TECHNICAL REPORT

Report for 2012 on the results from the monitoring of veterinary medicinal product residues and other substances in live animals and animal products[1]

European Food Safety Authority[2, 3]

European Food Safety Authority (EFSA), Parma, Italy

ABSTRACT

The present report summarises the monitoring data collected in 2012 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 772,540 samples were reported to the European Commission by the 27 EU Member States. They consisted of 427,193 targeted samples and 23,102 suspect samples reported under council Directive 96/23/EC, 4,164 samples collected at import and 318,081 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 97/74/EC. The percentage of non-compliant targeted samples (0.25 %) was slightly lower compared to the previous five years (0.28 – 0.34 %). A lower frequency of non-compliant samples was reported in 2012 for antithyroid agents, steroids, resorcyclic acid lactones, antibacterials, anticoccidials and carbamates and pyrethroids compared to the previous five years. The proportion of non-compliant samples for chemical elements (mainly metals) in 2012 was higher compared to 2007, 2008 and 2009, but lower compared to 2010 and 2011. For the other substance groups, there were no notable variations over the six years. 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.

© European Food Safety Authority, 2014

KEY WORDS

veterinary medicinal products, residue monitoring, Directive 96/23, food safety

[1] On request from the European Commission, Question No EFSA-Q-2013-00656, approved on 18 December 2013.

[2] Correspondence: contam@efsa.europa.eu

[3] Acknowledgement: EFSA wishes to thank EFSA staff: Karen Mackay and Silvia Inés Nicolau Solano for the preparatory work on this output.

Suggested citation: European Food Safety Authority, 2014. Report for 2012 on the results from the monitoring of veterinary medicinal product residues and other substances in live animals and animal products. EFSA supporting publication 2014:EN-540. 65 pp.

Available online: www.efsa.europa.eu/publications

© European Food Safety Authority, 2014

SUMMARY

The present report summarises the monitoring data from 2012 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) 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.

Altogether, 772,540 samples were reported by the 27 EU Member States in the framework of the residue monitoring in 2012. They consisted of 427,193 targeted samples and 23,102 suspect samples reported under Council Directive 96/23/EC, 318,081 samples collected in the framework of other programmes developed under the national legislation and 4,164 samples checked at import. The data analysis presented in this report was focused on the targeted samples reported under Council Directive 96/23/EC. Samples collected through other sampling strategies (suspect, import or ‘other’) do not follow a designed monitoring plan; therefore results on those samples were reported separately from the results on targeted samples.

The majority of the 27 EU Member States fulfilled the minimum requirements for sampling frequency laid down in Council Directive 96/23/EC and in Commission Decision 97/747/EC.

Of the total targeted samples 1,071 samples (0.25 %) out of the 427,193 target samples were non-compliant in 2012.

Similarly to the previous five years, there were no non-compliant samples for stilbenes and derivatives (A1). For antithyroid agents (A2), there were 0.33 % non-compliant samples, all for thiouracil, most likely due to feeding diets rich in cruciferous plants. In the group of steroids (A3), there were 0.09 % non-compliant samples in all animal and product categories. The non-compliant results for steroids (n = 40) were found in bovines (n = 4), pigs (n = 31), aquaculture (n = 4) and farmed game (n = 1). The relatively high percentage of non-compliant results in pigs was most likely the endogenous production. For corticosteroids, non-compliant results for authorised substances were reported under “other pharmacologically active substances” (B2f) in 2012. In the group of resorcyclic acid lactones (A4), 0.07 % of the samples were non-compliant for zearalanone and derivatives. For beta-agonists (A5), there were 0.01 % non-compliant samples. Prohibited substances (A6) were found in 0.05 % of

samples. Substances identified were chloramphenicol (n = 16), nitrofurans (n = 11) and nitroimidazoles (n = 8).

For antibacterials (B1), 0.18 % of the samples analysed under the Directive 96/23/EC monitoring were non-compliant. The highest frequency of non-compliant samples for antibacterials was found in honey (1.5 %).

In group B2 (other veterinary drugs), the highest proportion of non-compliant samples was found for "other pharmacologically active substances" (0.26 %; B2f), this value is higher than previous years and is considered to be due to the Member States reporting authorised corticosteroids under this group only, in 2012.

For anticoccidials (B2b), the percentage of non-compliant samples was lower in 2012 (0.15 %) compared to the previous five years (0.26 % - 1.6 %). Across the different species, the non-compliant results were reported as follows; in pigs (0.03 %), horses (1.25 %), poultry (0.16 %), eggs (0.35 %), rabbits (0.34 %) and farmed game (1.18 %). An important decrease has been observed in the frequency of non-compliant samples for anticoccidials in poultry (0.15 % in 2012 compared to 0.22 % in 2011, 0.96 % in 2010 and 2.05 % in 2009). Instances of non-compliance for anthelmintics (B2a) were reported in bovines (0.02 %), pigs (0.04 %), sheep and goats (0.36 %), horses (0.40 %), aquaculture (0.29 %), milk (0.09 %), rabbits (0.64 %) and farmed game (0.39 %). There were no non-compliant samples for pyrethroids (B2c). Non-compliant samples (0.05 %) were reported for sedatives (B2d) in bovines, pigs and horses. For non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were found in bovines (0.11 %), pigs (0.05 %), horses (1.58 %), poultry (0.34 %), milk (0.09 %) and rabbits (1.08 %).

In the group B3 (other substances and environmental contaminants), the chemical elements (B3c) had the highest overall percentage of non-compliant samples (2.9 %), with cadmium, lead, mercury and copper being most frequently identified. Non-compliant samples were reported for organochlorine compounds (B3a) and organophosphorus compounds (B3b); 0.21 % and 0.04 %, respectively. For mycotoxins (B3d), there were non-compliant samples for zearalenone and derivatives in bovine and pigs, ochratoxin A in pigs, aflatoxin B_1 in bovines and pigs and aflatoxin M_1 in milk. Prevalence of dyes (B3e) in aquaculture samples remained relatively high in 2012 (1.95 %), a value slightly higher compared to the previous four years. Substances found were malachite green, leuco malachite green, crystal violet and leuco crystal violet.

The overall frequency of non-compliant samples in 2012, was slightly lower (0.25 %) compared to the previous five years (0.28 % - 0.34 %). For several substance groups there were no notable variations in the frequency of non-compliant samples in 2012 compared to previous years. However, a decrease was observed for antithyroid agents (A2), steroids (A3), resorcyclic acid lactones (A4), antibacterials (B1), anticoccidials (B2b) and carbamates and pyrethroids (B2c). The proportion of non-compliant samples for chemical elements (mainly metals) in 2012 was higher compared to 2007, 2008 and 2009, but lower compared to 2010 and 2011. The decrease in the frequency of non-compliant samples for anticoccidials 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.

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 2
Table of contents 4
Background as provided by the European Commission 5
Terms of reference as provided by the European Commission 5
Analysis of residue monitoring data 6
1. Introduction 6
2. Objectives 8
3. Materials and methods 8
3.1. Materials 8
3.2. Methods 9
4. Results 9
4.1. EU overall assessment 9
4.1.1. Hormones 11
4.1.2. Beta-agonists 12
4.1.3. Prohibited substances 12
4.1.4. Antibacterials 13
4.1.5. Other veterinary drugs 14
4.1.6. Other substances and environmental contaminants 16
4.1.7. Multi-year comparison 18
4.2. Bovines 21
4.3. Pigs 23
4.4. Sheep and goats 25
4.5. Horses 27
4.6. Poultry 28
4.7. Aquaculture 31
4.8. Milk 32
4.9. Eggs 34
4.10. Rabbit meat 36
4.11. Farmed game 38
4.12. Wild game 40
4.13. Honey 42
4.14. Suspect, import and other samples 44
Conclusions and recommendations 46
References 48
Appendices 49
Appendix A. List of non-compliant results: targeted sampling 49
Appendix B. List of non-compliant results: suspect sampling 58
Appendix C. List of non-compliant results: import sampling 61
Appendix D. List of non-compliant results: other sampling 62
Appendix E. Annex I to Directive 96/23/EC 64
Abbreviations 65

BACKGROUND AS PROVIDED BY THE EUROPEAN COMMISSION

Council Directive 96/23/EC[4] 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[5].

TERMS OF REFERENCE AS PROVIDED BY THE EUROPEAN COMMISSION

In the framework of Article 31 of Regulation EC No 178/2002[6], 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 of the Food Chain and Animal Health (SCFCAH). 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 & Consumers (DG SANCO) 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 SANCO considers that data provided are in line with the requirements of Directive 96/23/EC, EFSA starts to produce its contribution.

[4] 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.

[5] Available online: http://ec.europa.eu/food/food/chemicalsafety/residues/control_en.htm

[6] 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.

ANALYSIS OF RESIDUE MONITORING DATA

1. Introduction

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

Council Directive 96/23/EC on measures to monitor certain substances and residues thereof in live animals and animal products requires Member States to adopt and implement a national residue monitoring plan for the groups of residues detailed in its Annex I in accordance with the sampling rules referred to in Annex IV. The Directive lays down sampling levels and frequency for bovines, pigs, sheep and goats, equine animals, poultry and aquaculture, as well as the groups of substances to be monitored for each food commodity. Commission Decision 97/747/EC[7] 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[8] 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.

[7] 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.

[8] 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. 8-36.

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[9], 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 of the European Parliament and of the Council of 6 May 2009[10]. Pharmacologically active substances and their classification regarding maximum residue limits are set out in Commission Regulation (EU) No 37/2010[11] of 22 December 2009. In addition, Commission Directive No 2009/8/EC[12] lays down maximum levels of unavoidable carry-over of coccidiostats or histomonostats in non-target feed and Commission Regulation (EC) No 124/2009[13] 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[14]. 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[15]. 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

[9] 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.

[10] 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.

[11] 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.

[12] 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.

[13] 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.

[14] 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.

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

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[16] and for malachite and leuco malachite green were established by Commission Decision 2004/25/EC[17].

2. Objectives

The present report summarises the monitoring data from 2012 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.

3. Materials and methods

3.1. Materials

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 Consumers (DG SANCO). 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 SANCO 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 SANCO 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.

[16] 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.

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

- Number of 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.

3.2. Methods

For the data analysis, the database and the data extraction tools available in DG SANCO'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 check whether the minimum required sampling frequencies had been fulfilled, the number of samples collected in 2012 was referred to the production of 2011. 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 3.1 represented considerable limitations in performing a more elaborate statistical analysis.

4. Results

The structure and the data analysis performed in the present report follows the one of the 2010 report:

- 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).

4.1. 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 chapters 4.2 to 4.13.

In 2012, 772,540 samples were reported by the 27 Member States for analysis of substances and residues covered by Directive 96/23/EC. Out of this, 427,193 were targeted samples collected in

conformity with the specifications of the National Residue Control Plans (NRCPs) for 2012. Additionally, 23,102 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 318,081 samples collected in the framework of other programmes developed under the national legislation. Only a relatively limited number of data (n = 4,164) was reported for samples checked at import. This is because the control of samples at import is more linked to the third country monitoring than to the residue monitoring in EU; thus Member States report those results to the EC (using other tools e.g. the Trade Control and Expert System (TRACES) and the Rapid Alert System for Food and Feed (RASFF).

Of the total targeted samples, 44 % were analysed for substances having an anabolic effect and unauthorised substances (group A) and 62 % for veterinary drugs and contaminants (group B)[18]. Of the 427,193 targeted samples, 1,071 were non-compliant (0.25 %) (1,129 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), 0.18 % for antibacterials (B1), 0.14 % for the "other veterinary drugs" (B2) and 1.2 % for "other substances and environmental contaminants" (B3) (Table 1, Figure 1).

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			186,524	44	129	0.07	130
	A1		22,783	5.3	0	0	0
	A2		10,157	2.4	34	0.33	34
	A3		45,610	11	40	0.09	40
	A4		22,019	5.2	15	0.07	16
	A5		41,399	10	5	0.01	5
	A6		74,164	17	35	0.05	35
B			263,269	62	942	0.36	999
	B1		126,889	30	227	0.18	238
	B2		97,794	23	136	0.14	147
		B2a	26,574	6.2	25	0.09	31
		B2b	22,016	5.2	32	0.15	33
		B2c	9,459	2.2	0	0	0
		B2d	9,889	2.3	5	0.05	5
		B2e	14,742	3.5	23	0.16	23
		B2f	19,824	4.6	51	0.26	55
	B3		48,563	11	578	1.2	614
		B3a	17,015	4.0	35	0.21	36
		B3b	8,431	2.0	3	0.04	3
		B3c	16,340	3.8	478	2.9	511
		B3d	6,740	1.6	22	0.33	22
		B3e	1,998	0.47	39	1.95	40
		B3f	2,433	0.57	2	0.08	2
Total			427,193	100	1,071	0.25	1,129

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

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

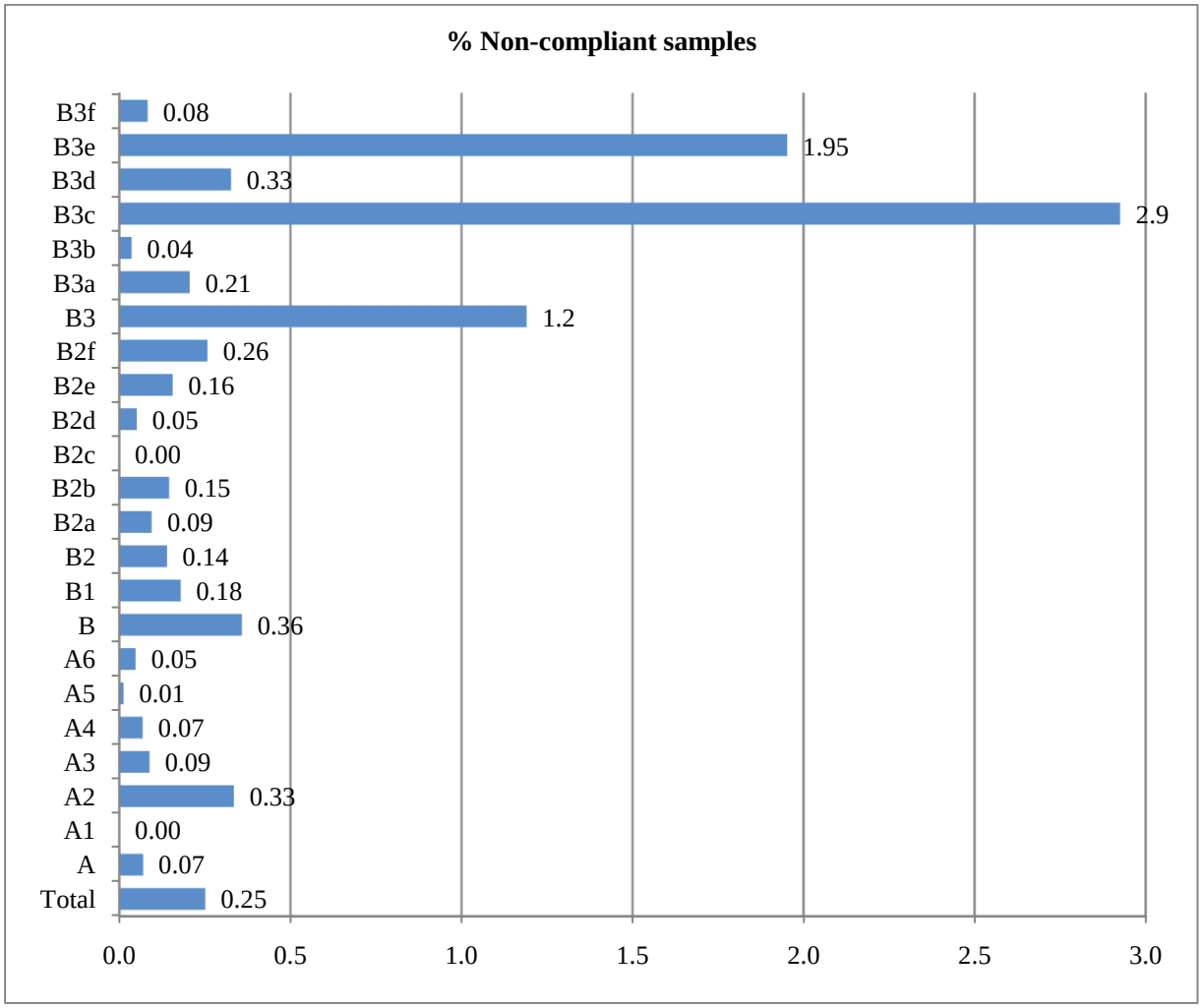


Figure 1: Percentage of non-compliant samples in each substance group.

4.1.1. 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). Resorcyclic 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 (100,569 samples) there were 89 non-compliant samples (0.09 %) (90 non-compliant results).

