TECHNICAL REPORT

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Report for 2015 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 2015 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 729,881 samples were reported to the European Commission by the 28 EU Member States. They consisted of 411,677 targeted samples and 19,257 suspect samples reported under Council Directive 96/23/EC, and of 3,768 samples collected at import and 295,179 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 2015, the percentage of non-compliant targeted samples (0.34%) was comparable to the previous 8 years (0.25%–0.37%). In 2015, the frequency of non-compliant samples was higher for resorcylic acid lactones, chemical elements (mainly metals) and mycotoxins, compared to previous years, although lower than those reported in 2014. Higher frequencies of non-compliant samples were noted for antithyroid agents, compared to previous years, except for 2013 when the highest frequency was reported. The frequency of non-compliant samples for 'other pharmacologically active substances' was lower compared to previous years, except for 2011 when the lowest frequency was reported. For the other substance groups, there were no notable variations over the 9 year period. This analysis should be regarded as having a certain degree of uncertainty, as it is based on partially aggregated data and the sampling plans and the spectrum of substances analysed are not necessarily the same every year.

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

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Correspondence: biocontam@efsa.europa.eu

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Summary

The present report summarises the monitoring data from 2015 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) asked the European Food Safety Authority (EFSA) to produce an annual compilation of the monitoring results obtained under the provision of Council Directive 96/23/EC. Animal categories and animal products covered in the monitoring are: bovines, pigs, sheep and goats, horses, poultry, rabbit, farmed game, wild game, aquaculture, milk, eggs and honey.

Data were collected in aggregated form in a database managed by the European Commission (EC). Data collected in this form do not allow for an in-depth analysis. The limitations described in the previous EFSA reports (EFSA, 2010, 2011a, b, 2012, 2013, 2014, 2015, 2016) were still applicable in the present analysis. Therefore, the recommendations made with regard to the collection of data in the EFSA format similar to pesticides and contaminants data remain valid.

In 2015, 28 European Union (EU) Member States reported in the framework of the residue monitoring the results for 729,881 samples. A total of 411,677 targeted samples and 19,257 suspect samples were reported under Council Directive 96/23/EC. Additionally, 295,179 samples collected in the framework of other programmes developed under the national legislation and 3,768 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 1,404 or 0.34% of non-compliant samples out of the 411,677 targeted samples in 2015.

For Group A, no non-compliant samples were reported for stilbenes and derivatives (A1). For antithyroid agents (A2), there were 0.70% non-compliant samples, all for thiouracil (including 5-methyl-2-thiouracil, 6-methyl-2-thiouracil, or 6-propyl-2-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 (0.06%), pigs (0.15%),sheep and goats (0.50%), horses (1.41%) and farmed game (2.00%). For corticosteroids, non-compliant results for authorised substances were reported under 'other pharmacologically active substances' (B2f). In the group of resorcylic acid lactones (A4), 0.36% of the samples were non-compliant for zearalanone and derivatives; the non-compliant samples were found in bovines (0.59%) and pigs (0.12%). For beta-agonists (A5), there were 0.02% non-compliant samples in total, reported for bovines (0.02%), pigs (0.01%) and horses (0.35%). Prohibited substances (A6) were found in 0.04% of samples. Substances identified were chloramphenicol (n = 15), nitroimidazoles (n = 9) and nitrofurans (n = 9).

For antibacterials (B1), 0.20% 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 (0.95%).

In group B2 (other veterinary drugs), the highest proportion of non-compliant samples was found for anticoccidials (B2b) (0.19%). For anticoccidials (B2b), the non-compliant samples were reported across the different species as follows; 0.11% for bovines, 1.19% for horses, 0.15% for poultry, 0.54% for eggs, 0.36% for rabbits and 1.43% for farmed game. Since 2009, an important decrease has been observed in the frequency of non-compliant samples for anticoccidials (B2b) in poultry. This decrease in the frequency of non-compliant samples for anticoccidials (B2b) 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.

For the other subgroups of B2, instances of non-compliance for anthelmintics (B2a) were reported in bovines (0.09%), pigs (0.01%), sheep and goats (0.51%), horses (1.24%), aquaculture (0.17%), milk (0.09%) and farmed game (0.45%). Non-compliant samples were reported for sedatives (B2d), in horses (1.12%). For non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were found in bovines (0.22%), pigs (0.02%), horses (0.38%), milk (0.14%) and farmed game (1.61%). Non-compliant samples were reported for 'other pharmacologically active substances' (B2f), in bovines (0.18%), only. No non-compliant samples were reported for pyrethroids (B2c).

In the group B3 (other substances and environmental contaminants), the chemical elements (B3c) had the highest overall percentage of non-compliant samples (4.71%), with cadmium, lead, mercury and copper being most frequently identified. Non-compliant samples were reported for organochlorine compounds (B3a) and organophosphorus compounds (B3b); 0.17% and 0.03%, respectively. For mycotoxins (B3d), there were non-compliant samples reported for bovines (4.65%), pigs (2.37%), sheep and goats (0.57%), horses (6.67%), poultry (0.89%), milk (0.30%) and rabbit (7.14%); with those identified being zearalenone and derivatives, ochratoxin A and aflatoxin M_1. The prevalence of dyes (B3e) in aquaculture samples (1.66%) was within the range noted for the previous 8 years (1.14%–2.2%). The substances found were malachite green, leuco-malachite green and leuco-crystal violet, crystal violet and brilliant green. For 'other substances' (B3f), one non-compliant sample was reported for the substance acetamiprid, in honey.

In 2015, the overall frequency of non-compliant samples (0.34%) was comparable to the previous 8 years (0.25%–0.37%). The frequency of non-compliant samples was higher for resorcylic acid lactones (A4), chemical elements (B3c; mainly metals) and mycotoxins (B3d), compared to previous years, although lower than those reported in 2014. Higher frequencies of non-compliant samples were noted in 2015 for antithyroid agents (A2), compared to previous years, except for 2013 when the highest frequency was reported. The frequency of non-compliant samples in 2015 for 'other pharmacologically active substances' (B2f), was lower compared to previous years, except for 2011 when the lowest frequency was reported. For the other substance groups, there were no notable variations over the 9 years.

The sampling plans and the pattern of substances analysed are not necessarily the same every year and the prescribing patterns of veterinary medicines vary between species. Therefore, the outcome of the data analysis at EU level may not accurately reflect the residue situation in each individual EU Member State and for each species or product category.

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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 Member States to adopt and implement a national residue monitoring plan for specific groups of residues. The Directive lays down sampling levels and frequency, as well as the group of substances to be monitored for each category of live animals or animal products. Member States must submit to the Commission, by no later than 31 March of each year, the national monitoring plans together with the monitoring results for the previous year. According to Article 8.4 of the aforementioned Directive, each year or whenever it deems it necessary, the Commission shall report to the Member States on the outcome of the surveys. According to Article 8.5, the Commission sends to the European Parliament and the Council a Communication on the results and actions taken at regional, national or Community level. The Communication is drafted on the basis of a summary report which includes the main results reported by the Member States as the outcome of the implementation of national residue plans. Summary reports have been published since 1998. Since 2001, the Commission has published the annual Communication to the Parliament and the Council.[2]

1.1.2. Terms of reference as provided by the European Commission

In the framework of Article 31 of Regulation EC No 178/2002[3], the European Commission asked EFSA to prepare an annual compilation (report) of the results of residue monitoring in live animals and animal products in the Member States. EFSA shall present its report to the Member States in the Standing Committee on Plants, Animals, Food and Feed (PAFF Committee). Together with the comments from the Member States and the answers to the questionnaires on actions taken as a consequence of non-compliant results, the Commission will use EFSA's report for the drafting of the Annual Report and the Communication to the European Parliament and the European Council.

Data used in the report were collected from Member States under Directive 96/23/EC and stored in the Commission's residue application. Directorate General for Health and Food Safety (DG SANTÉ) is in charge of the overall coordination of the residue data collection from Member States; it performs a preliminary format check and examines the data for inconsistencies, omissions or misreporting. It also requests that, where appropriate, the Member States check and update data that have been uploaded onto the application. When DG SANTÉ considers that data provided are in line with the requirements of Directive 96/23/EC, EFSA starts to produce its contribution.

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

[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. 10–32.
[2] Available online: http://ec.europa.eu/food/food/chemicalsafety/residues/control_en.htm
[3] Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety. OJ L 31, 1.2.2002, p. 1–24.

monitored for each food commodity. Commission Decision 97/747/EC[4] lays down rules for levels and frequencies of sampling for milk, eggs, honey, rabbit meat and game.

Member States should forward to the European Commission (EC) the results of their residue monitoring by 31 March of each year at the latest. 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[5] 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.

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) means 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[6] 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

[4] 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.

[5] 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.

[6] 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.

37/2010[7] of 22 December 2009. In addition, Commission Directive No 2009/8/EC[8] lays down maximum levels of unavoidable carry-over of coccidiostats or histomonostats in non-target feed and Commission Regulation (EC) No 124/2009[9] 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[10]. 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.[11] 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 means 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[12] and for malachite and leuco malachite green were established by Commission Decision 2004/25/EC[13].

1.3. Objectives

The present report summarises the monitoring data from 2015 submitted by the Member States to the European Commission. 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.
- 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.

[7] 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.
[8] 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.
[9] 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.
[10] 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.
[11] Commission Regulation (EC) 1881/2006 setting maximum levels for certain contaminants in foodstuffs. OJ L 364, 20.12.2006, p. 5–24.
[12] 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.
[13] 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.

2. Data and Methodologies

2.1. Data

Data used in this report have been collected from Member States under Directive 96/23/EC and stored in the residue database of Directorate General for Health and Food Safety (DG SANTÉ). 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).

DG SANTÉ is in charge of the overall coordination of the residue data collection from Member States (see 'Terms of reference'). 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). The respective institution is also in charge of the aggregation of the data received from the various central and regional departments. DG SANTÉ verifies whether or not the transmitted results are in line with the established monitoring plan and indicates misreporting. In case of misreporting, the Member States in question are asked to update their data.

Aggregate data are transmitted to the Commission at the following level of detail:

- animal category and animal products: bovines, pigs, sheep and goats, horses, poultry, rabbit, farmed game, wild game, aquaculture, milk, eggs and honey;
- production volume expressed in 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;
- sampling strategy: targeted, suspect, import and 'others';
- number of samples analysed for each substance group as defined in Annex I to Directive 96/23/EC;
- number of non-compliant results within each substance group or subgroup and within each animal category or animal product. Non-compliant results are listed by the substance identified. Additional information about the non-compliant samples is given in a separate document (Questionnaires) provided by the Member States. This information is not included in the database.

In this context, it is important to note that the number of non-compliant samples is not necessarily the same as the number of non-compliant results. One sample can be non-compliant for more than one substance and therefore the sum of non-compliant results might be higher than the sum of non-compliant samples. The information on sample identification, sample matrix and the corresponding results was not available in the database and thus it was impossible to perform a more elaborate statistical analysis at the matrix level (e.g., meat, liver, blood, etc.) and to identify the samples non-compliant for more substances (multi-residues samples).

Since information on the number of total analyses performed for an individual substance was only transmitted by the Member States which reported at least one non-compliant result for the respective substance, it was not possible to extract the full spectrum of substances analysed within one group or subgroup.

2.2. Methodologies

For the data analysis, the database and the data extraction tools available in DG SANTÉ's residue application were used. Making use of those tools it was possible to extract the production volume reported by the Member States and the number of samples analysed for each animal species or animal product category and for each substance group or subgroup. To verify whether the minimum required sampling frequencies had been fulfilled, a check between the number of samples collected in 2015 and the production data used by Member States to prepare the 2015 national residue control plans, was performed. The number of non-compliant samples could be extracted at the group or subgroup level. At the substance level, only Member States which found at least one non-compliant result reported the total number of samples analysed for that substance. The shortcomings mentioned

in Section 2.1 represented considerable limitations in performing a more elaborate statistical analysis. The data used in the preparation of this report were extracted from the database between 11 October 2016 and 02 December 2016 and are reflective of the database during this time period.

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 was 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 2015, 729,881 samples were reported by the 28 Member States for analysis of substances and residues covered by Directive 96/23/EC. Out of this, 411,677 were targeted samples collected in conformity with the specifications of the National Residue Control Plans (NRCPs) for 2015. Additionally, 19,257 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 295,179 samples collected in the framework of other programmes developed under the national legislation. Only a relatively limited number of data were reported for samples checked at import (n = 3,768). 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).

Of the total targeted samples, 46% were analysed for substances having an anabolic effect and unauthorised substances (group A) and 60% for veterinary drugs and contaminants (group B).[14] Of the 411,677 targeted samples, 1,404 were non-compliant (0.34%) (1,668 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), 0.20% for antibacterials (B1), 0.12% for the 'other veterinary drugs' (B2) and 1.91% for 'other substances and environmental contaminants' (B3) (Table 1, Figure 1).

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

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		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	191,317	46.5	215	0.11	245
A1	24,026	5.8	0	0	0
A2	8,998	2.2	63	0.70	64
A3	43,376	10.5	41	0.09	49
A4	19,710	4.8	71	0.36	92
A5	40,331	9.8	7	0.02	7
A6	77,479	18.8	33	0.04	33
B	245,552	59.6	1,192	0.49	1,423
B1	114,485	27.8	230	0.20	242
B2	95,254	23.1	113	0.12	117
B2a	24,356	5.9	28	0.11	30
B2b	22,545	5.5	42	0.19	43
B2c	8,881	2.16	0	0	0
B2d	9,111	2.2	2	0.02	2
B2e	15,847	3.8	22	0.14	22
B2f	19,772	4.8	20	0.10	20
B3	43,982	10.7	839	1.91	1,064
B3a	18,874	4.6	33	0.17	40
B3b	7,671	1.9	2	0.03	2
B3c	14,265	3.5	672	4.71	765
B3d	5,914	1.4	115	1.94	215
B3e	1,688	0.4	28	1.66	41
B3f	1,350	0.3	1	0.07	1
Total	**411,677**	**100**	**1,404**	**0.34**	**1,668**

(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.

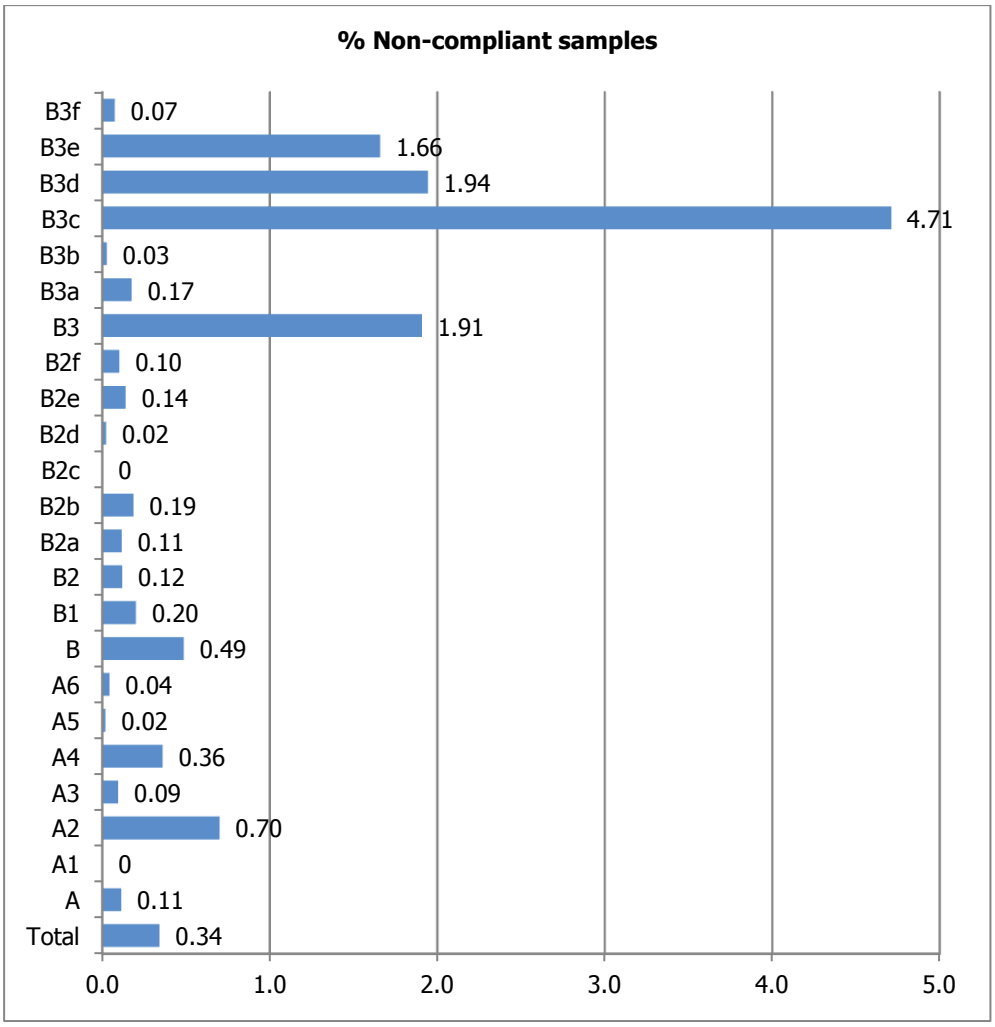


Figure 1: Percentage of non-compliant samples in each substance group

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 (96,110 samples) there were 175 non-compliant samples (0.18%) (205 non-compliant results).

