TECHNICAL REPORT

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Report for 2016 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 2016 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 710,839 samples were reported to the European Commission by 27 out of the 28 Member States. They consisted of 369,262 targeted samples and 21,350 suspect samples reported under Council Directive 96/23/EC, and of 4,075 samples collected at import and 316,152 samples collected in the framework of programmes developed under the national legislation. The majority of Member States fulfilled the minimum requirements for sampling frequency, laid down in Council Directive 96/23/EC and in Commission Decision 97/747/EC. Overall in 2016, the percentage of non-compliant targeted samples (0.31%) was comparable to the previous 9 years (0.25%–0.37%). In 2016, high frequencies of non-compliant samples were reported again for chemical elements (mainly metals). Over the 10 year period, the highest and lowest frequencies of non-compliant samples for non-steroidal anti-inflammatory drugs and antibacterials, respectively, were reported in 2016. Decreases in the percentage of non-compliant samples, compared to more recent years, were noted for antithyroid agents, resorcylic acid lactones and mycotoxins. This analysis should be regarded as having a certain degree of uncertainty, as it is based on partially aggregated data and the sampling plans and the spectrum of substances analysed are not necessarily the same every year.

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

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Summary

The present report summarises the monitoring data from 2016 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, 2016, 2017) 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 2016, 27 out of the 28 European Union (EU) Member States reported in the framework of the residue monitoring, the results for 710,839 samples. A total of 369,262 targeted samples and 21,350 suspect samples were reported under Council Directive 96/23/EC. Additionally, 316,152 samples collected in the framework of other programmes developed under the national legislation and 4,075 samples checked at import, were reported.

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

Overall, there were 1,131 or 0.31% of non-compliant samples out of the 369,262 targeted samples in 2016.

For Group A, no non-compliant samples were reported for stilbenes and derivatives (A1). For antithyroid agents (A2), there were 0.45% non-compliant samples, mainly for thiouracil and possibly due to feeding diets rich in cruciferous plants. In the group of steroids (A3), 0.09% of samples in total were found to be non-compliant (all for anabolic steroids). These non-compliant samples were reported for bovines (n = 9; 0.04%), pigs (n = 21; 0.19%), sheep and goats (n = 3; 0.33%), and aquaculture (n = 1; 0.31%). For corticosteroids, non-compliant results for authorised substances were reported under 'other pharmacologically active substances' (B2f). In the group of resorcylic acid lactones (A4), 0.14% of samples were non-compliant for zearalanone and derivatives; the non-compliant samples were found in bovines (0.20%), pigs (0.08%) and sheep and goats (1.05%).For beta-agonists (A5), there were 0.04% non-compliant samples in total, reported for bovines (0.06%) and pigs (0.02%). Prohibited substances (A6) were found in 0.03% of samples. Substances identified were chloramphenicol (n = 12), nitroimidazoles (n = 4) and nitrofurans (n = 10).

For antibacterials (B1), 0.17% of all samples analysed under the Directive 96/23/EC monitoring were non-compliant. Horses and honey had highest frequency of non-compliant samples for antibacterials (both 0.80%).

In group B2 (other veterinary drugs), the highest proportion of non-compliant samples was found for NSAIDs (B2e) (0.25%). The non–compliant samples were reported for bovines (0.16%), pigs

(0.14%), sheep and goats (1.28%), horses (0.74%), poultry (0.22%), milk (0.29%) and farmed game (1.69%). Non-compliant samples for anthelmintics (B2a) were reported in bovines (0.07%), pigs (0.06%), sheep and goats (0.83%), horses (1.21%), aquaculture (0.53%) and milk (0.06%). For anticoccidials (B2b), non-compliant samples were reported in pigs (0.04%), poultry (0.12%), eggs (0.81%) and rabbit (0.59%). 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. Non-compliant samples were reported for carbamates and pyrethroids (B2c), for bovines (0.10%) and poultry (0.06%). Non-compliant samples were reported for sedatives (B2d), in bovines (0.06%), pigs (0.02%) and poultry (0.56%). Non-compliant samples were reported for 'other pharmacologically active substances' (B2f), bovines (0.34%), horses (0.53%), poultry (0.17%) and eggs (1.21%).

In the group B3 (other substances and environmental contaminants), the chemical elements (B3c) had the highest overall percentage of non-compliant samples (5.02%), with cadmium, lead, mercury and copper being most frequently identified. Non-compliant samples were reported for organochlorine compounds (B3a) and organophosphorus compounds (B3b); 0.15% and 0.02%, respectively. For mycotoxins (B3d), there were non-compliant samples reported for bovines (n = 1; 0.09%), pigs (n = 10; 0.53%), sheep and goats (n = 1; 0.57%) and milk (n = 10; 0.60%); with those identified being zearalenone and derivatives, ochratoxin A, aflatoxin B1 and aflatoxin M1. The prevalence of dyes (B3e) in aquaculture samples (1.57%) was within the range noted for the previous 9 years (1.14%–2.2%). The substances found were malachite green, leuco-malachite green, crystal violet and leuco-crystal violet. For 'other substances' (B3f), no non-compliant samples reported.

In 2016, the overall frequency of non-compliant samples (0.31%) was comparable to the previous 9 years (0.25%–0.37%). High frequencies of non-compliant samples, similar to those of 2014 and 2015, were reported in 2016 for chemical elements (B3c; mainly metals). Over the 10 year period, the highest and lowest frequencies of non-compliant samples for NSAIDs (B2e) and antibacterials (B1), respectively, were reported in 2016. Decreases in the percentage of non-compliant samples were noted for antithyroid agents (A2), resorcylic acid lactones (A4) and mycotoxins (B3d), compared to more recent years. For the other substance groups, there were no notable variations over the 10 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

Abstract 1
Summary 3
1. Introduction 6
1.1. Background and Terms of Reference as provided by the European Commission 6
1.1.1. Background 6
1.1.2. Terms of reference as provided by the European Commission 6
1.2. Additional information 6
1.3. Objectives 8
2. Data and Methodologies 9
2.1. Data 9
2.2. Methodologies 9
3. Results 10
3.1. EU overall assessment 10
3.1.1. Hormones 12
3.1.2. Beta-agonists 13
3.1.3. Prohibited substances 13
3.1.4. Antibacterials 14
3.1.5. Other veterinary drugs 15
3.1.6. Other substances and environmental contaminants 17
3.1.7. Multi-year comparison 18
3.2. Bovines 22
3.3. Pigs 24
3.4. Sheep and goats 26
3.5. Horses 28
3.6. Poultry 30
3.7. Aquaculture 32
3.8. Milk 34
3.9. Eggs 36
3.10. Rabbit meat 38
3.11. Farmed game 40
3.12. Wild game 42
3.13. Honey 44
3.14. Suspect, import and other samples 46
4. Conclusions 48
5. Recommendations 49
References 49
Abbreviations 51
Appendix A – List of non-compliant results: targeted sampling 53
Appendix B – List of non-compliant results: suspect sampling 65
Appendix C – List of non-compliant results: import sampling 71
Appendix D – List of non-compliant results: other sampling 72
Appendix E – Annex I to Directive 96/23/EC 75

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 2016 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.

The data used in the preparation of this report were extracted from the database between 18 October 2017 and 11 December 2017 and are reflective of the database during this time period. The 2016 monitoring data from France were not submitted in time to be included in this report.

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

2016 and the production data used by Member States to prepare the 2016 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.

3. Results

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

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

3.1. EU overall assessment

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

In 2016, 710,839 samples were reported by 27 out of the 28 Member States[14] for analysis of substances and residues covered by Directive 96/23/EC. Out of this, 369,262 were targeted samples collected in conformity with the specifications of the National Residue Control Plans (NRCPs) for 2016. Additionally, 21,350 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 316,152 samples collected in the framework of other programmes developed under the national legislation. Only a relatively limited number of data were reported for samples checked at import (n = 4,075). 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, 50% were analysed for substances having an anabolic effect and unauthorised substances (group A) and 60% for veterinary drugs and contaminants (group B)[15]. Of the 369,262 targeted samples, 1,131 were non-compliant (0.31%) (1,243 non-compliant results). The percentage of non-compliant samples calculated from the total number of samples analysed for substances in that category was: 0.07% for substances having an anabolic effect and unauthorised substances (A), 0.17% for antibacterials (B1), 0.18% for the 'other veterinary drugs' (B2) and 1.78% for 'other substances and environmental contaminants' (B3) (Table 1, Figure 1).

[14] The 2016 monitoring data from France were not submitted in time to be included in this report.
[15] 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	185,179	50.1	133	0.07	145
A1	21,542	5.8	0	0	0
A2	8,538	2.3	38	0.45	40
A3	39,648	10.7	34	0.09	37
A4	16,847	4.6	24	0.14	29
A5	34,824	9.4	13	0.04	13
A6	81,489	22.1	24	0.03	26
B	221,723	60.0	998	0.45	1,098
B1	106,121	28.7	180	0.17	191
B2	87,509	23.7	160	0.18	171
B2a	22,473	6.1	35	0.16	42
B2b	22,589	6.1	46	0.20	46
B2c	6,957	1.88	2	0.03	2
B2d	8,524	2.3	3	0.04	4
B2e	14,667	4.0	37	0.25	38
B2f	19,505	5.3	39	0.20	39
B3	36,923	10.0	659	1.78	736
B3a	13,367	3.6	20	0.15	21
B3b	5,982	1.6	1	0.02	1
B3c	11,776	3.2	591	5.02	661
B3d	5,961	1.6	22	0.37	24
B3e	1,651	0.4	26	1.57	29
B3f	1,196	0.3	0	0	0
Total	**369,262**	**100**	**1,131**	**0.31**	**1,243**

(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.

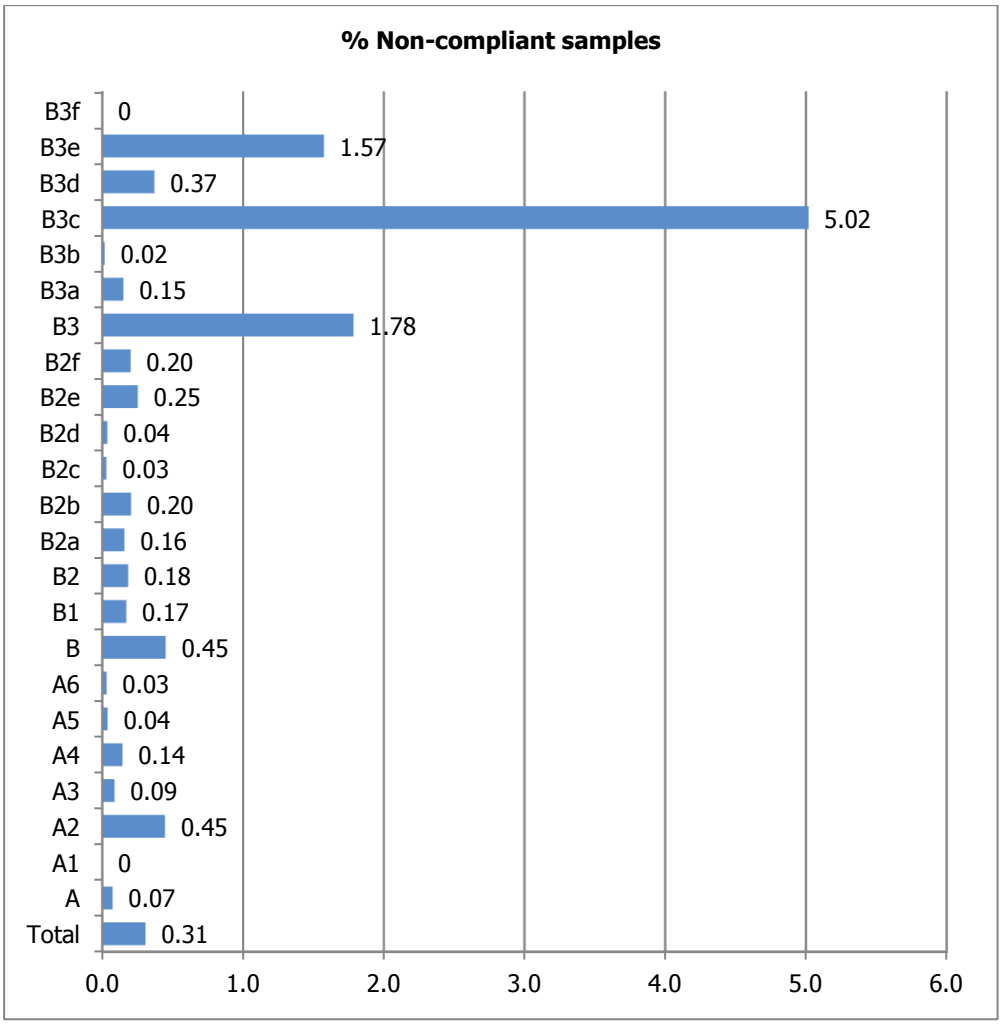


Figure 1: Percentage of non-compliant samples in each substance group

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 (86,575 samples) there were 96 non-compliant samples (0.11%) (106 non-compliant results).

The number of targeted samples analysed for stilbenes and derivatives (A1) in all animal/product categories together, was 21,542, and no non-compliant samples were reported for this group.

Antithyroid agents (A2) were analysed in 8,538 targeted samples, of which 38 samples were non-compliant (0.45%) (40 non-compliant results). They were reported for bovines (n = 34; 0.86%), pigs (n = 2; 0.06%) and sheep and goats (n = 2; 0.93%). Almost all non-compliant samples were reported for thiouracil, except for 2 non-compliant results noted for 2-mercaptoimidazole. 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 39,648 samples analysed in all animal species and product categories, 34 samples were non-compliant (0.09%) (37 non-compliant results). All 37 non-compliant results were for anabolic steroids. The non-compliant samples were found in bovines (n = 9; 0.04%), pigs (n = 21; 0.19%), sheep and goats (n = 3; 0.33%), and aquaculture (n = 1; 0.31%). Some Member States have indicated that residue findings on steroid hormones may not be attributable to illegal treatment, as the source was most likely the endogenous production, as reported in previous studies (Clouet et al., 1997; Samuels et al., 1998).

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

For resorcylic acid lactones (A4), of 16,847 samples analysed in all animal species and product categories, 24 were found non-compliant (0.14%) (29 non-compliant results), for zearalanone and derivatives. The non-compliant samples were found for bovines (n = 17; 0.20%), pigs (n = 4; 0.08%) and sheep and goats (n = 3; 1.05%).

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 2016, 34,824 targeted samples were analysed for beta-agonists, with 13 non-compliant samples (0.04%) reported in total, for bovines (n = 11; 0.06%) and pigs (n = 2; 0.02%).

