3519/2016	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-
(2)	3595/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3	-	-	-	-	-
	4047/2016	-	-	-	0.01	-	-	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-
	3970/2016	-	-	-	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	0.01
	4053/2016	-	0.4	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-
	3583/2016	-	-	-	-	-	-	-	-	-	-	0.08	-	-	0.03	-	-	-	-	-	-
	3577/2016	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	0.05	-	-	-
	3594/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	0.2	-	-	-
	4071/2016	-	-	-	-	-	-	-	-	-	-	-	0.07	-	-	-	-	0.07	-	-	-
(3)	3625/2016	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-
	3882/2016	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	0.01	-	-
	4117/2016	-	-	0.03	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-
	3557/2016	-	-	-	-	-	-	-	-	-	-	0.1	-	-	0.04	-	-	-	-	-	-
	4139/2016	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-	0.2	-	0.2	-	-	-
(5)	3562/2016	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	1.1	-	-	-	-	-
	4140/2016	0.03	-	-	0.1	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-
	4010/2016	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	0.7	-
(6)	3626/2016	-	-	0.2	0.1	-	-	-	0.07	-	-	-	-	0.03	-	0.4	-	-	-	-	-
	4124/2016	-	-	0.01	-	0.03	-	-	-	-	0.03	0.07	-	-	-	-	-	-	-	-	-
	3538/2016	-	-	-	-	-	-	-	0.03	-	-	0.09	0.1	0.01	-	-	-	-	-	-	-
	3889/2016	-	-	-	0.05	-	-	-	-	-	-	0.06	-	-	-	-	-	-	-	-	-
(7)	3548/2016	-	-	-	0.05	-	-	-	0.3	-	-	-	0.1	0.1	-	1.5	-	-	-	-	-
	3593/2016	0.08	-	-	0.3	-	-	0.01	-	-	-	-	-	-	-	0.7	-	-	-	-	-
	3890/2016	-	-	0.04	-	-	-	-	0.2	-	-	-	-	-	-	-	0.2	0.1	0.07	-	-
(8)	3950/2016	-	-	-	-	0.01	0.03	-	-	0.05	-	0.06	-	-	-	-	-	-	0.09	-	-

Number of residues	Sample ID	Residues found (mg/kg)															Country of origin
		MDI	MTF	MYC	PNZ	PPQ	PRZS	PYC	PYM	QINO	SPN	STTPS	THMSM	TRFL	TRSP	TTZ	
(1)	3883/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Egypt
	3519/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	India
(2)	3595/2016	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-	Chile
	4047/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Egypt
	3970/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	India
	4053/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	India
	3583/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Israel
	3577/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	South Africa
	3594/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	South Africa
	4071/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	South Africa
(3)	3625/2016	-	-	-	-	-	0.04	-	-	-	0.03	-	-	-	-	-	Egypt
	3882/2016	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	Egypt
	4117/2016	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	India
	3557/2016	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	Israel
	4139/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	South Africa
(5)	3562/2016	-	-	-	-	-	-	0.5	0.01	0.01	-	-	-	-	-	-	Chile
	4140/2016	-	-	-	-	-	-	-	0.5	-	-	-	0.2	-	-	-	Chile
	4010/2016	-	0.03	-	0.1	-	-	-	-	-	-	0.08	-	-	-	-	Italy
(6)	3626/2016	-	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	Egypt
	4124/2016	-	-	0.02	-	-	-	-	-	-	0.06	-	-	-	-	-	India
	3538/2016	0.01	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	South Africa
	3889/2016	-	-	0.04	-	-	-	-	-	-	0.04	0.07	-	0.2	-	-	Spain
(7)	3548/2016	-	-	-	-	-	-	-	1.1	-	-	0.05	-	-	-	-	Chile
	3593/2016	-	-	-	-	-	-	-	0.7	-	0.01	-	0.3	-	-	-	Chile
	3890/2016	-	-	-	-	-	-	-	-	-	-	0.1	-	0.02	-	-	Morocco
(8)	3950/2016	-	-	0.02	-	-	-	-	-	-	-	-	-	-	0.05	0.1	India

The abbreviations used for the pesticide names are as follows:

ACET	acetamiprid	AMTD	ametoctradin	AZOX	azoxystrobin
BOS	boscalid	BUF	buprofezin	CLQ	chlormequat
CTH	clothianidin	CYD	cyprodinil	DIFC	difenoconazole

DMR	dimethomorph	DTC	dithiocarbamates	ETH	ethephon
FLUD	fludioxonil	FMD	fenamidone	FNHX	fenhexamid
FPC	fluopicolide	FPYM	fluopyram	IMI	imidacloprid
IPR	iprodione	IPV	iprovalicarb	MDI	mandipropamid
MTF	metrafenone	MYC	myclobutanil	PNZ	penconazole
PPQ	proquinazid	PRZS	Prochloraz (sum)	PYC	pyraclostrobin
PYM	pyrimethanil	QINO	quinoxyfen	SPN	spinosad
STTPS	spirotetramat (sum)	THMSM	thiamethoxam (sum)	TRFL	trifloxystrobin
TRSP	triadimefon & triadimenol	TTZ	tetraconazole		

Table 12c. Residues sought but not found in samples of GRAPES obtained between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.01)
2,4-DB (0.01)
2-phenylphenol (0.02)
6-benzyladenine (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.02)
acrinathrin (0.02)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.02)
alpha-HCH (0.01)
amidosulfuron (0.01)
amitraz (0.01)
asulam (0.02)
atrazine (0.01)
azinphos-ethyl (0.02)
azinphos-methyl (0.02)
BAC (sum) (0.05)
benalaxyl (0.01)
bendiocarb (0.01)
benfuracarb (0.001)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenox (0.02)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.01)
bixafen (0.01)
bromophos-ethyl (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
butachlor (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan (0.02)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.02)
carbofuran (sum) (0.001)
carbosulfan (0.001)
carboxin (0.02)
chlorantraniliprole (0.01)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenapyr (0.01)
chlorfenvinphos (0.01)
chloridazon (0.01)
chlorobenzilate (0.02)
ethiofencarb (parent) (0.01)
ethion (0.01)
ethirimol (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)
etridiazole (0.02)
etrimfos (0.01)
famoxadone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.02)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.005)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
flufenacet (0.01)
flufenoxuron (0.02)
fluometuron (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flurochloridone (0.02)
fluroxypyr (sum) (0.02)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
folpet (0.01)
fonofos (0.01)
formetanate (0.01)
fosthiazate (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
furmecyclox (0.01)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum)
nitenpyram (0.01)
nitrofen (0.02)
nitrothal-isopropyl (0.01)
Novaluron (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.02)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.02)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
pentanochlor (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.02)
phenthoate (0.01)
phorate (partial sum) (0.01)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propachlor (0.01)
propamocarb (0.01)
propanil (0.02)
propaquizafop (0.02)
propargite (0.01)
propetamphos (0.01)
propham (0.02)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyrazophos (0.01)

(0.01)
chlorothalonil (0.01)
chlorpropham (sum) (0.01)
chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlortoluron (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
clethodim (0.02)
clofentezine (0.01)
clomazone (0.01)
coumaphos (0.01)
cyanazine (0.02)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.02)
cyflufenamid (0.01)
cyfluthrin (0.02)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)
cypermethrin (0.02)
cyproconazole (0.01)
cyromazine (0.02)
DDAC (sum) (0.05)
DDT (sum) (0.01)
deltamethrin (0.02)
demeton-S-methyl (0.01)
desmedipham (0.02)
diafenthiuron (0.02)
diazinon (0.01)
dichlobenil (0.01)
dichlofluanid (0.01)
dichlofluanid and DMSA (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.01)
dicrotophos (0.01)
diethofencarb (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethenamid (0.01)
dimethoate (sum) (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinotefuran (0.01)
diphenylamine (0.02)
disulfoton (sum) (0.01)
diuron (0.01)
dodine (0.02)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.02)
EPN (0.01)
epoxiconazole (0.01)
EPTC (0.01)
hexaconazole (0.01)
hexazinone (0.02)
hexythiazox (0.01)
imazalil (0.02)
indoxacarb (0.01)
ioxynil (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lambda-cyhalothrin (0.02)
lenacil (0.01)
lindane (0.01)
linuron (0.01)
lufenuron (0.02)
malathion (0.01)
MCPA, MCPB and MCPA thioethyl expressed (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mephosfolan (0.02)
mepiquat (0.02)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.02)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.02)
metconazole (0.01)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metribuzin (0.02)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
napropamide (0.02)
pyrethrins (0.01)
pyridaben (0.01)
pyridalyl (0.01)
pyridaphenthion (0.01)
pyrifenox (0.02)
pyriproxifen (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.02)
Quinoclamine (0.01)
quinomethionate (0.02)
quintozene (sum) (0.01)
resmethrin (0.02)
rimsulfuron (0.01)
rotenone (0.01)
simazine (0.02)
spirodiclofen (0.01)
spiromesifen (0.01)
spiroxamine (0.01)
sulcotrione (0.02)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)
tebufenpyrad (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
tepraloxydim (0.02)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbuthylazine (0.02)
terbutryn (0.02)
tetrachlorvinphos (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.02)
thiacloprid (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triallate (0.02)
triasulfuron (0.02)
triazamate (0.01)
triazophos (0.01)
triclopyr (0.02)
tricyclazole (0.01)
triflumizole (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.01)
triticonazole (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

Table 13a. Residues detected in retail samples of HONEY purchased between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
HONEY, UK: 33 samples analysed		
acetamiprid	<0.01 (i.e. not found)	32
(MRL = 0.05*)	0.01	1
boscalid	<0.01 (i.e. not found)	32
(MRL = 0.5)	0.03	1
carbendazim	<0.01 (i.e. not found)	31
(MRL = 1)	0.01	2
picoxystrobin	<0.01 (i.e. not found)	32
(MRL = 0.05*)	0.01	1
thiacloprid	<0.01 (i.e. not found)	31
(MRL = 0.05*)	0.01	2
HONEY, Imported (Non-EC): 10 samples analysed		
None found	-	10
HONEY, Imported (EC): 5 samples analysed		
amitraz	<0.01 (i.e. not found)	4
(MRL = 0.01*)	0.03	1

NOTE: * Indicates MRL is set to the Limit of Determination.

Imported (EC) samples of honey were from Belgium (1), EU (1), Germany (1), Romania (1), Spain (1).
Imported (Non-EC) samples of honey were from Australia (5), Mexico (2), New Zealand (3).
UK samples of honey (33).

Residues were distributed by country of origin, as follows:

acetamiprid	UK (1)
amitraz	Romania (1)
boscalid	UK (1)
carbendazim	UK (2)
picoxystrobin	UK (1)
thiacloprid	UK (2)

No residues were found in 28 of the 33 UK samples
No residues were found in any of the Imported (Non-EC) samples
No residues were found in 4 of the 5 Imported (EC) samples

Table 13b. Residues detected in retail samples of HONEY purchased between April and June 2016

Residues (1-2 compounds) were found in 6 of the 48 samples as follows:

Number of residues	Sample ID	Residues found (mg/kg)						Country of origin
		ACET	AMI	BOS	CBZ	PIC	THC	
(1)	0028/2016	-	-	-	-	-	0.01	UK
	0029/2016	-	-	-	-	-	0.01	UK
	0409/2016	0.01	-	-	-	-	-	UK
	2523/2016	-	0.03	-	-	-	-	Romania
(2)	1680/2016	-	-	-	0.01	0.01	-	UK
	1681/2016	-	-	0.03	0.01	-	-	UK

The abbreviations used for the pesticide names are as follows:

ACET	acetamiprid	AMI	amitraz	BOS	boscalid
CBZ	carbendazim	PIC	picoxystrobin	THC	thiacloprid

Table 13c. Residues sought but not found in retail samples of HONEY purchased between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.01)
2,4-DB (0.01)
2-phenylphenol (0.02)
6-benzyladenine (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.02)
acrinathrin (0.02)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.02)
alpha-HCH (0.01)
ametoctradin (0.01)
amidosulfuron (0.01)
asulam (0.02)
atrazine (0.01)
azinphos-ethyl (0.02)
azinphos-methyl (0.02)
azoxystrobin (0.01)
BAC (sum) (0.05)
benalaxyl (0.01)
bendiocarb (0.01)
benfuracarb (0.001)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenox (0.02)
bifenthrin (0.01)
bispyribac-sodium (0.01)
bitertanol (0.01)
bixafen (0.01)
bromophos-ethyl (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butachlor (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan (0.02)
carbaryl (0.01)
carbetamide (0.02)
carbofuran (sum) (0.001)
carbosulfan (0.001)
carboxin (0.02)
chlorantraniliprole (0.01)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenapyr (0.01)
chlorfenvinphos (0.01)
chloridazon (0.01)
chlorobenzilate (0.02)
chlorothalonil (0.01)
chlorpropham (sum) (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)
etridiazole (0.02)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.02)
fenhexamid (0.02)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.005)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
fludioxonil (0.01)
flufenacet (0.01)
flufenoxuron (0.02)
fluometuron (0.01)
fluopicolide (0.01)
fluopyram (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flurochloridone (0.02)
fluroxypyr (sum) (0.02)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
folpet (0.01)
fonofos (0.01)
formetanate (0.01)
fosthiazate (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
furmecyclox (0.01)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
nitrothal-isopropyl (0.01)
Novaluron (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.02)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.02)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
pentanochlor (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.02)
phenthoate (0.01)
phorate (partial sum) (0.01)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
piperonyl butoxide (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propachlor (0.01)
propamocarb (0.01)
propanil (0.02)
propaquizafop (0.02)
propargite (0.01)
propetamphos (0.01)
propham (0.02)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyraclostrobin (0.01)
pyrazophos (0.01)
pyrethrins (0.01)

chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlortoluron (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
clethodim (0.02)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
cyanazine (0.02)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.02)
cyflufenamid (0.01)
cyfluthrin (0.02)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)
cypermethrin (0.02)
cyproconazole (0.01)
cyprodinil (0.02)
cyromazine (0.02)
DDAC (sum) (0.05)

DDT (sum) (0.01)
deltamethrin (0.02)
demeton-S-methyl (0.01)
desmedipham (0.02)

diafenthiuron (0.02)
diazinon (0.01)
dichlobenil (0.01)
dichlofluanid (0.01)
dichlofluanid and DMSA (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.01)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethenamid (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinotefuran (0.01)
diphenylamine (0.02)
disulfoton (sum) (0.01)
diuron (0.01)
dodine (0.02)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.02)
EPN (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)
ethion (0.01)
ethirimol (0.01)
hexaconazole (0.01)
hexazinone (0.02)
hexythiazox (0.01)
imazalil (0.02)
imidacloprid (0.01)
indoxacarb (0.01)
ioxynil (0.01)
iprodione (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lambda-cyhalothrin (0.02)
lenacil (0.01)
lindane (0.01)
linuron (0.01)

lufenuron (0.02)
malathion (0.01)
mandipropamid (0.01)
MCPA, MCPB and MCPA thioethyl expressed (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mephosfolan (0.02)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.02)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.02)
metconazole (0.01)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.02)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
myclobutanil (0.01)
napropamide (0.02)
nitenpyram (0.01)
pyridaben (0.01)
pyridalyl (0.01)
pyridaphenthion (0.01)
pyrifenox (0.02)
pyrimethanil (0.01)
pyriproxifen (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.02)
Quinoclamine (0.01)
quinomethionate (0.02)
quinoxyfen (0.01)
quintozene (sum) (0.01)
resmethrin (0.02)
rimsulfuron (0.01)
rotenone (0.01)
simazine (0.02)
spinosad (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sulcotrione (0.02)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)
tebufenpyrad (0.01)

tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
tepraloxydim (0.02)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbuthylazine (0.02)
terbutryn (0.02)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.02)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.02)
triasulfuron (0.02)
triazamate (0.01)
triazophos (0.01)
triclopyr (0.02)
tricyclazole (0.01)
trifloxystrobin (0.01)
triflumizole (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.01)
triticonazole (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

ethofumesate (0.01) nitrofen (0.02)

Table 14a. Residues detected in retail samples of LEEKS purchased between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
LEEKS, UK: 15 samples analysed		
azoxystrobin	<0.01 (i.e. not found)	14
(MRL = 10)	0.02	1
DDAC (sum)	<0.01 (i.e. not found)	14
(MRL = 0.1)	0.01	1
tebuconazole	<0.01 (i.e. not found)	13
(MRL = 0.6)	0.02	2
LEEKS, Imported (EC): 9 samples analysed		
ametoctradin	<0.01 (i.e. not found)	7
(MRL = 5)	0.02, 0.07	2
BAC (sum)	<0.01 (i.e. not found)	7
(MRL = 0.1)	0.02, 0.04	2
chlorothalonil	<0.01 (i.e. not found)	7
(MRL = 8)	0.02	2
cypermethrin	<0.01 (i.e. not found)	8
(MRL = 0.5)	0.02	1
DDAC (sum)	<0.01 (i.e. not found)	8
(MRL = 0.1)	0.03	1
dimethomorph	<0.01 (i.e. not found)	8
(MRL = 1.5)	0.03	1
haloxyfop (sum)	<0.01 (i.e. not found)	8
(MRL = 0.1)	0.01	1
tebuconazole	<0.01 (i.e. not found)	8
(MRL = 0.6)	0.07	1

Imported (EC) samples of leeks were from Spain (5), the Netherlands (4).
UK samples of leeks (15).

