TECHNICAL REPORT

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Report for 2017 on the results from the monitoring of veterinary medicinal product residues and other substances in live animals and animal products

European Food Safety Authority

Abstract

The report summarises the monitoring data collected in 2017 on the presence of residues of veterinary medicinal products and certain substances in live animals and animal products in the European Union. A total of 708,880 samples were reported to the European Commission by the 28 EU Member States. They consisted of 360,293 targeted samples and 55,088 suspect samples reported under Council Directive 96/23/EC, and of 16,542 samples collected at import and 276,957 samples collected in the framework of programmes developed under the national legislation. The majority of Member States fulfilled the minimum requirements for sampling frequency laid down in Council Directive 96/23/EC and in Commission Decision 97/747/EC. Overall in 2017, the percentage of non-compliant targeted samples (0.35%) was comparable to the previous 10 years (0.25%–0.37%).

Key words: veterinary medicinal products, residue monitoring, Directive 96/23/EC, food safety

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Summary

The present report summarises the monitoring data from 2017 on the presence of residues of veterinary medicinal products and certain substances in live animals and animal products in the European Union (EU).

The presence of unauthorised substances, residues of veterinary medicinal products or chemical contaminants in food may pose a risk factor for public health. The EU legislative framework defines maximum limits permitted in food and monitoring programmes for the control of the presence of these substances in the food chain. Regulation (EU) No 37/2010 establishes maximum limits for residues of veterinary medicinal products in food-producing animals and animal products. Maximum residue levels for pesticides in or on food and feed of plant and animal origin are laid down in Regulation (EC) No 396/2005. Commission Regulation (EC) 1881/2006 lays down the maximum limits for the presence of certain contaminants in animal products. Council Directive 96/23/EC lays down measures to monitor certain substances and residues thereof, mainly veterinary medicinal products, in live animals and animal products. Additionally, Commission Decision 97/747/EC lays down levels and frequencies of sampling for certain animal products.

In the framework of Article 31 of Regulation EC 178/2002, the European Commission (EC) requested the assistance of the European Food Safety Authority (EFSA) to collect data obtained by the Member States in accordance with Directive 96/23/EC and in the annual preparation by the Commission services of a Communication to the European Parliament and the Council.

In 2017, 28 European Union (EU) Member States reported in the framework of the residue monitoring the results for 708,880 samples. A total of 360,293 targeted samples and 55,088 suspect samples were reported under Council Directive 96/23/EC. Additionally, 276,957 samples collected in the framework of other programmes developed under the national legislation and 16,542 samples checked at import, were reported. The data analysis presented in this report was focused on the targeted samples reported under Council Directive 96/23/EC. Samples collected through other sampling strategies (suspect, import or 'other') do not follow a designed monitoring plan; therefore, results on those samples were reported separately from the results on targeted samples.

The majority of Member States fulfilled the requirements for sampling frequency laid down in Council Directive 96/23/EC and in Commission Decision 97/747/EC.

Overall, there were 1,273 or 0.35% of non-compliant samples out of the 360,293 targeted samples in 2017.

For Group A, no non-compliant samples were reported for stilbenes and derivatives (A1). For antithyroid agents (A2), there were 0.42% non-compliant samples, all for thiouracil, most likely due to feeding diets rich in cruciferous plants. In the group of steroids (A3), non-compliant samples (all for anabolic steroids) were found in bovines (0.28%), pigs (0.11%) and sheep and goats (5.77 %). For corticosteroids, non-compliant results for authorised substances were reported under 'other pharmacologically active substances' (B2f). In the group of resorcylic acid lactones (A4), 0.17% of the samples were non-compliant for zearalanone and derivatives; the non-compliant samples were found in bovines (0.29%), sheep and goats (1.23%) and horses (0.97%). For beta-agonists (A5), there were 0.02% non-compliant samples in total, all reported for bovines. Prohibited substances (A6) were found in 0.03% of samples. Substances identified were chloramphenicol (n = 8), nitroimidazoles (n = 2) and nitrofurans (n = 18).

For Group B1 (antibacterials), 0.26% of the samples analysed under the Directive 96/23/EC monitoring were non-compliant. The highest frequency of non-compliant samples for antibacterials was found in honey (0.83%).

In group B2 (other veterinary drugs), the highest proportion of non-compliant samples was found for non-steroidal anti-inflammatory drugs (NSAIDs) (B2e) (0.27%). For NSAIDs (B2e), the non-compliant samples were reported across the different species as follows; 0.05% for bovines, 0.06% for sheep and goats, 0.66% for horses, 0.06% for pigs and 0.96% for milk. Instances of non-compliance for anthelmintics (B2a) were reported in bovines (0.10%), pigs (0.04%), sheep and goats (0.89%), milk (0.17%) and poultry (0.03%).

For anticoccidials (B2b), 0.15% of the samples analysed were non-compliant and were reported across the different species as follows; 0.85% in horses, 0.01% in pigs, 0.21% in poultry, 0.65% in rabbits and 0.47% in eggs. Since 2009, an important decrease has been observed in the frequency of non-compliant samples for anticoccidials (B2b) in poultry. This decrease is most likely the result of the awareness and the measures that followed the implementation of the Commission Directive 2009/8/EC setting up maximum levels of unavoidable carry-over of coccidiostats in non-target feed. No non-compliant samples were reported for pyrethroids (B2c). For sedatives (B2d), one non-compliant sample was reported in pigs only (0.02%). Non-compliant samples were reported for 'other pharmacologically active substances' (B2f), in bovines (0.19%), pigs (0.03%) and poultry (0.05%).

In the group B3 (other substances and environmental contaminants), the chemical elements (B3c) had the highest overall percentage of non-compliant samples (4.69%), with cadmium, lead, mercury and copper being most frequently identified. Non-compliant samples were reported for organochlorine compounds (B3a) and organophosphorus compounds (B3b); 0.22% and 0.01%, respectively. For mycotoxins (B3d), there were non-compliant samples reported for bovines (0.24%), pigs (0.43%), sheep and goats (0.76%), and milk (0.76%); with those identified being zearalenone and derivatives, ochratoxin A, aflatoxin B1 and aflatoxin M1. For dyes (B3e), non-compliant samples were reported for aquaculture (1.79%). The substances found were malachite green, leuco-malachite green, crystal violet and leuco-crystal violet. For 'other substances' (B3f), non-compliant samples were reported for honey (0.41%), eggs (0.10%) and poultry (0.14%). The substances identified were fipronil, thiacloprid, captan/folpet and boscalid.

In 2017, the overall frequency of non-compliant samples (0.35%) was comparable to the previous 10 years (0.25%–0.37%).

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1. Introduction

1.1. Background and Terms of Reference as provided by the European Commission

1.1.1. Background

Council Directive 96/23/EC[1] requires the Member States to implement a national residue monitoring plan for specific groups of residues specified in its Annexes I and II. Member States must submit their monitoring data and resulting control measures no later than 31 March of the following year. So far, this data has been collected in a Commission database. Member States must also publish the outcome of the implementation of their plans.

The Commission has the obligation to inform the Member States of developments in the situation within the Standing Committee on the Food Chain and Animal Health. Each year, the Commission shall send a Communication on the results of the action taken to the European Parliament and the Council, bearing in mind the comments of the Member States. This yearly communication includes an annual compilation of the results of residue monitoring in the Member States as well as information on actions taken at Member State level as follow-up to non-compliant results.

The Commission has published the annual Communications to the Parliament and the Council since 2001. The latest versions are available online[2]. In view of a further harmonisation of data collection on chemicals in food, the Commission Services consider it useful to address a request for technical assistance to EFSA.

1.1.2. Terms of reference as provided by the European Commission

In the framework of Article 31 of Regulation (EC) No 178/2002, the Commission requests EFSA's assistance in the collection of the data obtained by the Member States in accordance with Directive 96/23/EC and in the annual preparation by the Commission services of a Communication to the European Parliament and the Council.

EFSA shall develop a data collection system allowing direct data submission by the Member States.

This data collection system shall:

- collect information on all samples analysed in the framework of residue monitoring, and explore the possibility of its extension to all analyses concerning residues of veterinary medicinal products;
- allow the Member States to provide information on follow-up actions directly linked to the respective non-compliant results;
- allow differentiated access to the data for Commission services and Member States.

The data collection system should at least allow the extraction of:

- reports on the implementation of the residue monitoring plan. Each Member State shall be able to extract a report containing only their respective national data. The structure of the report shall be agreed with the Member States and Commission services;
- an annual compilation of the monitoring data of all Member States. EFSA shall annually extract such a compilation containing data submitted by the Member States for the past year. EFSA shall use the current format and level of detail as a basis for future compilations;
- a summary overview of the actions taken by the Member States as follow-up to non-compliant results. The Commission services shall be the only party that can extract such data for all Member States. The Member States shall be able to extract their own respective data. The structure of this overview shall be agreed with the Commission services.

EFSA shall present each annual compilation in the Standing Committee of the Food Chain and Animal Health two months after the last data submission by the Member States and collect comments from

[1] Council Directive 96/23/EC on measures to monitor certain substances and residues thereof in live animals and animal products and repealing Directives 85/358/EEC and 86/469/EEC and Decisions 89/187/EEC and 91/664/EEC (OJ L 125, 23.5.1996, p. 10).

[2] http://ec.europa.eu/food/food/chemicalsafety/residues/control_en.htm

the Commission and the Member States. EFSA shall send the final annual compilation taking into account the comments received to the Commission services.

1.2. Additional information

The presence of unauthorised substances, residues of veterinary medicinal products or chemical contaminants in food may pose a risk factor for public health. The EU legislative framework defines maximum limits permitted in food and monitoring programmes for the control of the presence of these substances in the food chain.

Council Directive 96/23/EC on measures to monitor certain substances and residues thereof in live animals and animal products requires Member States to adopt and implement a national residue monitoring plan for the groups of residues detailed in its Annex I in accordance with the sampling rules referred to in Annex IV. The Directive lays down sampling levels and frequency for bovines, pigs, sheep and goats, equine animals, poultry and aquaculture, as well as the groups of substances to be monitored for each food commodity. Commission Decision 97/747/EC[3] lays down rules for levels and frequencies of sampling for milk, eggs, honey, rabbit meat and game.

National residue control plans should be targeted to take the following minimum criteria into account: species, gender, age, fattening system, all available background information and all evidence of misuse or abuse of substances. Additionally, suspect samples may also be taken as part of the residue control.

The requirements for the analytical methods to be applied in the testing of official samples and the common criteria for the interpretation of analytical results are laid down in Commission Decision 2002/657/EC[4] of 12 August 2002 implementing Council Directive 96/23/EC.

Targeted samples are taken with the aim of detecting illegal treatment or controlling compliance with the maximum levels laid down in the relevant legislation. This means that, in their national plans Member States target the groups of animals (species, gender, age) where the probability of finding residues is the highest. Conversely, the objective of random sampling is to collect significant data to evaluate, for example, consumer exposure to a specific substance.

Suspect samples are taken as a consequence of i) non-compliant results on samples taken in accordance with the monitoring plan, ii) possession or presence of prohibited substances at any point during manufacture, storage, distribution or sale through the food and feed production chain, or iii) suspicion or evidence of illegal treatment or non-compliance with the withdrawal period for an authorised medicinal veterinary product.

Residues of pharmacologically active substances mean active substances, excipients or degradation products and their metabolites, which remain in food.

Unauthorised substances or products mean substances or products prohibited under European Union legislation.

Illegal treatment refers to the use of unauthorised substances or products or the use of substances or products authorised under EU legislation for purposes or under conditions other than those laid down in EU legislation or, where appropriate, in the various national legislation.

Withdrawal period represents the period necessary between the last administration of the veterinary medicinal product to animals under normal conditions of use and the production of foodstuffs from such animals, in order to ensure that such foodstuffs do not contain residues in quantities in excess of the maximum limits laid down in EU legislation.

Non-compliant result since the entry into force of Decision 2002/657/EC, the term for analytical results exceeding the permitted limits (in previous reports termed 'positives') is 'non-compliant'. The result of an analysis shall be considered non-compliant if the decision limit of the confirmatory method for the analyte is exceeded.

[3] Commission Decision 97/747/EC fixing the levels and frequencies of sampling provided for by Council Directive 96/23/EC for the monitoring of certain substances and residues thereof in certain animal products. OJ L 303, 6.11.1997, p. 12–15.

[4] Commission Decision 2002/657/EC of 12 August 2002 implementing Council Directive 96/23/EC concerning the performance of analytical methods and the interpretation of results. OJ L 221, 17.8.2002, p. 1-29.

Non-compliant sample is a sample that has been analysed for the presence of one or more substances and failed to comply with the legal provisions for at least one substance. Thus, a sample can be non-compliant for one or more substances.

Maximum residue limit (MRL) is the maximum concentration of residue resulting from the use of a veterinary medicinal product which may be accepted by the Community to be legally permitted or recognised as acceptable in or on a food. For veterinary medicinal products, MRLs are established according to the procedures laid down in Regulation (EC) No 470/2009[5] of the European Parliament and of the Council of 6 May 2009. Pharmacologically active substances and their classification regarding maximum residue limits are set out in Commission Regulation (EU) No 37/2010[6] of 22 December 2009. In addition, Commission Directive No 2009/8/EC[7] lays down maximum levels of unavoidable carry-over of coccidiostats or histomonostats in non-target feed and Commission Regulation (EC) No 124/2009[8] lays down maximum levels for the presence of coccidiostats or histomonostats in food resulting from the unavoidable carry-over of these substances in non-target feed.

For pesticides, MRLs are laid down in Regulation (EC) No 396/2005.[9] Some substances (e.g. carbamates, pyrethroids, organophosphorus compounds) are recognised both as veterinary medicinal products and pesticides and therefore they might have different MRLs in the corresponding legislation.

Maximum levels for contaminants are laid down in Commission Regulation (EC) No 1881/2006.[10] For contaminants where no EU maximum levels had been fixed at the time when data included in this report were collected, national tolerance levels were applied.

Minimum Required Performance Limits (MRPLs) - according to the Annex to Commission Decision 2002/657/EC, MRPL is the minimum content of an analyte in a sample which has to be detected and confirmed. It is intended to harmonise the analytical performance of methods for substances for which no permitted limit has been established. MRPLs for chloramphenicol, nitrofurans metabolites and medroxyprogesterone acetate were established by Commission Decision 2003/181/EC[11] and for malachite and leuco-malachite green were established by Commission Decision 2004/25/EC.[12]

1.3. Objectives

The present report summarises the monitoring data from 2017 submitted by the Member States to the EFSA. Data analysis was mainly focused on data submitted under Directive 96/23/EC and aimed to provide an overview on:

- production volume and number of samples collected in each Member State. These data were used to check whether the Member States had fulfilled the minimum requirements on sampling frequency as stated in Directive 96/23/EC and Commission Decision 97/747/EC.

[5] Regulation (EC) No 470/2009 of the European Parliament and of the Council of 6 May 2009 laying down Community procedures for the establishment of residue limits of pharmacologically active substances in foodstuffs of animal origin, repealing Council Regulation (EEC) No 2377/90 and amending Directive 2001/82/EC of the European Parliament and of the Council and Regulation (EC) No 726/2004 of the European Parliament and of the Council. OJ L 152, 16.6.2009, p. 11–22.

[6] Commission Regulation (EC) No 37/2010 of 22 December 2009 on pharmacologically active substances and their classification regarding maximum residue limits in foodstuffs of animal origin. OJ L 15, 20.1.2010, p. 1–72.

[7] Commission Directive 2009/8/EC of 10 February 2009 amending Annex I to Directive 202/32/EC of the European Parliament and of the Council as regards maximum levels of unavoidable carry-over of coccodiostats or histomonostats in non-target feed. OJ L 40, 11.2.2009, p. 19–25.

[8] Commission Regulation (EC) No 124/2009 of 10 February 2009 setting maximum levels for the presence of coccidiostats or histomonostats in food resulting from the unavoidable carry-over of these substances in non-target feed. OJ L 40, 11.2.2009, p. 7–11.

[9] Regulation (EC) 396/2005 of the European Parliament and of the Council of 23 February 20005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC. OJ L 70, 16.3.2005, p. 1–16.

[10] Commission Regulation (EC) 1881/2006 setting maximum levels for certain contaminants in foodstuffs. OJ L 364, 20.12.2006, p. 5–24.

[11] Commission Decision 2003/181/EC of 13 March 2003 amending Decision 2002/657/EC as regards the setting of minimum required performance limits (MRPLs) for certain residues in food of animal origin. OJ L 71, 15.3.2003, p. 17–18.

[12] Commission Decision 2004/25/EC of 22 December 2003 amending Decision 2002/657/EC as regards the setting of minimum required performance limits (MRPLs) for certain residues in food of animal origin. OJ L 6, 10.1.2004, p. 38—39.

- number of samples analysed in each animal species or food commodity for substance groups and subgroups as defined in Annex I to Directive 96/23/EC (see Appendix E);
- summary of non-compliant results per animal species or food commodity and substance group;
- identification of main substances contributing to non-compliant results within a group;
- EU overall distribution of non-compliant samples in the substance groups.

2. Data and Methodologies

Data used in this report have been collected from Member States under Directive 96/23/EC. The samples included in the monitoring were taken from the production process of animals and primary products of animal origin (live animals, their excrements, body fluids and tissues, animal products, animal feed and drinking water). Each Member State assigns the coordination of the national monitoring plan to a central public department or body which is also in charge of the data collection at national level (Directive 96/23/EC Art. 4) and reporting the results to EFSA.

The samples taken in 2017 were reported using Standard Sample Description Version 2.0 format (EFSA, 2013). This standard can be used to report the results of laboratory tests performed on samples of food, feed, animals and plants. Specific requirements for reporting the results of laboratory tests for veterinary medicinal products are described in EFSA, 2015 and EFSA, 2018. The standard allows results for all marker residues analysed for in a sample of animals or animal products to be reported. The following information is recorded:

Sampling event: one or more tissues taken from an animal at a specific location and at a specific point in time (e.g. kidney and muscle samples taken from a single pig carcass at slaughter). The sampling event requires the sampling point and sampling strategy to be recorded. The sampling strategy can be targeted, suspect, import or other.

Sample taken: The sample taken is described using EFSA FoodEx2 classification (e.g. beef liver or chicken eggs). These samples are then categorised as bovines, pigs, sheep & goats, horses, poultry, rabbit, farmed game, wild game, aquaculture, milk, eggs and honey. The country where the sample was taken, the date of sampling and the country of origin are also recorded.

Analytical method: Both screening and confirmatory tests can be reported. CCbeta the detection capability is reported for screening tests and CCAlpha the decision limit is reported for confirmatory tests.

Marker residue: The results for all residues, both above and below the limits of detection and covered by the scope of a laboratory method, are reported. An analysis hierarchy groups the residues according to the substance groups described in Annex I of Directive 96/23/EC.

Non-compliant results: Each result is classified as compliant or non-compliant by the reporting country. Additional information on investigation outcomes in the case of non-compliant results is also recorded.

The data was submitted in XML format to the EFSA data collection framework. Automatic data quality checks were performed as described in EFSA, 2018. Reporting countries were provided with the opportunity to validate their data submission by exporting a national report summarising the data that had been submitted.

Production volumes: The number of animals for bovines, pigs, sheep and goats, and horses, and in tonnes for poultry, rabbit, farmed game, wild game, aquaculture, milk, eggs and honey were downloaded from the residues database of the Directorate General for Health and Food Safety (DG SANTE). This information was used to verify whether the minimum sampling frequencies had been fulfilled.

The reported data is aggregated counting the number of distinct sampling events (**samples analysed**), the number of sampling events where one or more results are non-compliant (**non-compliant samples**) and the number of non-compliant results (**non-compliant results**) by reporting country, animal category/product, marker residue and substance group. Since more than one result can be non-compliant in a sample the sum of non-compliant results might be higher than

the sum of non-compliant samples. The percent non-compliant samples were calculated with non-compliant samples as the nominator and samples analysed as the denominator. Previously the number of samples analysed for a specific residue was not always available from countries where there were no non-compliant results. Using the current approach, the percent non-compliant samples may in some cases be higher, as in the previous approach samples which had not been tested for a specific residue may have been included in the denominator.

