TECHNICAL REPORT

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National summary reports on pesticide residue analysis performed in 2019

European Food Safety Authority (EFSA)

Abstract

In accordance with Article 31 of Regulation (EC) No. 396/2005, European Union (EU) Member States provide to the European Food Safety Authority (EFSA) the results of their official controls on pesticide residues in food. In this framework, the EU Member States, Iceland and Norway provided further information in the form of explanatory text outlining main findings of their control activities during the reference year. This Technical report is the compilation of those contributions of the reporting countries.

Keywords: pesticide residues, food, Regulation (EC) No. 396/2005, pesticide monitoring 2019

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Correspondence: DATA.Admin@efsa.europa.eu

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Summary

In the framework of the preparation of the EU report on pesticide residues under Regulation (EC) No. 396/2005, the EU Member States[1], Norway and Iceland reported the results of the official controls to the European Commission, EFSA and other Member States using the standardised reporting format (EFSA, 2020).

EFSA prepared a scientific report reflecting the 2019 European Union Annual Report on Pesticide Residues in Food (EFSA, 2021). In addition to the submission of the results in standardised reporting format developed by EFSA (Standard Sample Description, SSD), all the reporting countries provided additional information and a summary of their national results in a more descriptive mode compiled in this Technical report. In particular, the information was related to the competent authorities responsible for the implementation of pesticide monitoring at national level, the objectives and design of their national monitoring programmes, highlighting the specific characteristics and priorities of the national control plans, and the overall results of the national control programmes. The reporting countries also summarised the results and provided further information on follow-up actions taken and possible reasons for samples that were found to be non-compliant with the legal limits. Some reporting countries included a trend analysis in which the 2019 results were compared with the results of previous years. The information also addressed quality assurance aspects, such as the accreditation status of the laboratories responsible for official controls, and their participation in proficiency tests.

This Technical report is a compilation of that information provided to complement the scientific report on the findings of the 2019 control year (EFSA, 2021).

[1] As of 31st January 2020, the United Kingdom became a third country. The United Kingdom data have been included and evaluated in the present report because in 2019 the EU requirements on data sampling applied to them.

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Terms of Reference

In accordance with Article 31 of Regulation (EC) No. 396/2005[2], Member States shall submit their updated national control programme for pesticide residues to EFSA and publish all results of the national residue monitoring on the internet. EFSA decided to compile in a Technical report additional information provided by the reporting countries. In November 2019 SCoPAFF – pesticide residue the usefulness of this document was highlighted. To harmonise the whole document layout and to align it according to the EFSA technical reports' style, EFSA made minor changes in the documents provided by the reporting countries; however, the content submitted was not amended.

This Technical report is complementary to the scientific report on the findings of the 2019 control year (EFSA, 2021).

[2] Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC. OJ L 70, 16.3.2005, p. 1–16.

1. Introduction

This report is a compilation of the national summary reports as provided by the national competent authorities (see Appendix A - EFSA, 2021).

There might be a discrepancy between the information provided by reporting countries and the information published in the 2019 European Union Report on Pesticide Residues on food (EFSA, 2021), because EFSA included additional data-cleaning steps in the preparation of the European Union Report to ensure that the results reported by the 30 countries were comparable. So, these data-cleaning steps might have an impact on the overall results, such as the maximum residue level (MRL) compliance rates. By means of this Technical report, reporting countries can explain possible differences to its data.

2. Austria

2.1. Objective and design of the national control programme

The national pesticide monitoring is conducted according to a nation-wide sampling plan designed by the Austrian Agency for Health and Food Safety in cooperation with the Federal Ministry of Social Affairs, Health, Care and Consumer Protection. The plan is based on data for dietary consumption, production and import of fruits, vegetables and food of animal origin and it takes into account the results of earlier monitoring programmes, as well as the analytical possibilities. The national monitoring programme furthermore takes into consideration the coordinated programme of the European Commission. In addition, routine samples were taken from the Austrian market by the responsible bodies.

2.1.1. Objective

In particular, the task of official food control is the comprehensive protection of consumers against health hazards when consumption of food in addition to checking compliance with legal requirements. It is not only about detecting infringements in individual cases, but also about gaining general information that makes it possible to take the appropriate measures to reduce risk potential. Monitoring and control programme results are also suitable for contributing to a realistic assessment of the impact of legal regulations (ZEBS, 1995[3]).

2.1.2. Design

The collected data are representative for the Austrian market. Based on the results of the previous years selected parameter/commodity combinations were targeted in the monitoring programme and chosen for further examination, with the aim of reflecting the results of the previous years (usually repeated in a 3-year cycle).

Besides analysis of representative commodities for the Austrian diet, a significant number of samples was also analysed for usually underrepresented products like exotic vegetables and superfoods.

Samples are analysed and evaluated in terms of consumer exposure and legal compliance within AGES (Austrian Agency for Health and Food Safety) and compiled data submitted to competent authorities for further risk assessment, and data finally sent to the European Commission, to EFSA, and to the other Member States, in accordance with Article 31(1) of Regulation (EC) No. 396/2005. In addition, the programme results are published annually in a 'National Report about Residues of Plant Protection Products in Foodstuffs'. This report is further used as a basis for discussing and improving risk-minimising measures in food safety issues.

[3] ZEBS (1995) Modellhafte Entwicklung und Erprobung eines bundesweiten Monitorings zur Ermittlung der Belastung von Lebensmitteln mit Rückständen und Verunreinigungen - Abschlussbericht. Zentrale Erfassungs- und Bewertungsstelle für Umweltchemikalien, Berlin.

2.1.3. Sampling

The samples were taken by trained officials from the local Food Inspection Service ('Lebensmittelaufsicht') in accordance to the Commission Directive 2002/63/EC[4], which is implemented in the internal quality assurance system of the officials. The samples were predominantly taken at the retail or wholesale level.

2.1.4. Analytical methods used

The samples were analysed up to a maximum of 600 substances (part of sums included). The multiresidue methods were based on the QuEChERS (Quick, Easy, Cheap, Effective, Rugged, and Safe) method, combined with gas chromatography (GC)-MS/MS and liquid chromatography (LC)-MS/MS. Single-residue methods were used for dithiocarbamate (GC-MS), inorganic bromide (GC-ECD) and highly polar residues (glyphosate/glufosinate, ethephon, fosetyl, phosphonic acid, and chlorate and perchlorate etc.) via LC-MS/MS.

2.2. Key findings, interpretation of the results and comparability with the previous year's results

In 2019, 1,295 samples were examined for pesticide residues. These samples were primarily fruit, garden vegetables and primary derivatives thereof (757 samples), isolated purified ingredients (including mineral or synthetic) (309 samples), milk and milk products (dairy) (71 samples) and grains and grain-based products (62 samples).

2.2.1. Key findings

1,103 samples were taken as objective sampling and 192 as selective sampling. 71% came from the European market, 19% from third countries and the rest were of unknown origin. The percentage of objective sampling with residues above the MRL were 3.7%, 8.0% and 3.2% respectively (without considering the measurement uncertainty). No sample of selective sampling exceeded the MRL.

In 47% of the samples (objective and selective) no pesticide residues could be quantified; 49% of the samples had residues below or at the MRL. Disregarding measurement uncertainties, 3.9% of the samples contained one or more pesticide(s) numerically above the MRL (51 samples). If, however, measurement uncertainty is considered, the number of samples containing pesticide residues above the MRL, and so being non-compliant, is reduced to 25 samples (1.9%). 14 of the 25 samples non-compliant were garden vegetables and primary derivatives thereof (3.6% of 386 samples), 5 were fruit and primary derivatives thereof (1.4% of 371 samples), 2 were milk and milk products (dairy) (2.8% of 71 samples),2 were food products for young population (20% of 10 samples), 1 belonged to grains and grain-based product (1,6% of 62 samples) and 1 belonged to starchy roots and tubers and primary derivatives thereof (9,1% of 11 samples).

In 414 of all samples (32%), more than one pesticide was found. The maximum number of different pesticides was found in one sample of dried goji berry (18 compounds).

1,064 samples were of conventional production and 231 samples were labelled as organic. In 95.4% of non-organic samples, the MRL was not exceeded, while 99.1% of the organic samples did not exceed the MRL.

[4] Commission Directive 2002/63/EC of 11 July 2002 establishing Community methods of sampling for the official control of pesticide residues in and on products of plant and animal origin and repealing Directive 79/700/EEC. OJ L 187, 16.7.2002, p. 30–43.

Table 1: Summary results

Samples	Total	Quantified	Quantified below MRL	Above MRL	Non complaint
Grains and grain-based products	62	20	19	1	1
Oilseeds and oilfruits	40	3	3	0	0
Eggs and egg products	14	0	0	0	0
Alcoholic beverages	15	8	8	0	0
Food products for young population	10	3	1	2	2
Garden vegetables and primary derivatives thereof	386	236	217	19	14
Isolated purified ingredients (including mineral or synthetic)	309	95	93	2	0
Milk and milk products (dairy)	71	7	0	7	2
Legume seeds and primary derivatives thereof	1	1	1	0	0
Herbs, spices and similar	4	1	1	0	0
Fruit and primary derivatives thereof	371	305	287	18	5
Ingredients for hot drinks and infusions	1	0	0	0	0
Starchy roots and tubers and primary derivatives thereof	11	8	6	2	1
Total	**1,295**	**687**	**636**	**51**	**25**

2.3. Non-compliant samples: possible reasons, acute reference dose (ARfD) exceedances and actions taken

2.3.1. Possible reasons for non-compliant samples

In 2019, 25 samples (1.9 %, all commodities) were non-compliant with the EU MRLs, taking into account the measurement uncertainty. For these samples, administrative actions were set by the responsible officials from the local Food Inspection Service. In general, there is no verified knowledge of the reasons for non-compliant results.

2.3.2. Actions taken

Table 2: Actions taken

	Number of non-compliant samples concerned	Comments
Rapid Alert Notification	6	In addition to administrative sanctions RASFF-Reference 2019.1223; 2019.1225; 2019.1439; 2019.2064; 2019.4396; 2019.4584
Administrative sanctions (e.g. fines)	25	

2.4. Quality assurance

The analysis of the coordinated programme, the national monitoring programme and routine samples was conducted by the Austrian NRL, Institute for Food Safety Innsbruck of the Austrian Agency for Health and Food Safety. The laboratory received accreditation in the year 1998 and the methods for pesticide analyses were accredited.

Table 3: Laboratories participating in the national control programme

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
AT	Austrian Agency for Health and Food Safety	AGES	1 November 1998	BMWA	EU proficient tests (EUPT): SM11 EUPT FV21 EUPT AO14 EUPT SRM14 EUPT CF13 EUPT-FV SC03 FI 1971 ProgettoTrieste_FISH-MultiPesticideResidues ProofACS_P1906-MRT_AlkHydrolysis_Oranges

3. Belgium

3.1. Objective and design of the national control programme

The use of plant protection products during the production of fruit, vegetables and cereals can lead to the presence of residues in food and feed. Maximum residue levels (MRL) are set in the European legislation[5] in order to check the good use of plant protection products (use of authorised products according to their good agricultural practices) and to protect the consumers. Food or feed which do not comply with the MRL cannot be put on the market. MRLs are not toxicological limits. An MRL exceeding content is the sign of incorrect use of a plant protection product but does not necessarily involve a risk for the health of consumers according to the toxicological data available.

More information regarding plant protection products authorized in Belgium is available on Fytoweb website. Information on MRLs can be found on the website of the European Commission.

The approach used by the Federal Agency for the Safety of the Food Chain (FASFC) for the control of pesticide residues is risk based. The programme has been drawn up following the general statistical approach developed within the FASFC[6]. Several factors have been taken into account: the toxicity of the active substances, food consumption statistics, food commodities with a high residues/non-compliance rate in previous monitoring years, origin of food (domestic, EU or third country), RASFF notifications and all other useful information. Specific attention is then paid to products with high risk of MRL non-compliances.

Most of the groups of fruits and vegetables are included in the programme and a rotation programme has been applied for less important commodities. The coordinated control programme[7] of the European Commission and some targeted sampling, mainly targeted sampling at border controls according to Regulation 669/2009[8] and Regulation 885/2014[9] have been also included in the national programme (see **Error! Reference source not found.**).

Products of animal origin, apart from the samples analysed in the framework of the European control programme, are not included in this report. They are reported under the data collection of residues of veterinary medicinal products and certain other substances (Directive 96/23).

[5] Regulation (EC) No. 396/2005 of the EU Parliament and the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin

[6] Maudoux J-P., Saegerman C., Rettigner C., Houins G., Van Huffel X. & Berkvens D., Food safety surveillance by a risk-based control programming: approach applied by the Belgian federal agency for the safety of the food chain (FASFC), Vet. Quart. 2006, 28(4): 140-154. http://www.favv-afsca.fgov.be/publicationsthematiques/food-safety.asp

[7] Commission Implementing Regulation (EU) 2018/555 concerning a coordinated multiannual control programme of the Union for 2019, 2020 and 2021 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin

[8] Regulation (EC) N°669/2009 of 24 July 2009 implementing Regulation (EC) No 882/2004 of the European Parliament and of the Council as regards the increased level of official controls on imports of certain feed and food of non-animal origin

[9] Regulation 885/2014 of 13 August 2014 laying down specific conditions applicable to the import of okra and curry leaves from India and repealing Implementing Regulation (EU) No 91/2013

Adjustments to the programme can be made in the course of the year so that emerging problems can be dealt with.

Sampling is done in accordance with Directive 2002/63/EC[4] that has been implemented in Belgian legislation. Samples are analysed in EN ISO/IEC 17025:2005 accredited laboratories by means of multi-residues and single-residues methods which in 2019 allowed the detection of more than 600 pesticide residues.

Table 4: Targeted sampling and EU coordinated control programme included in the control programme 2019

Targeted sampling at border controls (Reg 669/2009 & 885/2014)		**EU Coordinated programme 2019 (Reg 2018/555)**
Origin	**Products**	
Benin	Pineapples	Apples
Cambodia	Aubergines, yardlong beans, chinese celery	Strawberries
China	Tea, chinese broccoli, goji berries	Peaches/nectarines
Dominican Republic	Yardlong beans, aubergines, lauki, sweet peppers, chili peppers	Lettuces
Egypt	Strawberries, sweet peppers, chili peppers, tablegrapes	Head cabbages
India	Curry leaves, okra, chili peppers	Tomatoes
Kenya	Peas with pods	Spinaches
Marocco	Munt	Oat grain
Pakistan	Chili peppers	Barley grain
Peru	Table grapes	Wine
Thaïland	Yardlong beans, aubergines, chili peppers	Cows milk
Turkey	Lemons, Vine leaves, sweet peppers, pomegranates	Swine fat
Uganda	Aubergines	Foods for infants and young children (other than infant formulae, follow-on formulae and processed cereal-based baby food)
Vietnam	Basilic, mint, pitahayas, coriander leaves, okras, chili peppers, parsley	

3.2. Key findings, interpretation of the results and comparability with the previous year results

In 2019, a total number of 3,114 samples of fruits, vegetables, cereals and processed products (including baby food) were taken by the Federal Agency for the Safety of the Food Chain (FASFC) and analysed for the presence of pesticide residues. Products of animal origin, apart from the samples analysed in the framework of the European control programme, are not included in this report. They are reported under the data collection of residues of veterinary medicinal products and certain other substances (Directive 96/23).

The products analysed were of Belgian origin (28,6%), EU origin (26%), non-EU origin (36,3%) and non-specified origin (9%).

Results are presented according to their sampling strategy. In contrast to surveillance samples which are randomly taken, enforcement samples are taken after concrete indications that certain food may be of higher risk as regards non-compliance or consumer safety (e.g. Rapid Alert notifications or follow-up enforcement samples following MRL violations identified in a first analysis of the product in focus).

Full details on the analytical scope, results per products and non-compliant samples can be found in the three annexes (xls format) of this summary report.

3.2.1. Surveillance samples

Out of the total of 3114 samples**,** 2642 surveillance samples were analysed within the context of the control programme. 98,2% were compliant with the legislation in force (**Error! Reference source not found.**).

Table 5: Surveillance samples - Summary results

Types of products	Number of samples analysed	Without quantified residues (%)	With residues at or below MRL (%)	With residues >MRL[(a)] (%)	With residues >MRL[(b)] (Non-compliant) (%)	Compliance (%) compared to 2018
Fruit, vegetables, cereals & other	2,113	35.8%	59.5%	4.7%	2%	98% (-0.1%)
Processed products	252	68.7%	30.9%	0.4%	0.4%	96% (-0.2%)
Baby food	95	99%	0%	1%	1%	99% (-1%)
Animal products	23	100%	0%	0%	0%	100% (=)
Feed	159	40.1%	53%	4.4%	2.5%	100% (+1.3%)
	2642	**42%**	**53.9%**	**4.1%**	**1.8%**	**98.2% (=)**

(a): Measurement uncertainty is not taken into account (numerical MRL exceedances)
(b): Measurement uncertainty is taken into account (non-compliant samples)

Fruit, vegetables and cereals: 98% of the 2113 samples analysed complied with the MRLS (-0,1% in comparison with 2018). Figure 1 gives an overview of the results these last 5 years.

64,2% of the samples contained one of more residues above the limit of quantification (LOQ). Citrus fruits, pome fruits and stone fruits are the groups with the highest frequency of detection of pesticide residues (more than 95% of the samples analysed contained one or more residues). These fruits showed however a high rate of compliance with MRLs (≥99%). Brassica vegetables is the group with the lowest frequency of detection (35,2 % of the samples analysed with one or more residue). Products with the highest rate of non-compliances are fresh herbs (18,9% non-compliances).

An overview of the detection frequencies and compliance to MRLs per product group is given in **Error! Reference source not found.**. As in previous years, more MRLs violations were proportionally observed in non-EU products (4,2%) than in products grown in the EU (1,1%).

Table 6: Overview of the results 2019 per group of products [fruits, vegetables, cereals & others 2019 (surveillance samples)]

Groups of products	Number of samples analyzed	Samples with one of more residues >LOQ (%)	Compliant samples (%)
Citrus fruits	104	98,1%	99%
Pome fruits	45	95,6%	100%
Stone fruits	42	95,2%	100%
Berries and small fruits	256	91,4%	100%
Fresh herbs	53	90,6%	81,1%
Leaf vegetables	88	84,1%	100%
Champignons	40	75%	100%
Stem vegetables	138	66,7%	95,7%
Bulb vegetables	94	62,8%	100%
Fruiting vegetables	291	59,4%	99,3%
Tea and infusions	176	57,4%	96,6%
Root vegetables	216	52,8%	99,1%
Miscellaneous fruits	133	50,4%	97%
Legume vegetables	112	48,2%	96,4%
Other products (oil products, coffee, cocoa & spices)	136	41,2%	94,9%
Cereals	98	38,8%	100%
Brassica vegetables	91	35,2%	100%
Total	**2113**	**64,2%**	**98%**

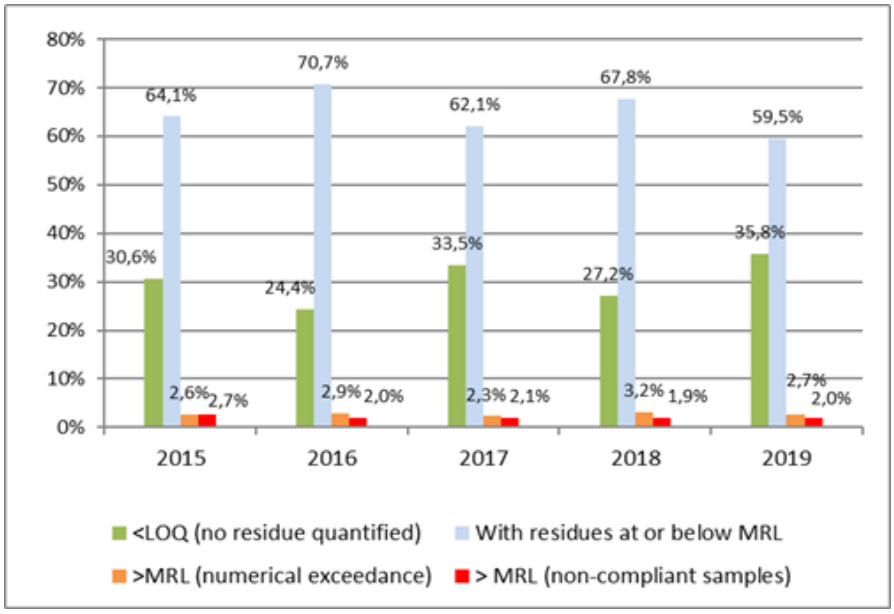


Figure 1: Overview of the evolution of the results for fruits, vegetables, cereals & other products of plant origin from 2015 to 2019 (surveillance samples)

- **Processed products:** 252 processed products (oil, dried fruits, canned vegetables, …) were analysed. One sample of dried vine fruits did not comply with its MRLs.
- **Babyfood**: 99% of the babyfood analysed did not contained any pesticide residues. One sample did not comply with the MRLs set in the babyfood legislation.
- **Feed**: 97,5 % of the feed products analysed were compliant to the legislation.

3.2.2. Enforcement samples

Beside surveillance samples, 472 enforcement samples were analysed in the case of suspicion about the non-compliance of a product with EU MRLs (**Error! Reference source not found.**). These products were mainly targeted products analysed according to Regulation 669/2009 (products coming from non-EU countries among others from Uganda, Kenya, Dominican Republic and China) and products analysed within the context of following up of violations found previously. 85,2% were compliant with the legislation (-0,7% in comparison with 2018).

Table 7: Enforcement samples - Summary results

Types of products	Number of samples analysed	Without quantified residues (%)	With residues at or below MRL (%)	>MRL[(a)] (%)	>MRL[(b)] (Non-compliant) (%)	Compliance (%) compared to 2017
Fruit, vegetables, cereals & other[(c)]	465	29.7%	45.8%	24.5%	15%	**85% (-1.9%)**
Feed	1	0%	100%	0%	0%	
Processed products	6	50%	0%	50%	0%	**100% (+60%)**
	472	**29.9%**	**45.3%**	**24.8%**	**14.8%**	**85.2% (-0.7%)**

(a): Measurement uncertainty is not taken into account (numerical MRL exceedances)
(b): Measurement uncertainty is taken into account (non-compliant samples)
(c): Including samples analysed in the framework of Regulation (EC) No 669/2009

- **Fruit, vegetables and cereals:** 85% of the 465 samples analysed complied with the MRLS (-1.9% in comparison with 2018). Figure 2, gives an overview of the evolution of the results of enforcement samples these last years. Non-compliances were observed mainly in products from non-EU countries (see **Error! Reference source not found.**).

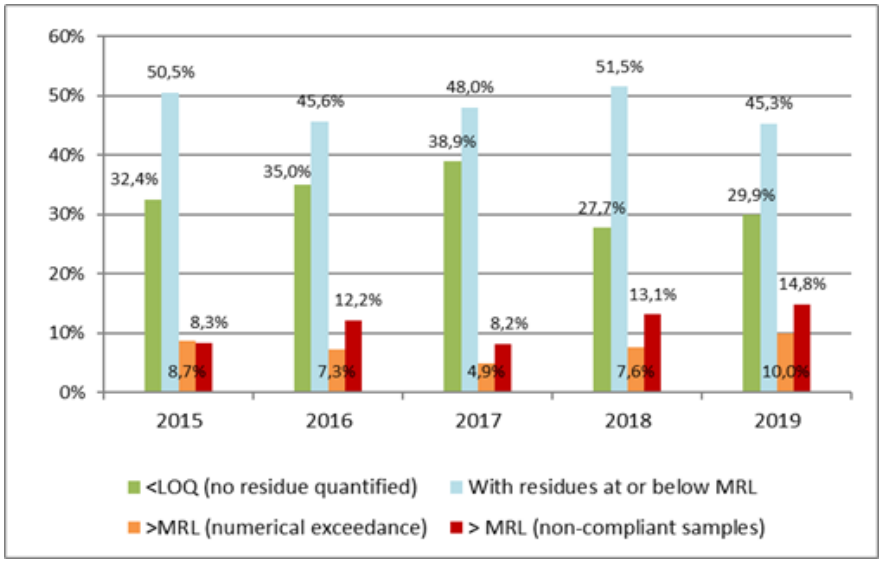


Figure 2: Overview of the evolution of the results for fruit, vegetables, cereals & other products of plant origin from 2015 to 2019 (enforcement samples)

Table 8: Overview of the results per group of products (enforcement samples)

Groups of products	Number of samples analyzed	Compliant samples (%)	Main non -compliant products (>MRL) and origin
Fresh herbs	37	78.4%	Mint (Marocco). Coriander leaves and parsley (Israel)
Fruiting vegetables	205	82.9%	Chili-peppers (Uganda. Pakistan. Vietnam) Aubergines (Dominican Republic)
Legume vegetables	129	82.9%	Beans (Dominican Republic. Kenya. Cameroun)
Miscellaneous fruits	27	88.9%	Papayas (Dominican Republic)
Tea & infusions	32	93.6%	Tea China)
Others	42	100%	
Total	**472**	**85.2%**	

3.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

3.3.1. Possible reasons for non-compliant samples

The reasons of MRL violations in Belgian products are investigated at the premises of the food business operator responsible for the product in order to check the correct use of plant protection products. Such investigation cannot be done in case of non-compliances on imported products, but these non-compliances are in general related to the use of plant protection products not authorized in the EU and for which no import tolerances were set.

3.4. ARfD exceedances

Sixteen products of food of plant origin analysed by the FASFC in the framework of the control plan or by food business operators during self-checking contained pesticide residues at a level potentially dangerous for the consumers (ARfD exceedances). All these products were not put on the market or recalled from the consumers and notified via the RASFF[10] (**Error! Reference source not found.**).

[10] http://ec.europa.eu/food/food/rapidalert/rasff_portal_database_en.print.htm

Table 9: RASFF issued by Belgium in 2019 for food products showing a risk for consumers

Food products	Pesticide residue	Number	Origin	Context
Spinach	Dimethoate & Omethoate	1	Belgium	Self-checking
Kales	Tebuconazole	1	Belgium	Self-checking
Courgettes	Heptachlor (sum)	1	Belgium	Self-checking
Dried beans	Chlorpyriphos, malathion, pyrimiphos-methyl & lambda-cyhalothrin	1	Cameroun	Official control
Pineapples	Omethoate	1	Costa-Rica	Official control
Pineapples	Ethephon	1	Ghana	Official control
Potatoes	Flonicamid (sum) & thiabendazole	1	France	Official control
Feed (wheat)	Deltamethrin	1	France	Official control
Feed (rice meal)	Deltamethrin & tricyclazole	1	France	Self-checking
Rice	Thiamethoxam & tricyclazole	3	India	Official control
Parsley	Dithiocarbamates	1	Israël	Official control
Aubergines	Carbofuran	2	Dominican Republic	Official control
Beans	Dimethoate & omethoate	1	Dominican Republic	Official control

3.4.1. Actions taken

When non-compliant samples are identified, the batch is seized, if available, and prevented from entering the market. An assessment of the risk for consumers is performed on all samples showing an exceeding of the MRLs and the appropriate measures such as recall and RASFF notification are taken[11] according to the risk for the consumer.

Follow-up action is taken to verify the violation and to identify its cause. When non-compliant samples are identified, the producer or importer is subject to enhanced control and an official report is drawn up and sent to the legal department of the FASFC which proposes a fine. If the fine is not paid, or in case of repeated offences, the matter is taken to court.

3.5. Quality assurance

Six ISO17025 accredited laboratories analysed pesticide residues in the framework of the national control program 2019 of the FASFC.

Table 10: Laboratories participation in the national control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
BE	CER Groupe	CER	073-TEST (Version 19; 19-04-2018 au 16-04-2019) (Version 20; 21-02-2019 au 16-04-2024)	BELAC	EUPT AO 14, EUPT SRM14, FAPAS 02381
BE	Primoris Belgium cvba	PRIMORIS	057-TEST Versions 23-27 (26/05/2017 - 06/05/2021)	BELAC	EUPT-FV-SC02, EUPT-CF13, EUPT-FV21, EUPT-FV-SM11, QS residue monitoring (spring 2019), FAPAS 19269, FAPAS 05136, FAPAS 09122, FAPAS FT 0115 (FAPAS-CORESTA), BIPEA 66i, BIPEA RCIL 19c-1719, QS residue monitoring (fall 2019), P1906-MRT (Proof-ACS), P1907-RT (Proof-ACS), P1911-RT (Proof-ACS), P1916-RT (Proof-ACS), COIPT-19 (Italian NRL AO +IOC), Relana

[11] The actions to be taken when an MRL is exceeded are described in a procedure available on the website of the FASFC (http://www.afsca.be/publicationsthematiques/inventaire-actions.asp).

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
					MRT1, Relana UC1, LB 19-01 Competence Scheme (Lach und Bruns)
BE	Sciensano (Pesticiden)	SC-PEST	Version 23 du 01/01/2019 au 26/06/2019 Version 24 du 27/06/2019 – 31/03/2024	BELAC	EUPT-AO14, EUPT-CF13, EUPT-FV21, EUPT-FV-SM11, EUPT-SRM14
GE	LUFA-ITL	LUFA	current: 19.12.2019 (previously: 10.04.2019; 19.11.2018)	DAkkS	EUPT-FV-SC02, EUPT-CF13, EUPT-FV21, EUPT-SRM14, EUPT-AO14, QS residue monitoring (spring 2019), FAPAS 19269, FAPAS 19271, FAPAS 05136, FAPAS 09124, BNN competence test, FAPAS 19276, PROOF ACS, BIPEA 66i, QS residue monitoring (fall 2019), EUPTFV-SC03
NL	Groenagro Control	GROENAGRO	L 335 (e.g. Version dd 23-12-2019)	RvA	EURL FV21, EURL FV-SM11, EURL SRM14, EURL AO14, EURL SC03
NL	Eurofins Lab Zeeuws-Vlaanderen BV	ZEEUWS	L 201 (e.g. version dd. 16-10-2019)	RvA	Fapas 19264, EUPT CF-13, Fapas 9120, EUPT FV-21, Proof P1908, Fapas 19266, Fapas 19267, Proof P1906-MRT, Fapas 9122, QS Spring 2019, Fapas 5135, Fapas 19269, LVU 2019-17a, Fapas 19272, Fapas 19271, Fapas 5136, Fapas 19274, Fapas 19275, BNN 2019, Fapas 19276, Fapas 19278, Fapas 5138, Fapas 9126, Proof P1911-RT, Fapas 19279, QS Autum 2019, Fapas 19280, EUPT FV-SC03, Fapas 19282

3.6. Processing Factors (PF)

Processing factors are applied when necessary to verify compliance of processed products with EU MRLs according to Article 20 of Regulation (EC) No 396/2005. Processing factors were mainly applied to cover the dehydratation of fruits or vegetables.

Table 11: Processing factors

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor	Comments
	Mushrooms	Dried mushrooms	9	General processing factor
	Table grapes	Dried grapes	5	General processing factor
	Gojiberries	Dried gojiberries	5	General processing factor

3.7. Additional Information

Organic production falls under the responsibility of the Belgian Regions. Samples of organic food and feed products analysed by the FASFC are checked for their compliance with MRLs set in Regulation (EC) No 396/2005. Products containing pesticide residue are notified to the Regions for eventual follow-up according to the legislation applicable to organic farming.

4. Bulgaria

4.1. Objective and design of the national control programme

4.1.1. Objective

The Bulgarian Food Safety Agency (BFSA) within the Ministry of Agriculture Food and Forestry (MAFF) is the competent authority for the enforcement of pesticide residues monitoring in Bulgaria. BFSA and the Risk Assessment Centre on Food Chain (RACFC) within MAFF are responsible for drawing up the national monitoring programme for pesticide residues in and on products of animal and plant origin. Therefore, BFSA is responsible for implementation of coordinated multiannual control programme of the EU and taking samples in terms of Commission Regulation (EC) No. 788/2012 of 31 August 2012 on a coordinated multiannual control programme of the Union. A coordinated multi-Community monitoring programme is included in the national programme on pesticide residues monitoring.

4.1.2. Design

The sampling plan for pesticide residues monitoring is always drawn up for one calendar year. The plan is drafted by the BFSA Headquarters, national reference laboratories within the BFSA and scientific experts from RACFC. The sampling plan is distributed to the Regional Food Safety Directorates/RFSD, which are responsible for its implementation.

In addition to the samples listed in Regulation (EU) No. 788/2012 the Republic of Bulgaria analysed the samples for identification of products used for plant protection.

The national control programme for pesticide residues in food of plant and animal origin 2019 was based on several factors of high importance listed below:

- relevance of the food products in the diet of the Bulgarian population;
- food commodities not included in EU coordinated programme;
- relevance of the food products in the national agricultural production;
- food products with high RASFF notification rate;
- food relevant for sensitive group of consumers;
- food products with high non-compliance rate identified in previous years.

The national control programme was based on the following factors of low importance listed below:

- countries with high non-compliance rate in the past;
- sampling of products during main marketing season/outside of main marketing season;
- non-processed or processed products;
- organic or conventional products;
- sample origin reflecting geographic distribution of food products consumed.

4.2. Key findings, interpretation of the results and comparability with the previous year's results

4.2.1. Key findings

In 2019, 7,263 samples were analyzed: 5544 samples of garden vegetables and primary derivatives, 1658 of fruit and primary derivatives thereof, 25 grains and grain-based products, 20 baby foods, 10 starchy roots and tubers and primary derivatives thereof and 6 alcoholic beverages in the the national and co-ordinated monitoring programs. In 4,227 samples results for residues are below MRL (58.20%) – 2,482 samples were below LOQ and 552 samples were exceeding MRL (7.60%).

7212 of fruits and nuts, vegetables and other plant products; 6 Alcoholic beverages, 20 baby foods and 25 grains and grain-based products – in the national and co-ordinated monitoring programs.

Table 12: Summary results

Matrix class	Total samples	Below LOQ	Above MRL
Alcoholic beverages	6	4	0
Food products for young population	20	20	0
Fruit and primary derivatives thereof	1658	517	212
Garden vegetables and primary derivatives thereof	5544	1915	337
Grains and grain-based products	25	21	0
Starchy roots and tubers and primary derivatives thereof	10	7	3
Total	**7263**	**2 484**	**552**

4.2.2. Interpretation of the results

In total, 7,263 samples were analysed, of which 552 (7.60%) samples contained pesticide residues above the MRL. Of all the samples 232 were of EU origin, 7,029 were Third Country (TC) origin and of 2 samples the origin is Unknown.

In 61 samples of all the 232 (142 selective and 90 objective) with EU origin there is no detection of residues. Residues above MRL were detected in 14 of them.

The biggest part of the samples was imported products 7029 of which 7018 were suspect and 11 objective sampling. The number of samples with resudues above MRL was 538.

Two (2) samples defined as unknown origin. The result of one of them is below MRL level and in the second the residues were not detected.

The most analyzed products were vegetables – 5544 samples and fruits – 1658. The samples from other groups vary between 6 and 25 per group.

Out of all the vegetable analysed samples 1915 were below LOQ and at 337 there is higer level of residues above the MRL. The most tested products were sweet pepers (5451) of which 330 are above MRL and in 1844 residues were not found. The total amount of other sampled vegetables (beans, broccoli, carrots, cucumbers, gojiberry, lettuces, onions, radishes, spinaches, tomatoes and white cabbage) was 93. In 7 of them the results are over the MRL and in 71 are below LOQ.

Lemons (965) and granate apples (606) were the most analyzed for residues of all the fruit samples (1658). Residues were not detected in 71 samples of lemons and in 398 of the analyzed granate apples, the results for residues are above MRL in 80 lemon s samplesand in 128 of granate apples. Of all other 87 tested fruits (apples, common peaches, grapefruits, kiwi fruits, mandarins, oranges, plums, strawberries and table grapes), 48 samples are below LOQ and in 4 results are above MRL

Of the other 61 samples (wine -6, processed cereal-based food for infants and young children – 20, maize grain - 1, oat high-bran flakes, potatoes – 10) 52 were below LOQ and in 3 samples of potatoes the results are above MRL.

Table 13: Analyzed products

Product	Number of samples
Apples	14
Beans (with pods) and similar-	3
Broccoli	5
Carrots	8
Common peaches	12
Cucumbers	5
Gojiberry	3
Granate apples	606
Grapefruits	3
Kiwi fruits (green, red, yellow)	5
Lemons	965
Lettuces (generic)	16
Maize grain	1
Mandarins	5

Product	Number of samples
Oat high-bran flakes	24
Onions	8
Oranges	10
Plums	5
Potatoes	10
Processed cereal-based food for infants and young children	20
Radishes	3
Spinaches	18
Strawberries	18
Sweet peppers	5451
Table grapes	15
Tomatoes	8
White cabbage	16
Wine	6

4.2.3. Comparability with the previous year results

As a comparison in 2018, a total number of 7685 samples were analyzed: 4446 samples were with residues below MRL (57.85%). 678 samples were exceeding MRL (8.82%).

As a comparison, in 2017, a total number of 6807 samples were analyzed: 3559 samples were with residues below MRL (52.28 %). 257 samples were exceeding MRL (4.99%).

As a comparison, in 2016, a total number of 5153 samples were analyzed: 2598 samples were with residues below MRL (50.42 %). 634 samples were exceeding MRL (9.31%).

As a comparison, in 2015, a total number of 3934 samples were analyzed: 1481 samples were with residues below MRL (37.6 %). 77 samples were exceeding MRL (2.0 %).

As a comparison, in 2014, a total number of 3428 samples were analyzed: 210 samples were with residues below MRL (6.1%). 72 samples were exceeding MRL (2.1%).

As a comparison, in 2013, a total number of 3237 samples were analyzed: 166 samples were with residues below MRL (5.1%) and 64 samples were exceeding MRL (2.0%).

As a comparison, in 2012, a total number of 3174 samples were analyzed: 198 samples were with residues below MRL (6.2%) and 60 samples were exceeding MRL (1.9%).

As a comparison, in 2011, a total number of 4516 samples were analyzed: 245 samples were with residues below MRL (5.4%) and 108 samples were exceeding MRL (2.4%).

The percentage of samples with residues below MRL has increased in 2019 (57.85 %) as compared to the years from 2011 to 2014 - 2014 (6.1%), 2013 (5.1 %), 2012 (6.2 %) and 2011 (5.4%)). The percentage has decreased in comparison to 2018 (57.85%), 2017 (52.28%), 2016 (50.42%) and 2015 (37.6 %).

The percentage of samples exceeding MRL in 2019 (8.98%) increased as compared to 2017 (4.99%), 2015(2.0%), 2014 (2.1%), 2013 (2.0%), 2012 (1.9%), 2011 (2.4%), and has decreased as compared to 2018 (8.82%) and 2016 (9.31%).

Table 14: Compared to previous years results

Year	Total	Below MRL (%)	Above MRL (%)
2019	7263	34.20	7.60
2018	7685	57.85	8.82
2017	6807	52.28	4.99
2016	5153	50.42	9.31
2015	3934	37.6	2.0
2014	3428	6.1	2.1
2013	3237	5.1	2.0
2012	3174	6.2	1.9
2011	4516	5.4	2.4

4.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

4.3.1. Possible reasons for non-compliant samples

In 2019 seven (7.6%) percent of total samples were determined as non-complaint with the EU MRL legislation. The main of the non-compliance reason were residues detection in border control activites following of detection of non approved pesticide residues in EU

Table 15: Possible reasons for MRL non-compliance

Reasons for MRL non-compliant	Pesticide	Food product	Frequency[a]
GAP not respected: use of a pesticide not approved in the EU[b]	Bromopropylate	Lemons	3
	Carbendazim and benomyl (sum of benomyl and carbendazim expressed as carbendazim)	Sweet peppers	1
	Chlorpyrifos	Sweet peppers	23
	Chlorpyrifos	Spinaches	1
	Chlorpyrifos	Radishes	1
	Clothianidin	Sweet peppers	6
	Dimethoate	Sweet peppers	7
	Dimethoate	Apples	1
	Omethoate	Lettuces (generic)	1
	Propiconazole (sum of isomers)	Potatoes	1
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Cypermethrin (Cypermethrin including other mixtures of constituent isomers (sum of isomers))	Spinaches	1
	Cyprodinil	Potatoes	1
	Dimethomorph (sum of isomers)	Plums	1
	Dimethomorph (sum of isomers)	Lemons	1
	Fluopyram	Lemons	1
	Imazalil	Radishes	2
	Imazalil	Kiwi fruits (green, red, yellow)	1
	Imazalil	Gojiberry	1
	Imazalil	Carrots	1
	Metalaxyl including other mixtures of constituent isomers including metalaxyl-M (sum of isomers)	Plums	1
	Pyrimethanil	Potatoes	1
	Pyrimethanil	Gojiberry	1
Use of a pesticide on food imported from third countries for which no import tolerance was set[c]	Acetamiprid	Sweet peppers	29
	Acrinathrin and its enantiomer	Sweet peppers	5
	Ametoctradin	Lemons	1
	Biphenyl	Sweet peppers	5
	Biphenyl	Lemons	3
	Buprofezin	Sweet peppers	70
	Buprofezin	Lemons	62
	Cyproconazole	Sweet peppers	1
	Dodine	Lemons	6
	Etoxazole	Sweet peppers	19
	Fenamiphos (sum of fenamiphos and its sulphoxide and sulphone expressed as fenamiphos)	Sweet peppers	2
	Fluopyram	Lemons	1
	Fluvalinate, tau-	Sweet peppers	22
	Formetanate: Sum of formetanate and its salts expressed as formetanate(hydrochloride)	Sweet peppers	34
	Fosthiazate	Sweet peppers	8

Reasons for MRL non-compliant	Pesticide	Food product	Frequency[a]
	Imazalil	Sweet peppers	4
	Imazalil	Table grapes	1
	Lambda-cyhalothrin (includes gamma-cyhalothrin) (sum of R,S and S,R isomers)	Sweet peppers	4
	Malathion (sum of malathion and malaoxon expressed as malathion)	Sweet peppers	7
	Methomyl	Sweet peppers	3
	Pirimiphos-methyl	Sweet peppers	42
	Pirimiphos-methyl	Lemons	2
	Prochloraz (sum of prochloraz and its metabolites containing the 2,4,6-Trichlorophenol moiety expressed as prochloraz)	Sweet peppers	5
	Propiconazole (sum of isomers)	Sweet peppers	2
	Pymetrozine	Lemons	1
	Pyridaben	Sweet peppers	74
	Spirotetramat and its 4 metabolites BYI08330-enol, BYI08330-ketohydroxy, BYI08330-monohydroxy, and BYI08330 enol-glucoside, expressed as spirotetramat	Sweet peppers	3
	Tebufenpyrad	Sweet peppers	17
	Tetradifon	Sweet peppers	1
	Thiabendazole	Sweet peppers	4
	Thiophanate-methyl	Sweet peppers	1

(a): Number of cases.
(b): Applicable only for food products produced in the EU.
(c): For imported food only.

4.3.2. ARfD exceedances

All suspect samples (above MRL) are analysed. Scientific advice is given to risk managers for follow-up action.

4.3.3. Actions taken

Table 16: Actions taken

Action taken	Number of non-compliant samples concerned	Comments
Rapid Alert Notification	83	Border rejections
Other actions	469	Investigations, administrative consequences Pesticide Residues Intake Model (PRIMo) model analysis

4.4. Quality assurance

The laboratory tests were carried out in four laboratories as detailed in **Error! Reference source not found.**. All had undergone accreditation procedures from the Executive Agency – 'Bulgarian Accreditation Service'. Eurolab carried out third country control at EU border and also the national control programme.

Table 17: Laboratories participating in the national control programme

Country	Laboratory		Accreditation		Participation in proficiency tests or interlaboratory tests
	Name	Code	Date	Body	
BG	Central Laboratory for Chemical Testing and Control	CLCTC	31 July 2020	Executive Agency – 'Bulgarian Accreditation Service'	
BG	Primoris	PRIMBG	2 May 2016	BELAC – Belgian Accreditation Council	
BG	EuroLab	EuroLab	30 July 2019	Executive Agency 'Bulgarian Accreditation Service'	

5. Croatia

5.1. Objective and design of the national control programme

The Programme was prepared and coordinated by Department for Sustainable Use of Pesticides operating within the Service for Plant Protection Products of the Sector of Phytosanitary Policy in the Directorate for Agricultural Land, Plant Production and Market in the Ministry of Agriculture.

Objectives of the Programme were:

- To determine the quantity of pesticide residues in food and verify compliance with the Regulation (EC) No 396/2005
- To assess the risk to consumers
- Acquire information related to the use of PPPs pursuant to the instructions on labels and GAP
- Control of the unauthorised use of plant protection products.

The National Monitoring Programme for pesticide residues in and on food is implemented pursuant to Article 6 of the Act on Implementation of Regulation (EC) No. 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin (Official Gazette of the Republic of Croatia, No. 80/13, 115/18 and 32/20).

The competent authorities for the implementation of Regulation (EC) No. 396/2005 were the Ministry of Agriculture and the State Inspectorate, each within their respective competences.

The Ministry of Agriculture was responsible for:

- establishing and preparing a multiannual national control programme for pesticide residues referred to in Article 30 of Regulation (EC) No 396/2005, coordinating its implementation, submitting it to the Commission and EFSA and publishing the results of the programme on the Internet;
- submitting the information referred to in Article 31 of Regulation (EC) No 396/2005.

Ministry of Agriculture is the Official Contact Point in Croatia designated according to Article 38 of Regulation (EC) No 396/2005.

State Inspectorate (agricultural, veterinary and sanitary inspection) were responsible for:

- carrying out official controls referred to in Article 26 of Regulation (EC) No 396/2005
- performing the sampling activities referred to in Article 27 of Regulation (EC) No 396/2005
- implementing the national monitoring programme for pesticide residues in food referred to in Article 30 of Regulation (EC) No 396/2005;
- implementing the emergency measures referred to in Article 35 of Regulation (EC) No 396/2005

- The National Monitoring Programme for pesticide residues in and on food in 2019 was funded by Ministry of Agriculture.

Products were selected according to Commission Implementing Regulation (EU) 2018/555 of 9 April 2018 concerning a coordinated multiannual control programme of the Union for 2019, 2020 and 2021 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin.

Products were also selected with regard to the assessment of their importance in the nutrition of the Croatian population and determined pesticide residues in the previous monitoring programmes especially products for which the previous monitoring programmes was found exceeding's of the MRLs or were misused (non authorised uses).

Risk factors taken into account:

- Importance of the crop
- MRL exceedances (products, pesticide, region)
- Multiple pesticides (products)
- Illegal use – non authorised pesticides
- Misuse

Products sampled according to Regulation (EU) 2018/555 of – EUCP were: apples, strawberries, peaches, wine, lettuce, cabbage, tomatoes, spinaches, oat grain, barley grain, cow's milk, swine fat and foods for infants and young children other than infant formulae, follow-on formulae and processed cereal-based baby food.

Products sampled by national priorities – NP taking into account previous exceedings and importance in the nutrition were: oranges, pears, blueberries, bananas, grapefruit, celeriac, kiwi, cucumbers.

Pesticides to be analysed were chosen according to:

- Part C and D of the Regulation (EU) 2017/660
- PPPs authorised in the country
- Forbidden PPPs (at national/EU level)
- Analitical capacities of national control laboratories.

Sampling strategy: 18 samples taken by selective sampling and the rest of samples by objective sampling.

Sampling methods: according to Commission Directive 2002/63/EC[4] of 11th July 2002 laying down sampling methods for official control of pesticide residues in and on products of plant and animal origin.

Area of sampling: 4 major cities, 1 smaller city, 4 regional units.

Sampling periods:

- Sanitary inspection: May/June /July/August/ September/October and November/December
- Agricultural inspection (sampling in periods adjusted to the agricultural production, harvest and picking: May/June/July/August/September/October.
- Veterinary Inspection - sampling throughout the year.

Points of sampling:

- Sanitary Inspection: sampling products of plant and animal origin in large shopping centres - central distribution warehouses, wholesale markets and cold stores where are affordable, comprehensive batches, in shops and at markets
- Agricultural inspectors – sampling products of plant origin from primary production - agricultural warehouses on farms or in places for storage of agricultural products intended for placing on the market, places for packaging or shipping of such products for the market, or in

places where products were temporarily stored after the harvest/picking before placing on the market

- Veterinary inspectors – sampling products of animal origin in from primary production, facilities for the production, processing and storage of products of animal origin and retail where it is prescribed by a special regulation.

In 2019 it was planned to analyse products on 347 pesticides for product of plant origin and 107 for products of animal origin.

For the purpose of the good implementation and coordination of the Programme, the Ministry of Agriculture prepared the Guidance for the implementation of the Programme in 2019 which is documented procedure for sampling including number and description of samples for each inspection, sampling area, sampling strategy, sampling methods, sampling periods, sampling procedures, sampling form, storage, packing and delivery of samples, analysis and analytical reports, notification HR RASFF and measures taken.

Laboratories for analysis products of plant origin: Andrija Štampar Teaching Institute of Public Health, Deapartment of Environmental Protection and Health Ecology

Laboratory for analysis products of animal origin: the Croatian Veterinary Institute (CVI), Laboratory for Determination of Residues.

Risk assessment for consumers was conducted by Croatian Centre for Agriculture and Food – Centre for Plant Protection.

HR RASFF system was under responsibility of the Ministry of Agriculture, Veterinary and Food Safety Directorate which represents the national RASFF contact point for the European Commission.

5.2. Key findings, interpretation of the results and comparability with the previous year results

5.2.1. Key findings

In 2019 were analysed 290 samples, with 8 samples exceeding MRL (of which 3 samples were compliant taking into account measurement uncertainty) and 5 samples non complaint.

Multiple residues were found in strawberries, grapefruit, peaches, lettuce, apples, banans, celeriacs, wine, tomatoes, oranges, strawberry jam, blueberries, spinaches, nectarines, barley grains, pears, cucumbers.

In the baby food samples, there was one active substance found in one sample.

MRL exceeding was determined in 8 samples: one sample for each of peach, kiwi fruit and celeriac, three samples of strawberries and two samples of spinaches.

MRL non - compliances was determined in 5 samples: one sample of spinach and peaches, and three samples of strawberries.

Regarding the comparability with the previous year, results showed some changes in the trend.

Table 18: Result trend

Year	No samples	Without Residues	With residues below MRL	Multiple residues	Exceeding MRL	Non-Compliant
2014	374	323 (86%)	70 (19%)	28	0	0
2015	483	348 (72%)	134 (28%)	74	1	1 (0.2 %)
2016	547	331 (60.51%)	216 (39.49%)	108	10 (1.83%)	6 (1.10%)
2017	608	423 (69.57%)	170 (27.96%)	95	15	5
2018	595	356 (59.83%)	226 (37.98%)	155	13 (2.18%)	6 (1.01%)
2019	290	166 (57.24 %)	116 (40%)	94	8 (2.7 %)	5 (1.72 %)

When compared with the previous year, it is evident that the number of analysed samples had firstly increased, then decreased in 2019, the percentages of samples without residues of pesticides has

decreased and the percentage of samples with pesticide residues below the MRLs has increased. Percentages of the non - compliant samples remains mostly of the same level.

Table 19: Summary results

Matrix detailed	Total samples	Below LOQ	% Below LOQ	Quantified below MRL	% Quantified below MRL	Above MRL	% Above MRL	Non-compliant	% Non-compliant
Oat grain	16	14	87.50%	2	12.50%	0	0.00%	0	0.00%
Barley grains	17	14	82.35%	3	17.65%	0	0.00%	0	0.00%
Barley flour	2	1	50.00%	1	50.00%	0	0.00%	0	0.00%
Oat flour	2	2	100.00%	0	0.00%	0	0.00%	0	0.00%
Oat high-bran flakes	1	1	100.00%	0	0.00%	0	0.00%	0	0.00%
Head cabbages	13	13	100.00%	0	0.00%	0	0.00%	0	0.00%
Red cabbages	2	2	100.00%	0	0.00%	0	0.00%	0	0.00%
White cabbage	4	4	100.00%	0	0.00%	0	0.00%	0	0.00%
Beefsteak tomato	1	1	100.00%	0	0.00%	0	0.00%	0	0.00%
Cherry tomatoes	4	3	75.00%	1	25.00%	0	0.00%	0	0.00%
Cucumbers	2	1	50.00%	1	50.00%	0	0.00%	0	0.00%
Lettuces (generic)	17	7	41.18%	10	58.82%	0	0.00%	0	0.00%
Curly endives	2	2	100.00%	0	0.00%	0	0.00%	0	0.00%
Spinaches	15	6	40.00%	8	53.33%	1	6.67%	0	0.00%
Celeriacs	3	1	33.33%	1	33.33%	1	33.33%	0	0.00%
Grapefruits	10	1	10.00%	9	90.00%	0	0.00%	0	0.00%
Apples	21	11	52.38%	10	47.62%	0	0.00%	0	0.00%
Pears	6	4	66.67%	2	33.33%	0	0.00%	0	0.00%
Strawberries	18	0	0.00%	15	83.33%	3	16.67%	3	16.67%
Blueberries	5	2	40.00%	3	60.00%	0	0.00%	0	0.00%
Common peaches	16	3	18.75%	12	75.00%	1	6.25%	1	6.25%
Nectarines	2	1	50.00%	1	50.00%	0	0.00%	0	0.00%
Kiwi fruits (green, red, yellow)	6	5	83.33%	0	0.00%	1	16.67%	0	0.00%
Common banana	10	1	10.00%	9	90.00%	0	0.00%	0	0.00%
Jam. strawberries	2	1	50.00%	1	50.00%	0	0.00%	0	0.00%
Pig fat tissue	14	14	100.00%	0	0.00%	0	0.00%	0	0.00%
Cow milk. whole	14	14	100.00%	0	0.00%	0	0.00%	0	0.00%
Cow milk. semi skimmed (half fat)	1	1	100.00%	0	0.00%	0	0.00%	0	0.00%
Juice concentrate. strawberry	1	1	100.00%	0	0.00%	0	0.00%	0	0.00%
Wine. white	5	1	20.00%	4	80.00%	0	0.00%	0	0.00%
Wine. red	13	2	15.38%	11	84.62%	0	0.00%	0	0.00%
Wine. rosé	1	1	100.00%	0	0.00%	0	0.00%	0	0.00%
Ready-to-eat meal for infants and young children	15	14	93.33%	1	6.67%	0	0.00%	0	0.00%
Ready-to-eat fruit-based meal for children	2	2	100.00%	0	0.00%	0	0.00%	0	0.00%
Baby leaf spinaches	4	1	25.00%	2	50.00%	1	25.00%	1	25.00%
Tomatoes	14	9	64.29%	5	35.71%	0	0.00%	0	0.00%
Oranges	9	5	55.56%	4	44.44%	0	0.00%	0	0.00%
Total	**290**	**166**	**57.24%**	**116**	**40.00%**	**8**	**2.76%**	**5**	**1.72%**

5.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

5.3.1. Possible reasons for non-compliant samples

Five (5) samples were determined as non-complaint with the EU MRL legislation (one sample of spinach and peaches, and three samples of strawberries). Consumer risk assessment showed that no posed the risk for consumers, but for 2 samples of strawberries no risk assessment was done.

Table 20: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/ food product	Frequency	Comments
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Spinosad/ Strawberries	1	Sample of domestic origin
GAP not respected: use of a non approved pesticide	Clothianidin/ Spinach	1	EU origin (Italy)
GAP not respected: use of an approved pesticide not authorised on the specific crop	Dimethoate/ Peach	1	Sample of domestic origin)
GAP not respected: use of an approved pesticide not authorised on the specific crop	Tebuconazole/ Strawberries	1	Sample of domestic origin
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Etofenprox/ Strawberries	1	EU origin (Italy)

5.3.2. ARfD exceedances

There was no ARfD exceedances, but risk assessment was conducted for only 3 samples: Spinosad/Strawberries, Clothianidin/Spinach and Dimethoate/Peach.

5.3.3. Actions taken

Table 21: Actions taken

Pesticide/food product	Action taken	Number of non-compliant samples concerned	Comments
Spinosad/ Strawberries	Administrative sanctions (e.g. fines)	1	Not found on the market after receiving results
Clothianidin/ Spinach	Administrative sanctions (e.g. fines)	1	Not found on the market after receiving results
Dimethoate/ Peach	Administrative sanctions (e.g. fines), follow up investigation	1	Not found on the market after receiving results, not found at the primary producer
Tebuconazole/ Strawberries	Administrative sanctions (e.g. fines), follow up investigation	1	Not found on the market after receiving results, not found at the primary producer
Etofenprox/ Strawberries	Administrative sanctions (e.g. fines)	1	Not found on the market after receiving results

5.4. Quality assurance

There are two accredited and designated laboratories analyse pesticide residues: Andrija Štampar Teaching Institute of Public Health and Croatian Veterinary Institute.

The analyses of products of plant origin were performed by the GC - MS technique (gas chromatography - mass spectrometry), GC-MS/MS technique (gas chromatography - tandem mass spectrometry) and LC-MS-MS technique (liquid chromatography - tandem mass spectrometry method according to DIN EN 12393:2013 and HRN EN 15662:2018. Analyses of products of animal origin were performed by the GC-MS/MS method.