The number of targeted samples analysed for stilbenes and derivatives (A1) in all animal/product categories together was 22,783. Similar to the previous years, no non-compliant sample was reported for this group.

Antithyroid agents (A2) were analysed in 10,157 targeted samples of which 34 samples were non-compliant (0.33 %) (34 non-compliant results). All non-compliant samples in the group A2 were for thiouracil. They were found in bovines (n = 29; 0.53 %), pigs (n = 4; 0.13 %) and sheep and goats (n = 1; 0.39 %). 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 45,610 samples analysed in all animal species and product categories, 40 samples were non-compliant (0.09 %) (40 non-compliant results) for nandrolone (n = 18), androstene-5-3-beta (n = 14) and (alpha-) boldenone (n = 8). The non-compliant samples were found in bovines (n = 4; 0.01 %), pigs (n = 31; 0.26 %), aquaculture (n = 4; 1.11 %) and farmed game (n = 1; 1.49 %). Some Member States indicated that residue findings on steroid hormones may not be attributable to illegal treatment, as the source was most likely the endogenous production as reported in previous studies (Clouet et al., 1997; Samuels et al., 1998).

The legal utilisation of corticosteroids (e.g. dexamethasone, betamethasone and prednisone) in the therapy of food producing animals in the EU, as for any other veterinary medicine, is strictly regulated in the EU, with withdrawal periods given between treatment and slaughtering. In previous years, some Member States included authorised corticosteroids under the group A3, whereas others allocated them to the subgroup B2f (other pharmacologically active substances). The Member States that included all corticosteroids in group A3 claimed that in this way they have more legal action power against illegal use. However in 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.

For resorcyclic acid lactones (A4), of 22,019 samples analysed in all animal species and product categories, 15 were found non-compliant (0.07 %) (16 non-compliant results). The non-compliant results were for bovines (n = 15) and horses (n = 1).

4.1.2. 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 2012, 41,399 targeted samples were analysed for beta-agonists and five non-compliant samples (0.01 %) were reported (in bovines, four for clenbuterol; in poultry, one for terbutaline).

4.1.3. 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 2012 residue monitoring, 74,164 targeted samples were analysed for prohibited substances and 35 samples (0.05 %) were non-compliant (35 non-compliant results). Altogether, there were 16 non-compliant results for chloramphenicol, 11 for nitrofurans and eight for nitroimidazoles (Table 2). For nitrofurans however, the reliability of SEM as an unambiguous sole marker residue for nitrofurazone treatment is no longer uncontested.

The distribution of the non-compliant results by individual substances and Member States is presented in Appendix A.

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

Substance	Species	Number of non-compliant results	Member States reporting non-compliant results
Chloramphenicol	bovine	2	CZ, IT
	pigs	10	BG, ES, FR, LT, PT, SE
	sheep/goats	1	AT
	poultry	1	IT
	milk	1	ES
	rabbit	1	CY
Nitrofurans			
SEM (semicarbazide)	bovine	6	IE
	sheep/goats	1	IE
AOZ (3-amino-2-oxazolidone)	poultry	2	GR
AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	farmed game	1	BE
Nitrofurazone	pigs	1	FR
Nitroimidazoles			
Metronidazole	bovines	1	DE
	pigs	2	DE
	poultry	1	FR
Dimetridazole	sheep/goats	1	SK
Nitroimidazoles (group)	poultry	3	SK

4.1.4. 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 2012 for antimicrobials in targeted samples was 126,889, of which 227 (0.18 %) were non-compliant (238 non-compliant results) (Table 1). The highest frequency of non-compliant samples for antibacterials was observed in honey (1.5 %) (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.

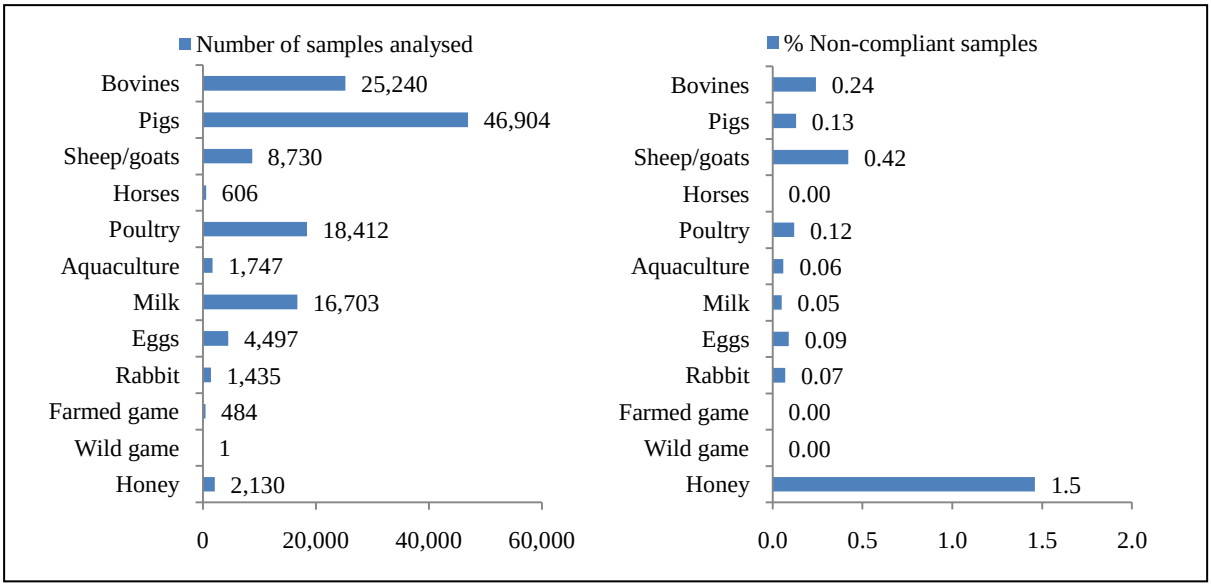


Figure 2: Number of targeted samples analysed and percentage of non-compliant samples for antibacterials (B1) in animal/product categories.

In Germany, for instance, there are two different strategies. One is to fulfil the requirements of Directive 96/23/EC. The second strategy is based on national law and means that at least 2 % of all commercially slaughtered calves and 0.5 % of all other commercially slaughtered hoofed animals must be officially sampled and analysed for residues of antimicrobials using inhibitor tests. To finally assess compliance with MRLs, all positive or suspicious results obtained with the inhibitor tests must be confirmed using chemical instrument analyses, as it is also the case with the screening results of tests performed pursuant to Directive 96/23/EC. In 2012, 308,536 samples were analysed in Germany under this scheme (27,669 for bovines, 278,040 for pigs, 2,625 for sheep and goats, 10 for horses, 140 for poultry, 37 for aquaculture, seven for farmed game and eight for rabbit meat) giving rise to 532 positive inhibitor tests (122 in bovines, 404 in pigs, four in sheep and goats, one in horses and one in poultry). A similar monitoring programme for residues of antibiotics exists in the Netherlands. The control program concerns suspect animals and therefore those results are included in the data on suspect samples (Section 4.14).

4.1.5. 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 2012 monitoring, 97,794 targeted samples were analysed for substances in the group B2 and 136 samples (0.14 %) 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. Conversely, 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.

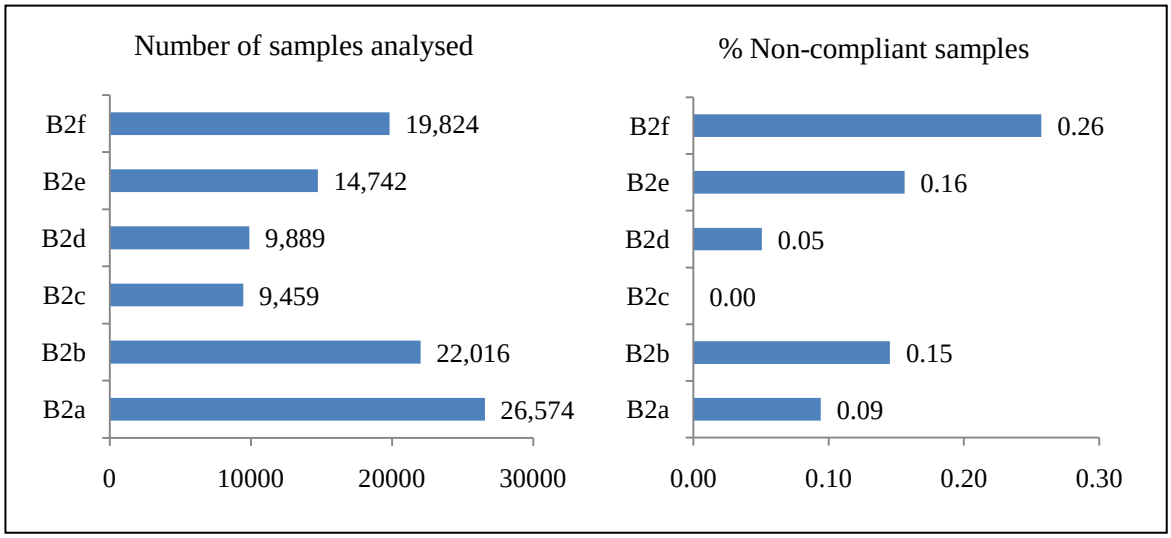


Figure 3: Number of targeted samples analysed within the group "other veterinary drugs" (B2) and the percentage of non-compliant samples.

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	5,028	0.02	1,913	0	1,659	0	2,203	0.05	4,757	0.11	11,006	0.40
Pigs	7,915	0.04	6,456	0.03	2,495	0	6,829	0.04	4,440	0.05	5,760	0.02
Sheep/goats	3,039	0.36	901	0	1,171	0	604	0	482	0	557	0.18
Horses	247	0.40	80	1.25	79	0	161	0.62	568	1.58	241	0.41
Poultry	3,105	0	7,974	0.16	1,973	0	7	0	876	0.34	699	0.43
Aquaculture	685	0.29	74	0	368	0	0.00	0	0	0	155	0
Milk	5,727	0.09	352	0	359	0	59	0	3,436	0.09	879	0
Eggs	262	0	3,765	0.35	187	0	7	0	17	0	117	0
Rabbit	157	0.64	296	0.34	107	0	10	0	93	1.08	45	0
Farmed game	259	0.39	169	1.18	129	0	9	0	73	0	13	0
Wild game	108	0	0	0	39	0	0	0	0	0	0	0
Honey	42	0	36	0	893	0	0	0	0	0	352	0

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

Regarding the number of samples analysed in each B2 subgroup, the highest proportion of non-compliant samples was observed for subgroup B2f "other pharmacologically active substances", (0.26 %): 0.40 % in bovines, 0.02 % in pigs, 0.18 % in sheep and goats, 0.41 % in horses and 0.43 % in poultry. This finding for group B2f is different compared to previous years. However, this increase is considered to be due to a move by the Member States in reporting authorised corticosteroids under the subgroup B2f, only (see Section 4.1.1).

For corticosteroids, 51 non-compliant results were reported by seven Member States and all except three results were reported for bovines. Substances identified were dexamethasone (n = 34), prednisolone (n = 13) and prednisone (n = 4) (Table 4). It is important to note that recent studies suggest that prednisolone could be produced endogenously by animals, especially by those found in a state of stress (Pompa et al., 2011; Fidani et al., 2012).

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

Substance	Substance group [(a)]	Species	Number of non-compliant results	Member States reporting non-compliant results
Dexamethasone	B2f	Bovine	33	DE, ES, FR, IT, NL
	B2f	Sheep/goats	1	FR
Prednisolone	B2f	Bovine	11	BE, FR, IT, RO
	B2f	Pigs	1	RO
	B2f	Horses	1	BE
Prednisone	B2f	Bovine	4	IT

(a): as detailed in Appendix E.

Non-compliant samples for anthelmintics (B2a) were reported in bovines (0.02 %), pigs (0.04 %), sheep and goats (0.36 %), horses (0.40 %), aquaculture (0.29 %), milk (0.09 %), rabbits (0.64 %) and farmed game (0.39 %).

For anticoccidials (B2b), non-compliant samples were reported in pigs (0.03 %), horses (1.25 %), poultry (0.16 %), eggs (0.35 %), rabbits (0.34 %) and farmed game (1.18 %).

There were no non-compliant samples for pyrethroids (B2c).

There were non-compliant samples reported for sedatives (B2d) in bovines (0.05 %), pigs (0.04 %) and horses (0.62 %).

For non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were reported in bovines (0.11 %), pigs (0.05 %), horses (1.58 %), poultry (0.34 %), milk (0.09 %) and rabbits (1.08 %).

More details on the number of samples analysed and the non-compliant samples found in each category are given in Sections 4.2 to 4.13 and in Appendix A.

4.1.6. 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 2012 residues monitoring, 48,563 samples were analysed for substances in group B3 of which 578 samples were non-compliant (1.2 %) (614 non-compliant results). The total number of targeted samples analysed for each subgroup in group B3 and the percentage of non-compliant samples is presented in Figure 4. Similar to group B2, the frequency of analyses for certain B3 subgroups is

highly variable with the targeted animal/product category. While chemical contaminants (B3c) are analysed in all animal/product categories, dyes (B3e) are analysed only in aquaculture products. An overview of the number of samples analysed and the percentage of non-compliant samples for the B3 subgroups in the specific animal group and animal product category is presented in Table 5.

The highest percentage of non-compliant samples was found, in almost all species, in the subgroup B3c "chemical elements" (2.9 %). 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 0.21 % and 0.04 %, respectively.

For mycotoxins (B3d), there were non-compliant samples for zearalenone and derivatives in bovines (n = 4) and in pigs (n = 3), ochratoxin A in pigs (n = 3), aflatoxin B_1 in bovines (n = 1) and in pigs (n = 1) and aflatoxin M_1 in milk (n = 9).

Dyes (B3e) were reported in aquaculture (39 non-compliant samples; 1.95 %). Substances found were malachite green, leuco malachite green, crystal violet and leuco crystal violet. In the subgroup “others” (B3f), two non-compliant sample were reported in honey for diethyltoluamide.

More details on the number of samples analysed and non-compliant samples in each category are given in the Sections 4.2 to 4.13 and in Appendix A.

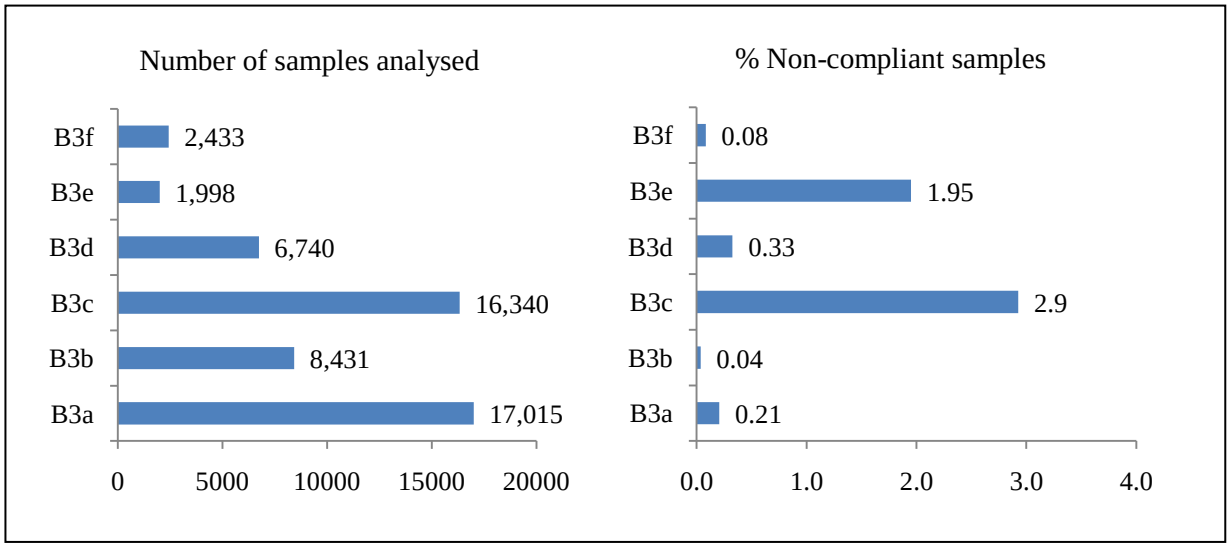


Figure 4: Number of samples analysed within the group “other substances and environmental contaminants” (B3) and the percentage of non-compliant samples.

