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Statistics on agricultural use of pesticides in the European Union

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SUMMARY

Comparable statistics on pesticides are requested by policy makers, scientists and the general public. Monitoring and reducing the risk of pesticides is a priority since many years in EU policy, be it agriculture, research, food safety or environmental health. Harmonised, comparable and high quality statistics are needed to underpin such policy initiatives.

Eurostat published a common methodology for the collection of pesticide usage statistics within agriculture and horticulture in 2008. In 2009, the Regulation (EC) No 1185/2009 on pesticide statistics was adopted as part of the EUs Thematic strategy on a sustainable use of pesticides. The Regulation covers statistics on placing on the market of pesticide and statistics on agricultural use of pesticide. This research paper provides a summary of the experiences from the first collection of pesticide use data, covering the five-year period 2010-2014, and summarises the results.

All EU Member States and Norway participated in the data collection during the period 2010-2014, by transmitting data in 2015, covering reference periods of maximum 12 months, for a number of crops chosen by the countries. Some Member States have already published data on their own national websites. However, when Eurostat analysed the data received, it became apparent that data dissemination on European level would be difficult. The legislation in force permits Eurostat to disseminate pesticide statistics only under the conditions of aggregating it to at least the level of chemical classes. Due to the different crops and reference periods chosen, and confidentiality requirements, so far it has not been possible to disseminate the data in Eurostat database as was foreseen.

Therefore, this research paper aims at providing some insights in the data collected, and to present a selection of results. Eurostat is working together with countries to improve progressively the comparability of the data and possibilities for dissemination.

1. INTRODUCTION

This paper presents results of work carried out by Eurostat and the relevant national authorities, usually National Statistical Institutes (NSIs) or Ministries of Agriculture, of the collection of data on agricultural use of pesticides. The reference period in question is 2010 to 2014 inclusive, following the entry into force of Regulation (EC) No 1185/2009 on pesticide statistics[1]. The Commission reported on the implementation of the pesticides statistics regulation to the European Parliament and of the Council[2] in 2017. In the report, several of the issues mentioned in this paper were already identified, but not fully developed.

Pesticide use statistics are needed to calculate risk indicators, as specified in the Directive 2009/128/EC on the sustainable use of pesticides[3]. The Directive states that it is necessary to measure the progress achieved in the reduction of risks and adverse impacts from pesticide use. Trends in risks

[1] Regulation (EC) No 1185/2009 of the European Parliament and of the Council of 25 November 2009 concerning statistics on pesticides. OJ L 324, 10.12.2009, p1.

[2] Report from the Commission to the European Parliament and the Council on the implementation of Regulation (EC) No 1185/2009 of the European Parliament and of the Council of 25 November 2009 concerning statistics on pesticides. COM/2017/0109 final.

[3] Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides. OJ L 309, 24.11.2009, p.71.

from pesticide use shall be estimated. To this end, it requires the Commission to establish harmonised risk indicators, to be calculated using statistical data and other relevant data.

This paper presents a selection of the data transmitted to Eurostat on the volume of pesticides used. In fact, participating countries collected and transmitted data on both volume of pesticide used and the area treated. However, the areas of individual crops treated by individual pesticides are not possible to aggregate, as described in section 3.3, and are therefore outside the scope of this paper.

2. BACKGROUND

With the adoption of Regulation (EC) No 1185/2009, EU Member States and EEA countries (Switzerland exempted) are obliged to transmit data on placing on the market of pesticides and agricultural use of pesticides to Eurostat. The statistics on placing on the market of pesticides are collected annually and published in Eurostat's dissemination database[4] and further analysed in a Statistics Explained article[5] on Eurostat's website[6]. The pesticide use data are collected by countries in five-year periods. Acknowledging the need for comparable statistics on pesticide use in the EU, Eurostat published a common methodology for the collection of pesticide usage statistics within agriculture and horticulture in 2008[7]. Countries are allowed to use different means such as surveys, information mandatory for companies to provide when placing pesticides on the EU market, other administrative sources, expert estimates, models or combinations of these methods. Some countries had already produced and disseminated national statistics whilst others had not.