Residues were distributed by country of origin, as follows:

ametoctradin	the Netherlands (2)
azoxystrobin	UK (1)
BAC (sum)	Spain (1), the Netherlands (1)
chlorothalonil	Spain (2)
cypermethrin	Spain (1)
DDAC (sum)	Spain (1), UK (1)
dimethomorph	the Netherlands (1)
haloxyfop (sum)	the Netherlands (1)
tebuconazole	the Netherlands (1), UK (2)

No residues were found in 11 of the 15 UK samples
No residues were found in 4 of the 9 Imported (EC) samples

Table 14b. Residues detected in retail samples of LEEKS purchased between April and June 2016

Residues (1-4 compounds) were found in 9 of the 24 samples as follows:

Number of residues	Sample ID	Residues found (mg/kg)									Country of origin
		AMTD	AZOX	BACSM	CLN	CYP	DDAC	DMR	HXFSM	TBC	
(1)	0280/2016	-	-	-	-	-	0.01	-	-	-	UK
	0373/2016	-	-	-	-	-	-	-	-	0.02	UK
	1028/2016	-	-	-	-	-	-	-	-	0.02	UK
	2511/2016	-	0.02	-	-	-	-	-	-	-	UK
	4508/2016	-	-	-	0.02	-	-	-	-	-	Spain
	1172/2016	-	-	0.04	-	-	-	-	-	-	the Netherlands
	1177/2016	0.02	-	-	-	-	-	-	-	-	the Netherlands
(4)	1570/2016	-	-	0.02	0.02	0.02	0.03	-	-	-	Spain
	0281/2016	0.07	-	-	-	-	-	0.03	0.01	0.07	the Netherlands

The abbreviations used for the pesticide names are as follows:

AMTD	ametoctradin	AZOX	azoxystrobin	BACSM	BAC (sum)
CLN	chlorothalonil	CYP	cypermethrin	DDAC	DDAC (sum)
DMR	dimethomorph	HXFSM	haloxyfop (sum)	TBC	tebuconazole

Table 14c. Residues sought but not found in retail samples of LEEKS purchased between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.02)
2,4-DB (0.01)
2-phenylphenol (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetamiprid (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.01)
acrinathrin (0.01)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.01)
alpha-HCH (0.01)
aminocarb (0.01)
amitraz (0.01)
atrazine (0.01)
azinphos-ethyl (0.01)
azinphos-methyl (0.01)
benalaxyl (0.01)
bendiocarb (0.01)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.05)
boscalid (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan (0.01)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.01)
carbofuran (sum) (0.01)
carboxin (0.01)
chlorantraniliprole (0.01)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenapyr (0.01)
chlorfenvinphos (0.01)
chlorfluazuron (0.01)
chloridazon (0.01)
chlorobenzilate (0.01)
chlorotoluron (0.01)
chlorpropham (sum) (0.05)
chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.01)
fenhexamid (0.01)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenthion (sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.01)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
fludioxonil (0.01)
flufenacet (0.01)
flufenoxuron (0.01)
fluometuron (0.01)
fluopicolide (0.01)
fluopyram (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
folpet (0.01)
fonofos (0.01)
formetanate (0.01)
formothion (0.01)
fosthiazate (0.01)
fuberidazole (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
halofenozide (0.01)
halosulfuron-methyl (0.01)
Haloxyfop-R methyl (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
hexaconazole (0.01)
hexaflumuron (0.01)
hexazinone (0.01)
hexythiazox (0.01)
Oxadiargyl (0.01)
oxadiazon (0.01)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.01)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.01)
phenthoate (0.01)
phorate (sum) (0.02)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propamocarb (0.01)
propanil (0.01)
propaquizafop (0.01)
propargite (0.01)
propetamphos (0.01)
propham (0.01)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyraclostrobin (0.01)
pyrazophos (0.01)
pyrethrins (0.01)
pyridaben (0.01)
pyridaphenthion (0.01)
pyrifenox (0.01)

chlorthal-dimethyl (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
cinidon-ethyl (0.01)
clethodim (0.01)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
crufomate (0.01)
cyanazine (0.01)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.01)
cyflufenamid (0.01)
cyfluthrin (0.01)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)

cyproconazole (0.01)
cyprodinil (0.01)
cyromazine (0.01)
DDT (sum) (0.01)
deltamethrin (0.01)
desmedipham (0.01)
desmetryn (0.01)
diazinon (0.01)
dichlofluanid (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.02)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethoate (sum) (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinocap (0.01)
dinotefuran (0.01)
dioxathion (0.01)
diphenylamine (0.05)
disulfoton (sum) (0.01)
diuron (0.01)
dodine (0.05)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.01)
EPN (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)
ethion (0.01)
ethirimol (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)
etrimfos (0.01)
famoxadone (0.01)
imazalil (0.01)
imidacloprid (0.01)
indoxacarb (0.01)
ioxynil (0.01)
iprodione (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lambda-cyhalothrin (0.01)

lenacil (0.01)
lindane (0.01)
linuron (0.01)
lufenuron (0.01)
malathion (0.01)
mandipropamid (0.01)
MCPA (sum) (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.01)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.01)
metconazole (0.02)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.01)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
myclobutanil (0.01)
napropamide (0.01)
neburon (0.01)
nitenpyram (0.01)
nitrothal-isopropyl (0.01)
nuarimol (0.01)
ofurace (0.01)
pyrimethanil (0.01)
pyriproxifen (0.01)
pyroxsulam (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.01)
Quinoclamine (0.01)
quinoxyfen (0.01)
quintozene (sum) (0.01)
Quizalofop, incl. quizalfop-P (0.01)
rotenone (0.01)
simazine (0.01)
spinosad (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebufenozide (0.01)
tebufenpyrad (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
terbacil (0.01)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbumeton (0.01)
terbuthylazine (0.01)
terbutryn (0.01)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.01)
thiacloprid (0.01)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.01)
triasulfuron (0.01)
triazamate (0.01)
triazamate (acid) (0.01)
triazamate (ester) (0.01)
triazophos (0.01)
trichlorfon (0.01)
triclopyr (0.05)
tricyclazole (0.01)
trifloxystrobin (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.05)
triticonazole (0.01)
tritosulfuron (0.01)
vamidothion (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

Table 15a. Residues detected in retail samples of LETTUCE purchased between April and May 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
ICEBERG UK: 4 samples analysed		
acetamiprid	<0.01 (i.e. not found)	3
(MRL = 3)	0.01	1
spirotetramat (sum)	<0.01 (i.e. not found)	0
(MRL = 7)	0.02 - 0.04	4
LITTLE GEM UK: 5 samples analysed		
mandipropamid	<0.01 (i.e. not found)	4
(MRL = 25)	0.02	1
propamocarb	<0.01 (i.e. not found)	4
(MRL = 40)	0.01	1
spirotetramat (sum)	<0.01 (i.e. not found)	3
(MRL = 7)	0.01, 0.03	2
ROMAINE UK: 2 samples analysed		
spirotetramat (sum)	<0.01 (i.e. not found)	1
(MRL = 7)	0.01	1
ICEBERG Imported (EC): 8 samples analysed		
acetamiprid	<0.01 (i.e. not found)	6
(MRL = 3)	0.02, 0.03	2
imidacloprid	<0.01 (i.e. not found)	3
(MRL = 2)	0.01 - 0.2	5
metalaxyl	<0.01 (i.e. not found)	7
(MRL = 3)	0.02	1
spirotetramat (sum)	<0.01 (i.e. not found)	2
(MRL = 7)	0.01 - 0.03	6
LITTLE GEM Imported (EC): 1 sample analysed		
deltamethrin	<0.02 (i.e. not found)	0
(MRL = 0.5)	0.05	1
imidacloprid	<0.01 (i.e. not found)	0
(MRL = 2)	0.9	1
propamocarb	<0.01 (i.e. not found)	0
(MRL = 40)	0.04	1
spirotetramat (sum)	<0.01 (i.e. not found)	0
(MRL = 7)	0.03	1

Imported (EC) samples of lettuce were from Spain (9).
UK samples of lettuce (11).

Residues were distributed by country of origin, as follows:

acetamiprid	Spain (2), UK (1)
deltamethrin	Spain (1)

imidacloprid	Spain (6)
mandipropamid	UK (1)
metalaxyl	Spain (1)
propamocarb	Spain (1), UK (1)
spirotetramat (sum)	Spain (7), UK (7)

Residues were found in all of the 4 UK iceberg samples
No residues were found in 2 of the 5 UK little gem samples
No residues were found in 1 of the 2 UK romaine samples
Residues were found in all of the 8 Imported (EC) iceberg samples
Residues were found in all of the 1 Imported (EC) little gem samples

Table 15b. Residues detected in retail samples of LETTUCE purchased between April and May 2016

Residues (1-4 compounds) were found in 17 of the 20 samples as follows:

Number of residues	Sample ID	Type of LETTUCE	Residues found (mg/kg)							Country of origin
			ACET	DEL	IMI	MDI	MTX	PCB	STTPS	
(1)	1030/2016	ROMAINE	-	-	-	-	-	-	0.01	UK
	1342/2016	ICEBERG	-	-	-	-	-	-	0.03	UK
	1380/2016	ICEBERG	-	-	-	-	-	-	0.02	UK
	1381/2016	LITTLE GEM	-	-	-	-	-	0.01	-	UK
	1813/2016	ICEBERG	-	-	-	-	-	-	0.04	UK
	1874/2016	LITTLE GEM	-	-	-	-	-	-	0.03	UK
	0441/2016	ICEBERG	-	-	-	-	-	-	0.01	Spain
	1550/2016	ICEBERG	-	-	-	-	-	-	0.01	Spain
	1736/2016	ICEBERG	-	-	-	-	-	-	0.01	Spain
(2)	0271/2016	LITTLE GEM	-	-	-	0.02	-	-	0.01	UK
	1781/2016	ICEBERG	0.01	-	-	-	-	-	0.02	UK
	0153/2016	ICEBERG	-	-	0.2	-	-	-	0.02	Spain
	0469/2016	ICEBERG	-	-	0.01	-	-	-	0.02	Spain
	1604/2016	ICEBERG	0.02	-	0.08	-	-	-	-	Spain
	1691/2016	ICEBERG	-	-	0.1	-	-	-	0.03	Spain
(3)	1577/2016	ICEBERG	0.03	-	0.1	-	0.02	-	-	Spain
(4)	1596/2016	LITTLE GEM	-	0.05	0.9	-	-	0.04	0.03	Spain

The abbreviations used for the pesticide names are as follows:

ACET	acetamiprid	DEL	deltamethrin	IMI	imidacloprid
MDI	mandipropamid	MTX	metalaxyl	PCB	propamocarb
STTPS	spirotetramat (sum)				

Table 15c. Residues sought but not found in retail samples of LETTUCE purchased between April and May 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.01)
2,4-DB (0.01)
2-phenylphenol (0.02)
6-benzyladenine (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.02)
acrinathrin (0.02)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.02)
alpha-HCH (0.01)
ametoctradin (0.01)
amidosulfuron (0.01)
amitraz (0.01)
asulam (0.02)
atrazine (0.01)
azinphos-ethyl (0.02)
azinphos-methyl (0.02)
azoxystrobin (0.01)
BAC (sum) (0.05)
benalaxyl (0.01)
bendiocarb (0.01)
benfuracarb (0.001)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenox (0.02)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.01)
bixafen (0.01)
boscalid (0.01)
bromophos-ethyl (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butachlor (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan (0.02)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.02)
carbofuran (sum) (0.001)
carbosulfan (0.001)
carboxin (0.02)
chlorantraniliprole (0.01)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenapyr (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)
ethion (0.01)
ethirimol (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)
etridiazole (0.02)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.02)
fenhexamid (0.02)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.005)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
fludioxonil (0.01)
flufenacet (0.01)
flufenoxuron (0.02)
fluometuron (0.01)
fluopicolide (0.01)
fluopyram (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flurochloridone (0.02)
fluroxypyr (sum) (0.02)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
folpet (0.01)
fonofos (0.01)
formetanate (0.01)
fosthiazate (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
nitenpyram (0.01)
nitrofen (0.02)
nitrothal-isopropyl (0.01)
Novaluron (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.02)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.02)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
pentanochlor (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.02)
phenthoate (0.01)
phorate (partial sum) (0.01)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propachlor (0.01)
propanil (0.02)
propaquizafop (0.02)
propargite (0.01)
propetamphos (0.01)
propham (0.02)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyraclostrobin (0.01)

chlorfenvinphos (0.01)
chloridazon (0.01)
chlorobenzilate (0.02)
chlorothalonil (0.01)
chlorpropham (sum) (0.01)
chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlortoluron (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
clethodim (0.02)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
cyanazine (0.02)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.02)
cyflufenamid (0.01)
cyfluthrin (0.02)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)

cypermethrin (0.02)
cyproconazole (0.01)
cyprodinil (0.02)
cyromazine (0.02)
DDAC (sum) (0.05)
DDT (sum) (0.01)
demeton-S-methyl (0.01)

desmedipham (0.02)
diafenthiuron (0.02)
diazinon (0.01)
dichlobenil (0.01)
dichlofluanid (0.01)
dichlofluanid and DMSA (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.01)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethenamid (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinotefuran (0.01)
diphenylamine (0.02)
disulfoton (sum) (0.01)
dithiocarbamates (0.05)
diuron (0.01)
dodine (0.02)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.02)
EPN (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
hexaconazole (0.01)
hexazinone (0.02)
hexythiazox (0.01)
imazalil (0.02)
indoxacarb (0.01)
inorganic bromide (20)
ioxynil (0.01)
iprodione (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)

lambda-cyhalothrin (0.02)
lenacil (0.01)
lindane (0.01)
linuron (0.01)
lufenuron (0.02)
malathion (0.01)
MCPA, MCPB and MCPA thioethyl expressed (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mephosfolan (0.02)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.02)
metamitron (0.01)
metazachlor (0.02)
metconazole (0.01)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.02)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
myclobutanil (0.01)
pyrazophos (0.01)
pyrethrins (0.01)
pyridaben (0.01)
pyridalyl (0.01)
pyridaphenthion (0.01)
pyrifenox (0.02)
pyrimethanil (0.01)
pyriproxifen (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.02)
Quinoclamine (0.01)
quinomethionate (0.02)
quinoxyfen (0.01)
quintozene (sum) (0.01)
rimsulfuron (0.01)
rotenone (0.01)
simazine (0.02)
spinosad (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spiroxamine (0.01)
sulcotrione (0.02)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)
tebufenpyrad (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)

tefluthrin (0.01)
tepraloxydim (0.02)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbuthylazine (0.02)
terbutryn (0.02)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.02)
thiacloprid (0.01)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.02)
triasulfuron (0.02)
triazamate (0.01)
triazophos (0.01)
triclopyr (0.02)
tricyclazole (0.01)
trifloxystrobin (0.01)
triflumizole (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.01)
triticonazole (0.01)
vinclozolin (sum) (0.01)

epoxiconazole (0.01)	napropamide (0.02)	zoxamide (0.01)

Table 16a. Residues detected in retail samples of PASTA purchased between April and May 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
PASTA, Imported (EC): 36 samples analysed		
glyphosate	<0.1 (i.e. not found)	30
(MRL = 1.05)	0.1 - 0.2	6
pirimiphos-methyl	<0.01 (i.e. not found)	34
(MRL = 0.95)	0.02, 0.07	2
pyrethrins	<0.01 (i.e. not found)	35
(MRL = 3)	0.2	1

Imported (EC) samples of pasta were from Italy (36).

