PESTICIDE RESIDUE CONTROL RESULTS

NATIONAL SUMMARY REPORT

Year: 2018

Country: Finland

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1. Finland

1.1. Name of the national competent authority/organisation

The national competent authorities of pesticide residue controls in Finland are Finnish Food Authority (central competent authority), Finnish Customs, National Supervisory Authority for Welfare and Health, and municipal food control authorities.

A functional mailbox for pesticide residue controls is: kasvinsuojeluainejaamat@ruokavirasto.fi and a web address where the national annual report is published: https://www.ruokavirasto.fi/en/companies/food-sector/production/common-requirements-for-composition/residues-of-plant-protection-products/control-of-plant-protection-product-residues-in-food/control-data-of-different-years/

2. 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 1).

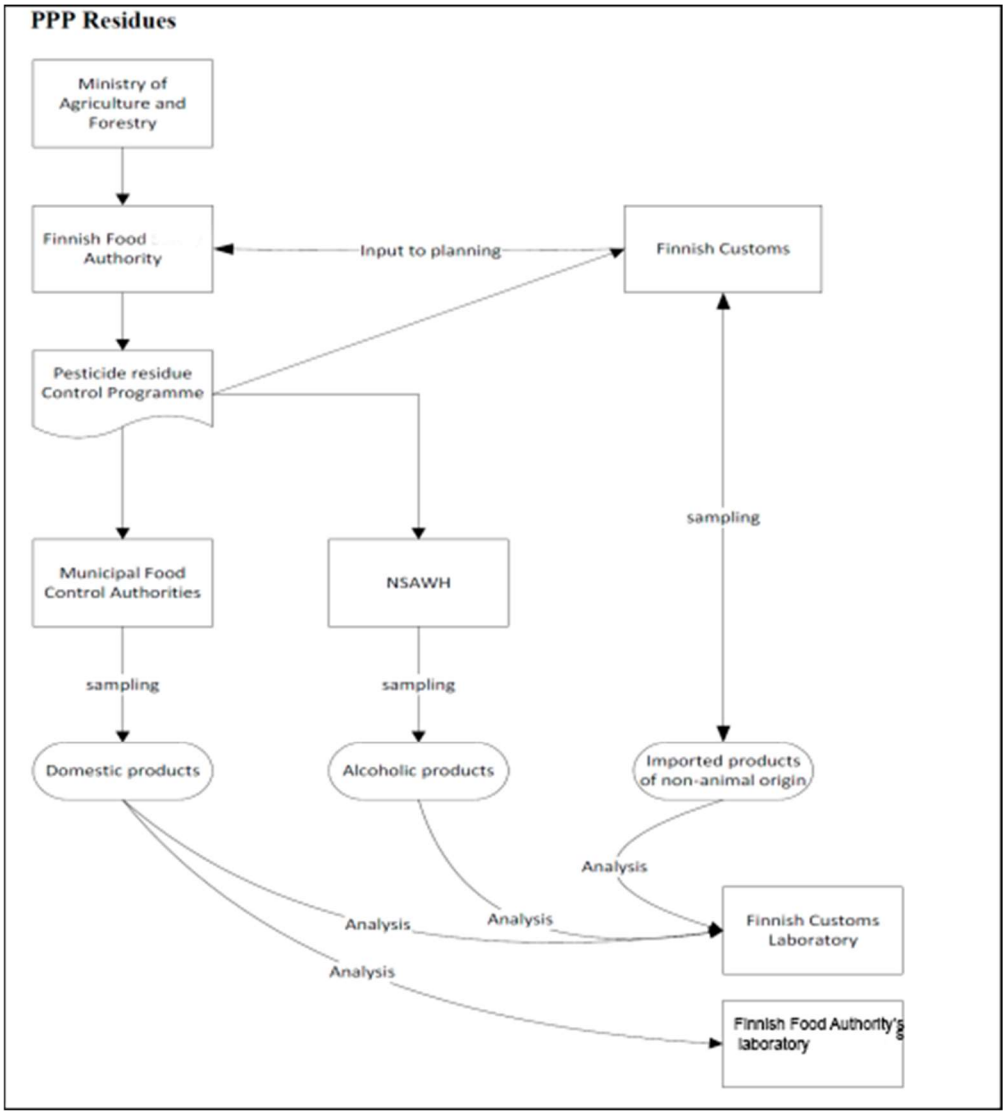

Figure 1: Control system of pesticide residues in Finland.

2.1. Objective

The objective of the annual pesticide residue control plan is to monitor and verify that i) foods do not contain residues of unauthorized pesticides and ii) the levels of residues for authorized pesticides do not exceed the maximum residue levels (MRLs).

