

# Controls of pesticide residues in food and feed - Belgium 2016

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Results of the official controls in accordance to Regulation (CE)  
N°396/2005 and Commission Regulation (EC) N° 2015/595

October 2017

**PESTICIDE RESIDUE CONTROL RESULTS**

**NATIONAL SUMMARY REPORT**

**Year: 2016**

**Country: Belgium**

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## 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 2016 allowed the detection of more than 600 pesticide residues.

**Table 1:** Targeted sampling and EU coordinated control programme included in the control programme 2016

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 2016	
Products	Samples to analyze
Apples	15
Lettuce	15
Peaches	15
Head cabbages	15
Strawberries	15
Leek	15
Tomatoes	15
Rye	15
Red wine	15
Milk	15
Swine fat	15

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

In 2016, a total number of 3873 samples of fruits, vegetables, cereals, animal products 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.

The products analysed were of Belgian origin (41%), EU origin (24%), non-EU origin (24%) and non-specified origin (11%).

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).

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 3873 samples, **3478** surveillance samples were analysed within the context of the control programme. 98,6% 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 (%)	> MRL <sup>1</sup> (%)	>MRL <sup>2</sup> (Non-compliant) (%)	Compliance (%) compared to 2015
Surveillance	Fruit, vegetables, cereals & other	2159	24,4%	71%	4,9%	2%	98% (+0,7%)
	Processed products	200	36%	62%	2%	0,5%	99,5% (+2,1%)
	Animal products <sup>3</sup>	849	83,8%	16,2%	0%	0%	100% (+0,4%)
	Baby food	167	97,6%	1,2%	1,2%	0%	100% (+1,1%)
	Feed	103	44,7%	5,2%	2,9%	2,9%	97,1% (-2%)
		<b>3478</b>	<b>43,7%</b>	<b>53%</b>	<b>3,3%</b>	<b>1,4%</b>	<b>98,6% (+0,7%)</b>

- **Fruit, vegetables and cereals** : 98% of the 2159 samples analysed complied with the MRLS (+0,7% in comparison with 2015). Graph 1 gives an overview of the results these last 5 years.

75,6% of the samples contained one of more residues above the limit of quantification (LOQ). Citrus fruits is the group with the highest frequency of detection of pesticide residues (97,5 % of the citrus fruits analysed contained one or more pesticide above the LOQ, mainly post-harvest fungicides). All these citrus were however compliant with MRLs. Conversely, brassica vegetables is the group with the lowest frequency of detection (38,3% of the samples analysed).

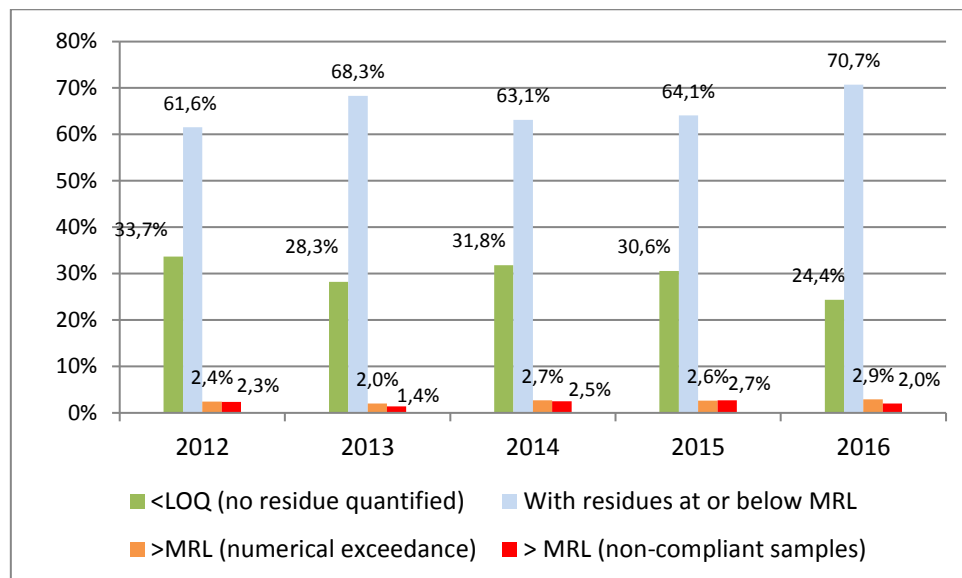
An overview of the detection frequencies and compliance to MRLs per product group is given in table 3. As in previous years, more MRLs violations were proportionally observed in non-EU products (3,6%) than in products grown in the EU (1,5%).