Table 22: Laboratories participation in the national control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
Croatia	Croatian Veterinary Institute Laboratory for Residue Control	HVI	First: May 14, 2013 Last: 27 April 2020	Croatian Accreditation Agency	2019: Pesticides in milk powder infant formula, organisation: FAPAS, UK 2019: Pesticides in bovine liver, organisation: EURL-AO Freiburg, Germany 2019: Pesticides in rye kernels, organisation: EURL-CF, Lyngby, Denmark
Croatia	Andrija Štampar Teaching Institute of Public Health	Stampar	2003 Flexibile acreditation	Croatia Accreditation Agency	EURL-PT-FV, EURL-PT-SRM, EURL-PT-CF, EUPT-AO, 2015-2019

6. Cyprus

6.1. Objective and design of the national control programme

The Ministry of Health is the competent authority for the enforcement of the Pesticide Residues (PR) Legislation and the execution of the national monitoring and surveillance programs. The enforcement of Legislation and sampling is allocated to the Department of Medical and Public Health Services (MPHS). For products of animal origin, sampling is carried out by the Veterinary Services of Ministry of Agriculture, Rural Development and Environment.

The Pesticide Residues Lab (PR-SGL) of the State General Laboratory, a department of the Ministry of Health, is the Official Laboratory for the Monitoring & Surveillance of PR in Food of Plant and Animal Origin. The PR-SGL Lab in cooperation with the MHPS design and implement the monitoring program for both the local market and imports. The sampling is focused at the key points of food chain: market, import, processing, primary storage producers, etc.

Organic products are controlled under a monitoring control plan designed by the PR-SGL Lab in cooperation with the Department of Agriculture (DA) of Ministry of Agriculture, Rural Development and Environment. The results are evaluated by the competent authority in accordance to the provisions of the Regulation on organic products.

The sampling regime is based on a combination of 'at random' sampling and target oriented sampling focusing towards problematic pesticides/food combination. This combination is, in a way, bias towards problematic products and might end up with higher violation rates. Nevertheless, it can provide higher degree of consumer protection and cost-effectiveness. Main criteria used in the sampling design are: EU coordinated program, violations from previous years, information from RASFF, consumption rate especially for children and the needs of imports control.

The increase in the number of compounds monitored is a continuous process. The increase in the pesticides included in the monitoring programme is mainly defined by the requirements of the EU coordinated program. The provisions of the SANCO working document on the inclusion of pesticides in the national control plan as well as the pesticides included in the EUPTs are also taken into account. It should be noted though that the laboratory capacity and the costs of the analysis are the main factors which influence the inclusion of new pesticides in the national monitoring plan.

6.1.1. Key findings, interpretation of the results and comparability with the previous year results

In 2019 a total of 583 food samples of plant and animal origin were analyzed in the framework of the official controls. Sampling rate was 68 samples /100 000 inhabitants.

Plant Origin samples

The number of plant origin samples analyzed in 2019 was 549 of which 12 samples were baby food. The number of fruits tested was 182, vegetables 244 and cereals 42. Processed foods such as olive oil and dry herbs were also analyzed as part of the National Monitoring Plan. A total of 12 oat samples were analyzed according to the requirements of the EU coordinated plan, but due to the limited number of oat grains found in the market, oat flour and oat flakes were also analyzed. The same approach was followed for barley samples. For the purpose of the import controls, 81 samples were analyzed. The main imported products were vegetables, fruits, cereals, pulses, dry herbs /teas and spices.

The 53.4 % of the plant origin samples were found to be positive with pesticide residues, while residues of more than one pesticide were found in the 39.2 % of the samples. The most frequently found pesticides within 2019 were Cypermethrin in 12.6%, Boscalid in 9.6%, Tebuconazole in 9.0%, Acetamiprid, Carbendazim, Propamocarb and Pyrimethanil in 7.0% of the samples analyzed for.

For statistical purposes, the violation rate of the MRLs is calculated taking into account only the samples of plant origin and excluding baby foods. For the year 2019, the 7.3% of the 537 samples were considered as legal violations, which means that the samples exceed the MRLs after taking into account the measurement uncertainty.

The number of organic farming samples analyzed was 67 out of which the 47 samples were analysed in the framework of the national monitoring program of organic products. Seven samples were found to be positive with quantifiable levels of pesticide residues and two samples contained pesticides at concentrations lower of the LOQ. Two samples of dry black eye beans contained chlorpyrifos at concentrations higher than the MRL of the Regulation (EC) No 396/2005. All the results, which are presented in **Error! Reference source not found.**, were reported to the competent authority of the organic products so that the appropriate measures to be taken.

Comparing the results of 2019 with that of 2018, the violation rate was found to show a significant increase from 4.8% to 7.3%. The main reason for the increase is that the Good Agriculture Practice was not respected. The frequency of multiple residues in 2019 was higher (39.2%) compared to 2018 (30.2%) and this may be due to the expansion of the analytical scope and also to the analytical capabilities of the laboratory to report lower limits of quantitation (LOQ).

Table 23: Results of organic farming samples

Product	Pesticides	Found value (mg/kg)
Dry black eye beans	Chlorpyrifos	0.026
Dry black eye beans	Chlorpyrifos	0.015
Spinach	Spinosad (spinosad, sum of spinosyn A and spinosyn D)	0.081
Apples	Spinosad (spinosad, sum of spinosyn A and spinosyn D)	0.061
Oat grains	Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	0.032
Oat flakes	Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	0.021
Oat flakes	Fosetyl-Al (sum of fosetyl, phosphonic acid and their salts, expressed as fosetyl)	0.27
Oat grains	Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	0.008 < LOQ
Dry mint	Carbendazim and benomyl (sum of benomyl and carbendazim expressed as carbendazim) Chlorpyrifos	0.015 < LOQ 0.019 < LOQ

Animal Origin Samples

Within 2019, 146 samples of animal origin have been analyzed for pesticide residues: 17 egg samples, 40 milk samples, 72 samples of meat, 6 fish samples, 11 samples of honey and 12 samples of pork fat, out of which 12 cow milk and the 12 pork fat samples were analyzed in the framework of the Community control plan. The rest of the samples have been analyzed under the National monitoring plan in order to fulfill the requirements of the EU directive 96/23.

In total 5 samples found to contain pesticides at quantifiable levels. A milk sample was positive with DDT at very low levels, much lower than the MRL and four honey samples were positive with Amitraz at concentrations ranged between 0.020 - 0.11 mg/kg. The evaluation of the results for honey has been performed in accordance to the provisions of the Regulation (EU) No 37/2010.

6.2. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

In 2019, 11.9% of the samples of plant origin (64 samples in total out of 537 samples of plant origin excluding baby food) were found non-compliant with the EU MRLs, whereas the 7.3% of the samples (39 samples in total) were considered as legal violations (meaning that they were found as non-compliant with the legal limits taking into account the measurement uncertainty).

Acute exposure assessment using the PRIMo ver. 3.1 has been performed for all legal violations, with exception of two cases for which no toxicological data were available. In three cases (Methomyl in cucumbers, Formetanate in apricot, Tebuconazole in cherries) the Predicted Short Term Intake (PSTI) for the children was found to exceed the acute reference dose (ARfD) whereas in a sample of lettuce the PSTI of Chlorothalonil for both consumption groups, children and adults, exceeded the ARfD.

The following follow-up actions (**Error! Reference source not found.**) were taken in the cases of non-compliant samples.

Table 24: Possible reasons for MRL non-compliance and actions taken

Reason for MRL non-compliance	Pesticide/food product	Frequency	Action taken
GAP not respected: use of a pesticide not approved in the EU	Oxadixyl / Red wine	1	Administrative sanctions/ Lot recalled from the market
Use of a pesticide on food imported from third countries which no import tolerance was set	Bifenthrin/ Basil fresh	1	Follow-up (suspect) sampling of similar products
Use of a pesticide on food imported from third countries which no import tolerance was set	Chlorpyrifos/ Black eye beans dry Malathion/ Black eye beans dry	1	Rejection of a non-compliant lot at the border
GAP not respected, organic product	Chlorpyrifos / Black eye beans dry	1	Lot recalled from the market
GAP not respected	Tetraconazole/ Peas with pods	1	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop	Ametoctradin / Strawberries Fluopicolide/ Strawberries	1	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop	Propamocarb/ Strawberries	1	Administrative sanctions
Use of a pesticide on food imported from third countries which no import tolerance was set	Acephate / rice Carbendazim / rice Methamidophos / rice	1	Rejection of a non-compliant lot at the border
Use of a pesticide on food imported from third countries which no import tolerance was set	Thiamethoxam / rice	2	Rejection of a non-compliant lot at the border
Use of a pesticide on food imported from third countries which no import tolerance was set	Tricyclazole / Rice	3	Rejection of a non-compliant lot at the border
GAP not respected: use of not authorized on the specific crop pesticide GAP not respected: application rate, number of treatments, application method or PHI not respected	Chlorpyrifos / Parsley Dimethoate / Parsley Omethoate/ Parsley	1	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop	Thiamethoxam / Rocket	1	Administrative sanctions
GAP not respected: use of a pesticide not authorized on the specific crop	Dimethoate / Spinach Omethoate / Spinach	1	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop	Propamocarb/ Vine leaves	1	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop	Triadimenol/Vine leaves	3	Lot recalled from the market /Administrative sanctions
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Phenmedipham/ Spinach	1	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop. GAP not respected: use of an approved pesticide,	Fluopicolide / Vine leaves	1	Administrative sanctions

Reason for MRL non-compliance	Pesticide/food product	Frequency	Action taken
but application rate, number of treatments, application method or PHI not respected	Metalaxyl / Vine leaves		
GAP not respected: use of an approved pesticide not authorized on the specific crop	Spiroxamine /Vine leaves	1	Administrative sanctions
GAP not respected: use of a pesticide not approved in the EU	Clothianidin/Spinach	1	Administrative sanctions
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Methomyl/Cucumbers	1	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop	Dimethoate / Cabbage	1	Administrative sanctions
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected GAP not respected: use of an approved pesticide not authorized on the specific crop	Formetanate / Apricots Kresoxim methyl / Apricots	1	Administrative sanctions
Contamination of previous use of a pesticide	DDT / Carrots	1	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop	Metalaxyl / Celery Propamocarb / Celery	1	Administrative sanctions
Use of a pesticide on food imported from third countries which no import tolerance was set	Acetamiprid / Rice	1	Rejection of a non-compliant lot at the border
GAP not respected: use of an approved pesticide not authorized on the specific crop	Thiophanate methyl / Table grapes	2	Administrative sanctions
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Cypermethrin / Table grapes	1	Administrative sanctions
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Triadimenol/ Beans with pods	1	Administrative sanctions
Use of a pesticide on food imported from third countries which no import tolerance was set	Chlorpyrifos/ Mint dry	2	Rejection of a non-compliant lot at the border / Lot recalled from the market and destruction of non-compliant lot
Use of a pesticide on food imported from third countries.	Profenofos/ Mint dry	1	Lot recalled from the market /Destruction of non-compliant lot
GAP not respected: use of a pesticide not approved in the EU	Triadimefon/ Cherry tomatoes	1	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop	Dithiocarbamates expressed as CS_2 / Spinach	1	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Chlorpyrifos / Mint fresh Dimethoate / Mint fresh Omethoate / Mint fresh Fluazifop-P / Mint fresh	1	Administrative sanctions
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Dimethoate /Mandarins	1	Administrative sanctions
GAP not respected: use of a pesticide not authorized on the specific crop	Chlorothalonil/Lettuce	2	Administrative sanctions
Use of a pesticide on food imported from third countries which no import tolerance was set	Tebuconazole/Cherries	1	Rapit Alert Notification/ Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop	Chlorpyrifos / Guava	2	Administrative sanctions
GAP not respected: use of an approved pesticide not authorized on the specific crop	Cypermethrin / Guava	1	Administrative sanctions
GAP not respected: use of a pesticide not approved in the EU	Tetramethrin/ Guava	1	Administrative sanctions

6.3. Quality assurance

The PR Lab of the SGL is accredited since 2002 according to EN ISO/IEC 17025:2005. The PR-Lab applies Quality Control procedures, which are in line with provisions of "Analytical Quality Control and Method Validation Procedures for Pesticide Residues Analysis in Food and Feed". Detaills on the laboratory can be found in **Error! Reference source not found.**.

Table 25: Quality control laboratory

Country code	Laboratory Name	Laboratory Code	Accreditation Date	Accreditation Body	Participation in proficiency tests or interlaboratory tests
CY	State General Laboratory of Ministry of Health	SGL_CYPRUS_FP	2002	Cyprus Accreditation Body (CYS-CYSAB)	PTs 2019: EUPT-SRM-14 (bovine liver) EUPT-AO-14 (bovine liver) EUPT-FV-21(head cabbages) EUPT-CF-13 (rye) FAPAS 19272 (wine) FAPAS 19276 (CS_2 in lettuce)

6.4. Processing Factors (PF)

Processing factors were applied to verify the compliance with EU MRLs of the processed food. **Error! Reference source not found.** presents the PFs applied for different food.

Table 26: Processing factors

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor
Acetamiprid	Table grapes	Raisins	0.9
Azoxystrobin			3.0
Boscalid			2.4
Difenoconazole			1.2
Fenhexamid			1.0
Fenpropathrin			1.4
Imidacloprid			1.0
Myclobutanil			1.0
Pyraclostrobin			1.0
Pyrimethanil			1.6
Tebuconazole			1.2
Trifloxystrobin			1.0
Spirotetramat			2.6
Ametoctradin	Wine grapes	Wine	1.0
Boscalid			
Carbentazim			
Dimethomorph			
Fenhexamid			
Folpet			
Fosetyl-Al			
Imidacloprid			
Iprovalicarb			
Metalaxyl			
Oxadixyl			
Pyrimethanil			
Spinosad			
Tebuconazole			
Thiophanate methyl			
Triadimenol			
Boscalid	Orange	Concentrated orange juice	4.5
Fenhexamid			
Fluopyram			
Thiacloprid			
Trifloxystrobin			
Epoxiconazole	Barley	Barley Flour	1
Fosetyl-Al			
Pirimiphos methyl			
Chlormequat	Oat	Oat flakes	1
Fosetyl-Al			

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor
Glyphosate			
Mepiquat			

7. Czechia

7.1. Objective and design of the national control programme

7.1.1. Objective

Pesticide residues monitoring in foodstuffs in the Czechia is guided by the Multiannual Control Plan for the Control of Pesticide Residues in CR submitted by the Ministry of Health, in cooperation with the Ministry of Agriculture and other supervisory bodies (CAFIA, SVA, CISTA).

A coordinated multiannual Community monitoring control programme is included in the plan as required by the European Parliament and Regulation (EC) No. 396/2005.

The requirements of the multi-annual control plan programme are included in the control plans of official authorities (CAFIA, SVA and CISTA), competent to monitor pesticide residues in foodstuffs of plant and animal origin and feeds.

7.1.2. Design

Multiannual control plan for pesticide residues refers mainly to foodstuffs and feedingstuffs in the whole food chain. The control plan stems from the Regulation (EU) No 2018/555. The number of selected commodities, number of samples and scope of analysed pesticide residues must be considered as minimum numbers which have to be fulfilled. The official authorities might increase these numbers if necessary and appropriate.

Selection of commodities

The following criteria have been used for the selection of commodities being listed in the national programme on pesticide residues control:

- the overall food consumption in the Czechia in 2016 (https://www.czso.cz/csu/czso/spotreba-potravin-2016)
- the consumption food basket (http://czvp.szu.cz/spotrebapotravin.htm);
- results of official controls and monitoring of pesticide residues in previous years (http://www.svscr.cz; http://www.szpi.gov.cz/; http://www.ukzuz.cz)
- foodstuffs intended for risk groups of population (namely infant formula and foods for young children);
- products having specific stricter rules on the use of pesticides (organic products);
- reports in RASFF system – annual EC reports (http://ec.europa.eu/food/food/rapidalert/index_en.htm);
- Commission Implementing Regulation (EU) 2018/555 of 9 April 2018 concerning a coordinated multiannual control programme of the Union for 2019, 2020 and 2021 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R0555&rid=8)
- the annual report of the EC on pesticide residues monitoring (http://ec.europa.eu/food/fvo/specialreports/pesticides_index_en.htm)
- EU reports on pesticide residues in food published on EFSA websites (http://www.efsa.europa.eu/en/efsajournal/pub/3694.htm - 2011, http://www.efsa.europa.eu/en/efsajournal/pub/3942.htm - 2012, http://www.efsa.europa.eu/en/efsajournal/pub/4038.htm - 2013, https://www.efsa.europa.eu/en/efsajournal/pub/4611 - 2014, https://www.efsa.europa.eu/en/efsajournal/pub/4791 - 2015, https://www.efsa.europa.eu/en/efsajournal/pub/5348 - 2016 https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2019.5743 - 2017 https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/sp.efsa.2020.EN-1814 - 2018

7.1.3. Number of samples

The number of samples is set to determine characteristic profiles of pesticide residues content in selected commodities and to map trends in pesticide residues presence and their levels in analysed commodities with respect to statistical evaluation. The multiannual EU programme laid down in the Regulation (EU) No 2018/555 is the basis for this control programme.

The number of samples in the Regulation (EU) No 2018/555 is set as a minimum. It is possible to change and update the number of samples according to the current situation. Similarly, it is possible to amend the number of commodities which are analysed on the content of pesticide residues. A real extent of samples is in the validation report.

7.1.4. Pesticide residues to be analysed

- The following factors have been considered in the selection of pesticide residues to be analysed: the most frequently used active substances (the source – the database of CISTA)
- the database of used plant protection preparations is managed by CISTA. The database contains active substances and their used amounts as both the total amount and the amounts used for main agricultural crops. The Actions taken of this database, includes thirteen of the most frequently used active substances in the Czechia including the list of main crops where these substances are used.
- the results of official controls and monitoring of pesticide residues in previous years
- (http://www.svscr.cz; http://www.szpi.gov.cz/; http://www.ukzuz.cz);
- information in RASFF system – EC annual reports
- (http://ec.europa.eu/food/food/rapidalert/index_en.htm)
- Commission Implementing Regulation (EU) 2016/662 of 1 April 2016 concerning a coordinated multiannual control programme of the Union for 2017, 2018 and 2019 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin
- (http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0662&rid=1)
- the final report on EC monitoring results
- (http://ec.europa.eu/food/fvo/specialreports/pesticides_index_en.htm)
- the consumer food basket
- (http://www.szu.cz/tema/bezpecnost-potravin;
- http://www.chhpr.szu.cz/spotreba-potravin.htm)
- toxicological profiles of pesticides (National Institute of Public Health, Prague)
- the laboratory capacity.

7.1.5. Sampling

7 CAFIA regional Inspectorates participate in sampling for determination of pesticide residues. They take samples in compliance with requirements of Commission Directive 2002/63/EC[4]. Samples are taken in particular in retail and wholesale.

Foodstuffs of animal origin are sampled by 14 Regional Veterinary Administrations in compliance with requirements of Commission Directive 2002/63/EC[4]. Samples are taken at production and processing premises.

Samples of feedstuffs are taken by inspectors of CISTA (6 regional branches) at producers of feed raw materials and operators placing these products on the market. Sampling is carried out in compliance with Commission Regulation (EC) No. 152/2009.

7.2. Key findings, interpretation of the results and comparability with the previous year results

The Czech Agriculture and Food Inspection Authority together with the State Veterinary Administration and Central Institute for Supervising and Testing in Agriculture sampled the total of 1,478 samples in 2019. The samples were taken within official controls focused on verification of presence of pesticide residues. The main proportion of the sample taken represented samples of fresh fruit, vegetables, cereals, cereals products and products of plant origin (1268 samples).

Foodstuffs of animal origin include 118 samples (unprocessed 103 samples, processed 15 samples), and feedingstuffs consist of 92 samples were further sampled.

7.2.1. Key findings

Out of the total number of the samples taken, 958 samples (64.8%) contained positive finding of any of the analysed active substances. MRL was exceeded in 58 samples (3.9%). 34 samples (2.3%) were assessed as non-compliant, i.e. the samples exceeded the MRL even when uncertainty of measurement was taken into.

Out of the total number of taken samples, the largest proportion comprised samples from EU countries (45.1% analysed samples) followed by samples from the Czechia 28.5%), and by samples from third countries (18.3%). In 8.1% of the samples, the country of origin was not known.

The largest proportion of the analysed samples was represented by samples of fruit, vegetables, nuts and other plant products (1268 samples). Presence of pesticide residues was not detected in 28.0% analysed plant origin samples. In 67,1% samples, the detected residues were under MRL value. Regardless uncertainty measurement, 57 samples of fruit, vegetables and other plant products contained pesticide residues above the MRL value. After taking uncertainty measurement into account, the number of non-compliant samples of fruit, vegetables and other plant products amounted to 33 (2.6 %).

As regards foodstuffs of animal origin, out of the total number of the samples taken (118), 103 samples comprised non-processed foodstuffs: hen eggs, bovine, poultry, pig and sheep fat, liver (veal, pigs and foie gras), poultry and bovine fresh meat, milk, honey and 15 samples comprised processed products: butter, milk products (quark, yoghurt) produced within organic farming.

All analysed foodstuffs which were of animal origin came from the CR. Pesticide residues were not found in 68.6% of foodstuffs of animal origin. As regards 31.4% of samples with residues, the detected residues were found under the MRL. Exceeding of the MRL was not detected in any of the sample of animal origin.

As regards feedingstuffs, the total of 77 samples of non-processed raw materials has been taken. Out of the total number of the analysed samples of feedingstuffs, 82 % originated in the CR, 6,5% in the EU countries, 6,5% in third countries and 5% were of unknown origin. Positive detections of pesticide residues were found in 84,4% feed samples and in one sample of sunflower seed meal the contained pesticide residue was above the MRL.

Organic products of plant and animal origin comprised 6.2% (86 samples) of the total amount of the samples taken compared to 93.8% (1300 samples) of foodstuffs produced within conventional farming. Out of the total number of samples taken from non-organic foodstuffs, positive finding of pesticide residues was detected in 71.2 % (926 samples) of samples compared to 27.9% (24 samples) of positive cases of samples taken from organic foodstuffs.

Out of the total number of 15 samples of feed from organic farming, in one case pesticide residue under MRL value was detected (6,6% of samples).

Within the increased official controls, the total of 15 samples were taken. In all cases tea from China was concerned. The MRL was exceeded in 5 samples which were assessed as non-compliant. In samples of tea from China following active substances were detected in an amount above the limit: acetamiprid, buprofezin, imidacloprid and tolfenpyrad.

In 724 samples of plant and animal origin (52.2%) more than one active substance was detected. The maximum number various pesticide substances and their metabolites was found in table grapes sample from Peru (16 compounds).

Table 27: Summary results of samples taken in 2019 by product class

Samples	Total	Without residues	With residues below MRL	Exceeding MRL	Non-compliant
Animal products	118	81	37	0	0
Baby food	10	10	0	0	0
Cereals and cereal products	87	60	26	1	0

Samples	Total	Without residues	With residues below MRL	Exceeding MRL	Non-compliant
Feeds	92	26	65	1	1
Fruits	405	43	352	10	6
Nuts	21	17	3	1	0
Legumes	6	4	2	0	0
Oil seeds	34	12	17	5	3
Other plant products	51	22	20	9	8
Potatoes	61	18	41	2	1
Processed products	71	31	39	1	0
Vegetables, herbs, spices	522	138	356	28	15
Sum	**1,478**	**462**	**958**	**58**	**34**

7.2.2. Comparability with the previous year results

Pesticide residues were in 2019 analysed in a total of 1,478 samples compared to the total number of 1,520 of samples analysed in 2017 and 1,390 analysed samples in 2018. Positive findings of pesticide residues were in 2019 detected in 64.9% samples compared to 56.2% in 2017 and 73.8% in 2018.

MRL value was in 2019 exceeded in 3.9 % of samples (4.5% in 2016, 3.1% in 2017, 3.5% in 2018), 2.3 % samples were assessed as non-compliant (2.4% in 2016, 1.8% in 2017, 1.8.% in 2018). It is possible to say data from 2019 are comparable with data from previous years.

7.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

Out of the total number of samples taken in 2019, 58 samples exceeded the MRL (3,9 %). Out of this number, 34 samples (2.3 %) were assessed as non-compliant even after uncertainty in measurement was taken into account. 3 non-compliant samples originated in the CR, 15 non-compliant samples originated in the EU and 16 non-compliant samples originated from third countries.

Following commodities were concerned: Chinese cabbages – 8 non-compliant samples, tea – 8 non-compliant samples, kales – 3 non-compliant samples, poppy seeds – 3 non-compliant samples, mandarins – 2 non-compliant samples, table grapes – 2 non-compliant samples, 1 non-compliant sample of beans with pods, celery, cauliflower, grapefruit, head cabbage, mango, potatoes and sunflower seed meal.

Following findings were notified into the RASFF: chlorpyrifos in kale from Poland (notification 2019.1377), methomyl in cauliflower from Poland (2019.3659), acetamiprid and tolfenpyrad in green tea from China (NC19.1070), buprofezin and tolfenpyrad in tea from China (NC19.2928), buprofezin and tolfenpyrad in green tea from China (NC19.2875), 3x tolfenpyrad in tea from China (NC19.2928, NC19.2875), imidacloprid in green tea from China (NC19.3969).

Within the increased official controls, 5 consignments of tea from China were not released into free circulation, the consignments were rejected on the border.

7.3.1. Possible reasons for non-compliant samples

Table 28: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]	Comments
GAP not respected: use of a pesticide not approved in the EU[b]	Methomyl/Cauliflower	1	Poland
	Chlorpyrifos/Kale	1	Poland
	Chlorpyrifos/Kale	1	CZ
	Chlorpyrifos/Chinese cabbage	1	Poland
	Dimethote/Chinese cabbage	3	Poland
	Chloryprifos/Poppy seeds	1	SR
GAP not respected: use of an approved pesticide not authorised on the specific crop[c]	Flonicamid/ Chinese cabbage	2	Poland
	Fluazifop-P/ Chinese cabbage	3	Poland
	Carboxin/Poppy seeds	1	CZ

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]	Comments
	Fluazifop-P/Kale	1	Portugal
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Thiabendazole/Potato Cyflufenamid /Table grapes	1 1	France Italy
Use of a pesticide on food imported from third countries for which no import tolerance was set[c]	Tolfenpyrad/Tea Acetamiprid/Tea Buprofezin/Tea Fipronil/Tea Imidacloprid/Tea Lambda cyhalotrin/Tea Dicrotophos/Table grapes Clofentezin/Beans with pods Trifloxistrobin/Mango Fenvalerate/Mandarins Didecyldimethylamonium chlorid/Mandarins Carboxin/Poppy seeds	6 2 2 1 2 1 1 1 1 1 1 1	China China China China China China Peru Marocco Brazil Turkey Turkey Turkey
Cross contamination: spray drift or other accidental contamination	Linuron/Celery	1	CZ

(a): Number of cases
(b): Applicable only for food products produced in the EU
(c): For imported food only

7.3.2. ARfD exceedances

All findings of pesticide residues in samples notified into the RASFF concerned exceeding of ARfD. Risk of health assessment in the CR is carried out by the National Health Institute.

7.3.3. Actions taken

In case any non-compliant sample is detected, assessment of health risk for consumers is carried out for the purposes of notification into the RASFF system. Appropriate measures are taken, such as withdrawal of the non-compliant sample from the market. Non-compliant detection is, on the basis of the health risk assessment, notified into the RASFF.

In case MRL of the given analytes laid down by obligatory legislation is exceeded, the supervisory body imposes a ban on sale or distribution of the non-compliant foodstuff. If the foodstuff is not dispatched at the time when the analyses are finished, withdrawal of the foodstuff is ordered. The inspected person is authorised to take a measure leading to the minimisation of further occurrence of the non-compliant foodstuff.

Within follow-up inspections, causes of detections of exceeding limits of pesticide residues in foodstuffs are found out at domestic growers and producers. Detected non-compliant findings lead to more intensive inspections at producers and imports. A fine that will be imposed to the inspected person that placed the foodstuffs in question on the market is suggested within an administrative procedure. However, the fine could be dropped based on the circumstances.

Table 29: Actions taken

Action taken	Commodity/ pesticide	Number of non-compliant samples concerned	Comments
Rapid Alert Notification		9	
	Kale/chlorpyrifos	1	2019.1377
	Green tea/acetamiprid, tolfenpyrad	1	NC19.1070
	Green tea/buprofezin, tolfenpyrad	2	NC19.2928 NC19.2875

Action taken	Commodity/ pesticide	Number of non-compliant samples concerned	Comments
	Green tea/ tolfenpyrad	3	NC19.2928 NC19.2875
	Cauliflower/methomyl	1	2019.3659
	Green tea/imidacloprid	1	NC19.3969
Administrative sanctions (e.g. fines)		26	
Lot recalled from the market		4	
Rejection of a non-compliant lot at the border	Tea/China	5	
Destruction of non-compliant lot		1	

7.4. Quality assurance

The laboratories performing analysis for the purpose of official controls in the pesticide residues area meet requirements of the technical standard ČSN EN ISO/IEC 17025:2005. They are accredited by the Czech Institute for Accreditation (CIA), they regularly participate in proficiency testing at international levels and the methods of analysis used are validated.

Table 30: Laboratories participation in the national control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
Czechia	Czech Agriculture and Food Inspection Authority (CAFIA)	S01	EN ISO/IEC 17025, Certificate No. 552/2018 (16.10.2018)	Czech Accreditation Institute (CAI), Prague, Czechia	EUPT-CF123, EUPT-FV210, EUPT-SM110, EUPT-SRM14, FAPAS 05138 3
Czechia	State Veterinary Institute Prague	V01	EN ISO/IEC 17025, Certificate No. 676/2018 (17.12.2018)	Czech Accreditation Institute (CAI), Prague, Czechia	EUPT-AO14 EUPT-SRM14
Czechia	Metrological and Testing laboratory, University of chemistry and technology	O01	EN ISO/IEC 17025, Certificate No. 192/2019 (29.4.2019), previous Certificate No. 202/2018 (18.4.2018)	Czech Accreditation Institute (CAI), Prague, Czechia	EUPT-FV21, EUPT-SM11, EUPT-SRM14, EUPT-AO14 CF13
Czechia	Central Institute for Supervising and Testing in Agriculture	U01	Certificate of accredation No. 719/2017 (5.12.2017)	Czech Accreditation Institute (CAI), Prague, Czechia	EUPT-FV21, EUPT-CF13

7.5. Processing Factors (PF)

Processing factors are applied when necessary to verify compliance of processed products with EU MRLs according to article 20 of Regulation 396/2005. Processing factors were applied to cover the dehydratation of fruits - goji, polishing of rice and oil production using pressing.

Table 31: Processing factors

Pesticide[(a)]	Unprocessed product (RAC)	Processed product	Processing factor[(b)]	Comments
Glyphosate	Grapes (Vinis vitifera)	Wine	1	Processing factor was applied according to Commission Implementing Regulation (EU) No. 2018/555
Acetamiprid, 2,4-D, clothianidin, difenoconazol, etoxazol, haloxafop, imidacloprid, propargite, sulfoxaflor, spirotetramate, tebuconazol, thiamethoxam	Goji	Dried goji	5	Processing factor was calculated from content of water in fresh and dried gojiberries
Carbendazim and benomyl, dimethoate, tebuconazol	Cherries	Dried cherries	5	Processing factor was calculated from content of water in fresh and dried cherries
Acetamiprid, carbendazim and benomyl	Apricots	Dried apricots	5	Processing factor was calculated from content of water in fresh and dried apricots
Chlorpyrifos	Olives	Olive oil	5	Processing factor was applied according to Commission Implementing Regulation (EU) No. 2017/660
Cyproconazol, imidacloprid, isoprothiolan, pirimifos-methyl, thiamethoxam, tricyclazole	Rice	Polishing rice	0.5	Processing factor was applied according to Commission Implementing Regulation (EU) No. 2017/660

(a): Report name
(b): Processing factor for the enforcement residue definition

7.6. Additional Information

Total of 101 organic foodstuffs and feeds were sampled in 2019. Pesticide residues were detected in 25 samples (24,8 %). Out of the total number of the analysed samples of organic fruit (15), in 5 samples positive detection of pesticide residues was found. Positive findings of pesticide residues were also proved in 5 samples out of 19 samples of organic vegetables, then in 2 samples out of 14 organic cereals samples, in 7 samples out of 11 food samples of animal origin, in 5 samples out of 27 samples of other plant foodstuffs and processed products incl. baby foods and in 1 sample out of 15 samples of feeds.

Table 32: Organic production

Commodity	Total samples	Below LOQ	% Below LOQ	Quantified	% Quantified	Quantified below MRL	% Quantified below MRL	Above MRL	% Above MRL	Non-compliant	% Non-compliant
Animal products	11	4	36.36	7	63.64	7	63.64	0	0.00	0	0.00
Baby food	4	4	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Cereals and cereal products	14	12	85.71	2	14.29	2	14.29	0	0.00	0	0.00
Feeds	15	14	93.33	1	6.67	1	6.67	0	0.00	0	0.00
Fruits	15	10	66.67	5	33.33	5	33.33	0	0.00	0	0.00
Fruit drinks	1	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Leugumes	3	2	66.67	1	33.33	1	33.33	0	0.00	0	0.00
Nuts	1	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Oil seeds	4	3	75.00	1	25.00	1	25.00	0	0.00	0	0.00
Potatoes	2	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Tea	8	7	87.50	1	12.50	1	12.50	0	0.00	0	0.00

8. Denmark

8.1. Objective and design of the national control programme

8.1.1. Objective

The Danish Veterinary and Food Administration (DVFA) is the competent authority for the enforcement of the pesticide monitoring programme in Denmark.

The monitoring programme include both sample strategies listed as objective or selective sampling as well as samples listed as suspect sampling.

8.1.2. Design

The National Food Institute, Technical University of Denmark, designed the monitoring programme in cooperation with the Danish Veterinary and Food Administration. Since 2006 the sampling plan has been based on dietary consumption pattern with regard to pesticide intake from the reports[12,13,14], which analysed monitoring data from 1998-2003, 2004-2011 and 2012-2017. These reports indicated how much individual commodities contribute to the exposure and the Hazard Index. It showed that 25 commodities were responsible for more than 81% of the exposure and 85% of the Hazard Index, respectively (Top25 commodities). The monitoring plan has been designed in such a way that most samples (40-50 samples) are taken of commodities with high contribution to the exposure and Hazard Index. Commodities that contribute less to the exposure and the Hazard Index are only taken every third year. All commodities in the EU coordinated control programme are included in this annual sample plan. The focus on these commodities will provide a better basis for comparison between years, so that trends in pesticide residues found may be analysed. In addition to these samples, a broad range of commodities common on the Danish market were analysed, including processed foods, food for infants and organically grown foods. Most sampling projects were designed to cover surveillance as well as control in combination and the sampling strategy for these samples is listed as objective or selective sampling. One project was set up to cover sampling and analysis according to

[12] M.E. Poulsen, J.H. Andersen, A. Petersen, H. Hartkopp (2005). Pesticide Food Monitoring, 1998-2003Part2.ISBN87-91569-54-0. http://www.fodevarestyrelsen.dk/Publikationer/Alle_publikationer/2005/002.htm

[13] Petersen A., Hamborg Jensen B., Andersen J.H, Poulsen M.E., Christensen T., Nielsen E. (2013). 'Pesticides Residues, results from the period 2004-2011', ISBN 978-87-92763-78-5. www.food.dtu.dk

[14] Jensen, B.H., Petersen, A., Pernille, B.P., Poulsen, M.E,. Nielsen, E.E., Christensen, T., Fagt, S., Trolle, E., Andersen, J.H . Pesticide Residues in Food on the Danish Market. Results from the period 2012 - 2017 . 2019, ISBN 978-87-7120-067-6. www.food.dtu.dk

Regulation (EC) No 669/2009. Another project was designed to cover suspect sampling and included sampling of direct import via Copenhagen Airport or other border entries. A third project was control of imported organic foods from Ukraine, Kazakhstan and Russia. Sampling strategy for these projects is listed as suspect sampling.

Sampling was performed by authorised personnel from the four Food Control Offices of the Danish Veterinary and Food Administration. Directive 2002/63/EC on sampling procedures for control of pesticide residues is implemented in the Danish legislation. All samples for control of the MRL, except the directly imported samples, were sampled on the market, primarily at wholesalers or importers. Products of animal origin were sampled at slaughterhouses.

Reporting includes samples analysed for pesticides from projects, based on Directive 96/23[4].

In total 340 pesticides (counted as residue definitions) were included in the analytical methods. Most samples of fruit and vegetables were analysed for about 340 pesticides (counted as residue definitions). In addition, part of the samples (94 samples) were analysed for dithiocarbamates, bromide ion (24 samples), chlormequat and mepiquat (12 samples) and glyphosate (81 samples). Due to the methodology applied, it was not possible to distinguish between the specific dithiocarbamates included in the residue definition for enforcement.

8.2. Key findings, interpretation of the results and comparability with the previous year results

8.2.1. Key findings

In 2019 a total of 1,872 surveillance samples of fruit, vegetables, cereals, processed products, baby food and animal products were analysed. Furthermore 123 samples were taken from direct import from third countries at the Copenhagen Airport, 11 samples were taken according to Regulation 669/2009 and 49 samples were taken to control import of products imported from Ukraine, Kazakhstan and Russia. Samples from these three projects are listed as suspect sampling. Results from these projects are reported separately and are not included in the following general statistics.

Of the 1872 samples, 633 were produced in Denmark and 1239 samples were produced in other EU countries and outside EU. The samples included 1501 samples of fruit, vegetables and cereals, 250 samples of animal origin, 111 samples of processed vegetable foods and 10 samples of baby foods.

87 (6.9%) of the fruit and vegetable samples and 65 (27%) of the cereal samples were organically produced.

Pesticide residues were found in 72% of the conventionally grown fruit, 34% of the conventionally grown vegetables and in 45% of the conventionally grown cereal samples. Residues exceeding the MRL were found in 1.7% of the conventionally grown fruit and vegetables samples (20 samples). Of these, 10 samples (0.9%) had non-compliant residues. Three cereal samples (1.7%) had residues exceeding the MRL. All three samples were non-compliant residues. In conventional grown processed samples, no residues exceeded the MRL. No samples of baby food exceeded the MRLs.

For fruits, pesticide residues were found in 71% and 80% of the samples produced in EU and outside EU, respectively, whereas pesticide residues were found in 56% of the samples from Denmark. For vegetables, residues were found in 49% and 31% of the samples produced in EU and outside EU, respectively, while residues were found in 18% of the samples from Denmark.

The frequency of conventionally grown samples exceeding the MRLs was 2.1 % and 1.0% for fruit produced in EU and outside the EU, respectively. For vegetables, the frequency of samples exceeding the MRL was 0.8% and 7.4% for vegetables originating from EU and outside the EU, respectively. The frequency of residues exceeding the MRL in Danish grown fruit was zero while the frequency of Danish grown vegetables exceeding the MRLs was 0.9%.

A total of 134 samples (conventionally grown crops) were taken using sampling strategy "Suspect". Non-compliant residues were found in 31 (23%) samples.

Residues were found in two organically produced sample. Spinosad was found in both samples; in a banana sample from Ecuador and in a sample of kale from Spain.

Both samples were found to be produced in accordance with the rules for organic production.

8.2.2. Interpretation of the results

Generally, the results from the monitoring programme in 2019 are comparable with the results from previous years.

- For conventionally grown fruit, pesticides residues were found in 72% of the samples.
- For conventionally grown vegetables pesticides residues were found in 34% of the samples.
- For conventionally grown fruit and vegetables exceedances of the MRL were found in 1.4% and 2.1% of the samples, respectively.
- Generally, more exceedances of the MRL are seen in fruit and vegetables produced in other EU countries and third countries compared to fruit and vegetables produced in Denmark.
- In cereals, pesticide residues were found in 45% of the conventionally grown samples. Exceedance of the MRL were found in 1.7% of the samples.
- In processed commodities, no exceedances of the MRL were found.
- No residues were found in baby food.
- In animal commodities, residues of were found in 0.4% (1) of the samples. The content was below the MRL.
- In organically grown samples, pesticide residues were found in 1.2% of the samples. Both samples were found to be produced in accordance with the rules for organic production.
- More than one residue was found in more samples. These samples were primarily found in samples outside the EU.
- All exceedances of the MRL, except 10 samples, were found not to result in any health concern. Furthermore 12 samples that had a content of chlorpyrifos or chlorpyrifos-methyl higher than the detection limit but below the MRL were assessed with the conclusion that a health risk could not be excluded.
- All other samples with multiple residues were found not to result in any health risk

8.2.3. Comparability with the previous year results

In 2019 a total of 2055 samples were analysed for pesticide residues compared to a total of 2121 samples analysed in 2018.

In 2019, residues were found to exceed the EU MRL in 1.6% of the conventionally grown samples of non-animal origin (23 samples) taken by objective or selective sample strategy compared to 2.8 % in 2018. Of these, 0.9% (13 samples) was found to be non-compliant with the EU MRL compared to 1.3 % in 2018.

For conventional grown samples taken as suspect sampling strategy in 2018, residues were found to exceed the MRL in 23% of the samples compared to 25.7% in 2018. Of these, 17% were found non-compliant with the EU MRL compared to 19% in 2018.

8.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

8.3.1. Possible reasons for non-compliant samples

In 2019, residues were found to exceed the EU MRL in 1.6 % of the conventionally grown samples of non-animal origin (23 samples) taken by objective or selective sample strategy. Of these, 0.9 % (13 samples) was found to be non-compliant with the EU MRL.

For samples taken by suspect sampling strategy, residues in 23% (31 samples) were found to exceed the EU MRL. Of these, 17% (23 samples) were found non-compliant with the EU MRL.

Follow-up actions were taken for samples that were found non-compliant with the EU MRL (measurement uncertainty taken into consideration) or non-compliant with the conditions for organic farming, see **Error! Reference source not found.**.

In general, there is no verified knowledge of the reasons for non-compliant results. For residues in organic produced products, the reasons for evaluation have been stated above.

8.3.2. ARfD exceedances

Ten samples were found to exceed the ARfD. Three samples were taken as objective sampling and seven samples were taken as suspect sampling. The samples taken as objective sampling were a sample of carrots from Denmark (hexachlorobenzen), a sample of apples from Poland (chlorpyrifos) and a rice sample from Vietnam (tricyclazol). The seven samples taken as suspect sampling were: one sample of papaya from Thailand (carbofuran), one sample of asiatic centella from Thailand (chlorpyrifos), one sample of coriander leaves from Thailand (chlorpyrifos), one sample of coriander root from Thailand (chlorpyrifos) and a sample of mango from Thailand (chlorpyrifos). All ten samples were due to health risk concern withdrawn from the market and nine of them were notified to RASFF.

Error! Reference source not found. gives an overview of actions taken in response to non-compliant products.

Table 33: Action Taken

Action taken	Number of non-compliant samples concerned
Administrative consequences	2
Rapid Alert Notification	9
Lot recalled from the market	8
Follow-up action due to pesticides residues in domestic products, which is not authorized in Denmark	5
Warnings to responsible food business operator	27
Other actions	31

8.4. Quality assurance

Table 34: Laboratories participation in the control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
DK	National Food Institute, Technical University of Denmark	DTU Food	20 April 1995 (DANAK #350)	DANAK, Denmark	EUPT-FV16, EUPT-SM06, EUPT-AO09, EUPT- SRM9, FAPAS 0991. Organiser of EUPT-CF8
DK	Danish Veterinary and Food Administration	FVST	30. September 2008 (DANAK #405)	DANAK, Denmark	EUPT-CF13, EUPT-FV21, EUPT-AO14, EUPT-SRM14, FAPAS 19263, FAPAS 19264, FAPAS 19267, FAPAS 19269, FAPAS 19272, FAPAS 19276, FAPAS 19277 FAPAS 09120, FAPAS 09125, FAPAS 09127, FAPAS 05135, Proget to FI1971

8.5. Processing Factors (PF)

In **Error! Reference source not found.** the processing factors are compiled that were reported by national competent authorities to verify compliance of processed products with EU MRLs. In addition to these, factors based on water content from food composition tables in fresh vs. dried commodities were used for dried samples where MRL was set on the fresh commodity.

Table 35: Processing factors

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor
Acephat	Rice	Polished rice	0.5
Azoxystrobin	Rice	Polished rice	0.5
Boscalid	Grape for wine production	Wine	1.3
Buprofezin	Rice	Polished rice	0.5
Deltamethrin	Rice	Polished rice	0.5
Dimethomorph	Grape for wine production	wine	1.3
Fenhexamid	Grape for wine production	wine	1.3
Fluopicolide	Grape for wine production	wine	1.3
Fluopyram	Grape for wine production	wine	1.3
Flutriafol	Rice	Polished rice	0.5
Imidacloprid	Rice	Polished rice	0.5
Iprovalicarb	Grape for wine production	wine	1.3
Isoprothiolan	Rice	Polished rice	0.5
Malathion	Rice	Polished rice	0.5
Metalaxyl	Grape for wine production	wine	1.3
Methamidophos	Rice	Polished rice	0.5
Propiconazol	Rice	Polished rice	0.5
Pyrimethanil	Grape for wine production	wine	1.3
Tebuconazol	Rice	Polished rice	0.5
Thiophanatmethyl	Grape for wine production	wine	1.3
Thiamethoxam	Rice	Polished rice	0.5
Tricyclazol	Rice	Polished rice	0.5

8.6. Additional Information

The analytical methods have been developed and/or validated by the National Food Institute, Technical University of Denmark. Most samples were analysed at the laboratory of the Danish Veterinary and Food Administration in Ringsted. Both laboratories are accredited to pesticide analysis in compliance with ISO17025 by the Danish Accreditation body, DANAK. Furthermore, the laboratories participated in the relevant FAPAS proficiency test scheme and in all EU-proficiency tests.

"Guidelines concerning Quality Control Procedures for Pesticide Residue Analysis" has been applied for all methods. Mass selective confirmation was performed forthe GC and LC multi methods. Analytical uncertainty is not applied in monitoring reports but is always applied in case of enforcement actions.

Each year, the National Food Institute, Technical University of Denmark, and the Danish Veterinary and Food Administration prepare a report on pesticide residues in foods on the Danish market. Since 1 January 2011, the annual pesticide report has been supplemented by the regular publication of control data from each quarter. The quarterly reporting comprises results from samples of fresh and frozen fruit and vegetables as well as cereals – both conventionally and organically grown. The National Food Institute, Technical University of Denmark, prepares and publishes the quarterly reports on the web site of the institute.

A risk assessment by the National Food Institute was performed for all findings above the MRL. It was concluded in all cases that there was no risk for the consumers except for six samples (see above). In addition, all samples, where more than one pesticide residue were found, were evaluated using the Hazard Index method, using the sum of each residue in relation to the ADI and ARfD, respectively, taking into account the estimated consumption of the sample commodity for an adult and a child. For all samples taken in 2019 with multiple residues, it was concluded that the residues were not expected to result in any risk for the consumer.

In 2019, samples were taken according to Regulation (EU) 2017/660 of 6 April 2017. The requirements for analysed number of samples were fulfilled for all commodities in the 2019 EUCP.

Table 36: The Danish summary table for the EUCP commodities

EUCP Commodity	Number
Apples	62
Barley grains	8
Cow mik	21
Peaches/nectarins	46
Cabbages	17
Tomatoes	54
Lettuces	46
Spinaches	8
Oat grain	17
Pig fat	12
Strawberries	5
Wine	56
Total number of samples	352

9. Estonia

9.1. Objective and design of the national control programme

Veterinary and Food Board (VFB) is a competent authority for food safety and is responsible for drawing up the pesticide residue monitoring programme which contains two parts. One is the coordinated multiannual control programme of the Union (a legal requirement from Commission Implementing Regulation No 2018/555 that gives the list of commodities and pesticide residues to be analysed and the number of samples to take for year 2019. Another part of the pesticide residue monitoring programme is the national control programme. National control programme contains commodities important for local consumption, commodities where the MRL-s were exceeded in previous years also commodities reported in EFSA report as problematic products, commodities stated to be organic (to control if they are free of residues). Due to reduction of financial resources it is not always possible to include these commodities into sampling plan every year.

In 2019 VFB took 249 samples. 40 different food commodities were analysed.

9.2. Key findings, interpretation of the results and comparability with the previous year results

In 2019 there were one case of MRL exceedance. The matrixes, where the exceedance was detected are oranges. Additionally, there was pesticide residue detected in one case of organic potatoes. During previous years there have been infringements with broccoli, apricots, sweet peppers, peaches, table grapes, beans, spinach, strawberries, apples, rice, tea, tomato, pomelo, kiwi, cultivated fungi, pomegranate and grapefruit.

The level of non-compliant samples (results above MRL after taking into account the measurement uncertainty) has stayed in low level. In 2010 it was 2,1% of samples, in year 2011 this number decreased to 0,7% out of all samples and in year 2012 the number of non-compliant samples was one (0,4% out of all), in 2013 this number was 2,6% of all samples, in 2014 the number of non-compliant samples was 4 (1,4% of all samples), in 2015 there were 6 non-compliant samples (1,8% of all samples), in 2016 there were 1 non-compliant sample (0,3% of all samples), in 2017 there were 3 non-compliant samples (0,9% of all samples), in 2018 there were 4 non-compliant samples (2% of all samples) and in 2019 there were 2 non-compliant samples (0,8% of all samples).

The overall percentage of samples with no residues have stayed in the range of 40% to 60% over the years. In year 2010 this number was 152 samples (53,1%) out of 286, in year 2011 the number was 175 samples (65,3%) out of 268, in year 2012 the number was 146 samples (51,9%) out of 281, in 2013 this number was 137 samples (51,1%) out of 268, in 2014 the number was 168 samples (60,0%) out of 280, in 2015 the number of samples with no residues detected was 223 (68,1%) out of 327 samples, in 2016 the number of samples with no resides detected was 227 (67,4%) and in

2017 the number was 202 samples (60,5%). In 2018 the number of samples with no resides detected was 91 (47%) out of 195 samples and in 2019 the number of samples with no resides detected was 114 (46%) out of 249 samples. The increase of the samples with no residues detected was caused by a larger amount of organic food samples in 2015-2017 taken by AB in the national control program.

Since 2018 Estonia does not report samples data taken by Agricultural Board (AB). For AB taking samples is part of the supervision of compliance of using plant protection products at primary production level mostly before harvesting (they are taking samples from field) and contains the most cultivated crops. AB is also taking samples to control the cultivated crops compliance of organic production. Comparing to VFB, who is taking samples from food and the sampling points cover different food handling steps from the primary production after harvesting to the wholesale and retail. VFB is taking samples that are defined in coordinated multiannual control programme of the Union, national sampling programme and samples taken during the import controls at the EU border.

The total number of samples analysed, number of samples with no detected residues, number of samples with detected residues above the LOQ and below or equal to MRL (including the results above MRL after taking into account the measurement uncertainty) and the number of samples with residues above MRL since year 2010 is represented in the **Error! Reference source not found.**.

Table 37: Summary results

Sampling year	Total number of taken samples	The percentage of samples with no residues	Residues detected > LOQ and ≤ MRL level	Residues > MRL level
2010	286	53.1%	44.8%	2.1%
2011	268	65.3%	34.0%	0.7%
2012	281	51.9%	47.7%	0.4%
2013	268	51.1%	46.3%	2.6%
2014	280	60.0%	38.6%	1.4%
2015	327	68.1%	30.1%	1.8%
2016	337	67.4%	32.3%	0.3%
2017	334	60.5%	38.6%	0.9%
2018	195	47%	51%	2.0%
2019	249	46%	53.2%	0.8%

9.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

Table 38: Actions taken

Action taken	Number of non-compliant samples concerned	Comments
Rapid Alert Notification	1	1 sample (lot) of oranges
Other follow-up investigations to identify reason of non-compliance or responsible food business operator	1	1 sample (lot) organic potato

Table 39: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Phenthoate/oranges	1
Reason unknown	Acetamiprid /pomegranate Dodine/ pomegranate	1 1

(a): Number of cases
(b): Applicable only for food products produced in the EU

9.4. Actions taken

In 2019, 0,4% of samples (1 sample in total) were foun to be non-compliant with te EU MRLs. For 1 sample RASFF notifications were issued.

Table 40: Actions taken

	Action taken	Number of non-compliant samples concerned	Comments
Rapid Alert Notification		1	
Lot recalled from the market		1	Lot have been already consumed before the analytical result was available

9.5. Quality assurance

According to Regulation No 882/2004 (since 14.12.2019 according to Regulation No 2017/625) the competent authority shall designate laboratories that may carry out the analysis of samples taken during official controls. And designated laboratories are assessed and accredited in accordance with the EN ISO/IEC 17025 on "General requirements for the competence of testing and calibration laboratories". The laboratories are accredited by the Estonian Accreditation Centre (EAK) and designated by Veterinary and Food Board for all analytical methods (and pesticide residues within these methods) used for official control of pesticide residues in food.

EC guideline SANTE/11813/2017 "Guidance document on analytical quality control and method validation procedures for pesticide residues and analysis in food and feed" was implemented.

There are two accredited and designated laboratories analyse pesticide residues: Tartu Laboratory of Estonian Health Board (HB) and Agricultural Research Centre Laboratory for Residues and Contaminants in Saku (ARC) (Actions taken).

HB analyses commodities of animal origin and non-animal origin. ARC analyses commodities of non-animal origin.

In 2018 HB and ARC was participating in the pesticide residues control program. They analyse the pesticide residues in the food samples that was taken by Veterinary and Food Board.

Table 41: Laboratories participation in the national control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
Estonia	Laboratory for Residues and Contaminants, Agricultural Research Centre	L003	Since 18.06.1996	EAC – Estonian Accreditation Centre	2019: EURL/NRL EUPT-CF13 EURL/NRL EUPT-FV-21 EURL/NRL EUPT-FV-SC02
Estonia	Tartu Laboratory of Estonian Health Board	L019	Since 28.12.1999	EAC – Estonian Accreditation Centre	2019: EUPT-FV21 EURL PT AO14 EU PT SRM 14

10. Finland

10.1. Objective and design of the national control programme

The Finnish pesticide residue control programme is coordinated by Finnish Food Authority and carried out in collaboration with Finnish Customs, National Supervisory Authority for Welfare and Health (NSAWH, Valvira) and municipal food control authorities (Figure 3).

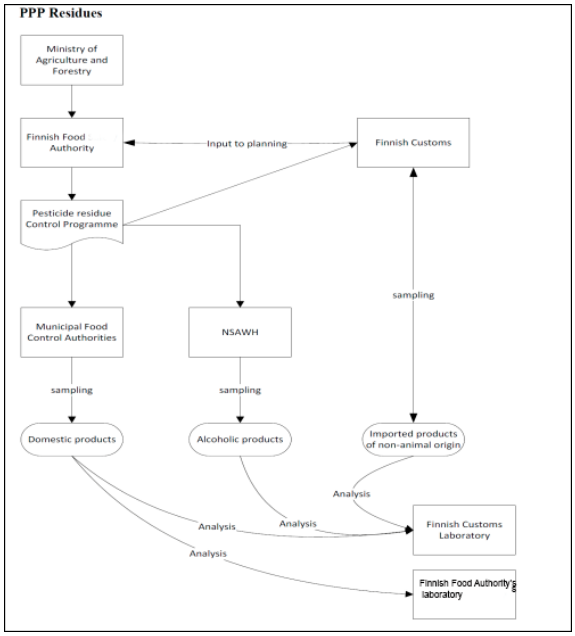


Figure 3: Control system of pesticide residues in Finland

10.1.1. Objective

The objective of the annual pesticide residue control plan is to monitor and verify that foods do not contain residues of unauthorised pesticides and that the levels of residues for authorised pesticides do not exceed the MRLs.

10.1.2. Design

The control programme is comprised of two strategies: 1) surveillance of products of plant and animal origin randomly sampled for the presence of pesticide residues; and 2) enforcement of specific pesticide residue legislation (e.g. when targeting of samples with a history of non-compliances and commodities is listed in Regulation (EC) No. 2019/1793 for pesticide residues).

The control programme consists of two parts: the EU coordinated multiannual control programme (EUCP, Commission Regulation (EU) No. 2018/555) and separate, national control programmes of the above-mentioned authorities based mainly on the dietary intake patterns of Finnish consumers as well as on the relevance of the national agricultural production.