The data used in the preparation of this report were extracted from the database in January 2019 and are reflective of the database during this time period. Additional data from Spain and Poland were incorporated into the analysis, since their submission to the EFSA data collection framework was not complete.

Following the Member State review of the report, from 26 February to 12 March 2019, comments were received from Belgium, the Czech Republic, Denmark, France, Germany, Latvia, Lithuania, Portugal, Spain and the United Kingdom, in relation to either clarifications and/or errors identified in data submission. The report has not been updated in relation to these clarifications or data errors. Instead the comments from each of the above Member States are listed in Appendix G of this report.

The data analysis was performed using Microstrategy, SAS Enterprise Guide 7.1 and R v3.5.0. Confidence intervals for the percent non-compliant samples were calculated using the R package 'binom'[13] using an exact (Pearson-Klopper) method at a confidence level of 95%.

3. Results

The structure and data analysis performed in the present report follows that of previous reports:

- the EU overall assessment includes all animal/animal product categories and is presented for each main substance group;
- assessment of samples analysed, non-compliant samples and non-compliant results are presented for each animal/animal product category separately;
- suspect samples are evaluated separately from the targeted samples;
- results which were not reported under the Council Directive 96/23/EC (import and 'others') are not included in the overall assessment but treated separately;
- non-compliant results for the individual substances in each animal/animal product category are listed in Appendix A (targeted samples), Appendix B (suspect samples), Appendix C (import samples) and Appendix D ('other' samples).

3.1. EU overall assessment

The aim of this assessment is to give an overview of the total number of samples analysed for the individual substance groups and to summarise the non-compliant samples for the major substance groups at EU level. Further details on the non-compliant samples found in each animal/product category are presented in Sections 3.2 to 3.13.

In 2017, 708,880 samples were reported by the 28 Member States for analysis of substances and residues covered by Directive 96/23/EC. Out of this, 360,293 were targeted samples collected in conformity with the specifications of the National Residue Control Plans (NRCPs) for 2017. Additionally, 55,088 suspect samples were reported as follow-up of non-compliant targeted samples or suspicion of illegal treatment or non-compliance with the withdrawal period. Apart from the data submitted in accordance to NRCPs, Member States reported in total 276,957 samples collected in the framework of other programmes developed under the national legislation. A relatively limited number of data were reported for samples checked at import (n = 16,542). This is because the control of samples at import is more linked to the third country monitoring than to the residue monitoring in EU; thus Member States report those results to the EC (using other tools e.g. the Trade Control and Expert System (TRACES) and the Rapid Alert System for Food and Feed (RASFF)).

[13] https://cran.r-project.org/web/packages/binom/binom.pdf

Of the total targeted samples, 53% were analysed for substances having an anabolic effect and unauthorised substances (group A) and 66% for veterinary drugs and contaminants (group B)[14]. Of the 360,293 targeted samples, 1,273 were non-compliant (0.35%) (1,458 non-compliant results). The percentage of non-compliant samples calculated from the total number of samples analysed for substances in that category was: 0.11% for substances having an anabolic effect and unauthorised substances (A), 0.26% for antibacterials (B1), 0.16% for the 'other veterinary drugs' (B2) and 1.47% for 'other substances and environmental contaminants' (B3) (Table 1, Figure 1).

Table 1: Number of targeted samples analysed, non-compliant samples and non-compliant results in all species and product categories

Substance group[(a)]	Samples analysed[(b)]	% Samples analysed	Non-compliant samples[(c)]	% Non-compliant samples	Non-compliant results[(d)]
A	192,486	53.4	221	0.11	254
A1	22,501	6.2	0	0	0
A2	8,020	2.2	34	0.42	34
A3	40,729	11.3	129	0.32	137
A4	15,759	4.4	27	0.17	49
A5	32,083	8.9	6	0.02	6
A6	89,879	24.9	25	0.03	28
B	237,886	66.0	1,061	0.45	1,204
B1	109,260	30.3	284	0.26	328
B2	111,029	30.8	182	0.16	192
B2a	28,845	8.0	48	0.17	54
B2b	33,151	9.2	49	0.15	52
B2c	11,964	3.3	0	0	0
B2d	8,201	2.3	1	0.01	1
B2e	20,276	5.6	55	0.27	56
B2f	28,740	8.0	29	0.10	29
B3	40,809	11.3	601	1.47	684
B3a	12,480	3.5	28	0.22	38
B3b	8,047	2.2	1	0.01	1
B3c	11,053	3.1	518	4.69	580
B3d	7,944	2.2	30	0.38	30
B3e	1,597	0.4	28	1.75	30
B3f	4,441	1.2	5	0.11	5
Total	**360,293**	**100**	**1,273**	**0.35**	**1,458**

(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

[14] Some samples were analysed for substances in both groups therefore the sum of percentages is higher than 100.

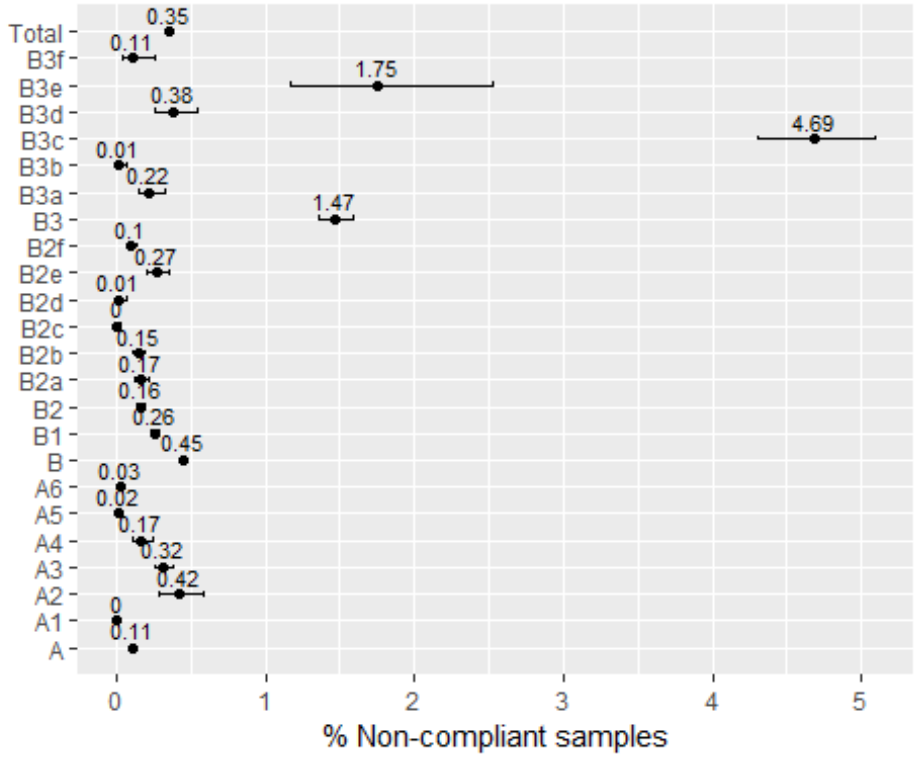

Figure 1: Percentage of non-compliant samples in each substance group

3.1.1. Hormones

Directive 96/22/EC prohibits the use of hormones in food producing animals except for well-defined therapeutic and zootechnical purposes and under strict veterinary control.

This group includes also synthetic, hormonally active substances such as stilbenes and their derivatives (A1), antithyroid agents (A2) and steroids (A3). Resorcylic acid lactones (A4) are hormonally active as well and potentially used for growth promoting purposes, but their presence in animals and products of animal origin could also be linked to the ingestion of feed contaminated with fungi belonging to the genus *Fusarium*.

Of all the targeted samples analysed for the category 'hormones' in all animal/product categories (87,009 samples) there were 190 non-compliant samples (0.22%) (220 non-compliant results).

The number of targeted samples analysed for stilbenes and derivatives (A1) in all animal/product categories together, was 22,501 and no non-compliant samples were reported for this group.

Antithyroid agents (A2) were analysed in 8,020 targeted samples of which 34 samples were non-compliant (0.42%) (34 non-compliant results). All non-compliant samples in the group A2 were for thiouracil and were found in bovines (n = 32; 0.71%) and sheep (n = 2; 0.98%). Residues of thiouracil resulted most probably from feeding diets rich in cruciferous plants. Pinel et al. (2006) demonstrated that urinary excretion of thiouracil in adult bovines fed with cruciferous plants can give erroneous indications of the possible illegal use of thyrostats in meat production animals.

For steroids (A3), of the 40,729 samples analysed in all animal species and product categories, 129 samples were non-compliant (0.32%) (137 non-compliant results). All 137 non-compliant results were for anabolic steroids. The non-compliant samples were found in bovines (n = 66; 0.28%), pigs (n = 11; 0.11%) and sheep and goats (n = 52; 5.77%). Some Member States have indicated that residue findings on steroid hormones may not be attributable to illegal treatment, as the source was most likely the endogenous production, as reported in previous studies (Clouet et al., 1997; Samuels et al., 1998).

The legal utilisation of corticosteroids (e.g. dexamethasone, betamethasone and prednisone) in the therapy of food producing animals in the EU, as for any other veterinary medicine, is strictly regulated

in the EU, with withdrawal periods given between treatment and slaughtering. In previous years, some Member States included authorised corticosteroids under the group A3, whereas others allocated them to the subgroup B2f (other pharmacologically active substances). The Member States that included all corticosteroids in group A3 claimed that in this way they have more legal action power against illegal use. However, from 2012, following a move towards a common approach in the reporting of corticosteroids, all Member States with non-compliant results have allocated them under subgroup B2f and no longer under A3 (see Section 3.1.5 and Table 4 for details).

For resorcylic acid lactones (A4), of 15,759 samples analysed in all animal species and product categories, 27 were found non-compliant (0.17%) (49 non-compliant results), for zearalanone and derivatives. The non-compliant samples were found for bovines (n = 23; 0.29%), sheep and goats (n = 3; 1.23%) and horses (n = 1; 0.97%).

3.1.2. Beta-agonists

Beta-agonists (A5) are used therapeutically in human and animal medicine for specific effects on smooth muscle. When misused at higher doses, they can also act as growth promoters by stimulating the increase of the muscular mass and reducing the adipose tissue. Directive 96/22/EC prohibits the use of beta-agonists in food producing animals except for well-defined therapeutic purposes and under strict veterinary control. In 2017, 32,083 targeted samples were analysed for beta-agonists, with 6 non-compliant samples and results (0.02%) reported in total, all relating to bovine samples.

3.1.3. Prohibited substances

This group (A6) includes substances listed in Commission Regulation (EU) No 37/2010 under prohibited substances for which MRLs cannot be established. These substances are not allowed to be administered to food-producing animals. Examples of substances belonging to this group are chloramphenicol, nitrofurans and nitroimidazoles.

In the framework of the 2017 residue monitoring, 89,879 targeted samples were analysed for prohibited substances and 25 samples (0.03%) were non-compliant (28 non-compliant results). Altogether, there were 18 non-compliant results for nitrofurans, two for nitroimidazoles and eight for chloramphenicol (Table 2).

The distribution of the non-compliant results, by individual substance and Member State, are presented in Appendix A.

Table 2: Overview on the non-compliant results for prohibited substances

Substance	Species/Product	Number of non-compliant results	Member States reporting non-compliant results
Chloramphenicol			
Chloramphenicol	Bovines	1	Poland
	Milk	1	Croatia
	Pigs	4	The Czech Republic, Germany
	Poultry	2	Cyprus, Poland
Nitrofurans			
AHD (1-aminohydantoin)	Milk	1	Croatia
AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	Aquaculture	1	Greece
	Milk	1	Croatia
	Poultry	7	Belgium
AOZ (3-amino-2-oxazolidone)	Honey	1	Germany
	Milk	1	Croatia
SEM (semicarbazide)	Honey	1	Finland
	Milk	1	Croatia
	Pigs	1	Italy
	Poultry	3	Cyprus, the Netherlands
Nitroimidazoles			
Metronidazole	Pigs	1	France
	Poultry	1	Belgium

3.1.4. Antibacterials

The group of antibacterials (B1) includes antibiotics (e.g. beta-lactams, tetracyclines, macrolides, aminoglycosides) but also sulphonamides and quinolones.

The total number of analyses carried out in 2017 for antimicrobials in targeted samples was 109,260 of which 284 (0.26%) were non-compliant (328 non-compliant results) (Table 1). The highest frequency of non-compliant samples for antibacterials was observed in honey (0.83%) (Figure 2).

It is important to mention that in some Member States there are specific control programmes which use microbiological tests (inhibitor tests). In some cases, a positive result in a microbiological test is sufficient to reject the sample. This may mean that no confirmation by a physico-chemical method is carried out and thus there is no conclusive identification of the substance concerned. In other cases, a positive result in the screening test is confirmed by means of an immunochemical or physico-chemical test and it is then possible to identify the substance and establish whether its concentration is above the MRL or not.

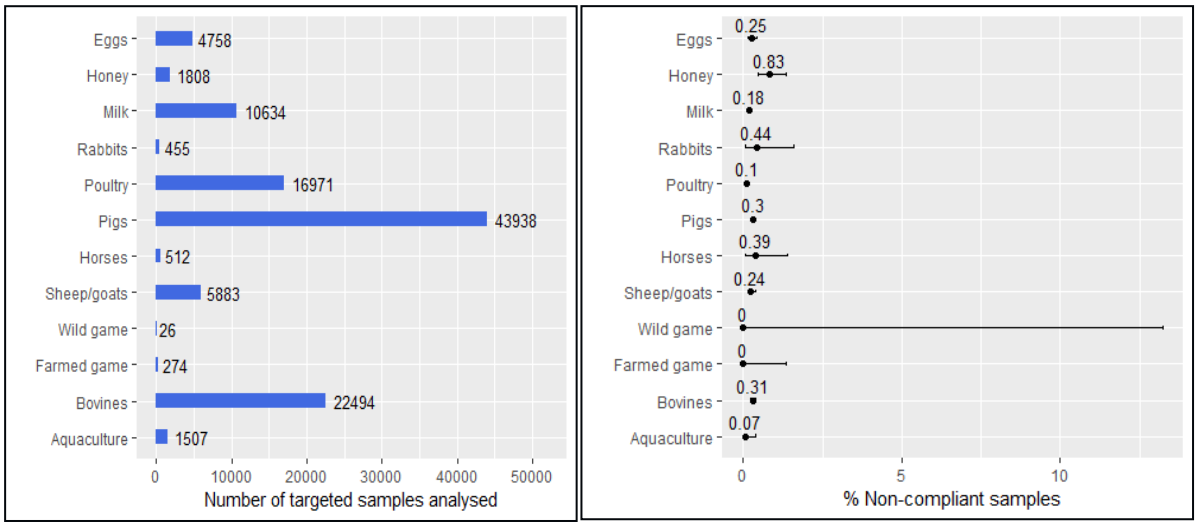

Figure 2: Number of targeted samples analysed and percentage of non-compliant samples for antibacterials (B1) in animal/product categories

More details on the number of samples analysed and the non-compliant samples found in each category are given in Sections 3.2 to 3.13 and in Appendix A.

3.1.5. Other veterinary drugs

The group 'other veterinary drugs' (B2) includes a variety of veterinary medicinal products classified according to their pharmacological action in:

- anthelmintics (B2a);
- anticoccidials (B2b);
- carbamates and pyrethroids (B2c);
- sedatives (B2d);
- non-steroidal anti-inflammatory drugs (NSAIDs) (B2e), and
- other pharmacologically active substances (B2f).

In the 2017 monitoring, 111,029 targeted samples were analysed for substances in the group B2 and 182 samples (0.16%) were non-compliant. The total number of targeted samples analysed for each subgroup in the group B2 and the percentage of non-compliant samples is presented in Figure 3. It is important to note that the frequency of analyses for substances in the B2 subgroups follows a different pattern in each species, depending on their animal specific therapeutic application. An overview of the number of samples analysed and the percentage of non-compliant samples for the B2 subgroups in the specific animal/product category is presented in Table 3.

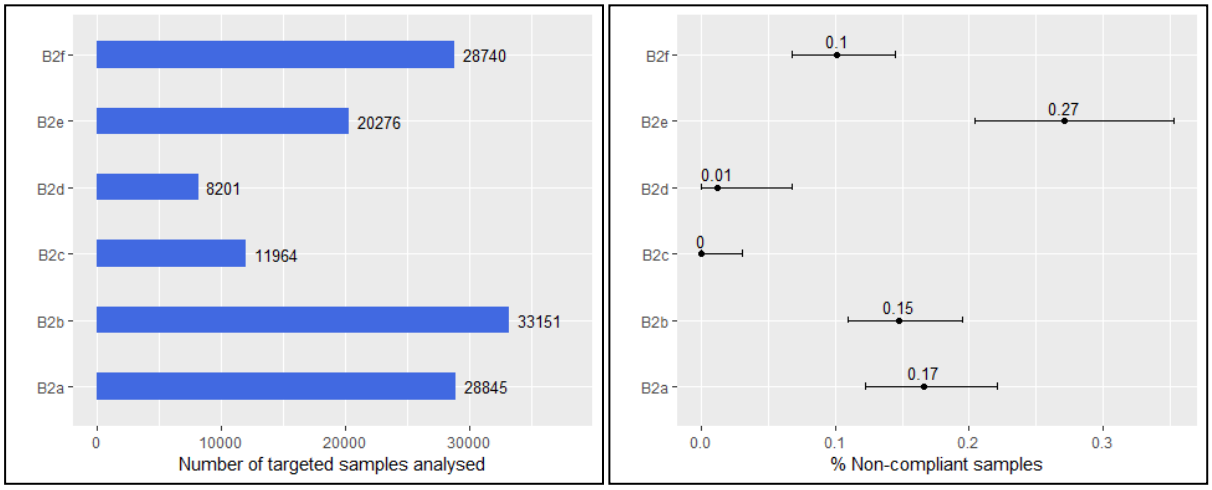

Figure 3: Number of targeted samples analysed within the group 'other veterinary drugs' (B2) and the percentage of non-compliant samples

Table 3: Number of targeted samples analysed for B2 subgroups in different animal categories and the frequency of non-compliant samples (percentage from the total number of samples analysed in each animal category)

Group	B2a % NC	B2a Samples	B2b % NC	B2b Samples	B2c % NC	B2c Samples	B2d % NC	B2d Samples	B2e % NC	B2e Samples	B2f % NC	B2f Samples
Aquaculture	0	560	0	379	0	315	NA	NA	0	3	0	327
Bovines	0.10	5,856	0	3,384	0	1,791	0	1,671	0.05	5,473	0.19	12,827
Farmed game	0	252	0	143	0	107	0	8	0	62	0	36
Wild game	0	102	0	14	0	35	NA	NA	0	3	0	22
Sheep/goats	0.89	3,041	0	2,260	0	2,270	0	244	0.06	1,796	0	776
Horses	0	186	0.85	118	0	139	0	198	0.66	605	0	241
Pigs	0.04	7,610	0.01	8,495	0	2,239	0.02	5,674	0.06	6,243	0.03	8,791
Poultry	0.03	3,670	0.21	12,736	0	1,754	0	128	0	1,552	0.05	3,780
Rabbits	0	118	0.65	153	0	60	NA	NA	0	65	0	67
Milk	0.17	6,635	0	1,272	0	1,778	0	82	0.96	4,474	0	489
Honey	0	219	0	124	0	922	NA	NA	NA	NA	0	755
Eggs	0	596	0.47	4,073	0	554	0	196	NA	NA	0	629

%NC: Percentage of non-compliant samples; NA: not applicable.

Regarding the number of samples analysed in each B2 subgroup, the highest proportion of non-compliant samples (0.27%) was observed for non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were reported in bovines (0.05%), sheep and goats (0.06%), horses (0.66%), pigs (0.06%) and milk (0.96%).

For anthelmintics (B2a), non-compliant samples were reported in bovine (0.10%), sheep and goats (0.89%), pigs (0.04%), poultry (0.03%) and milk (0.17%).

Non-compliant samples for anticoccidials (B2b) were reported in horses (0.85%), pigs (0.01%), poultry (0.21%), rabbits (0.65%) and eggs (0.47%).

No non-compliant samples were reported for pyrethroids (B2c).

For sedatives (B2d), one non-compliant sample was reported for pigs only (0.02%).