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 2016 residue monitoring, 81,489 targeted samples were analysed for prohibited substances and 24 samples (0.03%) were non-compliant (26 non-compliant results). Altogether, there were 12 non-compliant results for chloramphenicol, 10 for nitrofurans and four for nitroimidazoles (Table 2).

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

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

Substance	Species/product	Number of non-compliant results	Member States reporting non-compliant results
Chloramphenicol	bovine	1	PL
	pigs	6	DE, IT, LV, PL
	milk	3	PL
	honey	2	DE, PL
Nitrofurans			
AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	farmed game	2	BE
AOZ (3-amino-2-oxazolidone)	honey	4	DE, LV, PL
SEM (semicarbazide)	bovine	2	IE, NL
	pigs	1	UK
	sheep/goats	1	NL
Nitroimidazoles			
Hydroxymetronidazole (MNZOH)	milk	1	DE
Metronidazole	aquaculture	1	CZ
	farmed game	1	BE
	honey	1	PL

BE: Belgium; CZ: The Czech Republic; DE: Germany; IE: Ireland; IT: Italy; LV: Latvia; NL: The Netherlands; PL: Poland; UK: The 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 2016 for antimicrobials in targeted samples was 106,121 of which 180 (0.17%) were non-compliant (191 non-compliant results) (Table 1). The highest frequencies of non-compliant samples for antibacterials were observed for horses and honey (0.80%) (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.

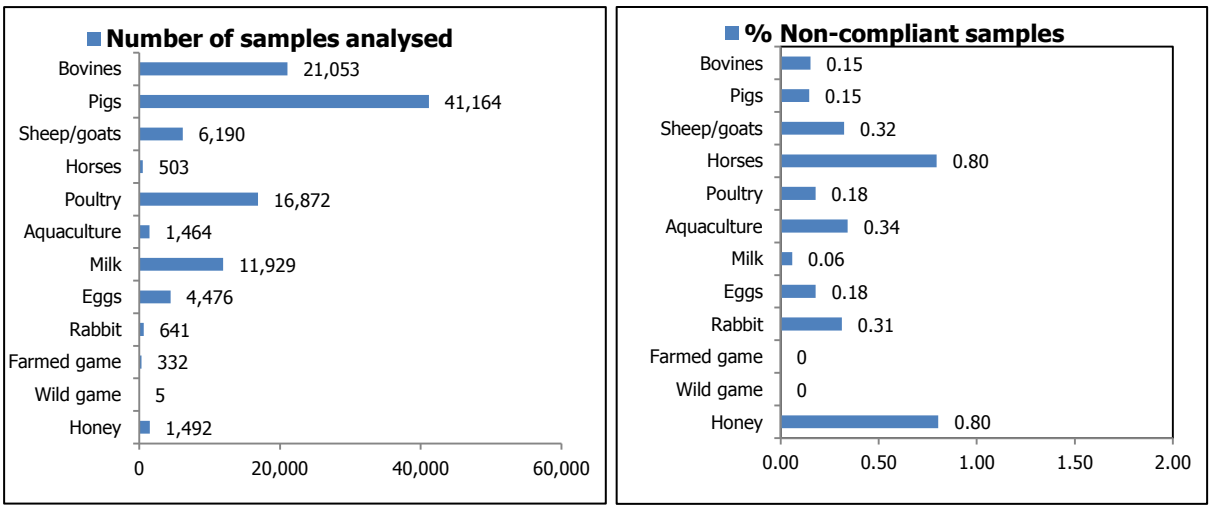


Figure 2: Number of targeted samples analysed and percentage of non-compliant samples for antibacterials (B1) in animal/product categories

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 2016 monitoring, 87,509 targeted samples were analysed for substances in the group B2 and 160 samples (0.18%) 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.

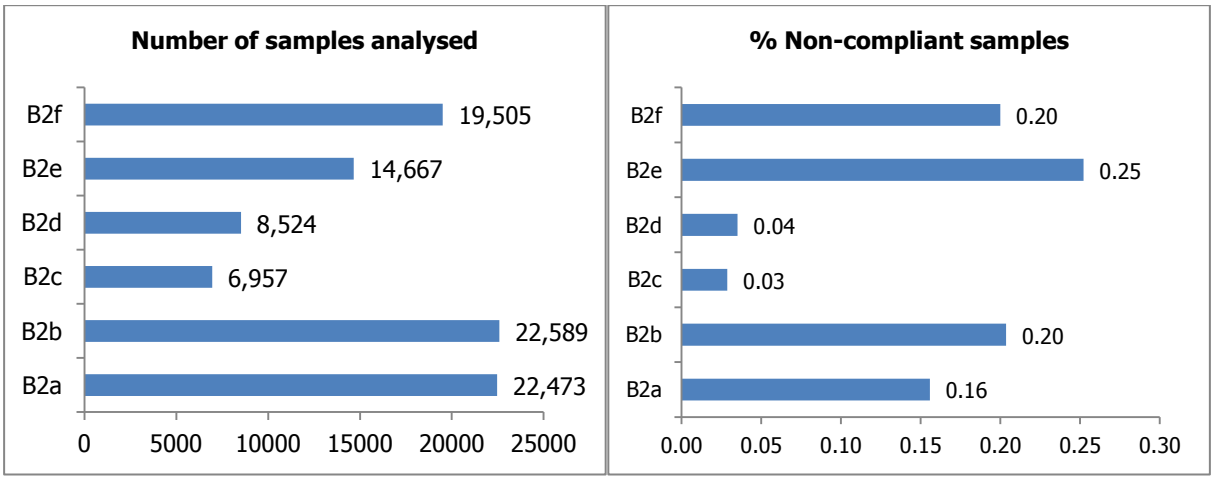


Figure 3: Number of targeted samples analysed within the group 'other veterinary drugs' (B2) and the percentage of non-compliant samples

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	4,051	0.07	1,996	0	1,037	0.10	1,683	0.06	4,319	0.16	10,246	0.34
Pigs	7,008	0.06	6,681	0.04	1,800	0	6,064	0.02	4,397	0.14	6,484	0
Sheep/goats	2,419	0.83	711	0	811	0	355	0	392	1.28	344	0
Horses	165	1.21	80	0	116	0	165	0	672	0.74	190	0.53
Poultry	2,282	0	8,223	0.12	1,563	0.06	177	0.56	891	0.22	605	0.17
Aquaculture	562	0.53	132	0	324	0	3	0	4	0	150	0
Milk	5,227	0.06	494	0	275	0	56	0	3,810	0.29	876	0
Eggs	209	0	3933	0.81	169	0	5	0	5	0	165	1.21
Rabbit	108	0	169	0.59	65	0	2	0	118	0	29	0
Farmed game	225	0	131	0	73	0	14	0	59	1.69	11	0
Wild game	130	0	0	0	16	0	0	0	0	0	0	0
Honey	87	0	39	0	708	0	0	0	0	0	405	0

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

The highest proportion of non-compliant samples (0.25%) was observed for the subgroup NSAIDs (B2e). Non–compliant samples were reported for the following species/products, bovines (0.16%), pigs (0.14%), sheep and goats (1.28%), horses (0.74%), poultry (0.22%), milk (0.29%) and farmed game (1.69%).

For the other subgroups, non-compliant samples for anthelmintics (B2a) were reported in bovines (0.07%), pigs (0.06%), sheep and goats (0.83%), horses (1.21%), aquaculture (0.53%) and milk (0.06%).

For anticoccidials (B2b), non-compliant samples were reported in pigs (0.04%), poultry (0.12%), eggs (0.81%) and rabbit (0.59%).

Non-compliant samples were reported for carbamates and pyrethroids (B2c), for bovines (0.10%) and poultry (0.06%).

For sedatives (B2d), non-compliant samples were reported for bovines (0.06%), pigs (0.02%) and poultry (0.56%).

For 'other pharmacologically active substances' (B2f), non-compliant samples were observed for bovines (0.34%), horses (0.53%), poultry (0.17%) and eggs (1.21%). For corticosteroids, 36 non-compliant results were reported by eight Member States and the substances identified were cortisone, dexamethasone, prednisolone and predisone (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
Cortisone	B2f	bovine	1	UK
Dexamethasone	B2f	bovine	33	BE, BG, DE, ES, IT, PL, PT
Prednisolone	B2f	horses	1	IT
Prednisone	B2f	bovine	1	IT

BE: Belgium; BG: Bulgaria; DE: Germany; ES: Spain; IT: Italy; PL: Poland PT: Portugal; UK: The United Kingdom.
(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 2016, 36,923 samples were analysed for substances in group B3 of which 659 samples were non-compliant (1.78%) (736 non-compliant results). The total number of targeted samples analysed for each subgroup in group B3 and the percentage of non-compliant samples is presented in Figure 4. Similarly to group B2, the frequency of analyses for certain B3 subgroups is highly variable with the targeted animal/product category. While chemical contaminants (B3c) are analysed in all animal/product categories, dyes (B3e) are analysed only in aquaculture products. An overview of the number of samples analysed and the percentage of non-compliant samples for the B3 subgroups in the specific animal group and animal product category is presented in Table 5.

The highest percentage of non-compliant samples was found in almost all species, in the subgroup B3c 'chemical elements' (5.02%). 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 0.15% and 0.02%, respectively.

There were non-compliant samples reported in subgroup B3d mycotoxins (n = 22; 0.37%), for bovines (n = 1; 0.09%), pigs (n = 10; 0.53%), sheep and goats (n = 1; 0.57%) and milk (n = 10; 0.60%). Those identified being zearalenone and derivatives, ochratoxin A, aflatoxin B_1 and aflatoxin M_1.

Dyes (B3e) were reported in aquaculture (26 non-compliant samples; 1.57%). Substances found were malachite green, leuco-malachite green, crystal violet and leuco-crystal violet.

There were no non-compliant samples reported for the subgroup 'others' (B3f).

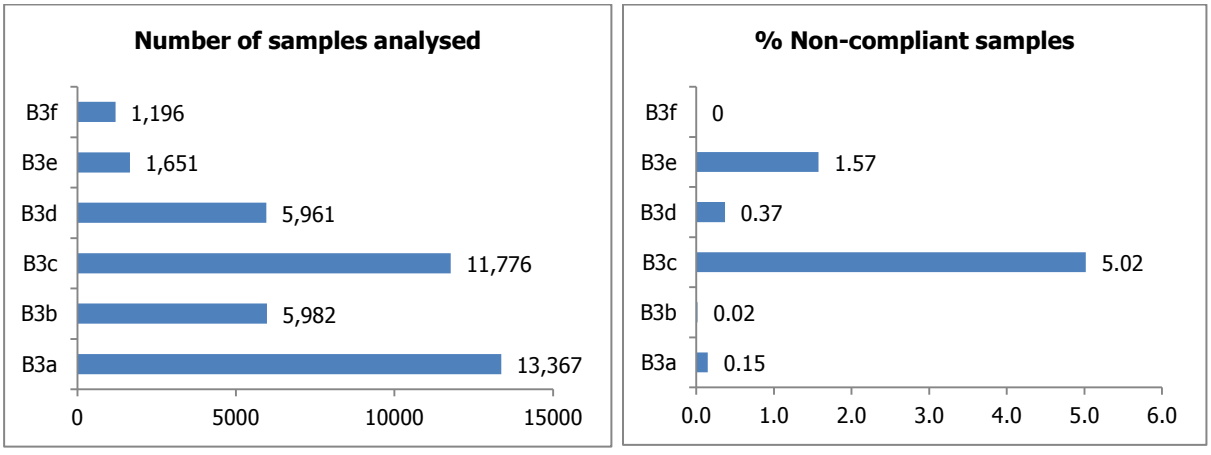


Figure 4: Number of samples analysed within the group 'other substances and environmental contaminants' (B3) and the percentage of non-compliant samples

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	1,894	0.16	987	0	1,809	9.73	1,096	0.09	0	0	92	0
Pigs	3,405	0.03	1,472	0	3,335	5.25	1,901	0.53	0	0	261	0
Sheep/goats	616	0	862	0	527	5.12	175	0.57	0	0	24	0
Horses	142	0.70	78	0	501	2.99	73	0	0	0	5	0
Poultry	2,373	0	711	0	1,522	0.20	844	0	0	0	129	0
Aquaculture	609	0.16	148	0	499	0	172	0	1,651	1.57	88	0
Milk	1,308	0.08	601	0	676	0.30	1664	0.60	0	0	73	0
Eggs	1,999	0.10	357	0	142	0	3	0	0	0	113	0
Rabbit	75	0	27	0	87	2.30	10	0	0	0	4	0
Farmed game	134	0	53	0	197	7.61	13	0	0	0	7	0
Wild game	190	5.79	23	0	2068	7.50	0	0	0	0	141	0
Honey	622	0	663	0.15	413	5.08	10	0	0	0	259	0

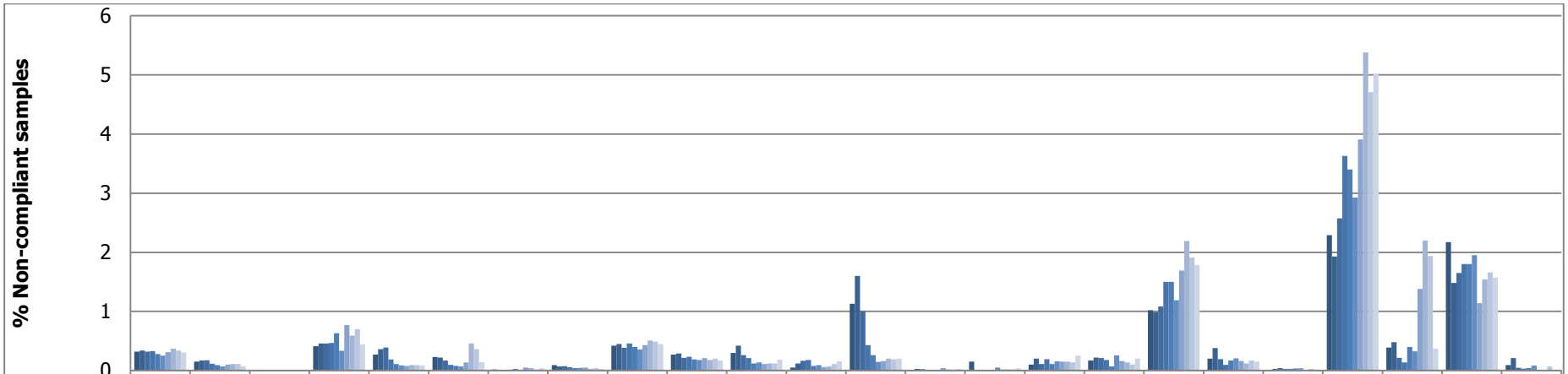
n: number of samples analysed; %nc: percentage of non-compliant samples.