The data collection covering the first five-year period took place in 2010-2014, and all EU Member States and Norway transmitted data to Eurostat in 2015. The associated Quality Reports were provided to Eurostat in 2016. When analysing the data received, it became apparent that the wide variety in crops and reference periods chosen by countries would seriously impair the necessary aggregation of data before publication by Eurostat.

As a consequence, at the time of publication of this paper, no data or metadata of pesticide use statistics have been published on Eurostat's public database, nor Quality Reports relating to individual Member States. Readers are therefore reminded of the overall research nature of this paper. In the following section, issues related to methodology, which are obstacles to data dissemination, are described.

3. METHODOLOGY ISSUES

3.1. Lack of harmonisation

In the pesticide use data collection, two main issues of harmonisation were identified; selection of crops and reference period.

[4] https://ec.europa.eu/eurostat/data/database?node_code=aei_fm_salpest09

[5] https://ec.europa.eu/eurostat/statistics-explained/index.php/Agri-environmental_indicator_-_consumption_of_pesticides

[6] https://ec.europa.eu/eurostat/web/main/home

[7] Eurostat 2008. A common methodology for the collection of pesticide usage statistics within agriculture and horticulture. ISSN 1977-0375. https://ec.europa.eu/eurostat/web/agriculture/agri-environmental-indicators/links

Regulation (EC) No 1185/2009 stipulates that for the statistics on agricultural use of pesticides, each Member State shall choose the crops to be covered during the five-year reference period so that the selection is representative of the crops cultivated in the Member State and of the substances used. It is important to note that the choice of crops to report is a national decision. The selection of crops shall take into account the most relevant crops for the National Action Plans (National Action Plans are described in Article 4 of Directive 2009/128/EC[8]). However, as most pesticide National Action Plans did not contain any reference to the most relevant crops, the choice of crops has been quite diverse.

The reference period shall be a period of a maximum of 12 months covering all plant protection treatments associated directly or indirectly with the crop, during the five-year period. Countries may choose the reference period at any time during the five-year period and the choice can be made independently for each selected crop that is reported.

3.1.1. Reference period

The countries transmitted data referring to the reference periods listed in Table 1 (corresponding to harvest year). One of the main reasons for compiling European statistics is to make comparisons between countries or to make EU-aggregates. For this, the same reference period (and the same crop) is needed from all countries, but the maximum number of countries providing data (not necessarily on the same crop) for the same reference period was 17, with 16 being EU Member States. Therefore no EU-aggregates can be calculated for any reference year.

Countries that submitted data sets for all reference periods did not necessarily survey the same crop each year or even twice during the five-year period (one example is shown in Table 2) and there was no legal requirement that they should have. To analyse trends in pesticide use over time, several reference years of the same crop would be needed, since pesticide use varies year by year depending on e.g. weather conditions. The instructions from Eurostat accompanying the data collection also said not to merge reference years for the same crop for this reason. However, with the current data set, it is not possible to calculate the trends in pesticide use; it is not meaningful to compare one crop grown in two different countries two different years.

3.1.2. Choice of crops

Countries reported the pesticide use on crops by using the corresponding crop codes from Annual Crop Statistics[9]. In total 157 different codes were transmitted. The crops which were most surveyed were potatoes (23 countries), apples (18 countries), common winter wheat and spelt (16 countries), and onions (15 countries) (Table 3). Eurostat's common methodology proposed to select within each country the crops which represent those most commonly grown, plus those receiving the most treatments, by area treated, weight applied and rate of application.

Some crop codes represent a lower level of hierarchy in the crop code lists, and some represent aggregates. As an example, Table 4 shows which countries submitted the aggregate "C1100 Wheat and spelt", and its breakdown into lower level codes. Some countries reported one or more of the codes adding up to the aggregate C1100. Some countries did not transmit any data on any wheat code, such as Italy, Malta or the United Kingdom.