Residues were distributed by country of origin, as follows:

glyphosate	Italy (6)
pirimiphos-methyl	Italy (2)
pyrethrins	Italy (1)

No residues were found in 29 of the 36 Imported (EC) samples

Table 16b. Residues detected in retail samples of PASTA purchased between April and May 2016

Residues (1-2 compounds) were found in 7 of the 36 samples as follows:

Number of residues	Sample ID	Residues found (mg/kg) GLY	PIM	PYTH	Country of origin
(1)	0367/2016	0.1	-	-	Italy
	0450/2016	0.1	-	-	Italy
	0472/2016	0.1	-	-	Italy
	1677/2016	0.2	-	-	Italy
	1733/2016	0.1	-	-	Italy
(2)	0386/2016	0.1	0.07	-	Italy
	1118/2016	-	0.02	0.2	Italy

The abbreviations used for the pesticide names are as follows:

GLY	glyphosate	PIM	pirimiphos-methyl	PYTH	pyrethrins

Table 16c. Residues sought but not found in retail samples of PASTA purchased between April and May 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.01)
2,4-DB (0.01)
2-phenylphenol (0.02)
6-benzyladenine (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetamiprid (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.02)
acrinathrin (0.02)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.02)
alpha-HCH (0.01)
ametoctradin (0.01)
amidosulfuron (0.01)
amitraz (0.01)
asulam (0.02)
atrazine (0.01)
azinphos-ethyl (0.02)
azinphos-methyl (0.02)
azoxystrobin (0.01)
BAC (sum) (0.05)
benalaxyl (0.01)
bendiocarb (0.01)
benfuracarb (0.001)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenox (0.02)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.01)
bixafen (0.01)
boscalid (0.01)
bromophos-ethyl (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butachlor (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan (0.02)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.02)
carbofuran (sum) (0.001)
carbosulfan (0.001)
carboxin (0.02)
chlorantraniliprole (0.01)
chlorbufam (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)
ethion (0.01)
ethirimol (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)
etridiazole (0.02)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.02)
fenhexamid (0.02)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.005)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
fludioxonil (0.01)
flufenacet (0.01)
flufenoxuron (0.02)
fluometuron (0.01)
fluopicolide (0.01)
fluopyram (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flurochloridone (0.02)
fluroxypyr (sum) (0.02)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
fonofos (0.01)
formetanate (0.01)
fosthiazate (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
furmecyclox (0.01)
halofenozide (0.01)
Monuron (0.01)
myclobutanil (0.01)
napropamide (0.02)
nitenpyram (0.01)
nitrofen (0.02)
nitrothal-isopropyl (0.01)
Novaluron (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.02)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.02)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
pentanochlor (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.02)
phenthoate (0.01)
phorate (partial sum) (0.01)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propachlor (0.01)
propamocarb (0.01)
propaquizafop (0.02)
propargite (0.01)
propetamphos (0.01)
propham (0.02)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)

chlordane (sum) (0.01)
chlorfenapyr (0.01)
chlorfenvinphos (0.01)
chloridazon (0.01)
chlormequat (0.02)
chlorobenzilate (0.02)
chlorothalonil (0.01)
chlorpropham (sum) (0.01)
chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlortoluron (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
clethodim (0.02)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
cyanazine (0.02)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.02)
cyflufenamid (0.01)
cyfluthrin (0.02)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)
cypermethrin (0.02)
cyproconazole (0.01)
cyprodinil (0.02)
cyromazine (0.02)
DDAC (sum) (0.05)
DDT (sum) (0.01)
deltamethrin (0.02)
demeton-S-methyl (0.01)
desmedipham (0.02)
diafenthiuron (0.02)
diazinon (0.01)
dichlobenil (0.01)
dichlofluanid (0.01)
dichlofluanid and DMSA (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.01)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethenamid (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinotefuran (0.01)
diphenylamine (0.02)
disulfoton (sum) (0.01)
diuron (0.01)
dodine (0.02)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
hexaconazole (0.01)
hexazinone (0.02)
hexythiazox (0.01)
imazalil (0.02)
imidacloprid (0.01)
indoxacarb (0.01)
ioxynil (0.01)
iprodione (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lambda-cyhalothrin (0.02)
lenacil (0.01)
lindane (0.01)
linuron (0.01)
lufenuron (0.02)
malathion (0.01)
mandipropamid (0.01)
MCPA, MCPB and MCPA thioethyl expressed (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mephosfolan (0.02)
mepiquat (0.02)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.02)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.02)
metconazole (0.01)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.02)
metsulfuron-methyl (0.01)
pymetrozine (0.01)
pyraclostrobin (0.01)
pyrazophos (0.01)
pyridaben (0.01)
pyridalyl (0.01)
pyridaphenthion (0.01)
pyrifenox (0.02)
pyrimethanil (0.01)
pyriproxifen (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.02)
Quinoclamine (0.01)
quinoxyfen (0.01)
quintozene (sum) (0.01)
resmethrin (0.02)
rimsulfuron (0.01)
rotenone (0.01)
simazine (0.02)
spinosad (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sulcotrione (0.02)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)
tebufenpyrad (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
tepraloxydim (0.02)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbuthylazine (0.02)
terbutryn (0.02)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.02)
thiacloprid (0.01)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.02)
triasulfuron (0.02)
triazamate (0.01)
triazophos (0.01)
triclopyr (0.02)
tricyclazole (0.01)
trifloxystrobin (0.01)
triflumizole (0.01)
triflumuron (0.01)
trifluralin (0.01)

emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.02)
EPN (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
triforine (0.01)
triticonazole (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

Table 16d. Processing factors and MRLs used for flour

Flour type	Pesticide	Processing factor	MRL for unprocessed grain (mg/kg)	Flour MRL (mg/kg)
Wholemeal wheat flour	Glyphosate	0.46	10	4.6
	Pirimiphos methyl	0.76	5	3.8
	Pyrethrins	1	3	3
Other wheat flour	Glyphosate	0.105	10	1.05
	Pirimiphos methyl	0.19	5	0.95
	Pyrethrins	1	3	3

Processing factors are taken from a compendium of publically available, authoritative processing factors published by the German regulatory authority for pesticides[4].

About processing factors

In nearly all cases the EU MRL is set for the food in its raw, unprocessed form (these foods are listed in Annex I of Regulation 396/2005), but is then applied to processed foods using appropriate processing factors. Processing factors take account of the effect of processing on the food as traded. Different forms of processing may remove, concentrate, or dilute residues, and the effect may vary depending on the food and the pesticide concerned.

Put another way, the use of processing factors enables checks that the original ingredient was compliant with MRLs. Food manufacturers should have information on the composition of their product - for instance, whether water is added/removed – that may assist in identifying appropriate processing factors and also have information on the compliance of the raw ingredients employed (in this case wheat or rye).

Suppliers and manufacturers must ensure that the raw materials and ingredients they supply or use to make processed food comply with MRLs *before processing*. It is an offence to use non-compliant food as a processed food ingredient. Processing cannot be used to make food compliant, and the compliance of processed foods should be checked using MRLs and relevant processing factors. Where processing affects residues, it is not appropriate to check results against unadjusted MRLs.

[4] *BfR compilation on processing factors for pesticide residues, dated 20.10.2011*
Downloaded from http://www.bfr.bund.de/en/pesticides-579.html on 7 January 2014

Table 17a. Residues detected in samples of PEARS obtained between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
PEARS, UK: 4 samples analysed		
boscalid	<0.01 (i.e. not found)	1
(MRL = 2)	0.09 - 0.1	3
diflubenzuron	<0.01 (i.e. not found)	3
(MRL = 5)	0.01	1
pyraclostrobin	<0.01 (i.e. not found)	1
(MRL = 0.5)	0.05 - 0.06	3
PEARS, Imported (Non-EC): 13 samples analysed		
acetamiprid	<0.01 (i.e. not found)	11
(MRL = 0.8)	0.01, 0.03	2
chlorantraniliprole	<0.01 (i.e. not found)	12
(MRL = 0.5)	0.07	1
dithiocarbamates	<0.05 (i.e. not found)	5
(MRL = 5)	0.07 - 0.3	8
fludioxonil	<0.01 (i.e. not found)	10
(MRL = 5)	0.01 - 0.3	3
pyrimethanil	<0.01 (i.e. not found)	8
(MRL = 15)	0.05 - 0.3	5
thiacloprid	<0.01 (i.e. not found)	8
(MRL = 0.3)	0.02 - 0.07	5
PEARS, Imported (EC): 13 samples analysed		
boscalid	<0.01 (i.e. not found)	9
(MRL = 2)	0.02 - 0.2	4
captan and folpet	<0.02 (i.e. not found)	6
(MRL = 3)	0.03 - 0.07	7
chlormequat	<0.02 (i.e. not found)	9
(MRL = 0.1)	0.03 - 0.1	4
cyprodinil	<0.02 (i.e. not found)	4
(MRL = 1.5)	0.03, 0.07	2
(MRL = 2)	0.07 - 0.2	7
difenoconazole	<0.01 (i.e. not found)	11
(MRL = 0.8)	0.01	2
dithiocarbamates	<0.05 (i.e. not found)	7
(MRL = 5)	0.06 - 0.2	6
fludioxonil	<0.01 (i.e. not found)	2
(MRL = 5)	0.04 - 0.2	11
fluopyram	<0.01 (i.e. not found)	12
(MRL = 0.5)	0.02	1
imazalil	<0.02 (i.e. not found)	12

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
(MRL = 2)	1	1
pyraclostrobin	<0.01 (i.e. not found)	10
(MRL = 0.5)	0.03 - 0.1	3
pyrimethanil	<0.01 (i.e. not found)	12
(MRL = 15)	0.6	1

Imported (EC) samples of pears were from Belgium (9), the Netherlands (4).
Imported (Non-EC) samples of pears were from Argentina (4), Chile (1), South Africa (8).
UK samples of pears (4).

Residues were distributed by country of origin, as follows:

acetamiprid	Argentina (1), South Africa (1)
boscalid	Belgium (2), the Netherlands (2), UK (3)
chlormequat	Belgium (4)
captan and folpet	Belgium (4), the Netherlands (3)
chlorantraniliprole	Argentina (1)
cyprodinil	Belgium (7), the Netherlands (2)
diflubenzuron	UK (1)
difenoconazole	Belgium (2)
dithiocarbamates	Argentina (1), Belgium (6), South Africa (7)
fludioxonil	Argentina (1), Belgium (8), South Africa (2), the Netherlands (3)
fluopyram	the Netherlands (1)
imazalil	the Netherlands (1)
pyraclostrobin	Belgium (2), the Netherlands (1), UK (3)
pyrimethanil	Argentina (1), Chile (1), South Africa (3), the Netherlands (1)
thiacloprid	South Africa (5)

No residues were found in 1 of the 4 UK samples
No residues were found in 3 of the 13 Imported (Non-EC) samples
Residues were found in all of the 13 Imported (EC) samples

Table 17b. Residues detected in samples of PEARS obtained between April and June 2016

Residues (1-5 compounds) were found in 26 of the 30 samples as follows:

Number of residues	Sample ID	Residues found (mg/kg)															Country of origin
		ACET	BOS	CLQ	CPFOL	CTP	CYD	DIF	DIFC	DTC	FLUD	FPYM	IMZ	PYC	PYM	THC	
(1)	3954/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	-	Chile
	3537/2016	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	South Africa
	3620/2016	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	South Africa
(2)	3614/2016	-	0.1	-	-	-	-	-	-	-	-	-	-	0.05	-	-	UK
	3921/2016	-	0.1	-	-	-	-	-	-	-	-	-	-	0.06	-	-	UK
	4013/2016	0.03	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	South Africa
	4148/2016	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	0.07	South Africa
	3922/2016	-	0.09	-	-	-	-	-	-	-	-	-	-	0.04	-	-	Belgium
	3617/2016	-	-	-	0.05	-	-	-	-	-	0.05	-	-	-	-	-	the Netherlands
(3)	4030/2016	-	0.09	-	-	-	-	0.01	-	-	-	-	-	0.05	-	-	UK
	3615/2016	-	-	-	-	-	-	-	-	0.1	-	-	-	-	0.2	0.02	South Africa
	3794/2016	-	-	-	-	-	-	-	-	0.2	-	-	-	-	0.3	0.04	South Africa
	4054/2016	-	-	-	-	-	-	-	-	0.2	-	-	-	-	0.2	0.04	South Africa
	4057/2016	-	-	-	-	-	-	-	-	0.3	0.1	-	-	-	-	0.03	South Africa
	3895/2016	-	-	-	0.03	-	0.07	-	-	-	0.04	-	-	-	-	-	Belgium
	4131/2016	-	-	-	0.04	-	0.07	-	-	-	0.05	-	-	-	-	-	Belgium
	3576/2016	-	-	-	0.07	-	0.03	-	-	-	0.06	-	-	-	-	-	the Netherlands
(4)	3897/2016	-	-	-	-	-	0.1	-	0.01	0.09	0.09	-	-	-	-	-	Belgium
	3958/2016	-	-	-	-	-	0.2	-	0.01	0.08	0.1	-	-	-	-	-	Belgium
	4011/2016	-	-	0.07	-	-	0.1	-	-	0.06	0.1	-	-	-	-	-	Belgium
	3621/2016	-	0.02	-	0.05	-	0.2	-	-	-	0.1	-	-	-	-	-	the Netherlands
(5)	3502/2016	0.01	-	-	-	0.07	-	-	-	0.07	0.01	-	-	-	0.2	-	Argentina
	3584/2016	-	0.2	0.1	-	-	-	-	-	0.1	0.2	-	-	0.1	-	-	Belgium
	3619/2016	-	-	0.08	0.04	-	0.1	-	-	0.2	0.08	-	-	-	-	-	Belgium
	4147/2016	-	-	0.03	0.07	-	0.1	-	-	0.06	0.08	-	-	-	-	-	Belgium
	3800/2016	-	0.08	-	-	-	-	-	-	-	-	0.02	1	0.03	0.6	-	the Netherlands

The abbreviations used for the pesticide names are as follows:

ACET	acetamiprid	BOS	boscalid	CLQ	chlormequat
CPFOL	captan and folpet	CTP	chlorantraniliprole	CYD	cyprodinil
DIF	diflubenzuron	DIFC	difenoconazole	DTC	dithiocarbamates
FLUD	fludioxonil	FPYM	fluopyram	IMZ	imazalil
PYC	pyraclostrobin	PYM	pyrimethanil	THC	thiacloprid