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 10 years. Furthermore, the 2016 data from France were not submitted in time to be included in this report. 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 2007–2016 is presented in Figure 5. The percentage of overall non-compliant samples in 2016 (0.31%) was comparable to the previous 9 years (0.25%-0.37%).



	Total	A	A1	A2	A3	A4	A5	A6	B	B1	B2	B2a	B2b	B2c	B2d	B2e	B2f	B3	B3a	B3b	B3c	B3d	B3e	B3f
2007	0.32	0.15	0	0.41	0.27	0.23	0.02	0.09	0.42	0.27	0.30	0.05	1.1	0.01	0.15	0.1	0.17	1.0	0.2	0	2.3	0.39	2.2	0.09
2008	0.34	0.17	0	0.46	0.36	0.22	0.005	0.07	0.45	0.29	0.42	0.12	1.6	0.03	0	0.2	0.22	0.99	0.38	0.03	1.9	0.48	1.5	0.21
2009	0.32	0.18	0	0.46	0.39	0.17	0.01	0.07	0.39	0.21	0.26	0.16	1.0	0.02	0	0.11	0.21	1.1	0.19	0.04	2.6	0.22	1.7	0.05
2010	0.33	0.11	0	0.47	0.19	0.09	0.02	0.05	0.46	0.23	0.21	0.18	0.43	0.01	0	0.19	0.18	1.5	0.10	0.03	3.6	0.14	1.8	0.03
2011	0.28	0.09	0	0.63	0.11	0.08	0.03	0.04	0.40	0.19	0.12	0.08	0.26	0.01	0.01	0.11	0.07	1.5	0.17	0.03	3.4	0.40	1.8	0.04
2012	0.25	0.07	0	0.33	0.09	0.07	0.01	0.05	0.36	0.18	0.14	0.09	0.15	0	0.05	0.16	0.26	1.2	0.21	0.04	2.9	0.33	1.95	0.08
2013	0.31	0.10	0.01	0.77	0.08	0.14	0.05	0.05	0.43	0.21	0.11	0.06	0.16	0.04	0.02	0.15	0.16	1.7	0.16	0.04	3.9	1.38	1.14	0
2014	0.37	0.11	0.005	0.59	0.09	0.46	0.04	0.03	0.51	0.18	0.12	0.07	0.20	0.02	0.02	0.15	0.14	2.19	0.12	0.01	5.4	2.20	1.54	0
2015	0.34	0.11	0	0.70	0.09	0.36	0.02	0.04	0.49	0.20	0.12	0.11	0.19	0	0.02	0.14	0.10	1.91	0.17	0.03	4.7	1.94	1.66	0.07
2016	0.31	0.07	0	0.45	0.09	0.14	0.04	0.03	0.45	0.17	0.18	0.16	0.20	0.03	0.04	0.25	0.20	1.78	0.15	0.02	5.02	0.37	1.57	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, 2014, 2015 and 2016 (substance groups are detailed in Appendix E)

Group A

Among hormones and prohibited substances (group A) the proportion of non-compliant samples in 2016 (0.07%) was similar to the previous 9 years.

Similarly to the years 2007-2012 and 2015, no non-compliant samples for stilbenes and derivatives (A1) were reported in 2016. Whereas, in 2013 and 2014 very low percentages of non-compliant samples had been reported (0.01% and 0.005%, respectively).

In 2016, a decrease in the percentage of non-compliant samples was noted for antithyroid agents (A2) (0.45%), compared to 2011, 2013, 2014 and 2015 and for resorcylic acid lactones (A4) (0.14%), compared to 2014 and 2015.

The percentage of non-compliant samples for steroids (A3) (0.09%), beta-agonists (A5) (0.04%) and prohibited substances (A6) (0.03%), in 2016 were similar to previous years.

Group B

Group B1

In the group of antibacterials (B1), the percentage of non-compliant samples in 2016 (0.17%), was slightly lower to the previous 9 years (0.18%-0.29%).

Group B2

In the group B2 ('other veterinary drugs'), the proportion of non-compliant samples in 2016 was slightly higher (0.18%) compared to the previous 5 years (0.11%-0.14%), although lower compared the period 2007–2010 (0.21%–0.42%).

Non-compliant samples for anthelmintics (B2a) increased slightly (0.16%) in 2016, compared to the last 5 years, however they were still within the range of values reported since 2007 (0.05%-0.18%).

For anticoccidials (B2b), from 2007–2011 this subgroup had the highest proportion of non-compliant samples (0.26%–1.6%). In 2012 and 2013 the percentage of non-compliant samples was lower compared to previous years (0.15% and 0.16%, respectively) and in 2014, 2015 and 2016, slight increases compared to the previous 2 years were noted (0.19%-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, 0.22% in 2011, 0.16% in 2012, 0.15% in 2013, 0.20% in 2014, 0.15% in 2015 and to 0.12% in 2016; being the lowest levels recorded so far. 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.

For carbamates and pyrethroids (B2c), non-compliant samples for were found in only a few isolated cases in 2007–2011, 2014 and 2016 (0.01%–0.03%), in 2013, the percentage of non-compliant samples was slightly higher compared to previous years (0.04%). In 2012 and 2015, no non-compliant samples were reported.

For sedatives (B2d), following the highest percentage of non-compliant samples recorded in 2007 (0.15%), no non-compliant samples were reported between 2008 and 2010 and only low levels of non-compliance have been reported between 2011 and 2016 (0.01 and 0.05%).

In the group B2e (NSAIDs), the proportion of non-compliant samples has remained relatively constant over the last 9 years (between 0.1%–0.2%). However, in 2016, levels of non-compliance were seen to rise slightly (0.25%).

For 'other pharmacologically active substances' (B2f), the percentage of non-compliant samples in 2016 (0.20%) was similar compared to the previous years of 2007–2010 and 2013-2014 (0.14%–0.22%). In 2011 and 2015, the percentage of non-compliant samples were lower (0.07% and 0.10% respectively), and in 2012, the highest percentage of non-compliant samples was reported (0.26%) for this subgroup.

Group B3

In the group of 'other substances and environmental contaminants' (B3), the percentage of non-compliant samples in 2016 (1.78%) was seen to decrease slightly compared to 2014 (2.19%) and 2015 (1.91%). However, this value was still higher compared to 2007-2013 (0.99%–1.7%).

The highest proportion of non-compliant samples in the group B3 has been noted for chemical elements (B3c) over the 10 years. The non-compliant samples accounted for around 2% in 2007 and 2008 and for 3.6% in 2010, 3.4% in 2011, 2.9% in 2012, 3.9% in 2013, 5.4% in 2014, 4.7% in 2015 and 5.02% in 2016. 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 fish and fishery products 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[16] amending Regulation (EC) No 396/2005 are applied to evaluate the compliance for copper and mercury (except for aquaculture) which led to a substantial higher proportion of non-compliant samples for the two chemical elements. For example, in 2007 and 2008 only 30 and 47 non-compliant results, respectively, were reported for mercury in all species and product categories, whereas in 2010 and 2011 their number reached 269 and 218, respectively. In 2012, 2013 and 2014 the number of non-compliant results had decreased to 170, 189 and 149, respectively. However, in 2015 and 2016, this number was seen to rise again to 212 and 204, 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. Since 2014, the number of non-compliant samples has risen again as follows: 360 in 2014, 260 in 2015 and 287 in 2016.

The proportion of non-compliant samples for organochlorine compounds (B3a) in 2016 (0.15%) was similar to those reported in 2007, 2009, 2011-2013 and 2015 (0.16%–0.21%). In 2008, the values were slightly higher (0.38%) and in 2010 and 2014 the values were lower (0.10% and 0.12%, respectively).

For organophosphorus compounds (B3b), the number of non-compliant samples has remained very low over the 10 years (0-0.04%).

From 2013 to 2015, the percentage of non-compliant samples for mycotoxins (B3d) had increased to between 1.38%-2.20%. In 2016, the levels were lower (0.37%) and within range of those reported between 2007–2012 (0.14%-0.48%).

The proportion of non-compliant samples for dyes (B3e) in 2016 (1.57%) was within the range noted for the previous 9 years (1.14%–2.2%).

For 'other substances' (B3f), no non-compliant samples were reported in 2016; the same as for 2013 and 2014. Whereas for the years 2007–2012 and 2015, the proportion of non-compliance was reported as 0.03%-0.21%.

Taking into account the limitations mentioned at the beginning of this section, from the 2016 results, it appears that high frequencies of non-compliant samples, similar to those of 2014 and 2015, were reported for chemical elements (B3c; mainly metals). Over the 10 year period, the highest and lowest frequencies of non-compliant samples for NSAIDs (B2e) and antibacterials (B1), respectively, were reported in 2016. Decreases in the percentage of non-compliant samples were noted for antithyroid agents (A2), resorcylic acid lactones (A4) and mycotoxins (B3d), compared to more recent years. For the other substance groups, there were no notable variations over the 10 years (see also EC, 2007; EFSA, 2010a, 2011, 2012, 2013, 2014, 2015, 2016, 2017).

[16] 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.

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. Overall, the minimum requirements for the number of samples were fulfilled in 2016 (Table 6), and by the majority of Member States (Table 7). Greece and Portugal did not achieve the minimum sampling frequency for bovines.

Table 6: Production of bovines and number of targeted samples over 2007–2016

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

(a): in relation to the production of the previous year.
(b): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[(a)] (animals)	Number of samples 2016	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2016	Animals tested (%)
Austria	695,174	3,860	0.56	Latvia	85,395	342	0.40
Belgium	837,475	6,003	0.72	Lithuania	177,220	712	0.40
Bulgaria	26535	132	0.50	Luxemburg	24,621	99	0.40
Croatia	184,733	873	0.47	Malta	3,766	58	1.54
Cyprus	14,927	211	1.41	Netherlands	1,925,800	15,580	0.81
Czech Republic	246,109	1,238	0.50	Poland	1,875,759	7,575	0.40
Denmark	462,429	1,896	0.41	Portugal	362,528	859	0.24
Estonia	36,866	185	0.50	Romania	200,649	841	0.42
Finland	267,292	1,242	0.46	Slovakia	33,726	326	0.97
Germany	3,570,097	14,647	0.41	Slovenia	111,468	461	0.41
Greece	162,875	575	0.35	Spain	2,182,590	9,598	0.44
Hungary	99,369	397	0.40	Sweden	428,220	3,088	0.72
Ireland	1,691,071	7,719	0.46	United Kingdom	2,628,000	13,605	0.52
Italy	2,467,894	17,759	0.72	**Total (MS 27[(b)])**	**20,802,588**	**109,881**	**0.53**

(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in bovines are presented in Table 8. Of the 109,881 samples analysed in this category, 331 (0.30%) were non-compliant (359 non-compliant results). The non-compliant samples were reported by 17 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.

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	69,261	63.0	74	0.11	78
A1	10,600	9.6	0	0	0
A2	3,956	3.6	34	0.86	36
A3	22,940	20.9	9	0.04	10
A4	8,330	7.6	17	0.20	18
A5	17,822	16.2	11	0.06	11
A6	15,434	14.0	3	0.02	3
B	47,928	43.6	257	0.54	281
B1	21,053	19.2	32	0.15	36
B2	22,485	20.5	46	0.20	52
B2a	4,051	3.7	3	0.07	8
B2b	1,996	1.8	0	0	0
B2c	1,037	0.9	1	0.10	1
B2d	1,683	1.5	1	0.06	1
B2e	4,319	3.9	7	0.16	7
B2f	10,246	9.3	35	0.34	35
B3	5,547	5.0	180	3.24	193
B3a	1,894	1.7	3	0.16	3
B3b	987	0.9	0	0	0
B3c	1,809	1.6	176	9.73	187
B3d	1,096	1.0	1	0.09	3
B3e	0	0	0	0	0
B3f	92	0.1	0	0	0
Total	**109,881**	**100**	**331**	**0.30**	**359**

(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.

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. Overall, the minimum requirements for the number of samples were fulfilled in 2016 (Table 9), and by the majority of Member States (Table 10). Croatia and Portugal did not achieve the minimum sampling frequency for Pigs.

Table 9: Production of pigs and number of targeted samples over 2007–2016

Year	Production (animals)	Targeted samples	% Animals tested[(a)]	Minimum 96/23/EC
2007 (EU 27)	241,501,638	144,378	0.06	0.05
2008 (EU 27)	244,965,996	137,281	0.06	
2009 (EU 27)	242,260,526	138,137	0.06	
2010 (EU 27)	245,149,546	136,792	0.06	
2011 (EU 27)	249,082,904	133,255	0.05	
2012 (EU 27)	246,691,569	135,745	0.05	
2013 (EU 28)	243,680,241	131,565	0.05	
2014 (EU 28)	244,508,972	135,129	0.06	
2015 (EU 28)	251,197,203	130,012	0.05	
2016 (MS 27[(b)])	229,090,419	121,953	0.05	

(a): in relation to the production of the previous year.
(b): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[(a)] (animals)	Number of samples 2016	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2016	Animals tested (%)
Austria	5,381,689	3,413	0.06	Latvia	359,306	181	0.05
Belgium	11,888,367	5,655	0.05	Lithuania	860,237	449	0.05
Bulgaria	968,710	480	0.05	Luxemburg	157,666	81	0.05
Croatia	1,079,095	447	0.04	Malta	60,722	54	0.09
Cyprus	573,027	594	0.10	Netherlands	15,496,600	9,068	0.06
Czech Republic	2,598,062	1,653	0.06	Poland	21,973,396	11,121	0.05
Denmark	18,851,446	9,649	0.05	Portugal	4,560,494	1,344	0.03
Estonia	503,826	652	0.13	Romania	4,277,530	2,160	0.05
Finland	2,040,006	1,410	0.07	Slovakia	368,886	349	0.09
Germany	60,206,284	30,671	0.05	Slovenia	242,257	148	0.06
Greece	1,427,536	644	0.05	Spain	42,509,188	21,320	0.05
Hungary	4,508,506	2,238	0.05	Sweden	2,560,450	1,289	0.05
Ireland	3,243,393	2,762	0.09	United Kingdom	10,136,000	5,597	0.06
Italy	10,684,759	8,524	0.08	**Total (MS 27[(b)])**	**227,517,438**	**121,953**	**0.05**

(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in pigs are presented in Table 11. Of the 121,953 samples analysed in this category, 295 (0.24%) were non-compliant (347 non-compliant results). The non-compliant samples were reported by 19 Member States.

