TECHNICAL REPORT

APPROVED: 17 December 2015 PUBLISHED: 25 May 2016

Report for 2014 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 2014 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 736,907 samples were reported to the European Commission by the 28 EU Member States. They consisted of 425,232 targeted samples and 14,097 suspect samples reported under Council Directive 96/23/EC, and of 4,136 samples collected at import and 293,442 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. The percentage of non-compliant targeted samples (0.37%) was slightly higher compared to the previous 7 years (0.25%–0.34%). For the 2014 results, increases in non-compliant samples were noted for resorcylic acid lactones, chemical elements (mainly metals) and mycotoxins, compared to previous 7 years (2007-2013). The lowest frequency of non-compliant samples for prohibited substances was reported in 2014, compared to the previous 7 years. For the other substance groups, there were no notable variations over the 8 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

Requestor: European Commission

Question number: EFSA-Q-2015-00031

Correspondence: biocontam@efsa.europa.eu

Acknowledgements: EFSA wishes to thank EFSA staff members: Karen Mackay and Ruth Roldán Torres for the preparatory work on this output.

Suggested citation: EFSA (European Food Safety Authority), 2016. Report for 2014 on the results from the monitoring of veterinary medicinal product residues and other substances in live animals and animal products. EFSA Supporting publication 2016:EN-923. 70 pp.

Summary

The present report summarises the monitoring data from 2014 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, 2010a, b, 2011, 2012, 2013, 2014, 2015) 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 2014, 28 European Union (EU) Member States reported in the framework of the residue monitoring the results for 736,907 samples. A total of 425,232 targeted samples and 14,097 suspect samples were reported under Council Directive 96/23/EC. Additionally, 293,442, samples collected in the framework of other programmes developed under the national legislation and 4,136 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.

There were 1,558 or 0.37% of non-compliant samples out of the 425,232 targeted samples in 2014.

For Group A, a low number of non-compliant samples were reported for stilbenes and derivatives (A1) in pigs (0.005%). For antithyroid agents (A2), there were 0.59% non-compliant samples, all for thiouracil, most likely due to feeding diets rich in cruciferous plants. In the group of steroids (A3), non-compliant samples (all for anabolic steroids) were found in bovines (0.06%), pigs (0.20%) and sheep and goats (0.10%). The relatively high percentage of non-compliant results in pigs was most likely the endogenous production. For corticosteroids, non-compliant results for authorised substances were reported under 'other pharmacologically active substances' (B2f) in 2014. In the group of resorcylic acid lactones (A4), 0.46% of the samples were non-compliant for zearalanone and derivatives; the non-compliant samples were found in bovines (0.72%), pigs (0.18%) and sheep and goats (0.89%). For beta-agonists (A5), there were 0.04% non-compliant samples reported in bovines only. Prohibited substances (A6) were found in 0.03% of samples. Substances identified were chloramphenicol (n = 12), nitroimidazoles (n = 4) and nitrofurans (n = 8).

For antibacterials (B1), 0.18% 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 (0.72%).

In group B2 (other veterinary drugs), the highest proportion of non-compliant samples was found for anticoccidials (B2b) (0.20%). For anticoccidials (B2b), the non-compliant samples were reported across the different species as follows; 0.02% for pigs, 0.11% for sheep and goats, 2.33% for horses, 0.20% for poultry, 0.41% for eggs, 0.71% for rabbits and 2.45% 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 (0.04%), pigs (0.03%), sheep and goats (0.21%), horses (0.54%) and milk (0.07%). For pyrethroids (B2c), non-compliant samples were reported for horses (0.78%) and honey (0.13%). Non-compliant samples were reported for sedatives (B2d) in pigs (0.03%). For non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were found in bovines (0.26%), sheep and goats (0.39%), horses (0.51%), poultry (0.19%), milk (0.03%) and farmed game (1.39%). Non-compliant samples were reported for 'other pharmacologically active substances' (B2f), in bovines (0.23%), sheep and goats (0.34%) and poultry (0.14%).

In the group B3 (other substances and environmental contaminants), the chemical elements (B3c) had the highest overall percentage of non-compliant samples (5.41%), with cadmium, lead, mercury and copper being most frequently identified. Non-compliant samples were reported for organochlorine compounds (B3a) and organophosphorus compounds (B3b); 0.12% and 0.01%, respectively. For mycotoxins (B3d), there were non-compliant samples reported for bovines (5.78%), pigs (2.64%), horses (2.63%), poultry (1.04%), milk (0.33%) and farmed game (12.50%); with those identified being zearalenone and derivatives, ochratoxin A and aflatoxin M_1. The prevalence of dyes (B3e) in aquaculture samples was slightly higher in 2014 (1.54%) compared to 2013 (1.14%), but within the range of values reported for 2007-2012 (1.5%–2.2%). The substances found were malachite green, leuco-malachite green and crystal violet. No non-compliant samples were noted for 'other substances' (B3f).

The overall frequency of non-compliant samples in 2014 (0.37%), was slightly higher compared to the previous 7 years (0.25%–0.34%). In 2014, increases in non-compliant samples were noted for resorcylic acid lactones (A4), chemical elements (B3c; mainly metals) and mycotoxins (B3d), compared to the previous 7 years. The lowest frequency of non-compliant samples for prohibited substances (A6), was reported in 2014, compared to the previous 7 years. For the other substance groups, there were no notable variations over the 8 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.

Table of contents

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 SANTE) 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 SANTE 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, 23.5.96, 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 2014 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 SANTE). 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 SANTE 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 SANTE 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 SANTE'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 2014 and the production data used by Member States to prepare the 2014 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 03 November 2015 and 11 December 2015 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).

Note: For Greece, due to technical problems, results from the analysis of samples from Groups A1, A3, and A4, and subgroup B2f were not available in time for inclusion in this 2014 results report; however, they will be included in the 2015 report.

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 2014, 736,907 samples were reported by the 28 Member States for analysis of substances and residues covered by Directive 96/23/EC. Out of this, 425,232 were targeted samples collected in conformity with the specifications of the National Residue Control Plans (NRCPs) for 2014. Additionally, 14,097 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 293,442 samples collected in the framework of other programmes developed under the national legislation. Only a relatively limited number of data (n = 4,136) was reported for samples checked at import. 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, 44% were analysed for substances having an anabolic effect and unauthorised substances (group A) and 61% for veterinary drugs and contaminants (group B).[14] Of the 425,232 targeted samples, 1,558 were non-compliant (0.37%) (1,820 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), 0.18% for antibacterials (B1), 0.12% for the 'other veterinary drugs' (B2) and 2.19% 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	189,196	44.5	217	0.11	249
A1	20,317	4.8	1	0.005	1
A2	9,387	2.2	55	0.59	55
A3	40,628	9.6	36	0.09	44
A4	18,356	4.3	84	0.46	108
A5	41,322	9.7	17	0.04	17
A6	80,570	18.9	24	0.03	24
B	260,733	61.3	1,341	0.51	1,571
B1	122,959	28.9	223	0.18	239
B2	100,392	23.6	120	0.12	125
B2a	27,672	6.5	19	0.07	20
B2b	22,916	5.4	46	0.20	46
B2c	8,933	2.10	2	0.02	2
B2d	9,459	2.2	2	0.02	2
B2e	16,198	3.8	24	0.15	26
B2f	19,981	4.7	28	0.14	29
B3	45,648	10.7	998	2.19	1,207
B3a	19,594	4.6	23	0.12	27
B3b	7,595	1.8	1	0.01	1
B3c	14,953	3.5	809	5.41	874
B3d	6,356	1.5	140	2.20	277
B3e	1,752	0.4	27	1.54	28
B3f	1,417	0.3	0	0	0
Total	**425,232**	**100**	**1,558**	**0.37**	**1,820**

(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.

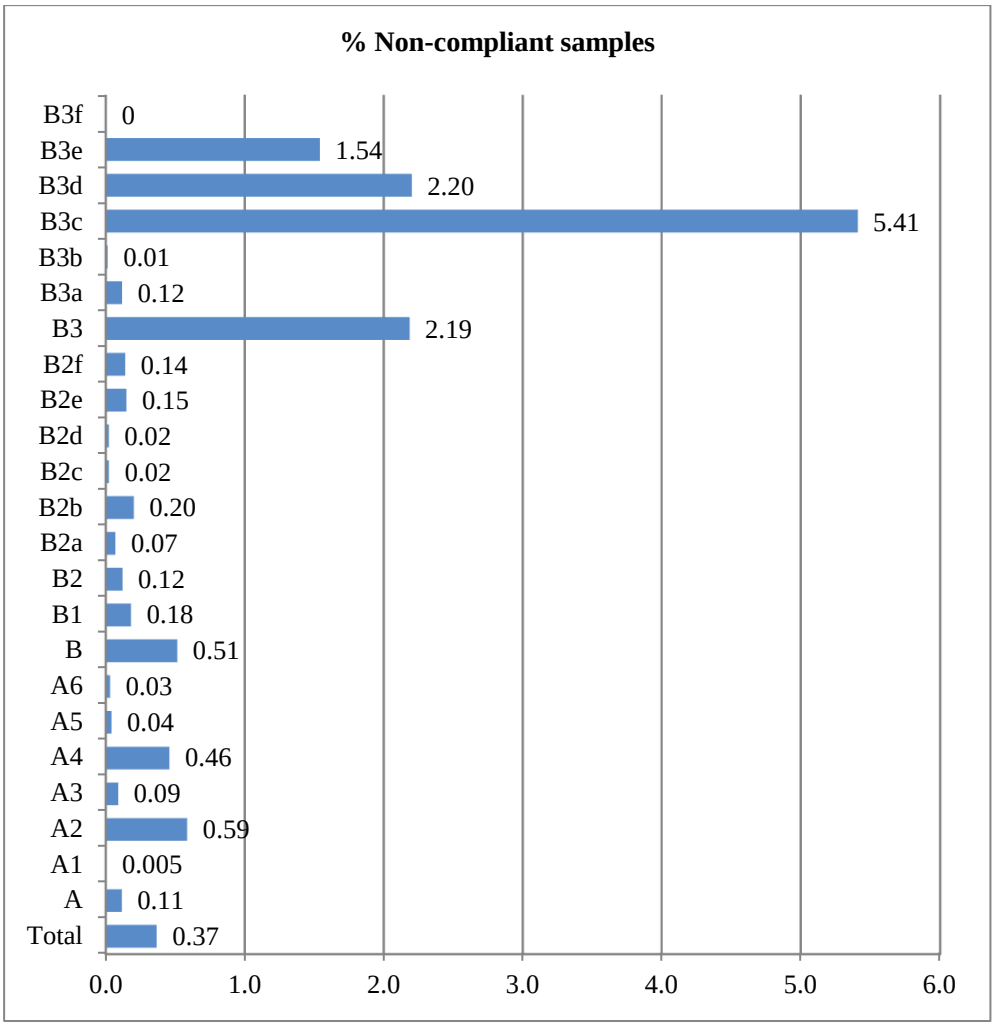


Figure 1: Percentage of non-compliant samples in each substance group

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 (88,688 samples) there were 176 non-compliant samples (0.20%) (208 non-compliant results).

The number of targeted samples analysed for stilbenes and derivatives (A1) in all animal/product categories together was 20,317, of which one sample (for pigs) was non-compliant (0.005%).

Antithyroid agents (A2) were analysed in 9,387 targeted samples of which 55 samples were non-compliant (0.59%) (55 non-compliant results). All non-compliant samples in the group A2 were for thiouracil. They were found in bovines (n = 48; 1.0%), pigs (n = 4; 0.12%), sheep and goats (n = 2; 0.73%) and farmed game (n = 1; 4.76%). Residues of thiouracil resulted most probably from feeding diets rich in cruciferous plants. Pinel et al. (2006) demonstrated that urinary excretion of thiouracil in adult bovines fed with cruciferous plants can give erroneous indications of the possible illegal use of thyrostats in meat production animals.

For steroids (A3), of the 40,628 samples analysed in all animal species and product categories, 36 samples were non-compliant (0.09%) (44 non-compliant results). All 44 non-compliant results were for anabolic steroids. The non-compliant samples were found in bovines (n = 16; 0.06%), pigs (n = 19; 0.20%) and sheep and goats (n = 1; 0.10%). Some Member States 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 18,356 samples analysed in all animal species and product categories, 84 were found non-compliant (0.46%) (108 non-compliant results). The non-compliant samples were found for bovines (n = 71; 0.72%), pigs (n = 9; 0.18%) and sheep and goats (n = 4; 0.89%).

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 2014, 41,322 targeted samples were analysed for beta-agonists, with 17 non-compliant samples reported for bovines only (0.04%).

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 2014 residue monitoring, 80,570 targeted samples were analysed for prohibited substances and 24 samples (0.03%) were non-compliant (24 non-compliant results). Altogether, there were 12 non-compliant results for chloramphenicol, eight for nitrofurans and four for nitroimidazoles (Table 2).

The distribution of the non-compliant results by individual substances and Member States, is 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	4	AT, DE, PL, SK
	pigs	1	CZ
	sheep/goats	1	AT
	poultry	1	CY
	aquaculture	1	DE
	milk	2	LV, PL
	eggs	2	LV
Nitrofurans			
SEM (semicarbazide)	bovine	2	IE
	sheep/goats	1	UK
AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	poultry	2	ES, PT
AOZ (3-amino-2-oxazolidone)	farmed game	2	IT
	honey	1	LV
Nitroimidazoles			
Dimetridazole	poultry	1	SK
Hydroxymetronidazole (MNZOH)	pigs	1	BG
Metronidazole	pigs	1	BG
	poultry	1	PL

AT: Austria; BG: Bulgaria; CZ: Czech Republic; CY: Cyprus; DE: Germany; ES: Spain; IE: Ireland; IT: Italy; LV: Latvia; PL: Poland; PT: Portugal; SK: Slovakia; UK: United Kingdom.

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 2014 for antimicrobials in targeted samples was 122,959 of which 223 (0.18%) were non-compliant (239 non-compliant results) (Table 1). The highest frequency of non-compliant samples for antibacterials was observed in honey (0.72%) (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.

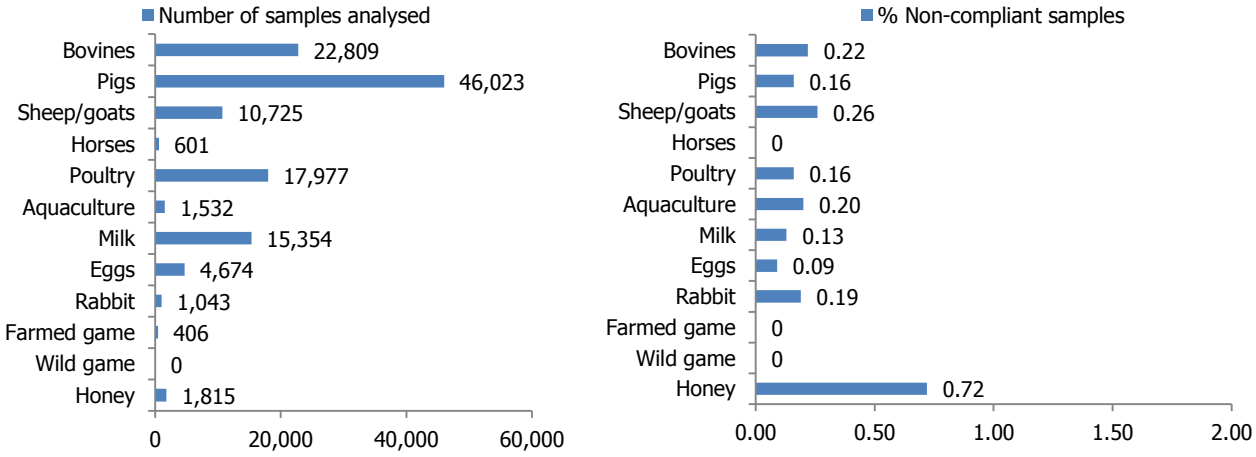


Figure 2: Number of targeted samples analysed and percentage of non-compliant samples for antibacterials (B1) in animal/product categories

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 2014 monitoring, 100,392 targeted samples were analysed for substances in the group B2 and 120 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.