Table 17c. Residues sought but not found in samples of PEARS obtained between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.01)
2,4-DB (0.01)
2-phenylphenol (0.02)
6-benzyladenine (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.02)
acrinathrin (0.02)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.02)
alpha-HCH (0.01)
ametoctradin (0.01)
amidosulfuron (0.01)
amitraz (0.01)
asulam (0.02)
atrazine (0.01)
azinphos-ethyl (0.02)
azinphos-methyl (0.02)
azoxystrobin (0.01)
BAC (sum) (0.05)
benalaxyl (0.01)
bendiocarb (0.01)
benfuracarb (0.001)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenox (0.02)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.01)
bixafen (0.01)
bromophos-ethyl (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butachlor (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.02)
carbofuran (sum) (0.001)
carbosulfan (0.001)
carboxin (0.02)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenapyr (0.01)
chlorfenvinphos (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)
etridiazole (0.02)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.02)
fenhexamid (0.02)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.005)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
flufenacet (0.01)
flufenoxuron (0.02)
fluometuron (0.01)
fluopicolide (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flurochloridone (0.02)
fluroxypyr (sum) (0.02)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
fonofos (0.01)
formetanate (0.01)
fosthiazate (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
furmecyclox (0.01)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
nitrofen (0.02)
nitrothal-isopropyl (0.01)
Novaluron (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.02)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.02)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
pentanochlor (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.02)
phenthoate (0.01)
phorate (partial sum) (0.01)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propachlor (0.01)
propamocarb (0.01)
propaquizafop (0.02)
propargite (0.01)
propetamphos (0.01)
propham (0.02)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)

chloridazon (0.01)
chlorobenzilate (0.02)
chlorothalonil (0.01)
chlorpropham (sum) (0.01)
chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlortoluron (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
clethodim (0.02)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
cyanazine (0.02)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.02)
cyflufenamid (0.01)
cyfluthrin (0.02)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)
cypermethrin (0.02)

cyproconazole (0.01)
cyromazine (0.02)
DDAC (sum) (0.05)

DDT (sum) (0.01)
deltamethrin (0.02)
demeton-S-methyl (0.01)
desmedipham (0.02)
diafenthiuron (0.02)
diazinon (0.01)
dichlobenil (0.01)
dichlofluanid (0.01)
dichlofluanid and DMSA (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.01)
dicrotophos (0.01)
diethofencarb (0.01)
diflufenican (0.01)
dimethenamid (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinotefuran (0.01)
diphenylamine (0.02)
disulfoton (sum) (0.01)
diuron (0.01)
dodine (0.02)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.02)
EPN (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)
ethion (0.01)
hexaconazole (0.01)
hexazinone (0.02)
hexythiazox (0.01)
imidacloprid (0.01)
indoxacarb (0.01)
ioxynil (0.01)
iprodione (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lambda-cyhalothrin (0.02)
lenacil (0.01)
lindane (0.01)
linuron (0.01)
lufenuron (0.02)

malathion (0.01)
mandipropamid (0.01)
MCPA, MCPB and MCPA thioethyl expressed (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mephosfolan (0.02)
mepiquat (0.02)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.02)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.02)
metconazole (0.01)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.02)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
myclobutanil (0.01)
napropamide (0.02)
nitenpyram (0.01)
pyrazophos (0.01)
pyrethrins (0.01)
pyridaben (0.01)
pyridalyl (0.01)
pyridaphenthion (0.01)
pyrifenox (0.02)
pyriproxifen (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.02)
Quinoclamine (0.01)
quinoxyfen (0.01)
quintozene (sum) (0.01)
resmethrin (0.02)
rimsulfuron (0.01)
rotenone (0.01)
simazine (0.02)
spinosad (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sulcotrione (0.02)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)

tebufenpyrad (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
tepraloxydim (0.02)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbuthylazine (0.02)
terbutryn (0.02)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.02)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.02)
triasulfuron (0.02)
triazamate (0.01)
triazophos (0.01)
triclopyr (0.02)
tricyclazole (0.01)
trifloxystrobin (0.01)
triflumizole (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.01)
triticonazole (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

ethirimol (0.01)

Table 18a. Residues detected in samples of POTATOES obtained between March and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
POTATOES, MAINCROP UK: 26 samples analysed		
Chlorpropham (potato definition)	<0.01 (i.e. not found)	5
(MRL = 10)	0.04 - 6.6	21
flonicamid (sum)	<0.01 (i.e. not found)	23
(MRL = 0.1)	0.05 - 0.07	3
maleic hydrazide	<1 (i.e. not found)	13
(MRL = 50)	2.6 - 22	13
propamocarb	<0.01 (i.e. not found)	24
(MRL = 0.3)	0.01	2
POTATOES, NEW UK: 12 samples analysed		
azoxystrobin	<0.01 (i.e. not found)	1
(MRL = 7)	0.01 - 0.02	11
Chlorpropham (potato definition)	<0.01 (i.e. not found)	11
(MRL = 10)	0.03	1
propamocarb	<0.01 (i.e. not found)	8
(MRL = 0.3)	0.01 - 0.03	4
POTATOES, NEW Imported (Non-EC): 5 samples analysed		
pencycuron	<0.01 (i.e. not found)	4
(MRL = 0.1)	0.02	1

Imported (Non-EC) samples of potatoes were from Egypt (1), Israel (4).
UK samples of potatoes (38).

Residues were distributed by country of origin, as follows:

azoxystrobin	UK (11)
Chlorpropham (potato definition)	UK (22)
flonicamid (sum)	UK (3)
maleic hydrazide	UK (13)
propamocarb	UK (6)
pencycuron	Israel (1)

No residues were found in 1 of the 26 UK maincrop samples
No residues were found in 1 of the 12 UK new samples
No residues were found in 4 of the 5 Imported (Non-EC) new samples

Table 18b. Residues detected in samples of POTATOES obtained between March and June 2016

Residues (1-3 compounds) were found in 37 of the 43 samples as follows:

Number of residues	Sample ID	Type of POTATOES	Residues found (mg/kg)						Country of origin
			AZOX	CPPOT	FLC	MH	PCB	PNY	
(1)	0265/2016	NEW	0.02	-	-	-	-	-	UK
	0266/2016	NEW	0.02	-	-	-	-	-	UK
	1122/2016	NEW	0.02	-	-	-	-	-	UK
	1649/2016	NEW	0.01	-	-	-	-	-	UK
	1673/2016	NEW	0.01	-	-	-	-	-	UK
	1692/2016	NEW	0.02	-	-	-	-	-	UK
	4167/2016	MAINCROP	-	3.5	-	-	-	-	UK
	4202/2016	MAINCROP	-	-	-	13	-	-	UK
	4226/2016	MAINCROP	-	6.6	-	-	-	-	UK
	4233/2016	MAINCROP	-	1.8	-	-	-	-	UK
	4243/2016	MAINCROP	-	-	-	6.2	-	-	UK
	4246/2016	MAINCROP	-	1.3	-	-	-	-	UK
	4258/2016	MAINCROP	-	0.1	-	-	-	-	UK
	4278/2016	MAINCROP	-	-	-	6.7	-	-	UK
	4279/2016	MAINCROP	-	0.9	-	-	-	-	UK
	4288/2016	MAINCROP	-	4.2	-	-	-	-	UK
	4292/2016	MAINCROP	-	-	-	13	-	-	UK
	4301/2016	MAINCROP	-	1.8	-	-	-	-	UK
	4214/2016	NEW	-	-	-	-	-	0.02	Israel
(2)	1031/2016	NEW	0.01	-	-	-	0.01	-	UK
	1650/2016	NEW	0.02	-	-	-	0.02	-	UK
	1672/2016	NEW	0.02	0.03	-	-	-	-	UK
	1725/2016	NEW	0.01	-	-	-	0.03	-	UK
	1729/2016	NEW	0.02	-	-	-	0.03	-	UK
	4168/2016	MAINCROP	-	1.9	-	2.6	-	-	UK
	4169/2016	MAINCROP	-	0.9	-	14	-	-	UK
	4170/2016	MAINCROP	-	0.9	-	14	-	-	UK
	4177/2016	MAINCROP	-	1.3	0.05	-	-	-	UK
	4191/2016	MAINCROP	-	1.6	-	10	-	-	UK
	4207/2016	MAINCROP	-	3.5	0.07	-	-	-	UK
	4221/2016	MAINCROP	-	0.8	-	4	-	-	UK
	4234/2016	MAINCROP	-	0.9	-	20	-	-	UK
	4259/2016	MAINCROP	-	0.8	-	21	-	-	UK
	4277/2016	MAINCROP	-	0.04	-	-	0.01	-	UK
	4289/2016	MAINCROP	-	0.8	-	22	-	-	UK
	4309/2016	MAINCROP	-	1.5	-	11	-	-	UK
(3)	4181/2016	MAINCROP	-	0.6	0.06	-	0.01	-	UK

The abbreviations used for the pesticide names are as follows:

AZOX	azoxystrobin	CPPOT	Chlorpropham (potato definition)	FLC	flonicamid (sum)
MH	maleic hydrazide	PCB	propamocarb	PNY	pencycuron

Table 18c. Residues sought but not found in samples of POTATOES obtained between March and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.01)
2,4-DB (0.01)
2-phenylphenol (0.02)
6-benzyladenine (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetamiprid (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.02)
acrinathrin (0.02)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.02)
alpha-HCH (0.01)
ametoctradin (0.01)
amidosulfuron (0.01)
amitraz (0.01)
asulam (0.02)
atrazine (0.01)
azinphos-ethyl (0.02)
azinphos-methyl (0.02)
BAC (sum) (0.05)
benalaxyl (0.01)
bendiocarb (0.01)
benfuracarb (0.001)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenox (0.02)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.01)
bixafen (0.01)
boscalid (0.01)
bromophos-ethyl (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butachlor (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan (0.02)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.02)
carbofuran (sum) (0.001)
carbosulfan (0.001)
carboxin (0.02)
chlorantraniliprole (0.01)
chlorbufam (0.01)
chlordane (sum) (0.01)
ethion (0.01)
ethirimol (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)
etridiazole (0.02)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.02)
fenhexamid (0.02)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fenpyroximate (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.005)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
fludioxonil (0.01)
flufenacet (0.01)
flufenoxuron (0.02)
fluometuron (0.01)
fluopicolide (0.01)
fluopyram (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flurochloridone (0.02)
fluroxypyr (sum) (0.02)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
folpet (0.01)
fonofos (0.01)
formetanate (0.01)
fosthiazate (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
furmecyclox (0.01)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Heptachlor (sum) (0.01)
nitrofen (0.02)
nitrothal-isopropyl (0.01)
Novaluron (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.02)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.02)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pendimethalin (0.01)
penflufen (0.01)
pentanochlor (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.02)
phenthoate (0.01)
phorate (partial sum) (0.01)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propachlor (0.01)
propanil (0.02)
propaquizafop (0.02)
propargite (0.01)
propetamphos (0.01)
propham (0.02)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyraclostrobin (0.01)
pyrazophos (0.01)

chlorfenapyr (0.01)
chlorfenvinphos (0.01)
chloridazon (0.01)
chlorobenzilate (0.02)
chlorothalonil (0.01)
chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlortoluron (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
clethodim (0.02)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
cyanazine (0.02)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.02)
cyflufenamid (0.01)
cyfluthrin (0.02)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)
cypermethrin (0.02)
cyproconazole (0.01)
cyprodinil (0.02)
cyromazine (0.02)
DDAC (sum) (0.05)
DDT (sum) (0.01)
deltamethrin (0.02)
demeton-S-methyl (0.01)
desmedipham (0.02)
diafenthiuron (0.02)
diazinon (0.01)
dichlobenil (0.01)
dichlofluanid (0.01)
dichlofluanid and DMSA (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.01)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethenamid (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinotefuran (0.01)
diphenylamine (0.02)
disulfoton (sum) (0.01)
diuron (0.01)
dodine (0.02)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.02)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
hexaconazole (0.01)
hexazinone (0.02)
hexythiazox (0.01)
imazalil (0.02)
imidacloprid (0.01)
indoxacarb (0.01)
ioxynil (0.01)
iprodione (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lambda-cyhalothrin (0.02)
lenacil (0.01)
lindane (0.01)
linuron (0.01)
lufenuron (0.02)
malathion (0.01)
mandipropamid (0.01)
MCPA, MCPB and MCPA thioethyl expressed (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mephosfolan (0.02)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.02)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.02)
metconazole (0.01)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.02)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
pyrethrins (0.01)
pyridaben (0.01)
pyridalyl (0.01)
pyridaphenthion (0.01)
pyrifenox (0.02)
pyrimethanil (0.01)
pyriproxifen (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.02)
Quinoclamine (0.01)
quinomethionate (0.02)
quinoxyfen (0.01)
quintozene (sum) (0.01)
resmethrin (0.02)
rimsulfuron (0.01)
rotenone (0.01)
simazine (0.02)
spinosad (0.01)
spirodiclofen (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sulcotrione (0.02)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)
tebufenpyrad (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
tepraloxydim (0.02)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbuthylazine (0.02)
terbutryn (0.02)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.02)
thiacloprid (0.01)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.02)
triasulfuron (0.02)
triazamate (0.01)
triazophos (0.01)
triclopyr (0.02)
tricyclazole (0.01)
trifloxystrobin (0.01)
triflumizole (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.01)

EPN (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)
Monuron (0.01)
myclobutanil (0.01)
napropamide (0.02)
nitenpyram (0.01)
triticonazole (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

Table 19a. Residues detected in retail samples of PREPARED FRESH FRUIT purchased between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
APPLE UK: 1 sample analysed		
None found	-	1
MANGO UK: 2 samples analysed		
BAC (sum)	<0.01 (i.e. not found)	1
(MRL = 0.1)	0.07	1
MELON UK: 3 samples analysed		
None found	-	3
MIXED UK: 9 samples analysed		
BAC (sum)	<0.01 (i.e. not found)	8
(MRL = 0.1)	0.02	1
Chlorate	<0.01 (i.e. not found)	7
(MRL = 0.01*)	0.05, 0.3	2
However we do not think that these chlorate findings should be treated as breaches of the legislation. – see our summary conclusions on page X.		
PINEAPPLE UK: 10 samples analysed		
DDAC (sum)	<0.01 (i.e. not found)	8
(MRL = 0.1)	0.01, 0.06	2
WATERMELON UK: 1 sample analysed		
None found	-	1
MANGO Imported (Non-EC): 1 sample analysed		
None found	-	1
PINEAPPLE Imported (Non-EC): 3 samples analysed		
DDAC (sum)	<0.01 (i.e. not found)	1
(MRL = 0.1)	0.04, 0.05	2

NOTE: * Indicates MRL is set to the Limit of Determination.

Imported (Non-EC) samples of prepared fresh fruit were from Costa Rica (2), Ghana (2).
UK samples of prepared fresh fruit (26).