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

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	61,947	50.8	36	0.06	40
A1	6,857	5.6	0	0	0
A2	3,252	2.7	2	0.06	2
A3	10,912	8.9	21	0.19	21
A4	4,989	4.1	4	0.08	8
A5	10,620	8.7	2	0.02	2
A6	31,625	25.9	7	0.02	7
B	79,848	65.5	259	0.32	307
B1	41,164	33.8	60	0.15	60
B2	30,721	25.2	13	0.04	15
B2a	7,008	5.7	4	0.06	4
B2b	6,681	5.5	3	0.04	3
B2c	1,800	1.5	0	0	0
B2d	6,064	5.0	1	0.02	2
B2e	4,397	3.6	6	0.14	6
B2f	6,484	5.3	0	0	0
B3	9,835	8.1	186	1.89	232
B3a	3,405	2.8	1	0.03	1
B3b	1,472	1.2	0	0	0
B3c	3,335	2.7	175	5.25	221
B3d	1,901	1.6	10	0.53	10
B3e	0	0	0	0	0
B3f	261	0.2	0	0	0
Total	**121,953**	**100**	**295**	**0.24**	**347**

(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.

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. Overall, the minimum requirements for the number of samples were fulfilled in 2016 (Table 12), and by the majority of Member States (Table 13). Greece and Portugal did not achieve the minimum sampling frequency for sheep and goats.

Table 12: Production of sheep and goats and number of targeted samples over 2007–2016

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	
2015 (EU 28)	31,554,480	21,420	0.06	
2016 (MS 27[(b)])	26,783,426	16,846	0.06	

(a): in relation to the production of the previous year.
(b): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[(a)] (animals)	Number of samples 2016	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2016	Animals tested (%)
Austria	144,019	377	0.26	Latvia	13,151	19	0.14
Belgium	129,220	271	0.21	Lithuania	7,890	18	0.23
Bulgaria	234,768	117	0.05	Luxemburg	2,402	10	0.42
Croatia	78,871	62	0.08	Malta	5,548	19	0.34
Cyprus	253,347	247	0.10	Netherlands	667,200	385	0.06
Czech Republic	14,844	61	0.41	Poland	39,218	96	0.24
Denmark	83,006	52	0.06	Portugal	1,001,445	296	0.03
Estonia	6,368	20	0.31	Romania	652,974	342	0.05
Finland	48,788	35	0.07	Slovakia	77,717	116	0.15
Germany	1,085,099	630	0.06	Slovenia	10,430	34	0.33
Greece	904,703	376	0.04	Spain	3,027,610	2,260	0.07
Hungary	31,079	46	0.15	Sweden	256,010	153	0.06
Ireland	2,824,199	1,950	0.07	United Kingdom	15,222,000	8,112	0.05
Italy	358,721	742	0.21	**Total (MS 27[(b)])**	**27,180,627**	**16,846**	**0.06**

(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in sheep and goats are presented in Table 14. Of the 16,846 samples analysed in this category, 82 (0.49%) were non-compliant (101 non-compliant results). The non-compliant samples were reported by 10 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.

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	4,145	24.6	9	0.22	11
A1	698	4.1	0	0	0
A2	215	1.3	2	0.93	2
A3	898	5.3	3	0.33	5
A4	285	1.7	3	1.05	3
A5	656	3.9	0	0	0
A6	1,464	8.7	1	0.07	1
B	13,032	77.4	73	0.56	90
B1	6,190	36.7	20	0.32	25
B2	4,814	28.6	25	0.52	27
B2a	2,419	14.4	20	0.83	22
B2b	711	4.2	0	0	0
B2c	811	4.8	0	0	0
B2d	355	2.1	0	0	0
B2e	392	2.3	5	1.28	5
B2f	344	2.0	0	0	0
B3	2,142	12.7	28	1.31	38
B3a	616	3.7	0	0	0
B3b	862	5.1	0	0	0
B3c	527	3.1	27	5.12	37
B3d	175	1.0	1	0.57	1
B3e	0	0	0	0	0
B3f	24	0.1	0	0	0
Total	**16,846**	**100**	**82**	**0.49**	**101**

(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.

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 2016 at EU level is presented in Table 15. The percentage of targeted samples taken in each Member State for the reported horse production is presented in Table 16.

Table 15: Production of horses and number of targeted samples over 2007–2016

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

(a): in relation to the production of the previous year.
(b): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[(a)] (animals)	Number of samples 2016	Animals tested (%)	Country	Production data[(a)] (animals)	Number of samples 2016	Animals tested (%)
Austria	783	72	9.20	Latvia	289	19	6.57
Belgium	8,337	448	5.37	Lithuania	1,412	18	1.27
Bulgaria	173	37	21.39	Luxemburg	0	0	NA
Croatia	489	32	6.54	Malta	17	14	82.35
Cyprus	0	0	NA	Netherlands	3,300	115	3.48
Czech Republic	274	61	22.26	Poland	30,136	341	1.13
Denmark	1,497	27	1.80	Portugal	3,508	55	1.57
Estonia	16	0	0	Romania	19,892	205	1.03
Finland	1,852	47	2.54	Slovakia	1	0	0
Germany	8,500	123	1.45	Slovenia	1,966	39	1.98
Greece	0	0	NA	Spain	48,115	285	0.59
Hungary	925	21	2.27	Sweden	3,050	231	7.57
Ireland	6,188	468	7.56	United Kingdom	4,515	102	2.26
Italy	29,324	560	1.91	**Total (MS 27[(b)])**	**174,559**	**3,320**	**1.90**

NA: not applicable.
(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in horses are presented in Table 17. Of the 3,320 samples analysed in this category, 28 samples (0.84%) were non-compliant (32 non-compliant results). The non-compliant samples were reported by 11 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.

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	811	24.4	0	0	0
A1	94	2.8	0	0	0
A2	56	1.7	0	0	0
A3	147	4.4	0	0	0
A4	87	2.6	0	0	0
A5	210	6.3	0	0	0
A6	272	8.2	0	0	0
B	2,573	77.5	28	1.09	32
B1	503	15.2	4	0.80	4
B2	1,331	40.1	8	0.60	9
B2a	165	5.0	2	1.21	2
B2b	80	2.4	0	0	0
B2c	116	3.5	0	0	0
B2d	165	5.0	0	0	0
B2e	672	20.2	5	0.74	6
B2f	190	5.7	1	0.53	1
B3	778	23.4	16	2.06	19
B3a	142	4.3	1	0.70	2
B3b	78	2.3	0	0	0
B3c	501	15.1	15	2.99	17
B3d	73	2.2	0	0	0
B3e	0	0	0	0	0
B3f	5	0.2	0	0	0
Total	**3,320**	**100**	**28**	**0.84**	**32**

(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.

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. Overall, the minimum requirement of one sample analysed per 200 t production was achieved in 2016 (Table 18).

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

Table 18: Production of poultry and number of targeted samples over 2007–2016

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

(a): in relation to the production of the previous year.
(b): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ 200 t	Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ 200 t
Austria	116,585	850	1.5	Latvia	29,000	205	1.4
Belgium	360,107	2,141	1.2	Lithuania	78,641	393	1.0
Bulgaria	89,040	440	1.0	Luxemburg	0	0	NA
Croatia	57,075	402	1.4	Malta	3,913	205	10.5
Cyprus	18,180	330	3.6	Netherlands	997,621	5,301	1.1
Czech Republic	149,661	803	1.1	Poland	1,653,290	8,318	1.0
Denmark	134,553	694	1.0	Portugal	317,978	949	0.6
Estonia	18,485	200	2.2	Romania	464,920	2,397	1.0
Finland	112,430	639	1.1	Slovakia	91,414	510	1.1
Germany	1,518,553	8,782	1.2	Slovenia	54,961	322	1.2
Greece	211,287	685	0.6	Spain	1,434,689	7,025	1.0
Hungary	598,019	3,118	1.0	Sweden	142,760	825	1.2
Ireland	147,084	1,411	1.9	United Kingdom	1,656,000	9,935	1.2
Italy	1,261,200	7,621	1.2	**Total (MS 27[(b)])**	**11,717,446**	**64,501**	**1.10**

NA: not applicable.
(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in poultry are presented in Table 20. Of the 64,501 samples analysed in this category, 48 (0.07%) were non-compliant (49 non-compliant results). The non-compliant samples were reported by 14 Member States.

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

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	34,700	53.8	0	0	0
A1	3,092	4.8	0	0	0
A2	994	1.5	0	0	0
A3	4,296	6.7	0	0	0
A4	3,036	4.7	0	0	0
A5	5,093	7.9	0	0	0
A6	19,351	30.0	0	0	0
B	34,787	53.9	48	0.14	49
B1	16,872	26.2	30	0.18	31
B2	13,478	20.9	15	0.11	15
B2a	2,282	3.5	0	0	0
B2b	8,223	12.7	10	0.12	10
B2c	1,563	2.4	1	0.06	1
B2d	177	0.3	1	0.56	1
B2e	891	1.4	2	0.22	2
B2f	605	0.9	1	0.17	1
B3	5,023	7.8	3	0.06	3
B3a	2,373	3.7	0	0	0
B3b	711	1.1	0	0	0
B3c	1,522	2.4	3	0.20	3
B3d	844	1.3	0	0	0
B3e	0	0	0	0	0
B3f	129	0.2	0	0	0
Total	**64,501**	**100**	**48**	**0.07**	**49**

(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.

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. Overall, the minimum requirements for the number of samples to be taken were fulfilled in 2016 (Table 21), and by the majority of Member States (Table 22). Greece, Hungary, Malta, Portugal and Spain did not analyse at least one sample/100 t of production.

Table 21: Production of aquaculture and number of targeted samples over 2007–2016

Year	Production (t)	Targeted samples	% Samples tested/100 t[(a)]	Minimum 96/23/EC
2007 (EU 27)	602,555	9,257	1.5	
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	1/100 t
2012 (EU 27)	631,117	8,264	1.3	
2013 (EU 28)	614,191	7,971	1.3	
2014 (EU 28)	608,658	7,236	1.2	
2015 (EU 28)	633,541	7,246	1.2	
2016 (MS 27[(b)])	603,868	6,735	1.1	

(a): in relation to the production of the previous year.
(b): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ 100 t	Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ 100 t
Austria	3,239	221	6.8	Latvia	273	9	3.3
Belgium	2,000	111	5.6	Lithuania	4,150	52	1.3
Bulgaria	6,540	80	1.2	Luxemburg	0	0	NA
Croatia	13,022	164	1.3	Malta	8,606	68	0.8
Cyprus	6,273	122	1.9	Netherlands	6,000	70	1.2
Czech Republic	20,135	228	1.1	Poland	36,400	550	1.5
Denmark	36,000	370	1.0	Portugal	9,955	69	0.7
Estonia	870	17	2.0	Romania	4,454	52	1.2
Finland	13,322	201	1.5	Slovakia	783	123	15.7
Germany	21,014	338	1.6	Slovenia	1,441	27	1.9
Greece	99,545	624	0.6	Spain	61,513	582	0.9
Hungary	4,625	40	0.9	Sweden	9,454	116	1.2
Ireland	10,176	126	1.2	United Kingdom	157,058	1,600	1.0
Italy	59,300	775	1.3	**Total (MS 27[(b)])**	**596,148**	**6,735**	**1.1**

NA: not applicable.
(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in aquaculture are presented in Table 23. Of the 6,735 samples analysed for aquaculture 37 samples (0.55%) were non-compliant (40 non-compliant results). The non-compliant samples were reported by 9 Member States.

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

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	2,114	31.4	2	0.09	2
A1	123	1.8	0	0	0
A2	2	0.1	0	0	0
A3	327	4.9	1	0.31	1
A4	50	0.7	0	0	0
A5	106	1.6	0	0	0
A6	1,646	24.4	1	0.06	1
B	4,968	73.8	35	0.70	38
B1	1,464	21.7	5	0.34	5
B2	948	14.1	3	0.32	3
B2a	562	8.3	3	0.53	3
B2b	132	2.0	0	0	0
B2c	324	4.8	0	0	0
B2d	3	0.1	0	0	0
B2e	4	3.3	0	0	0
B2f	150	2.2	0	0	0
B3	2,901	43.1	27	0.93	30
B3a	609	9.0	1	0.16	1
B3b	148	2.2	0	0	0
B3c	499	7.4	0	0	0
B3d	172	2.6	0	0	0
B3e	1,651	24.5	26	1.57	29
B3f	88	1.3	0	0	0
Total	**6,735**	**100**	**37**	**0.55**	**40**

(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.

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. Overall, the minimum requirements for the number of samples to be taken were fulfilled in 2016 (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 2007–2016

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	
2015 (EU 28)	150,637,679	26,705	2.7	
2016 (MS 27[(b)])	121,134,877	23,934	2.9	

(a): in relation to the production of the previous year.
(b): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ 15,000 t	Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ 15,000 t
Austria	150,915	348	34.6	Latvia	972,000	726	11.2
Belgium	3,464,609	769	3.3	Lithuania	1,483,490	359	3.6
Bulgaria	569,839	278	7.3	Luxemburg	287,000	300	15.7
Croatia	72,440	1,037	214.7	Malta	44,274	307	104.0
Cyprus	163,000	484	44.5	Netherlands	13,467,400	2,117	2.4
Czech Republic	2,973,000	334	1.7	Poland	12,859,447	2,626	3.1
Denmark	4,613,123	309	1.0	Portugal	2,000,286	619	4.6
Estonia	805,165	560	10.4	Romania	964,612	327	5.1
Finland	2,364,900	295	1.9	Slovakia	1,263,676	520	6.2
Germany	31,457,454	2,105	1.0	Slovenia	530,985	335	9.5
Greece	1,915,170	500	3.9	Spain	6,574,721	681	1.6
Hungary	687,687	249	5.4	Sweden	2,921,000	300	1.5
Ireland	6,361,528	1,272	3.0	United Kingdom	14,850,189	3,607	3.6
Italy	11,037,367	2,570	3.5	**Total (MS 27[(b)])**	**124,855,277**	**23,934**	**2.9**

(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 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 are presented in Table 26. Of the 23,934 milk samples analysed, 38 (0.16%) were non-compliant (38 non-compliant results). The non-compliant samples were reported by 12 Member States.

