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**PESTICIDE RESIDUE CONTROL RESULTS**

**NATIONAL SUMMARY REPORT**

**Country: HELLAS**

**Year: 2021**

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## 1. Country: Hellas

### 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 according to national law 4036/2012. It is also responsible for the planning and the coordination of the official controls for plant origin food. The competent authorities responsible of the sampling of plant origin products 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 authority responsible for the planning and the coordination of the monitoring of processed foods is EFET (Hellenic Food Authority) while the controls of pesticide residues in wine are organised by the General Chemical State (GCS).

The official laboratories which analyzed the samples taken in 2021 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.

The control programs for pesticide residues and the report of results of the national residue monitoring are published on the official web site of the Hellenic Ministry of Rural Development and Food on an annual basis (<http://www.minagric.gr/index.php/el/for-farmer-2/crop-production/fytoprostasiamenu/ypoleimatafyto>  
<http://www.minagric.gr/index.php/en/citizen-menu/foodsafety-menu>)

National control program of 2021 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 as well as the SANCO 12745/2013 working document in the version applicable. 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 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. Samples were taken by domestic production and imports, proportionally, covering points of collection, storage, packing and trade of products of plant origin.

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.

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

In 2021, 3658 samples were analysed in total by our authorities. 2727 samples were domestic (74,5%), 171 samples originated from EU (4,7%), 726 originated from third countries (19,8%) while the origin of 34 samples was unknown (1%).

52% of samples analysed were free of quantifiable residues, 43% of samples contained quantifiable residues at or below EU Mrl and 5% of samples exceeded the EU Mrl. Considering measurement uncertainty (50%) this

percentage is reduced to 3%. Considering previous years' results, the non compliance rate is generally estimated from 3 to 4%.

The total number of pesticides analysed was approximately 555.

Among the domestic samples analysed, spinach was the most frequently non compliant commodity. From third countries, the most frequently non compliant products were lemons, tomatoes, beans (dry), apples and courgettes.

The most frequently detected pesticide in non compliant samples was chlorpyrifos.

Regarding organic samples, 143 out of the 165 samples were below LOQ (86,7%), 19 out of 165 samples were at or below LOQ (11,5%) and 3 out of 165 samples were non compliant (1,8%).

A targeted sampling on sesame seeds and similar products (tahini) took place due to the emerging risk of ethylene oxide. The total number of samples analysed was 177. 83,6% of samples were below LOQ, 5,7% of samples contained quantifiable residues below or at the Mrl, 10,7% of samples exceeded the Mrl and 1,1% were non compliant.

The non compliance rate for suspect samples was lower than expected due to the high number of sesame seeds taken and their results as described above.

**Table 1:** Summary results 2017-2021

Category	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021
Total number of samples	2623	3571	3454	3149	<b>3658</b>
Number of samples without detectable residues	1307 (50%)	1701 (48%)	1724 (50%)	1516 (48%)	<b>1885 (52%)</b>
Number of samples with detectable residues at or below EU MRL	1160 (44%)	1606 (45%)	1531 (44%)	1429 (45%)	<b>1575 (43%)</b>
Number of samples with residues exceeding EU Mrls	156 (6%)	264 (7%)	199 (6%)	204 (7%)	<b>198 (5%)</b>
Non compliant samples	90 (3%)	158 (4%)	119 (3%)	123 (4%)	<b>115 (3%)</b>

**Table 2:** Summary results **2021** per origin

Origin of samples	Total No of samples	No of number of samples (%)			
		<LOQ	>LOQ and <MRL	>MRL	
				Compliant and non compliant	Non compliant
EU	2898	1487 (51,3%)	1308 (45,1%)	103 (3,6%)	63 (2%)
TC	726	375 (51,6)	257 (35,4%)	94 (13%)	52 (7%)
unknown	34	23 (67,6%)	10 (29,4%)	1 (3%)	0
Total	3658	1885	1575	198	115