Defining out food products to be analysed in the control programme
When defining the food products to be analysed in the control programmes special importance was given to the factors listed below:

- EU Commissions Regulation concerning a coordinated multiannual control programme of the Union ((EU) No 2018/555);
- relevance of a food product in national dietary patterns and in the national agricultural production;
- food products with a high non-compliance rate identified in the previous years;
- high RASFF notification rate;
- organic or conventional products;
- origin of the food product (e.g. domestic, EU, third countries);
- co-operation possibilities in sampling with different contaminant projects and organic control programme;
- needs of the national risk assessment projects.
- Defining the pesticides to be included in the control programme
- For defining pesticides that should be included in the control programme the following aspects were taken into consideration:
- pesticides listed in the Regulation concerning a coordinated multiannual control programme (included as far as possible),

- RASFF notifications for a pesticide and frequency of pesticide findings in the EU monitoring reports.
- use pattern of pesticides: commonly used pesticides as well as pesticides that are known to leave residues in foods,
- pesticides that are authorized for use in Finland (when relevant),
- toxicity of the active substances; e.g. many toxic organophosphate compounds which are not commonly used anymore are still included (they may occur in samples originating from the developing countries),
- cost of analysis: multiple residue methods are preferred, as the cost of analysis in case of single residue methods is higher; if several single residue analyses are performed the total number of samples to be analysed is decreased,
- capacity of the labs: single residue methods are run as required by the EU coordinated programme and a limited number of other samples; instrument and personnel capacity in the laboratories is limiting the number of single residue analyses.

10.2. Key findings, interpretation of the results and comparability with the previous year's results

10.2.1. Key findings

The sampling for pesticide residue control programme was carried out in accordance with the plan of 2019. The summary of samples and their results are presented in (**Error! Reference source not found.**-**Error! Reference source not found.**). In general, the results presented in this report include data from Finnish Food Authority and the Finnish Customs submitted successfully to EFSA Data Warehouse (DWH).

Table 42: Summary of samples taken in 2019 by product class

Samples	Total	Without Residues	%	With Residues below MRL	%	Exceeding MRL	%	Non-Compliant	%
Cereals	149	107	71.8	30	20.1	12	8.1	6	4.0
Baby food	8	86	100	0	0	0	0	0	0
Vegetables	459	264	57.5	191	41.6	4	0.9	2	0.4
Fruits, nuts and other plant products	694	330	47.6	337	48.6	27	3.9	10	1.4
Animal products[(a)]	24	24	100	0	0	0	0	0	0
Processed products*	341	225	66	96	28.2	20	5.9	9	2.6
Total[(b)]	**1,753**	**1,036**	**59.1**	**654**	**37.3**	**63**	**3.4**	**27**	**1.5**

(a): Cow's milk and swine fat as regulated in (EU) 2018/555)

(b): Including herbs, spices and similar and alcoholic beverages

Reporting system could not classify 14 samples analysed by Customs Laboratory

***Percentages calculated from sum of classified samples, total 1,753

Additionally, 181 other samples of animal origin were analyzed for pesticide residues as part of the National Residue Control Programme (NRCP) based on the on COUNCIL directive 96/23[4]. No pesticide residues exceeding MRLs were found.

Table 43: Summary of the number of samples taken, MRL exceedances and non-compliances in 2019 by region of origin

Origin	Samples	%	Exceeding MRL	%	Non-compliant	%
Domestic	140	8	0	0	0	0
EU	816	46,8	11	17,5	2	7,4
Third countries	732	42,0	52	82,5	25	92,6
Unknown	55	3,2	0	0	0	0
Total	**1,743**	**100**	**63**	**100**	**27**	**100**

Table 44: Summary of organic samples taken in 2019 by product class and results

Samples	Total	Without residues	%	With Residues below MRL	%	Exceeding MRL	%	Non-compliant	%
Fruits and nuts, and other plant products	76	75	98.7	1	1.3	0	0	0	0
Vegetables	37	37	100	0	0	0	0	0	0
Cereals	174	174	100	0	0	0	0	0	0
Baby food	0	0	0	0	0	0	0	0	0
Animal products	0	0	100	0	0	0	0	0	0
Other plant products	8	8	100	0	0	0	0	0	0
Total	**295**	**294**	**99.7**	**1**	**0.3**	**0**	**0**	**0**	**0**

10.2.2. Interpretation of the results

The total number of samples analysed under the EU coordinated and national programmes was 1743, which is about 44 % more than previous year. The distribution of all the samples by origin was domestic 8 %, EU 47 % and third countries 42 %. Actually, the percentage of the samples originate in third countries was greater, as some sampled products have arrived through other Member States and are therefore classified as samples of EU origin.

41 % of all samples had residues of one or more pesticide active ingredients. Exceedances of MRLs were found in 63 samples, of which 27 were non-compliant (measurement uncertainty taken into consideration; number including surveillance and enforcement samples). The total percentage of non-compliances (1,5 %) is a bit less than previous year (3,2 %).

The non-compliant lots originated from 11 different countries. Highest number of non-compliances were in products from India (5 samples) and Pakistan (5 samples), followed by Turkey (4 samples) and Taiwan (4 samples).

The number of samples above MRL was highest in the food group fruits, nuts and other plant products (27 samples) followed by processed products (20 samples) and cereals (12 samples).

The product with highest number of MRL-exceedances was rice grain (5 samples) followed by grapefruits (3 samples) and tea leaves (3 samples).

No residues were detected in any of the analysed baby foods or animal-based products (swine fat and cow's milk analysed as a part of the NRCP based on the COUNSIL directive 96/23).

In addition to 1743 samples, total of 295 samples from organic production were analysed. One of them had residues above reporting level. Residue levels didn't exceed MRLs set for conventional farming.

10.2.3. Comparability with the previous year results

Table 45: Summary of the results of pesticide residue control programme results in Finland during 2011-2019[15]

Year	Samples	Without residues (%)	With residues (%)	Number of samples exceeding MRL	Number of non-compliant samples
2019	1753	59	41	63	27
2018	1217	47	53	70	38
2017	1664	64	36	84	51

[15] The data represents only the results successfully submitted to EFSA DWH from years 2011-2017 and 2019, and from year 2018 the original data from Customs Laboratory and data submitted to EFSA DWH from Finnish Food Authority.

Year	Samples	Without residues (%)	With residues (%)	Number of samples exceeding MRL	Number of non-compliant samples
2016	1969	57	43	65	37
2015	2088	55	45	55	35
2014	2383	54	46	126	49
2013	2408	49	51	117	63
2012	2243	48	52	66	31
2011	2104	47	53	54	22

10.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

10.3.1. Possible reasons for non-compliant samples

No domestic samples were found non-compliant.

The reasons for non-compliant samples from import control mainly remain unknown. As the highest proportion of non-compliant samples occur in products from third countries, possible reasons might be the use of a pesticide on food imported from third countries for which no import tolerance was set, and GAP not respected: use of a pesticide not approved in the EU.

10.3.2. ARfD exceedances

The acute reference dose (ARfD) calculated according the pesticide residue intake model (PRIMo) of the European Food Safety Authority EFSA was not exceeded in any of the samples. However, for one non-compliant lot of green tea from China no toxicological data was available, and recall was made.

10.3.3. Actions taken

In 2019, 1,55 % of the samples (27 samples in total) were found to be non-compliant with the EU MRLs. For 10 samples RASFF notifications and for 4 organic samples OFIS notifications were issued.

For all non-compliant samples detected, effective and appropriate actions were taken in order to protect the European consumers (**Error! Reference source not found.**).

Table 46: Actions taken for samples non-compliant with the EU MRLs

Action taken	Number of non-compliant samples concerned	Comments
Rapid Alert Notification	10	Number of RASFFs notified by Finland for pesticide residues
OFIS notifications	6	Four INEU OFIS notifications and two INTC OFIS notifications
Lot recalled from the market	1	
Lot withdrawn from the market	7	Additionally, 6 lots already consumed before the analytical result was available
Rejection of a non-compliant lot at the border	20	
Warnings to responsible food business operator	32	
Marketing as organic prohibited	1	

10.4. Quality assurance

All the laboratories conducting the official analyses of pesticide residues were accredited according to ISO-17025, have routine quality assurance activities and participate regularly in proficiency tests regarding their expert opinion (**Error! Reference source not found.**).

Table 47: Laboratories participating in the national control programme

Country	Laboratory		Accreditation		Participation in proficiency tests or interlaboratory tests
	Name	Code	Date	Body	
FI	Finnish Customs Laboratory	FI01	17 January 2020	FINAS-Espoo, Finland	EUPT-FV21, EUPT-CF13, EUPT-FV-SM11, EUPT-FV-SC03, Bipea 09-2619
FI	Finnish Food Authority	FI03	8 April 2020	FINAS-Espoo, Finland	EUPT-SRM14, EUPT-AO14, EUPT-CF13, EUPT-FV21, FAPAS 09127, FAPAS 19275

10.5. Processing factors

The processing factors used by national competent authorities to verify the compliance of processed products with EU MRLs are presented in **Error! Reference source not found.**.

Processing factors for processed products were mainly acquired from the database of Bundesinstitut fur Risikobewertung (BfR). In the cases were processing factors were not available in the database, the crude estimate based on **Error! Reference source not found.** was used.

Table 48: Processing factors used to verify the compliance of processed products

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor[(a)]	Comments
All pesticides	Fresh herbs	Dried herbs	10	factors are used for first
All pesticides	Fresh vegetables	Dried vegetables	10	estimation, in case of
All pesticides	Fresh fruits	Dried fruits	5	non-compliance, more detailed information is requested from the stake holder
All pesticides	Rice	Polished rice	0.5	

(a): Processing factor for the enforcement residue draft.

10.6. Additional information

In this national summary report the data from Finnish Food Authority and Finnish Customs Laboratory successfully submitted to EFSA Data Warehouse (DWH) (100 % of the samples). In the following years further, developments will be made to improve the efficacy of the data submission system at the national level.

10.7. Note on confidentiality of certain control data submitted by the reporting country

Finland follows the common agreements made at the EFSA Network on Pesticide Monitoring on the confidentiality of certain control data submitted.

11. France

11.1. Objective and design of the national control programme

11.1.1. Objective

- DGCCRF

The General Directorate for Competition Policy, Consumer Affairs and Fraud Control (DGCCRF), within the Ministry of Economics and Finance, is the competent authority for the enforcement of pesticide residues monitoring on marketed food from non animal origin. The DGCCRF draws up the annual national monitoring programme for pesticide residues in and on fruits, vegetables, cereals and food originating from these products placed on the market. The aims of this programme are to ensure the protection of consumers, and to prevent from any fraud or unfair commercial practice.

- DGAL

The General Directorate for Food (DGAL), within the Ministry of Agriculture and Food, is the competent authority for the enforcement of pesticide residues monitoring in primary plant products (samples collected from crops harvested by farmers, relating, therefore, only to domestic production). The aim of this programm is to identify non compliance use of plant protection products in targeted crops selected after a national and regional risk analysis (national "control" programme), and to be able to assess the levels of residue in any given crop (national "surveillance" programme).

DGAl also implements a national control programme for monitoring pesticide residues in food of animal origin (samples collected on farms or at the slaughterhouse). The aim of this programme is to identify non-compliant uses of pesticides (notably insecticides) in animals or excessive exposures of food producing animals to plant protection products that would lead to excessive concentrations of residues in products of animal origin and therefore excessive exposure of the consumer.

Regarding chlordecone, the DGAL implements surveillance and control plans on food of animal origin and primary plant products as well as on animal feed and soil. These plans are part of a global national chlordecone actions plan that have been put in place in response to the strong concerns expressed by the population concerning the effects of pollution by the chlordecone which constitutes, by its scale and its persistence over time, a health, environmental, economic and social issues in Martinique and Guadeloupe. The aim of this program is, on the one hand, to assess the prevalence of chlordecone in these food and feed and, on the other hand, to detect non-conformities, bad practices and fraud and thus to limit consumer exposure.

11.1.2. Design

- DGCCRF

The national pesticide monitoring is conducted according to a nation-wide sampling. The monitoring programme is based on data concerning dietary consumption, national agricultural production and import of fruits, vegetables cereals and food originating from these products. It takes into account the results of previous monitoring programmes as well as the analytical possibilities.

The programmes cover three strategies of sampling called "surveillance" for random samplings (notably implementing the European coordinated programme), "control" for targeted samplings (based on strong suspicion of non-compliance or on specific concerns, such as the presence of chlordecone in vegetable-roots) and "samplings within the framework of regulation No (EC) 2019/1793".

The national plan takes into account:

- The level of risk exposure (calculated according to the frequency of detections of active substances, balanced with matrices of consumption in France and the existence of chronic and acute risks affecting various population categories),
- The observations of non-compliance from the previous years,
- The MRL modifications and changes in the scope of phytopharmaceutical products approved in the European Union or authorised in France (authorisations and withdrawals).

In addition to the samplings initially planned, further products can be analysed in case of RASFF alerts or if a non-compliance had been noticed.

Samples are taken from all stages of the supply chain, but they are taken more often by the responsible of placing the products on the market (wholesaler, importer).

The samplings cover raw and transformed products as well as organic, non-organic and "pesticide-free" labelled products. They are, for surveillance purposes, representative of the national consumption, in particular in terms of origin and agriculture systems.

Samples are taken by experimented inspectors from local services (departments) of the DGCCRF, in compliance with the Commission Directive 2002/63/EC[4].

Analyses are performed by four official laboratories from the SCL network. Two of these laboratories are located overseas and deals mainly with local productions. The two others analyse all types of plant commodities available on the French market, including raw and transformed products.

Up to 618 substances (part of sums included) are sought in samples. The multi-residues method used the "Quechers" method (NF EN 15662), combined with GC-MS(/MS), LC-TOF and LC-MS/MS. Single residue methods are used for specific substances (dithiocarbamates, bromide, glyphosate, ethephon, chlormequat, mepiquat, chlordecone, maleic hydrazide) following the recommendations of the European reference laboratories.

- DGAL
    - Control of primary plant products (**Error! Reference source not found.** and **Error! Reference source not found.**)

The samples are analysed by eight laboratories, two of which belong to SCL (Network of Laboratories run by DGCCRF). The other six are private laboratories approved by the Ministry of Agriculture as official laboratories. Their approval is based on the laboratories being accredited to conduct tests on pesticide residues provided by the competent authorities and on their participation in the inter-laboratory aptitude tests, organized by EU Reference Laboratories.

The samples are taken by the regional departments of the DGAl (DRAAF), in compliance with Directive 2002/63 EC requirements, transposed into French law by an order of 12 September 2002, relating to plant products affected by MRL, as set out in Appendix I of Regulation (EU) No. 396/2005.

The "control" programme is based on a risk assessment, which takes account of the following factors:

- Results from previous national "control" and "surveillance" plans conducted by DGAl and DGCCRF,
- Chronic and acute risk exposure data, calculated by EFSA from the results of the European monitoring programme;
- The latest scientific and technical recommendations from ANSES (National Agency for Food Safety, Environment and Labour) on the number of samples per crop and the pesticides to be tested in order to evaluate consumer exposure;
- Notifications to RASFF regarding plant products of EU provenance;
- MRL modifications affecting phytopharmaceutical products authorised in France;
- Changes in the use of phytopharmaceutical products authorised in France (authorisations and withdrawals);
- The importance of cultures in national plant products and their geographical distribution nation-wide.

This "control" programm is also establish in order to sample, in a multi-annual programm of 3 years, the first 70 cultures which production is the most important in France.

The 2019 "surveillance" programme was aimed at late harvest apples, cucurbit with non-comestible peel, sunflower and corn (grain and seed), different kind of cabbages and also watercress, spinach, leek, lettuce, rocket, radish, artichoke and aromatic plants.

In addition to these samples taken as part of the control and surveillance plans, further samples may be taken from any matrix if non-compliance of a product is suspected.

The eight laboratories are accredited by the French Accreditation Committee (COFRAC) to ISO 17025 standards, enabling them to conduct tests on pesticide residues in fruits and vegetables. Accreditation for multi-residue methods is relatively difficult and expensive, as it involves the validation of each pesticide and class of matrix. However, the scope of the accreditation focuses on the most frequently found or relevant residues.

The Quechers method is used by all laboratories. However, in the case of highly specific or targeted tests, samples may be sent to laboratories recognised by COFRAC as being competent for certain methods and approved by the French Ministry of Agriculture.

Official tests are governed by health guidelines 11945/2015 of November 30 and December 1 2015 relating to analytical quality control and method validation procedures for testing pesticide residues in food for humans and animals.

Table 49: Distribution of samples by culture (detail by plant product) - national "control" programme

Plant products	Number of samples taken	Plant products	Number of samples taken
Asparagus	28	Pineapple	13
Aubergine	2	Plantain	12
Barley	10	Potato	25
Basil	1	Radish	26
Blackberry	1	Rapeseed	39
Blackcurrant	8	Raspberry	8
Blueberry	7	Red beetroot	1
Broccoli	21	Redcurrant	4
Buck wheat	11	Rice	3
Carrot	29	Rye	27
Celeriac	25	Savory	2
Celery	1	Shallot	3
Cherry	23	Sorghum	18
Chives	3	Spinach	32
Coriander	2	Sugar beet	31
Cythere Plum	4	Sweet corn	5
Dragon Fruit	5	Sweet pepper	18
Garlic	18	Sweet potato	7
Kiwi	32	Table grape	10
Lamb's lettuce	29	Table olive	3
Leek	24	Tangor	4
Lemon	1	Tarragon	1
Mandarin	9	Taro	3
Manioc	8	Thyme	1
Melon	40	Triticale	3
Mushroom	13	Turnip	15
Oil olive	26	Verbena	1
Orange	10	Wheat	62
Parsley	15	Wine grape	51
Peach	1	Yam	5

Table 50: Distribution of samples by culture (detail by plant product) - national "surveillance" programme

Product group	Plant product	Number of samples taken
Aromatic plants	Aromatic plants	37
Artichoke	Artichoke	7
Cabbages	Cabbages	69
	Corn (seed)	31
Cucurbit	Amaranthus blitum	1
	Courgette	2
	Cucumber	4
	Squash	36
	Watermelon	5
Late harvest apple	Late harvest apple	14
Leek	Leek	6
Lettuce	Lettuce	13
Radish	Radish	5
Rocket	Rocket	8
Salad (others)	Salad (others)	7
Spinach	Spinach	3
Sunflower (grain)	Sunflower (grain)	21
Watercress	Watercress	13

- Control of animal origin products (except the specific control program for chlordecone)

The samples are taken by inspectors from the departmental services of the DGAl (DD(CS)PP), in compliance with Directive 96/23/CE, Commission Implementing Regulation (EU) 2018/555, Decision 97/747/CE and Directive 2002/63 EC requirements.

Sampled products are raw and unprocessed, organic and non-organic products. They are taken at the production stage of the food chain, i.e. at the slaughterhouse or at the farm level. Milk samples are also taken at the level of the dairy industry before the bulk tanker is discharged and eggs samples are carried out partly on hens reared exclusively in buildings (on the ground or in cages) and partly on outdoor hens and / or organic.
In honey, the target analytes are: Bromopropylate, Chlorfenvinphos, Coumaphos, Fluvalinate, Amitraz, Acetamipride, Clothianidine, Thiacloprid, Imidacloprid and Thiamethoxam.

In the other products of animal origin, the target analytes are amongst aldicarbe, aldicarbe sulfone, aldicarbe sulfoxyde, Aldrine, Aldrine + Dieldrine, Azinphos éthyl, Bifenthrine, carbofuran, carbofuran 3OH, "Carbofurane [somme du carbofurane (y compris le carbofurane provenant de carbosulfane, de benfuracarb ou de furathiocarbe) et du 3-hydroxy-carbofurane, exprimée en carbofurane]", Chlordane (cis- + trans- + oxy-chlordane), Chlordane cis, Chlordane oxy, Chlordane trans, Chlordécone, Chlorothalonil, Chlorpyriphos éthyl, Chlorpyriphos méthyl, Cyfluthrine, Cyhalothrine lambda, Cyperméthrine (somme des isomères), DDT (pp'DDT + op'DDT + pp'DDE + pp'TDE (DDD)), Deltaméthrine (cis-deltaméthrine), Diazinon, Dicofol (p, p'-dicofol + o,p'-dicofol), Dieldrine, Diflubenzuron, Disulfoton, Disulfoton + sulfoxide + sulfone, Disulfoton sulfone, Disulfoton sulfoxide, Endosulfan (alpha- + beta- + endosulfan-sulphate), Endosulfan alpha, Endosulfan beta, Endosulfan-sulphate, Endrine, Fenthion, Fenthion oxon, Fenthion oxon sulfone, Fenthion oxon sulfoxide, Fenthion sulfone, Fenthion sulfoxide, Fenthion+oxygene+sulfoxide+sulfone, Fenvalerate (quel que soit le rapport entre les isomères constitutifs (RR, SS, RS et SR), y compris l'esfenvalérate), Fenvalérate et Esfenvalérate RS et SR, Heptachlore, Heptachlore + Heptachlore époxyde, Heptachlore époxyde, Hexachlorobenzène, Hexachlorocyclohexane alpha, Hexachlorocyclohexane bêta, Hexachlorocyclohexane gamma (Lindane), Méthacrifos, Méthidathion, méthomyl, Methomyl et Thiodicarb (somme de methomyl et thiodicarb, exprimé en methomyl) Méthomyl + Thiodicarbe, Methoxychlor, o,p'-dicofol, op'DDT, p, p'-dicofol, Paraoxon-methyl, Parathion ethyl, Parathion-methyl, Parathion-methyl + Paraoxon-methyl, Pendimethalin, Perméthrine (somme des isomères), Perméthrine cis, Perméthrine trans, Phorate, Phorate +Phorate oxon + phorate sulfone, Phorate oxon, Phorate sulfone, Pirimiphos méthyl, pp'DDE, pp'DDT, pp'TDE (DDD), Profenofos, Propoxur, Pyrazophos, Teflubenzuron, Thiodicarbe and Triazophos.

According to the Commission Implementing Regulation (EU) 2018/555, new analytes were added to the list of analytes above:

- glyphosate and fipronil in cow's milk,
- fipronil in hens' eggs

The samples for this analytes are analyzed by the National Refrence Laboratory (Anses Maisons-Alfort). The samples (except honey) are analyzed by one the ten laboratories of the laboratory network. This network consists in the National Reference Laboratory (Anses Maisons-Alfort) and nine laboratories approved by the Ministry of Agriculture as official laboratories. Their approval is based on the laboratories being accredited to conduct tests on pesticide residues provided by the competent authorities and on their participation to the inter-laboratory aptitude tests, organized by the European Reference laboratory.

Honey is analyzed by one specific National Reference Laboratory (Anses Sophia-Antipolis) for both diagnostic and confirmation (at the last inter-laboratory aptitude test performed in 2015, the lab obtained satisfactory results).

All these laboratories are accredited by the French Accreditation Committee (COFRAC) to ISO 17025 standards, enabling them to conduct tests on pesticide residues in food of animal origin.

In 2019, as part of DGAL's control programme for food of animal origin, 1585 samples (not counting samples analysed for chlordecone specifically) were taken and analysed out of 1633 samples planned (**Error! Reference source not found.**).

Table 51: Distribution of samples by animal species or type of products

Animal species or type of products	Matrice	Number of samples planned in 2019	Number of samples taken in 2019
Bovine	Kidney fat	349 for organochlorine (OC), organophosphorus (OP) pesticides and pyrethroids (Pyr)	335 for organochlorine (OC), organophosphorus (OP) pesticides and pyrethroids (Pyr)
	Muscle	50 for carbamates	49 for carbamates
	Cow milk	70 for OC, OP & Pyr, 70 for glyphosate and 70 for fipronil	67 for OC, OP & Pyr, 67 for glyphosate and 66 for fipronil
Porcine	Kidney fat	350 for OC, OP & Pyr	342 for OC, OP & Pyr
	Muscle	50 for carbamates	49 for carbamates
Ovine and caprine	Kidney fat	99 for OC, OP & Pyr	93 for OC, OP & Pyr
	Goat milk	15 for OC, OP & Pyr	17 for OC, OP & Pyr
Equine	Kidney fat	5 for OC, OP & Pyr	5 for OC, OP & Pyr
Poultry	Muscle and skin	245 for OC, OP & Pyr + 5 for carbamates	244 for OC, OP & Pyr + 5 for carbamates
Rabbit	Muscle	10 for OC & Pyr	10 for OC & Pyr
Farmed game	Muscle	5 for OC & Pyr	2 for OC & Pyr
Aquaculture	Muscle	40 for OC, OP & Pyr	39 for OC, OP & Pyr
Hens eggs	Eggs	70 for OC, OP & Pyr et 70 for fipronil	69 for OC, OP & Pyr et 74 for fipronil
Quail eggs	Eggs	10 for OC, OP & Pyr	7 for OC, OP & Pyr
Honey	Honey	50 (pesticides listed above)	45 (pesticides listed above)

For each specific animal species or type of products, the number of samples defined at the national level was distributed amongst departments according to their local production and based on a local risk analysis.

- Surveillance and control of chlordecone in animal and plant origin products

The analyte sought is chlordecone on foodstuffs of animal origin derived from:

- bovine supply chains (perirenal fat and liver);
- ovine-caprine (perirenal fat);
- porcine (perirenal fat);
- equine (perirenal fat);
- egg products (chicken egg);
- poultry (muscle);
- in fishery products (flesh);

It is also sought after in foodstuffs of plant origin intended for human and animal consumption and soil.

The samples are taken at the production stage (primary production) of the food chain, i.e. at the slaughterhouse or at the farm level but also at the distribution step or in farm, according to the matrix considered. These samples are taken by food, agriculture and forestry department of Guadeloupe and Martinique.

The samples are analyzed by one of the four laboratories of the laboratory network. These four laboratories are approved by the Ministry of Agriculture as official laboratories.

In 2019, as part of DGAL's control programme for food of animal origin, 3951 samples were taken and analysed (**Error! Reference source not found.**).

Table 52: Distribution of samples by animal species or type of products

2019	Guadeloupe	Martinique
Animal species or type of product	**Number of samples taken in 2019**	**Number of samples taken in 2019**
Bovine	1493	895
Fish product	318	594
Ovine-Caprine	33	90
Swine	226	40
Equine	-	-
Poultry	18	130
Egg	23	91
TOTAL	2111	1840

In 2019, as part of DGAL's control programme for primary plant products and soil, 492 samples were taken and analysed (**Error! Reference source not found.**).

Table 53: Distribution of samples by products

2019	Guadeloupe	Martinique
	Number of samples taken in 2019	**Number of samples taken in 2019**
Plants	52	255
Soils	29	156
TOTAL	81	411

11.2. Key findings, interpretation of the results and comparability with the previous year results

11.2.1. Key findings

- DGCCRF

In 2019, 6,039 samples of marketed food from plant origin have been analysed. This represented 9 samples per 100,000 inhabitants.

The majority of the 6,039 samples were of French origin (52%). Among them, 19% have been taken in overseas France. 36% of the all samplings originated from Third Countries, and 12% were products from the European Union.

For import control, the sampled came from 10 countries: Kenya (267 samples), China (188), Dominican Republic (135), Viet Nam (70), India (24), Turkey (7), Egypt (6), Thailand (5), Uganda (3), and Malaysia (1). The main contributors were Kenya (267 samples), Dominican Republic (134), and India (22), for vegetables, and Viet Nam (51), for fruits.

The samples were distributed as follows:

- 49.7% vegetables and vegetable products [59.9% in the control programme, 66.6% of the controls on imports],

- 23.7% fruits and fruit products [27.3% in the "surveillance" programme, 7.8% of the controls on imports],

- 10.6% cereals and cereal products [24.9% of the controls on imports],

- 5.0% teas, coffee, herbal infusions, cocoa and carobs,

- 4.4% wines,

- 2.1% oilseeds and oil fruits,

- 1.2% pulses,

- 0.8 spices,

- 0.6 babyfood,

- 0.3% honey,
- 0.2% suger plants,
- 1.4% other products.

More than 90 distinct type of products were analysed among vegetables and vegetable products and more than 60 among fruits and tree nuts.

Organic samples (1,121 samplings) were taken in every programme, from all origins and all types of products (raw and processed).

The main results are detailed in **Error! Reference source not found.**. The percentages of samples containing residues above the quantification limit, of samples exceeding the legally permitted MRLs or non-compliant with the MRLs depended on the monitoring programme. The highest rates were obtained for import control, three-quarters of the analysed samples containing at leats one residue above the limit of quantification (LOQ) and reaching a non-compliance rate of 13.3%.

At least one residue could be quantified in 34.4% of all the samples, with an exceedance of MRLs for 10.5% of them. When measurement uncertainty was taken into account, the number of samples containing pesticide residues above the MRL was significantly reduced, which led to a non-compliance rate of 4.9%.

Table 54: Summary results

Control programme	Number of samplings	% > LOQ[(a)]	% > MRL (before uncertainty)	% of non-compliance to MRL
"Surveillance"	3,625	34.0	6.5	2.3
Control	1,708	24.7	14.1	6.7
Control on imports	706	74.6	22.9	13.3
Total	6,039	34.4	10.5	4.9

[(a)]LOQ: limit of quantification

- DGAL
    - Control programme in primary plant products

As part of DGAL's control programme for pesticide residues in primary plant products, 840 samplings have been analysed. 22 were non-MRL compliant, after taking account of analytical uncertainty (i.e., 2.6 % of samples taken nation-wide, all cultures).

Table 55: Control programme 2019 – Main results

Compliant/Non-compliant	Number of samples
Compliant	818
Non-compliant	22
Total	840
Percentage of Non-compliance	2.6 %

    - Surveillance programme in primary plant products

As part of DGAL's surveillance programme for pesticide residues in primary plant products, 282 samplings have been analysed, 8 were non-MRL compliant, after taking account of analytical uncertainty (i.e., 2.8 % of samples taken nation-wide, all cultures).

Table 56: Surveillance programme 2019 – Main results

Compliant/Non-compliant	Number of samples
Compliant	274
Non-compliant	8
Total	282
Percentage of Non-compliance	2.8 %

- Control programme in products of animal origin (except for chlordecone)

Out of 1,585 samples taken and analysed, none were non-MRL compliant.

- Surveillance and control of chlordecone in animal origin products and primary plant products and soil

As part of DGAL's control programme for food of animal origin, 3951 samples were taken and analysed and 182 were non-MRL compliant (**Error! Reference source not found.**).

Table 57: Programme 2019 on food of animal origine – Main results

2019	Guadeloupe		Martinique	
Animal species or type of product	**Number of samples taken in 2019**	**Number of non-MRL compliant samples**	**Number of samples taken in 2019**	**Number of non-MRL compliant samples**
Bovine	1493	15	895	59
Fish product	318	40	594	22
Ovine-Caprine	33	0	90	0
Swine	226	0	40	0
Equine	-	-	-	-
Poultry	18	0	130	0
Egg	23	0	91	3
TOTAL	2,111	55	1,840	84

As part of DGAL's control programme for primary plant products and soil, 492 samples were taken and analysed and only 2 plants intended for human consumption samples were non MRL compliant (**Error! Reference source not found.**).

Table 58: Programme 2019 on primary plant products and soil – Main results

	Guadeloupe		Martinique	
2018	**Number of samples taken in 2019**	**Number of non-MRL compliant samples**	**Number of samples taken in 2019**	**Number of non-MRL compliant samples**
Plants	52	0	255	2 (1 on food and 1 on feed)
Soils	29	(beware: there is non MRL for chlordecone in soil, it represents a level of contamination)	156	(beware: there is non MRL for chlordecone in soil, it represents a level of contamination)
TOTAL	81		411	

11.2.2. Interpretation of the results

- DGCCRF

Almost half of the all samples (2,945 samples, representing 48.8% of all the samples) contained detectable residues. They were distributed as follows: 28.6 % for the "surveillance" samples, 10.2% for the control samples, and 9.9% for the control on imports. 24.4% of the sampled vegetables contained detectable residues, 13.6% of fruits, 4.4% of cereals and cereal products, 3.1% of the analysed teas, coffee, herbal infusions, cocoa and carobs, 1.7% of wines, and less than 1% for the other products. A mean of 3 detectable residues per sample was found, with a maximum number of 32 residues found in a mix of spices from China (only one residue exceeded the MRL despite measurement uncertainty), followed by 27 residues in an organic cumin sample from China (all the detected residues exceeding the MRL, mostly while taking into account the measurement uncertainty), and 23 residues in a sweet pepper from India (all the level being below the MRL without taking into account the measurement uncertainty). 1.4% of all the samples contained at least 10 detectable residues, and 42.0% contained 5 or less detectable residues.

Quantifiable residues were found in 2,075 samples (34.4%): the higest contribution came from the import controls (74.6% of all the samples).

In accordance with the sample distribution, the highest proportion of quantifiable residue-containing products were vegetables (21.0% of all these samples), fruits (12.2%), cereals and cereal-based processed food (3.6%), teas, coffee, herbal infusions, cocoa and carobs (2.6%), wines (1.2%), oilseeds and oil fruits (0.5%), pulses (0.3%) and spices (0.2%).

48 samples (0.8%) contained at least 10 residues exceeding the LOQ, with a maximum of 26 residues quantified in an organic cumin sample from China (among 27 detected residues, see above), 25 in a mix of spices from China (among 32 detected residues, see above), 21 in a sweet pepper from India (see above), and in a sweet pepper from Viet Nam (10 residues being non-compliant to the corresponding MRLs). 37.9% of all the samples exceeding the LOQ contained at least 5 quantifiable residues.

The "surveillance" samples showed, in 2019, the lowest percentages of MRL exceedance (6.5%) and non-compliance with the R396/2005 (2.3%).

The highest figures were obtained for import control, both in terms of samples containing residues above the LOQ (74.6% of the control on import samples) and samples exceeding the MRLs (22.9%), leading to a non-compliance rate of 13.3%. These high figures were linked to the specific targeting of commodities and importing countries with an identified risk of MRL exceedance, and could be, consequently, expected to be higher than the ones obtained for "surveillance" and control programmes. 66.6% of the control on imports samples were vegetables, 24.9% tea, 7.8% fruits. 84.8% of the control on imports, originating from all the targeted countries, exhibited detectable residues. On average, these samples contained 3.6 residues, and half of the samples contained 3 or more than 3 residues, with 29 samples containing between 10 and 32 residues. More than 80% of the non-compliant samples originated from 3 countries: Kenya (45.7%), Dominican Republic (22.3%) and China (20.2%). The main non-compliant products were beans with pods (from Kenya and Dominican Republic, 40.4% of the non-compliant samples), sweet pepper/bell peppers (from several countries, 21.3%), and tea from China (19.1%).

3,002 samples of vegetables, covering 95 distinct products or group of products, were analysed. Beans (12.5% of the vegetable samples), peppers (6.7%), cabbage (6.3%), eggplants (5.9%), tomatoes (4.0%), turnips (3.9%), sweet potatoes (3.6%), yams (3.5%), shallots (3.4%), Brussels sprouts (3.0%) were the main sampled products. Half oh the analysed vegetable were taken in the "surveillance" programme, 33.9% in the control programme and 15.6% controlled on imports.

The analysed vegetable contained an average of 2.8 residues. 20 samples showed 10 and more residues with a maximum of 23 residues found in a sample of peppers from India (no residue being above the MRLs without measurement uncertainty).

1,270 samples contained at least one quantifiable residue (42.3% of the analysed vegetables, 21.0% of all the samples).

311 samples exceeded the MRLs without taking into account the measurement uncertainty, leading to 180 cases of non-compliance, for 32 distinct products. The highest rates of non-compliance were found for beans with pods (22.7% of the non-compliant samples of vegetable; 1.4% of the analysed vegetable), chilli peppers (10.5% of the non-compliant samples of vegetable), and cassava roots (9.9%). 38.7% of the non-compliant samples were taken within each control programme, 22.7% within the "surveillance" programme.

1,695 samples were reported as fruits, distributed as 1,324 fruits, covering 62 distinct products, and 371 fruit-based products. The main analysed products were grapefruits (8.7% of the analysed fruits), table grapes (8.2%), apples (7.6%), pineapples (6.3%), strawberries (6.3%), and sweet cherries (6.3%).

73.3% of the fruit samples were taken within the "surveillance" programme, 23.5% within the control programme, and 3.2% as control on imports.

48.3% of fruits contained detectable residues, 46.4% at least one quantifiable residue, and 6.3% of all the sampled fruits were above the MRLs without measurement uncertainty.

A mean of 3.7 residues were detected, half of the samples containing 3 or less than 3 residues. 36 samples contained at least 10 detectable residues. The highest numbers of residues per sample were 16 residues in strawberries from France (none of these residues being above the MRLs), 15 for cherries from France (none of these residues being above the MRLs), and for pomegranates from Turkey (6 residues being above the MRLs). Samples with quantifiable residues contained on average 3.1 residues, half of the samples containing at least 2 residues.

Only 46 samples (2.7%) of fruits were non-compliant with MRLs: 28.3% of them were pineapples, 10.9% table grapes, 8.7% were pitayas and pomegranates. 46.7% were taken within the "surveillance" programme, 43.5% within the control programme and 10.9% as import control.

Cereals and cereal products represented 10.6% of the all samples. 90% were sampled within the "surveillance" programme. 41.6% of cereal and processed food samples contained at least one detectable residue, and 34.4% quantifiable residues. No detectable residue was found in buckwheat samples. 12.5% were found in quinoa, 22.2% for rye. Half of the barley, wheat, oat and maize/corn samples contained detectable residues, as well as 36.5% of the processed food (including flours). More than 5 residues were detected in 2.8% of the samples (from 5 to 10 residues) and quantified in 1.3% (8 samples out of 639). 75.2% of the residue-containing samples were compliant with the MRLs due to measurement uncertainty. Only two samples of rice were non-compliant with R396/2005 (0.3% of the sampled cereals). Piperonyl butoxide is included in the list of searched residue and compliance is evaluated as regard to national MRLs. 164 samples contained piperonyl butoxide, above the LOQ for 82.3% of them.

73 pulses were sampled in 2019 (1.2% of all the samples). In 23 samples (31.5% of the sampled pulses) including 11 peas, 7 chickpeas, 3 beans and 2 lentils, only one residues have been detected, under the LOQ for 8 of them. 4 of these 23 samples were organic products. Only one sample was non-compliant with the MRL set for chlorpropham on lentil, all the other residues levels being under the corresponding MRLs.

Among the 129 oilseeds, oil fruits and processed products from oilseeds and oil fruits sampled in 2019 (2.2% of all the samples), 46 exhibited detectable residues, including 31 olive oils, 4 rapeseeds, 3 olives for oil production and other products. 17 distinct residues were detected in these products. Chlorpyriphos was the main residue detected; it was found in 12 samples, followed by lambda-cyahlothrine, oxyfluorfen and phosmet found in 6 samples. Three-quarters of these samples were collected within the "surveillance" programme.

Honey and sugar plants from organic and non-organic productions were targeted and represented 0.6% of the samples. Only one honey sample contained one detectable residue, and all samples were compliant with the EU MRLs.

264 wines were sampled: only one residue was detected for 105 of them, above the quantification limit in 53 cases. Boscalid was found in 26 samples, dimethormorph in 25, fosetyl-Al in 14, fenhexamid in 6 and amectoctradin, fluopicolid, pyrimethanil in 5 samples. No sample was non-compliant with R396/2005.

Detectable residues were detected in 18 samples of spices (36% of the sampled spices), 14 of them originating from organic production and containing residues of unauthorised pesticides. Only 2 of these organic samples were non-compliant with MRLs. In addition, five samples contained more than 10 residues, with a maximum of 27 residues found in samples of organic cumin.

37 samples of baby food (0.6% of the total samplings) were analysed. For 3 of them, some residues have been detected. Two samplings were compliant with the 0.010 mg/kg limit set for baby food products (one sampling containing boscalid and thiacloprid, one sampling containing propamocarb). One sampling (containing boscalid under 10 mg/kg) was not compliant due to an exceedance of spinosad.

Only one sample of hops was analysed in 2019. 10 residues were quantified, all of them being below the MRLs (without measurement uncertainty): the sample was consequently compliant.

More than half of the samples of tea, coffee, herbal infusions, cocoa and carobs were sampled for control on imports, and 27% were sampled within the control programme. 61.7% of the sampled products contained detectable residues, and 38.7% quantifiable residues. Less than 10% were non-compliant with the R396/2005 (9.3%). Up to 19 residues could be detected by sample, and up to 16

could be quantified. One-third of all the analysed tea, coffee, herbal infusions, cocoa and carobs contained up to 4 detetable or quantifiable residues.

Organic products of all types (raw or processed food) represented 18.6% of all the samplings. For the majority of them, no residue could be detected. Residues could be detected in 172 samplings (15.3% of the organic samplings), under LOQ for 35.5% of them (5.4% of the organic samples). Less than 5 residues were detected in 13.6% of the organic samplings, corresponding to 2.5% of all the samplings. 1% of these samplings contained residues above the detection limit (one samplings containing 24 residues, and 4 containing between 10 and 15 residues). 0.5% of the organic samplings (spices, cocoa, fruit, pulses, milk-derived product) were non-compliant with the 0.01 mg/kg limit, which represents 0.1% of all the samplings.

11.2.3. Comparability with the previous year results

- DGCCRF

After an increase by 21.6% between 2017 (4,958) and 2018 (6,029), the number of samplings in 2019 (6,039) was the same as in 2018 in order to maintain the control pressure and to meet consumer expectations for a better protection.

The number of samplings by control programme was also constant between 2018 and 2019. The scope of residues analysed was the same as in 2018. Only the type of analysed products differed between years.

The number of samples originating from France decreased by 14% in 2019 compared to 2018, while the number of those from Third countries increased by 15%. The part of samples taken in overseas France was almost doubled to raise 19% in 2019 compared to 10% in 2018 due to an increase in overseas sampling capability and to the targeting of tropical commodities associated with a significant risk of exposure.

Despite a decreasing proportion in 2019 (73%) compared to 2018 (86%), fruits and vegetables remained the main products analysed in all programmes (except the programme dedicated to cereal control).

The number of organic samples significantly increased (by 10%) in 2019 compared to 2018, in relation to a larger availability of these products on the market. However, the rate of non-compliance was almost half the rate calculated for previous years (1.9% in 2018), suggesting an improvement in organic farming practices and in the control of the risk associated with pesticide residues.

As observed for previous years, the numbers of samples with detected residues, of samples with quantified residues, and of non-compliant samples depends on the sampling programme. The specific pattern observed for control on imports (high number of non-compliant samples) was quite similar to the one observed each year.

Considering the origin of the non-compliant samples, the results were in accordance with the previous years' ones: the majority of the breaches occured in samples from third countries followed by domestic samples, while the samples originating from EU showed a very low non-compliant rate.

As previously observed, the number of samples containing residues above the LOQ were found among control samples and the lowest rates for MRL exceendance were found for "surveillance" samples.

In 2019, the percentage of samples containing one or more quantifiable residue(s) as well as the percentages of samples with residue contents above MRL and of non-compliant samples were slightly different from the percentages obtained in the previous years. The number of samples containing at least one residue above the LOQ was significantly decreased (34.4% in 2019 vs. 50.5% in 2018). In the same time, the rate of MRL exceedance increased by 3.4% and by 1.4% before and after taking into account the measurement uncertainty, respectively. Considering all plans and all type of commodity, 4.9% of non-compliance was observed in 2019, compared to 3.5% in 2018, 2017 and 2016. This increase might be due to the targeting of products associated with an identified, significant risk of non-compliance.

As previously observed, the pattern of non-compliance for organic food varies according to the sampling year, possibly due to the limited number of organic samples analysed. As in 2018, samples of vegetables and spices were the main ones to be non-compliant with MRL(s) in 2019.

A few countries still gave raise to recurrent non-compliant results. A large variety of commodities were found to contain quantifiable residues, under or above the MRL(s), some of them being found from year to year (spices, tea, roots and tuber vegetables contaminated by chlordecone…). All of these results, both in terms of origin and products, are taken into account to build the next national control programmes.

- DGAL

For pesticide residues in primary plant products, the percentages of non-compliance in 2019 were similar to those of 2018, concerning the control programm. The percentages of non-compliance are lower in 2019 than in 2018, concerning the surveillance programm, which can been explained by the fact that all the plant products of the surveillance's programm in 2018 were products in which non compliance results were expected.

In animal origin food products, as in 2017 and 2018, all the samples were compliant. Taken into account the uncertainty due to sampling fluctuations, the percentage of non-compliance in the population is therefore below 1.6% for organochlorine pesticides, organophosphorus pesticides and pyrethroids in cattle, pigs and poultry, below 4% for these pesticides in sheep and goat and below 7,3% for carbamates in cattle and pigs.

For chlordecone:

- Between 2018 and 2019, in the animal sectors, the analysis compliance rates found remained stable: the compliance rate was 97% in both 2018 and 2019 in Guadeloupe, and respectively 91% and 95% in 2018 and 2019 in Martinique;
- In the plant sectors, between 2018 and 2019, the compliance rate found was stable: 99.6% in Martinique and 97% in Guadeloupe.

11.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

11.3.1. Possible reasons for non-compliant samples

- DGCCRF

The possible reasons for MRL non-compliance (with measurement uncertainty taken into account) are shown in **Error! Reference source not found.**. If multiple reasons are possible, products are listed for the main one.

Table 59: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]	Comments[b]
GAP not respected: use of a pesticide not approved in the EU[c]	Parsley / linuron	1	FR
	Table olives / thiaclopride	1	FR
GAP not respected: use of an approved pesticide not authorised in organic production	Algae / diuron	1	KR
	Almonds / 2,4-D	1	ES
	Barley / piperonyl butoxide *	1	IT
	Basil and edible flowers / 2,4,6-dichlorophenol	1	TH
	Beers / dimethomorph	2	BE
	Cocoa / chlordane	1	PE
	Coriander / acetamiprid	1	IN
	Dried figs / piperonyl butoxide *	1	TR
	Fennels / anthraquinone	1	IN
	Gojiberries / anthraquinone	1	CN
	Gojiberries / sulfoxaflor	3	CN

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]	Comments[b]
	Grapes (dried) / acetamiprid	2	TR, UZ
	Grapes (dried) / boscalid	1	TR
	Grapes (dried) / flutriafol	1	UZ
	Ginger oil	1	LK
	Kaffir lime leaves / cypermethrin	1	TH
	Lentils / chlorpropham	1	FR
	Pineapples / diuron	1	TG
	Potatoes / chlorpropham	2	FR
	Shallots / piperonyl butoxide *	1	FR
	Spices / acetamiprid	2	TH, IN
	Spices / anthraquinone	1	NP
	Spices / carbendazim and benomyl	1	IN
	Spices / chlorpyriphos	1	IN
	Spices / clothianidin	1	IN
	Spices / imidacloprid	1	IN
	Spices / kresoxym-methyl	1	IN
	Spices / metalaxyl	2	IN
	Spices / monocrothphos	1	IN
	Spices / propiconazole	1	IN
	Spices / quinalphos	2	IN
	Spices / thiamethoxam	1	IN
	Spices / tricyclazole	1	IN
	Tea / anthraquinone	1	CN
	Origan / chlorpyriphos	1	FR
	Tomatoes / ametoctradin	1	TR
	Tomatoes / azoxystrobin	1	TR
	Vanilla / 2,4-D	1	MG
	Flours / piperonyl butoxide *	3	FR
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Others	-	-
Contamination from previous use of a pesticide: uptake of residues from the soil (e.g. persistent pesticides used in the past)	Dasheen taros / chlordecone	6	FR
	Courgettes / aldrin-dieldrin	3 *(1)***	FR
	Welsh onions / chlordecone	2	FR
Use of a pesticide on food imported from third countries for which no import tolerance was set[d]	Beans (with pods) / acephate	29	DO, KE
	Beans (with pods) / acetamiprid	1	KE
	Beans (with pods) / alphamethrin	3	DO, KE
	Beans (with pods) / azoxystrobin	2	KE
	Beans (with pods) / buprofezin	1	DO
	Beans (with pods) / chlorpyrifos	5	DO, KE
	Beans (with pods) / hexaconazole	1	KE
	Beans (with pods) / omethoate	1	KE
	Eggplants / azoxystrobin	1	DO
	Jackfruits / azoxystrobin	1	MY
	Okra / acephate	1	VN
	Okra / acetamiprid	1	VN
	Peppers / acephate	1	VN
	Peppers / acetamiprid	8	DO, EG, IN, UG, VN
	Peppers / azoxystrobin	2	DO
	Peppers / bifenthrin	1	IN
	Peppers / piperonyl butoxide *	1	VN
	Peppers / clothianidin	1	DO
	Peppers / chlorfenapyr	1	EG
	Peppers / cyazofamid	5	DO
	Pitayas / acephate	1	VN
	Pitayas / azoxystrobin	2	VN

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]	Comments[b]
	Pitayas / carbendazim-benomyl	1	VN
	Pomegranates / acetamprid	1	TR
	Spices / acetamiprid	1	CN
	Tea / acetamiprid	9	CN
	Tea / anthraquinone	3	CN
	Tea / bifenthrin	5	CN
	Tea / biphenyl	1	CN

(a): Number of cases.
(b): Applicable only for food products produced in the EU.
(c): For imported food only.
**: not allowed in France.*
***organic products*

- DGAL

The possible reasons for MRL non-compliance are shown in **Error! Reference source not found.** and **Error! Reference source not found.**

Table 60: Possible reasons for MRL non-compliance – Control programme

Reasons for MRL non-compliance	Pesticide/food product	Frequency
GAP not respected: use of a pesticide not approved in the EU	Dimethoate-Omethoate / Cherry	1
GAP not respected: use of an approved pesticide not authorised on the specific crop	Dithiocarbamat / Spinach Linuron / Parsley Linuron / Celeriac Linuron / Lamb's lettuce Iprodione / Lamb's lettuce Propamocarb / Celery Fluopicolid / Oil olive Tebufenozid / Oil olive Proquinazid / Oil olive Dithianon / Bluecurrant	1 1 1 1 1 1 1 1 1 2
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Flonicamid / Melon Prosulfocarb / Parsley Permethrin / Wine grape Diflubenzuron / Mushroom	3 1 1 1
Use of pesticide according to authorised GAP: unexpected slow degradation of residues		
Cross contamination: spray drift or other accidental contamination	Glyphosate / Buckwheat Lambda-cyalothrin / Spinach Pirimicarb / Spinach Chlorpyrifos-methyl / Wheat Chlorprophame / Carrot Thiophanate-methyl / Buckwheat Prosulfocarb / Sorghum	1 1 1 1 1 1 - 1
Contamination from previous use of a pesticide: uptake of residues from the soil (e.g. persistent pesticides used in the past)	Dieldrin / Melon Dieldrin / Carrot	1 1

Table 61: Possible reasons for MRL non-compliance – Surveillance programme

Reasons for MRL non-compliance	Pesticide/food product	Frequency
GAP not respected: use of a pesticide not approved in the EU		
GAP not respected: use of an approved pesticide not authorised on the specific crop		
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method	Prosulfocarb / Coriander Napropamid / Mint	1 1

Reasons for MRL non-compliance	Pesticide/food product	Frequency
or PHI not respected	Tau-fluvalinate / Squash Penconazole / Chervil Dithiocarbamates / Amaranthus blitum Fenazaquin / Amaranthus blitum Folpet / Amaranthus blitum Phosmet / Amaranthus blitum Linuron / Thyme Napropamid / Thyme Prosulfocarb / Thyme	1 1 1 - 1 1 1 1 1 1
Use of pesticide according to authorised GAP: unexpected slow degradation of residues		
Cross contamination: spray drift or other accidental contamination	Chlorpropham / Squash Aclonifen / Chervil Prosulfocarb / Watercress	1 1 1
Contamination from previous use of a pesticide: uptake of residues from the soil (e.g. persistent pesticides used in the past)		

For chlordecone, the reason of the non-compliant samples is the effects of pollution by the chlordecone which was a large use product since 1993 and an overtime persistent molecule.

11.3.2. ARfD exceedances

- DGCCRF

ARfD exceedances notified following official controls on the market:

- Ethephon in pineapples (10 samples) from Ghana: 223 to 496% of ARfD children, 73 to 145% of ARfD adults,
- Acephate in beans without pods from Kenya: 319% ARfD children,
- Dieldrin in courgettes from France: 152% ARfD children,
- Chlorpyriphos in celeries from Guatemala: 352% ARFD children, 150% ARfD adult,
- Lambda-cyhalothrin in kiwis from China: 113% ARfD children,
- Imazalil in lemons from Spain: 434% ARfD children,
- Dithiocarbamates in baby leaf crops from France: 305% ARfD children,
- Chlorpyriphos in pineapples from Costa Rica: 344% of ARfD children, 118% of ARfD adults.

- DGAL

For pesticide residues in primary plant products, reported ARfD exceedances were:

- Melon / Flonicamid: ARfD exceedance of 849 % for children.
- Melon / Flonicamid: ARfD exceedance of 205 % for children.
- Melon / Flonicamid: ARfD exceedance of 205 % for children.
- Spinach / Lambda-cyalothrin: ARdD exceedance of 565 % for children.
- Spinach / Pirimicarb: ARdD exceedance of 398 % for children.
- Melon / Dieldrin: ARfD exceedance of 430 % for children.
- Amaranthus blitum / Phosmet: ARfD exceedance of 423 % for children.
- Amaranthus blitum / Dithiocarbamates: ARfD exceedance of 107 % (mancozeb) or 329 % (maneb).
- Residues of linuron (> MRL) have also be found in thyme (1 case), parsley (1 case), celery (1 case) and lamb's lettuce (1 case) for which no risk assessment can be finished because of the lack of ARfD.

- Residues of chlorpyrifos-methyl (> MRL) have also be found in wheat (1 case) for which no risk assessment can be finished because of the lack of ARfD.

11.3.3. Actions taken

- DGCCRF

When a non-compliant sample is identified, the batch is seized, if available. It is prevented from entering the market for products controlled on imports (by destruction or rejection at the border).

An assessment of the risk for consumers is performed on all non-compliant samples and the appropriate measures, such as recall and RASFF notification, are taken according to this risk assessment.

When non-compliant samples are identified, the producer or importer is subjected to an enhanced control that gives rise to an official report and, if relevant, a fine. A follow-up action is also implemented to identify the cause of non-compliance. In that case, the information can be transmitted to the services of the Ministry of Agriculture, responsible for controlling the use of pesticides at the production level. The reason of MRL exceedance or use of a pesticide not approved in the EU or in France is investigated as far as possible in French products.

The **Error! Reference source not found.** summarises the actions taken following the detection of non-compliant samples. Some actions remain ongoing.

Table 62: Actions taken

Action taken	Number of non-compliant samples concerned	Comments
Rapid Alert Notification	26	RASFF notifications: 2019.0030, 2019.0506, 2019.0708, 2019.0717, 2019.2731, 2019.2775, 2019.4405, 2019.0029, 2019.0388, 2019.0389, 2019.0393, 2019.0406, 2019.0709, 2019.0716, 2019.1566, 2019.1574, 2019.1576, 2019.1592, 2019.1689, 2019.2578, 2019.2767, 2019.2868, 2019.3097, 2019.3248, 2019.4202, 2019.4251.
Administrative sanctions (fines)	16	
Administrative warnings	60	
Consignments	10	
Lot recalled from the market	17	
Rejection / Destruction of a non-compliant lot at the border	90	
Warnings to responsible food business operator	55	

- DGAL

As part of the control programme, each instance of non-compliance was followed up by administrative action and/or sanctions.

The following actions were implemented:

- 29 administrative warning
- 3 consignments of crop with sample for product release testing, followed by the release of the crop
- 5 destructions of crop
- 6 crime reports sent to magistrate courts
- 6 formal compliance warnings
- 31 second checks scheduled in 2020.

The same measure can be implemented to sanction a series of non-compliances, with several samples possibly being taken from one same area.

For chlordecone, non-compliant samples were followed up by administrative action that which can go as far as the withdrawal of the commodity concerned from the market.

11.4. Quality assurance

- DGCCRF

Both mainland France's laboratories are accredited by the French Committee of Accreditation (COTAIL COAT). One overseas laboratory has been accredited at the end of 2012 for the search of chlordecone in non-animal products.

SCL laboratories are assessed and/or accredited in accordance with the EN ISO/IEC 17025 on "General requirements for the competence of testing and calibration laboratories". Most of the analyses are performed under COFRAC accreditation according to the standard NF EN 15662:2009 "Foods of plant origin - Determination of pesticide residues using GC-MS and/or LC-MS/MS) following acetonitrile extraction/partitioning and clean-up by dispersive SPE-QuEChERS-method".

The Guidance document on analytical quality control and method validation procedures for pesticides residues analysis in food and feed was implemented (EC, 2017).

Table 63: Laboratories participation in the national control programme

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
FR	SCL - Laboratoire de Montpellier	SCL34	1997	Comité français d'accréditation - COFRAC (1-0154)	Yes
FR	SCL - Laboratoire de Paris	SCL91	1996	Comité français d'accréditation – COFRAC (1-0527)	Yes
FR	SCL - Laboratoire des Antilles	SCL971	2012	Comité français d'accréditation - COFRAC (1-2463)	Yes
FR	SCL - Laboratoire de La Réunion	SCL974	-	-	Yes

11.5. Processing factors

- DGCCRF

The processing factors used to verify compliance of processed products with EU MRLs are listed in **Error! Reference source not found.**.