<sup>1</sup> Measurement uncertainty is not taken into account (numerical MRL exceedances)

<sup>2</sup> Measurement uncertainty is taken into account (non-compliant samples)

<sup>3</sup> Some animal products were analysed in the framework of Council Directive 96/23/EC of 29 April 1996 on measures to monitor certain substances and residues thereof in live animals and animal products

**Graph 1:** overview of the evolution of the results for fruits, vegetables, cereals & other products of plant origin from 2012 to 2016 (surveillance samples)



**Table 3:** Overview of the results per group of products (fruits, vegetables, cereals & other products of plant origin from 2012 to 2016 (surveillance samples)

Groups of products	Number of samples analyzed	Samples with one of more residues >LOQ (%)	Compliant samples (%)
Citrus fruits	119	97,5%	100,0%
Pome fruits	84	92,9%	100,0%
Stone fruits	79	91,1%	100,0%
Leafy vegetables	239	90,8%	99,2%
Berries and small fruits	269	90,3%	99,6%
Fresh herbs	83	86,7%	90,4%
Stem vegetables	124	83,1%	98,4%
Legume vegetables	105	78,1%	98,1%
Cereals	79	70,9%	100,0%
Fruiting vegetables	307	67,1%	98,4%
Root and tuber vegetables	163	64,4%	95,7%
Bulb vegetables	87	64,4%	95,4%
Tea and infusion	70	64,3%	94,3%
Champignons	22	59,1%	95,5%
Miscellaneous fruits	124	58,9%	96,0%
Other products (oil products, coffee, cocoa & spices)	90	57,8%	96,7%
Brassica vegetables	115	38,3%	100,0%
	<b>2159</b>	<b>75,6%</b>	<b>98,0%</b>

- **Processed products :** 200 processed products were analysed. One non-compliance was observed in a sample of sunflower oil.

In 2016, specific attention was paid to pesticide residues in fresh orange juices. 91% of the 92 samples of orange juices analysed contained pesticide residues above the LOQ but all were compliant with MRLs. Main residues detected were post-harvest fungicides (imazalil, thiabendazole and ortho-phenylphenol).

- **Animal products** : All the samples analysed were compliant with MRLs. Traces of pesticide residues (mainly obsolete pesticides present in the environment) were detected in 16,2% of the samples.
- **Babyfood** : Two samples showed a trace of pesticide residue but were compliant with the MRLs of 0,01 mg/kg set in the babyfood legislation.
- **Feed** : 3 non-compliances were observed on wheat and linseeds used for animal feed.

### 3.2 Enforcement sampling

Beside surveillance samples, **395** 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 Kenya, Egypt, the Dominican Republic and China) and products analysed within the context of following up of violations found previously. **88,2%** were compliant with the legislation (-3,5% in comparison with 2015).

**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 <sup>4</sup> (%)	>MRL <sup>5</sup> (Non-compliant) (%)	Compliance (%) compared to 2015
Enforcement (targeted samples)	Fruit, vegetables, cereals & other <sup>6</sup>	386	35%	45,6%	19,5%	12,2%	<b>87,8%</b> (-3,8%)
	Animal products	5	100%	0%	0%	0%	<b>100% (=)</b>
	Babyfood	1	100%	0%	0%	0%	/
	Feed	3	33,3%	66,6%	0%	0%	<b>100% (=)</b>
		<b>395</b>	<b>35,9%</b>	<b>45,1%</b>	<b>19%</b>	<b>11,8%</b>	<b>88,2%</b> (-3,5%)

