Controls of pesticide residues in food and feed - Belgium 2019

Results of the official controls in accordance to Regulation (CE) N°396/2005 and Commission Regulation (EC) N° 2018/555

October 2020

PESTICIDE RESIDUE CONTROL RESULTS

NATIONAL SUMMARY REPORT

Year: 2019

Country: BELGIUM

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1. Country

1.1. Name of the national competent authority/organisation

The federal Agency for the Safety of the Food Chain (FASFC) is the competent Authority for the enforcement of Regulation 396/2005.

Pesticide residues results are published on http://www.favv-afsca.fgov.be/publicationsthematiques/pesticide-residue-monitoring-food-plant-origin.asp

Functional mailbox : pesticidepccb.s1@favv-afsca.be

2. 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[a] 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 the website Fytoweb[b]. Information on MRLs can be found on the website of the European Commission[c].

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[d]. 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[e] 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[f] of the European Commission and some targeted sampling, mainly targeted sampling at border controls according to Regulation 669/2009[g] and regulation 885/2014[h] have been also included in the national programme (see table 1).

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).

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[i] that has been implemented in Belgian legislation. Samples are analysed in ISO 17025 accredited laboratories by means of multi-residues and single-residues methods which in 2019 allowed the detection of more than 600 pesticide residues.

Table 1: Targeted sampling and EU coordinated control programme included in the control programme 2019

Targeted sampling at border controls (Reg 669/2009 & 885/2014)	
Origin	**Products**
Benin	Pineapples
Cambodia	Aubergines, yardlong beans, chinese celery
China	Tea, chinese broccoli, goji berries
Dominican Republic	Yardlong beans, aubergines, lauki, sweet peppers, chili peppers
Egypt	Strawberries, sweet peppers, chili peppers, tablegrapes
India	Curry leaves, okra, chili peppers
Kenya	Peas with pods
Marocco	Munt
Pakistan	Chili peppers
Peru	Table grapes
Thaïland	Yardlong beans, aubergines, chili peppers
Turkey	Lemons, Vine leaves, sweet peppers, pomegranates
Uganda	Aubergines
Vietnam	Basilic, mint, pitahayas, coriander leaves, okras, chili peppers, parsley

EU Coordinated programme 2019 (Reg 2018/555)
Products
Apples
Strawberries
Peaches/nectarines
Lettuces
Head cabbages
Tomatoes
Spinaches
Oat grain
Barley grain
Wine
Cow's milk
Swine fat
Foods for infants and young children (other than infant formulae, follow-on formulae and processed cereal-based baby food)

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

In 2019, a total number of 3114 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.

3.1. 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 (table 2).

Table 2: Surveillance samples - Summary results

Sampling strategy	Types of products	Number of samples analysed	Without quantified residues (%)	With residues at or below MRL (%)	With residues > MRL[1] (%)	With residues >MRL[2] (Non-compliant) (%)	Compliance (%) compared to 2018
Surveillance	Fruit, vegetables, cereals & other	2113	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%	97,5% (-2,5%)
		2642	**42%**	**53,9%**	**4,1%**	**1,8%**	98,2% (=)

[1] Measurement uncertainty is not taken into account (numerical MRL exceedances)
[2] 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). Graph 1 gives an overview of the evolution of the results over the 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 table 3. Full details on non-compliant samples can be found in annexe 3 (xls format) of this summary report.

  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%).