**Table 3:** Summary results **2021** per type of product and sampling strategy

Commodity	No of samples (%)									
	Total No of samples		<LOQ		>LOQ and <MRL		>Mrl			
	Random & Selective	Suspect	Random & Selective	Suspect	Random & Selective	Suspect	Compliant and Non compliant		Non compliant	
							Random & Selective	Suspect	Random & Selective	Suspect
<b>Animal products</b>	22	0	22	0	0	0	0	0	0	0
<b>Baby food</b>	14	0	14 (100%)	0	0	0	0	0	0	0
<b>Cereals</b>	92	4	69 (75%)	0	22 (24%)	0	1 (1%)	0	0	0
<b>Fruits and nuts</b>	1376	32	445 (32,3%)	11 (34%)	883 (64,2%)	14 (44%)	48 (3,5%)	7 (22%)	28 (2%)	5 (16%)
<b>Other plant products</b>	331	170	233 (70%)	132 (78%)	69 (21%)	18 (11%)	29 (9%)	20 (12%)	15 (5%)	4 (2%)
<b>Vegetables</b>	1558	63	922 (59%)	37 (59%)	548 (35%)	21 (33%)	88 (5%)	5 (8%)	60 (4%)	3 (5%)
<b>Total</b>	<b>3393</b>	<b>265</b>	<b>1705 (50%)</b>	<b>180 (68%)</b>	<b>1522 (45%)</b>	<b>53 (20%)</b>	<b>166 (5%)</b>	<b>32 (12%)</b>	<b>103 (3%)</b>	<b>12 (5%)</b>

**Table 4:** Summary results **2020** per type of product and sampling strategy

Commodity	No of samples (%)									
	Total No of samples		<LOQ		>LOQ and <MRL		>Mrl			
	Random & Selective	Suspect	Random & Selective	Suspect	Random & Selective	Suspect	Compliant and Non compliant		Non compliant	
							Random & Selective	Suspect	Random & Selective	Suspect
<b>Animal products</b>	41	0	41 (100%)	0	0	0	0	0	0	0
<b>Baby food</b>	23	0	23 (100%)	0	0	0	0	0	0	0
<b>Cereals</b>	91	4	67 (74%)	2 (50%)	20 (22%)	2 (50%)	4 (4%)	0	2 (2%)	0
<b>Fruits and nuts</b>	1226	28	361 (30%)	6 (21%)	808 (66%)	15 (54%)	57 (4%)	7 (25%)	29 (2%)	0
<b>Other plant products</b>	239	26	181 (76%)	15 (58%)	51 (21%)	5 (19%)	7 (3%)	6 (23%)	6 (3%)	4 (15%)
<b>Vegetables</b>	1375	96	775 (56,3%)	45 (47%)	496 (36,1%)	32 (33%)	104 (7,6%)	19 (20%)	63 (5)	15 (16%)
<b>Total</b>	<b>2995</b>	<b>154</b>	<b>1448 (48,3%)</b>	<b>68 (44%)</b>	<b>1375 (46%)</b>	<b>54 (35%)</b>	<b>172 (5,7%)</b>	<b>32 (21%)</b>	<b>100 (3,3%)</b>	<b>23 (15%)</b>

**Table 5:** Summary results **2021** per origin and sampling strategy

Sampling strategy	Origin of samples	Total No of samples	<LOQ	>LOQ and <MRL	>MRL	
					Complaint and Non compliant	Non compliant
Random sampling	EU	2563	1324 (51,7%)	1146 (44,7%)	93 (3,6%)	55 (2,1%)
	TC	199	110 (55,3%)	78 (39,2%)	11 (5,5%)	6 (3%)
	Unknown	33	22 (66,7%)	10 (30,3%)	1 (3%)	0 (0%)
<b>Total No of samples</b>		<b>2795</b>	<b>1456 (52,1%)</b>	<b>1234 (44,2%)</b>	<b>105 (3,8%)</b>	<b>61 (2,2%)</b>
Selective sampling	EU	293	134 (46%)	152 (51,7%)	7 (2,3%)	6 (2%)
	TC	305	114 (37%)	137 (45%)	54 (18%)	36 (12%)
	unknown	0	0	0	0	0
<b>Total No of samples</b>		<b>598</b>	<b>248 (41,5%)</b>	<b>289 (48,3%)</b>	<b>61 (10,2%)</b>	<b>42 (7%)</b>
Suspect sampling	EU	42	29 (69%)	10 (24%)	3 (7%)	2 (4,8%)
	TC	222	151 (68%)	42 (19%)	29 (13%)	10 (4,5%)
	unknown	1	1 (100%)	0	0	0
<b>Total No of samples</b>		<b>265</b>	<b>181 (68,3%)</b>	<b>52 (19,6%)</b>	<b>32 (12,1%)</b>	<b>12 (4,5%)</b>