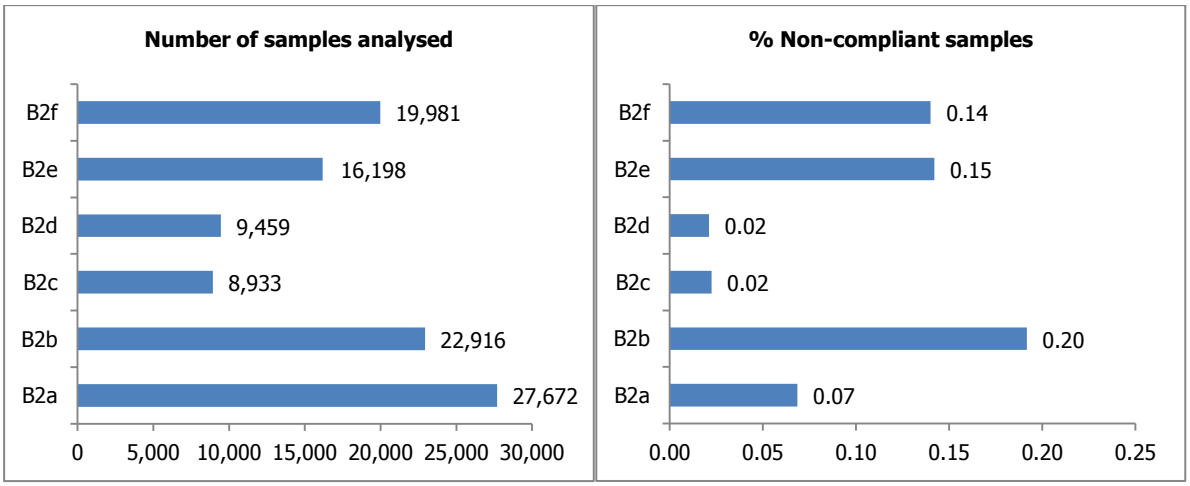


Figure 3: Number of targeted samples analysed within the group 'other veterinary drugs' (B2) and the percentage of non-compliant samples

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	4,931	0.04	1,619	0	1,517	0	1,865	0.0	5,053	0.26	10,976	0.23
Pigs	7,526	0.03	5,969	0.02	2,402	0	6,814	0.03	4,668	0	6,060	0
Sheep/goats	4,679	0.21	896	0.11	974	0	464	0	514	0.39	583	0.34
Horses	184	0.54	86	2.33	129	0.78	194	0	981	0.51	218	0
Poultry	3,125	0	9,094	0.20	2,072	0	7	0	1,052	0.19	701	0.14
Aquaculture	609	0	31	0	296	0	0	0	0	0	140	0
Milk	5,808	0.07	344	0	357	0	55	0	3711	0.03	843	0
Eggs	269	0	4367	0.41	192	0	0	0	17	0	138	0
Rabbit	148	0	280	0.71	86	0	10	0	130	0	50	0
Farmed game	227	0	163	2.45	109	0	12	0	72	1.39	6	0
Wild game	128	0	1	0	29	0	17	0	0	0	0	0
Honey	38	0	66	0	770	0.13	21	0	0	0	266	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 (0.20%) was observed for anticoccidials (B2b).

For anticoccidials (B2b), non-compliant samples were reported in pigs (0.02%), sheep and goats (0.11%), horses (2.33%), poultry (0.20%), eggs (0.41%), rabbits (0.71%), and farmed game (2.45%).

Non-compliant samples for anthelmintics (B2a) were reported in bovines (0.04%), pigs (0.03%), sheep and goats (0.21%), horses (0.54%), and milk (0.07%).

For pyrethroids (B2c), non-compliant samples were noted for horses (0.78%) and honey (0.13%).

There were non-compliant samples reported for sedatives (B2d) in pigs (0.03%).

For non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were reported in bovines (0.26%), sheep and goats (0.39%), horses (0.51%), poultry (0.19%), milk (0.03%), and farmed game (1.39%).

For 'other pharmacologically active substances' (B2f), non-compliant samples were observed for bovines (0.23%) sheep and goats (0.34%) and poultry (0.14%). For corticosteroids, 27 non-compliant results were reported by nine Member States and all except two results were reported for bovines. Substances identified were betamethasone (n = 1), dexamethasone (n = 23), prednisolone (n = 3) (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
Betamethasone	B2f	bovine	1	DE
Dexamethasone	B2f	bovine	22	BE, DE, ES, FR, IT, NL, PT
		sheep/goats	1	FR
Prednisolone	B2f	bovine	2	LT
		sheep/goats	1	DE

BE: Belgium; DE: Germany; ES: Spain; FR: France; IT: Italy; LT: Lithuania; NL: Netherlands; PT: Portugal.
(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 2014 residues monitoring, 45,648 samples were analysed for substances in group B3 of which 998 samples were non-compliant (2.19%) (1,207 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. Similar 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' (5.41%). 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 0.12% and 0.01%, respectively.

There were non-compliant samples reported in subgroup B3d mycotoxins (n = 140; 2.20%), for bovines (n = 70; 5.78%), pigs (n = 52; 2.64%), horses (n = 2; 2.63%), poultry (n = 9; 1.04%), milk (n = 6; 0.33%) and farmed game (n = 1; 12.50%). Those identified being zearalenone and derivatives, ochratoxin A and aflatoxin M_1.

Dyes (B3e) were reported in aquaculture (27 non-compliant samples; 1.55%). Substances found were malachite green, leuco-malachite green and crystal violet. There were no non-compliant samples in the subgroup 'others' (B3f).

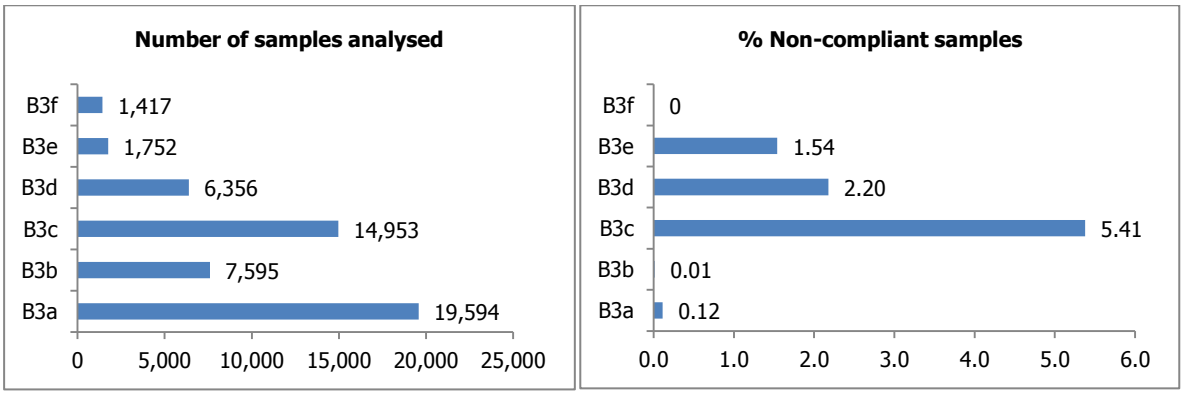


Figure 4: Number of samples analysed within the group 'other substances and environmental contaminants' (B3) and the percentage of non-compliant samples

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	3,340	0.09	1,464	0	2,760	7.61	1,211	5.78	8	0	180	0
Pigs	5,070	0.02	2,397	0	4,116	5.10	1,968	2.64	0	0	322	0
Sheep/goats	1,263	0.08	1,026	0.10	874	3.66	213	0	0	0	20	0
Horses	156	0	86	0	714	25.35	76	2.63	0	0	5	0
Poultry	3,985	0	784	0	1,905	0.26	868	1.04	0	0	183	0
Aquaculture	701	0.14	63	0	540	0.37	153	0	1,744	1.55	72	0
Milk	1,877	0.05	712	0	915	0	1,799	0.33	0	0	112	0
Eggs	1,978	0.25	298	0	132	0	8	0	0	0	158	0
Rabbit	149	0	26	0	118	0.85	19	0	0	0	4	0
Farmed game	197	1.02	42	0	241	7.88	8	12.50	0	0	22	0
Wild game	271	3.32	38	0	2,088	6.00	0	0	0	0	142	0
Honey	607	0	659	0	550	2.73	33	0	0	0	197	0

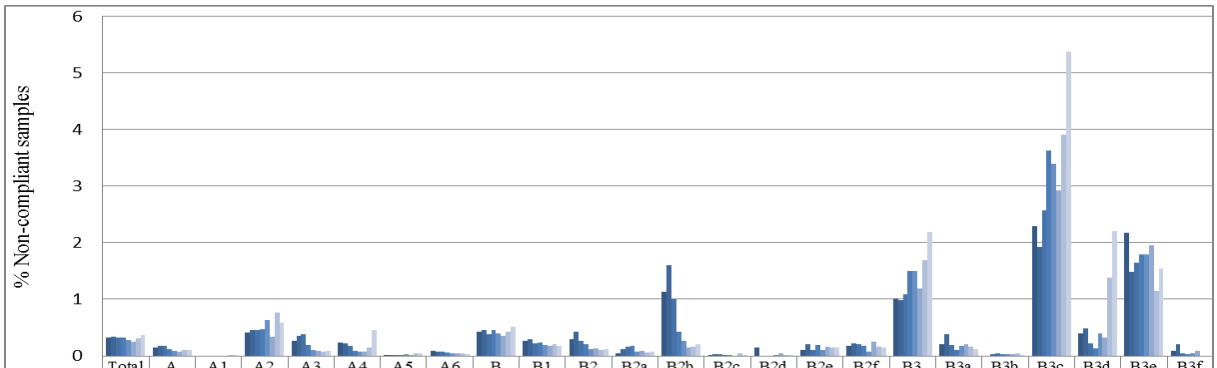
n: number of samples analysed; %nc: percentage of non-compliant samples.

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 8 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 2007–2014 (EU 28) is presented in Figure 5. The percentage of overall non-compliant samples in 2014 (0.37%) was slightly higher compared to the previous 7 years (0.25%–0.34%).



	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

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 and 2014 (substance groups are detailed in Appendix E)

Among hormones and prohibited substances (group A) the proportion of non-compliant samples in 2014 (0.11%) was similar to the previous 4 years.

In 2013, non-compliant samples (0.01%) were reported for the first time for stilbenes and derivatives (A1), and in 2014, low levels were again reported (0.005%).

The percentage of non-compliant samples for antithyroid agents (A2) was lower in 2014 (0.59%), compared to 2011 (0.63%) and 2013 (0.77%), although slightly higher compared to the remaining 5 years.

In 2014, the percentage of non-compliant samples for steroids (A3) (0.09%) was comparable to 2012 and 2013 (0.08%-0.09%) and lower compared to previous years (2007–2011). 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 2014 for resorcylic acid lactones (A4) (0.46%) was higher compared to the previous 7 years (0.07%-0.14%).

For beta-agonists (A5) in 2014, the percentage of non-compliant samples (0.04%) was similar to 2013, although higher than previous years (2007-2011).

For prohibited substances (A6), the proportion of non-compliant samples reported in 2014 was slightly lower (0.03%) compared to previous years and has remained at very low levels over the 8 years (0.03%–0.09%).

In the group of antibacterials (B1), the percentage of non-compliant samples in 2014 (0.18%), was similar compared to the previous 7 years (0.18%–0.29%).

In the group B2 ('other veterinary drugs'), the proportion of non-compliant samples has been comparable over the period 2011–2014 (0.11%–0.14%) and lower compared the period 2007–2010 (0.21%–0.42%).

For anthelmintics (B2a) increased slightly from 0.05% in 2007 to 0.18% in 2010, however in 2011 and 2012 the number of non-compliant samples decreased to 0.08 and 0.09%, respectively. In 2013 and 2014, the number of non-compliant samples was even lower; 0.06% and 0.07%, respectively.

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 a slight increase compared to the previous 2 years was noted (0.20%). 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, and to 0.20% in 2014. 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 2007–011 and 2014 (0.01%–0.03%), and in 2012 no non-compliant samples were reported. In 2013, the percentage of non-compliant samples was slightly higher compared to previous years (0.04%).

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 and 2014 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 8 years (around 0.1%–0.2%).

For 'other pharmacologically active substances' (B2f), the percentage of non-compliant samples in 2014 (0.14%) was slightly lower compared to the previous years, 2007–2010 and 2013 (0.16%–0.22%). In 2011 the percentage of non-compliant samples decreased to 0.07%. However in 2012, the highest percentage of non-compliant samples was reported (0.26%) for this subgroup.

In the group of 'other substances and environmental contaminants' (B3), the percentage of non-compliant samples (2.19%) increased in 2014, compared to the previous 7 years (0.99%–1.7%).

The highest proportion of non-compliant samples in the group B3 has been noted for chemical elements (B3c) over the 8 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 and 5.4% in 2014. 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 result, 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. 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.

The proportion of non-compliant samples for organochlorine compounds (B3a), were similar in 2007, 2009, 2011 and 2013 (0.16%–0.21%). In 2008 and 2012 the values were slightly higher (0.21% and 0.38%, respectively) 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 8 years (zero to three samples per year).

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.

The proportion of non-compliant samples for dyes (B3e) in 2014 (1.54%) was within the range noted for 2007–2012 (1.5%–2.2%). In 2013 the number of non-compliant samples was lower (1.14%).

For 'other substances' (B3f), from 2007–2012, the percentage of non-compliant samples ranged from 0.03% to 0.21%; however, in 2013 and 2014 no non-compliant samples were reported for this group.

[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.

Taking into account the limitations mentioned at the beginning of this section, it appears that in 2014 the frequency of non-compliant samples overall, was slightly higher. Increases in non-compliant samples were noted for resorcylic acid lactones (A4), chemical elements (B3c; mainly metals) and mycotoxins (B3d), compared to the previous 7 years. The lowest frequency of non-compliant samples for prohibited substances (A6), was reported in 2014, compared to the previous 7 years. For the other substance groups, there were no notable variations over the 8 years (see also EC, 2007; EFSA, 2010a, 2011, 2012, 2013, 2014, 2015).

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 2014 for the EU overall (Table 6), and by the majority of Member States (Table 7). Greece, Latvia and Romania did not achieve the minimum sampling frequency for bovines.