Table 64: Processing factors

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor [(a)]
All pesticides	Cereals	Complete Flour	1
All pesticides	Cereals	Flour	0,2
All pesticides	Cereals	Bran	2,4
All pesticides	Fruits	Dry fruits	5
All pesticides	Fungi	Dry Fungi	10
All pesticides	Olive	Olive oil	5
All pesticides	Wine grappes	Wine	1
All pesticides	Fruits	Fruits juice	1
All pesticides	Gojiberries	Dried Gojiberries	5

(a) Processing factor for the enforcement residue definition

12. Germany

12.1. Objective and design of the national control programme

Germany's multi-annual national programme for control of pesticide residues in and on foodstuffs serves the planning of official controls to make sure that residues in food of animal or plant origin do not lead to inacceptable risks to health. Investigations under this programme aim to evaluate consumers' exposure to pesticide residues and control compliance with legal regulations.

The control programme is jointly developed by the Federal Government and the Federal states (*Länder*). Each programme covers a period of three years, is updated each year and submitted to the commission and EFSA three months before the end of the current calendar year at the latest, in accordance with Article 30 (1) 2 of Regulation (EC) No. 396/2005.

To reach both the aim of evaluating consumer exposure and of checking compliance with current legislation, part of the samples is analysed following the provisions set out in a multi-annual national monitoring plan. This plan has been specifically conceived to measure pesticide residues and to determine in the end consumers' exposure on a national scale. Sampling is made at random and is based on the conditions of the German market, as regards the origin of samples and their distribution over conventional and ecological farming.

A much larger number of samples is taken and analysed on a risk basis and at all levels of trade (import, wholesale, retail sale, production), on the basis of uniform criteria, which allows to integrate the sampling plans separately developed by the *Länder* into one national sampling plan.

The following criteria have been set up for the selection of products to be sampled, in order to allow a uniform approach to developing the multi-annual national control plan, and integration of the *Länder*' plans into a national sampling plan in a transparent manner:

a) "Hard" criteria:

- Product risk as defined in a health risk assessment of the respective product (risk to population, risk to sensitive consumer groups, food with potential risks), while considering the product's dietary importance
- Amount of production/import/distribution of the food product in question
- Frequency of non-compliance with residue levels, frequency of complaints
- Frequency of findings (distribution of frequency), frequency of multiple residues
- Findings under the monitoring programme; findings reported in the Annual Report pursuant to Article 32 of Regulation (EC) No. 396/2005

b) "Soft" criteria:

- Seasonal particularities (for instance, early strawberries: sampling should be concentrated at the beginning of the season, to allow forecasts of trends in residue findings)
- Origin and regional particularities (for instance, regional prevalence of certain crops)
- Consideration of findings in controls performed by the Crop Protection Services of the *Länder* (for instance, findings about improper or unauthorised use of plant protection products, or suspicion of residues of unauthorised use of plant protection products or use of banned products)
- Information of the public/public perception of pesticide residues
- Type of farming (such as ecological/conventional, small-scale/large-scale cropping)
- Efficiency of producers'/suppliers' self-control systems

Both control programmes, sampling and actual analyses are performed by the competent authorities of the *Länder*. Analytic results are delivered to the BVL. The BVL compiles the data submitted by the *Länder* according EFSA's business rules, makes an assessment, and sends the data to the European Commission, to EFSA, and to the other Member States, in accordance with Article 31(1) of Regulation (EC) No. 396/2005. In addition, all results are published annually in a "National Report about

Residues of Plant Protection Products in Foodstuffs". This report serves as a basis for discussing risk-minimising measures in the field of food safety.

12.2. Key findings, interpretation of the results and comparability with the previous year results

In 2019, Germany submitted a total of 20,117 samples tested for pesticide residues to EFSA of which 20,073 samples were considered to be relevant for the annual report by EFSA (19,696 surveillance and 377 follow-up enforcement samples). All these sample data fulfilled the requirements of EFSA's business rules. Of these samples 14,478 samples came from within the EU, 3,429 samples were produced outside of the EU and 2,166 of the samples had an unknown origin.

The samples included a total of 7,575,879 analyses, from which 5,340,526 were considered to be relevant for data analysis by EFSA.

The samples were analysed for a total of 641 different pesticides (excluding isomers and metabolites) from which 273 were detected at least in one sample. Residues of 122 individual pesticides exceeded MRLs.

In 8,333 (42.3%) surveillance samples no residues of pesticides could be quantified (2018: 7,633 (40.1%); 2017: 40.9%). In 10,557 (53.6%) surveillance samples residues of pesticides were quantified at or below MRLs (2018: 10,396 (54.6%); 2017: 54.9%). 806 (4.1%) surveillance samples contained residues of pesticides exceeding MRLs (2018: 1,006 (5.3%); 2017: 4.2%). 309 (1.6%) samples had residues non-compliant with the MRL (2018: 403 (2.1%); 2017: 1.9 %).

In 190 (50.4%) follow-up enforcement samples no residues of pesticides could be quantified (2018: 127 (46.5%); 2017: 73.0%). In 155 (41.1%) follow-up enforcement samples residues of pesticides were quantified at or below MRLs (2018: 113 (41.4 %); 2017: 19.6%). 32 (8.5%) follow-up enforcement samples contained residues of pesticides exceeding MRLs (2018: 33 (12.1 %); 2017: 7.4%). 24 (6.4%) samples had residues non-compliant with the MRL (2018: 19 (7 %); 2017: 4.5 %).

2,257 samples of 20,043 (11.3 %) were from products produced under the rules of organic farming. In 515 (23%) samples residues of pesticides could be quantified. 39 (1.7%) of organic samples contained residues of pesticides exceeding MRLs. The sampling strategies for these products varied between the Federal states. Some have special programs others take samples rather by chance.

Multiple residues were found and quantified in 34.9% of all samples (2018: 39.4%, 2017: 37.7 % 2016: 37.7 %).

12.3. Non-compliant samples: possible reasons and actions taken

In 2019, 1.7 % of the samples (333 samples in total) were found non-compliant with the EU MRL. For 14 samples RASFF notifications were issued. In addition to the 333 samples, the following tables list also samples that were submitted to EFSA but were not considered relevant for the annual report.

Table 65: Follow-up actions taken in case of sample non-compliant with the EU MRL (measurement uncertainty taken into consideration)

Number of non-compliant samples	Action taken	Note
91	Administrative sanctions (e.g. fines)	
4	Animals and products classified as unfit for human consumption	
46	Follow-up (suspect) sampling	
1	Follow-up action due to the residue of a pesticide detected in a domestic product, which is not authorized in the country	
7	Follow-up investigation	
2	Intensified checks before release	
17	Lot not released on the market	
2	Lot recalled from the market	
22	No action	
188	Other	

Number of non-compliant samples	Action taken	Note
14	Rapid Alert Notification	Sample code: 3905105047484555338 -1453779344214251396 -4317119258231807164 -2696771190773117621 1762784269800658182 190336563241109490 -3590346221386900974 -2914794455921022489 -2506062700415230948 -1949544076246340166 -3062888395949294878 -1367704388633601316 3524891650899966191 -6201216295937616191
7	Warnings	

The possible reasons for the MRL exceedances were submitted in only 219 cases from the competent authorities in the Federal States. In all other cases the information was not available (**Error! Reference source not found.**).

Table 66: Possible reasons for the MRL exceedances

Product	Residue	Reason for MRL non- compliance	Frequency
Apples	Chlorpyrifos	Good Agricultural Practice (GAP) not respected: use of an approved pesticide not authorised on the specific crop	
Aubergines (egg plants)	Ethion	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Aubergines (egg plants)	Omethoate	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Babyfood	Phosphonic acid	Residues resulting from other sources than plant protectionproduct (e.g. biocides, veterinary drugs, bio fuel)	11
Beans (with pods)	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Beans (with pods)	Flutriafol	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Beans (with pods)	Propargite	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	2
Broccoli	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Brussels sprouts	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Buckwheat and other pseudocereals	Fosetyl-Al (sum of fosetyl, phosphonic acid and their salts, expressed as fosetyl)	Residues resulting from other sources than plant protectionproduct (e.g. biocides, veterinary drugs, bio fuel)	
Celery	Fluopyram	Cross contamination: spray drift or other accidental contamination	
Celery leaves	Chlorpyrifos	Unknown	
Cherries	Ametoctradin	Unknown	
Cherries	Dimethoate	Other	
Chili peppers	Acetamiprid	Unknown	
Chili peppers	Carbendazim and benomyl (sum of benomyl and carbendazim expressed as carbendazim)	Unknown	
Chili peppers	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Chili peppers	Chlorpyrifos	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Chili peppers	Chlorthalonil	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Chili peppers	Fipronil	Unknown	
Chili peppers	Metalaxyl	Unknown	
Chili peppers	Triazophos	Unknown	
Chilli pepper spice	Benzalkonium chloride (mixture of alkylbenzyldimethylammonium chlorides with alkyl chain	Residues resulting from other sources than plant protectionproduct (e.g. biocides, veterinary drugs, bio fuel)	
Chilli pepper spice	Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	Illegal treatment	

Product	Residue	Reason for MRL non- compliance	Frequency
Chilli pepper spice	Chlorpyrifos	Unknown	
Chilli pepper spice	Didecyldimethylammonium chloride (mixture of alkyl-quaternary ammonium salts with alkyl	Residues resulting from other sources than plant protectionproduct (e.g. biocides, veterinary drugs, bio fuel)	
Chinese cabbage	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Chinese cabbage	Dimethoate	Good Agricultural Practice (GAP) not respected: use of an approved pesticide not authorised on the specific crop	
Coriander leaves	Chlorpyrifos	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Coriander leaves	Chlorpyrifos	Unknown	
Coriander leaves	Linuron	Good Agricultural Practice (GAP) not respected: use of a pesticide not approved in the EU	
Coriander leaves	Penconazole	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Courgettes	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Courgettes	Heptachlor (sum of heptachlor and the cis and trans isomers of heptachlor epoxide)	Unknown	
Cucumbers	Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Cucumbers	Dichlorvos	Unknown	
Cultivated fungi	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Dairy products Cattle	Benzalkonium chloride (mixture of alkylbenzyldimethylammonium chlorides with alkyl chain	Residues resulting from other sources than plant protectionproduct (e.g. biocides, veterinary drugs, bio fuel)	9
Fennel	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Figs, dried	Pyrimethanil	Unknown	
Grapefruits, Pomelos, Sweeties	Buprofezin	Unknown	
Grapefruits, Pomelos, Sweeties	Triadimefon	Unknown	
Herbal infusions, dried	Anthraquinone	Residues resulting from other sources than plant protectionproduct (e.g. biocides, veterinary drugs, bio fuel)	2
Herbal infusions, dried	Anthraquinone	Unknown	4
Herbal infusions, dried	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Herbal infusions, dried	Chlorpyrifos	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Holy basil/tulsi	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	2
Holy basil/tulsi	Chlorpyrifos	Unknown	
Holy basil/tulsi	Dimethomorph (sum of isomers)	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	

Product	Residue	Reason for MRL non- compliance	Frequency
Kale	Flonicamid (sum of flonicamid, TNFG and TNFA expressed as flonicamid)	Unknown	
Kale	Lambda-cyhalothrin, including other mixed isomeric consituents (sum of isomers)	Unknown	
Kale	Nicotine	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Kale	Omethoate	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Kale	Prosulfocarb	Cross contamination: spray drift or other accidental contamination	
Kale	Tebuconazole	Unknown	
Lamb`s lettuce	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Lamb`s lettuce	Chlorates	Contamination during handling, storage or transport of food item/crop	
Lamb`s lettuce	Mepronil	Unknown	
Leek	Fluazinam	Unknown	
Lentils (dry)	Hydrogen phosphide (phosphides expressed as hydrogen phosphide)	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Lettuce	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	3
Lettuce	Dimethoate	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Lettuce	Flonicamid (sum of flonicamid, TNFG and TNFA expressed as flonicamid)	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Lettuce	Omethoate	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Melons	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Okra, ladys fingers	Acephate	Unknown	
Okra, ladys fingers	Dimethoate	Unknown	
Okra, ladys fingers	Etofenprox	Unknown	
Okra, ladys fingers	Flonicamid (sum of flonicamid, TNFG and TNFA expressed as flonicamid)	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Okra, ladys fingers	Flonicamid (sum of flonicamid, TNFG and TNFA expressed as flonicamid)	Unknown	2
Okra, ladys fingers	Mepiquat (sum of mepiquat and its salts, expressed as mepiquat chloride)	Unknown	
Okra, ladys fingers	Metalaxyl and metalaxyl-M (metalaxyl including other mixtures of constituent isomers inclu	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Okra, ladys fingers	Oxamyl	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Oranges	Imazalil	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Other farm animals Liver	Copper compounds	Unknown	

Product	Residue	Reason for MRL non- compliance	Frequency
Papaya	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Passion fruit	Carbendazim and benomyl (sum of benomyl and carbendazim expressed as carbendazim)	Good Agricultural Practice (GAP) not respected: use of a pesticide not approved in the EU	
Passion fruit	Chlorfenapyr	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Passion fruit	Chlorthalonil	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Passion fruit	Fosetyl-Al (sum of fosetyl, phosphonic acid and their salts, expressed as fosetyl)	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Passion fruit	Imazalil	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Passion fruit	Imazalil	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Passion fruit	Phosphonic acid	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Passion fruit	Prochloraz (sum of prochloraz and its metabolites containing the 2,4,6-Trichlorophenol moi	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Peaches	Etofenprox	Unknown	
Pears	Bitertanol (sum of isomers)	Unknown	
Pears	Mepiquat (sum of mepiquat and its salts, expressed as mepiquat chloride)	Illegal treatment	3
Peppers	Formetanate hydrochloride	Unknown	
Peppers	Propargite	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Peppers	Tebufenpyrad	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Peppers	Tebufenpyrad	Unknown	2
Peppers spices	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	4
Peppers spices	Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	4
Peppers spices	Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	Illegal treatment	
Peppers spices	Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	Unknown	5
Physalis (Cape gooseberry)	Allethrin	Good Agricultural Practice (GAP) not respected: use of a pesticide not approved in the EU	
Pineapples	Chlorpyrifos	Unknown	
Pitayas/dragon fruits	Carbendazim and benomyl (sum of benomyl and carbendazim expressed as carbendazim)	Good Agricultural Practice (GAP) not respected: use of a pesticide not approved in the EU	
Pitayas/dragon fruits	Hexaconazole	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	

Product	Residue	Reason for MRL non- compliance	Frequency
Pitayas/dragon fruits	Permethrin (sum of isomers)	Good Agricultural Practice (GAP) not respected: use of a pesticide not approved in the EU	
Pomegranate	Acetamiprid	Use of a pesticide on food imported from third countries for which no import tolerance was set	
Pomegranate	Acetamiprid	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Pomegranate	Chlorpyrifos	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Pomegranate	Sulfoxaflor (sum of isomers)	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	2
Pomegranate	Thiacloprid	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	2
Potatoes	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	2
Potatoes	Chlorpyrifos	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	2
Potatoes	Chlorpyrifos	Unknown	
Poultry - chicken, geese, duck, turkey and Guinea fowl - ostrich, pigeon Muscle	Chlorates	Contamination during handling, storage or transport of food item/crop	3
Poultry - chicken, geese, duck, turkey and Guinea fowl - ostrich, pigeon Muscle	Chlorates	Contamination during handling, storage or transport of food item/crop	4
Pumpkins	Dinotefuran	Good Agricultural Practice (GAP) not respected: use of a pesticide not approved in the EU	
Raspberries	Chlorpyrifos	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Raspberries	Iprodione	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Raspberries	Milbemectin (sum of milbemycin A4 and milbemycin A3, expressed as milbemectin)	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Rice	Acetamiprid	Unknown	2
Rice	Buprofezin	Change in the legal limit throughout the year	
Rice	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Rice	Thiamethoxam	Use of a pesticide on food imported from third countries for which no import tolerance was set	
Rice	Thiamethoxam	Unknown	
Rice	Tricyclazole	Use of a pesticide on food imported from third countries for which no import tolerance was set	
Rice	Tricyclazole	Unknown	5
Rocket, Rucola	Chlorates	Cross contamination: spray drift or other accidental contamination	
Rocket, Rucola	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Rocket, Rucola	Omethoate	Good Agricultural Practice (GAP) not respected: use of an approved pesticide not authorised on the specific crop	
Spinach	Dithiocarbamates (Dithiocarbamates expressed	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate,	

Product	Residue	Reason for MRL non- compliance	Frequency
	as CS2, including Maneb, Mancozeb, Metiram, P	number of treatments, application method or PHI not respected	
Spinach	Dithiocarbamates (Dithiocarbamates expressed as CS2, including Maneb, Mancozeb, Metiram, P	Unknown	
Spinach	Fluazifop (free acid)	Unknown	
Spinach	Omethoate	Good Agricultural Practice (GAP) not respected: use of an approved pesticide not authorised on the specific crop	
Strawberries	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Strawberries	Chlorates	Residues resulting from other sources than plant protectionproduct (e.g. biocides, veterinary drugs, bio fuel)	
Strawberries	Dichlorvos	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Strawberries	Dimethoate	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Strawberries	Trichlorfon	Unknown	
Table grapes	Malathion	Unknown	
Tea	Acetamiprid	Unknown	3
Tea	Anthraquinone	Unknown	3
Tea	Hexaflumuron	Unknown	
Tea	Lambda-cyhalothrin, including other mixed isomeric consituents (sum of isomers)	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	2
Tea	Lambda-cyhalothrin, including other mixed isomeric consituents (sum of isomers)	Unknown	4
Tea	Methomyl	Unknown	
Tea	Tolfenpyrad	Unknown	
Tomatoes	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Tomatoes	Chlorfenapyr	Illegal treatment	
Watercress, water spinach	Clothianidin	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Watercress, water spinach	Emamectin benzoate B1a, expressed as emamectin	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Watercress, water spinach	Metalaxyl and metalaxyl-M (metalaxyl including other mixtures of constituent isomers inclu	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Watercress, water spinach	Thiamethoxam	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Wheat	Simazine	Illegal treatment	
Wheat	Tetramethrin	Good Agricultural Practice (GAP) not respected: use of a pesticide not approved in the EU	
Wild fungi (dried)	Chlorates	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Wild fungi (dried)	Fosetyl-Al (sum of fosetyl, phosphonic acid	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate,	

Product	Residue	Reason for MRL non- compliance	Frequency
	and their salts, expressed as fosetyl)	number of treatments, application method or PHI not respected	
Wild fungi (dried)	Phosphonic acid	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	
Wild fungi (dried)	Propargite	Unknown	
Wine	Iprodione	Change in the legal limit throughout the year	
Wine grapes oil	Fluopicolide	Good Agricultural Practice (GAP) not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	

12.4. Quality assurance

19 accredited laboratories (**Error! Reference source not found.**) took part in the national control programme for 2019.

Table 67: Laboratories

Country code	Laboratory Name	Laboratory Code	Accreditation Date	Accreditation Body	Participation in proficiency tests or interlaboratory tests
DE	Chemisches und Veterinäruntersuchungsamt Freiburg 79114 Freiburg Bissierstr. 5	082102	23.11.2018	DAkkS	BIPEA 09-3819 (pesticides in cheese) BIPEA 3619 (pesticides in honey) FAPAS 05132 (pesticides in infant formula) FAPAS 05137 (pesticides in animal pork fat) EURL POPs 1902-EY (persistent pesticides in egg powder)
DE	Chemisches und Veterinäruntersuchungsamt Stuttgart 70736 Fellbach Schaflandstr. 3/2	082107	02.04.2019	DAkkS	EUPT 2019: CF13, FV21, SC03, FV21, SRM14 Proof ACS P1910-RT (Highly polar pesticides in grapes)
DE	Bayerisches Landesamt für Gesundheit und Lebensmittelsicherheit 91058 Erlangen Eggenreuther Weg 43	092821	18.12.2019	DAkkS	EUPT 2019: AO14, CF13, SC03, FV21, SRM14 RIKILT 2017-08 (fipronil in chicken fat and eggs)
DE	Landeslabor Berlin-Brandenburg Dienstsitz Berlin 12489 Berlin Rudower Chaussee 39	112001	08.12.2017	DAkkS	EUPT 2019: CF13, FV21 FAPAS 19282 (pestizides in green tea)
DE	Landeslabor Berlin-Brandenburg Dienstsitz Frankfurt (Oder) 15236 Frankfurt (Oder) Gerhard-Naumann-Straße 2/3	122104	08.12.2017	DAkkS	EUPT 2019: CF13, FV21 FAPAS 19282 (pestizides in green tea)
DE	Landesuntersuchungsamt für Chemie, Hygiene und Veterinärmedizin 28217 Bremen Lloydstraße 4	042101	05.04.2020	DAkks	EUPT 2019: FV21 FAPAS 5138 (pesticides in olive oil) FAPAS 19282 (pesticides in green tea)
DE	Institut für Hygiene und Umwelt 20539 Hamburg Marckmannstr. 129a	022020	03.12.2018	DAkkS	EUPT 2019: AO14, FV21, SRM14 FAPAS 19263 (pesticides in honey) FAPAS 19278 (pesticides in raspberry)
DE	Landesbetrieb Hessisches Landeslabor FG I.3 Datenmeldestelle 65203 Wiesbaden Glarusstraße 6	062109	05.06.2020	DAkkS	EUPT 2019: FV21
DE	Landesamt für Landwirtschaft, Lebensmittelsicherheit und Fischerei Mecklenburg-Vorpommern 18059 Rostock Thierfelderstr. 18	132101	27.03.2019	DAkkS	EUPT 2019: AO 14, CF 13, FV 21, SRM 14 ProofACS P1909-RT (Gly/Quats) ProofACS P1911-RT (Dithios)
DE	Niedersächsisches Landesamt für Verbraucherschutz und Lebensmittelsicherheit Lebensmittel- und Veterinärinstitut Oldenburg 26133 Oldenburg Martin-Niemöller-Straße 2	032010	07.03.2019	DAkkS	EUPT 2019: FV21, CF13, SC03, SM11 COIPT19 (pesticides in olive oil)

Country code	Laboratory Name	Laboratory Code	Accreditation Date	Accreditation Body	Participation in proficiency tests or interlaboratory tests
DE	Chemisches und Veterinäruntersuchungsamt Rhein-Ruhr-Wupper CVUA-RRW 47798 Krefeld Deutscher Ring 100	052306	19.12.2018	DAkkS	EUPT 2019: CF13, FV21, SC03, SM1 BIPEA 19h (dithiocarbamates in apple) BIPEA: 19k (pesticides in tea)
DE	Landeshauptstadt Düsseldorf Amt für Verbraucherschutz Chemische und Lebensmitteluntersuchung 40468 Düsseldorf Ulmenstraße 215	052311	31.10.2019	DAkkS	EUPT 2019: CF 13, FV21, SC03
DE	Chemisches und Veterinär-untersuchungsamt Münsterland-Emscher-Lippe CVUA-MEL 48147 Münster Joseph-König-Straße 40	052502	10.04.2019	DAkkS	EUPT 2019: AO 14, FV21, SC03, SRM14 FAPAS 19282 (pestizides in green tea)
DE	Landesuntersuchungsamt Institut für Lebensmittelchemie 67346 Speyer Nikolaus-von-Weis-Str. 1	072107	24.10.2019	DAkkS	EUPT 2019: AO14, CF13, FV21, SRM14 FAPAS 05133 (pesticides in chicken eggs) FAPAS 19263 (pesticides in honey) FAPAS 19273 (pesticides in strawberries) FAPAS 19282 (pestizides in green tea) BIPEA 04-5419 (dithiocarbamates in salad) BIPEA 21-0619 (bromid and Dithiocarbamates in salad) NRL MN0319 (copper in mushrooms) NRL MN0419 (copper in rapeseed oil) NRL MN0519 (copper in powdered fish)
DE	Landesamt für Verbraucherschutz GB 2 – Veterinärmedizinische, mikrobiologische, molekularbiologische und lebensmittelchemische Untersuchungen 66115 Saarbrücken Konrad-Zuse-Straße 11	101101	17.04.2020	DAkkS	EUPT 2019: CF13, FV21 FAPAS 09127 (chlormequat und mepiquat in wheat flour) FAPAS 19278 (pesticides in raspberry purree) Progetto Trieste E1900 (fipronil in egg)
DE	Landesuntersuchungsanstalt für das Gesundheits- und Veterinärwesen Sachsen Standort Dresden 01099 Dresden Jägerstraße 8/10	142262	28.11.2018	DAkkS	EUPT 2019: AO14, CF13, FV21, SM11, SRM14
DE	Landesamt für Verbraucher-schutz Sachsen-Anhalt Fachbereich 3 06009 Halle (Saale) Freiimfelder Str. 68	152200	25.02.2019	DAkkS	EUPT 2019: AO14, CF13, FV21, SRM14
DE	Landeslabor Schleswig-Holstein (Lebensmittel-, Veterinär- und Umweltuntersuchungsamt) Postfach 2743 24537 Neumünster Max-Eyth-Str. 5	012001	05.04.2019	DAkkS	EUPT 2019: CF13, FV21
DE	Thüringer Landesamt für Lebensmittelsicherheit und Verbraucherschutz Standort Bad Langensalza 99947 Bad Langensalza Tennstedter Str. 8/9	162104	28.01.2019	DAkkS	EUPT 2019: AO14, FV21

13. Greece

13.1. Objective and design of the national control programme

The Hellenic Ministry of Rural Development and Food is the national authority responsible for coordinating the implementation of Regulation (EC) 396/2005. It is also responsible for the planning and the coordination of the official controls for plant origin food. The authority responsible for the planning and the coordination of the monitoring of processed foods is EFET (Hellenic Food Authority).

The competent authorities responsible of the sampling are the Regional Centres of Plant Protection and Quality Control (RCPP&QC) of the Ministry of Rural Development and Food and the Directorates General of Regional Rural Economy and Veterinary Medicine.

The official laboratories which analyzed the samples taken in 2019 were the Laboratory of Pesticides Residues of Benaki Phytopathological Institute (BPI), the Laboratory of Pesticide Residues of the Centre of Plant Protection and Quality Control of Thessaloniki (RCPP&QC) and the laboratory of Pesticide Residues of the General Chemical State.

http://www.minagric.gr/index.php/en/citizen-menu/foodsafety-menu

http://www.minagric.gr/index.php/el/for-farmer-2/crop-production/fytoprostasiamenu/ypoleimatafyto

National control program of 2019 for pesticide residues (monitoring) as part of the Multi Annual Control Program (EU-MACCP) has been established according to terms and conditions of Articles 26-35 of Regulation (EC) No 396/2005.

The program was based on several risk analysis criteria and parameters: number of samples (domestic and imported) for each product, agricultural produce, cultivation area per culture, expected imports, results from previous years' monitoring programs, dietary intake contribution of each product, sampling location, community control program, pesticides used in practice by the farmers, relevant RASFF notifications for pesticide residues, personnel and analytical capacity of the official laboratories, recommendations from EFSA. It aims at ensuring compliance with maximum levels and assessing consumer exposure in order to achieve a high level of protection and application of good agricultural practice in all stages of production and harvest of agricultural products.

The responsibilities of the laboratories involved, regarding the number of samples of each commodity that should be analyzed and the areas of sampling were defined. The responsible for the EU co-ordinated program laboratories were clearly stated. The sampling was carried out by the responsible for sampling regional and local authorities.

Sampling strategy was based on "from the farm to the fork" rationale, taking into account the specialties of each region of the country. The sampling methods, necessary for carrying out such controls of pesticide residues, were those provided for in JMD 91972/2003-Directive 2002/63/EC[4]. Samples were taken by domestic production and imports, proportionally, covering points of collection, storage, packing and trade of products of plant origin.

Furthermore, a significant number of selective samples was taken by the competent authorities responsible of the sampling.

The official laboratories, analyzing samples for pesticide residues are accredited and participate in the Community Proficiency Tests. The methods of analysis used by the laboratories comply with the criteria set out in relevant EU law provisions and other adopted technical guidelines.

13.2. Key findings, interpretation of the results and comparability with the previous year results

3,454 samples were analysed in total. 2788 samples were domestic (80.72%), 131 samples originated from EU (3.79%), 491 originated from third countries (14.22%) while the origin of 44 samples was unknown (1.27%).

49.91% of samples were free of quantifiable residues, 44.33% of samples contained quantifiable residues at or below Mrl, 5.76% of samples contained residues exceeding EU Mrls and 3.45% of

samples were non-compliant (contained residues exceeding EU Mrls taking into account the measurement uncertainty).

The percentage of samples containing quantifiable residues at or below Mrl remains constant for the fourth consecutive year.

The percentage of samples exceeding the Mrls and the percentage of non-compliant samples have decreased compared to last year and are comparable to the results of 2017.

For random sampling, the percentage of non-compliant samples was 2.61%. For selective sampling the percentage of non-compliant samples was 5,95% and for suspect sampling, the percentage of non-compliant samples was 10%.

The percentage of samples which exceeded numerically the Mrls was 5.20% for the domestic samples, 5.34% for EU samples and 9.57% for third countries while the percentage of non-compliant samples was 2.98% for domestic samples, 3.82% for EU samples and 6.31% for third countries' samples.

Among the domestic samples analysed, grape leaves and potatoes were the most frequently non-compliant products. From third countries the most frequently non-compliant products were lemons (various actives substances), tomatoes (mostly chlorfenapyr) and pomegranates (various active substances).

Chlorpyrifos was the most frequently found pesticide in non-compliant samples (as in 2017 and 2018) primarily because of incorrect GAP application and secondary because of a not authorized use.

114 samples were organic out of which 23 samples were cereals, 1 sample was baby food, 76 samples were fruits, vegetables and nuts, 14 samples were other products, and 4 samples were processed commodities.

87.72% of the organic samples contained no detectable residues, 10.53% of organic samples contained residues below Mrls and 1.75% of the organic samples were detected with residues numerically exceeding the Mrls. Taking into account the measurement uncertainty, all samples were compliant with the MRLs.

Table 68: Summary results 2015-2019

Category	Year 2015	%	Year 2016	%	Year 2017	%	Year 2018	%	Year 2019	%
Total number of samples	2425	100	2287	100	2623	100	3571	100	3454	100
Number of samples without detectable residues	1545	63.71	1180	51.60	1307	49.83	1701	47.63	1724	49.91
Number of samples with detectable residues at or below EU MRL	789	32.54	1016	44.42	1160	44.22	1606	44.97	1531	44.33
Number of samples with residues exceeding EU Mrls	91	3.75	91	3.98	156	5.95	264	7.39	199	5.76
Non-compliant samples	58	2.39	53	2.32	90	3.43	158	4.42	119	3.45

Table 69: Summary results 2019 per type of product (surveillance and enforcement)

Products	Samples	Residues below LOQ	%	Residues between LOQ and MRL	%	Exceeding MRL	%	Non Compliant	%
Animal products	37	37	100.00	0	0	0	0	0	0.00
Baby food	10	10	100.00	0	0	0	0	0	0.00
Cereals (including processed products)	139	100	71.94	37	26.62	2	1.44	1	0.72
Other products (including processed products)	235	174	81.69	29	13.62	10	4.69	3	1.41
Sum of fruits and nuts, vegetables, other plant products	3033	1381	45.53	1465	48.30	187	6.17	115	3.79
Total	**3454**	**1724**	**49.91**	**1531**	**44.33**	**199**	**5.76**	**119**	**3.45**

Table 70: Summary results 2018 per type of product (surveillance and enforcement)

Products	Samples	Residues below LOQ	%	Residues between LOQ and MRL	%	Exceeding MRL	%	Non Compliant	%
Animal products	37	37	100.0	0	0.0	0	0.0	0	0.0
Baby food	34	34	100.0	0	0.0	0	0.0	0	0.0
Cereals	67	45	67.1	18	26.9	4	6.0	3	4.5
Processed products	235	166	70.6	52	22.1	17	7.2	9	3.8
Sum of fruits and nuts, vegetables, other plant products	3198	1420	44.4	1534	48	244	7.6	146	4.6
Total	**3571**	**1702**	**47.7**	**1604**	**44.9**	**265**	**7.4**	**158**	**4.4**

Table 71: Summary results 2019 for random and selective sampling

Products	Samples	Residues below LOQ	%	Residues between LOQ and MRL	%	Exceeding MRL	%	Non-Compliant	%
Animal products	37	37	100.00	0	0.00	0	0	0	0
Baby food	10	10	100.00	0	0.00	0	0	0	0
Cereals	136	99	72.79	36	26.47	1	0.74	0	0
Fruits and nuts	1178	392	33.27	733	62.22	53	4.50	26	2.21
Other plant products	229	193	84.28	26	11.35	10	4.37	3	1.31
Vegetables	1755	946	53.90	693	39.49	116	6.61	79	4.50
Total	**3345**	**1677**	**50.13**	**1488**	**44.48**	**180**	**5.21**	**108**	**3.23**

Table 72: Summary results 2018 for random and selective sampling

Product	Samples	Residues below LOQ	%	Residues between LOQ and MRL	%	Exceeding MRL	%	Non Compliant	%
Animal products	37	37	100.0	0	0.0	0	0.0	0	0.0
Baby food	34	34	100.0	0	0.0	0	0.0	0	0.0
Cereals	128	76	59.4	38	29.7	14	10.9	8	6.3
Fruits and nuts	1118	337	30.1	738	66.0	43	3.8	22	2.0
Other plant products	164	146	89.0	13	7.9	5	3.0	1	0.6
Vegetables	1895	1002	52.9	733	38.7	160	8.3	97	5.1
Total	**3376**	**1632**	**48.3**	**1522**	**45.1**	**222**	**6.6**	**128**	**3.8**

Table 73: Summary results 2019 for enforcement samples (suspect samples)

Products	Samples	Residues below LOQ	%	Residues between LOQ and MRL	%	Exceeding MRL	%	Non Compliant	%
Animal products	0	0	0	0	0	0	0	0	0
Baby food	0	0	0	0	0	0	0	0	0
Cereals	3	1	33.33	1	33.33	1	33.33	1	33.33
Fruits and nuts	28	2	7.14	16	57,14	10	35.71	7	25.0
Other plant products	6	3	50.0	3	50.0	0	0	0	0
Vegetables	72	41	56.95	23	31.94	8	11.11	3	4.17
Total	**109**	**47**	**43.12**	**43**	**39.45**	**19**	**17.43**	**11**	**10.10**

Table 74: Summary results 2018 for enforcement samples (suspect samples)

Products	Samples	Residues below LOQ	%	Residues between LOQ and MRL	%	Exceeding MRL	%	Non Compliant	%
Animal products	0	0	0	0	0	0	0	0	0
Baby food	0	0	0	0	0	0	0	0	0
Cereals	5	4	80	1	20	0	0	0	0
Fruits and nuts	46	4	8.7	30	65.2	12	26.1	9	19.6
Other plant products	16	7	43.8	7	43.8	2	12.5	1	6.3
Vegetables	128	55	43	44	34.4	29	22.7	20	15.6
Total	**195**	**70**	**35.9**	**82**	**42.1**	**43**	**22.1**	**30**	**15.4**

13.3. Non-compliant samples: possible reasons. ARfD exceedances and actions taken

13.3.1. Possible reasons for non-compliance

Table 75: Reasons for MRL exceedances

Reasons for MRL non-compliance	Pesticide/food product	Frequency	Comments
GAP not respected: use of a pesticide not approved in the EU			
	clothianidin / Grape leaves	1	
	thiamethoxam / Grape leaves	1	
	carbofuran / Strawberries	1	
	chlorfenapyr / Tomatoes	2	origin: Italy
	linuron / Celery leaves	1	
GAP not respected: use of an approved pesticide not authorised on the specific crop			
	formetanate / Cucumbers	2	
	thiophanate-methyl / Cucumbers	3	
	boscalid / Grape leaves	5	
	dimethomorph / Grape leaves	6	
	pyraclostrobin / Grape leaves	3	
	cyprodinil / Grape leaves	3	
	pyrimethanil / Grape leaves	2	
	acetamiprid / Grape leaves	1	
	etoxazole / Grape leaves	1	
	penconazole / Grape leaves	1	
	tebuconazole / Grape leaves	2	
	cyflufenamid / Grape leaves	1	
	trifloxystrobin / Grape leaves	3	
	metalaxyl and metalaxyl-M / Grape leaves	2	
	propiconazole / Grape leaves	1	
	cyhalothrin, lambda / Grape leaves	1	
	famoxadone / Grape leaves	1	
	fludioxonil / Grape leaves	1	
	flupyradifurone / Grape leaves	1	
	fluxapyroxad / Grape leaves	1	
	chlorpyrifos / Kiwi fruits	1	
	dimethoate / Sweet peppers/bell peppers	1	
	omethoate / Sweet peppers/bell peppers	1	metabolite of dimethoate
	chlorpyrifos / Spinaches	2	
	ethoprophos / Carrots	1	
	propamocarb / Carrots	1	
	ethephon / Sweet peppers/bell peppers	1	
	boscalid / Pomegranates	2	
	flonicamid / Teas	1	
	famoxadone / Sweet peppers/bell peppers	1	
	indoxacarb / Spring onions/green onions and Welsh onions	1	
	chlorpyrifos / Celeriacs/turnip rooted celeries	1	
	metalaxyl / Cherries (sweet)	1	
	fluopyram / Kiwi fruits	1	
	tebuconazole / Kiwi fruits	1	
	thiacloprid / Mandarins	1	
	etofenprox / Plums	1	
	etofenprox / Quinces	1	

Reasons for MRL non-compliance	Pesticide/food product	Frequency	Comments
	sulfoxaflor / Roman rocket/rucola	2	
	triadimenol / Roman rocket/rucola	2	
	formetanate / Roman rocket/rucola	1	
	dodine / Spinaches	1	
	thiophanate-methyl / Spinaches	2	
	dimethoate / Spinaches	1	
	omethoate / Spinaches	2	metabolite of dimethoate
	fluvalinate, tau- / Spinaches	1	
	kresoxim-methyl / Spring onions/green onions and Welsh onions	1	
	acetamiprid / Greek mountain tea	1	
	carbendazim /benomyl / Greek mountain tea	1	metabolite of thiophanate methyl (see below)
	thiophanate-methyl / Greek mountain tea	1	
	myclobutanil / Greek mountain tea	1	
	chlorpyrifos / Celery leaves	3	
	penconazole / Celery leaves	1	
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected			
	chlorpyrifos / Cucumbers	4	
	chlorpyrifos / Sweet peppers/bell peppers	2	
	methomyl and thiodicarb / Sweet peppers/bell peppers	1	
	oxamyl / Sweet peppers/bell peppers	1	
	chlorpyrifos / Potatoes	7	
	fosthiazate / Potatoes	3	
	chlorantraniliprole / Potatoes	5	
	chlorpyrifos / Head cabbages	1	
	dimethoate / Mandarins	1	
	chlorpyrifos / Apples	2	
	cypermethrin / Celeriacs/turnip rooted celeries	1	
	chlorpyrifos / Cherries (sweet)	1	
	dimethoate / Cherries (sweet)	1	
	forchlorfenuron / Kiwi fruits	1	
	dimethoate / Lemons	1	
	chlorpyrifos / Lettuces	2	
	dimethoate / Lemons	1	
	omethoate / Tomatoes	1	metabolite of dimethoate origin: Italy – not authorised on the specific crop *or* authorised but application rate, number of treatments, application method or PHI not respected
	pirimiphos-methyl / Tomatoes	1	origin: Poland – not

Reasons for MRL non-compliance	Pesticide/food product	Frequency	Comments
			authorised on the specific crop *or* authorised but application rate, number of treatments, application method or PHI not respected
Use of pesticide according to authorised GAP: unexpected slow degradation of residues			
Cross contamination: spray drift or other accidental contamination			
Contamination from previous use of a pesticide: uptake of residues from the soil (e.g. persistent pesticides used in the past)			
Residues resulting from other sources than plant protection product (e.g. biocides. veterinary, drugs, bio fuel)			
Natural occurrence (e.g. dithiocarbamates in turnips)			
Changes of the MRL			
Use of a pesticide on food imported from third countries for which no import tolerance was set[(d)]			
Unknown			
	tricyclazole / Rice white	1	India
	chlorfenapyr / Tomatoes	6	Albania
	flusilazole / Lemons	1	Egypt
	cyfluthrin / Lemons	1	Egypt
	lufenuron / Lemons	1	Egypt
	diazinon / Lemons	1	Egypt
	chlorfenapyr / Sweet peppers/bell peppers	1	Albania
	chlorpyrifos / Apples	1	Republic of North Macedonia
	imazalil / Pomegranates	2	Turkey
	prochloraz / Pomegranates	1	Turkey
	acetamiprid / Pomegranates RASFF NC19.3817	1	Turkey
	boscalid / Pomegranates RASFF NC19.3817	1	Turkey
	thiacloprid / Pomegranates RASFF NC19.3817	1	Turkey
	buprofezin / Lemons RASFF NC19.3820, NC19.4045, NC19.4072, NC19.4027, NC19.4004	6	Turkey
	methomyl / Strawberries	1	Moldova
	methomyl and Thiodicarb / Strawberries	1	Moldova

Reasons for MRL non-compliance	Pesticide/food product	Frequency	Comments
	formetanate / Sweet peppers/bell peppers	1	Republic of North Macedonia
	buprofezin / Tomatoes	2	Albania
	acetamiprid / Chamomile	1	Egypt
	chlorpyrifos / Chamomile	1	Egypt
Other (Use of a pesticide on food imported from third country with exceedance of the ARfD)			
	dimethoate - Omethoate / Apples RASFF 2019.3991	1	Albania
	chlorpyrifos / Courgettes RASFF 2019.3525	1	Albania
	chlorpyrifos / Sweet peppers/bell peppers RASFF 2019.3526, 2019.3686	2	Albania
	prochloraz / Pomegranates RASFF 2019.0581	1	Turkey
	chlorfenapyr / Tomatoes RASFF 2019.1793	1	Italy

13.3.2. ARfD exceedances

Table 76: RASFF issued in 2019 for food products showing a risk for consumers

Food products	Pesticide residue	Number	Origin	Context
Apples	dimethoate/omethoate	1	Albania	RASFF 2019.3991
Peppers	chlorpyrifos	2	Albania	RASFF 2019.3526 2019.3686
Pomegranates	prochloraz	1	Turkey	RASFF 2019.0581
Courgettes	chlorpyrifos	1	Albania	RASFF 2019.3525
Tomatoes	chlorfenapyr	1	Italy	RASFF 2019.1793

13.4. Actions taken

In a case of an MRL exceedance, before any administrative and punitive enforcement action is taken, a default analytical uncertainty of 50% is subtracted from the measured value. If this figure still exceeds the MRL, this sample is non-compliant and enforcement action relevant to the case is taken. Risk assessment on non-compliant samples is carried out by the Directorate of Plant Production Protection (Department of Plant Protection Products). RASFF notifications were sent according EU Regulations taking into account the results of the risk assessment and the instructions of the RASFF WI 2.2. Guidelines.

The batches of products with MRL exceedance were set under official detention and were destroyed or re-dispatched to the country of origin. Next placement in the market of other batches of same origin was not allowed unless, prior to marketing, a second laboratory analysis was conducted, and the results showed conformity with the respected MRLs.

Sanctions were imposed to producers of non-compliant samples according to national laws. If the producer (or farmer) of the lot of the product was unknown, the control authority called the distributor/s (traders, wholesaler, retailer etc) to provide elements (evidence) about the origin of the products. If traceability was lost, sanctions were imposed to the traders.

For imported products sanctions were imposed to importers.

For samples taken according to Import Control Regulations (such as Regulation (EC) 669/2009 and Regulation (EC) 1793/2019), a border rejection decision was taken for non-compliant samples and a RASFF notification was issued.

13.5. Quality assurance

Table 77: Laboratories participation in the control program

Country	Laboratory		Accreditation Body	Participation in proficiency tests or inter-laboratory tests
	Name	Date		
Hellas	Benaki Phytopathological Institute, Pesticides Residues Laboratory	09/07/2002	ESYD (Hellenic Accreditation System S.A.)	EUPT-FV-21 EUPT-AO-14 EUPT-CF-13 EUPT-SRM-14 COI-PT19
Hellas	Regional Centre of Plant Protection, Quality and Phytosanitary Control of Thessaloniki	08/09/2009	ESYD	EUPT-FV 21, EUPT-CF 13
Hellas	General Chemical State	ACCREDITED, ISO 17025, 2009-2018	ESYD	EUPT-FV-21, EUPT-AO-14, EUPT-CF-13, EUPT-SRM-14, COI-PT19
		ACCREDITED, ISO 17025, 1998-2009	UKAS	

13.6. Processing factors

The processing factors applied were based on the former EU multiannual control programme for pesticide residues.

14. Hungary

14.1. Objective and design of the national control programme

14.1.1. Objective

The National Food Chain Safety Office (NFCSO) is the competent authority for the enforcement of the pesticide residues monitoring in Hungary.

14.1.2. Design

The National Monitoring Programme for pesticide residues in produce of plant and animal origin 2019 was based on risk assessment. The programme covers all important commodities of fruits and vegetables, cereals, selected processed products of plant origin, and baby-food products. The sampling frequency of different commodities is determined taking into consideration the production and Hungarian food consumption habits as well as the results of previous monitoring programmes. The coordinated programme of the European Commission was included in the national programme.

Domestic analytical samples of plant origin were taken at harvest on the places of production and the marketplaces, while the import commodities were sampled at the border inspection posts – BIPs - and at the wholesale chains.

The planned number of samples (2266) for the 2019 control programme was set the National Food Chain Safety Office of Hungary. A major contribution to the planned number of samples for food of animal origin (61) was decided in conjunction with the Food and Feed Safety Directorate, as part of the National Residue Plan required under Directive 96/23/EC.

Sampling is done in accordance with Directive 2002/63/EC[4] that has been implemented in Hungarian legislation. Samples are analysed in ISO 17025 accredited laboratories by means of multi-residues and single-residue methods which allowed in 2019 the detection of more than 500 pesticide residues.

The four regional Pesticide Residues Analytical Laboratories – Hódmezővásárhely, Miskolc, Szolnok, Velence - belongs to the NFCSO.

14.2. Key findings, interpretation of the results and comparability with the previous year results

14.2.1. Key findings

In 2019, 2266 samples were analysed for pesticide residues in Hungary. These samples were included in the national monitoring programme, EU coordinated programme

Table 78: Total number of samples

Type of products (surveillance samples only)	Raw samples	Processed samples	Total number of samples in category
Animal products	51	10	61
Cereals	72	23	95
Baby food	0	87	87
Other products	101	40	141
Fruits and nuts, vegetables and other plant product	1773	109	1882
Total number of samples	2037	229	2266

14.2.2. Interpretation of the results

Table 79: Origin of samples

Strategy	Origin	Samples	Samples %
SURVEILLANCE	Domestic	1359	60
	EU countries	618	27
	Third countries	289	13

Fruits and vegetables (including potato, nuts and other plant products)

A total of 1882 fruit and vegetable samples were tested. Within this category residues above MRLs (without taking account of measurement uncertainty) was at 1 %, around the expected level.

Table 80: Summary results for samples from the surveillance programme

Type of information	Summary results
Fruit and vegetable samples with pesticide residues detected	1882 surveillance samples were analysed 46 % without residues (no residues detected above the LOQ) 53 % had residues detected above the LOQ and below the MRL 1 % had residues detected above the MRL
Origin of samples (fruits and vegetables)	59 % domestic samples 30 % were from EU countries 11 % from Third countries
Most frequently detected pesticides	Detection rates in all fruit and vegetables Dithiocarbamates 17.02 %; Boscalid 9.91 % Azoxystrobin 6.84 %; Fluopiram 6.39 %; Fludioxonil 6.39 %; Imazalil 5.34 %; Tebuconazole 4.9 %; Ciprodinil 4.41 %
MRL breaches	25 samples exceeded the MRL
Processed	109 samples
Labelled organic	105 samples

Cereals

Table 81: Summary results for cereal with the surveillance programme

Type of information	Summary results
Cereal samples with pesticide residues detected	95 cereal samples were analysed 87 % had no residue detected above the LOQ 13 % had residues detected above the LOQ and below the MRL 0 % had residues detected above the MRL
Origin of samples	65 % of cereal samples were domestic samples 17 % were from other EU countries and 18 % from Third Countries
Most frequently detected pesticides	Detection rates in all cereal samples Chlorpyrifos 4.29 %; Pirimifos-methyl 4.29 %; Chlorpyrifos-methyl 2.86 %
MRL breaches	0 sample exceeded the MRL
Processed	23 samples
Labelled organic	9 samples

Animal products

Table 82: Summary results for food of animal origin with the surveillance programme

Type of information	Summary results
Food of animal origin samples with pesticide residues detected	61 food of animal origin samples were analysed 98 % had no residue detected above the LOQ 2 % had residues detected above the LOQ and below the MRL 0 % had residues detected above the MRL
Origin of samples	93 % of the food of animal origin samples were of Hungarian origin 5 % were from other EU countries, 2 % were from Third Countries
Most frequently detected pesticides	Detection rates in all animal products samples Carbendazim 1.6 %
MRL breaches	There was no MRL exceedance
Processed	10 samples
Labelled organic	1 sample

Baby food

Table 83: Summary results for baby food samples

Type of information	Summary results
Baby food samples with pesticide residues detected	87 baby food samples were analysed 100 % had no residue detected above the LOQ No residues detected above the LOQ and below the MRL
Origin of samples	45 % domestic samples 55 % were from EU countries
Most frequently detected pesticides	No pesticides detected
MRL breaches	There was no MRL exceedance
Processed	87 samples were processed
Labelled organic	30 samples

Overview

In 2019, 52.21 % of the samples analysed resulted without pesticide residues. 46.51 % of the samples analysed resulted with pesticide residues below the EC-MRL and 1.28 % of the samples exceeded the EC-MRL level (0.57 % non-compliant).

14.2.3. Comparability with the previous year results

Error! Reference source not found. gives an overview of the samples of the last 2 years. The number of the samples is lower (6%) than the previous year. The number of the samples without pesticide residues has been decreased. The percentage of samples with pesticide residues above MRLs is slightly higher than in the previous year.

Table 84: Number of samples in 2017 and 2018

Year	Number of samples	Without Residues	With residues below MRL	Exceeding MRL	Non-Compliant
2018	2408	52.62%	47.38%	1.2%	0.37%
2019	2266	52.21%	46.51%	1.28%	0.57%

14.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

14.3.1. Possible reasons for non-compliant samples

Totally, 0.57 % of the samples were found non-compliant with the EU MRLs.

Table 85: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Comment
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Generally, all samples are non-compliance with the MRL

14.3.2. ARfD exceedances

14.3.3. Actions taken

Error! Reference source not found. gives an overview of what sort of actions that have been taken.

Table 86: Actions taken

Action taken	Number of non-compliant samples concerned	Comments
Rapid Alert Notification	0	
Administrative sanctions (e.g. fines)	13	Most of the non-compliant lots had been "eaten"
Lot recalled from the market	0	
Rejection of a non-compliant lot at the border	0	
Destruction of non-compliant lot	0	
Warnings to responsible food business operator	0	
Other actions (please specify)	0	

14.4. Quality assurance

Table 87: Laboratories' participation in the national control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
HU	FCSCN Ltd. – Pesticide Residue Analytical Laboratory, Miskolc	206	10.05.2023	NAH-1-1742/2018	EUPT-FV21, EUPT-FV-SM11, EUPT-SRM14, EUPT-AO14, EUPT-CF13, Wessling-Qualco Duna – Pesticide Residues in Water 2019,

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
HU	FCSCN Ltd. Pesticide Residue Analytical Laboratory, Hódmezővásárhely	213	20.04.2022	NAH-1-1704/2017	EUPT-FV21, EUPT-FV-SM11, EUPT-SRM14, EUPT-AO14, EUPT-CF13
HU	NFCSO – DPPSCA Pesticide Analytical Laboratory, Velence	220	06.04.2022	NAH-1-1594/2017	EUPT-FV21, EUPT-FV-SM11, EUPT-SRM14, EUPT-AO14, EUPT-CF13, Wessling-Qualco Duna – Pesticide Residues in Water 2019
HU	FCSCN Ltd Pesticide Residue Analytical Laboratory, Szolnok	244	09.11.2023	NAH-1-1625/2018	EUPT-FV-21, EUPT-SM11, EUPT-CF13, EUPT-AO14, EUPT-SRM14

15. Iceland

15.1. Objective and design of the national control programme

15.1.1. Objective

The control programme consisted of two strategies, surveillance of food of plant origin and animal origin randomly sampled for the presence of pesticide residues and enforcement of the pesticide residue legislation.

Reporting included samples in the National Residue monitoring program based on Directive No 96/23/EC that were analysed for pesticides, but no samples were taken for increased control of certain imported food according to Regulation (EC) No. 669/2009.

15.1.2. Design

The Food and Veterinary Authority is the competent authority for designing the pesticide residues monitoring program as well as reporting results to EFSA. The collection of the samples from import was done by The Environmental and Public Health office in Reykjavik but samples of domestic produce was collected by the relevant municipal health authority around the country. Enforcement action when necessary were also the responsibility of the relevant municipal health authority.

This year 268 samples were taken in total. Thereof, suspect samples, as a follow up on non-compliance were 7 in total.

A multi-annual sampling plan is revised every year. The sampling plan is based on information extracted from customs tariff on import volumes and numbers on domestic production volumes. In addition, the co-ordinated EU programme in Regulation (EC) No 2018/555 was part of the sampling plan.

Strawberries and raspberries are the only fruit/berry commercially grown in Iceland. All other fruits found in Iceland´s report are imported. Vegetables are both imported and grown domestically, both outdoors and in greenhouses with the use of electrical illumination.

Cereals are grown in very limited amount in Iceland, and mainly for feed. As over half of all cereals are imported processed in consumer-sized package, or already malted for brewing, it is difficult to find whole grain cereal for sampling in Iceland. Therefore, few samples are of whole grain.

The laboratory of Matis ohf. in Reykjavik analyses samples of fruits, vegetables, wine, and grains for pesticide residues. A growing number of pesticides are included in the monitoring program. The number of pesticides screened for, increased from 61 in the year 2013 to over 200 in the year 2019, and all of them are included in the accreditation scheme. The laboratory has the capacity to analyse many more samples than are taken each year, but due to the small size of the population it is not necessary, and funds do not allow it. For other matrixes, the samples are sent abroad for analysing.

Samples of certified organic fruits, vegetables, cereals and wine are included in the monitoring programme.

15.2. Key findings, interpretation of the results and comparability with the previous year results

15.2.1. Key findings

This year results show that overall, 95.5 % of samples taken were free of quantifiable residues or contained residues within the legally permitted levels 4.5 % of samples (12) contained residues exceeding the MRLs. Of these, one sample was compliant due to measurement uncertainty and two were enforcement sample taken to confirm residues above MRL (**Error! Reference source not found.**).

Table 88: Summary results

Origin of samples	No of samples	% of samples	No of samples exceeding MRL	% exceedances
EU	114	42.5	2*	1.75
Domestic	58	21.6	0	0
Outside EU and EEA	96	35.8	10	10.42
Total	**268**		**12***	**4.47%**

*One of these was compliant due to measurement uncertainty

15.2.2. Interpretation of the results

The results of the monitoring programme show that the level of pesticide residues in food from the EU is generally low and that there are few exceedances. This implies that the food with these measured levels of pesticide residues is safe to eat. There has been a significant increase in number of exceedances after a decrease in 2017 and 2018. The main factors in this is the randomness of a small program, and the increasing number of pesticides screened for. To see a bigger picture, it is important to view the results of whole of Europe. Still, it is important to continue the monitoring of pesticide residues in both imported and locally grown food.

15.2.3. Comparability with the previous year results

This year the number of exceedances has gone up again similar to the year 2016 (**Error! Reference source not found.**). In 2014 the laboratory capacity increase and number of pesticides screened for, rose from 61 to 200 in 2019. However, the very small program plays a role in the randomness of the results. A change in the choice of samples, origin and matrix can change the outcome significantly.

Table 89: Comparability with the previous year results

	2012	2013	2014	2015	2016	2017	2018	2019
Number of exceedances	3	5	2	4	8	4	3	11

15.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

15.3.1. Possible reasons for non-compliant samples

Twelve cases of non-compliances occurred in 2019, all were non-domestic products.

Three cases of fresh spinach and one of romaine lettuce imported directly from the USA, and in addition two samples of spinach taken as a follow up from the next shipment at the same importer. In the past years this has repeatedly happened with spinach from the USA, where permethrin and other

pesticides are found well above the MRL. The importers have stated that they will choose to import more from countries within the EU.