The number of targeted samples analysed for stilbenes and derivatives (A1) in all animal/product categories together, was 24,026, and no non-compliant samples were reported for this group.

Antithyroid agents (A2) were analysed in 8,998 targeted samples of which 63 samples were non-compliant (0.70%) (64 non-compliant results). All non-compliant samples in the group A2 were for thiouracil, (including 5-methyl-2-thiouracil, 6-methyl-2-thiouracil, or 6-propyl-2-thiouracil). They were found in bovines (n = 56; 1.27%), pigs (n = 6; 0.18%) and sheep and goats (n = 1; 0.37%). 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 43,376 samples analysed in all animal species and product categories, 41 samples were non-compliant (0.09%) (49 non-compliant results). All 49 non-compliant results were for anabolic steroids. The non-compliant samples were found in bovines (n = 18; 0.06%), pigs (n = 15; 0.15%), sheep and goats (n = 5; 0.50%), horses (n = 2; 1.41%) and farmed game (n = 1; 2.00%). 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 19,710 samples analysed in all animal species and product categories, 71 were found non-compliant (0.36%) (92 non-compliant results), for zearalanone and derivatives. The non-compliant samples were found for bovines (n = 65; 0.59%) and pigs (n = 6; 0.12%).

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 2015, 40,331 targeted samples were analysed for beta-agonists, with 7 non-compliant samples (0.02%) reported in total, for bovines (n = 5; 0.02%), pigs (n = 1; 0.01%) and horses (n = 1; 0.35%).

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 2015 residue monitoring, 77,479 targeted samples were analysed for prohibited substances and 33 samples (0.04%) were non-compliant (33 non-compliant results). Altogether, there were 15 non-compliant results for chloramphenicol, nine for nitrofurans and nine for nitroimidazoles (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	Number of non-compliant results	Member States reporting non-compliant results
Chloramphenicol	bovine	2	HR, LV
	pigs	5	BG, FI, PL
	poultry	3	HR, PL
	milk	2	LV, PL
	eggs	2	LV
	honey	1	DE
Nitrofurans			
AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	bovine	1	IT
	aquaculture	3	GR
	farmed game	3	BE
AOZ (3-amino-2-oxazolidone)	poultry	1	RO
	honey	1	PL
Nitroimidazoles			
Dimetridazole	poultry	1	SK
	rabbit	1	IT
Hydroxymetronidazole (MNZOH)	pigs	1	PL
Metronidazole	pigs	3	ES, PL
	poultry	1	IT
	honey	2	PL

BE: Belgium; BG: Bulgaria; DE: Germany; ES: Spain; FI: Finland; GR: Greece; HR: Croatia; IT: Italy; LV: Latvia; PL: Poland; RO: Romania; SK: Slovakia.

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 2015 for antimicrobials in targeted samples was 114,485 of which 230 (0.20%) were non-compliant (242 non-compliant results) (Table 1). The highest frequency of non-compliant samples for antibacterials was observed in honey (0.95%) (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.

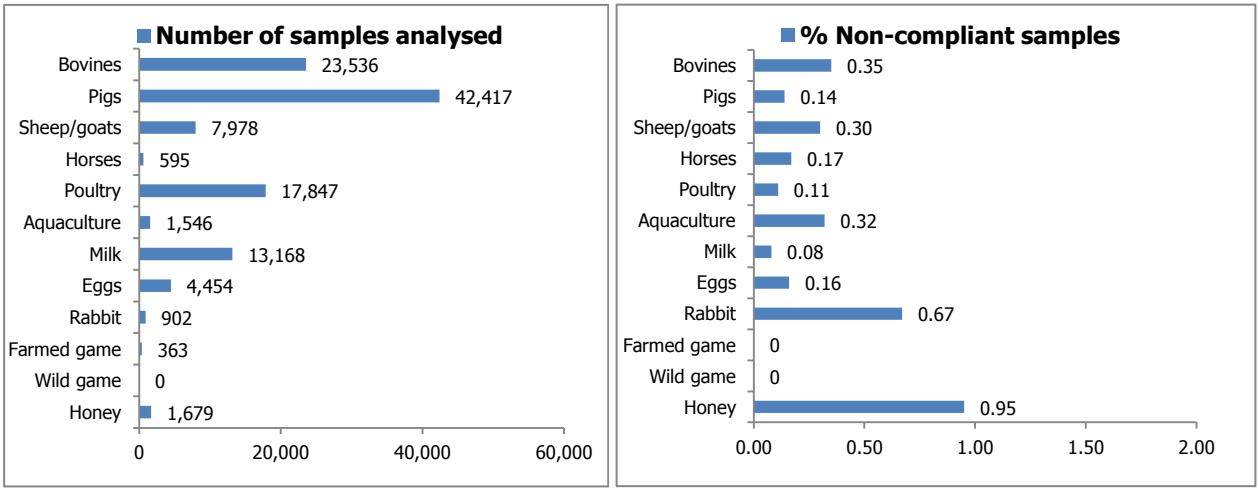


Figure 2: Number of targeted samples analysed and percentage of non-compliant samples for antibacterials (B1) in animal/product categories

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 2015 monitoring, 95,254 targeted samples were analysed for substances in the group B2 and 113 samples (0.12%) 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. For example, in bovines, the anthelmintics, NSAIDs and other pharmacologically active substances (corticosteroids are largely represented in this subgroup) were more frequently analysed than anticoccidials or sedatives. In poultry, anticoccidials was the largest subgroup. 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.

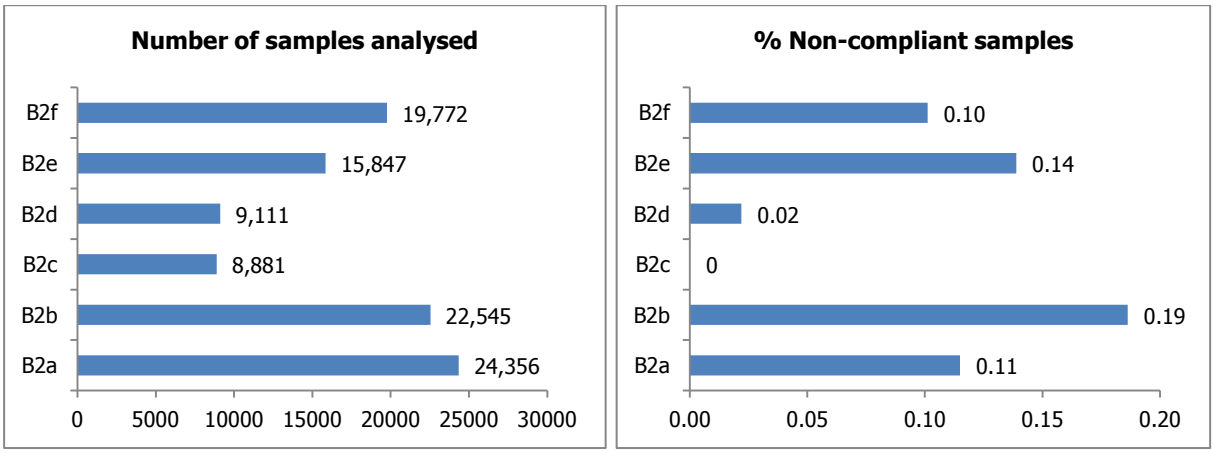


Figure 3: Number of targeted samples analysed within the group 'other veterinary drugs' (B2) and the percentage of non-compliant samples

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		B2b		B2c		B2d		B2e		B2f	
	n	% nc	n	% nc	n	% nc	n	% nc	n	% nc	n	% nc
Bovines	4,531	0.09	1,784	0.11	1,600	0	1,753	0	5,445	0.22	10,838	0.18
Pigs	7,249	0.01	6,096	0	2,230	0	6,657	0	4,584	0.02	6,218	0
Sheep/goats	2,720	0.51	984	0	914	0	445	0	410	0	505	0
Horses	161	1.24	84	1.19	103	0	178	1.12	781	0.38	180	0
Poultry	2,928	0	8,700	0.15	2,061	0	6	0	905	0	554	0
Aquaculture	588	0.17	74	0	374	0	0	0	0	0	142	0
Milk	5,458	0.09	102	0	352	0	55	0	3,545	0.14	838	0
Eggs	192	0	4,227	0.54	263	0	0	0	0	0	141	0
Rabbit	131	0	279	0.36	81	0	9	0	115	0	39	0
Farmed game	220	0.45	140	1.43	68	0	8	0	62	1.61	15	0
Wild game	130	0	0	0	26	0	0	0	0	0	0	0
Honey	48	0	75	0	809	0	0	0	0	0	302	0

n: Number of samples analysed; %nc: Percentage of non-compliant samples.

Regarding the number of samples analysed in each B2 subgroup, the highest proportion of non-compliant samples (0.19%) was observed for anticoccidials (B2b).

For anticoccidials (B2b), non-compliant samples were reported in bovine (0.11%), horses (1.19%), poultry (0.15%), eggs (0.54%), rabbits (0.36%), and farmed game (1.43%).

Non-compliant samples for anthelmintics (B2a) were reported in bovines (0.09%), pigs (0.01%), sheep and goats (0.51%), horses (1.24%), aquaculture (0.17%), milk (0.09%) and farmed game (0.45%).

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

For sedatives (B2d), non-compliant samples were reported for horses only (1.12%).

For non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were reported in bovines (0.22%), pigs (0.02%), horses (0.38%), milk (0.14%) and farmed game (1.61%).

For 'other pharmacologically active substances' (B2f), non-compliant samples were observed for bovines (0.18%). For corticosteroids, 20 non-compliant results were reported by five Member States and the substances identified were dexamethasone, prednisolone and prednisone (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	Substance group[(a)]	Species	Number of non-compliant results	Member States reporting non-compliant results
Dexamethasone	B2f	bovine	18	DE, FR, IT, PL
Prednisolone	B2f	bovine	1	BE
Prednisone	B2f	bovine	1	IT

BE: Belgium; DE: Germany; FR: France; IT: Italy; PL: Poland.
(a): as detailed in Appendix E.

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.

3.1.6. 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 2015, 43,982 samples were analysed for substances in group B3 of which 839 samples were non-compliant (1.91%) (1,064 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' (4.71%). 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 0.17% and 0.03%, respectively.

There were non-compliant samples reported in subgroup B3d mycotoxins (n = 115; 1.94%), for bovines (n = 51; 4.65%), pigs (n = 46; 2.37%), sheep and goats (n = 1; 0.57%), horses (n = 4; 6.67%), poultry (n = 7; 0.89%), milk (n = 5; 0.30%) and rabbit (n = 1; 7.14%). Those identified being zearalenone and derivatives, ochratoxin A and aflatoxin M_1.

Dyes (B3e) were reported in aquaculture (28 non-compliant samples; 1.66%). Substances found were malachite green, leuco-malachite green and crystal violet leuco-crystal violet and brilliant green.

In the subgroup 'others' (B3f) one non-compliant sample was report under honey, for acetamiprid.

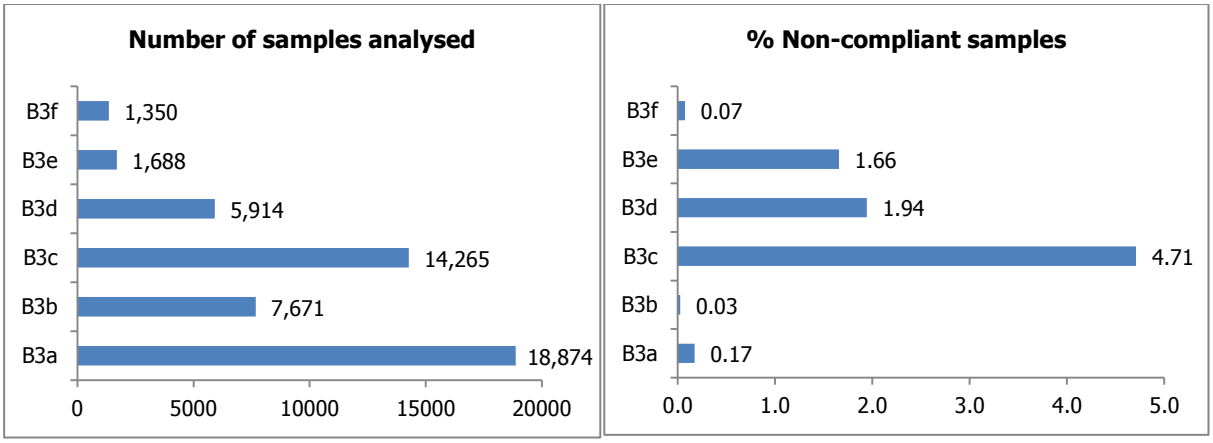


Figure 4: Number of samples analysed within the group 'other substances and environmental contaminants' (B3) and the percentage of non-compliant samples

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		B3b		B3c		B3d		B3e		B3f	
	n	% nc	n	% nc	n	% nc	n	% nc	n	% nc	n	% nc
Bovines	3,151	0.06	1,425	0	2,587	6.76	1,096	4.65	0	0	196	0
Pigs	4,785	0.04	2,145	0	3,774	3.97	1,937	2.37	0	0	326	0
Sheep/goats	1,146	0.09	998	0.10	805	2.86	174	0.57	0	0	20	0
Horses	131	0.76	77	0	607	12.19	60	6.67	0	0	6	0
Poultry	3,685	0.03	994	0	1,823	0.11	788	0.89	0	0	97	0
Aquaculture	633	0.32	73	0	590	0.85	148	0	1,688	1.66	86	0
Milk	1,712	0	671	0	794	0.13	1673	0.30	0	0	104	0
Eggs	2,499	0.32	389	0	156	0	8	0	0	0	121	0
Rabbit	120	0	27	0	115	0	14	7.14	0	0	2	0
Farmed game	178	1.69	39	0	258	7.75	5	0	0	0	17	0
Wild game	160	8.13	31	0	2,187	9.33	0	0	0	0	137	0
Honey	674	0	802	0.12	569	3.16	11	0	0	0	238	0.42

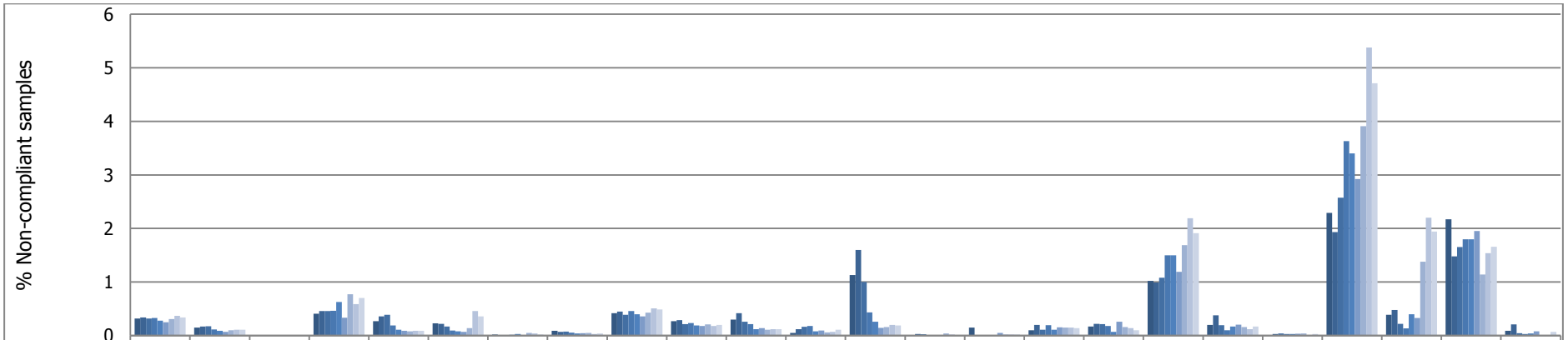
n: number of samples analysed; %nc: percentage of non-compliant samples.

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

It is important to note that this analysis is based on data that were partially aggregated. In addition, the number of samples analysed for each substance and animal/product category was not necessarily the same over the 9 years. Therefore, this analysis should be regarded as having a certain degree of uncertainty. The purpose of this exercise was to check whether major variations of the proportion of non-compliant samples occurred at substance group level in the EU. When such variations are noted, a more in-depth analysis of the monitoring plans per species, country and pattern of substances analysed has to be carried out in order to identify the trigger for the differences observed and in consequence to take corrective measures.

An overall picture covering the period 2007–2015 (EU 28) is presented in Figure 5. The percentage of overall non-compliant samples in 2015 (0.34%) was comparable to the previous 8 years (0.25%–0.37%).