Countries that transmitted crop codes lower in the hierarchy did not necessarily send all the codes needed to compile a higher-level aggregate, to enable cross-country comparisons. In the example in

[8] http://data.europa.eu/eli/dir/2009/128/oj

[9] https://ec.europa.eu/eurostat/cache/metadata/Annexes/apro_cp_esms_an1.pdf

Table 4 , all countries that transmitted data related to the crop item "C1112 Common spring wheat and spelt" also transmitted data on "C1111 Common winter wheat and spelt" while the opposite is not true (spring wheat might not be a representative crop in the latter countries). With the differences in breakdown levels, it is not possible to produce meaningful crop aggregates.

3.2. Confidentiality rules

The data confidentiality rules are defined in Article 3.4 of Regulation (EC) No 1185/2009:

"Eurostat shall aggregate the data before publication in accordance with the chemical classes or categories of products indicated in Annex III…"

This means that Eurostat is not permitted to disseminate data on individual active substances, or based on other aggregations users might request, such as "Low-risk active substances[10]" for example.

"… taking due account of the protection of confidential data at the level of individual Member State."

This also means that secondary confidentiality must be considered when publishing aggregated data. If a higher aggregate A is composed of three classes B+C+D, and D is a confidential class, Eurostat cannot disseminate A, B, and C, and hide only D, since D can be calculated based on the other three data (A-(B+C)=D). Therefore, in addition, one more value has to be hidden.

For the pesticide use data collection, countries used flags to indicate confidentiality. As regards volume of pesticides used, completely non-confidential data sets were provided by only 14 countries (CZ, DE, EE, IE, IT, CY, LV, LT, HU, MT, AT, RO, SK, UK). All other countries flagged at least part of the items with different levels of confidentiality, or not for publication (which can e.g. be due to uncertainty in data due to low count). Since the national pesticide use statistics are aggregated data (also grossed-up to give national estimates of usage), based on data collection from farms, where no persons or economic entities can be identified (neither directly nor indirectly), Eurostat would have expected no confidential data.

3.3. Units

The units reported were kg of active substance used, and the number of hectares (ha) treated with this active substance, per crop. Due to the confidentiality rules described above, Eurostat cannot present the use of an individual active substance per hectare and crop (e.g. active substance A was used at a rate of 1 kg/ha). Instead, the active substances must be aggregated to at least their chemical class (e.g. active substances A+B=chemical class C).

In the Eurostat's common methodology regarding area it is specified that only the "Active substance area treated" should be reported. Two treatments on the same physical area, doubles the area in the statistics reported (two treatments on 50 hectares is reported as 100 hectares treated). However, Commission Regulation (EU) No 656/2011[11], clarifies that the area to be reported is the "Area treated" for each pesticide, corresponding to physical area with no double counting.

[10] An active substance can be approved as a low-risk active substance if it meets the regular approval criteria and in addition meets the low-risk criteria as specified in Annex II, point 5 of Regulation (EC) No 1107/2009.

[11] Commission Regulation (EU) No 656/2011 of 7 July 2011 implementing Regulation (EC) No 1185/2009 of the European Parliament and of the Council concerning statistics on pesticides, as regards definitions and list of active substances. OJ L 180, 8.7.2011, p. 3–38

In the data collection, each active substance was reported with its corresponding hectares treated, example "active substance A, 100 kg, 100 ha", "active substance B, 200 kg, 50 ha". From this information, it is not possible to know if the hectares reported for each crop are the same physical area, or different fields. It is therefore not possible to aggregate the pesticides used by area as:

"active substances (A+ B)"/(100 ha+50 ha)="kg of pesticide used by hectare"

which would be required for complying with the confidentiality rules. Indeed, active substance A might have been used on 100 hectares where no other pesticide was applied, active substance B on another 50 hectares. Alternatively, both active substances A and B were used on the same 50 hectares and only active substance A on a further 50 ha; or any other combination imaginable.