Table 6: Production of bovines and number of targeted samples over 2007–2014

Year	Production (animals)	Targeted samples	% Animals tested[(a)]	Minimum 96/23/EC
2007 (EU 27)	27,087,367	129,201	0.47	0.4
2008 (EU 27)	26,898,702	122,648	0.48	
2009 (EU 27)	26,677,946	127,897	0.48	
2010 (EU 27)	26,267,917	128,130	0.48	
2011 (EU 27)	26,566,593	126,540	0.48	
2012 (EU 27)	25,759,645	130,554	0.49	
2013 (EU 28)	25,481,237	126,307	0.49	
2014 (EU 28)	25,315,582	125,552	0.49	

(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 2014	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2014	Animals tested (%)
Austria	692,369	3,933	0.57	Italy	2,745,457	19,162	0.70
Belgium	824,511	5,600	0.68	Latvia	82,679	326	0.39
Bulgaria	27,230	274	1.01	Lithuania	153,376	633	0.41
Croatia	254,363	1,297	0.51	Luxemburg	22,196	90	0.41
Cyprus	15,211	297	1.95	Malta	4,076	50	1.23
Czech Republic	241,156	1,293	0.54	Netherlands	1,931,000	14,555	0.75
Denmark	491,790	2,028	0.41	Poland	1,596,807	6,511	0.41
Estonia	33,233	178	0.54	Portugal	361,987	1,438	0.40
Finland	262,334	1,277	0.49	Romania	138,775	457	0.33
France	4,663,356	18,808	0.40	Slovakia	36,782	359	0.98
Germany	3,509,270	14,471	0.41	Slovenia	110,285	491	0.45
Greece[(b)]	194,093	585	0.30	Spain	2,317,972	10,023	0.43
Hungary	97,759	393	0.40	Sweden	418,380	1,660	0.40
Ireland	1,585,790	7,469	0.47	United Kingdom	2,669,000	11,894	0.45
				Total (EU 28)	**25,481,237**	**125,552**	**0.49**

(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in bovines are presented in Table 8. Of the 125,552 samples analysed in this category, 531 (0.42%) were non-compliant (642 non-compliant results). The non-compliant samples were reported by 20 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	75,796	60.4	158	0.21	186
A1	10,254	8.2	0	0	0
A2	4,788	3.8	48	1.00	48
A3	25,360	20.2	16	0.06	24
A4	9,900	7.9	71	0.72	91
A5	22,815	18.2	17	0.07	17
A6	17,107	13.6	6	0.04	6
B	55,247	44.0	373	0.68	456
B1	22,809	18.2	50	0.22	56
B2	25,540	20.3	40	0.16	40
B2a	4,931	3.9	2	0.04	2
B2b	1,619	1.3	0	0	0
B2c	1,517	1.2	0	0	0
B2d	1,865	1.5	0	0	0
B2e	5,053	4.0	13	0.26	13
B2f	10,976	8.7	25	0.23	25
B3	7,715	6.1	283	3.67	360
B3a	3,340	2.7	3	0.09	2
B3b	1,464	1.2	0	0	0
B3c	2,760	2.2	210	7.61	227
B3d	1,211	1.0	70	5.78	131
B3e	8	0.01	0	0	0
B3f	180	0.1	0	0	0
Total	**125,552**	**100**	**531**	**0.42**	**642**

(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, six Member States reported a total of 48 non-compliant samples, all for thiouracil. In the group A3, a total of 16 non-compliant samples (24 non-compliant results) were reported. Among the substances identified, the highest number of non-compliant results were noted for nandrolone (n = 6), epinandrolone and 17-alpha-methyl-5-beta-androstan-3-alpha-17-beta-diol (n = 3, each) and 17-alpha nortestosteron (n = 2). In the group A4, four Member States reported 71 non-compliant samples (91 non-compliant results) for alpha- and beta-zearalanol. There were 17 non-compliant samples (17 non-compliant results) reported in Group A5: for clenbuterol (n = 16) and salbutamol (n = 1) by two Member States. In group A6, five Member States reported prohibited substances in six samples (six non-compliant results). The substances identified were: chloramphenicol (n = 4) and semicarbazide (n = 2).

For antibacterials (B1), ten Member States reported a total of 50 non-compliant samples (56 non-compliant results). Among the substances identified, oxytetracycline was the most frequent one (19 non-compliant results).

In Group B2, there were two non-compliant samples (two non-compliant results) for anthelmintics (B2a), 13 non-compliant samples (13 non-compliant results) were reported by five Member States for non-steroidal anti-inflammatory drugs (NSAIDs) (B2e), and 25 non-compliant samples (25 non-compliant results) were reported by eight Member States for steroidal anti-inflammatory drugs (B2f). Dexamethasone was the most frequently reported substance in B2f (n = 22 non-compliant results).

In the group B3, there were three non-compliant samples for organochlorine compounds (B3a), 210 non-compliant samples for heavy metals (B3c) and 70 non-compliant samples for mycotoxins (B3d) (aflatoxin B_1, zearalenol-alpha and –beta and zearalenone). Within the 210 non-compliant samples (227 non-compliant results) for heavy metals (B3d) there were 183 non-compliant results for copper (reported by two Member States), 27 for cadmium (reported by nine Member States), 15 for mercury (reported by two Member States), and two for lead (reported by two Member States).

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

3.3. Pigs

Council Directive 96/23/EC requires that the minimum number of pigs that have to be controlled each year for all kinds of residues and substances is 0.05% of the pigs slaughtered the previous year. The minimum requirements for the number of samples to be taken were fulfilled in 2014 for the EU overall (Table 9), and by the majority of Member States (Table 10). Greece did not achieve the minimum sampling frequency for pigs.

Table 9: Production of pigs and number of targeted samples over 2007–2014

Year	Production (animals)	Targeted samples	% Animals tested[(a)]	Minimum 96/23/EC
2007 (EU 27)	241,501,638	144,378	0.06	0.05
2008 (EU 27)	244,965,996	137,281	0.06	
2009 (EU 27)	242,260,526	138,137	0.06	
2010 (EU 27)	245,149,546	136,792	0.06	
2011 (EU 27)	249,082,904	133,255	0.05	
2012 (EU 27)	246,691,569	135,745	0.05	
2013 (EU 28)	243,680,241	131,565	0.05	
2014 (EU 28)	244,508,972	135,129	0.06	

(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 2014	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2014	Animals tested (%)
Austria	5,396,038	3,390	0.06	Italy	10,809,701	7,720	0.07
Belgium	11,724,297	5,565	0.05	Latvia	323,313	160	0.05
Bulgaria	843,555	840	0.10	Lithuania	878,471	440	0.05
Croatia	1,111,610	707	0.06	Luxemburg	147,267	74	0.05
Cyprus	608,624	996	0.16	Malta	71,230	52	0.07
Czech Republic	2,728,849	1,711	0.06	Netherlands	14,310,000	8,404	0.06
Denmark	19,054,850	10,099	0.05	Poland	20,949,761	10,835	0.05
Estonia	436,432	673	0.15	Portugal	4,249,410	2,226	0.05
Finland	2,129,100	1,413	0.07	Romania	3,580,495	1,750	0.05
France	23,746,074	11,716	0.05	Slovakia	604,032	460	0.08
Germany	58,653,454	30,066	0.05	Slovenia	228,793	156	0.07
Greece[(b)]	1,666,947	622	0.04	Spain	40,179,161	19,980	0.05
Hungary	4,025,314	2,098	0.05	Sweden	2,555,840	1,366	0.05
Ireland	2,915623	2,498	0.09	United Kingdom	9,752,000	9,112	0.09
				Total (EU 28)	**243,680,241**	**135,129**	**0.06**

(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in pigs are presented in Table 11. Of the 135,129 samples analysed in this category, 378 (0.28%) were non-compliant (486 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	57,051	42.2	36	0.06	40
A1	6,806	5.0	1	0.01	1
A2	3,203	2.4	4	0.12	4
A3	9,386	6.9	19	0.20	19
A4	5,057	3.7	9	0.18	13
A5	10,911	8.1	0	0	0
A6	26,541	19.6	3	0.01	3
B	89,192	66.0	342	0.38	446
B1	46,023	34.1	74	0.16	77
B2	32,416	24.0	5	0.02	6
B2a	7,526	5.6	2	0.03	3
B2b	5,969	4.4	1	0.02	1
B2c	2,402	1.8	0	0	0
B2d	6,814	5.0	2	0.03	2
B2e	4,668	3.5	0	0	0
B2f	6,060	4.5	0	0	0
B3	11,957	8.8	263	2.20	363
B3a	5,070	3.8	1	0.02	1
B3b	2,397	1.8	0	0	0
B3c	4,116	3.0	210	5.10	245
B3d	1,968	1.5	52	2.64	117
B3e	0	0	0	0	0
B3f	322	0.2	0	0	0
Total	**135,129**	**100**	**378**	**0.28**	**486**

(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 was one non-compliant sample reported in group A1 for diethylstillbestrol. In the group A2, two Member States reported a total of four non-compliant samples, all for thiouracil. In the group A3, three Member States reported 19 non-compliant samples and results (14 for nandrolone and five for boldenone). Nine non-compliant samples (13 non-compliant results) were reported in group A4 for alpha- and beta-zearalanol (n = 5, non-compliant results each) and zearalanone (n = 3 non-compliant results). In group A6, two Member States reported prohibited substances in three samples (three non-compliant results); one each for chloramphenicol, metronidazole and hydroxymetronidazole.

For antibacterials (B1), 15 Member States reported a total of 74 non-compliant samples (77 non-compliant results).

In the group B2, four Member States reported five non-compliant samples (six non-compliant results). They were distributed as follows: two non-compliant samples (three non-compliant results) for anthelmintics (B2a), one non-compliant sample and result for anticoccidials (B2b) and two non-compliant samples and results for sedatives (B2d).

In the group B3, there were 263 non-compliant samples (363 non-compliant results). The non-compliant results were distributed as follows: one for organochlorine compounds (B3a), one for organophosphorus compounds (B3b), 245 for heavy metals (B3c), 117 for mycotoxins (B3d) (seven for ochratoxin A, 41 for zearalenol-alpha, 40 for zearalenone and29 for zearalenol-beta. Of the 245 non-compliant results for heavy metals (B3c), 83 were reported as non-compliant for mercury, 150 for copper, 10 for cadmium and two 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 2014 for the EU overall (Table 12), and by the majority of Member States (Table 13). 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 2007–2014

Year	Production (animals)	Targeted samples	% Animals tested[(a)]	Minimum 96/23/EC
2007 (EU 27)	40,935,665	26,599	0.06	0.05
2008 (EU 27)	41,435,268	24,320	0.06	
2009 (EU 27)	39,584,954	26,265	0.06	
2010 (EU 27)	36,121,283	23,894	0.06	
2011 (EU 27)	37,217,484	23,112	0.06	
2012 (EU 27)	36,558,080	23,441	0.06	
2013 (EU 28)	35,831,474	22,761	0.06	
2014 (EU 28)	36,188,624	26,218	0.07	

(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 2014	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2014	Animals tested (%)
Austria	145,373	384	0.26	Italy	537,838	861	0.16
Belgium	123,784	209	0.17	Latvia	13,104	19	0.14
Bulgaria	171,191	113	0.07	Lithuania	6,496	17	0.26
Croatia	59,805	46	0.08	Luxemburg	1,929	9	0.47
Cyprus	268,004	452	0.17	Malta	5,470	17	0.31
Czech Republic	12,040	61	0.51	Netherlands	686,000	458	0.07
Denmark	77,485	57	0.07	Poland	30,637	100	0.33
Estonia	7,989	18	0.23	Portugal	973,915	496	0.05
Finland	40,793	42	0.10	Romania	264,914	111	0.04
France	4,405,799	2,186	0.05	Slovakia	80,417	128	0.16
Germany	1,020,117	567	0.06	Slovenia	8,793	33	0.38
Greece[(b)]	1,136,361	544	0.05	Spain	7,627,095	4,628	0.06
Hungary	18,261	68	0.37	Sweden	252,880	137	0.05
Ireland	2,911,984	1976	0.07	United Kingdom	14,943,000	12,481	0.08
				Total (EU 28)	**35,831,474**	**26,218**	**0.07**

(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in sheep and goats is presented in Table 14. Of the 26,218 samples analysed in this category, 85 (0.32%) were non-compliant (92 non-compliant results). The non-compliant samples were reported by 14 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	4,563	17.4	9	0.20	9
A1	310	1.2	0	0	0
A2	273	1.0	2	0.73	2
A3	1,049	4.0	1	0.10	1
A4	450	1.7	4	0.89	4
A5	1,005	3.8	0	0	0
A6	1,758	6.7	2	0.11	2
B	21,834	83.3	76	0.35	83
B1	10,725	40.9	28	0.26	33
B2	8,049	30.7	14	0.17	15
B2a	4,679	17.8	10	0.21	10
B2b	896	3.4	1	0.11	1
B2c	974	3.7	0	0	0
B2d	464	1.8	0	0	0
B2e	514	2.0	2	0.39	2
B2f	583	2.2	2	0.34	2
B3	3,118	11.9	34	1.09	35
B3a	1,263	4.8	1	0.08	1
B3b	1,026	3.9	1	0.10	1
B3c	874	3.3	32	3.66	33
B3d	213	0.8	0	0	0
B3e	0	0	0	0	0
B3f	20	0.1	0	0	0
Total	**26,218**	**100**	**85**	**0.32**	**92**

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

In group A, two non-compliant samples and results were reported against antithyroid agents (A2) for thiouracil, for one Member State. For steroids (A3), one non-compliant sample and result was reported for epinandrolone, for one Member State. In group A4, four non-compliant samples and results were reported for alpha- and beta-zearalanol, by one Member State. In the group A6, two Member States reported prohibited substances in two samples (two non-compliant results): one each for chloramphenicol and semicarbazide.

For antibacterials (B1), six Member States reported a total of 28 non-compliant samples (33 non-compliant results). The substance with the highest number of non-compliant results was sulfadiazine (n = 15).

In the group B2, non-compliant samples (and results) were reported for anthelmintics (B2a) (n = 10), anticoccidials (B2b) (n = 1), NSAIDs (B2e) (n = 2) and 'other pharmacologically active susbtances' (B2f) (n = 2); with dexamethasone and prednisolone reported for B2f.

In the group B3, there were 34 non-compliant samples (35 non-compliant results). The non-compliant results were distributed as follows: one each for organochlorine compounds (B3a) and organophosphorus compounds (B3b), and 33 for heavy metals (B3c): four for cadmium, seven for mercury, ten for lead and 12 for copper.

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 2014 at EU level was slightly higher compared to the years 2007–2012 (Table 15). The percentage of targeted samples taken in each Member State for the reported horse production is presented in Table 16. Cyprus, Greece and Luxembourg did not report horse production and thus no samples have been taken.