	Total	A	A1	A2	A3	A4	A5	A6	B	B1	B2	B2a	B2b	B2c	B2d	B2e	B2f	B3	B3a	B3b	B3c	B3d	B3e	B3f
2007	0.32	0.15	0	0.41	0.27	0.23	0.02	0.09	0.42	0.27	0.30	0.05	1.1	0.01	0.15	0.1	0.17	1.0	0.2	0	2.3	0.39	2.2	0.09
2008	0.34	0.17	0	0.46	0.36	0.22	0.005	0.07	0.45	0.29	0.42	0.12	1.6	0.03	0	0.2	0.22	0.99	0.38	0.03	1.9	0.48	1.5	0.21
2009	0.32	0.18	0	0.46	0.39	0.17	0.01	0.07	0.39	0.21	0.26	0.16	1.0	0.02	0	0.11	0.21	1.1	0.19	0.04	2.6	0.22	1.7	0.05
2010	0.33	0.11	0	0.47	0.19	0.09	0.02	0.05	0.46	0.23	0.21	0.18	0.43	0.01	0	0.19	0.18	1.5	0.10	0.03	3.6	0.14	1.8	0.03
2011	0.28	0.09	0	0.63	0.11	0.08	0.03	0.04	0.40	0.19	0.12	0.08	0.26	0.01	0.01	0.11	0.07	1.5	0.17	0.03	3.4	0.40	1.8	0.04
2012	0.25	0.07	0	0.33	0.09	0.07	0.01	0.05	0.36	0.18	0.14	0.09	0.15	0	0.05	0.16	0.26	1.2	0.21	0.04	2.9	0.33	1.95	0.08
2013	0.31	0.10	0.01	0.77	0.08	0.14	0.05	0.05	0.43	0.21	0.11	0.06	0.16	0.04	0.02	0.15	0.16	1.7	0.16	0.04	3.9	1.38	1.14	0
2014	0.37	0.11	0.005	0.59	0.09	0.46	0.04	0.03	0.51	0.18	0.12	0.07	0.20	0.02	0.02	0.15	0.14	2.19	0.12	0.01	5.4	2.20	1.54	0
2015	0.34	0.11	0	0.70	0.09	0.36	0.02	0.04	0.49	0.20	0.12	0.11	0.19	0	0.02	0.14	0.10	1.91	0.17	0.03	4.7	1.94	1.66	0.07

Figure 5: Percentage of non-compliant samples reported in relation to the total number of targeted samples analysed for the respective group in 2007, 2008, 2009, 2010, 2011, 2012, 2013 2014 and 2015 (substance groups are detailed in Appendix E)

Group A

Among hormones and prohibited substances (group A) the proportion of non-compliant samples in 2015 (0.11%) was similar to the previous 8 years.

Similarly to the years 2007–2012, no non-compliant samples for stilbenes and derivatives (A1) were reported in 2015, whereas, in 2013 and 2014 very low percentages of non-compliant samples had been reported (0.01% and 0.005%, respectively).

In 2015 the percentage of non-compliant samples for antithyroid agents (A2) (0.70%), had risen slightly compared to previous years, although this was still lower compared to the highest value of 0.77%, which was reported in 2013.

In 2015, the percentage of non-compliant samples for steroids (A3) (0.09%) was comparable to the years 2012–2014 (0.08%–0.09%) and lower compared to years 2007–2011 (0.11%–0.39%). This change is considered to be due to Member States reporting authorised corticosteroids under group B2f only, instead of also under group A3, since 2012.

The percentage of non-compliant samples reported in 2015 for resorcylic acid lactones (A4) (0.36%) was lower than that of 2014 (0.46%), although higher compared years 2007–2013 (0.07%–0.23%).

For beta-agonists (A5) in 2015, the percentage of non-compliant samples (0.02%) was similar to years 2007–2012, and slightly lower compared to 2013 and 2014.

For prohibited substances (A6), the proportion of non-compliant samples reported in 2015 was consistent with previous years (0.04%) and has remained at very low levels over the 9 years (0.03%–0.09%).

Group B

Group B1

In the group of antibacterials (B1), the percentage of non-compliant samples in 2015 (0.20%), was similar to the previous 8 years (0.18%–0.29%).

Group B2

In the group B2 ('other veterinary drugs'), the proportion of non-compliant samples has been comparable over the period 2011–2015 (0.11%–0.14%) and lower compared the period 2007–2010 (0.21%–0.42%).

Anthelmintics (B2a) increased slightly (0.11%) in 2015, compared to the last 4 years, however they were still within the range of values reported since 2007 (0.05%–0.18%).

For anticoccidials (B2b), from 2007–2011 this subgroup had the highest proportion of non-compliant samples (0.26%–1.6%). In 2012 and 2013 the percentage of non-compliant samples was lower compared to previous years (0.15% and 0.16%, respectively) and in 2014 and 2015, slight increases compared to the previous 2 years were noted (0.20% and 0.19% respectively). Since 2009 a decrease in the number of non-compliant samples has been recorded for this group, with the most notable effect present in poultry where the frequency of non-compliant samples dropped from 2.05% in 2009, to 0.96% in 2010, to 0.22% in 2011, to 0.16% in 2012, to 0.15% in 2013, to 0.20% in 2014 and to 0.15% in 2015. This development is most likely the result of the awareness raised by and the measures taken after Commission Directive 2009/8/EC laying down maximum levels of unavoidable carry-over of coccidiostats in non-target feed entered into force.

Non-compliant samples for carbamates and pyrethroids (B2c) were found in only a few isolated cases in 2007–2011 and 2014 (0.01%–0.03%), in 2013, the percentage of non-compliant samples was slightly higher compared to previous years (0.04%). In 2012 and 2015, no non-compliant samples were reported.

For sedatives (B2d), no non-compliant samples were reported between 2008 and 2010 and only one sample was reported in 2011 (0.01%). In 2012 this number had risen slightly (0.05%), however in 2013, 2014 and 2015 the number of non-compliant samples had decreased to 0.02%.

In the group B2e (non-steroidal anti-inflammatory drugs), the proportion of non-compliant samples has remained relatively constant over the 9 years (around 0.1%–0.2%).

For 'other pharmacologically active substances' (B2f), the percentage of non-compliant samples in 2015 (0.10%) was slightly lower compared to the previous years, 2007–2010 and 2013–2014 (0.14%–0.22%). In 2011 the percentage of non-compliant samples decreased to 0.07%, and in 2012, the highest percentage of non-compliant samples was reported (0.26%) for this subgroup.

Group B3

In the group of 'other substances and environmental contaminants' (B3), the percentage of non-compliant samples in 2015 (1.91%) was seen to decrease slightly compared to 2014 (2.19%), however this value was still higher compared to 2007–2013 (0.99%–1.7%).

The highest proportion of non-compliant samples in the group B3 has been noted for chemical elements (B3c) over the 9 years. The non-compliant samples accounted for around 2% in 2007 and 2008 and for 3.6% in 2010, 3.4% in 2011, 2.9% in 2012, 3.9% in 2013, 5.4% in 2014 and 4.7% in 2015. This evolution is mainly explained by the practice introduced since 2009 with regard to the legal basis applied for compliance checking for mercury and copper. Commission Regulation (EC) No 1881/2006 specifies maximum limits for mercury only in aquaculture and does not specify any maximum limits for copper in food. Since 2009, the maximum limits laid down in Commission Regulation (EC) No 149/2008[15] amending Regulation (EC) No 396/2005 are applied to evaluate the compliance for copper and mercury (except for aquaculture) which led to a substantial higher proportion of non-compliant samples for the two chemical elements. For example, in 2007 and 2008 only 30 and 47 non-compliant results, respectively, were reported for mercury in all species and product categories, whereas in 2010 and 2011 their number reached 269 and 218, respectively. In 2012, 2013 and 2014 the number of non-compliant results had decreased to 170, 189 and 149, respectively. However, in 2015 this number was seen to increase again to 212. Similarly, no non-compliant results were reported for copper in 2007, 2008 and 2009 but after applying the new legal provision, in 2010, 2011, 2012 and 2013 there were respectively 73, 67, 72 and 64 non-compliant results for copper. In 2014, this number of had risen to 360 and in 2015 the number of non-compliant results was 260.

The proportion of non-compliant samples for organochlorine compounds (B3a) in 2015 (0.17%) was similar to those in 2007, 2009 and 2011–2013 (0.16%–0.21%). In 2008, the values were slightly higher (0.38%) and in 2010 and 2014 the values were lower (0.10% and 0.12%, respectively).

For organophosphorus compounds (B3b), the number of non-compliant samples has remained very low over the 9 years (0–0.04%).

From 2007–2012 the percentage of non-compliant samples for mycotoxins (B3d), ranged from 0.14% to 0.48%. In 2013 and 2014 the number of samples had risen to 1.38% and 2.20%, respectively and in 2015 this value was still high (1.94%). The increases noted in mycotoxins, may be related to climate change effects (Van der Fel-Klerx et al., 2016).

The proportion of non-compliant samples for dyes (B3e) in 2015 (1.66%) was within the range noted for the previous 8 years (1.14%–2.2%).

For 'other substances' (B3f) in 2015, the proportion of non-compliant samples (0.07%) was within the range noted for the period 2007–2012 (0.03%–0.21%). In 2013 and 2014 no non-compliant samples were reported for this group.

Taking into account the limitations mentioned at the beginning of this section, in 2015, the frequency of non-compliant samples was higher for resorcylic acid lactones (A4), chemical elements (B3c; mainly metals) and mycotoxins (B3d), compared to previous years, although lower than those reported in 2014. Higher frequencies of non-compliant samples were noted in 2015 for antithyroid agents (A2), compared to previous years, except for 2013 when the highest frequency was reported. The

[15] Commission Regulation (EC) No 149/2008 of 29 January 2008 amending Regulation (EC) No 396/2005 of the European Parliament and of the Council by establishing Annexes II, III and IV setting maximum residue levels for products covered by Annex I thereto. OJ L 58, 1.3.2008, p. 1–348.

frequency of non-compliant samples in 2015 for 'other pharmacologically active substances' (B2f), was lower compared to previous years, except for 2011 when the lowest frequency was reported. For the other substance groups, there were no notable variations over the 9 years (see also EC, 2007; EFSA, 2010, 2011b, 2012, 2013, 2014, 2015, 2016).

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 fulfilled in 2015 for the EU overall (Table 6), and by the majority of Member States (Table 7). France, Portugal and Romania did not achieve the minimum sampling frequency for bovines.

Table 6: Production of bovines and number of targeted samples over 2007–2015

Year	Production (animals)	Targeted samples	% Animals tested[(a)]	Minimum 96/23/EC
2007 (EU 27)	27,087,367	129,201	0.47	
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	0.4
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	

(a): in relation to the production of the previous year.

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

Country	Production data[(a)] (animals)	Number of samples 2015	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2015	Animals tested (%)
Austria	675,905	3,819	0.57	Italy	2,602,751	19,534	0.75
Belgium	808,075	5,661	0.70	Latvia	79,975	328	0.41
Bulgaria	22,970	102	0.44	Lithuania	159,585	644	0.40
Croatia	196,879	1,010	0.51	Luxemburg	23,541	96	0.41
Cyprus	14,710	256	1.74	Malta	4,088	58	1.42
Czech Republic	239,290	1,228	0.51	Netherlands	1,941,000	14,889	0.77
Denmark	485,180	1,998	0.41	Poland	1,586,221	6,602	0.42
Estonia	34,241	171	0.50	Portugal	342,329	1,190	0.35
Finland	264,177	1,290	0.49	Romania	141,321	548	0.39
France	4,654,107	1,7905	0.38	Slovakia	35,732	337	0.94
Germany	3,589,878	14,759	0.41	Slovenia	108,702	472	0.43
Greece	187,909	754	0.40	Spain	2,208,141	9,650	0.44
Hungary	94,584	380	0.40	Sweden	431,830	2,276	0.53
Ireland	1,726,461	7,655	0.44	United Kingdom	2,656,000	13,575	0.51
				Total (EU 28)	**25,315,582**	**127,187**	**0.50**

(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2013 or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in bovines are presented in Table 8. Of the 127,187 samples analysed in this category, 494 (0.39%) were non-compliant (600 non-compliant results). The non-compliant samples were reported by 22 Member States.

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

Substance group[a]	Samples analysed		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	77,385	60.8	147	0.19	172
A1	13,148	10.3	0	0	0
A2	4,403	3.5	56	1.27	57
A3	27,882	21.9	18	0.06	23
A4	11,067	8.7	65	0.59	84
A5	21,755	17.1	5	0.02	5
A6	14,797	11.6	3	0.02	3
B	55,324	43.5	348	0.63	428
B1	23,536	18.5	82	0.35	85
B2	25,450	20.0	37	0.15	38
B2a	4,531	3.6	4	0.09	4
B2b	1,784	1.4	2	0.11	2
B2c	1,600	1.3	0	0	0
B2d	1,753	1.4	0	0	0
B2e	5,445	4.3	12	0.22	12
B2f	10,838	8.5	20	0.18	20
B3	7,206	5.7	217	3.01	305
B3a	3,151	2.5	2	0.06	2
B3b	1,425	1.1	0	0	0
B3c	2,587	2.0	175	6.76	187
B3d	1,096	0.9	51	4.65	116
B3e	0	0	0	0	0
B3f	196	0.2	0	0	0
Total	**127,187**	**100**	**494**	**0.39**	**600**

(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, seven Member States reported a total of 56 non-compliant samples, all for thiouracil or 5-methyl-2-thiouracil.

In the group A3, a total of 18 non-compliant samples (23 non-compliant results) were reported. Among the substances identified, the highest number of non-compliant results were noted for epinandrolone (n = 7).

In the group A4, four Member States reported 65 non-compliant samples (84 non-compliant results) for alpha-zeralanol, beta-zearalanol and zearalanone.

There were 5 non-compliant samples (5 non-compliant results) reported in Group A5: for clenbuterol (n = 4) and ractopamine (n = 1) by three Member States.

In group A6, three Member States reported prohibited substances in three samples (three non-compliant results). The substances identified were: chloramphenicol (n = 2) and AMOZ (5-methylmorpholino-3-amino-2-oxazolidone) (n = 1).

For antibacterials (B1), 12 Member States reported a total of 82 non-compliant samples (85 non-compliant results). Among the substances identified, oxytetracycline was the most frequent one (22 non-compliant results).

In Group B2, there were four non-compliant samples (four non-compliant results) for anthelmintics (B2a), two non-compliant samples for anticoccidials (B2b), 12 non-compliant samples (12 non-compliant results) were reported by four Member States for non-steroidal anti-inflammatory drugs (NSAIDs) (B2e), and 20 non-compliant samples (20 non-compliant results) were reported by five Member States for steroidal anti-inflammatory drugs (B2f). Dexamethasone was the most frequently reported substance in B2f (n = 18 non-compliant results).

In the group B3, there were two non-compliant samples for organochlorine compounds (B3a), 175 non-compliant samples for heavy metals (B3c) and 51 non-compliant samples for mycotoxins (B3d) (zearalenol-alpha and –beta and zearalenone (mycotoxin F)). Within the 175 non-compliant samples (187 non-compliant results) for heavy metals (B3d) there were 150 non-compliant results for copper (reported by two Member States), 18 for cadmium (reported by nine Member States), 18 for mercury (reported by one Member State), and one for lead.

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 2015 for the EU overall (Table 9), and by the majority of Member States (Table 10). Bulgaria did not achieve the minimum sampling frequency for pigs.

Table 9: Production of pigs and number of targeted samples over 2007–2015

Year	Production (animals)	Targeted samples	% Animals tested[(a)]	Minimum 96/23/EC
2007 (EU 27)	241,501,638	144,378	0.06	
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	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	

(a): in relation to the production of the previous year.

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

Country	Production data[(a)] (animals)	Number of samples 2015	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2015	Animals tested (%)
Austria	5,376,923	3,364	0.06	Italy	10,046,886	7,853	0.08
Belgium	11,945,169	5,607	0.05	Latvia	344,079	178	0.05
Bulgaria	879,821	355	0.04	Lithuania	888,663	441	0.05
Croatia	973,605	443	0.05	Luxemburg	157,719	80	0.05
Cyprus	563,693	579	0.10	Malta	69,789	55	0.08
Czech Republic	2,664,714	1,649	0.06	Netherlands	14,535,900	8,023	0.06
Denmark	18,930,372	9,737	0.05	Poland	21,551,492	10,949	0.05
Estonia	443,085	661	0.15	Portugal	4,406,626	2,114	0.05
Finland	2,131,678	1,244	0.06	Romania	4,172,659	1,878	0.05
France	23,654,629	11,711	0.05	Slovakia	573,711	440	0.08
Germany	59,026,965	30,003	0.05	Slovenia	241,286	154	0.06
Greece	1,565,648	755	0.05	Spain	39,665,170	20,017	0.05
Hungary	4,222,792	2,025	0.05	Sweden	2,566,040	1,323	0.05
Ireland	2,946,858	2,747	0.09	United Kingdom	9,963,000	5,627	0.06
				Total (EU 28)	**244,508,972**	**130,012**	**0.05**

(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2013 or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in pigs are presented in Table 11. Of the 130,012 samples analysed in this category, 294 (0.23%) were non-compliant (364 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		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	56,826	43.7	37	0.07	39
A1	6,530	5.0	0	0	0
A2	3,317	2.6	6	0.18	6
A3	9,729	7.5	15	0.15	15
A4	5,158	4.0	6	0.12	8
A5	11,160	8.6	1	0.01	1
A6	26,299	20.2	9	0.03	9
B	84,122	64.7	259	0.31	325
B1	42,417	32.6	59	0.14	64
B2	31,913	24.5	2	0.01	2
B2a	7,249	5.6	1	0.01	1
B2b	6,096	4.7	0	0	0
B2c	2,230	1.7	0	0	0
B2d	6,657	5.1	0	0	0
B2e	4,584	3.5	1	0.02	1
B2f	6,218	4.8	0	0	0
B3	11,533	8.9	198	1.72	259
B3a	4,785	3.7	2	0.04	2
B3b	2,145	1.6	0	0	0
B3c	3,774	2.9	150	3.97	191
B3d	1,937	1.5	46	2.37	66
B3e	0	0	0	0	0
B3f	326	0.3	0	0	0
Total	**130,012**	**100**	**294**	**0.23**	**364**

(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 A2, three Member States reported a total of six non-compliant samples, all for thiouracil, 6-methyl-2-thiouracil, or 6-propyl-2-thiouracil.