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)

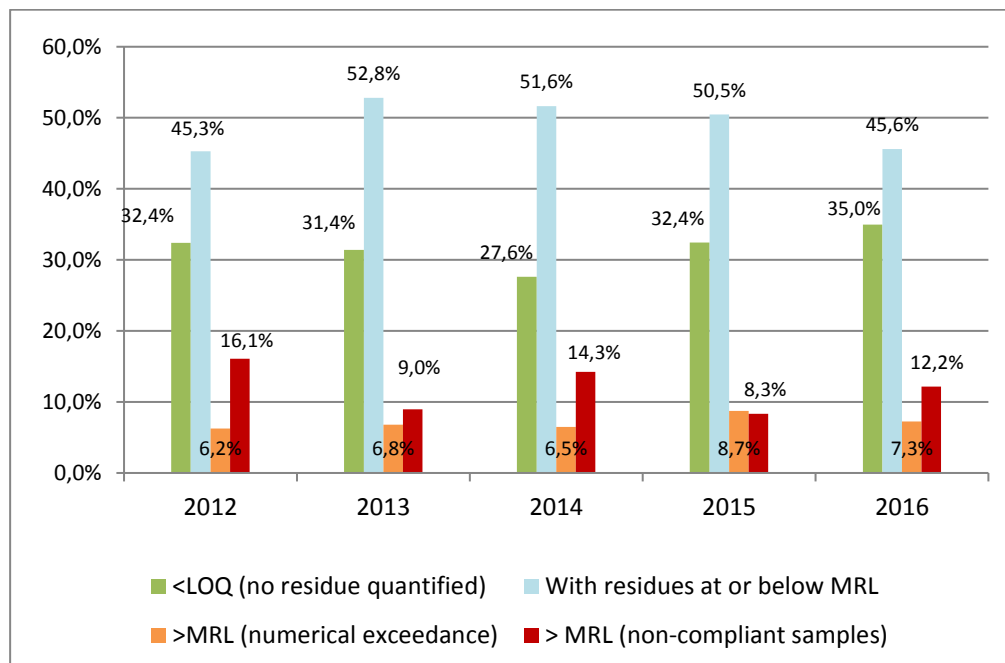
<sup>4</sup> Measurement uncertainty is not taken into account (numerical MRL exceedances)

<sup>5</sup> Measurement uncertainty is taken into account (non-compliant samples)

<sup>6</sup> 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 2012 to 2016 (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
Freh herbs	20	65,0%	Mint (Marocco)
Leafy vegetables	15	66,6%	Vine leaves (Turkey)
Fruiting vegetables	81	71,5%	Aubergines (Uganda) Chili-peppers
Miscellaneous fruits	32	75,0%	Mangoes (Vietnam) Cherymoya (Vietnam)
Root vegetables	11	83,8%	Turnips
Legume vegetables	66	93,9%	Beans (Dominican Republic) Peas (Kenya)
Tea & infusions	49	93,9%	Tea (China)
Berrie and small fruits	106	97,2%	Strawberries (Egypt)
Others	6	100,0%	
	<b>386</b>	<b>87,8%</b>	

#### 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 non-compliant samples and the appropriate measures such as recall and RASFF notification are taken<sup>7</sup> according to the risk of the non-compliant product 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.

The reason of MRL violations is investigated as far as possible in Belgian products (table 6). Non-compliances in imported products cannot be investigated but are mainly related to the use of plant protection products which are 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