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

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	6,948	29.0	4	0.06	4
A1	2	0.03	0	0	0
A2	23	0.1	0	0	0
A3	47	0.2	0	0	0
A4	0	0	0	0	0
A5	161	0.7	0	0	0
A6	6,849	28.6	4	0.06	4
B	20,431	85.4	34	0.17	34
B1	11,929	49.8	7	0.06	7
B2	7,456	31.2	14	0.19	14
B2a	5,227	21.8	3	0.06	3
B2b	494	2.1	0	0	0
B2c	275	1.1	0	0	0
B2d	56	0.2	0	0	0
B2e	3,810	15.9	11	0.29	11
B2f	876	3.7	0	0	0
B3	4,153	17.4	13	0.31	13
B3a	1,308	5.5	1	0.08	1
B3b	601	2.5	0	0	0
B3c	676	2.8	2	0.30	2
B3d	1,664	7.0	10	0.60	10
B3e	0	0	0	0	0
B3f	73	0.3	0	0	0
Total	**23,934**	**100**	**38**	**0.16**	**38**

(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.

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. Overall, the minimum requirements for the number of samples to be taken were fulfilled in 2016 (Table 27). 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 2007–2016

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

(a): in relation to the production of the previous year.
(b): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ 15,000 t	Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ 15,000 t
Austria	109,719	222	2.0	Latvia	39,085	485	12.4
Belgium	140,325	576	4.1	Lithuania	42,965	200	4.7
Bulgaria	46,174	146	3.2	Luxemburg	1,300	200	153.8
Croatia	34,320	571	16.6	Malta	4,885	197	40.3
Cyprus	8,592	271	31.5	Netherlands	645,308	1,584	2.5
Czech Republic	136,026	215	1.6	Poland	495,425	716	1.4
Denmark	62,218	202	3.2	Portugal	105,303	233	2.2
Estonia	12,561	200	15.9	Romania	109,879	205	1.9
Finland	71,460	200	2.8	Slovakia	38,118	200	5.2
Germany	786,500	831	1.1	Slovenia	23,823	210	8.8
Greece	105,917	124	1.2	Spain	736,675	766	1.0
Hungary	50,240	206	4.1	Sweden	125,000	539	4.3
Ireland	41,562	324	7.8	United Kingdom	618,408	1,581	2.6
Italy	789,642	1,496	1.9	**Total (MS 27[(b)])**	**5,381,430**	**12,700**	**2.4**

(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in eggs are presented in Table 29. Of the 12,700 egg samples analysed, 44 (0.35%) were non-compliant (44 non-compliant results). The non-compliant samples were reported by 15 Member States.

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

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

Substance group[a]	Samples analysed		Non-compliant samples		Non-compliant results
	n[b]	%	n[c]	%	n[d]
A	3,563	28.1	0	0	0
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	3,571	28.1	0	0	0
B	10,133	79.8	44	0.43	44
B1	4,476	35.2	8	0.18	8
B2	4,343	34.2	34	0.78	34
B2a	209	1.6	0	0	0
B2b	3,933	31.0	32	0.81	32
B2c	169	1.3	0	0	0
B2d	5	0.04	0	0	0
B2e	5	0.04	0	0	0
B2f	165	1.3	2	1.21	2
B3	2,340	18.4	2	0.09	2
B3a	1,999	15.7	2	0.10	2
B3b	357	2.8	0	0	0
B3c	142	1.1	0	0	0
B3d	3	0.02	0	0	0
B3e	0	0	0	0	0
B3f	113	0.9	0	0	0
Total	**12,700**	**100**	**44**	**0.35**	**44**

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

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 2007–2016

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

(a): 2016 results data from France not available, see Section 2.2 for further details.

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 Portugal did not achieve the minimum sampling frequency requirement in 2016.

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

Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ required	Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ required
Austria	0	0	NA	Latvia	15	16	32.0
Belgium	4,360	121	1.2	Lithuania	62	13	6.3
Bulgaria	19	19	30.0	Luxemburg	8	10	37.5
Croatia	12	15	37.5	Malta	89	23	7.8
Cyprus	123	59	14.4	Netherlands	22	22	30.0
Czech Republic	830	34	1.2	Poland	4,369	129	1.2
Denmark	0	0	NA	Portugal	6,467	57	0.5
Estonia	0	0	NA	Romania	0	0	NA
Finland	0	0	NA	Slovakia	11	50	136.4
Germany	529	37	2.1	Slovenia	15	21	42.0
Greece	2,025	64	0.9	Spain	54,363	472	1.7
Hungary	11,460	156	1.2	Sweden	0	0	NA
Ireland	0	0	NA	United Kingdom	0	0	NA
Italy	33,831	454	2.2	**Total (MS 27[(b)])**	**118,610**	**1,772**	**NA**

NA: not applicable.
(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2013, 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 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 1,772 samples analysed for rabbits, 5 (0.28%) were non-compliant (5 non-compliant results). The non-compliant samples were reported by four Member States.

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

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	510	28.8	0	0	0
A1	28	1.6	0	0	0
A2	24	1.4	0	0	0
A3	37	2.1	0	0	0
A4	30	1.7	0	0	0
A5	58	3.3	0	0	0
A6	325	18.3	0	0	0
B	1,286	72.6	5	0.39	5
B1	641	36.2	2	0.31	2
B2	489	27.6	1	0.20	1
B2a	108	6.1	0	0	0
B2b	169	9.5	1	0.59	1
B2c	65	3.7	0	0	0
B2d	2	0.1	0	0	0
B2e	118	6.7	0	0	0
B2f	29	1.6	0	0	0
B3	187	10.6	2	1.07	2
B3a	75	4.2	0	0	0
B3b	27	1.5	0	0	0
B3c	87	4.9	2	2.30	2
B3d	10	0.6	0	0	0
B3e	0	0	0	0	0
B3f	4	0.2	0	0	0
Total	**1,772**	**100**	**5**	**0.28**	**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.

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, 1,607 targeted samples were reported in 2016 (Tables 33 and 34).

Table 33: Production of farmed game and number of targeted samples over 2007–2016

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

(a): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[(a)] (t)	Number of samples 2016	Country	Production data[(a)] (t)	Number of samples 2016
Austria	293	145	Latvia	43	20
Belgium	196	152	Lithuania	9	12
Bulgaria	0	0	Luxemburg	0	0
Croatia	10	28	Malta	0	0
Cyprus	0	14	Netherlands	7	10
Czech Republic	172	110	Poland	23	38
Denmark	27	27	Portugal	0	0
Estonia	0	0	Romania	9	54
Finland	1,900	107	Slovakia	0	101
Germany	2,141	99	Slovenia	1	3
Greece	81	43	Spain	23	21
Hungary	5	53	Sweden	1,615	102
Ireland	49	137	United Kingdom	4,054	152
Italy	2,659	179	**Total (MS 27[(b)])**	**13,317**	**1,607**

(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2013, 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 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 1,607 samples analysed for farmed game, 17 (1.06%) were non-compliant (19 non-compliant results). The non-compliant samples were reported by five Member States.

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

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	492	30.6	1	0.20	3
A1	48	3.0	0	0	0
A2	16	1.0	0	0	0
A3	43	2.7	0	0	0
A4	40	2.5	0	0	0
A5	98	6.1	0	0	0
A6	265	16.5	1	0.38	3
B	1,151	71.6	16	1.39	16
B1	332	20.7	0	0	0
B2	490	30.5	1	0.20	1
B2a	225	14.0	0	0	0
B2b	131	8.2	0	0	0
B2c	73	4.5	0	0	0
B2d	14	0.9	0	0	0
B2e	59	3.7	1	1.69	1
B2f	11	0.7	0	0	0
B3	352	21.9	15	4.26	15
B3a	134	8.3	0	0	0
B3b	53	3.3	0	0	0
B3c	197	12.3	15	7.61	15
B3d	13	0.8	0	0	0
B3e	0	0	0	0	0
B3f	7	0.4	0	0	0
Total	**1,607**	**100**	**17**	**1.06**	**19**

(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.

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, 2,468 targeted samples were reported in 2016 (Tables 36 and 37).

Table 36: Production of wild game and number of targeted samples over 2007–2016

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

(a): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[a] (t)	Number of samples 2016	Country	Production data[a] (t)	Number of samples 2016
Austria	9,030	196	Latvia	30	99
Belgium	2,478	242	Lithuania	58	36
Bulgaria	14	188	Luxemburg	360	100
Croatia	10	16	Malta	0	0
Cyprus	0	0	Netherlands	582	89
Czech Republic	10,780	150	Poland	26,352	211
Denmark	422	15	Portugal	2,166	40
Estonia	704	98	Romania	114	61
Finland	59	0	Slovakia	6,930	110
Germany	75,858	109	Slovenia	2,709	100
Greece	5	25	Spain	9,403	112
Hungary	20,305	120	Sweden	0	78
Ireland	423	95	United Kingdom	550	100
Italy	452	78	**Total (MS 27[b])**	**169,794**	**2,468**

(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2012, 2013, 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 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 2,468 samples analysed for wild game, 165 (6.69%) were non-compliant (167 non-compliant results). The non-compliant samples were reported by 17 Member States.

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

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	45	1.8	0	0	0
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	45	1.8	0	0	0
B	2,424	98.2	165	6.81	167
B1	5	11.1	0	0	0
B2	146	5.9	0	0	0
B2a	130	5.3	0	0	0
B2b	0	0	0	0	0
B2c	16	0.6	0	0	0
B2d	0	0	0	0	0
B2e	0	0	0	0	0
B2f	0	0	0	0	0
B3	2,289	92.7	165	7.21	167
B3a	190	7.7	11	5.79	11
B3b	23	0.9	0	0	0
B3c	2,068	83.8	155	7.50	156
B3d	0	0	0	0	0
B3e	0	0	0	0	0
B3f	141	5.7	0	0	0
Total	**2,468**	**100**	**165**	**6.69**	**167**

(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.

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 2016, 3,545 targeted samples were collected for honey (Table 39). Production volume and number of targeted samples broken down by Member State are presented in Table 40. Bulgaria, Denmark, Latvia and Portugal did not achieve the minimum sampling frequency requirement in 2016.

Table 39: Production of honey and number of targeted samples over 2007–2016

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

(a): 2016 results data from France not available, see Section 2.2 for further details.

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

Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ required	Country	Production data[(a)] (t)	Number of samples 2016	Samples tested/ required
Austria	4,300	183	1.8	Latvia	1,704	53	0.9
Belgium	1,500	184	3.7	Lithuania	3,090	103	1.0
Bulgaria	4,362	90	0.9	Luxemburg	120	23	5.8
Croatia	2,633	210	2.4	Malta	15	4	8.0
Cyprus	472	75	4.8	Netherlands	10	14	42.0
Czech Republic	7,650	148	1.3	Poland	13,170	378	2.8
Denmark	1,900	60	0.9	Portugal	10,452	34	0.3
Estonia	1,155	39	1.0	Romania	11,781	133	1.0
Finland	1,700	58	1.0	Slovakia	4,108	174	1.7
Germany	19,529	188	1.2	Slovenia	471	86	5.5
Greece	15,500	175	1.2	Spain	33,475	217	1.1
Hungary	25,461	185	1.1	Sweden	2,500	112	1.3
Ireland	110	110	30.0	United Kingdom	3,312	185	1.8
Italy	13,000	324	2.4	**Total (MS 27[(b)])**	**183,480**	**3,545**	**NA**

NA: not applicable.
(a): The production data was used for the preparation of the 2016 Residue Control Plan and may pertain to the years 2014 or 2015.
(b): 2016 results data from France not available, see Section 2.2 for further details.

The distribution of samples analysed, non-compliant samples and non-compliant results in honey are presented in Table 41. Of the 3,545 samples analysed for honey, 41 (1.16%) were non-compliant (42 non-compliant results). The non-compliant samples were reported by nine Member States.

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

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	643	18.1	7	1.09	7
A1	0	0	0	0	0
A2	0	0	0	0	0
A3	1	0.03	0	0	0
A4	0	0	0	0	0
A5	0	0	0	0	0
A6	642	18.1	7	1.09	7
B	3,162	89.2	34	1.08	35
B1	1,492	42.1	12	0.80	13
B2	808	22.8	0	0	0
B2a	87	2.5	0	0	0
B2b	39	1.1	0	0	0
B2c	708	20.0	0	0	0
B2d	0	0	0	0	0
B2e	0	0	0	0	0
B2f	405	11.4	0	0	0
B3	1,376	38.8	22	1.60	22
B3a	622	17.5	0	0	0
B3b	663	18.7	1	0.15	1
B3c	413	11.7	21	5.08	21
B3d	10	0.3	0	0	0
B3e	0	0	0	0	0
B3f	259	7.3	0	0	0
Total	**3,545**	**100**	**41**	**1.16**	**42**

(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.

3.14. Suspect, import and other samples

In addition to the targeted samples collected in conformity with the specification of the NRCP for 2016, 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.

In 2016, 21,350 suspect samples were reported of which 512 (2.40%) were non-compliant (595 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 = 4,075). 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, 316,152 samples were collected in the framework of other monitoring programmes developed under the national legislation. An overview on the number of 'other' samples analysed for the different animal species/product categories and the frequency of non-compliant samples is presented in Table 42. Further details on the substances identified and Member States which reported non-compliant results are given in Appendix D.