Table 15: Production of horses and number of targeted samples over 2007–2014

Year	Production (animals)	Targeted samples	% Animals tested[(a)]	Minimum 96/23/EC
2007 (EU 27)	312,969	3,115	1.16	Not specified
2008 (EU 27)	386,302	2,545	0.81	
2009 (EU 27)	264,538	3,000	0.78	
2010 (EU 27)	258,362	3,094	1.17	
2011 (EU 27)	249,403	3,309	1.28	
2012 (EU 27)	272,286	3,850	1.54	
2013 (EU 28)	284,035	4,453	1.63	
2014 (EU 28)	215,629	4,112	1.45	

(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 2014	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2014	Animals tested (%)
Austria	1,004	70	6.97	Italy	72,387	569	0.79
Belgium	9,199	355	3.86	Latvia	416	23	5.53
Bulgaria	37	42	113.51	Lithuania	1,055	19	1.80
Croatia	568	46	8.10	Luxemburg	0	0	NA
Cyprus	0	0	NA	Malta	38	15	39.47
Czech Republic	416	59	14.18	Netherlands	8,319	180	2.16
Denmark	1,723	106	6.15	Poland	34,451	334	0.97
Estonia	34	0	0.00	Portugal	3,111	93	2.99
Finland	1,874	58	3.09	Romania	20,652	174	0.84
France	20,552	412	2.00	Slovakia	39	5	12.82
Germany	11,110	204	1.84	Slovenia	1,577	43	2.73
Greece[(b)]	0	0	NA	Spain	67,277	386	0.57
Hungary	1,116	43	3.85	Sweden	4,010	220	5.49
Ireland	16,306	526	3.23	United Kingdom	6,764	130	1.92
				Total (EU 28)	**284,035**	**4,112**	**1.45**

NA: not applicable.
(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in horses is presented in Table 17. Of the 4,112 samples analysed in this category, 192 samples (4.67%) were non-compliant (200 non-compliant results). The non-compliant samples were reported by 15 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	880	21.4	0	0	0
A1	90	2.2	0	0	0
A2	76	1.8	0	0	0
A3	148	3.6	0	0	0
A4	90	2.2	0	0	0
A5	197	4.8	0	0	0
A6	314	7.6	0	0	0
B	3,313	81	192	5.80	200
B1	601	14.6	0	0	0
B2	1,768	43.0	9	0.51	11
B2a	184	4.5	1	0.54	1
B2b	86	2.1	2	2.33	2
B2c	129	3.1	1	0.78	1
B2d	194	4.7	0	0	0
B2e	981	23.9	5	0.51	7
B2f	218	5.3	0	0	0
B3	1,024	24.9	183	17.87	189
B3a	156	3.8	0	0	0
B3b	86	2.1	0	0	0
B3c	714	17.4	181	25.35	187
B3d	76	1.8	2	2.63	2
B3e	0	0	0	0	0
B3f	5	0.1	0	0	0
Total	**4,112**	**100**	**192**	**4.67**	**200**

(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 for group A.

In the group B2, nine non-compliant samples (11 non-compliant results) were noted, for anthelmintics (B2a)(one sample and result), anticoccidials (B2b) (two samples and results), carbamates and pyrethroids (B2c) (one sample and result), for NSAIDs (B2e) (five samples and seven results).

In the group B3, 181 non-compliant samples (187 non-compliant results) were reported for the heavy metal subgroup B3c: 181 for cadmium and six for mercury. Non-compliant samples were also noted for mycotoxins (B3d) (n = 2, for zearalenone).

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

3.6. 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 2014 for the EU overall (Table 18).

Percentage of targeted samples taken in each Member State for the reported production of poultry is given in Table 19. Greece and Romania did not achieve this requirement. Luxembourg did not report poultry production and as a result no samples were taken in 2014.

Table 18: Production of poultry and number of targeted samples over 2007–2014

Year	Production (t)	Targeted samples	% Samples tested/200 t[(a)]	Minimum 96/23/EC
2007 (EU 27)	10,912,500	62,101	1.15	1/200 t
2008 (EU 27)	12,421,566	60,406	1.11	
2009 (EU 27)	11,383,434	61,989	1.00	
2010 (EU 27)	11,804,262	61,259	1.08	
2011 (EU 27)	12,417,108	65,942	1.12	
2012 (EU 27)	12,845,333	68,770	1.11	
2013 (EU 28)	12,930,555	71,186	1.11	
2014 (EU 28)	12,909,837	72,486	1.12	

(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 2014	Samples tested/ 200 t	Country	Production data[(a)] (t)	Number of samples 2014	Samples tested/ 200 t
Austria	103,794	833	1.6	Italy	1,261,000	7,264	1.2
Belgium	406,887	2,320	1.1	Latvia	25,000	202	1.6
Bulgaria	82,060	795	1.9	Lithuania	64,873	322	1.0
Croatia	70,463	549	1.6	Luxemburg	0	0	NA
Cyprus	16,925	680	8.0	Malta	4,115	200	9.7
Czech Republic	151,042	834	1.1	Netherlands	891,400	5,029	1.1
Denmark	147,816	790	1.1	Poland	1,411,435	7,435	1.1
Estonia	16,364	200	2.4	Portugal	299,428	1,823	1.2
Finland	106,932	670	1.3	Romania	746,620	3,267	0.9
France	1,668,447	8,450	1.0	Slovakia	77,119	458	1.2
Germany	1,426,733	8,631	1.2	Slovenia	54,323	327	1.2
Greece[(b)]	187,776	507	0.5	Spain	1,292,393	7,089	1.1
Hungary	503,556	2,603	1.0	Sweden	124,210	657	1.1
Ireland	144,844	1,262	1.7	United Kingdom	1,645,000	9,289	1.1
				Total (EU 28)	**1,2930,555**	**72,486**	**1.12**

NA: not applicable.
(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in poultry are presented in Table 20. Of the 72,486 samples analysed in this category 69 (0.10%) were non-compliant (79 non-compliant results). The non-compliant samples were reported by 15 Member States.

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

Substance group[a]	Samples analysed		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	36,219	50.0	5	0.01	5
A1	2,640	3.6	0	0	0
A2	979	1.4	0	0	0
A3	4,176	5.8	0	0	0
A4	2,723	3.8	0	0	0
A5	5,938	8.2	0	0	0
A6	21,288	29.4	5	0.02	5
B	40,241	55.5	64	0.16	74
B1	17,977	24.8	29	0.16	29
B2	15,936	22.0	21	0.13	22
B2a	3,125	4.3	0	0	0
B2b	9,094	12.5	18	0.20	18
B2c	2,072	2.9	0	0	0
B2d	7	0.01	0	0	0
B2e	1,052	1.5	2	0.19	2
B2f	701	1.0	1	0.14	2
B3	6,757	9.3	14	0.21	23
B3a	3,985	5.5	0	0	0
B3b	784	1.1	0	0	0
B3c	1,905	2.6	5	0.26	5
B3d	868	1.2	9	1.04	18
B3e	0	0	0	0	0
B3f	183	0.3	0	0	0
Total	**72,486**	**100**	**69**	**0.10**	**79**

(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 five non-compliant samples and results in total, for AMOZ (5-methylmorpholino-3-amino-2-oxazolidone) (n = 2) and one each for chloramphenicol, dimetridazole and metronidazole.

For antibacterials (B1), ten Member States reported a total of 29 non-compliant samples (29 non-compliant results). Similar to previous years, the most frequent substance reported was doxycycline (n = 20).

In the group B2, the highest number of non-compliant samples reported was for anticoccidials (B2b): 18 non-compliant samples and results, from eight Member States. Other non-compliant results reported in the group B2 were for NSAIDs drugs (B2e) (n = 2) and 'other pharmacologically active substances' (B2f) (n = 2).

In the group B3, there were five non-compliant samples and results reported under chemical elements (B3c) (two for cadmium, two for copper and one for mercury). Nine non-compliant samples (18 non-compliant results) were reported for mycotoxins (B3d); nine results for zearalenol-alpha, six results for zearalenone-beta and three results for zearalenone.

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 2014 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, Malta, Portugal, Romania and Sweden did not analyse at least one sample/100 t of production. Luxembourg did not report aquaculture production and consequently no samples were taken.

Table 21: Production of aquaculture and number of targeted samples over 2007–2014

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	

(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 2014	Samples tested/ 100 t	Country	Production data[(a)] (t)	Number of samples 2014	Samples tested/ 100 t
Austria	3,124	224	7.2	Italy	59,900	743	1.2
Belgium	2,000	134	6.7	Latvia	574	8	1.4
Bulgaria	5,210	105	2.0	Lithuania	3,884	43	1.1
Croatia	10,946	122	1.1	Luxemburg	0	0	NA
Cyprus	5,458	251	4.6	Malta	7,000	41	0.6
Czech Republic	20,800	257	1.2	Netherlands	6,000	107	1.8
Denmark	36,000	384	1.1	Poland	28,996	560	1.9
Estonia	371	17	4.6	Portugal	4,676	42	0.9
Finland	12,659	180	1.4	Romania	6,118	37	0.6
France	49,673	492	1.0	Slovakia	712	126	17.7
Germany	19,691	276	1.4	Slovenia	1,155	28	2.4
Greece[(b)]	98,035	666	0.7	Spain	51,214	540	1.1
Hungary	7,786	133	1.7	Sweden	10,550	100	0.9
Ireland	13,221	136	1.0	United Kingdom	148,438	1,484	1.0
				Total (EU 28)	**614,191**	**7,236**	**1.2**

NA: not applicable.
(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in aquaculture are presented in Table 23. Of the 7,236 samples analysed for aquaculture 34 samples (0.47%) were non-compliant (36 non-compliant results). The non-compliant samples were reported by ten 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	2,197	30.4	1	0.05	1
A1	136	1.9	0	0	0
A2	0	0	0	0	0
A3	353	4.9	0	0	0
A4	65	0.9	0	0	0
A5	87	1.2	0	0	0
A6	1,682	23.2	1	0.06	1
B	5,225	72.2	33	0.63	35
B1	1,532	21.2	3	0.20	4
B2	872	12.1	0	0	0
B2a	609	8.4	0	0	0
B2b	31	0.4	0	0	0
B2c	296	4.1	0	0	0
B2d	0	0	0	0	0
B2e	0	0	0	0	0
B2f	140	1.9	0	0	0
B3	3,080	43	30	0.97	31
B3a	701	9.7	1	0.14	1
B3b	63	0.9	0	0	0
B3c	540	7.5	2	0.37	2
B3d	153	2.1	0	0	0
B3e	1,744	24.1	27	1.55	28
B3f	72	1.0	0	0	0
Total	**7,236**	**100**	**34**	**0.47**	**36**

(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, only one non-compliant sample was reported in group A6, for chloramphenicol.

In group B1, three non-compliant samples (four non-compliant results) were reported by three Member States, for enrofloxacin, marbofloxacin, oxolinic acid and sulfadiazine.

There were no non-compliant samples reported for group B2 'other veterinary drugs'.

In the group B3, there were 30 non-compliant samples (31 non-compliant results), in total. The non-compliant results were distributed as follows: one for organochlorine compounds (B3a), two for mercury (B3c), and 28 for dyes (B3e) (malachite green, malachite green-leuco and crystal violet). With 1.55% non-compliant samples in subgroup B3e, residues of dyes are again the most frequently found residues in aquaculture.

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 2014 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 2007–2014

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	1/15,000 t
2008 (EU 27)	145,006,173	53,333	5.6	
2009 (EU 27)	141,669,974	54,063	5.6	
2010 (EU 27)	144,705,166	30,372	3.2	
2011 (EU 27)	143,022,677	29,592	3.1	
2012 (EU 27)	149,086,701	30,748	3.2	
2013 (EU 28)	146,446,811	29,788	3.0	
2014 (EU 28)	147,794,431	29,533	3.0	

(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 2014	Samples tested/ 15,000 t	Country	Production data[(a)] (t)	Number of samples 2014	Samples tested/ 15,000 t
Austria	3,413,021	347	1.5	Italy	10,597,572	2,323	3.3
Belgium	3,222,409	861	4.0	Latvia	874,000	728	12.5
Bulgaria	442,508	298	10.1	Lithuania	1,394,558	303	3.3
Croatia	803,652	1,084	20.2	Luxemburg	287,000	300	15.7
Cyprus	153,913	3,604	351.2	Malta	43,566	277	95.4
Czech Republic	2,740,700	312	1.7	Netherlands	11,852,000	2,035	2.6
Denmark	4,500,000	928	3.1	Poland	12,237,315	2,608	3.2
Estonia	721,246	653	13.6	Portugal	1,861,404	643	5.2
Finland	2,220,198	309	2.1	Romania	1,518,927	330	3.3
France	24,702,693	1,781	1.1	Slovakia	1,281,915	543	6.4
Germany	29,782,354	2,019	1.0	Slovenia	529,000	325	9.2
Greece[(b)]	1,817,129	632	5.2	Spain	6,890,100	1,137	2.5
Hungary	814,813	313	5.8	Sweden	2,870,000	312	1.6
Ireland	5,515,614	1,194	3.2	United Kingdom	13,359,204	3,334	3.7
				Total (EU 28)	**146,446,811**	**29,533**	**3.0**

(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

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 29,533 milk samples analysed 35 (0.12%) were non-compliant (35 non-compliant results). The non-compliant samples were reported by 15 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	6,815	23.1	2	0.03	2
A1	0	0	0	0	0
A2	22	0.1	0	0	0
A3	56	0.2	0	0	0
A4	0	0	0	0	0
A5	154	0.5	0	0	0
A6	6,679	22.6	2	0.03	2
B	25,064	84.9	33	0.13	33
B1	15,354	52.0	20	0.13	20
B2	8,487	28.7	5	0.06	5
B2a	5,808	19.7	4	0.07	4
B2b	344	1.2	0	0	0
B2c	357	1.2	0	0	0
B2d	55	0.2	0	0	0
B2e	3,711	12.6	1	0.03	1
B2f	843	2.9	0	0	0
B3	5,138	17.4	8	0.16	8
B3a	1,877	6.4	1	0.05	1
B3b	712	2.4	0	0	0
B3c	915	3.1	0	0	0
B3d	1,799	6.1	6	0.33	7
B3e	0	0	0	0	0
B3f	112	0.4	0	0	0
Total	**29,533**	**100**	**35**	**0.12**	**35**

(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 20 non-compliant samples (20 non-compliant results).

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

In the group B3, there were eight non-compliant samples (eight non-compliant results) in total: one non-compliant result for organochlorine compounds (B3a) and seven 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 2014 for the EU overall (Table 27) and by the majority of Member States. Only 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 2007–2014

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	

(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 2014	Samples tested/ 1,000 t	Country	Production data[a] (t)	Number of samples 2014	Samples tested/ 1,000 t
Austria	100,730	219	2.2	Italy	793,900	1,105	1.4
Belgium	162,240	381	2.3	Latvia	40,260	482	12.0
Bulgaria	58,584	483	8.2	Lithuania	35,741	198	5.5
Croatia	32,173	721	22.4	Luxemburg	1,300	200	153.8
Cyprus	9,597	371	38.7	Malta	3,627	150	41.4
Czech Republic	115,000	239	2.1	Netherlands	612,000	1,520	2.5
Denmark	60,971	473	7.8	Poland	496,531	661	1.3
Estonia	11,305	200	17.7	Portugal	99,640	360	3.6
Finland	67,500	200	3.0	Romania	114,821	190	1.7
France	772,213	854	1.1	Slovakia	46,094	240	5.2
Germany	759,260	812	1.1	Slovenia	22,589	218	9.7
Greece[b]	116,883	109	0.9	Spain	735,266	770	1.0
Hungary	46,962	214	4.6	Sweden	103,400	198	1.9
Ireland	34,853	294	8.4	United Kingdom	616,894	1,529	2.5
				Total (EU 28)	**6,070,334**	**13,391**	**2.2**

(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in eggs is presented in Table 29. Of the 13,391 egg samples analysed, 29 (0.22%) were non-compliant (29 non-compliant results). The non-compliant samples were reported by 14 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		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	3,618	27.0	2	0	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	3,618	27.0	2	0.06	2
B	10,876	81.2	27	0.25	27
B1	4,674	34.9	4	0.09	4
B2	4,973	37.1	18	0.36	18
B2a	269	2.0	0	0	0
B2b	4,367	32.6	18	0.41	18
B2c	192	1.4	0	0	0
B2d	0	0	0	0	0
B2e	17	0.1	0	0	0
B2f	138	1.0	0	0	0
B3	2,218	17	5	0.23	5
B3a	1,978	14.8	5	0.25	5
B3b	298	2.2	0	0	0
B3c	132	1.0	0	0	0
B3d	8	0.1	0	0	0
B3e	0	0	0	0	0
B3f	158	1.2	0	0	0
Total	**13,391**	**100**	**29**	**0.22**	**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.