Four cases of other products grown in third countries (**Error! Reference source not found.**) the reason for non-compliance is most likely that the produce was not grown to be exported to the EU. For two samples produced in EU-countries a misuse of PPP product is the most likely reason for the MRL non-compliance. One of these was compliant due to measurement uncertainty,

Table 90: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]	Comments
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Permethrin / Spinach	5	Spinach grown for USA market
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Permethrin / Romaine lettuce	1	Lettuce grown for USA market
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Flonicamid / Spinach	3	Spinach grown for USA market
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Clothianidin / Spinach	2	Spinach grown for USA market
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Pyriproxyfen / Spinach	2	Spinach grown for USA market
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Cypermethrin / Spinach	1	Spinach grown for USA market
Misuse of product	Cypermethrin / Kiwi	1	Italian, compliant due to measurement uncertainty
Misuse of product	Chlorpropham / Clementine	1	Spanish
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Imazalil / Oranges	1	Imported from Argentina
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Parathion methyl / Cape gooseberries	1	Imported from Colombia
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Chlorpyrifos / Baby-corn	1	Imported from Thailand
Use of a pesticide on food imported from third countries for which no import tolerance was set[b]	Methomyl / carambole	1	Imported from Malaysia

(a): Number of cases.
(b): Applicable only for food products produced in the EU.

15.3.2. ARfD exceedances

None of the MRL exceedances resulted in an ARfD exceedance.

15.3.3. Actions taken

In case of imported products exceeding the MRL, the importer is obliged to notify when the next shipments from the same producer is expected and is not allowed to distribute the product until it has been sampled and results confirmed to be below MRL.

In three cases of fresh spinach and one of romaine lettuce which was imported directly from the USA, the distribution was stopped, and lot destroyed. In two cases of a shipment that was detained on the border, the whole lot was destroyed when results showed levels above MRL, and nothing went on the market.

The other 6 cases were single shipments. The distribution was stopped and what was left of the lot was destroyed. Follow-up sampling was performed when the importer received another shipment from the same producer/country. None of the follow-up samples had residues above the MRL.

Table 91: Actions taken

	Action taken	Number of non-compliant samples	Comments
Rapid Alert Notification	None	0	
Lot recalled from the market			
Spinach	Stop Distribution	3	
Romaine lettuce	Stop Distribution	1	
Rejection of a non-compliant lot at the border			
Spinach	Lot destroyed	2	Follow-up sample
Destruction of non-compliant lot			
Spinach	Destroyed after confirmation of non-compliance	5	
Romaine lettuce	Destroyed after confirmation of non-compliance	1	
Follow-up (suspect) sampling of similar products, samples of same producer or country of origin			
Spinach	Ban on distribution Destroyed when results show levels above MRL.	2	Above MRL
Carambola	Ban on distribution until results show levels within MRL	1	Residues within MRL
Clementine	Ban on distribution until results show levels within MRL	3	Residues within MRL
Baby-corn	Ban on distribution until results show levels within MRL	1	Residues within MRL
Warnings to responsible food business operator			
Importers	Import from the same producer will be detained at the border until a new sample proves the shipment is compliant	12	In all cases

15.4. Quality assurance

In 2019, three laboratories, analysed all the samples.

Table 92: Laboratories participating in the national control programme

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
DK	Eurofins Dr. Specht	Eurofins	28 August 2018	DAkkS	EUPT-FV21, EUPT-FV-SM11, EUPT-SRM14, EUPT-AO14, EUPT-CF13
SE	Statens Livsmedelsverket	SLV	02/26/2007	SWEDAC	EUPT-FV19, EUPT-AO12, EUPT-CF11, EUPT-SM09, EUPT-SRM12
IS	Matís ohf	Matís	11 September 2018	SWEDAC	EUPT FV21, EUPT CF13

15.5. Processing factors

No processing factors were needed for the results in 2019.

15.6. Additional information

On the list of pesticides to be analysed according to Regulation (EU) No 2018/555 (the coordinated multiannual control programme) there are few pesticides that the laboratory in Iceland cannot analyse yet. New pesticides have been added every year since 2013 to the analysing method and will continue in year 2020.

The implementation of new legislation, and changes in MRLs in Iceland are delayed. New legislation needs to be approved in the EEA Joint Committee before implementation, which will cause a delay compared to the EU.

16. Ireland

16.1. Objective and design of the national control programme

The 2019 Irish national control programme for pesticide residues in food was carried out by the Pesticide Controls Division (PCD) of the Department of Agriculture, Food and the Marine with the cooperation of the Pesticide Control Laboratory and under the terms of a service contract with the Food Safety Authority of Ireland (FSAI).

16.1.1. Objective

The control programme consisted of two strategies:

- **surveillance** of plant and animal origin randomly sampled for the presence of pesticide residues and
- **enforcement** of the pesticide residue legislation e.g. targeting of samples with a history of non-compliances and commodities listed in Regulation (EC) No. 669/2009 for pesticide residues.

This involved sampling of produce at distribution outlets, storage, processing, slaughter premises, ports and airports and the analysis of those samples for the presence of pesticide residues at the Pesticide Control Laboratory in Ireland.

16.1.2. Design

The control programme for 2019 took into consideration:

- the coordinated programme required by the European Commission for 2019;
- dietary intake patterns of Irish consumers[16] (adult and children);
- the residue profile of commodities as established from the results of the programme in previous years;
- results from other Member States in the EFSA annual reports;
- handling/processing of food before consumption;
- capacity of the laboratory.

The planned number of samples for the 2019 control programme was agreed with the FSAI. A major contribution to the planned number of samples for food of animal origin was decided in conjunction with the Veterinary Medicine Unit of the Department of Agriculture, Food and the Marine (DAFM), as part of the National Residue Plan required under Directive 96/23/EC.

For setting out pesticides that should be included in national control programmes the following aspects were taken into consideration:

- EU monitoring programme regulation;
- EU working document on compounds to be considered for inclusion in monitoring;
- results from other Member States in the EFSA annual reports;
- RASFF notifications.

[16] Irish University Nutrition Alliance IUNA 2008–2010 and the 2006 Irish Children's Survey.

16.2. Key findings, interpretation of the results and comparability with the previous year results

16.2.1. Key findings

Overall, 99.3% of the 1,465 samples analysed were free of quantifiable residues or contained residues within the legally permitted levels. No residues were detected in 57.1% of the samples, another 42.2% of samples contained quantified residues below the MRLs and 0.7% (10 samples) contained residues exceeding the MRLs. Taking into account the analytical measurement uncertainty, 0.5% of the samples (7 samples) clearly exceeded these legal limits (non-compliance).

Table 93: Summary of samples taken in 2019 by product class

Samples	Total	<LOQ	%<LOQ	>LOQ and <MRL	%>LOQ and <MRL	>MRL	% >MRL
Animal products	448	439	98.0	9	2	0	0
Cereals	75	29	38.7	43	57.3	3	4.0
Baby food	72	72	100	0	0	0	0
Fruits and vegetables	829	269	32.4	553	66.7	7	0.8
Processed products	41	28	68.3	13	31.7	0	0

Table 94: Summary results – fruit including processed and enforcement

Commodity	Residues detected				Origin of samples			
	Total	<LOQ	>LOQ and <MRL	>MRL	Ireland	EU	TC	Unknown
American persimmons	1	1	0	0	0	0	1	0
Apples	70	21	48	1	3	39	28	
Apricots	2	0	2	0	0	2	0	0
Blackberries	4	0	4	0	0	1	3	0
Blueberries	6	3	3	0	0	3	3	0
Cherries (sweet)	2	1	1	0	0	1	1	0
Clementines	32	1	31	0	0	7	25	0
Common banana	21	6	15	0	0	0	21	0
Common peaches	15	0	15	0	0	12	3	0
Dried vine fruits	3	2	1	0	0	0	3	0
Figs	1	1	0	0	0	0	1	0
Granate apples	8	2	5	1	0	1	7	0
Grapefruits	15	0	14	1	0	9	6	0
Juice, apple	4	1	3	0	0	0	0	4
Juice, cranberry	3	3	0	0	0	0	0	3
Juice, grapefruit	2	0	2	0	0	0	0	2
Juice, orange	10	6	4	0	0	0	0	10
Juice, pineapple	1	1	0	0	0	0	0	1
Kiwi fruits	16	6	10	0	0	11	5	0
Lemons	9	0	9	0	0	5	4	0
Limes	8	1	7	0	0	0	8	0
Mandarins	17	0	17	0	0	6	11	0
Mangoes	13	9	4	0	0	0	13	0
Melons	2	0	2	0	0	1	1	0
Minneolas	2	0	2	0	0	0	2	0
Nectarines	10	1	9	0	0	6	4	0
Oranges	39	5	34	0	0	11	28	0
Passionfruits	5	1	3	1	0	0	5	0
Pears	41	4	37	0	0	35	6	0
Pineapples	5	0	5	0	0	0	5	0
Plums	11	1	10	0	0	6	5	0
Raspberries	12	5	7	0	1	7	4	0
Satsumas	9	0	9	0	0	1	8	0

Commodity	Residues detected				Origin of samples			
	Total	<LOQ	>LOQ and <MRL	>MRL	Ireland	EU	TC	Unknown
Strawberries	24	3	21	0	8	10	6	0
Table grapes	27	4	23	0	0	5	22	0
Wine, red	8	8	0	0	0	4	4	0
Wine, white	8	6	2	0	0	1	7	0
Total	**466**	**103**	**359**	**4**	**12**	**184**	**250**	**20**

Table 95: Summary results – vegetable and fungi including processed and enforcement

Commodity	Residues detected				Origin of samples			
	Total	<LOQ	>LOQ and <MRL	>MRL	Ireland	EU	TC	Unknown
Asparagus	2	2	0	0	0	1	1	0
Aubergines	9	3	6	0	0	9	0	0
Avocados	13	12	1	0	0	2	11	0
Beans (without pods)	1	1	0	0	0	0	1	0
Beans (with pods)	14	8	5	1	1	1	12	0
Broccoli	20	14	6	0	5	11	4	0
Brussels sprouts	1	0	1	0	1	0	0	0
Carrots	21	10	11	0	13	7	1	0
Cauliflowers	6	6	0	0	2	4	0	0
Celeries	6	1	5	0	0	6	0	0
Chards	3	0	3	0	1	2	0	0
Chili peppers	2	2	0	0	0	0	2	0
Chinese cabbages	1	1	0	0	0	1	0	0
Common mushrooms	16	10	6	0	16	0	0	0
Courgettes	15	8	7	0	1	14	0	0
Cucumbers	13	6	7	0	4	9	0	0
Curly endives	1	0	1	0	0	1	0	0
Curly kales	10	3	7	0	6	4	0	0
Escaroles	1	0	1	0	0	1	0	0
Florence fennels	1	1	0	0	0	1	0	0
Garden peas (with pods)	12	1	10	1	0	0	12	0
Garden peas (without pods)	7	7	0	0	0	0	1	6
Head cabbages	16	8	8	0	8	8	0	0
Lamb's lettuces	2	0	2	0	0	2	0	0
Land cresses	1	0	1	0	0	1	0	0
Leeks	6	5	1	0	4	2	0	0
Lettuces (generic)	31	9	22	0	3	28	0	0
Mints	1	0	1	0	0	1	0	0
Onions	10	8	1	1	1	9	0	0
Oyster mushrooms	1	1	0	0	1	0	0	0
Pak-choi	2	1	1	0	2	0	0	0
Parsley	1	1	0	0	1	0	0	0
Parsnip roots	5	2	3	0	5	0	0	0
Potatoes	38	32	6	0	24	12	2	0
Roman rocket and similar-	5	0	5	0	0	5	0	0
Spinaches	19	8	11	0	6	12	0	1
Spring onions	3	1	2	0	0	0	3	0
Swedes	5	5	0	0	5	0	0	0

Commodity	Residues detected				Origin of samples			
	Total	<LOQ	>LOQ and <MRL	>MRL	Ireland	EU	TC	Unknown
Sweet corn	2	2	0	0	0	1	1	0
Sweet peppers	24	14	10	0	0	22	2	0
Sweet potatoes	8	3	5	0	0	1	7	0
Thyme	1	0	1	0	0	1	0	0
Tomatoes	25	9	16	0	8	15	2	0
Turnips	1	1	0	0	1	0	0	0
Winter squashes	4	3	1	0	0	3	1	0
Total	**386**	**209**	**174**	**3**	**119**	**197**	**63**	**7**

Table 96: Summary results – cereals including processed and enforcement

Commodity	Residues detected				Origin of samples			
	Total	<LOQ	>LOQ and <MRL	>MRL	Ireland	EU	TC	Unknown
Barley grains	20	9	11	0	20	0	0	0
millet grain	1	1	0	0	0	0	1	0
wheat grain	7	0	7	0	0	7	0	0
Couscous	1	1	0	0	0	1	0	0
Oat grain	18	2	16	0	17	1	0	0
Popcorn	1	1	0	0	0	0	1	0
Rice grain	16	6	7	3	0	0	0	16
Spelt grain	1	1	0	0	0	1	0	0
Wheat flour	10	8	2	0	0	0	0	10
Total	**75**	**29**	**43**	**3**	**37**	**10**	**2**	**26**

Table 97: Summary results – other plant products including processed and enforcement

Commodity	Residues detected				Origin of samples			
	Total	<LOQ	>LOQ and <MRL	>MRL	Ireland	EU	TC	Unknown
Coconut oil/fat	1	1	0	0	0	0	1	0
Coconuts	2	2	0	0	0	0	2	0
Galangal roots	1	1	0	0	0	0	1	0
Ginger roots spice	2	1	1	0	0	0	2	0
Lentils (dry)	1	1	0	0	0	0	1	0
Olive oil	5	5	0	0	0	5	0	0
Peas (dry)	1	1	0	0	0	0	1	0
Rape seed oil	3	3	0	0	1	0	1	1
Sunflower seed oil	2	2	0	0	0	0	0	2
Total	**18**	**17**	**1**	**0**	**1**	**5**	**9**	**3**

Table 98: Summary results – food of animal origin including processed and enforcement

Commodity	Residues detected				Origin of samples			
	Total	<LOQ	>LOQ and <MRL	>MRL	Ireland	EU	TC	Unknown
Bovine fat tissue	141	140	1	0	141	0	0	0
Chicken, fresh fat tissue	20	20	0	0	20	0	0	0
Equine fat tissue	8	6	2	0	8	0	0	0
Pig fat tissue	67	67	0	0	67	0	0	0
Sheep fat tissue	84	79	5	0	84	0	0	0
Turkey, fresh fat tissue	5	5	0	0	5	0	0	0
Cow milk, whole	74	74	0	0	74	0	0	0
Hen eggs	30	30	0	0	30	0	0	0
Honey	19	18	1	0	15	0	0	4
Total	**448**	**439**	**9**	**0**	**444**	**0**	**0**	**4**

Table 99: Summary results – infant formula

Commodity	Residues detected				Origin of samples			
	Total	<LOQ	>LOQ and <MRL	>MRL	Ireland	EU	TC	Unknown
Follow-on formulae	16	16	0	0	16	0	0	0
Infant formulae	26	26	0	0	26	0	0	0
Processed cereal-based food for infants and young children	20	20	0	0	0	0	0	20
Ready-to-eat meal for infants and young children	10	10	0	0	0	0	0	10
Total	**72**	**72**	**0**	**0**	**42**	**0**	**0**	**30**

Table 100: Summary results – enforcement (samples also included in tables 97, 98, 99, 101)

Commodity	Type	Residues detected			
		Total	<LOQ	>LOQ and <MRL	>MRL
Beans with pods	669/2009	2	1	1	0
Lemons	669/2009	1	0	1	0
Sweet peppers	669/2009	1	1	0	0
Apple	Border sample	1	1	0	0
Coconut flour	Border sample	1	1	0	0
Coconut oil	Border sample	1	1	0	0
Coconut sugar	Border sample	1	1	0	0
Honey	Border sample	4	4	0	0
Pea protein	Border sample	1	1	0	0
Potatoes	Border sample	1	1	0	0
Apples	Targeted	3	1	2	0
Kales	Targeted	2	1	1	0
Leeks	Targeted	1	1	0	0
Passion fruits	Targeted	1	0	1	0
Pears	Targeted	1	0	1	0
Potatoes	Targeted	1	1	0	0
Spring onions	Targeted	1	0	1	0
Strawberries	Targeted	1	1	0	0
Swedes	Targeted	1	1	0	0
Raisins	Statutory	1	0	1	0

Commodity	Type	Residues detected			
		Total	<LOQ	>LOQ and <MRL	>MRL
Rice	Statutory	1	0	0	1
Beans without pods	Investigation	1	1	0	0
Chickpea without pods	Investigation	1	1	0	0
Couscous	Investigation	1	1	0	0
Lentils (dried)	Investigation	1	1	0	0
Millet	Investigation	1	1	0	0
Oats	Investigation	1	1	0	0
Popcorn	Investigation	1	1	0	0
Raisins	Investigation	1	1	0	0
Spelt	Investigation	1	1	0	0
Sultanas	Investigation	1	1	0	0
Tomatoes	Investigation	1	1	0	0
Total		**39**	**29**	**9**	**1**

Table 101: Summary results – MRL exceedance details

Commodity	Residues detected			
	Origin	compound	Result	MRL
Apple	France	chlorpyrifos	0.012	0.01
Grapefruit	Turkey	buprofezin	0.056	0.01
Green bean with pod	Kenya	methamidophos	0.16	0.01
		acephate	0.42	0.01
Onions	Ireland	chlorothalonil	0.011	0.01
Passion fruit	Colombia	chlorantraniliprole	0.012	0.01
		difenoconazole	0.19	0.1
Pomegranate	India	ethion	0.021	0.01
Rice	Unknown	tricyclazole	0.021	0.01
Rice	Unknown	tricyclazole	0.021	0.01
Rice	Unknown	buprofezin	0.025	0.01
Sugar peas with pod	Guatemala	dimethoate	0.071	0.01
		omethoate	0.035	0.01

16.2.2. Interpretation of the results

In 2019 15.4% of the fruit and vegetable samples analysed were of domestic origin and the rest were imported from the EU and elsewhere. 99.2% of the fruit and vegetables samples either contained no residues or contained residues within the legally permitted levels (32.4% contained no residues and 66.7% of samples contained residues at levels which were in compliance with the EU legislation). The remaining 0.8% contained residues exceeding the MRLs. When measurement uncertainty (50%) is taken into account this reduces to 0.6%.

In the case of the cereal samples, 49.3% were of domestic origin. No residues were detected in 38.7% of the samples and 57.3% of the cereal samples had residues in compliance with the EU legislation. The remaining 4% contained residues exceeding the MRLs this remained at 4% when measurement uncertainty (50%) is taken into account. These all related to rice and were mainly due to a lowering of the MRL for tricyclazole (2 of the 3 samples).

All the food of animal origin samples originated domestically, except for four honey samples, and all of the samples either contained no residues or contained residues within the legally permitted levels. No residues were detected in 98.0% of the samples, 2% of the samples had residues in compliance with the EU legislation.

No pesticide residues were detected in any of the infant formula or baby food samples.

In 2019 four samples were taken under EU Regulations dealing with increased inspection of targeted food commodities from certain countries. No residues were detected in 50% of the samples and 50% of the samples had residues in compliance with the EU legislation.

In all cases where non-compliant residues are detected, consumer risk assessments, based on the residue level found and national food consumption data are carried out to estimate the risk to consumers and to guide the follow-up action to be taken. In 2019 one breach was found to have exceeded the acute reference dose (ARfD).

All breaches involving produce of domestic origin were investigated to establish the reasons for the breaches and for appropriate follow-up. In addition, all produce with MRL breaches, both domestic and imported, were listed for targeted sampling as part of the follow-up enforcement strategy. During 2019 a total of 12 such targeted samples were identified and taken.

16.3. Comparability with the previous year results

In the 2019 programme a total of 870 fruit, vegetable and fungi samples were analysed. When compared to previous years, the number of samples with residues detected above the MRL (0.8%) compares favourably to 2018 (3%) and 2017 (2.2%). The majority of the breaches occur in samples from third countries with different regulations controlling the use of pesticides and where application for higher import MRLs or import tolerances in the EU have yet to be applied for or are not granted.

The number of fruit and vegetable samples with detectable residues above the LOQ has increased from 63.3 in 2018 to 67.5% in 2019. The number of pesticides being detected has remained relatively constant.

As in the previous 3 years, imazalil which is mainly used to prevent decay of citrus during storage and transportation was the most commonly detected pesticide in the fruit and vegetables samples during 2019 using the multi residue methods.

Pesticide residues were found in 61.3% of the cereal samples taken and there were 3 rice samples where the MRL was exceeded. This is more than that found in 2018 (44.4%) and 2017 (58%). Glyphosate was detected in 1.7% of samples analysed using the selective method for that compound this is lower than 2018 (2.9%) and 2017 (3.6%).

The percentage of food of animal origin samples with detectable residues remained relatively low over the past three years: 2.0% in 2019, 3.9% in 2018 and 4.6% in 2017. There was no MRL breach in 2019 compared with none in 2018 and 3 in 2017 for food of animal origin. In line with previous years there continued to be no residues detected in the infant and follow-on formula samples analysed in 2019. In the case of chlorfluazuron detected in honey at 0.013mg/kg the MRL applied was 0.05mg/kg as historically this was the default applied to honey for compounds not listed in the legislation. This is further confirmed in SANTE/11956/2016 rev. 9. (Technical guidelines for determining the magnitude of pesticide residues in honey and setting Maximum Residue Levels in honey) which applies from January 2020 and sets the MRL at 0.05mg/kg.

There were no MRL breaches for import control samples in 2019 compared with one in 2018 and one in 2017

16.4. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

16.4.1. Possible reasons for non-compliant samples

The PCD Enforcement Officer investigates all MRL breaches in samples of plant origin of domestic origin. For food of animal origin, the Dairy or Veterinary section is informed of the issue and investigates the cause. In 2019, 1 MRL breach was detected in produce of domestic origin (onions). For non-compliant imported samples, it is not possible to follow up on the root causes. However, for imported samples the CODEX contact point in the country of origin is informed of the issue. All breaches are reported to the FSAI.

In one case, there was an exceedance of the ARfD for sugar peas with pod containing omethoate and dimethoate.

Table 102: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency[(a)]	Comments	Origin country
Unknown	chlorpyrifos / apples	1	Not a breach when measurement uncertainty is taken into account	France
Misuse of product	buprofezin / grapefruit	1		Turkey
Misuse of product	methamidophos, acephate / beans (with pods)	1		Kenya
Unknown	chlorothalonil / onions	1	Not a breach when measurement uncertainty is taken into account	Ireland
Misuse of product	chlorantraniliprole, difenoconazole / passion fruit	1	Not a breach when measurement uncertainty is taken into account	Colombia
Misuse of product	ethion / granate apple	1		India
Misuse of product	tricyclazole / rice	2	MRL decreased to 0.01mg/kg recently	Unknown
Misuse of product	buprofezin / rice	1		Unknown
Misuse of product	dimethoate, omethoate / peas with pods	1	Follow up sample taken in 2019 – compliant	Guatemala

(a): Number of cases

16.4.2. ARfD exceedances

There was one exceedance for dimethoate in peas with pods from Guatemala.

16.4.3. Actions taken

Inspections are carried for all Irish MRL breaches. For other MRL breaches the Food Business Operator is informed as well as the CODEX contact point for the country of origin.

For the ARfD exceedance the importer was informed of the issue and a follow up sample was taken of the next consignment, which was compliant.

Table 103: Actions taken

	Action taken	N. of non-compliant samples concerned	Comments
Rapid Alert Notification		0	
Administrative sanctions (e.g. fines)		0	
Lot recalled from the market		0	
Rejection of a non-compliant lot at the border		0	
Destruction of non-compliant lot		0	
Follow-up (suspect) sampling of similar products, samples of same producer or country of origin	Targeted Sampling where possible	11 targeted 2 statutory	To date other relevant samples could not be found on the market in 2019
Warnings to responsible food business operator	Letter sent informing the FBO of the issue	10	All MRL breaches followed up in this way at a minimum
Other follow-up investigations to identify reason of non-compliance or responsible food business operator	Grower contacted by a PCD enforcement officer	1	For Irish MRL breaches

	Action taken	N. of non-compliant samples concerned	Comments
Other actions (please specify)			

16.5. Quality assurance

The analysis of the co-ordinated programme and the national monitoring programme was carried out by the Pesticide Control Laboratory. The laboratory is accredited for pesticide residue analysis.

Table 104: Laboratories participation in the national control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
Ireland	Pesticide Control Laboratory	PCS	1/1/2019-31/12/2019	INAB	5 EUPTs in 2019

17. Italy

17.1. Objective and design of the national control programme

The national control program is defined by Ministerial Decree 23 December 1992 (transposing Directive 90/642/EEC) as integrated by Ministerial Decree 30 July 1993 concerning the programming of official controls for imports coming from Third Countries and documents containing specific indication issued by the General Directorate.

The National Program Pesticide Residues foresees a detailed program implementing the checks to be carried out by Regions and Autonomous Provinces of Trento and Bolzano, with indication of the minimum number and the type of samples to be analysed.

The breakdown of the number of samples to be taken for each Region/Province is calculated according to the data on consumption and production of a given foodstuffs in the concerned Region or autonomous Province concerned.

The number of samples to be taken for each Region/Province for the following foodstuffs: vegetables, fruits, cereals, wine, oils is provided by the Decree.

The program also foresees the research of residues of plant protection products in foodstuffs of animal origin meat, milk, egg, fish.

Moreover, the Director General of Directorate-General for the hygiene and safety of food and nutrition - Ministry of Health gives indications to the regions/provinces for sampling of foods reported in the coordinated program and for national program.

In particular for every region/province there is reported the number of samples that have to be checked for every food that have to be sampled for monitoring program. There is reported the samples irregular in the last year with procedures to sampling for not compliant samples and with information about sampling region and with origin region. There is also indication about baby food and organic samples.

There is also indication that permit to group the type of food in the classification of annex I of regulation 396/2005

The honey was added to products of animal origin, moreover, done to environment regional problem the fish have to be sampled on voluntary basis.

Specific indications were given about the transmission of data and the processing factor the laboratories have to apply when they evaluate the results. There is also attached the integration form report that inspectors need as checklist necessary for transmission data.

"Uffici di Sanità Marittima, Aerea e di Frontiera" (USMAF) of Ministry of Health perform the sampling on products of vegetable origin imported from Third Countries, in at least 3% of the consignments of imported food.

The national program reports also the pesticides that the Laboratories must search. There are the pesticides that are found as not compliant in the past year and the pesticides that are reported in the SANCO/12745/2013 document. There is also reported the pesticides as indication of the Regulation EU 555/2018.

17.2. Key findings, interpretation of the results and comparability with the previous year results

Italy is a Nation devoted to agriculture and the prevailing diet is the Mediterranean then to assure the safety of consumer, Ministry of health plans the controls every year of pesticides residues

Not compliant samples are (1.1%) taking in consideration also not compliant import controls.

Detailed information about import control are collected in particular 817 samples are taken to border place and 10,683 samples are done from local health authorities and Command Carabinieri Health Prevention.

Out of a total of 11,500 (**Error! Reference source not found.**) samples 56,8 % are fruit and vegetable: 16 % cereals, 11.3 % oil and wine, 0.9 % baby food and 15 % other type of food (processed different form oil and wine , product of animal origin, fish product, tea, spice, sugar plant, oilseeds and oil fruits).

62,6% of samples (**Error! Reference source not found.**) are without residues, while 36.2 % are with residues below the MRL and 1,1% are non-compliant. All baby food samples are compliant. Non-compliant sample were found for cereal, fruit, vegetable, wine and other food.

9,473 samples have as origin Italy, 452 come from other EU Member states, 1,309 come from Third country and for 266 samples the origin is unknown.

The 3,3 % (382) of samples were organic. 5,2 % (597) of samples were enforcement sample.

The total number of products sampled for European program (**Error! Reference source not found.**) of the Regulation (UE) No 2018/555 are 1,620. All types of food are sampled in quantity above the indication reported in that regulation.

Table 105: Summary results

Fruit & vegetables	% on total	Cereals	% on total	oil & wine	% on Total	Baby food	% On total	other product	% on total	Total
6,532	56.8	1839	16.0	1,301	11.3	99	0.9	1729	15.0	11,500

Table 106: Compliant – non-compliant

Food	Total Samples	Samples without residues	Samples without residues (%)	Samples with residue below or equal LMR	Samples with residue below or equal LMR (%)	Samples with residues above LMR	Samples with residues above LMR (%)
Fruit & vegetables	6532	3153	48,3%	3260	49,9%	119	1,8%
Cereals	1839	1489	81,0%	343	18,7%	7	0,4%
oil & wine	1301	850	65,3%	450	34,6%	1	0,1%
Baby food	99	98	99,0%	1	1,0%	0	0,0%
other product	1729	1608	93,0%	115	6,7%	6	0,3%
Total	11500	7198	62,6%	4169	36,3%	133	1,1%

Table 107: National sample

Food	Total Samples	Samples without residues	Samples without residues (%)	Samples with residue below or equal LMR	Samples with residue below or equal LMR (%)	Samples with residues above LMR	Samples with residues above LMR (%)
Fruit & vegetables	5956	2805	47,1%	3058	51,3%	93	1,6%
Cereals	1722	1414	82,1%	301	17,5%	7	0,4%
oil & wine	1300	850	65,4%	449	34,5%	1	0,1%
Baby food	99	98	99,0%	1	1,0%	0	0,0%
other product	1606	1511	94,1%	91	5,7%	4	0,2%
Total	10683	6678	62.5%	3900	36.5%	105	0.98%

Table 108: Import sample

Food	Total Samples	Samples without residues	Samples without residues (%)	Samples with residue below or equal LMR	Samples with residue below or equal LMR (%)	Samples with residues above LMR	Samples with residues above LMR (%)
Fruit & vegetables	576	348	60,4%	202	35,1%	26	4,5%
Cereals	117	75	64,1%	42	35,9%	0	0,0%
Oil & wine	1	0	0,0%	1	100,0%	0	0,0%
other product	123	97	78,9%	24	19,5%	2	1,6%
Total	817	520	63,6%	269	32,9%	28	3,4%

Table 109: EUCP samples

Food	Total Samples	Samples without residues	Samples without residues (%)	Samples with residue below or equal LMR	Samples with residue below or equal LMR (%)	Samples with residues above LMR	Samples with residues above LMR (%)
Oat and similar-	1	1	100,0	0	0,0	0	0,0
Oat and similar-	2	2	100,0	0	0,0	0	0,0

Food	Total Samples	Samples without residues	Samples without residues (%)	Samples with residue below or equal LMR	Samples with residue below or equal LMR (%)	Samples with residues above LMR	Samples with residues above LMR (%)
organic							
Oat grain	44	38	86,4	6	13,6	0	0,0
Oat grain-organic	8	8	100,0	0	0,0	0	0,0
Barley grains	124	114	91,9	10	8,1	0	0,0
Barley grains-organic	9	9	100,0	0	0,0		0,0
Barley flour	2	2	100,0	0	0,0		0,0
Oat flour	6	6	100,0	0	0,0		0,0
Oat flour-organic	1	1	100,0	0	0,0		0,0
Head cabbages and similar-	11	9	81,8	2	18,2		0,0
Head cabbages and similar-organic	1	1	100,0	0	0,0	0	0,0
Head cabbages	58	50	86,2	8	13,8	0	0,0
Head cabbages-organic	3	3	100,0	0	0,0	0	0,0
Pointed head cabbages	1	1	100,0	0	0,0	0	0,0
Savoy cabbages	1	1	100,0	0	0,0	0	0,0
White cabbage	2	2	100,0	0	0,0	0	0,0
Tomatoes and similar-	5	3	60,0	2	40,0	0	0,0
Globe tomato	2	1	50,0	1	50,0	0	0,0
Globe tomato-organic	1	1	100,0	0	0,0	0	0,0
Pear-shaped tomatoes	1	0	0,0	1	100,0	0	0,0
Cherry tomatoes	5	0	0,0	5	100,0	0	0,0
Lettuces (generic)	74	23	31,1	51	68,9	0	0,0
Lettuces (generic)-organic	4	3	75,0	1	25,0	0	0,0
Crisp lettuces	2	1	50,0	1	50,0	0	0,0
Romaines	9	1	11,1	8	88,9	0	0,0
Spinach-type leaves	6	3	50,0	3	50,0	0	0,0
Spinaches and similar-	9	3	33,3	5	55,6	1	11,1
Spinaches and similar-organic	4	4	100,0	0	0,0	0	0,0
Spinaches	85	52	61,2	30	35,3	3	3,5
Spinaches-organic	1	0	0,0	1	100,0	0	0,0
Apples and similar-	1	0	0,0	1	100,0	0	0,0
Apples	164	52	31,7	111	67,7	1	0,6
Apples-organic	9	8	88,9	1	11,1	0	0,0
Strawberries and similar-	3	0	0,0	3	100,0	0	0,0
Strawberries	117	35	29,9	81	69,2	1	0,9
Strawberries-organic	3	3	100,0		0,0	0	0,0
Peaches and similar-	52	9	17,3	42	80,8	1	1,9
Peaches and similar-organic	1	1	100,0		0,0	0	0,0
Common peaches	95	19	20,0	75	78,9	1	1,1
Common peaches-organic	9	8	88,9	1	11,1	0	0,0

Food	Total Samples	Samples without residues	Samples without residues (%)	Samples with residue below or equal LMR	Samples with residue below or equal LMR (%)	Samples with residues above LMR	Samples with residues above LMR (%)
Nectarines	20	4	20,0	16	80,0	0	0,0
Pig fat tissue	84	83	98,8	1	1,2	0	0,0
Pig fat tissue-organic	1	1	100,0		0,0	0	0,0
Cow milk, whole	132	132	100,0		0,0	0	0,0
Wine, white	62	43	69,4	19	30,6	0	0,0
Wine, white-organic	3	3	100,0		0,0	0	0,0
Wine, red	141	63	44,7	77	54,6	1	0,7
Wine, red-organic	7	7	100,0		0,0	0	0,0
Ready-to-eat meal for infants and young children	29	28	96,6	1	3,4	0	0,0
Ready-to-eat meal for infants and young children-organic	1	1	100,0	0	0,0	0	0,0
Ready-to-eat meat-based meal for children	1	1	100,0	0	0,0	0	0,0
Ready-to-eat fruit-based meal for children	16	16	100,0	0	0,0	0	0,0
Other food for infants and children	15	15	100,0	0	0,0	0	0,0
Lettuces and similar-	12	6	50,0	6	50,0	0	0,0
Lettuces and similar-organic	1	1	100,0	0	0,0	0	0,0
Tomatoes	150	81	54,0	69	46,0	0	0,0
Tomatoes-organic	9	8	88,9	1	11,1	0	0,0
Total	1620	971	59,9	640	39,5	9	0,6

17.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

In 2019, 1,1 % of the samples (133 samples in total) were found not compliant with the EU MRL. The measures adopted for samples not compliant to Regulation 396/2005 are reported below.

Table 110: Actions taken

Action taken	Number of non-compliant samples concerned
Rapid Alert Notification	25
Administrative sanctions (e.g. fines)	90
Follow up (suspect) sampling	5
Follow-up investigation	16
No Action	10
Lot recalled from the market	2
Rejection of a non-compliant lot at the border	
Destruction of non-compliant lot	2
Warnings to responsible food business operator	1
Other actions or not reported	7

Table 111: MRL non-compliant

Pesticide/Food product	Frequency
Chlorpyrifos/apples	16
Etofenprox/Plums	4
Chlorpyrifos/Common Peaches	3
Acetamiprid/Granate apples	3
Spirotetramat (RD)/Strawberries	3
Propoxur/Processed fungi	2
Nicotine/Processed fungi	2
Tetramethrin/Processed fungi	2
Haloxyfop/Beans Dry	2
Dimethoate/Cherries	2
Chlorpyrifos/Florence Fennel	2
Clothianidin/Ginger root	2
Buprofezin/Lemons	2
Buprofezin/Lettuces	2
Methomyl/Lettuces	2
Dimethoate/Mandarins	2
Acephate/Peppers	2
Fipronil (RD)/Peppers	2
Chlorpyrifos/Sweet Pepper	2
Chlorfenapyr/Tomatoes	2
Deltamethrin (cis-deltamethrin)fungi processedi	1
Dimethoate/Apples	1
Dimethomorph (sum of isomers)/Apples	1
Permethrin (sum of isomers)/Apples	1
Lambda-cyhalothrin (includes gamma-cyhalothrin) (sum of R,S and S,R isomers)Apples	1
Dimethomorph (sum of isomers)/Apricots	1
Phosmet (phosmet and phosmet oxon expressed as phosmet)Apricots	1
DicloranAubergines	1
ChlorpyrifosAubergines and similar-	1
ChlorpyrifosBeans (dry) and similar-	1
FlutriafolBeans (dry) and similar-	1
Pirimiphos-methylBeans (dry) and similar-	1
Dimethomorph (sum of isomers)Beans (with pods) and similar-	1
AmetoctradinBeans (with pods) and similar-	1
Triadimenol (any ratio of constituent isomers)Celeries	1
ChlorpyrifosCeleries	1
Chlorpyrifos-methylCeleries	1
Cypermethrin (Cypermethrin including other mixtures of constituent isomers (sum of isomers))Celeries	1
Lambda-cyhalothrin (includes gamma-cyhalothrin) (sum of R,S and S,R isomers)Celeries	1
FlutriafolCelery leaves	1
DodineChards	1
Folpet (sum of folpet and phthalimide, expressed as folpet)Cherries (sweet)	1
OmethoateCherries (sweet)	1
Dimethomorph (sum of isomers)Cherries (sweet)	1
FluopicolideCherries (sweet)	1
Propamocarb (Sum of propamocarb and its salt expressed as propamocarb)Cherries (sweet)	1
TriflumuronCherries (sweet)	1
OmethoateCommon peaches	1
DimethoateCommon peaches	1
TebuconazoleCommon peaches	1
ChlorpyrifosCourgettes	1
Metalaxyl including other mixtures of constituent isomers including metalaxyl-M (sum of isomers)Courgettes	1
IprodioneCrisp lettuces	1
ChlorpyrifosCucumbers	1
Chlorpyrifos-methylFlorence fennels	1
LinuronFlorence fennels	1

Pesticide/Food product	Frequency
ImidaclopridGinger roots	1
ThiamethoxamGinger roots	1
Carbendazim and benomyl (sum of benomyl and carbendazim expressed as carbendazim)Globe artichokes	1
ChlorpyrifosGlobe artichokes	1
ProfenofosGlobe artichokes	1
Propiconazole (sum of isomers)Globe artichokes	1
PhenthoateGlobe artichokes	1
TebuconazoleGranate apples	1
ThiabendazoleGranate apples	1
Triadimenol (any ratio of constituent isomers)Grape leaves	1
AcetamipridGrape leaves	1
AzoxystrobinGrape leaves	1
ChlorpyrifosGrape leaves	1
Cypermethrin (Cypermethrin including other mixtures of constituent isomers (sum of isomers))Grape leaves	1
DifenoconazoleGrape leaves	1
FamoxadoneGrape leaves	1
MyclobutanilGrape leaves	1
TebuconazoleGrape leaves	1
TriadimefonGrape leaves	1
Pirimiphos-methylGrapefruits	1
BuprofezinGrapefruits and similar-	1
ProfenofosGrapefruits and similar-	1
ProfenofosGreen onions	1
Cypermethrin (Cypermethrin including other mixtures of constituent isomers (sum of isomers))Kaki	1
AcetamipridKiwi fruits (green, red, yellow)	1
Chlorpyrifos-methylKiwi fruits (green, red, yellow)	1
Carbendazim and benomyl (sum of benomyl and carbendazim expressed as carbendazim)Laurel and similar-	1
DifenoconazoleLaurel and similar-	1
PyridabenLaurel and similar-	1
DimethoateLemons	1
Lufenuron (any ratio of constituent isomers)Lemons	1
ChlorpyrifosLentils (dry)	1
Acrinathrin and its enantiomerLettuces (generic)	1
ChlorpyrifosLettuces (generic)	1
OmethoateLettuces (generic)	1
ChlorpyrifosOlives for oil production	1
FluopyramOlives, processed	1
DimethoateOranges	1
Fenthion (fenthion and its oxigen analogue, their sulfoxides and sulfone expressed as parent)Oranges	1
IprodioneOther Miscellaneous fruits with inedible peel, small	1
ChlorpyrifosPeaches and similar-	1
Benzalkonium chloride (mixture of alkylbenzyldimethylammonium chlorides with alkyl chain lengths of C8, C10, C12, C14, C16 and C18)Pears	1
Dicofol (sum of p, p' and o,p' isomers)Peppers and similar-	1
HexaconazolePeppers and similar-	1
IprovalicarbPeppers and similar-	1
MethamidophosPeppers and similar-	1
EtofenproxPrickly pears	1
Lambda-cyhalothrin (includes gamma-cyhalothrin) (sum of R,S and S,R isomers)Purslanes	1
PyraclostrobinRice grain	1
TricyclazoleRice grain	1
TetramethrinRice grain	1
PyrimethanilShallots	1
ClothianidinSpinaches	1
Deltamethrin (cis-deltamethrin)Spinaches	1

Pesticide/Food product	Frequency
MethomylSpinaches	1
ChlorpyrifosSpinaches and similar-	1
Chlorpyrifos-methylSpinaches and similar-	1
SpirotetramatStrawberries	1
Lufenuron (any ratio of constituent isomers)Strawberries	1
Spinosad (spinosad, sum of spinosyn A and spinosyn D)Strawberries	1
TebuconazoleStrawberries	1
ChlorfenapyrSun-dried tomatoes	1
ProfenofosSweet peppers	1
ChlorpyrifosTable grapes	1
DimethoateTable grapes	1
AcetamipridTeas leaves, dry and/or fermented, and similar	1
PyridabenTeas leaves, dry and/or fermented, and similar	1
CarbofuranTomatoes	1
ChlorpyrifosTomatoes	1
DimethoateTomatoes	1
Fenamiphos (sum of fenamiphos and its sulphoxide and sulphone expressed as fenamiphos)Tomatoes	1
HexaconazoleTomatoes	1
CarbarylWheat and similar-	1
TetramethrinWheat and similar-	1
TetramethrinWheat flour white	1
CarbarylWheat flour, durum	1
IprodioneWine, red	1

17.4. Quality assurance

All regions participated in the national programme, and the corresponding laboratories are under listed. All laboratories are accredited.

Table 112: Laboratories participating in the control programme

Country	Laboratory Name	Code	Accreditation		Participation in proficiency tests or inter-laboratory tests
			Date	Body	
IT	IZS LOMBARDIA E EMILIA	I0200000	03/04/1997	Accredia	EUPT-FV-21-EUPT AO-14-EUPT-CF13
IT	IZS DELLE VENEZIE	I0300000	18/07/1997	Accredia	EUPT AO-14-EUPT-CF13
IT	IZS LAZIO E TOSCANA	I0500000	1998	Accredia	EUPT-FV-21—EUPT-FV-SM11 - EUPT AO-14-EUPT-CF13
IT	IZS UMBRIA E MARCHE	I0600000	14/12/1998	Accredia	EUPT-FV-21-EUPT AO-14-EUPT-CF13
IT	IZS ABRUZZO E MOLISE	I0700000	18/12/2003	Accredia	EUPT-FV-21 - EUPT AO-14-EUPT-CF13
IT	IZS DELLA SICILIA	I1000000	08/07/1999	Accredia	EUPT-FV-21-EUPT-FV-SM11-EUPT AO-14-EUPT-CF13
IT	IZS DELLA SARDEGNA	I0400000	17/05/2011	Accredia	EUPT-FV-21- - EUPT AO-14
IT	IZS DELLA PUGLIA E	I0800000	31/10/2000	Accredia	EUPT-FV-21-EUPT AO-14-

Country	Laboratory Name	Code	Accreditation		Participation in proficiency tests or inter-laboratory tests
			Date	Body	
	BASILICATA				EUPT-CF13
IT	IZS DEL MEZZOGIORNO	I0900000	14/07/2010	Accredia	EUPT AO-14
IT	IZS PIEMONTE -LIGURIA e VALLE D'AOSTA	I0100000		Accredia	EUPT AO-14-EUPT-CF13
IT	ARPA AOSTA	P0201010	03/10/2007	Accredia	EUPT-FV-21-EUPT-CF13
IT	ATS BERGAMO	030325	19/06/2009	Accredia	EUPT-FV-21
IT	APPA BOLZANO	P0411010	05/12/2001	Accredia	EUPT-FV-21-EUPT-FV-SM11 - -EUPT AO-14-EUPT-CF13
IT	APPA TRENTO	P0421010		Accredia	EUPT-FV-21-EUPT-CF13
IT	ARPAV VERONA	P0501200	09/07/2008	Accredia	EUPT-FV-21— EUPT-CF13
IT	ARPA UDINE	P0601040	17/10/2012	Accredia	EUPT-FV-21 - EUPT-FV-SM11-EUPT-CF13
T	ARPAL LA SPEZIA	P0701050	25/06/2002	Accredia	EUPT-FV-21-EUPT-CF13
IT	ARPA FERRARA	P0801090	1998	Accredia	EUPT-FV-21-EUPT-CF13
IT	ARPAM MACERATA	P1101090	December 1999	Accredia	EUPT-FV-21— EUPT-CF13
IT	ARPA LATINA	P1201110	18/03/2004	Accredia	EUPT-FV-21-EUPT-FV-SM11-EUPT-CF13
IT	ARPA BARI	P1601040	25/02/2010	Accredia	EUPT-FV-21-EUPT-CF13
IT	ARPA CAMPANIA	P1500400	17/02/2011	Accredia	EUPT-FV-21
IT	ATS MILANO	030321	21/12/2010	Accredia	EUPT-FV-21-EUPT-CF13
IT	LABORATORIO DI SANITA PUBBLICA FIRENZE	090201	18/12/2006	Accredia	EUPT-FV-21— EUPT-FV-SM11 - EUPT-CF13

17.5. Processing factors

In the table below the processing factors used by national competent authorities to verify compliance of processed products with EU MRLs.

Table 113: Processing factors

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor [(a)]
All	Pepper	Dried pepper	10
Nicotine	Fungi	Dried fungi	30
Other different from nicotine	Fungi	Dried fungi	10
All	Oregano	Dried oregano	10
All	Wheat	Flour	1

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor [a]
All	Olives	Oil	5
All	Wine grapes	Wine	1
All	Dry product	Found with calculator developed by National reference laboratory	

(a) Processing factor for the enforcement residue draft.

18. Latvia

18.1. Objective and design of the national control programme

The Ministry of Agriculture of Latvia in collaboration with the Food and Veterinary Service and the State Plant Protection Service drafted the national control programme for pesticide residues taking into account the Article 30 Part 1 of Regulation (EC) No. 396/2005 of the European Parliament and of the Council of 23 February 2005 on the MRL of pesticides in or on food and feed of plant or animal origin.

18.1.1. Objective

The goal of this programme is to clarify the situation on contamination of the products of animal and plant origin on to pesticide residues, as well as to perform an unified pesticide monitoring programme in Latvia and to participate in the coordinated EU pesticide control programme.

18.1.2. Design

The pesticide control programmes are drafted taking into account the relevance of food products in national agricultural production, performance of plant protection products in Latvia, metabolism and toxicity of the active substances, RASFF notifications for pesticides, the risk to consumers, as well as cost of analysis and results of previous National control programmes for pesticide residues. The food commodities and pesticide residues which are not included in the EU coordinated programme are submitted in the national control programme. Sampling was carried out at different marketing levels:

- primary production
- wholesalers
- retail
- processing and manufacturing
- border inspection activities,
- by trained inspectors of the Food and Veterinary Service (FVS) according to Commission Directive 2002/63/EC[4] 11 July 2002 drafting Community methods of sampling for the official control of pesticide residues in and on products of plant and animal origin.

Table 114: Summary of samples taken in 2019 by product class and origin of samples

Samples	Total	Domestic	EU[a]	TC[b]
Animal products	29	16	11	2
Cereals	58	35	22	1
Baby food	20	10	8	2
Fruit and nuts	94	34	49	11
Vegetables	141	62	44	35
Other plant products	15	8	2	5
Wine	25	0	14	11
Honey	10	5	3	2
Total	392	170	153	69

(a) European Union.
(b) Third countries.

18.2. Key findings, interpretation of the results and comparability with the previous year results

Key findings

Coordinated programme: according to Regulation (EC) No 2018/555 in 2019, a total of 286 samples of fruit: apples, strawberries, peaches, nectarines, grapes; vegetables: cabbages, tomatoes, spinaches, lettuces; cereals: barley, oat, wine; animal products: fat, milk and baby food. The proportion of organic samples in year 2019 was 8 % (23 samples).

National programme: total of 62 samples of vegetables: carrots, cauliflowers, potatoes, head cabbages, onions; cereals: barley, wheat; rape; honey; fruit: blueberries, cranberries, cherries, sea buckthorns, strawberries, all samples of domestic origin. The proportion of organic samples in year 2019 was 40 % (25 samples).

Pesticides residues control on border posts: total of 44 samples from third countries: wine, honey, citrus fruits, strawberries, head cabbages, teas, eggs, peas, buckwheat, onions, linseeds. The proportion of organic samples in year 2019 was 56 % (25 samples).

Table 115: Summary results

Product	Total samples	Non-compliant samples
Baby food	20	0
Cow milk	12	0
Hen egg/product	5	0
Honey	10	0
Pork lard	12	0
Wine	25	0
Wheat	8	0
Barley	19	0
Buckwheat	2	0
Rapeseeds	2	0
Oat	27	0
Apples, pears	26	0
Table grapes	2	0
Strawberries	27	0
Citrus fruits	2	0
Berries	4	0
Cherries	2	0
Peaches, nectarines	28	1
Sea buckthorns	2	0
Cabbage	32	0
Onions	5	0
Lettuces	24	0
Cucumbers, courgettes	2	0
Spinaches	24	0
Peas	25	0
Potatoes	5	0
Carrots	2	0
Linseeds	2	0
Rape seed	2	0
Malt extract	6	0
Tomatoes	22	0
Coffee	2	0
Teas, herbal infusion	3	0
Kiwi	1	0

18.2.1. Interpretation of the results

In 2019, 1 samples were found non-compliant with the EU MRL – nectarine.

18.2.2. Comparability with the previous year results

Table 116: Comparability with previous year's result

	Total	Vegetables	Fruits	Cereals	Animal products	Baby food	Other products
Year 2016							
Total samples	343	132	125	34	36	10	6
Non-compliant samples	0	0	0	0	0	0	0
Year 2017							
Total samples	343	109	92	58	32	17	35
Non-compliant samples	2	0	0	1	0	0	1
Year 2018							
Total samples	368	143	100	34	33	26	32
Non-compliant samples	3	2	1	0	0	0	0
Year 2019							
Total samples	392	141	94	58	29	20	50
Non-compliant samples	1	0	1	0	0	0	0

Comparison of the results for 2016, 2017, 2018 and 2019 shows that they do not differ significantly.

18.3. Non-compliant samples: possible reasons and actions taken

18.3.1. Possible reasons for non-compliant samples

Table 117: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/Food product	Frequency	Comments
Other (please specify) - No reason possible to determine	Nectarines, Conventional (non-organic) production (A01GN#F21.A0C6Y)	1	

18.3.2. ARfD exceedances

No exceedance reported.

18.3.3. Actions taken

Follow up investigation at retailer was performed for non-compliant sample of nectarines.

Table 118: Actions taken

	Action taken	Number of non-compliant samples concerned
Nectarines	Follow up investigation at retailer	1

18.4. Quality assurance

All laboratory analyses were carried out by Institute of Food Safety, Animal Health and Environment BIOR.

Table 119: Laboratories participating in the national control programme

Country	Laboratory		Accreditation		Participation in proficiency tests or interlaboratory tests
	Name	Code	Date	Body	
LV	Institute of Food Safety, Animal Health and Environment BIOR	90009235333	08 June 2011	Latvian National Accreditation Bureau (LATAK)	Yes, institute participated in proficiency tests and interlaboratory tests

18.5. Processing factors (PF)

All samples reported were unprocessed products.

18.6. Additional information

No additional information.

18.7. Note on confidentiality of certain control data submitted by reporting country

All data can be shared to stakeholders and third parties as they are reported.

19. Lithuania

19.1. Objective and of the national control programme

The Lithuanian pesticide residue control programme is coordinated by State Food and Veterinary Service of the Republic of Lithuania (hereinafter - SFVS) in accordance with legislative requirements by plant origin food contamination monitoring pesticides residues in vegetable foods, state control and carried out in collaboration with National Food and Veterinary Risk Assessment Institute.

2019 plant origin food contamination monitoring programme (hereinafter - Programme) aims - to monitor, evaluate and manage the use of pesticides residues in plant origin foods.

The control programme consists of three parts: the EU coordinated multiannual control programme (EUCP, Commission Implementing Regulation (EU) 2018/555 of 9 April 2018 concerning a coordinated multiannual control programme of the Union for 2019, 2020 and 2021 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin, separate national control programme and import control programme prepared according State Food and Veterinary service director's order No.B1-157, where targeting of samples with commodities listed in Regulation (EC)

No 669/2009 and currently amended by regulations:

- Commission Implementing Regulation (EU) 212/2010
- Commission Implementing Regulation (EU) 323/2014
- Commission Implementing Regulation (EU) 718/2014
- Commission Implementing Regulation (EU) 2016/1024
- Commission Implementing Regulation (EU) 2016/2107
- Commission Implementing Regulation (EU) 2016/186
- Commission Implementing Regulation (EU) 2017/1142
- Commission Implementing Regulation (EU) No 2017/2298
- Commission Implementing Regulation (EU) 2018/941
- Commission Implementing Regulation (EU) 2018/1660

The main tasks of the control programme:

- Regularly collect information about the plant foods in which is set pesticide residues and collect information about imported from the European Union (hereinafter - EU) Member

States, imported from third countries and plant grown and produced foods in the Republic of Lithuania;

- Collect information on risk factors and use of the state control of the food chain;
- Provide information to producers and / or their associations, users and / or their associations, the Government of the Republic of Lithuania and the Republic of Lithuania to other institutions and authorities of the on-going state of plant food control;
- Impose sanctions plant foods to reduce pollution;
- When the plant foods for pesticide residues exceeding the Regulation (EC) No. 396/2005 or Commission Directive 2006/125/EC the MRLs to ensure the contaminated food would be removal from the market and to ensure measures to prevent consumers. About established unsafe food - to inform EU countries-warning of unsafe food and feed system on the market the Rapid Alert System for Food and Feed (hereinafter - RASFF).
- Commission Regulation (EC) No 889/2008 of 5 September 2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control

When defining the food products to be analysed in the national control programmes importance was given to factors listed below:

- Commission Implementing Regulation (EU) No. 2018/555 provisions;
- Commission Regulation (EU) No. 669/2009;
- Commission Directive 2006/125/EC;
- Vegetable contamination of pesticide residues and other contamination risk;
- Extent of the use of pesticides by the State Plant Service under the Ministry of Agriculture;
- NFVRAI risk assessments;
- EU Member States' annual reports on pesticide residues in food identification data;
- RASFF notifications received;
- To carry out the program the funds allocated;

For defining pesticides that should be included in national control programme the following aspects were taken into consideration:

- Pesticides listed in the Regulation concerning a coordinated multiannual control programme 2018/555 are included;
- Pesticides listed in EUPT (European proficiency test) organised by the European Union Reference Laboratories for Pesticide Residues;
- RASFF notifications for a pesticide and frequency of pesticide findings in the EU monitoring reports are used as selection criteria;
- Use pattern of pesticide. Those pesticides which are commonly used and which are known to leave residues in foods are included;
- Pesticides that are authorized for use in Lithuania are included into the program when relevant;
- Toxicity of the active substances is considered.

19.2. Key findings, interpretation of the results and comparability with the previous year results

The total number of samples analysed under the EU coordinated and national control programme were 629 (620 in 2018) samples and import control programme were 625 (482 in 2018) samples, total amount 1254 samples (1102 in 2018), which are 152 samples more than previous year (in 2018 there were 1102 samples).

Exceedances of MRLs were found in samples non-compliant (measurement uncertainty taken into consideration). The total percentage of non-compliances is 3,3%.

Non-compliant samples are mentioned in **Error! Reference source not found.**.