For 'other pharmacologically active substances' (B2f), non-compliant samples were observed for bovines (0.19%), pigs (0.03%) and poultry (0.05%). For corticosteroids, 26 non-compliant results were reported by four Member States and the substances identified were dexamethasone and prednisolone (Table 4). It is important to note that recent studies suggest that prednisolone could be produced endogenously by animals, especially by those found in a state of stress (Pompa et al., 2011; Fidani et al., 2012).

Table 4: Overview on corticosteroids non-compliant results (B2f)

Substance	Species/Product	Number of non-compliant results	Member States reporting non-compliant results
Dexamethasone	Bovines	22	Germany, Italy, Poland, Spain
	Pigs	2	Germany
Prednisolone	Bovines	1	Italy
	Pigs	1	Germany

3.1.6. Other substances and environmental contaminants

The group 'other substances and environmental contaminants' (B3) includes the following subcategories:

- organochlorine compounds including PCBs (B3a);
- organophosphorus compounds (B3b);
- chemical elements (B3c);
- mycotoxins (B3d);
- dyes (B3e), and
- others (B3f).

In the 2017, 40,809 samples were analysed for substances in group B3 of which 601 samples were non-compliant (1.47%) (684 non-compliant results). The total number of targeted samples analysed for each subgroup in group B3 and the percentage of non-compliant samples is presented in Figure 4. Similarly to group B2, the frequency of analyses for certain B3 subgroups is highly variable with the targeted animal/product category. While chemical contaminants (B3c) are analysed in all animal/product categories, dyes (B3e) are analysed only in aquaculture products. An overview of the number of samples analysed and the percentage of non-compliant samples for the B3 subgroups in the specific animal group and animal product category is presented in Table 5.

The highest percentage of non-compliant samples was found in almost all species, in the subgroup B3c 'chemical elements' (4.69%). Similar to previous years, cadmium, lead, mercury and copper were the chemical elements frequently identified as responsible for non-compliance.

Instances of non-compliance for organochlorine compounds (B3a) and organophosphorus compounds (B3b) were 0.22% and 0.01%, respectively.

There were non-compliant samples reported in subgroup B3d mycotoxins (n = 30; 0.38%), for bovines (n = 6; 0.24%), pigs (n = 11; 0.43%), sheep and goats (n = 2; 0.76%) and milk (n = 11; 0.76%). Those identified being zearalenone and derivatives, ochratoxin A, aflatoxin B_1 and aflatoxin M_1.

Dyes (B3e) were reported in aquaculture (28 non-compliant samples; 1.79%). Substances found were malachite green, leuco-malachite green, crystal violet and leuco-crystal violet.

There were non-compliant samples reported in subgroup B3f 'others' (n = 5; 0.11%), for honey (n = 3; 0.41%), eggs (n = 1; 0.10%) and poultry (n = 1; 0.14%). Those identified being fipronil, thiacloprid, captan/folpet and boscalid.

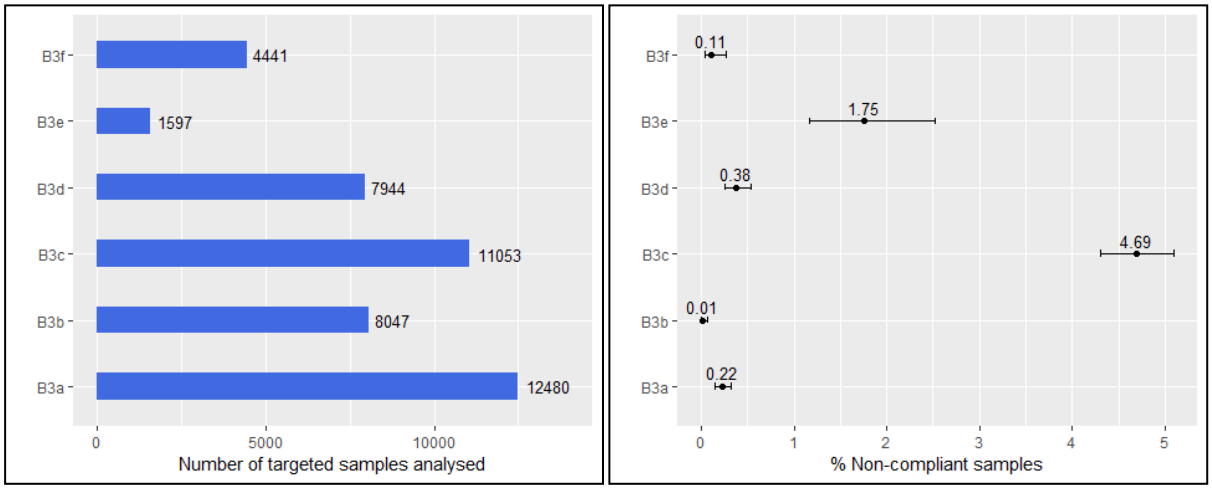

Figure 4: Number of samples analysed within the group 'other substances and environmental contaminants' (B3) and the percentage of non-compliant samples

Table 5: Number of targeted samples analysed for B3 subgroups in different animal and product categories and the frequency of non-compliant samples (percentage from the total number of samples analysed in each animal/product category)

Group	B3a % NC	B3a Samples	B3b % NC	B3b Samples	B3c % NC	B3c Samples	B3d % NC	B3d Samples	B3e % NC	B3e Samples	B3f % NC	B3f Samples
Aquaculture	0	419	0	157	0.22	447	0	136	1.79	1,567	0	78
Bovines	0.05	2,068	0	1,337	7.42	1,846	0.24	2,464	0	10	0	341
Farmed game	0.80	125	0	60	14.58	542	0	10	NA	NA	0	23
Wild game	12.77	141	0	43	6.24	1,394	NA	NA	NA	NA	0	139
Sheep/goats	0	537	0	970	6.40	406	0.76	262	NA	NA	0	74
Horses	0	144	0	92	4.40	432	0	88	NA	NA	0	28
Pigs	0	2,884	0	1,910	4.20	3,572	0.43	2,539	0	10	0	1,079
Poultry	0.09	2,263	0	880	0.43	1,390	0	976	0	10	0.14	722
Rabbits	0	58	0	21	0	68	0	14	NA	NA	0	15
Milk	0	1,345	0	935	0	471	0.76	1,450	NA	NA	0	225
Honey	0.12	849	0.11	908	3.38	385	0	1	NA	NA	0.41	736
Eggs	0.30	1,647	0	734	0	100	0	4	NA	NA	0.10	981

%NC: percentage of non-compliant samples
NA: not applicable

More details on the number of samples analysed and non-compliant samples in each category are given in the Sections 3.2 to 3.13 and in Appendix A.

3.1.7. Multi-year comparison

Overall, the percentage of non-compliant samples in 2017 (0.35%) was comparable to the previous 10 years (0.25%-0.37%).

As this is the first year that the monitoring data were reported to EFSA using the SSD (Version 2.0) format (see Section 2 on Data and Methodologies), comparisons between the non-compliance rates for specific substance groups in 2017 with those from previous years, have not been performed in this report, due to differences in the reporting and calculation methods.

3.2. Bovines

Council Directive 96/23/EC requires that the minimum number of bovine animals to be controlled each year for all kinds of residues and substances is 0.4% of the bovine animals slaughtered the previous year. The minimum requirements for the number of samples were not fulfilled in 2017 for the EU overall (Table 6), while they were fulfilled by the majority of the Member States (Table 7). Bulgaria, France, Germany, Lithuania, Portugal and Romania did not achieve the minimum sampling frequency for bovines.

Table 6: Production of bovines and number of targeted samples over 2007–2017

Year	Production (animals)	Targeted samples	% Animals tested[a]	Minimum 96/23/EC
2007 (EU 27)	27,087,367	129,201	0.47	0.4
2008 (EU 27)	26,898,702	122,648	0.48	
2009 (EU 27)	26,677,946	127,897	0.48	
2010 (EU 27)	26,267,917	128,130	0.48	
2011 (EU 27)	26,566,593	126,540	0.48	
2012 (EU 27)	25,759,645	130,554	0.49	
2013 (EU 28)	25,481,237	126,307	0.49	
2014 (EU 28)	25,315,582	125,552	0.49	
2015 (EU 28)	25,463,018	127,187	0.50	
2016 (MS 27[b])	21,414,980	109,881	0.53	
2016 (EU 28)	*26,099,292*			
2017 (EU 28)	26,394,612	102,647	0.39[c]	

(a): in relation to the production of the previous year;
(b): data from France was not available for inclusion in the 2016 results report;
(c): calculated based on 2016 production data from 28 Member States (MS).

Table 7: Production volume and number of targeted samples collected in bovines

Country	Production data[(a)] (animals)	Number of samples 2017	Animals tested (%)
Austria	686,525	3,888	0.57
Belgium	874,853	5,829	0.67
Bulgaria	32,641	114	0.35
Croatia	187,400	763	0.41
Cyprus	16,378	121	0.74
The Czech Republic	259,356	1,394	0.54
Denmark	495,111	1,997	0.40
Estonia	41,380	209	0.51
Finland	277,898	1,206	0.43
France	4,684,312	10,139	0.22
Germany	3,608,699	13,894	0.39
Greece	89,923	529	0.59
Hungary	105,575	496	0.47
Ireland	1,708,611	7,408	0.43
Italy	2,490,672	12,503	0.50
Latvia	88,434	372	0.42
Lithuania	171,243	563	0.33
Luxembourg	25,071	102	0.41
Malta	4,167	30	0.72
The Netherlands	2,084,000	8,419	0.40
Poland	1,920,870	7,717	0.40
Portugal	375,509	803	0.21
Romania	297,607	1,174	0.39
Slovakia	31,308	313	1.00
Slovenia	111,634	480	0.43
Spain	2,333,895	9,853	0.42
Sweden	427,220	1,756	0.41
The United Kingdom	2,669,000	10,575	0.40
Total (EU 28)	**26,099,292**	**102,647**	**0.39**

(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in bovines are presented in Table 8. Of the 102,647 samples analysed in this category, 366 (0.36%) were non-compliant (436 non-compliant results). The non-compliant samples were reported by 17 Member States.

Table 8: Number of samples analysed, non-compliant samples and non-compliant results in bovines

Substance group[(a)]	Samples Analysed[(b)]	% Samples analysed	Non-compliant samples[(c)]	% Non-compliant samples	Non-compliant results[(d)]
A	65,447	63.8	128	0.20	148
A1	12,234	11.9	0	0	0
A2	4,527	4.4	32	0.71	32
A3	23,998	23.4	66	0.28	68
A4	8,043	7.8	23	0.29	41
A5	17,676	17.2	6	0.03	6
A6	17,936	17.5	1	0.01	1
B	54,221	52.8	244	0.45	288
B1	22,494	21.9	69	0.31	101
B2	27,732	27.0	33	0.12	33
B2a	5,856	5.7	6	0.10	6
B2b	3,384	3.3	0	0	0
B2c	1,791	1.7	0	0	0
B2d	1,671	1.6	0	0	0
B2e	5,473	5.3	3	0.05	3
B2f	12,827	12.5	24	0.19	24
B3	7,351	7.2	144	1.95	154
B3a	2,068	2.0	1	0.05	3
B3b	1,337	1.3	0	0	0
B3c	1,846	1.8	137	7.42	145
B3d	2,464	2.4	6	0.24	6
B3e	10	0.01	0	0	0
B3f	341	0.3	0	0	0
Total	**102,647**	**100**	**366**	**0.36**	**436**

(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

There were no non-compliant samples reported in group A1.

In the group A2, five Member States reported a total of 32 non-compliant samples and results, all for thiouracil.

In the group A3, a total of 66 non-compliant samples (68 non-compliant results) were reported. Among the substances identified, the highest number of non-compliant results were noted for epinandrolone (n =38).

In the group A4, five Member States reported 23 non-compliant samples (41 non-compliant results) with the most frequently reported substances being alpha-zeralanol and beta-zearalanol.

There were 6 non-compliant samples (6 non-compliant results) reported in Group A5: for clenbuterol (n = 4), zipaterol (n=1) and sotalol hydrochloride (n = 1) by three Member States.

In Group A6, there was one non-compliant sample and result reported for chloramphenicol by one Member State.

For antibacterials (B1), 14 Member States reported a total of 69 non-compliant samples (101 non-compliant results). Among the substances identified, Benzylpenicillin (Penicillin G) was the most frequent one (11 non-compliant results).

In Group B2, there were six non-compliant samples (six non-compliant results) for anthelmintics (B2a), 3 non-compliant samples (3 non-compliant results) were reported by two Member States for non-steroidal anti-inflammatory drugs (NSAIDs) (B2e), and 24 non-compliant samples (24 non-compliant results) were reported by four Member States for steroidal anti-inflammatory drugs (B2f). Dexamethasone was the most frequently reported substance in B2f (n = 22 non-compliant results).

In the group B3, there was one non-compliant sample (3 non-compliant results) for organochlorine compounds (B3a), 137 non-compliant samples for chemical elements (including heavy metals) (B3c) and 6 non-compliant samples for mycotoxins (B3d); all for zearalenone. Within the 137 non-compliant samples (145 non-compliant results) for chemical elements (B3c) there were 101 non-compliant results for copper (reported by two Member States), 26 for cadmium (reported by five Member States), 14 for mercury (reported by one Member State), and four for lead (reported by three Member States).

A detailed presentation on the specific substances identified and the number of non-compliant results reported by each Member State is given in Appendix A.

3.3. Pigs

Council Directive 96/23/EC requires that the minimum number of pigs that have to be controlled each year for all kinds of residues and substances is 0.05% of the pigs slaughtered the previous year. The minimum requirements for the number of samples to be taken were fulfilled in 2017 for the EU overall (Table 9), and by the majority of Member States (Table 10). France, Lithuania and Portugal did not achieve the minimum sampling frequency for pigs.

Table 9: Production of pigs and number of targeted samples over 2007–2017

Year	Production (animals)	Targeted samples	% Animals tested[a]	Minimum 96/23/EC
2007 (EU 27)	241,501,638	144,378	0.06	0.05
2008 (EU 27)	244,965,996	137,281	0.06	
2009 (EU 27)	242,260,526	138,137	0.06	
2010 (EU 27)	245,149,546	136,792	0.06	
2011 (EU 27)	249,082,904	133,255	0.05	
2012 (EU 27)	246,691,569	135,745	0.05	
2013 (EU 28)	243,680,241	131,565	0.05	
2014 (EU 28)	244,508,972	135,129	0.06	
2015 (EU 28)	251,197,203	130,012	0.05	
2016 (MS 27[b])	229,09 0,419	121,953	0.05	
2016 (EU 28)	*252,921,158*			
2017 (EU 28)	252,107,558	125,810	0.05[c]	

(a): in relation to the production of the previous year;
(b): data from France were not available for inclusion in the 2016 results report;
(c): calculated based on 2016 production data from 28 Member States (MS).

Table 10: Production volume and number of targeted samples collected in pigs

Country	Production data[(a)] (animals)	Number of samples 2017	Animals tested (%)
Austria	5,197,563	3,390	0.07
Belgium	11,919,279	5,827	0.05
Bulgaria	1,072,205	589	0.05
Croatia	1,137,000	580	0.05
Cyprus	573,290	278	0.05
The Czech Republic	2,488,432	2,262	0.09
Denmark	18,390,962	9,429	0.05
Estonia	527,076	658	0.12
Finland	2,069,804	1,373	0.07
France	23,830,739	5,399	0.02
Germany	59,075,000	30,254	0.05
Greece	1,048,423	634	0.06
Hungary	4,709,528	3,200	0.07
Ireland	3,359,032	2,585	0.08
Italy	10,929,098	6,213	0.06
Latvia	390,411	200	0.05
Lithuania	784,134	333	0.04
Luxembourg	172,106	84	0.05
Malta	56,140	34	0.06
The Netherlands	15,395,900	7,957	0.05
Poland	22,438,554	11,273	0.05
Portugal	4,561,396	1,401	0.03
Romania	4,502,507	2,286	0.05
Slovakia	496,302	375	0.08
Slovenia	258,307	168	0.07
Spain	44,417,470	22,344	0.05
Sweden	2,526,500	1,335	0.05
The United Kingdom	10,594,000	5,349	0.05
Total (EU 28)	**252,921,158**	**125,810**	**0.05**

(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in pigs are presented in Table 11. Of the 125,810 samples analysed in this category, 318 (0.25%) were non-compliant (377 non-compliant results). The non-compliant samples were reported by 19 Member States.

Table 11: Number of targeted samples analysed, non-compliant samples and non-compliant results in pigs

Substance group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples	Non-compliant results[d]
A	67,753	53.9	17	0.03	17
A1	6,067	4.8	0	0	0
A2	2,428	1.9	0	0	0
A3	10,015	8.0	11	0.11	11
A4	4,260	3.4	0	0	0
A5	8,276	6.6	0	0	0
A6	35,429	28.2	6	0.02	6
B	87,041	69.2	302	0.35	360
B1	43,938	34.9	133	0.30	142
B2	37,729	30.0	12	0.03	12
B2a	7,610	6.1	3	0.04	3
B2b	8,495	6.8	1	0.01	1
B2c	2,239	1.8	0	0	0
B2d	5,674	4.5	1	0.02	1
B2e	6,243	5.0	4	0.06	4
B2f	8,791	7.0	3	0.03	3
B3	11,545	9.2	161	1.39	206
B3a	2,884	2.3	0	0	0
B3b	1,910	1.5	0	0	0
B3c	3,572	2.8	150	4.20	195
B3d	2,539	2.0	11	0.43	11
B3e	10	0.007	0	0	0
B3f	1,079	0.9	0	0	0
Total	**125,810**	**100**	**318**	**0.25**	**377**

(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

In the group A3, five Member States reported 11 non-compliant samples and results (11 for nandrolone and one for epinandrolone).

In Group A6, there were 6 non-compliant samples and results reported by four Member States for chloramphenicol, metronidazole and SEM.

For antibacterials (B1), 13 Member States reported a total of 133 non-compliant samples (142 non-compliant results).

In Group B2, there were three non-compliant samples (three non-compliant results) for anthelmintics (B2a), one non-compliant sample for anticoccidials (B2b), one non-compliant sample for sedatives (B2d) (for xylazine), four non-compliant samples for non-steroidal anti-inflammatory drugs (NSAIDs) (B2e) and three for other pharmacologically active substances (B2f).

In the group B3, there were 161 non-compliant samples (206 non-compliant results). The non-compliant results were reported for heavy metals (n = 195) (B3c) by three Member States and mycotoxins (n = 11) (B3d) by five Member States.

The specific substances identified and the number of non-compliant results reported by each Member State, are presented in Appendix A.

3.4. Sheep and goats

Council Directive 96/23/EC requires that the minimum number of sheep and goats that have to be controlled each year for all kinds of residues and substances is 0.05% of the sheep and goats slaughtered the previous year. The minimum requirements for the number of samples were fulfilled in in 2017 for the EU overall (Table 12), and by the majority of Member States (Table 13). Portugal and France did not achieve the minimum sampling frequency for sheep and goats.

Table 12: Production of sheep and goats and number of targeted samples over 2007–2017

Year	Production (animals)	Targeted samples	% Animals tested[a]	Minimum 96/23/EC
2007 (EU 27)	40,935,665	26,599	0.06	
2008 (EU 27)	41,435,268	24,320	0.06	
2009 (EU 27)	39,584,954	26,265	0.06	
2010 (EU 27)	36,121,283	23,894	0.06	
2011 (EU 27)	37,217,484	23,112	0.06	
2012 (EU 27)	36,558,080	23,441	0.06	0.05
2013 (EU 28)	35,831,474	22,761	0.06	
2014 (EU 28)	36,188,624	26,218	0.07	
2015 (EU 28)	31,554,480	21,420	0.06	
2016 (MS 27[b])	26,783,426	16,846	0.06	
2016 (EU 28)	*31,274,756*			
2017 (EU 28)	31,160,255	16,348	0.05[c]	

(a): in relation to the production of the previous year;
(b): data from France were not available for inclusion in the 2016 results report;
(c): calculated based on 2016 production data from 28 Member States (MS).