A few countries submitted aggregations of pesticide active substances in the chemical class or category of product, with the corresponding number of hectares treated. In most cases, the sum of the hectares treated with each individual substances are higher than the figure reported as treated with the chemical class/category of products, which makes sense since a physical area can be treated with several pesticide active substances of the same class (moreover, commercially, mixtures are common). It corresponds to the above-mentioned concept of "Area treated". In other cases, the sum of the hectares treated with each individual substances **do add up to** the figure reported as treated with the chemical class/category of products, which could correspond to the concept of "Active substance area treated".

For the reasons explained above, the numbers of hectares reported by countries are not further discussed in this research paper.

4. SUMMARY ANALYSIS OF DATA PROVIDED BY COUNTRIES

Data on the crops selected below are presented in the Statistical annex, disaggregated by year, as explained above under section 3.1.1. The number of different active substances used in the cultivation of the selected crops below in each country is presented; note that this does not suggest that any individual field/crop were treated with all substances reported. On the contrary, it can give an indication of the different management practices chosen or required by farmers in their production. For each crop, the used Major Groups of pesticides are indicated with the kg of active substances reported.

4.1. Potatoes

Potatoes were surveyed by 23 countries with at least one country represented per calendar year in the five-year period (Statistical annex Section 7.1), and is clearly a main crop of interest in the EU. The number of active substances reportedly used in the countries related to potato cultivation ranged from 22 to 128. Use of the Major pesticide Groups "Fungicides and bactericides", "Herbicides, haulm destructors and moss killers", and "Insecticides and acaricides" were reported from all countries. Use of "Plant growth regulators" was reported from 12 countries.

4.2. Apples

Apples were surveyed by 18 countries, with at least one country represented per calendar year except for reference year 2011 (Statistical annex Section 7.2). The number of active substances reportedly used in the countries related to apple cultivation ranged from 9 to 164. Use of the Major pesticide Groups "Fungicides and bactericides", "Herbicides, haulm destructors and moss killers", and

"Insecticides and acaricides" were reported from all countries. Use of "Plant growth regulators" was reported from 11 countries.

4.3. Common winter wheat and spelt

Common winter wheat and spelt were surveyed by 16 countries with at least one country represented per calendar year in the five-year period (Statistical annex Section 7.3). The number of active substances reportedly used in the countries related to winter wheat and spelt cultivation ranged from 30 to 171. Use of the Major pesticide Groups "Fungicides and bactericides", "Herbicides, haulm destructors and moss killers", and "Insecticides and acaricides" were reported from all countries. Use of "Plant growth regulators" was reported from 15 countries.

4.4. Strawberries

Strawberries were surveyed by 14 countries with at least one country represented per calendar year in the five-year period (Statistical annex Section 7.4). The number of active substances reportedly used in the countries related to strawberry cultivation ranged from 12 to 80. Use of the Major pesticide Groups "Fungicides and bactericides" and "Insecticides and acaricides" were reported from all countries. Use of the Major pesticide Group "Herbicides, haulm destructors and moss killers" was reported from 13 countries.

4.5. Olives and table olives

"Olives" or "Table olives" were surveyed by 7 countries; 5 reported data on Olives, and 2 on Table olives (Statistical annex Section 7.5). The latter is a lower breakdown of the category Olives in crop statistics. The number of active substances reportedly used in the countries related to olive cultivation ranged from 8 to 57. Use of the Major pesticide Groups "Fungicides and bactericides", "Herbicides, haulm destructors and moss killers" and "Insecticides and acaricides" were reported from all countries.

5. CONCLUSION AND FUTURE DEVELOPMENTS

This report provides the status of work on statistics on agricultural use of pesticides including a selection of available data from the work carried out by Eurostat and the national statistical authorities in the first data collection under Regulation (EC) No 1185/2009. The paper is designated as a Research Paper as Eurostat is not ready to start regular dissemination, but wishes to provide information on the work carried out so far and the history to it. The data provided herein may of course be subject to revision between the time of publication of this paper and that of regular dissemination.