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

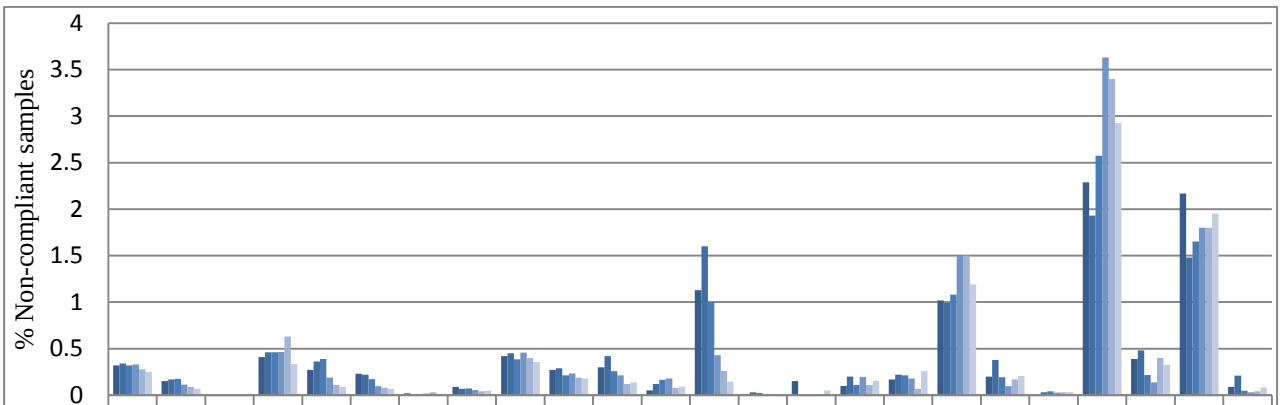
Group	B3a		B3b		B3c		B3d		B3e		B3f	
	n	% nc	n	% nc	n	% nc	n	% nc	n	% nc	n	% nc
Bovines	3,098	0	1,657	0	3,014	2.6	1,136	0.44	0	0	300	0
Pigs	4,446	0.02	2,539	0.04	4,393	3.4	1,972	0.41	0	0	834	0
Sheep/goats	1,145	1	1,193	0	1,043	2.0	251	0	0	0	29	0
Horses	139	0	99	0	718	5.0	78	0	0	0	5	0
Poultry	2,790	0.11	841	0	2,008	0.05	877	0	0	0	265	0
Aquaculture	678	0.29	141	0	787	0	246	0	1,996	1.95	147	0
Milk	1,585	0	803	0	1,099	0	2,090	0.43	0	0	206	0
Eggs	1,723	0.35	325	0	158	0	7	0	2	0	220	0
Rabbit	162	0	58	0	187	0	22	0	0	0	6	0
Farmed game	209	1	55	0	316	5.7	36	0	0	0	48	0
Wild game	322	0.62	53	0	2,052	8.0	0	0	0	0	166	0
Honey	718	0.00	667	0	565	1.8	25	0	0	0	207	1

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

4.1.7. 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 six years. Therefore this analysis should be regarded as having a certain degree of uncertainty. The purpose of this exercise was to check whether major variations of the proportion of non-compliant samples occurred at substance group level in the EU. When such variations are noted, a more in-depth analysis of the monitoring plans per species, country and pattern of substances analysed has to be carried out in order to identify the trigger for the differences observed and in consequence to take corrective measures.

An overall picture covering the period 2007 - 2012 (EU 27) is presented in Figure 5. The percentage of overall non-compliant samples in 2012 (0.25 %) was slightly lower compared to the previous five years (0.28 % - 0.34 %).



	Total	A	A1	A2	A3	A4	A5	A6	B	B1	B2	B2a	B2b	B2c	B2d	B2e	B2f	B3	B3a	B3b	B3c	B3d	B3e	B3f
2007	0.32	0.15	0	0.41	0.27	0.23	0.02	0.09	0.42	0.27	0.30	0.05	1.1	0.01	0.15	0.1	0.17	1.0	0.2	0	2.3	0.39	2.2	0.09
2008	0.34	0.17	0	0.46	0.36	0.22	0.01	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

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 and 2012 (substance groups are detailed in Appendix E).

Among hormones and prohibited substances (group A) the proportion of non-compliant samples was lower in 2012 (0.07 %), compared to previous years. However, between 2007 and 2011 the percentage of non-compliant samples in this group still only accounted for less than 0.2 %. There were no non-compliant samples for stilbenes (A1) in the six years included in the analysis and only a very limited number of non-compliant samples for beta-agonists (A5) (0.01 % - 0.03 %). The percentage of non-compliant samples for antithyroid agents (A2) was lower in 2012 (0.33 %) compared to 2007 - 2011 (0.41 %- 0.63 %), the same trend was noted for steroids (A3), (0.09 % in 2012 compared to 0.11 % - 0.39 % in 2007 - 2011). With regard to steroids, it is important to note that in 2012 authorised corticosteroids were not reported under this group, instead they were allocated to group B2f and thus they have not been included in the calculation for group A3. The percentage of non-compliant samples reported in 2012 for resorcyclic acid lactones (A4) was similar to those reported in 2010 and 2011 (0.07 % - 0.09 %) but lower compared to 2007 - 2009 (0.17 % - 0.23 %). For prohibited substances (A6), the proportion of non-compliant samples remained at very low levels over the six years (0.04 % - 0.09 %).

In the group of antibacterials (B1), the percentage of non-compliant samples was lower in 2012 (0.18 %) compared to the previous five years (0.19 % - 0.29 %).

In the group B2 (other veterinary drugs), the proportion of non-compliant samples for anthelmintics (B2a) increased slightly from 0.05 % in 2007 to 0.18 % in 2010, however in 2011 and 2012 the number of non-compliant samples decreased to 0.08 and 0.09 %, respectively.

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

Non-compliant samples for carbamates and pyrethroids (B2c) were found in only a few isolated cases in the previous five years (0.01 %- 0.03 %), however in 2012 no non-compliant samples were reported. For sedatives (B2d), no non-compliant samples were reported between 2008 – 2010 and only one sample was reported in 2011 (0.01 %). In 2012, this number had risen slightly, with five non-compliant samples in total being reported for bovines, pigs and horses (0.05 %).

In the group B2e (non-steroidal anti-inflammatory drugs) the proportion of non-compliant samples has remained relatively constant over the six years (around 0.1 % - 0.2 %). For "other pharmacologically active substances" (B2f), the percentage of non-compliant samples decreased from 0.17 % - 0.22 % in the period 2007 – 2010 to 0.07 % in 2011. However in 2012, the highest percentage of non-compliant samples was reported (0.26 %) for this subgroup. This increase is considered to be due to Member States reporting authorised corticosteroids under the subgroup B2f only, in 2012 (see Sections 4.1.1 and 4.1.5).

In the group of "other substances and environmental contaminants" (B3), the percentage of non-compliant samples increased from 1 % in 2007 – 2009 to 1.5 % in 2010 and 2011, however in 2012 the number decreased slightly to 1.2 %.

The highest proportion of non-compliant samples in the group B3 has been noted for chemical elements (B3c) over the six years. The non-compliant samples accounted for around 2 % in 2007 and 2008 and for 3.6 % in 2010, 3.4 % in 2011 and 2.9 % in 2012. This evolution is mainly explained by the practice introduced since 2009 with regard to the legal basis applied for compliance checking for mercury and copper. Commission Regulation (EC) No 1881/2006 specifies maximum limits for mercury only in aquaculture and does not specify any maximum limits for copper in food. Since 2009, the maximum limits laid down in Commission Regulation (EC) No 149/2008[19] 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 samples, respectively, were reported for mercury in all species and product categories whereas in 2010 and 2011 their number reached 269 and 218, respectively, although in 2012 the number had decreased to 170. Similarly, no non-compliant samples were reported for copper in 2007, 2008 and 2009 but after applying the new legal provision, in 2010, 2011 and 2012 there were respectively 73, 67 and 72 non-compliant samples for copper.

Non-compliant samples in the groups of organochlorine compounds (B3a), mycotoxins (B3d) and "other substances" (B3f) represented about 0.1 % - 0.5 % of the total number of samples analysed each year. For organophosphorus compounds (B3b), the number of non-compliant samples remained very low over the six years (zero to three samples per year (0.04 %)). The proportion of non-compliant samples for dyes (B3e) remained relatively constant over the six years (1.5 – 2.2 %), although in 2012, the value was slightly higher compared to the last four years.

Taking into account the limitations mentioned at the beginning of this section, it appears that the frequency of non-compliant samples for antithyroid agents (A2), steroids (A3), resorcyclic acid lactones (A4), antibacterials (B1), anticoccidials (B2b) and carbamates and pyrethroids (B2c) were lower in 2012 compared to the previous years. The frequency of non-compliant samples reported under "other pharmacologically active substances" (B2f) was higher in 2012 compared to the previous five years. The move by the Member States in 2012 to report non-compliant samples for authorised corticosteroids under one group only (i.e., B2f), rather than under either A3 or B2f, can account for the increase noted for B2f and the decrease noted for A3, in 2012. The proportion of non-compliant samples for chemical elements (B3c; mainly metals) in 2012 was higher compared to 2007, 2008 and 2009, but lower compared to 2010 and 2011. For the other substance groups, there were no notable variations over the six years (see also EC, 2007; EFSA, 2010a, 2011, 2012, 2013).

[19] 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.

4.2. Bovines

Council Directive 96/23/EC requires that the minimum number of bovine animals to be controlled each year for all kinds of residues and substances is 0.4 % of the bovine animals slaughtered the previous year. The minimum requirements for the number of samples were fulfilled in 2012 for the EU overall (Table 6), and by each of the Member States (Table 7).

Table 6: Production of bovines and number of targeted samples over 2007-2012.

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	

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

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

Country	Production 2011 (animals)	Number of samples 2012	Animals tested (%)	Country	Production 2011 (animals)	Number of samples 2012	Animals tested (%)
Austria	688,486	3,877	0.56	Latvia	90,760	366	0.40
Belgium	837,290	5,444	0.65	Lithuania	170,632	824	0.48
Bulgaria	23,405	195	0.83	Luxemburg	24,752	100	0.40
Cyprus	15,998	606	3.79	Malta	4,252	57	1.34
Czech Republic	273,426	2,073	0.76	Netherlands	2,057,000	15,841	0.77
Denmark	517,998	2,093	0.40	Poland	1,591,060	6,604	0.42
Estonia	41,194	207	0.50	Portugal	402,297	1,640	0.41
Finland	263,771	1,295	0.49	Romania	133,510	600	0.45
France	5,059,481	20,222	0.40	Slovakia	50,830	369	0.73
Germany	3,767,004	14,992	0.40	Slovenia	117,242	520	0.44
Greece	253,764	1,021	0.40	Spain	2,352,103	10,806	0.46
Hungary	98,600	440	0.45	Sweden	432,509	1987	0.46
Ireland	1,660,634	7,686	0.46	United Kingdom	2,819,000	12,559	0.45
Italy	2,819,595	18,130	0.64	**Total (EU 27)**	**26,566,593**	**130,554**	**0.49**

The distribution of samples analysed, non-compliant samples and non-compliant results in bovines are presented in Table 8. Of the 130,554 samples analysed in this category, 262 (0.20 %) were non-compliant (271 non-compliant results). The non-compliant samples were reported by 22 Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples	Non-compliant results	
			n[(b)]	%	n[(c)]	%	n[(d)]
A			76,836	59	60	0.08	61
	A1		12,228	9.4	0	0	0
	A2		5,478	4.2	29	0.53	29
	A3		27,199	21	4	0.01	4
	A4		11,955	9.2	14	0.12	15
	A5		22,481	17	4	0.02	4
	A6		15,997	12	9	0.06	9
B			58,537	45	202	0.35	210
	B1		25,240	19	61	0.24	62
	B2		26,075	20	51	0.20	55
		B2a	5,028	3.9	1	0.02	1
		B2b	1,913	1.5	0	0	0
		B2c	1,659	1.3	0	0	0
		B2d	2,203	1.7	1	0.05	1
		B2e	4,757	3.6	5	0.11	5
		B2f	11,006	8.4	44	0.40	48
	B3		8,657	6.6	90	1.04	93
		B3a	3,098	2.4	7	0.23	7
		B3b	1,657	1.3	0	0	0
		B3c	3,014	2.3	78	2.59	81
		B3d	1,136	0.9	5	0.44	5
		B3e	0	0.0	0	0	0
		B3f	300	0.23	0	0	0
Total			**130,554**	**100**	**262**	**0.20**	**271**

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

No non-compliant samples were reported for the group A1. In the group A2, seven Member States reported a total of 29 non-compliant samples, all for thiouracil. In the group A3, a total of 4 non-compliant samples were reported by one Member State, for boldenone-alpha. In the group A4, four Member States reported 14 non-compliant samples (15 non-compliant results) for alpha and beta-zearalanol and zearalanone. There were four non-compliant samples reported in Group A5 for beta-agonists (clenbuterol) by one Member State. In group A6, four Member States reported prohibited substances in nine samples. The substances identified were: chloramphenicol, metronidazole and semicarbazide.

For antibacterials (B1), 12 Member States reported a total of 61 non-compliant samples (62 non-compliant results). Among the substances identified, oxytetracycline was the most frequent one (12 non-compliant samples).

In the group B2, 51 non-compliant samples (55 non-compliant results) were reported by seven Member States, for anthelmintics (n = 1; B2a), sedatives (n = 1; B2d) and non-steroidal (n = 5; B2e) and steroidal (n = 48; B2f) anti-inflammatory drugs.

In the group B3, there were 7 non-compliant samples for organochlorine compounds (B3a), 78 non-compliant samples for heavy metals (B3c) and five non-compliant samples for mycotoxins (B3d) (aflatoxin B_1 and zearalenol-alpha and -beta). Within the 78 non-compliant samples for heavy metals (81 non-compliant results) there were 38 non-compliant results for cadmium, 21 for copper, 16 for mercury, five for lead and one for arsenic.

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.

4.3. Pigs

Council Directive 96/23/EC requires that the minimum number of pigs that have to be controlled each year for all kinds of residues and substances is 0.05 % of the pigs slaughtered the previous year. The minimum requirements for the number of samples to be taken were fulfilled in 2012 for the EU overall (Table 9), and by each of the Member States (Table 10).

Table 9: Production of pigs and number of targeted samples over 2007-2012.

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	

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

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

Country	Production 2011 (animals)	Number of samples 2012	Animals tested (%)	Country	Production 2011 (animals)	Number of samples 2012	Animals tested (%)
Austria	5,555,567	3,318	0.06	Latvia	246,236	123	0.05
Belgium	11,924,052	6,040	0.05	Lithuania	770,676	576	0.07
Bulgaria	759,781	860	0.11	Luxemburg	13,150	66	0.50
Cyprus	703,628	1,632	0.23	Malta	83,622	55	0.07
Czech Republic	3,129,970	2,729	0.09	Netherlands	14,450,000	8,608	0.06
Denmark	20,789,856	10,554	0.05	Poland	20,395,020	10,560	0.05
Estonia	420,537	631	0.15	Portugal	4,772,481	2,527	0.05
Finland	2,242,343	1,450	0.06	Romania	3,223,418	1,759	0.05
France	24,930,625	12,615	0.05	Slovakia	757,690	556	0.07
Germany	59,100,910	30,511	0.05	Slovenia	292,325	166	0.06
Greece	1,895,473	900	0.05	Spain	39,411,858	19,804	0.05
Hungary	4,329,830	2,214	0.05	Sweden	2,853,300	1,579	0.06
Ireland	2,828,205	2,531	0.09	United Kingdom	9,438,000	4,756	0.05
Italy	13,764,351	8,625	0.06	**Total (EU 27)**	**249,082,904**	**135,745**	**0.05**

The distribution of samples analysed, non-compliant samples and non-compliant results in pigs are presented in Table 11. Of the 135,745 samples analysed in this category, 279 (0.21 %) were non-compliant (306 non-compliant results). The non-compliant samples were reported by 19 Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			55,285	41	48	0.09	48
	A1		6,629	4.9	0	0	0
	A2		3,139	2.3	4	0.13	4
	A3		12,027	8.9	31	0.26	31
	A4		6,337	4.7	0	0	0
	A5		11,185	8.2	0	0	0
	A6		23,445	17	13	0.06	13
B			90,342	67	231	0.26	258
	B1		46,904	35	60	0.13	63
	B2		33,048	24	11	0.03	12
		B2a	7,915	5.8	3	0.04	4
		B2b	6,456	4.8	2	0.03	2
		B2c	2,495	1.8	0	0	0
		B2d	6,829	5.0	3	0.04	3
		B2e	4,440	3.3	2	0.05	2
		B2f	5,760	4.2	1	0.02	1
	B3		12,594	9.3	159	1.26	183
		B3a	4,446	3.3	1	0.02	1
		B3b	2,539	1.9	1	0.04	1
		B3c	4,393	3.2	149	3.39	173
		B3d	1,972	1.5	8	0.41	8
		B3e	0	0.0	0	0	0
		B3f	834	0.6	0	0	0
Total			**135,745**	**100**	**279**	**0.21**	**306**

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

There were no non-compliant samples in the group A1. In the group A2, two Member States reported a total of four non-compliant samples, all for thiouracil. In the group A3, three Member States reported 31 non-compliant samples (16 for nandrolone, 14 for androstene-5-3-Beta and one for boldenone). In group A6, seven Member States reported prohibited substances in 13 samples: 10 for chloramphenicol, two for metronidazole and one for nitrofurazone.