Table 120: Non-compliant samples in 2019

Product	Country	Residue	Value mg/kg	MRLs mg/kg	Programme
Hazelnuts, shelled, **organic***	Turkey	Piperonyl butoxide	0.018 ± 0.009	-	Import control
Buckwheat	Ukraina	Glyphosate	0.95 ± 0.47	0,1	Import control
Black tea	Sri Lanka	2-phenylphenol	0.50 ± 0.25	0,05	Import control
Green Tea	China	Lambda-cyhalothrin	0.078 ± 0.039	0,01	Import control
		Pyridaben	0.21 ± 0.11	0,05	
		carbendazim and benomyl (sum of benomyl and carbendazim expressed as carbendazim)	0.22 ± 0.11	0,1	
		Tolfenpyrad	0.32 ± 0.16	0,1	
Grapefruits	Turkey	Benzalkonium chloride	0.47 ± 0.23	0,1	National control
Honey	Lithuania	Glyphosate	0.14 ± 0.07	0,05	Inspection control
Parsley	Georgia, or Sacartwell	Chlorpyrifos	0.13 ± 0.07	0,02	National control
Honey	Lithuania	Glyphosate	4.7 ± 2.35	0,05	Inspection control
Oranges	Egypt	Chlorfenapyr	0.056 ± 0.028	0,01	National control
Organic natural flavor **Organic** cream plus vanilla*	USA	Benzalkonium chloride	0.070 ± 0.035	-	Import control
		DDAC10	0.072 ± 0.036		
Buckwheat	Poland	Glyphosate	0.43 ± 0.22	0,1	National control
Black tea	China	Lambda-cyhalothrin	0.15 ± 0.08	0,01	Import control
Fresh dill	Lithuania	Prosulfocarb	0.44 ± 0.22	0,05	National control
Chopped ginseng root	China	Hexachlorobenzene (HCB);	0.27 ± 0.13	0,02	Import control
		Sum of quintozene (quintozene and pentachloroaniline expressed as quintozene);	2.5 ± 1.3	0,1	
		Procymidone;	1.9 ± 1.0	0,05	
		Dimethomorph	0.20 ± 0.10	0,05	
		Fipronil (sum of fipronil and sulphone metabolite (MB46136) expressed as Fipronil);	0.012 ± 0.006	0,005	
Organic dried papaya pieces*	Sri Lanka	Acetamiprid	0.091 ± 0.045	-	Import control
Dill	Lithuania	Tebuconazole	5.0 ± 2.5	2,0	National control
Organic frozen	Belarus	N, N-diethyl-m-toluamide (DEET)	0.022 ±	-	Import

Product	Country	Residue	Value mg/kg	MRLs mg/kg	Programme
blueberries*			0.011		control
Organic frozen blueberries*	Russia	N, N-diethyl-m-toluamide (DEET)	0.027 ± 0.014	-	Import control
Organic chiaseeds*	Mexico	2-phenylphenol;	0.070 ± 0.035	-	Import control
		Chlorpyrifos;	0.010 ± 0.005		
Organic raisins*	Turkey	Cyprodinil;	0.010 ± 0.005	-	Import control
		Pyrimethanil;	0.015 ± 0.008		
		Spinosyn A;	0.008 ± 0.004		
Organic berries, blueberries, frozen*	Belarus	N, N-diethyl-m-toluamide (DEET)	0.024 ± 0.012	-	Import control
Honey	Lithuanian	Glyphosate	0.182 ± 0.09	0,05	Residues monitoring
Buckwheat		Glyphosate	0.25 ± 0.13	0,1	National control
Buckwheat	Ukraine	Glyphosate	1.4 ± 0.7	0,1	National control
Plums	Lithuania	Dodin	0.034 ± 0.017	0,01	National control
Blue plums	Moldova	Diflubenzuron	0.023 ± 0.012	0,01	National control
Organic coconut slices*	Philippines	Benzalkonium chloride (alkylbenzyldimethylammonium chlorides with alkyl chains of 10, 12, 14,16 carbon atoms)	0.249 ± 0.124	-	Import control
Organic black garlic puree*	USA	Benzalkonium chloride (alkylbenzyldimethylammonium chlorides with alkyl chains of 10, 12, 14,16 carbon atoms)	0.012 ± 0.0.006	-	Import control
Cabbage, Beijing, fresh,	Poland	Chlorpyrifos;	0.26 ± 0.13	0,01	National control
		dimethoate	0.22 ± 0.11	0,01	
Buckwheat	Ukraine	Glyphosate	0.32 ± 0.16	0,1	National control
Honey		Glyphosate	0.18 ± 0.09	0,05	Residues monitoring
Grapefruits	South Africa Republic	Imazalyl	10.2 ± 5.1	5	National control
		Thiabendazol	20.2 ± 10.1	7	
Mandarins	South Africa Republic	Fenbutatin oxide	0.051 ± 0.026	0,01	National control
Black tea	Russia	Dinotefuran;	0.082 ± 0.041	0,01	Import control
		Tolfenpiradas;	0.042 ± 0.021	0,01	
Buckwheat	Lithuania	Glyphosate	1.4 ± 0.7	0,1	National control
Grapefruit red	Turkey	Fenbutatin oxide	0.25 ± 0.12	0,01	Import control
Quickly frozen **organic**	Ukraine	N, N-diethyl-m-toluamide (DEET)	0.017 ± 0.008	-	Import control

Product	Country	Residue	Value mg/kg	MRLs mg/kg	Programme
blackberries*					
Rice	Vietnam	Tricyclazole	0.034 ± 0.017	0,01	Import control
Mandarins	Turkey	Fenvalerate (any ratio of its isomers (RR, SS, RS and SR), including esfenvalerate)	0.34 ± 0.17	0,02	Import control
Cucumbers	Greece	Formethanate (sum of formetanate and its salts expressed as formetanate (hydrochloride))	0.026 ± 0.013	0,01	National control
Dried ground hot peppers	China	Ethion	0.45 ± 0.23	0,17	Import control
Rice	Brazil	Tricyclazole	0.040 ± 0.020	0,01	Import control

*organic products

19.3. Quality assurance

According to Regulation No 882/2004 the competent authority shall designate laboratories that may carry out the analysis of samples taken during official controls. And designated laboratories are assessed and accredited in accordance with the EN ISO/IEC 17025:2017 on "General requirements for the competence of testing and calibration laboratories".

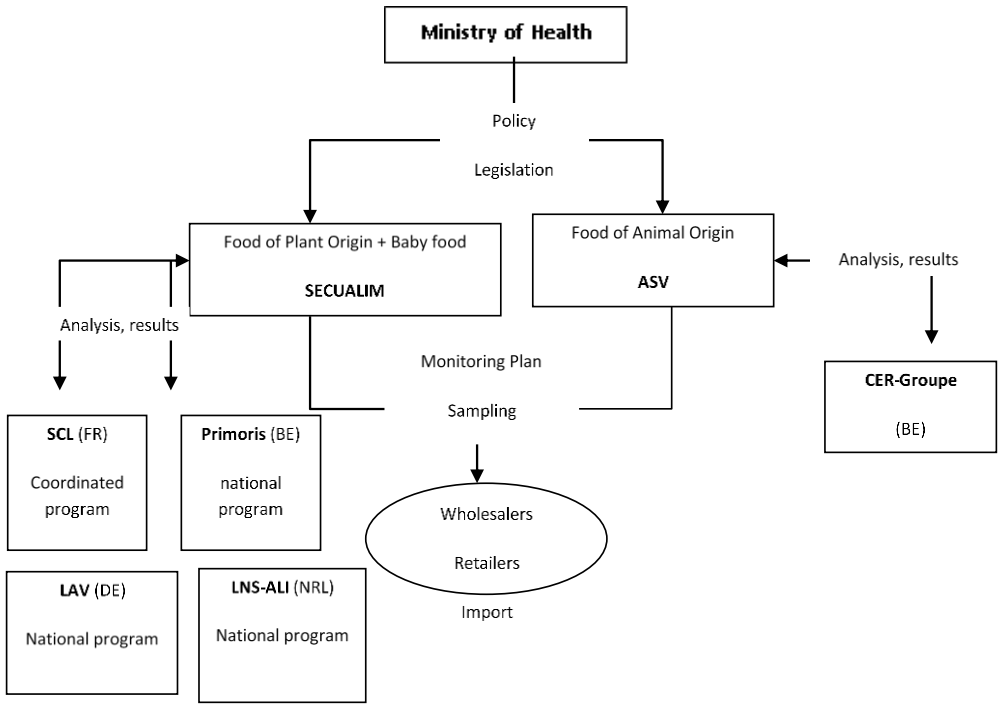
Table 121: Laboratory participation in the national control program

Country code	Laboratory Name	Laboratory Code	Accreditation Date	Accreditation Body	Participation in proficiency tests or interlaboratory tests
LT	National Food and Veterinary Risk Assessment Institute	NFVRAI	09.04.2020, valid until 08.04.2025	NAB, Lithuania from May 2015	EURL EUPT CF 13, Denmark; EURL EUPT FV-SM 12, Spain; EURL EUPT-FV21, Spain; EURL EUPT AO15, Germany; EURL EURL-SRM14, Germany.

20. Luxembourg

The Ministry of Health is the competent authority for the control of pesticide residues in food of both plant and animal origin. Within this ministry, the Division of Food Safety (SECUALIM) of the Directorate for public health is the executive, competent authority responsible for the control of pesticide residues in food of plant origin, including cereals and baby food. SECUALIM is also responsible for transferring notifications to the RASFF via the national contact point (COMALIM: Commissariat du gouvernement à la qualité, à la fraude et à la sécurité alimentaire) for these same categories of food.

The role and implementation of the various services during the sample collection process at wholesalers, retailers and during import are shown in Figure 4 below.



SECUALIM: Division of Food Safety of the Directorate for Public Health
ASV: Administration of Veterinary service
CER: Centre d'économie rurale, laboratory for the products of animal origin
LNS-ALI: Food Laboratory of the National Health Laboratory
Primoris: Laboratory for the products of plant origin

Figure 4: Role of the various departments involved in the control plan

As regards the control of pesticide residues in food of animal origin, the executive competent authority is the Administration of Veterinary Services (ASV). The various roles of these two authorities for the control of pesticide residues in food, both operating under the Ministry of Health, are illustrated in **Error! Reference source not found.**.

Table 122: Various roles of the SECUALIM and ASV departments for the control of pesticide residues in food

Role	Organisation name	Organisation address	Products
- Official reporting organisation residue programme design - Sample collection - Enforcement agencies	Division of food safety (SECUALIM)	7 A, rue Thomas Edison L-1445 Strassen	Food of plant origin (fruits, vegetables, cereals) and baby food
- Official reporting organisation - Residue programme design - Sample collection - Enforcement agencies	Administration of Veterinary Services (ASV)	7 A, rue Thomas Edison L-1445 Strassen	Food of animal origin

The collected samples are sent to the appropriate laboratories: the samples from food of animal origin are analysed by the laboratory for the products of animal origin (CER). For products of plant origin, including cereals and baby food, samples collected for both the coordinated and national programmes are sent to SCL (Service Commun des Laboratoires, fusion des laboratoires de la direction générale de la concurrence, de la consommation et de la répression des fraudes (DGCCRF) et de la direction

générale des douanes et droits indirects (DGDDI)); samples collected for the national program are sent to Primoris, laboratory for pesticide and residue analysis. One part of the pesticide analysis was done by the "Landesamt für Verbraucherschutz" (LAV) and one part by the Food Laboratory of the national health laboratory (analysis of dithiocarbamates).

20.1. Objective and design of the national control programme

20.1.1. Objective

The aim of the national control programme is to judge the contamination of plant products regarding pesticide residues that can be found on fruit, vegetables and cereals as a result of the use of plant protection products during primary production.

To protect the consumers and to check the good use of plant protection products (i.e. the use of authorised products and the application of good agricultural practice), MRLs are set in European legislation. An MRL exceedance, while showing an incorrect use of a plant protection product, does not necessarily involve a risk for the health of consumers.

More information on the authorised pesticide products authorised in Luxembourg can be found via the following link: https://saturn.etat.lu/tapes/tapes_de_mnu_pdt.htm

20.1.2. Design

The Division of Food Safety (SECUALIM) is responsible for drafting the sampling plan and for the control of presence of pesticide residues in fruits and nuts, vegetables, cereals, baby food and other plant products.

The control programme included two different programmes:

- the Coordinated Community control programme based on the Commission Regulation (EC) No. 555/2018 of 9th of April 2017 on a coordinated multiannual control programme;
- The national programme based on a risk assessment where several factors were taken into account: results from previous checks, data from the RASFF (rapid alert system for food and feed), toxicological data of residues, national production and available consumption.

The EU coordinated programme is the main part of the control programme. Samples included apples, strawberries, peaches, wine made from grapes, lettuces, head cabbages, tomatoes, spinaches, oat grains, barley grains, cow's milk, swine fat as well as baby food (Regulation (EC) N°555/2018).

For the national programme, samples collected included cereals, fruits (i.e. apples, avocados, dates, apricots, dried figs, dried plums, lemons, limes, mangos, papayas, passion fruits, pears, pineapples, plums, pomelos, raspberries, strawberries, wine grapes, tables grapes, blackberries, cassis, blueberries, pomegranates, persimmon, litchis, nectarines, mangosteens, mirabelles, rambutans, currants), aromatic herbs, tea, coffee grains, spices, nuts, vegetables (i.e. potatoes, asparagus, aubergines, beans, cabbages, celery, carrots, tomatoes, chili peppers, beetroots, courgettes, cucumbers, fennel seeds, garlic, artichokes, chicory, lettuces, kiwanos, turnips, onions, sweetcorn, parsnips, radishes, rhubarb, spinaches, peppers, endives, pepinos).

For both parts of the programme, the national production was taken into account, as well as food originating from other EEA countries and from third countries. Furthermore, where available, samples were taken from products originating from organic farming that reflect the market share of organic products. Sampling was done mainly at wholesalers and on retail level, but also during import. The choice of the matrices is based largely on fresh products to conduct the controls at the origin of the food chain and avoid the need of having to use a processing factor.

As far as the use pattern of pesticides and the toxicity of the active substances are concerned, Luxembourg works in collaboration with the laboratory responsible for controlling the samples for choosing the pesticides to be screened for as regards to a specific matrix (in function of their toxicity).

20.2. Key findings, interpretation of the results and comparability with the previous year results

20.2.1. Key findings

In 2019, a total of 490 samples were analysed for pesticide residues. 485 samples were collected in the framework of surveillance (156 samples within the coordinated community control programme and 329 samples within the national programme) and 5 samples were collected during enforcement.

Table 123: Summary of results for the samples collected (surveillance and enforcement)

Matrix	Organic samples	Total samples	<LOQ	Quantified	Quantified <MRL	Result >MRL but compliant considering uncertainty	Result non-compliant
Cereals	14	40	72.5 %	29.50 %	100 %	0 %	0 %
Coffee beans, roasted	10	25	84 %	16 %	96 %	4 %	0 %
Foods for infants and young children	4	10	100 %	0 %	0 %	0 %	0 %
Fruits	13	113	37.2 %	62.8 %	97.3 %	1.8 %	0.9 %
Herbs and spices	8	40	75 %	25 %	100 %	0 %	0 %
Legume seeds	1	9	66.7 %	33.3 %	100 %	0 %	0 %
Legumes	36	139	54.7 %	45.3 %	97.1 %	0.70 %	2.20 %
Nuts and oilseeds	5	37	70.3 %	29.7 %	97.3 %	2.7 %	0 %
Tea and herbal infusions	0	23	26 %	74 %	69.56 %	17.40 %	13.04 %
Tubers	1	15	100 %	0 %	0 %	0 %	0 %
Wine	0	12	25 %	75 %	100 %	0 %	0 %
Products of animal origin	2	27	96.3 %	3.7 %	100 %	0 %	0 %
Total	94	490	57.45 %	42.55 %	95.03%	3.46 %	1.51 %

Table 124: Summary of results of non-compliant samples

Product	Origin	Pesticide residue	Level (mg/kg)	MRL (mg/kg)
Surveillance				
Spinach	Belgium	Propiconazole	0.022	0.01
Tomato	Italy	Chlorfenapyr	0.14	0.01
		Import (882/2004)		
Tea	India	Acetamiprid	0.24	0.05
		Monocrotophoas	0.14	0.05
Tea	India	Acetamiprid	0.14	0.05
Tea	India	Acetamiprid	0.2	0.05
Blueberries	Mexico	Methamidophos		
		Thidiazuron	0.11	0.01
		Thiamethoxam	0.082	0.01
		Enforcement (669/2009)		
Beans (with pods)	Kenya	Acephate	0.39	0.01
		Methamidophos	0.12	0.01

20.2.2. Interpretation of the results

In 2019, 1.51 % of the samples collected (enforcement and surveillance) were non-compliant (7 samples of fruits and vegetables from a conventional production; 6 samples were collected in the

framework of surveillance and 1 of the samples was collected in the framework of enforcement) with the MRL set in EU legislation.

For surveillance, 2 of the non-compliant samples were from EU origin. The other 4 non-compliant samples originated from third country.

2 non-compliant samples were sampled as part of the national multiannual control programme and the products were withdrawn from the market. To note that there was no health concern with regards to these samples and no rapid alert (RASFF) has been issued.

The 4 non-compliant samples taken in the context of border inspection activities according to regulation (EC) No 882/2004 were also removed from the market. There was no health concern for these samples either.

The non-compliant sample from enforcement (669/2009) was not released onto the market.

20.2.3. Comparability with the previous year results

Table 125: Number of samples collected between 2016 and 2019 and non-compliance rates

Year	Total number of samples collected	Coordinated program	National program	Enforcement (669/2009)	Non-compliance (%)
2019	490	156	329	5	1.51 %
2018	349	156	189	4	2.3 %
2017	396	134	250	12	2.53 %
2016	411	182	222	7	2.92 %

20.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

20.3.1. Possible reasons for non-compliant samples

Table 126: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]	Comments
GAP not respected: use of a pesticide not authorized in the European Union	Propiconazole / Spinach (Belgium)	1	Reg. 1107/2009
GAP not respected: use of a pesticide not authorized in the European Union	Chlorfenapyr / Tomato (Italy)	1	Reg. 1107/2009
GAP not respected: use of a pesticide not authorized on the specific crop	Acetamiprid / Tea and herbal infusions (India)	3	Reg. 88/2019
GAP not respected: use of a pesticide not authorized in the European Union	Monocrotophos / Tea and herbal infusins (India)	1	Reg. 1107/2009
GAP not respected: use of a pesticide not authorized in the European Union	Thidiazuron / Blueberris (Mexico)	1	Reg. 1107/2009
GAP not respected: use of a pesticide not authorized in the European Union	Thiamethoxam / Blueberris (Mexico)		Reg. 1107/2009
GAP not respected: use of a pesticide not authorized in the European Union	Acephate / Beans (with pods) (Kenya)	1	Reg. 1107/2009
GAP not respected: use of a pesticide not authorized in the European Union	Methamidophos / Beans (with pods) (Kenya)	1	Reg. 1107/2009

(a): Number of cases.

20.3.2. ARfD exceedances

In 2019, none of the samples exceeded the acute reference dose (ARfD).

20.4. Quality assurance

Table 127: Laboratories participating in the national control programme

Country	Laboratory		Accreditation		Participation in proficiency tests or interlaboratory tests
	Name	Code	Date	Body	
BE	Centre d'économie rurale	CER	20 May 2014	BELAC (073 Test)	EUPT-A013
BE	Primoris	Primoris	27 July 2012	BELAC (057-TEST)	FAPAS 19260 EUPT CF13 EUPT FV21 FAPAS 09122 Proof-ACS 1911RT Proof-ACS 1916-RT Bipea 19c
FR	SCL – Laboratoire de Paris	SCL	2019-09-24	COFRAC	
LU	Laboratoire national de santé – Laboratoire de surveillance alimentaire	LNS-ALI	22 September 2009	OLAS (1/002)	EUPT-CF13 EUPT-FV21 FAPAS PT 09122

20.5. Processing factors (PF)

The processing factors that were used to verify the compliance of the processed products with EU MRL are compiled in the table below.

Table 128: Processing factors

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor[(a)]	Comments
All	Cereal grains (except rice)	Flour	1	As mentioned in Regulation (EC) 555/2018
All	Wine graes	Wine	1	As mentioned in regulation (EC) 555/2018

(a) Processing factor for the enforcement residue draft.

20.6. Note on confidentiality of certain control data submitted by reporting country

Luxembourg confirms that reported data on the 2019 pesticide monitoring results do not contain confidential information and can be shared with third parties if required.

21. Malta

21.1. Objective and design of the national control programme

21.1.1. Objective

The National Monitoring Programme for pesticide residues in produce of plant and animal origin for 2019 was based on the EU Coordinated Multiannual Community Control Programme as per Implementing Regulation (EU) 2018/555 of 9th April 2018 concerning a coordinated multiannual control programme of the Union for 2019, 2020 and 2021 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin. It also takes into consideration Local production/imports of commodities; past findings that may indicate a historical residue problem; organic produce; in light of new risks

(e.g. knowledge on use of banned pesticides) or other countries monitoring schemes and national environmental impacts that may have impacted produce; and consumer complaints.

21.1.2. Design

Sampling Programmes

A total of 20 different food commodities (including fruit and vegetables, food of animal origin and baby food) were analysed during 2019.

The commodities and quantities[17] sampled were as follows:

a. Apples = 12 samples
b. Food for infants and young children other than infant and follow-on formulae and processed cereal based baby food = 10 samples
c. Barley Grain = 3 samples
d. Beans = 12 samples
e. Head Cabbages = 12 samples
f. Grapes = 12 samples
g. Lettuces = 12 samples
h. Melons = 12 samples
i. Cow's Milk = 12 samples
j. Oat grain = 5 samples
k. Oranges = 12 samples
l. Peaches = 12 samples
m. Pears = 12 samples
n. Potatoes = 15 samples
o. Rice = 12 samples
p. Spinaches = 12 samples
q. Strawberries = 12 samples
r. Swine Fat = 12 samples
s. Tomatoes = 14 samples
t. Wine (including red or white) made from grapes = 12 samples

Sampling (personnel, procedures, sampling points)

The sampling strategy adopted was mainly objective sampling except where there was a reasonable suspicion on specific produce and thus, a Selective or Suspect sampling strategy was adopted.

The sampling methodology used was in accordance with Commission Directive 2002/63/EC[4] of 11 July 2002 establishing Community methods of sampling for the official control of pesticide residues in and on products of plant and animal origin which is implemented in the internal quality system of the MCCAA.

Officials from the Technical Regulations Division within MCCAA were responsible to implement the sampling procedures and elevate samples as per internal procedures. Samples were mainly taken from producers, wholesalers and importers. Samples of Maltese origin (local produce), as well as samples of EU and non-EU origin were taken.

[17] Samples below the average of n were subject to sample availability

21.2. Key findings, interpretation of the results and comparability with the previous year results

In 2019, a total number of 227 samples of fruits, vegetables, animal products and infant food were taken by the MCCAA and analysed for the presence of pesticide residues. In the case of products of animal origin, 245 pesticide residues were tested for, 578 pesticide residues were tested for in the fruit and vegetable commodities, while 1017 pesticide residues were tested for in the infant food, which cover the pesticide residues as listed in Commission Implementing Regulation (EU) 2018/555 concerning a coordinated multiannual control programme of the Union for 2019, 2020 and 2021 and also Directive 2006/125/EC on processed cereal-based foods and baby foods for infants and young children in the case of the infant food.

The products analysed were of Maltese origin (56.39%) and imported (42.73%). Imported produce consisted of that of EU origin (38.77%) and non-EU origin (3.96%). Products with unknown origin were also analysed (0.88%).

185 of the samples analysed in 2019 were unprocessed. Ten samples of food for infants and young children, twelve samples of wine, five samples of oat grain, twelve samples of rice and three samples of barley grain were subjected to processing.

91.2% of samples analysed were compliant with the pesticide residue legislation (in 37.9% no residue was found, whilst 53.3% were below the MRL). 8.8% of the samples (twenty samples) had the residue levels above the MRL.

21.2.1. Key findings

Table 129: Summarises the type of commodities tested as per sampling programme and the results obtained.

Sampling Program	Types of commodities	No. of samples analysed	% No residue found	% Residue <MRL	% Residue >MRL
EU Coordinated Multi Annual Community Control Program	Apples	12	25.0	75.0	0.0
	Baby Food	10	100.0	0.0	0.0
	Barley Grain	3	66.7	33.3	0.0
	Cabbages	12	58.3	25.0	16.7
	Lettuce	12	8.3	91.7	0.0
	Cow's Milk	12	100.0	0.0	0.0
	Oat grain	5	0.0	100.0	0.0
	Peaches	12	0.0	100.0	0.0
	Spinaches	12	25.0	25.0	50.0
	Strawberries	12	25.0	50.0	25.0
	Swine Fat	12	100.0	0.0	0.0
	Tomatoes	14	14.3	71.4	14.3
	Wine	12	8.3	91.7	0.0
National Program	Beans	12	50.0	41.7	8.3
	Grapes	12	0.0	100.0	0.0
	Melons	12	58.3	41.7	0.0
	Oranges	12	50.0	41.7	8.3
	Pears	12	0.0	100.0	0.0
	Potatoes	15	46.7	20.0	33.3
	Rice	12	33.3	66.7	0.0

21.2.2. Interpretation of the results

Seven commodities had pesticide residues exceeding the MRL i.e. cabbages, spinaches, strawberries, tomatoes, beans, oranges and potatoes. There were two samples of cabbage, six samples of spinaches, three samples of strawberries, two samples of tomatoes and five samples of potatoes which exceeded the MRL. In the case of oranges and beans there was only one sample of each which exceeded the MRL.

All the samples with residues above MRL were of local origin apart from the sample of beans which was imported.

21.2.3. Comparability with the previous year results

The comparison of sample numbers for 2017, 2018 and 2019 can be seen in Figure 5.

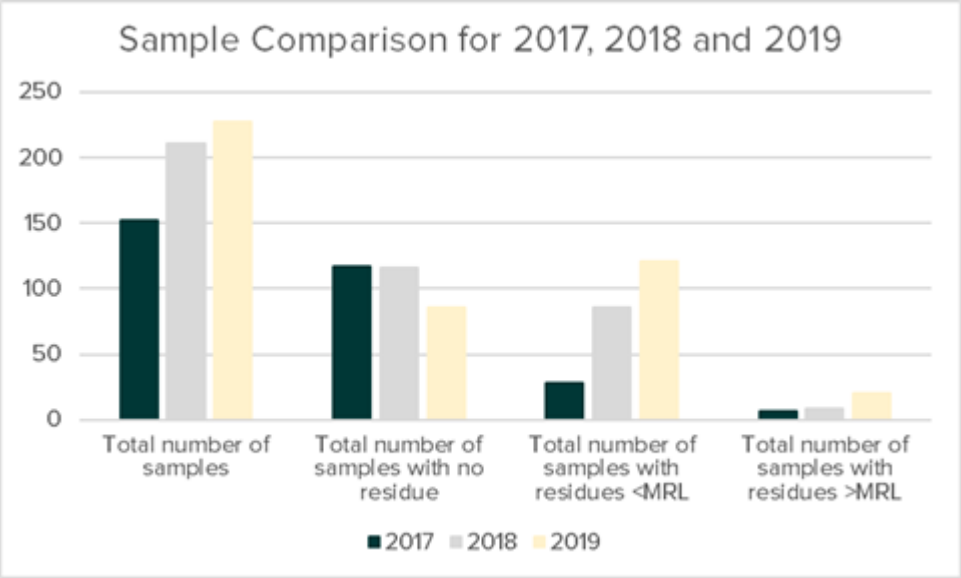


Figure 5: Number of samples

The Comparison of the % of samples with residue content for 2017,2018 and 2019 can be seen in Figure 6.

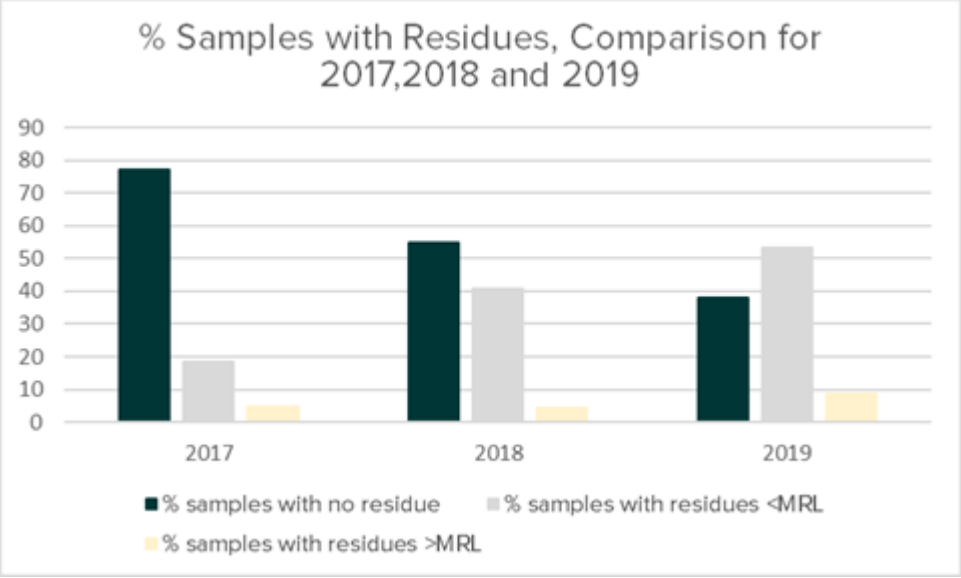


Figure 6: Percent of samples

Compared with the past 3 years, 2019 data depicts a decrease in the number of samples with no residues as compared to 2017 and 2018 (80.0% in 2017, 55.0% in 2018, and 37.9% in 2019).

2019 data depicts an increase in number of samples with residues below the MRL when compared to the previous 2 years (53.3% in 2019 compared to 40.8% in 2018 and 16.6% in 2017). The percentage of samples above MRL in 2019 was 8.8% as compared to 4.3% in 2018 and 3.4% in 2017, on comparison with previous years, for year 2019, one laboratory was contracted for the analysis of the 227 samples. In view of the contracted laboratory, an increase in the residue scope

coverage was presented for year 2019 analysed samples. Thus, the values for 2019 are to be evaluated in view of the above considerations.

21.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

21.3.1. Residues found

Eleven different pesticide residues were found in commodities samples which exceeded the EC-MRL value set at the time of sampling. In all the cases found with residues above the MRL value, a legal action as stipulated in the Pesticides Control Act, Chapter 430 of the Laws of Malta, is initiated. The residues found are summarised in Table 130:

Table 130: Residues found

Commodity	Origin	Residue above MRL found	Residue Level in mg/kg	MRL mg/kg
Strawberries	Local	Tebuconazole	0.066	0.02
Strawberries	Local	Tebuconazole Cyazofamid	0.21 0.54	0.02 0.01
Strawberries	Local	Etofenprox	0.025	0.01
Beans	Egypt	Benzalkonium Chloride	2.2	0.1
Cabbages	Local	Chlorpyriphos-ethyl Lufenuron	0.025 0.074	0.01 0.01
Cabbages	Local	Lufenuron	0.028	0.01
Oranges	Local	Dimethoate	0.062	0.01
Potatoes	Local	Lufenuron	0.12	0.01
Potatoes	Local	Chlorantraniliprole	0.15	0.02
Potatoes	Local	Chlorantraniliprole Chlorpyrifos-ethyl	0.14 0.064	0.02 0.01
Potatoes	Local	Chlorpyrifos-ethyl Lufenuron	9.5 0.52	0.01 0.01
Potatoes	Local	Chlorantraniliprole	0.17	0.02
Spinach	Local	Deltamethrin	0.51	0.01
Spinach	Local	Chlorpyrifos-ethyl	0.036	0.01
Spinach	Local	Chlorpyrifos-ethyl	0.58	0.01
Spinach	Local	Lufenuron	0.055	0.01
Spinach	Local	Diuron	0.028	0.01
Spinach	Local	Lufenuron	0.13	0.01
Tomatoes	Local	Chlorfenapyr	0.17	0.01
Tomatoes	Local	Chlorfenapyr Cyhexatin	0.021 0.37	0.01 0.01

21.3.2. Possible reasons for non-compliant samples

Table 131: Possible reasons for MRL non-compliant

Reasons for MRL non-compliance	Pesticide/food product	Frequency[(a)]
Good Agricultural Practice not respected, use of an approved pesticide, but application rate, number of treatments, application method or pre-harvest interval not respected	Clorfenapyr/Tomatoes	1
	Chlorfenapyr and Cyhexatin/Tomatoes	1
	Lufenuron/Spinach	2
	Chlorpyrifos-ethyl/Spinach	2
	Deltamethrin/Spinach	1
	Diuron/Spinach	1
	Chlorantraniliprole/Potatoes	2
	Chlorantraniliprole and Chlorpyrifos-ethyl/Potatoes	1
	Chlorpyrifos-ethyl and Lufenuron/Potatoes	1

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]
	Lufenuron/Potatoes	1
	Dimethoate /Oranges	1
	Chlorpyrifos-ethyl and Lufenuron/Cabbages	1
	Lufenuron/Cabbages	1
	Benzalkonium Chloride/Beans	1
	Tebuconazole and Cyazofamid/Strawberries	1
	Tebuconazole/Strawberries	1
	Etofenprox/Strawberries	1

(a): Number of cases

21.4. Actions taken

Table 132: Actions taken

Number of non-compliant samples concerned	Action taken
20	Legal action has been taken against the farmers whose produce exceeded the EC-MRL of one or more pesticide residues.

21.5. Quality assurance

Samples are to be sent for multi-residue analysis to a Laboratory which shall have in place a Quality Assurance system in compliance with the criteria of the latest edition of European standard EN ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories" as specified under Regulation (EC) 882/2004 and accredited by the relevant Accreditation Body.

As specified in Regulation (EC) 396/2005 the Laboratory analyzing samples for the official control on pesticide residues shall be participating in the Community proficiency tests for pesticide residues organized by the Commission and be actively co-ordinating with the Maltese National Reference Laboratory.

Table 133: Laboratories participation in the national control program

Country	Laboratory Name	Accreditation		Participation in proficiency tests or inter-laboratory tests
		Date	Body	
DE	Eurofins Dr. Specht Laboratorien GmbH	Issued: 28th August 2018 Expiries: 11th December 2021 Re-issued: 15th April 2020	DAkkS	Yes

22. The Netherlands

22.1. Objective and design of the national control programme

The national control programme combines the two purposes of official control: risk-based inspection, sampling and analysis, and evaluating the market situation with respect to MRL compliance. In the national control programme choices were made for kind and number of samples to be taken for analysis as many different pesticides, vegetables and fruits are involved. Therefore, some considerations are of importance:

- consumption of the commodity;

- production or import volume of the commodity;
- experience from the previous years on violations. These experiences do not only extend to type of products and country of origin, but take into account results of sampling at individual companies as well;
- the occurrence of pesticide/crop combinations that might lead to exceedances of the ARfD;
- the degree of sampling and analysis, carried out by the producer/importer;

The MRL Regulation (EC) 396/2005 mentions two main objectives of the official control programme: enforcement of MRLs and obtaining data to be able to assess consumer exposure. For the latter objective representative sampling is a pre-requisite, whereas the first objective is optimised by searching for high-risk products. The Dutch programme is a mixture of both strategies. Sampling in the market is in general representative for the product present in the market at that time and can be used for intake calculations. The choice of products to be sampled, however, is risk based. Products sampled at border control and importers of high-risk products are typically non-representative and selected from an enforcement point of view. High violation rates can indicate both an efficient sampling strategy and problems in the agricultural practice.

The national control programme is primarily directed to major products in the consumption pattern. These products are in line with the products the EU has chosen for the multiannual rolling programme of the control Regulation (EU) 2018/555. Considerable capacity is reserved to minor products especially from import products, because they show frequent non-compliances. For 2019, this number was 605 samples of fruits and vegetables within the total number of 3,178.

The coordinated control program also implies analysis of products of animal origin. As the veterinary control program (directive 96/23/EU, VMPR) requires pesticide analysis to some extent as well, the samples of that program were analysed with an additional scope in line with the control regulation EU/2018/555. These samples have been reported in the framework of the VMPR-datagathering and are not reported in the pesticide data transmission to prevent double occurrence when data may be merged in one central data warehouse. In 2019, various samples of products of animal origin have been analysed. The numbers for the products of the coordinated program, cows milk and pig fat, were 20 each.

The main sampling points are distribution centres of retail chains, importers, warehouses and for both domestic and non-domestic products. At those inspection points, it is clear who is responsible for the product, so that appropriate legal action can be taken in case of non-compliance.

The control program involves both Dutch and foreign production. The EU-harmonisation of MRLs has resulted in such a lowering of exceedance rates of EU-products that less attention is needed for that market segment and can be redistributed to more riskful imports from non-EU countries. Although the main consumption patterns come from products from EU-origin come from the European market, their sampling has been reduced, unless a reasonable high violation rate exists

In general, control based on the primary product is preferred over that of processed food. It is useful to monitor processed products in the following cases:

- due to processing toxic metabolites can be formed (Ethyl thioureum, propyl thioureum)
- the primary product is not accessible. Examples are:
  - products processed in other countries, e.g. fruit juices, wines and vegetable oil
  - products obtained by the processing industry directly from the grower
- processed food gives a good overview of the situation of the market as to dietary intake, e.g. flour and baby food.

The NVWA (Netherlands Food and Consumer Product Safety Authority) applies as much as possible MRMs for the analysis of pesticide residues. The main procedure is extraction with acetone, followed by solvent partitioning with dichloromethane/petroleum ether. The extract is analysed with GC-MS/MS and LC-MS/MS. Depending laboratory capacity theseapparatus are run in different modes. For the LC-MS/MS a choice had to be made between a short run narrow scope and a long run extensive scope, depending on capacities. Whenever possible, LC-MS/MS was applied in negative mode as well. Dried products and baby food have been analysed using the QuEChERS method, followed by triple–quad GC-MS/MS, both in electron impact and negative chemical ionisation mode, and LC-MS/MS. Depending

choices made, scopes applied to the samples varied from 175 to more than 500. For pesticides outside the scope of MRMs, SRMs must be applied. As these give only information on one or a few analytes, they are much less cost effective than MRMs, and only applied when the following criteria are met:

- for the commodity–pesticide combination an MRL above the LOQ exist, indicating that residues may be expected;
- for the commodity–pesticide combination improper use of the pesticide is expected;
- the pesticide is part of the EU coordinated control programme

22.2. Key findings, interpretation of the results and comparability with the previous year results

During 2019, 3,178 samples, both domestic and non-domestic products, were analysed for pesticide residues. The national and coordinated control plan accounted for about 2,500 samples. As part of the import control Regulations 669/2009 and 885/2014 605 samples were analysed. Within the national control plan domestic products made up app. 20 % of the fresh produce samples, 15 % of the samples came from other EU countries and app 65 % from non-EU countries. Dutch products show residues above the reporting limit in about 64 % of the samples, whereas non-domestic products contain residues in 71 % (EU) and 75 % (non-EU) of the cases, respectively. These percentages are comparable with the year before, slightly higher for Dutch products. Non-EU products sampled in the framework of the regulation 669/2009/EU or 885/2014 contained residues in 76 % of the cases. This number is less than in 2017. The change in scope of products in the regulation is the source of the difference. In app. 2000 samples 6327 residues of 199 different pesticides were found. Non-compliant samples: possible reasons, ARfD exceedances and actions taken.

22.2.1. MRL violations and actions taken

In 2019 MRL violations of European products showed a comparable percentage to 2018. The total number of non-compliances in European products is low. Therefore, a small change in absolute number gives considerable relative spread from year to year. The decrease of MRL-violations in national control samples originating from non-EU products cannot be attributed to a specific product or country. Samples taken in the framework of the 669/2009 and 885/2014 for import control show a lower non-compliance rate than national control plan samples from the same countries considering all products (Figure 7). Possibly stronger requirements by importers play a role. It should be noted that the majority of the MRL exceedances are within the measurement uncertainty range. In those cases, no enforcement takes place, unless an ARfD exceedance may occur.

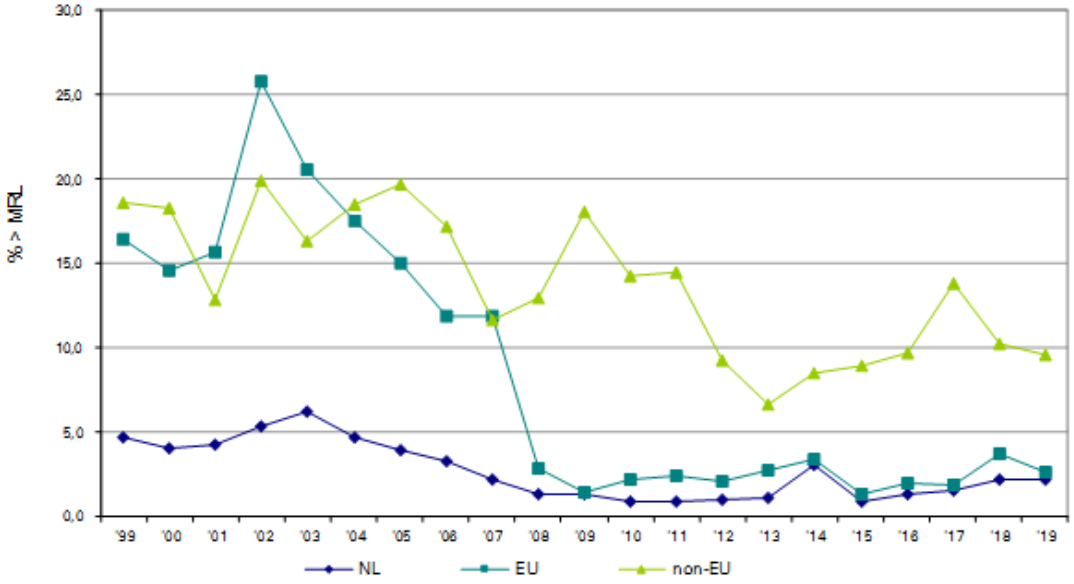


Figure 7: Percentage of MRL violations

Non-EU countries are major contributors into the amount of MRL-violations. Figure 8 gives the most frequently non-complying pesticide/crop combinations with the main countries of origin for the samples in the national control plan. Figure 8 gives this overview for the 669/2009 and 885/2014 import control regulated imports. In spite of these measures for some products this import regime still detects considerable numbers of non-compliances. Figure 8 gives results on main products in the year 2019. A comparison is made with the results of previous years. For the main products in the national program, fewer violations were observed with most of the products, as in general compliance increased. High percentages of non-compliances exist for several groups of non-EU products. They originate from specific problems: rice from India, for many tropical vegetables, spinach or broccoli MRLs apply, whereas the GAPs are different.

Some minor products not planned within the national control program show still a considerable violation rate. Examples are tropical fruits and gojiberries. Although little direct wine leaf import in the Netherlands exist, market control shows high numbers of MRL violations. This validates the inclusion of wine leaves in Regulation 885/2014.

When food safety issues are involved in pesticide residues, it is mainly with respect to acute effects. Therefore, it is important to notice to what extent pesticides are used that give acute intake hazards. For product/pesticide combinations the Critical Crop/Pesticide Concentration (CCPC) has been evaluated.

At the CCPC-limit 100 % of the ARfD is reached based on a point-estimate and a product is considered to be unsafe and "injurious to health" in the meaning of the General Food Law (Regulation EC/178/2002). In such cases the product is recalled when possible, and a Rapid Alert is issued. Further, a company will receive a financial fine as a result of bringing hazardous food on the market. In 13 cases possible ARfD exceedances were encountered with pesticide residues based on official control samples and rapid or information alerts were issued. In 2018 the number was comparable.

Product	Pesticides	%>MRL	Countries
Wine leaves	cyhalothrin-lambda; metalaxyl; boscalid; trtriadimenol; cypermethrin; azoxystrobin; carbendazim.	65	Turkey
Passion fruits Maracujas	profenofos; methamidofos; diverse	40	Colombia
Chilipeppers	chlorpyriphos	24	China, Malaysia, Vietnam, Turkey, Zimbabwe, Uganda, Egypt
Rice	tricyclazool; thiamethoxam	20	India
Gojiberries	thiamethoxam, acetamiprid	17	China

Figure 8: Main products with high percentages of non-compliances, with corresponding pesticides and origins

22.3. Quality assurance

Information about the laboratory can be seen in **Error! Reference source not found.**.

Table 134: Laboratories participating in the national control programme

Country	Laboratory		Accreditation		Participation in proficiency tests or interlaboratory tests
	Name	Code	Date	Body	
NL	Netherlands Food and Consumer Product Safety Authority	NVWA	1–8-1998	RVA	EU-RL, Fapas

22.4. Processing factors (PF)

In the table below the processing factors are compiled that were used by national competent authorities to verify compliance of processed products with EU MRLs. For risk assessment processing factors were used as compiled by Dutch RIVM (chemkap.rivm.nl processing factors), also EFSA processing database is frequently used. Furthermore, on individual basis also companies may deliver a processing factor to NVWA, based on proven experience.

Table 135: Processing factors used in MRL compliance assessment

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor[(a)]	Comments
all	Grape	raisin	4.7	
all	Grape	wine	1	
all	Gojiberries	dried berries	5	
fat soluble	oil seeds	crude oil	oil percentage	Agreement on oil content with oil producing industry

(a): Processing factor for the enforcement residue definition

23. Norway

23.1. Objective and design of the national control programme

23.2. Objective

The Norwegian Food Safety Authority (NFSA) is the competent authority for the enforcement of the pesticide residues monitoring in Norway.

The Norwegian monitoring programme for pesticide residues in fresh fruit and vegetables, cereals, baby food and animal products and some other products have the last year included 1,263 samples. In addition to the monitoring programme, this report also includes official controls on imports of certain feed and food of non-animal origin, EU-regulation No. 669/2009 (border control samples).

23.3. Design

The number of each commodity and the percentage of imported versus domestic samples are based on Norwegian statistic of food consumption rates, the risk for residues, previous RASFF notifications and the national three years plan. The criteria for taking organic grown samples are dependent on their market share and the availability on the market. The sampling includes products that are important in the Norwegian diet, but also products that are more sporadic are included as well.

The balance of organic and conventional products in the national monitoring programme was almost like earlier years in Norway. In 2019, 158 organic samples were analysed.

Inspectors from the Norwegian Food Safety Authority are taking the monitoring samples mainly at importers and wholesalers' warehouses in different parts of Norway. Some samples were also collected at farmers or retail sale.

Norwegian Institute of Bioeconomy Research (NIBIO) was responsible for all analysis in the monitoring programme.

23.4. Key findings, interpretation of the results and comparability with the previous year results

23.4.1. Key Findings

In 2019, 1,263 samples were analysed for pesticide residues in Norway. These samples were from the national monitoring programme and the EU coordinated programme. In addition, 10 samples were enforcement samples – border control in line with Regulation (EC) No. 669/2009 and 'following up samples'.

In 2019, Norway gave two RASFF notifications. This was in beans with pods from Laos and in rice from Vietnam. There were no RASFF alerts from the border control.

In the ordinary monitoring programme, the surveillance samples included 120 different commodities. 23 samples had residues above the MRLs. Six of them came from EU and 17 outside EU/EEA. 14 samples were considered as non-compliant after the measurement uncertainty was taken into account. No domestic samples had residue levels that exceeded the MRLs.

In addition to the monitoring programme, nine samples from the border control were analysed. It was detected residues above the MRL for two of these samples, which were beans with pods from Kenya and tea from China. There were one following up sample with no residues above the MRL.

There were no findings of pesticide residues in samples of baby food and in samples of animal origin in the national monitoring programme.

Every sample of plant origin was analysed by two multimethods, which covered 353 different pesticides including some metabolites. Some samples were analysed by single residue methods. In 2019, 14 single residue methods used, covering 54 substances.

23.4.2. Interpretation of the results

The monitoring programme shows that the level of pesticide residues in food is generally low and that there are few exceedances. This implies that the food with these measured levels of pesticide residues is safe to eat. In the period 2014 to 2019, the number of samples with pesticide residues above the MRLs ranged from 1.4 to 3.6 % (Table 138:). Percentage of samples with findings above the MRLs is at the same level as in 2018 and slightly higher than in 2017.

The results from 2019 show that 34 % of the samples in the ordinary monitoring programme (surveillance) had two or more pesticide residues in the same sample. This is in accordance with the five previous years (Table 136:).

Table 136: Mean number of pesticide residues in surveillance samples, chlorate above MRL not included, in which more than one pesticide has been detected (2014–2019)

	2014	2015	2016	2017	2018	2019
Mean number of pesticide residues in samples in which more than one pesticide has been detected	3.3	3.4	3.4	3.6	3.5	3.4

The highest number of different pesticides in one sample was detected in raisins from Turkey. Residues of 16 different pesticides were detected, but none of them was above the MRL.

23.4.3. Comparability with the previous year results

Error! Reference source not found. gives an overview of number of samples with exceedances for the last years.

Table 137: Number of samples with exceedances (after subtraction of the analytical uncertainty) from 2014 to 2019 (surveillance samples, chlorate above the MRL not included)

	2014	2015	2016	2017	2018	2019
Number of samples with exceedances	18	10	28	14	17	14

The Norwegian Food Safety Authority publishes all exceedances on their website (www.mattilsynet.no).

In the period 2014 to 2019, the number of samples with pesticide residues above the MRLs ranged from 1.4 to 3.6 % (**Error! Reference source not found.**). Percentage of samples with findings above the MRLs is at the same level as in 2018 and slightly higher than 2017.

Table 138: Number (%) of samples with findings above the MRLs from 2014-2019 (surveillance samples, chlorate above MRL not included).

	2014	2015	2016	2017	2018	2019
Domestic	0.2	0.2	0.5	–	-	-
Imported	2.7	2.1	5.1	2.2	3.2	3.0
Total	1.8	1.4	3.6	1.4	2.2	2.1

Factors that can influence the number of findings above the MRLs can be the selection of products sampled, changes in the regulation from year to year, the analytical scope and differences in the limits of quantification for the analytical methods.

23.5. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

Totally, 1.3 % of the surveillance samples (14 samples) in the monitoring programme (chlorate not included) were found non-compliant with the EU MRL. The pesticides found were compared with the MRLs and the measurement uncertainty has been taken into consideration for all samples

Nine samples from the border control were analysed for pesticide residues. Two of the samples was found non-compliant with the EU-MRL. These samples were beans with pods from Kenya and tea from China.

23.5.1. Possible reasons for MRL non-compliance

Table 139: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/Food product
GAP not respected: use of an approved pesticide not authorised on the specific crop[(c)]	There were four samples with pesticide not approved in Norway we had to investigate. These were: • Chlormequat in barley, following up of local producers. • Hexythiazox in strawberries, no sign of uses at the producer. Mother plants originally from NL where they were allowed to use it. • Cyprodinil in fennel. The producer got inspection. However, could not find the reason for the finding of cyprodinil in the fennel. • Penconazole in dill. The producer got inspection. However, could not find the reason for the finding of penconazole in dill.
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Most of the exceedance are samples where the pesticide is approved, but it has in or the other way managed to be too much.
Cross-contamination: spray drift or other accidental contamination	One organic sample was detected with terbutylazin. This was notified in the OFIS system. Investigation showed that the reason for this exceedance was spray drift from the neighbour field.
Residues resulting from other sources than plant protection product (e.g. biocides, veterinary drugs, biofuel)	Chlorate could not be proved to be found as use as pesticide. But it may come from the water used. Found in lettuce, basil and thyme

23.5.2. ARfD exceedances

Norway notified two samples due to health risk, which were beans with pods from Laos (0.16 mg/kg triazophos) and rice from Vietnam (0.015 mg/kg tricyclazole). This consignment was withdrawn as soon as possible from the market, and new import of these products were followed up by new samples.

23.5.3. Actions taken

Error! Reference source not found. gives an overview of what sort of actions that have been taken when a non-compliance product was proven.

Table 140: Actions taken

Action taken	Number of non-compliant samples concerned	Comments
Administrative consequences	6	
Destruction of animals and/or products	2	
Follow-up (suspect) sampling		
Follow-up action due to a residue of a pesticide detected in an EU sample, which is not approved for use in the EU territory	3	
No action	8	
Other	1	
Follow-up investigation	2	
Rapid Alert Notification	2	RASFF no 2019.3180 and RASFF no 2019.3612
Lot recalled from the market	7	
Movement restriction	1	
Warnings	1	

Since we do not follow up imported products at the farm or at the food business abroad, we do not have the knowledge to conclude anything.

23.6. Quality assurance

An overview of the laboratories involved in the pesticide residues programme is shown in **Error! Reference source not found.**.

Table 141: Laboratories participating in the control programme

Country	Laboratory		Accreditation		Participation in proficiency tests or interlaboratory tests
	Name	Code	Date	Body	
NO	NIBIO, Biotechnology and Plant Health, Pesticides and Natural Products Chemistry	NIBIO	27 April 1995, valid to 9 October 2022	Norwegian accreditation	EUPT-FV-21, EUPT-SRM-14, EUPT-CF-13, EUPT-AO-14, EUPT-FV-SM11, EUPT-FV-SC03

23.7. Processing factors (PF)

An overview of the processing factors used in the pesticide residues programme is shown in **Error! Reference source not found.**.

Table 142: Processing factors

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor (a)	Comments
Tricyclazole	Rice	Rice, polished	0.5	
Isoprothiolane	Rice	Rice, polished	0.5	
Tebuconazole	Rice	Rice, polished	0.5	
Acetamiprid	Grapes	Raisins	4.7	
Azoxystrobin	Grapes	Raisins	2.99	

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor (a)	Comments
Boscalid	Grapes	Raisins	2.4	
Carbendazim	Grapes	Raisins	4.7	
Cyflufenamid	Grapes	Raisins	4.7	
Cypermethrin	Grapes	Raisins	3.3	
Cyprodinil	Grapes	Raisins	2	
Deltamethrin	Grapes	Raisins	3.6	
Dimethomorph	Grapes	Raisins	4.7	
Famoxadone	Grapes	Raisins	4.7	
Fenhexamid	Grapes	Raisins	1.77	
Fenpyroximate	Grapes	Raisins	2.7	
Fenvalerate	Grapes	Raisins	4.7	
Fludioxonil	Grapes	Raisins	1.59	
Fluopicolide	Grapes	Raisins	2.7	
Fluopyram	Grapes	Raisins	2.41	
Flutriafol	Grapes	Raisins	4.7	
Imidacloprid	Grapes	Raisins	1.05	
Indoxacarb	Grapes	Raisins	2.26	
Iprodione	Grapes	Raisins	4.7	
Lambda-cyhalothrin	Grapes	Raisins	3	
Metalaxyl And Metalaxyl-M	Grapes	Raisins	3.03	
Methoxyfenozide	Grapes	Raisins	2.1	
Myclobutanyl	Grapes	Raisins	4.7	
Propargite	Grapes	Raisins	0.85	
Pyraclostrobin	Grapes	Raisins	2.87	
Pyrimethanil	Grapes	Raisins	4.7	
Spirodiclofen	Grapes	Raisins	1.67	
Spirotetramat	Grapes	Raisins	4.7	
Tebuconazole	Grapes	Raisins	1.2	
Tebufenozide	Grapes	Raisins	4.7	
Trifloxystrobin	Grapes	Raisins	4.7	
Chlormequat	Barley grain	Barley flour	1	
Glyphosate	Barley grain	Barley flour	1	
Chlormequat	Oat grain	Oat flour	1	
Glyphosate	Oat grain	Oat flour	1	
Carbendazim	Mushroom	Dried mushroom	5	
Boscalid	Wine grapes	Wine	1	
Fenhexamid			0.41 (white wine) 0.22 (red wine)	
Fluopicolide			0.4	
Metalaxyl And Metalaxyl-M			1	
Methoxyfenozide			0.32	
Myclobutanil			0.14	
Pyrimethanil			0.43	

a. Processing factor for the enforcement residue draft

23.8. Additional information

According to Regulation (EU) No 662/2016 (the coordinated multiannual control programme), some pesticide residues can be analysed on voluntary basis. Those of the voluntary pesticides that are included in the multi methods are analysed on all samples. The voluntary analysis of pesticide residues, which have to be analysed with single residue methods, were analysed in small amounts and some were not analysed at all.

Norway has a delay in the implementation of new legislations/new MRLs. New legislations have to be approved in the EEA Joint Committee before implementation, which will cause a delay compared to the rest of the EU.

24. Poland

24.1. Objective and design of the national control programme

The Chief Sanitary Inspectorate designed the programme for the control of pesticide residues in food of plant and animal origin. The national control plan includes monitoring and official control as well as coordinated EU monitoring programme and covers all major pesticide/commodity combinations including processed products, baby food and organically grown product.

The aim of this programme is to control food available in the Polish market for the possible presence of pesticide residues in order to evaluate the market situation with respect to compliance with the MRLs, to assess consumer exposure and to monitor pesticide residues surpassing admissible level as a basis for follow-up and enforcement actions.

The 2019 national programme was designed to control 51 different food commodities and 335 pesticides including metabolites and break down products.

The National Plan for 2019 was developed taking into considerations several factors:

- preferences of consumers, relevance of a food product in diet,
- food consumed by infants and children,
- commodities with high residue levels, where the MRLs were exceeded in previous years,
- origin of food (domestic, EU, third countries), focussing on countries with high non-compliance rate in the past,
- cost of analysis and analytical capacity of the official laboratories.

The food samples were collected according to the annual sampling plan which is prepared every year in line with new requirements. The samples were collected at different marketing levels, mainly at central distribution or wholesale levels. The sampling strategy was mainly random sampling taking into account seasonality of crops. When it was suspected that the product does not meet the requirements, the sampling was selective. This strategy provides more efficient residue monitoring and higher degree of consumer protection.