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

Group	Sampling type					
	Suspect		Import		Other sampling	
	n	nc	n	nc	n	nc
Bovines	16,570	208	377	1	25,232	140
Pigs	1,035	78	134	0	280,451	695
Sheep/goats	1,603	40	177	0	3789	16
Horses	52	1	103	0	248	71
Poultry	255	14	628	0	1,212	11
Aquaculture	270	60	2,084	12	162	8
Milk	1,339	46	23	0	3,595	17
Eggs	36	1	26	0	184	0
Rabbit	21	2	59	1	217	1
Farmed game	0	0	42	0	0	0
Wild game	5	1	30	1	104	1
Honey	164	61	392	1	958	4
Total	**21,350**	**512**	**4,075**	**16**	**316,152**	**964**
Percentage non-compliant samples		**2.40**		**0.39**		**0.30**

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

4. Conclusions

- In 2016, 27 out of the 28 European Union (EU) Member States reported in the framework of the residue monitoring, the results for 710,839 samples. A total of 369,262 targeted samples and 21,350 suspect samples were reported under Council Directive 96/23/EC. Additionally, 316,152 samples collected in the framework of other programmes developed under the national legislation and 4,075samples checked at import, were reported.
- The majority of Member States fulfilled the requirements for sampling frequency laid down in Council Directive 96/23/EC and in Commission Decision 97/747/EC.
- Overall, there were 1,131 or 0.31% of non-compliant samples out of the 369,262 targeted samples in 2016.
- No non-compliant samples were reported for stilbenes and derivatives (A1).
- For antithyroid agents (A2), there were 0.45% non-compliant samples, mainly for thiouracil and possibly due to feeding diets rich in cruciferous plants.
- In the group of steroids (A3), 0.09% of samples in total were found to be non-compliant (all for anabolic steroids). These non-compliant samples were reported for bovines (n = 9; 0.04%), pigs (n = 21; 0.19%), sheep and goats (n = 3; 0.33%), and aquaculture (n = 1; 0.31%). For corticosteroids, non-compliant results for authorised substances were reported under 'other pharmacologically active substances' (B2f).
- In the group of resorcylic acid lactones (A4), 0.14% of samples were non-compliant for zearalanone and derivatives; the non-compliant samples were found in bovines (0.20%), pigs (0.08%) and sheep and goats (1.05%).
- For beta-agonists (A5), there were 0.04% non-compliant samples in total, reported for bovines (0.06%) and pigs (0.02%).
- Prohibited substances (A6) were found in 0.03% of samples. Substances identified were chloramphenicol (n = 12), nitroimidazoles (n = 4) and nitrofurans (n = 10).
- For antibacterials (B1), 0.17% of all samples analysed under the Directive 96/23/EC monitoring were non-compliant. Horses and honey had highest frequency of non-compliant samples for antibacterials (both 0.80%).
- In group B2 (other veterinary drugs), the highest proportion of non-compliant samples was found for NSAIDs (B2e) (0.25%). The non–compliant samples were reported for bovines (0.16%), pigs (0.14%), sheep and goats (1.28%), horses (0.74%), poultry (0.22%), milk (0.29%) and farmed game (1.69%).
- Non-compliant samples for anthelmintics (B2a) were reported in bovines (0.07%), pigs (0.06%), sheep and goats (0.83%), horses (1.21%), aquaculture (0.53%) and milk (0.06%).
- For anticoccidials (B2b), non-compliant samples were reported in pigs (0.04%), poultry (0.12%), eggs (0.81%) and rabbit (0.59%).
- 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.
- Non-compliant samples were reported for carbamates and pyrethroids (B2c), for bovines (0.10%) and poultry (0.06%).
- Non-compliant samples were reported for sedatives (B2d), in bovines (0.06%), pigs (0.02%) and poultry (0.56%).
- Non-compliant samples were reported for 'other pharmacologically active substances' (B2f), bovines (0.34%), horses (0.53%), poultry (0.17%) and eggs (1.21%).

- In the group B3 (other substances and environmental contaminants), the chemical elements (B3c) had the highest overall percentage of non-compliant samples (5.02%), with cadmium, lead, mercury and copper being most frequently identified.
- Non-compliant samples were reported for organochlorine compounds (B3a) and organophosphorus compounds (B3b); 0.15% and 0.02%, respectively.
- For mycotoxins (B3d), there were non-compliant samples reported for bovines (n = 1; 0.09%), pigs (n = 10; 0.53%), sheep and goats (n = 1; 0.57%) and milk (n = 10; 0.60%); with those identified being zearalenone and derivatives, ochratoxin A, aflatoxin B_1 and aflatoxin M_1.
- The prevalence of dyes (B3e) in aquaculture samples (1.57%) was within the range noted for the previous 9 years (1.14%–2.2%). The substances found were malachite green, leuco-malachite green, crystal violet and leuco-crystal violet.
- For 'other substances' (B3f), no non-compliant samples reported.
- In 2016, the overall frequency of non-compliant samples (0.31%) was comparable to the previous 9 years (0.25%–0.37%).
- In 2016, high frequencies of non-compliant samples, similar to those of 2014 and 2015, were reported for chemical elements (B3c; mainly metals).
- Over the 10 year period, the highest and lowest frequencies of non-compliant samples for NSAIDs (B2e) and antibacterials (B1), respectively, were reported in 2016.
- Decreases in the percentage of non-compliant samples were noted for antithyroid agents (A2), resorcylic acid lactones (A4) and mycotoxins (B3d), compared to more recent years.
- For the other substance groups, there were no notable variations over the 10 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, 2016 and 2017) still remain valid. Such an approach would help to overcome the limitations borne from using aggregated data.

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Abbreviations

Member States

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

Other abbreviations

AMOZ	5-methylmorpholino-3-amino-2-oxazolidone
AOZ	3-amino-2-oxazolidone
DG 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**	2-Mercaptoimidazole	PT	50	2	4.0
		Thiouracil	AT	89	2	2.3
			HR	27	2	7.4
			IE	235	6	2.6
			LT	27	2	7.4
			NL	382	19	5.0
			RO	3	3	100.0
		Sub-total for A2	**7**		**36**	
	A3	Boldenone-Alpha	NL	1,476	3	0.2
		Epinandrolone (19-Norepitestosterone)	CZ	71	2	2.8
		Nandrolone	PL	128	1	0.8
		Testosterone-17-Alpha	AT	41	1	2.4
		Testosterone-17-Beta	AT	41	1	2.4
			CZ	14	1	7.1
			PL	172	1	0.6
		Sub-total for A3	**4**		**10**	
	A4	Alpha-Zeralanol (Zeranol)	AT	41	1	2.4
			UK	705	14	2.0
		Beta Zearalanol (Taleranol)	AT	41	1	2.4
			UK	359	2	0.6
		Sub-total for A4	**2**		**18**	
	A5	Clenbuterol	IE	598	1	0.2
			IT	1,636	1	0.6
			PT	234	8	3.4
		Salbutamol (albuterol)	NL	756	1	0.1
		Sub-total for A5	**4**		**11**	
	A6	Chloramphenicol	PL	443	1	0.2
		SEM (semicarbazide)	IE	344	1	0.3
			NL	245	1	0.4
		Sub-total for A6	**3**		**3**	
	B1	Amoxycillin	DE	1,007	1	0.1
		Chlortetracyclin	DE	2,771	1	0.4
			UK	86	1	1.2
		Ciprofloxacin	HR	142	1	0.7
		Dihydrostreptomycin	ES	357	1	0.3
		Dihydrostreptomycin	PL	815	3	0.4

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines (continued)	**B1 (continued)**	Dihydrostreptomycin	UK	88	1	1.1
		Doxycycline	ES	832	1	0.1
		Enrofloxacin	HR	142	2	1.4
		Florfenicol	UK	90	2	2.2
		Marbofloxacin	CZ	180	1	0.6
			DE	2,774	1	0.4
			IE	2,106	1	0.5
		Oxytetracycline	DE	2,775	1	0.4
			ES	832	2	0.2
			IT	663	1	0.2
			LT	109	2	1.8
			PL	815	1	0.1
			PT	156	1	0.6
		Penicillin	NL	1,741	1	0.6
		Sulfadiazine	CZ	180	1	0.6
			DE	2,777	1	0.4
			IE	2,016	1	0.5
			UK	1,195	1	0.8
		Sulfadimethoxine	IT	1,807	1	0.6
		Sulfamethazine	IT	1,807	1	0.6
		Sulfonamides	DE	666	1	0.2
		Tetracycline	ES	776	1	0.1
			NL	1,741	1	0.6
		Tilmicosin	UK	86	1	1.2
		Sub-total for B1	**11**		**36**	
	B2a	2-amino-5-benzoyl-Benzimidazole	DE	196	1	0.5
		2-Aminoflubendazole	DE	218	1	0.5
		Albendazol	DE	220	1	0.5
		Albendazolsulfon	DE	196	1	0.5
		Flubendazole + (2-amino-1H-benzimidazol-5-yl) (4-fluorphenyl)-methanon	DE	200	1	0.5
		Ivermectin	UK	420	1	0.2
		Levamisole	DE	220	1	0.5
		Mebendazole	DE	220	1	0.5
		Sub-total for B2a	**2**		**8**	
	B2c	Flumethrin	BE	182	1	0.6
		Sub-total for B2c	**1**		**1**	
	B2d	Xylazine	CZ	35	1	2.9
		Sub-total for B2d	**1**		**1**	
	B2e	Antipyrin-4-Methylamino	DE	292	1	0.3
		Flunixin	ES	4	1	25.0

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines (continued)	**B2e (continued)**	Meloxicam	DE	406	4	1.0
			UK	613	1	0.2
		Sub-total for B2e	**3**		**7**	
	B2f	Cortisone	UK	331	1	0.3
		Dexamethasone	BE	2,989	4	0.1
			BG	7	1	14.3
			DE	1,320	5	0.4
			ES	681	4	0.6
			IT	2,756	15	0.5
			PL	79	3	3.8
			PT	9	1	11.1
		Prednisone	IT	1,411	1	0.7
		Sub-total for B2f	**8**		**35**	
	B3a	Dioxins	PT	10	1	10.0
		PCB sum	CZ	120	1	0.8
			DE	217	1	0.5
		Sub-total for B3a	**3**		**3**	
	B3c	Cadmium Cd	CZ	49	4	8.2
			DE	47	5	10.6
			HR	35	4	11.4
			NL	146	1	0.7
			SI	8	2	25.0
			UK	67	4	6.0
		Copper Cu	DE	141	137	97.2
			DK	36	9	25.0
		Lead Pb	DE	83	1	1.2
			UK	67	2	3.0
		Mercury Hg	CZ	49	2	4.1
			DE	244	15	6.2
			PL	205	1	0.5
		Sub-total for B3c	**8**		**187**	
	B3d	Zearalenol-alpha	ES	1	1	100.0
		Zearalenol-beta	ES	1	1	100.0
		Zearalenone (Mycotoxin F)	ES	1	1	100.0
		Sub-total for B3d	**1**		**3**	
		Total in Bovines	**17**		**359**	
Pigs	**A2**	Thiouracil	LT	15	1	6.7
			NL	155	1	0.7
		Sub-total for A2	**2**		**2**	
	A3	Boldenone	PL	199	3	1.5
		Boldenone beta	AT	63	1	1.6

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Pigs (continued)	**A3 (continued)**	Nandrolone	CZ	68	1	1.5
			NL	651	8	1.2
			PL	759	8	1.1
		Sub-total for A3	**4**		**21**	
	A4	Alpha-Zeralanol (Zeranol)	RO	2	2	100.0
		Beta Zearalanol (Taleranol)	RO	2	2	100.0
		Zearalanone	DK	237	2	0.8
			RO	2	2	100.0
		Sub-total for A4	**2**		**8**	
	A5	Clenbuterol	PT	181	2	1.1
		Sub-total for A5	**1**		**2**	
	A6	Chloramphenicol	DE	2,882	2	0.7
			IT	840	1	0.1
			LV	27	1	3.7
			PL	780	2	0.3
		SEM (semicarbazide)	UK	324	1	0.3
		Sub-total for A6	**5**		**7**	
	B1	Benzylpenicillin (Penicillin G)	BE	1,353	1	0.7
		Chlortetracyclin	RO	1	1	100.0
		Dihydrostreptomycin	PL	896	1	0.1
		Doxycycline	CY	197	1	0.5
			DE	8,904	2	0.2
			ES	4,252	8	0.2
			HU	38	1	2.6
			PL	896	1	0.1
			PT	433	3	0.7
		Enrofloxacin	DE	8,935	1	0.1
			ES	4,099	2	0.5
		Epi-Chlortetracycline	RO	1	1	100.0
		Florfenicol	BE	1,353	1	0.7
		Florfenicol amine	BE	1,353	1	0.7
		Lincomycin	ES	3,126	3	0.1
		Oxytetracycline	DK	1,273	1	0.8
			NL	2,569	1	0.4
			PL	896	2	0.2
			PT	25	2	8.0
			SE	1	1	100.0
		Penicillin	NL	2,569	3	0.1
		Sulfadiazine	AT	932	1	0.1
			BE	1,353	1	0.7
			ES	4,708	1	0.2

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Pigs (continued)	**B1 (continued)**	Sulfadiazine	UK	1,359	3	0.2
		Sulfadimethoxine	IT	1,241	9	0.7
			UK	1,359	1	0.7
		Sulfamethazine	CY	197	4	2.0
			ES	4,701	1	0.2
		Trimethoprim	AT	932	1	0.1
		Sub-total for B1	**14**		**60**	
	B2a	Closantel	IE	91	1	1.1
		Levamisole	NL	465	1	0.2
		Thiabendazole	DE	461	2	0.4
		Sub-total for B2a	**3**		**4**	
	B2b	Maduramicin	CZ	30	1	3.3
		Toltrazurilsulfon	ES	748	2	0.3
		Sub-total for B2b	**2**		**3**	
	B2d	Azaperol	DE	1,566	1	0.6
		Azaperone	DE	1,602	1	0.6
		Sub-total for B2d	**1**		**2**	
	B2e	Antipyrin-4-Methylamino	BE	232	1	0.4
		Diclofen (Diclofenac)	DE	505	1	0.2
			PL	42	1	2.4
			PT	40	2	5.0
		Meloxicam	DE	25	1	4.0
		Sub-total for B2e	**4**		**6**	
	B3a	PCB sum	CZ	110	1	0.9
		Sub-total for B3a	**1**		**1**	
	B3c	Cadmium Cd	DE	93	3	3.2
			ES	530	3	0.6
		Copper Cu	DE	128	102	79.7
		Lead Pb	DE	750	1	0.1
		Mercury Hg	CZ	50	2	4.0
			DE	1,057	109	10.3
			PL	349	1	0.3
		Sub-total for B3c	**4**		**221**	
	B3d	Aflatoxin B1	IT	21	1	4.8
		Ochratoxin A	AT	32	1	3.1
			GR	44	8	18.2
		Sub-total for B3d	**3**		**10**	
		Total in Pigs	**19**		**347**	
Sheep/Goats	**A2**	Thiouracil	IE	18	2	11.1
		Sub-total for A2	**1**		**2**	
	A3	Boldenone-Alpha	AT	25	1	4.0

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Sheep/Goats (continued)	**A3 (continued)**	Boldenone beta	AT	25	1	4.0
		Epinandrolone (19-Norepitestosterone)	AT	25	1	4.0
			NL	12	2	16.7
		Sub-total for A3	**2**		**5**	
	A4	Alpha-Zeralanol (Zeranol)	UK	112	3	2.7
		Sub-total for A4	**1**		**3**	
	A6	SEM (semicarbazide)	NL	15	1	6.7
		Sub-total for A6	**1**		**1**	
	B1	Chlortetracyclin	CY	114	2	1.8
			ES	321	1	0.3
		Dihydrostreptomycin	UK	2,609	1	0.4
		Oxytetracycline	CY	114	1	0.9
			IE	830	1	0.1
			PT	133	2	1.5
		Spiramycin	PT	133	1	0.8
		Sulfadiazine	ES	687	6	0.9
			PT	133	8	6.0
		Sulfamethazine	CY	114	2	1.8
		Sub-total for B1	**5**		**25**	
	B2a	Albendazol	DE	66	1	1.5
		Closantel	IE	295	8	2.7
			UK	981	6	0.6
		Fenbendazole	IE	295	1	0.3
		Flubendazole	DE	66	1	1.5
		Ivermectin	DE	61	1	1.6
			UK	562	1	0.2
		Levamisole	IE	295	1	0.3
		Rafoxanide	IE	295	2	0.7
		Sub-total for B2a	**3**		**22**	
	B2e	Diclofen (Diclofenac)	DE	81	5	6.2
		Sub-total for B2e	**1**		**5**	
	B3c	Cadmium Cd	DE	16	2	12.5
			GR	63	2	3.2
			PL	26	3	11.5
			PT	30	1	3.3
			UK	52	6	11.5
		Copper Cu	DE	15	12	80.0
		Lead Pb	UK	52	1	1.9
		Mercury Hg	DE	26	10	38.5
		Sub-total for B3c	**5**		**37**	
	B3d	Aflatoxin M1	PT	3	1	33.3