Table 13: Production volume and number of targeted samples collected in sheep and goats

Country	Production data[(a)] (animals)	Number of samples 2017	Animals tested (%)
Austria	138,044	393	0.28
Belgium	139,973	208	0.15
Bulgaria	109,567	65	0.06
Croatia	88,070	65	0.07
Cyprus	232,867	137	0.06
The Czech Republic	13,922	69	0.50
Denmark	79,999	52	0.07
Estonia	6,614	19	0.29
Finland	56,894	50	0.09
France	4,491,330	876	0.02
Germany	1,069,172	494	0.05
Greece	290,312	330	0.11
Hungary	40,921	62	0.15
Ireland	2,825,057	1,834	0.06
Italy	369,791	598	0.16
Latvia	21,244	13	0.06
Lithuania	9,009	7	0.08
Luxembourg	2,690	21	0.78
Malta	5,913	13	0.22
The Netherlands	688,600	374	0.05
Poland	35,527	105	0.30
Portugal	962,928	250	0.03
Romania	676,009	313	0.05
Slovakia	80,383	110	0.14
Slovenia	11,431	39	0.34
Spain	3,123,289	2,000	0.06
Sweden	251,200	133	0.05
The United Kingdom	15,454,000	7,718	0.05
Total (EU 28)	**31,274,756**	**16,348**	**0.05**

(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in sheep and goats is presented in Table 14. Of the 16,348 samples analysed in this category, 125 (0.77%) were non-compliant (144 non-compliant results). The non-compliant samples were reported by 12 Member States.

Table 14: Number of targeted samples analysed, non-compliant samples and non-compliant results in sheep and goats

Substance group[(a)]	Samples analysed[(b)]	% Samples analysed	Non-compliant samples[(c)]	% Non-compliant samples	Non-compliant results[(d)]
A	4,125	25.2	57	1.38	66
A1	651	4.0	0	0	0
A2	205	1.3	2	0.98	2
A3	901	5.5	52	5.77	58
A4	244	1.5	3	1.23	6
A5	569	3.5	0	0	0
A6	1,821	11.1	0	0	0
B	13,620	83.3	70	0.51	78
B1	5,883	36.0	14	0.24	14
B2	5,886	36.1	28	0.48	34
B2a	3,041	18.6	27	0.89	33
B2b	2,260	13.8	0	0	0
B2c	2,270	13.9	0	0	0
B2d	244	1.5	0	0	0
B2e	1,796	11.0	1	0.06	1
B2f	776	4.7	0	0	0
B3	2,255	13.8	28	1.24	30
B3a	537	3.3	0	0	0
B3b	970	5.9	0	0	0
B3c	406	2.5	26	6.40	28
B3d	262	1.6	2	0.76	2
B3e	NA	NA	NA	NA	NA
B3f	74	0.5	0	0	0
Total	**16,348**	**100**	**125**	**0.77**	**144**

NA: not applicable.
(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

In group A, two non-compliant samples and results were reported against antithyroid agents (A2) for thiouracil, by one Member State. Fifty-two non-compliant samples and 58 non-compliant results were reported for steroids (A3), (for nandrolone (n = 10), boldenone-alpha (n = 42), epinandrolone (n=2), boldenone (n = 3), norethandrolon (n=1)), by three Member States.

In the group A4, two Member States reported three non-compliant samples (six non-compliant results) for alpha-/beta-zearalanol and zearalenol alpha/beta.

For antibacterials (B1), eight Member States reported a total of 14 non-compliant samples (14 non-compliant results). The substance with the highest number of non-compliant results was sulfadiazine (n = 6).

In the group B2, 27 non-compliant samples (33 non-compliant results) were reported for anthelmintics (B2a) and one non-compliant sample and result was reported to B2e (NSAIDs).

In the group B3, there were 28 non-compliant samples (30 non-compliant results). The non-compliant results were distributed as follows: 28 for heavy metals (B3c) (17 for copper, four for cadmium and three for mercury and four for lead) and 2 for mycotoxins (B3d) (zearalenone).

A detailed presentation on the specific substances identified and the number of non-compliant results reported by each Member State is given in Appendix A.

3.5. Horses

For horses, Council Directive 96/23/EC requires that the number of samples is to be determined by each Member State in relation to the identified problem. The number of targeted samples taken in 2017 at EU level was slightly lower compared to previous years (Table 15). The percentage of targeted samples taken in each Member State for the reported horse production is presented in Table 16.

Table 15: Production of horses and number of targeted samples over 2007–2017

Year	Production (animals)	Targeted samples	% Animals tested[a]	Minimum 96/23/EC
2007 (EU 27)	312,969	3,115	1.16	Not specified
2008 (EU 27)	386,302	2,545	0.81	
2009 (EU 27)	264,538	3,000	0.78	
2010 (EU 27)	258,362	3,094	1.17	
2011 (EU 27)	249,403	3,309	1.28	
2012 (EU 27)	272,286	3,850	1.54	
2013 (EU 28)	284,035	4,453	1.63	
2014 (EU 28)	215,629	4,112	1.45	
2015 (EU 28)	190,540	3,749	1.74	
2016 (MS 27[b])	177,309	3,320	1.90	
2016 (EU 28)	*191,678*			
2017 (EU 28)	186,330	3,232	1.69[c]	

(a): in relation to the production of the previous year;
(b): data from France were not available for inclusion in the 2016 results report;
(c): calculated based on 2016 production data from 28 Member States (MS).

Table 16: Production volume and number of targeted samples collected for horses

Country	Production data[(a)] (animals)	Number of samples 2017	Animals tested (%)
Austria	602	67	11.13
Belgium	8,540	359	4.20
Bulgaria	348	9	2.59
Croatia	225	17	7.56
Cyprus	0	NA	NA
The Czech Republic	187	43	22.99
Denmark	1,597	58	3.63
Estonia	17	0	0
Finland	1,639	52	3.17
France	14,369	213	1.48
Germany	8,179	112	1.37
Greece	0	NA	NA
Hungary	818	63	7.70
Ireland	7,408	466	6.29
Italy	26,740	464	1.74
Latvia	67	12	17.91
Lithuania	1,292	7	0.54
Luxembourg	0	NA	NA
Malta	15	2	13.33
The Netherlands	3,800	91	2.39
Poland	28,981	341	1.18
Portugal	1,113	20	1.80
Romania	24,936	218	0.87
Slovakia	0	NA	NA
Slovenia	1,424	42	2.95
Spain	52,758	271	0.51
Sweden	2,670	205	7.68
The United Kingdom	3,953	100	2.53
Total (EU 28)	**191,678**	**3,232**	**1.69**

NA: not applicable.
(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in horses is presented in Table 17. Of the 3,232 samples analysed in this category, 27 samples (0.84%) were non-compliant (31 non-compliant results). The non-compliant samples were reported by 11 Member States.

Table 17: Number of targeted samples analysed, non-compliant samples and non-compliant results in horses

Substance group[(a)]	Samples analysed[(b)]	% Samples analysed	Non-compliant samples[(c)]	% Non-compliant samples	Non-compliant results[(d)]
A	1,012	31.3	1	0.10	2
A1	79	2.4	0	0	0
A2	51	1.6	0	0	0
A3	184	5.7	0	0	0
A4	103	3.2	1	0.97	2
A5	235	7.3	0	0	0
A6	416	12.9	0	0	0
B	2,669	82.6	26	0.97	29
B1	512	15.8	2	0.39	2
B2	1,461	45.2	5	0.34	6
B2a	186	5.8	0	0	0
B2b	118	3.7	1	0.85	1
B2c	139	4.3	0	0	0
B2d	198	6.1	0	0	0
B2e	605	18.7	4	0.66	5
B2f	241	7.5	0	0	0
B3	777	24.1	19	2.44	21
B3a	144	4.5	0	0	0
B3b	92	2.8	0	0	0
B3c	432	13.4	19	4.40	21
B3d	88	2.7	0	0	0
B3e	NA	NA	NA	NA	NA
B3f	28	0.9	0	0	0
Total	**3,232**	**100**	**27**	**0.84**	**31**

NA: not applicable.
(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

In group A, there was one non-compliant sample (two results) for resorcylic acid lactones (A4) only.

In group B1, two non-compliant samples (two results) were reported for 'sum of enrofloxacin and ciprofloxacin'.

In the group B2, five non-compliant samples (six results) were reported for anticoccidials (B2b) (one sample and result) and for NSAIDs (B2e) (four samples and five results).

In the group B3, 19 non-compliant samples (21 non-compliant results) were reported for the heavy metal subgroup B3c: 19 results for cadmium and 2 for mercury.

A detailed presentation on the specific substances identified and the number of non-compliant results reported by each Member State is given in Appendix A.

3.6. Poultry

According to Directive 96/23/EC, the minimum number of samples for each category of poultry must be one per 200 t of annual production, with a minimum of 100 samples for each group of substances where annual production in the category concerned is over 5,000 t. The minimum requirement of one sample analysed per 200 t production was not achieved in 2017 for the EU overall (Table 18).

The percentage of targeted samples taken in each Member State for the reported production of poultry is given in Table 19. France, Greece, Lithuania, Portugal and the United Kingdom did not achieve this requirement.

Table 18: Production of poultry and number of targeted samples over 2007–2017

Year	Production (t)	Targeted samples	% Samples tested/ 200 t[a]	Minimum 96/23/EC
2007 (EU 27)	10,912,500	62,101	1.15	1/200 t
2008 (EU 27)	12,421,566	60,406	1.11	
2009 (EU 27)	11,383,434	61,989	1.00	
2010 (EU 27)	11,804,262	61,259	1.08	
2011 (EU 27)	12,417,108	65,942	1.12	
2012 (EU 27)	12,845,333	68,770	1.11	
2013 (EU 28)	12,930,555	71,186	1.11	
2014 (EU 28)	12,909,837	72,486	1.12	
2015 (EU 28)	13,394,013	71,223	1.10	
2016 (MS 27[b])	12,239,495	64,501	1.10	
2016 (EU 28)	*13,906,572*			
2017 (EU 28)	14,320,889	67,630	0.97[c]	

(a): in relation to the production of the previous year;
(b): data from France were not available for inclusion in the 2016 results report;
(c): calculated based on 2016 production data from 28 Member States (MS).

Table 19: Production volume and number of targeted samples collected for poultry

Country	Production data (t)[(a)]	Number of samples 2017	Samples tested/ 200 t
Austria	117,007	850	1.5
Belgium	399,490	2,258	1.1
Bulgaria	100,404	498	1.0
Croatia	53,000	316	1.2
Cyprus	19,424	193	2.0
The Czech Republic	151,647	922	1.2
Denmark	144,252	702	1.0
Estonia	19,107	196	2.1
Finland	117,065	621	1.1
France	1,667,077	4,265	0.5
Germany	1,507,934	8,824	1.2
Greece	211,287	635	0.6
Hungary	642,298	5,124	1.6
Ireland	164,248	1,314	1.6
Italy	1,307,000	6,485	1.0
Latvia	30,000	193	1.3
Lithuania	83,865	291	0.7
Luxembourg	0	NA	NA
Malta	3,832	114	6.0
The Netherlands	1,066,288	5,553	1.0
Poland	1,895,598	9,389	1.0
Portugal	303,921	1,070	0.7
Romania	442,045	2,608	1.2
Slovakia	96,853	531	1.1
Slovenia	57,730	338	1.2
Spain	1,446,990	7,741	1.1
Sweden	152,210	741	1.0
The United Kingdom	1,706,000	5,858	0.7
Total (EU 28)	**13,906,572**	**67,630**	**0.97**

NA: not applicable.
(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in poultry are presented in Table 20. Of the 67,630 samples analysed in this category, 69 (0.10%) were non-compliant (73 non-compliant results). The non-compliant samples were reported by 15 Member States.

Table 20: Number of targeted samples analysed, non-compliant samples and non-compliant results in poultry

Substance group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples	Non-compliant results[d]
A	38,259	56.6	13	0.03	13
A1	3,275	4.8	0	0	0
A2	755	1.1	0	0	0
A3	5,103	7.5	0	0	0
A4	2,998	4.4	0	0	0
A5	4,586	6.8	0	0	0
A6	20,459	30.3	13	0.06	13
B	40,909	60.5	56	0.14	60
B1	16,971	25.1	17	0.10	18
B2	20,871	30.9	30	0.14	33
B2a	3,670	5.4	1	0.03	1
B2b	12,736	18.8	27	0.21	30
B2c	1,754	2.6	0	0	0
B2d	128	0.2	0	0	0
B2e	1,552	2.3	0	0	0
B2f	3,780	5.6	2	0.05	2
B3	5,706	8.4	9	0.16	9
B3a	2,263	3.3	2	0.09	2
B3b	880	1.3	0	0	0
B3c	1,390	2.1	6	0.43	6
B3d	976	1.4	0	0	0
B3e	10	0.01	0	0	0
B3f	722	1.1	1	0.14	1
Total	**67,630**	**100**	**69**	**0.10**	**73**

(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

For group A, 13 non-compliant samples and results were reported for group A6 only, by four Member States: for AMOZ (n = 7), chloramphenicol (n = 2), metronidazole (n = 1) and SEM (n = 3).

For antibacterials (B1), six Member States reported a total of 17 non-compliant samples (18 non-compliant results), with the most frequent substance reported being doxycycline (n = 10).

In the group B2, one non-compliant result was reported for anthelmintics (B2a), 27 non-compliant samples (30 non-compliant results) were reported for anticoccidials (B2b), and two non-compliant results were for B2f (relating to nicotine).

In the group B3, two non-compliant samples and results were reported for organochlorine compounds (B3a). Six non-compliant samples and results were reported under chemical elements (B3c) (copper, lead and cadmium). One non-compliant result was reported for 'others' (B3f) and relates to fipronil.

The specific substances identified and the number of non-compliant results reported by each Member State are presented in Appendix A.

3.7. Aquaculture

Directive 96/23/EC specifies that the minimum number of samples to be collected each year must be at least one per 100 t of annual production. The minimum requirements for the number of samples to be taken were fulfilled in 2017 for the EU overall (Table 21) and by the majority of Member States. The production volume and the number of samples analysed in each Member State are given in Table 22. Bulgaria, France, Greece, Hungary, Latvia, Malta and Portugal did not analyse at least one sample/100 t of production.

Table 21: Production of aquaculture and number of targeted samples over 2007–2017

Year	Production (t)	Targeted samples	% Samples tested/ 100 t[a]	Minimum 96/23/EC
2007 (EU 27)	602,555	9,257	1.5	1/100 t
2008 (EU 27)	644,875	8,751	1.4	
2009 (EU 27)	627,109	8,606	1.3	
2010 (EU 27)	622,032	8,668	1.4	
2011 (EU 27)	655,772	8,241	1.3	
2012 (EU 27)	631,117	8,264	1.3	
2013 (EU 28)	614,191	7,971	1.3	
2014 (EU 28)	608,658	7,236	1.2	
2015 (EU 28)	633,541	7,246	1.2	
2016 (MS 27[b])	603,868	6,735	1.1	
2016 (EU 28)	*645,068*			
2017 (EU 28)	668,766	6,500	1.0[c]	

(a): related to the production of the previous year;
(b): data from France were not available for inclusion in the 2016 results report;
(c): calculated based on 2016 production data from 28 Member States (MS).

Table 22: Production volume and number of targeted samples collected for aquaculture

Country	Production data (t)[(a)]	Number of samples 2017	Samples tested/ 100 t
Austria	3,393	235	6.9
Belgium	2,000	110	5.5
Bulgaria	6,574	62	0.9
Croatia	16,076	175	1.1
Cyprus	6,614	78	1.2
The Czech Republic	20,140	204	1.0
Denmark	36,000	373	1.0
Estonia	795	18	2.3
Finland	14,877	204	1.4
France	41,200	115	0.3
Germany	19,040	236	1.2
Greece	95,240	678	0.7
Hungary	4,752	32	0.7
Ireland	13,919	141	1.0
Italy	57,060	608	1.1
Latvia	863	6	0.7
Lithuania	4,403	0	0
Luxembourg	0	NA	NA
Malta	10,800	18	0.2
The Netherlands	6,000	76	1.3
Poland	33,540	538	1.6
Portugal	11,218	48	0.4
Romania	7,152	69	1.0
Slovakia	746	124	16.6
Slovenia	1,590	28	1.8
Spain	69,802	692	1.0
Sweden	9,117	103	1.1
The United Kingdom	152,157	1,529	1.0
Total (EU 28)	**645,068**	**6,500**	**1.0**

NA: not applicable.
(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in aquaculture are presented in Table 23. Of the 6,500 samples analysed for aquaculture, 31 samples (0.48%) were non-compliant (33 non-compliant results). The non-compliant samples were reported by eight Member States.

Table 23: Number of targeted samples analysed, non-compliant samples and non-compliant results in aquaculture

Substance group[(a)]	Samples analysed[(b)]	% Samples analysed	Non-compliant samples[(c)]	% Non-compliant samples	Non-compliant results[(d)]
A	2,264	34.8	1	0.04	1
A1	111	1.7	0	0	0
A2	4	0.1	0	0	0
A3	317	4.9	0	0	0
A4	52	0.8	0	0	0
A5	91	1.4	0	0	0
A6	1,599	24.6	1	0.06	1
B	5,167	79.5	30	0.58	32
B1	1,507	23.2	1	0.07	1
B2	1,241	19.1	0	0	0
B2a	560	8.6	0	0	0
B2b	379	5.8	0	0	0
B2c	315	4.8	0	0	0
B2d	NA	NA	NA	NA	NA
B2e	3	0.05	0	0	0
B2f	327	5.0	0	0	0
B3	2,611	40.2	29	1.11	31
B3a	419	6.4	0	0	0
B3b	157	2.4	0	0	0
B3c	447	6.9	1	0.22	1
B3d	136	2.1	0	0	0
B3e	1,567	24.1	28	1.79	30
B3f	78	1.2	0	0	0
Total	**6,500**	**100**	**31**	**0.48**	**33**

NA: not applicable
(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

For group A, one non-compliant sample and result was reported in group A6, for AMOZ (5-methylmorpholino-3-amino-2-oxazolidone.

In group B1, one non-compliant sample and result was reported, for amoxicillin.

In the group B3, there were 28 non-compliant samples (30 non-compliant results) for dyes (B3e) (malachite green, leuco-malachite green, 'sum of malachite green and leucomalachite green' crystal violet, leuco-crystal violet).

The specific substances identified and the number of non-compliant results reported by each Member State are presented in Appendix A.

3.8. Milk

Commission Decision 97/747/EC lays down that the annual number of samples taken should be one per 15,000 t of annual milk production, with a minimum of 300 samples. The minimum requirements for the number of samples to be taken were fulfilled in 2017 by EU overall (Table 24) and by the majority of Member States. France did not achieve this requirement.

The production volume and the number of samples analysed in each Member State are given in Table 25.

Table 24: Production of milk and number of targeted samples over 2007–2017

Year	Production (t)	Targeted samples	% Samples tested/ 15,000 t[(a)]	Minimum 96/23/EC
2007 (EU 27)	142,461,705	51,571	5.3	
2008 (EU 27)	145,006,173	53,333	5.6	
2009 (EU 27)	141,669,974	54,063	5.6	
2010 (EU 27)	144,705,166	30,372	3.2	
2011 (EU 27)	143,022,677	29,592	3.1	
2012 (EU 27)	149,086,701	30,748	3.2	1/15,000 t
2013 (EU 28)	146,446,811	29,788	3.0	
2014 (EU 28)	147,794,431	29,533	3.0	
2015 (EU 28)	150,637,679	26,705	2.7	
2016 (MS 27[(b)])	121,134,877	23,934	2.9	
2016 (EU 28)	*145,701,788*			
2017 (EU 28)	154,860,990	19,451	2.0[(c)]	

(a): related to the production of the previous year;
(b): data from France were not available for inclusion in the 2016 result report;
(c): calculated based on 2016 production data from 28 Member States (MS).