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), four non-compliant samples (four non-compliant results) were reported by four Member States. One non-compliant result was found for each of the following substances: doxycycline, enrofloxacin, flumequine and sulfadiazine

In the group B2, 18 non-compliant samples were found (18 non-compliant results) for anticoccidials (B2b). The substances found were, diclazuril (n = 6), narasin (n = 3), lasalocid and salinomycin (n = 2, each) and monensin, nicarbazin, robenidine, salinomycin sodium and toltrazurilsulfon (n = 1, each).

In the group B3, five non-compliant samples (five non-compliant results) were reported for organochlorine compounds (B3a) by one Member State.

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 2007–2014

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

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 and Slovakia did not achieve the minimum sampling frequency requirement. Austria, Denmark, Estonia, Finland, Ireland, Romania, Sweden and the United Kingdom did not report rabbit meat production and as a consequence no rabbit meat samples were taken in 2014.

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

Country	Production data[(a)] (t)	Number of samples 2014	Samples tested/ required	Country	Production data[(a)] (t)	Number of samples 2014	Samples tested/ required
Austria	0	0	NA	Italy	35,041	422	2.0
Belgium	4,191	110	1.1	Latvia	3	19	190.0
Bulgaria	31	17	16.5	Lithuania	33	12	10.9
Croatia	8	26	97.5	Luxemburg	8	12	45.0
Cyprus	158	158	30.0	Malta	100	21	6.3
Czech Republic	829	36	1.3	Netherlands	63	35	16.7
Denmark	0	0	NA	Poland	3,768	109	1.1
Estonia	0	0	NA	Portugal	6,798	116	1.0
Finland	0	0	NA	Romania	0	0	NA
France	42,380	366	1.6	Slovakia	819	18	0.7
Germany	496	41	2.5	Slovenia	19	17	26.8
Greece[(b)]	2,474	62	0.8	Spain	56,866	1,003	3.6
Hungary	10,579	162	1.3	Sweden	0	0	NA
Ireland	0	0	NA	United Kingdom	0	0	NA
				Total (EU 28)	**164,664**	**2,762**	**NA**

NA: not applicable.
(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in rabbit meat are presented in Table 32. Of the 2,762, samples analysed for rabbits, 5 (0.18%) were non-compliant (5 non-compliant results). The non-compliant samples were reported by nine 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	774	28.0	0	0	0
A1	41	1.5	0	0	0
A2	23	0.8	0	0	0
A3	46	1.7	0	0	0
A4	34	1.2	0	0	0
A5	109	3.9	0	0	0
A6	542	19.6	0	0	0
B	2,007	72.7	5	0.25	5
B1	1,043	37.8	2	0.19	2
B2	703	25.5	2	0.28	2
B2a	148	5.4	0	0	0
B2b	280	10.1	2	0.71	2
B2c	86	3.1	0	0	0
B2d	10	0.4	0	0	0
B2e	130	4.7	0	0	0
B2f	50	1.8	0	0	0
B3	295	10.7	1	0	1
B3a	149	5.4	0	0	0
B3b	26	0.9	0	0	0
B3c	118	4.3	1	0.85	1
B3d	19	0.7	0	0	0
B3e	0	0	0	0	0
B3f	4	0.1	0	0	0
Total	**2,762**	**100**	**5**	**0.18**	**5**

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

No non-compliant samples were reported for group A.

In the group B, there were two non-compliant samples (two non-compliant results) for antibacterials (B1); the substances found were doxycycline and sulfadimethoxine. For group B2 non-compliant samples were reported for anticoccidials (B2b) (n = 2), by two Member States. In group B3, one non-compliant sample (one non-compliant result) was reported for subgroup B3c, for lead.

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 1,918 targeted samples were collected in 2014 in the EU (Table 33). Estonia, Luxembourg and Malta did not report farmed game production (Table 34).

Table 33: Production of farmed game and number of targeted samples over 2007–2014

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

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

Country	Production data[a] (t)	Number of samples 2014	Country	Production data[a] (t)	Number of samples 2014
Austria	309	182	Italy	3,136	226
Belgium	196	161	Latvia	20	25
Bulgaria	0	0	Lithuania	22	19
Croatia	10	29	Luxemburg	0	0
Cyprus	22	34	Malta	0	0
Czech Republic	241	104	Netherlands	123	21
Denmark	31	21	Poland	20	86
Estonia	0	0	Portugal	1,202	43
Finland	1,957	116	Romania	75	12
France	10,775	144	Slovakia	213	107
Germany	3,510	104	Slovenia	0	13
Greece[b]	105	60	Spain	114	33
Hungary	126	40	Sweden	1,692	85
Ireland	54	129	United Kingdom	2,403	124
			Total (EU 28)	**26,356**	**1,918**

(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in farmed game are presented in Table 35. Of the 1,918 samples analysed for farmed game, 30 (1.56%) were non-compliant (36 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	573	29.9	3	0.52	3
A1	40	2.1	0	0.0	0
A2	21	1.1	1	4.76	1
A3	50	2.6	0	0	0
A4	36	1.9	0	0	0
A5	104	5.4	0	0	0
A6	340	17.7	2	0.59	2
B	1,381	72.0	27	1.96	33
B1	406	21.2	0	0.0	0
B2	575	30.0	5	0.87	5
B2a	227	11.8	0	0.00	0
B2b	163	8.5	4	2.45	4
B2c	109	5.7	0	0	0
B2d	12	0.6	0	0	0
B2e	72	3.8	1	1.39	1
B2f	6	0.3	0	0.00	0
B3	423	22.1	22	5.20	28
B3a	197	10.3	2	1.02	7
B3b	42	2.2	0	0.0	0
B3c	241	12.6	19	7.88	19
B3d	8	0.4	1	12.50	2
B3e	0	0.0	0	0	0
B3f	22	1.1	0	0	0
Total	**1,918**	**100**	**30**	**1.56**	**36**

(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, non-compliant samples were reported for group A2 and A6. For group A2, one non-compliant sample (one non-compliant result) for thiouracil was reported and two non-compliant samples (two non-compliant results) were reported in group A6, for AOZ.

In the group B2, non-compliant samples were reported for anticoccidials (B2b) (n = 4) and NSAIDs (B2e) (n = 1).

In the group B3, non-compliant samples were reported for organochlorine compounds (B3a), chemical elements (B3c) and mycotoxins (B3d). For subgroup B3a, two non-compliant samples (seven non-compliant results) were reported by two Member States. For subgroup B3c, 19 non-compliant samples and results were reported for heavy metals as follows, cadmium (n = 13), copper (n = 3), lead (n = 1) and mercury (n = 2). For subgroup B3d, one non-compliant sample (two non-compliant results) were reported as follows, zearalenol-beta (n = 1) and zearalenone (n = 1).

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 2,601 targeted samples were collected in 2014 in the EU (Table 36). Cyprus and Malta did not report wild game production thus no samples were taken in 2014 (Table 37).

Table 36: Production of wild game and number of targeted samples over 2007–2014

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

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

Country	Production data[a] (t)	Number of samples 2014	Country	Production data[a] (t)	Number of samples 2014
Austria	9,724	198	Italy	1,500	83
Belgium	1,965	212	Latvia	121	80
Bulgaria	19	196	Lithuania	1	41
Croatia	30	15	Luxemburg	360	100
Cyprus	0	0	Malta	0	0
Czech Republic	9,499	148	Netherlands	685	33
Denmark	238	15	Poland	13,946	208
Estonia	524	100	Portugal	1,400	57
Finland	56	0	Romania	119	84
France	31,913	187	Slovakia	6,001	110
Germany	91,435	93	Slovenia	1,804	100
Greece[b]	10	26	Spain	9,788	103
Hungary	21,917	105	Sweden	0	96
Ireland	408	111	United Kingdom	550	100
			Total (EU 28)	**204,013**	**2,601**

(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in wild game are presented in Table 38. Of the 2,601 samples analysed for wild game, 140 (5.38%) were non-compliant (146 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	49	1.9	0	0	0
A1	0	0	0	0	0
A2	2	0.1	0	0	0
A3	4	0.2	0	0	0
A4	1	0.04	0	0	0
A5	2	0.1	0	0	0
A6	40	1.5	0	0	0
B	2,475	95.2	140	5.66	146
B1	0	0	0	0	0
B2	175	6.7	0	0	0
B2a	128	4.9	0	0	0
B2b	1	0.0	0	0	0
B2c	29	1.1	0	0	0
B2d	17	0.7	0	0	0
B2e	0	0	0	0	0
B2f	0	0	0	0	0
B3	2,406	92.5	140	5.82	146
B3a	271	10.4	9	3.32	9
B3b	38	1.5	0	0	0
B3c	2,088	80.3	134	6	137
B3d	0	0	0	0	0
B3e	0	0	0	0	0
B3f	142	5.5	0	0	0
Total	**2,601**	**100**	**140**	**5.38**	**146**

(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 = 137) were reported for metals (B3c) (56 for lead, 41 for cadmium, 33 for mercury, 6 for copper and 1 for arsenic). The only other non-compliant samples (n = 9) 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 2014, 4,294 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. Only Bulgaria did not achieve the minimum sampling frequency requirement in 2014.

Table 39: Production of honey and number of targeted samples over 2007–2014

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

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

Country	Production data[(a)] (t)	Number of samples 2014	Samples tested/ required	Country	Production data[(a)] (t)	Number of samples 2014	Samples tested/ required
Austria	5,300	181	1.7	Italy	23,000	328	2.0
Belgium	1,500	113	2.3	Latvia	1,180	47	1.2
Bulgaria	9,610	103	0.8	Lithuania	2,488	89	1.1
Croatia	2,520	217	2.6	Luxemburg	120	26	6.5
Cyprus	380	118	9.3	Malta	15	10	20.0
Czech Republic	7,331	122	1.1	Netherlands	100	19	5.7
Denmark	2,000	77	1.2	Poland	12,273	317	2.4
Estonia	957	32	1.0	Portugal	6,851	108	1.0
Finland	1,700	59	1.0	Romania	16,306	149	1.0
France	11,809	147	1.1	Slovakia	3,867	174	1.7
Germany	16,669	183	1.3	Slovenia	1,031	75	2.2
Greece[(b)]	16,000	252	1.8	Spain	30,310	686	3.6
Hungary	25,513	274	1.6	Sweden	3,174	117	1.2
Ireland	150	110	22.0	United Kingdom	3,312	161	1.6
				Total (EU 28)	**205,466**	**4,294**	**NA**

NA: not applicable.
(a): The production data was used for the preparation of the 2014 Residue Control Plan and may pertain to the years 2010, 2011, 2012 and/or 2013.
(b): Incomplete 2014 results submitted by Greece – see Section 3 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in honey are presented in Table 41. Of the 4,294 samples analysed for honey 30 (0.70%) were non-compliant (34 non-compliant results). The non-compliant samples were reported by eleven 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	15.4	1	0.15	1
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	661	15.4	1	0.15	1
B	3,878	90.3	29	0.75	33
B1	1,815	42.3	13	0.72	14
B2	898	20.9	1	0.11	1
B2a	38	0.9	0	0	0
B2b	66	1.5	0	0	0
B2c	770	17.9	1	0.13	1
B2d	21	0.5	0	0	0
B2e	0	0	0	0	0
B2f	266	6.2	0	0	0
B3	1,517	35.3	15	0.99	18
B3a	607	14.1	0	0	0
B3b	659	15.3	0	0	0
B3c	550	12.8	15	2.73	18
B3d	33	0.8	0	0	0
B3e	0	0	0	0	0
B3f	197	4.6	0	0	0
Total	**4,294**	**100**	**30**	**0.70**	**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.

The majority of the non-compliant results (n = 14) were for antibacterials (B1). Other non-compliant results were reported under the group A6[16] (n = 1) for AOZ, B2c (n = 1) for fluvalinate-tau and B3c (n = 18) for arsenic (n = 1), cadmium (n = 5), copper (n = 4) and lead (n = 8).

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 2014, Member States also reported results on samples collected through sampling strategies other than targeted. According to Directive 96/23/EC in case of infringements of maximum residue limits when animals or animal products are placed on the market, intensified checks on the animals and products from the farm and/or establishment in question must be carried out by the competent authorities. Also, in the event of possession or presence of prohibited substances at any point during manufacture, storage, distribution or sale through the food and feed production chain, or suspicion or evidence of illegal treatment or non-compliance with the withdrawal period for an authorised medicinal veterinary product the competent authorities have to apply special measures including repeated sampling in the farm or establishment concerned. Thus, these samples are not representative for the assessment of the residue situation in the Member States and therefore they are reported separately in the residue database as 'suspect samples', as part of the follow-up measure taken in case of infringements.

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

In 2014, 14,097 suspect samples were reported of which 435 (3.09%) were non-compliant (549 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 = 4,136). 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, 293,442 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	9,995	271	531	2	23,554	122
Pigs	1,646	51	78	0	260,926	536
Sheep/goats	557	15	165	0	2,999	10
Horses	78	3	56	0	579	5
Poultry	362	7	746	0	762	3
Aquaculture	62	9	2,029	35	307	8
Milk	821	16	27	0	3,497	7
Eggs	74	9	14	0	199	0
Rabbit	63	0	58	2	118	0
Farmed game	8	0	25	0	11	0
Wild game	40	3	48	1	17	0
Honey	391	51	359	3	473	2
Total	14,097	435	4,136	43	293,442	693
Percentage non-compliant samples		**3.09**		**1.04**		**0.24**

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

4. Conclusions

- In 2014, 28 European Union (EU) Member States reported in the framework of the residue monitoring the results for 736,907 samples. A total of 425,232 targeted samples and 14,097 suspect samples were reported under Council Directive 96/23/EC. Additionally, 293,442, samples collected in the framework of other programmes developed under the national legislation and 4,136 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.
- There were 1,558 or 0.37% of non-compliant samples out of the 425,232 targeted samples in 2014.
- A low number of non-compliant samples were reported for stilbenes and derivatives (A1) in pigs (0.005%).
- For antithyroid agents (A2), there were 0.59% non-compliant samples, all for thiouracil, most likely due to feeding diets rich in cruciferous plants.
- In the group of steroids (A3), non-compliant samples (all for anabolic steroids) were found in bovines (0.06%), pigs (0.20%) and sheep and goats (0.10%). The relatively high percentage of non-compliant results in pigs was most likely the endogenous production. For corticosteroids, non-compliant results for authorised substances were reported under 'other pharmacologically active substances' (B2f) in 2014.
- In the group of resorcylic acid lactones (A4), 0.46% of the samples were non-compliant for zearalanone and derivatives. The non-compliant samples were found in bovines (0.72%), pigs (0.18%) and sheep and goats (0.89%).
- For beta-agonists (A5), there were 0.04% non-compliant samples reported in bovines only.
- Prohibited substances (A6) were found in 0.03% of samples. Substances identified were chloramphenicol (n = 12), nitroimidazoles (n = 4) and nitrofurans (n = 8).
- For antibacterials (B1), 0.18% 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 (0.72%).
- In group B2 (other veterinary drugs), the highest proportion of non-compliant samples was found for anticoccidials (B2b) (0.20%).
- For anticoccidials (B2b), the non-compliant samples were reported across the different species as follows; 0.02% for pigs, 0.11% for sheep and goats, 2.33% for horses, 0.20% for poultry, 0.41% for eggs, 0.71% for rabbits and 2.45% 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 (0.04%), pigs (0.03%), sheep and goats (0.21%), horses (0.54%) and milk (0.07%).
- For pyrethroids (B2c), non-compliant samples were reported for horses (0.78%) and honey (0.13%).
- Non-compliant samples were reported for sedatives (B2d) in pigs (0.03%).
- For non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were found in bovines (0.26%), sheep and goats (0.39%), horses (0.51%), poultry (0.19%), milk (0.03%) and farmed game (1.39%).