Residues were distributed by country of origin, as follows:

BAC (sum)	UK (2)
Chlorate	UK (2)
DDAC (sum)	Costa Rica (2), UK (2)

No residues were found in any of the UK apple samples
No residues were found in 1 of the 2 UK mango samples
No residues were found in any of the UK melon samples
No residues were found in 7 of the 9 UK mixed samples
No residues were found in 8 of the 10 UK pineapple samples
No residues were found in any of the UK watermelon samples
No residues were found in any of the Imported (Non-EC) mango samples

No residues were found in 1 of the 3 Imported (Non-EC) pineapple samples

Table 19b. Residues detected in retail samples of PREPARED FRESH FRUIT purchased between April and June 2016

Residues (1-2 compounds) were found in 7 of the 30 samples as follows:

Number of residues	Sample ID	Type of PREPARED FRESH FRUIT	Residues found (mg/kg)			Country of origin
			BACSM	CLOR	DDAC	
(1)	0156/2016	PINEAPPLE	-	-	0.06	UK
	0438/2016	MIXED	-	0.05	-	UK
	0449/2016	PINEAPPLE	-	-	0.01	UK
	2519/2016	MANGO	0.07	-	-	UK
	1938/2016	PINEAPPLE	-	-	0.04	Costa Rica
	2505/2016	PINEAPPLE	-	-	0.05	Costa Rica
(2)	0420/2016	MIXED	0.02	0.3	-	UK

The abbreviations used for the pesticide names are as follows:

BACSM	BAC (sum)	CLOR	Chlorate	DDAC	DDAC (sum)

Table 19c. Residues sought but not found in retail samples of PREPARED FRESH FRUIT purchased between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

All pesticides sought were found at or above their reporting limit in one or more samples

Table 20a. Residues detected in retail samples of STRAWBERRIES purchased between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
STRAWBERRIES, UK: 17 samples analysed		
azoxystrobin	<0.01 (i.e. not found)	11
(MRL = 10)	0.02 - 0.1	6
boscalid	<0.01 (i.e. not found)	14
(MRL = 10)	0.02 - 0.3	3
bupirimate	<0.01 (i.e. not found)	9
(MRL = 2)	0.02 - 1	8
clofentezine	<0.01 (i.e. not found)	16
(MRL = 2)	0.1	1
cyprodinil	<0.01 (i.e. not found)	10
(MRL = 5)	0.01 - 0.06	7
ethirimol	<0.01 (i.e. not found)	16
(MRL = 0.2)	0.05	1
fenhexamid	<0.01 (i.e. not found)	9
(MRL = 10)	0.02 - 1.6	8
fenpyrazamine	<0.01 (i.e. not found)	16
(MRL = 3)	0.1	1
fludioxonil	<0.01 (i.e. not found)	10
(MRL = 4)	0.02 - 0.08	7
fluopyram	<0.01 (i.e. not found)	16
(MRL = 2)	0.04	1
iprodione	<0.01 (i.e. not found)	8
(MRL = 20)	0.01 - 0.2	9
mepanipyrim (sum)	<0.01 (i.e. not found)	12
(MRL = 3)	0.03 - 0.3	5
myclobutanil	<0.01 (i.e. not found)	12
(MRL = 1)	0.01 - 0.1	5
penconazole	<0.01 (i.e. not found)	14
(MRL = 0.5)	0.01 - 0.02	3
pirimicarb (sum)	<0.01 (i.e. not found)	14
(MRL = 3)	0.01 - 0.03	3
pyraclostrobin	<0.01 (i.e. not found)	16
(MRL = 1.5)	0.06	1
pyrimethanil	<0.01 (i.e. not found)	15
(MRL = 5)	0.05, 0.08	2
quinoxyfen	<0.01 (i.e. not found)	15
(MRL = 0.3)	0.02, 0.03	2
spirodiclofen	<0.01 (i.e. not found)	16
(MRL = 2)	0.04	1

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
thiacloprid	<0.01 (i.e. not found)	9
(MRL = 1)	0.01 - 0.9	8
STRAWBERRIES, Imported (EC): 7 samples analysed		
abamectin (sum)	<0.01 (i.e. not found)	5
(MRL = 0.1)	0.01, 0.05	2
acrinathrin	<0.01 (i.e. not found)	6
(MRL = 0.2)	0.04	1
azoxystrobin	<0.01 (i.e. not found)	6
(MRL = 10)	0.01	1
boscalid	<0.01 (i.e. not found)	6
(MRL = 10)	0.02	1
bupirimate	<0.01 (i.e. not found)	5
(MRL = 2)	0.01, 0.03	2
clofentezine	<0.01 (i.e. not found)	5
(MRL = 2)	0.09, 0.2	2
cyprodinil	<0.01 (i.e. not found)	5
(MRL = 5)	0.03	2
etoxazole	<0.01 (i.e. not found)	4
(MRL = 0.2)	0.01 - 0.2	3
fenhexamid	<0.01 (i.e. not found)	5
(MRL = 10)	0.03, 0.04	2
fenpyroximate	<0.01 (i.e. not found)	5
(MRL = 1)	0.03, 0.8	2
fludioxonil	<0.01 (i.e. not found)	4
(MRL = 4)	0.01 - 0.05	3
fluopyram	<0.01 (i.e. not found)	6
(MRL = 2)	0.09	1
hexythiazox	<0.01 (i.e. not found)	6
(MRL = 0.5)	0.02	1
lambda-cyhalothrin	<0.01 (i.e. not found)	6
(MRL = 0.5)	0.02	1
myclobutanil	<0.01 (i.e. not found)	5
(MRL = 1)	0.01, 0.2	2
quinoxyfen	<0.01 (i.e. not found)	5
(MRL = 0.3)	0.02, 0.05	2
tebufenpyrad	<0.01 (i.e. not found)	6
(MRL = 1)	0.03	1
tetraconazole	<0.01 (i.e. not found)	6
(MRL = 0.2)	0.03	1
trifloxystrobin	<0.01 (i.e. not found)	3
(MRL = 1)	0.01 - 0.05	4

Imported (EC) samples of strawberries were from Belgium (1), Spain (6).

UK samples of strawberries (17).

Residues were distributed by country of origin, as follows:

abamectin (sum)	Spain (2)
acrinathrin	Spain (1)
azoxystrobin	Spain (1), UK (6)
boscalid	Belgium (1), UK (3)
bupirimate	Spain (2), UK (8)
clofentezine	Spain (2), UK (1)
cyprodinil	Spain (2), UK (7)
ethirimol	UK (1)
etoxazole	Spain (3)
fludioxonil	Spain (3), UK (7)
fenhexamid	Belgium (1), Spain (1), UK (8)
fenpyroximate	Spain (2)
fluopyram	Spain (1), UK (1)
fenpyrazamine	UK (1)
hexythiazox	Spain (1)
iprodione	UK (9)
lambda-cyhalothrin	Spain (1)
mepanipyrim (sum)	UK (5)
myclobutanil	Spain (2), UK (5)
pirimicarb (sum)	UK (3)
penconazole	UK (3)
pyraclostrobin	UK (1)
pyrimethanil	UK (2)
quinoxyfen	Spain (2), UK (2)
spirodiclofen	UK (1)
tebufenpyrad	Spain (1)
thiacloprid	UK (8)
trifloxystrobin	Belgium (1), Spain (3)
tetraconazole	Spain (1)

Residues were found in all of the 17 UK samples
Residues were found in all of the 7 Imported (EC) samples

Table 20b. Residues detected in retail samples of STRAWBERRIES purchased between April and June 2016

Residues (1-12 compounds) were found in 24 of the 24 samples as follows:

Number of residues	Sample ID	Residues found (mg/kg)																
		ABA	ACR	AZOX	BOS	BUP	CLF	CYD	EHM	EXZ	FLUD	FNHX	FNPY	FPYM	FPZM	HEX	IPR	LCY
(1)	1990/2016	-	-	-	-	0.07	-	-	-	-	-	-	-	-	-	-	-	-
	1171/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(2)	0282/2016	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-
	1668/2016	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	0.09	-
	1694/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1726/2016	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-
	2520/2016	-	-	-	-	-	-	-	-	-	-	-	-	0.04	-	-	-	-
	0445/2016	-	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-
(3)	1989/2016	-	-	-	-	0.03	-	-	-	-	-	-	-	-	0.1	-	0.01	-
	2506/2016	-	-	-	0.02	-	-	-	-	-	-	0.04	-	-	-	-	-	-
(4)	0439/2016	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-
	1675/2016	-	-	-	-	-	-	0.03	-	-	0.02	0.02	-	-	-	-	-	-
	1940/2016	-	-	0.1	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-
	0387/2016	-	-	0.01	-	0.03	-	-	-	-	-	-	-	0.09	-	-	-	-
(5)	1572/2016	-	-	0.02	-	0.2	-	-	-	-	0.02	0.1	-	-	-	-	0.2	-
(6)	2507/2016	-	-	-	-	0.03	-	-	-	-	-	0.07	-	-	-	-	0.2	-
	0406/2016	0.05	-	-	-	-	-	0.03	-	0.01	0.03	-	0.8	-	-	-	-	-
(7)	1939/2016	-	-	0.02	-	0.02	-	0.06	-	-	0.06	0.02	-	-	-	-	0.08	-
(8)	0421/2016	-	-	0.04	0.3	-	-	0.05	-	-	0.07	0.5	-	-	-	-	0.06	-
	2521/2016	-	-	-	0.02	-	-	0.04	-	-	0.05	-	-	-	-	-	0.07	-
(9)	0057/2016	0.01	-	-	-	-	0.09	0.03	-	0.2	0.05	-	0.03	-	-	-	-	-
	0377/2016	-	0.04	-	-	0.01	0.2	-	-	0.06	-	0.03	-	-	-	0.02	-	0.02
(10)	0422/2016	-	-	0.05	0.04	-	-	0.03	-	-	0.04	0.1	-	-	-	-	0.09	-

Number of residues	Sample ID	Residues found (mg/kg)																
		ABA	ACR	AZOX	BOS	BUP	CLF	CYD	EHM	EXZ	FLUD	FNHX	FNPY	FPYM	FPZM	HEX	IPR	LCY
(12)	1554/2016	-	-	0.04	-	1	-	0.06	0.05	-	0.08	1.6	-	-	-	-	0.01	-

Number of residues	Sample ID	Residues found (mg/kg)												Country of origin
		MEPSM	MYC	PIR	PNZ	PYC	PYM	QINO	SPD	TEBF	THC	TRFL	TTZ	
(1)	1990/2016	-	-	-	-	-	-	-	-	-	-	-	-	UK
	1171/2016	-	-	-	-	-	-	-	-	-	-	0.04	-	Spain
(2)	0282/2016	-	-	0.03	-	-	-	-	-	-	-	-	-	UK
	1668/2016	-	-	-	-	-	-	-	-	-	-	-	-	UK
	1694/2016	-	-	0.01	-	-	-	-	-	-	0.01	-	-	UK
	1726/2016	-	-	-	-	-	-	-	-	-	0.02	-	-	UK
	2520/2016	-	-	-	-	-	-	-	-	-	0.01	-	-	UK
	0445/2016	-	-	-	-	-	-	0.02	-	-	-	-	-	Spain
(3)	1989/2016	-	-	-	-	-	-	-	-	-	-	-	-	UK
	2506/2016	-	-	-	-	-	-	-	-	-	-	0.01	-	Belgium
(4)	0439/2016	-	-	-	0.02	-	-	0.03	-	-	0.09	-	-	UK
	1675/2016	-	-	-	-	-	0.05	-	-	-	-	-	-	UK
	1940/2016	0.1	0.1	-	-	-	-	-	-	-	-	-	-	UK
	0387/2016	-	-	-	-	-	-	-	-	-	-	0.05	-	Spain
(5)	1572/2016	-	-	-	-	-	-	-	-	-	-	-	-	UK
(6)	2507/2016	-	0.05	-	-	-	0.08	-	-	-	0.03	-	-	UK
	0406/2016	-	-	-	-	-	-	-	-	-	-	-	0.03	Spain
(7)	1939/2016	-	-	0.02	-	-	-	-	-	-	-	-	-	UK
(8)	0421/2016	0.03	-	-	-	0.06	-	-	-	-	-	-	-	UK
	2521/2016	0.09	0.02	-	0.01	-	-	-	-	-	0.06	-	-	UK
(9)	0057/2016	-	0.2	-	-	-	-	0.05	-	-	-	0.01	-	Spain
	0377/2016	-	0.01	-	-	-	-	-	-	0.03	-	-	-	Spain

Number of residues	Sample ID	Residues found (mg/kg)												Country of origin
		MEPSM	MYC	PIR	PNZ	PYC	PYM	QINO	SPD	TEBF	THC	TRFL	TTZ	
(10)	0422/2016	0.05	0.01	-	-	-	-	0.02	-	-	0.05	-	-	UK
(12)	1554/2016	0.3	0.1	-	0.01	-	-	-	0.04	-	0.9	-	-	UK

The abbreviations used for the pesticide names are as follows:

ABA	abamectin (sum)	ACR	acrinathrin	AZOX	azoxystrobin
BOS	boscalid	BUP	bupirimate	CLF	clofentezine
CYD	cyprodinil	EHM	ethirimol	EXZ	etoxazole
FLUD	fludioxonil	FNHX	fenhexamid	FNPY	fenpyroximate
FPYM	fluopyram	FPZM	fenpyrazamine	HEX	hexythiazox
IPR	iprodione	LCY	lambda-cyhalothrin	MEPSM	mepanipyrim (sum)
MYC	myclobutanil	PIR	pirimicarb (sum)	PNZ	penconazole
PYC	pyraclostrobin	PYM	pyrimethanil	QINO	quinoxyfen
SPD	spirodiclofen	TEBF	tebufenpyrad	THC	thiacloprid
TRFL	trifloxystrobin	TTZ	tetraconazole		

Table 20c. Residues sought but not found in retail samples of STRAWBERRIES purchased between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.02)
2,4-DB (0.01)
2-phenylphenol (0.01)
acephate (0.01)
acetamiprid (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.01)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.01)
alpha-HCH (0.01)
ametoctradin (0.01)
aminocarb (0.01)
amitraz (0.01)
atrazine (0.01)
azinphos-ethyl (0.01)
azinphos-methyl (0.01)
BAC (sum) (0.01)
benalaxyl (0.01)
bendiocarb (0.01)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.05)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
buprofezin (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan and folpet (0.01)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.01)
carbofuran (sum) (0.01)
carboxin (0.01)
chlorantraniliprole (0.01)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenapyr (0.01)
chlorfenvinphos (0.01)
chlorfluazuron (0.01)
chloridazon (0.01)
chlorobenzilate (0.01)
chlorothalonil (0.01)
chlorotoluron (0.01)
chlorpropham (sum) (0.05)
chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
ethion (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.01)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenthion (sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.01)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
flufenacet (0.01)
flufenoxuron (0.01)
fluometuron (0.01)
fluopicolide (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
fonofos (0.01)
formetanate (0.01)
formothion (0.01)
fosthiazate (0.01)
fuberidazole (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Haloxyfop-R methyl (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
hexaconazole (0.01)
hexaflumuron (0.01)
hexazinone (0.01)
nitrothal-isopropyl (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.01)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.01)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.01)
phenthoate (0.01)
phorate (sum) (0.02)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propamocarb (0.01)
propanil (0.01)
propaquizafop (0.01)
propargite (0.01)
propetamphos (0.01)
propham (0.01)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)
pyrazophos (0.01)
pyrethrins (0.01)
pyridaben (0.01)
pyridaphenthion (0.01)
pyrifenox (0.01)

chlozolinate (0.01)
chromafenozide (0.01)
cinidon-ethyl (0.01)
clethodim (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
crufomate (0.01)
cyanazine (0.01)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.01)
cyflufenamid (0.01)
cyfluthrin (0.01)
cyhalofop-butyl (sum) (0.01)

cymoxanil (0.01)
cypermethrin (0.01)
cyproconazole (0.01)
cyromazine (0.01)
DDAC (sum) (0.01)
DDT (sum) (0.01)
deltamethrin (0.01)
desmedipham (0.01)
desmetryn (0.01)
diafenthiuron (0.01)
diazinon (0.01)
dichlofluanid (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.02)
dicrotophos (0.01)
diethofencarb (0.01)
difenoconazole (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinocap (0.01)
dinotefuran (0.01)
dioxathion (0.01)
diphenylamine (0.05)
disulfoton (sum) (0.01)
dithiocarbamates (0.05)
diuron (0.01)
dodine (0.05)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.01)
EPN (0.01)
epoxiconazole (0.01)
EPTC (0.01)
ethiofencarb (parent) (0.01)

imazalil (0.01)
imidacloprid (0.01)
indoxacarb (0.01)
ioxynil (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)

kresoxim-methyl (0.01)
lenacil (0.01)
lindane (0.01)
linuron (0.01)
lufenuron (0.01)
malathion (0.01)
mandipropamid (0.01)
MCPA (sum) (0.01)
mecarbam (0.01)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.01)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.01)
metconazole (0.02)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metrafenone (0.01)
metribuzin (0.01)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
napropamide (0.01)
neburon (0.01)
nitenpyram (0.01)

pyriproxifen (0.01)
pyroxsulam (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.01)
Quinoclamine (0.01)
quintozene (sum) (0.01)
Quizalofop, incl. quizalfop-P (0.01)
rotenone (0.01)
simazine (0.01)
spinosad (0.01)
spiromesifen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
terbacil (0.01)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbumeton (0.01)
terbuthylazine (0.01)
terbutryn (0.01)
tetrachlorvinphos (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.01)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.01)
triasulfuron (0.01)
triazamate (0.01)
triazamate (acid) (0.01)
triazamate (ester) (0.01)
triazophos (0.01)
trichlorfon (0.01)
triclopyr (0.05)
tricyclazole (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.05)
triticonazole (0.01)
tritosulfuron (0.01)
vamidothion (0.01)
vinclozolin (sum) (0.01)
zoxamide (0.01)