Table 25: Production volume and number of targeted samples collected for milk

Country	Production data (t)[(a)]	Number of samples 2017	Samples tested/ 15,000 t
Austria	146,928	353	36.0
Belgium	3,563,796	703	3.0
Bulgaria	447,680	287	9.6
Croatia	674,200	392	8.7
Cyprus	200,000	364	27.3
The Czech Republic	2,990,000	255	1.3
Denmark	3,591,207	303	1.3
Estonia	783,172	541	10.4
Finland	2,359,000	290	1.8
France	24,566,911	638	0.4
Germany	31,565,955	2,080	1.0
Greece	1,897,642	625	4.9
Hungary	945,230	238	3.8
Ireland	955,974	1,104	17.3
Italy	11,159,207	1,701	2.3
Latvia	978,000	721	11.1
Lithuania	1,409,456	283	3.0
Luxembourg	350,000	326	14.0
Malta	45,910	397	129.7
The Netherlands	14,616,286	967	1.0
Poland	12,867,163	2,821	3.3
Portugal	1,935,177	267	2.1
Romania	915,338	364	6.0
Slovakia	1,252,218	513	6.2
Slovenia	499,965	341	10.2
Spain	6,794,063	815	1.9
Sweden	2,921,000	294	1.5
The United Kingdom	15,270,310	1,468	1.4
Total (EU 28)	**145,701,788**	**19,451**	**2.0**

(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in milk are presented in Table 26. Of the 19,451 milk samples analysed, 86 (0.44%) were non-compliant (90 non-compliant results). The non-compliant samples were reported by 11 Member States.

Table 26: Number of targeted samples analysed, non-compliant samples and non-compliant results in milk

Substance group[(a)]	Samples analysed[(b)]	% Samples analysed	Non-compliant samples[(c)]	% Non-compliant samples	Non-compliant results[(d)]
A	7,737	39.8	2	0.03	5
A1	NA	NA	NA	NA	NA
A2	23	0.1	0	0	0
A3	111	0.6	0	0	0
A4	NA	NA	NA	NA	NA
A5	178	0.9	0	0	0
A6	7,469	38.4	2	0.03	5
B	17,454	89.7	84	0.48	85
B1	10,634	54.7	19	0.18	20
B2	8,696	44.7	54	0.62	54
B2a	6,635	34.1	11	0.17	11
B2b	1,272	6.5	0	0	0
B2c	1,778	9.1	0	0	0
B2d	82	0.4	0	0	0
B2e	4,474	23.0	43	0.96	43
B2f	489	2.5	0	0	0
B3	3,954	20.3	11	0.28	11
B3a	1,345	6.9	0	0	0
B3b	935	4.8	0	0	0
B3c	471	2.4	0	0	0
B3d	1,450	7.5	11	0.76	11
B3e	NA	NA	NA	NA	NA
B3f	225	1.2	0	0	0
Total	**19,451**	**100**	**86**	**0.44**	**90**

NA: not applicable.
(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

In the group A, there were two non-compliant samples (five non-compliant results) in group A6 reported by one Member State (one result each for AHD, AMOZ, AOZ, chloramphenicol and SEM).

For antibacterials (B1), seven Member States reported a total of 19 non-compliant samples (20 non-compliant results).

In the group B2, there were 54 non-compliant samples and results: 11 for anthelmintics (B2a) and 43 for NSAIDs (B2e).

In the group B3, there were 11 non-compliant samples and results for mycotoxins (B3d) (all aflatoxin M_1).

More information on the specific substances identified and the number of non-compliant results reported by each Member State is given in Appendix A.

3.9. Eggs

The number of samples to be taken each year must be at least equal to one per 1,000 t of annual egg production, with a minimum of 200 samples. The minimum requirements for the number of samples to be taken were fulfilled in 2017 for the EU overall (Table 27) and by the majority of Member States. France did not analyse at least one sample/1,000 t of production. The production volume and the number of samples analysed in each Member State are given in Table 28.

Table 27: Production of eggs and number of targeted samples over 2007–2017

Year	Production (t)	Targeted samples	% Samples tested/ 1,000 t[a]	Minimum 96/23/EC
2007 (EU 27)	6,114,369	13,685	2.3	
2008 (EU 27)	6,021,476	10,859	1.8	
2009 (EU 27)	6,137,732	13,031	2.2	
2010 (EU 27)	6,101,039	12,715	2.1	
2011 (EU 27)	6,136,691	12,248	2.0	
2012 (EU 27)	6,070,174	12,596	2.1	1/1,000 t
2013 (EU 28)	6,070,334	13,323	2.2	
2014 (EU 28)	6,271,679	13,391	2.2	
2015 (EU 28)	6,255,410	13,158	2.1	
2016 (MS 27[b])	5,424,380	12,700	2.4	
2016 (EU 28)	*6,312,403*			
2017 (EU 28)	6,416,551	9,944	1.6[c]	

(a): related to the production of the previous year;
(b): data from France were not available for inclusion in the 2016 result report;
(c): calculated based on 2016 production data from 28 Member States (MS).

Table 28: Production volume and number of targeted samples collected for eggs

Country	Production data (t)[(a)]	Number of samples 2017	Samples tested/ 1,000 t
Austria	105,000	222	2.1
Belgium	140,325	492	3.5
Bulgaria	46,882	189	4.0
Croatia	14,850	251	16.9
Cyprus	9,088	152	16.7
The Czech Republic	71,609	152	2.1
Denmark	65,653	209	3.2
Estonia	12,874	200	15.5
Finland	72,570	201	2.8
France	888,023	165	0.2
Germany	801,060	1,131	1.4
Greece	102,601	145	1.4
Hungary	47,931	158	3.3
Ireland	46,570	287	6.2
Italy	807,408	1,024	1.3
Latvia	41,880	181	4.3
Lithuania	38,181	164	4.3
Luxembourg	1,300	105	80.8
Malta	4,843	266	54.9
The Netherlands	638,059	678	1.1
Poland	501,169	867	1.7
Portugal	106,784	126	1.2
Romania	117,371	238	2.0
Slovakia	44,679	209	4.7
Slovenia	27,388	239	8.7
Spain	782,326	821	1.1
Sweden	137,159	207	1.5
The United Kingdom	638,820	865	1.4
Total (EU 28)	**6,312,403**	**9,944**	**1.6**

(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2014, 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in eggs is presented in Table 29. Of the 9,944 egg samples analysed, 37 (0.37%) were non-compliant (38 non-compliant results). The non-compliant samples were reported by 11 Member States.

Table 29: Number of targeted samples analysed, non-compliant samples and non-compliant results in eggs

Substance group[(a)]	Samples analysed[(b)]	% Samples analysed	Non-compliant samples[(c)]	% Non-compliant samples	Non-compliant results[(d)]
A	3,785	38.1	0	0	0
A1	NA	NA	NA	NA	NA
A2	NA	NA	NA	NA	NA
A3	NA	NA	NA	NA	NA
A4	NA	NA	NA	NA	NA
A5	NA	NA	NA	NA	NA
A6	3,458	34.8	0	0	0
B	9,095	91.5	37	0.41	38
B1	4,758	47.8	12	0.25	12
B2	5,012	50.4	19	0.38	19
B2a	596	6.0	0	0	0
B2b	4,073	41.0	19	0.47	19
B2c	554	5.6	0	0	0
B2d	196	2.0	0	0	0
B2e	NA	NA	NA	NA	NA
B2f	629	6.3	0	0	0
B3	2,562	25.8	6	0.23	7
B3a	1,647	16.6	5	0.30	6
B3b	734	7.4	0	0	0
B3c	100	1.0	0	0	0
B3d	4	0.04	0	0	0
B3e	NA	NA	NA	NA	NA
B3f	981	9.9	1	0.10	1
Total	**9,944**	**100**	**37**	**0.37**	**38**

NA: not applicable.
(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

Directive 96/23/EC, Annex II requires Member States to monitor in the group A only, the residues of prohibited substances (A6). In this group A6, no non-compliant samples were reported in 2017.

For antibacterials (B1), 12 non-compliant samples (and results) were reported by five Member States: doxycycline (n = 5), enrofloxacin (n = 2), sulfadiazine (n = 3), flumequine (n = 1) and trimethoprim (n = 1)

In the group B2, 19 non-compliant samples were found (19 non-compliant results) for anticoccidials (B2b). The most frequently reported substance was lasalocid (n = 6).

In the group B3, 5 non-compliant samples (6 non-compliant results) were reported for organochlorine compounds (B3a) by three Member States while one non-compliant result was reported for 'others' (B3f) and relates to fipronil.

More details on the specific substances identified and the number of non-compliant results reported by each Member State are given in Appendix A.

3.10. Rabbit meat

The number of samples to be taken each year must be equal to 10 per 300 t of annual production (dead weight) for the first 3,000 t, plus one sample for each additional 300 t. The rate between the total targeted samples reported and the minimum number of samples that should be collected for the reported production, as specified in Commission Decision 97/747/EC, was calculated.

Table 30: Production of rabbit meat and number of targeted samples over 2007–2017

Year	Production (t)	Targeted samples
2007 (EU 27)	189,932	4,480
2008 (EU 27)	187,389	3,625
2009 (EU 27)	199,655	3,691
2010 (EU 27)	172,353	3,885
2011 (EU 27)	176,315	3,737
2012 (EU 27)	173,626	3,471
2013 (EU 28)	164,664	2,796
2014 (EU 28)	156,204	2,762
2015 (EU 28)	162,216	2,509
2016 (MS 27[(a)])	117,239	1,772
2016 (EU 28)	*159,527*	
2017 (EU 28)	148,112	1,717

(a): data from France were not available for inclusion in the 2016 results report.

To calculate the total number of samples that should be collected, two different equations were applied depending on the production volume, as follows:

a) For countries with production above 3,000 t

Total samples required = {(10/300 × 3,000) + [(Production reported in tonnes −3,000) × (1/300)]}

b) For countries with production below 3,000 t

Total samples required = Production reported in t × (10/300)

Countries with a rate "samples tested/required" equal to 1.0 or above completely fulfilled the requirements for sampling frequency. Countries with a value below 1.0 did not.

Production volume and number of targeted samples broken down by Member States are presented in Table 31. France, Greece and Portugal did not achieve the minimum sampling frequency requirement in 2017.

Table 31: Production volume and number of targeted samples collected for rabbit meat

Country	Production data (t)[(a)]	Number of samples 2017	Samples tested/ required
Austria	0	NA	NA
Belgium	4,215	110	1.1
Bulgaria	14	8	17.1
Croatia	4	1	7.5
Cyprus	134	45	10.1
The Czech Republic	920	40	1.3
Denmark	0	NA	NA
Estonia	0	NA	NA
Finland	0	NA	NA
France	42,288	117	0.5
Germany	583	33	1.7
Greece	1,889	58	0.9
Hungary	11,024	205	1.6
Ireland	0	NA	NA
Italy	32,261	340	1.7
Latvia	57	12	6.3
Lithuania	67	7	3.1
Luxembourg	8	9	33.8
Malta	89	18	6.1
The Netherlands	36	14	11.7
Poland	4,740	133	1.3
Portugal	7,085	62	0.6
Romania	2	19	285.0
Slovakia	11	56	152.7
Slovenia	19	19	30.0
Spain	54,081	411	1.5
Sweden	0	NA	NA
The United Kingdom	0	NA	NA
Total (EU 28)	**159,527**	**1,717**	**NA**

NA: not applicable.
(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2013, 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in rabbit meat are presented in Table 32. Of the 1,717, samples analysed for rabbits, 3 (0.17%) were non-compliant (3 non-compliant results). The non-compliant samples were reported by three Member States.

Table 32: Number of targeted samples analysed, non-compliant samples and non-compliant results in rabbit meat

Substance group[(a)]	Samples analysed[(b)]	% Samples analysed	Non-compliant samples[(c)]	% Non-compliant samples	Non-compliant results[(d)]
A	587	34.2	0	0	0
A1	43	2.5	0	0	0
A2	12	0.7	0	0	0
A3	51	3.0	0	0	0
A4	27	1.6	0	0	0
A5	40	2.4	0	0	0
A6	321	18.9	0	0	0
B	1,246	72.6	3	0.24	3
B1	455	26.5	2	0.44	2
B2	511	29.8	1	0.20	1
B2a	118	6.9	0	0	0
B2b	153	9.0	1	0.65	1
B2c	60	3.5	0	0	0
B2d	NA	NA	NA	NA	NA
B2e	65	3.8	0	0	0
B2f	67	3.9	0	0	0
B3	194	11.3	0	0	0
B3a	58	3.4	0	0	0
B3b	21	1.2	0	0	0
B3c	68	4.0	0	0	0
B3d	14	0.8	0	0	0
B3e	NA	NA	NA	NA	NA
B3f	15	0.9	0	0	0
Total	**1,717**	**100**	**3**	**0.17**	**3**

NA: not applicable.
(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

In group A, there were no non-compliant samples reported in group A6.

In group B, there were two non-compliant samples and results for antibacterials (B1); the substances found were sulfadimethoxine (n = 1) and Tulathromycin (n = 1). For groups B2 and B3, only one non-compliant sample and result was reported for anticoccidials (B2b).

More details on the specific substances identified and the number of non-compliant results reported by each Member State are given in Appendix A.

3.11. Farmed game

European Commission Decision 97/747/EC requires that the number of samples to be taken each year in the Member States to be at least 100. The minimum number of samples was set as a provisional rule to be reviewed in light of the information provided by the Member States on their production figures. For farmed game, a total of 1,635 targeted samples were collected in 2017 in the EU (Tables 33 and 34).

Table 33: Production of farmed game and number of targeted samples over 2007–2017

Year	Production (t)	Targeted samples
2007 (EU 27)	40,895	2,286
2008 (EU 27)	18,485	1,959
2009 (EU 27)	84,482	1,975
2010 (EU 27)	25,449	2,157
2011 (EU 27)	24,991	2,575
2012 (EU 27)	25,348	2,334
2013 (EU 28)	26,356	2,072
2014 (EU 28)	24,379	1,918
2015 (EU 28)	22,044	1,785
2016 (MS 27[(a)])	12,976	1,607
2016 (EU 28)	*46,623*	
2017 (EU 28)	229,431	1,635

(a): data from France were not available for inclusion in the 2016 results report.

Table 34: Production volume and number of targeted samples collected for farmed game

Country	Production data (t)[(a)]	Number of samples 2017
Austria	354	120
Belgium	117	97
Bulgaria	0	NA
Croatia	10	41
Cyprus	7	0
The Czech Republic	196	105
Denmark	37	18
Estonia	0	NA
Finland	1,589	105
France	8,727	25
Germany	27,123	90
Greece	51	24
Hungary	258	15
Ireland	42	171
Italy	2,394	132
Latvia	14	117
Lithuania	9	0
Luxembourg	0	NA
Malta	0	NA
The Netherlands	74	9
Poland	25	58
Portugal	0	NA
Romania	35	47
Slovakia	0	92
Slovenia	2	13
Spain	32	8
Sweden	1,857	173
The United Kingdom	3,670	175
Total (EU 28)	**46,623**	**1,635**

NA: not applicable.
(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2014, 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in farmed game are presented in Table 35. Of the 1,635 samples analysed for farmed game, 80 (4.89%) were non-compliant (83 non-compliant results). The non-compliant samples were reported by seven Member States.

Table 35: Number of targeted samples analysed, non-compliant samples and non-compliant results in farmed game

Substance group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples	Non-compliant results[d]
A	358	21.9	0	0	0
A1	39	2.4	0	0	0
A2	14	0.9	0	0	0
A3	37	2.3	0	0	0
A4	31	1.9	0	0	0
A5	80	4.9	0	0	0
A6	202	12.4	0	0	0
B	1,386	84.8	80	5.77	83
B1	274	16.8	0	0	0
B2	505	30.9	0	0	0
B2a	252	15.4	0	0	0
B2b	143	8.7	0	0	0
B2c	107	6.5	0	0	0
B2d	8	0.5	0	0	0
B2e	62	3.8	0	0	0
B2f	36	2.2	0	0	0
B3	670	41.0	80	11.94	83
B3a	125	7.6	1	0.80	1
B3b	60	3.7	0	0	0
B3c	542	33.1	79	14.58	82
B3d	10	0.6	0	0	0
B3e	NA	NA	NA	NA	NA
B3f	23	1.4	0	0	0
Total	**1,635**	**100**	**80**	**4.89**	**83**

NA: not applicable.
(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

No non-compliant samples were reported in group A, B1 and group B2.

In the group B3, non-compliant samples were reported for organochlorine compounds (B3a) and chemical elements (B3c). For subgroup B3a, one non-compliant sample and result was reported, relating to DDE. For subgroup B3c, 79 non-compliant samples (82 results) were reported for heavy metals as follows, cadmium (n = 56), lead (n = 15), arsenic (n = 1), copper (n = 4) and mercury (n = 6).

More details on the specific substances identified and the number of non-compliant results reported by each Member State are given in Appendix A.

3.12. Wild game

European Commission Decision 97/747/EC requires that the number of samples to be taken each year in the Member States to be at least 100 samples. Samples must be taken to analyse residues of chemical elements. For wild game, a total of 1,760 targeted samples were collected in 2017 in the EU (Tables 36 and 37).

Table 36: Production of wild game and number of targeted samples over 2007–2017

Year	Production (t)	Targeted samples
2007 (EU 27)	270,704	2,360
2008 (EU 27)	316,541	2,443
2009 (EU 27)	252,328	2,488
2010 (EU 27)	147,097	2,395
2011 (EU 27)	263,860	2,674
2012 (EU 27)	209,607	2,600
2013 (EU 28)	204,013	2,694
2014 (EU 28)	180,307	2,601
2015 (EU 28)	201,794	2,480
2016 (MS 27[(a)])	172,090	2,468
2016 (EU 28)	*3,394,896*	
2017 (EU 28)	469,359	1,760

(a): data from France were not available for inclusion in the 2016 results report.

Table 37: Production volume and number of targeted samples collected for wild game

Country	Production data (t)[(a)]	Number of samples 2017
Austria	9,155	189
Belgium	2,081	142
Bulgaria	64	91
Croatia	10	0
Cyprus	0	NA
The Czech Republic	11,330	0
Denmark	448	15
Estonia	978	102
Finland	43	0
France	32,000	1
Germany	3,277,555	80
Greece	3	30
Hungary	7,728	161
Ireland	375	0
Italy	478	91
Latvia	102	0
Lithuania	89	6
Luxembourg	360	100
Malta	0	NA
The Netherlands	769	100
Poland	28,808	235
Portugal	2,166	0
Romania	129	86
Slovakia	7,188	111
Slovenia	3,002	102
Spain	9,485	118
Sweden	0	NA
The United Kingdom	550	0
Total (EU 28)	**3,394,896**	**1,760**

NA: not applicable.
(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2012, 2013, 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in wild game are presented in Table 38. Of the 1,760 samples analysed for wild game, 96 (5.45%) were non-compliant (114 non-compliant results). The non-compliant samples were reported by seven Member States.

Table 38: Number of targeted samples analysed, non-compliant samples and non-compliant results in wild game

Substance group[(a)]	Samples analysed[(b)]	% Samples analysed	Non-compliant samples[(c)]	% Non-compliant samples	Non-compliant results[(d)]
A	34	1.9	0	0	0
A1	2	0.1	0	0	0
A2	1	0.1	0	0	0
A3	11	0.6	0	0	0
A4	1	0.1	0	0	0
A5	8	0.5	0	0	0
A6	11	0.6	0	0	0
B	1,730	98.3	96	5.55	114
B1	26	1.5	0	0	0
B2	167	9.5	0	0	0
B2a	102	5.80	0	0	0
B2b	14	0.8	0	0	0
B2c	35	2.0	0	0	0
B2d	NA	NA	NA	NA	NA
B2e	3	0.2	0	0	0
B2f	22	1.2	0	0	0
B3	1,595	90.6	96	6.02	114
B3a	141	8.0	18	12.77	25
B3b	43	2.4	0	0	0
B3c	1,394	79.2	87	6.24	89
B3d	NA	NA	NA	NA	NA
B3e	NA	NA	NA	NA	NA
B3f	139	7.9	0	0	0
Total	**1,760**	**100**	**96**	**5.45**	**114**

NA: not applicable.
(a): as detailed in Appendix E;
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

The vast majority of the non-compliant results (n = 89) were reported for metals (B3c) (37 for lead, 39 for mercury and 13 for copper). The only other non-compliant samples (n = 25) were reported for organochlorine compounds (B3a), reported by one Member State.

3.13. Honey

The number of samples to be taken must be at least 10 per 300 t of annual production for the first 3,000 t, plus one sample for each additional 300 t. In order to check the fulfilment of this requirement the same equations were applied as described in Section 3.10.

Where the rate between the total targeted samples reported and the number of samples to be collected for the reported production is equal to 1.0 or higher, Member States completely fulfilled the requirements for sampling frequency. Member States with a value below 1.0 did not.