- Non-compliant samples were reported for 'other pharmacologically active substances' (B2f), in bovines (0.23%), sheep and goats (0.34%) and poultry (0.14%).
- In the group B3 (other substances and environmental contaminants), the chemical elements (B3c) had the highest overall percentage of non-compliant samples (5.41%), with cadmium, lead, mercury and copper being most frequently identified.
- Non-compliant samples were reported for organochlorine compounds (B3a) and organophosphorus compounds (B3b); 0.12% and 0.01%, respectively.
- For mycotoxins (B3d), there were non-compliant samples reported for bovines (5.78%), pigs (2.64%), horses (2.63%), poultry (1.04%), milk (0.33%) and farmed game (12.50%); those identified being zearalenone and derivatives, ochratoxin A and aflatoxin M_1.
- The prevalence of dyes (B3e) in aquaculture samples was slightly higher in 2014 (1.54%) compared to 2013 (1.14%), but within the range of values reported for 2007-2012 (1.5%–2.2%). Substances found were malachite green, leuco-malachite green and crystal violet.
- No non-compliant samples were noted for 'other substances' (B3f).
- The overall frequency of non-compliant samples in 2014 (0.37%), was slightly higher compared to the previous 7 years (0.25%–0.34%).
- In 2014, increases in non-compliant samples were noted for resorcylic acid lactones (A4), chemical elements (B3c; mainly metals) and mycotoxins (B3d), compared to the previous 7 years.
- The lowest frequency of non-compliant samples for prohibited substances (A6), was reported in 2014, compared to the previous 7 years. For the other substance groups, there were no notable variations over the 8 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, 2010a, b, 2011, 2012, 2013, 2014, 2015) still remain valid. Such an approach would help to overcome the limitations borne from using aggregated data.

References

Clouet AS, Le Bizec B, Montrade MP, Monteau F and André F, 1997. Identification of endogenous 19-nortestosterone in pregnant ewes by Gas-Chromatography-Mass Spectrometry.Analyst, 122, 471–474.

EC (European Commission), 2007. European Commission Staff Working Document on the implementation of National Residue Monitoring Plans in the Member States in 2007. Available online: http://ec.europa.eu/food/food/chemicalsafety/residues/workdoc_2007_en.pdf

EFSA (European Food Safety Authority), 2010a.Report for 2008 on the results from the monitoring of veterinary medicinal product residues and other substances in food of animal origin in the Member States. EFSA Journal 2010;8(4):1559, 55 pp. doi:10.2903/j.efsa.2010.1559

EFSA (European Food Safety Authority), 2010b. Technical report of EFSA: Evaluation of the data collection performed in the framework of Directive 96/23/EC. 20 pp. Available online: http://www.efsa.europa.eu/en/supporting/doc/103e.pdf

EFSA (European Food Safety Authority), 2011. Technical report of EFSA: Report for 2009 on the results from the monitoring of veterinary medicinal product residues and other substances in live animals and animal products. Supporting Publications 2011:158, 70 pp. Available online: http://www.efsa.europa.eu/en/supporting/doc/158e.pdf

EFSA (European Food Safety Authority), 2012. Technical report of EFSA: Report for 2010 on the results from the monitoring of veterinary medicinal product residues and other substances in live animals and animal products. Supporting Publications 2012:212, 65 pp. Available online: http://www.efsa.europa.eu/en/search/doc/212e.pdf

EFSA (European Food Safety Authority), 2013. Technical report of EFSA: Report for 2011 on the results from the monitoring of veterinary medicinal product residues and other substances in live animals and animal products. EFSA supporting publications 2013:EN-363, 65 pp. Available online: http://www.efsa.europa.eu/en/supporting/doc/363e.pdf

EFSA (European Food Safety Authority), 2014. Technical report of EFSA: Report for 2012 on the results from the monitoring of veterinary medicinal product residues and other substances in live animals and animal products. EFSA supporting publications 2014:EN-540, 65 pp. Available online: http://www.efsa.europa.eu/en/supporting/pub/540e.htm

EFSA (European Food Safety Authority), 2015. Technical report of EFSA: Report for 2013 on the results from the monitoring of veterinary medicinal product residues and other substances in live animals and animal products. EFSA supporting publications 2015:EN-723, 69 pp. Available online: http://www.efsa.europa.eu/en/supporting/pub/723e.htm

Fidani M, Pompa G, Mungiguerra F, Casati A, Fracchiolla ML and Arioli F, 2012. Investigation of the presence of endogenous prednisolone in equine urine by high-performance liquid chromatography mass spectrometry and high-resolution mass spectrometry. Rapid Communications in Mass Spectrometry, 26, 879–886.

Pinel G, Mathieu S, Cesbron N, Maume D, De Brabander HF, André F and Le Bizec B, 2006. Evidence that urinary excretion of thiouracil in adult bovine submitted to a cruciferous diet can give erroneous indications of the possible illegal use of thyrostats in meat production. Food Additives and Contaminants, 23, 974–980.

Pompa G, Arioli F, Casati A, Fidani M, Bertocchi L and Dusi G, 2011. Investigation of the origin of prednisolone in cow urine. Steroids, 76, 104–110.

Samuels TP, Nedderman A, Seymour MA and Houghton E, 1998.Study of the metabolism of testosterone, nandrolone and estradiol in cattle. Analyst, 123, 2401–2404.

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 SANTE	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**	Thiouracil	HR	45	2	4.4
			IE	239	12	5.0
			LT	20	3	15.0
			NL	366	21	5.7
			PL	100	1	1.0
			UK	419	9	2.1
		Sub-total for A2	**6**		**48**	
	A3	17-Alpha-Methyl-5-Beta-Androstan-3-Alpha-17-Beta-Diol	BE	2,272	3	0.1
		17-Alpha nortestosteron	HR	34	2	5.9
		17-Alpha trenbolon	HR	34	1	2.9
		17-Beta-Trenbolone	HR	34	1	2.9
		Boldenone	HR	34	1	2.9
		Boldenone-Alpha	AT	69	1	1.4
			HR	34	1	2.9
			NL	931	1	0.1
		Boldenone beta	AT	69	1	1.4
		Epinandrolone (19-Norepitestosterone)	CZ	48	3	6.3
		Epitrenbolone	HR	34	1	2.9
		Methyltestosterone	BE	2,272	1	0.04
		Nandrolone	HR	62	6	9.7
		Testosterone-17-Alpha	NL	119	1	0.8
		Sub-total for A3	**5**		**24**	
	A4	Alpha-Zeralanol (Zeranol)	HR	130	13	10.0
			IT	748	7	0.9
			UK	384	12	3.1
		Beta Zearalanol (Taleranol)	ES	330	1	0.3
			HR	130	27	20.8
			IT	748	13	1.7
			UK	384	18	4.7
		Sub-total for A4	**4**		**91**	
	A5	Clenbuterol	PT	284	16	5.6
		Salbutamol (albuterol)	NL	68	1	1.5
		Sub-total for A5	**2**		**17**	
	A6	Chloramphenicol	AT	95	1	1.1
			DE	1,267	1	0.1
			PL	384	1	0.3
			SK	21	1	4.8
		SEM (semicarbazide)	IE	340	2	0.6
		Sub-total for A6	**5**		**6**	
	B1	Amoxycillin	ES	628	2	0.3
		Benzylpenicillin (Penicillin G)	ES	6	1	16.7
		Ciprofloxacin	PL	544	1	0.2
		Dihydrostreptomycin	PL	544	1	0.2
			UK	228	3	1.3
		Doxycycline	ES	566	1	0.2
		Enrofloxacin	ES	596	1	0.2
			FR	1,682	2	0.1
			PL	544	1	0.2
		Epi-Oxytetracycline	DE	300	1	0.3

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
		Florfenicol	UK	94	5	5.3
		Gentamicin	DE	937	2	0.2
		Marbofloxacin	FR	1,682	1	0.1
		Neomycin	FR	1,632	1	0.1
			PL	544	1	0.2
		Oxytetracycline	CY	90	1	1.1
			DE	2,082	2	0.1
			ES	642	2	0.3
			FR	2,225	5	0.2
			HR	192	1	0.5
			LV	58	1	1.7
			PL	544	5	0.9
			PT	245	1	0.4
			UK	1,410	1	0.1
		Sulfadiazine	HR	192	1	0.5
			IT	1,914	1	0.1
		Sulfadimethoxine	IT	1,914	1	0.1
		Sulfadoxine	PL	544	1	0.2
		Sulfamerazine	FR	2,128	1	0.05
			IT	1,914	1	0.1
		Sulfamethazine	IT	1,914	1	0.1
		Sulfapyridin	IT	1,914	1	0.1
		Tetracycline	PL	544	1	0.2
		Tilmicosin	IT	72	1	1.4
		Tulathromycin	FR	1,632	2	0.1
		Tylosin, Tylosin A	FR	1,632	1	0.1
		Sub-total for B1	**10**		**56**	
	B2a	Closantel	IE	515	1	0.2
			UK	818	1	0.1
		Sub-total for B2a	**2**		**2**	
	B2e	Antipyrin-4-Methylamino	AT	30	1	3.3
			DE	298	1	0.3
		Dipyrone	DE	8	1	12.5
		Flunixin	FR	798	2	0.3
		Ibuprofen	UK	539	2	0.4
		Meloxicam	FR	798	2	0.3
		Naproxen	NL	90	1	1.1
		Phenylbutazone	DE	1,251	1	0.1
			UK	184	1	0.5
		Tolfenamic acid	FR	798	1	0.1
		Sub-total for B2e	**5**		**13**	
	B2f	Betamethasone	DE	839	1	0.1
		Dexamethasone	BE	923	1	0.1
			DE	873	9	1.0
			ES	659	1	0.2
			FR	593	3	0.5
			IT	3,026	3	0.1
			NL	1,499	4	0.3
			PT	30	1	3.3
		Prednisolone	LT	6	2	33.3
		Sub-total for B2f	**8**		**25**	

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
	B3a	PCB sum	CZ	105	2	1.9
		Sub-total for B3a	**1**		**2**	
	B3c	Cadmium Cd	CZ	47	2	4.3
			DE	312	4	1.3
			ES	237	1	0.4
			FR	663	2	0.3
			HR	38	12	31.6
			LV	9	1	11.1
			PL	202	1	0.5
			SI	8	1	12.5
			UK	103	3	2.9
		Copper Cu	CZ	34	15	44.1
			DE	275	168	61.1
		Lead Pb	IT	214	1	0.5
			NL	165	1	0.6
		Mercury Hg	CZ	47	3	6.4
			DE	311	12	3.9
		Sub-total for B3c	**11**		**227**	
	B3d	Zearalenol-alpha	HR	130	21	16.2
			RO	2	2	100.0
		Zearalenol-beta	FI	30	1	3.3
			HR	130	67	51.5
		Zearalenone (Mycotoxin F)	HR	130	38	29.2
			RO	2	2	100.0
		Sub-total for B3d	**3**		**131**	
		Total in Bovines	**20**		**642**	
Pigs	**A1**	Diethylstilbestrol (Stilbestrol)	DK	1,488	1	0.1
		Sub-total for A1	**1**		**1**	
	A2	Thiouracil	LT	16	3	18.8
			NL	138	1	0.7
		Sub-total for A2	**2**		**4**	
	A3	Boldenone	PL	5	5	100.0
		Nandrolone	CZ	67	1	1.5
			NL	563	6	1.1
			PL	716	7	1.0
		Sub-total for A3	**3**		**19**	
	A4	Alpha-Zeralanol (Zeranol)	HR	60	5	8.3
		Beta Zearalanol (Taleranol)	HR	60	5	8.3
		Zearalanone	HR	60	3	5.0
		Sub-total for A4	**1**		**13**	
	A6	Chloramphenicol	CZ	32	1	3.1
		Hydroxymetronidazol (MNZOH)	BG	40	1	2.5
		Metronidazole	BG	40	1	2.5
		Sub-total for A6	**2**		**3**	
	B1	Amoxycillin	ES	1,910	1	0.1
			IT	171	1	0.6
		Benzylpenicillin (Penicillin G)	DK	160	1	0.6
		Chlortetracyclin	DE	6,147	1	0.02
			UK	1,886	1	0.1
		Ciprofloxacin	IT	437	1	0.2
		Dihydrostreptomycin	CZ	36	7	19.4

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
			PL	555	2	0.4
		Doxycycline	ES	1,947	7	0.4
			GR	145	1	0.7
			IT	465	3	0.6
			NL	2,315	1	0.04
			PL	555	6	1.1
			RO	2	2	100.0
		Enrofloxacin	DE	4,448	2	0.04
			IT	437	1	0.2
		Florfenicol	BE	1,387	1	0.1
		Gentamicin	CZ	36	1	2.8
		Lincomycin	CY	642	2	0.3
			ES	1,314	1	0.1
		Oxytetracycline	BE	1,387	2	0.1
			ES	1,948	1	0.1
			FR	2,076	1	0.05
			NL	2,315	2	0.1
			PL	555	1	0.2
			UK	1,886	1	0.1
		Penicillin	FR	1,278	1	0.1
		Sulfadiazine	BE	1,742	2	0.1
			CY	642	1	0.2
			DE	4,201	3	0.1
			IE	219	2	0.9
			UK	1,886	3	0.2
		Sulfadimethoxine	FR	1,975	3	0.2
			IT	1,103	2	0.2
		Sulfamethazine	DE	4,210	1	0.02
		Sulfamethoxazole	AT	915	1	0.1
		Tetracycline	DE	4,584	1	0.02
			PL	555	1	0.2
		Trimethoprim	DE	3,739	2	0.1
			DK	160	1	0.6
			IE	1,056	1	0.1
		Tulathromycin	BE	1,387	1	0.1
		Sub-total for B1	**15**		**77**	
	B2a	2-Aminoflubendazole	BE	116	1	0.9
			DE	505	1	0.2
		Flubendazole + (2-amino-1H-benzimidazol-5-yl) (4-fluorphenyl)-methanon	DE	421	1	0.2
		Sub-total for B2a	**2**		**3**	
	B2b	Lasalocid	PL	103	1	1.0
		Sub-total for B2b	**1**		**1**	
	B2d	Azaperol	BE	237	1	0.4
		Propionylpromazine	FR	694	1	0.1
		Sub-total for B2d	**2**		**2**	
	B3a	Dioxins	FR	572	1	0.2
		Sub-total for B3a	**1**		**1**	
	B3c	Cadmium Cd	CZ	78	1	1.3
			DE	1,427	6	0.4
			ES	402	3	0.7