Table 21a. Residues detected in retail samples of TOMATO purchased between April and June 2016

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
CHERRY UK: 1 sample analysed		
None found	-	1
ROUND UK: 1 sample analysed		
None found	-	1
CHERRY Imported (Non-EC): 1 sample analysed		
difenoconazole	<0.01 (i.e. not found)	0
(MRL = 2)	0.2	1
dithiocarbamates	<0.05 (i.e. not found)	0
(MRL = 3)	0.09	1
mandipropamid	<0.01 (i.e. not found)	0
(MRL = 3)	0.05	1
spiromesifen	<0.01 (i.e. not found)	0
(MRL = 1)	0.2	1
tebufenpyrad	<0.01 (i.e. not found)	0
(MRL = 0.8)	0.05	1
PLUM Imported (Non-EC): 1 sample analysed		
None found	-	1
ROUND Imported (Non-EC): 3 samples analysed		
azoxystrobin	<0.01 (i.e. not found)	1
(MRL = 3)	0.01, 0.02	2
difenoconazole	<0.01 (i.e. not found)	2
(MRL = 2)	0.03	1
dithiocarbamates	<0.05 (i.e. not found)	1
(MRL = 3)	0.1, 0.2	2
spiromesifen	<0.01 (i.e. not found)	2
(MRL = 1)	0.04	1
tebufenpyrad	<0.01 (i.e. not found)	2
(MRL = 0.8)	0.03	1
thiacloprid	<0.01 (i.e. not found)	2
(MRL = 0.5)	0.01	1
BEEFSTEAK Imported (EC): 1 sample analysed		
None found	-	1
ROUND Imported (EC): 15 samples analysed		
boscalid	<0.01 (i.e. not found)	13
(MRL = 3)	0.02, 0.04	2
chlorantraniliprole	<0.01 (i.e. not found)	13

Commodity/Pesticide	Concentration range (mg/kg)	Number of samples in range
(MRL = 0.6)	0.01, 0.02	2
dithiocarbamates	<0.05 (i.e. not found)	14
(MRL = 3)	0.07	1
fenpyroximate	<0.01 (i.e. not found)	14
(MRL = 0.2)	0.02	1
fluopyram	<0.01 (i.e. not found)	11
(MRL = 0.9)	0.05 - 0.2	4
iprodione	<0.01 (i.e. not found)	14
(MRL = 5)	0.02	1
metrafenone	<0.01 (i.e. not found)	14
(MRL = 0.4)	0.02	1
pyriproxifen	<0.01 (i.e. not found)	14
(MRL = 1)	0.05	1
spiromesifen	<0.01 (i.e. not found)	14
(MRL = 1)	0.02	1
VINE Imported (EC): 1 sample analysed		
None found	-	1

Imported (EC) samples of tomato were from Belgium (1), Spain (6), the Netherlands (10).
Imported (Non-EC) samples of tomato were from Morocco (5).
UK samples of tomato (2).

Residues were distributed by country of origin, as follows:

azoxystrobin	Morocco (2)
boscalid	Spain (1), the Netherlands (1)
chlorantraniliprole	the Netherlands (2)
difenoconazole	Morocco (2)
dithiocarbamates	Morocco (3), Spain (1)
fenpyroximate	Spain (1)
fluopyram	the Netherlands (4)
iprodione	Spain (1)
mandipropamid	Morocco (1)
metrafenone	Spain (1)
pyriproxifen	Spain (1)
spiromesifen	Morocco (2), Spain (1)
tebufenpyrad	Morocco (2)
thiacloprid	Morocco (1)

No residues were found in any of the UK cherry samples
No residues were found in any of the UK round samples
Residues were found in all of the 1 Imported (Non-EC) cherry samples
No residues were found in any of the Imported (Non-EC) plum samples
Residues were found in all of the 3 Imported (Non-EC) round samples
No residues were found in any of the Imported (EC) beefsteak samples
No residues were found in 4 of the 15 Imported (EC) round samples
No residues were found in any of the Imported (EC) vine samples

Table 21b. Residues detected in retail samples of TOMATO purchased between April and June 2016

Residues (1-5 compounds) were found in 15 of the 24 samples as follows:

Number of residues	Sample ID	Type of TOMATO	Residues found (mg/kg)														Country of origin
			AZOX	BOS	CTP	DIFC	DTC	FNPY	FPYM	IPR	MDI	MTF	PYX	SPM	TEBF	THC	
(1)	4055/2016	ROUND	-	-	-	-	-	-	-	-	-	-	-	-	0.03	-	Morocco
	3501/2016	ROUND	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	Spain
	4123/2016	ROUND	-	-	-	-	0.07	-	-	-	-	-	-	-	-	-	Spain
	3503/2016	ROUND	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	the Netherlands
	3579/2016	ROUND	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	the Netherlands
	3582/2016	ROUND	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	the Netherlands
	3899/2016	ROUND	-	0.04	-	-	-	-	-	-	-	-	-	-	-	-	the Netherlands
	3903/2016	ROUND	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-	the Netherlands
	3956/2016	ROUND	-	-	-	-	-	-	0.07	-	-	-	-	-	-	-	the Netherlands
	4058/2016	ROUND	-	-	-	-	-	-	0.05	-	-	-	-	-	-	-	the Netherlands
(2)	3920/2016	ROUND	-	-	-	-	-	-	-	-	-	0.02	0.05	-	-	-	Spain
(3)	3952/2016	ROUND	0.02	-	-	0.03	0.1	-	-	-	-	-	-	-	-	-	Morocco
	3504/2016	ROUND	-	-	-	-	-	0.02	-	0.02	-	-	-	0.02	-	-	Spain
(4)	4029/2016	ROUND	0.01	-	-	-	0.2	-	-	-	-	-	-	0.04	-	0.01	Morocco
(5)	3547/2016	CHERRY	-	-	-	0.2	0.09	-	-	-	0.05	-	-	0.2	0.05	-	Morocco

The abbreviations used for the pesticide names are as follows:

AZOX	azoxystrobin	BOS	boscalid	CTP	chlorantraniliprole
DIFC	difenoconazole	DTC	dithiocarbamates	FNPY	fenpyroximate
FPYM	fluopyram	IPR	iprodione	MDI	mandipropamid
MTF	metrafenone	PYX	pyriproxifen	SPM	spiromesifen

TEBF	tebufenpyrad	THC	thiacloprid

Table 21c. Residues sought but not found in retail samples of TOMATO purchased between April and June 2016

The following pesticide(s) were actively sought but not found at or above their reporting limits (in parentheses in mg/kg):

2,4-D (sum) (0.01)
2,4-DB (0.01)
2-phenylphenol (0.02)
6-benzyladenine (0.01)
abamectin (sum) (0.01)
acephate (0.01)
acetamiprid (0.01)
acetochlor (0.01)
acibenzolar-s-methyl (0.01)
aclonifen (0.02)
acrinathrin (0.02)
alachlor (0.01)
aldicarb (sum) (0.01)
aldrin and dieldrin (0.01)
allethrin (0.02)
alpha-HCH (0.01)
ametoctradin (0.01)
amidosulfuron (0.01)
amitraz (0.01)
asulam (0.02)
atrazine (0.01)
azinphos-ethyl (0.02)
azinphos-methyl (0.02)
BAC (sum) (0.05)
benalaxyl (0.01)
bendiocarb (0.01)
benfuracarb (0.001)
benthiavalicarb (sum) (0.01)
beta-HCH (0.01)
bifenox (0.02)
bifenthrin (0.01)
biphenyl (0.01)
bispyribac-sodium (0.01)
bitertanol (0.01)
bixafen (0.01)
bromophos-ethyl (0.01)
bromopropylate (0.01)
bromoxynil (0.01)
bromuconazole (0.01)
bupirimate (0.01)
buprofezin (0.01)
butachlor (0.01)
butocarboxim (parent) (0.01)
butoxycarboxim (0.01)
cadusafos (0.01)
captan and folpet (0.02)
carbaryl (0.01)
carbendazim (0.01)
carbetamide (0.02)
carbofuran (sum) (0.001)
carbosulfan (0.001)
carboxin (0.02)
chlorbufam (0.01)
chlordane (sum) (0.01)
chlorfenapyr (0.01)
chlorfenvinphos (0.01)
chloridazon (0.01)
ethephon (0.05)
ethiofencarb (parent) (0.01)
ethion (0.01)
ethirimol (0.01)
ethofumesate (0.01)
ethoprophos (0.01)
etofenprox (0.01)
etoxazole (0.01)
etridiazole (0.02)
etrimfos (0.01)
famoxadone (0.01)
fenamidone (0.01)
fenamiphos (sum) (0.01)
fenarimol (0.01)
fenazaquin (0.01)
fenbuconazole (0.01)
fenbutatin oxide (0.02)
fenhexamid (0.02)
fenitrothion (0.01)
fenoxycarb (0.01)
fenpropathrin (0.01)
fenpropidin (0.01)
fenpropimorph (0.01)
fenpyrazamine (0.01)
fensulfothion (sum) (0.01)
fenthion (partial sum) (0.01)
fenvalerate & esfenvalerate (all isomers (0.01)
fipronil (sum) (0.005)
flonicamid (sum) (0.01)
fluazifop-p-butyl (sum) (0.01)
fluazinam (0.01)
flubendiamide (0.01)
flucythrinate (0.01)
fludioxonil (0.01)
flufenacet (0.01)
flufenoxuron (0.02)
fluometuron (0.01)
fluopicolide (0.01)
fluoxastrobin (0.01)
fluquinconazole (0.01)
flurochloridone (0.02)
fluroxypyr (sum) (0.02)
flusilazole (0.01)
flutolanil (0.01)
flutriafol (0.01)
fluxapyroxad (0.01)
fonofos (0.01)
formetanate (0.01)
fosthiazate (0.01)
furalaxyl (0.01)
furathiocarb (0.001)
furmecyclox (0.01)
halofenozide (0.01)
halosulfuron-methyl (0.01)
haloxyfop (sum) (0.01)
Heptachlor (sum) (0.01)
heptenophos (0.01)
nitenpyram (0.01)
nitrofen (0.02)
nitrothal-isopropyl (0.01)
Novaluron (0.01)
nuarimol (0.01)
ofurace (0.01)
Oxadiargyl (0.01)
oxadiazon (0.02)
oxadixyl (0.01)
oxamyl (0.01)
oxasulfuron (0.01)
oxydemeton-methyl (sum) (0.01)
oxyfluorfen (0.02)
paclobutrazol (0.01)
parathion (0.01)
parathion-methyl (sum) (0.01)
penconazole (0.01)
pencycuron (0.01)
pendimethalin (0.01)
penflufen (0.01)
pentanochlor (0.01)
penthiopyrad (0.01)
permethrin (0.01)
phenmedipham (0.02)
phenthoate (0.01)
phorate (partial sum) (0.01)
phosalone (0.01)
phosmet (sum) (0.01)
phosphamidon (0.01)
phoxim (0.01)
picolinafen (0.01)
picoxystrobin (0.01)
piperonyl butoxide (0.01)
pirimicarb (sum) (0.01)
pirimiphos-ethyl (0.01)
pirimiphos-methyl (0.01)
prochloraz (parent only) (0.01)
procymidone (0.01)
profenofos (0.01)
promecarb (0.01)
prometryn (0.01)
propachlor (0.01)
propamocarb (0.01)
propanil (0.02)
propaquizafop (0.02)
propargite (0.01)
propetamphos (0.01)
propham (0.02)
propiconazole (0.01)
propoxur (0.01)
propyzamide (0.01)
proquinazid (0.01)
prosulfocarb (0.01)
prosulfuron (0.01)
prothioconazole (0.01)
prothiofos (0.01)
pymetrozine (0.01)

chlormequat (0.02)
chlorobenzilate (0.02)
chlorothalonil (0.01)
chlorpropham (sum) (0.01)
chlorpyrifos (0.01)
chlorpyrifos-methyl (0.01)
chlorthal-dimethyl (0.01)
chlortoluron (0.01)
chlozolinate (0.01)
chromafenozide (0.01)
clethodim (0.02)
clofentezine (0.01)
clomazone (0.01)
clothianidin (0.01)
coumaphos (0.01)
cyanazine (0.02)
cyazofamid (0.01)
cycloate (0.01)
cycloxydim (0.02)
cyflufenamid (0.01)
cyfluthrin (0.02)
cyhalofop-butyl (sum) (0.01)
cymoxanil (0.01)
cypermethrin (0.02)
cyproconazole (0.01)
cyprodinil (0.02)
cyromazine (0.02)
DDAC (sum) (0.05)
DDT (sum) (0.01)
deltamethrin (0.02)
demeton-S-methyl (0.01)
desmedipham (0.02)
diafenthiuron (0.02)
diazinon (0.01)
dichlobenil (0.01)
dichlofluanid (0.01)
dichlofluanid and DMSA (0.01)
dichlorprop (0.01)
dichlorvos (0.01)
diclobutrazol (0.01)
dicloran (0.01)
dicofol (sum) (0.01)
dicrotophos (0.01)
diethofencarb (0.01)
diflubenzuron (0.01)
diflufenican (0.01)
dimethenamid (0.01)
dimethoate (sum) (0.01)
dimethomorph (0.01)
dimoxystrobin (0.01)
diniconazole (0.01)
dinotefuran (0.01)
diphenylamine (0.02)
disulfoton (sum) (0.01)
diuron (0.01)
dodine (0.02)
emamectin benzoate (0.01)
endosulfan (sum) (0.01)
endrin (0.02)
EPN (0.01)
epoxiconazole (0.01)
hexachlorobenzene (0.01)
hexachlorocyclohexane (sum) (0.01)
hexaconazole (0.01)
hexazinone (0.02)
hexythiazox (0.01)
imazalil (0.02)
imidacloprid (0.01)
indoxacarb (0.01)
inorganic bromide (20)
ioxynil (0.01)
iprovalicarb (0.01)
isazophos (0.01)
isocarbophos (0.01)
isofenphos (0.01)
isofenphos-methyl (0.01)
isoprocarb (0.01)
isoprothiolane (0.01)
isoproturon (0.01)
isopyrazam (0.01)
isoxaben (0.01)
isoxaflutole (0.01)
kresoxim-methyl (0.01)
lambda-cyhalothrin (0.02)
lenacil (0.01)
lindane (0.01)
linuron (0.01)
lufenuron (0.02)
malathion (0.01)
MCPA, MCPB and MCPA thioethyl expressed (0.01)
mecarbam (0.01)
mepanipyrim (sum) (0.01)
mephosfolan (0.02)
mepiquat (0.02)
mepronil (0.01)
mesosulfuron-methyl (0.01)
metaflumizone (0.02)
metalaxyl (0.01)
metamitron (0.01)
metazachlor (0.02)
metconazole (0.01)
methabenzthiazuron (0.01)
methacrifos (0.01)
methamidophos (0.01)
methidathion (0.01)
methiocarb (sum) (0.01)
methomyl (sum) (0.01)
methoxychlor (0.01)
methoxyfenozide (0.01)
metobromuron (0.01)
metolachlor (0.01)
metolcarb (0.01)
metosulam (0.01)
metoxuron (0.01)
metribuzin (0.02)
metsulfuron-methyl (0.01)
mevinphos (0.01)
molinate (0.01)
monocrotophos (0.01)
monolinuron (0.01)
Monuron (0.01)
myclobutanil (0.01)
pyraclostrobin (0.01)
pyrazophos (0.01)
pyrethrins (0.01)
pyridaben (0.01)
pyridalyl (0.01)
pyridaphenthion (0.01)
pyrifenox (0.02)
pyrimethanil (0.01)
quassia (0.01)
quinalphos (0.01)
quinmerac (0.02)
Quinoclamine (0.01)
quinomethionate (0.02)
quinoxyfen (0.01)
quintozene (sum) (0.01)
resmethrin (0.02)
rimsulfuron (0.01)
rotenone (0.01)
simazine (0.02)
spinosad (0.01)
spirodiclofen (0.01)
spirotetramat (sum) (0.01)
spiroxamine (0.01)
sulcotrione (0.02)
sum of butocarboxim and butocarboxim sul (0.01)
tau-fluvalinate (0.01)
tebuconazole (0.01)
tebufenozide (0.01)
tebuthiuron (0.01)
tecnazene (0.01)
teflubenzuron (0.01)
tefluthrin (0.01)
tepraloxydim (0.02)
terbufos (0.01)
Terbufos (sum not defintion) (0.01)
terbuthylazine (0.02)
terbutryn (0.02)
tetrachlorvinphos (0.01)
tetraconazole (0.01)
tetradifon (0.01)
tetramethrin (0.01)
thiabendazole (0.02)
thiamethoxam (sum) (0.01)
thiophanate-methyl (0.01)
tolclofos-methyl (0.01)
tolfenpyrad (0.01)
tolylfluanid (sum) (0.01)
triadimefon & triadimenol (0.01)
triallate (0.02)
triasulfuron (0.02)
triazamate (0.01)
triazophos (0.01)
triclopyr (0.02)
tricyclazole (0.01)
trifloxystrobin (0.01)
triflumizole (0.01)
triflumuron (0.01)
trifluralin (0.01)
triforine (0.01)
triticonazole (0.01)
vinclozolin (sum) (0.01)