The paper shows that several factors hinder a good use of the data collected. Despite efforts from countries and Eurostat, the work carried out has not improved the availability of pesticide use data on European level. It also cannot be used for calculating risk indicators, which was an initial aim of the legislation. Without further harmonisation, Eurostat has not found any possibility to disseminate any meaningful data in the Eurostat's dissemination database. Eurostat does not have the power to prescribe EU Member States how the data collection should be carried out in a harmonised way but can only issue guidance. This paper forms part of the work towards harmonisation.

Eurostat considers that there are four key issues facing the European Statistical System (ESS) with respect to moving towards regular production:

- Common reference year(s) to be surveyed;
- A more targeted crop selection, with agreement on the aggregation level to be reported;
- Further agreement on how to report the reference area;
- A better common understanding with countries concerning needs for confidentiality when aggregating data on national/EU-level.

Efforts to harmonise the data collection including with respect to comparability issues will continue with a view to longer-term improvements. The second data collection on pesticide use data covering 2015-2019 is already concluding, and planning for the third period 2020-2024 is starting. Therefore, further harmonisation will take time to have any measureable effect.

Finally, it should be mentioned that the issues in this paper are to be discussed by the EU Member States' representatives at the next meeting of the Working Group on Agro-environmental statistics, foreseen to take place in November 2019. This will have an impact on decisions relating to future regular production and on possible future methodological developments.

6. TABLES

Table 1: Reference years for pesticide use data 2010-2014

Country	Year 2010	Year 2011	Year 2012	Year 2013	Year 2014
BE			X		
BG					
CZ					X
DK					X
DE					X
EE					X
IE		X	X		
EL					X
ES				X	
FR	X	X		X	
HR					X
IT	X	X	X	X	X
CY		X	X	X	X
LV			X		X
LT					X
LU			X	X	
HU					X
MT					X
NL			X		
AT			X		
PL	X	X	X	X	X
PT			X		
RO			X		
SI					X
SK					X
FI				X	
SE	X				
UK					X
NO					X
Total	**4**	**5**	**11**	**7**	**17**

Table 2: Example of surveyed crops reported by two countries: crops surveyed by Italy and Poland in different reference periods

Country	Year 2010	Year 2011	Year 2012	Year 2013	Year 2014
Italy	W1000	O1000	V3100	R1000	V3100
Poland	C1500	C1111	C1210	C1320	C1112
	C1600	R2000	F1110	F1241	C1410
	F1120	V3100	R1000	F3200	F1250
	V1900	V3200	S0000	I1111	F3100
	V4210	V4100	V1300	V4300	R9000

Crop codes with labels:
C1111 Common winter wheat and spelt
C1112 Common spring wheat and spelt
C1210 Rye
C1320 Spring barley
C1410 Oats
C1500 Grain maize and corn-cob-mix
C1600 Triticale
R1000 Potatoes (including seed potatoes)
R2000 Sugar beet (excluding seed)
R9000 Other root crops n.e.c.
I1111 Winter rape and turnip rape seeds
V1300 Cabbages
V1900 Other brassicas n.e.c
V3100 Tomatoes
V3200 Cucumbers
V4100 Carrots
V4210 Onions
V4300 Beetroot
S0000 Strawberries
F1110 Apples
F1120 Pears
F1241 Sour cherries
F1250 Plums
F3100 Currants
F3200 Raspberries
W1000 Grapes
O1000 Olives

Table 3: Crops surveyed reported by at least 10 countries

Crop codes	Label	Number of countries
R1000	Potatoes (including seed potatoes)	23
F1110	Apples	18
C1111	Common winter wheat and spelt	16
V4210	Onions	15
C1320	Spring barley	14
C1500	Grain maize and corn-cob-mix	14
S0000	Strawberries	14
C1600	Triticale	13
V4100	Carrots	13
C1410	Oats	12
I1111	Winter rape and turnip rape seeds	12
V1300	Cabbages	12
C1210	Rye	10
C1112	Common spring wheat and spelt	10

Table 4: Example of crop codes reported by countries: Aggregate C1100 Wheat and spelt, and its constituents