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

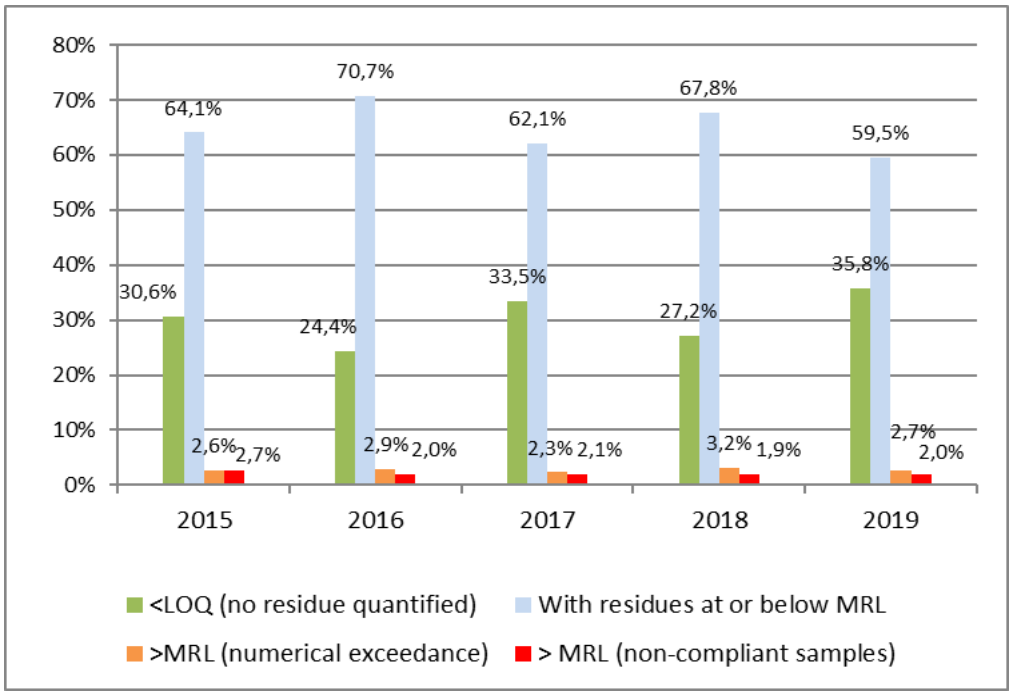


Table 3: Overview of the results 2019 per group of products [fruits, vegetables, cereals & others 2019 (surveillance samples)]

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%
	2113	**64,2%**	**98%**

- **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. Enforcement samples

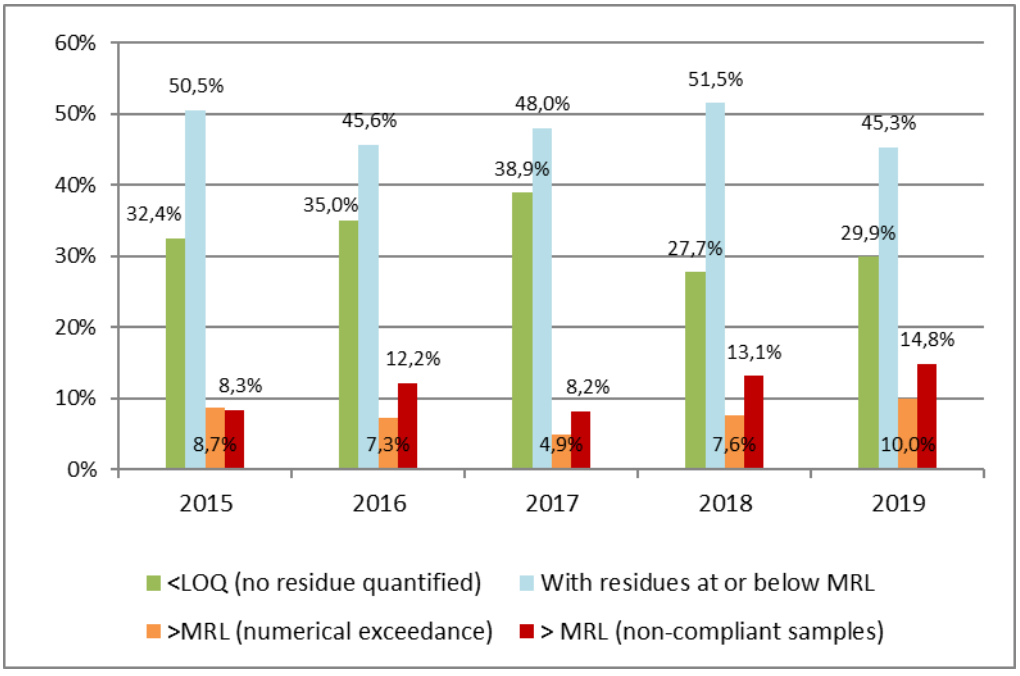
Beside surveillance samples, 472 enforcement samples were analysed in the case of suspicion about the non-compliance of a product with EU MRLs (table 4). These products were mainly targeted products analysed according to Regulation 669/2009 (products coming from non-EU countries among others from Uganda, 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 4: Enforcement samples - Summary results

