Controls of pesticide residues in food and feed - Belgium 2017






Results of the official controls in accordance to Regulation (CE) N°396/2005 and Commission Regulation (EC) N° 2016/662

September 2018

PESTICIDE RESIDUE CONTROL RESULTS

NATIONAL SUMMARY REPORT

Year: 2017

Country: Belgium

Table of contents

1. BELGIUM

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.

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], have been also included in the national programme (see table 1).

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[h] 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 2017 allowed the detection of more than 600 pesticide residues.

Table 1: Targeted sampling and EU coordinated control programme included in the control programme 2017

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

EU Coordinated programme 2017 (Reg 2016/662)	
Products	**Samples to analyze**
Oranges	12
Pears	12
Kiwi fruits	12
Cauliflowers	12
Onions	12
Carrots	12
Potatoes	12
Beans (dried)	12
Rye grain	12
Rice	12
Poultry fat	12
Sheep fat	12
Babyfood (infant formulae)	5
Babyfood (follow on formulae)	5

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

In 2017, a total number of 2859 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 24 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 (38,2%), EU origin (25,2%), non-EU origin (31,5%) and non-specified origin (5,1%).

Results are presented according to their sampling strategy. Contrary 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 sampling

Out of the total of 2859 samples**,** 2430 surveillance samples were analysed within the context of the control programme. 98% 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 2016
Surveillance	Fruit, vegetables, cereals & other	2181	33,5%	62,1%	4,4%	2,1%	97,9% (-0,1%)
	Processed products	53	58,5%	34%	7,5%	3,8%	96,2% (-3,3%)
	Baby food	93	98,9%	0%	1,1%	0%	100% (=)
	Animal products	24	100%	0 %	0%	0%	
	Feed	79	41,7%	57%	1,3%	1,3%	98,7% (+1,6%)
		2430	**37,5%**	**58,3%**	**4,2%**	**2%**	98% (-0,6%)

- **Fruit, vegetables and cereals :** 97,9% of the 2181 samples analysed complied with the MRLS (-0,1% in comparison with 2016). Graph 1 gives an overview of the results these last 5 years.
  66,5% of the samples contained one of more residues above the limit of quantification (LOQ). Pome fruits & citrus fruits are the groups with the highest frequency of detection of pesticide residues (>95% of the samples contained one or more residues). All these fruits were however compliant with MRLs.
  Conversely, brassica vegetables is the group with the lowest frequency of detection (27,4% of the samples analysed).
  Products with the highest rate of non-compliances are fresh herbs and tea & infusions.
  An overview of the detection frequencies and compliance to MRLs per product group is given in table 3.
  As in previous years, more MRLs violations were proportionally observed in non-EU products (3,9%) than in products grown in the EU (1,3%).

[1] Measurement uncertainty is not taken into account (numerical MRL exceedances)
[2] Measurement uncertainty is taken into account (non-compliant samples)

Graph 1: overview of the evolution of the results for fruits, vegetables, cereals & other products of plant origin from 2012 to 2017 (surveillance samples)

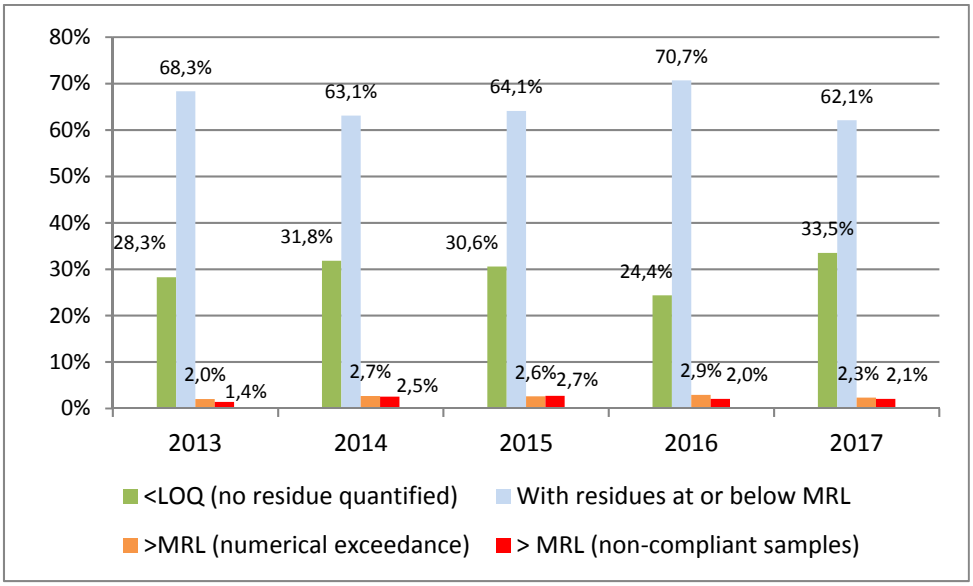

Table 3: Overview of the results 2017 per group of products [fruits, vegetables, cereals & others 2017 (surveillance samples)]