For antibacterials (B1), 11 Member States reported a total of 60 non-compliant samples (63 non-compliant results). The most frequent substances reported were: sulfamides (n = 22), benzylpenicillin (n = 7), doxycycline (n = 7) and enrofloxacin (n = 7).

In the group B2, seven Member States reported 11 non-compliant samples (12 non-compliant results). They were distributed as follows: four for anthelmintics (B2a), two for anticoccidials (B2b), three for sedatives (B2d), two for NSAIDs (B2e) and one for prednisolone (B2f). There were no non-compliant samples for the group B2c.

In the group B3, there were 159 non-compliant samples (183 non-compliant results). The non-compliant results were distributed as follows: one for organochlorine compounds (B3a), one for organophosphorus compounds (B3b), 173 for heavy metals (B3c) and three for ochratoxin A, three for zearalenol-alpha and two for aflatoxin B_1 (B3d). Of the 173 non-compliant results for heavy metals, 109 were reported as non-compliant for mercury, 46 for copper, 16 for cadmium and two for lead.

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

4.4. Sheep and goats

Council Directive 96/23/EC requires that the minimum number of sheep and goats that have to be controlled each year for all kinds of residues and substances is 0.05 % of the sheep and goats slaughtered the previous year. The minimum requirements for the number of samples were fulfilled in 2012 for the EU overall (Table 12), and by the vast majority of the Member States (Table 13). Romania did not achieve the minimum sampling frequency for sheep and goats.

Table 12: Production of sheep and goats and number of targeted samples over 2007-2012.

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	

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

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

Country	Production 2011 (animals)	Number of samples 2012	Animals tested (%)	Country	Production 2011 (animals)	Number of samples 2012	Animals tested (%)
Austria	132,597	403	0.30	Latvia	8,555	18	0.21
Belgium	143,196	247	0.17	Lithuania	5,352	16	0.30
Bulgaria	231,706	168	0.07	Luxemburg	4,620	11	0.24
Cyprus	262,270	293	0.11	Malta	4,522	17	0.38
Czech Republic	12,993	82	0.63	Netherlands	740,000	502	0.07
Denmark	82,727	55	0.07	Poland	23,304	101	0.43
Estonia	8,506	18	0.21	Portugal	1,108,122	606	0.05
Finland	35,511	43	0.12	Romania	380,626	165	0.04
France	4,277,775	2,349	0.05	Slovakia	83,960	111	0.13
Germany	1,038,787	600	0.06	Slovenia	9,616	34	0.35
Greece	1,447,720	793	0.05	Spain	8,599,162	5,595	0.07
Hungary	33,484	96	0.29	Sweden	261,740	122	0.05
Ireland	2,399,081	1,942	0.08	United Kingdom	15,308,000	7,978	0.05
Italy	573,552	1,076	0.19	**Total (EU 27)**	**37,217,484**	**23,441**	**0.06**

The distribution of samples analysed, non-compliant samples and non-compliant results in sheep and goats is presented in Table 14. Of the 23,441 samples analysed in this category, 88 (0.38 %) were non-compliant (92 non-compliant results). The non-compliant samples were reported by 13 Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			5,024	21	4	0.08	4
	A1		344	1.5	0	0	0
	A2		259	1.1	1	0.39	1
	A3		1,178	5.0	0	0	0
	A4		425	1.8	0	0	0
	A5		1,245	5.3	0	0	0
	A6		1,890	8.1	3	0.16	3
B			18,659	80	84	0.45	88
	B1		8,730	37	37	0.42	38
	B2		6,666	28	12	0.18	13
		B2a	3,039	13	11	0.36	12
		B2b	901	3.8	0	0	0
		B2c	1,171	5.0	0	0	0
		B2d	604	2.6	0	0	0
		B2e	482	2.1	0	0	0
		B2f	557	2.4	1	0.18	1
	B3		3,501	15	35	1.00	37
		B3a	1,145	4.9	12	1.05	13
		B3b	1,193	5.1	2	0.17	2
		B3c	1,043	4.4	21	2.01	22
		B3d	251	1.1	0	0	0
		B3e	0	0.0	0	0	0
		B3f	29	0.12	0	0	0
Total			**23,441**	**100**	**88**	**0.38**	**92**

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

There were no non-compliant samples for the group A1, A3, A4 and A5. In the group A2, one Member State reported one non-compliant sample, for thiouracil. In the group A6, three Member States reported prohibited substances in three samples: one for chloramphenicol, one for dimetridazole and one for semicarbazide.

For antibacterials (B1), six Member States reported a total of 37 non-compliant samples (38 non-compliant results). Sulfamides were the most frequent substances reported (n = 21).

In the group B2, three Member States reported 12 non-compliant samples (13 non-compliant results: 12 for anthelmintics (B2a) and one for corticosteroids (B2f)). There were no non-compliant samples in the groups B2b, B2c, B2d and B2e.

In the group B3, there were 35 non-compliant samples (37 non-compliant results). The non-compliant results were distributed as follows: 13 for organochlorine compounds (B3a), two for organophosphorus compounds (B3b) and 22 for heavy metals (B3c): 13 for cadmium, four for lead, three for copper and two for mercury.

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

4.5. 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 2012 at EU level was similar to previous years (Table 15). The percentage of targeted samples taken in each Member State for the reported horse production is presented in Table 16. Cyprus, Estonia, Greece and Luxembourg did not report horse production and thus no samples have been taken. Although Slovakia did not report production in 2011, samples were taken in 2012.

Table 15: Production of horses and number of targeted samples over 2007-2012.

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	

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

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

Country	Production 2011 (animals)	Number of samples 2012	Animals tested (%)	Country	Production 2011 (animals)	Number of samples 2012	Animals tested (%)
Austria	1,003	69	6.9	Latvia	445	22	4.9
Belgium	7,962	344	4.3	Lithuania	1,939	17	0.9
Bulgaria	73	25	34.2	Luxemburg	0	0	NA
Cyprus	0	0	NA	Malta	76	15	19.7
Czech Republic	395	49	12.4	Netherlands	3,626	155	4.3
Denmark	2,169	94	4.3	Poland	43,230	357	0.8
Estonia	0	0	NA	Portugal	774	41	5.3
Finland	1,453	55	3.8	Romania	28,243	123	0.4
France	17,085	457	2.7	Slovakia	0	3	NA
Germany	10,703	160	1.5	Slovenia	1,578	33	2.1
Greece	0	0	NA	Spain	32,229	404	1.3
Hungary	486	26	5.3	Sweden	4,500	240	5.3
Ireland	15,702	332	2.1	United Kingdom	8,727	181	2.1
Italy	67,005	648	1.0	**Total (EU 27)**	**249,403**	**3,850**	**1.54**

NA: not applicable.

The distribution of samples analysed, non-compliant samples and non-compliant results in horses is presented in Table 17. Of the 3,850 samples analysed in this category, 50 samples (1.30 %) were non-compliant (53 non-compliant results). The non-compliant samples were reported by 12 Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			901	23	1	0.11	1
	A1		104	2.7	0	0	0
	A2		71	1.8	0	0	0
	A3		167	4.3	0	0	0
	A4		86	2.2	1	1.16	1
	A5		238	6.2	0	0	0
	A6		309	8.0	0	0	0
B			2,986	78	49	1.64	52
	B1		606	16	0	0	0
	B2		1,359	35	13	0.96	13
		B2a	247	6.4	1	0.40	1
		B2b	80	2.1	1	1.25	1
		B2c	79	2.1	0	0	0
		B2d	161	4.2	1	0.62	1
		B2e	568	14.8	9	1.58	9
		B2f	241	6.3	1	0.41	1
	B3		1,025	27	36	3.51	39
		B3a	139	3.6	0	0	0
		B3b	99	2.6	0	0	0
		B3c	718	18.6	36	5.01	39
		B3d	78	2.0	0	0	0
		B3e	0	0.0	0	0	0
		B3f	5	0.13	0	0	0
Total			**3,850**	**100**	**50**	**1.30**	**53**

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

In the group A, there was only one non-compliant sample for zeranol (A4). No non-compliant samples were reported for the groups A1, A2, A3, A5, A6 and B1.

In the group B2, seven Member States reported 13 non-compliant samples. They were distributed as follows: nine for NSAIDs, one for anthelmintics (B2a), one for anticoccidials (B2b), one for sedatives (B2d) and one for corticosteroids (B2f). There were no non-compliant samples in the group B2c.

In the group B3, there were 36 non-compliant samples (39 non-compliant results), all from the heavy metal subgroup B3c: 35 for cadmium and four for mercury.

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

4.6. Poultry

According to Directive 96/23/EC, the minimum number of samples for each category of poultry must be one per 200 t of annual production, with a minimum of 100 samples for each group of substances where annual production in the category concerned is over 5,000 t. The minimum requirement of one sample analysed per 200 t production was achieved in 2012 for the EU overall (Table 18).

Percentage of targeted samples taken in each Member State for the reported production of poultry is given in Table 19. Greece did not achieve this requirement. Luxembourg did not report poultry production for 2011 and as a result no samples were taken in 2012.

Table 18: Production of poultry and number of targeted samples over 2007-2012.

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	

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

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

Country	Production 2011 (t)	Number of samples 2012	Samples tested/ 200 t	Country	Production 2011 (t)	Number of samples 2012	Samples tested/ 200 t
Austria	106,860	797	1.5	Latvia	24,000	197	1.6
Belgium	408,683	2,505	1.2	Lithuania	62,425	307	1.0
Bulgaria	77,531	716	1.8	Luxemburg	0	0	NA
Cyprus	21,646	1,419	13.1	Malta	4,155	196	9.4
Czech Republic	156,332	1,200	1.5	Netherlands	833,054	4,410	1.1
Denmark	150,907	789	1.0	Poland	1,245,901	6,398	1.0
Estonia	15,317	200	2.6	Portugal	295,010	1,874	1.3
Finland	95,903	652	1.4	Romania	340,022	1,651	1.0
France	1,829,078	9,046	1.0	Slovakia	73,247	507	1.4
Germany	1,492,095	9,073	1.2	Slovenia	53,266	329	1.2
Greece	188,878	416	0.4	Spain	1,379,150	6,931	1.0
Hungary	503,052	2,681	1.1	Sweden	119,780	586	1.0
Ireland	155,816	1,162	1.5	UK	1,564,000	7,970	1.0
Italy	1,221,000	6,758	1.1	**Total (EU 27)**	**12,417,108**	**68,770**	**1.11**

NA: not applicable.

The distribution of samples analysed, non-compliant samples and non-compliant results in poultry are presented in Table 20. Of the 68,770 samples analysed in this category 54 (0.08 %) were non-compliant (56 non-compliant results). The non-compliant samples were reported by 13 Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			33,269	48	8	0.02	8
	A1		3,163	4.6	0	0	0
	A2		1,116	1.6	0	0	0
	A3		4,465	6.5	0	0	0
	A4		3,023	4.4	0	0	0
	A5		5,490	8.0	1	0.02	1
	A6		18,825	27.4	7	0.04	7
B			38,515	56	46	0.12	48
	B1		18,412	27	23	0.12	25
	B2		14,544	21	19	0.13	19
		B2a	3,105	4.5	0	0	0
		B2b	7,974	11.6	13	0.16	13
		B2c	1,973	2.9	0	0	0
		B2d	7	0.01	0	0	0
		B2e	876	1.3	3	0.34	3
		B2f	699	1.0	3	0.43	3
	B3		6,194	9.0	4	0.06	4
		B3a	2,790	4.1	3	0.11	3
		B3b	841	1.22	0	0	0
		B3c	2,008	2.9	1	0.05	1
		B3d	877	1.3	0	0	0
		B3e	0	0.0	0	0	0
		B3f	265	0.4	0	0	0
Total			**68,770**	**100**	**54**	**0.08**	**56**

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

No non-compliant samples were reported in the groups A1, A2, A3 and A4. In the group A5, one non-compliant sample was reported for terbutaline. Prohibited substances (A6) were reported by four Member States. They included nitroimidazoles (n = 3), AOZ (3-amino-2-oxazolidone) (n = 2), chloramphenicol (n = 1) and metronidazole (n = 1).

For antibacterials (B1), six Member States reported a total of 23 non-compliant samples (25 non-compliant results). Similar to previous years, the most frequent substance reported was doxycycline (n = 16).

In the group B2, the highest number of non-compliant samples reported was for anticoccidials (B2b): 13 samples from six Member States. Other non-compliant results reported in the group B2 were for non-steroidal anti-inflammatory drugs (B2e) (n = 3) and other pharmacologically active substances (B2f) (n = 3). No non-compliant samples were reported in the groups B2a, B2c and B2d.

In the group B3, there were four non-compliant samples, which were distributed as follows: three for organochlorine compounds (B3a) and one for copper (B3c).

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

4.7. Aquaculture

Directive 96/23/EC specifies that the minimum number of samples to be collected each year must be at least one per 100 t of annual production. The minimum requirements for the number of samples to be taken were fulfilled in 2012 for the EU overall (Table 21) and by the vast majority of Member States. The production volume and the number of samples analysed in each Member State are given in Table 22. Only Greece and Sweden did not analyse at least one sample/100 t of production. Luxembourg did not report aquaculture production and consequently no samples were taken.

Table 21: Production of aquaculture and number of targeted samples over 2007-2012.

Year	Production (t)	Targeted samples	% Samples tested/100 t[(a)]	Minimum 96/23/EC
2007 (EU 27)	602,555	9,257	1.5	1/100 t
2008 (EU 27)	644,875	8,751	1.4	
2009 (EU 27)	627,109	8,606	1.3	
2010 (EU 27)	622,032	8,668	1.4	
2011 (EU 27)	655,772	8,241	1.3	
2012 (EU 27)	631,117	8,264	1.3	

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

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

Country	Production 2011 (t)	Number of samples 2012	Samples tested/ 100 t	Country	Production 2011 (t)	Number of samples 2012	Samples tested/ 100 t
Austria	2,920	241	8.3	Latvia	548	13	2.4
Belgium	2,000	160	8.0	Lithuania	3,338	36	1.1
Bulgaria	3,738	383	10.2	Luxemburg	0	0	NA
Cyprus	5,005	409	8.2	Malta	6,881	31	0.5
Czech Republic	21,000	258	1.2	Netherlands	6,400	106	1.7
Denmark	36,000	363	1.0	Poland	32,400	584	1.8
Estonia	765	15	2.0	Portugal	4,142	42	1.0
Finland	11,772	173	1.5	Romania	6,021	58	1.0
France	49,964	737	1.5	Slovakia	616	105	17.0
Germany	38,073	585	1.5	Slovenia	1,307	28	2.1
Greece	104,923	562	0.5	Spain	49,236	520	1.1
Hungary	8,229	133	1.6	Sweden	10,000	83	0.8
Ireland	16,793	169	1.0	United Kingdom	170,101	1,714	1.0
Italy	63,600	756	1.2	**Total (EU 27)**	**655,772**	**8,264**	**1.3**

NA: not applicable.

The distribution of samples analysed, non-compliant samples and non-compliant results in aquaculture are presented in Table 23. Of the 8,264 samples analysed for aquaculture 51 samples (0.62 %) were non-compliant (54 non-compliant results). The non-compliant samples were reported by 14 Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			2,546	31	4	0.16	4
	A1		194	2.3	0	0	0
	A2		2	0.0	0	0	0
	A3		360	4.4	4	1.11	4
	A4		74	0.9	0	0	0
	A5		354	4.3	0	0	0
	A6		1,752	21.2	0	0	0
B			5,957	72	47	0.79	50
	B1		1,747	21	1	0.06	1
	B2		1,029	12	2	0.19	2
		B2a	685	8.3	2	0.29	2
		B2b	74	0.9	0	0	0
		B2c	368	4.5	0	0	0
		B2d	0	0.0	0	0	0
		B2e	0	0.0	0	0	0
		B2f	155	1.9	0	0	0
	B3		3,614	44	44	1.22	47
		B3a	678	8.2	2	0.29	2
		B3b	141	1.7	0	0	0
		B3c	787	9.5	3	0.38	5
		B3d	246	3.0	0	0	0
		B3e	1,996	24.2	39	1.95	40
		B3f	147	1.8	0	0	0
Total			**8,264**	**100**	**51**	**0.62**	**54**

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

No non-compliant samples were reported in the groups A1, A2, A4, A5 and A6. In the group A3, three non-compliant samples were reported for boldenone and one nandrolone. For antibacterials (B1), one non-compliant sample was reported.