In the group A3, three Member States reported 15 non-compliant samples and results (nine for nortestosterone acetate, four for nandrolone and two for boldenone).

Six non-compliant samples (eight non-compliant results) were reported in group A4 for alpha- and beta-zearalanol (n = 2 non-compliant results each) and zearalanone (n = 4 non-compliant results).

In group A6, four Member States reported prohibited substances in nine samples (nine non-compliant results) for chloramphenicol (n = 5), metronidazole (n = 3) and hydroxymetronidazole (n = 1).

For antibacterials (B1), 14 Member States reported a total of 59 non-compliant samples (64 non-compliant results).

In the group B2, two Member States reported two non-compliant samples (two non-compliant results). They were distributed as follows: one non-compliant sample (one non-compliant result) for anthelmintics (B2a) and one non-compliant sample and result for NSAIDS (B2e).

In the group B3, there were 198 non-compliant samples (259 non-compliant results). The non-compliant results were distributed as follows: two for organochlorine compounds (B3a), 191 for heavy metals (B3c), 66 in total for mycotoxins (B3d) (for ochratoxin A, zearalenol-alpha and –beta and zearalenone (mycotoxin F). Of the 191 non-compliant results for heavy metals (B3c), 100 were reported as non-compliant for mercury, 84 for copper, six for cadmium and one for lead.

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 2015 for the EU overall (Table 12), and by the majority of Member States (Table 13). Portugal and Romania did not achieve the minimum sampling frequency for sheep and goats.

Table 12: Production of sheep and goats and number of targeted samples over 2007–2015

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	0.05
2012 (EU 27)	36,558,080	23,441	0.06	
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	

(a): in relation to the production of the previous year.

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

Country	Production data[(a)] (animals)	Number of samples 2015	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2015	Animals tested (%)
Austria	148,999	356	0.24	Italy	464,501	734	0.16
Belgium	128,048	205	0.16	Latvia	13,806	34	0.25
Bulgaria	239,647	115	0.05	Lithuania	6,779	17	0.25
Croatia	69,907	58	0.08	Luxemburg	2,424	10	0.41
Cyprus	247,856	223	0.09	Malta	5,389	18	0.33
Czech Republic	14,476	61	0.42	Netherlands	683,000	418	0.06
Denmark	81,926	51	0.06	Poland	36,075	100	0.28
Estonia	5,883	20	0.34	Portugal	1,029,251	390	0.04
Finland	44,207	33	0.07	Romania	363,539	161	0.04
France	4,395,117	2,140	0.05	Slovakia	70,957	110	0.16
Germany	1,005,011	528	0.05	Slovenia	9,595	33	0.34
Greece	1,013,161	498	0.05	Spain	7,783,865	4,603	0.06
Hungary	24,082	54	0.22	Sweden	257,800	144	0.06
Ireland	2,956,323	1,962	0.07	United Kingdom	15,087,000	8,344	0.06
				Total (EU 28)	**36,188,624**	**21,420**	**0.06**

(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2013 or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in sheep and goats is presented in Table 14. Of the 21,420 samples analysed in this category, 70 (0.33%) were non-compliant (75 non-compliant results). The non-compliant samples were reported by 10 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		Non-compliant samples		Non-compliant results
	n[b]	%	N[c]	%	n[d]
A	4,880	22.8	6	0.12	8
A1	802	3.7	0	0	0
A2	270	1.3	1	0.37	1
A3	1,009	4.7	5	0.50	7
A4	396	1.8	0	0	0
A5	951	4.4	0	0	0
A6	1,731	8.1	0	0	0
B	16,736	78.1	64	0.38	67
B1	7,978	37.2	24	0.30	24
B2	5,894	27.5	14	0.24	14
B2a	2,720	12.7	14	0.51	14
B2b	984	4.6	0	0	0
B2c	914	4.3	0	0	0
B2d	445	2.1	0	0	0
B2e	410	1.9	0	0	0
B2f	505	2.4	0	0	0
B3	2,955	13.8	26	0.88	29
B3a	1,146	5.4	1	0.09	1
B3b	998	4.7	1	0.10	1
B3c	805	3.8	23	2.86	25
B3d	174	0.8	1	0.57	2
B3e	0	0	0	0	0
B3f	20	0.1	0	0	0
Total	**21,420**	**100**	**70**	**0.33**	**75**

(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, a non-compliant sample and result was reported against antithyroid agents (A2) for thiouracil, by one Member State. Five non-compliant samples and seven results were reported for steroids (A3), (for nandrolone (n = 4), boldenone-alpha (n = 1) and boldenone–beta (n = 2)), by three Member States.

For antibacterials (B1), five Member States reported a total of 24 non-compliant samples (24 non-compliant results). The substance with the highest number of non-compliant results was sulfadiazine (n = 12).

In the group B2, 14 non-compliant samples (and results) were reported for anthelmintics (B2a), only.

In the group B3, there were 26 non-compliant samples (29 non-compliant results). The non-compliant results were distributed as follows: one each for organochlorine compounds (B3a) and organophosphorus compounds (B3b), 25 for heavy metals (B3c) (15 for copper, six for cadmium and two for mercury and lead), and two for mycotoxins (B3d).

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 2015 at EU level was slightly lower compared to the previous three 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 2007–2015

Year	Production (animals)	Targeted samples	% Animals tested[(a)]	Minimum 96/23/EC
2007 (EU 27)	312,969	3,115	1.16	
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	Not specified
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	

(a): in relation to the production of the previous year.

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

Country	Production data[(a)] (animals)	Number of samples 2015	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2015	Animals tested (%)
Austria	943	67	7.10	Italy	49,489	520	1.05
Belgium	8,800	446	5.07	Latvia	288	21	7.29
Bulgaria	110	41	37.27	Lithuania	1,529	18	1.18
Croatia	710	36	5.07	Luxemburg	0	0	NA
Cyprus	0	0	NA	Malta	19	16	84.21
Czech Republic	404	77	19.06	Netherlands	4,300	152	3.53
Denmark	1,328	26	1.96	Poland	29,241	334	1.14
Estonia	23	0	0	Portugal	2698	64	2.37
Finland	1,953	50	2.56	Romania	18,262	146	0.80
France	17,075	453	2.65	Slovakia	2	0	0
Germany	8,847	104	1.18	Slovenia	1,836	42	2.29
Greece	0	0	NA	Spain	50,152	360	0.72
Hungary	1,020	14	1.37	Sweden	3,650	195	5.34
Ireland	7,942	472	5.94	United Kingdom	5,008	95	1.90
				Total (EU 28)	**215,629**	**3,749**	**1.74**

NA: not applicable.
(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2013 or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in horses is presented in Table 17. Of the 3,749 samples analysed in this category, 91 samples (2.43%) were non-compliant (129 non-compliant results). The non-compliant samples were reported by 16 Member States.

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

Substance group[a]	Samples analysed		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	867	23.1	3	0.35	3
A1	87	2.3	0	0	0
A2	71	1.9	0	0	0
A3	142	3.8	2	1.41	2
A4	87	2.3	0	0	0
A5	287	7.7	1	0.35	1
A6	264	7.0	0	0	0
B	2,922	78	88	3.01	126
B1	595	15.9	1	0.17	1
B2	1,485	39.6	8	0.54	8
B2a	161	4.3	2	1.24	2
B2b	84	2.2	1	1.19	1
B2c	103	2.7	0	0	0
B2d	178	4.7	2	1.12	2
B2e	781	20.8	3	0.38	3
B2f	180	4.8	0	0	0
B3	859	22.9	79	9.20	117
B3a	131	3.5	1	0.76	1
B3b	77	2.1	0	0	0
B3c	607	16.2	74	12.19	106
B3d	60	1.6	4	6.67	10
B3e	0	0	0	0	0
B3f	6	0.2	0	0	0
Total	**3,749**	**100**	**91**	**2.43**	**129**

(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 three non-compliant samples and results in total, for steroids (A3) (nandrolone, n = 2), and beta-agonists (A5) (clenbuterol, n = 1).

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

In the group B2, eight non-compliant samples (eight non-compliant results) were noted, for anthelmintics (B2a) (two samples and results), anticoccidials (B2b) (one sample and result), sedatives (B2d) (two samples and results), for NSAIDs (B2e) (three samples and results).

In the group B3, 74 non-compliant samples (106 non-compliant results) were reported for the heavy metal subgroup B3c: 74 results for cadmium and 32 for mercury. Non-compliant samples were also noted for organochlorine substances (B3a) (n = 1) and mycotoxins (B3d) (n = 4).

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 achieved in 2015 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. Belgium, Greece, Portugal and Romania did not achieve this requirement.

Table 18: Production of poultry and number of targeted samples over 2007–2015

Year	Production (t)	Targeted samples	% Samples tested/200 t[(a)]	Minimum 96/23/EC
2007 (EU 27)	10,912,500	62,101	1.15	
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	1/200 t
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	

(a): in relation to the production of the previous year.

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

Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ 200 t	Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ 200 t
Austria	107,947	828	1.5	Italy	1,258,800	7,504	1.2
Belgium	383,430	1,729	0.9	Latvia	27,000	204	1.5
Bulgaria	84,352	418	1.0	Lithuania	67,606	347	1.0
Croatia	56,505	365	1.3	Luxemburg	0	0	NA
Cyprus	17,940	333	3.7	Malta	3,916	212	10.8
Czech Republic	147,738	800	1.1	Netherlands	957,200	5,270	1.1
Denmark	143,048	748	1.0	Poland	1,560,158	7,921	1.0
Estonia	17,562	200	2.3	Portugal	305,137	1,382	0.9
Finland	102,161	666	1.3	Romania	402,452	1,881	0.9
France	1,655,380	8,207	1.0	Slovakia	84,838	481	1.1
Germany	1,504,731	9,004	1.2	Slovenia	54,159	326	1.2
Greece	198,280	622	0.6	Spain	1,295,035	6,834	1.1
Hungary	560,904	2,867	1.0	Sweden	133,660	655	1.0
Ireland	139,898	1,340	1.9	United Kingdom	1,640,000	10,079	1.2
				Total (EU 28)	**12,909,837**	**71,223**	**1.10**

NA: not applicable.
(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2013 or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in poultry are presented in Table 20. Of the 71,223 samples analysed in this category, 49 (0.07%) were non-compliant (58 non-compliant results). The non-compliant samples were reported by 13 Member States.

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

Substance group[a]	Samples analysed		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	37,078	52.1	6	0.02	6
A1	3,241	4.6	0	0	0
A2	864	1.2	0	0	0
A3	4,099	5.8	0	0	0
A4	2,871	4.0	0	0	0
A5	5,743	8.1	0	0	0
A6	21,244	29.8	6	0.03	6
B	38,584	54.2	43	0.11	52
B1	17,847	25.1	20	0.11	21
B2	14,896	20.9	13	0.09	13
B2a	2,928	4.1	0	0	0
B2b	8,700	12.2	13	0.15	13
B2c	2,061	2.9	0	0	0
B2d	6	0.01	0	0	0
B2e	905	1.3	0	0	0
B2f	554	0.8	0	0	0
B3	6,298	8.8	10	0.16	18
B3a	3,685	5.2	1	0.03	1
B3b	994	1.4	0	0	0
B3c	1,823	2.6	2	0.11	2
B3d	788	1.1	7	0.89	15
B3e	0	0	0	0	0
B3f	97	0.1	0	0	0
Total	**71,223**	**100**	**49**	**0.07**	**58**

(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, non-compliant samples were reported for group A6 only. Five member States reported six non-compliant samples and results in total, for chloramphenicol (n = 3) and one each for AOZ (3-amino-2-oxazolidone), dimetridazole and metronidazole.

For antibacterials (B1), eight Member States reported a total of 20 non-compliant samples (21 non-compliant results). Similar to previous years, the most frequent substance reported was doxycycline (n = 14).

In the group B2, of non-compliant samples were reported for anticoccidials (B2b) only (13 non-compliant samples and results), by four Member States.

In the group B3, one non-compliant sample and result was reported for organochlorine compounds (B3a). Two non-compliant samples and results were reported under chemical elements (B3c) (copper). Seven non-compliant samples (15 non-compliant results) were reported for mycotoxins (B3d); six results for zearalenol-alpha and zearalenone-beta, two results for zearalenone (mycotoxin F) and one for aflatoxin B1.

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 2015 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. Greece and Malta did not analyse at least one sample/100 t of production.

Table 21: Production of aquaculture and number of targeted samples over 2007–2015

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	

(a): related to the production of the previous year.

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

Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ 100 t	Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ 100 t
Austria	3,700	233	6.3	Italy	59,000	812	1.4
Belgium	2,000	146	7.3	Latvia	643	9	1.4
Bulgaria	4,922	77	1.6	Lithuania	3,870	42	1.1
Croatia	11,720	141	1.2	Luxemburg	0	0	NA
Cyprus	4,908	127	2.6	Malta	7,007	61	0.9
Czech Republic	20,645	243	1.2	Netherlands	6,000	83	1.4
Denmark	36,000	364	1.0	Poland	32,500	532	1.6
Estonia	733	16	2.2	Portugal	5,621	56	1.0
Finland	13,613	202	1.5	Romania	5,166	61	1.2
France	49,673	496	1.0	Slovakia	778	119	15.3
Germany	20,481	343	1.7	Slovenia	1,234	28	2.3
Greece	97,271	750	0.8	Spain	50,053	530	1.1
Hungary	5,949	62	1.0	Sweden	9,888	100	1.0
Ireland	10,033	124	1.2	United Kingdom	145,250	1,489	1.0
				Total (EU 28)	**608,658**	**7,246**	**1.2**

NA: not applicable.
(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2010, 2011, 2013 and/or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in aquaculture are presented in Table 23. Of the 7,246 samples analysed for aquaculture 44 samples (0.61%) were non-compliant (57 non-compliant results). The non-compliant samples were reported by 13 Member States.

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

Substance group [a]	Samples analysed		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	2,213	30.5	3	0.14	3
A1	118	1.6	0	0	0
A2	2	0.1	0	0	0
A3	358	4.9	0	0	0
A4	39	0.5	0	0	0
A5	85	1.2	0	0	0
A6	1,688	23.3	3	0.18	3
B	5,218	72.0	41	0.79	54
B1	1,546	21.3	5	0.32	5
B2	967	13.3	1	0.10	1
B2a	588	8.1	1	0.17	1
B2b	74	1.0	0	0	0
B2c	374	5.2	0	0	0
B2d	0	0	0	0	0
B2e	0	0	0	0	0
B2f	142	2.0	0	0	0
B3	3,012	42	35	1.16	48
B3a	633	8.7	2	0.32	2
B3b	73	1.0	0	0	0
B3c	590	8.1	5	0.85	5
B3d	148	2.0	0	0	0
B3e	1,688	23.3	28	1.66	41
B3f	86	1.2	0	0	0
Total	**7,246**	**100**	**44**	**0.61**	**57**

(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, three non-compliant samples and results were reported in group A6, for AMOZ (5-methylmorpholino-3-amino-2-oxazolidone.

In group B1, five non-compliant samples and results were reported by three Member States, for amoxicillin, inhibitors and sulfadiazine.

In group B2, one non-compliant sample and result was reported for anthelmintics (B2a).

In the group B3, there were 35 non-compliant samples (48 non-compliant results), in total. The non-compliant results were distributed as follows: two for organochlorine compounds (B3a), five for mercury (B3c), and 41 for dyes (B3e) (brilliant green, malachite green, leuco-malachite green and 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 2015 by all Member States (Table 24). 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 2007–2015

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	1/15,000 t
2012 (EU 27)	149,086,701	30,748	3.2	
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	

(a): related to the production of the previous year.