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
Sheep/Goats (continued)	**B3d (continued)**	**Sub-total for B3d**	**1**		**1**	
		Total in Sheep/Goats	**10**		**101**	
Horses	**B1**	Marbofloxacin	IE	117	3	2.6
		Sulfamethazine	ES	16	1	6.3
		Sub-total for B1	**2**		**4**	
	B2a	Closantel	IE	30	1	3.3
		Oxyclozanide	IE	30	1	3.3
		Sub-total for B2a	**1**		**2**	
	B2e	Diclofen (Diclofenac)	ES	17	1	5.9
		Oxyphenbutazone Anhydrate	CZ	19	1	5.3
		Phenylbutazone	CZ	19	1	5.3
			DE	42	1	2.4
			SE	1	1	100.0
			UK	36	1	2.8
		Sub-total for B2e	**5**		**6**	
	B2f	Prednisolone	IT	20	1	5.0
		Sub-total for B2f	**1**		**1**	
	B3a	WHO-PCDD/F-PCB-TEQ	DK	4	1	25.0
		WHO-PCDD/F-TEQ	DK	4	1	25.0
		Sub-total for B3a	**1**		**2**	
	B3c	Cadmium Cd	BG	4[b]	4[b]	100.0
			CZ	15	1	6.7
			DE	2	2	100.0
			IT	153	1	0.7
			PL	136	2	1.5
			SI	9	7	77.8
			UK	1	1	100.0
		Mercury Hg	DE	4	2	50.0
		Sub-total for B3c	**7**		**17**	
		Total in Horses	**11**		**32**	
Poultry	**B1**	Chlortetracyclin	BG	123	3	2.4
		Doxycycline	ES	805	1	0.1
			NL	1,410	4	0.3
			PL	1,050	11	1.1
			RO	1	1	100.0
		Enrofloxacin	IT	751	1	0.1
			NL	1,410	1	0.7
			PL	1,050	2	0.2
		Flumequine	NL	1,410	1	0.7
		Oxytetracycline	IT	268	2	0.8
		Sulfadiazine	ES	12	4	33.3

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Poultry (continued)	**B1 (continued)**	**Sub-total for B1**	**6**		**31**	
		Lasalocid	HR	35	1	2.9
		Maduramicin ammonium	HR	35	1	2.9
		Monensin	PT	89	1	1.1
		Robenidine	MT	1	1	100.0
		Salinomycin	GR	47	1	2.1
			MT	1	1	100.0
			PL	852	2	0.2
			UK	678	2	0.3
		Sub-total for B2b	**6**		**10**	
		Flumethrin	IE	25	1	4.0
		Sub-total for B2c	**1**		**1**	
	B2d	Ketamine	DE	4	1	25.0
		Sub-total for B2d	**1**		**1**	
	B2e	Antipyrin-4-Methylamino	AT	16	1	6.3
		Diclofen (Diclofenac)	PT	47	1	2.1
		Sub-total for B2e	**2**		**2**	
	B2f	Nicotine	DE	83	1	1.2
		Sub-total for B2f	**1**		**1**	
	B3c	Copper Cu	DE	22	3	13.6
		Sub-total for B3c	**1**		**3**	
		Total in Poultry	**14**		**49**	
Aquaculture	**A3**	Testosterone-17-Beta	BG	6	1	16.7
		Sub-total for A3	**1**		**1**	
	A6	Metronidazole	CZ	10	1	10.0
		Sub-total for A6	**1**		**1**	
	B1	Inhibitors	DE	24	5	20.8
		Sub-total for B1	**1**		**5**	
	B2a	Emamectin B1a	UK	91	3	3.3
		Sub-total for B2a	**1**		**3**	
	B3a	Dieldrin	UK	2	1	50.0
		Sub-total for B3a	**1**		**1**	
	B3e	Cristal Violet	DE	335	1	0.3
		Cristal Violet-Leuco	CZ	85	2	2.4
		Malachite Green	AT	110	1	0.9
		Malachite Green-Leuco	AT	110	1	0.9
			CZ	85	8	9.4
			DE	335	2	0.6
			IT	152	1	0.7
			NL	20	1	5.0
			PL	193	11	5.7

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Aquaculture (continued)	**B3e (continued)**	Malachite Green-Leuco	SK	84	1	1.2
		Sub-total for B3e	**7**		**29**	
		Total in Aquaculture	**9**		**40**	
Milk	**A6**	Chloramphenicol	PL	207	3	1.5
		Hydroxymetronidazol (MNZOH)	DE	494	1	0.2
		Sub-total for A6	**2**		**4**	
	B1	Amoxycillin	UK	481	1	0.2
		Benzylpenicillin (Penicillin G)	DE	509	1	0.2
		Danofloxacin	ES	281	1	0.4
		Gentamicin	PL	140	1	0.7
		Tetracycline	PL	140	2	1.4
		Tilmicosin	IT	96	1	1.0
		Sub-total for B1	**5**		**7**	
	B2a	Ivermectin	IE	338	2	0.6
		Triclabendazole	UK	382	1	0.3
		Sub-total for B2a	**2**		**3**	
	B2e	Diclofen (Diclofenac)	DE	1,392	3	0.2
			GR	40	1	2.5
			LU	175	4	2.3
			SI	182	2	1.1
		Salicylic acid	NL	116	1	0.9
		Sub-total for B2e	**5**		**11**	
	B3a	2,4-Dichlorophenoxybutyric acid	IE	66	1	1.5
		Sub-total for B3a	**1**		**1**	
	B3c	Lead Pb	ES	12	1	8.3
			PL	120	1	0.8
		Sub-total for B3c	**2**		**2**	
	B3d	Aflatoxin M1	ES	66	1	1.5
			GR	101	3	3.0
			HU	9	1	11.1
			IT	423	4	1.0
			PT	2	1	50.0
		Sub-total for B3d	**5**		**10**	
		Total in Milk	**12**		**38**	
Eggs	**B1**	Doxycycline	BE	139	1	0.7
			PT	90	1	1.1
		Enrofloxacin	HR	159	3	1.9
		Flumequine	HR	159	1	0.6
		Sulfadiazine	CY	85	1	1.2

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Eggs (continued)	**B1 (continued)**	Sulfadiazine	ES	162	1	0.6
		Sub-total for B1	**5**		**8**	
	B2b	Diclazuril	HR	190	1	0.5
			PL	140	1	0.7
			PT	77	1	1.3
			SI	188	1	0.5
		Dinitrocarbanilide	PT	77	1	1.3
		Lasalocid	CY	42	1	2.4
			CZ	28	1	3.6
			SI	188	1	0.5
			UK	579	3	0.5
		Monensin	CZ	28	1	3.6
		Narasin	MT	1	1	100.0
			PT	6	4	66.7
			SI	188	3	1.6
		Robenidine	SI	188	1	0.5
		Salinomycin	BE	91	1	1.1
			HR	190	3	1.6
			NL	470	1	0.2
			PL	140	1	0.7
			SI	188	1	0.5
			SK	30	1	3.3
		Toltrazuril	HR	190	1	0.5
		Toltrazurilsulfon	AT	208	1	0.5
			NL	470	1	0.2
		Sub-total for B2b	**12**		**32**	
	B2f	Cyromazine	IT	19	1	5.3
		Nicotine	DE	139	1	0.7
		Sub-total for B2f	**2**		**2**	
	B3a	WHO-PCDD/F-PCB-TEQ	DE	2	1	50.0
		WHO-PCDD/F-TEQ	DE	9	1	11.1
		Sub-total for B3a	**1**		**2**	
		Total in Eggs	**15**		**44**	
Rabbit	**B1**	Enrofloxacin	LT	1	1	100.0
		Epi-Oxytetracycline	ES	20	1	5.0
		Sub-total for B1	**2**		**2**	
	B2b	Salinomycin	PT	7	1	14.3
		Sub-total for B2b	**1**		**1**	
	B3c	Copper Cu	DE	2	2	100.0
		Sub-total for B3c	**1**		**2**	
		Total in Rabbit	**4**		**5**	

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Farmed Game	**A6**	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	BE	61	2	3.3
		Metronidazole	BE	53	1	1.9
		Sub-total for A6	**1**		**3**	
	B2e	Diclofen (Diclofenac)	CZ	4	1	25.0
		Sub-total for B2e	**1**		**1**	
	B3c	Cadmium Cd	FI	27	10	37.0
		Copper Cu	DE	1	1	100.0
		Lead Pb	HR	3	1	33.3
		Mercury Hg	DE	23	3	13.0
		Sub-total for B3c	**3**		**15**	
		Total in Farmed Game	**5**		**19**	
Wild game	**B3a**	DDT: Sum DDT, pp' - DDT, op' - DDE, pp' - DDD, pp'	DE	39	4	10.3
			LT	4	1	25.0
			PL	50	1	2.0
		HCH-Beta	DE	70	1	1.4
		PCB 138	DE	25	1	4.0
		PCB sum	CZ	20	3	15.0
		Sub-total for B3a	**4**		**11**	
	B3c	Cadmium Cd	ES	112	4	3.6
			GR	25	1	4.0
			LU	100	2	2.0
			LV	99	35	35.4
			NL	89	1	1.1
			RO	1	1	100.0
		Copper Cu	DE	1	1	100.0
		Lead Pb	AT	174	7	4.0
			CZ	110	10	9.1
			EE	49	1	2.0
			GR	25	2	8.0
			HR	16	2	12.5
			IT	71	3	4.2
			LU	100	2	2.0
			LV	99	3	3.0
			NL	89	7	7.9
			PL	161	5	3.1
			PT	40	5	12.5
			RO	4	4	100.0
			SK	100	1	1.0
		Mercury Hg	DE	88	54	61.4
			DK	15	3	20.0
			PL	161	2	1.2

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Wild game (continued)	**B3c (continued)**	**Sub-total for B3c**	**16**		**156**	
		Total in Wild game	**17**		**167**	
Honey	**A6**	AOZ (3-amino-2-oxazolidone)	DE	26	1	3.9
			LV	8	2	25.0
			PL	24	1	4.2
		Chloramphenicol	DE	26	1	3.9
			PL	13	1	7.7
		Metronidazole	PL	32	1	3.1
		Sub-total for A6	**3**		**7**	
	B1	Enrofloxacin	AT	131	1	0.8
		Neospiramycin	IT	41	1	2.4
		Spiramycin	IT	41	1	2.4
		Sulfadiazine	HR	49	1	2.0
		Sulfamonomethoxine	HR	49	1	2.0
		Sulfathiazole	ES	37	1	2.7
			SK	10	1	10.0
		Sulfonamides	PL	188	5	2.7
		Tetracycline	IT	55	1	1.8
		Sub-total for B1	**6**		**13**	
	B3b	Chlorpyrifos	BE	25	1	4.0
		Sub-total for B3b	**1**		**1**	
	B3c	Copper Cu	DE	29	20	69.0
		Lead Pb	IT	33	1	3.0
		Sub-total for B3c	**2**		**21**	
		Total in Honey	**9**		**42**	
Total in all categories					**1,243**	

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

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

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines	**A5**	Clenbuterol	IT	90	1	1.1
		Sub-total for A5	**1**		**1**	
	B1	Amoxycillin	BE	244	3	1.2
			UK	1	1	100.0
		Antibacterials	NL	393	42	10.7
		Benzylpenicillin (Penicillin G)	AT	346	1	0.3
			BE	244	10	4.1
		Ceftiofur	BE	244	2	0.8
		Chlortetracyclin	DE	3	1	33.3
		Ciprofloxacin	BE	244	1	0.4
			DE	4	1	25.0
			IT	508	4	0.8
			PL	14	1	7.1
		Danofloxacin	IT	508	1	0.2
		Dihydrostreptomycin	AT	346	1	0.3
			BE	244	7	2.9
			DE	3	1	33.3
			PL	14	1	7.1
			UK	10	4	40.0
		Doxycycline	IT	7	1	14.3
		Enrofloxacin	BE	244	3	1.2
			DE	4	1	25.0
			IT	508	4	0.8
			PL	14	1	7.1
		Epi-Chlortetracycline	DE	3	1	33.3
		Epi-Oxytetracycline	BE	244	4	1.6
			IT	509	3	0.6
		Epi-Tetracycline	BE	244	1	0.4
		Florfenicol	BE	244	2	0.8
		Gamithromycin	UK	1	1	100.0
		Gentamicin	BE	244	2	0.8
			DE	3	1	33.3
			MT	1	1	100.0
			NL	393	2	0.5
		Lincomycin	DE	4	1	25.0
		Marbofloxacin	IT	508	2	0.4
			UK	23	3	13.0
		Neomycin	BE	244	3	1.2
			NL	393	2	0.5
		Oxytetracycline	AT	18	1	5.6

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines (continued)	**B1 (continued)**	Oxytetracycline	BE	244	4	1.6
			IT	509	8	1.6
			NL	393	3	0.8
			PL	14	2	14.3
			UK	16	4	25.0
		Penicillin	BE	244	1	0.4
			NL	393	1	0.3
			UK	13	1	7.7
		Spectinomycin	BE	244	2	0.8
			DE	2	1	50.0
		Spiramycin	BE	244	2	0.8
		Sulfadiazine	DE	4	1	25.0
			IE	2,269	1	0.4
		Sulfadimethoxine	IT	477	1	0.2
		Sulfadoxine	BE	244	1	0.4
		Sulfamonomethoxine	IT	477	1	0.2
		Sulfonamides	DE	3	1	33.3
		Tetracycline	BE	244	1	0.4
			PL	14	1	7.1
		Tilmicosin	BE	235	3	1.3
		Trimethoprim	DE	4	1	25.0
			IE	2,269	1	0.4
			IT	149	1	0.7
		Tulathromycin	BE	244	2	0.8
			IT	472	1	0.2
			NL	393	1	0.3
			UK	1	1	100.0
		Tylosin, Tylosin A	BE	244	13	5.3
			UK	4	1	25.0
		Sub-total for B1	**9**		**184**	
	B2a	Closantel	BE	256	2	0.8
		Doramectin	BE	256	2	0.8
		Ivermectin	BE	256	1	0.4
			UK	119	1	0.8
		Levamisole	IE	3	1	33.3
		Nitroxinil	UK	119	8	6.7
		Oxyclozanide	BE	256	2	0.8
		Sub-total for B2a	**3**		**17**	
	B2e	Carprofen	BE	235	1	0.4
		Diclofen (Diclofenac)	BE	235	2	0.9
		Flunixin	BE	235	8	3.4
		Meloxicam	BE	235	5	2.1