In the group B2, two non-compliant samples were reported for anthelmintics (B2a). There were no non-compliant samples in the groups B2b, B2c and B2f. No monitoring is required for substances in the groups B2d (sedatives) and B2e (non-steroidal anti-inflammatory drugs) in aquaculture (Annex II to Council Directive 96/23/EC).

In the group B3, there were 44 non-compliant samples (47 non-compliant results). The non-compliant results were distributed as follows: two for organochlorine compounds (B3a), two for arsenic and three for mercury (B3c), and 40 for dyes (B3e) (malachite green, leuco-malachite green, crystal violet and leuco-crystal violet). It is evident that with 1.95 % non-compliant samples in group B3e, residues of dyes are the most frequently found residues in aquaculture.

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

4.8. Milk

Commission Decision 97/747/EC lays down that the annual number of samples taken should be one per 15,000 t of annual milk production, with a minimum of 300 samples. The minimum requirements

for the number of samples to be taken were fulfilled in 2012 by all Member States (Table 24). The production volume and the number of samples analysed in each Member State are given in Table 25.

Table 24: Production of milk and number of targeted samples over 2007-2012.

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	

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

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

Country	Production 2011 (t)	Number of samples 2012	Samples tested/ 15000 t	Country	Production 2011 (t)	Number of samples 2012	Samples tested/ 15000 t
Austria	3,285,914	344	1.6	Latvia	835,000	710	13
Belgium	3,070,000	644	3.1	Lithuania	1,328,111	930	11
Bulgaria	393,124	1,022	39	Luxemburg	284,000	300	16
Cyprus	153,220	3,694	362	Malta	44,415	440	149
Czech Republic	2,600,000	419	2.4	Netherlands	11,636,800	1,939	2.5
Denmark	4,500,000	297	1.0	Poland	12,052,200	2,651	3.3
Estonia	675,700	655	14.5	Portugal	1,897,690	1,356	10.7
Finland	2,189,619	314	2.2	Romania	919,890	419	7
France	23,301,219	1,976	1.3	Slovakia	1,136,231	547	7.2
Germany	28,742,463	1,902	1.0	Slovenia	428,806	337	12
Greece	1,885,854	738	5.9	Spain	7,312,992	1,300	2.7
Hungary	1,066,863	530	7.5	Sweden	2,850,000	300	1.6
Ireland	5,702,538	1,230	3.2	United Kingdom	13,726,528	3,563	3.9
Italy	11,003,500	2,191	3.0	**Total (EU 27)**	**143,022,67**	**30,748**	**3.2**

The distribution of samples analysed, non-compliant samples and non-compliant results in milk and the number of Member States reporting non-compliant results is presented in Table 26. Of the 30,748 milk samples analysed 27 (0.09 %) were non-compliant (31 non-compliant results). The non-compliant samples were reported by 11 Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			6,642	22	1	0.02	1
	A1		0	0.0	0	0	0
	A2		22	0.1	0	0	0
	A3		65	0.21	0	0	0
	A4		0	0.0	0	0	0
	A5		156	0.5	0	0	0
	A6		6,516	21.2	1	0.02	1
B			27,072	88	26	0.10	30
	B1		16,703	54	9	0.05	9
	B2		8,230	27	8	0.10	12
		B2a	5,727	19	5	0.09	9
		B2b	352	1.1	0	0	0
		B2c	359	1.17	0	0	0
		B2d	59	0.19	0	0	0
		B2e	3,436	11.2	3	0.09	3
		B2f	879	2.9	0	0	0
	B3		5,562	18	9	0.16	9
		B3a	1,585	5.2	0	0	0
		B3b	803	2.6	0	0	0
		B3c	1,099	3.6	0	0	0
		B3d	2,090	6.8	9	0.43	9
		B3e	0	0.0	0	0	0
		B3f	206	0.7	0	0	0
Total			**30,748**	**100**	**27**	**0.09**	**31**

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

In the group A, there was only one non-compliant sample for chloramphenicol (A6). According to Annex II to Council Directive 96/23/EC there is no requirement for residue monitoring of the substances in groups A1, A2, A3, A4 and A5 in milk.

For antibacterials (B1), six Member States reported a total of nine non-compliant samples of which three were found by applying inhibitor tests, one for ampicillin, one for benzylpenicillin, one for cefalonium and one for oxytetracycline.

In the group B2, there were eight non-compliant samples (12 non-compliant results): nine for anthelmintics (B2a) and three for non-steroidal anti-inflammatory drugs (B2e).

In the group B3, there were nine non-compliant samples, all of which were reported in subgroup B3d for aflatoxin M_1, by three Member States.

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

4.9. Eggs

The number of samples to be taken each year must be at least equal to one per 1,000 t of annual egg production, with a minimum of 200 samples. The minimum requirements for the number of samples to be taken were fulfilled in 2012 for the EU overall (Table 27) and by the vast majority of Member

States. Only Greece did not analyse at least one sample/1000 t of production. The production volume and the number of samples analysed in each Member State are given in Table 28.

Table 27: Production of eggs and number of targeted samples over 2007-2012.

Year	Production (t)	Targeted samples	Samples tested/1000 t [(a)]	Minimum 96/23/EC
2007 (EU 27)	6,114,369	13,685	2.3	1/1000 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	

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

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

Country	Production 2011 (t)	Number of samples 2012	Samples tested/ 1000 t	Country	Production 2011 (t)	Number of samples 2012	Samples tested/ 1000 t
Austria	94,631	220	2.3	Latvia	40,894	466	11.4
Belgium	153,600	242	1.6	Lithuania	49,020	194	4.0
Bulgaria	32,227	504	15.6	Luxemburg	1,300	200	153.8
Cyprus	7,810	297	38.0	Malta	3,262	177	54.3
Czech Republic	120,000	265	2.2	Netherlands	633,600	1,552	2.4
Denmark	58,080	223	3.8	Poland	471,200	664	1.4
Estonia	11,622	200	17.2	Portugal	94,569	447	4.7
Finland	62,300	202	3.2	Romania	98,320	200	2.0
France	958,491	964	1.0	Slovakia	38,249	230	6.0
Germany	617,240	709	1.1	Slovenia	25,221	216	8.6
Greece	107,930	85	0.8	Spain	771,774	869	1.1
Hungary	134,738	290	2.2	Sweden	99,000	200	2.0
Ireland	23,310	277	11.9	United Kingdom	620,393	1,536	2.5
Italy	807,910	1,167	1.4	**Total (EU 27)**	**6,136,691**	**12,596**	**2.1**

The distribution of samples analysed, non-compliant samples and non-compliant results in eggs is presented in Table 29. Of the 12,596 egg samples analysed, 23 (0.18 %) were non-compliant (24 non-compliant results). The non-compliant samples were reported by 12 Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			3,611	29	0	0	0
	A1		0	0.0	0	0	0
	A2		0	0.0	0	0	0
	A3		0	0.0	0	0	0
	A4		0	0.0	0	0	0
	A5		0	0.0	0	0	0
	A6		3,631	28.8	0	0	0
B			10,086	80	23	0.23	24
	B1		4,497	36	4	0.09	4
	B2		4,290	34	13	0.30	14
		B2a	262	2.1	0	0	0
		B2b	3,765	29.9	13	0.35	14
		B2c	187	1.5	0	0	0
		B2d	7	0.06	0	0	0
		B2e	17	0.13	0	0	0
		B2f	117	0.93	0	0	0
	B3		2,183	17	6	0.27	6
		B3a	1,723	13.7	6	0.35	6
		B3b	325	2.6	0	0	0
		B3c	158	1.3	0	0	0
		B3d	7	0.06	0	0	0
		B3e	2	0.0	0	0	0
		B3f	220	1.7	0	0	0
Total			**12,596**	**100**	**23**	**0.18**	**24**

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

Directive 96/23/EC, Annex II requires Member States to monitor in the group A only the residues of prohibited substances (A6). Although 3,611 samples were analysed for one ore more substances in this group (3,631 analyses), no non-compliant samples were reported.

For antibacterials (B1), four non-compliant samples were reported by three Member States. Substances found were: enrofloxacin (n = 1), doxycycline (n = 1), flumequine (n =1), and sulfadimidine (n = 1).

In the group B2, 13 non-compliant samples were found (14 non-compliant results) for anticoccidials (B2b) representing 0.35 % of the total samples analysed for this substance group.

In the group B3, six non-compliant samples were reported for dioxins and PCBs (B3a) by three Member States.

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

4.10. 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 2007-2012.

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

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 3000 t
Total samples required = {(10/300x3000) + [(Production reported in tonnes -3000) x (1/300)]}
b) For countries with production below 3000 t
Total samples required = Production reported in t x (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 did not achieve the minimum sampling frequency requirement. Austria, Denmark, Estonia, Finland, Ireland, Romania, Sweden and the United Kingdom did not report rabbit meat production for the year 2011 and as a consequence no rabbit meat samples were taken in 2012. Although Slovakia did not report production in 2011, samples were taken in 2012.

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

Country	Production 2011 (t)	Number of samples 2012	Samples tested/ required	Country	Production 2011 (t)	Number of samples 2012	Samples tested/ required
Austria	0	0	NA	Latvia	5	20	120.0
Belgium	4,258	174	1.7	Lithuania	49	17	10.4
Bulgaria	21	67	95.7	Luxemburg	8	13	48.8
Cyprus	256	231	27.1	Malta	300	23	2.3
Czech Republic	1,068	39	1.1	Netherlands	57	34	17.9
Denmark	0	0	NA	Poland	2,829	112	1.2
Estonia	0	0	NA	Portugal	7,353	119	1.0
Finland	0	0	NA	Romania	0	0	NA
France	51,665	810	3.1	Slovakia	0	37	NA
Germany	393	33	2.5	Slovenia	25	17	20.4
Greece	3,392	69	0.7	Spain	58,981	998	3.5
Hungary	9,339	135	1.1	Sweden	0	0	NA
Ireland	0	0	NA	United Kingdom	0	0	NA
Italy	36,316	523	2.5	**Total (EU 27)**	**176,315**	**3,471**	**NA**

NA: not applicable.

The distribution of samples analysed, non-compliant samples and non-compliant results in rabbit meat are presented in Table 32. Of the 3,471, samples analysed for rabbits, five (0.14 %) were non-compliant (five non-compliant results). The non-compliant samples were reported by four Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			1,006	29	1	0.10	1
	A1		68	2.0	0	0	0
	A2		33	0.95	0	0	0
	A3		79	2.3	0	0	0
	A4		65	1.9	0	0	0
	A5		118	3.4	0	0	0
	A6		711	20.5	1	0.14	1
B			2,506	72	4	0.16	4
	B1		1,435	41	1	0.07	1
	B2		707	20	3	0.42	3
		B2a	157	4.5	1	0.64	1
		B2b	296	8.5	1	0.34	1
		B2c	107	3.1	0	0	0
		B2d	10	0.29	0	0	0
		B2e	93	2.7	1	1.08	1
		B2f	45	1.3	0	0	0
	B3		417	12	0	0	0
		B3a	162	4.7	0	0	0
		B3b	58	1.7	0	0	0
		B3c	187	5.4	0	0	0
		B3d	22	0.6	0	0	0
		B3e	0	0.0	0	0	0
		B3f	6	0.2	0	0	0
Total			**3,471**	**100**	**5**	**0.14**	**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.

In the group A, only one non-compliant sample was reported for chloramphenicol (A6).

In the group B, there was one non-compliant sample for antibacterials (B1), one non-compliant result for anthelmintics (B2a), one for anticoccidials (B2b) and one for NSAIDs (B2e).

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

4.11. Farmed game

European Commission Decision 97/747/EC requires that the number of samples to be taken each year in the Member States to be at least 100. The minimum number of samples was set as a provisional rule to be reviewed in light of the information provided by the Member States on their production figures. For farmed game, a total of 2,334 targeted samples were collected in 2012 in the EU (Table 33). Estonia, Luxembourg, Malta and Slovenia did not report farmed game production in 2011 (Table 34). Although Bulgaria and Slovakia did not report production in 2011, samples were taken in 2012.

Table 33: Production of farmed game and number of targeted samples over 2007-2012.

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

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

Country	Production 2011 (t)	Number of samples 2012	Country	Production 2011 (t)	Number of samples 2012
Austria	429	154	Latvia	16	25
Belgium	200	167	Lithuania	19	63
Bulgaria	0	177	Luxemburg	0	0
Cyprus	41	19	Malta	0	0
Czech Republic	140	100	Netherlands	274	41
Denmark	71	32	Poland	218	110
Estonia	0	0	Portugal	1,197	45
Finland	2,148	128	Romania	16	85
France	10,775	185	Slovakia	0	100
Germany	1,697	108	Slovenia	0	0
Greece	156	63	Spain	164	45
Hungary	30	101	Sweden	1,526	106
Ireland	57	117	United Kingdom	2,403	141
Italy	3,414	222	**Total (EU 27)**	24,991	2,334

The distribution of samples analysed, non-compliant samples and non-compliant results in farmed game are presented in Table 35. Of the 2,334 samples analysed for farmed game, 24 (1.03 %) were non-compliant (25 non-compliant results). The non-compliant samples were reported by six Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			646	28	2	0.31	2
	A1		51	2.2	0	0	0
	A2		37	1.6	0	0	0
	A3		67	2.9	1	1.49	1
	A4		53	2.3	0	0	0
	A5		127	5.4	0	0	0
	A6		341	14.6	1	0.29	1
B			1,690	72	22	1.30	23
	B1		484	21	0	0	0
	B2		636	27	3	0.47	3
		B2a	259	11	1	0.39	1
		B2b	169	7.2	2	1.18	2
		B2c	129	5.5	0	0	0
		B2d	9	0.39	0	0	0
		B2e	73	3.1	0	0	0
		B2f	13	0.6	0	0	0
	B3		607	26	19	3.13	20
		B3a	209	9.0	2	0.96	2
		B3b	55	2.4	0	0	0
		B3c	316	13.5	18	5.70	18
		B3d	36	1.5	0	0	0
		B3e	0	0.0	0	0	0
		B3f	48	2.1	0	0	0
Total			**2,334**	**100**	**24**	**1.03**	**25**

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

There was one non-compliant sample in each of groups A3 and A6, for nandrolone and AMOZ, respectively.

In the group B2, non-compliant samples were reported for anthelmintics (B2a) (n = 1) and anticoccidials (B2b) (n = 2).

In the group B3, there were 19 non-compliant samples (20 non-compliant results), which were distributed as follows: two for organochlorine compounds (B3a) and 18 for heavy metals (B3c) (13 for cadmium, four for mercury and one for lead).

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

4.12. Wild game

European Commission Decision 97/747/EC requires that the number of samples to be taken each year in the Member States to be at least 100 samples. Samples must be taken to analyse residues of chemical elements. For wild game, a total of 2,600 targeted samples were collected in 2012 in the EU (Table 36). Cyprus and Malta did not report wild game production in 2011 thus no samples were taken in 2012 (Table 37). Although Sweden did not report production in 2011, samples were taken in 2012.

Table 36: Production of wild game and number of targeted samples over 2007-2012.

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

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

Country	Production 2011 (t)	Number of samples 2012	Country	Production 2011 (t)	Number of samples 2012
Austria	9,230	165	Latvia	124	90
Belgium	1,566	216	Lithuania	331	34
Bulgaria	10	198	Luxemburg	360	100
Cyprus	0	0	Malta	0	0
Czech Republic	7,737	159	Netherlands	376	43
Denmark	329	21	Poland	20,242	200
Estonia	454	99	Portugal	57	88
Finland	145	55	Romania	164	56
France	31,913	93	Slovakia	4,789	110
Germany	69,512	105	Slovenia	1,247	99
Greece	100	35	Spain	9,443	153
Hungary	101,693	173	Sweden	0	65
Ireland	188	72	United Kingdom	550	100
Italy	3,300	71	**Total (EU 27)**	**263,860**	**2,600**

The distribution of samples analysed, non-compliant samples and non-compliant results in wild game are presented in Table 38. Of the 2,600 samples analysed for wild game, 164 (6.31 %) were non-compliant (164 non-compliant results). The non-compliant samples were reported by 13 Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			76	2.92	0	0	0
	A1		2	0.1	0	0	0
	A2		0	0.00	0	0	0
	A3		3	0.12	0	0	0
	A4		1	0.04	0	0	0
	A5		5	0.19	0	0	0
	A6		65	2.50	0	0	0
B			2,553	98.2	164	6.42	164
	B1		1	0.04	0	0	0
	B2		147	5.7	0	0	0
		B2a	108	4.2	0	0	0
		B2b	0	0.0	0	0	0
		B2c	39	1.5	0	0	0
		B2d	0	0.00	0	0	0
		B2e	0	0.0	0	0	0
		B2f	0	0.0	0	0	0
	B3		2,426	93	164	6.76	164
		B3a	322	12.4	2	0.62	2
		B3b	53	2.0	0	0	0
		B3c	2,052	78.9	162	8	162
		B3d	0	0.0	0	0	0
		B3e	0	0.0	0	0	0
		B3f	166	6.4	0	0	0
Total			**2,600**	**100**	**164**	**6.31**	**164**

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

The vast majority of the non-compliant results (n = 162) were reported for heavy metals (B3c) representing 8 % of the total number of samples analysed for elements in this group (72 for cadmium, 58 for lead and 32 for mercury). The only other non-compliant samples (n = 2) were reported for organochlorine compounds (B3a).