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

Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ 15,000 t	Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ 15,000 t
Austria	150,915	338	33.6	Italy	11,071,383	2,474	3.4
Belgium	3,299,539	925	4.2	Latvia	915,000	732	12.0
Bulgaria	531,304	294	8.3	Lithuania	1,392,429	305	3.3
Croatia	738,917	1,074	21.8	Luxemburg	287,000	650	34.0
Cyprus	164,000	476	43.5	Malta	45,142	308	102.3
Czech Republic	2,856,000	334	1.8	Netherlands	12,716,300	2,134	2.5
Denmark	4,500,000	304	1.0	Poland	12,607,301	2,606	3.1
Estonia	771,632	661	12.8	Portugal	1,847,975	764	6.2
Finland	2,288,500	293	1.9	Romania	1,900,107	375	3.0
France	24,425,788	1,746	1.1	Slovakia	1,262,123	513	6.1
Germany	30,380,817	2,006	1.0	Slovenia	505,536	341	10.1
Greece	1,892,333	605	4.8	Spain	6,927,836	1,118	2.4
Hungary	872,541	306	5.3	Sweden	2,932,000	300	1.5
Ireland	5,900,705	1,197	3.0	United Kingdom	14,611,308	3,526	3.6
				Total (EU 28)	**147,794,431**	**26,705**	**2.7**

(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2013 or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in milk and the number of Member States reporting non-compliant results is presented in Table 26. Of the 26,705 milk samples analysed, 28 (0.10%) were non-compliant (29 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		Non-compliant samples		Non-compliant results
	n[b]	%	N[c]	%	n[d]
A	6,783	25.4	2	0.03	2
A1	0	0	0	0	0
A2	22	0.1	0	0	0
A3	51	0.2	0	0	0
A4	0	0	0	0	0
A5	151	0.6	0	0	0
A6	6,646	24.9	2	0.03	2
B	22,440	84.0	26	0.12	27
B1	13,168	49.3	10	0.08	11
B2	7,743	29.0	10	0.13	10
B2a	5,458	20.4	5	0.09	5
B2b	102	0.4	0	0	0
B2c	352	1.3	0	0	0
B2d	55	0.2	0	0	0
B2e	3,545	13.3	5	0.14	5
B2f	838	3.1	0	0	0
B3	4,668	17.5	6	0.13	6
B3a	1,712	6.4	0	0	0
B3b	671	2.5	0	0	0
B3c	794	3.0	1	0.13	1
B3d	1,673	6.3	5	0.30	5
B3e	0	0	0	0	0
B3f	104	0.4	0	0	0
Total	**26,705**	**100**	**28**	**0.10**	**29**

(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 (two non-compliant results) in group A6 for chloramphenicol (n = 2). According to Annex II to Council Directive 96/23/EC there is no requirement for residue monitoring of the substances in groups A1, A2, A3, A4 and A5 in milk.

For antibacterials (B1), six Member States reported a total of 10 non-compliant samples (11 non-compliant results).

In the group B2, there were 10 non-compliant samples (10 non-compliant results): five for anthelmintics (B2a) and five for NSAIDs (B2e).

In the group B3, there were six non-compliant samples (six non-compliant results) in total: one non-compliant result for chemical elements (B3c) (lead), and five 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 2015 for the EU overall (Table 27) and by the majority of Member States. France and Greece 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 2007–2015

Year	Production (t)	Targeted samples	Samples tested/1,000 t	Minimum 96/23/EC
2007 (EU 27)	6,114,369	13,685	2.3	1/1,000 t
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	
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	

(a): related to the production of the previous year.

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

Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ 1,000 t	Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ 1,000 t
Austria	107,292	219	2.0	Italy	766,584	1,234	1.6
Belgium	162,240	535	3.3	Latvia	38,000	504	13.3
Bulgaria	45,416	204	4.5	Lithuania	40,138	198	4.9
Croatia	33,305	382	11.5	Luxemburg	1,300	200	153.8
Cyprus	8,567	267	31.2	Malta	4,916	200	40.7
Czech Republic	132,300	215	1.6	Netherlands	645,300	1,569	2.4
Denmark	60,905	196	3.2	Poland	506,586	672	1.3
Estonia	11,964	200	16.7	Portugal	105,303	254	2.4
Finland	67,100	200	3.0	Romania	105,990	176	1.7
France	864,243	821	0.9	Slovakia	40,707	210	5.2
Germany	781,000	817	1.0	Slovenia	25,031	216	8.6
Greece	107,208	90	0.8	Spain	782,212	794	1.0
Hungary	44,951	209	4.6	Sweden	118,000	200	1.7
Ireland	51,249	320	6.2	United Kingdom	613,872	2,056	3.3
				Total (EU 28)	**6,271,679**	**13,158**	**2.1**

(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2013 or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in eggs is presented in Table 29. Of the 13,158 egg samples analysed, 40 (0.30%) were non-compliant (45 non-compliant results). The non-compliant samples were reported by 16 Member States.

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

Substance group[a]	Samples analysed		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	3,358	25.5	2	0.06	2
A1	0	0	0	0	0
A2	0	0	0	0	0
A3	0	0	0	0	0
A4	0	0	0	0	0
A5	0	0	0	0	0
A6	3,366	25.6	2	0.06	2
B	10,912	82.9	37	0.34	43
B1	4,454	33.9	7	0.16	8
B2	4,675	35.5	23	0.49	24
B2a	192	1.5	0	0	0
B2b	4,227	32.1	23	0.54	24
B2c	263	2.0	0	0	0
B2d	0	0	0	0	0
B2e	0	0	0	0	0
B2f	141	1.1	0	0	0
B3	2,806	21	8	0.29	11
B3a	2,499	19.0	8	0.32	11
B3b	389	3.0	0	0	0
B3c	156	1.2	0	0	0
B3d	8	0.1	0	0	0
B3e	0	0	0	0	0
B3f	121	0.9	0	0	0
Total	**13,158**	**100**	**40**	**0.30**	**45**

(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, two non-compliant samples (two non-compliant results) for chloramphenicol were reported, by one Member State.

For antibacterials (B1), seven non-compliant samples (eight non-compliant results) were reported by six Member States: doxycycline (n = 1), enrofloxacin (n = 3), sulfadiazine (n = 2), sulfadimethoxine (n = 1) and trimethoprim (n = 1)

In the group B2, 23 non-compliant samples were found (24 non-compliant results) for anticoccidials (B2b). The most frequently reported substance was lasalocid (n = 9).

In the group B3, eight non-compliant samples (11 non-compliant results) were reported for organochlorine compounds (B3a) by three Member States.

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 2007–2015

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

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 equal to one 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. Greece, the Netherlands and Portugal did not achieve the minimum sampling frequency requirement in 2015.

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

Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ required	Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ required
Austria	0	0	NA	Italy	33,346	391	1.9
Belgium	4,191	127	1.2	Latvia	5	20	120.0
Bulgaria	33	19	17.3	Lithuania	45	13	8.7
Croatia	15	15	30.0	Luxemburg	8	9	33.8
Cyprus	121	74	18.3	Malta	75	23	9.2
Czech Republic	832	34	1.2	Netherlands	46	0	0
Denmark	0	0	NA	Poland	3,200	109	1.1
Estonia	0	0	NA	Portugal	7,085	87	0.8
Finland	0	0	NA	Romania	0	0	NA
France	43,758	302	1.3	Slovakia	12	40	100.0
Germany	552	39	2.1	Slovenia	22	18	24.5
Greece	2,474	45	0.5	Spain	50,592	1,014	3.9
Hungary	9,792	130	1.1	Sweden	0	0	NA
Ireland	0	0	NA	United Kingdom	0	0	NA
				Total (EU 28)	**156,204**	**2,509**	**NA**

NA: not applicable.
(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2013 or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in rabbit meat are presented in Table 32. Of the 2,509 samples analysed for rabbits, 9 (0.36%) were non-compliant (10 non-compliant results). The non-compliant samples were reported by five Member States.

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

Substance group[a]	Samples analysed		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	719	28.7	1	0.14	1
A1	44	1.8	0	0	0
A2	27	1.1	0	0	0
A3	45	1.8	0	0	0
A4	43	1.7	0	0	0
A5	98	3.9	0	0	0
A6	494	19.7	1	0.20	1
B	1,796	71.6	8	0.45	9
B1	902	36.0	6	0.67	7
B2	651	25.9	1	0.15	1
B2a	131	5.2	0	0	0
B2b	279	11.1	1	0.36	1
B2c	81	3.2	0	0	0
B2d	9	0.4	0	0	0
B2e	115	4.6	0	0	0
B2f	39	1.6	0	0	0
B3	257	10.2	1	0.39	1
B3a	120	4.8	0	0	0
B3b	27	1.1	0	0	0
B3c	115	4.6	0	0	0
B3d	14	0.6	1	7.14	1
B3e	0	0	0	0	0
B3f	2	0.1	0	0	0
Total	**2,509**	**100**	**9**	**0.36**	**10**

(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, one non-compliant sample and result was reported in group A6 for dimetridazole.

In group B, there were six non-compliant samples (seven non-compliant results) for antibacterials (B1); the substances found were sulfadimethoxine (n = 4) enrofloxacin (n = 2) and ciprofloxacin (n = 1). For groups B2 and B3, one non-compliant sample and result was reported in each, for anticoccidials (B2b) and mycotoxins (B3d).

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 1,785 targeted samples were collected in 2015 in the EU (Tables 33 and 34).

Table 33: Production of farmed game and number of targeted samples over 2007–2015

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

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

Country	Production data[(a)] (t)	Number of samples 2015	Country	Production data[(a)] (t)	Number of samples 2015
Austria	297	143	Italy	2,835	172
Belgium	196	151	Latvia	23	24
Bulgaria	0	0	Lithuania	20	18
Croatia	10	21	Luxemburg	0	0
Cyprus	6	0	Malta	0	0
Czech Republic	221	111	Netherlands	21	34
Denmark	33	12	Poland	51	50
Estonia	0	0	Portugal	1,356	97
Finland	1,505	136	Romania	9	15
France	9,140	131	Slovakia	0	107
Germany	2,429	98	Slovenia	1	9
Greece	105	38	Spain	121	40
Hungary	88	12	Sweden	1,615	102
Ireland	47	124	United Kingdom	4,250	140
			Total (EU 28)	**24,379**	**1,785**

(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2013 or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in farmed game are presented in Table 35. Of the 1,785 samples analysed for farmed game, 31 (1.74%) were non-compliant (34 non-compliant results). The non-compliant samples were reported by nine Member States.

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

Substance group[a]	Samples analysed		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	515	28.9	4	0.78	5
A1	56	3.1	0	0	0
A2	22	1.2	0	0	0
A3	57	3.2	1	2.00	2
A4	49	2.7	0	0	0
A5	101	5.7	0	0	0
A6	261	14.6	3	1.15	3
B	1,274	71.4	27	2.12	29
B1	363	20.3	0	0	0
B2	509	28.5	4	0.79	6
B2a	220	12.3	1	0.45	3
B2b	140	7.8	2	1.43	2
B2c	68	3.8	0	0	0
B2d	8	0.4	0	0	0
B2e	62	3.5	1	1.61	1
B2f	15	0.8	0	0	0
B3	438	25	23	5.25	23
B3a	178	10.0	3	1.69	3
B3b	39	2.2	0	0	0
B3c	258	14.5	20	7.75	20
B3d	5	0.3	0	0	0
B3e	0	0	0	0	0
B3f	17	1.0	0	0	0
Total	**1,785**	**100**	**31**	**1.74**	**34**

(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, one non-compliant sample (two non-compliant results) were reported for group A3, for boldenone beta and nandrolone. Three non-compliant samples (three non-compliant results) were reported in group A6, for AMOZ (5-methylmorpholino-3-amino-2-oxazolidone).

In the group B2, four non-compliant samples (six non-compliant results) were reported under the following groups, anthelmintics (B2a) (n = 3), anticoccidials (B2b) (n = 2) and NSAIDs (B2e) (n = 1).

In the group B3, non-compliant samples were reported for organochlorine compounds (B3a) and chemical elements (B3c). For subgroup B3a, three non-compliant samples and results were reported by three Member States. For subgroup B3c, 20 non-compliant samples and results were reported for heavy metals as follows, cadmium (n = 13), lead (n = 4) and mercury (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.

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 2,480 targeted samples were collected in 2015 in the EU (Tables 36 and 37).

Table 36: Production of wild game and number of targeted samples over 2007–2015

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

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

Country	Production data[(a)] (t)	Number of samples 2015	Country	Production data[(a)] (t)	Number of samples 2015
Austria	9,474	170	Italy	370	67
Belgium	1,965	199	Latvia	120	100
Bulgaria	40	190	Lithuania	25	40
Croatia	10	12	Luxemburg	360	100
Cyprus	0	0	Malta	0	0
Czech Republic	10,320	149	Netherlands	734	61
Denmark	356	15	Poland	19,101	190
Estonia	696	100	Portugal	2,166	41
Finland	54	0	Romania	116	81
France	31,913	110	Slovakia	6,029	110
Germany	74,628	95	Slovenia	1,748	101
Greece	6	28	Spain	7,772	131
Hungary	11,414	91	Sweden	0	92
Ireland	340	107	United Kingdom	550	100
			Total (EU 28)	**180,307**	**2,480**

(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2010, 2011, 2013 and/or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in wild game are presented in Table 38. Of the 2,480 samples analysed for wild game, 216 (8.71%) were non-compliant (223 non-compliant results). The non-compliant samples were reported by 14 Member States.

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

Substance group[a]	Samples analysed		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	32	1.3	0	0	0
A1	0	0	0	0	0
A2	0	0	0	0	0
A3	1	0.04	0	0	0
A4	0	0	0	0	0
A5	0	0	0	0	0
A6	31	1.3	0	0	0
B	2,448	98.7	216	8.82	223
B1	0	0	0	0	0
B2	155	6.3	0	0	0
B2a	130	5.2	0	0	0
B2b	0	0	0	0	0
B2c	26	1.0	0	0	0
B2d	0	0	0	0	0
B2e	0	0	0	0	0
B2f	0	0	0	0	0
B3	2,319	93.5	216	9.31	223
B3a	160	6.5	13	8.13	17
B3b	31	1.3	0	0	0
B3c	2,187	88.2	204	9.33	206
B3d	0	0	0	0	0
B3e	0	0	0	0	0
B3f	137	5.5	0	0	0
Total	**2,480**	**100**	**216**	**8.71**	**223**

(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 = 206) were reported for metals (B3c) (87 for lead, 54 for cadmium, 52 for mercury, three for copper and 10 for calcium). The only other non-compliant samples (n = 13) were reported for organochlorine compounds (B3a).

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 2015, 4,203 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, Portugal and Sweden did not achieve the minimum sampling frequency requirement in 2015.

Table 39: Production of honey and number of targeted samples over 2007–2015

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

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

Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ required	Country	Production data[(a)] (t)	Number of samples 2015	Samples tested/ required
Austria	5,000	185	1.7	Italy	17,500	328	2.2
Belgium	1,500	150	3.0	Latvia	1,666	58	1.0
Bulgaria	10,194	101	0.8	Lithuania	2,912	97	1.0
Croatia	2,387	203	2.6	Luxemburg	120	28	7.0
Cyprus	380	83	6.6	Malta	15	12	24.0
Czech Republic	8,063	130	1.1	Netherlands	100	26	7.8
Denmark	2,400	83	1.0	Poland	14,550	338	2.4
Estonia	979	34	1.0	Portugal	9,346	87	0.7
Finland	1,700	59	1.0	Romania	12,828	131	1.0
France	11,414	216	1.7	Slovakia	4,080	168	1.6
Germany	18,953	171	1.1	Slovenia	2,400	84	1.1
Greece	16,400	177	1.2	Spain	28,157	681	3.7
Hungary	21,156	200	1.2	Sweden	3,016	94	0.9
Ireland	280	116	12.4	United Kingdom	3,312	163	1.6
				Total (EU 28)	**200,808**	**4,203**	**NA**

NA: not applicable.
(a): The production data was used for the preparation of the 2015 Residue Control Plan and may pertain to the years 2013 or 2014.

The distribution of samples analysed, non-compliant samples and non-compliant results in honey are presented in Table 41. Of the 4,203 samples analysed for honey, 38 (0.90%) were non-compliant (44 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		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	661	15.7	4	0.61	4
A1	0	0	0	0	0
A2	0	0	0	0	0
A3	3	0.1	0	0	0
A4	0	0	0	0	0
A5	0	0	0	0	0
A6	658	15.7	4	0.61	4
B	3,776	89.8	35	0.93	40
B1	1,679	39.9	16	0.95	16
B2	916	21.8	0	0	0
B2a	48	1.1	0	0	0
B2b	75	1.8	0	0	0
B2c	809	19.2	0	0	0
B2d	0	0	0	0	0
B2e	0	0	0	0	0
B2f	302	7.2	0	0	0
B3	1,631	38.8	20	1.23	24
B3a	674	16.0	0	0	0
B3b	802	19.1	1	0.12	1
B3c	569	13.5	18	3.16	22
B3d	11	0.3	0	0	0
B3e	0	0	0	0	0
B3f	238	5.7	1	0.42	1
Total	**4,203**	**100**	**38**	**0.90**	**44**

(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), 16 non-compliant samples and results (n = 16) were reported. Other non-compliant results were reported for the group A6[16], (AOZ (n = 1), chloramphenicol (n = 1), and metronidazole (n = 2)), for organophosphorus compounds (B3b) (n = 1), for chemical elements (B3c) (n = 22) (for cadmium (n = 5), copper (n = 6) and lead (n = 11)) and under 'other' (B3f) (n = 1 for acetamiprid).