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines (continued)	**B2e (continued)**	Meloxicam	UK	17	1	5.9
		Phenylbutazone	BE	235	1	0.4
			UK	17	1	5.9
		Tolfenamic acid	BE	235	11	4.7
		Sub-total for B2e	**2**		**30**	
	B2f	Cortisol (Hydrocortisone)	BE	682	1	0.2
		Dexamethasone	BE	682	4	0.6
			DE	1	1	100.0
			ES	188	6	3.2
			IT	436	1	0.2
		Methylprednisolone	BE	682	2	0.3
		Prednisolone	BE	682	2	0.3
			ES	31	1	3.2
		Prednisone	ES	183	1	0.6
		Sub-total for B2f	**4**		**19**	
	B3a	PCB sum	CZ	13	4	30.8
		Sub-total for B3a	**1**		**4**	
	B3c	Cadmium Cd	CZ	2	2	100.0
			DE	3	3	100.0
			UK	6	2	33.3
		Copper Cu	DE	1	1	100.0
		Sub-total for B3c	**3**		**8**	
	B3d	Aflatoxin B1	IT	10	1	10.0
		Sub-total for B3d	**1**		**1**	
		Total in Bovines	**11**		**264**	
Pigs	**B1**	Amoxycillin	BE	68	2	2.9
			ES	5	1	20.0
		Benzylpenicillin (Penicillin G)	BE	68	4	5.9
		Chlortetracyclin	IE	368	1	0.3
		Doxycycline	ES	70	31	44.3
		Enrofloxacin	BE	68	1	1.5
		Epi-Oxytetracycline	BE	68	2	2.9
		Epi-Tetracycline	BE	68	1	1.5
		Oxytetracycline	BE	68	2	2.9
		Sulfadiazine	BE	68	1	1.5
			UK	20	20	100.0
		Sulfadimethoxine	IT	1	1	100.0
		Sulfadoxine	BE	68	1	1.5
		Sulfamethazine	CY	89	1	1.1
		Tetracycline	BE	68	1	1.5
		Tulathromycin	BE	68	4	5.9
		Tylosin, Tylosin A	BE	68	1	1.5

Category	Group	Substances	MS	Number of samples analysed[a]	Non-compliant results	
					N	%
Pigs (continued)	**B1 (continued)**	**Sub-total for B1**	**6**		**75**	
	B2a	Ivermectin	BE	55	1	1.8
		Oxyclozanide	BE	55	1	1.8
		Sub-total for B2a	**1**		**2**	
	B2e	Diclofen (Diclofenac)	PL	1	1	100.0
		Flunixin	BE	55	2	3.6
		Meloxicam	BE	55	1	1.8
		Metamizole (Dipyrone Monohydrate)	BE	55	3	5.5
		Sub-total for B2e	**2**		**7**	
	B3c	Mercury Hg	CZ	2	2	100.0
		Sub-total for B3c	**1**		**2**	
		Total in Pigs	**8**		**86**	
Sheep/Goats	**B1**	Amoxycillin	ES	176	1	0.6
		Antibacterials	NL	25	1	4.0
		Dihydrostreptomycin	NL	25	1	4.0
		Oxytetracycline	IE	2	1	50.0
			NL	25	3	12.0
			UK	46	3	6.5
		Sulfadiazine	ES	261	1	0.4
		Sub-total for B1	**4**		**11**	
	B2a	Closantel	UK	220	11	5.0
		Flubendazole	UK	220	5	2.3
		Sub-total for B2a	**1**		**16**	
	B3c	Copper Cu	DE	8	8	100.0
		Mercury Hg	DE	5	5	100.0
		Sub-total for B3c	**1**		**13**	
		Total in Sheep/Goats	**5**		**40**	
Horses	**B3c**	Cadmium Cd	BG	13[b]	1	7.7[b]
		Sub-total for B3c	**1**		**1**	
		Total in Horses	**1**		**1**	
Poultry	**B1**	Doxycycline	PL	2	1	50.0
		Spectinomycin	NL	182	13	7.1
		Sub-total for B1	**2**		**14**	
		Total in Poultry	**2**		**14**	
Aquaculture	**B3e**	Malachite Green	AT	3	3	100.0
		Malachite Green-Leuco	AT	3	3	100.0
			CZ	6	3	50.0
			DK	219	51	23.3
			PL	16	3	18.8
		Sub-total for B3e	**4**		**63**	
		Total in Aquaculture	**4**		**63**	

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Milk	**B1**	Cefalonium	IT	13	1	7.7
		Cefazolin	IT	13	1	7.7
		Cloxacillin	DE	13	1	7.7
		Gentamicin	PL	2	1	50.0
		Lincomycin	IT	1	1	100.0
		Na-penicillin-G	ES	1	1	100.0
		Tilmicosin	IT	79	1	1.3
		Sub-total for B1	**4**		**7**	
	B3d	Aflatoxin M1	ES	5	5	100.0
			IT	759	34	4.5
		Sub-total for B3d	**2**		**39**	
		Total in Milk	**4**		**46**	
Eggs	**B2b**	Monensin	CZ	2	1	50.0
		Sub-total for B2b	**1**		**1**	
		Total in Eggs	**1**		**1**	
Rabbit	**B2b**	Narasin	NL	12	2	16.7
		Sub-total for B2b	**1**		**2**	
		Total in Rabbit	**1**		**2**	
Wild game	**B3c**	Lead Pb	IT	2	1	50.0
		Sub-total for B3c	**1**		**1**	
		Total in Wild game	**1**		**1**	
Honey	**A6**	AOZ (3-amino-2-oxazolidone)	DE	11	6	54.6
			LV	2	1	50.0
			PL	1	1	100.0
		Chloramphenicol	DE	2	1	50.0
		Dapsone	AT	1	1	100.0
		Sub-total for A6	**4**		**10**	
	B1	Neospiramycin	IT	19	14	73.7
		Spiramycin	IT	19	18	94.7
		Sulfanilamide	AT	1	1	100.0
		Sulfathiazole	AT	2	2	100.0
		Sulfonamides	PL	8	5	62.5
		Tetracycline	IT	19	18	94.7
		Sub-total for B1	**3**		**58**	
	B3c	Copper Cu	DE	1	1	100.0
		Lead Pb	IT	22	8	36.4
		Sub-total for B3c	**2**		**9**	
		Total in Honey	**5**		**77**	
Total in all categories					**595**	

(a): The number of samples analysed for the individual substances was reported by the Member States only if there was at least one non-compliant sample for the substance in question. In case that all samples were compliant, the number of

samples analysed was not reported. Furthermore, in case of animals controlled at farm and slaughterhouse, the number of samples may include either samples taken at farm or slaughterhouse depending where the non-compliant samples were found. Where non-compliant samples were found at both farm and slaughterhouse, the number of samples represents the sum of samples taken at both sampling points.

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

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

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines	**B2e**	Salicylic acid	NL	20	1	5.0
		Sub-total for B2e	**1**		**1**	
		Total in Bovines	**1**		**1**	
Aquaculture	**A6**	AOZ (3-amino-2-oxazolidone)	BE	97	1	1.0
		SEM (semicarbazide)	NL	27	1	3.7
		Sub-total for A6	**2**		**2**	
	B1	Doxycycline	BE	92	1	1.1
			DK	13	2	15.4
		Sulfadiazine	DK	13	1	7.7
		Sulfamethoxazole	NL	38	1	2.6
		Sub-total for B1	**3**		**5**	
	B2a	Thiabendazole	DE	25	1	4.0
		Sub-total for B2a	**1**		**1**	
	B3a	Endosulfan-Alpha	DE	58	1	1.7
		Sub-total for B3a	**1**		**1**	
	B3c	Cadmium Cd	GR	161	3	1.9
		Mercury Hg	CY	23	1	4.4
		Sub-total for B3c	**2**		**4**	
		Total in Aquaculture	**6**		**13**	
Rabbit	**B1**	Norfloxacin	BE	21	1	4.8
		Sub-total for B1	**1**		**1**	
		Total in Rabbit	**1**		**1**	
Wild game	**B3a**	Mirex	DE	4	1	25.0
		Sub-total for B3a	**1**		**1**	
		Total in Wild game	**1**		**1**	
Honey	**B1**	Sulfamethazine	DE	29	1	3.5
		Sub-total for B1	**1**		**1**	
		Total in Honey	**1**		**1**	
Total in all categories					**17**	

(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	**B1**	Benzylpenicillin (Penicillin G)	DE	79	8	10.1
			IT	168	1	0.6
		Cefquinom	DE	63	1	1.6
		Ciprofloxacin	DE	79	1	1.3
		Enrofloxacin	DE	81	2	2.5
		Epi-Tetracycline	DE	33	1	3.0
		Gamithromycin	IT	234	1	0.4
		Gentamicin	DE	74	3	4.1
		Inhibitors	DE	20,918	96	0.5
		Marbofloxacin	DE	83	4	4.8
		Neomycin	DE	74	4	5.4
		Oxytetracycline	DE	82	3	3.7
		Sulfadiazine	DE	81	3	3.7
			IT	238	1	0.4
		Sulfamerazine	IT	238	1	0.4
		Sulfamethazine	DE	81	1	1.2
			IT	238	1	0.4
		Tetracycline	DE	81	8	9.9
		Tilmicosin	IT	234	1	0.4
		Trimethoprim	DE	81	1	1.2
		Tulathromycin	DE	77	1	1.3
		Sub-total for B1	**2**		**143**	
	B2f	Dexamethasone	DE	45	3	6.7
		Sub-total for B2f	**1**		**3**	
		Total in Bovines	**2**		**146**	
Pigs	**B1**	Amoxycillin	DE	279	12	4.3
		Benzylpenicillin (Penicillin G)	DE	345	26	7.5
		Chlortetracyclin	DE	435	5	1.2
			IT	161	1	0.6
		Ciprofloxacin	DE	325	2	0.6
		Dihydrostreptomycin	DE	222	8	3.6
		Doxycycline	DE	429	39	9.1
			IT	161	2	1.2
			MT	1	1	100.0
		Enrofloxacin	DE	437	22	5.0
		Epi-Oxytetracycline	DE	184	2	1.1
		Epi-Tetracycline	DE	195	2	1.0
		Gentamicin	DE	222	2	0.9
		Inhibitors	DE	278,739	553	0.2
		Marbofloxacin	DE	448	3	0.7

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Pigs (continued)	**B1 (continued)**	Neomycin	DE	222	1	0.5
		Oxytetracycline	DE	453	14	3.1
		Spectinomycin	DE	189	2	1.1
		Sulfadiazine	DE	346	3	0.9
		Sulfamethazine	DE	343	3	0.9
		Tetracycline	DE	444	2	0.5
			IT	161	1	0.6
		Trimethoprim	DE	346	2	0.6
		Tulathromycin	DE	270	3	1.1
		Sub-total for B1	**3**		**711**	
	B2a	2-Aminoflubendazole	DE	83	1	1.2
		Flubendazole + (2-amino-1H-benzimidazol-5-yl) (4-fluorphenyl)-methanon	DE	3	1	33.3
		Sub-total for B2a	**1**		**2**	
	B2e	Antipyrin-4-Methylamino	DE	81	1	1.2
		Meloxicam	DE	152	1	0.7
		Sub-total for B2e	**1**		**2**	
	B2f	Dexamethasone	DE	175	1	0.6
		Sub-total for B2f	**1**		**1**	
		Total in Pigs	**3**		**716**	
Sheep/Goats	**B1**	Inhibitors	DE	3,757	15	0.4
		Sulfadiazine	DE	9	1	11.1
		Sub-total for B1	**1**		**16**	
		Total in Sheep/Goats	**1**		**16**	
Horses	**B1**	Inhibitors	DE	130	70	53.9
		Sub-total for B1	**1**		**70**	
	B2b	Salinomycin	MT	1	1	100.0
		Sub-total for B2b	**1**		**1**	
		Total in Horses	**2**		**71**	
Poultry	**A6**	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	NL	37	7	18.9
		SEM (semicarbazide)	NL	37	1	2.7
		Sub-total for A6	**1**		**8**	
	B1	Doxycycline	MT	1	1	100.0
		Enrofloxacin	MT	1	1	100.0
		Oxytetracycline	MT	1	1	100.0
		Tetracycline	MT	1	1	100.0
		Sub-total for B1	**1**		**4**	
		Total in Poultry	**2**		**12**	
Aquaculture	**B1**	Inhibitors	DE	25	0	0.0
		Sub-total for B1	**1**		**0**	
	B3c	Cadmium Cd	GR	109	8	7.3

Category	Group	Substances	MS	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Aquaculture (continued)	**B3c (continued)**	Lead Pb	GR	109	4	3.7
		Sub-total for B3c	**1**		**12**	
		Total in Aquaculture	**2**		**12**	
Milk	**B1**	Flumequine	IT	138	1	0.7
		Sub-total for B1	**1**		**1**	
	B3a	HCH-Beta	IT	289	4	1.4
		WHO-PCDD/F-PCB-TEQ	IT	109	1	0.9
		Sub-total for B3a	**1**		**5**	
	B3d	Aflatoxin M1	IT	1909	11	0.6
		Sub-total for B3d	**1**		**11**	
		Total in Milk	**1**		**17**	
Rabbit	**B1**	Inhibitors	DE	27	0	0.0
		Sub-total for B1	**1**		**0**	
	B2f	Cyromazine	IT	7	1	14.3
		Sub-total for B2f	**1**		**1**	
		Total in Rabbit	**2**		**1**	
Wild game	**B1**	Inhibitors	DE	10	0	0.0
		Sub-total for B1	**1**		**0**	
	B3c	Lead Pb	IT	7	1	14.3
		Sub-total for B3c	**1**		**1**	
		Total in Wild game	**2**		**1**	
Honey	**B1**	Sulfathiazole	IT	115	1	0.9
		Sub-total for B1	**1**		**1**	
	B3c	Lead Pb	IT	84	3	3.6
		Sub-total for B3c	**1**		**3**	
		Total in Honey	**1**		**4**	
Total in all categories					**996**	

(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-inflammatory drugs (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.