In 2017, 3,619 targeted samples were collected for honey in the EU (Table 39). Production volume and number of targeted samples broken down by Member State are presented in Table 40. Bulgaria, Cyprus, the Czech Republic, France, Latvia, Lithuania and Portugal did not achieve the minimum sampling frequency requirement in 2017.

Table 39: Production of honey and number of targeted samples over 2007–2017

Year	Production (t)	Targeted samples
2007 (EU 27)	188,945	5,850
2008 (EU 27)	158,694	5,257
2009 (EU 27)	162,213	4,826
2010 (EU 27)	191,501	4,720
2011 (EU 27)	215,141	4,684
2012 (EU 27)	215,101	4,820
2013 (EU 28)	205,466	4,612
2014 (EU 28)	200,808	4,294
2015 (EU 28)	193,347	4,203
2016 (MS 27[(a)])	222,048	3,545
2016 (EU 28)	*236,720*	
2017 (EU 28)	216,244	3,619

(a): data from France were not available for inclusion in the 2016 results report.

Table 40: Production volume and number of targeted samples collected for honey

Country	Production data (t)[(a)]	Number of samples 2017	Samples tested/ required
Austria	4,300	184	1.8
Belgium	1,500	482	9.6
Bulgaria	4,306	92	0.9
Croatia	2,700	99	1.1
Cyprus	246	34	0.3
The Czech Republic	8,521	78	0.7
Denmark	1,200	48	1.2
Estonia	1,117	38	1.0
Finland	1,700	55	1.0
France	14,672	116	0.8
Germany	23,399	179	1.1
Greece	15,500	183	1.3
Hungary	35,095	200	1.0
Ireland	84	82	29.3
Italy	23,000	311	1.9
Latvia	2,091	61	0.9
Lithuania	3,196	55	0.5
Luxembourg	120	30	7.5
Malta	15	12	24.0
The Netherlands	1,678	64	1.1
Poland	21,469	387	2.4
Portugal	12,623	27	0.2
Romania	13,324	138	1.0
Slovakia	4,296	174	1.7
Slovenia	2,047	72	1.1
Spain	31,709	209	1.1
Sweden	3,500	109	1.1
The United Kingdom	3,312	100	1.0
Totals (EU 28)	**236,720**	**3,619**	**NA**

NA: not applicable.
(a): The production data was used for the preparation of the 2017 Residue Control Plan and may pertain to the years 2014, 2015 or 2016.

The distribution of samples analysed, non-compliant samples and non-compliant results in honey are presented in Table 41. Of the 3,619 samples analysed for honey, 35 (0.97%) were non-compliant (36 non-compliant results). The non-compliant samples were reported by 11 Member States.

Table 41: Number of targeted samples analysed, non-compliant samples and non-compliant results in honey

Substance group[(a)]	Samples analysed[(b)]	% Samples analysed	Non-compliant samples[(c)]	% Non-compliant samples	Non-compliant results[(d)]
A	1,125	31.1	2	0.18	2
A1	NA	NA	NA	NA	NA
A2	NA	NA	NA	NA	NA
A3	1	0.03	0	0	0
A4	NA	NA	NA	NA	NA
A5	344	9.5	0	0	0
A6	758	21.0	2	0.26	2
B	3,348	92.5	33	0.99	34
B1	1,808	50.0	15	0.83	16
B2	1,218	33.7	0	0	0
B2a	219	6.1	0	0	0
B2b	124	3.4	0	0	0
B2c	922	25.5	0	0	0
B2d	NA	NA	NA	NA	NA
B2e	NA	NA	NA	NA	NA
B2f	755	20.9	0	0	0
B3	1,589	43.9	18	1.13	18
B3a	849	23.5	1	0.12	1
B3b	908	25.1	1	0.11	1
B3c	385	10.6	13	3.38	13
B3d	1	0.03	0	0	0
B3e	NA	NA	NA	NA	NA
B3f	736	20.3	3	0.41	3
Total	**3,619**	**100**	**35**	**0.97**	**36**

NA: not applicable.
(a): as detailed in Appendix E.
(b): number of samples analysed for one or more substances of the respective group;
(c): number of non-compliant samples for one or more substances in the respective group;
(d): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

For antibacterials (B1), 15 non-compliant samples (16 non-compliant results) were reported. Other non-compliant results were reported for the group A6[15], (AOZ (n = 1) and SEM (n = 1)), for anthelmintics (B3a) (n=1), for organophosphorus compounds (B3b) (n = 1), for chemical elements (B3c) (n = 13) (all for cadmium) and under 'other' (B3f) (n = 3).

More details on the specific substances identified and the number of non-compliant results reported by each Member State are given in Appendix A.

[15] For honey, sampling for Group A substances is not a requirement of Council Directive 96/23/EC and Commission Decision 97/474/EC.

3.14. Suspect, import and other samples

In addition to the targeted samples collected in conformity with the specification of the NRCP for 2017, Member States also reported results on samples collected through sampling strategies other than targeted. According to Directive 96/23/EC in case of infringements of maximum residue limits when animals or animal products are placed on the market, intensified checks on the animals and products from the farm and/or establishment in question must be carried out by the competent authorities. Also, in the event of possession or presence of prohibited substances at any point during manufacture, storage, distribution or sale through the food and feed production chain, or suspicion or evidence of illegal treatment or non-compliance with the withdrawal period for an authorised medicinal veterinary product the competent authorities have to apply special measures including repeated sampling in the farm or establishment concerned. Thus, these samples are not representative for the assessment of the residue situation in the Member States and therefore they are reported separately in the residue database as 'suspect samples', as part of the follow-up measure taken in case of infringements. A general overview of the follow-up actions taken by Member States in 2017, is presented in Appendix F.

In 2017, 55,088 suspect samples were reported of which 301 (0.55%) were non-compliant. It is to note that the number of non-compliant results from suspect sampling reported by a Member State does not accurately reflect the residue situation in that Member State. The suspect samples are taken as follow-up of non-compliance of targeted samples or evidence of possession and use of prohibited substances. In addition, the sampling procedure applied in case of suspicion might be different among Member States. For example, in Belgium, at slaughterhouse each injection site must be sampled together with a sample of muscle which are then analysed by a multi-residue method. This approach results in a higher probability that a suspect sample is found non-compliant for more than one substance. An overview on the number of suspect samples analysed for the different animal species/product categories and the frequency of non-compliant samples is presented in Table 42. Further details on the substances identified and Member States which reported non-compliant results are given in Appendix B.

Apart from the data submitted in accordance to NRCPs, Member States reported a certain amount of results on samples checked at import (n = 16,542). As the control of samples at import is more linked to the third country monitoring than to residue monitoring in the EU, Member States report those results to the EC using the TRACES and RASFF tools. Therefore, those data are of limited value and are not representative of the overall situation of residue control at import. An overview on the number of import samples analysed for the different animal species/product categories and the frequency of non-compliant samples is presented in Table 42. Further details on the substances identified and Member States which reported non-compliant results are given in Appendix C.

In total, 276,957 samples were collected in the framework of other monitoring programmes developed under the national legislation. An overview on the number of 'other' samples analysed for the different animal species/product categories and the frequency of non-compliant samples is presented in Table 42. Further details on the substances identified and Member States which reported non-compliant results are given in Appendix D.

Table 42: Number of suspect, import and other samples analysed and frequency of non-compliant samples and in all species and product categories

Group	Suspect samples total	Suspect samples non-compliant	Import samples total	Import samples non-compliant	Other samples total	Other samples non-compliant
Aquaculture	419	14	10,553	13	1,292	3
Bovines	46877	169	1,378	0	27,060	6
Farmed game	32	0	67	0	22	0
Wild game	14	1	27	0	28	0
Sheep/goats	435	16	398	1	4,514	1
Horses	196	2	302	0	488	0
Pigs	2,917	33	96	0	221,830	0
Poultry	1,316	19	1,887	2	6,192	0
Rabbits	20	1	117	0	427	3
Milk	1,848	11	30	0	11,702	7
Honey	139	12	1,617	1	1,955	11
Eggs	875	23	70	0	1,447	2
Total	**55,088**	**301**	**16,542**	**17**	**276,957**	**33**
Percentage non-compliant samples		**0.55**		**0.10**		**0.01**

4. Conclusions

- In 2017, 28 European Union (EU) Member States reported in the framework of the residue monitoring the results for 708,880 samples. A total of 360,293 targeted samples and 55,088 suspect samples were reported under Council Directive 96/23/EC. Additionally, 276,957 samples collected in the framework of other programmes developed under the national legislation and 16,542 samples checked at import, were reported.
- The majority of Member States fulfilled the requirements for sampling frequency laid down in Council Directive 96/23/EC and in Commission Decision 97/747/EC.
- Overall, there were 1,273 or 0.35% of non-compliant samples out of the 360,293 targeted samples in 2017.
- No non-compliant samples were reported for stilbenes and derivatives (A1).
- For antithyroid agents (A2), there were 0.42% non-compliant samples, all for thiouracil, most likely due to feeding diets rich in cruciferous plants.
- In the group of steroids (A3), non-compliant samples (all for anabolic steroids) were found in bovines (0.28%), pigs (0.11%) and sheep and goats (5.77 %). For corticosteroids, non-compliant results for authorised substances were reported under 'other pharmacologically active substances' (B2f).
- In the group of resorcylic acid lactones (A4), 0.17% of the samples were non-compliant for zearalanone and derivatives; the non-compliant samples were found in bovines (0.29%), sheep and goats (1.23%) and horses (0.97%).
- For beta-agonists (A5), there were 0.02% non-compliant samples in total, all reported for bovines.
- Prohibited substances (A6) were found in 0.03% of samples. Substances identified were chloramphenicol (n = 8), nitroimidazoles (n = 2) and nitrofurans (n = 18).
- For antibacterials (B1), 0.26% of the samples analysed under the Directive 96/23/EC monitoring were non-compliant. The highest frequency of non-compliant samples for antibacterials was found in honey (0.83%).
- In group B2 (other veterinary drugs), the highest proportion of non-compliant samples was found for NSAIDs (B2e) (0.27%).
- For non-steroidal anti-inflammatory drugs (NSAIDs) (B2e), the non-compliant samples were reported across the different species as follows; 0.05% for bovines, 0.06% for sheep and goats, 0.66% for horses, 0.06% for pigs and 0.96% for milk.
- Instances of non-compliance for anthelmintics (B2a) were reported in bovines (0.10%), pigs (0.04%), sheep and goats (0.89%), milk (0.17%) and poultry (0.03%).
- For anticoccidials (B2b), 0.15% of the samples analysed were non-compliant and were reported across the different species as follows; 0.85% in horses, 0.01% in pigs, 0.21% in poultry, 0.65% in rabbits and 0.47% in eggs.
- Since 2009, an important decrease has been observed in the frequency of non-compliant samples for anticoccidials (B2b) in poultry. This decrease is most likely the result of the awareness and the measures that followed the implementation of the Commission Directive 2009/8/EC setting up maximum levels of unavoidable carry-over of coccidiostats in non-target feed.
- No non-compliant samples were reported for pyrethroids (B2c).
- For sedatives (B2d), one non-compliant sample was reported in pigs only (0.02%).
- Non-compliant samples were reported for 'other pharmacologically active substances' (B2f), in bovines (0.19%), pigs (0.03%) and poultry (0.05%).

- In the group B3 (other substances and environmental contaminants), the chemical elements (B3c) had the highest overall percentage of non-compliant samples (4.69%), with cadmium, lead, mercury and copper being most frequently identified.
- Non-compliant samples were reported for organochlorine compounds (B3a) and organophosphorus compounds (B3b); 0.22% and 0.01%, respectively.
- For mycotoxins (B3d), there were non-compliant samples reported for bovines (0.24%), pigs (0.43%), sheep and goats (0.76%), and milk (0.76%); with those identified being zearalenone and derivatives, ochratoxin A, aflatoxin B_1 and aflatoxin M_1.
- For dyes (B3e), non-compliant samples were reported for aquaculture (1.79%). The substances found were malachite green, leuco-malachite green, crystal violet and leuco-crystal violet.
- For 'other substances' (B3f), non-compliant samples were reported for honey (0.41%), eggs (0.10%) and poultry (0.14%). The substances identified were fipronil, thiacloprid, captan/folpet and boscalid.
- In 2017, the overall frequency of non-compliant samples (0.35%) was comparable to the previous 10 years (0.25%–0.37%).

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Abbreviations

AMOZ	5-methylmorpholino-3-amino-2-oxazolidone
AOZ	3-amino-2-oxazolidone
DG SANTÉ	Directorate General for Health and Food Safety
EC	European Commission
EFSA	European Food Safety Authority
MRL	Maximum residue limit
MRPL	Minimum Required Performance Limit
NRCPs	National Residue Control Plans
NSAIDs	Non-steroidal anti-inflammatory drugs
RASFF	Rapid Alert System for Food and Feed
SEM	Semicarbazide
TRACES	Trade Control and Expert System

Appendix A – List of non-compliant results: targeted sampling

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
Aquaculture	A6	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	Greece	82	1	1.2
		Sub-total for A6	**1**		**1**	
	B1	Amoxycillin	Germany	8	1	12.5
		Sub-total for B1	**1**		**1**	
	B3c	Total mercury	Spain	72	1	1.4
		Sub-total for B3c	**1**		**1**	
	B3e	Cristal Violet	Slovakia	70	1	1.4
		Cristal Violet-Leuco	The Netherlands	31	1	3.2
		Leucomalachite Green	Cyprus	18	1	5.6
			The Czech Republic	100	14	14.0
			Spain	34	1	2.9
		Malachite Green	The Czech Republic	100	2	2.0
			Spain	37	1	2.7
		Sum of malachite green and leucomalachite green	Poland	197	9	4.6
		Sub-total for B3e	**6**		**30**	
		Total for Aquaculture	**8**		**33**	
Bovines	A2	Thiouracil	Ireland	243	14	5.8
			Italy	312	1	0.3
			The Netherlands	416	15	3.6
			Romania	116	1	0.9
			Spain	599	1	0.2
		Sub-total for A2	**5**		**32**	
	A3	17-alpha-Boldenone Glucuronide	The Netherlands	1,585	1	0.1
		17-Alpha-Methyl-5-Beta-Androstan-3-Alpha-17-Beta-Diol	The Czech Republic	71	1	1.4
		17(a)1-Testosteron	Austria	311	1	0.3
		Boldenone	Austria	311	1	0.3
			The United Kingdom	2,020	1	0.05
		Boldenone-Alpha	Austria	311	1	0.3
			The United Kingdom	2,020	2	0.1
		Epinandrolone (19-	Poland	243	5	2.1

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		Norepitestosterone)	The United Kingdom	1,926	33	1.7
		Estradiol-17-Alpha	The United Kingdom	129	2	1.6
		Nandrolone	The United Kingdom	1,926	10	0.5
		Testosterone-17-Alpha	The United Kingdom	129	3	2.3
		Testosterone-17-Beta	Germany	150	5	3.3
			The United Kingdom	676	2	0.3
		Sub-total for A3	**6**		**68**	
	A4	Alpha-Zearalanol (Zeranol)	Germany	538	2	0.4
			The United Kingdom	467	11	2.4
		Beta Zearalanol (Taleranol)	Denmark	154	2	1.3
			Germany	531	4	0.8
			The United Kingdom	467	11	2.4
		Zearalanol	Denmark	154	1	0.6
		Zearalanone	Spain	268	1	0.4
		Zearalenol alpha	Romania	39	4	10.3
		Zearalenol beta	Romania	39	5	12.8
		Sub-total for A4	**5**		**41**	
	A5	Clenbuterol	The Netherlands	1,488	1	0.1
			Portugal	241	3	1.2
		Sotalol hydrochloride	Ireland	475	1	0.2
		Zilpaterol	Portugal	210	1	0.5
		Sub-total for A5	**3**		**6**	
	A6	Chloramphenicol	Poland	795	1	0.1
		Sub-total for A6	**1**		**1**	
	B1	Benzylpenicillin (Penicillin G)	Germany	1,472	10	0.7
			Poland	1,631	1	0.1
		Ceftiofur	Portugal	178	1	0.6
		Chlortetracyclin	Portugal	178	1	0.6
			Spain	1,273	1	0.1
			The United Kingdom	1,305	1	0.1
		Cinoxacin	Portugal	178	1	0.6
		Ciprofloxacin	Portugal	178	1	0.6
		Danofloxacin	Portugal	178	1	0.6
		Dihydrostreptomycin	Germany	1,022	2	0.2
			Greece	100	1	1.0
			Poland	1,631	1	0.1

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
			The United Kingdom	471	1	0.2
		Doxycycline	Belgium	551	1	0.2
			Portugal	178	1	0.6
			Romania	1	1	100.0
		Florfenicol	The United Kingdom	97	1	1.000
		Florfenicol amine	Germany	627	1	0.2
		Gamithromycin	The United Kingdom	1,305	2	0.2
		Gentamicin	Croatia	17	1	5.9
			Germany	971	2	0.2
			The Netherlands	1,882	1	0.1
		Marbofloxacin	Germany	2,711	2	0.1
			Poland	824	1	0.1
		Na-penicillin-G	Hungary	50	1	2.0
		Nalidixic acid	Portugal	178	1	0.6
		Neomycin	France	1,202	1	0.1
			The Netherlands	1,882	1	0.1
			Poland	824	1	0.1
		Oxolinic Acid	Portugal	178	1	0.6
		Oxytetracycline	Hungary	50	1	2.0
			Portugal	178	1	0.6
			Spain	1,029	2	0.2
			The United Kingdom	1,305	2	0.2
		Sulfachlorpyridazine	Portugal	178	1	0.6
		Sulfadiazine	Germany	2,722	1	0.0
			Portugal	178	1	0.6
			Spain	1,188	2	0.2
			The United Kingdom	1,083	1	0.1
		Sulfadimethoxine	Portugal	178	1	0.6
		Sulfadimidine	Portugal	178	1	0.6
		Sulfadoxin	Portugal	178	1	0.6
		Sulfamethizol	Portugal	178	1	0.6
		Sulfamethoxazole	Portugal	178	1	0.6
		Sulfapyridin	Portugal	178	1	0.6
		Sulfaquinoxaline	Portugal	178	1	0.6
		Sulfathiazole	Portugal	178	1	0.6
		Sulfisomidin	Portugal	178	1	0.6
		Sulfisoxazol	Portugal	178	1	0.6
		Sum of chlortetracyclin	Germany	2,275	1	0.04

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		and its 4-epimer				
		Sum of enrofloxacin and ciprofloxacin	Germany	2,662	3	0.1
			Poland	1,631	1	0.1
		Sum of Oxytetracycline and its 4-epimer	France	14	4	28.6
			Germany	2,275	3	0.1
			Italy	781	5	0.6
			Poland	1,631	1	0.1
		Sum of tetracycline and its 4-epimer	Germany	2,273	6	0.3
		Tetracycline	Portugal	178	1	0.6
		Tildipirosin	Germany	2,542	2	0.1
		Tilmicosin	The Czech Republic	3	1	33.3
			Portugal	178	1	0.6
			The United Kingdom	1,305	1	0.1
		Trimethoprim	Portugal	178	1	0.6
		Tulathromycin	Belgium	551	1	0.2
			Germany	2,647	1	0.04
			The Netherlands	6	1	16.7
			The United Kingdom	1,305	1	0.1
		Tylon (Tylosin, Tylosin A)	Portugal	178	1	0.6
		Sub-total for B1	**14**		**101**	
	B2a	Closantel	Ireland	498	1	0.2
			The United Kingdom	519	2	0.4
		Ivermectin	Ireland	498	1	0.2
			Spain	130	1	0.8
		Nitroxinil	The United Kingdom	519	1	0.2
		Sub-total for B2a	**3**		**6**	
	B2e	Flunixin	Germany	608	1	0.2
		Ibuprofen	The Czech Republic	33	1	3.0
		Meloxicam	Germany	660	1	0.2
		Sub-total for B2e	**2**		**3**	
	B2f	Dexamethasone	Germany	1,429	9	0.6
			Italy	2,507	8	0.3
			Poland	89	1	1.1
			Spain	810	4	0.5
		Metoprolol	Germany	46	1	2.2
		Prednisolone	Italy	449	1	0.2
		Sub-total for B2f	**4**		**24**	