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

3.14. Suspect, import and other samples

In addition to the targeted samples collected in conformity with the specification of the NRCP for 2015, 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

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

are reported separately in the residue database as 'suspect samples', as part of the follow-up measure taken in case of infringements.

In 2015, 19,257 suspect samples were reported of which 379 (1.97%) were non-compliant (448 non-compliant results). 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 relatively limited number of results on samples checked at import (n = 3,768). 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, 295,179 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	Sampling type					
	Suspect		Import		Other sampling	
	n	nc	n	nc	n	nc
Bovines	16,041	181	473	0	25,780	106
Pigs	1,371	79	105	0	259,975	448
Sheep/goats	377	42	197	0	3,702	10
Horses	88	1	95	0	235	6
Poultry	136	0	651	0	601	3
Aquaculture	221	32	1,691	3	145	8
Milk	801	24	26	0	3,285	20
Eggs	35	8	29	0	208	1
Rabbit	59	0	67	0	334	1
Farmed game	4	1	14	0	46	6
Wild game	3	1	50	0	23	0
Honey	121	10	370	2	845	3
Total	**19,257**	**379**	**3,768**	**5**	**295,179**	**612**
Percentage of non-compliant samples		**1.97**		**0.13**		**0.21**

n: number of samples analysed; nc: number of non-compliant samples.

4. Conclusions

- In 2015, 28 European Union (EU) Member States reported in the framework of the residue monitoring the results for 729,881 samples. A total of 411,677 targeted samples and 19,257 suspect samples were reported under Council Directive 96/23/EC. Additionally, 295,179 samples collected in the framework of other programmes developed under the national legislation and 3,768 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 1,404 or 0.34% of non-compliant samples out of the 411,677 targeted samples in 2015.
- No non-compliant samples were reported for stilbenes and derivatives (A1).
- For antithyroid agents (A2), there were 0.70% non-compliant samples, all for thiouracil (including 5-methyl-2-thiouracil, 6-methyl-2-thiouracil, or 6-propyl-2-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 (0.06%), pigs (0.15%), sheep and goats (0.50%), horses (1.41%) and farmed game (2.00%). For corticosteroids, non-compliant results for authorised substances were reported under 'other pharmacologically active substances' (B2f).
- In the group of resorcylic acid lactones (A4), 0.36% of the samples were non-compliant for zearalanone and derivatives; the non-compliant samples were found in bovines (0.59%) and pigs (0.12%).
- For beta-agonists (A5), there were 0.02% non-compliant samples in total, reported for bovines (0.02%), pigs (0.01%) and horses (0.35%).
- Prohibited substances (A6) were found in 0.04% of samples. Substances identified were chloramphenicol (n = 15), nitroimidazoles (n = 9) and nitrofurans (n = 9).
- For antibacterials (B1), 0.20% 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 (0.95%).
- In group B2 (other veterinary drugs), the highest proportion of non-compliant samples was found for anticoccidials (B2b) (0.19%).
- For anticoccidials (B2b), the non-compliant samples were reported across the different species as follows; 0.11% for bovines, 1.19% for horses, 0.15% for poultry, 0.54% for eggs, 0.36% for rabbits and 1.43% for farmed game.
- Since 2009, an important decrease has been observed in the frequency of non-compliant samples for anticoccidials (B2b) in poultry.
- The decrease in the frequency of non-compliant samples for anticoccidials (B2b) 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.
- Instances of non-compliance for anthelmintics (B2a) were reported in bovines (0.09%), pigs (0.01%), sheep and goats (0.51%), horses (1.24%), aquaculture (0.17%), milk (0.09%) and farmed game (0.45%).
- Non-compliant samples were reported for sedatives (B2d), in horses (1.12%).
- For non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were found in bovines (0.22%), pigs (0.02%), horses (0.38%), milk (0.14%) and farmed game (1.61%).
- Non-compliant samples were reported for 'other pharmacologically active substances' (B2f), in bovines (0.18%), only.

- No non-compliant samples were reported for pyrethroids (B2c).
- In the group B3 (other substances and environmental contaminants), the chemical elements (B3c) had the highest overall percentage of non-compliant samples (4.71%), with cadmium, lead, mercury and copper being most frequently identified.
- Non-compliant samples were reported for organochlorine compounds (B3a) and organophosphorus compounds (B3b); 0.17% and 0.03%, respectively.
- For mycotoxins (B3d), there were non-compliant samples reported for bovines (4.65%), pigs (2.37%), sheep and goats (0.57%), horses (6.67%), poultry (0.89%), milk (0.30%) and rabbit (7.14%); with those identified being zearalenone and derivatives, ochratoxin A and aflatoxin M1.
- The prevalence of dyes (B3e) in aquaculture samples (1.66%) was within the range noted for the previous 8 years (1.14%–2.2%). The substances found were malachite green, leuco-malachite green and leuco-crystal violet, crystal violet and brilliant green.
- For 'other substances' (B3f), one non-compliant sample was reported for the substance acetamiprid, in honey.
- In 2015, the overall frequency of non-compliant samples (0.34%) was comparable to the previous 8 years (0.25%–0.37%).
- In 2015, the frequency of non-compliant samples was higher for resorcylic acid lactones (A4), chemical elements (B3c; mainly metals) and mycotoxins (B3d), compared to previous years, although lower than those reported in 2014.
- Higher frequencies of non-compliant samples were noted in 2015 for antithyroid agents (A2), compared to previous years, except for 2013 when the highest frequency was reported.
- The frequency of non-compliant samples in 2015 for 'other pharmacologically active substances' (B2f), was lower compared to previous years, except for 2011 when the lowest frequency was reported.
- For the other substance groups, there were no notable variations over the 9 years.
- The sampling plans and the pattern of substances analysed are not necessarily the same every year and the prescribing patterns of veterinary medicines vary between species. Therefore, the outcome of the data analysis at EU level may not accurately reflect the residue situation in each individual EU Member State and for each species or product category

5. Recommendations

- With regards to the collection of data generated under Council Directive 96/23 in the EFSA format, similar to pesticides and contaminants data, the recommendations made in the previous reports (EFSA, 2010, 2011a, b, 2012, 2013, 2014, 2015 and 2016) still remain valid. Such an approach would help to overcome the limitations borne from using aggregated data.

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Abbreviations

Member States

AT	Austria
BE	Belgium
BG	Bulgaria
HR	Croatia
CY	Cyprus
CZ	The Czech Republic
DK	Denmark
EE	Estonia
FI	Finland
FR	France
DE	Germany
GR	Greece
HU	Hungary
IE	Ireland
IT	Italy
LV	Latvia
LT	Lithuania
LU	Luxembourg
MT	Malta
NL	The Netherlands
PL	Poland
PT	Portugal
RO	Romania
SK	Slovakia
SI	Slovenia
ES	Spain
SE	Sweden
UK	The United Kingdom

Other 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
NCRP	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	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
Bovines	**A2**	5-Methyl-2-thiouracil	IE	116	1	0.9
		Thiouracil	AT	50	2	4.0
			HR	26	3	11.5
			IE	237	9	3.8
			LT	20	3	15.0
			NL	373[b]	37	9.9
			PL	129	1	0.8
			UK	218	1	0.5
		Sub-total for A2	**7**		**57**	
	A3	17-Beta-Trenbolone	HR	96	2	2.1
		Boldenone-Alpha	NL	928[b]	5	0.5
		Boldenone beta	HR	20	1	5.0
		Epinandrolone (19-Norepitestosterone)	CZ	33	1	3.0
			HR	96	6	6.3
		Nandrolone	HR	76	4	5.3
			PL	94	1	1.1
		Nortestosterone acetate - (17b)-17-Hydroxyestr-4-en-3-one acetate	FR	3,060	1	0.03
		Testosterone-17-Alpha	AT	36	1	2.8
		Testosterone-17-Beta	AT	36	1	2.8
		Sub-total for A3	**6**		**23**	
	A4	Alpha-Zeralanol (Zeranol)	FI	30	1	3.3
			HR	30	9	30.0
			IT	738	11	1.5
			MT	1	1	100.0
			UK	702	9	1.3
		Beta Zearalanol (Taleranol)	AT	12	1	8.3
			DK	84	1	1.2
			ES	320	1	0.3
			FI	30	1	3.3
			HR	30	13	43.3
			IT	738	21	2.8
			UK	702	12	1.7
		Zearalanone	HR	50	3	6.0
		Sub-total for A4	**8**		**84**	
	A5	Clenbuterol	PT	165	3	1.8
			UK	535	1	0.2
		Ractopamine	HR	72	1	1.4
		Sub-total for A5	**3**		**5**	
	A6	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	IT	98	1	1.0
		Chloramphenicol	HR	13	1	7.7
			LV	42	1	2.4
		Sub-total for A6	**3**		**3**	
	B1	Amoxycillin	CY	45	1	2.2
			FR	1,986	1	0.1
			IT	416	1	0.2
			PL	700	1	0.1
		Ampicillin	IT	416	1	0.2
		Benzylpenicillin (Penicillin G)	PL	700	1	0.1
		Chlortetracyclin	UK	88[b]	1	1.1
		Ciprofloxacin	HR	150	2	1.3
			PL	700	1	0.1
		Danofloxacin	FR	1,986	1	0.1
			PL	700	1	0.1

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
		Dihydrostreptomycin	CZ	5	2	40.0
			ES	22	1	4.5
			FR	997	1	0.1
			NL	1,811[b]	1	0.05
			PL	700	3	0.4
			UK	1,207[b]	3	0.2
		Enrofloxacin	HR	150	2	1.3
			PL	700	1	0.1
		Florfenicol	UK	91[b]	4	4.4
		Gamithromycin	UK	88[b]	1	1.1
		Gentamicin	ES	23	2	8.7
			NL	1,811[b]	2	0.1
		Marbofloxacin	FR	997	1	0.1
			IT	541	2	0.4
			PL	700	2	0.3
		Oxytetracycline	DE	2,706	1	0.04
			ES	785	1	0.1
			FR	2,385	14	0.6
			IT	562	2	0.4
			LT	98	1	1.0
			NL	1,811[b]	1	0.05
			PL	700	1	0.1
			UK	88[b]	1	1.1
		Penicillin	UK	1,207[b]	1	0.1
		Penicillins (group)	FR	1,986	1	0.1
		Spiramycin	FR	997	1	0.1
		Sulfadiazine	ES	928	1	0.1
		Sulfadimethoxine	FR	2,383	2	0.1
			PL	700	1	0.1
		Sulfadoxine	PL	700	1	0.1
		Sulfamerazine	FR	2,383	1	0.04
		Sulfamethazine	IT	1,911	1	0.1
		Sulfonamides	FR	2,383	1	0.04
		Tetracycline	DE	2,438	1	0.04
		Tilmicosin	FR	997	2	0.2
			UK	88[b]	1	1.1
		Tulathromycin	DE	1,004	1	0.1
			FR	998	5	0.5
			SE	1	1	100.0
			UK	1,207[b]	1	0.1
		Sub-total for B1	**12**		**85**	
	B2a	Abamectin (Avermectin B1)	IE	510	1	0.2
		Ivermectin	UK	426	1	0.2
		Moxidectin	FR	497	1	0.2
		Nitroxinil	UK	506	1	0.2
		Sub-total for B2a	**3**		**4**	
	B2b	Decoquinate	UK	17	2	11.8
		Sub-total for B2b	**1**		**2**	
	B2e	Antipyrin-4-Methylamino	DE	301	1	0.3
		Diclofen (Diclofenac)	FR	798	2	0.3
			NL	231[b]	1	0.4
		Flunixin	DE	234	1	0.4
			FR	798	1	0.1
		Ibuprofen	UK	622	1	0.2
		Meloxicam	FR	798	2	0.3
		Metamizole (Dipyrone Monohydrate)	NL	231[b]	1	0.4
		Naproxen	DE	287	1	0.3

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
		Tolfenamic acid	FR	798	1	0.1
		Sub-total for B2e	**4**		**12**	
	B2f	Dexamethasone	DE	999	5	0.5
			FR	524	2	0.4
			IT	1,432	10	0.7
			PL	54	1	1.9
		Prednisolone	BE	922	1	0.1
		Prednisone	IT	1,549	1	0.1
		Sub-total for B2f	**5**		**20**	
	B3a	HCH-Beta	FR	394	1	0.3
		PCB sum	UK	76	1	1.3
		Sub-total for B3a	**2**		**2**	
	B3c	Cadmium Cd	CZ	49	4	8.2
			DE	44	5	11.4
			HR	30	3	10.0
			PL	217	2	0.9
			SI	8	1	12.5
			UK	65	3	4.6
		Copper Cu	DE	146	139	95.2
			DK	11	11	100.0
		Lead Pb	NL	150[b]	1	0.7
		Mercury Hg	DE	257	18	7.0
		Sub-total for B3c	**8**		**187**	
	B3d	Zearalenol-alpha	HR	80	29	36.3
			RO	1	1	100.0
		Zearalenol-beta	FI	30	2	6.7
			HR	80	48	60.0
			RO	1	1	100.0
		Zearalenone (Mycotoxin F)	FI	30	1	3.3
			HR	80	33	41.3
			RO	1	1	100.0
		Sub-total for B3d	**3**		**116**	
		Total in Bovines	**22**		**600**	
Pigs	**A2**	6-Methyl-2-thiouracil	PL	262	1	0.4
		6-Propyl-2-thiouracil	PL	262	1	0.4
		Thiouracil	EE	9	2	22.2
			PL	262	1	0.4
			UK	100	1	1.0
		Sub-total for A2	**3**		**6**	
	A3	Boldenone	PL	195	2	1.0
		Nandrolone	CZ	68	2	2.9
			PL	767	2	0.3
		Nortestosterone acetate - (17b)-17-Hydroxyestr-4-en-3-one acetate	NL	629[b]	9	1.4
		Sub-total for A3	**3**		**15**	
	A4	Alpha-Zeralanol (Zeranol)	DK	240	1	0.4
			IT	112	1	0.9
		Beta Zearalanol (Taleranol)	HR	42	1	2.4
			IT	112	1	0.9
		Zearalanone	HR	42	4	9.5
		Sub-total for A4	**3**		**8**	
	A5	Clenbuterol	PT	242	1	0.4
		Sub-total for A5	**1**		**1**	
	A6	Chloramphenicol	BG	38	2	5.3
			FI	20	1	5.0
			PL	663	2	0.3
		Hydroxymetronidazol (MNZOH)	PL	115	1	0.9

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
		Metronidazole	ES	423	1	0.2
			PL	115	2	1.7
		Sub-total for A6	**4**		**9**	
	B1	Amoxycillin	DE	816	1	0.1
		Benzylpenicillin (Penicillin G)	DE	1,346	1	0.1
			EE	439	1	0.2
			IE	1,113	1	0.1
			PL	814	1	0.1
		Chlortetracyclin	HU	26	1	3.8
			PL	814	1	0.1
		Dihydrostreptomycin	CZ	12	1	8.3
			DE	1,171	2	0.2
			EE	439	2	0.5
			FR	983	1	0.1
			PL	814	1	0.1
		Doxycycline	DE	7,689	2	0.03
			ES	3,891	3	0.1
			GR	141	1	0.7
			PL	814	11	1.4
		Enrofloxacin	DE	7,735	1	0.01
			ES	3,780	3	0.1
			IT	590	1	0.2
		Inhibitors	DE	1	1	100.0
		Oxytetracycline	ES	3,892	3	0.1
			FR	1,977	1	0.1
			IT	629	1	0.2
			PL	814	2	0.2
		Penicillins (group)	FR	983	1	0.1
		Sulfadiazine	BE	1,587	2	0.1
			ES	4,460	2	0.04
			FR	2,572	1	0.04
			UK	1,336	1	0.1
		Sulfadimethoxine	FR	2,572	2	0.1
			IT	1,191	1	0.1
		Sulfameter	CZ	390	1	0.3
		Sulfamethazine	AT	233	1	0.4
			CY	188	2	1.1
			DE	4,896	1	0.02
		Sulfonamides	FR	2,572	1	0.04
		Tetracycline	DE	6,097	1	0.02
			FR	1,977	1	0.1
		Trimethoprim	BE	1,587	2	0.1
		Sub-total for B1	**14**		**64**	
	B2a	Levamisole	NL	440[b]	1	0.2
		Sub-total for B2a	**1**		**1**	
	B2e	Diclofen (Diclofenac)	PL	35	1	2.9
		Sub-total for B2e	**1**		**1**	
	B3a	PCB sum	CZ	110	1	0.9
		WHO-PCDD/F-TEQ	DK	71	1	1.4
		Sub-total for B3a	**2**		**2**	
	B3c	Cadmium Cd	DE	60	2	3.3
			ES	424	3	0.7
			NL	177[b]	1	0.6
		Copper Cu	DE	111	84	75.7
		Lead Pb	IT	290	1	0.3
		Mercury Hg	DE	1,119	99	8.8
			NL	177[b]	1	0.6
		Sub-total for B3c	**4**		**191**	