4.13. 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 chapter 4.10.

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 2012, 4,820 targeted samples were collected for honey in the EU (Table 39). Production volume and number of targeted samples broken down by Member State are presented in Table 40. Lithuania and Sweden did not achieve the minimum sampling frequency requirement.

Table 39: Production of honey and number of targeted samples over 2007-2012.

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

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

Country	Production 2011 (t)	Number of samples 2012	Samples tested/ required	Country	Production 2011 (t)	Number of samples 2012	Samples tested/ required
Austria	5,000	175	1.6	Latvia	676	22	1.0
Belgium	1,500	101	2.0	Lithuania	2,384	70	0.9
Bulgaria	5,354	220	2.0	Luxemburg	120	26	6.5
Cyprus	413	290	21.1	Malta	15	12	24.0
Czech Republic	7,500	126	1.1	Netherlands	100	19	5.7
Denmark	3,000	194	1.9	Poland	12,200	273	2.1
Estonia	681	23	1.0	Portugal	7,426	118	1.0
Finland	1,700	57	1.0	Romania	20,088	189	1.2
France	15,974	353	2.5	Slovakia	2,530	126	1.5
Germany	23,178	213	1.3	Slovenia	1,910	73	1.1
Greece	16,532	345	2.4	Spain	31,214	724	3.7
Hungary	25,787	327	1.9	Sweden	3,336	82	0.8
Ireland	220	110	15.0	United Kingdom	3,303	170	1.7
Italy	23,000	382	2.3	**Total (EU 27)**	**215,141**	**4,820**	**NA**

NA: not applicable.

The distribution of samples analysed, non-compliant samples and non-compliant results in honey are presented in Table 41. Of the 4,820 samples analysed for honey 44 (0.91 %) were non-compliant (48 non-compliant results). The non-compliant samples were reported by 15 Member States.

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

Substance group [(a)]			Samples analysed		Non-compliant samples		Non-compliant results
			n[(b)]	%	n[(c)]	%	n[(d)]
A			682	14	0	0	0
	A1		0	0.0	0	0	0
	A2		0	0.0	0	0	0
	A3		0	0.0	0	0	0
	A4		0	0.0	0	0	0
	A5		0	0.0	0	0	0
	A6		682	14.1	0	0	0
B			4,366	91	44	1.01	48
	B1		2,130	44	31	1.46	35
	B2		1,063	22	1	0.09	1
		B2a	42	0.87	0	0	0
		B2b	36	0.75	0	0	0
		B2c	893	18.5	0	0	0
		B2d	0	0.0	0	0	0
		B2e	0	0.0	0	0	0
		B2f	352	7.3	1	0	1
	B3		1,783	37	12	0.67	12
		B3a	718	14.9	0	0	0
		B3b	667	13.8	0	0	0
		B3c	565	11.7	10	1.77	10
		B3d	25	0.5	0	0	0
		B3e	0	0.0	0	0	0
		B3f	207	4.3	2	0.97	2
Total			**4,820**	**100**	**44**	**0.91**	**48**

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

The majority of the non-compliant results (n = 35) were for antibacterials (B1). Other non-compliant results were reported under the subgroups B2f (n = 1) for amitraz, B3c (n = 10) for copper, lead and tin and B3f (n = 2) for diethyltoluamide.

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

4.14. Suspect, import and other samples

In addition to the targeted samples collected in conformity with the specification of the NRCP for 2012, 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 2012, 23,102 suspect samples were reported of which 449 (1.9 %) were non-compliant (519 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 = 4,164). 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, 318,081 samples were collected in the framework of other monitoring programmes developed under the national legislation. Of that, 308,536 were samples analysed in Germany for antibacterials by means of inhibitor tests (see Section 4.1.4). 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	16,086	203	511	2	30,395	211
Pigs	3,870	122	171	5	279,310	546
Sheep/goats	1,379	4	157	3	2674	6
Horses	58	0	80	0	190	1
Poultry	547	17	766	29	673	5
Aquaculture	94	15	1,951	11	146	3
Milk	850	54	20	0	3,846	83
Eggs	42	4	37	0	73	3
Rabbit	82	0	15	0	223	0
Farmed game	7	1	47	1	8	0
Wild game	2	0	54	0	5	0
Honey	85	29	355	1	538	1
Total	**23,102**	**449**	**4,164**	**52**	**318,081**	**859**
Percentage non-compliant samples		**1.9**		**1.25**		**0.27**

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

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

- In 2012, 27 European Union (EU) Member States reported in the framework of the residue monitoring the results for 772,540 samples. A total of 427,193 targeted samples and 23,102 suspect samples were reported under Council Directive 96/23/EC. Additionally, 318,081 samples collected in the framework of other programmes developed under the national legislation and 4,164 samples checked at import were reported.
- The majority of Member States fulfilled the requirements for sampling frequency laid down in Council Directive 96/23/EC and in Commission Decision 97/747/EC.
- There were 1,071 or 0.25 % of non-compliant samples out of the 427,193 targeted samples in 2012.
- Similarly to the previous five years, there were no non-compliant samples for stilbenes and derivatives (A1).
- For antithyroid agents (A2), there were 0.33 % non-compliant samples, all for thiouracil. Feeding diets rich in cruciferous plants was considered to be the source of non-compliance.
- In the group of steroids (A3), there were 0.09 % non-compliant samples in all animal and product categories. The non-compliant results for steroids were found in bovines (n = 4), pigs (n = 31), aquaculture (n = 4) and farmed game (n = 1). Non-compliant results for authorised corticosteroids were reported under B2f, in 2012.
- In the group of resorcyclic acid lactones (A4), 0.07 % of the samples were non-compliant for zearalanone and derivatives. For beta-agonists (A5), there were 0.01 % non-compliant samples.
- For prohibited substances, 0.05 % of samples were non-compliant. Substances identified were chloramphenicol (n = 16), nitrofurans (n = 11) and nitroimidazoles (n = 8).
- For antibacterials (B1), 0.18 % of the samples analysed under the Directive 96/23/EC monitoring were non-compliant. The highest frequency of non-compliant samples for antibacterials was found in honey (1.5 %).
- In the group B2 (other veterinary drugs), the highest proportion of non-compliant samples was found for “other pharmacologically active substances” (0.26 %; B2f), this value is higher than previous years and is considered to be due to the Member States reporting authorised corticosteroids under this group only, in 2012.
- Instances of non-compliance for anthelmintics (B2a) were reported in bovines (0.02 %), pigs (0.04 %), sheep and goats (0.36 %), horses (0.40 %), aquaculture (0.29 %), milk (0.09 %), rabbits (0.64 %) and farmed game (0.39 %).
- For anticoccidials (B2b), the percentage of non-compliant samples was lower in 2012 (0.15 %) compared to the previous five years (0.26 %- 1.6 %). Across the different species the non-compliant results were reported as follows; in pigs (0.03 %), horses (1.25 %), poultry (0.16 %), eggs (0.35 %), rabbits (0.34 %) and farmed game (1.18 %).
- There were no non-compliant samples for pyrethroids (B2c).
- Non-compliant samples (0.05 %) were reported for sedatives (B2d) in bovines, pigs and horses.
- For non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were found in bovines (0.11 %), pigs (0.05 %), horses (1.58 %), poultry (0.34 %), milk (0.09 %) and rabbits (1.08 %).

- In the group B3 (other substances and environmental contaminants), the chemical elements (B3c) had the highest overall percentage of non-compliant samples (2.9 %), with cadmium, lead, mercury and copper being most frequently identified.
- Non-compliant samples were reported for organochlorine compounds (B3a) and organophosphorus compounds (B3b); 0.21 % and 0.04 %, respectively.
- For mycotoxins (B3d), there were non-compliant samples for zearalenone and derivatives in bovine and pigs, ochratoxin A in pigs, aflatoxin B_1 in bovines and pigs and aflatoxin M_1 in milk.
- Prevalence of dyes (B3e) in aquaculture samples remained relatively high in 2012 (1.95 %), a value slightly higher compared to the previous four years. Substances found were malachite green, leuco malachite green, crystal violet and leuco crystal violet.
- The overall frequency of non-compliant samples in 2012 was slightly lower (0.25 %) compared to the previous five years (0.28 % - 0.34 %). Although, for several substance groups there were no notable variations in the frequency of non-compliant samples in 2012 compared to previous years.
- A decrease was observed for antithyroid agents (A2), steroids (A3), resorcyclic acid lactones (A4), antibacterials (B1), anticoccidials (B2b) and carbamates and pyrethroids (B2c) compared to previous years, in 2012. The proportion of non-compliant samples for chemical elements (mainly metals) in 2012 was higher compared to 2007, 2008 and 2009, but lower compared to 2010 and 2011.
- The decrease in the frequency of non-compliant samples for anticoccidials 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.
- 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.

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) still remain valid. Such an approach would help to overcome the limitations borne from using aggregated data.

- A database which contains all individual test results for each sample and an accurate sample description for both compliant and non-compliant samples should be considered in the future, in order to allow a more detailed analysis at matrix and substance level.

- Information on follow-up actions and measures applied in the case of non-compliant results, should be integrated into the residues database in order to allow automatic processing of that information.

- As suggested by the Committee for Medicinal Products for Veterinary Use (CVMP) of the European Medicines Agency, the residue monitoring data could be an important source of information on the compatibility of the MRLs recommended by the CVMP and the withdrawal periods established by the CVMP and national authorities. Currently, information relevant to this issue is not captured in the database and thus it is impossible to perform any

evaluation in this respect. It is recommended that information on the reason for the violation (e.g. abusive use, withdrawal period not respected) should be captured in the database.

- Results from inhibitor tests that are not considered part of the residue monitoring plan under council Directive 96/23/EC should not be included in the EU residue database and instead transmitted separately, if required.

REFERENCES

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

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

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

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

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

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

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

Fidani M, Pompa G, Mungiguerra F, Casati A, Fracchiolla ML, Arioli F, 2012. Investigation of the presence of endogenous prednisolone in equine urine by high-performance liquid chromatography mass spectrometry and high-resolution mass spectrometry. Rapid Communications in Mass Spectrometry, 26, 879-86.

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

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

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

APPENDICES

Appendix A. LIST OF NON-COMPLIANT RESULTS: TARGETED SAMPLING

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines	**A2**	Thiouracil	BE	166	4	2.4
			ES	354	4	1.1
			FI	23	2	8.7
			IE	243	11	4.5
			LT	21	1	4.8
			PL	101	1	1.0
			UK	442	6	1.4
		Sub-total for A2	**7**		**29**	
	A3	Boldenone-Alpha	NL	980	4	0.4
		Sub-total for A3	**1**		**4**	
	A4	Alpha-Zearalanol (Zeranol)	DE	266	2	0.8
			UK	404	8	2.0
		Beta Zearalanol (Taleranol)	DE	240	1	0.4
			IT	358	1	0.3
			UK	226	2	0.9
		Zearalanone	SK	24	1	4.2
		Sub-total for A4	**4**		**15**	
	A5	Clenbuterol	PT	155	4	2.6
		Sub-total for A5	**1**		**4**	
	A6	Chloramphenicol	CZ	110	1	0.9
			IT	507	1	0.2
		Metronidazole	DE	288	1	0.3
		SEM (semicarbazide)	IE	205	6	2.9
		Sub-total for A6	**4**		**9**	
	B1	Amoxycillin	PL	198	1	0.5
		Benzylpenicillin (Penicillin G)	DE	469	1	0.2
			DK	137	1	0.7
			EE	8	1	12.5
			IT	332	1	0.3
		Chlortetracyclin	IT	433	1	0.2
		Dihydrostreptomycin	ES	1	1	100.0
			FR	2427	2	0.1
			LT	93	1	1.1
			PL	198	2	1.0
			UK	1831	3	0.2
		Epi-Tetracycline	DE	251	1	0.4
		Florfenicol	UK	100	4	4.0
		Gamithromycin	UK	1831	1	0.1
		Gentamicin	DE	499	2	0.4
			NL	1943	2	0.1
		Kanamycin	DE	420	1	0.2
		Neomycin	NL	1943	5	0.3
			PL	198	1	0.5
		Oxytetracycline	ES	470	1	0.2
			FR	3223	10	0.3

(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.

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
			LT	93	1	1.1
		Penicillins (group)	FR	2427	2	0.1
		Spiramycin	FR	2427	1	0.0
		Sulfadiazine	CY	35	3	8.6
			IT	1890	1	0.1
		Sulfadimethoxine	BE	552	1	0.2
			FR	3171	2	0.1
			IT	1890	1	0.1
		Sulfadimidine	CY	35	1	2.9
			FR	3171	1	0.0
		Sulfamethazine	UK	1831	1	0.1
		Sulfamonomethoxine	IT	1890	1	0.1
		Sulfapyridin	IT	1890	1	0.1
		Tetracycline	DE	1353	1	0.1
		Tiamulin	NL	1943	1	0.1
		Sub-total for B1	**12**		**62**	
	B2a	2-Aminoflubendazole	UK	992	1	0.1
		Sub-total for B2a	**1**		**1**	
	B2d	Acepromazine	BE	95	1	1.1
		Sub-total for B2d	**1**		**1**	
	B2e	Antipyrin-4-Methylamino	DE	328	1	0.3
		Ibuprofen	UK	773	1	0.1
		Mefenamic Acid	BE	157	1	0.6
		Meloxicam	FR	594	1	0.2
		Phenylbutazone	UK	773	1	0.1
		Sub-total for B2e	**4**		**5**	
	B2f	Dexamethasone	DE	830	6	0.7
			ES	662	1	0.2
			FR	418	2	0.5
			IT	3036	21	0.7
			NL	1567	3	0.2
		Prednisolone	BE	411	3	0.7
			FR	418	3	0.7
			IT	3036	4	0.1
			RO	18	1	5.6
		Prednisone	IT	3036	4	0.1
		Sub-total for B2f	**7**		**48**	
	B3a	HCH-Beta	FR	444	1	0.2
		PCB sum	CZ	125	1	0.8
			FR	350	2	0.6
			SK	8	1	12.5
		PCDD	FR	45	1	2.2
		WHO-PCDD/F-PCB-TEQ	BE	179	1	0.6
		Sub-total for B3a	**4**		**7**	
	B3c	Arsenic As	ES	85	1	1.2
		Cadmium Cd	CZ	230	4	1.7
			DE	307	11	3.6
			ES	253	1	0.4
			HU	8	2	25.0
			LV	8	1	12.5
			NL	156	2	1.3
			PL	267	1	0.4
			SI	11	3	27.3
			UK	101	13	12.9
		Copper Cu	DE	35	21	60.0
		Lead Pb	AT	11	1	9.1
			IT	218	2	0.9