Groups of products	Number of samples analyzed	Samples with one of more residues >LOQ (%)	Compliant samples (%)
Pome fruits	45	100%	100,0%
Citrus fruits	117	95,7%	100,0%
Stone fruits	85	84,7%	100,0%
Root and tuber vegetables	165	51,5%	100,0%
Other products (oil products, coffee, cocoa & spices)	93	37,6%	100,0%
Legume vegetables	122	40,1%	99,2%
Brassica vegetables	117	27,4%	99,1%
Bulb vegetables	89	67,4%	98,9%
Berries and small fruits	285	91,6%	98,9%
Fruiting vegetables	298	53,7	98,3%
Leafy vegetables	215	76,7%	98,6%
Miscellaneous fruits	117	53,8%	97,4%
Cereals	106	65,1%	98%
Champignons	40	40,0%	97,5%
Stem vegetables	125	78,4%	96%
Tea and infusion	79	68,4%	88,6%
Fresh herbs	83	89,2%	86,7%
	2181	**66,5%**	**97,9%**

- **Processed products :** 53 processed products were analysed. Two non-compliances were observed in samples of dried goji berries from China.
- **Babyfood** : one sample showed a trace of a pesticide (Ethylene thiourea) residue but complied with the MRLs of 0,01 mg/kg set in the babyfood legislation.

- **Animal products** : Poultry fat and sheep fat were analysed in the framework of the European control programme. No detection of pesticide residues was reported in these samples.
- **Feed** : One non-compliance was observed on linseeds used for animal feed (deltamethrin).

3.2 Enforcement sampling

Beside surveillance samples, **429** 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 Egypt, Uganda and China) and products analysed within the context of following up of violations found previously. **91,8%** were compliant with the legislation (+2,6% in comparison with 2016).

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 2016
Enforcement (targeted samples)	Fruit, vegetables, cereals & other[5]	427	38,9%	45,6%	13,1%	8,2%	**91,8% (+4%)**
	Processed products	2	0%	100%	50%	0%	/
		429	**38,7%**	**48,0%**	**13,3%**	**8,2%**	**91,8% (+3,6%)**

Graph 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 table 5)

[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

Graph 2: overview of the evolution of the results for fruit, vegetables, cereals & other products of plant origin from 2013 to 2017 (enforcement samples)

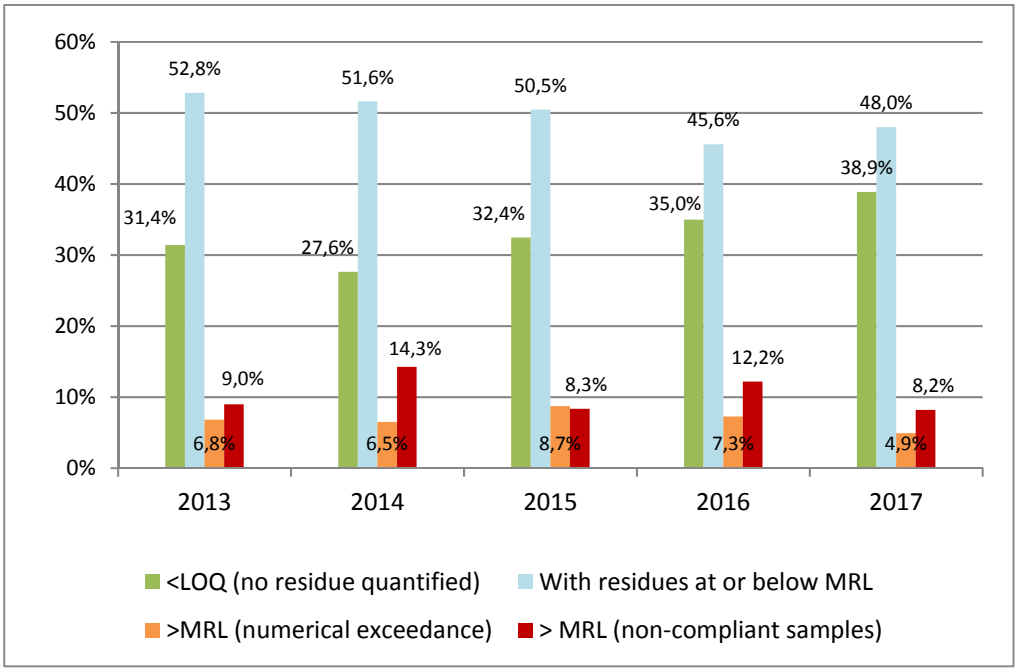

Table 5: Overview of the results per group of products (enforcement samples)