EPTC (0.01)	napropamide (0.02)	zoxamide (0.01)

Appendix D: Additional Action Taken

Action taken by HSE

HSE wrote to:

- the suppliers of all samples containing residues above the MRL
- the authorities of the exporting countries of all samples containing residues above the MRL
- The suppliers of UK samples that contained residues that were not approved for that crop.
- the Organics branch of Defra about samples that were labelled as organic and contained residues of pesticides not approved for organic production
- The suppliers and certification organisation of all organic samples containing residues of pesticides not approved for organic production.

Recipients of the letters are given 4 weeks to provide a statement for inclusion in the report. The Expert Committee on Pesticide Residues in Food reviews any replies received.

Appendix E: Pesticides analysed as multi-component analytes and their reporting limits

Why some results cover more than one substance

Both the legal controls and our analytical tests are aimed at checking food for the presence of residues of specific pesticides. Residues are the chemical traces left behind after pesticides are used. In most cases the residue of a pesticide is measured by first identifying the pesticide and then measuring the quantity of that pesticide in the food itself. But for some pesticides the residue remaining in the food is known to be chemically different from the original pesticide and so the laboratory needs to looks for more than one component. There are various reasons why this happens, for example:

- the animal or plant can change the pesticide into related chemicals
- the pesticide can change in the environment into related chemicals
- some pesticides are mixtures of chemicals , so the relevant components of the mixture need to be checked for
- in the laboratory sample preparation and/or analysis may change pesticides into related chemicals
- related chemicals may be pesticides in their own right

The MRL setting process takes account of all these issues. The EU may set a complex residue definition to ensure that the identity and quantity of the residue found is representative of the pesticide present. A complex residue definition may be set where it is necessary for safety reasons or to be able to accurately identify the pesticide residue present in the food. This definition usually includes the actual pesticide, plus other related chemicals. These residues are usually reported together as a "sum". Sometimes different foods need different definitions because different pesticide residues are known to occur in that food. For instances, plants and animals may metabolise a pesticide differently, which forms different residues.

The full definitions of pesticides that we have found in our surveys are described in the table below. If you would like more detail about a particular residue definition, please get in touch. You can email us at prif@hse.gov.uk and other contact details are on the back cover.

Where the detailed individual analysis results tell us something useful, we mention that in our conclusions.

How we calculate sums

Unless the definition says otherwise, the summed result is a simple addition. For individual components that are not detected that result is treated as a zero.

Where a residue definition says "expressed as", that means that the individual component results are adjusted by molecular weight before being added together. The residue definition is set this way so that the final calculated result for the whole definition is an expression of the level of the most toxic component, and so that value can be used directly in consumer risk assessment without further adjustment.

The EU Reference Laboratories for pesticide residues have an e-learning package aimed at analytical chemists on this very technical subject at http://www.eupt.es/e-learning/.

Complex residue definitions used in our reports

There are a large number of pesticides used and types of food in the world. So other complex residue definitions may apply to food/pesticide combinations not yet considered by PRiF. You can look up all the EU MRL definitions for pesticide residues at the European Commission's pesticide database at http://ec.europa.eu/food/plant/pesticides/pesticides_database/index_en.htm

Short name we use in our reports	Legal residue definition – These definitions apply to all foods unless otherwise stated
2,4-D (sum)	2,4-D (sum of 2,4-D and its esters expressed as 2,4-D)
abamectin (sum)	Abamectin (sum of Avermectin B1a, AvermectinB1b and delta-8,9 isomer of Avermectin B1a)
aldicarb (sum)	Aldicarb (sum of Aldicarb, its sulfoxide and its sulfone, expressed as Aldicarb)
aldrin and dieldrin	Aldrin and Dieldrin (Aldrin and dieldrin combined expressed as dieldrin), aka dieldrin (sum)
amitraz	Amitraz (amitraz including the metabolites containing the 2,4 - dimethylaniline moiety expressed as amitraz)
BAC (sum)	Benzalkonium chloride (mixture of alkylbenzyldimethylammonium chlorides with alkyl chain lengths of C_8, C_{10}, C_{12}, C_{14}, C_{16} and C_{18})
benthiavalicarb (sum)	Benthiavalicarb (Benthiavalicarb-isopropyl (KIF-230 R-L) and its enantiomer (KIF-230 S-D) and diastereomers (KIF-230 R-L and KIF-230 S-D)
bixan (animal products)	Sum of bixafen and desmethyl bixafen expressed as bixafen This definition applies to animal products only
captan and folpet	Sum of captan and folpet aka captan/folpet This definition applies only to pome fruit (fruits such as apples and pears), strawberries, raspberries, currants, tomatoes and beans. For all other foods there are separate MRLs for captan only and for folpet only.
carbendazim (animal products)	Carbendazim and thiophanate-methyl, expressed as carbendazim
Carbendazim (sum)	Carbendazim and benomyl (sum of benomyl and carbendazim expressed as carbendazim)
carbofuran (sum)	Carbofuran (sum of carbofuran and 3-hydroxy-carbofuran expressed as carbofuran)
chlordane (animal products)	Chlordane (sum of cis- and trans-isomers and oxychlordane expressed as chlordane) This definition applies to animal products only
chlordane (sum)	Chlordane (sum of cis- and trans- isomers) This definition applies to all foods except animal products
chlorpropham (potatoes)	Chlorpropham only This definition applies only to potatoes
chlorpropham (sum for animal products)	Chlorpropham and 4-hydroxychlorpropham-O-sulphonic acid (4-HSA),expressed as chlorpropham This definition applies only to animal products
chlorpropham (sum)	Chlorpropham (Chlorpropham and 3-chloroaniline, expressed as Chlorpropham) This definition applies to all foods except potatoes and animal products

Short name we use in our reports	Legal residue definition – These definitions apply to all foods unless otherwise stated
DDAC (sum)	Didecyldimethylammonium chloride (mixture of alkyl-quaternary ammonium salts with alkyl chain lengths of C_8, C_{10} and C_{12})
DDT (sum)	DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT)
dichlorprop	Sum of Dichlorprop, including dichlorprop-p and its conjugates, expressed as dichlorprop
dicofol (sum)	Dicofol (sum of p, p' and o,p' isomers)
dimethenamid	Dimethenamid–p (Dimethenamid-p including other mixtures of constituent isomers (sum of isomers))
dimethoate (sum)	Dimethoate (sum of dimethoate and omethoate expressed as dimethoate)
disulfoton (sum)	Disulfoton (sum of disulfoton, disulfoton sulfoxide and disulfoton sulfone expressed as disulfoton)
dithiocarbamates	Dithiocarbamates are a group of pesticides that are chemically similar. Testing for them individually in routine analysis is not possible, so MRLs are set for a test for the group.
endosulfan (sum)	Endosulfan (sum of alpha- and beta-isomers and endosulfan-sulphate expresses as endosulfan)
fenamiphos (sum)	Fenamiphos (sum of fenamiphos and its sulphoxide and sulphone expressed as fenamiphos)
fenchlorphos (sum)	Fenchlorphos (sum of fenchlorphos and fenchlorphos oxon expressed as fenchlorphos)
fensulfothion (sum)	Fensulfothion (sum of fensulfothion, its oxygen analogue and their sulfones, expressed as fensulfothion).
fenthion (sum)	Fenthion (fenthion and its oxygen analogue, their sulfoxides and sulfone expressed as parent)
fenvalerate & esfenvalerate (all isomers)	Fenvalerate (any ratio of constituent isomers (RR, SS, RS & SR) including esfenvalerate)
fipronil (infant food)	Sum of fipronil and fipronil-desulfinyl, expressed as fipronil This definition applies to foods for babies only
fipronil (sum)	Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil) This definition applies to all foods except foods for babies
flonicamid (sum)	Flonicamid (sum of flonicamid, TNFG and TNFA) This definition applies to all food except animal prodcuts
fluazifop-p-butyl (sum)	Fluazifop-P-butyl (fluazifop acid (free and conjugate))
haloxyfop (sum)	Haloxyfop including haloxyfop-R (Haloxyfop-R methyl ester, haloxyfop-R and conjugates of haloxyfop-R expressed as haloxyfop-R)
Heptachlor (infant food)	Sum of heptachlor and trans heptachlor epoxide This definition applies to foods for babies only
Heptachlor (sum)	Heptachlor (sum of heptachlor and heptachlor epoxide expressed as heptachlor) This definition applies to all foods except infant foods

Short name we use in our reports	Legal residue definition – These definitions apply to all foods unless otherwise stated
hexachlorocyclohexane (sum)	Hexachlorocyclohexane (HCH), sum of isomers, except the gamma isomer This definition applies to all foods except animal products (For animal products the alpha and beta isomers have separate MRls)
malathion	Malathion (sum of malathion and malaoxon expressed as malathion)
MCPA (animal prdocuts)	[Residue defintion, animal products] MCPA, MCPB and MCPA thioethyl expressed as MCPA This definition applies to animal products only
MCPA (sum)	MCPA and MCPB (MCPA, MCPB including their salts, esters and conjugates expressed as MCPA) This definition applies to all foods except animal prdoucts
mepanipyrim (sum)	Mepanipyrim and its metabolite (2-anilino-4-(2-hydroxypropyl)-6-methylpyrimidine) expressed as mepanipyrim
methiocarb (sum)	Methiocarb (sum of methiocarb and methiocarb sulfoxide and sulfone, expressed as methiocarb)
methomyl (sum)	Sum of methomyl and thiodicarb expressed as methomyl
oxydemeton-methyl (sum)	Oxydemeton-methyl (sum of oxydemeton-methyl and demeton-S-methylsulfone expressed as oxydemeton-methyl)
parathion-methyl (sum)	Parathion-methyl (sum of Parathion-methyl and paraoxon-methyl expressed as Parathion-methyl)
Permethrin	Permethrin (sum of isomers)
phorate (sum)	Phorate (sum of phorate, its oxygen analogue and their sulfones expressed as phorate)
phosmet (sum)	Phosmet (phosmet and phosmet oxon expressed as phosmet) This definition applies to all foods except animal products
pirimicarb (sum)	Pirimicarb (sum of Pirimicarb and Desmethyl pirimicarb expressed as Pirimicarb)
Prothioconazole (sum)	Prothioconazole (sum of prothioconazole-desthio and its glucuronide conjugate, expressed as prothioconazoledesthio) This definition applies to animal products only
PTU & propineb	Sum of PTU and propineb This definition applies to food for babies only
quintozene (sum)	Quintozene (sum of quintozene and pentachloro-aniline expressed as quintozene)
Prochloraz (sum)	Prochloraz (sum of prochloraz and its metabolites containing the 2,4,6-Trichlorophenol moiety expressed as prochloraz)
Terbufos (sum)	Terbufos (sum of terbufos, its sulfoxide and sulfone This definition applies only to foods for babies
thiamethoxam (sum)	Thiametoxam (sum of thiametoxam and clothianidin expressed as thiametoxam) There are also separate clothianidin MRLs
tolylfluanid (sum)	Tolylfluanid (Sum of tolylfluanid and dimethylaminosulfotoluidide expressed as tolylfluanid)

Short name we use in our reports	Legal residue definition – These definitions apply to all foods unless otherwise stated
triadimefon & triadimenol	Triadimefon and triademenol
vinclozolin (animal products)	Vinclozolin, iprodione, procymidone, sum of compounds and all metabolites containing the 3,5-dichloroaniline moiety expressed as 3,5-dichloroaniline This definition applies to animal products only
vinclozolin (sum)	Vinclozolin (sum of vinclozolin and all metabolites containing the 3,5-dichloraniniline moiety, expressed as vinclozolin) This definition applies to all foods except animal products

Glossary

This is a 'standard' glossary which defines the key terms used in the PRiF reports. Not all the terms listed here are used in this particular report.

Acceptable Daily Intake (ADI): This is the amount of a chemical which can be consumed every day for a lifetime in the practical certainty, on the basis of all known facts, that no harm will result. It is expressed in milligrams of the chemical per kilogram of body weight of the consumer. The starting point for the derivation of the ADI is usually the 'no observed adverse effect level' (NOAEL) that has been observed in animal studies for toxicity. This is then divided by an uncertainty factor (most often 100) to allow for the possibility that animals may be less sensitive than humans and also to account for possible variation in sensitivity between individuals. The studies from which NOAELs and hence ADIs are derived take into account any impurities in the pesticide active substance as manufactured, and also any toxic breakdown products of the pesticide.

Acute Reference Dose (ARfD): The definition of the ARfD is similar to that of the ADI, but it relates to the amount of a chemical that can be taken in at one meal or on one day without appreciable health risk to the consumer. It is normally derived by applying an appropriate uncertainty factor to the lowest NOAEL in studies that assess acute toxicity or developmental toxicity.

As a matter of policy the EU does not use NOAELs from tests that involve deliberate administration of pesticides to humans to determine ADIs and ARfDs. However, where such data have been ethically and scientifically derived some authorities, e.g. the World Health Organization, do consider such data. Where human data are used there is usually less uncertainty in the resulting reference value compared to extrapolating from animal tests to humans, and a lower uncertainty factor (most often 10) is used to account for the variation in sensitivity between individuals.