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
		Copper Cu	CZ	37	1	2.7
			DE	1,384	149	10.8
		Lead Pb	IT	296	2	0.7
		Mercury Hg	CZ	78	4	5.1
			DE	1,427	79	5.5
		Sub-total for B3c	**4**		**245**	
	B3d	Ochratoxin A	GR	46	5	10.9
			PL	102	1	1.0
			UK	65	1	1.5
		Zearalenol-alpha	FI	57	3	5.3
			HR	60	38	63.3
		Zearalenol-beta	HR	60	29	48.3
		Zearalenone (Mycotoxin F)	HR	60	40	66.7
		Sub-total for B3d	**5**		**117**	
		Total in Pigs	**19**		**486**	
Sheep/Goats	**A2**	Thiouracil	UK	75	2	2.7
		Sub-total for A2	**1**		**2**	
	A3	Epinandrolone (19-Norepitestosterone)	NL	21	1	4.8
		Sub-total for A3	**1**		**1**	
	A4	Alpha-Zeralanol (Zeranol)	UK	76	2	2.6
		Beta Zearalanol (Taleranol)	UK	76	2	2.6
		Sub-total for A4	**1**		**4**	
	A6	Chloramphenicol	AT	35	1	2.9
		SEM (semicarbazide)	UK	493	1	0.2
		Sub-total for A6	**2**		**2**	
	B1	Chlortetracyclin	ES	563	3	0.5
		Ciprofloxacin	ES	488	2	0.4
		Dihydrostreptomycin	FR	539	2	0.4
			GR	139	1	0.7
		Doxycycline	ES	535	1	0.2
		Enrofloxacin	ES	492	2	0.4
			GR	139	1	0.7
		Oxytetracycline	ES	563	1	0.2
			FR	539	1	0.2
			NL	146	1	0.7
			UK	2,782	2	0.1
		Sulfadiazine	CY	320	1	0.3
			ES	941	13	1.4
			UK	2,782	1	0.04
		Sulfadimethoxine	FR	539	1	0.2
		Sub-total for B1	**6**		**33**	
	B2a	Closantel	IE	286	4	1.4
			UK	1,706	2	0.1
		Fenbendazole	UK	1,706	1	0.1
		Nitroxinil	IE	286	1	0.3
		Rafoxanide	IE	286	2	0.7
		Sub-total for B2a	**2**		**10**	
	B2b	Monensin sodium	HR	3	1	33.3
		Sub-total for B2b	**1**		**1**	

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
	B2e	Diclofen (Diclofenac)	EE	1	1	100.0
			FR	101	1	1.0
		Sub-total for B2e	**2**		**2**	
	B2f	Dexamethasone	FR	137	1	0.7
		Prednisolone	DE	65	1	1.5
		Sub-total for B2f	**2**		**2**	
	B3a	gamma-HCH (HCH, Lindane)	ES	185	1	0.5
		Sub-total for B3a	**1**		**1**	
	B3b	Diazinon	UK	570	1	0.2
		Sub-total for B3b	**1**		**1**	
	B3c	Cadmium Cd	CZ	3	1	33.3
			NL	11	1	9.1
			SK	6	1	16.7
			UK	55	1	1.8
		Copper Cu	DE	16	12	75.0
		Lead Pb	DE	32	1	3.1
			ES	155	1	0.6
			GR	74	4	5.4
			PT	27	1	3.7
			UK	55	3	5.5
		Mercury Hg	DE	32	7	21.9
		Sub-total for B3c	**8**		**33**	
		Total in Sheep/Goats	**14**		**92**	
Horses	**B2a**	Closantel	IE	35	1	2.9
		Sub-total for B2a	**1**		**1**	
	B2b	Diclazuril	PT	2	1	50.0
		Salinomycin	MT	1	1	100.0
		Sub-total for B2b	**2**		**2**	
	B2c	Sum Permethrine-cis and Permethrin-trans	IT	3	1	33.3
		Sub-total for B2c	**1**		**1**	
	B2e	OxyphenbutazoneAnhydrate	FR	142	1	0.7
			IE	162	1	0.6
		Phenylbutazone	DE	107	2	1.9
			FR	142	1	0.7
			IE	162	1	0.6
			RO	1	1	100.0
		Sub-total for B2e	**4**		**7**	
	B3c	Cadmium Cd	BG	8	1	12.5
			CZ	5	5	100.0
			DE	7	2	28.6
			ES	84	15	17.9
			FR	179	140	78.2
			HU	13	7	53.8
			IT	111	2	1.8
			PL	130	4	3.1
			RO	1	1	100.0
			SI	5	3	60.0
			UK	1	1	100.0
		Mercury Hg	CZ	5	5	100.0
			DE	7	1	14.3
		Sub-total for B3c	**11**		**187**	

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
	B3d	Zearalenone (Mycotoxin F)	HR	3	2	66.7
		Sub-total for B3d	**1**		**2**	
		Total in Horses	**15**		**200**	
Poultry	**A6**	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	ES	419	1	0.2
			PT	359	1	0.3
		Chloramphenicol	CY	73	1	1.4
		Dimetridazole	SK	24	1	4.2
		Metronidazole	PL	145	1	0.7
		Sub-total for A6	**5**		**5**	
	B1	Chlortetracyclin	UK	2,500	2	0.1
		Dihydrostreptomycin	HR	106	1	0.9
		Doxycycline	BE	378	2	0.5
			DE	2,087	1	0.05
			ES	290	2	0.7
			NL	1,386	12	0.9
			PL	588	2	0.3
			RO	1	1	100.0
		Enrofloxacin	DE	1,452	1	0.1
			ES	250	1	0.4
			LV	38	1	2.6
			RO	1	1	100.0
		Lincomycin	DE	765	1	0.1
		Oxytetracycline	FR	909	1	0.1
		Sub-total for B1	**10**		**29**	
	B2b	Halofuginone	AT	118	3	2.5
		Lasalocid	IT	255	1	0.4
		Maduramicin	CY	12	1	8.3
		Monensin	PT	131	1	0.8
			UK	820	1	0.1
		Nicarbazin	RO	1	1	100.0
		Salinomycin	CY	12	1	8.3
			PL	744	6	0.8
			UK	820	1	0.1
		Toltrazuril	HR	34	2	5.9
		Sub-total for B2b	**8**		**18**	
	B2e	Antipyrin-4-Methylamino	AT	13	1	7.7
		Flunixin	AT	13	1	7.7
		Sub-total for B2e	**1**		**2**	
	B2f	Cotinine	DE	101	1	1.0
		Nicotine	DE	101	1	1.0
		Sub-total for B2f	**1**		**2**	
	B3c	Cadmium Cd	FR	254	2	0.8
		Copper Cu	DE	131	2	1.5
		Mercury Hg	PL	312	1	0.3
		Sub-total for B3c	**3**		**5**	
	B3d	Zearalenol-alpha	HR	38	9	23.7
		Zearalenol-beta	HR	38	6	15.8
		Zearalenone (Mycotoxin F)	HR	38	3	7.9
		Sub-total for B3d	**1**		**18**	
		Total in Poultry	**15**		**79**	

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
Aquaculture	**A6**	Chloramphenicol	DE	49	1	2.0
		Sub-total for A6	**1**		**1**	
	B1	Enrofloxacin	HR	27	1	3.7
		Marbofloxacin	HR	27	1	3.7
		Oxolinic acid	FR	20	1	5.0
		Sulfadiazine	IT	36	1	2.8
		Sub-total for B1	**3**		**4**	
	B3a	PCB sum	DE	37	1	2.7
		Sub-total for B3a	**1**		**1**	
	B3c	Mercury Hg	ES	53	2	3.8
		Sub-total for B3c	**1**		**2**	
	B3e	Cristal Violet	IT	159	1	0.6
		Malachite Green	BG	15	2	13.3
			CZ	100	1	1.0
		Malachite Green-Leuco	BG	15	2	13.3
			CZ	100	8	8.0
			DE	263	2	0.8
			PL	169	9	5.3
			SK	75	1	1.3
			UK	196	2	1.0
		Sub-total for B3e	**7**		**28**	
		Total in Aquaculture	**10**		**36**	
Milk	**A6**	Chloramphenicol	LV	255	1	0.4
			PL	199	1	0.5
		Sub-total for A6	**2**		**2**	
	B1	Amoxycillin	FR	301	1	0.3
		Ampicillin	LU	55	1	1.8
		Benzylpenicillin (Penicillin G)	PL	99	1	1.0
		Cefalonium	FR	301	1	0.3
		Dihydrostreptomycin	UK	1,517	1	0.1
		Doxycycline	PL	99	2	2.0
		Inhibitors	CY	3,027	12	0.4
		Spiramycin	ES	319	1	0.3
		Sub-total for B1	**6**		**20**	
	B2a	Albendazolsulfoxide	HR	143	1	0.7
		Doramectin	LU	35	1	2.9
		Ivermectin	UK	811	1	0.1
		Levamisole	IE	301	1	0.3
		Sub-total for B2a	**4**		**4**	
	B2e	Diclofen (Diclofenac)	DE	1,383	1	0.1
		Sub-total for B2e	**1**		**1**	
	B3a	PCB sum	CZ	20	1	5.0
		Sub-total for B3a	**1**		**1**	
	B3d	Aflatoxin M1	CY	60	1	1.7
			GR	157	2	1.3
			IT	336	2	0.6
			PT	21	1	4.8
			RO	1	1	100.0
		Sub-total for B3d	**5**		**7**	
		Total in Milk	**15**		**35**	

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
Eggs	**A6**	Chloramphenicol	LV	105	2	1.9
		Sub-total for A6	**1**		**2**	
	B1	Doxycycline	PL	164	1	0.6
		Enrofloxacin	BG	123	1	0.8
		Flumequine	BE	139	1	0.7
		Sulfadiazine	FR	164	1	0.6
		Sub-total for B1	**4**		**4**	
	B2b	Diclazuril	HR	254	3	1.2
			IT	116	1	0.9
			PT	118	2	1.7
		Lasalocid	CY	31	1	3.2
			LT	139	1	0.7
		Monensin	CY	31	1	3.2
		Narasin	FR	215	2	0.9
			UK	576	1	0.2
		Nicarbazin	SI	190	1	0.5
		Robenidine	HR	254	1	0.4
		Salinomycin	NL	442	1	0.2
			PL	116	1	0.9
		Salinomycin sodium	HR	254	1	0.4
		Toltrazurilsulfon	NL	442	1	0.2
		Sub-total for B2b	**10**		**18**	
	B3a	WHO-PCDD/F-PCB-TEQ	DE	156	5	3.2
		Sub-total for B3a	**1**		**5**	
		Total in Eggs	**14**		**29**	
Rabbit	**B1**	Doxycycline	ES	76	1	1.3
		Sulfadimethoxine	IT	82	1	1.2
		Sub-total for B1	**2**		**2**	
	B2b	Salinomycin	CY	10	1	10.0
			SI	1	1	100.0
		Sub-total for B2b	**2**		**2**	
	B3c	Lead Pb	PT	4	1	25.0
		Sub-total for B3c	**1**		**1**	
		Total in Rabbit	**5**		**5**	
Farmed Game	**A2**	Thiouracil	IE	2	1	50.0
		Sub-total for A2	**1**		**1**	
	A6	AOZ (3-amino-2-oxazolidone)	IT	32	2	6.3
		Sub-total for A6	**1**		**2**	
	B2b	Lasalocid	FR	14	1	7.1
			UK	15	3	20.0
		Sub-total for B2b	**2**		**4**	
	B2e	Ibuprofen	CZ	5	1	20.0
		Sub-total for B2e	**1**		**1**	
	B3a	DDE, pp'-	UK	7	1	14.3
		PCB 101	AT	4	1	25.0
		PCB 138	AT	4	1	25.0
		PCB 153	AT	4	1	25.0
		PCB 180	AT	4	1	25.0
		PCB 28	AT	4	1	25.0
		PCB 52	AT	4	1	25.0
		Sub-total for B3a	**2**		**7**	

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
	B3c	Cadmium Cd	FI	30	13	43.3
		Copper Cu	DE	14	3	21.4
		Lead Pb	UK	17	1	5.9
		Mercury Hg	DE	8	2	25.0
		Sub-total for B3c	**3**		**19**	
	B3d	Zearalenol-beta	HR	1	1	100.0
		Zearalenone (Mycotoxin F)	HR	1	1	100.0
		Sub-total for B3d	**1**		**2**	
		Total in Farmed Game	**9**		**36**	
Wild game	**B3a**	DDT: Sum DDT, pp' - DDT, op' - DDE, pp' - DDD, pp'	DE	75	7	9.3
		PCB 180	DE	73	1	1.4
		PCB sum	CZ	20	1	5.0
		Sub-total for B3a	**2**		**9**	
	B3c	Arsenic As	PL	147	1	0.7
		Cadmium Cd	GR	26	1	3.8
			LV	80	39	48.8
			PL	147	1	0.7
		Copper Cu	DE	75	6	8.0
		Lead Pb	AT	173	9	5.2
			CZ	105	7	6.7
			ES	103	2	1.9
			GR	26	4	15.4
			HR	15	1	6.7
			HU	80	1	1.3
			IE	111	3	2.7
			LV	80	18	22.5
			NL	33	3	9.1
			PL	147	7	4.8
			PT	57	1	1.8
		Mercury Hg	CZ	105	1	1.0
			DE	85	32	37.6
		Sub-total for B3c	**12**		**137**	
		Total in Wild game	**12**		**146**	
Honey	**A6**	AOZ (3-amino-2-oxazolidone)	LV	4	1	25.0
		Sub-total for A6	**1**		**1**	
	B1	Chlortetracyclin	IE	10	1	10.0
		Epi-Tetracycline	DE	21	1	4.8
		Oxytetracycline	ES	28	1	3.6
		Spiramycin	IT	62	1	1.6
		Sulfamonomethoxine	HR	51	1	2.0
		Sulfathiazole	LT	44	1	2.3
		Sulfonamides	PL	170	5	2.9
		Tetracycline	DE	111	1	0.9
			ES	28	1	3.6
		Tetracyclines	FR	49	1	2.0
		Sub-total for B1	**8**		**14**	
	B2c	Fluvalinate-Tau	GR	64	1	1.6
		Sub-total for B2c	**1**		**1**	
	B3c	Arsenic As	PL	32	1	3.1
		Cadmium Cd	GR	25	5	20.0
		Copper Cu	DE	15	4	26.7

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
		Lead Pb	EE	4	1	25.0
			GR	25	6	24.0
			HR	33	1	3.0
		Sub-total for B3c	**5**		**18**	
		Total in Honey	**11**		**34**	
Total in all categories					**1,820**	

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

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines	**A3**	17-Alpha-Methyl-5-Beta-Androstan-3-Alpha-17-Beta-Diol	BE	332	7	2.1
		17-Beta-Trenbolone	HR	2	1	50.0
		Estradiol-17-Beta	IT	68	9	13.2
		Methyltestosterone	BE	332	6	1.8
		Nandrolone	HR	3	1	33.3
		Sub-total for A3	**3**		**24**	
	A5	Clenbuterol	PT	191	30	15.7
		Sub-total for A5	**1**		**30**	
	A6	Chloramphenicol	SK	11	1	9.1
		Sub-total for A6	**1**		**1**	
	B1	Amoxycillin	BE	209	4	1.9
			IE	2,726	1	0.04
			UK	18	1	5.6
		Ampicillin	IT	118	1	0.8
		Antibacterials	NL	2,278	19	0.8
		Benzylpenicillin (Penicillin G)	BE	209	9	4.3
			ES	9	4	44.4
			FI	7	1	14.3
			IE	2,726	1	0.04
			IT	118	4	3.4
			UK	19	3	15.8
		Ceftiofur	BE	209	1	0.5
			NL	2,278	1	0.04
		Ciprofloxacin	BE	209	2	1.0
			IT	108	2	1.9
		Dihydrostreptomycin	AT	69	1	1.4
			BE	209	1	0.5
			UK	15	6	40.0
		Doxycycline	IT	121	1	0.8
		Enrofloxacin	BE	209	4	1.9
			ES	12	1	8.3
			IT	108	2	1.9
		Florfenicol	BE	209	4	1.9
		Florfenicol amine	BE	209	1	0.5
		Gamithromycin	UK	17	1	5.9
		Gentamicin	BE	209	2	1.0
		Lincomycin	BE	209	1	0.5
		Marbofloxacin	ES	14	1	7.1
			IE	2,726	1	0.04
			IT	108	3	2.8
			UK	2	2	100.0
		Neomycin	BE	209	1	0.5
		Oxytetracycline	BE	209	9	4.3
			FI	2	2	100.0
			GR	12	2	16.7
			IE	2,726	4	0.1
			IT	121	7	5.8
			UK	18	14	77.8
		Spectinomycin	BE	209	4	1.9