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
	B3a	Sum of 6 PCB indicators	Germany	208	1	0.5
		TEQ dioxins and dioxin-like PCBs LB	Germany	1	1	100.0
		WHO-PCDD/F-PCB-TEQ	Germany	1	1	100.0
		Sub-total for B3a	**1**		**3**	
	B3c	Cadmium (Cd)	Croatia	33	2	6.1
			Germany	300	9	3.0
			The Netherlands	180	7	3.9
			Spain	184	5	2.7
			The United Kingdom	76	3	3.9
		Copper (Cu)	Germany	300	88	29.3
		Lead (Pb)	Germany	300	1	0.3
			Italy	96	1	1.0
			The Netherlands	180	2	1.1
		Total copper	Denmark	28	13	46.4
		Total mercury	Germany	293	14	4.8
		Sub-total for B3c	**7**		**145**	
	B3d	Zearalenone	Romania	39	5	12.8
			Spain	10	1	10.0
		Sub-total for B3d	**2**		**6**	
		Total for Bovines	**17**		**436**	
Eggs	B1	Doxycycline	Belgium	80	4	5.0
			Spain	298	1	0.3
		Enrofloxacin	Greece	56	2	3.6
		Flumequine	Latvia	140	1	0.7
		Sulfadiazine	Spain	354	3	0.8
		Trimethoprim	Croatia	160	1	0.6
		Sub-total for B1	**5**		**12**	
	B2b	Diclazuril	Croatia	23	3	13.0
			Italy	200	1	0.5
		Lasalocid	The Czech Republic	28	1	3.6
			Poland	203	2	1.0
			The United Kingdom	583	1	0.2
		Lasalocid A	Croatia	22	2	9.1
		Narasin	Slovenia	216	1	0.5
			The United Kingdom	583	1	0.2
		Robenidine	Croatia	23	1	4.3
		Salinomycin	Greece	15	1	6.7
		Salinomycin sodium	Croatia	23	1	4.3

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		Toltrazurilsulfon	Latvia	123	2	1.6
			Poland	203	2	1.0
		Sub-total for B2b	**8**		**19**	
	B3a	DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT)	Germany	166	1	0.6
			Latvia	56	1	1.8
		Sum of 6 PCB indicators	Belgium	37	1	2.7
		WHO-PCDD/F-PCB-TEQ	Germany	142	1	0.7
		WHO-PCDD/F-TEQ	Germany	143	2	1.4
		Sub-total for B3a	**3**		**6**	
	B3f	Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)	Germany	620	1	0.2
		Sub-total for B3f	**1**		**1**	
		Total for Eggs	**11**		**38**	
Game (Farmed Game)	B3a	DDE, p,p-	The United Kingdom	7	1	14.3
		Sub-total for B3a	**1**		**1**	
	B3c	Arsenic (As)	Poland	3	1	33.3
		Cadmium (Cd)	Finland	22	9	40.9
			Latvia	103	47	45.6
		Copper (Cu)	Germany	24	4	16.7
		Lead (Pb)	Croatia	18	1	5.6
			Ireland	98	3	3.1
			Latvia	103	5	4.9
			Poland	37	5	13.5
			The United Kingdom	99	1	1.0
		Total mercury	Germany	25	2	8.0
			Poland	47	4	8.5
		Sub-total for B3c	**7**		**82**	
		Total for Game (Farmed Game)	**7**		**83**	
Game (Wild Game)	B3a	DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT)	Germany	70	16	22.9
		Dieldrin	Germany	70	1	1.4
		Endrin	Germany	70	1	1.4
		Heptachlor (sum of heptachlor and the cis and trans isomers of heptachlor epoxide)	Germany	54	1	1.9
		Hexachlorobenzene	Germany	70	1	1.4
		Hexachlorocyclohexane	Germany	70	1	1.4

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		(HCH), alpha-isomer				
		Hexachlorocyclohexane (HCH), beta-isomer	Germany	70	3	4.3
		PCB-153	Germany	62	1	1.6
		Sub-total for B3a	**1**		**25**	
	B3c	Copper (Cu)	Germany	72	7	9.7
		Lead (Pb)	Austria	175	1	0.6
			Estonia	51	1	2.0
			Italy	84	3	3.6
			The Netherlands	100	29	29.0
			Slovenia	102	3	2.9
		Total copper	Denmark	10	6	60.0
		Total mercury	Denmark	10	2	20.0
			Germany	72	37	51.4
		Sub-total for B3c	**7**		**89**	
		Total for Game (Wild Game)	**7**		**114**	
Sheep/goats	A2	Thiouracil	Ireland	18	2	11.1
		Sub-total for A2	**1**		**2**	
	A3	Boldenone	Austria	33	1	3.0
			The United Kingdom	478	2	0.4
		Boldenone-Alpha	Austria	33	1	3.0
			The United Kingdom	478	41	8.6
		Epinandrolone (19-Norepitestosterone)	Austria	33	1	3.0
			The United Kingdom	478	1	0.2
		Nandrolone	The United Kingdom	478	10	2.1
		Norethandrolon	The Netherlands	7	1	14.3
		Sub-total for A3	**3**		**58**	
	A4	Alpha-Zearalanol (Zeranol)	The United Kingdom	76	1	1.3
		Beta Zearalanol (Taleranol)	The United Kingdom	76	1	1.3
		Zearalenol alpha	Romania	23	2	8.7
		Zearalenol beta	Romania	23	2	8.7
		Sub-total for A4	**2**		**6**	
	B1	Benzylpenicillin (Penicillin G)	Ireland	1	1	100.0
		Doxycycline	Germany	137	2	1.5
		Marbofloxacin	Germany	137	1	0.7
		Oxytetracycline	The	42	1	2.4

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
			Netherlands			
			Portugal	129	1	0.8
			The United Kingdom	2,127	1	0.05
		Sulfadiazine	Cyprus	20	1	5.0
			Portugal	129	4	3.1
			Spain	558	1	0.2
		Sum of Oxytetracycline and its 4-epimer	Romania	1	1	100.0
		Sub-total for B1	**8**		**14**	
	B2a	Albendazolsulfoxide	Germany	33	1	3.0
		Closantel	Ireland	333	11	3.3
			The United Kingdom	1,523	10	0.7
		Levamisole	Ireland	333	1	0.3
		Nitroxinil	The United Kingdom	1,523	1	0.1
		Oxfendazole	The United Kingdom	1,394	1	0.1
		Sum of albendazole sulphoxide, albendazole sulphone, and albendazole 2-amino sulphone, expressed as albendazole	The United Kingdom	1,522	2	0.1
		Sum of extractable residues which may be oxidised to oxfendazole sulphone	Ireland	333	1	0.3
			The United Kingdom	1,394	2	0.1
		Triclabendazole	The United Kingdom	1,523	2	0.1
		Triclabendazolsulfon	The United Kingdom	1,523	1	0.1
		Sub-total for B2a	**3**		**33**	
	B2e	Antipyrin-4-Methylamino	Austria	19	1	5.3
		Sub-total for B2e	**1**		**1**	
	B3c	Cadmium (Cd)	Germany	28	1	3.6
			Hungary	6	1	16.7
			The United Kingdom	57	2	3.5
		Copper (Cu)	Germany	28	14	50.0
		Lead (Pb)	Greece	34	2	5.9
			The United Kingdom	57	2	3.5
		Total copper	Denmark	6	3	50.0
		Total mercury	Germany	28	3	10.7
		Sub-total for B3c	**5**		**28**	
	B3d	Zearalenone	Romania	23	2	8.7

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		Sub-total for B3d	**1**		**2**	
		Total for Sheep/goats	**12**		**144**	
Honey	A6	AOZ (3-amino-2-oxazolidone)	Germany	30	1	3.3
		SEM (semicarbazide)	Finland	10	1	10.0
		Sub-total for A6	**2**		**2**	
	B1	Chlortetracyclin	Ireland	10	2	20.0
		Doxycycline	France	2	1	50.0
		Oxytetracycline	Finland	55	1	1.8
		Streptomycin	Poland	14	1	7.1
		Sulfacetamide	Poland	226	6	2.7
		Sulfachlorpyrazine	Poland	14	2	14.3
		Sum of tetracycline and its 4-epimer	France	2	1	50.0
		Tetracycline	Finland	55	1	1.8
		Tilmicosin	Italy	35	1	2.9
		Sub-total for B1	**5**		**16**	
	B3a	MCPA, MCPB and MCPA thioethyl expressed as MCPA	Belgium	1	1	100.0
		Sub-total for B3a	**1**		**1**	
	B3b	Coumaphos	Finland	27	1	3.7
		Sub-total for B3b	**1**		**1**	
	B3c	Cadmium (Cd)	Greece	37	13	35.1
		Sub-total for B3c	**1**		**13**	
	B3f	Boscalid	Belgium	240	1	0.4
		Captan/Folpet (sum)	Belgium	25	1	4.0
		Thiacloprid	Germany	92	1	1.1
		Sub-total for B3f	**2**		**3**	
		Total for Honey	**8**		**36**	
Horses	A4	Alpha-Zearalanol (Zeranol)	The United Kingdom	1	1	100.0
		Beta Zearalanol (Taleranol)	The United Kingdom	1	1	100.0
		Sub-total for A4	**1**		**2**	
	B1	Sum of enrofloxacin and ciprofloxacin	Germany	13	2	15.4
		Sub-total for B1	1		2	
	B2b	Diclazuril	Croatia	1	1	100.0
		Sub-total for B2b	**1**		**1**	
	B2e	Antipyrin-4-Methylamino	Austria	25	1	4.0
		Oxyphenbutazone Anhydrate	Ireland	141	1	0.7
		Phenylbutazone	Belgium	45	1	2.2
			Ireland	141	1	0.7

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
			The United Kingdom	36	1	2.8
		Sub-total for B2e	**4**		**5**	
	B3c	Cadmium (Cd)	Bulgaria	2	1	50.0
			Germany	5	3	60.0
			Hungary	13	7	53.8
			Italy	214	3	1.4
			Poland	140	1	0.7
			Slovenia	6	3	50.0
			The United Kingdom	1	1	100.0
		Total mercury	Germany	5	2	40.0
		Sub-total for B3c	**7**		**21**	
		Total for Horses	**11**		**31**	
Milk	A6	AHD (1-aminohydantoin)	Croatia	128	1	0.8
		AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	Croatia	128	1	0.8
		AOZ (3-amino-2-oxazolidone)	Croatia	128	1	0.8
		Chloramphenicol	Croatia	131	1	0.8
		SEM (semicarbazide)	Croatia	128	1	0.8
		Sub-total for A6	**1**		**5**	
	B1	Ampicillin	Croatia	293	1	0.3
			Italy	274	1	0.4
		Benzylpenicillin (Penicillin G)	Spain	232	1	0.4
			The United Kingdom	504	2	0.4
		Cefalonium	Italy	119	1	0.8
		Ciprofloxacin	Spain	288	1	0.3
		Cloxacillin	Croatia	293	1	0.3
			Italy	270	1	0.4
		Doxycycline	Spain	273	2	0.7
		Florfenicol	The United Kingdom	869	5	0.6
		Sum of Oxytetracycline and its 4-epimer	Poland	1,976	1	0.1
		Sum of tetracycline and its 4-epimer	Poland	1,976	1	0.1
		Trimethoprim	Austria	32	1	3.1
		Tulathromycin	Denmark	211	1	0.5
		Sub-total for B1	**7**		**20**	
	B2a	Clorsulon	The United Kingdom	396	1	0.3
		Closantel	The United Kingdom	401	1	0.2

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		Ivermectin	Ireland	366	2	0.5
			The United Kingdom	412	2	0.5
		Levamisole	Croatia	154	1	0.6
		Nitroxinil	Ireland	366	1	0.3
		Sum of extractable residues which may be oxidised to ketotriclabendazole	Ireland	366	1	0.3
		Sum of extractable residues which may be oxidised to oxfendazole sulphone	Ireland	366	1	0.3
		Triclabendazolsulfon	The United Kingdom	401	1	0.2
		Sub-total for B2a	**3**		**11**	
	B2e	Diclofen (Diclofenac)	Austria	33	1	3.0
			Croatia	151	1	0.7
			Estonia	6	1	16.7
			Germany	1,479	2	0.1
		Salicylic acid	Croatia	151	35	23.2
			Denmark	121	1	0.8
			The Netherlands	116	2	1.7
		Sub-total for B2e	**6**		**43**	
	B3d	Aflatoxin M1	Cyprus	14	7	50.0
			Greece	124	1	0.8
			Italy	387	1	0.3
			Romania	78	2	2.6
		Sub-total for B3d	**4**		**11**	
		Total for Milk	**14**		**90**	
Pigs	A3	Epinandrolone (19-Norepitestosterone)	Germany	620	1	0.2
		Nandrolone	Cyprus	11	1	9.1
			Finland	59	1	1.7
			The Netherlands	661	4	0.6
			Poland	328	4	1.2
		Sub-total for A3	**5**		**11**	
	A6	Chloramphenicol	The Czech Republic	180	1	0.6
			Germany	2,991	3	0.1
		Metronidazole	France	381	1	0.3
		SEM (semicarbazide)	Italy	404	1	0.2
		Sub-total for A6	**4**		**6**	
	B1	Amoxycillin	Germany	4,978	8	0.2

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		Ampicillin	Germany	5,277	1	0.02
		Baquiloprim	Germany	4,474	1	0.02
		Benzylpenicillin (Penicillin G)	The Czech Republic	3	1	33.3
			Germany	5,307	15	0.3
		Chlortetracyclin	Greece	128	1	0.8
		Ciprofloxacin	Italy	953	1	0.1
		Dihydrostreptomycin	Croatia	23	1	4.3
			The Netherlands	2,548	1	0.04
		Doxycycline	Germany	9,467	15	0.2
			Hungary	386	1	0.3
			Italy	984	1	0.1
			Poland	1,370	8	0.6
			Portugal	536	1	0.2
			Spain	4,521	3	0.1
		Enrofloxacin	Italy	954	1	0.1
		Florfenicol	Spain	110	1	0.9
		Gamithromycin	Germany	6,735	1	0.01
		Gentamicin	Germany	2,677	1	0.04
			Romania	240	1	0.4
		Lincomycin	Cyprus	78	3	3.8
			Spain	3,380	1	0.03
		Marbofloxacin	Germany	9,378	3	0.03
			Spain	3,492	1	0.03
		Oxytetracycline	The Netherlands	2,548	2	0.1
			Portugal	536	1	0.2
		Sulfadiazine	Hungary	461	1	0.2
			Spain	5,147	3	0.1
		Sulfadimethoxine	Germany	9,475	1	0.01
			Italy	1,201	6	0.5
		Sulfadimidine	Greece	128	2	1.6
		Sulfadoxin	Germany	9,474	1	0.01
		Sulfamethoxazole	The Czech Republic	394	2	0.5
		Sum of chlortetracyclin and its 4-epimer	Germany	7,846	7	0.1
		Sum of enrofloxacin and ciprofloxacin	Germany	9,156	16	0.2
			Poland	3,985	2	0.1
		Sum of Oxytetracycline and its 4-epimer	Denmark	2,970	2	0.1
			Germany	7,853	14	0.2
			Italy	958	1	0.1
		Sum of tetracycline and	Germany	7,843	1	0.01

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		its 4-epimer				
		Tilmicosin	Germany	9,459	1	0.01
		Trimethoprim	The Czech Republic	3	3	100.0
			Germany	8,767	2	0.02
			Hungary	365	1	0.3
		Tulathromycin	Germany	8,275	1	0.01
		Sub-total for B1	**13**		**142**	
	B2a	2-Aminoflubendazole	The Netherlands	465	1	0.2
		Levamisole	The Netherlands	466	1	0.2
		Sum of extractable residues which may be oxidised to oxfendazole sulphone	Belgium	200	1	0.5
		Sub-total for B2a	**2**		**3**	
	B2b	Monensin	Belgium	45	1	2.2
		Sub-total for B2b	**1**		**1**	
	B2d	Xylazine	Germany	1,510	1	0.1
		Sub-total for B2d	**1**		**1**	
	B2e	Antipyrin-4-Methylamino	Germany	769	1	0.1
		Diclofen (Diclofenac)	Estonia	10	1	10.0
		Ibuprofen	The United Kingdom	36	1	2.8
		Ketoprofen	Croatia	27	1	3.7
		Sub-total for B2e	**4**		**4**	
	B2f	Dexamethasone	Germany	1,552	2	0.1
		Prednisolone	Germany	2,620	1	0.04
		Sub-total for B2f	**1**		**3**	
	B3c	Cadmium (Cd)	Germany	1,385	6	0.4
			Spain	462	8	1.7
		Copper (Cu)	Germany	1,385	92	6.6
		Total mercury	Denmark	70	2	2.9
			Germany	1,327	87	6.6
		Sub-total for B3c	**3**		**195**	
	B3d	Aflatoxin B1	Italy	22	1	4.5
		Ochratoxin A	Austria	36	4	11.1
			Poland	110	1	0.9
			The United Kingdom	68	2	2.9
		Zearalenone	Romania	70	3	4.3
		Sub-total for B3d	**5**		**11**	
		Total for Pigs	**19**		**377**	
Poultry	A6	AMOZ (5-	Belgium	300	7	2.3

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		methylmorpholino-3-amino-2-oxazolidone)				
		Chloramphenicol	Cyprus	39	1	2.6
			Poland	786	1	0.1
		Metronidazole	Belgium	269	1	0.4
		SEM (semicarbazide)	Cyprus	27	1	3.7
			The Netherlands	641	2	0.3
		Sub-total for A6	**4**		**13**	
	B1	Chlortetracyclin	Bulgaria	250	4	1.6
		Doxycycline	Belgium	375	2	0.5
			Hungary	534	2	0.4
			The Netherlands	1,827	2	0.1
			Poland	2,651	3	0.1
			Spain	1,520	1	0.1
		Flumequine	The Netherlands	1,825	2	0.1
		Sulfadiazine	Spain	1,551	1	0.1
		Tetracycline	Bulgaria	250	1	0.4
		Sub-total for B1	**6**		**18**	
	B2a	Thiabendazole (sum of thiabendazole and 5-hydroxythiabendazole)	Romania	129	1	0.8
		Sub-total for B2a	**1**		**1**	
	B2b	Halofuginone	Poland	872	1	0.1
		Lasalocid	The United Kingdom	1,413	2	0.1
		Maduramicin	Greece	37	6	16.2
		Monensin	Croatia	32	1	3.1
			Portugal	84	1	1.2
			The United Kingdom	1,413	2	0.1
		Narasin	The Czech Republic	144	2	1.4
		Nicarbazin	The Czech Republic	149	1	0.7
		Salinomycin	The Czech Republic	149	8	5.4
			Poland	872	2	0.2
			The United Kingdom	1,413	2	0.1
		Toltrazurilsulfon	The Netherlands	145	1	0.7
			Poland	872	1	0.1
		Sub-total for B2b	**7**		**30**	

Category	Group	Substance	Member State	Number of samples analysed[(a)]	Non-compliant results	% non-compliant results
	B2f	Nicotine	Germany	99	2	2.0
		Sub-total for B2f	**1**		**2**	
	B3a	Mirex	Spain	152	1	0.7
		Sum of 6 PCB indicators	Germany	146	1	0.7
		Sub-total for B3a	**2**		**2**	
	B3c	Cadmium (Cd)	Germany	141	1	0.7
		Copper (Cu)	Germany	141	2	1.4
		Lead (Pb)	Ireland	80	3	3.8
		Sub-total for B3c	**2**		**6**	
	B3f	Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)	Germany	249	1	0.4
		Sub-total for B3f	**1**		**1**	
		Total for Poultry	**15**		**73**	
Rabbits	B1	Sulfadimethoxine	Italy	77	1	1.3
		Tulathromycin	Belgium	52	1	1.9
		Sub-total for B1	**2**		**2**	
	B2b	Salinomycin sodium	Cyprus	10	1	10.0
		Sub-total for B2b	**1**		**1**	
		Total for Rabbits	**3**		**3**	

(a): The number of samples analysed for the individual substances is presented only if there was at least one non-compliant sample for the substance in question.