**Table 6:** Summary results **2021** for sesame seeds/tahini

Commodity	Origin of samples	Total No of samples	<LOQ	>LOQ and <MRL	>MRL	
					Complaint and Non compliant	Non compliant
Sesame seeds/tahini	EU	3	3 (100%)	0	0	
	TC	173	145 (83,8%)	10 (5,8%)	18 (10,4%)	2 (1,15%)
	Unknown	1	0	0	1 (100%)	0
<b>Total No of samples</b>		<b>177</b>	<b>148 (83,6%)</b>	<b>10 (5,7%)</b>	<b>19 (10,7%)</b>	<b>2 (1,12%)</b>

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

#### 3.1. Possible reasons for non compliance

Reasons for MRL non-compliance	Pesticide/food product <sup>(a)</sup>	Frequency <sup>(b)</sup>	Comments
GAP not respected: use of a pesticide not approved in the EU <sup>(c)</sup>	Beans with pods/chlorpyrifos	1	
	Carrot/chlorpyrifos	3	
	Celery leaves/thiamethoxam	1	
	Celery leaves/chlorpyrifos	1	
	Celeries/chlorpyrifos	1	
	Lettuce/dimethoate/omethoate	1	metabolite of dimethoate
	Leek/chlorpyrifos	1 <sup>(e)</sup>	
	Lettuces/chlorpyrifos	3	
	Mandarins/chlorpyrifos	1	
	Nectarin/tetramethrin	1	further investigations are carried out
	Okra/myclobutanil	1	approval of active substance expired 31-05-2021
	Oranges/chlorpyrifos	2	
	Potatoes/chlorpyrifos	2	
	Pears/tetramethrin	1	further investigations are carried out
	Spinach/chlorpyrifos	1	
	Spinach/cyfluthrin	1	
	Spinach/ethirimol	1	
	Table grapes/thiacloprid	1	
	Tomatoes/chlorpyrifos	1	
	Tomatoes (cherry)/chlorfenapyr	1	
Tomatoes (cherry)/diflubenzuron	1		
Watermelon/fenamiphos	1		
GAP not respected: use of an approved pesticide not authorised on the specific crop <sup>(c)</sup>	Apricots/phosmet	2	approval of active substance expires 01-02-2022
	Carrot/dodine	1	
	Celery leaves/flupyradifurone	1	
	Celery leaves/metaflumizone	1	
	Celeries/cypermethrin	1	
	Celeries/fluvalinate	1	
	Cherries/propamocarb	1	
	Cucumber/formetanate	3	
	Cucumber/fosthiazate	1	
	Grape leaves/ametoctradin	1	
	Grape leaves/boscalid	1	
	Grape leaves/famoxadone	1	approval of active substance expired 9-9-2021
	Grape leaves/tebuconazole	1	
	Grape leaves/tebufenpyrad	1	
	Lentils/fluxapyroxad	1	
	Lentils/pirimiphos methyl	1	
	Mandarin/dimethomorph	2	
	Oranges/prochloraz	1	
	Olives for oil production/fluopyram	2	
	Parsley leaves/penconazole	1	
	Peach/imazalil	1	
	Pepper (sweet)/formetanate	1	
	Pepper (sweet)/etoxazole	1	