2.2. Design

The control programme is comprised of two strategies: i) surveillance of products of plant and animal origin randomly sampled for the presence of pesticide residues and ii) enforcement of specific pesticide residue legislation (e.g. where targeting of samples with a history of non-compliances and commodities is listed in Regulation (EC) No 669/2009 for pesticide residues).

The control programme consists of two parts: the EU coordinated multiannual control programme (EUCP, Commission Regulation ((EU) No 2017

/660) 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.

2.2.1. Defining food products to be included 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 2017/660);
- 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.

2.2.1.1. Defining 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.

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

3.1. Key findings

The sampling for pesticide residue control programme was carried out in accordance with the plan of 2018. The summary of samples and their results are presented in Tables 1-3. In general, the results presented in this report include the original data from Customs Laboratory, as well as data from Finnish Food Authority submitted successfully to EFSA Data Warehouse (DWH). Unfortunately most of the data from Finland was not successfully submitted to EFSA DWH.

Table 1: Summary of samples taken in 2018 by product class.

Samples	Total	Without Residues	%	With Residues below MRL	%	Exceeding MRL	%	Non-Compliant	%
Cereals	79	57	72,2	18	22,8	4	5,1	3	3,8
Baby food	16	16	100	0	0	0	0	0	0
Fruits and nuts, vegetables and other plant products	904	374	41,4	481	53,2	49	5,4	23	2,5
Processed products	204	118	57,8	69	33,8	17	8,3	12	5,9
Other*	14								
Total**	**1217**	**565**	**47**	**568**	**47,2**	**70**	**5,8**	**38**	**3,2**

*Reporting system could not classify 14 samples analysed by Customs Laboratory
**Percentages calculated from sum of classified samples, total 1203

Additionally, samples of animal origin (e.g. bovine fat and chicken eggs regulated in (EU) 2017/660) were analyzed for pesticide residues as part of the National Residue Control Programme (NRCP) based on the on the COUNSIL directive 96/23. No pesticide residues exceeding MRLs were found.

Table 2: Summary of the number of samples taken, MRL-exceedances and non-compliances in 2018 by region of origin.

Origin	Samples	%	Exceeding MRL	%	Non-Compliant	%
Domestic	97	8	0	0	0	0
EU	723	59,4	35	48,6	14	36,8
Third countries	397	32,6	37	51,4	24	63,2
Total	**1217**	**100**	**72**	**100**	**38**	**100**

Table 3: Summary of organic samples taken in 2018 by product class and results.

Samples	Total	Without Residues	%	With Residues below MRL	%	Exceeding MRL	%	Non-Compliant	%
Fruits and nuts, vegetables and other plant products	116	115	99,1	1	0,9	0	0	1	0,9
Cereals	19	19	100	0	0	0	0	0	0
Baby food	49	49	100	0	0	0	0	0	0
Processed plant products	116	112	96,6	4	3,4	0	0	4	3,4
Other plant products	2	2	100	0	0	0	0	0	0
Total	**302**	**297**	**98,3**	**5**	**1,7**	**0**	**0**	**0**	**0**

3.2. Interpretation of the results

The total number of samples analysed under the EU coordinated and national programmes was 1217, which is about 27 % less than successfully submitted to EFSA Data Warehouse (DWH) in the previous year. However, results from 2018 are the original data from Customs Laboratory and data from Finnish Food Authority successfully sent to DWH. All data from Finnish Food Authority was successfully submitted. The distribution of all the samples by origin was: domestic 8 %, EU 59 % and third countries 33 %. Actually greater percentage of the samples originate in third countries, as some sampled products have arrived through other member states and are therefore classified as samples of EU origin.

53 % of all samples had residues of one or more pesticide active ingredients. Exceedances of MRLs were found in 70 samples, of which 38 were non-compliant (measurement uncertainty taken in to consideration; number including surveillance and enforcement samples). The total percentage of non-compliances (3,2 %) is about the same as previous year (3,1 %).

The non-compliant lots originated from 14 different countries. Highest number of non-compliances were in products from Thailand (6 samples), China (4 samples) and Pakistan (3 samples). Three non-compliant samples originated from EU countries.

The number of samples above MRL was highest in the food group vegetables (13 samples) followed by fruits and nuts (7 samples), cereals (3 samples) and other plant products (11 samples). The product with highest number of MRL-exceedances was tea (7 samples) followed by lentils (4 samples), rice (4 samples), and chili peppers (3 samples). No residues were detected in any of the analysed baby foods or animal-based products (bovine fats and chicken eggs analysed as a part of the NRCP based on the COUNSIL directive 96/23).

A total of 302 samples from organic production were analysed. 5 samples of them had residues above reporting level. Residue levels didn't exceed MRLs set for conventional farming.