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
			PL	267	1	0.4
			UK	101	1	1.0
		Mercury Hg	CZ	230	3	1.3
			DE	307	13	4.2
		Sub-total for B3c	**11**		**81**	
	B3d	Aflatoxin B_1	IT	151	1	0.7
		Zearalenol-alpha	FI	20	1	5.0
		Zearalenol-beta	FI	20	3	15.0
		Sub-total for B3d	**2**		**5**	
		Total in Bovines	**22**		**271**	
Pigs	**A2**	Thiouracil	EE	9	2	22.2
			LT	12	2	16.7
		Sub-total for A2	**2**		**4**	
	A3	Androstene-5-3-Beta	NL	581	14	2.4
		Boldenone	PL	2	1	50.0
		Nandrolone	FR	487	10	2.1
			PL	709	6	0.8
		Sub-total for A3	**3**		**31**	
	A6	Chloramphenicol	BG	29	1	3.4
			ES	843	4	0.5
			FR	98	1	1.0
			LT	35	1	2.9
			PT	142	1	0.7
			SE	198	2	1.0
		Metronidazole	DE	3975	2	0.1
		Nitrofurazone	FR	149	1	0.7
		Sub-total for A6	**7**		**13**	
	B1	Amoxycillin	CZ	1136	4	0.4
			ES	1872	1	0.1
		Benzylpenicillin (Penicillin G)	CZ	1136	2	0.2
			DE	1131	1	0.1
			DK	1135	4	0.4
		Chlortetracyclin	CY	1024	1	0.1
			ES	1884	1	0.1
			PL	398	2	0.5
		Dihydrostreptomycin	DE	925	1	0.1
			NL	2399	3	0.1
			PL	200	1	0.5
		Doxycycline	BE	1667	2	0.1
			ES	1884	3	0.2
			NL	2399	1	0.0
			PL	398	1	0.3
		Enrofloxacin	DE	4317	2	0.0
			ES	1900	5	0.3
		Oxytetracycline	DE	4088	1	0.0
			ES	1884	1	0.1
		Sulfadiazine	BE	1898	3	0.2
			CY	53	3	5.7
			ES	2450	2	0.1
		Sulfadimethoxine	FR	3389	5	0.1
			IT	1496	4	0.3
		Sulfadimidine	DE	3176	2	0.1
			ES	2449	2	0.1
		Sulfamethazine	PL	368	1	0.3
		Tetracycline	DE	4089	2	0.0
		Tilmicosin	PT	140	1	0.7
		Trimethoprim	DE	1792	1	0.1

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
		Sub-total for B1	**11**		**63**	
	B2a	2-Aminoflubendazole	DE	510	1	0.2
		Albendazol	DE	521	1	0.2
		Doramectin	PL	490	1	0.2
		Flubendazole	DE	475	1	0.2
		Sub-total for B2a	**2**		**4**	
	B2b	Lasalocid	UK	97	1	1.0
		Salinomycin	ES	761	1	0.1
		Sub-total for B2b	**2**		**2**	
	B2d	Haloperidol	FR	693	1	0.1
		Xylazine	DE	965	1	0.1
			ES	629	1	0.2
		Sub-total for B2d	**3**		**3**	
	B2e	Diclofen (Diclofenac)	AT	34	1	2.9
		Metamizole (Dipyrone Monohydrate)	AT	34	1	2.9
		Sub-total for B2e	**1**		**2**	
	B2f	Prednisolone	RO	69	1	1.4
		Sub-total for B2f	**1**		**1**	
	B3a	PCB sum	CZ	96	1	1.0
		Sub-total for B3a	**1**		**1**	
	B3b	Diazinon	ES	260	1	0.4
		Sub-total for B3b	**1**		**1**	
	B3c	Cadmium Cd	DE	1485	14	0.9
			ES	412	1	0.2
			NL	175	1	0.6
		Copper Cu	DE	178	46	25.8
		Lead Pb	IT	323	1	0.3
			PL	466	1	0.2
		Mercury Hg	CZ	231	9	3.9
			DE	1485	100	6.7
		Sub-total for B3c	**6**		**173**	
	B3d	Aflatoxin B_1	IT	20	2	10.0
		Ochratoxin A	AT	25	2	8.0
			UK	59	1	1.7
		Zearalenol-alpha	FI	23	3	13.0
		Sub-total for B3d	**4**		**8**	
		Total in Pigs	**19**		**306**	
Sheep/Goats	**A2**	Thiouracil	IE	14	1	7.1
		Sub-total for A2	**1**		**1**	
	A6	Chloramphenicol	AT	24	1	4.2
		Dimetridazole	SK	2	1	50.0
		SEM (semicarbazide)	IE	126	1	0.8
		Sub-total for A6	**3**		**3**	
	B1	Chlortetracyclin	ES	729	3	0.4
		Dihydrostreptomycin	GR	155	2	1.3
			NL	149	1	0.7
			UK	2888	1	0.0
		Doxycycline	ES	590	4	0.7
		Neomycin	FR	301	1	0.3
		Oxytetracycline	ES	727	2	0.3
			FR	599	1	0.2
		Penicillins (group)	FR	301	1	0.3
		Sulfadiazine	CY	14	2	14.3
			ES	1054	18	1.7
		Sulfadimethoxine	FR	599	1	0.2
		Tildipirosin	FR	301	1	0.3

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
		Sub-total for B1	**6**		**38**	
	B2a	Closantel	IE	265	3	1.1
			UK	1630	1	0.1
		Fenbendazole	UK	1630	1	0.1
		Flubendazole	IE	265	1	0.4
		Levamisole	UK	1630	1	0.1
		Nitroxinil	IE	265	1	0.4
			UK	1630	1	0.1
		Oxfendazole	UK	1630	1	0.1
		Rafoxanide	IE	265	1	0.4
		Triclabendazole	UK	1630	1	0.1
		Sub-total for B2a	**2**		**12**	
	B2f	Dexamethasone	FR	98	1	1.0
		Sub-total for B2f	**1**		**1**	
	B3a	gamma-HCH (HCH, Lindane)	ES	282	2	0.7
		PCB sum	CZ	3	1	33.3
		PCDD	FR	39	1	2.6
		PCDF	FR	39	2	5.1
		WHO-PCDD/F-PCB-TEQ	CZ	3	3	100.0
			DE	1	1	100.0
		WHO-PCDD/F-TEQ	CZ	3	2	66.7
			DE	1	1	100.0
		Sub-total for B3a	**4**		**13**	
	B3b	Diazinon	UK	582	2	0.3
		Sub-total for B3b	**1**		**2**	
	B3c	Cadmium Cd	DE	31	2	6.5
			ES	190	2	1.1
			GR	115	5	4.3
			HU	7	2	28.6
			NL	10	1	10.0
			SK	6	1	16.7
		Copper Cu	DE	4	3	75.0
		Lead Pb	DE	31	1	3.2
			IT	46	1	2.2
			UK	64	2	3.1
		Mercury Hg	DE	31	2	6.5
		Sub-total for B3c	**8**		**22**	
		Total in Sheep/Goats	**13**		**92**	
Horses	**A4**	Alpha-Zearalanol (Zeranol)	DE	8	1	12.5
		Sub-total for A4	**1**		**1**	
	B2a	Closantel	IE	29	1	3.4
		Sub-total for B2a	**1**		**1**	
	B2b	Monensin	BE	10	1	10.0
		Sub-total for B2b	**1**		**1**	
	B2d	Diazepam	DE	4	1	25.0
		Sub-total for B2d	**1**		**1**	
	B2e	Diclofen (Diclofenac)	PL	25	1	4.0
		Ibuprofen	UK	92	1	1.1
		Metamizole (Dipyrone Monohydrate)	AT	12	1	8.3
		Phenylbutazone	DK	8	1	12.5
			UK	92	5	5.4
		Sub-total for B2e	**4**		**9**	
	B2f	Prednisolone	BE	60	1	1.7
		Sub-total for B2f	**1**		**1**	
	B3c	Cadmium Cd	BE	10	1	10.0
			CZ	3	2	66.7

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
			DE	9	4	44.4
			ES	90	17	18.9
			FR	137	2	1.5
			HU	1	1	100.0
			PL	150	2	1.3
			SI	5	4	80.0
			UK	2	2	100.0
		Mercury Hg	CZ	3	1	33.3
			DE	9	3	33.3
		Sub-total for B3c	**9**		**39**	
		Total in Horses	**12**		**53**	
Poultry	**A5**	Terbutaline	FR	686	1	0.1
		Sub-total for A5	**1**		**1**	
	A6	AOZ (3-amino-2-oxazolidone)	GR	37	2	5.4
		Chloramphenicol	IT	256	1	0.4
		Metronidazole	FR	1036	1	0.1
		Nitroimidazoles (group)	SK	23	3	13.0
		Sub-total for A6	**4**		**7**	
	B1	Chlortetracyclin	CY	401	1	0.2
		Ciprofloxacin	ES	399	2	0.5
		Doxycycline	ES	303	3	1.0
			GR	106	1	0.9
			IT	144	2	1.4
			NL	1188	6	0.5
			PL	405	4	1.0
		Enrofloxacin	ES	257	4	1.6
		Sulfameter	CY	401	1	0.2
		Tetracycline	CY	401	1	0.2
		Sub-total for B1	**6**		**25**	
	B2b	Decoquinate	CZ	160	1	0.6
			PL	653	1	0.2
		Maduramicin	CZ	160	1	0.6
			FR	189	1	0.5
		Salinomycin	MT	26	3	11.5
			PL	653	5	0.8
		Toltrazuril	NL	119	1	0.8
		Sub-total for B2b	**5**		**13**	
	B2e	Antipyrin-4-Methylamino	BE	135	2	1.5
		Tolfenamic acid	BE	135	1	0.7
		Sub-total for B2e	**1**		**3**	
	B2f	Nicotine	DE	79	2	2.5
		Olaquindox	PT	93	1	1.1
		Sub-total for B2f	**2**		**3**	
	B3a	PCB sum	FR	224	2	0.9
		PCDD	FR	43	1	2.3
		Sub-total for B3a	**1**		**3**	
	B3c	Copper Cu	DE	25	1	4.0
		Sub-total for B3c	**1**		**1**	
		Total in Poultry	**13**		**56**	
Aquaculture	**A3**	Boldenone	FR	41	3	7.3
		Nandrolone	FR	41	1	2.4
		Sub-total for A3	**1**		**4**	
	B1	Dihydrostreptomycin	HU	6	1	16.7
		Sub-total for B1	**1**		**1**	
	B2a	Emamectin B1a	UK	228	2	0.9
		Sub-total for B2a	**1**		**2**	
	B3a	PCB 138	UK	13	1	7.7

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
		PCB 153	UK	13	1	7.7
		Sub-total for B3a	**1**		**2**	
	B3c	Arsenic As	ES	28	2	7.1
		Mercury Hg	ES	84	3	3.6
		Sub-total for B3c	**1**		**5**	
	B3e	Cristal Violet	PL	152	1	0.7
		Cristal Violet-Leuco	CZ	80	2	2.5
			DE	396	1	0.3
			DK	60	1	1.7
			PL	152	1	0.7
		Malachite Green	CZ	80	1	1.3
			PL	152	1	0.7
		Malachite Green-Leuco	AT	90	1	1.1
			BE	76	3	3.9
			BG	39	1	2.6
			CZ	80	13	16.3
			DE	427	4	0.9
			EE	2	1	50.0
			IT	184	1	0.5
			PL	152	5	3.3
			SK	60	3	5.0
		Sub-total for B3e	**10**		**40**	
		Total in Aquaculture	**14**		**54**	
Milk	**A6**	Chloramphenicol	ES	317	1	0.3
		Sub-total for A6	**1**		**1**	
	B1	Ampicillin	LT	214	1	0.5
		Benzylpenicillin (Penicillin G)	DE	404	1	0.2
			IT	112	1	0.9
			SK	45	1	2.2
		Cefalonium	FR	327	1	0.3
		Inhibitors	CY	3131	3	0.1
		Oxytetracycline	LT	214	1	0.5
		Sub-total for B1	**6**		**9**	
	B2a	Clorsulon	BE	55	1	1.8
		Fenbendazole	FR	265	1	0.4
		Ivermectin	BE	55	1	1.8
		Ketotriclabendazole	DE	495	1	0.2
		Triclabendazole	DE	748	1	0.1
		Triclabendazolsulfon	DE	567	1	0.2
			UK	860	2	0.2
		Triclabenzolsulfoxide	DE	567	1	0.2
		Sub-total for B2a	**4**		**9**	
	B2e	Acetaminophen (Paracetamol)	DE	59	1	1.7
		Diclofen (Diclofenac)	DK	50	1	2.0
		Ibuprofen	UK	187	1	0.5
		Sub-total for B2e	**3**		**3**	
	B3d	Aflatoxin M_1	BG	88	1	1.1
			ES	70	1	1.4
			IT	463	7	1.5
		Sub-total for B3d	**3**		**9**	
		Total in Milk	**11**		**31**	
Eggs	**B1**	Doxycycline	BE	45	1	2.2
		Enrofloxacin	BE	45	1	2.2
		Flumequine	IT	62	1	1.6
		Sulfadimidine	DE	42	1	2.4
		Sub-total for B1	**3**		**4**	
	B2b	Diclazuril	FR	153	1	0.7

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
			UK	547	2	0.4
		Lasalocid	DE	223	1	0.4
			MT	23	1	4.3
			UK	547	1	0.2
		Maduramicin	FR	153	1	0.7
		Narasin	ES	71	1	1.4
			FR	153	1	0.7
			IE	46	1	2.2
		Nicarbazin	IE	46	1	2.2
		Robenidine	IT	217	2	0.9
		Salinomycin	PL	112	1	0.9
		Sub-total for B2b	**8**		**14**	
	B3a	Dioxins	PT	9	1	11.1
		HCB (Hexachlorbenzene)	DE	125	1	0.8
		PCB sum	DK	1	1	100.0
			SK	50	1	2.0
		WHO-PCDD/F-PCB-TEQ	DE	105	2	1.9
		Sub-total for B3a	**4**		**6**	
		Total in Eggs	**12**		**24**	
Rabbit	**A6**	Chloramphenicol	CY	20	1	5.0
		Sub-total for A6	**1**		**1**	
	B1	Sulfadimethoxine	FR	248	1	0.4
		Sub-total for B1	**1**		**1**	
	B2a	Albendazol	PT	6	1	16.7
		Sub-total for B2a	**1**		**1**	
	B2b	Narasin	ES	122	1	0.8
		Sub-total for B2b	**1**		**1**	
	B2e	Diclofen (Diclofenac)	CY	6	1	16.7
		Sub-total for B2e	**1**		**1**	
		Total in Rabbit	**4**		**5**	
Farmed Game	**A3**	Nandrolone	FR	4	1	25.0
		Sub-total for A3	**1**		**1**	
	A6	AMOZ (5-methylmorpholino-3-amino-2-oxazolidone)	BE	42	1	2.4
		Sub-total for A6	**1**		**1**	
	B2a	Ivermectin	FI	43	1	2.3
		Sub-total for B2a	**1**		**1**	
	B2b	Lasalocid	UK	15	2	13.3
		Sub-total for B2b	**1**		**2**	
	B3a	DDE, pp'-	UK	7	1	14.3
		PCB 180	DE	13	1	7.7
		Sub-total for B3a	**2**		**2**	
	B3c	Cadmium Cd	FI	30	13	43.3
		Lead Pb	GR	14	1	7.1
		Mercury Hg	DE	11	4	36.4
		Sub-total for B3c	**3**		**18**	
		Total in Farmed Game	**6**		**25**	
Wild game	**B3a**	PCB sum	FR	20	2	10.0
		Sub-total for B3a	**1**		**2**	
	B3c	Cadmium Cd	DK	21	1	4.8
			ES	128	3	2.3
			FI	28	15	53.6
			FR	59	2	3.4
			LU	100	4	4.0
			LV	90	46	51.1
			PL	116	1	0.9
		Lead Pb	AT	128	3	2.3

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
			CZ	105	10	9.5
			EE	57	1	1.8
			ES	128	1	0.8
			FR	59	1	1.7
			GR	35	5	14.3
			LU	100	3	3.0
			LV	90	24	26.7
			NL	43	5	11.6
			PL	116	5	4.3
		Mercury Hg	DE	83	25	30.1
			DK	21	6	28.6
			PL	116	1	0.9
		Sub-total for B3c	**13**		**162**	
		Total in Wild game	**13**		**164**	
Honey	**B1**	Dihydrostreptomycin	AT	129	1	0.8
		Oxytetracycline	CY	94	3	3.2
			GR	127	2	1.6
			HU	27	3	11.1
			UK	97	2	2.1
		Streptomycin	LU	4	1	25.0
		Sulfachlorpyridazine	HU	35	1	2.9
		Sulfadimidine	AT	129	1	0.8
		Sulfamethoxazole	CY	94	1	1.1
		Sulfathiazole	AT	129	3	2.3
		Sulfonamides	PL	146	10	6.8
		Tetracycline	BG	51	2	3.9
			HU	27	3	11.1
		Trimethoprim	HU	35	1	2.9
		Tylosin, Tylosin A	SK	25	1	4.0
		Sub-total for B1	**9**		**35**	
	B2f	Amitraz (Formamidine)	DE	121	1	0.8
		Sub-total for B2f	**1**		**1**	
	B3c	Copper Cu	DE	3	1	33.3
		Lead Pb	AT	46	1	2.2
			CZ	16	1	6.3
			DK	20	1	5.0
			EE	2	1	50.0
			FI	8	1	12.5
			IE	15	2	13.3
			PL	33	1	3.0
		Tin Sn	CZ	1	1	100.0
		Sub-total for B3c	**8**		**10**	
	B3f	Diethyltoluamide	DE	89	2	2.2
		Sub-total for B3f	**1**		**2**	
		Total in Honey	**15**		**48**	
Total in all categories					**1129**	