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	1	
	Dimethoate / carrots	1	
	Haloxifop / turnips	1	
	Haloxifop / linseed	1	
	Mandipropamid / turnips	1	
	Cyazofamid / parsley	1	
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	Dimethoate / turnips	3	
	Haloxifop / spring onions	2	
	Dithiocarbamates / parsley	1	
	Propizamid / Currants	1	
	Chlorpropham / celery	1	
	Propamocarb / celery	1	
	Spinosad / celeriac	1	
	Propamocarb / Beans	1	
	Dithiocarbamates / spinach	1	
Residues resulting from other sources than plant protection product (e.g. biocides, veterinary drugs, bio fuel)	Mepiquat / cultivated fungi	1	Residue upcoming from the growing substrate (straw)
Reason unknown	Chlorpropham / wheat (feed)	1	Cross contamination suspected
	Propamocarb / wheat	1	
	Prosulfocarb / parsley	1	
	Pirimiphos-methyl / parsley	1	

#### 4.1. ARfD exceedances Comparability with the previous year results

Thirteen products 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<sup>8</sup> (table 7).

<sup>7</sup> 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>).

<sup>8</sup> [http://ec.europa.eu/food/food/rapidalert/rasff\\_portal\\_database\\_en.print.htm](http://ec.europa.eu/food/food/rapidalert/rasff_portal_database_en.print.htm)

**Table 7:** RASFF issued by Belgium in 2016 for food products showing a risk for consumers

Food products	Pesticide residue	Number	Origin
Turnips	Dimethoate (sum)	1	Belgium
Pineapples	Ethephon	1	Benin
Figs	Ethephon Carbofuran (sum)	1	Brazil
Basilicum	Dichlorvos Dithiocarbamates	1	Cambodia
Pineapples	Ethephon	1	Cameroun
Broccolis	Chlorpyrifos	1	Poland
Coriander	Chlorpyrifos	1	Thailand
Grapefruit	Imazalil	1	Turkey
Aubergines	Dimethoate (sum) Profenofos	3	Uganda
Mineola's	Carbaryl	1	USA
Mangoes	Dimethoate (sum)	1	Vietnam

## 5. Quality assurance

Eight ISO17025 accredited laboratories analysed pesticide residues in the framework of the national control program 2016 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	Federaal Laboratorium voor de Voedselveiligheid Tervuren	FLVVT	v.9: 17-09- 2015 v.10_2: 01-01- 2016	BELAC (014-test; site Tervuren)	Yes
BE	Primoris Belgium cvba)	FYTOLAB	Version 15_3 d.d. 28-01- 2016 Version 16 d.d. 21-05- 2016.	BELAC (057 - Test)	Yes
BE	Laboratoire Fédéral pour la Sécurité Alimentaire Liège	LFSAL	v.9: 17-09- 2015 v.10_2: 01-01- 2016	BELAC (014-test; site Wandre)	Yes
BE	WIV - ISP (Pesticiden)	WIV-PEST	Version 17 25/06/2015  Version 18 02/08/2016	BELAC (081-Test)	Yes

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
DE	LUFA-ITL GmbH	LUFA	31-03-2016	DAkkS (D-PL-14083-01-00)	Yes
NL	Groen Agro Control	GROENAGRO	26-01-2015	RvA (L335)	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 dehydration of fruits or vegetables.

**Table 9 :** Processing factors

Pesticide (report name) <sup>(a)</sup>	Unprocessed product (RAC)	Processed product	Processing factor <sup>(b)</sup>	Comments
	Mushrooms	Dried mushrooms	9	General processing factor
	Gojiberries	Dried gojiberries	5	General processing factor
	Olive	Olive oil	5	General processing factor
	Grapes	Dried Grapes	5	General processing factor

a) Report name as specified in the MatrixTool2016

b) Processing factor for the enforcement residue definition

## 7. Additional Information

In 2016, 51 organic food and feed products were analysed by the FASFC. Pesticide residues were detected above the LOQ in four samples (eggs, honey and tomatoes). All these samples were compliant with the MRL set in Regulation 396/2005.

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## 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](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) 2015/595 concerning a coordinated multiannual control programme of the Union for 2016, 2017 and 2018 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
- (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

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## 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

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## **Annexes (xls format) : overview results monitoring 2017**

**Annex 1** : Analytical scope

**Annex 2** : Number of samples analysed, non-compliant samples, number of samples - Variables related to the origin of samples

**Annex 3** : overview of non-compliant samples