3.3. Comparability with the previous year results

Table 4: Summary of the results of pesticide residue control programme results in Finland during 2011-2018.*

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

* N.B. The data represents only the results successfully submitted to EFSA DWH from years 2011-2017, and from year 2018 the original data from Customs Laboratory and data submitted to EFSA DWH from Finnish Food Authority.

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

4.1. 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.

Table 5: Possible reasons for MRL non compliance

Reasons for MRL non-compliance	Pesticide/food product[a]	Frequency[b]	Comments
GAP not respected: use of a pesticide not approved in the EU[c]	N/A	N/A	
GAP not respected: use of an approved pesticide not authorised on the specific crop[c]	N/A	N/A	
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected	N/A	N/A	
Use of pesticide according to authorised GAP: unexpected slow degradation of residues	N/A	N/A	
Cross contamination: spray drift or other accidental contamination	N/A	N/A	
Contamination from previous use of a pesticide: uptake of residues from the soil (e.g. persistent pesticides used in the past)	N/A	N/A	
Residues resulting from other sources than plant protection product (e.g. biocides, veterinary drugs, bio fuel)	N/A	N/A	
Naturally occurrence (e.g. dithiocarbamates in turnips)	N/A	N/A	
Changes of the MRL	N/A	N/A	
Use of a pesticide on food imported from third countries for which no import tolerance was set[d]	N/A	N/A	
Other (please specify)	N/A	N/A	

(a): Report name as specified in the MatrixTool
(b): Number of cases
(c): Applicable only for food products produced in the EU
(d): For imported food only
(e):

4.2. ARfD exceedances

The acute reference dose (ARfD) calculated according the pesticide residue intake model (PRIMo) of the European Food Safety Authority EFSA was exceeded in one sample, basmati rice from India. Additionally, for three non-compliant lots no toxicological data was available: pomelo from China, okra from Thailand, and basilica from Israel. These four lots were recalled and RASFF-alerts were notified, when applicable (see also 4.3).

4.3. Actions taken

In 2018, 3,2 % of the samples (38 samples in total) were found to be non-compliant with the EU MRLs. For 18 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 (Table 6).

Table 6: Actions taken

	Number of non-compliant samples concerned	Comments
Rapid Alert Notification	18	Number of RASFFs notified by Finland for pesticide residues
OFIS notifications	4	Three INEU OFIS notifications and one INTC OFIS notifications
Administrative sanctions (e.g. fines)	N/A	Administrative sanctions are carried out e.g. in case of unauthorized destructions and returns, but there is no numerical data available.
Lot recalled from the market	3	Additionally one lot already consumed before the analytical result was available
Lot withdrawn from the market	7	Additionally one lot already consumed before the analytical result was available
Rejection of a non-compliant lot at the border	24	
Destruction of non-compliant lot	25	
Follow-up (suspect) sampling of similar products, samples of same producer or country of origin	N/A	Follow-up sampling is regular procedure after rejection but there is no numerical data available.
Warnings to responsible food business operator	34	
Other follow-up investigations to identify reason of non-compliance or responsible food business operator	N/A	The lot partly or totally consumed. The remaining part detained and destroyed or sent back to the seller by permission of authorities in the country of origin. Enforcement sampling on next coming import lots. Some cases, but no numerical data available.
Marketing as organic prohibited	-	

5. Quality assurance

Table 7: Laboratories participation in the national control program

Country	Laboratory		Accreditation		Participation in proficiency tests or inter-laboratory tests
	Name	Code	Date	Body	
FI	Finnish Customs Laboratory	FI01	11/09/2018	FINAS-Espoo, Finland	EUPT-FV20, EUPT-CF12, EUPT-FV-SM10, EUPT-SRM13, EUPT-FV-SC02, Bipea 04-4319
FI	Finnish Food Authority	FI03	31/12/2018	FINAS-Espoo, Finland	EUPT-AO13, EUPT-SRM13, EUPT-CF12, FAPAS 19256, FAPAS 19253

6. Processing Factors (PF)

The processing factors used by national competent authorities to verify the compliance of processed products with EU MRLs are presented in Table 8.

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 Table 8 was used.

Table 8: Processing factors used to verify the compliance of processed products.

Pesticide (report name)[a]	Unprocessed product (RAC)	Processed product	Processing factor[b]	Comments
All pesticides	Fresh herbs	Dried herbs	10	factors are used for first estimation, in case of non-compliance, more detailed information is requested from the stake holder
All pesticides	Fresh vegetables	Dried vegetables	10	
All pesticides	Fresh fruits	Dried fruits	5	
All pesticides	Rice	Polished rice	0,5	

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

7. Additional Information

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

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

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