For defining pesticides that should be included in national control programmes the following aspects were taken into consideration:

- high RASFF notification rate for a pesticide,
- use pattern of pesticide,
- toxicity of the active substance

24.2. Key findings, interpretation of the results and comparability with the previous year results

24.2.1. Key findings

In 2019, 2,624 samples were collected and analysed for the presence of pesticide residues. The samples were collected in the frame of EU coordinated programme, national monitoring and official control of food and border control.

Samples were collected depending on the availability on the market, mainly fresh or frozen. 1694 (64.6%) of taken samples were of domestic origin, 520 (19.8%) of samples originated from EU countries and 369 (14.1%) of samples were produced in third countries. For 41 (1,5%) of the samples the product origin was non-specified.

No detectable residues were found in 1204 samples (45.9% of all samples). Of the 2624 samples tested, 1420 (54.1%) contained one or more pesticide residues within the legally permitted levels. In 132 (5%) of samples permissible levels were exceeded (numerical exceedances).

As in previous years, more MRLs residues were observed for fruit (81 % samples), vegetables (52% of samples), and cereals (38%). The lowest amount of residues was found in samples of animal origin (4.3%) and baby food (1.1%).

In the group of vegetables, the highest level of residues was observed for celery (40%), chinese cabbage (25.5%), parsley (12.8%), and tomatoes (11.9%). A high level of residues was found in celery from domestic production which contained mainly linuron (45.2% of celery samples), azoxystrobin (42.8%), and difenoconazole (40.5%). The residues of linuron exceeding the acceptable levels were found in 7 of 42 samples of celeries.

In the group of fruits, citrus fruits, pome fruits and berries were the groups with the highest frequency of pesticides detected (80 – 100% of the samples). The most frequent found pesticides were: boscalid, captan, azoxystrobin, fludioxonil, acetamiprid, fluopyram.

Relatively a large number of samples (17) contained residues of chlorpyrifos above the MRLs (Chinese cabbage, celery, currants, broccoli, Brussels sprouts).

Of the 95 samples of baby food tested only one (ready to eat apple cream) contained residue above the MRL (flonicamid). In products of animal origin, in 10 of 43 samples of honey some residues were found (acetamiprid, thiacloprid), all below the MRL.

In 2019 there were collected and tested 38 organic samples. No pesticide residues were found in any of these samples.

Results of 2019 year summarised per group are presented in **Error! Reference source not found.** to **Error! Reference source not found.**.

Table 143: Overview of the results 2019 (summary of monitoring, official control and border control)

	Number of samples taken	Number of samples without residues (<LOQ)	%	Number of samples with residues ≥LOQ≤MRL	%	Number of samples with residues > MRL*	%
Fruit/vegetables	1777	612	34.4	1055	59.4	110	5.0
Cereals	158	98	62.0	59	37.4	1	0.6
Baby food	95	94	98.9	0	0	1	1.1
Processed products	253	137	54.2	112	44.2	4	1.6
Animal products	235	189	92.6	15	7.4	0	0
Others	106	38	35.8	52	49.1	16	15.1
Summary	**2624**	**1204**	**45.9**	**1288**	**49.1**	**132**	**5.0**

* - the measurement uncertainty was not taken into account (numerical exceedances)

Table 144: Results of domestic samples by commodity group

	Number of samples taken	Number/ percentage of samples without residues (<LOQ)	%	Number/ percentage of samples with residues ≥LOQ≤MRL	%	Number/ percentage of samples with residues > MRL*	%
Fruit	384	82	21.4	284	74	18	4.6
Vegetables	742	356	47.9	315	42.5	71	9.6
Cereals	140	83	59.3	56	40	1	0.7
Baby food	83	82	98.8	0	0	1	1.2

	Number of samples taken	Number/ percentage of samples without residues (<LOQ)	%	Number/ percentage of samples with residues ≥LOQ≤MRL	%	Number/ percentage of samples with residues > MRL*	%
Processed products	117	45	38.5	68	58.1	4	3.4
Animal products	228	218	95.6	10	4.4	0	0
Others							
Summary	**1694**	**866**	**51.1**	**733**	**43.3**	**95**	**5.6**

* - the measurement uncertainty was not taken into account (numerical exceedances)

Table 145: Results depending on origin of the samples

	Number of samples taken	Number/percentage of samples without residues (<LOQ)	%	Number/percentage of samples with residues ≥LOQ≤MRL	%	Number/percentage of samples with residues >MRL*	%
PL (Poland)	1694	866	51.1	733	43.3	95	5.6
UE (Union)	520	210	40.4	300	57.7	10	1.9
TC (Third countries)	369	105	28.5	238	64.5	26	7.1
NN (non-specified)	41	23	56.1	17	41.5	1	2.4

* - the measurement uncertainty was not taken into account (numerical exceedances)

24.2.2. Interpretation of the results

Pesticide residues were found for 54.1% of all tested samples. Although 81% of the fruit and 52% of vegetable sample contained pesticide residues, the detected residues were well below the established levels of MRL. More exceedances of the MRL were found in products from third countries than in domestic samples or samples originating from UE (7.1%, 1,9% and 5.6% respectively). However, the percentage of non-compliance in domestic samples was higher in 2019 (3.2) than 2018 (2.04%).

In last year more samples were analysed as targeted samples from border control: 84 in 2018 and 120 in 2019 including 58 samples collected in the frame of regulation 669/2009.

Only 3 samples of black tea had pesticide residues (acetamiprid, lambda-cyhalothrin and anthraquinone) above the MRL (non-compliance). In comparison with 2018, the rate of non-compliance was lower.

In 2019 RASFF notifications from Poland were not submitted.

24.2.3. Comparability with the previous year results

The total number of samples in 2019 was about 3% more than in previous year. Compared to 2018, the percentage of samples without residues slightly decreased: 47,1% in 2018 and 45.9% in 2019. The rate of non-compliant samples in 2019 compared to 2018 was on a slightly higher level: 2,5% and 2.04%, respectively.

The increase in the samples with residues found (52.9% in 2018 and 54% in 2019) was caused by a larger number of pesticides sought by laboratories. Use of more sensitive analytical techniques allowed quantification at lower levels.

24.3. Non-compliant samples: possible resons, ARfD exceedances and actions taken

24.3.1. Possible reasons for non-compliant samples

In 2019, 132 (5%) samples had residues exceeding MRL set in EU legislation. Taking into account measurement uncertainty of 50%, only 66 (2.5%) were found non-compliant. The exceedances were mostly detected in celery roots (40% of samples), Chinese cabbages (25,5%) and parsley (12,8%).

The information about possible reasons for non-compliance, in most cases, was not available.

Table 146: Possible reasons for MRL non compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency [a]
GAP not respected: use of a pesticide not approved in the EU[b]	Carbendazim/currants	2
	Carbendazim/cucumbers	1
	Prometryna/leek	2
	Linuron,chlorpiryfos/celery	1
	Linuron,propiconazole/celery	1
	Linuron/celery	5
	Linuron/ parsley	1
	Propiconazole/parsley	1
	Propiconazole/celery	1
	Iprodione/celery	1
	Clothianidin/Brussels sprouts	2
GAP not respected: use of an approved pesticide not authorised on the specific crop[b]	Mepiquat/apples	1
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Chlorpiryfos/broccoli	2
	Chlorpiryfos/brussels sprouts	4
	Chlorpiryfos/Cinese cabbage	6
	Chlorpiryfos/currants	1
	Chlorpiryfos,propikonazole/currants	1
	Chlorpiryfos/celery	1
	Chlorpiryfos/avocado	1
	Chlorpiryfos/leek	1
	Flutolanil/celery	2
	Etephon /tomatoes	1
	Etephon /peppers	1
	Fluazifop-P/spinach	1
	Chlorothalonil/Chinese cabbage	1
	Chlorothalonil/raspberries	1
	Flonicamid/raspberries	1
	Flonicamid/baby food	3
	Dimethoate/ Chinese cabbage	1
	Cypermethrin/cucumbers	1
	Cypermethrin/oyster mushrooms	1
	Propamocarb/strawberries	1
	Tebukonazole/kiwi	1
	Tetrakonazole/currants	1
	Pirymifos-methyl/rye	1
	Glyphosate/millet flakes	1
	Glyphosate/Buckweat	1
	Lambda-cyhalotrin/tea	1
	Acetamipryd/tea	1
	Anthraquinone/tea	1
	Spiroxamine,dinotefuran/tomatoes	1
	Spiroxamine/tomators	3
Unknown	Pirimifos-methyl/strawberies	1
	Glyphosate/nectarins	1

(a): Number of cases
(b): Applicable only for food products produced in the EU

24.3.2. ARfD exceedances

A risk assessment was performed by experts from National Institute of Public Health – National Institute of Hygiene for 45 of non-compliant samples. In 12 cases, residues may pose a risk to consumers so necessary enforcement actions were taken. This concerned mainly chlorpyrifos residues in samples of broccoli, Chinese cabbage, red currant and prometrin in leek, etephon in tomatoes, linuron in celery, dimethoate in Chinese cabbage, carbendazim in cucumbers.

The largest exceedings of ARfD were found for chlorpiryfos in broccoli (1228,9% for children, 375.5% for adults) and etephon in tomatoes (697.8% for children, 190.3% for adults), both from domestic production.

24.3.3. Actions taken

Table 147: Actions taken

	Number of non-compliant samples concerned
Administrative sanctions (e.g. fines)	48 2
Lot recalled from the market	6
Rejection of a non-compliant lot at the border	3
Destruction of non-compliant lot	3
Follow-up (suspect) sampling of similar products, samples of same producer or country of origin	4

24.4. Quality assurance

Collected samples were analysed in 5 official laboratories. All laboratories are assessed and accredited in accordance with the EN ISO/IEC 17025 by Polish Centre for Accreditation. Two multiresidue methods (MRM) and three single methods (SRM) were used for analysis.

Table 148: Laboratories participation in the national control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
Poland	Voivodship Sanitary – Epidemiological Station in Warszawa	LAB 1 (NRL)	19/10/2004	The Polish Centre for Accreditation	EUPT-FV 21, EUPT-CF 13
Poland	Voivodship Sanitary – Epidemiological Station in Łódź	LAB 2	03/01/2006	The Polish Centre for Accreditation	EUPT-FV 21
Poland	Voivodship Sanitary – Epidemiological Station in Opole	LAB 3	15/11/2004	The Polish Centre for Accreditation	EUPT-FV 20, EUPT-CF 13,
Poland	Voivodship Sanitary – Epidemiological Station in Rzeszów	LAB 4	18/06/2004	The Polish Centre for Accreditation	PT/EUPT AO 14, COIPT-19
Poland	Voivodship Sanitary – Epidemiological Station in Wrocław	LAB 5	08/12/2005	The Polish Centre for Accreditation	EUPT-FV 21

24.5. Processing Factors (PF)

In the Table below are compiled the processing factors that were used by national competent authorities to verify compliance of processed products with EU MRLs.

Table 149: Processing factors

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor
Deltamethrin Lambda-cyhalothrin Trifloxystrobin Chlorpyrifos Cypermethrin	Olives for oil production	Olive oil	5
Acetamiprid Amitraz Azoxystrobin Cypermethrin Chlorothalonil Fenpropathrin Difenoconazole Dithiocarbamates Imidaclopryd Carbendazim Pyridaben Propargit Pyraklostrobin Spirotetramate Spirodiklofen Tebuconazole Thiametoxam Tiophanat – methyl Triadimenol	Goji berries	Dried goji berries	5
Chlorpyrifos- methyl Cypermethrinl Deltamethrin Pirymiphos – methyl Permethrin Tebuconazole	Wheat grain	Wheat flour	1
Propiconazole Azoxystrobin Cyproconazole Imidacloprid Isoprothiolan Permethrin Tebuconazole	Natural rice	Polished rice	0.5

25. Portugal

25.1. Objective and design of the national control programme

- relevance of a food product in diet or in national agricultural production - High
- food products with high non-compliance rate identified in the previous years/ high RASFF notification rate - High
- unprocessed - High or processed products - Low
- food relevant for sensitive group of consumers (e.g. baby food) - Low
- organic - Low or conventional products - High
- sampling of products during main marketing season - High; outside of main marketing season (e.g. strawberries during winter) - Low
- sample origin reflecting geographic distribution of food products consumed (e.g. domestic, EU, third countries) – High, or focussing on countries with high non-compliance rate in the past - Low

- food commodities not included in EU coordinated programme - High

For defining pesticides that should be included in national control programmes the following aspects were taken into consideration:

- capacity of the labs - High
- those defined in the Regulation 2018/555 from 9th April – High

25.2. Key findings, interpretation of the results and comparison with the previous year results

25.2.1. Key findings

Table 150: Summary results: 2019

Samples	Total	Without residues	%	With residues below the MRL	%	Exceeding MRL	%	Non compliant	%
Cereals (unprocessed)	41	27	65.9	12	29.3	2	4.9	2	4.9
Processed products	82	23	28	57	69.5	2	2.4	1	1.2
Sum of fruits and nuts, vegetables, other plant products (unprocessed)	834	350	42	414	49.6	70	8.4	40	5
Animal products	17	7	41.2	10	58.8	0	0	0	0
Total	**974**	**407**	**41.79**	**493**	**50.62**	**74**	**7.6**	**43**	**4.41**

25.3. Comparison with previous results

Previous results (2015-2018):

Table 151: Summary results: 2018

Samples	Total	Non-compliant	%
Cereals (including processed products)	69	7	10,00
Processed products	81	0	0
Sum of fruits and nuts, vegetables, other plant products	650	19	2,9
Total	**800**	**26**	**3,25**

Out of 800 samples, 61 (7.6%) refer to organic farming, and one of them was non-compliant.

Table 152: Summary results: 2018 (continue)

Samples	Total	Without residues	%	With residues below the MRL	%	Exceeding MRL	%	Non compliant	%
Baby food	20	20	100	0	0	0	0	0	0
Animal products	35	35	100	0	0	0	0	0	0
Total	**55**	**55**	**100**	**0**	**0**	**0**	**0**	**0**	**0**

Table 153: Summary results: 2017

Samples	Total	Without residues	%	With residues below the MRL	%	Exceeding MRL	%	Non compliant	%
Baby food	17	17	100	0		0		0	
Cereals	58	37	63,79	15	25,86	6	10,34	5	8,62
Processed products	27	14	51,85	11	40,74	2	7,41	1	3,70
Sum of fruits and nuts, vegetables, other plant products	602	279	46,35	282	46,84	41	6,81	28	4,65
Animal products	6	6	100	0		0		0	
Total	**710**	**353**	**49,72**	**308**	**43,38**	**49**	**6,9**	**34**	**4,79**

Table 154: Summary results: 2016

Samples	Total	Without residues	%	With residues below the MRL	%	Exceeding MRL	%	Non compliant	%
Baby food	13	12	92.31	-	-	1	7.69	1	7.69
Cereals	11	11	100	-	-	0	0	0	0
Processed products	46	28	60.87	18	39.13	0	0	0	0
Sum of fruits and nuts, vegetables, other plant products	313	130	41.53	177	56.55	6	1.92	3	0.96
Animal products	46	46	100	-	-	0	0	0	0
Total	**429**	**227**	**52.91**	**195**	**45.45**	**7**	**1.63**	**4**	**0.93**

Table 155: Summary results: 2015

Samples	Total	Without residues	%	With residues below MRL	%	Exceeding MRL	%	Non compliant	%
Baby food	13	13	13	0	0	0	0,00	0	0,00
Cereals	31	23	74	8	25	0	0,00	0	0,00
Processed products	55	44	80	11	20	0	0,00	0	0,00
Sum of fruits and nuts, vegetables, other plant products	589	328	56	242	41	19	3,22	14	2.4
Total	**688**	**408**	**59.3**	**261**	**37.9**	**19**	**2.76**	**14**	**2**

25.4. Non-compliant samples: possible reasons, ARfD exceedances and actions taken (Coordinated and National Program)

25.4.1. Possible reasons for non-compliant samples

Table 156: Possible reasons for non-compliant MRL

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]	Comments
GAP not respected: use of a pesticide not approved in the EU[c]	Fonicamide/cauliflowes	1	AGQ Labs
	Thiametoxam+tryciclasol/rice	1	AGQ Labs
	Chlorpropham/apples	2	LRVSA Madeira
	Chlorpyrifos/apples	1	AGQ Labs
	Chlorpropham/pears	2	LRVSA Madeira
	Dinocap/table grapes	1	AGQ Labs
	Iprodione/cherries	8	AGQ Labs
	Iprodione/peaches	1	AGQ Labs
	Dimethoate+ometoate/peaches	1	AGQ Labs
	Teflubenzuron/kaki	1	LRVSA Madeira
	Dimethoate+ometoate/mangoes	1	LRVSA Madeira
	Iprodione/white wine	1	AGQ/Labs
	Fopet/tomato	1	AGQ/Labs
	iprodione/lettuces*	1	AGQ/Labs
GAP not respected: use of an approved pesticide not authorised on the specific crop[b]	Spinosad/turnips**	1	AGQ Labs
	Chlormequat/barley	1	AGQ Labs
	Acrinatrine/Aubergines	1	AGQ Labs
	Delthamethrin/spinaches	1	AGQ Labs
	Delthamethrin/oranges	1	LRVSA Madeira
	Dithiocarbamates/raspberries	1	AGQ Labs
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Lambda-cyhalothrin /lettuces[d]	1	AGQ Labs
	Lambda-cyhalothrin/parsley	1	AGQ Labs
Naturally occurrence (e.g. dithiocarbamates in turnips)	Dithiocarbamates/broccoli	1	LRVSA Madeira
	Dithiocarbamates/spinaches	1	LRVSA Madeira
	Dithiocarbamates/turnips[e]	5	LRVSA Madeira
Changes of the MRL	Iprodione/white wine	1	AGQ/Labs
Use of a pesticide on food imported from third countries for which no import tolerance was set[c]	Diaphentioron+iprovalicarbe/chilli peppers	1	Labiagro
	Carbaryl/coconut	1	Labiagro
	Dichlorvos/pumpkin seeds	1	Labiagro
	Carbofuran/wolfberries	2	Labiagro
	Prochloraz/Chayote	1	Labiagro
	Imazalil/papaya		

(a): Number of cases
(b): Applicable only for food products produced in the EU
(c): For imported food only
(d): Same sample (lettuce)
(e): Same sample of one of the 5 turnips samples

25.4.2. ARfD exceedances

Table 157: Number of samples

Pesticide/food product	Frequency	Lab
Dimethoate+ometoate/peaches	1	AGQ Labs
Fopet/tomato	1	AGQ Labs
Dimethoate+ometoate/mangoes	1	LRVSA Madeira
Dinocap/table grapes	1	AGQ Labs

Pesticide/food product	Frequency	Lab
Delthamethrin/oranges	1	AGQ Labs
Lambda-cyhalothrin + iprodione/lettuces	1	AGQ Labs
Thiametoxam+tryciclasol/rice	1	AGQ Labs
TOTAL	7	

Table 158: ARfD exceedances non-compliant (Control at Import Program)

Pesticide[(a)]/food product	Frequency	Origin
Carbofuran/Gojiberries	1	Labiagro China
Diafenthiuron+iprovalicarb/chilli peppers	1	Labiagro Paquistan
Tricyclazole (+buprofezin)/Basmati rice	1	Neotron Third country
TOTAL	3	

Table 159: Origin of the non-compliant products

Pesticide/food product	Frequency	Origin
Dimethoate+ometoate/peaches	1	Spain
Fopet/tomato	1	Portugal
Dimethoate+ometoate/mangoes	1	Portugal
Lambda-cyhalothrin + iprodione/lettuces	1	Spain
Dinocap/table grapes	1	Portugal
Delthamethrin/oranges	1	Portugal
Thiametoxam+tryciclasol/rice	1	India
Carbofuron/wolfberries	1	China
Diaphentioron+iprovalicarbe/chilli peppers	1	Pakistan
Acetamiprid, carbendazim, propiconazole, tolfenpyrade/green tea	1	China
Boscalid, tebuconazole, flubendiamid, tolfenpyrad, dinotefuran/green tea	1	Japan
Carbofuran, hexaconazole, amitraze, propargite, fipronil/Goji berries	1	China
Trinexapac/rice	1	Argentina

25.4.3. Actions taken

Table 160: Actions taken for mangoes, apples, pears, kaki, turnips

Action taken[(a)]	Number of non-compliant samples concerned	Comments
Rapid Alert Notification		
Administrative sanctions (e.g. fines)	24+7	Mainland+ Madeira
Rejection of a non-compliant lot at the border	11	
Other actions	5 (with dithiocarbamates)	No action considering possible natural occurrence

25.5. Quality assurance

Table 161: Laboratories participation in the control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
PT	Laboratório Regional de Veterinária e Segurança Alimentar - Madeira (LRVSA-Madeira)	DAVA - DSLIA	08/07/2011	IPAC	PT 2018: EUPT-FV20, EUPT-CF12, EUPT-SRM-13, EUPT-AO-13
ES	AGQ LAB		19/01/2007	ENAC, IAS	FAPAS 19245,19248,19251,19257,19258,19261
PT	LABIAGRO		2003 1991	IPAC	
IT	NEOTRON (LAB N.º 0026L			ACCREDIA	

25.6. Additional information

Other cases of non-compliances: MRLs (CS_2) and uses (organic production):

Table 162: Non-compliant (MRL and use in organic farming)

Reasons for MRL non-compliance	Pesticide/food product	Frequency
GAP not respected: use of a pesticide not approved in organic farming	Dithiocarbamates/Turnips Imazalil/papaya Tiametoxam+tryciclasol/rice Fonicamide/cauliflowes	1 1 1 1

26. Romania

26.1. Objective and design of the national control programme

National Sanitary Veterinary and Food Safety Authority (the coordinator) has the responsibility for preparing the National Multiannual Control Programme for pesticides residues in cooperation with the other two CAs. NSVFSA also has the responsibility for elaboration and implementation of its own National Programme for Surveillance and Control for food of plant and animal origin.

Implementation of National Programme for Surveillance and Control for food of plant and animal origin is performed by Sanitary Veterinary and Food Safety County Divisions and BIPs.

The Programme sets the samples of food of plant origin from Member States and third countries, the point of sampling, the active substances to be analyzed.

The number of active substances analysed is 150 for fruits, vegetables and cereals, and 139 for olive oil and tea.

Romanian Ministry of Agriculture and Rural Development has the responsibility for national monitoring plan of pesticides residues in fruits, vegetables, cereals from domestic market.

Implementation of monitoring programme is performed by MADR through Laboratory for Pesticides Residues Control in Plants and Vegetable Products and Zonal Laboratory for Pesticides Residues determination in Plants and Vegetables Products – Mures, which analyses the samples taken by Counties and Bucharest Phytosanitary Units.

In the monitoring programme of MARD for 2019, samples from 49 agricultural products were planned 2430 samples and were analyzed 2256 samples. The number of active substances analyzed were 259.

Ministry of Health is responsible for food for special nutritional purposes.

MH realises monitoring and control of pesticide residues in food for special nutritional purposes within the National Program for monitoring of environmental and worklife determinants – Subprogram for public health protection by preventing diseases associated with food and nutrition risks factors.

Ministry of Health analysed 41 samples in 2019. All of them complied with the legislative provisions

26.2. Design

The selection of the products that were tested for pesticides residues determination is made taking into consideration the following factors listed below:

- Food commodities with high residues/non-compliance rate in previous monitoring years:
    - all data from the last three years were compared and the products with high residues levels were selected to be analysed at a higher frequency: lettuce, spinach, apple, parsley leaves, lemons, grapefruit, mandarins, oranges, pappers, tomates, table grapes and wine grapes.
- Origin of food
    - compared with 2017 and 2018, in 2019 the number of samples analysed for pesticide residues from EU market has been increased (from 55,1% in 2018 to 56,2% in 2019) and for samples from Third Countries the number of samples has been reduced (from 44,6% in 2018 to 43,7% in 2019) - as presented in the **Error! Reference source not found.**.

Table 163: Summary results by sample origin

Origin of samples	2017(%)	2018(%)	2019(%)
EU	56.6	55,1	56,2
Third Countries	42	44,6	43,7
Unknown	1,2	0,3	0,1

- Sampling at different marketing levels: farm gates, wholesaler, import activities, border inspection activities, farming, slaughtering,
- Sampling of products during main marketing season/outside of main marketing season (e.g. citrus fruits during the autumn and winter),
- Rapid Alert System for Food and Feed notifications and all other useful information,
- Food for the sensitive consumer groups, e.g. baby food,
- Importance of the commodity in the country production, the national statistical data presented by National Institute of Statistics (Production of the main agricultural products per inhabitant). Thus, a great number of samples were planned for cereals (wheat), fruits (apples, grapes) and vegetables (potatoes, tomatoes),
- Food commodities not included in the EU coordinated programme

For defining pesticides that are included in national control programmes the following aspects were taken into consideration,

- The pesticides included in the EU coordinated programme,
- Use pattern of pesticides,
- Cost of the analysis: multiple methods,
- capacity of laboratories,
- Toxicity of the active substance.

26.3. Key findings, interpretation of the results and comparability with the previous year results

26.3.1. Key findings

In 2019 a total number of 5166 samples were taken in order to check the MRL's compliance of pesticide residues in different crops. From these, 4829 samples there were sampled under objective sampling strategy, 233 samples were sampled under selective sampling strategy and 100 samples were sampled under suspect sampling strategy.

A number of 1762 samples were fruit and primary derivatives thereof, 2562 samples were garden vegetables and primary derivatives thereof, 229 were grains and grain-based products, 41 samples of baby food and 89 samples of animal products.

From the total number of the 5166 samples that include fruit, vegetables, cereals, processed products (including baby food) and animal products, 2504 were produced in Romania, 404 samples were produced in EU, and 2258 samples were produced outside of the EU.

Table 164: Summary results

Samples	2017	2018	2019
Total	5773	4809	5166
Without residues (%)	4754 (82,35%)	3101(64,48%)	3150 (60,98%)
With residues below MRL (%)	1019 (17,65%)	1563(32,50%)	1927 (37.30%)
Exceeding (%)	61 (1%)	145(3,02%)	89 (1,72%)
Non-compliant (%)	24 (0,42%)	90(1,87%)	58 (1,12%)

26.3.2. Interpretation of the results

The most frequent pesticides detected in

- *the animal products* were: Fipronil, Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil, DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT),
- *cereals* were: Bifenthrin (sum of isomers), chlorpyrifos-methyl, Imidacloprid, Propiconazole (sum of isomers),
- *Fruit and Nuts* were: Acetamiprid, Boscalid, Cyprodinil, Fludioxonil, Pyrimethanil, Thiabendazole, 2-Phenylphenol (sum of 2-phenylphenol and its conjugates, expressed as 2-phenylphenol), Propiconazole (sum of isomers), Imazalil
- Vegetables were: Acetamiprid, Azoxystrobin, Boscalid, Carbendazim and Benomyl, Chlorothalonil, Imidacloprid, Pendimethalin, Pyraclostrobin, Metalaxyl including other mixtures of constituent isomers including metalaxyl-M (sum of isomers), Pyrimethanil, Fludioxonil, Tebuconazole

The highest concentration was for propiconazole (sum of isomers) 3.49 mg/kg detected in lemon.

From the total number of samples, 1569 foodstuffs samples had 2 or more foundings. Below there are mentioned some products with different number of pesticide residues:

- apples – 128 samples with a number of residues from 2 up to 6,
- strawberries – 48 samples with a number of residues from 2 up to 5,
- lettuce – 39 samples with a number of residues from 2 up to 9,
- tomatoes – 409 samples with a number of residues from 2 up to 9,
- apricots- 34 samples with a number of residues from 2 up to 6,
- grapefruits and similar – 142 samples with a number of residues from 2 up to 7,
- lemons -150 samples with a number of residues from 2 up to 8,

- mandarins – 64 samples with a number of residues from 2 up to 5,
- oranges – 139 samples with a number of residues from 2 up to 5,
- pears – 38 samples with a number of residues from 2 up to 6,
- table grapes – 112 samples with a number of residues from 2 up to 6,
- wine grapes – 61 samples with a number of residues from 2 up to 8,
- cucumbers - 32 samples with a number of residues from 2 up to 6,
- sweet peppers – 173 samples with a number of residues from 2 up to 10,

26.3.3. Comparability with the previous year results

Compared with 2018, in 2019 the number of samples with residues below MRL has been increased (from 32,5% in 2018 to 37,3% in 2019) and the number of samples with exceeding has been reduced (from 3,0% in 2018 to 1,72% in 2019) – as presented in the **Error! Reference source not found.**. The number of pesticides reported has been remained the same as 2013 (310). Pesticides were validated according to SANCO 12682/2019.

26.4. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

26.4.1. Possible reasons for non-compliant samples

From 5166 samples in 2019, 58 samples were found non-compliant with the EU MRL. The following follow-up actions were taken in case of sample non-compliant with the EU MRL (measurement uncertainty taken into consideration):

Table 165: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency	Comments	Title
GAP not respected: use of a pesticide not approved in the EU	Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Hen eggs	15	RO321-IISPV-20140-1 RO321-IISPV-20140-2 RO321-IISPV-20140-3 RO321-IISPV-20141-1 RO321-IISPV-20351-1 RO321-IISPV-20351-2 RO321-IISPV-24976-1 RO321-IISPV-25577-1 RO321-IISPV-25577-3 RO321-IISPV-25578-1 RO321-IISPV-25578-2 RO321-IISPV-25779-1 RO321-IISPV-25779-2 RO321-IISPV-25783-1 RO321-IISPV-25783-2	Romania
	Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Hen eggs mixed whole	4	RO321-IISPV-24972-1 RO321-IISPV-24972-2 RO321-IISPV-24973-1 RO321-IISPV-24973-2	Romania
	Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Poultry fat tissue	8	RO321-IISPV-25573-1 RO321-IISPV-25573-2 RO321-IISPV-25573-3 RO321-IISPV-25574-1 RO321-IISPV-25574-2 RO321-IISPV-25574-3 RO321-IISPV-25575-1 RO321-IISPV-25575-2	Romania

Reasons for MRL non-compliance	Pesticide/food product	Frequency	Comments	Title
	Dimethoate/ Peaches and similar	1	RO321ANSVSA-31002	Romania
	Dimethoate/Granate Apples Omethoate/ Granate Apples	1	RO321ANSVSA-32859-3	Romania
	Chlorpyrifos/ Granate apples	1	RO321ANSVSA-30389	Romania
	Metalaxyl including other mixtures of constituent isomers including metalaxyl-M (sum of isomers)/Courgettes	5		
	Acetamiprid/pommes granates	2		
	Metalaxyl including other mixtures of constituent isomers including metalaxyl-M (sum of isomers), Pyraclostrobin, Boscalid/ pommes granates	1		
	Indoxacarb/quinces	1		
GAP not respected: use of an approved pesticide not authorised on the specific crop	Chlorothalonil/lettuces	2	19-0049 19-0135	Romania
	Chlorothalonil/spinaches	1	19-0191	Romania
	Dimethoate/Apples	1	19-1393	Romania
	Dimethoate/parsley	1	19-0034	Romania
	Omethoate/parsley	1	10-0034	Romania
	Spiroxamine (sum of isomers)/dill leaves	2	19-0189 19-0211	Romania Romania
	Tebuconazole/dill leaves	1	19-0189	Romania
	Triadimenol (any ratio of constituent isomers)/dill leaves	2	19-0189 19-0211	Romania Romania
	Propiconazole (sum of isomers)/dill leaves	1	19-0211	Romania
	Chlorpyrifos-methyl/lovage leaves	1	19-0283	Romania
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Acetamiprid/eggplants	1		
	Acetamiprid/melons	1		
Use of pesticide according to authorised GAP: unexpected slow degradation of residues	Chlorpyrifos/Spring onions/green onions and Welsh onions	1	19-0134	Romania
	Chlorpyrifos/tomatoes	1	19-1066	Romania
	Carbendazim/Spring onions/green onions and Welsh onions	1	19-0164	Romania
	Thiophanate-methyl/Spring	1	19-0164	Romania

Reasons for MRL non-compliance	Pesticide/food product	Frequency	Comments	Title
	onions/green onions and Welsh onions			
	Fenhexamid/pears	1	19-1071	Romania
Cross contamination: spray drift or other accidental contamination	-			
Contamination from previous use of a pesticide: uptake of residues from the soil (e.g. persistent pesticides used in the past)	-			
Residues resulting from other sources than plant protection product (e.g. biocides, veterinary drugs, bio fuel)	-			
Naturally occurrence (e.g. dithiocarbamates in turnips)	-			
Changes of the MRL	Buprofezin/sweet peppers	3		
Use of a pesticide on food imported from third countries for which no import tolerance was set	-			

26.5. Actions taken

Table 166: Actions taken

	Action taken	Number of non-compliant samples concerned	Comments	Country of origin
Rapid Alert Notification				
Chlorpyrifos/tomatoes		1		
Metalaxyl including other mixtures of constituent isomers including metalaxyl-M (sum of isomers)/Courgettes		5		TR
Acetamiprid/pommes granates		2		TR
Metalaxyl including other mixtures of constituent isomers including metalaxyl-M (sum of isomers), Pyraclostrobin, Boscalid/ pommes granates		1		TR
Indoxacarb/quinces		1		TR
Acetamiprid/eggplants		1		TR
Acetamiprid/melons		1		TR
Buprofezin/sweet peppers		3		TR
Administrative sanctions (e.g. fines)				
Chlorpyrifos/Spring onions/green onions and Welsh onions		1		
Chlorpyrifos-methyl/lovage leaves		1		
Lot recalled from the market				
Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Hen eggs		15		
Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Hen eggs mixed whole		4		

	Action taken	Number of non-compliant samples concerned	Comments	Country of origin
Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Poultry fat tissue		8		
Rejection of a non-compliant lot at the border		-		
Destruction of non-compliant lot		-		
Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Eggs (chicken)		-		
Follow-up (suspect) sampling of similar products, samples of same producer or country of origin		-		
Chlorothalonil/lettuces		2		
Chlorothalonil/spinaches		1		
Dimethoate/Apples		1		
Dimethoate/parsley		1		
Omethoate/parsley		1		
Spiroxamine(sum of isomers)/dill leaves		2		
Tebuconazole/dill leaves		1		
Triadimenol (any ratio of constituent isomers)/dill leaves		2		
Propiconazole (sum of isomers)/dill leaves		1		
Carbendazim/Spring onions/green onions and Welsh onions		1		
Thiophanate-methyl/Spring onions/green onions and Welsh onions		1		
Fenhexamid/pears		1		
Dimethoate/ Peaches and similar		1		EG
Dimethoate/Granate Apples Omethoate/ Granate Apples		1		IN
Chlorpyrifos/ Granate apples		1		IN
Metalaxyl including other mixtures of constituent isomers including metalaxyl-M (sum of isomers)/Courgettes		5		TR
Acetamiprid/pommes granates		2		TR
Metalaxyl including other mixtures of constituent isomers including metalaxyl-M (sum of isomers), Pyraclostrobin, Boscalid/ pommes granates		1		TR
Indoxacarb/quinces		1		TR
Acetamiprid/eggplants		1		TR
Acetamiprid/melons		1		TR
Buprofezin/sweet peppers		3		TR
Warnings to responsible food business operator		-		
Other follow-up investigations to identify reason of non-compliance or responsible food business operator		-		
Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Hen eggs		15		
Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Hen eggs mixed whole		4		
Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Poultry fat tissue		8		
Other actions (please specify)	0			
Administrative sanctions (e.g. fines)				
Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Hen eggs		15		
Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Hen eggs mixed whole		4		
Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)/ Poultry fat tissue		8		

26.6. Quality assurance

Table 167: Laboratories participation in the national control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
RO	Laboratory for Control Pesticide Residues in Plant and Plant Products	RO_321_ LCRPPPV	16/01/2006 Reaccreditation in 18/12/2017	RENAR-Bucharest	EUPT FV 21 EUPT CF 13
RO	Sanitary Veterinary and Food Safety Laboratory Bucharest	RO321-ANSVSA	LI 496 11/04/2007	RENAR-Bucharest	EUPT-FV 21 EUPT-CF 13
RO	Sanitary Veterinary and Food Safety Laboratory Constanta	RO223-ANSVSA	24/05/2004	RENAR-Bucharest	EUPT AO 14
RO	Zonal Laboratory for Pesticides Residues determination in Plants and Vegetables Products – Mures	RO_125_ LZDRPPPV	26/04/2013 Reaccreditation in 18/12/2017	RENAR-Bucharest	EUPT-FV 21 EUPT-CF13
RO	Sanitary Veterinary and Food Safety Laboratory Cluj	RO113-ANSVSA	LI 456 13.03.2020	RENAR-Bucharest	EUPT AO 14 EUPT-CF13 EURL–PT-DPB_1902-EY IISPV –NAC -PESTICIDE – A I 2019 IISPV –NAC -PESTICIDE – A II 2019
RO	Environmental hygiene laboratory	MS-RO113-MS	LI 1189/04.10.2018	RENAR-Bucharest	-
RO	Sanitary Veterinary and Food Safety Laboratory Suceava	RO215-ANSVSA	05/03/2007	RENAR-Bucharest	EUPT AO -14 EURL–PT-DPB_1902-EY Determination of PCBs in Egg yolk powder
RO	Institute of Hygiene and Veterinary Public Health	RO321-IISPV	01/04/2002	RENAR-Bucharest	EUPT AO 14 EUPT CF 13 EUPT SRM 14
RO	Sanitary Veterinary and Food Safety Laboratory Ialomita	RO031-ANSVSA	LI 540 01.07.2019	RENAR Bucharest	EUPT FV-21
RO	Sanitary Veterinary and Food Safety Laboratory Olt	RO41-ANSVSA	LI 1174 05.05.2018	RENAR Bucharest	EUPT FV 21

Table 168: Processing factors

Pesticide[a]	Unprocessed product (RAC)	Processed product	Processing factor
All pesticides	Oranges	Oranges Juice	1
All pesticides	Olives for oil production	Oliver Oil	5
All pesticides	Wheat	Flour	1
All pesticides	Rye	Flour	1
All pesticides	Wine grapes	White Wine	1
All pesticides	Wine grape	Red Wine	1

(a) Processing factor for the enforcement residue definition

27. Slovakia

27.1. Objective and design of the national control programme

In the year 2019, the pesticide residue control was conducted in compliance with the Multi-annual Control Programme for Pesticide Residues in Food and Baby Food in the SR, issued for the years 2019-2021, (hereinafter referred to as the "Programme"), in which Commission Implementing Regulation No 2018/555/EU was incorporated. In developing the national plan we focused on several priorities. For a selection process as regards types and number of samples to be collected and analyzed certain criteria were set such as: knowledge from sample analyses from the previous year, consumption and production of a given commodity in Slovakia, as well as the RASFF information. In selection of commodities we focused on fresh fruit and vegetables. Within the scope of the EU monitoring 2019, the following commodities were sampled: apples, strawberries, peaches, including nectarines and similar hybrids, wine (red or white), lettuces, head cabbages, tomatoes, spinaches, oat grain, barley grain, cow's milk and swine fat. Beyond the scope of EU monitoring commodities have been collected also other fruits and vegetables, for example: citrus fruits, cucumbers, peppers and other. In compliance with legislative requirements, a total of 32 samples of organic foods and 40 samples of baby foods were collected and analyzed. Sampling of food of domestic origin was preferentially done at growers' distribution warehouses but also at trade network level. The percentage of samples upon their origin for the purpose of pesticide residue analysis reflected food offer in the Slovak market and herewith also consumption trends in Slovakia: food of domestic origin – 29.7%, EU countries – 47.0%, third countries – 22.9% (unknown origin-two samples).

The extention of analyses in 2019 by other types of pesticides was based on the requirements of Regulation No 2018/555/EU. Collected samples were analyzed in two official laboratories. Food samples were analyzed in the State Veterinary and Food Institute - Veterinary and Food Institute in Bratislava and food for infants and young children samples were analyzed in the Laboratory of the Public Health Authority of the SR. Two multiresidue methods (MRM) and eleven "single" residue methods (SRM) were used for food analyses (besides baby foods). Nine MRM were used to analyze foods for infants and young children samples.

27.2. Key findings, interpretation of the results and comparability with the previous year results

27.2.1. Key findings

In 2019, 472 samples were analysed.

Table 169: Summary results

Samples	Total	Without residues	With residues below MRL	Exceeding MRL	Non-compliant
Animal products	30	29	1	0	0
Cereals	33	17	15	1	1
Baby food	40	40	0	0	0
Fruits and nuts, vegetables and other plant products	327	113	193	21	13
Processed products	42	13	27	2	1
Total	472	212	236	24	15

27.2.2. Interpretation of the results

No pesticide residues were detected in 212 samples to represent 44.9 % of all analyzed samples. One or more pesticide residues under the MRL were detected in 236 samples to represent 50.0 % of all analyzed samples. Residues exceeding MRL were found in 24 analyzed samples, of which 15 samples were non-compliant.

In compliance with the legislative requirements, a total of 32 samples of organic foods were collected. The presence of pesticides below MRL was detected in 1 sample bio tomatoes from Spain.

The multiresidual findings were detected in 191 samples. Multiresidue findings with the highest number of detected pesticide residues including their metabolites - 11 different types were detected in one samples of pears from Italy.

27.2.3. Comparability with the previous year results

Table 170: Comparability with the previous year results

Year	Total number of samples	Without residues (%)	With residues below MRL (%)	Exceeding MRL (%)	Non-compliant (%)
2017	520	47.9	49.2	2.9	1.7
2018	482	44.6	51.2	4.1	2.1
2019	472	44.9	50.0	5.1	3.2

27.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

27.3.1. Possible reasons for non-compliant samples

In total, 3.2 % of the samples in the monitoring programme were found non-compliant with the EU MRL.

Table 171: Non-compliant samples

Sample number	Food	Country of origin	Pesticide residues	Level (mg/kg)
BA24667_19	Grapefruit	Turkey	Buprofesin Fenbutatin-oxide	0.057 0.16
BA4901_19	Grappe	India	Chlorpyrifos	0.028
BA5803_19	Grappe	India	Chlorpyrifos	0.026
BA24208_19	Pears	Belgium	Fenhexamid	0.041
BA21852_19	Chinese cabbages	Poland	Dimethoate	0.15
BA24387_19	Mandarins	Turkey	Fenvalerate (any ratio of constituent isomers (RR, SS, RS and SR) including esfenvalerate)	0.125

Sample number	Food	Country of origin	Pesticide residues	Level (mg/kg)
BA24657_19	Mandarins	Turkey	Fenbutatin-oxide	0.36
BA24542_19	Mandarins	Turkey	Fenbutatin-oxide	0.074
BA5945_19	Mandarins	Turkey	Fenvalerate (any ratio of constituent isomers (RR, SS, RS and SR) including esfenvalerate)	0.08
BA22528_19	Carrots	Slovakia	Linuron	0.071
BA10293_19	Ground peppers	China	Chlormequat	0.36
BA24660_19	Peppers	Turkey	Buprofezin Pyridaben	0.042 0.053
BA24242_19	Parsnip	Poland	Linuron	0.058
BA24550_19	Buckwheat	Poland	Glyphosate	0.46
BA21360_19	Tomatoes	Hungary	Iprodione	0.039

Table 172: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency[a]
GAP not respected: use of a pesticide not approved in the EU[b]	Linuron/ Parsnip, Carrots Iprodion/Tomatoes	3
GAP not respected: use of an approved pesticide not authorised on the specific crop[b]		
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Buprofezin/Grapefruits, Pepper Chlorpyrifos/2x Table Grappes Chlormequat/ Paprika powder Pyridaben/Peppers Glyphosate/ Buckwheat Fenhexamid/Pears Dimethoate/ Chinese cabbages	9
Use of a pesticide on food imported from third countries for which no import tolerance was set[c]	Fenvalerate (any ratio of constituent isomers (RR, SS, RS and SR) including esfenvalerate)/2x Mandarins Fenbutatin oxide/2x Mandarins, Grapefruits	5

(a): Number of cases
(b): Applicable only for food products produced in the EU
(c): For imported food only

27.3.2. ARfD exceedances

Risk of health assessment in the Slovakia is carried out by the National Agricultural and Food Centre – the Food Research Institute. In 2019 exceeding of the ARfD were not found.

27.4. Actions taken

Error! Reference source not found. gives an overview of what sort of actions that have been taken when a non-compliant product was proven.

Table 173: Actions taken

	Action taken	Number of non-compliant samples concerned	Comments
Rapid Alert Notification		-	
Administrative sanctions (e.g. fines)		8	
Lot recalled from the market		1	297 kg
Destruction of non-compliant lot		2	3357,7 kg
Follow-up (suspect) sampling of similar products, samples of same		4	suspect samples in compliant

producer or country of origin			

27.5. Quality assurance

An overview of the laboratories involved in the pesticide residues programme is shown in **Error! Reference source not found.**.

Table 174: Laboratories participating in the national control programme

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Last audit from SNAS	Body	
Slovakia	State Veterinary and Food Institute	156434	27.-31. 05. 2019	Slovak National Accreditation Service (SNAS)	EUPT FV 21, EUPT CF 13 EUPT SRM 14, EUPT AO 14
Slovakia	Pesticide Lab of Public Health Authority (PHA) SR - Bratislava	607223	30.05.2019	Slovak National Accreditation Service (SNAS)	EUPT-FV21, EUPT-CF13

27.6. Processing factors

An overview of the processing factors used in the pesticide residues programme is shown in **Error! Reference source not found.**.

Table 175: Processing factors

Pesticide	Matrix class	Matrix detailed	Processing factor	Process
All pesticides	Grains and grain-based products	Oat flour	1	Grain milling - flours production
All pesticides	Grains and grain-based products	Wheat flour white	1	Grain milling - flours production
All pesticides	Fruit/vegetables/plant drinks, spreads and related products	Juice, apple	1	Juicing
All pesticides	Alcoholic beverages	Wine, red	1	Winemaking
All pesticides	Alcoholic beverages	Wine, white	1	Winemaking
All pesticides	Ingredients for hot drinks and infusions	Tea leaves and stalks, fermented	1	Fermentations Drying (dehydration)
All pesticides	Isolated purified ingredients (including mineral or synthetic)	Honey, blended	1	Blending
All pesticides	Garden vegetables and primary derivatives thereof	Dried mushrooms	12	Drying (dehydration)
All pesticides	Garden vegetables and primary derivatives thereof	Dried vegetables	5	Drying (dehydration)
All pesticides	Ingredients for hot drinks and infusions	Non-fermented tea leaves (green or white tea)	1	Drying (dehydration)
All pesticides	Legume seeds and primary derivatives thereof	Borlotti or other common beans (dry)	1	Drying (dehydration)
All pesticides	Legume seeds and primary derivatives thereof	Lentils (dry)	1	Drying (dehydration)
Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	Herbs, spices and similar	Paprika powder	7	Drying (dehydration)Grinding / milling / crushing

Pesticide	Matrix class	Matrix detailed	Processing factor	Process
All pesticides	Fruit and primary derivatives thereof	Fruit chips (except dry apples)	10	Freeze-drying (lyophilisation)Drying (dehydration)Slicing
All pesticides	Fruit and primary derivatives thereof	Apples dry	10	Drying (dehydration)
All pesticides	Grains and grain-based products	Rice grain, polished	1	Polishing
All pesticides	Grains and grain-based products	Buckwheat groats	1	Grinding / milling / crushing

28. Slovenia

28.1. Objective and design of the national control programme

The national control program is defined in accordance with Article 30 of Regulation 396/2005/ES. Administration of the Republic of Slovenia for Food Safety, Veterinary Sector and Plant Protection prepare a Multi-annual national control program of pesticide residues in food, previously coordinated with representatives of governmental and non-governmental organizations. It constitutes the basis for carrying out official sampling for checking the conformity of foods.

For the implementation of the program and reporting to the European Food Safety Authority in accordance with Article 31 of the Regulation 396/2005/ES are responsible the Administration of the Republic of Slovenia for Food Safety, Veterinary Sector and Plant Protection and the Health Inspectorate of the Republic of Slovenia, each in accordance with their respective competences.

The set of pesticides to be determined in 2019 were selected on the basis of the EU coordinated program defined by Commission Implementing Regulation (EU) 2018/555 on a coordinated multiannual Union program, the SANCO work program, data on the registration and sale of pesticides in Slovenia and national data on the authorization of plant protection products.

The selection of foodstuffs in which pesticide residues will be determined is based on the following criteria:

- the permanent part of the program, which includes children's food and foods that Slovenians enjoy the most. These are apples, potatoes, lettuce, baby food, flour or cereals and milk. Pesticide residues in these foods are identified annually and these foods may coincide with the selection of foods in the European coordinated program;
- rotating part of the program because all foods can not be included in the annual control program and the selected samples of fruit and products from fruit, vegetables and products from vegetables, cereals and their products and foodstuffs of animal origin are examined during the three-year cycle. Some foods from the rotating program are also part of the European Coordinated Control Program;
- EU coordinated pesticide residue monitoring program ("EU" in the tables), which is fully integrated into the Control Program;
- tracing foods where in past years (2018) the pesticide content exceeded the maximum residue levels or MRLs (from the "maximum residue level") or other relevant informations;
- additional controls, which include the inclusion of problematic foods (regular exceeding of MRLs or increased pesticide burden in the past), the topicality of problematic foods or the inclusion of additional pesticides, given the current issues;
- a review of the condition, which means the inclusion of individual foods in order to check the situation.

28.2. Objective

When Slovenia defining the food products to be analysed in the national control programmes high or low importance was given to one or several factors listed below:

- relevance of a food product in diet or in national agricultural production;
- food products with high non-compliance rate identified in the previous years/high RASFF notification rate;
- unprocessed or processed products;
- food relevant for sensitive group of consumers (e.g. baby food);
- organic or conventional products;
- sampling of products during main marketing season/outside of main marketing season (e.g. strawberries during winter);
- sample origin reflecting geographic distribution of food products consumed (e.g. domestic, EU, third countries); or focussing on countries with high non-compliance rate in the past;
- food commodities not included in EU coordinated programme.

28.3. Design

For defining pesticides that should be included in national control programmes the following aspects were taken into consideration:

- RASFF notifications for a pesticide;
- use pattern of pesticide;
- toxicity of the active substance;
- cost of analysis (single method/ multiple method);
- capacity of the labs.

In 2019 were in national control included 865 food samples, which were examined for the content of pesticide residues. There are foods of animal origin (such as milk, poultry meat and cheese) and foods of non-animal origin, such as vegetables, fruit (fresh or frozen), cereals and cereal products, processed foods such as baby food, pumpkin oil, tea, canned vegetables, dried fruits and spices.

The results of the investigations showed that 497 samples (57.5%) did not contain pesticide residues and that 344 samples is quantified below MRL (39,8%).

In 24 samples (2.8%), the levels of pesticides found, even taking into account measurement uncertainty, exceeded the limit values. The samples did not comply with the provisions of legislation.

An overview of the summary results of the national control program for 2019 is shown in **Error! Reference source not found.**

Table 176: Summary results of the national control program for 2019

Samples	Number of samples	Without residues	With residue below MRL	Exceeding MRL	Non-compliant
Animal products	37	37	0	0	0
Cereals	68	58	9	5	5
Baby food	10	8	2	0	0
Processed products	110	67	38	5	4
Fruits, vegetables, other products	640	364	246	26	15
Total	**865**	**534**	**295**	**36**	**24**

By origin, there were 349 samples (40.4%) from Slovenia, 326 samples (37.7%) from other EU countries and 189 samples (21.8%) from third countries and 1 sample of unknown origin (0.1%).

An overview of the summary of samples taken in 2019 by region of origin is shown in **Error! Reference source not found.**.

Table 177: Summary of samples taken in 2019 by region of origin

Origin	Number of samples	Exceeding MRL	%	Non-compliant	%
EU	675	15	2,2	8	1,2
TC	189	21	11,1	16	8,5
unknown	1	0	0	0	0
Total	**865**	**36**	**4,2**	**24**	**2,8**

EU – European Union
TC – third countries

28.4. Key findings, interpretation of the results and comparability with the previous year results

In 2019 there were 24 food samples which were not compliant with limit values for pesticide residues set by Regulation 396/2005/ES. It represents 2.8% of all tested samples taken for pesticide residue analysis.

In previous year (2018) there were 21 food samples which were not compliant by Regulation 396/2005/ES, which represent 2.5% of all tested samples.

The share of non-compliant foods has increased slightly, also due to the intensified sampling of non-compliant foods from 2018. In the framework of controls we also follow non-compliant foods from 2018 and find that the list of non-compliant foods is largely repeated (peppers, Chinese cabbage, tomatoes, rice and tea). We will continue to monitor these foods more closely also in the coming years.

28.4.1. Key findings

Table 178: Summary results of Non-compliant and not safety samples taken in 2019

Samples	Number of samples	Non-compliant	Not safety
Animal products	37	0	0
Baby food	10	0	0
Cereals	68	5	0
Processed products	110	4	0
Fruits, vegetables, other products	640	15	1
Total	**865**	**24**	**1**

28.4.2. Interpretation of the results

In 2019, 865 food samples were tested from Slovenia. There were:

- 640 samples (74.0 %) of vegetables (fresh or frozen), fruit (fresh or frozen), and other products
- 68 samples (7.9%) of cereals,
- 120 samples (13,8%) of processed foods and
- 37 samples (4.3%) of food of animal origin.

In 1 sample of sweet pepper (origin: Albania), the content of methomyl was determined. The food was not safe under Article 14 of the Regulation 178/2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.

In 24 convencional food samples (2.5%), the levels of pesticides found, even taking into account measurement uncertainty, exceeded the limit values, the samples did not comply with the provisions of Regulation (EC) No. 396/2005. Non-conforming patterns:

1.) 6 samples of fruit:

- pineapple: Nuvaluron MRL value exceeded,
- 4x pomegranate: MRL value exceeded for Acetamiprid in all 4 samples and in one sample also Prochlorase,
- grapefruit: MRL value exceeded for Buprofezin,

2.) 9 samples of vegetables:

- 2X chinese cabbage - 1x MRL value exceeded for Dimethoate, 1x MRL value exceeded for Chlorpyrifos-ethyl,

- 3x sweet peppers: - 2x exceeded MRL value for Methomyl, 1x for Fipronil,

- celery roof- exceeded MRL value for Dimethoate,

- chard - exceeded MRL value for Chlorpyrifos-ethyl,

- carrots - exceeded MRL value for Linuron,

- tomato - exceeded MRL value for Chlorfenapyr,

3.) 5 samples of cereals.

- 5x rice - MRL value exceeded for Tricyclazole,

4.) 4 samples of other food products:

- dried leaves / stems of tea - MRL value exceeded for Tolfenpyrad and Acetamipride,

- pumpkin oil - exceeded MRL value for Aldrin and Dieldrin,

- ginger - exceeded MRL value for Cyromazine and Clothianidin,

- fruit juice of apples and pears: MRL value exceeded for Fenhexamide.

28.4.3. Comparability with the previous year results

In 2019, 2,8 % of the samples (24 samples in total, from 855 samples taken) were found non-compliant with the EU-MRL. The following follow-up actions were taken for non-compliant samples.

In 2018, 2,5 % of the samples (21 samples in total, from 835 samples taken) were found non-compliant with the EU-MRL.

In 2019 there were 0,3 % more samples which were non-compliant, than in the year 2018. The number of non-compliant samples taken in previous years was also ranged between 2 % and 3 % of all taken samples, so we rate this deviation as a normal discrepancy that manifests itself over the years.

28.5. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

If we identify non-compliant samples we according to instructions usually batch is seized and prevented from entering the market.

For all samples which exceedance of the MRLs we introduce the appropriate measures according to the risk for the consumer. We also taken follow-up actions to verify the violation and to identify its cause.

When we identified non-compliant samples we drawned up official report, the producer or importer must paid a fine according to the provisions of the legislation.

Foods sampled at import will normally be rejected at the border in the event of inconsistent results with our legislation.

28.5.1. Possible reasons for non-compliant samples

Domestic pumpkin oil and fruit juice of apples/ pears was found to be non-compliant due to the detection of Aldrin, Dieldrin and Fenhexamide residue, which exceeding the MRL. The reasons for non-compliance was that GAP was not respected and pesticide according to authorised GAP.

There are also other non-compliant samples from EU countries and third countries. The main reason is that samples were non-compliant with the EU MRL, even if measurement uncertainty taken into consideration. Other reasons for non-compliant mainly remain unknown. As the highest proportion of non-compliant samples occurs in products from third countries, possible reason is use of a pesticide on food imported from third countries for which no import tolerance was set.

An overview of possible reasons for MRL non-compliance is shown in Table 179: .