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
		Sulfadiazine	BE	209	1	0.5
			ES	15	1	6.7
			IE	2,726	1	0.04
			IT	137	1	0.7
		Sulfadoxine	BE	209	1	0.5
		Sulfamerazine	IT	137	1	0.7
		Sulfamethazine	IE	2,726	1	0.04
			IT	137	3	2.2
		Tetracycline	BE	209	5	2.4
		Thiamphenicol	BE	209	3	1.4
		Tilmicosin	BE	209	2	1.0
		Trimethoprim	BE	209	1	0.5
		Tulathromycin	BE	209	7	3.3
			UK	4	4	100.0
		Tylosin, Tylosin A	BE	209	7	3.3
		Sub-total for B1	**9**		**168**	
	B2a	Abamectin (Avermectin B1)	BE	206	1	0.5
		Clorsulon	BE	206	2	1.0
		Closantel	BE	206	1	0.5
			UK	109	12	11.0
		Doramectin	BE	206	2	1.0
		Ivermectin	BE	206	3	1.5
		Nitroxinil	BE	206	2	1.0
			UK	109	4	3.7
		Oxyclozanide	BE	206	1	0.5
		Sub-total for B2a	**2**		**28**	
	B2e	Antipyrin-4-Methylamino	AT	1	1	100.0
		Carprofen	BE	206	1	0.5
		Flunixin	BE	206	12	5.8
		Meloxicam	BE	206	3	1.5
			IT	74	2	2.7
		Metamizole (Dipyrone Monohydrate)	BE	206	3	1.5
		Phenylbutazone	BE	206	2	1.0
			UK	16	1	6.3
		Tolfenamic acid	BE	206	6	2.9
		Sub-total for B2e	**4**		**31**	
	B2f	Dexamethasone	BE	306	2	0.7
			ES	46	1	2.2
			IT	559	12	2.1
		Prednisone	IT	409	1	0.2
		Sub-total for B2f	**3**		**16**	
	B3a	PCB sum	CZ	10	7	70.0
		Sub-total for B3a	**1**		**7**	
	B3c	Copper Cu	DE	17	15	88.2
		Sub-total for B3c	**1**		**15**	
	B3d	Zearalenone (Mycotoxin F)	ES	2	2	100.0
		Sub-total for B3d	**1**		**2**	
		Total in Bovines	**14**		**322**	
Pigs	**A3**	Nandrolone	CZ	3	1	33.3
		Sub-total for A3	**1**		**1**	

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
	B1	Amoxycillin	BE	53	3	5.7
		Antibacterials	NL	520	3	0.6
		Benzylpenicillin (Penicillin G)	BE	53	1	1.9
			UK	1	1	100.0
		Ciprofloxacin	BE	53	1	1.9
		Doxycycline	NL	520	1	0.2
		Enrofloxacin	BE	53	4	7.5
		Inhibitors	CY	1	1	100.0
		Lincomycin	CY	9	1	11.1
		Marbofloxacin	BE	53	1	1.9
			UK	1	1	100.0
		Oxytetracycline	FI	2	2	100.0
		Penicillin	NL	520	1	0.2
		Sulfadiazine	BE	53	3	5.7
		Trimethoprim	BE	53	1	1.9
		Tulathromycin	BE	53	3	5.7
		Sub-total for B1	**5**		**28**	
	B2a	Ivermectin	BE	53	1	1.9
		Sub-total for B2a	**1**		**1**	
	B2d	Azaperol	BE	56	2	3.6
		Azaperone	BE	56	2	3.6
		Xylazine	BE	56	3	5.4
		Sub-total for B2d	**1**		**7**	
	B2e	Flunixin	BE	53	2	3.8
		Meloxicam	BE	53	3	5.7
		Metamizole (Dipyrone Monohydrate)	BE	53	3	5.7
		Tolfenamic acid	BE	53	3	5.7
		Sub-total for B2e	**1**		**11**	
	B3c	Cadmium Cd	DE	2	1	50.0
		Copper Cu	DE	3	1	33.3
		Mercury Hg	CZ	11	1	9.1
			DE	10	6	60.0
		Sub-total for B3c	**2**		**9**	
	B3d	Ochratoxin A	GR	24	9	37.5
		Sub-total for B3d	**1**		**9**	
		Total in Pigs	**8**		**66**	
Sheep/Goats	**B1**	Oxytetracycline	ES	104	7	6.7
		Sulfadiazine	ES	200	13	6.5
		Sub-total for B1	**1**		**20**	
	B2a	Closantel	UK	175	2	1.1
		Sub-total for B2a	**1**		**2**	
		Total in Sheep/Goats	**2**		**22**	
Horses	**B1**	Amoxycillin	IE	11	1	9.1
		Sub-total for B1	**1**		**1**	
	B3c	Cadmium Cd	BG	9	2	22.2
		Sub-total for B3c	**1**		**2**	
		Total in Horses	**2**		**3**	
Poultry	**A6**	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	GR	39	2	5.1
		Sub-total for A6	**1**		**2**	

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
	B1	Amoxycillin	MT	1	1	100.0
		Doxycycline	MT	1	1	100.0
		Flumequine	MT	1	1	100.0
		Sub-total for B1	**1**		**3**	
	B2b	Toltrazuril	HR	5	2	40.0
		Sub-total for B2b	**1**		**2**	
	B3c	Mercury Hg	PL	1	1	100.0
		Sub-total for B3c	**1**		**1**	
		Total in Poultry	**4**		**8**	
Aquaculture	**B3e**	Malachite Green	DE	11	1	9.1
		Malachite Green-Leuco	CZ	2	2	100.0
			PL	27	6	22.2
		Sub-total for B3e	**3**		**9**	
		Total in Aquaculture	**3**		**9**	
Milk	**B1**	Benzylpenicillin (Penicillin G)	AT	1	1	100.0
			IT	82	2	2.4
		Sub-total for B1	**2**		**3**	
	B3c	Lead Pb	IT	13	7	53.8
		Sub-total for B3c	**1**		**7**	
	B3d	Aflatoxin M1	IT	82	6	7.3
		Sub-total for B3d	**1**		**6**	
		Total in Milk	**2**		**16**	
Eggs	**A6**	Chloramphenicol	LV	5	1	20.0
		Sub-total for A6	**1**		**1**	
	B1	Doxycycline	PL	7	6	85.7
		Sub-total for B1	**1**		**6**	
	B2b	Lasalocid	PT	2	1	50.0
		Robenidine	IT	22	1	4.5
		Sub-total for B2b	**2**		**2**	
		Total in Eggs	**4**		**9**	
Wild game	**B3c**	Mercury Hg	DE	5	3	60.0
		Sub-total for B3c	**1**		**3**	
		Total in Wild game	**1**		**3**	
Honey	**A6**	AOZ (3-amino-2-oxazolidone)	LV	9	1	11.1
			PL	3	2	66.7
		Sub-total for A6	**2**		**3**	
	B1	Neospiramycin	IT	73	42	57.5
		Oxytetracycline	IT	67	1	1.5
		Spiramycin	IT	73	40	54.8
		Sulfathiazole	AT	4	3	75.0
		Sulfonamides	PL	7	2	28.6
		Sub-total for B1	**3**		**88**	
		Total in Honey	**4**		**91**	
Total in all categories					**549**	

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

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines	**B2a**	Albendazol	IE	2	2	100.0
		Sub-total for B2a	**1**		**2**	
		Total in Bovines	**1**		**2**	
Aquaculture	**A6**	AOZ (3-amino-2-oxazolidone)	IE	13	1	7.7
		Chloramphenicol	DE	41	2	4.9
		SEM (semicarbazide)	DE	70	2	2.9
			SI	2	1	50.0
		Sub-total for A6	**3**		**6**	
	B1	Ciprofloxacin	DE	74	1	1.4
		Doxycycline	DE	79	1	1.3
			DK	54	2	3.7
		Oxytetracycline	DE	79	8	10.1
			DK	54	7	13.0
		Sulfadiazine	DE	79	1	1.3
		Sub-total for B1	**2**		**20**	
	B3a	Endosulfansulfate	DE	55	1	1.8
		Endosulfan: Sum of Endosulfan-Alpha, Endosulfan-Beta and Endosulfansulfate	DE	55	1	1.8
		Sub-total for B3a	**1**		**2**	
	B3c	Cadmium Cd	DE	192	2	1.0
		Mercury Hg	CY	79	6	7.6
			DE	189	1	0.5
		Sub-total for B3c	**2**		**9**	
		Total in Aquaculture	**5**		**37**	
Rabbit	**A6**	AOZ (3-amino-2-oxazolidone)	DE	9	2	22.2
		Sub-total for A6	**1**		**2**	
		Total in Rabbit	**1**		**2**	
Wild game	**B3c**	Lead Pb	NL	5	1	20.0
		Sub-total for B3c	**1**		**1**	
		Total in Wild game	**1**		**1**	
Honey	**B1**	Sulfamethazine	DE	22	2	9.1
		Sulfonamides	PL	7	1	14.3
		Sub-total for B1	**2**		**3**	
		Total in Honey	**2**		**3**	
Total in all categories					**45**	

(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	145	2	1.4
		Boldenone-Alpha	IT	145	2	1.4
		Boldione	IT	145	1	0.7
		Sub-total for A3	**1**		**5**	
	A4	Alpha-Zeralanol (Zeranol)	IT	150	1	0.7
		Beta Zearalanol (Taleranol)	IT	150	1	0.7
		Sub-total for A4	**1**		**2**	
	B1	Amoxycillin	DE	56	2	3.6
		Benzylpenicillin (Penicillin G)	DE	88	13	14.8
		Cefquinom	DE	52	1	1.9
		Ciprofloxacin	DE	81	1	1.2
		Dihydrostreptomycin	DE	70	2	2.9
		Doxycycline	DE	85	1	1.2
		Enrofloxacin	DE	86	2	2.3
			IT	153	3	2.0
		Epi-Tetracycline	DE	35	2	5.7
		Gentamicin	DE	70	3	4.3
		Inhibitors	DE	20,909	70	0.3
		Marbofloxacin	DE	88	3	3.4
		Neomycin	DE	70	4	5.7
		Oxytetracycline	DE	85	3	3.5
			IT	152	3	2.0
		Spectinomycin	DE	50	1	2.0
		Sulfadiazine	DE	83	1	1.2
		Sulfamethazine	DE	83	2	2.4
		Sulfonamides	DE	10	1	10.0
		Tetracycline	DE	85	3	3.5
		Trimethoprim	DE	79	1	1.3
		Tulathromycin	DE	46	1	2.2
		Sub-total for B1	**2**		**123**	
	B2e	Meloxicam	DE	19	2	10.5
		Sub-total for B2e	**1**		**2**	
	B2f	Dexamethasone	DE	41	3	7.3
			IT	149	1	0.7
		Sub-total for B2f	**2**		**4**	
	B3a	WHO-PCDD/F-PCB-TEQ	IT	8	1	12.5
		Sub-total for B3a	**1**		**1**	
		Total in Bovines	**2**		**137**	
Pigs	**A6**	Chloramphenicol	DE	62	1	1.6
		Sub-total for A6	**1**		**1**	
	B1	Amoxycillin	DE	339	8	2.4
		Ampicillin	DE	468	3	0.6
		Benzylpenicillin (Penicillin G)	DE	468	25	5.3
		Chlortetracyclin	DE	545	7	1.3
			IT	66	1	1.5
		Ciprofloxacin	DE	441	2	0.5
		Dihydrostreptomycin	DE	309	4	1.3
		Doxycycline	DE	553	32	5.8
			IT	66	2	3.0
		Enrofloxacin	DE	536	22	4.1

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
		Epi-Oxytetracycline	DE	285	2	0.7
		Gentamicin	DE	309	1	0.3
		Inhibitors	DE	259,718	403	0.2
		Marbofloxacin	DE	536	6	1.1
		Neomycin	DE	309	1	0.3
		Oxytetracycline	DE	542	9	1.7
		Sulfadiazine	DE	468	8	1.7
		Sulfadimethoxine	IT	66	1	1.5
		Sulfadoxine	DE	468	3	0.6
		Sulfamethazine	DE	468	1	0.2
		Sulfonamides	DE	144	5	3.5
		Tetracycline	DE	540	2	0.4
		Trimethoprim	DE	466	8	1.7
		Tulathromycin	DE	311	2	0.6
		Tylosin, Tylosin A	DE	465	1	0.2
		Sub-total for B1	**2**		**559**	
	B2e	Flunixin	DE	117	2	1.7
		Sub-total for B2e	**1**		**2**	
		Total in Pigs	**2**		**562**	
Sheep/Goats	**B1**	Benzylpenicillin (Penicillin G)	DE	7	1	14.3
		Ciprofloxacin	DE	6	1	16.7
		Enrofloxacin	DE	7	4	57.1
		Inhibitors	DE	2,967	5	0.2
		Sub-total for B1	**1**		**11**	
	B2f	Dexamethasone	DE	5	2	40.0
		Sub-total for B2f	**1**		**2**	
		Total in Sheep/Goats	**1**		**13**	
Horses	**B1**	Dihydrostreptomycin	DE	1	1	100.0
		Inhibitors	DE	417	3	0.7
		Sulfadiazine	DE	1	1	100.0
		Sulfonamides	DE	1	1	100.0
		Sub-total for B1	**1**		**6**	
		Total in Horses	**1**		**6**	
Poultry	**B1**	Enrofloxacin	IT	42	1	2.4
		Oxytetracycline	IT	43	1	2.3
		Sub-total for B1	**1**		**2**	
	B2b	Salinomycin	SK	5	1	20.0
		Sub-total for B2b	**1**		**1**	
		Total in Poultry	**3**		**3**	
Aquaculture	**A6**	Chloramphenicol	NL	30	1	3.3
		Nitrofurazone	NL	43	1	2.3
		Sub-total for A6	**1**		**2**	
	B1	Inhibitors	DE	20	1	5.0
		Sub-total for B1	**1**		**1**	
	B3c	Cadmium Cd	GR	122	5	4.1
		Lead Pb	GR	122	1	0.8
		Sub-total for B3c	**1**		**6**	
		Total in Aquaculture	**3**		**9**	
Milk	**B1**	Benzylpenicillin (Penicillin G)	IT	30	2	6.7
		Sub-total for B1	**1**		**2**	

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
	B3d	Aflatoxin M1	IT	1,880	5	0.3
		Sub-total for B3d	**1**		**5**	
		Total in Milk	**1**		**7**	
Honey	**B1**	Oxytetracycline	IT	79	1	1.3
		Sulfamethazine	IT	80	1	1.3
		Sulfathiazole	IT	80	1	1.3
		Sub-total for B1	**1**		**3**	
		Total in Honey	**1**		**3**	
Total in all categories					**740**	

(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 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.