	Spinach/bupirimate	1	
	Tea infusion leaves/cypermethrin	1	
	Tomatoes/spiroxamine	1	(or GAP not authorised on the specific crop)
	Tomatoes (cherries)/buprofezin	1	(or GAP not authorised on the specific crop)
GAP not respected: use of an approved pesticide, but application rate, number of treatments, application method or PHI not respected			
	Aubergine/flutriafol	1	
	Beetroot/deltamethrin	1	
	Potatoes/fosthiazate	2	
	Spinach/deltamethrin	5	
	Spinach/fluazifop-p	1	
Use of a pesticide on food imported from third countries for which no import tolerance was set/unknown reason <sup>(d)</sup>			
	Apples/propargite	1	(origin MK)
	Apples/azoxystrobin	1	(origin MK)
	Apples/chlorpyrifos	3	(origin MK)
	Bananas/imazail	1	(origin EC)
	Beans dry/flutriafol	1	(origin IN)
	Beans dry/ chlorpyrifos	8	(origin 6 cases MG and 2 cases PE)
	Beans (dry)/thiamethoxam	1	(origin PE)
	Courgettes/metalaxyl	4	(origin TR)
	Courgette/fosthiazate	1	(origin TR)
	Cumin seeds/acetamiprid	1	(origin IN)
	Cumin seeds/carbendazim	1	(origin IN)
	Cumin seeds/tricyclazole	1	(origin IN)
	Cumin seeds/clothianidin	1	(origin IN)
	Cumin seeds/thiamethoxam	1	(origin IN)
	Ginger roots/clothianidin	1	(origin CN)
	Ginger roots/thiamethoxam	1	(origin CN)
	Lemons/ chlorpyrifos	3	(origin TR)
	Lemons /prochloraz	1	(origin TR)
	Lemon/ buprofezin	4	(origin TR)
	Mangoes/tetraconazole	1	(origin BR)
	Grape leaves/indoxcarb	1	(origin TR)
	Grape fruit/chlorpyrifos-methyl	1	(origin TR)
	Grape fruit/buprofezin	1	(origin TR)
	Oregano/chlorpyrifos	1	(origin AL)
	Pear/diflubenuron	1	(origin TR)
	Peppers (sweet)/tebufenpyrad	1	(origin AL)
	Sesame seeds/imidacloprid	1	(origin NG)
	Sesame seeds/chlorpyrifos	1	(origin IN)
	Tomato/buprofezin	4	(origin 1 TR + 3 AL)
	Tomatoes (cherries)/chlorfenapyr	2	(origin 1 CA+1 AL)
	Tomatoes/pirimiphos methyl	3	(origin AL)
	Tomatoes (cherries)/chlorpyrifos	1	(origin AL)
Other (Use of a pesticide on food imported from third country with exceedance of the ARfD)	Lemon /prochloraz	2	(origin TR)

(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): A discrepancy is noticed for this sample compared with the data submitted to EFSA since it contained chlorpyrifos and not chloroxuron.



### 3.2. ARfD exceedances

For 6 out of 3658 samples, exceedance of the health based guidance values (HBGV) was noticed (apricot/phosmet, potato/fosthiazate, orange/prochloraz, lemon/prochloraz, cucumber/formetanate, spinach/fluazifop-p). For active substances for which HBGV were needed but no values were established, risk assessment was not finalized.

### 3.3. 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 to EU Regulations taking into account the results of the risk assessment and the instructions of the RASFF WI 2.2. Guidelines (rasff notifications can be found at <https://webgate.ec.europa.eu/rasff-window>).

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 (Regulation (EU) 1793/2019), a border rejection decision was taken for non compliant samples. RASFF notifications were issued for samples when a risk to consumers was identified.

## 4. Quality assurance

**Table 7:** Laboratories participation in the control program

Country	Laboratory		Accreditation	Participation in proficiency tests or inter-laboratory tests
	Name	Date	Body	
Hellas	Benaki Phytopathological Institute, Pesticides Residues Laboratory	09/07/2002	ESYD (Hellenic Accreditation System S.A.)	EUPT-FV23 EUPT-SRM16 EUPT-AO16 EUPT-CF15 COIPT-20
Hellas	Regional Centre of Plant Protection, Quality and Phytosanitary Control of Thessaloniki	08/09/2009	ESYD	EUPT-FV23, EUPT-CF15
Hellas	General Chemical State	ACCREDITED, ISO 17025, 2009-2018	ESYD	EUPT-FV23, EUPT-CF15, EUPT-AO16, EUPT-SRM16, COIPT21, EUPT-FV-SC05, LGC-FC296
		ACCREDITED, ISO 17025, 1998-2009	UKAS	

## **5.** Processing factors

The processing factors applied were those characterized as indicative/reliable at the European database of processing factors for pesticides in food (<https://www.efsa.europa.eu/en/supporting/pub/en-1510>).