The initial risk assessments in PRiF reports use the agreed EU reference values. However, where intakes are above the EU value and a reference value based on acceptable human data is available a refined assessment, which is a more appropriate indicator of the risk, is also reported.

Analyte: This is the name for the substance that the PRiF surveys look for and measure if present; it could be a pesticide itself or a product from a pesticide when it is degraded, or metabolised.

COLEACP (Europe-Africa-Caribbean-Pacific Liaison Committee): It aims to promote the competitive export of fresh fruit, vegetables, flowers and ornamental plants from the ACP. Its specialised information and advisory services are open to all ACP companies in the horticultural export sector and are financed by the European Commission. It has two overriding objectives to enable ACP companies to comply with European food safety and traceability requirements and to consolidate the position of small-scale producers in the ACP horticultural export sector.

Cholinergic: In relation to the animal nervous system, processes and structures are cholinergic if they release or use acetylcholine. Acetylcholine is a neurotransmitter, a chemical that carries signals through the nervous system.

Cryogenic Milling: Processing of commodities at very low temperatures can be achieved by milling/grinding pre-frozen samples in the presence of dry ice, a procedure known as 'cryogenic milling'.

Good Agricultural Practice in the Use of Pesticides (GAP): The nationally authorised safe uses of pesticides under conditions necessary for effective and reliable pest control (the way products should be used according to the statutory conditions of approval which are stated on the label). GAP encompasses a range of pesticide applications up to the highest authorised rates of use, applied in a manner which leaves a residue which is the smallest practicable. Authorised safe uses are determined at the national level and include nationally registered recommended uses, which take into account public and occupational health and environmental safety considerations. Actual conditions include any stage in the production, storage, transport, distribution and processing of food commodities and animal feed.

High-level Consumer: A term used in UK risk assessment calculations to describe the amount of food consumed by a person. In line with internationally agreed approaches, the PRiF uses the 97.5th percentile value, which is generally about three times the average amount consumed. This takes account of different eating patterns that may occur throughout the population.

Human Data: See under Acute Reference Dose

Import Tolerance: an MRL set for imported products where the use of the active substance in a plant protection product on a commodity is not authorised in the European Community (EC) or an existing EC MRL is not sufficient to meet the needs of international trade. All import tolerances are assessed for consumer safety.

Imported: The tables in the reports record whether the sample was of UK origin, or imported. This can mean different things depending on the commodity. See also 'Origin'. The PRiF report the country from where the produce has been imported only if this is clear from the packaging or labelling.

JMPR: Joint FAO/WHO Meeting on Pesticide Residues, which conducts scientific evaluations of pesticide residues in food.

Limit of Quantification (LOQ): The limit of quantification is the lowest concentration of a pesticide residue or contaminant that can be routinely identified and quantitatively measured in a specified food, agricultural commodity or animal feed with an acceptable degree of certainty by the method of analysis.

Maximum Residue Level (MRL): The maximum concentration of a pesticide residue (expressed as mg/kg) legally permitted in or on food commodities and animal feeds. MRLs are based on good agricultural practice data and residues in foods derived from commodities that comply with the respective MRLs are intended to be toxicologically acceptable.

MRLs are intended primarily as a check that GAP is being followed and to assist international trade in produce treated with pesticides. **MRLs are not in themselves 'safety limits'**, and exposure to residues in excess of an MRL does not automatically imply a hazard to health.

The MRLs applicable in the UK are now largely set under EC legislation.

Futher information on MRLs can be found at:
www.pesticides.gov.uk/guidance/industries/pesticides/topics/food-safety/maximum-residue-levels

Maximum Residue Limits (CODEX or CAC): In cases where there is no UK or EC MRLs, the acceptability of residues may be judged against Codex Maximum Residue Limits. Although not embodied in UK statute, Codex limits are taken as presumptive standards. These limits give an indication of the likely highest residue that should occur in edible crops. These are based on worldwide uses and the residues trials data to support those uses, at the time of evaluation (date of setting the limits is specified and thus the Maximum Residue Limit applicable up to that year, but will not take into account subsequent approved uses.)

There are occasions where the MRL that has been set by Codex may not reflect current UK Good Agricultural Practice (e.g. the Codex MRLs for dithiocarbamates and propamocarb on lettuce). In such circumstances it is possible to exceed the Codex MRL through a UK approved use. This factor needs to be taken into account when assessing results.

Maximum Residue Levels set at the LOD (LOD MRL): For some pesticides and commodities, insufficient trials data are available on which to set a maximum residue level or there may be no use of the pesticide on that crop. In these cases, the MRL may be set at a default level, i.e. at the limit of determination (LOD) where analytical methods can reasonably detect the presence of the pesticide. **These MRLs are not based on Good Agricultural Practice (GAP).**

MRL exceedances: When a residue is found at a level higher than that set for the MRL.

MRL Exceedances and Relationship with the Acceptable Daily Intake (ADI): Before permitting any use of a pesticide, a detailed assessment is made to ensure that residues in foods derived from commodities comply with MRLs and will not give rise to unacceptable risks to consumers. MRLs do take account of consumer safety aspects and, in effect, are set at levels below safety limits. However, MRLs must not be confused with safety limits, which are expressed in terms of the acceptable daily intake (ADI) of a particular pesticide residue from all sources. The ADI (expressed as mg/kg bw/day) is the amount of chemical that can be consumed every day of an individual's entire lifetime in the practical certainty, on the basis of all known facts, that no harm will result. See ADI for further information.

Whenever unexpectedly high or unusual residues occur during monitoring, the risk to consumers, from exposure to residues at the highest levels found, is assessed by comparison of predicted intakes with the ADI or ARfD as appropriate.

No MRL: For certain pesticides an MRL may not have been set.

UKT MRL: For certain pesticide a temporary national MRL has been set. UKT MRLs are worked out by HSE. The level indicates the amount of residue expected when the pesticide is applied in accordance with good agricultural practice (GAP). The UK has a number of UKT MRLs, these take precedence over provisional EC levels.

Extraneous Residue Limit (ERL): An ERL refers to a pesticide residue or a contaminant arising from environmental sources (including former agricultural uses) other than the use of a pesticide or a contaminant substance directly or indirectly on the commodity. It is the maximum concentration of a pesticide residue or contaminant that is recommended by the Codex Alimentarius Commission (CAC) to be legally permitted or recognised as acceptable in or on a food, agricultural commodity or animal feed.

Metabolite: A degradation or conversion product from a pesticide when it is metabolised.

Multiple Residues: In this report this term is used to describe when more than one pesticide is found in an individual food sample. It may have arisen because the crop was treated at different times with pesticides applied singularly, or when pesticides are applied as mixtures (several pesticides mixed in the spray tank at the same time) or the marketed pesticide product contains more than one pesticide or any combination of these three situations. Mixtures may be used in response to specific pest pressures and also as part of strategies to minimise pesticide resistance building up on pest populations.

NEDI: National Estimate of Daily Intake. An estimate of intake of pesticide in the diet over the long-term to compare to the ADI. The NEDI is based on median or mean residue levels and a high level consumption (97.5^{th} percentile value) for the daily amounts of the food item consumed over the long term. For further details on the calculation of NEDIs please refer to section 3 of the data requirements handbook: www.pesticides.gov.uk/guidance/industries/pesticides/topics/pesticide-approvals/pesticides-registration/applicant-guide/the-applicant-guide-contents.

NESTI: National Estimate of Short Term Intake. An estimate of peak intake of pesticide in the diet to compare to the ARfD. The NESTI is based on the highest residue found multiplied by a variability factor (see glossary description) and a high level consumption (97.5^{th} percentile value) for the amount of the food item consumed over a single day. For further details on the calculation of NESTIs please refer to section 3 of the data requirements handbook: www.pesticides.gov.uk/guidance/industries/pesticides/topics/pesticide-approvals/pesticides-registration/applicant-guide/the-applicant-guide-contents.

Neurotoxicity: Neurotoxicity is the effect of substances (called neurotoxins) which alter the normal working of an animal's nervous systems and/or damage the nervous tissue.

No Observed Adverse Effect Level (NOAEL): The greatest concentration or amount of a substance, found by experiment or observation, which causes no detectable adverse alteration of morphology, functional capacity, growth, development or life span of the target organism under defined conditions of exposure.

Origin: The brand name annex reports the origins of the samples tested. This can mean different things depending on the commodity. For example, butter is often labelled as 'UK origin'; however, the majority of it comes in bulk from New Zealand and is split into smaller blocks and packaged in the UK. Lettuce is a fresh produce and 'UK origin' usually means that it has been grown and packaged in the UK. Processed commodities such as cereal bars often contain multiple raw ingredients, each of which may come from a different source/origin. Therefore, the origin of the produce usually reflects the place where it was manufactured. The PRiF report the origin as stated on the packaging or labelling of the commodity concerned, unless other more accurate information is available to indicate that the origin is from elsewhere. Some products are listed as 'unknown origin' because the labelling does not give this information.

Parent: The chemical form of a pesticide as applied to plants, as opposed to metabolites and breakdown products.

Percentile: A percentile is a value that divides a sample of measurements at a specific point when they are listed in ascending order of magnitude. For example, the 97.5th percentile from a food consumption survey is a value that is equal to or more than 97.5% of the measurements and equal to or less than 2.5% of the measurements. So in a sample of 40 daily food consumption values, the 97.5th percentile is equal to or more than 39 of the measurements. Such high percentile estimates of food consumption are used in risk assessments as they are more protective than using average consumption levels.

Permitted Level (PL): The permitted levels (expressed as mg/kg), in specific commodities, of some substances which can be classified as pesticides but are controlled under the Miscellaneous Food Additives Regulations 1995 (S.I. 1995 No. 3187).

Pesticide: A pesticide is any substance, preparation or organism prepared or used for destroying any pest. The majority of pesticides sought by the PRiF in its monitoring are those used to control pests in agricultural crops, although non-agricultural products may be included where there is a specific reason for doing so, e.g. where there are implications in terms of possible intakes of residues.

Probabilistic Modelling: The usual estimates of consumer exposure use single high values for both consumption amounts and residue levels. Whilst these are based on realistic UK dietary survey data and residue levels, they tend to overestimate most representative intakes. This is because they do not take into account actual variations in both amounts consumed and residue levels. Probabilistic modelling is a technique that considers all the possible different combinations of consumption and residue levels. This provides information on the probability of particular intakes occurring.

Rapid Alert System for Food and Feed (RASFF): The European Commission operates an EU rapid alert system for food, which was set up in 1992. This provides the competent authorities in the Member States of the European Union with the means of notifying cases where high residues of pesticides have been found in imported samples. Since its introduction this system has proved a successful method for disseminating information between Members States allowing swift action where necessary. HSE notify the Food Standards Agency of any residues where the predicted intakes are above the ARfD. RASFFs are only raised when a potential consumer risk has been identified. In general, for intakes exceeding the ARfD by more than 1.1 times, the FSA will raise a RASFF. If a significant consumer health concern has been identified, then the product will be withdrawn/recalled and the FSA will also issue a food alert.

Relationship between GAP and MRLs: The MRL can be defined as the maximum concentration of a pesticide residue (expressed as mg/kg) likely to occur in or on food commodities and animal feeds, after the use of the pesticide according to the GAP.

Reporting Limit: The reporting limit is the lowest calibrated level employed during analysis to detect residues. The reporting limit may vary slightly from laboratory to laboratory depending on the equipment available and operating procedures used.

'None were detected above the Set RL': This term is used in the Brand Name Annex, where no residues were found above their reporting limit.

Residue: Residues may be present in vegetable and animal products following the application(s) of a pesticide(s). They may not only include the pesticide that was applied but other degradation or reaction products and metabolites that may be of toxicological significance. The levels or amounts of residues present are expressed in milligrams of the chemical in a kilogram of crop/food/commodity (mg/kg), or parts per million.

Risk Assessment: A risk assessment is carried out when residues are found in foods to determine whether, at the levels found, they present a concern for consumer health or not. Consumer risk assessments are routinely conducted as part of the approval process for pesticides and are based on residue trials. Approval of a pesticide is only recommended when the consumer risk is acceptable.

Safety Factor: Values used in extrapolation from experimental studies in animals (usually 100) or humans (usually 10) to the population: for PRiF assessments this represents a value by which the NOAEL is divided to derive an ADI or ARfD. The value depends on the nature of the effect, the dose-response relationship, and the quality of the toxicological information available. The use of such a factor accounts for possible differences in susceptibility between the animal species tested and humans, and for variation between different individuals in the population. The terms 'uncertainty factor' and 'assessment factor' are also sometimes used for this factor; the PRiF will use 'safety factor'.

Sample: The nature of all samples is as designated in the EC's 'sampling' Directive – 2002/63/EC. Examples are: apple – at least 10 apples weighing at least 1 kg; grapes – at least 5 bunches, weighing at least 2 kg.

Specific Off-Label Approval (SOLA): For many reasons, label recommendations of approved pesticides do not cover the control of every problem which may arise. This is particularly true for crops that are grown on a comparatively small scale in the UK as well as for sporadic pests and diseases. It is for this reason that the extrapolations presented in the Long Term Arrangements for Extension of Use have been developed. If these do not address particular needs growers or their representatives may apply to HSE for a specific off-label approval (SOLA).

Technical Exceedances: When an MRL has been set at the LOD because there have been no data to support a higher level. In the context of this report, 'technical exceedances' always relate to produce from third countries.

Variability Factor: A value that describes the variation in residue levels between the highest unit level and the average level in samples made up of many units. Internationally this is agreed to be the 97.5th percentile unit residue level divided by the average of the sum. The variability factor multiplied by the measured residue level from a composite sample (i.e. a sample made up by mixing several units before analysis) gives an estimate of the likely higher residue levels that may have occurred in individual units. These estimated higher levels are used in short-term risk assessments involving fruit and vegetables where consumers eat only a portion of a single item, e.g. melon, or a small number of units e.g. apples and potatoes.

Ware: Ware potatoes, sometimes referred to as main crop potatoes, are harvested between August and November, and are available throughout the period August to June because they are stored under controlled temperature after October.

Follow-up from Previous Reports

Quarter 4 2015

Pear:

Chlormequat: Sample number 2185/2015
We passed details of a sample of pears from the UK that contained chlormequat to HSE. HSE's investigation could not give a definitive cause for the residue being present in the sample. They were unable to conclude whether the residue was from historic use or recent spray drift as both source could have been likely. HSE's actions are complete, so we have included brand name details in the annex to this report.

Quarter 1 2016

Lettuce

Cypermethrin: Sample number 0150/2016
We passed details of a sample of lettuce from UK that contained cypermethrin to HSE. HSE's enquiries are not yet complete; an update will appear in a future report.

Potatoes

MCPS, MSPB and MCPA thioethyl expressed as MCPA: Sample number 4308/2016

We passed details of a sample of potatoes from UK that contained MCPA to HSE. HSE's enquiries are not yet complete; an update will appear in a future report.

Quarter 3 of 2016 will look at residues in:

Apples	Apricots	Beans with Pods
Bread	Cabbage	Cheese (buffalo, goats & ewes)
Fish (predator)	Fish (sea)	Grapes
Infant Food (fruit & vegetable based)	Jam	Leeks
Lettuce	Milk	Okra
Peaches & Nectarines	Pears	Peppers
Pork	Potatoes	Prepared Fresh Fruit
Speciality Vegetables	Spices (cumin)	Spring Onions
Strawberries	Tomatoes	

For further details on information contained in this report, previous surveys or information concerning pesticide residues in food

Please contact:

Expert Committee on Pesticide Residues in Food
HSE's Chemicals Regulation Division
Mallard House
Kings Pool
Peasholme Green
York YO1 7PX

prif@hse.gov.uk

Or visit our website at:

https://www.gov.uk/government/groups/expert-committee-on-pesticide-residues-in-food-prif