Groups of products	Number of samples analyzed	Compliant samples (%)	Main non -compliant products (>MRL) and origin
Berrie and small fruits	155	98,1%	Currants (Belgium)
Fruiting vegetables	106	93,4%	Chili-peppers (Uganda)
Miscellaneous fruits	50	88%	Ramboutans (Thailand)
Legume vegetables	56	87,5%	Beans (Dominican Republic) Peas (Kenya)
Others	15	86,7%	Vine leaves (Turkey)
Tea & infusions	23	78,3%	Tea (China)
Freh herbs	22	77,3%	Mint (Marocco)
	427	**91,8%**	

4. Non-compliant samples: possible reasons, ARfD exceedances and 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[6] according to the risk for the consumer.

[6] 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).

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.

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 (table 6). Such investigation cannot be done in case of non-compliances in imported products but these non-compliances are mainly related to the use of plant protection products not authorized in the EU and for which no import tolerances were set.

Table 6: Possible reasons for MRL non-compliance in products of Belgian origin

Possible reasons for MRL non-compliance	Pesticide/food product	Frequency	Comments
GAP not respected: use of an approved pesticide not authorised on the specific crop	Dithiocarbamates / celery Fluazifop / Head cabage	1 1	RASFF issued RASFF issued
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Abamectin / Red currants Dithiocarbamates / lettuce Chlorpropham / Fennel Propamocarb / celery	2 1 1 1	
Cross contamination: spray drift or other accidental contamination	Dichlorvos / strawberries Deltamethrin / linseed (feed) Nicotine / mushrooms Dimethenamid / Tarragon	1 1 1 1	
Reason unknown	Flutolanil / parsley Chlorpropham / wheat Prosulfocarb / parsley	1 1 1	Cross contamination suspected
Reason unknown	Bifenthrine & imazalil / celery tebuconazole / Dill	1 1	

4.1. ARfD exceedances Comparability with the previous year results

Eight products of food of plant origin analysed in the framework of the control plan of the FASFC or self-checking carried out by business operators contained pesticide residues at a level potentially dangerous for the consumers (ARfD exceedances). All these products were recalled from the consumers and notified via the RASFF[7] (table 7).

Table 7: RASFF issued by Belgium in 2017 for food products showing a risk for consumers

Food products	Pesticide residue	Number	Origin	Context
Celery	Dithiocarbamates (sum)	1	Belgium	Official control
Lettuce	Fluopyram	1	Belgium	Self-checking
Head cabbage	Fluazifop (sum)	1	Belgium	Official control
Pineapples	Ethephon	1	Benin	Official control
Pineapples	Carbofuran (sum)	1	Costa-Rica	Self-checking
Potatoes	Fosthiazate	1	Cyprus	Self-checking
Apples	Dimethoate (sum)	1	Poland	Self-checking

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

Food products	Pesticide residue	Number	Origin	Context
Beans	Chlorpyriphos, Bifenthrine & carbofuran (sum)	1	Dominican Republic	Official control

5. Quality assurance

Eight ISO17025 accredited laboratories analysed pesticide residues in the framework of the national control program 2017 of the FASFC.

Table 8: 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 - Département Santé	CER	18-12-2014	BELAC (073-Test)	Yes
BE	Primoris Belgium cvba)	PRIMORIS	Version 15_3 d.d. 28-01-2016 Version 16 d.d. 21-05-2016.	BELAC (057 – Test)	Yes
BE	WIV - ISP (Pesticiden)	WIV-PEST	Version 17 25/06/2015 Version 18 02/08/2016	BELAC (081-Test)	Yes
DE	LUFA-ITL GmbH	LUFA	31-03-2016	DAkkS (D-PL-14083-01-00)	Yes
NL	Laboratorium Zeeuws-Vlaanderen BV	ZEEUWS	Version 03/03/2015	RvA (L201)	Yes

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 9 : Processing factors

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

	Grapes	Dried Grapes	5	General processing factor
Ethephon	Pineapples unpeeled	Pulp	0,25	EFSA, 2009

a) Report name as specified in the MatrixTool2016
b) Processing factor for the enforcement residue definition

7. Additional Information

- Organic food: 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 residue are notified to the Regions for eventual follow-up according to the legislation applicable to organic farming. In 2017, the FASFC analysed 15 organic food samples. Three samples contained pesticide residues above the LOQ (two samples of dried goji berries and one sample of pears) but complied with MRLs.

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) 2016/662 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**;**

(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) 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

Annexes (xls format) : overview results monitoring 2017

Annex 1 : Analytical scope

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

Annex 3 : overview of non-compliant samples