Country reporting pesticide use data	Crop reported by crop hierarchy		
BE, BG, IE, RO, SI	C1100 Wheat and spelt		
EL, ES, FR, CY PT, SE		C1110 Common wheat and spelt	
CZ, DK, DE, EE, IE, LV, LT, LU, HU, NL, AT, PL, SK, FI, SE, NO			C1111 Common winter wheat and spelt
EE, IE, LV, LT, NL, PL, SK, FI, SE, NO			C1112 Common spring wheat and spelt
EL, ES, FR, CY, PT, SK		C1120 Durum wheat	

7. ANNEX ON STATISTICS ON AGRICULTURAL USE OF PESTICIDES

Abbreviations used:

PES_F	Fungicides and bactericides
PES_H	Herbicides, haulm destructors and moss killers
PES_I	Insecticides and acaricides
PES_PGR	Plant growth regulators
PES_M	Molluscicides
PES_ZR	Other plant protection products
c	confidential value
:	missing value

All active substances are reported in kg.

7.1. Use of active substances (by Major Group) reported on potatoes

Crop code R1000 Potatoes										
Year	**2010**	**2011**	**2012**							
Country	**SE**	**CY**	**BE**	**IE**	**LU**	**NL**	**AT**	**PL**	**PT**	**RO**
Number of active substances	31	92	111	41	26	82	56	68	108	75
PES_F	57 688	70 486	c	71 321	3 988	1 213 242	86 504	433 442	132 569	215 865
PES_H	22 748	5 057	c	19 909	1 670	457 150	45 586	80 167	8 049	31 077
PES_I	363	3 646	c	1 048	29 482	45 851	1 773	7 248	3 442	20 097
PES_PGR	:	:	c	771	11	:	1 753	1 518	1	101
PES_M	:	:	c	118	:	12	:	:	<1	:
PES_ZR	:	:	c	:	:	560 574	:	2 102	57	:

Crop code R1000 Potatoes														
Year	**2013**				**2014**									
Country	**FR**	**IT**	**LU**	**FI**	**CZ**	**DK**	**DE**	**EE**	**HR**	**LV**	**LT**	**MT**	**SK**	**NO**
Number of active substances	87	128	23	33	64	27	52	30	76	37	59	37	58	22
PES_F	2 027 390	149 711	1 838	27 398	75 631	191 726	1 375 850	5 123	32 201	18 629	18 399	3 916	19 421	17 980
PES_H	500 870	36 716	1 542	9 038	30 343	54 754	724 637	606	9 018	2 247	3 436	295	5 571	12 369
PES_I	562 332	20 005	19 388	19	2 198	1 125	8 811	68	3 919	84	735	10	691	200
PES_PGR	63 469	2 302	:	:	694	:	7 882	:	:	:	:	:	2	:
PES_M	:	<1	:	:	21	:	:	:	:	:	:	:	:	:
PES_ZR	242 999	1 573	:	:	5	:	:	:	:	:	:	:	:	:

7.2. Use of active substances (by Major Group) reported on apples

Crop code F1110 Apples								
Year	**2010**	**2012**			**2013**			
Country	**SE**	**NL**	**AT**	**PL**	**CY**	**PT**	**RO**	**FI**
Number of active substances	28	58	53	69	48	110	83	25
PES_F	5 381	203 793	154 760	1 397 435	424	158 543	167 712	1 282
PES_H	1 797	16 876	7 107	46 454	23	23 931	6 100	357
PES_I	372	3 659	71 047	64 601	692	202 742	16 936	394
PES_PGR	:	990	426	114	:	302	:	:
PES_M	:	:	:	:	:	:	:	5
PES_ZR	:	14 934	16 319	<1	:	3	:	103

Crop code F1110 Apples										
Year	**2014**									
Country	**CZ**	**DE**	**EE**	**EL**	**LV**	**LT**	**HU**	**SI**	**SK**	**NO**
Number of active substances	78	58	9	140	14	20	164	73	73	17
PES_F	143 588	1 175 818	180	24 576	2 510	12 354	412 393	63 839	24 600	8 277
PES_H	6 964	38 831	29	14 985	506	1 879	11 945	1 927	1 443	1 022
PES_I	5 143	80 431	4	91 631	123	98	105 031	c	2 232	240
PES_PGR	141	4 013	:	254	:	:	474	c	16	4
PES_M	:	:	:	5	:	:	:	0	:	0
PES_ZR	1 446	25 286	:	2 899	:	:	41 963	1 050	815	:

7.3. Use of active substances (by Major Group) reported on common winter wheat and spelt

Crop code C1111 Common winter wheat and spelt									
Year	**2010**	**2011**	**2012**					**2013**	
Country	**SE**	**PL**	**IE**	**LV**	**LU**	**NL**	**AT**	**LU**	**FI**
Number of active substances	44	107	68	79	86	45	65	98	50
PES_F	60 522	839 738	202 875	83 070	6 048	73 472	25 751	12 786	1 435
PES_H	128 600	1 041 768	109 544	122 376	14 068	95 972	121 845	10 389	8 666
PES_I	2 615	43 544	17 275	15 188	209	373	3 395	322	14
PES_PGR	:	572 868	103 407	156 491	4 138	109 840	16 890	8 506	1 690
PES_M	:	223	329	:	70	:	:	20	:
PES_ZR	:	13 877	0	:	197	8 052	50	280	:

Crop code C1111 Common winter wheat and spelt								
Year	**2014**							
Country	**CZ**	**DK**	**DE**	**EE**	**LT**	**HU**	**SK**	**NO**
Number of active substances	111	49	84	65	97	171	120	30
PES_F	480 222	166 747	3 103 450	13 999	136 785	622 644	171 042	6 527
PES_H	608 619	734 084	2 875 921	41 439	119 771	250 159	116 681	11 908
PES_I	39 551	8 841	67 677	3 189	1 841	38 515	9 073	33
PES_PGR	481 085	146 659	1 752 542	16 748	178 453	109 812	111 205	6 019
PES_M	985	207	274	:	:	<1	:	:
PES_ZR	3 636	:	:	:	:	6 038	550	:

7.4. Use of active substances (by Major Group) reported on strawberries

Crop code S0000 Strawberries							
Year	**2010**	**2011**	**2012**		**2013**		
Country	**SE**	**CY**	**NL**	**PL**	**PT**	**RO**	**FI**
Number of active substances	34	49	40	44	50	15	37
PES_F	5 763	80	11 562	44 097	17 297	1 170	4 989
PES_H	3 985	:	3 470	10 655	166	378	2 174
PES_I	40	61	426	2 984	359	3	373
PES_PGR	:	:	:	1	:	:	:
PES_M	:	:	18	:	:	:	4
PES_ZR	:	:	:	120	:	:	:

Crop code S0000 Strawberries							
Year	**2014**						
Country	**EE**	**LV**	**LT**	**MT**	**SK**	**UK**	**NO**
Number of active substances	16	21	12	39	15	80	30
PES_F	13	60	86	225	529	40 355	3 580
PES_H	34	93	420	2	42	5 964	1 583
PES_I	6	6	3	9	4	3 690	168
PES_PGR	:	:	:	:	:	:	:
PES_M	:	:	:	:	:	570	87
PES_ZR	:	:	:	223	131	58 545	:

7.5. Use of active substances (by Major Group) reported on olives and table olives

Crop codes surveyed							
O1000 Olives	**X**			**X**	**X**	**X**	**X**
O1100 Olives for table use		**X**	**X**				
Year	**2011**	**2013**			**2014**		
Country	**IT**	**ES**	**CY**	**PT**	**EL**	**HR**	**SI**
Number of active substances	35	42	13	53	57	25	8
PES_F	339 434	5 965 690	11	534 433	6 926	13 817	c
PES_H	108 648	3 036 104	20	258 164	14 477	45 214	c
PES_I	127 538	1 125 046	90	64 352	5 978	4 980	c
PES_PGR	6 731	:	:	:	<1	:	0
PES_M	:	:	:	845	2	:	0
PES_ZR	18 971	8 666	:	353	:	:	0