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
	B3d	Ochratoxin A	AT	30	1	3.3
			GR	56	15	26.8
			PL	127	2	1.6
		Zearalenol-alpha	FI	53	9	17.0
			HR	42	13	31.0
			RO	1	1	100.0
		Zearalenol-beta	HR	42	10	23.8
			RO	1	1	100.0
		Zearalenone (Mycotoxin F)	FI	53	3	5.7
			HR	42	10	23.8
			RO	1	1	100.0
		Sub-total for B3d	**6**		**66**	
		Total in Pigs	**21**		**364**	
Sheep/Goats	**A2**	Thiouracil	HR	2	1	50.0
		Sub-total for A2	**1**		**1**	
	A3	Boldenone-Alpha	AT	25	1	4.0
		Boldenone beta	AT	25	1	4.0
			HR	2	1	50.0
		Nandrolone	HR	2	1	50.0
			NL	13[b]	3	23
		Sub-total for A3	**3**		**7**	
	B1	Benzylpenicillin (Penicillin G)	AT	22	1	4.5
		Dihydrostreptomycin	FR	594	1	0.2
		Doxycycline	FR	594	1	0.2
		Oxytetracycline	ES	790	1	0.1
			FR	594	1	0.2
			IE	722	1	0.1
			UK	2,604	4	0.2
		Penicillins (group)	FR	594	1	0.2
		Sulfadiazine	ES	1,185	12	1.0
		Sulfonamides	FR	594	1	0.2
		Sub-total for B1	**5**		**24**	
	B2a	Abamectin (Avermectin B1)	UK	546[b]	1	0.2
		Closantel	IE	295	1	0.3
			UK	960[b]	10	1.0
		Nitroxinil	UK	960[b]	1	0.1
		Oxfendazole sulfon	IE	295	1	0.3
		Sub-total for B2a	**2**		**14**	
	B3a	gamma-HCH (HCH, Lindane)	NL	13[b]	1	7.7
		Sub-total for B3a	**1**		**1**	
	B3b	Diazinon	UK	569	1	0.2
		Sub-total for B3b	**1**		**1**	
	B3c	Cadmium Cd	CZ	4	1	25.0
			DE	17	1	5.9
			HU	2	1	50.0
			UK	56	3	5.4
		Copper Cu	DE	19	15	78.9
		Lead Pb	DE	24	1	4.2
			FR	189	1	0.5
		Mercury Hg	DE	29	2	6.9
		Sub-total for B3c	**5**		**25**	
	B3d	Zearalenol-alpha	HR	3	1	33.3
		Zearalenol-beta	HR	3	1	33.3
		Sub-total for B3d	**1**		**2**	
		Total in Sheep/Goats	**10**		**75**	
Horses	**A3**	Nandrolone	MT	1	1	100.0
			PL	6	1	16.7
		Sub-total for A3	**2**		**2**	

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
	A5	Clenbuterol	FR	88	1	1.1
		Sub-total for A5	**1**		**1**	
	B1	Benzylpenicillin (Penicillin G)	FR	98	1	1.0
		Sub-total for B1	**1**		**1**	
	B2a	Closantel	IE	32	2	6.3
		Sub-total for B2a	**1**		**2**	
	B2b	Salinomycin	MT	1	1	100.0
		Sub-total for B2b	**1**		**1**	
	B2d	Acepromazine	BE	46	1	2.2
			RO	1	1	100.0
		Sub-total for B2d	**2**		**2**	
	B2e	Diclofen (Diclofenac)	AT	17	1	5.9
		Metamizole (Dipyrone Monohydrate)	RO	1	1	100.0
		Phenylbutazone	DE	27	1	3.7
		Sub-total for B2e	**3**		**3**	
	B3a	PCB sum	PL	25	1	4.0
		Sub-total for B3a	**1**		**1**	
	B3c	Cadmium Cd	BG	7	1	14.3
			CZ	30	30	100.0
			DE	2	2	100.0
			ES	69	1	1.4
			FR	73	31	42.5
			HU	4	3	75.0
			IT	123	1	0.8
			PL	132	1	0.8
			SI	5	3	60.0
			UK	1	1	100.0
		Mercury Hg	CZ	30	30	100.0
			DE	2	2	100.0
		Sub-total for B3c	**10**		**106**	
	B3d	Zearalenol-alpha	RO	3	3	100.0
		Zearalenol-beta	RO	3	3	100.0
		Zearalenone (Mycotoxin F)	DK	2	1	50.0
			RO	3	3	100.0
		Sub-total for B3d	**2**		**10**	
		Total in Horses	**16**		**129**	
Poultry	**A6**	AOZ (3-amino-2-oxazolidone)	RO	1	1	100.0
		Chloramphenicol	HR	12	1	8.3
			PL	505	2	0.4
		Dimetridazole	SK	35	1	2.9
		Metronidazole	IT	295	1	0.3
		Sub-total for A6	**5**		**6**	
	B1	Chlortetracyclin	UK	1,899	1	0.1
		Ciprofloxacin	DE	1624	1	0.1
		Doxycycline	BE	494	1	0.2
			DE	2,160	1	0.05
			ES	509	1	0.2
			IT	161	2	1.2
			NL	1,377[(b)]	3	0.2
			PL	975	6	0.6
		Enrofloxacin	DE	2,162	2	0.1
			PL	975	1	0.1
		Oxytetracycline	FR	885	1	0.1
		Sulfadimethoxine	FR	986	1	0.1
		Sub-total for B1	**8**		**21**	
	B2b	Lasalocid	HR	29	3	10.3
		Monensin	PL	799	1	0.1

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
			UK	725	1	0.1
		Salinomycin	PL	799	3	0.4
			UK	725	1	0.1
		Toltrazuril	HR	29	1	3.4
			UK	725	2	0.3
		Toltrazurilsulfon	IE	214	1	0.5
		Sub-total for B2b	**4**		**13**	
	B3a	WHO-PCDD/F-TEQ	PT	25	1	4.0
		Sub-total for B3a	**1**		**1**	
	B3c	Copper Cu	DE	24	2	8.3
		Sub-total for B3c	**1**		**2**	
	B3d	Aflatoxin B1	IT	40	1	2.5
		Zearalenol-alpha	HR	14	6	42.9
		Zearalenol-beta	HR	14	6	42.9
		Zearalenone (Mycotoxin F)	HR	14	2	14.3
		Sub-total for B3d	**2**		**15**	
		Total in Poultry	**13**		**58**	
Aquaculture	**A6**	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	GR	214	3	1.4
		Sub-total for A6	**1**		**3**	
	B1	Amoxycillin	BE	46	1	2.2
		Inhibitors	DE	32	2	6.3
		Sulfadiazine	IE	91	2	2.2
		Sub-total for B1	**3**		**5**	
	B2a	Emamectin B1a	UK	86	1	1.2
		Sub-total for B2a	**1**		**1**	
	B3a	DDT: Sum DDT, pp' - DDT, op' - DDE, pp' - DDD, pp'	MT	18	2	11.1
		Sub-total for B3a	**1**		**2**	
	B3c	Mercury Hg	ES	72	5	6.9
		Sub-total for B3c	**1**		**5**	
	B3e	Brillant Green	DE	307	1	0.3
		Cristal Violet	SK	80	1	1.3
		Cristal Violet-Leuco	AT	114	1	0.9
			CZ	100	1	1.0
			DE	333	1	0.3
		Malachite Green	CZ	100	1	1.0
			DE	336	5	1.5
			SK	80	5	6.3
		Malachite Green-Leuco	AT	114	1	0.9
			BE	40	1	2.5
			CZ	100	1	1.0
			DE	332	5	1.5
			EE	4	1	25.0
			NL	27[b]	1	3.7
			PL	185	10	5.4
			SK	80	5	6.3
		Sub-total for B3e	**8**		**41**	
		Total in Aquaculture	**13**		**57**	
Milk	**A6**	Chloramphenicol	LV	258	1	0.4
			PL	182	1	0.5
		Sub-total for A6	**2**		**2**	
	B1	Amoxycillin	CY	71	1	1.4
			UK	474	1	0.2
		Benzylpenicillin (Penicillin G)	IT	147	1	0.7
		Cefalexin (Cefalexin Anhydrate)	DE	311	1	0.3
		Cefquinom	IT	29	1	3.4
		Cloxacillin	PL	120	1	0.8

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
		Enrofloxacin	ES	381	1	0.3
			PL	120	1	0.8
		Kanamycin	DE	35	1	2.9
		Spiramycin	ES	313	1	0.3
		Tetracycline	PL	120	1	0.8
		Sub-total for B1	**6**		**11**	
	B2a	Albendazol	IE	318	1	0.3
		Closantel	BG	35	1	2.9
			IE	318	1	0.3
		Ivermectin	UK	558	2	0.4
		Sub-total for B2a	**3**		**5**	
	B2e	Diclofen (Diclofenac)	DE	1,342	3	0.2
			GR	40	1	2.5
			LU	140	1	0.7
		Sub-total for B2e	**3**		**5**	
	B3c	Lead Pb	BG	28	1	3.6
		Sub-total for B3c	**1**		**1**	
	B3d	Aflatoxin M1	GR	125	3	2.4
			IT	416	2	0.5
		Sub-total for B3d	**2**		**5**	
		Total in Milk	**11**		**29**	
Eggs	**A6**	Chloramphenicol	LV	101	2	2.0
		Sub-total for A6	**1**		**2**	
	B1	Doxycycline	PL	180	1	0.6
		Enrofloxacin	BE	136	1	0.7
			ES	117	1	0.9
			MT	100	1	1.0
		Sulfadiazine	ES	165	1	0.6
			GR	49	1	2.0
		Sulfadimethoxine	FR	173	1	0.6
		Trimethoprim	ES	89	1	1.1
		Sub-total for B1	**6**		**8**	
	B2b	Diclazuril	HR	185	1	0.5
		Lasalocid	BE	103	1	1.0
			CY	50	1	2.0
			HR	185	4	2.2
			IT	122	2	1.6
			UK	577	1	0.2
		Maduramicin	SI	192	1	0.5
		Monensin	FR	322	1	0.3
			PL	120	1	0.8
		Narasin	LV	140	1	0.7
			NL	459[b]	2	0.4
			PT	78	1	1.3
			SI	192	2	1.0
		Nicarbazin	SI	192	1	0.5
		Robenidine	HR	6	1	16.7
		Salinomycin	PL	120	1	0.8
		Salinomycin sodium	HR	185	1	0.5
		Toltrazurilsulfon	DE	242	1	0.4
		Sub-total for B2b	**12**		**24**	
	B3a	gamma-HCH (HCH, Lindane)	FR	86	1	1.2
		HCH-Beta	DE	147	1	0.7
		PCB sum	DE	96	1	1.0
			FR	83	1	1.2
		WHO-PCDD/F-PCB-TEQ	DE	103	4	3.9
		WHO-PCDD/F-TEQ	DE	123	2	1.6
			DK	47	1	2.1

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
		Sub-total for B3a	**3**		**11**	
		Total in Eggs	**16**		**45**	
Rabbit	**A6**	Dimetridazole	IT	14	1	7.1
		Sub-total for A6	**1**		**1**	
	B1	Ciprofloxacin	ES	89	1	1.1
		Enrofloxacin	ES	89	2	2.2
		Sulfadimethoxine	FR	194	3	1.5
			IT	74	1	1.4
		Sub-total for B1	**3**		**7**	
	B2b	Salinomycin	CZ	5	1	20.0
		Sub-total for B2b	**1**		**1**	
	B3d	Zearalenol-beta	HR	1	1	100.0
		Sub-total for B3d	**1**		**1**	
		Total in Rabbit	**5**		**10**	
Farmed Game	**A3**	Boldenone beta	AT	1	1	100.0
		Nandrolone	AT	1	1	100.0
		Sub-total for A3	**1**		**2**	
	A6	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	BE	45	3	6.7
		Sub-total for A6	**1**		**3**	
	B2a	Fenbendazole	AT	2	1	50.0
		Oxfendazole	AT	2	1	50.0
		Oxfendazole sulfon	AT	2	1	50.0
		Sub-total for B2a	**1**		**3**	
	B2b	Dinitrocarbanilide	PT	12	1	8.3
		Lasalocid	UK	15	1	6.7
		Sub-total for B2b	**2**		**2**	
	B2e	Antipyrin-4-Methylamino	AT	2	1	50.0
		Sub-total for B2e	**1**		**1**	
	B3a	DDE, pp'-	DE	12	1	8.3
			UK	7	1	14.3
		PCB sum	CZ	14	1	7.1
		Sub-total for B3a	**3**		**3**	
	B3c	Cadmium Cd	FI	31	13	41.9
		Lead Pb	FR	26	2	7.7
			IT	33	1	3.0
			UK	18	1	5.6
		Mercury Hg	DE	16	3	18.8
		Sub-total for B3c	**5**		**20**	
		Total in Farmed Game	**9**		**34**	
Wild game	**B3a**	DDE, pp'-	DE	27	2	7.4
		DDT: Sum DDT, pp' - DDT, op' - DDE, pp' - DDD, pp'	DE	34	11	32.4
		HCB (Hexachlorbenzene)	DE	44	2	4.5
		PCB sum	CZ	20	1	5.0
			PL	42	1	2.4
		Sub-total for B3a	**3**		**17**	
	B3c	Cadmium Cd	ES	131	2	1.5
			LU	100	2	2.0
			LV	100	48	48.0
			PL	148	2	1.4
		Calcium Ca	FR	93	10	10.8
		Copper Cu	DE	5	3	60.0
		Lead Pb	AT	152	6	3.9
			CZ	109	18	16.5
			FR	93	28	30.1
			GR	28	1	3.6
			IE	7	3	42.9

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
			IT	58	4	6.9
			LU	100	1	1.0
			LV	100	7	7.0
			NL	61[(b)]	11	18
			PL	148	5	3.4
			PT	41	2	4.9
			SK	100	1	1.0
		Mercury Hg	CZ	109	1	0.9
			DE	78	50	64.1
			PL	148	1	0.7
		Sub-total for B3c	**14**		**206**	
		Total in Wild game	**14**		**223**	
Honey	**A6**	AOZ (3-amino-2-oxazolidone)	PL	21	1	4.8
		Chloramphenicol	DE	9	1	11.1
		Metronidazole	PL	20	2	10.0
		Sub-total for A6	**2**		**4**	
	B1	Chlortetracyclin	IE	12	1	8.3
		Doxycycline	GR	66	2	3.0
			LT	42	1	2.4
		Oxytetracycline	RO	1	1	100.0
		Sulfamethoxazole	LT	42	1	2.4
		Sulfathiazole	BG	38	1	2.6
			DE	94	1	1.1
		Sulfonamides	PL	179	6	3.4
		Tetracycline	DE	94	1	1.1
			MT	1	1	100.0
		Sub-total for B1	**8**		**16**	
	B3b	Trichlorfon	BE	25	1	4.0
		Sub-total for B3b	**1**		**1**	
	B3c	Cadmium Cd	GR	30	5	16.7
		Copper Cu	DE	16	6	37.5
		Lead Pb	AT	52	1	1.9
			GR	30	8	26.7
			IE	15	1	6.7
			LV	3	1	33.3
		Sub-total for B3c	**5**		**22**	
	B3f	Acetamiprid	DE	74	1	1.4
		Sub-total for B3f	**1**		**1**	
		Total in Honey	**11**		**44**	
Total in all categories					**1,668**	

AT: Austria; BE: Belgium; BG: Bulgaria; CY: Cyprus; CZ: the Czech Republic; DK: Denmark; EE: Estonia; ES: Spain; FI: Finland; FR: France; DE: Germany; GR: Greece; HR: Croatia; HU: Hungary; IE: Ireland; IT: Italy; LV: Latvia; LT: Lithuania; LU: Luxembourg; MS: Member State; MT: Malta; NL: the Netherlands; PL: Poland; PT: Portugal; RO: Romania; SK: Slovakia; SI: Slovenia; SE: Sweden; UK: the United Kingdom.

(a): The number of samples analysed for the individual substances was reported by the Member States only if there was at least one non-compliant sample for the substance in question. In case that all samples were compliant, the number of samples analysed was not reported. Furthermore, in case of animals controlled at farm and slaughterhouse, the number of samples may include either samples taken at farm or slaughterhouse depending where the non-compliant samples were found. Where non-compliant samples were found at both farm and slaughterhouse, the number of samples represents the sum of samples taken at both sampling points.

(b): value added manually to report following late submission of information; not updated in the database.