Appendix B – List of non-compliant results: suspect sampling

Category	Group	Substance	Member State	Number of samples analysed[(a)]	Non-compliant results	% non-compliant results
Aquaculture	B1	Sulfonamides	Spain	2	2	100.0
		Sub-total for B1	**1**		**2**	
	B3e	Leucomalachite Green	Cyprus	4	3	75.0
		Sum of cristal violet and leucocristal violet	The Netherlands	36	2	5.6
		Sum of malachite green and leucomalachite green	Denmark	48	5	10.4
			Poland	28	2	7.1
		Sub-total for B3e	**4**		**12**	
		Total for Aquaculture	**5**		**14**	
Bovines	A2	Thiouracil	Belgium	411	3	0.7
			Ireland	6	1	16.7
			The Netherlands	10	5	50.0
		Sub-total for A2	**3**		**9**	
	A3	Epinandrolone (19-Norepitestosterone)	Belgium	3,649	4	0.1
		Testosterone-17-Beta	Belgium	204	1	0.5
		Sub-total for A3	**1**		**5**	
	A5	Clenbuterol	Portugal	66	4	6.1
		Clenbuterol-Hydroxymethyl (1142)	Portugal	34	1	2.9
		Sub-total for A5	**1**		**5**	
	B1	Amoxycillin	Belgium	109	1	0.9
		Ampicillin	Belgium	109	2	1.8
		Benzylpenicillin (Penicillin G)	Belgium	109	7	6.4
			Germany	19	1	5.3
			Ireland	1	1	100.0
		Ciprofloxacin	Italy	419	8	1.9
		Dihydrostreptomycin	Austria	518	3	0.6
			Belgium	109	11	10.1
			The United Kingdom	48	3	6.2
		Enrofloxacin	Italy	419	6	1.4
		Gamithromycin	The United Kingdom	48	2	4.2
		Gentamicin	Germany	17	1	5.9
			Latvia	20	1	5.0
		Marbofloxacin	Austria	518	1	0.2
			Germany	19	2	10.5

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
			Ireland	1,860	1	0.1
			Italy	397	15	3.8
		Neomycin	Belgium	109	1	0.9
		Oxytetracycline	Latvia	21	1	4.8
			The United Kingdom	48	28	58.3
		Spectinomycin	Belgium	109	2	1.8
		Spiramycin	Belgium	109	1	0.9
		Streptomycin	Austria	518	1	0.2
		Sulfadiazine	Italy	383	1	0.3
		Sulfamonomethoxine	Italy	383	1	0.3
		Sulfonamides	Belgium	109	1	0.9
		Sum of enrofloxacin and ciprofloxacin	Belgium	109	1	0.9
			Germany	18	3	16.7
		Sum of florfenicol and its metabolites measured as florfenicol-amine	Belgium	109	2	1.8
		Sum of Oxytetracycline and its 4-epimer	Belgium	109	8	7.3
			Ireland	2	2	100.0
			Italy	370	10	2.7
		Sum of tetracycline and its 4-epimer	Austria	518	1	0.2
			Belgium	109	5	4.6
			Germany	19	1	5.3
			Italy	6	1	16.7
		Tetracycline	Belgium	109	1	0.9
			Latvia	21	1	4.8
		Trimethoprim	Italy	294	1	0.3
			The United Kingdom	47	1	2.1
		Tylon (Tylosin, Tylosin A)	Belgium	109	5	4.6
			Italy	384	1	0.3
			Latvia	21	1	4.8
		Sub-total for B1	**7**		**148**	
	B2a	Abamectin	Belgium	109	1	0.9
		Doramectin	Belgium	109	1	0.9
		Ivermectin	Belgium	109	2	1.8
		Oxyclozanide	Belgium	109	1	0.9
		Sum of extractable residues which may be oxidised to oxfendazole sulphone	Belgium	109	1	0.9
		Sub-total for B2a	**1**		**6**	
	B2e	Antipyrin-4-	Austria	2	1	50.0

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		Methylamino	Germany	10	1	10.0
		Carprofen	Belgium	109	1	0.9
			Italy	269	1	0.4
		Diclofen (Diclofenac)	Belgium	109	1	0.9
		Flunixin	Belgium	109	2	1.8
			Germany	14	2	14.3
			The United Kingdom	1	1	100.0
		Meloxicam	Belgium	109	2	1.8
		Tolfenamic acid	Belgium	109	9	8.3
		Sub-total for B2e	**5**		**21**	
	B2f	Dexamethasone	Belgium	697	2	0.3
			Germany	27	3	11.1
			Italy	376	1	0.3
		Methylprednisolone	Belgium	697	1	0.1
		Prednisolone	Belgium	697	3	0.4
		Prednisone	Belgium	74	1	1.4
		Sub-total for B2f	**3**		**11**	
	B3c	Copper (Cu)	Germany	2	2	100.0
		Sub-total for B3c	**1**		**2**	
	B3d	Aflatoxin B1	Italy	3	2	66.7
		Sub-total for B3d	**1**		**2**	
		Total for Bovines	**9**		**209**	
Eggs	B3f	Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)	Germany	94	23	24.5
		Sub-total for B3f	**1**		**23**	
		Total for Eggs	**1**		**23**	
Game (Wild Game)	B3c	Total mercury	Germany	1	1	100.0
		Sub-total for B3c	**1**		**1**	
		Total for Game (Wild Game)	**1**		**1**	
Sheep/goats	B1	Ciprofloxacin	Italy	2	1	50.0
		Enrofloxacin	Italy	2	1	50.0
		Oxytetracycline	Spain	29	1	3.4
		Sulfadiazine	Spain	29	2	6.9
		Sub-total for B1	**2**		**5**	
	B3c	Copper (Cu)	Germany	12	12	100.0
		Sub-total for B3c	**1**		**12**	
		Total for Sheep/goats	**3**		**17**	
Honey	A6	AOZ (3-amino-2-	Poland	6	5	83.3

Category	Group	Substance	Member State	Number of samples analysed[a]	Non-compliant results	% non-compliant results
		oxazolidone)				
		Sub-total for A6	**1**		**5**	
	B1	Sulfacetamide	Poland	15	4	26.7
		Sulfachlorpyrazine	Poland	15	2	13.3
		Tylon (Tylosin, Tylosin A)	Italy	3	1	33.3
		Sub-total for B1	**2**		**7**	
		Total for Honey	**2**		**12**	
Horses	B2e	Phenylbutazone	Austria	2	2	100.0
		Sub-total for B2e	**1**		**2**	
		Total for Horses	**1**		**2**	
Milk	B1	Cloxacillin	Italy	66	1	1.5
		Florfenicol	The United Kingdom	6	2	33.3
		Tilmicosin	Italy	67	1	1.5
		Sub-total for B1	**2**		**4**	
	B3d	Aflatoxin M1	Cyprus	2	2	100.0
			Italy	71	5	7.0
		Sub-total for B3d	**2**		**7**	
		Total for Milk	**3**		**11**	
Pigs	A3	Boldenone	Belgium	35	1	2.9
		Sub-total for A3	**1**		**1**	
	B1	Amoxycillin	Belgium	29	4	13.8
		Benzylpenicillin (Penicillin G)	Belgium	29	2	6.9
		Doxycycline	Italy	12	1	8.3
		Sulfadiazine	Spain	23	1	4.3
		Sulfonamides	Belgium	29	3	10.3
		Sum of florfenicol and its metabolites measured as florfenicol-amine	Belgium	29	3	10.3
		Sum of Oxytetracycline and its 4-epimer	Belgium	29	1	3.4
		Sum of tetracycline and its 4-epimer	Belgium	29	1	3.4
		Tulathromycin	Belgium	29	7	24.1
		Tylon (Tylosin, Tylosin A)	Belgium	29	1	3.4
		Sub-total for B1	**3**		**24**	
	B2a	Abamectin	Belgium	29	1	3.4
		Ivermectin	Belgium	29	2	6.9
		Praziquantel	Belgium	29	1	3.4
		Sub-total for B2a	**1**		**4**	
	B2b	Maduramicin	Germany	28	6	21.4

Category	Group	Substance	Member State	Number of samples analysed[(a)]	Non-compliant results	% non-compliant results
		Toltrazurilsulfon	Spain	14	1	7.1
		Sub-total for B2b	**2**		**7**	
	B2e	Antipyrin-4-Methylamino	Belgium	15	1	6.7
		Flunixin	Belgium	29	1	3.4
		Tolfenamic acid	Belgium	29	1	3.4
		Sub-total for B2e	**1**		**3**	
	B3c	Total mercury	Germany	1	1	100.0
		Sub-total for B3c	**1**		**1**	
		Total for Pigs	**4**		**40**	
Poultry	B1	Chlortetracyclin	Bulgaria	31	1	3.2
		Sub-total for B1	**1**		**1**	
	B2b	Toltrazurilsulfon	Poland	11	1	9.1
		Sub-total for B2b	**1**		**1**	
	B3c	Copper (Cu)	Germany	16	5	31.2
		Sub-total for B3c	**1**		**5**	
	B3f	Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)	Germany	102	12	11.8
		Sub-total for B3f	**1**		**12**	
		Total for Poultry	**3**		**19**	
Rabbits	B2b	Salinomycin sodium	Cyprus	2	1	50.0
		Sub-total for B2b	**1**		**1**	
		Total for Rabbits	**1**		**1**	

(a): The number of samples analysed for the individual substances is presented only if there was at least one non-compliant sample for the substance in question.

Appendix C – List of non-compliant results: import sampling

Category	Group	Substance	Member State	Number of samples analysed[(a)]	Non-compliant results	% non-compliant results
Aquaculture	A6	AOZ (3-amino-2-oxazolidone)	Belgium	505	4	0.8
			Germany	187	1	0.5
		Chloramphenicol	Germany	192	2	1.0
		SEM (semicarbazide)	Belgium	505	1	0.2
		Sub-total for A6	**2**		**8**	
	B3c	Cadmium (Cd)	Greece	136	5	3.7
		Sub-total for B3c	**1**		**5**	
		Total for Aquaculture	**3**		**13**	
Sheep/goats	B2e	Mefenamic Acid	Germany	8	1	12.5
		Sub-total for B2e	**1**		**1**	
		Total for Sheep/goats	**1**		**1**	
Honey	B3c	Lead (Pb)	Germany	1	1	100.0
		Sub-total for B3c	**1**		**1**	
		Total for Honey	**1**		**1**	
Poultry	B2b	Lasalocid	Germany	46	1	2.2
		Sub-total for B2b	**1**		**1**	
	B2e	Diclofen (Diclofenac)	Germany	8	1	12.5
		Sub-total for B2e	**1**		**1**	
		Total for Poultry	**1**		**2**	

(a): The number of samples analysed for the individual substances is presented only if there was at least one non-compliant sample for the substance in question.

Appendix D – List of non-compliant results: other sampling

Category	Group	Substance	Member State	Number of samples analysed[(a)]	Non-compliant results	% non-compliant results
Aquaculture	B3c	Cadmium (Cd)	Greece	65	2	3.1
		Lead (Pb)	Greece	64	2	3.1
		Total mercury	Cyprus	42	1	2.4
		Sub-total for B3c	**2**		**5**	
		Total for Aquaculture	**2**		**5**	
Bovines	B1	Benzylpenicillin (Penicillin G)	Italy	109	1	0.9
		Lincomycin	Italy	166	1	0.6
		Sum of Oxytetracycline and its 4-epimer	Italy	173	2	1.2
		Tilmicosin	Italy	171	1	0.6
		Sub-total for B1	1		5	
	B2f	Dexamethasone	Italy	142	1	0.7
		Sub-total for B2f	**1**		**1**	
		Total for Bovines	**1**		**6**	
Eggs	B3a	WHO-PCDD/F-PCB-TEQ	Italy	11	2	18.2
		Sub-total for B3a	**1**		**2**	
		Total for Eggs	**1**		**2**	
Sheep/goats	B3a	WHO-PCB-TEQ	Italy	6	1	16.7
		Sub-total for B3a	**1**		**1**	
		Total for Sheep/goats	**1**		**1**	
Honey	B1	Spiramycin	Italy	91	1	1.1
		Sum of Oxytetracycline and its 4-epimer	Italy	95	3	3.2
		Tetracycline	Italy	92	1	1.1
		Tylon (Tylosin, Tylosin A)	Italy	91	5	5.5
		Sub-total for B1	**1**		**10**	
	B3b	Dimethoate	Italy	27	1	3.7
		Sub-total for B3b	**1**		**1**	
	B3c	Lead (Pb)	Italy	78	1	1.3
		Sub-total for B3c	**1**		**1**	
		Total for Honey	**1**		**12**	
Milk	B1	Benzylpenicillin (Penicillin G)	Italy	16	2	12.5
		Sub-total for B1	**1**		**2**	
	B3d	Aflatoxin M1	Cyprus	14	1	7.1
			Italy	1776	4	0.2

Category	Group	Substance	Member State	Number of samples analysed[(a)]	Non-compliant results	% non-compliant results
		Sub-total for B3d	**2**		**5**	
		Total for Milk	**2**		**7**	
Rabbits	B1	Sulfadimethoxine	Italy	30	1	3.3
		Sum of Oxytetracycline and its 4-epimer	Italy	35	3	8.6
		Sub-total for B1	**1**		**4**	
		Total for Rabbits	**1**		**4**	

(a): The number of samples analysed for the individual substances is presented only if there was at least one non-compliant sample for the substance in question.

Appendix E – Annex I to Directive 96/23/EC

GROUP A – Substances having anabolic effect and unauthorised substances

A.1. Stilbenes, stilbene derivatives, and their salts and esters

A.2. Antithyroid agents

A.3. Steroids

A.4. Resorcylic acid lactones, including zeranol

A.5. Beta-agonists

A.6. Compounds included in Annex IV to Council Regulation (EEC) N° 2377/90 of 26 June 1990[16]

GROUP B – Veterinary drugs and contaminants

B.1. Antibacterial substances, including sulphonamides, quinolones

B.2. Other veterinary drugs

- a) Anthelmintics
- b) Anticoccidials
- c) Carbamates and pyrethroids
- d) Sedatives
- e) Non-steroidal anti-inflammatorydrugs (NSAIDs)
- f) Other pharmacologically active substances

B.3. Other substances and environmental contaminants

- a) Organochlorine compounds, including PCBs
- b) Organophosphorus compounds
- c) Chemical elements
- d) Mycotoxins
- e) Dyes
- f) Others

[16] Council Regulation (EEC) No 2377/90 of 26 June 1990 laying down a Community procedure for the establishment of maximum residue limits of veterinary medicinal products in foodstuffs of animal origin. OJ L 224, 18.8.1990, p. 1–8.

Appendix F – Summary of follow-up actions reported by Member States

For non-compliances identified regarding targeted sampling, a follow-up investigation was reported (34%) as the most frequent action. These follow-up investigations concluded on "Environmental Contamination" (20%), "Withdrawal period not respected" (13%), "Illegal treatment" (7%), "Withdrawal period respected" (6%), "Accidental" (4%), "Natural occurrence" (0.3%) or "Other" (9%). For 28% of the investigated cases the causes remained unknown and for 14%, the conclusions were not yet available.

For 18% of the identified non-compliances, administrative actions were taken. For 15% of the non-compliances no action was reported. In many of these cases, the non-compliance was caused by environmental contamination, natural occurrence or the non-availability of the conclusion at the time of reporting to EFSA.

For 9% of the non-compliances "Follow-up (suspect) sampling" was performed and for 8% of the non-compliances "Other actions" were reported. The follow-up actions reported less frequently (between 0.4 - 5%) consisted of "Denial of community aid", "Destruction of animals and/or products", "Warnings", "Rapid Alert Notification", "Movement restriction", "Lot not released on the market", "Lot recalled from the market", "Intensified checks before release" and "Animal and products classified as unfit for human consumption".

Appendix G – Member State Comments

Member State	Comments
Belgium	**Target Poultry A6 (Table 2, Appendix A):** Non-compliance (NC) results for AMOZ and metronidazole are related to pigeons. In previous annual reports pigeons have been categorised under farmed game. The following results have been transmitted to EFSA as "natural origin" therefore they should not be listed as non-compliant: • **Suspect Bovines A2 (Appendix B)**: 3 NC results for thiouracil, 4 NC results for epinandrolone • **Suspect Pigs A3 (Appendix B):** 1 NC result for boldenone
The Czech Republic	**Target Wild game (Table 37):** Number of targeted samples should be 150, not 0. **Target Aquaculture B3e (Appendix A):** the 14 NC results were submitted for malachite/leucomalachite green include results that are above CCα but <MRPL. It should be clarified which level should be used.
Denmark	**Target Sheep B3c (Appendix A):** 3 NC results for copper should be changed to 1 NC result (3 NC samples for copper should be 1 NC sample). **Target Wild Game B3c (Appendix A):** 6 NC results for copper should be changed to 7 NC results (4 NC samples for copper should be 5 NC samples). **Target Pigs (Table 10):** Number of targeted samples should be 9,438, not 9,429.
France	In relation to the number of targeted samples reported **(Tables 7, 10, 13, 16, 19, 22, 25, 28, 31, 34, 37, 40** and **Appendix A)**, France notes: • *The figures presented in this report do not reflect the monitoring data collected in 2017 on the presence of residues of veterinary medicinal products and certain substances in live animals and animal products in France. Much more samples were taken and reported under Council Directive 96/23/EC but some of them were incorrectly qualified as random samples.*
Germany	In relation to NC results reported for **Fipronil** (**B3f)** for **Egg** and **Poultry,** under **Target and Suspect categories (Appendices A and B),** Germany notes: • *These samples have been analyzed and reported within the framework of the 2017 national residue monitoring plan (NRCP), following the detection of fipronil residues in eggs resulting from a misuse of non-approved veterinary medicinal products in poultry farms. The majority of the samples has also been taken into account in the framework of the EU-Ad-hoc monitoring program* https://www.efsa.europa.eu/en/efsajournal/pub/5164
Latvia	**Target Farmed game (Table 34):** Number of targeted samples should be 14, not 117. **Target Wild game (Table 37):** Number of targeted samples should be 103, not 0. **Target Farmed & wild game B3c (Appendix A):** There were no non-compliant samples for farmed game. The non-compliant results (5 for lead and 47 for cadmium) noted under farmed game in the report, should instead be under wild game.

Member State	Comments
Lithuania	Lithuania note: • *Lithuania had tested more samples than indicated in the report and did comply with the minimum sampling requirements for the year 2017. The inadequate number of samples is a result of improper transmission of laboratory data to EFSA.*
Portugal	Portugal note: • *The numbers on the report do not show the real picture about National Monitoring Plan, PT has tested more samples then those indicated in the report. This difference is due to the difficulty found on the new SSD2 format requested by EFSA to report these data. In 2018 PT is still adapting the existing databases in order to be compatible with EFSA SSD2 format. Additionally, by the time of the report, not all the results were available.*
Spain	The following errors in the reported data have been identified: **Targeted sampling (Appendix A):** • **Bovine A4:** 1 NC result for zearalanone should be deleted • **Bovine B1:** 2 NC results for sulfadiazine should be changed to 1 NC result • **Eggs B1:** 3 NC results for sulfadiazine should be changed to 2 NC results • **Sheep & Goats B1:** 1 NC result for sulfadiazine should be changed to 3 NC results • **Pigs B1:** 3 NC result for sulfadiazine should be changed to 4 NC results **Suspect sampling (Appendix B):** • **Aquaculture B1:** 2 NC results for sulfonamides should be deleted • **Bovine B1**: 1 NC result for sulfadiazine is missing • **Eggs B1**: 1 NC result for sulfadiazine is missing • **Sheep & Goats B1:** 2 NC results for sulfadiazine should be deleted • **Pigs B1:** 1 NC result for sulfadiazine should be deleted **Import Sampling (Appendix C):** • **Aquaculture A6:** 1 NC result for nitrofurans and 1 NC result for furazolidone are missing • **Aquaculture B1**: 2 NC results for sulphonamides are missing
The United Kingdom	**Poultry (Table 19):** Number of targeted samples should be 8536, not 5858. In relation to a high number of non-compliant results for Group A3 (**Appendix A**), in particular for bovines and sheep and goats, the UK note: • *The UK carried out follow-up investigations at the farms of origin of these samples. No signs of administration were found, and this fact, combined with the extremely low levels of detection in the analytical methods, has led to the conclusions that these hormones were naturally occurring in the sampled animals.*