Appendix B. LIST OF NON-COMPLIANT RESULTS: SUSPECT SAMPLING

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines	**A2**	Thiouracil	ES	28	1	3.6
			UK	12	1	8.3
		Sub-total for A2	**2**		**2**	
	A5	Clenbuterol	IT	492	35	7.1
			PT	51	3	5.9
		Clenbuterol-Hydroxymethyl (NA 1142)	IT	492	12	2.4
		Clenpenterol (NAB 762, Methylclenbuterol)	IT	492	12	2.4
		Mabuterol	IT	492	12	2.4
		Mapenterol	IT	492	12	2.4
		Sub-total for A5	**2**		**86**	
	B1	Amoxycillin	IE	3833	1	0.0
		Antibacterials	NL	7832	82	1.0
		Benzylpenicillin (Penicillin G)	BE	118	1	0.8
			IE	3833	1	0.0
			IT	20	1	5.0
		Chlortetracyclin	AT	155	1	0.6
			IE	3833	1	0.0
		Ciprofloxacin	IT	22	3	13.6
		Danofloxacin	IE	3833	1	0.0
		Dihydrostreptomycin	BE	118	1	0.8
			ES	2	2	100.0
			GR	6	1	16.7
			UK	37	1	2.7
		Enrofloxacin	IT	22	3	13.6
		Erythromycin (Erythromycin A)	GR	6	1	16.7
		Florfenicol	UK	37	1	2.7
		Gentamicin	BE	118	1	0.8
		Marbofloxacin	IE	3833	6	0.2
		Oxytetracycline	AT	429	1	0.2
			BE	118	3	2.5
			IE	3833	3	0.1
			IT	23	1	4.3
			LT	1	1	100.0
		Spectinomycin	BE	118	2	1.7
		Sulfadiazine	IT	67	1	1.5
		Sulfadimethoxine	BE	118	1	0.8
		Sulfadimidine	IT	67	1	1.5
		Sulfamerazine	IT	67	1	1.5
		Sulfamonomethoxine	IT	67	1	1.5
		Tetracycline	BE	118	2	1.7
			ES	19	1	5.3
			MT	10	1	10.0
		Tilmicosin	BE	118	3	2.5
		Trimethoprim	BE	118	2	1.7
		Tylosin, Tylosin A	BE	118	1	0.8
		Sub-total for B1	**10**		**135**	
	B2a	Avermectin B1a	BE	132	2	1.5
		Clorsulon	BE	132	1	0.8
		Doramectin	BE	132	1	0.8
		Moxidectin	BE	132	6	4.5
		Sub-total for B2a	**1**		**10**	
	B2e	Flunixin	BE	117	1	0.9
		Metamizole (Dipyrone	AT	3	3	100.0

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
		Monohydrate)				
		Tolfenamic acid	BE	117	8	6.8
		Sub-total for B2e	**2**		**12**	
	B2f	Dexamethasone	ES	77	1	1.3
			IT	76	1	1.3
		Prednisolone	BE	228	1	0.4
		Prednisone	IT	739	2	0.3
		Sub-total for B2f	**3**		**5**	
	B3a	PCB sum	CZ	11	2	18.2
			IT	2	1	50.0
		Sub-total for B3a	**2**		**3**	
	B3c	Cadmium Cd	CZ	2	1	50.0
		Copper Cu	DE	2	2	100.0
		Mercury Hg	CZ	17	3	17.6
		Sub-total for B3c	**2**		**6**	
	B3d	Aflatoxin B_1	IT	5	2	40.0
		Sub-total for B3d	**1**		**2**	
		Total in Bovines	**13**		**261**	
Pigs	**A6**	Chloramphenicol	DE	378	36	9.5
			ES	25	2	8.0
			SE	26	11	42.3
		Sub-total for A6	**3**		**49**	
	B1	Antibacterials	NL	1588	22	1.4
		Benzylpenicillin (Penicillin G)	BE	34	3	8.8
		Beta-lactams	MT	220	3	1.4
		Cephalosporins	MT	220	1	0.5
		Ciprofloxacin	BE	34	2	5.9
		Dihydrostreptomycin	BE	34	1	2.9
		Doxycycline	BE	34	1	2.9
			ES	21	1	4.8
		Enrofloxacin	BE	34	5	14.7
		Inhibitors	CY	4	4	100.0
		Quinolones	MT	220	1	0.5
		Spectinomycin	BE	34	1	2.9
		Tetracycline	MT	220	4	1.8
		Sub-total for B1	**5**		**49**	
	B2d	Azaperol	BE	29	1	3.4
		Azaperone	BE	29	2	6.9
		Sub-total for B2d	**1**		**3**	
	B2e	Flunixin	BE	29	3	10.3
		Sub-total for B2e	**1**		**3**	
	B2f	Dexamethasone	BE	364	2	0.5
		Sub-total for B2f	**1**		**2**	
	B3a	PCB sum	CZ	12	10	83.3
		Sub-total for B3a	**1**		**10**	
	B3c	Copper Cu	DE	4	1	25.0
		Mercury Hg	CZ	31	12	38.7
			DE	10	3	30.0
		Sub-total for B3c	**2**		**16**	
		Total in Pigs	**8**		**132**	
Sheep/Goats	**B1**	Antibacterials	NL	37	2	5.4
		Oxytetracycline	IE	27	1	3.7
		Sulfadimidine	CY	2	1	50.0
		Sub-total for B1	**3**		**4**	
		Total in Sheep/Goats	**3**		**4**	
Poultry	**A6**	AOZ (3-amino-2-oxazolidone)	GR	2	2	100.0
		Metronidazole	DE	232	1	0.4

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
		Nitroimidazoles (group)	SK	8	1	12.5
		Sub-total for A6	**3**		**4**	
	B1	Doxycycline	ES	37	1	2.7
		Tylosin, Tylosin A	ES	28	1	3.6
		Sub-total for B1	**1**		**2**	
	B2b	Monensin	MT	32	2	6.3
			PL	7	1	14.3
		Salinomycin	MT	32	7	21.9
			PL	7	2	28.6
		Sub-total for B2b	**2**		**12**	
	B3a	PCB sum	SK	1	1	100.0
		Sub-total for B3a	**2**		**1**	
		Total in Poultry	**6**		**19**	
Aquaculture	**B3e**	Malachite Green-Leuco	CZ	20	4	20.0
			DE	25	9	36.0
			PL	24	2	8.3
		Sub-total for B3e	**3**		**15**	
		Total in Aquaculture	**3**		**15**	
Milk	**B1**	Benzylpenicillin (Penicillin G)	IT	52	3	5.8
		Oxytetracycline	IT	41	1	2.4
		Spiramycin	IT	15	2	13.3
		Sub-total for B1	**1**		**6**	
	B3a	HCH-Beta	IT	9	3	33.3
		PCB sum	IT	11	1	9.1
		Sub-total for B3a	**1**		**4**	
	B3d	Aflatoxin B_1	IT	378	40	10.6
		Aflatoxin M_1	BG	7	3	42.9
			GR	2	1	50.0
		Sub-total for B3d	**3**		**44**	
		Total in Milk	**3**		**54**	
Eggs	**B1**	Doxycycline	BE	1	1	100.0
		Sulfadimidine	DE	1	1	100.0
		Sub-total for B1	**2**		**2**	
	B3a	PCB sum	SK	1	1	100.0
		WHO-PCDD/F-TEQ	DE	4	1	25.0
		Sub-total for B3a	**2**		**2**	
		Total in Eggs	**3**		**4**	
Farmed Game	**B3c**	Mercury Hg	DE	1	1	100.0
		Sub-total for B3c	**1**		**1**	
		Total in Farmed Game	**1**		**1**	
Honey	**B1**	Dihydrostreptomycin	AT	4	1	25.0
		Sulfadiazine	IT	4	2	50.0
		Sulfathiazole	AT	6	6	100.0
			LT	2	2	100.0
		Sulfonamides	PL	28	8	28.6
		Tetracycline	BG	2	1	50.0
			IT	9	5	55.6
		Tylosin, Tylosin A	IT	2	1	50.0
		Sub-total for B1	**5**		**26**	
	B3c	Lead Pb	IE	5	3	60.0
		Sub-total for B3c	**1**		**3**	
		Total in Honey	**6**		**29**	
Total in all categories					**519**	

Appendix C. LIST OF NON-COMPLIANT RESULTS: IMPORT SAMPLING

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines	**A6**	Chloramphenicol	PT	9	1	11.1
		Sub-total for A6	**1**		**1**	
	B2a	Ivermectin	IE	9	1	11.1
		Sub-total for B2a	**1**		**1**	
		Total in Bovines	**2**		**2**	
Pigs	**A6**	Chloramphenicol	DK	15	5	33.3
		Sub-total for A6	**1**		**5**	
		Total in Pigs	**1**		**5**	
Sheep/Goats	**A6**	AOZ (3-amino-2-oxazolidone)	DE	23	1	4.3
		Chloramphenicol	DK	16	1	6.3
			PT	2	1	50.0
		Sub-total for A6	**3**		**3**	
		Total in Sheep/Goats	**3**		**3**	
Poultry	**B1**	Doxycycline	BE	46	1	2.2
		Sub-total for B1	**1**		**1**	
	B2b	Chlopidol	CY	3	1	33.3
			DE	50	15	30.0
			IE	22	6	27.3
		Toltrazurilsulfon	IE	22	1	4.5
		Sub-total for B2b	**3**		**23**	
	B2f	Cyromazine	IE	22	2	9.1
		Sub-total for B2f	**1**		**2**	
	B3c	Mercury Hg	DE	50	3	6.0
		Sub-total for B3c	**1**		**3**	
		Total in Poultry	**4**		**29**	
Aquaculture	**A6**	AOZ (3-amino-2-oxazolidone)	DE	90	2	2.2
		Sub-total for A6	**1**		**2**	
	B1	Oxytetracycline	DK	3	1	33.3
		Sub-total for B1	**1**		**1**	
	B3c	Arsenic As	PL	61	1	1.6
		Cadmium Cd	PL	61	1	1.6
		Mercury Hg	DE	228	5	2.2
			SI	9	1	11.1
		Sub-total for B3c	**3**		**8**	
		Total in Aquaculture	**4**		**11**	
Farmed Game	**A6**	Chloramphenicol	BE	23	1	4.3
		Sub-total for A6	**1**		**1**	
		Total in Farmed Game	**1**		**1**	
Honey	**B1**	Sulfathiazole	DE	41	1	2.4
		Sub-total for B1	**1**		**1**	
		Total in Honey	**1**		**1**	
Total in all categories					**52**	

(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	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
Bovines	**B1**	Amoxycillin	DE	91	1	1.1
		Benzylpenicillin (Penicillin G)	DE	103	20	19.4
		Chlortetracyclin	DE	107	1	0.9
		Ciprofloxacin	DE	86	9	10.5
			IT	34	2	5.9
		Danofloxacin	DE	93	2	2.2
			IT	34	1	2.9
		Dihydrostreptomycin	DE	99	8	8.1
		Enrofloxacin	DE	98	14	14.3
			IT	34	2	5.9
		Epi-Oxytetracycline	DE	21	2	9.5
		Epi-Tetracycline	DE	23	1	4.3
		Florfenicol	DE	5	1	20.0
		Gentamicin	DE	98	9	9.2
		Inhibitors	DE	27669	122	0.4
		Lincomycin	DE	66	1	1.5
		Marbofloxacin	DE	97	3	3.1
		Neomycin	DE	95	5	5.3
		Oxytetracycline	DE	110	9	8.2
			IT	37	1	2.7
		Sulfadiazine	DE	95	1	1.1
			IT	40	1	2.5
		Sulfadimethoxine	DE	95	1	1.1
		Sulfadimidine	DE	96	1	1.0
			IT	40	1	2.5
		Sulfadoxine	DE	95	1	1.1
		Sulfamerazine	IT	40	1	2.5
		Sulfonamides	DE	1	1	100.0
		Tetracycline	DE	109	4	3.7
		Trimethoprim	DE	65	1	1.5
		Sub-total for B1	**2**		**227**	
	B2e	Flunixin-Meglumine	DE	7	2	28.6
		Meloxicam	DE	17	1	5.9
		Sub-total for B2e	**1**		**3**	
	B2f	Dexamethasone	DE	25	4	16.0
			IT	658	6	0.9
		Prednisolone	IT	658	1	0.2
		Sub-total for B2f	**2**		**11**	
	B3c	Mercury Hg	MT	2	1	50.0
		Sub-total for B3c	**1**		**1**	
		Total in Bovines	**3**		**242**	
Pigs	**B1**	Amoxycillin	DE	357	6	1.7
		Ampicillin	DE	387	3	0.8
		Benzylpenicillin (Penicillin G)	DE	392	12	3.1
		Chlortetracyclin	DE	484	16	3.3
		Ciprofloxacin	DE	350	2	0.6
		Dihydrostreptomycin	DE	334	11	3.3
		Doxycycline	DE	501	40	8.0
		Enrofloxacin	DE	394	17	4.3

(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.

Category	Group	Substances	Member State	Number of samples analysed[(a)]	Non-compliant results	
					N	%
			IT	74	1	1.4
		Epi-Oxytetracycline	DE	258	1	0.4
		Epi-Tetracycline	DE	266	5	1.9
		Gentamicin	DE	331	1	0.3
		Inhibitors	DE	278040	404	0.1
		Marbofloxacin	DE	387	4	1.0
		Oxytetracycline	DE	476	10	2.1
		Sulfadiazine	DE	392	10	2.6
		Sulfadimethoxine	DE	385	1	0.3
		Sulfonamides	DE	19	4	21.1
		Tetracycline	DE	479	10	2.1
		Tilmicosin	DE	373	1	0.3
		Trimethoprim	DE	323	12	3.7
		Tulathromycin	DE	321	1	0.3
		Tylosin, Tylosin A	DE	357	2	0.6
		Sub-total for B1	**2**		**574**	
	B2e	Antipyrin-4-Methylamino	DE	216	1	0.5
		Sub-total for B2e	**1**		**1**	
	B2f	Dexamethasone	DE	244	1	0.4
		Sub-total for B2f	**1**		**1**	
	B3c	Mercury Hg	MT	2	1	50.0
		Sub-total for B3c	**1**		**1**	
		Total in Pigs	**3**		**577**	
Sheep/Goats	**B1**	Dihydrostreptomycin	DE	2	1	50.0
		Inhibitors	DE	2625	4	0.2
		Oxytetracycline	DE	2	1	50.0
		Sub-total for B1	**1**		**6**	
		Total in Sheep/Goats	**1**		**6**	
Horses	**B1**	Inhibitors	DE	10	1	10.0
		Sub-total for B1	**1**		**1**	
		Total in Horses	**1**		**1**	
Poultry	**B1**	Flumequine	IT	41	1	2.4
		Inhibitors	DE	140	1	0.7
		Oxytetracycline	IT	41	1	2.4
		Sulfadimethoxine	IT	42	1	2.4
		Sulfadimidine	IT	42	1	2.4
		Tylosin, Tylosin A	IT	41	1	2.4
		Sub-total for B1	**2**		**6**	
		Total in Poultry	**2**		**6**	
Aquaculture	**B3c**	Cadmium Cd	GR	83	2	2.4
		Lead Pb	GR	83	2	2.4
		Sub-total for B3c	**1**		**4**	
		Total in Aquaculture	**2**		**4**	
Milk	**B3a**	HCH-Beta	IT	193	2	1.0
		Sub-total for B3a	**1**		**2**	
	B3d	Aflatoxin M_1	IT	3107	81	2.6
		Sub-total for B3d	**1**		**81**	
		Total in Milk	**1**		**83**	
Eggs	**B3a**	Dioxins	IT	12	1	8.3
		PCB sum	IT	12	2	16.7
		Sub-total for B3a	**1**		**3**	
		Total in Eggs	**1**		**3**	
Honey	**B1**	Tetracycline	IT	67	1	1.5
		Sub-total for B1	**1**		**1**	
		Total in Honey	**1**		**1**	
Total in all categories					**923**	

Appendix E. ANNEX I TO DIRECTIVE 96/23/EC

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. Resorcyclic 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[23]

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

[23] 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.

ABBREVIATIONS

Country Codes

AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	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
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovak Republic
ES	Spain
SE	Sweden
NL	The Netherlands
UK	United Kingdom

Other abbreviations

AMOZ	5-methylmorpholino-3-amino-2-oxazolidone
AOZ	3-amino-2-oxazolidone
CVMP	Committee for Medicinal Products for Veterinary Use
DG SANCO	Directorate General for Health and Consumers
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
TRACE	Trade Control and Expert System