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

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
Bovines	**A5**	Clenbuterol	PT	44	2	4.5
		Sub-total for A5	**1**		**2**	
	A6	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	IT	3	2	66.7
		Sub-total for A6	**1**		**2**	
	B1	Amoxycillin	BE	227	2	0.9
		Ampicillin	IT	261	3	1.1
		Antibacterials	NL	2,306[b]	66	2.9
		Benzylpenicillin (Penicillin G)	AT	15	1	6.7
			BE	227	11	4.8
			IT	261	1	0.4
		Ceftiofur	BE	227	2	0.9
		Chlortetracyclin	IE	2,970	1	0.03
		Ciprofloxacin	BE	227	2	0.9
			IT	265	1	0.4
		Danofloxacin	IT	265	1	0.4
		Dihydrostreptomycin	AT	85	1	1.2
			BE	227	1	0.4
			IE	2,970	1	0.03
			NL	2,306[b]	8	0.3
		Doxycycline	IT	290	2	0.7
			NL	2,306[b]	1	0.04
		Enrofloxacin	BE	227	6	2.6
			IT	265	1	0.4
		Epi-Oxytetracycline	BE	227	5	2.2
			IT	290	1	0.3
		Epi-Tetracycline	BE	227	1	0.4
		Florfenicol	BE	227	1	0.4
		Macrolides	MT	8	1	12.5
		Marbofloxacin	BE	227	1	0.4
			IE	2,970	1	0.03
			IT	265	1	0.4
		Neomycin	NL	2,306[b]	1	0.04
		Oxytetracycline	BE	227	6	2.6
			IE	2,970	4	0.1
			IT	290	7	2.4
			NL	2,306[b]	3	0.1
		Penicillin	NL	2,306[b]	2	0.1
		Spiramycin	BE	227	1	0.4
		Streptomycin	NL	2,306[b]	1	0.04
		Sulfadiazine	IT	286	1	0.3
			NL	2,306[b]	1	0.04
		Sulfadoxine	NL	2,306[b]	1	0.04
		Sulfamethazine	IE	2,970	2	0.1
		Tetracycline	BE	227	1	0.4
		Tetracyclines	MT	8	1	12.5
		Tildipirosin	BE	227	1	0.4
		Tilmicosin	BE	227	1	0.4
		Tulathromycin	BE	227	1	0.4
			NL	2,306[b]	1	0.04
		Tylosin, Tylosin A	BE	227	4	1.8
			NL	2,306[b]	1	0.04
		Sub-total for B1	**6**		**165**	
		Closantel	BE	226	1	0.4
	B2a	Doramectin	BE	226	1	0.4
		Ivermectin	BE	226	1	0.4

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
		Nitroxinil	BE	226	1	0.4
		Sub-total for B2a	**1**		**4**	
	B2e	Carprofen	BE	228	1	0.4
		Diclofen (Diclofenac)	BE	228	2	0.9
		Flunixin	BE	228	9	3.9
		Meloxicam	BE	228	5	2.2
			NL	2,306[b]	1	0.04
		Tolfenamic acid	BE	228	8	3.5
		Sub-total for B2e	**2**		**26**	
		Cortisol (Hydrocortisone)	BE	357	1	0.3
	B2f	Dexamethasone	BE	357	1	0.3
			IT	241	3	1.2
		Prednisolone	BE	357	1	0.3
		Sub-total for B2f	**2**		**6**	
		HCH-Beta	IT	1	1	100.0
	B3a	**Sub-total for B3a**	**1**		**1**	
		Cadmium Cd	CZ	2	1	50.0
	B3c	**Sub-total for B3c**	**1**		**1**	
		Zearalenol-beta	FI	3	1	33.3
	B3d	Zearalenone (Mycotoxin F)	FI	3	1	33.3
		Sub-total for B3d	**1**		**2**	
		Total in Bovines	**9**		**209**	
Pigs	**A5**	Clenbuterol	PT	16	9	56.3
		Sub-total for A5	**1**		**9**	
	A6	Chloramphenicol	BE	56	2	3.6
			PL	2	1	50.0
		Sub-total for A6	**2**		**3**	
	B1	Amoxycillin	BE	57	3	5.3
			IT	2	1	50.0
		Antibacterials	NL	135[b]	14	10.0
		Benzylpenicillin (Penicillin G)	BE	57	6	10.5
		Ciprofloxacin	IT	75	1	1.3
		Dihydrostreptomycin	AT	2	1	50.0
			BE	57	2	3.5
			PL	8	3	37.5
		Doxycycline	ES	8	1	12.5
			PL	8	2	25.0
		Enrofloxacin	BE	57	5	8.8
			IT	75	1	1.3
		Epi-Oxytetracycline	BE	57	4	7.0
		Epi-Tetracycline	BE	57	1	1.8
		Florfenicol	BE	57	1	1.8
		Marbofloxacin	BE	57	1	1.8
		Oxytetracycline	BE	57	4	7.0
			PL	8	1	12.5
		Quinolones	MT	36	2	5.6
		Spiramycin 1	BE	57	1	1.8
		Sulfadoxine	BE	57	1	1.8
		Sulfamethazine	IT	14	9	64.3
		Sulfathiazole	IT	14	4	28.6
		Tetracycline	BE	57	1	1.8
		Tylosin, Tylosin A	BE	57	1	1.8
		Sub-total for B1	**7**		**71**	
	B2a	Ivermectin	BE	56	2	3.6
		Sub-total for B2a	**1**		**2**	
	B2e	Flunixin	BE	56	3	5.4
		Meloxicam	BE	56	2	3.6
		Metamizole (Dipyrone Monohydrate)	BE	56	1	1.8

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
		Sub-total for B2e	**1**		**6**	
	B2f	Dexamethasone	BE	56	1	1.8
		Dexamethasone acetate	BE	56	1	1.8
		Sub-total for B2f	**1**		**2**	
	B3a	PCB sum	CZ	5	1	20.0
		Sub-total for B3a	**1**		**1**	
	B3c	Copper Cu	DE	2	2	100.0
		Mercury Hg	DE	3	2	66.7
		Sub-total for B3c	**1**		**4**	
	B3d	Ochratoxin A	GR	28	8	28.6
		Sub-total for B3d	**1**		**8**	
		Total in Pigs	**11**		**106**	
Sheep/Goats	**B1**	Chlortetracyclin	ES	14	3	21.4
		Oxytetracycline	ES	14	3	21.4
			NL	69[b]	1	1.4
		Sulfadiazine	ES	222	38	17.1
		Trimethoprim	ES	14	2	14.3
		Sub-total for B1	**2**		**47**	
		Total in Sheep/Goats	**2**		**47**	
Horses	**B2e**	Phenylbutazone	LV	1	1	100.0
		Sub-total for B2e	**1**		**1**	
		Total in Horses	**1**		**1**	
Aquaculture	**A6**	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	GR	28	16	57.1
		Sub-total for A6	**1**		**16**	
	B3c	Cadmium Cd	GR	6	1	16.7
		Sub-total for B3c	**1**		**1**	
	B3e	Malachite Green	CZ	6	2	33.3
			DE	14	3	21.4
		Malachite Green-Leuco	CZ	6	3	50.0
			DE	14	3	21.4
			PL	25	7	28.0
		Sub-total for B3e	**3**		**18**	
		Total in Aquaculture	**4**		**35**	
Milk	**B1**	Amoxycillin	IT	103	1	1.0
		Ampicillin	ES	21	2	9.5
			GR	6	1	16.7
		Benzylpenicillin (Penicillin G)	IT	103	1	1.0
		Cloxacillin	ES	21	2	9.5
			IT	103	1	1.0
		Tilmicosin	IT	100	2	2.0
		Sub-total for B1	**3**		**10**	
	B2a	Closantel	BG	1	1	100.0
		Sub-total for B2a	**1**		**1**	
	B3d	Aflatoxin M1	GR	16	4	25.0
			IT	129	11	8.5
		Sub-total for B3d	**2**		**15**	
		Total in Milk	**4**		**26**	
Eggs	**A6**	Chloramphenicol	LV	6	4	66.7
		Sub-total for A6	**1**		**4**	
	B2b	Diclazuril	HR	1	1	100.0
		Lasalocid	PL	2	1	50.0
		Salinomycin	PL	2	1	50.0
		Sub-total for B2b	**2**		**3**	
	B3a	WHO-PCDD/F-TEQ	DK	1	1	100.0
		Sub-total for B3a	**1**		**1**	
		Total in Eggs	**4**		**8**	
Farmed Game	**B3c**	Mercury Hg	DE	1	1	100.0

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
		Sub-total for B3c	**1**		**1**	
		Total in Farmed Game	**1**		**1**	
Wild game	**B3c**	Mercury Hg	DE	1	1	100.0
		Sub-total for B3c	**1**		**1**	
		Total in Wild game	**1**		**1**	
Honey	**B1**	Chlortetracyclin	IT	10	6	60.0
		Sulfonamides	PL	23	4	17.4
		Tetracycline	IT	10	4	40.0
		Sub-total for B1	**2**		**14**	
		Total in Honey	**2**		**14**	
Total in all categories					**448**	

AT: Austria; BE: Belgium; BG: Bulgaria; CZ: the Cezch Republic; DE: Germany; DK: Denmark; ES: Spain; FI: Finland; GR: Greece; HR: Croatia; IE: Ireland; IT: Italy; LV: Latvia; MS: Member State; MT: Malta; NL: the Netherlands; PL: Poland; PT: Portugal.

(a): The number of samples analysed for the individual substances was reported by the Member States only if there was at least one non-compliant sample for the substance in question. In case that all samples were compliant, the number of samples analysed was not reported. Furthermore, in case of animals controlled at farm and slaughterhouse, the number of samples may include either samples taken at farm or slaughterhouse depending where the non-compliant samples were found. Where non-compliant samples were found at both farm and slaughterhouse, the number of samples represents the sum of samples taken at both sampling points.

(b): value added manually to report following late submission of information; not updated in the database.

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

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Aquaculture	**A6**	SEM (semicarbazide)	DE	53	1	1.9
		Sub-total for A6	**1**		**1**	
	B1	Oxytetracycline	DE	44	1	2.3
		Sulfadiazine	PL	8	1	12.5
		Sub-total for B1	**2**		**2**	
		Total in Aquaculture	**2**		**3**	
Honey	**B1**	Epi-Tetracycline	DE	44	1	2.3
		Sulfamethazine	DE	36	1	2.8
		Tetracycline	DE	44	1	2.3
			LT	8	1	12.5
		Sub-total for B1	**2**		**4**	
		Total in Honey	**2**		**4**	
Total in all categories					**7**	

DE: Germany; LV: Latvia; MS: Member State; PL: Poland.

(a): The number of samples analysed for the individual substances was reported by the Member States only if there was at least one non-compliant sample for the substance in question. In case that all samples were compliant, the number of samples analysed was not reported. Furthermore, in case of animals controlled at farm and slaughterhouse, the number of samples may include either samples taken at farm or slaughterhouse depending where the non-compliant samples were found. Where non-compliant samples were found at both farm and slaughterhouse, the number of samples represents the sum of samples taken at both sampling points.

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

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines	**A3**	Boldenone	IT	155	2	1.3
		Boldenone-Alpha	IT	155	2	1.3
		Boldione	IT	155	2	1.3
		Sub-total for A3	**1**		**6**	
	A4	Alpha-Zeralanol (Zeranol)	IT	161	2	1.2
		Beta Zearalanol (Taleranol)	IT	161	2	1.2
		Sub-total for A4	**1**		**4**	
	B1	Amoxycillin	DE	55	1	1.8
		Benzylpenicillin (Penicillin G)	DE	76	8	10.5
		Ciprofloxacin	DE	74	1	1.4
		Danofloxacin	DE	81	1	1.2
		Enrofloxacin	DE	78	2	2.6
		Gentamicin	DE	64	8	12.5
		Inhibitors	DE	22,573	60	0.3
		Marbofloxacin	DE	81	6	7.4
			IT	218	1	0.5
		Oxytetracycline	DE	79	6	7.6
		Sulfadiazine	IT	218	1	0.5
		Sulfamethazine	DE	79	1	1.3
		Sulfonamides	DE	11	1	9.1
		Tetracycline	DE	80	4	5.0
		Trimethoprim	DE	80	1	1.3
		Tulathromycin	DE	54	2	3.7
		Sub-total for B1	**2**		**104**	
	B2e	Meloxicam	DE	21	1	4.8
		Sub-total for B2e	**1**		**1**	
	B2f	Dexamethasone	DE	32	3	9.4
			IT	180	3	1.7
		Sub-total for B2f	**2**		**6**	
		Total in Bovines	**2**		**121**	
Pigs	**A4**	Zearalanone	IT	1	1	100.0
		Sub-total for A4	**1**		**1**	
	B1	Amoxycillin	DE	327	8	2.4
		Benzylpenicillin (Penicillin G)	DE	415	22	5.3
		Chlortetracyclin	DE	513	2	0.4
		Ciprofloxacin	DE	391	2	0.5
		Danofloxacin	DE	525	1	0.2
		Dihydrostreptomycin	DE	302	4	1.3
		Doxycycline	DE	500	23	4.6
			IT	75	1	1.3
		Enrofloxacin	DE	517	28	5.4
		Gentamicin	DE	302	3	1.0
		Inhibitors	DE	258,886	344	0.1
		Marbofloxacin	DE	525	2	0.4
		Oxytetracycline	DE	522	7	1.3
		Spectinomycin	DE	281	1	0.4
		Sulfadiazine	DE	426	2	0.5
		Sulfadoxine	DE	426	1	0.2
		Sulfamethoxazole	DE	345	1	0.3
		Tetracycline	DE	520	7	1.3
		Trimethoprim	DE	424	2	0.5
		Sub-total for B1	**2**		**461**	
	B2e	Antipyrin-4-Methylamino	DE	38	3	7.9
		Flunixin	DE	81	3	3.7
		Meloxicam	DE	80	1	1.3
		Sub-total for B2e	**1**		**7**	

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
	B2f	Dexamethasone	DE	160	1	0.6
		Sub-total for B2f	**1**		**1**	
		Total in Pigs	**2**		**470**	
Sheep/Goats	**B1**	Amoxycillin	DE	5	2	40.0
		Enrofloxacin	DE	7	1	14.3
		Inhibitors	DE	3,650	6	0.2
		Oxytetracycline	DE	6	1	16.7
		Sub-total for B1	**1**		**10**	
		Total in Sheep/Goats	**1**		**10**	
Horses	**B1**	Benzylpenicillin (Penicillin G)	DE	1	1	100.0
		Inhibitors	DE	117	4	3.4
		Lincomycin	DE	1	1	100.0
		Sulfadimethoxine	DE	1	1	100.0
		Sulfonamides	DE	1	1	100.0
		Sub-total for B1	**1**		**8**	
		Total in Horses	**1**		**8**	
Poultry	**B1**	Oxytetracycline	IT	47	1	2.1
		Sulfadimethoxine	IT	47	1	2.1
		Sub-total for B1	**1**		**2**	
	B3d	DON	SK	3	1	33.3
		Sub-total for B3d	**1**		**1**	
		Total in Poultry	**2**		**3**	
Aquaculture	**B3c**	Cadmium Cd	GR	95	8	8.4
		Lead Pb	GR	95	4	4.2
		Sub-total for B3c	**1**		**12**	
		Total in Aquaculture	**1**		**12**	
Milk	**B3a**	HCH-Beta	IT	309	2	0.6
		Sub-total for B3a	**1**		**2**	
	B3d	Aflatoxin M1	IT	1,939	18	0.9
		Sub-total for B3d	**1**		**18**	
		Total in Milk	**1**		**20**	
Eggs	**B3a**	WHO-PCDD/F-PCB-TEQ	IT	24	1	4.2
		WHO-PCDD/F-TEQ	IT	24	1	4.2
		Sub-total for B3a	**1**		**2**	
		Total in Eggs	**1**		**2**	
Rabbit	**B1**	Oxytetracycline	IT	6	1	16.7
		Sub-total for B1	**1**		**1**	
		Total in Rabbit	**1**		**1**	
Farmed Game	**A6**	Furaltadone	NL	39[(b)]	6	15.4
		Sub-total for A6	**1**		**6**	
		Total in Farmed Game	**1**		**6**	
Honey	**B1**	Chlortetracyclin	IT	92	1	1.1
		Sulfonamides	BE	69	1	1.4
		Sub-total for B1	**2**		**2**	
	B3a	Iprodione	IT	24	1	4.2
		Sub-total for B3a	**1**		**1**	
		Total in Honey	**2**		**3**	
Total in all categories					**656**	

BE: Belgium; DE: Germany; GR: Greece; IT: Italy; MS: Member State; NL: the Netherlands; SK: Slovakia.

(a): The number of samples analysed for the individual substances was reported by the Member States only if there was at least one non-compliant sample for the substance in question. In case that all samples were compliant, the number of samples analysed was not reported. Furthermore, in case of animals controlled at farm and slaughterhouse, the number of samples may include either samples taken at farm or slaughterhouse depending where the non-compliant samples were found. Where non-compliant samples were found at both farm and slaughterhouse, the number of samples represents the sum of samples taken at both sampling points.

(b): value added manually to report following late submission of information; not updated in the database.

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[17]

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

[17] 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.