Sampling strategy	Types of products	Number of samples analysed	Without quantified residues (%)	With residues at or below MRL (%)	> MRL[3] (%)	>MRL[4] (Non-compliant) (%)	Compliance (%) compared to 2018
Enforcement (targeted samples)	Fruit, vegetables, cereals & other[5]	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%)

- **Fruit, vegetables and cereals :** 85% of the 465 samples analysed complied with the MRLS (-1,9% in comparison with 2018). Graph 2 gives an overview of the evolution of the results of enforcement samples these last years. Non-compliances were observed in products from non-EU countries (see table 5)

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



[3] Measurement uncertainty is not taken into account (numerical MRL exceedances)
[4] Measurement uncertainty is taken into account (non-compliant samples)
[5] Including samples analysed in the framework of Regulation (CE) N°669/2009

Table 5: 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 Parsley (Israël)
Fruiting vegetables	205	82,9 %	Chili-peppers (Uganda, Pakistan, Vietnam) Aubergines (Domican 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%	
	472	**85,2%**	

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

4.1. 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 in 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.

4.2. 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[6] (table 6).

Table 6: 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

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

Food products	Pesticide residue	Number	Origin	Context
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

4.3. 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[7] according to the risk for the consumer.

Follow-up action is taken 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.

5. Quality assurance

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

Table 7: 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),

[7] 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	
					P1907-RT (Proof-ACS), P1911-RT (Proof-ACS), P1916-RT (Proof-ACS), COIPT-19 (Italian NRL AO +IOC), Relana 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
DE	LUFA-ITL	LUFA	current: 19.12.2019 (previously: 10.04.2019; 19.11.2018)	DAkkS (Deutsche Akkreditierungsstelle)	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

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
					9126, Proof P1911-RT, Fapas 19279, QS Autum 2019, Fapas 19280, EUPT FV-SC03, Fapas 19282

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 396/2005. Processing factors were mainly applied to cover the dehydratation of fruits or vegetables.

Table 8 : Processing factors

Pesticide (report name)[a]	Unprocessed product (RAC)	Processed product	Processing factor[b]	Comments
	Mushrooms	Dried mushrooms	9	General processing factor
	Table grapes	Dried grapes	5	General processing factor
	Gojiberries	Dried gojiberries	5	General processing factor

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 396/2005. Products containing pesticide residues are notified to the Regions for eventual follow-up according to the legislation applicable to organic farming.

References

(a) Regulation (EC) N°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

(b) http://www.fytoweb.be

(c) https://ec.europa.eu/food/plant/pesticides/max_residue_levels_en

(d) 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

(e) https://webgate.ec.europa.eu/rasff-window/portal/

(f) 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**;**

(g) 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

(h) 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

(i) 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

Glossary [and/or] Abbreviations

ARfD	Acute Reference Dosis
FASFC	Federal Agency for the Safety of the Food Chain
GAP	Good Agricultural Practices
LOQ	Limit of quantification
MRL	Maximum residue limit
PHI	Pre-Harvest Interval
RASFF	Rapid Alert System for Food and Feed

Annex A – Overview results monitoring 2019 (xls format)

Part 1 : Analytical scope

Part 2 : Number of samples analysed, MRL exceedances, number of samples - Variables related to the origin of samples

Part 3 : overview of non-compliant samples