Table 179: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency (a)
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Aldrin – pumpkin oil	1
	Dieldrin - pumpkin oil	1
	Fenhexamide - fruit juice of apples and pears	1
Cross contamination: spray drift or other accidental contamination	Linuron – carrots	1
	Dimethoate - celery roof	1
Use of a pesticide on food imported from third countries for which no import tolerance was set(c)	Acetamipride – tea (dried leaves / stems)	1
	Tolfenpyrad – tea (dried leaves / stems)	1
	Cyromazine - ginger	1
	Clothianidin - ginger	1
	Methomyl - sweet papper	2
	Fipronil – sweet papper	1
	Nuvaluron - pineapple	1
	Acetamiprid – pomegranate	4
	Prochlorase – pomegranate	1
	Buprofezin - grapefruit	1
	Chlorfenapyr - tomato	1
	Tricyclazole - rice	5
Unknown	Chlorpyrifos-ethyl - chard	1
Unknown	Dimethoate - chinese cabbage	1
Unknown	Chlorpyrifos-ethyl - chinese cabbage	1

(a): Number of cases
(b): Applicable only for food products produced in the EU
(c): For imported food only

28.5.2. ARfD exceedances

Detection of pesticide residues in samples notified into the RASFF concerned exceeding ARfD. Risk of health assessment is carried out in Slovenia by the National laboratory of Health, Environment and Food.

Totally, 2,8 % of the samples (24 samples) in the monitoring programme were found non-compliant with the EU MRL. For any non-compliant sample, ARfD was not exceeded.

28.5.3. Actions taken

Error! Reference source not found. gives an overview of what sort of actions that have been taken when a non-compliant product was proven.

Table 180: Actions taken

	Action taken	Number of non-compliant samples concerned	Comments
Rapid Alert Notification	Recalled from the market	1	
Lot recalled from the market			
Rejection of a non-compliant lot at the border		12	5 as a result of

	Action taken	Number of non-compliant samples concerned	Comments
			2019/1793 import control
Destruction of non-compliant lot			
Follow-up (suspect) sampling of similar products, samples of same producer or country of origin			
Warnings to responsible food business operator			
Other follow-up investigations to identify reason of non-compliance or responsible food business operator	Recalled from the market	2	
Other actions (please specify)			
Administrative sanctions (e.g. fines)	Recalled from the market	9	

28.6. Quality assurance

The laboratories performing analysis for the official controls in the pesticide residues area meet the requirements of the technical standard EN ISO/IEC 17025:2005. The laboratories are accredited by the Slovenian Institute for Accreditation. They regularly examine control samples both at national and international levels and the methods of analysis used are validated.

An overview of the laboratories involved in the pesticide residues program is shown in Table 181: .

Table 181: Laboratories participation in the national control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
Slovenia	National laboratory of Health, Environment and Food	IPH/NLZOH	25.3.2019	Slovenian Accreditation	1.) EUPT-FV20 2.) EUPT-SM10 3.) EUPT-AO13 4.) EUPT-CF12 5.) EUPT-SRM13

28.7. Processing Factors (PF)

Processing factors are applied when necessary to verify compliance of processed products with EU MRLs according to Article 20 of Regulation 396/2005. The processing factors that were reported by national competent authorities to verify compliance of processed products with EU MRLs.

In addition to these, factors based on water content from food composition tables in fresh versus dried commodities were used for dried samples where MRL was set on the fresh commodity. Processing factors were mainly applied to cover the dehydration of fruits, oil production using pressing, polishing of rice.

An overview of the processing factors used in the pesticide residues program is shown in Processing factors.

Table 182: Processing factors

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor [(a)]	Comments
Tricyclazole	rice	Polished rice	0.5	Treatment: polishing; Processing factor was applied according to Commission Implementing Regulation (EU) No. 2018/555

(a): Processing factor for the enforcement residue definition.

29. Spain

29.1. Objective and design of the national control programme

Responsibilities:

The elaboration and implementation of the national control programme involves the following units:

- The Sub-Directorate-General for Foreign Health of the Ministry of Health.
- The Sub-Directorate-General for Coordination of Alerts and Programming Official Control of the Spanish Agency for Food Safety and Nutrition (in Spanish AESAN).
- Control Units of the Autonomous Spanish Regions

Each unit has assigned its duties about coordination or execution within its scope.

AESAN is an autonomous body under the Ministry of Consumer Affairs, and acts as liaison between the Commission and the European Food Safety Authority (EFSA), and the Autonomous Communities (AA CC) which are the Competent Authorities for the execution of programmes at regional level.

For the development and implementation of the risk based "Annual National Programm", a Guidance on programming have been developed and approved in Spain. This document is aimed to support the Autonomous Control Units and the Foreign Health Unit in its duties on programming.

The national programme is made up of two subprogrammes based on the point where the samples are collected:

- market subprogramme, coordinated by AESAN;
- imports subprogramme, coordinated by MSCBS.

Official Controls on residues:

The National Pesticide Residues Control programme integrates controls carried out by the AA CC. AESAN is responsible for the coordination of control programme. The annual plans developed by the AA CC and coordinated by AESAN include monitoring of unauthorised products.

29.1.1. Objectives

To ensure that official controls are carried out in order not to place on the market food products treated by unauthorized pesticides.

To ensure that official controls are carried out in order not to place on the market food products with pesticide residues levels above those established in regulations in force, so they can pose a health risk for consumers.

29.1.2. Design of programmes

Staffs responsible for sampling are inspectors from the Autonomous Communities.

Those samples taken at the border inspection posts/points of entry are taken by staff from the General Directorate of Public Health.

Sample selection

- Data from consumers.
  - The Spanish diet model for determining exposure to chemicals.
  - Food intended for populations at risk (baby food).
    - Data from production.
    - Products with a high consumption in each region.
    - Information from import programme.

- Information from the Plant Health of the Ministry of Agriculture services on recent inspections, prohibited use of pesticide, etc.
- The pattern of use of plant protection products (commonly used, time of application).
- Toxicity of the active substances.
- Recent changes in the MRL or withdrawal of authorisations for use/approval of active substances.
- Scope of accreditation of the laboratory/analytical capacity/resources.
- Non-compliant results obtained in previous years.
- Pesticide residues selection: In the national risk-based programming work, the Working Document SANCO / 12745/2013 is also taken into consideration, as it includes the pesticides that should be considered for inclusion in the national control programs to guarantee compliance with the maximum levels of pesticide residues in food of plant and animal origin.

Sample–pesticide residues combination

- Frequency of findings of residues of active substances in food products in reporting plans (national and EU) official control from prior years.
- RASFF notifications.
- The products listed in the Regulation on a Coordinated Multiannual Control Programme of the European Union for 2019, 2020 and 2021, aimed at ensuring the enforcement of MRLs pesticides in food of animal or plant origin and on them, and to assess the degree of consumer exposure to these residues.

29.2. Key findings, interpretation of the results and comparability with the previous year results

In order to get a better understanding of the information regarding the number of samples taken by Spain by number of inhabitants, it should be taken into account that the results sent to EFSA from Spain do not include those samples taken in primary production. Due to the Spanish administrative organization, samples taken in primary production are considered excluded from the scope of Regulation (EC) No. 396/2005.

29.2.1. Key findings

All of the samples programmed in the Pesticide Residues Monitoring and Control Program in products of plant and animal origin and baby food in Spain 2019 have been collected.

In 2019 a total of 2,314 samples were analysed for pesticide residues. All of the 2,314 samples were objective samples.

Regarding results, the analysis of the 2,314 samples lead to 299,811 results.

The 1.38% of the analysed samples shown pesticide residues levels exceeding the EC-MRL. In particular, there have been 32 non-compliant samples that correspond to 38 non-compliant results, since there are samples that have tested positive for more than one substance. (e.g.: a sample from the group 'other stone fruits', was positive to chlorothalonil, deltamethrin, lambda-cyhalothrin, pyraclostrobin and tebuconazole)

None of the baby food samples, nor the cereal group samples were non-compliant. It is remarkable that there has been any non-compliant result within the cereal group, considering the amount of parameters analysed (18,161 results within 126 samples).

The group of "Fruits and other vegetables" shows the higher number of non-compliant results. The parameter confirmed in more samples in this group was oxamyl, with 6 positive results, followed by dimethoate, with 5 positive results. The greatest number of samples and analysed substances belong to this group, and 20 of the 21 pesticides detected, appeared within the group.

Regarding the groups "Products of animal origin", only one pesticide was detected (DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT)). This parameter was detected in 6 seafood samples.

The main results are detailed in the tables below:

Table 183: General summary

Matrix	Total number of samples	Total number of results	Compliant samples	Samples with residues >MRL	% NC
Products of animal origin	447	6929	441	6	1.34%
Baby foods	93	8280	93	0	0%
Cereals	126	18161	126	0	0%
Fruits and other vegetables	1648	266444	1627	21	1.27%
Total	**2314**	**299811**	**2287**	**27**	**1.17%**

Table 184: Control program 2019. Main results

Matrix	Samples without residues detected	Samples with residues detected	Samples compliant due to analytical method uncertainty	% With residues	% Without residues
Products of animal origin	431	16	1	3.6%	96.4%
Baby foods	78	15	2	16.1%	83.9%
Cereals	108	18	0	14.3%	85.7%
Fruits and other vegetables	916	732	18	44.4%	55.6%
Total	**1533**	**781**	**21**	**33.7%**	**66.3%**

29.3. Interpretation of the results

The results gathered in 2019 are highly satisfactory; the sample program has been carried out according to the plan, and the analyzed results shows an accurate and responsible management of pesticides and complies the current legislation as shown on **Error! Reference source not found.**.

Although the presence of some pesticides has been detected in some babyfood samples, they were below the MRL and all of them were compliant.

It is especially remarkable that there has been non-compliant sample in the cereal's food group.

All the laboratories have procedures to estimate analytical uncertainty, which is taken into account to decide any enforcement action. Document SANTE/11945/2015 is also considered.

Some new confirmation methods were implemented in Spanish laboratories in order to increase the number of pesticide residues measured and to bring down detection limits of some of them.

The results are detailed in **Error! Reference source not found.**.

Table 185: NC results. Summary

Matrix	Samples	Results	Pesticide	Frequency
Animal products	6	6	DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT)	1 1 4
Baby foods	0	0	-	0
Cereals	0	0	-	0

Matrix	Samples	Results	Pesticide	Frequency
Fruits and other vegetables	21	27	Acephate	2
			Acetamiprid	1
			Acrinathrin and its enantiomer	1
			Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	2
			Chlorpropham	2
			Chlorpyrifos	1
			Clorotalonil	1
			Deltametrin	1
			Dimethoate	5
			Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)	1
			Fluazifop-P	1
			Imazalil	1
			Imidacloprid	1
			Iprodione	1
			Lambda-cihalotrina	1
			Omethoate	1
			Oxamyl	1
			Pyraclostrobin	2
			Tebuconazol	1
Total	**27**	**33**		**33**

29.4. Comparability with the previous year results

In 2019 a total of 2314 samples were analysed for pesticide residues compared to a total of 2711 samples analysed in 2018, and 2273 samples analysed in 2017. This year, the number of analysis dropped down (**Error! Reference source not found.**).

Table 186: Comparability samples/results by year

Year	Total number of samples	Total number of results
2017	2773	419596
2018	2711	467443
2019	2314	299811

Table 187: Frequency of residue chlorpyrifos by year

Year	Residue non-compliant more common	Number of samples analysed	Number of non-compliant	%	Product more common
2017	Chlorpyrifos	2773	7	0.25	Fruits and other vegetables (3 Beets / beet leaves)
2018	Chlorpyrifos	2346	18	0.77	Animal products
2019	Chlorpyrifos	1176	1	0.08	Fruits and other vegetables (1 Artichoke)

29.5. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

29.5.1. Possible reasons for non-compliant samples

This year is the first data collection Spain reports their data using EFSA SSD2 system. In order to make it as easy as possible for our data providers, information on mandatory SSD2 elements was only requested.

As the data element N.06.01. Conclusion of follow-up investigation (evalInfo.conclusion) is considered 'Optional' in the current SSD2 guidance, we have not received this information from some data providers. This is why the number of "unknown" is high.

Table 188: Possible reasons for MRL non-compliance

Reasons for MRL non-compliance	Pesticide/food product	Frequency
Bad Practices.	Chlorpropham	2
	Chlorpyrifos	1
	Dimethoate	2
	Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)	1
	Iprodione	1
Pesticide misuses	Acetamiprid	1
	Pyraclostrobin	1
	Imazalil	1
Unknown	DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT)	6
	Oxamyl	1
	Dimethoate	3
	Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride)	2
	Acephate	2
	Omethoate	1
	Fluazifop-P	1
	Piraclostrobina	1
	Tebuconazol	1
	Lambda-cihalotrina	1
	Clorotalonil	1
	Deltametrin	1
	Acrinathrin and its enantiomer	1
	Imidacloprid	1

29.5.2. Actions taken

Table 189: Actions taken

Action taken	No. of non-compliant samples concerned	Residue/Product
Rapid Alert Notification	1	Dimethoate/ **Kiwi**
Follow-up investigations initiated when there is suspicion of an irregularity	9	Acetamiprid / **Escaroles** Pyraclostrobin / **Escaroles** Chlorpyrifos / **Artichokes** Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride) / **Lettuces** Dimethoate / **Lemons** Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil) / **Potatoes** Imazalil / **Mandarins** Iprodione / **Table Grapes** Chlormequat (sum of chlormequat and its salts, expressed as chlormequat-chloride) / **Lettuces**
Administrative consequences imposed when there is evidence of an irregularity	10	Dimethoate / **Artichokes** Omethoate / **Artichokes** Dimethoate / **Artichokes** Dimethoate / **Cherries** Piraclostrobina / **Other stone fruits** Tebuconazol / **Other stone fruits** Lambda-cihalotrina / **Other stone fruits** Clorotalonil / **Other stone fruits** Deltametrin / **Other stone fruits** Imidacloprid / **Chards**
Follow-up (suspect) sampling of similar products, samples of	4	Chlorpropham / **Lemons** Chlorpropham / **Oranges**

Action taken	No. of non-compliant samples concerned	Residue/Product
same producer or country of origin		Fluazifop-P / **Broccoli** Oxamyl / **Lettuces**
Warnings	2	Acephate / **Apples** Acephate / **Apples**
No actions taken or described	7	Acrinathrin and its enantiomer **Tomatoes** DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT) / **Crab, sea-spiders** DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT) / **Crab, sea-spiders** DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT) / **Crab, sea-spiders** DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT) / **Crab, sea-spiders** DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT) / **Squid** DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT) / **Thunnus alalunga**

29.6. Quality assurance

Table 190: Laboratories participation in the national control program

Country	Laboratory Name	Accreditation		Participation in proficiency tests or inter-laboratory tests
		Date	Body	
Spain	Laboratorio de la Agencia de Salud Pública de Barcelona (LASPB)	03.06.19	ENAC	FAPAS, EUPT, Test-Qual
Spain	Laboratorio Regional de Salud Pública de Madrid	14.10.16	ENAC	FAPAS
Spain	Laboratorio de Salud Pública de Badajoz	24.05.13	ENAC	FAPAS, EUPT
Spain	Laboratorio de Salud Pública de Valencia	24.03.17	ENAC	FAPAS, EUPT
Spain	Laboratorio Agroalimentario de Burjasot-Valencia (Comunidad Valenciana)	02.11.99	ENAC	FAPAS, EUPT, Test-Qual
Spain	Laboratorio KUDAM S.L	20.07.18	ENAC	FAPAS, EUPT, Test-Qual
Spain	Laboratorio Químico Microbiológico S.A., de Mairena de Aljarafe, de Sevilla	16.12.05	ENAC	EUPT, EUPT, Test-Qual
Spain	Laboratorio de Salud Pública de Almería (Junta de Andalucía)	11.01.19	ENAC	FAPAS, EUPT
Spain	Laboratorio COEXPHAL de El Viso (Almería)	16.02.18	ENAC	FAPAS, Test-Qual
Spain	Laboratorio Oficial de Salud Pública de la Delegación de Salud y Bienestar Social de Cuenca	02.12.11	ENAC	FAPAS, EUPT
Spain	Laboratorio Tecnológico de las Palmas de Gran Canarias (Gobierno de Canarias)		ENAC	FAPAS, EUPT, Test-Qual
Spain	Laboratorio Agroalimentario y de Sanidad Animal (LAYSA) de Murcia	21.07.15	ENAC	FAPAS, EUPT, Test-Qual
Spain	Laboratorio Agrario Regional de Burgos (Junta de Castilla León)	18.05.01	ENAC	FAPAS, EUPT
Spain	Laboratorio Normativo de Salud Pública de Bilbao	19.09.18	ENAC	FAPAS, EUPT
Spain	Laboratorios ECOSUR, S.A.L.	21.06.19	ENAC	FAPAS, EUPT, Test-Qual

Country	Laboratory Name	Accreditation		Participation in proficiency tests or inter-laboratory tests
		Date	Body	
Spain	AINIA	20.12.96	ENAC	FAPAS, EUPT, Test-Qual
Spain	Analytica Alimentaria GmbH Sucursal en España	11.07.16	DAKKS y IAS	FAPAS, EUPT
Spain	Químico microbiológico S.A. Murcia	14.07.06	ENAC	EUPT, Test-Qual
Spain	Laboratorio de Salud Pública (Madrid Salud) Ayto. Madrid	04.01.06	ENAC	EUPT
Spain	Laboratorio analítico bioclínico S.L.	25.11.05	ENAC	FAPAS, EUPT, Test-Qual
Spain	Labs & technological Services AGQ, S.L.	29.03.19	ENAC	FAPAS, EUPT, Test-Qual
Spain	Laboratorio de Salud Pública de Galicia	27.07.18	ENAC	FAPAS, EUPT, Test-Qual
Spain	Laboratorio de Salud Pública en Bizkaia	05.07.19	ENAC	FAPAS
Spain	Laboratorio Regional del Gobierno de La Rioja	10.07.19	ENAC	FAPAS, EUPT, Test-Qual
Spain	Laboratorio Agroalimentario de Zaragoza	19.07.19	ENAC	FAPAS, EUPT, Test-Qual
Spain	Laboratorio Agroalimentario de Córdoba	21.09.01	ENAC	

29.7. Processing Factors (PF)

In the tables below the processing factors that were used by national competent authorities to verify compliance of processed products with EU MRLs are compiled.

Table 191: Processing factors overview

Pesticide (report name)	Unprocessed product (RAC)	Processed product	Processing factor
All pesticides	Wine grapes	Wine	1
All pesticides	Olives for oil production	Olive oil	5
All pesticides	Olives for oil organic production	Organic extra virgin olive oil	5

29.8. Additional information

In 2019, AESAN had to update its pesticide data collection system, because it had become obsolete with the continuous improvements made by EFSA. These changes required a large investment, and in the meantime, it was decided to use the tool provided by EFSA for the data collection. The use of this tool led to a series of human mistakes, which could not be adequately reviewed, and caused significant errors when validating the data introduced.

Several samples (63) had to be deleted from the report, due to errors occurred while introducing information in excel files. This caused that the number of samples analysed were multiplied, and therefore the information was false.

AESAN, in agreement with EFSA, decided to remove those samples from the report, to amend the error.

Later, in subsequent revisions, other mistakes were detected in relation to the number of samples considered 'non-compliant'. In this case, 2 wine samples had an error when reporting the 'unit of sampling', and no 'decimal separator' was introduced considering those samples as non-compliant. The data of this National report has been updated and modified to reflect the reality of the sampling situation.

30. Sweden

30.1. Objective and design of the national control programme

30.1.1. Objective

The Swedish Food Agency has developed a scoring model to clarify the criteria that form the basis for the prioritization of the products included in the national monitoring program for pesticide residues. The score model is valid for a period of three years and revised every third year. The score model takes the risks for the consumer into account, ranking of the products based on their score. The 20 products with highest score are taken as most important products, and they shall be included annually and constitute to about 60 percent of the control program. The rest of the products shall recur on a regular basis, such as every three years. Baby food is exception and it always included in the program.

The following criteria are included in the score model in order to find out which products that belongs to the 20 most important:

- Acute Swedish consumption, 97.5 percentile, for adults and children
- Positive results from pesticide control in relation to the number of samples taken over a three-year period. This is done on product basis. A minimum of 30 selected samples during the three years is required for the product to be included in this criterion.
- The proportion of samples with residues above MRL over three year's period, expressed in percentage
- Whether products are processed or not before consumption
- Edible or inedible peel
- RASFF messages
- If the measured levels have led to the intake of acute toxic substances above 50 or 100 percent of the acute reference dose (ARfD).

30.1.2. Design

In 2019 the sampling distribution between the origins of the food was roughly 28 % domestic, 30 % other EU countries and 42 % from third country.

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

The number of samples from the organic sector was roughly dependent on its markets share and availability on the market. In total 287 organic samples (16.6 %) was collected 2019.

All samples were analysed by a multi-residue method. Depending on the use pattern of pesticides and the products to be analysed we complement the multi residue method by using one or more single residue methods. Overall, we used 15 analytical methods. In all, by using both multi-residue methods and single residue methods it was possible to determine about 550 analytes which of about a hundred is metabolites or break down products.

30.2. Key findings, interpretation of the results and comparability with the previous year results

30.2.1. Key findings

In 2019, 1726 selective samples of fruits, vegetables, baby food, juices, cereal grains, bovine fat and chicken eggs were analysed for residues of about 550 analytes (pesticides, metabolites and break

down products). EU harmonized Maximum Residue Limits (EC-MRLs) were exceeded in 52 samples (3.0 %). The history of exceedance has looked as follow; 2014 - 2.1 %, 2015 – 1.3 %, 2016 – 2.1 %, 2017 – 3.3 %, 2018 - 3.3 % and for 2019 it was 3.0 %. Looking over time the exceedance the last six years is in range of 1.1-3.3 %.

Error! Reference source not found. shows the total number of samples taken for each category, the number of samples with the concentration of pesticides below the LOQ, i.e. no residues are found, number of samples with residues located between the LOQ and the limit (MRL), and the samples with residue concentrations over the limit was noted (not taking the measurement uncertainty into account).

Table 192: Summary results from the national monitoring program for pesticide residues 2019

Food category	Total No of samples	No of samples < LOQ	No of samples >LOQ and ≤ MRL	No of samples >MRL
Fruit and berries (fresh or frozen)	734	177 (24,1 %)	536 (73,2)	21 (2,7 %)
Vegetables (fresh or frozen)	582	332 (57,0 %)	235 (40,4 %)	15 (2,6 %)
Baby food	31	31	--	--
Cereals	255	196 (76,9 %)	47 (18,4 %)	12 (4,7 %)
Products of animal origin	30	30	--	--
Others (e.g. juice, dry products, veg. oils)	94	53 (56,4 %)	37 (39,4 %)	4 (4,3 %)
Total	**1726**	**819 (47,3 %)**	**856 (49,7 %)**	**52 (3,0 %)**

30.2.2. Interpretation of the results

When measurement uncertainty was taking into consideration, only 20 samples, of the 52 samples, were non-compliant.

Table 193: Summary over non-compliant samples 2019

Commodity	Origin	No. of Sample	Pesticides
Cucumber	Jordan	1	Cyflumetofen
Cucumber	Jordan	1	Amitraz
Dates (dried)	Saudi Arabia	1	Ethion
Pomegranate	Turkey	1	Acetamiprid, Boscalide, Chlorpyrifos, Sulfoxaflor, Thiacloprid
Lentils (dried)	Lebanon	1	Propoxur
Rice	India	1	Acefate, Thiametoxam, Tricyclazole
Rice	Iran	1	Acetamiprid
Apple	Brazil	1	Fenitrothion
Rice	India	1	Tricyklazole
Rice	India	1	Acephate, Carbendazim, Thiametoxam, Tricyklazole
Rice	Iran	1	Tricyklazole
Rice	India	1	Thiametoxam
Papaya	Brazil	1	Acetamiprid
Chinese cabbage	Poland	1	Dimethoate
Coriander	Thailand	1	Carbofuran
Rice	India	1	Tricyklazol,

Commodity	Origin	No. of Sample	Pesticides
			Thiametoxam
Rice	India	1	Tricyklazol
Chili	Laos		Triazofos, Carbofuran
Basil	Thailand	1	Valifenalate, pyridaben
Basil	Laos	1	Carbendazim, Chlorfenapyr, Chlorothalonil, Permetrin

The suspect samples were 69 and included 15 enforcement samples and 54 samples according to Regulation (EC) No 669/2009. Including measurement uncertainty 6 (11.11 %) of the 669/2009 samples and zero (0.00 %) of the enforcement samples contained residues above the MRL.

30.2.3. Comparability with the previous year results

An overview of exceedance in fresh fruits and vegetables is illustrated in Figure 9. Looking over ten years period the exceedance trend has declined.

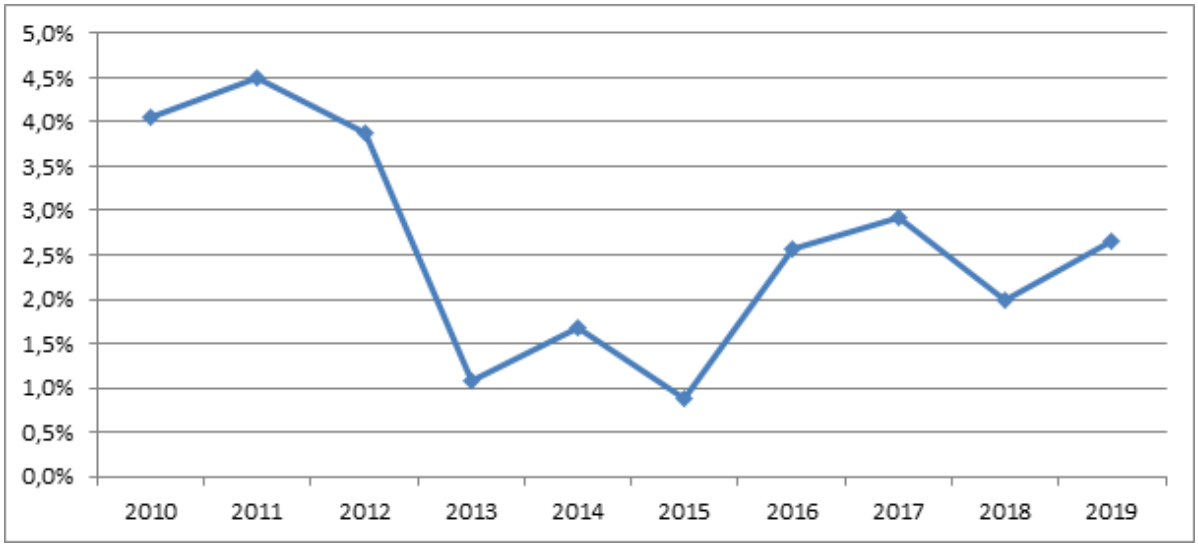


Figure 9: Exceedance rate for fresh fruit and vegetables between 2010-2019

30.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

30.3.1. Possible reasons for non-compliant samples

Table 194: Possible reasons for MRL non-compliant

Reasons for MRL non-compliance	Pesticide/food product	Frequency
GAP not respected: use of a pesticide not approved in the EU[(a)]	Amitraz/Cucumber	1
	Ethion/Dates (dried)	1
	Chlorpyrifos/pomegranate	1
	Thiacloprid/pomegranate	1
	Propoxur/lentils	1
	Acephate/rice	1
	Thiametoxam/rice	3
	Fenitrothion/apple	1
	Acephate/rice	1

Reasons for MRL non-compliance	Pesticide/food product	Frequency
	Carbendazim/rice	1
	Dimetoat/Chinese cabbage	1
	Coriander/carbofuran	1
	Triazofos/chili	1
	Carbofuran/Chili	1
	Basil/Carbendazim	1
	Basil/Chlorfenapyr	1
	Basil/ Chlorothalonil	1
	Permethrin/basil	1
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Cyflometofen/cucumber	1
	Acetamiprid/pomegranate	1
	Boscalide/pomegranate	1
	Sulfoxaflor/pomegranate	1
	Acetamiprid/rice	1
	Acetamiprid/papaya	1
	Basil/Valifenalate	1
	Basil/Pyridaben	1
Changes of the MRL	Tricyklazol/rice	6

30.3.2. ARfD exceedances

The short-term intake was estimated for all acute toxic pesticides with an acute reference dose (ARfD) set by EU or WHO. The calculation was based on the residue found in a selective (composite) sample and EFSA calculation model PRIMO rev 3 was used. Two samples exceeded the ARfD and a RASFF notification was sent to the Commissions RASFF-team.

Table 195: ARfD exceedances

Product	Origin	Risk assessment	Comments
Cucumber	Jordan	Residues of toxic substance: amitraz 0,19 mg/kg ARfD 0.01 mg/kg bw Monograph of the active substance amitraz, Austria 1997 (rev 2 July 2013). Acute risk assessment (EFSA calculation model, PRIMo rev 3) IESTI 1; variability factor 5 Cucumber, children (CZ child 4-6 years bodyweight 21.4 kg): 125% of ARfD	Sample code: 20190114S101 RASFF ref: 2019.0369
Chili	Laos	Residues of toxic substance: triazophos 1.2 mg/kg, ARfD = 0.001 mg/kg bw Neither EFSA nor EU has evaluated the active substance triazophos. Instead the ARfD has been established by JMPR 2002. Acute risk assessment (EFSA calculation model, PRIMo rev 3.1); variability factor 7 sweet pepper/bell pepper, children (DE child bodyweight 16.15 kg): 7140% of ARfD If a child with body weight 15 kg eats 10 gram of chili pepper containing 1.2 mg/kg triazofpos the ARfD will be reached, therefore a consumer risk can not be excluded.	Sample code: 20191111H602 RASFF ref: 2019.4184

30.3.3. Actions taken

A total of 43 follow-ups actions has been taken in 2019.

Table 196: Actions taken

Action taken	Number of non-compliant samples concerned	Comments
Rapid Alert Notification	2	Sample code: 20180213S102 RASFF ref: 2018/0450 Sample code: 20180327H701 RASFF ref: 2018-0935
Administrative sanctions (e.g. fines)	14	Sanctions in terms of enforcement sampling on next coming consignments from the same origin.
Rejection of a non-compliant lot at the border	6	Within the frame of Reg. (EC) 669/2009
Follow-up (suspect) sampling of similar products, samples of same producer or country of origin	15	
Other follow-up investigations to identify reason of non-compliance or responsible food business operator	6	

30.4. Quality assurance

Table 197: Laboratories participation in the national control program

Country	Laboratory Name	Accreditation Code	Date	Body	Participation in proficiency tests or inter-laboratory test
SE	Eurofins Food& Feed Sweden AB	Eurofins	02/09/1991	SWEDAC	**EUPT 2019:** EUPT-CF13 EUPT-FV21 EUPT-FV-SC03 EUPT-FV-SM11 EUPT-SRM14 **Fapas 2019:** FAPAS 05132 FAPAS 05136 FAPAS 05137 FAPAS 05138 FAPAS 09122 FAPAS 09126 FAPAS 19264 FAPAS 19267 FAPAS 19274 FAPAS 19275 FAPAS 19276 FAPAS 19278 FAPAS 19279 FAPAS 19280
SE	Swedish Food Agency	SLV/Kem1	02/26/2007	SWEDAC	**EUPT 2019**: EUPT-FV19 EUPT-AO12 EUPT-CF11 EUPT-SM09 EUPT-SRM12

30.5. Processing Factors (PF)

In **Error! Reference source not found.**, the processing factors are compiled that were used by the Swedish Food Agency to verify compliance of processed products with EU MRLs.

Table 198: Processing factors

Pesticide	Unprocessed product (RAC)	Processed product	Processing factor [(a)]
Acetamiprid	Table grapes	Raisins	4.5
Ametocratin	Table grapes	Raisins	4.5
Azinphos-metyl	Table grapes	Raisins	4.5
Azoxystrobin	Table grapes	Raisins	4.5
Bifenthrin	Table grapes	Raisins	4.5
Boscalid	Table grapes	Raisins	4.5
Bromopropylate	Table grapes	Raisins	4.5
Buprofezin	Table grapes	Raisins	4.5
Chlorantraniliprole	Table grapes	Raisins	4.5
Chlormequat	Table grapes	Raisins	4.5
Chlorpyrifos	Table grapes	Raisins	4.5
Cypermethrin (RD)	Table grapes	Raisins	4.5
Cyprodinil	Table grapes	Raisins	4.5
DEltamethrin	Table grapes	Raisins	4.5
Difenconazole	Table grapes	Raisins	4.5
Dithiiocrbamates	Table grapes	Raisins	4.5
Etoxazole	Table grapes	Raisins	4.5
Fenbbutatin oxide	Table grapes	Raisins	4.5
Fenhexamide	Table grapes	Raisins	4.5
Fenpyroximate	Table grapes	Raisins	4.5
Fenvalerate (RD)	Table grapes	Raisins	4.5
Fludioxinil	Table grapes	Raisins	4.5
Fluopyram	Table grapes	Raisins	4.5
Fluzilazole	Table grapes	Raisins	4.5
Flutriafol	Table grapes	Raisins	4.5
Hexythiazox	Table grapes	Raisins	4.5
Imidcloprid	Table grapes	Raisins	4.5
Indoxacarb (RD)	Table grapes	Raisins	4.5
Iprodione	Table grapes	Raisins	4.5
Iproalicarb	Table grapes	Raisins	4.5
Lambda-Cyhalothrin	Table grapes	Raisins	4.5
Metalaxyl (RD)	Table grapes	Raisins	4.5
Methoxyfenoxide	Table grapes	Raisins	4.5
Metrafenone	Table grapes	Raisins	4.5
Myclobutanil	Table grapes	Raisins	4.5
Penconazole	Table grapes	Raisins	4.5
Propargite	Table grapes	Raisins	4.5
Proquinazid	Table grapes	Raisins	4.5
Pyraclostrobin	Table grapes	Raisins	4.5
Pyrimethanil	Table grapes	Raisins	4.5
Quinoxyfen	Table grapes	Raisins	4.5
Tebuconazole	Table grapes	Raisins	4.5
Triadimefon (RD)	Table grapes	Raisins	4.5
Trifloxystrobin	Table grapes	Raisins	4.5

(a): Processing factor for the enforcement residue definition

31. United Kingdom

31.1. Objective and design of the national control programme

The Chemicals Regulation Division (CRD) of the Health and Safety Executive (HSE) acts as the UK competent authority for plant protection products including pesticide residues on behalf of Defra (Department for Environment and Rural Affairs) and other UK government departments.

The Expert Committee on Pesticide Residues in Food (PRiF) is a panel of independent experts that advises the UK government on the programme.

Results are published in a range of formats, including detailed quarterly PRiF reports and an annual report. Reports are available at https://www.gov.uk/government/collections/pesticide-residues-in-food-results-of-monitoring-programme and associated ODS format files containing detailed results are available at https://data.gov.uk/dataset/5d5028ef-9918-4ab7-8755-81f3ad06f308/pesticide-residues-in-food

General enquiries about HSE'S work on pesticide residues monitoring should be sent through Defra see https://www.gov.uk/guidance/contact-defra

Enquiries about PRiF reports can be sent to prif@hse.gov.uk

The UK national control programme is made up of surveys of commodities selected every year on the basis of an established prioritisation system.

Proposals for the programme for 2019 were reviewed by the Expert Committee on Pesticide Residues in Food (PRiF - a committee of independent experts) in 2018 before the programme was finalised. Full details of the programme and supporting justification were previously provided to EFSA and the Commission.

Factors of particular importance in determining surveys for this year's programme were:

- EU monitoring programme – all foods covered by the required EU monitoring for 2019 were classified as high priority for incorporation into the national programme
- Staple foods – bread and milk are always included in the UK programme. Foods of high dietary importance, whether for the whole population or for vulnerable sub-groups in particular infants and children.
- Foods for which RASFF notifications were issued for pesticide residues during 2018 and/or where previous results showed a high rate of non-compliance with MRLs.
- Lower priority foods which had not been surveyed for some years.
- We continued to incorporate chlorate analysis in the programme, in surveys of cheese, cooked meats, infant food, pre-packed salad and spinach as it was considered that these foods were more likely than most to contain residues. The aim of this testing was not to check for non-compliance, but to collect information on the incidence and source of chlorate residues.

In addition, certain foods were selected for "rolling reporting", that is sampling by government inspectors and a retail marketing agency, with faster turn-around and publication of results. These results are later included in other reports and data compilations.

Other minor adjustments were made to the programme during the course of the year which affected the balance of sample numbers between surveys.

31.2. Key findings, interpretation of the results and comparability with the previous year results

31.2.1. Key findings

In total, 3,302 samples were tested. Of those, 49.58% of samples contained no detectable residues, 47.55% of samples contained residues at or below the MRL or assessed as compliant, and 2.88% of samples contained residues assessed as over the MRL (without taking account of measurement uncertainty). These results exclude chlorate, which was considered separately.

Detailed interpretation of results is published in PRiF reports. PRiF quarterly reports for 2019[18] contain additional detailed interpretation of results including consumer risk assessments. PRiF's annual report for 2019 contains an overview of the year's results including separate consideration of chlorate results and additional information about the work of the committee.[19]

The presentation of some detailed data points are inconsistent between the published UK results and the data submitted to EFSA, due to differing data standards.

Separate consideration of chlorate residues

412 samples from 5 surveys were additionally tested for chlorate. These were not assessed for compliance with the MRL as part of the national monitoring programme. However, in order to include these important results in the UK data supplied to EFSA it has been necessary to code them as non-compliant to comply with the business rules set for acceptable data.

Fresh and Frozen Fruit and Vegetables (including potatoes)

A total of 1,604 samples were tested. Within this category residues above MRLs (without taking account of measurement uncertainty) was at 3.4%. This excludes results for chlorate.

Animal products including fish

A total of 906 samples were tested. Within this category 1.7% of residues were above MRLs (without taking account of measurement uncertainty) Most of the residues above the MRL were of the biocides BAC or DDAC.

Starchy foods and grains

492 samples were tested. Within this category residues above MRLs (without taking account of measurement uncertainty) was at 1.22%. This excludes results for chlorate. Processing factors were applied to consider compliance in bread and pasta.

Miscellaneous groceries

A total of 264 samples were tested. The other groceries tested were chocolate, processed potatoes, spices (turmeric) and wine Overall within these categories 7.58% of the samples had residues above the MRL.

Infant food

36 samples of savoury-based food for infants were tested. There were no residues detected in any of those samples tested.

Summary results are presented in **Error! Reference source not found.**.

Table 199: Summary results excluding chlorate

	Samples tested	Samples with residues over the MRL
Fruit and vegetable		
Apples	96	0
Beans with pods	96	16
Cabbage	96	2
Chilli Peppers	49	4
Curry Leaves	18	5
Grapes	120	1
Lemons	96	1
Lettuce	72	0
Okra	91	17
Peach & Nectarines	96	0
Peppers	122	0
Plums	96	0

[18] https://www.gov.uk/government/publications/pesticide-residues-in-food-quarterly-monitoring-results-for-2019
[19] https://www.gov.uk/government/publications/expert-committee-on-pesticide-residues-in-food-prif-annual-report

	Samples tested	Samples with residues over the MRL
Potatoes	156	3
Prepacked salad	88	1
Spinach	96	1
Strawberries	120	2
Tomatoes	96	1
Starchy foods and grains		
Barley	72	0
Bread	180	1
Bread (Gluten Free)	36	0
Oats	96	0
Pasta	72	0
Rice	36	5
Animal products (including fish)		
Butter	48	0
Cheese	96	0
Cooked meats	96	14
Fish (oily)	108	No MRLs
Honey	90	0
Milk	300	1
Pork	108	0
Shellfish	60	No MRLs
Miscellaneous groceries		
Chocolate	72	0
Potatoes (processed)	72	0
Spices (turmeric)	48	20
Wine	72	0
Infant food		
Cereal-based infant food	36	0

31.2.2. Interpretation of the results

Chlorate results

412 samples from 5 of surveys were selected for testing for chlorate as well as our usual range of pesticides. This testing was targeted towards foods thought most likely to contain chlorate residues.

We found chlorate residues in 160 samples (38.8%); of those, 147 (35.7%) of the total sampled) contained a residue above 0.01 mg/kg. Where we found residues above this level, we followed the results up with suppliers. Brand owners and other stakeholder provided responses on the likely source of residues. These findings were reported separately.

PRiF advised reporting results for chlorate separately from other residues as they are confident that the residues detected come from use of chlorine-based disinfectants used to maintain microbiological safety (control microorganisms that cause food poisoning), not from use of pesticides used on plants. They responded directly to a European Commission consultation explaining that in their opinion chlorate residues may prove impossible to reduce when the main source of chlorate is likely to be from treated drinking water or the use of legitimate biocides. Their colleagues in the Advisory Committee on the Microbiological safety of Food (ACMFS), which advised the UK's Food Safety Agency, also wrote to raise concerns about the unintended consequences for overall food safety of focussing on biocide residues without considering the effect on microbiocidal safety.

Table 200: Summary results for chlorate

Survey	Number of samples tested	Number of samples containing residues at 0.01 mg/kg (the reporting limit)	Number OF samples with residues above 0.01 mg/kg
Cheese	96	1	17
Cooked meats	96	6	26
Infant food	36	1	2
Pre-packed salad	88	1	80
Spinach	96	4	22

Fresh and Frozen Fruit and Vegetables (including potatoes)

The most frequent non-compliant samples were in okra and beans with pods surveys. Speciality varieties of beans with pods and okra continue to have relatively high incidences of non-compliance. These foods are not commonly grown in Europe and many of the MRLs are set at the LOD.

Animal products including fish

All the residues over the MRL in animal products were residues of the biocides BAC or DDAC. Responses for food business indicated expected that the residues result from the use of biocides as disinfectant on surfaces and tools/machinery in the line with product labels during the preparation and processing of meat, dairy foods and fish for consumer purchases rather than as pesticides on plants.

Starchy foods and grains

The most frequent non-compliant samples were in rice. All non-compliant samples of rice contained a residue of tricyclazole above the MRL. The MRL for tricyclazole changed in December 2017, these samples were imported after this date, no clear picture emerged of a cause for non-compliance.

Miscellaneous other groceries

The most frequent non-complaint samples were in the spices (turmeric) survey. Results were not unexpected based on previous RASFF notifications. No clear picture emerged of a cause for non-compliance.

Infant food

No residues were detected in these samples.

31.2.3. Comparability with the previous year results

Since the UK programme is made of surveys of different foods each year, it is not appropriate to compare results statistically to previous years. Results for most foods are broadly consistent with previous years. Overall results excluding chlorate are also broadly consistent.

31.3. Non-compliant samples: possible reasons, ARfD exceedances and actions taken

31.3.1. Possible reasons for non-compliant samples

Fresh Fruit and Vegetables (including potatoes)

We continued to find a relatively high percentage of samples with residues over the MRL in beans with pods (mainly in speciality beans) and in okra. Both will be surveyed again in 2020 as part of the rolling reporting surveys.

Animal products including fish

All the residue over the MRL in animal products were residues of the biocides BAC or DDAC. Responses for food business indicated expected that the residues result from the use of biocides as disinfectant on surfaces and tools/machinery in line with product labels during the preparation and processing of meat, dairy foods and fish for consumer purchases rather than as pesticides on plants.

Due to the need to maintain microbiological safety food businesses have been advised not stop using biocides or change their practices in response to these results.

Cereals and grains

The most frequent non-compliant samples were in rice. All non-compliant samples of rice contained a residue of tricyclazole above the MRL. The MRL for tricyclazole changed in December 2017, these samples were imported after this date, no clear picture emerged of a cause for non-compliance.

Infant food and other groceries

The most frequent non-complaint samples were in the spices (turmeric) survey. Results were not unexpected based on previous RASFF notifications. No clear picture emerged of a cause for non-compliance.

31.3.2. ARfD and ADI exceedances

All individual results were screened against intakes

5 samples with residues over the MRL gave intakes over the ARfD, details and draft RASFFs were sent on to the UK's RASFF contact point (the Food Standard Agency). Detailed risk assessments were published in quarter reports for these and other cases where consideration of the effect of peeling or similar issues considered when setting the MRL was needed to fully consider the risk to consumers.

The screening process also considers whether chronic intakes need to be considered: no concerns were identified based on individual food results. It was observed that chlorate intakes from food are negligible compared with intakes from drinking water.

31.3.3. Actions taken

Individual food businesses were advised of chlorate residues and asked to provide comments to help understand of these residues and to rule out plant protection product use. Work on the general issue has continued in collaboration with the UK's Food Safety Agency and with stakeholder bodies.

Advisory letters were issued to sampling points and/or brand owners about residues above the MRL. Where residues were in breach of the MRL after measurement uncertainty was in most cases these were highlighted as non-compliant when brand name details were published. Brand name details are routinely published for all UK samples taken from the supply chain. For samples of non-UK food, the appropriate authorities were also notified. For UK samples were (where possible) investigated and/or referred for action under cross compliance rules.

RASFF notifications were prepared and issued in respect of 5 samples that were sent to the FSA for consideration. Brand name details of these samples were also published separately.

Reasons for non-compliance were not always provided, with the exception of residues of BAC and DDAC where evidence of legitimate, non-pesticide source was often provided.

In general non-compliance was highest for foods from outside the EU. It was considered likely, although representations were not made to this effect, that the food had been grown in accordance with local GAP for local markets that is not to a specification that was compliant with EU requirements.

Residues detected in 11 samples of organic produce; these were referred to the appropriate agriculture departments and to organic certification bodies. Exceptionally the pesticide MRL competent authority although not responsible for compliance in either organic food or infant food provided technical support in the detailed scrutiny of a residue in organic baby food.

In the PRiF annual report results for glyphosate were specifically included in response to stakeholder interest, although no safety or compliance issues were identified by the committee.

31.4. Quality assurance

All laboratories analysing for the UK national control programme are required to be accredited for the tests conduct, to participate in EU proficiency tests (EUPT) and FAPAS proficiency tests relevant to the surveys they are working on (all laboratories analyse samples from across the UK for specific foods).

The Expert Committee on Pesticide Residues in Food's Analytical Sub-Group (ASG), which includes representatives from all laboratories, reviews the outcome of proficiency testing as well as results of analysis by the laboratories before they are sent to HSE, to ensure their reliability.

Table 201: Accreditation of laboratories and participation in proficiency tests

MS	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	**Code**	**Date**	**Body**	
GB	Agri-Food and Biosciences Institute	AFBI	11/11/2010	UKAS	**EUPT**: CF13 **FAPAS**: 05/133, 05/135, 05/0136, 05/0137, 05/139, 05/141
GB	Fera Science Ltd	Fera Science Ltd	1996	UKAS	**EUPT**: FV21, FV/SM11, CF13, AO14, SRM14 **FAPAS**: 05/135, 05/136, 05/137, 05/139, 05/140, 05/141, 19/283, 09/122, 09/124, 09/128, 19/268, 19/270, 19/271, 19/272, 19/275, 19/276, 19/279, 19/280, 19/284, 19/286
GB	Science and Advice for Scottish Agriculture (SASA)	SASA	18 July 1994	UKAS	**EUPT**: FV21 **FAPAS**: 19/267, 19/271, 19/273, 19/276, 19/279, 19/280

31.5. Processing Factors (PF)

The following processing factors were applied to results for samples collected during 2019. Otherwise a professing factor of 1 was applied to simple processed foods where appropriate as an initial check.

Table 202: Processing factors

Pesticide	Unprocessed product (RAC)	Processed Product	Processing factor	Appendix A - Comments
Chlorpyrifos-methyl	Wheat	Wholemeal wheat bread	0.47	BfR compilation
Deltamethrin	Wheat	Wholemeal wheat bread	0.84	BfR compilation
Glyphosate	Wheat	Wholemeal wheat bread	0.36	BfR compilation
Pirimiphos methyl	Wheat	Wholemeal wheat bread	0.43	BfR compilation
Chlormequat	Wheat	Other wheat bread	0.3	BfR compilation
Chlorpyrifos-methyl	Wheat	Other wheat bread	0.05	BfR compilation
Deltamethrin	Wheat	Other wheat bread	0.14	BfR compilation
Glyphosate	Wheat	Other wheat bread	0.105 ‡	BfR compilation
Pirimiphos methyl	Wheat	Other wheat bread	0.12	BfR compilation
Chlormequat	Rye	Wholemeal rye bread	0.3	BfR compilation
Chlormequat	Rye	Other rye bread	0.99	BfR compilation
All residues	Cocoa beans	Chocolate	Adjusted to account for % cocoa solids	
All residues	Potatoes	Processed potatoes	1	However, further consideration was applied for foods other than potatoes

31.6. Additional Information

The Food Standards Agency (FSA), in accordance with its statutory obligations as the UK central competent authority for food and feed, regularly submits to the EU Commission test returns for high-risk commodities controlled upon arrival at UK ports under the various safeguard measures and other legislation currently in place, either monthly, quarterly or bi-annually, as is required by the legislation.

References

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DIN EN 12393:2013 Foods of plant origin - Multiresidue methods for the determination of pesticide residues by GC or LC-MS/MS - Part 1: General considerations

EC (European Commission), 2018. Guidance document on analytical quality control and method validation procedures for pesticide residues and analysis in food and feed SANTE/11813/2017. 21-22 November 2017, rev.0

EC (European Commission), 2004. Notification Criteria for Pesticide Residue Findings to the Rapid Alert System for Food and Feed (RASFF), SANCO/3346/2001 rev 7, Brussels, 14 July 2004 http://ec.europa.eu/food/plant/protection/resources/rasff_pest_res_en.pdf

EFSA (European Food Safety Authority), 2020. Chemical monitoring reporting guidance: 2020 data collection. EFSA Supporting publication 2020.EN-1796. 101 pp. doi:10.2903/sp.efsa.2020.EN-1796

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Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EECText with EEA relevance. OJ L 70, 16.3.2005, p. 1–16.

Commission Implementing Regulation (EU) 2018/555 of 9 April 2018 concerning a coordinated multiannual control programme of the Union for 2019, 2020 and 2021 to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin. OJ L 92, 10.4.2018, p. 6–18.

Commission Regulation (EC) No 669/2009 of 24 July 2009 implementing Regulation (EC) No 882/2004 of the European Parliament and of the Council as regards the increased level of official controls on imports of certain feed and food of non-animal origin and amending Decision 2006/504/EC. OJ L 194, 25.7.2009, p. 11–21.

Commission Directive 2002/63/EC of 11 July 2002 establishing Community methods of sampling for the official control of pesticide residues in and on products of plant and animal origin and repealing Directive 79/700/EEC. OJ L 187, 16.7.2002, p. 30–43.

Abbreviations

AA CC	Autonomous Communities
AB	Estonia Agricultural Board
ADI	Acceptable Daily Intake
AESAN	Spanish Agency for Food Safety and Nutrition
AFBI	Agri-food and Biosciences Institute
AGES	Austrian Health and Food Safety Agency
ANSES	French Agency for Food, Environmental and Labour Safety
ARC	Agricultural Research Centre – Laboratory for residues and contaminants of Saku
ARfD	Acute reference dose
ASV	Veterinary Administration Services of Luxembourg
AT	Austria
BAC	Benzalkonium chloride
BE	Belgium
BELAC	Belgium Accreditation Council
BfR	Bundesinstitut für Risikobewertung
BFSA	Bulgarian Food Safety Agency
BG	Bulgaria
BIOR	Institute of Food Safety, Animal Health and Environment of Latvia
BIPEA	International Bureau for Analytical Studies
BMWA	Federal Ministry of Labour, Health and Social Affairs of Austria
BVL	Federal Office of Consumer Protection and Food Safety
CAFIA	Czech Agriculture and Food Inspection Authority
CAI	Czech Accreditation Institute
CCPC	Critical crop/pesticide concentration
CISTA	Central Institute for Supervising and Testing in Agriculture of Czech Republic
CLCTC	Central Laboratory for Chemical Testing and Control of Bulgaria
CLVCE	Central Laboratory of Veterinary Control and Ecology of Bulgaria
COFRAC	French Committee for Accreditation
COIPT	Olive oil proficiency test
CZ	Czechia
CY	Cyprus
DA	Department of Agriculture
DAFM	Department of Agriculture, Food and the Marine of Ireland
DAkkS	German accreditation body
DANAK	Danish accreditation body
DDAC	Didecyl dimethylammonium chloride
DDT	Dichlorodiphenyltrichloroethane

DE	Germany
DGCCRF	French General Directorate of Competition, Consumption and Fraud Repression
DK	Denmark
DPPSCA	Directorate of Plant Protection, Soil Conservation and Agri-environment of Hungary
DVFA	Danish Veterinary and Food Administration
EAK	Estonian Accreditation Centre
EC	European Commission
EEA	European Economic Area
EFSA	European Food Safety Authority
ENAC	Spanish Accreditation Body
ES	Spain
ESYD	Greek accreditation body
EU	European Union
EUCP	EU coordinated multiannual control programme
EUPT-AO	European Union Proficiency Test in Animal Origin
EUPT-CF	European Union Proficiency Test in Cereals and Feed
EUPT-FV	European Union Proficiency Test in Fruit and Vegetables
EUPT-SRM	European Union Proficiency Test in Single-Residue Methods
Fapas	Food analysis performance assessment scheme
FASFC	Federal Agency for the Safety of the Food Chain
FI	Finland
FINAS	Finnish accreditation service
FR	France
FSA	Food Standards Agency
FSAI	Food Safety Authority of Ireland
FVS	Food and Veterinary Service of Latvia
Fytolab	Laboratory for Pesticide and Residue Analysis
GAP	Good agricultural practice
GC	Gas chromatography
GC-ECD	Gas chromatography with electron capture detector
GC-FID	Gas chromatography with flame ionisation detector
GC-FPD	Gas chromatography with flame photometric detector
GC-MS/MS	Gas chromatography with tandem mass/mass spectrometer
GC-(P)FPD	Gas chromatography with pulsed flame photometric detector
GR	Greece
HB	Tartu Laboratory of Estonian Health Board
HBC	Central Chemistry Laboratory of the Health Board of Estonia
HCH	Hexachlorocyclohexane

HPLC	High-performance liquid chromatography
HR	Croatia
HU	Hungary
IE	Ireland
INAB	The Irish National Accreditation Board
IPAC	Portuguese Accreditation Institute
IPH	Institute of Public Health
ISO	International Organization for Standardization
IT	Italy
IUNA	Irish Universities Nutrition Alliance
JMD	Joint ministerial decisions
LATAK	Latvian National Accreditation Bureau
LAYSA	Laboratorio Agroalimentario y de Sanidad Animal
LC	Liquid chromatography
LC-ITMS	Liquid Chromatography with Ion Trap Mass Spectrometry
LC-LR-MS	Liquid Chromatography with Low Resolution Mass Spectrometry
LC-MS	Liquid Chromatography Mass Spectrometry
LC-MS/MS	Liquid chromatography with tandem mass/mass spectrometer
LC-QTOF-MS	Liquid Chromatography Quadrupole-Time-of-Flight Mass Spectrometry
LOQ	Limit of quantification
LRVSA	Veterinary and Food Safety Laboratory of the Regional Directorate of Agriculture and Rural Development of Madeira
LT	Lithuania
LU	Luxembourg
LUA3	Regional Institute for Food Control in Vienna
LV	Latvia
MAFF	Ministry of Agriculture and Food of Bulgaria
MARD	Romanian Ministry of Agriculture and Rural Development
MH	Ministry of Health
MoA	Ministry of Agriculture
MPHS	Department of Medical and Public Health Services of Cyprus
MRL	Maximum residue limits
MRM	Multiresidue method
MSCBS	Spanish Ministry of Health, Consumer Affairs and Social Welfare
NAT	National Accreditation Body of Hungary
NFA	Swedish National Food Agency
NFCSO	National Food Chain Safety Office of Hungary
NFSA	Norwegian Food Safety Authority
NIBIO	Norwegian Institute of Bioeconomy Research

NL	Netherlands
NSVFSA	National Sanitary Veterinary and Food Safety Authority
OSQCA	Organism for the Security and Equality of the Food Chain of Luxembourg
PCD	Pesticide Controls Division of Ireland
PHI	Pre-harvest interval
PL	Poland
PPP	Plant protection products
PR	Pesticide residues
PRiF	Expert Committee on Pesticide Residues in Food
PRIMo	Pesticide residue intake model
PR-SGL	Pesticide Residues of the State General Laboratory
PT	Portugal
QuEChERS	Quick, easy, cheap, effective, rugged and safe method
QuPPe	Quick Polar Pesticides Method
RAC	Raw agricultural commodity
RACFC	Risk Assessment Centre on Food Chain
RASFF	Rapid Alert System for Food and Feed
RENAR	Romanian Accreditation Association
RO	Romania
RvA	Dutch Accreditation Council
SASA	Science and Advice for Scottish Agriculture
SCL	Common Laboratory Network of France
SE	Sweden
Secualim	Food Safety Service of the Direction of Public Health of Luxembourg
SFVS	State Food and Veterinary Service of the Republic of Lithuania
SGL	State General Laboratory of Cyprus
SK	Slovakia
SNAS	Slovak National Accreditation Service
SRM	Single-residue method
SVA	State Veterinary Administration of the Czech Republic
SWEDAC	Swedish Board for Accreditation and Conformity Assessment
TC	Third Country
UV/VIS	Ultra-Violet / Visible Spectroscopy (photometry)
USMAF	Office of the Maritime Health, Air and Border of the Ministry of Health of Italy
VFB	Veterinary and Food Board of Estonia
VWA	Netherlands Food and Consumer Product Safety Authority
WHO	World Health Organization